KEY TO DATES AND PAGES.

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CONTAINING

CURRENT NOTES ON THE WORK OF THE ASSOCIATION

REPORTS OF CONFERENCES

MEETINGS OF BRANCHES AND DIVISIONS

THE GENERAL MEDICAL COUNCIL

MEDICAL BILLS IN PARLIAMENT

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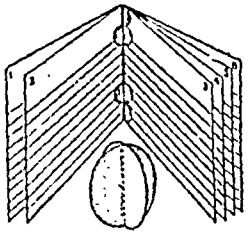

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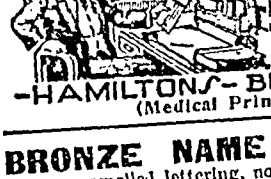

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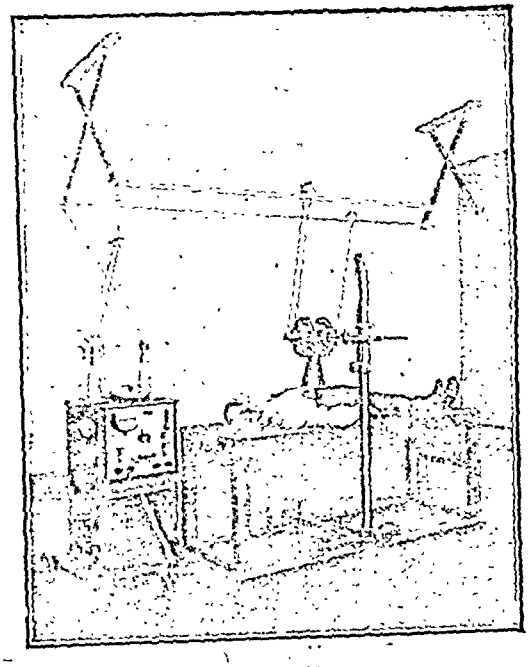

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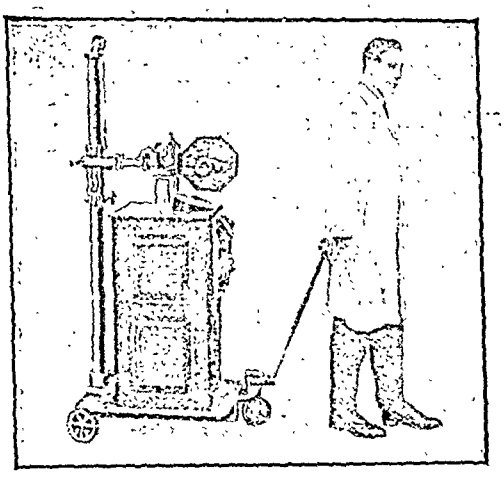

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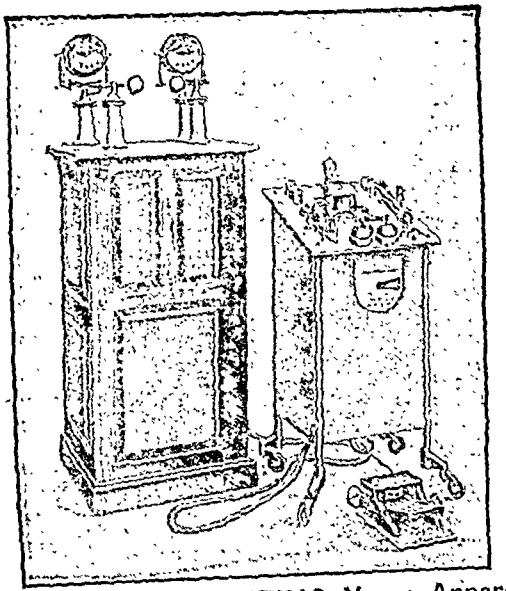

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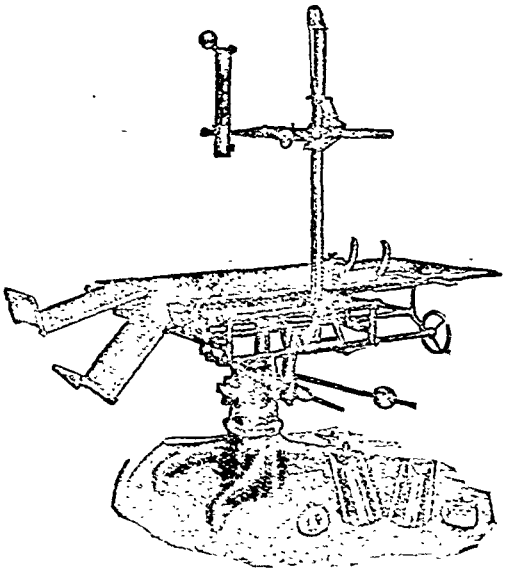

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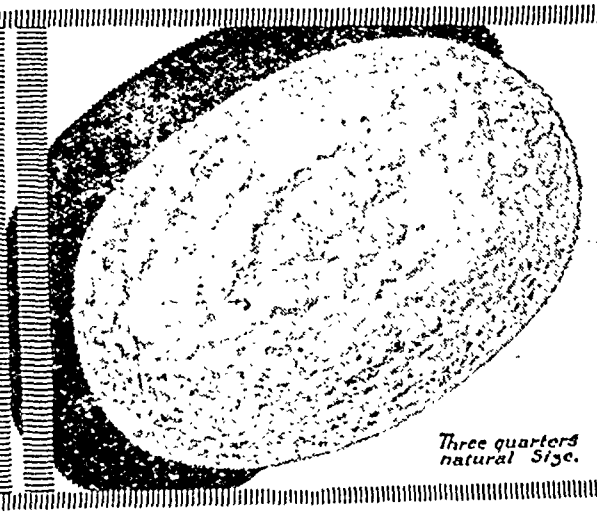

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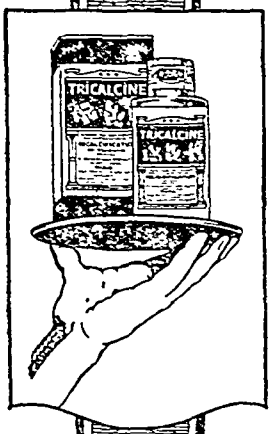

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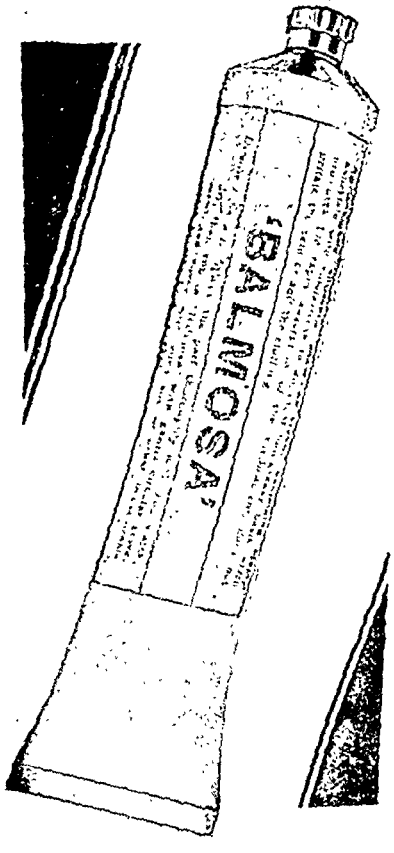

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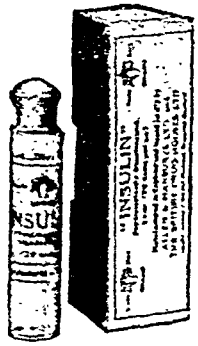

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Andrews Liver Salt is an ideal Saline aperient of pleasant taste, readily taken and well tolerated by the most delicate adult or child. It ensures an easy and complete evacuation without griping or tenesmus; it is not contra-indicated in the majority of diseases where constipation arises.

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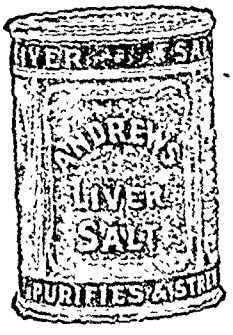

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The B.D.H. irradiation process has been perfected with much experimentation, with the result that the irradiation is carried out in such a way that a product (Radiostol) is always obtained which is of optimum Vitamin D activity.

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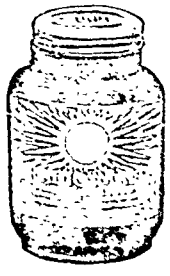

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Radio-Malt is accurately-standardised and, therefore, more reliable than cod-liver oil and malt; also it is more concentrated and more intensive in its effects.

RADIOSTOL and RADIO-MALT are available from leading pharmacists

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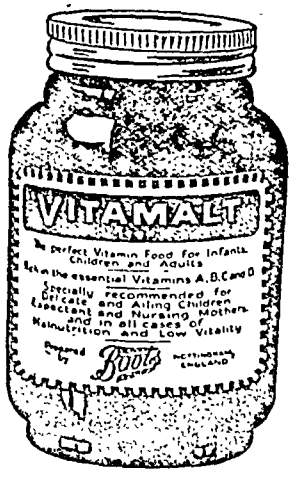

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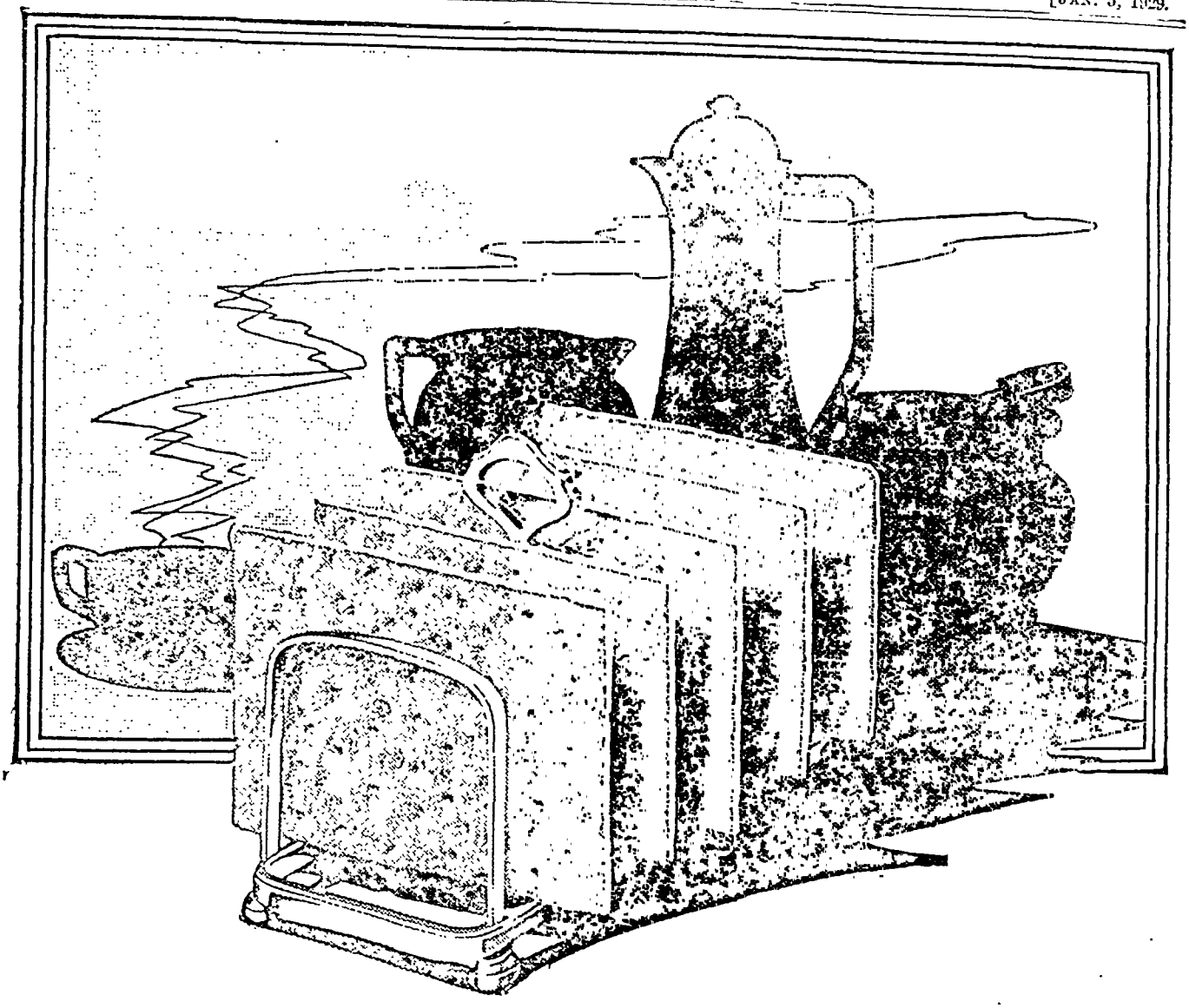

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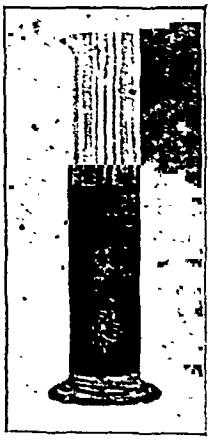

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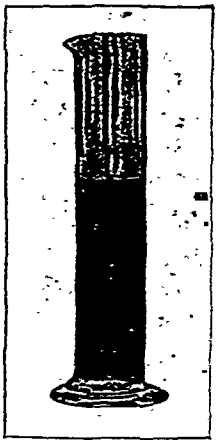

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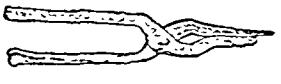
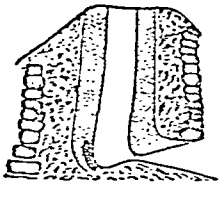
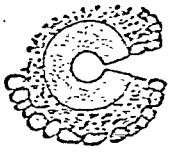
REMAINS OF AN ANCIENT KELTIC IRON-FURNACE AND A PAIR OF BLACKSMITH'S PINCERS.—In many of the localities inhabited by the ancient Kelts are to be found the remains of furnaces and other relics of the iron-working industry, of which these people were famous pioneers. Julius Cæsar was greatly impressed by the skill of the Gaulish blacksmiths, and records his admiration for the iron anchor-chains they made. Plutarch records that a certain military officer was obliged to have metal helmets made for his men to resist the Keltic swords, "which were the greatest strength of these barbarians." Machines and agricultural appliances, made of iron or requiring iron in their composition, were well-known as their handiwork. Pliny states that they possessed mowing machines, a borer with a spiral, and four-wheeled chariots. An immense variety of tools and utensils forged by them characterise the later Iron Age. The Keltic furnace for the extraction of iron from its ores was a simple cavity, generally in the side of a hill, its walls being constructed of the local stone. It was filled with ore in horizontal layers alternating with layers of charcoal. An opening at the base permitted of ventilation by a natural draught and perhaps by means of a primitive bellows, while through it, too, the iron-worker withdrew the lumps of metal. Present-day experiments have shown that these ancient furnaces, worked with simple bellows, would yield, in 48 hours, 25 lb. of iron so pure that it could at once be forged into lance-heads.







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LONDON: SATURDAY, JANUARY 5TH, 1929.

A Lecture
ON
THE PSYCHOLOGY OF CONJOINED TWINS:
A STUDY OF MONSTERHOOD.

DELIVERED TO THE LEEDS UNIVERSITY MEDICAL SOCIETY, NOVEMBER 20TH, 1928,

BY

SIR JOHN BLAND-SUTTON, BT., LL.D., F.R.C.S.,
CONSULTING SURGEON TO THE MIDDLESEX HOSPITAL.

Women shall bring forth monsters.—II Esdras v, 8.

CONJOINED twins, or monsters, which is the vulgar name for these unfortunate human beings, have interested the world for centuries. Anatomists one hundred years ago called them "freaks." In museums of pathology many double foetuses are preserved and shown to visitors as curiosities. This is pardonable because it was impossible to give an explanation of such conditions on account of the ignorance of the prime factors concerned in animal reproduction.

Conjoined twins interest embryologists, doctors, midwives, surgeons, and psychologists.

Embryologists are mainly concerned with their origin. One ovum, as a rule, gives rise to one embryo; not infrequently an ovum may be the source of two embryos; each may be a separate individual, be born, mature, manifest average mental capacity, physical power, and reproductive ability. Mammals are known in which a single ovum may give rise to several embryos. Thus in the nine-banded armadillo, *Tatusia novemcincta*, from one ovum four embryos normally arise (Fig. 1). They are of the same sex. This is called polyembryony.

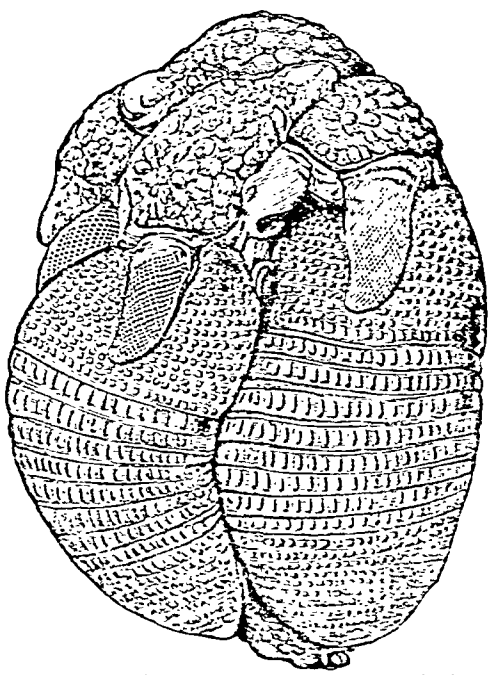

FIG. 1.—Quadruplets of the Nine-banded Armadillo, developed from a single ovum.

Embryologists are occupied with the experimental production of double creatures such as starfishes, newts, salamanders, and the like. The eggs of such aquatic forms are large enough to permit of delicate manipulation, and some experimenters are so clever that they can divide the developing ovum, either with an extremely fine needle or a fine sterilized hair, without arresting the growth of the ovum, and then observe the fragments develop into complete individuals, or become monstrous forms. In one lucky instance an embryologist (Clarke), studying the development of the American salamander, noticed something unusual with the anterior extremity of the medullary fold; he set the egg aside and had the satisfaction of watching the development of a two-headed salamander.

Conjoined twins are common among salmon-fry in hatcheries; they have also been observed in many classes of vertebrate animals—fishes, reptiles, birds, and mammals. Examples are preserved in all well-stocked anatomical museums throughout the world.

Doctors and midwives are concerned in the delivery of twins—especially the birth of monsters, but mainly in regard to the safety of the mother. Judging from the large number of monstrous twins preserved in museums, conjoined twins rarely survive their birth. In some cases Caesarean section is required. In many instances the mothers are multiparous; in some of the best known the reports run: "the twins were born without difficulty." The mother of the Siamese twins Chang—Eng (Fig. 2) stated that the head of one twin was between the legs of the other, and they were born easily. When Laloo (Fig. 3) was born the arms of the parasite were around the neck of the autosite.

In Eastern countries conjoined twins of any kind are regarded as portents. When Chang—Eng were born the King of Siam, conceiving them to be monsters, imagined they portended evil and designed them to be put to death (*Phil. Trans.*, 1830, 177).

Surgeons critically study conjoined twins because they have to exercise their wits as to the possibility of separating them successfully. This matter has received attention in individual cases from surgeons of the highest reputation and skill.

Although the object foremost in my mind in this lecture is to discuss the psychology of these persons who, when inseparable surgically, are condemned to a life of bondage, it will be necessary to describe some examples illustrating the various forms such twins assume.

CONJOINED TWINS.

The best known example of this variety is the Siamese twins Chang—Eng. They were discovered by Captain R. Hunter in 1829: the twins were fishing in the Siam River; they were naked above the waist, and he imagined them to be some rare animal. Hunter ascertained from their mother that they were born without difficulty; he saw them when they were 18 years of age. Sir William Fergusson examined them (1829) in regard to the question of separation, and did not favour operative intervention. The twins were exhibited in New York as Chang and Eng Bunker. They were skilful at battledore and shuttlecock, became affluent, and married two sisters—daughters of a Wesleyan minister. Chang had ten children and Eng twelve. The twins were shown in England in 1869, and

were seen again by Fergusson, and he decided against separation. The desire for separation had increased "as each family wanted to have a father all to itself."

Chang—Eng died in 1874 within two hours of each other, aged 63.

PARASITIC TWINS.

In the case of duplex twins, when one of them is incomplete, the well-developed twin is known as the *autosite*; the imperfectly developed twin is called the parasite. This variety of conjoined twins is called parasitic twins. The parasite assumes various forms; when the head is lacking the parasite is said to be acephalous. In such a condition the anatomical relationship has been graphically described "as if the parasitic twin had plunged its head into the autosite's breast" (Fig. 3).

A good example is Laloo, an intelligent Hindu, who was exhibited in London, aged 17 years. I had an opportunity of thoroughly examining Laloo with the late S. G. Shattock, and drawing up a joint report for the Pathological Society of London. I have seen Laloo many times since. He was shown as "a boy and girl joined together alive." There was no doubt about the sex. They were two males, each with well-developed external genital organs. In conjoined twins the sex is identical. I know of no exception.

A well-known pair exactly like Laloo is the Chinese boy A—Ke. There is a clay model of this boy in the Museum of the Royal College of Surgeons. Our knowledge of the A—Ke pair is based entirely on a description drawn up by J. Livingstone, a surgeon in Hong-Kong, in 1804. At that date A—Ke was aged 16. His mother died from the effects of labour. I have a manuscript copy of Livingstone's description, which contains a brief, but pathetic, report of the domestic relations of this poor lad; also a crayon portrait of him.

Now that the anatomy and relations of parasitic twins are better understood surgeons should be stimulated to remove them, and spare the autosite not only a dreadful life of bondage, but the disgust and ignominy of being exhibited for gain in public shows. That this is possible will be demonstrated in a later section of this lecture. In the case of Laloo we have a lad encumbered with a headless—acephalous—brother. A rarer form is a limbless parasite attached to an otherwise well-formed individual. Such a twin may be conveniently described as *capitate* (Fig. 4).

My knowledge of this rare variety of parasite rests on an engraving which Dr. Dan McKenzie found in a second-hand-book shop and sent to me. I have failed to find a detailed description of this rare example, but there is an engraving of him in the *Gentleman's Magazine*, 1777, xlvii, 424, and it is stated to be from a picture in the museum of Sir Hans Sloane. The *Journal* for the same year also contains, on page 572, an engraving of the conjoined twins Lazarus—Johannes Colloredo. These twins will be considered in a subsequent section.

FIG. 2.—The Siamese Twins Chang—Eng at the age of 16. They were born without difficulty, and died in 1874, aged 63. Chang died first.

TERATOID TWINS (TERATOMAS).

In order to emphasize the distinction between a parasitic foetus and a teratoma it may be stated that if the brother of Laloo (Fig. 3) or the limbless brother of James Poro (Fig. 4) were inside the abdomen of the autosite it would be called a teratoid-tumour—shortly, a teratoma. There would be this difference only: the teratoma would be enclosed, or sequestered, in a sac. Twins of this kind are of great interest to surgeons.

In 1808 Dr. G. W. Young described to the Medico-Chirurgical Society, London, "A foetus found in the abdomen of a boy." In this instance a large cyst was found in the belly of a male infant aged 12 months. A *post-mortem* examination was made, and the cyst, or bag, contained, in addition to a large quantity of fluid, the pelvis, lower limbs, and external genital organs of a foetus (Fig. 5).

The nature of the investment of a teratoma is of interest. Is it a persistent amnion? When an aseptic body, be it animal, vegetable, or metallic, or even a globule of oil, is introduced into the peritoneal cavity it becomes invested with a capsule. This is the most probable explanation of the bag which contained Young's boy. The capsule is adventitious. In recent years several such encysted imperfect foetuses have been removed by surgeons from the abdominal cavity of children and under conditions where the question of extrauterine gestation does not arise.

W. Roger Williams has, with conspicuous literary diligence, collected from current medical literature more than 100 examples of teratoid tumours and analysed them (*Medical Journal and Record*, New York, 1927).

For many years I have collected reliable reports of parasitic twins in order to grade them. What is set down in regard to the abdomen is also true of the head, thorax, and pelvis. There is this disquieting fact in regard to external teratomas of the sacral region—they are liable to be the seat of malignant disease.

One of the surprising specimens in my series is a black pigling, double in everything except its head. On close examination I saw evidence of reduplication in the maxillae, and hunted around to find the extra mandible. To my astonishment I found it in the pharynx, malformed but containing teeth, and hanging by a stalk from the pharyngeal surface of the sphenoid bone.

The interest of this little pig (which is preserved in the Teratological Gallery of the Royal College of Surgeons) is the support it gives to this opinion—*Pharyngeal teratomas are portions of the cephalic end of an undeveloped individual.*

A LIFE OF BONDAGE.

The psychology of conjoined twins is a curious problem; such couples, as well as individuals so unfortunate as to be hampered with a parasitic twin, should be objects of pity. Most of them are born to parents in poor circumstances, and when they survive their birth are apt to fall into the hands of crafty showmen who exhibit them for gain. Few can hope to be as lucky in respect to money as Chang—Eng.

They accumulated money, married, and lived comfortably on their farms in America. The Civil War ruined them. They went on show and recouped themselves. On the other hand, A—Ke's father belonged to the poorest class of Chinese husbandmen, and was content to let his encumbered son "on hire" for exhibition purposes. Ten cash (less than a penny sterling) was the price of admission. In Livingstone's record there is this note: "When A—Ke passes water, the parasite passes it at the same time, whether the urine is voided for necessity or to gratify the curiosity of strangers." In the case of Laloo, his headless and heedless parasitic brother voids his urine *independently without warning*, and usually over him, causing much discomfort day and night.

FIG. 3.—Laloo, the Hindu boy, aged 17, with his parasite brother. (*Tumours.*)

SURGERY AND CONJOINED TWINS.

In relation to conjoined twins, the thought uppermost in the minds of the parents is the hope of separating them by a surgical operation. In many instances this is impracticable. In the known instances where it has been carried out the life of one of the twins was sacrificed; and in a recent case (1927) both twins died. Dr. Boehm in 1861 separated conjoined twins—girls—a few days after birth. One died on the fourth day after operation; the other survived.

The Orissa twin sisters Radica—Doodica were shown in London in 1895. At their birth the inhabitants of the village, instigated by Brahmins, put the whole family in prison on the supposition that the twins were the incarnation of the devil. When I saw them they were attractive little children and danced daintily; they had silver bells on their necklaces, bracelets, and anklets. Eight years later Doodica developed signs of abdominal tuberculosis. Dr. Doyen, a French surgeon, separated them, and Radica survived.

In 1927 a male child, Karamet Hussain, was born in a village near Gujarkhana, India. Attached to the child was an acephalous parasite which, in its mode of attachment to the autosite, was the counterpart of Laloo (Fig. 3). When born the parasite had its arms around its brother's neck, and was born without difficulty. The mother was multiparous, aged 35.

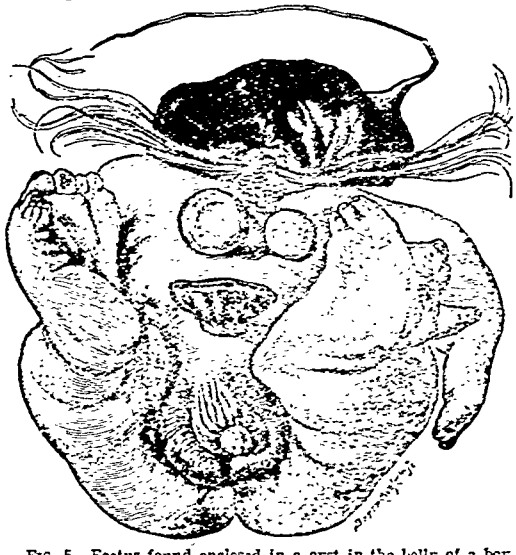

FIG. 5.—Foetus found enclosed in a cyst in the belly of a boy. When removed it was as rosy and as healthy as if alive. This specimen is preserved in the Teratological Collection at the Royal College of Surgeons.

A month after birth the parasite was growing rapidly, "and the parents were afraid that the life of the child would be troublesome," and sought the aid of surgery. Luckily aid was rendered by Captain D. D. Kapur of the I.M.S., and by a clever operation he relieved the child of its parasitic brother. The autosite was one month old at the time of the operation. Five months later the child was reported fit and well and growing nicely.

The leading facts of this case (*Lancet*, 1928, i, 24) should serve as a stimulus to surgeons and encourage them to spare the autosite not only a dreadful life of bondage, but the disgust and ignominy of life in a travelling menagerie.

In many conjoined twins surgical separation is barred by the anatomical conditions. This is the case with Violet—Daisy Hilton, born at Brighton in 1909. These twins were described by Dr. James A. Rooth as being united at the sacrum—pygopagous twins with a single anus. Their mother, panic-stricken when she saw her offspring, forsook them and fled. They were nursed by a foster-mother, who married a showman. They left England when 3 years of age and were exhibited in various countries. As the children grew the uniting band, mainly of skin, became flexible and allowed the girls to face each other so that they can "fight, play, or caress each other." One can sleep while the other plays: external genitals complete in each; anus common to both; micturition individual;

FIG. 4.—James Foro (born in Genoa, 1585).

surgical separation impracticable. The photograph represents them at the age of 18, and the showman speaks of their "health and beauty." They are intelligent, good musicians, can play the saxophone and other instruments, and they have acquired a comfortable fortune. A report more laconic and quaint would be difficult to conceive. Dr. James Rooth has furnished an excellent account of the delivery and infancy of the Brighton twins in the *British Medical Journal*, 1911, ii, 653.

Apart from the many disagreeables incidental to such unions, there is this dominating question: What will happen if one twin dies before the other?

Lazarus—Johannes Baptista Colloredò was born in Genoa in 1617. Each child was christened separately, and when

FIG. 6.—Violet-Daisy Hilton, the Brighton Twins.

they grew up were exhibited all over Europe. They were described by G. Bartholinus, professor of anatomy at Copenhagen. At that date the twins were 28. It is worth notice that Lazarus was of a just stature, courteous in deportment, and gallantly attired. He covered the body of his brother with a cloak, as presaging that when he died, he should also expire with the stink and putrefaction of his body. Lazarus therefore took the greatest care of his smaller brother. This is a good example of kindness for selfish reasons.

It is established that, as a rule, in the case of conjoined twins the death of one is quickly followed by the death of the companion. The fate of the pygopagous twins Rosa—Josepha Blazek, born at Prague and known throughout the world as the Bohemian Twins, is worth recording on account of its pathos. Josepha had pneumonia followed by catarrhal jaundice in Chicago in 1922, aged 44. Rosa refused to be separated from her sister. Josepha died first; Rosa died fifteen minutes later. Rosa's last wish was that she should be allowed to die with her sister. Rosa's son insisted on his mother's wish being respected, saying he preferred being an orphan to denying his mother's last request. At the age of 32 Rosa fell in love with the showman and conceived. She gave birth to a living child at Prague. The child was in Rosa's womb, but Josepha as well as Rosa had milk in her breasts (see *Tumours*, seventh edition, 1922, p. 502). A curious legal question arose because both women died intestate, and some relations of Josepha, the unmarried twin, claimed part of the estate.

LYMPHADENOID GOITRE AND ITS CLINICAL SIGNIFICANCE.

BY

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WITH

A NOTE ON ITS ETIOLOGY IN RATS

BY

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BREVET COLONEL I.M.S.

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(With Special Plate.)

WHEN working on the histology of the thyroid in 1925 we found that there were two activities carried on by the normal gland.[1] This conclusion has since been substantiated by evidence drawn from several other sources—biochemical, biological, and clinical.[2,3] The two functions we refer to are: (1) The production of secretion proper; or what for greater precision may be called "lymphogenic" secretion. This secretion contains no thyroxin. (2) The accumulation of colloid—that is, iodo-colloid, which contains the thyroxin moiety of the thyroid products.

One of the features of the normal secretory process is the conspicuous activity of the reticulo-endothelial cells with the production of lymphocytes in the interfollicular lymph spaces of the thyroid gland units. It is this latter feature of the secretory process which calls for the specific designation "lymphogenic" secretion.

To the pathologist the knowledge of a specific process in the normal physiology of a gland must lead to search for the corresponding pathological condition in which undue strain falls upon that specific process. This, then, led us to look for a class of thyroid disorder in which the functional imbalance would lie in the over-production of lymphocytes during the secretory process of an otherwise normal thyroid gland. In the course of a review of about 4,000 goitres we were able to separate some glands answering to this description. These, when ranged in sequence, betrayed their own pathological sequelae—fibrosis and atrophy. Thus a pathological condition which had been obscure could now be discerned as a specific progressive disorder often associated with goitre. To this class of enlarged thyroid gland we gave the name "lymphadenoid goitre."* [5]

Goitres which essentially belong to the group of lymphadenoid goitres have been called by earlier observers "chronic inflammatory thyroiditis," "granulomatous thyroiditis," "endothelioma," "sarcoma," and also "Riedel's disease" or "woody thyroid," etc. Although these various designations fail to convey the true pathogenesis of this condition they do indicate its most striking features: (1) the lymphocytic activity which is typical of the early or progressive stages of the process, and (2) the fibrosis and atrophy which accompany its later stages.

The lymphocytic infiltration is peculiar in that it picks out the *specific* thyroid lymph spaces in a most delicate and selective fashion (Figs. 1, 4, and 5). In this manner

* The lymphadenoid process need not cause enlargement of the gland; indeed, it has been found as a progressive condition in senility.

(*By G. Scott Williamson, Innes H. Pearse, and R. McCarrison.*)

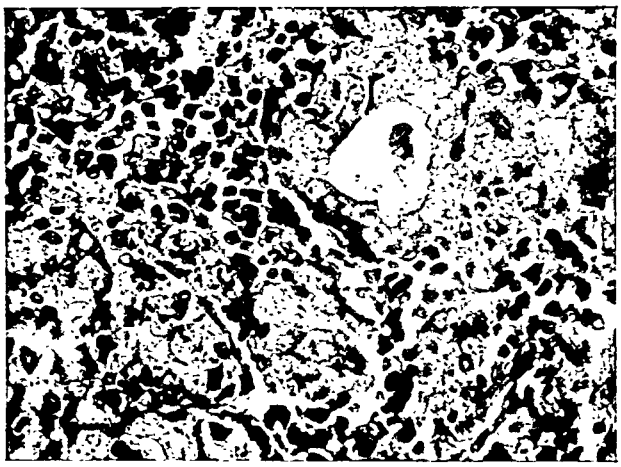

FIG. 1.—Section of a human thyroid showing the early changes in the lymphadenoid state. Lymphocytes fill the lymph sinusoids between the epithelial columns. Colloid is absent. The follicle is a "secretion" follicle.

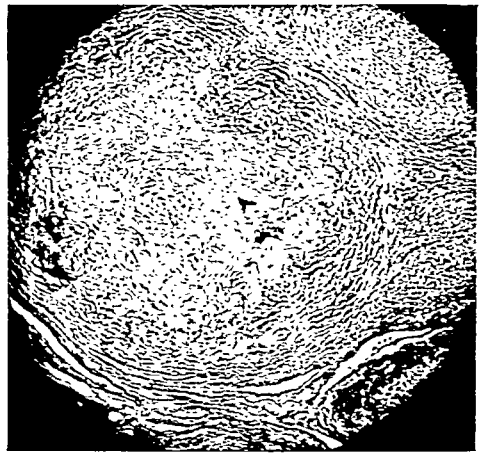

FIG. 2.—Later stage of the lymphadenoid process in a human thyroid. A whorl of fibrous tissue replaces a gland-unit.

FIG 3.—Section of a lymphadenoid thyroid of a man, aged 65, who died an accidental death and had no symptoms. The white opaque areas are foci of lymphogenesis.

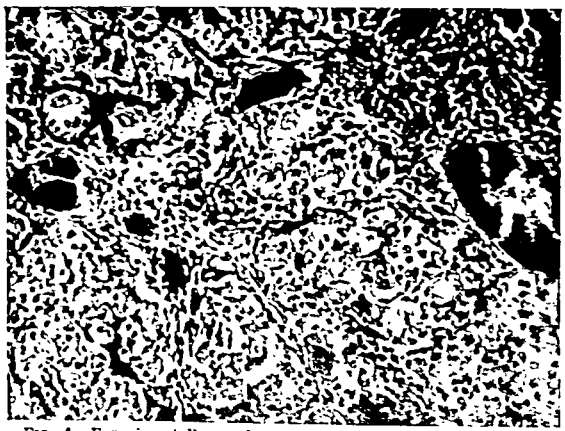

FIG. 4.—Experimentally produced lymphadenoid goitre in a rat showing invasion of the lymph sinusoids with lymphocytes and an aggregation of lymphocytes in one part of the field.

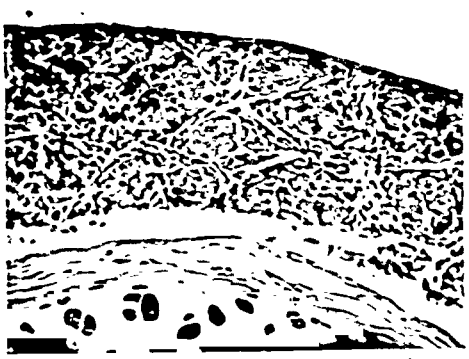

FIG. 5.—Isthmus of lymphadenoid goitre in rat, showing invasion of the lymph spaces with lymphocytes and the absence of both secretion and colloid follicles.

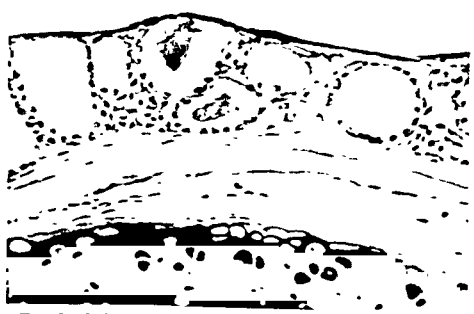

FIG. 6.—Isthmus of normal thyroid in "control" rat, for comparison with Fig. 5.

(*Illustrating the article by Bernard Hudson, printed at page 15.*)

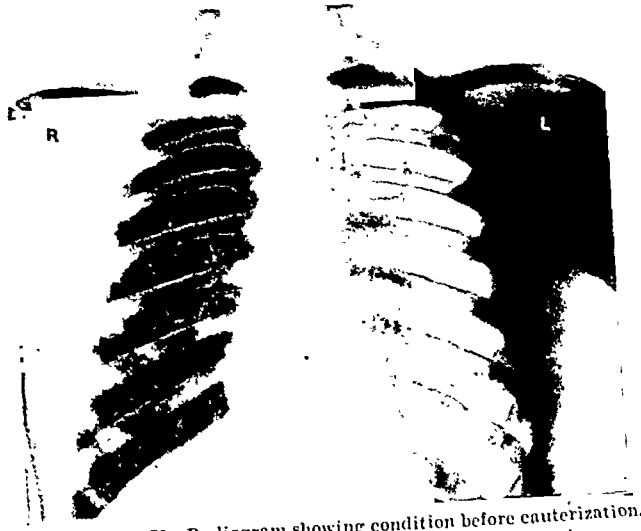

FIG. 1.—Case II: Radiogram showing condition before cauterization.

FIG. 2.—Case II: Condition after cauterization.

H. MARTIN GREY: A NORMAL VENTRICULOGRAM.

(*See page 15.*)

Posterior view of skull, showing anterior horns of lateral ventricles close together, with the third ventricle lying immediately underneath.

Anterior view of skull, showing posterior horns of lateral ventricles widely separated.

it affords a beautiful picture of natural injection of the thyroid lymph sinusoid, and lends further confirmation to our conception of the essential nature of the thyroid gland units.

As the disease progresses the lymphogenesis becomes more and more active; lymphocytes begin to collect at the hilum of the gland-unit and to range themselves in a circular fashion around its circumference as they crowd in the perivascular lymph spaces about the capsule of the gland-units. With the increasingly active lymphogenesis the parenchyma, which is producing the lymphogenic secretion, becomes hyperplastic, and active mitosis appears in the epithelium. The overgrowth of the parenchyma is so great that, in some cases, islands of solid epithelial tissue fill the follicular spaces, from which by this time all secretion has been drained away. It is noteworthy that lymphocytes only accumulate in and about those gland-units wherein lymphogenic secretion is being formed. In the follicles where colloid is accumulating there is no perifollicular lymphocytosis. This characteristic feature of the condition can, of course, only be observed in earlier cases in the human subject and in the experimentally produced condition in rats; for, as the process advances, the abnormal lymphogenic activity claims the whole field, and colloid storage becomes inconsiderable. Exhaustion of the epithelium eventually ensues, and now, no longer able to produce secretion, it becomes atrophic.

Meanwhile the cells of the reticulo-endothelial system, so actively concerned in the lymphogenic process, also suffer; an insidious fibrosis invades this tissue, creeping along its course from the periphery of the lymph sinusoid towards the centre, until there ultimately appears a complete fibrous skeleton replacing the reticulo-endothelium of the affected gland-unit (Fig. 2). The process is not that of scar formation. It is one of replacement fibrosis beginning in the reticulo-endothelial system, which is the region of functional "strain," and finally involving also the isolated islands of exhausted epithelium. The picture produced by the end-result of this process is a characteristic and peculiar one, for the gland-unit is entirely replaced by fibrous tissue. An ever-increasing number of complete fibrous whorls are ultimately formed throughout the thyroid, each whorl representing what was originally an active gland-unit of thyroid tissue. This is the "woody" thyroid of Riedel's disease. Area after area of these whorled fibrous nodules become linked together by the late progressive fibrosis of the interlobular lymph channels, and the once much enlarged thyroid tends finally to shrink into a small knot of fibrous tissue, unrecognizable as a thyroid gland except for its position. This gland is the gland of myxoedema.

It is clear from the progressive and ordered chain of events in the pathology of lymphadenoid goitre that there was justification for postulating the association of this type of thyroid with some general, as yet undifferentiated, constitutional disorder, the terminal phase of which was myxoedema.[8]

The sequence of events which thus leads up to the gland of myxoedema had been already noted by Simmonds.[6] He also emphasized the fact that this sequence of events was to be found apart from myxoedema, but in evident association with hypothyroidism. A further survey by Simmonds showed conclusively that this was not a secondary event in infectious disease, but a very specific condition of the thyroid. The lymphogenesis, as he points out, is the cause of the fibrosis and atrophy, and not a reaction following primary atrophy of the gland. Tebbutt, in a study of the condition, confirms Simmonds's main conclusion, and definitely links the pathological process to a progressive hypothyroidism and ultimate myxoedema.[7] Carrying this a step further we have shown that lymphogenesis is a function of the normal thyroid, so that lymphadenoid goitre becomes an expression of a disturbance of the lymphogenic function of the gland. We may conclude that there is some specific general disturbance which expresses itself in the thyroid gland as lymphadenoid goitre. The general condition has as its clinical sequelae hypothyroidism and finally myxoedema. Spontaneous myxoedema is thus the termination of a general disease rather than the sequel of a local thyroiditis.

Clinicians have recently begun to recognize the condition, with the result that during the last eighteen months four out of the seven lymphadenoid goitres we have received from the operating theatre were diagnosed as such before operation. It is not for us to speak, however, of the full clinical syndrome; suffice it only to say that the tendency for lesser or greater degrees of myxoedema to accompany the goitre is already well recognized by the surgeons familiar with these cases. It is, indeed, likely that many cases exist in which no symptoms occur until the insidious fibrous atrophy induces a spontaneous myxoedema. Thyroid glands are occasionally found *post mortem* in which the early stages of the lymphadenoid condition are observable in the gland histology, but where there is no record of any coexisting symptoms (see also Simmonds). A figure is shown of one such gland taken from a man, aged 65, who died an accidental death (Fig. 3). It is certainly true that the typical gland attributed by the pathologist to myxoedema is identical with the gland of the terminal stage of lymphadenoid goitre.

Let us now turn to a consideration of the etiology of the condition. McCarrison has for many years been concerned to demonstrate that the thyroid gland plays an important part in the general metabolism and, further, that other workers, by confining their attention exclusively to the metabolism of iodine, have been taking too narrow a view of the thyroid function. He therefore set out to cause a goitre on a diet which contained iodine. He was guided in his choice of diet by the experience of his previous work, which showed the overwhelming influence of vitamins in the functional turnover of the lymphocytes in the intestine—or intestinal lymphogenesis.[8] He ultimately found a diet, containing an abundance of iodine, which gave rise to a disturbance of the lymphogenic function of the thyroid gland. In other words, McCarrison has produced experimentally a lymphadenoid goitre.

There is no room for doubt that the goitre produced in the rat and the goitre of the natural disease in man represent the same condition (Compare Fig. 1 with Figs. 4 and 5). The rat goitres represent the earlier stages, the greater number of human lymphadenoid glands encountered represent both the early and the later stages of an identical pathological process in the thyroid. Unless the human glands are completely replaced by fibrous tissue, areas can always be found somewhere in them in which the condition is still progressive; if the rat goitres are selected some will be found in which the characteristic fibrosis is already beginning to show. In the human subject the age at which the progressive symptoms show themselves is rarely before 45 years, while myxoedema, of course, occurs on an average a decade later. We have, then, every reason to expect that the terminal phase of lymphadenoid goitre can also be produced in rats, provided they can be kept alive sufficiently long under suitable experimental conditions.

NOTE ON THE EXPERIMENTAL PRODUCTION OF LYMPHADENOID GOITRE IN RATS.

BY

COLONEL R. McCARRISON, I.M.S.

The composition of the diets used in the experimental production of lymphadenoid goitre[9 10] in rats is as follows: American white flour, 72 to 82 parts; meat residue, 5 to 15 parts; olive oil, 8 parts; salt mixture, containing 0.45 per cent. of potassium iodide, 5 parts; distilled water *ad lib.* Various modifications of this diet, containing greater or lesser amounts of white flour, or having certain proportions of the white flour replaced by starch, have also been used.

Approximately 25 per cent. of young rats fed on diets of this composition, and confined in separate cages under conditions of the most scrupulous cleanliness, have exhibited goitres of various sizes at *post-mortem* examination. The goitres have been found in rats killed, or dying, as early as 75 days from the initiation of the experiments and as late as 165 days. They have occurred more frequently in females than in males. Macroscopically they are of glistening, fleshy appearance, bright or darkish red in colour, and vary in size from twice to five times that of the normal

thyroid. The isthmus is usually prominent, thickened, and broadened. One lobe is commonly more enlarged than the other; occasionally the enlargement is unilateral (Figs. 5 and 6).

Microscopically the goitres have presented in detail the appearances described by Williamson and Pearse as characteristic of the progressive stage of lymphadenoid goitre in the human subject. It is exceptional to find pronounced retrogressive changes—fibrosis and atrophy—in the rat goitres, although these have occasionally been encountered in relatively mild degree. Lymphadenoid changes have also been observed in glands presenting no obvious signs of enlargement; they were confined to certain areas in an otherwise apparently normal organ.[9 10 11]

Having had an opportunity recently to examine under the microscope sections of lymphadenoid goitre in man, side by side with others of experimentally produced lymphadenoid goitre in rats, the identity of the pathological state of the thyroid gland in man and in rats was apparent.

To the physician or surgeon who has to deal with goitre in the human subject the points of interest arising from these observations are: (1) lymphadenoid goitre occurs in man; it can be produced under experimental conditions in rats. (2) It arises in approximately 25 per cent. of young rats despite the adequate ingestion of iodine. (3) Deficiency of iodine in the food is certainly not the cause of lymphadenoid goitre as it occurs in rats; it is unlikely, therefore, to be the cause of lymphadenoid goitre as it occurs in man. (4) The basal factor in the causation of lymphadenoid goitre in rats is a dietetic one; it may reasonably be expected that the basal factor in its causation in man is likewise dietetic and of a like order. (5) Judging from experimental experience in rats the diets which are likely to be associated with lymphadenoid goitre in man are those composed largely of white flour or other vitamin-poor carbohydrate, vitamin-poor protein, and vitamin-poor fats and in which there is a paucity of fresh fruit and green leafy vegetables. In view of the almost universal use of white flour as the main staple of the dietary in Western countries, of the widespread use of vitamin-poor carbohydrate foods, of substitutes for butter which are relatively poor in vitamin A, of the use also of frozen and tinned meats, and of the small proportion of fresh fruit and green leafy vegetables in many people's dietaries, the etiological significance of the observations made on rats appears to me to be great.

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THE PREVENTION AND EARLY DIAGNOSIS OF THE ACUTE ABDOMEN.*

BY

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Though the title of my paper includes the early diagnosis of acute abdominal disease I wish to deal chiefly with the prevention of the acute abdomen. This convenient but slang term is generally taken to cover those acute conditions which come without warning, like a bolt from the blue, and it is seldom that a word is heard about measures for preventing such catastrophes. It is easy to see how this fatalistic attitude has arisen. In the course of practice the surgeon—who is largely responsible for current teaching—sees the patient in the throes of an acute calamity, the slighter premonitory features have been overshadowed by the catastrophic culmination, and there is frequently no strong inclination to prolong the time between diagnosis and operation in eliciting a meticulously accurate history of preliminary symptoms. As an example of this attitude I could cite a reference to a book published in 1914 by a famous London surgeon who, in describing a case of appendicitis, said "no surgeon of experience pays much regard to history." Until this attitude is replaced by one of very careful study of all the antecedents of the more acute conditions we cannot hope to diagnose early, much less prevent the disease.

I will first consider the extent to which it is possible to prevent the onset of any acute abdominal disease, and secondly how to prevent any acute condition which has actually started from reaching a catastrophic stage.

Until the exact pathology of the various abdominal conditions is known it is, of course, impossible to take exact precautions to prevent, but by a careful attention to symptoms it is occasionally possible to detect serious disease before it is acute. The different diseases vary greatly in their preventability, but it is worth while considering the question in each group of cases.

Take first the question of perforated gastric and duodenal ulcer. Is it possible to prevent perforation? If we only consider the acute ulcer which develops within a few days and precipitately perforates, the answer must be No; but when we recollect that the majority of ulcers which perforate are those of long standing the reply should be a modified affirmative. Chronic ulcers can now be diagnosed by means of the x rays in the great majority of cases, and if the correct treatment is adopted it should be possible to prevent perforation. If I am asked, What is the correct treatment—is it medical or surgical?—I cannot tell unless the type of ulcer is specified, and who is to carry out the treatment. Some ulcers are, I think, curable by the alkali method or by means of the duodenal tube; others hold out no hope of cure other than by surgery. The patient should be kept under treatment and supervision until the radiological evidence of ulcer has disappeared and the symptoms have subsided.

An ulcer may continue for many years without preventing the patient carrying out his duties, so constant supervision is necessary. A medical friend of mine, when a student with me, had a very severe melaena and all the symptoms of duodenal ulcer. He was advised to have an operation, but refused, and for twenty years managed a busy practice, though constantly ailing with dyspepsia and latterly having to give up from time to time. He was supposed to be rather neurotic by those who had not seen the melaena and did not know his character. Eighteen months ago (and twenty-two years after the melaena), while on a motor tour in Scotland, he had all the symptoms of perforation—pain, collapse, etc.—though fortunately the symptoms subsided with rest. I saw him a little later. An x-ray examination revealed very extreme pyloric stenosis and an ulcer crater in the duodenum. At the operation I found a mass of fibrous tissue all round the first part of the duodenum, with a recent perforation sealed over by omentum. Now this patient, who was known to have an ulcer, waited twenty years for his perforation, and but for the kindly offices of a bit of omentum might easily have succumbed. Correct treatment of the ulcer at an earlier date should have prevented this.

It is a common occurrence for there to be an exacerbation of symptoms for a few days before the perforation of a chronic ulcer, and this fact should be pointed out to all those who are known to have an ulcer and yet will not submit to give up the time necessary for the correct treatment to be carried out. Rest should be insisted upon in times of acute exacerbation of the symptoms.

The most common acute condition in the abdomen is appendicitis, and it is no exaggeration to say that any method of preventing that disease would not only save two thousand lives annually in this country, but would also more than halve the number of acute cases upon which the surgeon would need to operate. Appendicitis is no new disease, for in the College of Surgeons can be seen an

*An address delivered to the Croydon Division of the British Medical Association on October 16th, 1928.

account, written by John Hunter's own hand, of a *post-mortem* examination performed by him on the body of a colonel who had died with symptoms of intestinal obstruction, but in whose abdomen Hunter found only a perforated appendix with peritonitis. Yet it cannot be doubted, either on looking into old *post-mortem* records or examining the statistics of cases of appendicitis and peritonitis in later years, that the disease has become much more frequent in the last three decades. If we could but find the reason of this, prevention should be within our power. An exhaustive inquiry into the possible causes of this increase was made comparatively recently by Mr. Rendle Short. He came to the conclusion that the increase in the incidence of appendicitis was most likely due to some change in the dietary of the nation, but his evidence was against the common assumption that increased meat-eating had anything to do with the increase of the disease. By comparing the common articles of diet at the present time with those most in use before the great increase of appendicitis Short found that the chief change was a gradual diminution in the amount of cellulose-containing foods. He suggests that herein lies the cause of the greater predisposition to, and incidence of, appendicitis.

I think it will be allowed that appendicitis is a microbial disease which attacks certain people who are at the moment of attack in a state of diminished resistance to that infection. It will hardly be questioned that stagnation of the intestinal contents and the presence of much decomposing meat in the intestines are factors which would favour the growth of the infective organisms. It may be that cellulose-containing foods help to prevent stagnation of the intestinal contents, and they may possibly supply some vitamin which maintains resistance against the organisms. The moral to be deduced from this is that, so far as our knowledge goes at present, a predisposition to appendicitis would be lessened by (1) preventing constipation, (2) minimizing the amount of meat eaten, and (3) increasing the amount of food containing cellulose.

A fourth suggestion is to diminish the total amount of food taken. It is generally agreed that most people in this country eat more than is necessary, and often more than is good for them. Now it has been shown by Rendle Short that in institutions such as prisons and some children's homes, in which a low diet is given, the incidence of appendicitis is much lessened; while Horsley Gantt, in his very interesting account of the classes of disease which attacked the starved and neglected Bolshevist masses after the revolution in Russia, pointed out that appendicitis, cholecystitis, and similar inflammatory diseases of the intestinal tract almost disappeared, although most varieties of infective disease were rife at the time. I believe that appendicitis will once more diminish in frequency if some of the suggestions here given are followed up.

In considering diseases of the gall-bladder it is wise to deal separately with gall-stones and cholecystitis. It is not at all uncommon to find an inflamed gall-bladder without any gall-stones, and though gall-stones are usually accompanied by inflammation, that is not necessarily the case.

Cholecystitis apart from gall-stones has a close relationship with appendicitis. The two conditions are sometimes present together, and may occur at different times in the same person. It is quite likely that the same causes will tend to produce both diseases, and this is supported by the remarkable and parallel diminution in their incidence in Russia after the revolution. It has lately been shown that the infection of the gall-bladder may be primary in the wall of the viscus, a fact which testifies to the route of the infection being by way of the blood stream. In the prevention of cholecystitis and appendicitis, therefore, the importance of dealing with any focus of infection which might furnish a source of origin of organisms which could travel by the blood stream to the abdominal viscera must be remembered. The throat, mouth, and accessory sinuses should particularly be attended to.

The regular emptying of the gall-bladder is important if infection is to be prevented from obtaining a hold. Though the exact mechanism of the emptying of the viscus is not yet determined with certainty, there is strong evidence, furnished by Lyon and Meltzer, to show that the lower end of the common bile-duct is relaxed under the influence of magnesium sulphate applied round the orifice in the second part of the duodenum. Though some of the magnesium sulphate taken by the mouth may be altered in the stomach, yet it would appear rational to recommend the occasional taking of Epsom salts by those who are thought to be predisposed to disease of the gall-bladder.

The actual prevention of gall-stones depends not only upon the prevention of infection, but also on the prevention of hypercholesterinaemia and the avoidance of too much inspissation of the bile. Our knowledge of the formation and metabolism of cholesterin is at present too vague for any definite dietetic precautions to be taken with any chance of success of avoiding the formation of gall-stones. The encouragement of the flow of bile has been mentioned above.

Of the other common intra-abdominal inflammations salpingitis due to infection with the gonococcus is a preventable infection in theory, but practically the question is not such an easy one. The female is not usually infected from an acutely inflamed male urethra—for obvious reasons—but the trouble arises from the awakening of a chronic infection which has been latent in the prostate or seminal vesicles, or possibly in the crypts of the urethra itself. It is of the utmost importance, therefore, that all infections of the male genital tract should be as far as possible eradicated, and permission to marry should not be given unless and until the infection has been destroyed. I am aware that this is a counsel of perfection, for the channels of the genital tract are devious and labyrinthine, but at all events a series of stringent tests should be made to determine whether the infection due to the gonococcus is still present or not. Only in this way shall we be able to diminish the number of those cases of acute salpingitis following soon after marriage—cases of truly tragic import. It is not sufficient to examine the discharge obtained from the urethra after prostatic massage. An artificial congestion must be produced by passing a full-sized bougie, or by injecting into the prostatic urethra a few minims of a solution of silver nitrate, 5 grains to the ounce, and then examining the discharge. A big dose of vaccine should be given to induce a local reaction, and some have even recommended the administration of an amount of alcohol sufficient to produce urethral congestion. One examination should never suffice; several examinations at spaced intervals are necessary, and even when every examination has been made there can be no absolute certainty as to the absence of the organism, which may lurk in so many crannies in the tract. It is sometimes possible to destroy local foci of infection by means of the operating urethroscope.

Another form of acute infection which invades the female genital tract is that which leads to pneumococcal peritonitis. The work of Fraser and others makes it fairly clear that the pneumococcus gains entry through the vagina and Fallopian tubes, and since the condition chiefly attacks girls between 5 and 10 years of age we have a clear indication for prevention—that is, to promote local cleansing and hygienic measures so as to prevent the entry of the organism. The carrying out of these measures would devolve upon those who have the care of young children, and the medical man's part is to instruct those concerned.

The prevention of intestinal obstruction is impossible in some cases, problematical in others, but easily attainable in the majority of instances. This statement may cause surprise until it is recollected that the majority of cases of intestinal obstruction are due to the strangulation of external herniae. It is clearly easy to prevent strangulation of an external hernia by undertaking a radical cure of the condition. There are three or four factors which have a bearing on the question of operation in such cases—age, reducibility, control by a truss, the position of the hernia, and the general constitutional condition of the patient.

When a hernia is strangulated operation is undertaken whatever may be the age of the patient, and in any hernia which is irreducible, painful, or prone to attacks of subacute obstruction, operation should in general be recommended irrespective of age. It can be performed under gas and oxygen combined with local anaesthesia with very

little risk to the patient. There is no definite age at which it can dogmatically be said that the sufferer is too old for operation. If a hernia is easily reducible, and can readily be controlled by a truss, the danger of strangulation is greatly reduced, and there is no need to urge operation for such herniae in people over middle age who have no strenuous work to do. If the truss does not control, then the risk of operation is no greater than the risk of strangulation.

Of the three common kinds of hernia—inguinal, umbilical, and femoral—the first-mentioned is not quite so dangerous as the other two. The explanation of this depends probably on two factors. In the first place, umbilical and femoral herniae issue through rings with hard, fibrous margins, which have no "give" in them and make reduction more difficult; secondly, there is a greater nerve supply in the inguinal region, and strangulated herniae there are as a rule much more painful than those in the other situations. It is seldom possible to overlook a strangled inguinal hernia, but not so difficult for the patient and any unobservant person to miss a small strangled femoral hernia. Again, umbilical herniae usually occur in very fat people, and sometimes a small hernia may be embedded in the fat and hardly visible on the surface. There is all the more reason, therefore, to urge operation on even small herniae in the umbilical and femoral regions so as to prevent a strangulation which might easily be overlooked until too late. There is one exception to this statement—that is, the case of any enormous irreducible umbilical hernia of long standing occurring in a feeble patient. By operating and forcing the herniated mass into the general abdominal cavity the intra-abdominal pressure may be unduly increased, with considerable shock, embarrassment of respiration, and possibly fatal result.

Herniation through a weak scar of the abdominal wall is another preventable condition. It is not always possible to prevent the occurrence of a hernia in an operation scar—though much may be done by careful suturing and the imitation of drainage—but it is certainly possible to keep an eye on the scar for some time after operation, and to detect any weakness which may be remedied in time to prevent any risk of strangulation of the abdominal contents.

Intussusception is a disease of healthy babies who are attacked about weaning time, when the change from liquid to more solid food is taking place. Such strong babies are more likely to be favoured with "a little bit of what we have" at an earlier date than the more weakly, and this may sometimes account for its occurrence even from the fourth to the sixth month. Given an ileo-caecal region which is furnished with a longer mesentery than usual, an infant whose intestinal muscle is strong and equal to vigorous peristalsis, and a large food bolus sufficient to stimulate excessively the as yet uneducated ileum, and it is not difficult to see how an intussusception is produced. Indeed, it is strange that the condition is not more common. The only factor which can in any way be controlled is that of diet. Too sudden a change should not be made in the diet of a child aged from 6 to 18 months; let the transition from liquid to solid be graduated; also, do not let solid food be given too early simply because the child is stronger than usual. See, also, that the milk-clots in the child's stomach and intestine are made small by administering some sodium citrate by the mouth. Keep the bowels open so as to avoid constipation and straining.

Many forms of intestinal obstruction are almost impossible to prevent because the preliminary symptoms are so very vague and the physical changes so slight that nothing except actual vision can determine their importance. Cancerous stricture of the gut, peritoneal pouches causing intraperitoneal herniae, strangulation by Meckel's diverticulum, and a puckering of the mesentery and intestine by the attachment of a calcified lymph gland can hardly be prevented, though intra-abdominal adhesions following operations can, to a limited extent, be prevented by care in manipulation of the intestines, reduction of drainage to the minimum, peritonizing any raw surfaces, and attending to the details of suturing the abdominal wall.

In the case of recurring abdominal pain of a subacute colicky type, however, we have the barium x-ray examination to help in detecting any kink or stricture in the intestines, and though this method is very much less helpful than some enthusiasts would have us believe, yet sometimes it may lead us to operate and detect obstruction before it becomes acute.

Having considered a few measures which can be taken in order to prevent the onset of acute abdominal disease, I will now briefly comment on the early diagnosis of an acute condition which has started. I could not, even if I wished, do more than skim the surface of this very important problem, but I can best provoke discussion by making an extreme statement of the surgical attitude. *There should be a time limit for the making of a diagnosis in a case of acute abdominal disease.* I do not mean to suggest that it is always possible to diagnose a case in a few hours, but I do assert that any case of severe abdominal pain which lasts for more than six hours is serious enough to merit the calling in of a surgeon—not necessarily with a view to operation, but to exclude those forms of acute abdominal disease which need prompt operative intervention if they are to be successfully treated. I particularly put in the proviso about operation, for I believe the wise surgeon is recognized as much by his knowing when to operate as by his operative skill. I hope I am not presuming when I venture to think that the surgeon sees a much greater number of acute abdominal cases than any other branch of the profession, and if he is worth his salt he should be able to give a sound opinion on those cases.

I have often been astonished by the stoicism of patients, who will bear the most agonizing pain for many hours in the hope that it will subside spontaneously, and I have occasionally been surprised at the vicariously stoical attitude of some doctors when faced by a patient in pain. There are many acute abdominal pains for which a dose of morphine is the correct treatment—such, for example, as renal and biliary colic, gastric crises, diaphragmatic pleurisy with pain referred to the abdomen—but there are other conditions of an apparently similar nature for which to give a dose of morphine is, to say the least, an unwise, and, to say the most, a possibly fatal, procedure. It is generally possible to distinguish between these groups, and such a distinction should be made at as early a stage as may be done.

I have taken the time limit with reference to pain because that is the only constant symptom, but it is rare for that to be the only symptom. What I would insist upon is that any other common symptom is not to be regarded as essential. I have frequently had the statement made to me, "*I did not* think it could be serious because of the absence of a certain symptom"—the absent symptom varying according to the case. Now the common symptoms found in acute abdominal disease are: pain; nausea or vomiting; local tenderness; local muscular rigidity; distension; hyperaesthesia; shock; alteration of pulse, respiration, or temperature; furred tongue; constipation or obstipation; altered facies. There is hardly any absolutely constant symptom, but it may be safely asserted that pain is by far the most common, and is present in the vast majority of all acute abdominal conditions. All the others are most variable.

I think if I were asked which was the most important help in diagnosis after pain I should say altered facial appearance. I cannot describe the exact changes which the countenance undergoes, for this can only be learnt by experience, and some have great difficulty in acquiring this knowledge. To learn when a patient is really ill should be the first step in the diagnosis of acute abdominal disease, but it is astonishing how seldom this knowledge is acquired. Ward sisters often have more knowledge of this than the resident officer. There is one time, however, when the face does not help quite so much—that is, when the latent stage has supervened a few hours after the start of the disease.

Vomiting is frequently absent in appendicitis, often occurs only once immediately after the perforation of an ulcer, is not to be expected in obstruction of the large

bowel, and may even be absent in acute obstruction of the small intestine when gangrene quickly follows obstruction; it is not a constant symptom in the rupture of an ectopic gestation. Nausea is more constant, but not so striking a symptom.

Distension must never be waited for, and should not be present in the early stages except in obstruction of the large intestine. I well remember a man being sent to St. Mary's Hospital some years ago by a doctor who wrote: "Last night I thought this man very likely had a perforated ulcer, but he was not distended, so I left him alone: this morning he is distended, so I send him up to you."

Alteration of the pulse rate is of value when noted, but nearly every kind of acute abdominal disorder may be present without an appreciable alteration of the pulse. In some of the acute colics the pulse may be slowed; in perforated gastric or duodenal ulcer the pulse after two or three hours generally becomes quite normal; in intestinal obstruction of either the small or large intestine the pulse is frequently normal or slowed until toxaemia begins or unless there is severe shock on account of strangulation. In appendicitis I expect to find a normal pulse, unless (*a*) there is commencing peritonitis, or (*b*) the appendix is distended with toxic material. I have even known a normal pulse with acute pancreatitis, though I must admit that this is very exceptional.

I need hardly dwell on the *variability of temperature* in acute abdominal disease. A drop of several degrees accompanied by acute pain in the abdomen at once proclaims the occurrence of a catastrophe, however quickly the patient may regain a normal appearance. But many conditions cause no fall in temperature. Fever is absent in the acute obstructions, is moderate in amount and rather slow in onset in the peritoneal inflammations, and is high only in those conditions where infection is occurring in small cavities such as the pelvis of the kidney and the biliary ducts. I make it a rule in any case of acute abdomen with a temperature of 104° or 105° to turn first to the kidneys and then to the lungs and pleura.

Constipation is too vague a symptom to be of much use in early diagnosis. The same remark applies to furred tongue, though it is often possible to learn a lot by looking at the tongue.

An *increase in respiratory rate* must make one examine the lungs very carefully, but this increase quite often occurs in acute abdominal disease, so it is not of such great help.

Local muscular rigidity, though frequently referred to in the textbooks as a regular sign of appendicitis and peritonitis, should never be waited for. It is seldom present when the inflammation has not pierced through the walls of the appendix, and even when peritonitis has commenced muscular rigidity is absent when the inflammation affects a silent or undemonstrative part of the peritoneal cavity—for example, the pelvis or central part of the abdominal cavity. I wonder how many lives have been lost by ignorance of this simple fact.

We come, then, to the conclusion that the diagnosis of the presence of acute and serious abdominal disease is decided chiefly by the occurrence of pain—spontaneously complained of by the patient or elicited by local pressure on certain parts of the abdomen. The pain must be investigated from every standpoint—time of onset, character, duration, severity, position, variation in position, whether it occurs on breathing, passing urine, or defaecation. Finally, the practitioner should ask whether it is referred to any part other than the primary part, and observe how the patient turns over on to his side. Local tenderness must also be carefully sought; this examination is assisted by a careful study of the face. All other symptoms are observed, but it is generally possible to say whether the condition is serious or not by the simple observations I have described.

The doctor must make up his mind within six hours or less as to the seriousness of the condition. If he is doubtful he should not be ashamed to get a colleague to help in diagnosis. He must never procrastinate, for procrastination is the thief of lives.

TREATMENT OF ASTHMA BY RADIATION.*

BY

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THIS disease, or rather symptom of disease, must still be regarded as an unsolved medical problem. As Professor Wild states: "Asthma is one of the most fascinating diseases for everyone except the patient." Theories have been advanced from time to time as to possible causes. The numerous so-called cures that are advocated simply indicate that no one "cure" is effective.

While not proposing to discuss the many different theories or even to advance a new one as the possible cause or causes of asthma, I will briefly outline one that is at present gaining ground, as it is helpful in explaining the effects obtained by radiation (*x* rays), administered by the method about to be described.

It is now generally accepted that asthma is not primarily a lung disease, but that some condition outside the lung is responsible for the spasm of the bronchial tubes. Abnormalities of the upper respiratory tract, such as nasal polypi; infection, such as sinusitis; chronic appendicitis; ovarian irritation; intestinal worms; the presence of cats, dogs, horses, feather cushions; the intake of certain foods, and many other agents, fantastic and otherwise, are known to give rise to an attack of asthma in different individuals. But should not these be looked upon rather as *triggers* that let off the asthmatical gun than as the primary causes of asthma? In more scientific language, do they not start a reflex, peculiar to asthmatical patients, in some organ or organs, which upsets or disturbs the metabolic or endocrine balance?—a somewhat nebulous term, but indicating a complex condition, which is best described as a loss of balance between the various ductless glands. The investigations of many workers tend to prove that one gland is, in some indefinable way, dependent on the quantity and quality of the secretion of another for its proper functioning. If a break occurs in this cycle, either a nerve reflex or otherwise, the whole balance is upset, and this is made manifest in many and various ways.

It is conceivable that each gland, when at fault, gives rise to its own particular set of clinical manifestations. Is it possible that in asthma the secretion of the suprarenal glands is defective? This somewhat speculative theory is mentioned here, for I believe that, in some manner, general radiation influences the secretion of the ductless glands. In other words, the beneficial results may be achieved by restoring the metabolic balance.

X rays have been used by many workers as a therapeutic agent in asthma, but the available literature on the subject shows that the results are, on the whole, disappointing. I believe two technical faults are responsible for this failure—*too small* a radiation field and *too large* a dose. The majority of authors treat only the thorax, using single front and back areas of about 10 by 15 cm. and the short wave (high voltage) therapy.[1] Others have found that some cases respond better if the spleen alone be radiated in the same way.[2] Even the skull has been radiated for this disease.

The important factors in the method of radiation about to be described are *the use of a large field and small dosage*. I wish to emphasize this combination, for, so far as I can find out by examining the literature on the subject, it has not been previously used in asthma.

As the beneficial results were discovered accidentally, it is difficult to say with certainty upon which organ or organs influence is being exercised. The whole trunk, back and front, is therefore irradiated, using the long ware therapy (low voltage). It is interesting to note that results have been obtained by radiation of the abdomen alone, but not by the radiation of the *thorax* only. The possible biological effects of a combined large field and small dosage have yet to be investigated, and the budding research worker should

*Read at the Second International Radiological Congress at Stockholm, 1928.

here find ample material to work upon. Might not the effects be analogous to those of sunlight carried to deeper structures? One might hesitate to bring forward yet another method for the treatment of asthma if it were not for the fact that the beneficial effects were accidentally discovered. The method, therefore, was not based on any preconceived theory; the beneficial results are undeniable.

It was while working on the problem of radiation in connexion with cancer that its effect upon asthma was first noticed. With the object of preventing metastases occurring in malignant disease, and with the possibility of stimulating Nature's defensive measures, I introduced the dual or open method of radiation some five years ago at the London Hospital. This general radiation of the whole trunk[3] has proved of such value that it is now given as a routine in all cases of cancer, in addition to any intensive local applications that may be necessary. While a patient was undergoing this treatment for malignant disease of the breast some three years ago she volunteered the statement that her asthma had thereby been cured. I was ignorant of the fact that she had been a martyr to this distressing complaint for some twenty years. The statement roused my interest, especially as there could be no question in her case of the results being due to suggestion. After considerable difficulty several cases of true asthma were recruited from among my friends. The results very soon convinced me that we had here a valuable therapeutic agent requiring investigation.

Being somewhat sceptical, it was some time before I felt justified in coming to the above conclusion. A policeman and a butcher finally turned the scale. The policeman had been discharged from the force, having been asthmatical for some ten years; his asthma had become chronic. He was blue in the face, with hardly enough breath to give his history. He came back the following week to all appearances a normal individual, and stated that he experienced relief twenty-four hours after the first treatment. He had been free from asthma for two years when he last reported himself, and was earning his living. The butcher's livelihood was threatened, as he was unable to enter the cold storage room without severe asthma; he also was cyanosed and distressed on presenting himself at the hospital. He reported after the third treatment that the cold storage room had no terrors for him.

A preliminary note on the technique was published in the *British Medical Journal* of June 5th, 1926 (p. 939). It is quite simple, once the importance of the combination of a large radiation field and small dosage is fully appreciated. Two Coolidge tubes, one focused on the back and the other on the front of the patient, so arranged that the rays cover the whole trunk, are energized by two separate installations, both tubes running at the same time. While this arrangement saves time the results are equally good if each side of the body is treated separately. The anterior tube, at 12 inches from the skin, is centred over the epigastrium, and arranged to cover an area from the chin to the symphysis pubis, and the posterior tube a corresponding area.

The short wave or high voltage therapy should *under no circumstances be used with this method*; serious damage to the patient may otherwise result. The voltage should never exceed 150,000 volts—in fact, some cases respond better if a still lower voltage is used. Aluminium filters can therefore be used with safety; 3 to 4 mm. thickness is all that is required, the latter being reserved for the heavy patients. A filter of 2 mm. will suffice when treating young children, with a correspondingly small dose.

It is strongly recommended that in addition to any indirect measurement of dosage, some *direct* method of measurement should always be utilized in low voltage work. In place of anything better, the Sabouraud pastille makes a satisfactory unit, but it *must be placed on the skin* and the tint read off by means of a tintometer. It should be noted that a quarter Sabouraud *B* tint, measured on the skin without a filter, is equal to a full erythema dose. A dose of 20 X through a 4 mm. aluminium filter, the maximum dose used in malignant disease, represents a double erythema dose to the skin, although it is found from actual experience that this gives rise to only a mild erythema.

The average dose used for an adult with asthma is 15 X per 3 mm. of aluminium, back and front of the trunk. This, using a 25 cm. spark-gap (points) and 8 mm. through the tube, takes on the average five minutes. In severe cases this dose is given twice a week for four doses, followed by a fortnight's rest, and then two laterally once a week. Milder cases receive the dose once a week for four doses, followed by two weeks' rest, and then two laterally once weekly. An occasional dose may be necessary after this course. Each case, however, must be treated on its merits to a certain degree, and the treatment modified accordingly.

The method has now been used for about three years. The preliminary note of the technique, published in the *British Medical Journal* of June 5th, 1926, was based on some twenty cases. The results now published are based on approximately 120 cases treated during the last two and a half years. Although the number is small, it includes all types—that is, unselected cases—and is sufficient to indicate that the treatment is of considerable therapeutic value.

To simplify matters the cases are grouped into three classes: Class A, asthma (A), subdivided into (*a*) paroxysmal, and (*b*) chronic. Class B, asthma with bronchitis (A–B). Class C, chronic bronchitis with asthma (B–A), with usually, emphysema. In Class A there were 31 paroxysmal and 19 chronic asthmatical cases treated; in Class B (A–B), 53 cases; in Class C (B–A), 18 cases. If we analyse these cases, the results are as follows:

	Cases Treated.	No Improvement.	Slight Improvement.	Slight Recurrence.	Good Results.
Class A					
(*a*) Paroxysmal ...	31	4*	—	4	21
(*b*) Chronic	19	—	4	2	13
Class B (A–B)	53	6	2	2	43
Class C (B–A)	18	3	1	2	12
Totals ...	121	15	7	10	89

* Two other paroxysmal patients gave up treatment owing to nausea.

The classification should not be taken too literally. For instance, paroxysmal asthma may become chronic at certain times of the year or in one locality. Again, it is not always easy to distinguish between chronic bronchitis with asthma, and chronic asthma.

The results in Class A—namely, patients with chronic bronchitis who have definite attacks of paroxysmal asthma in addition—are only given in relation to the effect of treatment on their asthma, although, in a few cases, the bronchitis was definitely benefited. Class B, made up of asthmatics who have periodic attacks of bronchitis, gives the best results, and in many cases the attacks of bronchitis seem to become less frequent and severe. Cardiac asthmas have not been included.

Several cases of chronic bronchitis with emphysema of long standing and with doubtful attacks of asthma were given a trial course of radiation. Although no apparent improvement was noted, these patients insist that they got relief, and come up at intervals for treatment.

Of the 121 cases treated, 89 derived definite benefit. I purposely do not use the term "cure." Not knowing the cause of asthma, we cannot say if we have removed it. Some of these may yet have recurrences, as it is but three months since their last treatment. With regard to permanency, the time is too short to give a definite opinion. The longest period of freedom from asthma was in a case of twenty years' standing; this patient has now been free for two and a half years. Many have been clear for over one year. Although the age of the patients does not appear to affect the initial results, there is a tendency to recurrence in those treated under 6 years of age. The average age of those treated is 40 years. One patient in the late sixties was able, after a course of radiation, to do without his nurse, who had attended him for five years. She applied to me for a new post!

It is important to make a careful radiological examination of the thorax in all cases. Definite fibrosis of the

roots of the lungs is present in practically all asthmatics, but three patients had definite evidence of pulmonary tuberculosis—two healed and one active—all unsuspected cases. The two former were treated with good result; the latter was sent back untreated and a haemorrhage occurred a few days later. The possibility of using this method of general radiation in pulmonary tuberculosis is under consideration.

The hilum fibrosis that is common in asthma is, I believe, a secondary condition, as no alteration could be detected even after radiation had been successful. The presence of "asthmatical triggers," such as nasal polypi, infections, etc., should be sought for and removed, if possible.

In considering the value of the results it must be remembered that practically all the cases treated by radiation were those which had tried all known methods, and had been driven to the use of anti-asthmatical cigarettes, injections of adrenaline, Tucker's inhaler, etc., for relief when they became really desperate. Many patients state that their asthma originated in their abdomen—that is, the attack was preceded by some form of abdominal discomfort or indigestion. This seems to disappear if radiation proves beneficial.

Several interesting but apparently unconnected observations have been made on the after-effects of general radiation, other than on asthma. Radiation sickness or nausea was observed to a very slight degree in most cases, but bore no relation to the results. Two patients, however, proved very susceptible to the reaction, and eventually stated that they preferred the complaint to the cure. In many cases looseness of the bowels, amounting even to diarrhoea, occurred during the course. A very noticeable result in quite a number of patients was a definite increase in weight. One put on 3 lb. each week for six weeks; another as much as a stone in a month, and 3 stones in three months. Patients often state that they feel considerably better in their general health, and that they are mentally brighter. One patient lost her sense of smell with the onset of asthma three years ago. This returned after the first dose, but for a week everything seemed to have a noxious odour, becoming normal at the end of that time. The condition of her nose had been previously passed as normal. In the early stages of treatment she had a slight recurrence of her asthma, and her sense of smell was again lost, only to return later. A doctor whose work was threatened on account of asthma became quite free from attacks, but stated that the treatment had put him entirely off smoking. As he grossly overdid it this was all to the good.

A few, subject to bronchitis as well as asthma (Class C), developed what appeared to be an acute attack of bronchitis soon after treatment had been started. This may, of course, be a mere coincidence, but I mention it as a possible sequel to the treatment, although no radiation fibrosis of the lungs was noted in any case. Several patients who had been treated for nasal catarrh unsuccessfully stated that this had disappeared with the attacks of asthma after radiation.

There are a few patients who respond well at first, but have a recurrence of their asthma, which is again benefited by further radiation, but is followed by yet another attack. In such cases further investigation for asthma "triggers," such as nasal polypi, sinusitis, etc., gave no clue to the cause of these recurrent attacks.

A much larger number of cases must, of course, be treated before the true therapeutic value of this method can be gauged, and for this reason it is not presented as a new cure for asthma. The results so far obtained at least indicate that we have here a valuable palliative agent worthy of further investigation and trial by the radiologist. An Asthma Research Council has recently been formed in England. Its objects are widespread. When funds are available they will cover research in all forms—the testing of the therapeutic value of various treatments, the collecting of statistics, and so forth. It should eventually prove of very great value towards creating order out of chaos.

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A VOCAL COMPLICATION OF TONSILLECTOMY, AND ITS TREATMENT.

BY

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THOSE who have examined many throats after tonsillectomy must have come across cases in which the action of the soft palate has been hampered by the tightening of its lower margin. This is caused by excess of the cicatricial contraction at the site of removal of the tonsils. By delicacy and care in the enucleation such contraction may be avoided, and when it is only slight it produces no ill effects, especially if the patient is not a singer. If, however, it is more than moderate it may, in a singer, interfere very seriously with the use of the voice. The breath is apt to escape behind the palate and the tone becomes less clear, while at the same time the enunciation of the explosive consonants (B, P, T, D, K, G) may become difficult, and they may be replaced by the resonants (M, N, NG). This is the so-called *dysfalia aperta*. The vocal sound may be accompanied by an audible bruit as the air escapes through the open though narrow passage behind the palate.

Apart from care in operating, it is well to start the patient on appropriate vocal and other exercises, to get the palate into play, soon after the throat has recovered from whatever reaction may have followed the operation—say, in about a week or ten days. This is of special importance in the case of the professional singer, in whom, indeed, the operation should only be carried out after full consideration. One writer on the subject states that he generally delegates the operation to other hands than his own when the subject is a singer. Comment is needless.

The chief remedial vocal exercise consists in singing vigorously and clearly on a convenient note the sound "m-bah!" The transition from the *m* to the *b* is effected by a drawing up of the soft palate, and this is obviously the movement which has to be preserved. If difficulty is experienced in making the transition without a break, the "*bah*" may be sung without a precedent *m*.

Another simple exercise is to sing merely the sound "*ah*," and test by means of a cold mirror under the nose whether air finds its way out through the nares, revealing to the patient's own eyes the existence of a defect which has to be rectified.

Still another useful proceeding is for the patient to blow vigorously through a very narrow tube, such as a fine Eustachian catheter or a pipe-stem, or even a straw, into a tumbler of water for as long as possible without taking a fresh breath.

The palate may also be exercised by means of a small quantity of innocuous oil, such as a light liquid vaseline, poured into the nose while the patient holds his head back and abstains from swallowing. If the palate is inefficient the liquid trickles into the pharynx and larynx and excites cough.

In illustration of these points I may quote the case of a young lady who had gained a valuable scholarship for singing, being endowed with a fine voice and exceptional musical ability. For doubtless excellent reasons her tonsils had been enucleated, but unfortunately her capacity for singing was seriously affected, and continued to be so. She was referred to me three months later, and when I saw her she was in great distress, as the authorities of the college were forced to decide that unless the emission of her voice returned to its normal condition they would have to withdraw her scholarship and give it to some other candidate.

She applied herself to the understanding of the instructions, and carried them out so successfully that, to her own great satisfaction and that of the authorities, she was able to retain her scholarship and to sing better than ever, benefiting incidentally from the removal of the tonsils, which had threatened to bring her career as a vocalist to an end.

I may in this connexion refer to the question of insufficiency of the palate, to which Brown Kelly has given particular attention. This usually takes the form of a wedge-shaped gap between the two halves of the hard palate. When this is present the soft palate is not so

readily drawn up as in normal circumstances, and the nasopharynx may not be so completely shut off from the mouth as is necessary for the production of a clear singing voice. In some cases compensation is afforded by a sphincter-like action of the constrictor fibres, or even by a pad of adenoid tissue or a prominence of the atlas vertebra. The condition is fairly uncommon, but it should be kept in mind when we contemplate clearing operations in those parts.

The removal of tonsils, even in singers, is sometimes obligatory, and always accompanied by some anxiety. I feel, however, that the anxiety is considerably diminished if we realize to what extent the possible disadvantages may be removed by the intelligent use of the exercises here described.

TREATMENT OF LUPUS ERYTHEMATOSUS WITH GOLD COMPOUNDS.

BY

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NOBODY who has attempted to treat a case of subacute lupus erythematosus with the methods available until quite recently can have failed to be impressed with the difficulty of such an undertaking. Prolonged rest in bed still holds the field as the most nearly infallible procedure, but it is obviously often impossible to persuade patients to take this drastic step.

In krysolgan I consider we have a drug which is almost specific and at the same time appears to be, with ordinary care, not dangerous. I record briefly my results in nine cases which have been treated since November, 1927, in the hope that they will encourage some of those who are still waiting to see which way this new therapeutic cat will jump. I have treated only moderately severe cases, for the reason that I did not care to pump foreign material into the general circulation of patients who were not overwhelmingly anxious to be cured, or in whom the disease was quiescent and of insignificant extent. Most of these had had previous treatment with quinine, rest, and various local applications, and some had already been treated for a short time with sanocrysin.

I may say at once that I have had no success with sanocrysin, possibly because I did not use the correct dosage. I started with 50 mg. and increased up to 250 mg. Whitehouse and Bechet,[1] who recorded four complete cures and eleven greatly improved out of thirty cases, regarded 100 mg. as a "rather large dose." I also understand that 1 gram is not considered unreasonable for the first dose in a case of active pulmonary tuberculosis. One patient received two injections of sanocrysin for a recent relapse of an old-standing lupus erythematosus, an extensive erythema centrifugum type; on her third visit, coinciding with a failure of the supply of the drug, I gave her 0.3 gram of novarsenobillon, to avoid disappointment, as she had come a long way from the country. Severe general and local reaction took place and was followed by the complete disappearance of the eruption, which has not recurred. I do not claim this case as a triumph for sanocrysin, and I mention it with the suggestion implied that intravenous injections of anything at all may cure certain cases of anything at all of an allergic nature, as is probably lupus erythematosus. However, I feel convinced in my own mind that I could not have done one-quarter as well in the following cases with any other form of treatment known to me.

I have used krysolgan in the following doses:

First Course: 0.075, 0.15, 0.375, 0.75, 0.75, 1, 1, and 1.25 grains.
Second Course: 0.75, 0.75, 1, 1, 1.5, 1.5, 1.5, and 2 grains.
Third Course: Four injections only of 1.5 grains each.

No unpleasant accidents occurred in a total of about 120 injections. The urine of each patient was examined three or four times, but albumin was never found, which is contrary to the experience of Nicolas and Schmitzer,[2] who found that albuminuria was constant after a total dose per course of 7 grains. The doses were given at weekly intervals with a four weeks' rest between courses.

For purposes of description I classify my cases into three groups according to the depth of involvement; one can guess roughly from the appearance of a patch what kind of a scar it will leave. Group I, erythema centrifugum type, leaving little or no scar. Group II, intermediate variety, leaving thin white supple scar. Group III, lupus erythemateux fixe, leaving disfiguring or warty scars.

Case 1.—A stableman, aged 43, with multiple patches of Type II; treated since June, 1926, with quinine; septic foci treated and various local remedies. He steadily became worse. Three injections of novarsenobillon produced no improvement; the same result followed twelve injections of sanocrysin. Krysolgan was started on February 24th, 1928; there was slight improvement only after one course, but no new lesions occurred. He was made much worse again by the untimely application of carbon dioxide snow. After a second course of krysolgan there was considerable improvement, but there were still about half the original number of lesions, and still active. There was no further progress after a third course; the final result being that the patient's condition was only slightly improved.

Case 2.—A restaurateuse, aged 59; tip of nose affected—Type II; she also had chilblains. The local application of carbon dioxide snow, after excluding oral sepsis, and four weeks' quinine treatment produced only temporary cure; she relapsed after exposure to the sun three weeks later. The lesion completely disappeared after the last injection of the first course of krysolgan. The chilblains were successfully treated with ext. thyroideum siccum, 1 grain twice daily. Still healed a month later, after half a second course had been given. Condition on June 8th, 1928—cured.

Case 3.—An unmarried woman, aged 28; relapse in thick white scar of previous lesion on the left cheek, also patches of Type I on neck and fingers. She showed slight improvement after one course of sanocrysin, but relapsed in a fortnight. She was nearly well after four injections of krysolgan, but two full courses were given before the patch on the cheek was completely healed. She was given a third course. Condition on June 8th, 1928—cured.

Case 4.—A single woman, aged 38, with active lupus erythematosus of Type III occupying the whole of the left side of the nose and part of the right batswing area. After the first course of krysolgan the whole lesion was white and showed no sign of activity. She returned after a fortnight with complete relapse, having been exposed to the sun. After waiting another fortnight she began a second course. The lesion was completely healed again after the third injection. She was still under treatment on August 30th, but appeared to be cured.

Case 5.—A nurse, aged 39, with extensive lesions of face and neck—Type I. After the first injection of krysolgan (0.25 grain) the eruption was only faintly visible. At the end of the first course only faint white patches of atrophy were to be seen. Four weeks later she was given a third course. Condition on July 30th, 1928—cured.

Case 6.—A married woman, aged 28, first seen on December 14th, 1926, with Type III lesions of tip of nose and both alae. These completely disappeared for eighteen months after rest in bed with quinine for ten weeks. After four injections of krysolgan she was much worse; it was therefore discontinued. There was no improvement after a course of sanocrysin. The lesion disappeared for two months after treatment with carbon dioxide snow, but relapsed again, and the disease is now extending. Result of treatment: no improvement; ? worse.

Case 7.—This patient, aged 71, edentulous, had extensive asymmetrical scarring and patches of alopecia with active lupus erythematosus of Type III at the edges of some of them. Patient complained of itching and a burning sensation. There had been no previous treatment. After one course of krysolgan no improvement was apparent, but relief of symptoms. A second course was given at the patient's request, and great improvement followed. A third course was given; there are now no signs of activity, and the scars seem to be thinner and more supple. Condition on July 20th, 1928—cured.

Case 8.—Patient, aged 58, was first seen on June 30th, 1926, with ulcerated, readily bleeding Type III lesions covering the whole of the nose and the left batswing area; there was also a patch on the back of the left hand. Cure for eleven months followed treatment with carbon dioxide snow and quinine. Patient returned on March 6th, 1928, with relapse on a small part of the original area. Removal of septic teeth, the administration of quinine, and further applications of carbon dioxide snow failed to bring relief. Slight improvement followed a first course of krysolgan, which was not, however, maintained through a six weeks' holiday. The condition was better after the second injection of the second course, but there was no further improvement at the end of the course. Condition on August 30th, 1928—very slight improvement. October 12th, after third course—cured.

Case 9.—A single woman, aged 38, with extensive lesions on the neck (Type I) and on the hands and feet (Type II). She had had relapses and spontaneous recoveries for five years. A severe attack in December, 1927, completely cleared up after treatment with krysolgan and rest in bed. She relapsed again in April, 1928. Krysolgan was recommenced in May. There was no improvement after doses of 0.375, 0.75, and 1 grain. She went away for a holiday, and returned complaining of severe pains in the back and thighs, which had followed shortly after the third injection. No organic basis could be found for these symptoms, but krysolgan was discontinued and the patient left the district. There was no improvement of the lupus erythematosus.

It may well be urged that mine is a very small series of cases, and that they have not been given nearly enough time in which to relapse, nevertheless any small success in the treatment of this disfiguring condition is acceptable to most of us, and if others are encouraged by this note to use the drug and to record their results its object will not have been missed.

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THE DICK TEST IN SCARLET FEVER.

BY

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IT has long been recognized that streptococci have some relationship to scarlet fever, but until the work of the Dicks no convincing evidence that the streptococcus was the primary etiological factor had been adduced. Their discovery, too, of a soluble exotoxin, by which clinical scarlet fever can be produced, and which can be used as a test of susceptibility to that disease, marks an epoch in the history of our knowledge of the disease.

The present investigation is concerned with the use of the Dick test in scarlet fever patients (*a*) on admission to hospital (273 cases), (*b*) at weekly intervals during residence in hospital (239 cases), (*c*) in a series of cases dismissed from hospital some time previously (159 cases). The material used was the "Wellcome" brand diluted scarlet fever toxin (test) and heated scarlet fever toxin (control). The test consists of an intradermal injection of 0.2 c.cm. of a 1 in 1,000 dilution of filtrate obtained from a broth culture of the *Streptococcus scarlatinae*. In the interpretation of the tests pseudo and positive reactions were counted as positive, and pseudo and negative reactions as negative. This is in accordance with the custom observed by other investigators.

In group (*b*) 152 cases were treated with anti-scarlatinal serum, and in group (*c*) 76 cases had been so treated. The serum used was Burroughs Wellcome and Company's anti-scarlatinal serum unconcentrated. In over 85 per cent. of these cases this did not exceed 10 c.cm. in amount.

DICK TESTS ON ADMISSION.

TABLE I.—*The Dick Test in 273 Cases of Scarlet Fever on Admission to Hospital.*

Day of Disease.	Total Cases.	Percentage Positive.
First	15	60.0
Second	69	73.5
Third	64	72.3
Fourth	55	63.0
Fifth	56	58.4
Sixth	11	72.7
Seventh to fourteenth	16	58.0
Fourteenth onwards	9	45.5

This table shows that, with the exception of the first day, there is a large percentage positive early in the disease, and that this percentage declines steadily until the sixth day, after which the numbers are too small to allow of trustworthy conclusions.

These figures compare favourably with those of Ker and his co-workers, who found 73.9 per cent. of positives during the first three days, and 68.6 per cent. in the period three to six days. Zingher obtained 98 per cent. positive during the first five days. In his paper on the subject Ker noted the disparity between his results and those of Zingher; he attributed this disparity to various causes, but especially to the greater dilution of toxin which he himself used. Lees, in an outbreak of scarlet fever in a school in Minnesota, found that fifteen out of forty-eight boys who developed scarlet fever gave a negative Dick test at the onset of symptoms. He used ten times the strength of toxin to re-test contacts, and did not obtain more positive reactions; he came to the conclusion that in this particular outbreak he was dealing with more than one strain of toxin. Various authors have reported cases of a patient being Dick-negative before developing scarlet fever. Robertson reports a case occurring in an epidemic. Nobel and Orel report one case seen by themselves and publish records of another case. I have observed the case of a nurse in hospital who was twice found to be Dick-negative and yet developed a typical attack of scarlet fever. Lees suggests that in any epidemic it would be advisable to isolate the particular strain of organism causing the disease before testing the contacts.

From the foregoing it will be seen that more accurate standardization of the toxin is necessary before complete reliability can be placed on results obtained from its use.

WEEKLY DICK TESTS.

This series of 239 cases is divided into two groups—namely, (*a*) 87 cases not treated with anti-scarlatinal serum; (*b*) 152 cases treated with anti-scarlatinal serum immediately after their first Dick test.

TABLE II.—*Weekly Dick Tests in Patients Not Treated by Serum.*

Week of Illness.	Total Number.	Percentage Positive.
First	79	69.6
Second	82	39.02
Third	84	23.57
Fourth	87	24.13
Fifth	85	27.06
Sixth	66	21.21
Seventh	42	19.05

This table shows that there is a decline in the number of positive reactions from the first week onwards, and that this decline is most marked between the first and second weeks. There is a slight and temporary increase in the number of positives during the fifth week.

These figures indicate a steady increase in immunity. A detailed analysis does not prove this for the individual. There are wide variations. Some patients rapidly become negative and remain so. Others are positive or negative on admission and remain so during their residence in hospital. Lastly, there is a group of patients, 13 in number, who are positive on admission, become negative, and subsequently become positive again. Zingher has stated that immunity to scarlet fever is mainly antitoxic in character. Little is known of the nature of antitoxin formation, but these facts would seem to indicate that individuals vary greatly in this capacity. This has been demonstrated by Lindsay and his co-workers, while Henry and Lewis have shown that the amount of antitoxin present in the blood of convalescent scarlet fever patients is considerably greater than in normal "resistant" controls.

TABLE III.—*Weekly Dick Tests in Patients Treated by Serum.*

Week of Disease.	Total Number.	Percentage Positive.
First	144	69.4
Second	151	11.92
Third	152	15.78
Fourth	152	16.44
Fifth	140	23.57
Sixth	106	32.02
Seventh	62	40.32

The two striking features of this table are the large decrease in the number of positive reactions from the first to the second week, and the gradual increase in the number of positives from the second week onwards. Both of these are attributable to the administration of anti-scarlatinal serum. The serum confers, in the majority of cases, an immediate passive immunity, which passes off to be replaced by the acquired immunity. Trask has shown that the amount of circulating toxin early in scarlet fever varies greatly in similar cases. It is probable that in some cases the amount of antitoxin given in the serum was completely neutralized by the circulating toxin. Since the percentage of positive reactions in the later weeks is greater in the cases treated by serum than in those not treated by serum, it may safely be assumed that the administration of serum at least delays the process of natural antitoxin formation.

OLD CASES.

It is well known that in the majority of cases one attack of scarlet fever protects the individual against a subsequent attack. It was determined to investigate the Dick reaction in patients who had been in hospital at some previous date.

1. Eighty-three patients who had had scarlet fever five years previously were Dick-tested. These cases had not been treated with anti-scarlatinal serum.

2. Seventy-six patients who had had scarlet fever nine months previously were Dick-tested. These cases had all been treated with anti-scarlatinal serum. This latter group automatically selected itself, as anti-scarlatinal serum had only been used for the first time on these cases.

Great care was taken in all these cases to ascertain by reference to hospital records that the attack of scarlet fever was genuine. Rosen and Korobicina call attention to this in one of their papers. Other workers on the results of the Dick test in patients with a history of scarlet fever have not stated that they took similar precautions.

1. In all of these 83 patients the Dick test was negative, thus indicating that they are no longer susceptible to scarlet fever. Rosen and Korobicina, in a series of 111 cases with a history of scarlet fever, obtained 23.4 per cent. of positives. However, in another series of 14 persons in whom the history was verified, they found that 2 only were positive and that these 2 had suffered from scarlet fever twenty and thirty-five years previously. It would seem, therefore, that where a history of scarlet fever is verified the Dick reaction is negative in practically every case, thus indicating immunity to scarlet fever.

2. Of the 76 cases treated by serum nine months previously, 8, or 10.52 per cent., gave a positive Dick reaction. These 8 patients had not developed their anti-toxic immunity. In the present state of our knowledge of immunity to scarlet fever it is impossible to state that the positive Dick test does indicate a lack of immunity to scarlet fever. Davies of Yale, from his investigations on a similar group of cases, considers that there may be some disadvantage in the use of anti-scarlatinal serum from the point of view of subsequent immunity to the disease. It may be that second attacks of scarlet fever will become more frequent. In this connexion it is interesting to note that the only case of a second attack of scarlet fever observed by myself during the course of this investigation occurred in a girl, 6 years of age, who had been treated with serum for a mild attack four months previously. Both attacks were undoubted, and the second more severe than the first. It is too early yet to look for confirmation of this aspect of the effect of serum administration.

This investigation was carried out in the County Fever Hospital, Motherwell, during the winter 1926–27, and I am much indebted to Dr. John Reid, the medical superintendent, for facilities provided and for much helpful criticism.

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LACERATION OF THE ANTERIOR WALL OF THE FEMALE URETHRA AND ITS REPAIR.

BY

WILLIAM LEE, M.B., CH.B.LEEDS.

EXAMPLES of laceration of the posterior wall of the female urethra are relatively, though decreasingly, common in midwifery, and although tears of the anterior wall are not unknown yet the peculiarities of this case may make it worth recording.

A 5-para, aged 31, was admitted to hospital four weeks after delivery of her last child. Forceps were used and the child was stillborn. She had persistent incontinence of urine throughout her convalescence, and came into hospital with a provisional diagnosis of vesico-vaginal fistula. Albumin and pus were present in the urine.

Whilst under an anaesthetic the patient was placed in the lithotomy position. On examination the posterior wall of the urethra was found to be intact. The external urethral orifice was torn and ragged, and appeared to be dilated to about half an inch diameter. The little finger could easily be passed into the urethra, and the anterior wall was found to be torn for nearly an inch in length. This communicated with a large infected cavity behind the pubic arch, and the bare bone of the posterior aspect of the symphysis pubis could be palpated. It appeared as though the whole pelvic structures had been torn away from the pubes.

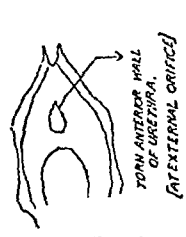


FIG. 1.

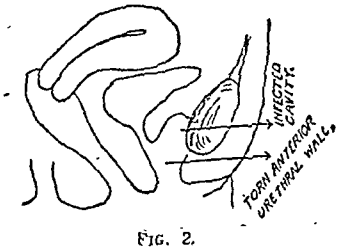
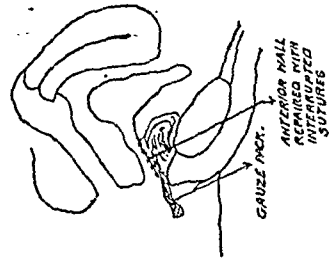


FIG. 2.



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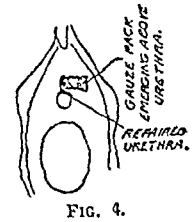

FIG. 4.

Diagrams of First Operation.

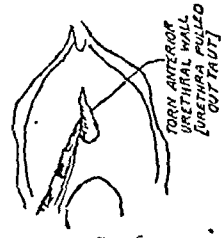

FIG. 5.

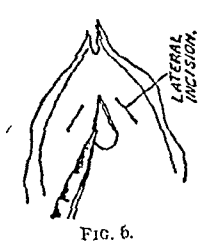

FIG. 6.

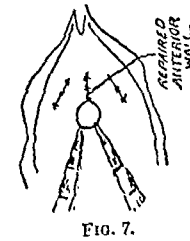

FIG. 7.

Diagrams of Second Operation.

An attempt was made to free the torn edges of the urethra, and this was repaired with interrupted catgut sutures. Three or four sutures were inserted anterior to the urethral wall in order to pull the lateral tissues somewhat together. A eusol gauze pack was placed in the cavity, the pack emerging at the vulva above the repaired urethral orifice. A self-retaining catheter was inserted into the bladder.

An evening rise in temperature occurred for four days, but was never more than 100.4°. The gauze pack was gradually decreased and the cavity closed completely, whilst the catheter was retained until the fifteenth day. For the following five days there was frequency and urgency of micturition, but no actual incontinence. Incontinence, however, did recur, and the patient was allowed to return home after two months in hospital.

She was readmitted two months later when her general condition was improved. The anterior wall of the urethra was found to be torn for about half an inch in length, and a great deal of contracted fibrous tissue was present round it. The urethra was pulled out taut and a small incision made along either side of the gaping urethra. The urethral walls were trimmed and brought together by means of interrupted catgut sutures. Two catgut sutures were put into the side wounds and a self-retaining catheter placed with some difficulty into the bladder. The catheter was retained for three days and then had to be removed. After a few days the patient had complete control over micturition; only occasional frequency occurred, and the anterior wall of the urethra healed perfectly.

I am indebted to the surgeon in charge, Dr. E. O. Croft, senior honorary surgeon to the Leeds Hospital for Women and Children, for permission to publish this case.

SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS.

BY

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(With Special Plate.)

THE two following cases illustrate the value of surgical treatment in pulmonary tuberculosis which has failed to respond to treatment by general methods.

CASE I.

A man, aged 33, was admitted in October, 1927, suffering from very extensive disease in the left lung. The patient obviously had long-standing disease, and had been in bed already for nearly a year before admission here. He was very ill, thin, with a considerable amount of sputum and cough, and thoroughly toxaemic. *X*-ray examination showed the left lung to be practically opaque, although signs of cavitation could just be detected in the upper lobe. *The temperature range was very consistent, always about* 100° to 101° F. each evening. Artificial pneumothorax had been attempted in England, but had failed owing to the presence of strong adhesions. It was attempted again here by me, with the same result. The condition of the right lung, although the apex was slightly affected, was very good. As the patient was obviously going downhill, a consultation was called with a view to the *advisability of surgical intervention.* A plastic operation was decided upon, and on November 4th an extrapleural thoracoplasty was performed in one sitting, under local anaesthesia, parts of every rib being removed.

The patient stood this very severe operation remarkably well, and six weeks after was able to get up and lead a quiet, ordinary life, for the first time for over a year. His condition after four months (March, 1928) was extremely good; he had gained two kilos in weight, and the sputum had almost ceased, what there was being tubercle negative. The temperature range was never higher than 99.2° F. (rectal) at night, and all symptoms of activity had disappeared. The patient returned to England, for urgent reasons, during the summer, and followed his profession (solicitor) in London without any ill effects at all. He returned to Davos in November, 1928, for the winter. His condition is now excellent; he weighs 86 kilograms, as against 73 a year ago. He has steadily improved since the operation.

CASE II.

A man, aged 24, was admitted in January, 1927, suffering from very widespread and active tuberculosis of the left lung, the upper lobe of the right lung being also slightly affected. The family history was particularly bad. With ordinary treatment the disease settled down to a certain extent, but was never really quiescent, and it became quite obvious that it was slowly spreading, and undermining the patient's constitution. An artificial pneumothorax was proposed six months previously, but the patient refused it, being desirous of trying the sanocrysin treatment. He had a course of this treatment with no result one way or the other. At length, in October, 1927, he consented to have an artificial pneumothorax attempted. The induction was a complete success. However, on radiographic examination after the first few fillings, it was seen that the collapse, although complete over the greater part of the lung, and at the base, was hindered at the apex by what appeared to be a strong fibrous adhesion, which was holding open a large lateral cavity. It was evident that this would not give way except by cauterization, and accordingly this was attempted on January 9th, 1928. On examination by the thoracoscope, it was seen that there were actually two large adhesions, one behind the other, each containing numerous small blood vessels. Two or three other thinner adhesions were also present.

The largest adhesion was first dealt with. A trocar was introduced by the side of the thoracoscope, and in order to obviate bleeding—a troublesome and most dangerous complication—a third of the largest adhesion was first coagulated by the diathermic cautery, and subsequently divided by the electric thermo-cautery. This procedure was continued for the middle third of the adhesion, and finally the last part was dealt with, the adhesion thus being completely divided without a single drop of blood escaping. At the same sitting a portion of the second big adhesion was treated in the same way, but, the operation having lasted about three hours, it was decided to complete the procedure at a later date. There was no reaction to speak of. Fillings were given twice weekly in order to provide as much room as possible and to stretch the adhesion, which was a very short and thick one. This and some smaller ones were dealt with a month later, in the same way as previously described, and complete collapse of the lung ensued.

The patient has never looked back, and he has had no complications (fluid, etc.) whatever. He has a filling every month, is in excellent general condition, and has gained many pounds in weight. He has no fever, and no cough or expectoration. I last saw him on November 29th. Fig. 1 shows the case after the induction of the artificial pneumothorax, but before the cauterization. It shows well the holding open of the cavity by adhesions. Fig. 2 shows the condition after the cauterization.

In the first case the ordinary treatment by rest in bed and climatic conditions proved useless, and artificial pneumothorax was impossible owing to the presence of massive adhesions. In the second case although artificial pneumothorax was performed successfully as regards the greater part of the lung, it was really unsuccessful because of the apical adhesions which held open the large cavity in the upper lobe. This partial collapse of the upper lobe was not only a hindrance to the patient's cure, but was a positive danger, owing to the presence of the widely open thin-walled cavity. In this case the operation of dividing the adhesions was extremely interesting owing to their great thickness and vascularity. The diathermic cautery was used with marked success, there being no bleeding either during the operation or subsequently.

I am indebted to Mr. P. G. Sutton, M.S.R., of the *X*-Ray Institute, Davos-Platz, for the radiographs.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A NORMAL VENTRICULOGRAM.

(With Special Plate.)

THE case here described may be of some interest from the point of view of showing the normal appearance of the lateral ventricles, and the relationship of the third ventricle to the foregoing in a case of ventriculography.

The patient was a man in early middle life, who was admitted to the Maida Vale Hospital for Epilepsy and Paralysis complaining of headache and convulsions. On admission he was found to have nystagmus of the pupils, but the discs were clear. Examination of the central nervous system revealed the presence of deafness in the left ear, suggesting involvement of the eighth nerve. The tongue was protruded to the left, implicating the twelfth cranial nerve. The Wassermann reaction was negative in both the blood and the cerebro-spinal fluid.

Ventriculography, or the injection of air into the ventricles, was performed under local anaesthesia in the hope that a diagnosis might be obtained as regards the presence or absence of a cerebral tumour. Skiagrams were accordingly taken showing the ventricles anteriorly, posteriorly, and laterally. The anterior and posterior ventricles are alone referred to in this article.

In the anterior view of the ventricles the two anterior horns of the lateral ventricle are clearly seen. They are filled with air, and are closely approximated, with the third ventricle lying below. In the middle line the pineal body can be seen through the third ventricle.

In the posterior view of the ventricles it will be observed that the third ventricle has emptied itself into the lateral ventricles, and only the posterior horns of the lateral ventricles are seen; these are normally situated. The pineal body can be made out to be in the middle line.

I desire to thank Dr. W. Russell Brain for permission to use the clinical notes.

H. MARTIN GREY, M.R.C.S., L.R.C.P.,

Radiologist, Maida Vale Hospital for Epilepsy and Paralysis.

RAPID RECOVERY FROM PLEURO-PNEUMONIA.

THE arrest of lobar pneumonia with pleurisy within thirty hours of its onset seems to be a gratifying achievement and worthy of record.

I was recently called to see a man, aged 55, whom I had attended four years previously with double pneumonia and pleurisy; from this he nearly died, but eventually made a good recovery. On November 1st, 1928, he went for a motor drive in the country and fell asleep on the ground with his coat off. He retired to bed that night feeling perfectly well, but, after a few hours' sleep, he awoke and was very restless. A little later he had a rigor and vomited, and immediately complained of shortness of breath, with a stabbing pain over the lower part of the left side of the chest, laterally and in front. A similar pain was felt over the tip of the left shoulder, and his temperature was 101.2° F. I saw him at 9.30 that morning, when his respirations were short, quick, and painful. He coughed then for the first time and brought up a lump of mucus tinged with bright red blood, the sight of which confirmed his impression that another attack of pneumonia was beginning. Examination revealed signs of consolidation of the left base, diminished vocal fremitus, an impaired note up to the angle of the scapula, diminished air entry, and distant voice sounds; a fine pleuritic rub was heard over this area and extending to the front.

He was ordered hot linseed poultices every two hours, the first of which contained mustard, and cachets four-hourly, containing half a gram each of aspirin and diuretin, and 0.12 gram of quinine. The temperature and pulse rate remained constant all

day; the expectoration was scanty, but each time contained bright red blood. He began to feel rather better, the pain became less, and he sweated profusely, but the lung signs remained about the same. I ordered a Dover's powder for the night, but he did not sleep much and the temperature was 101.5° F. and the pulse 100. At 10 the next morning he felt much better, the temperature had fallen to just below normal, and the pulse was 76; he was hungry and asked for solid food. The signs at the left base were much as before, but there was also a small patch of distant bronchial breathing and bronchophony, with crackling râles about the affected area; the pleuritic rub was still present, but less distinct. The expectoration was now more abundant and bright red intimately mixed with mucus.

From this time he steadily improved, the temperature and pulse remained normal, the bronchial breathing and bronchophony gradually diminished, the crackling râles gave place to redux crepitations, and the lung slowly, but completely, cleared up. The expectoration, however, never became rusty, but remained bright red in diminishing quantity until November 7th, when the cough and expectoration ceased. Similar cachets were given at four-hourly intervals until the temperature dropped, and were continued three times a day until November 7th.

This appears to have been a typical case of lobar pneumonia with pleurisy, the treatment being started within six hours of the onset. The temperature and pulse fell to normal within thirty hours, and the lung signs improved so that the patient was able to leave his bed on November 11th. He was on full diet and enjoyed his food from November 6th.

Valparaiso, *Chile.* S. M. WELLS, F.R.C.S.Ed.

FLEXNER DYSENTERY IN A TWO-DAY-OLD CHILD.

IN view of the age of the child this case seems to be of sufficient interest to warrant publication.

A multipara after a normal confinement gave birth to a male child. The boy was perfectly healthy at birth, and was fed on the breast. Forty-eight hours after birth he began to pass loose green stools, which contained mucus and a small amount of pus, and were streaked with blood. The number of stools was not excessive, averaging two or three daily. The temperature remained normal. A portion of stool was plated out on MacConkey's bile salt lactose agar, and gave practically a pure culture of a non-lactose fermenting Gram-negative bacillus. This organism was culturally identical with *B. dysenteriae* Flexner, and was agglutinated to full titre with a polyvalent Flexner [illegible]. Under suitable treatment the child made [illegible] and was transferred to the Aberdeen City [illegible].

The mother was regarded as the most likely source of infection, and a rectal swab was examined for the presence of dysentery organisms; *B. dysenteriae* Flexner was easily isolated. The mother had no symptoms of dysentery, and, owing to the fact that she was suffering from puerperal insanity, no history of a previous diarrhoeal condition could be elicited. She was suffering from hallucinations and delusions of persecution, and was transferred to a mental hospital.

We are indebted to Professor McKerron for permission to publish this case.

J. C. KERRIN, M.B., Ch.B., D.P.H.,
Department of Bacteriology, Aberdeen University.
J. M. GILL, M.B., Ch.B.,
Resident Medical Officer, Maternity Hospital, Aberdeen.

TWIN ABORTION FROM A UTERUS DIDELPHYS.

THE following details illustrate the point that, in the country, the inaccessibility of such instruments as one does not happen to be carrying when called in may sometimes render rather mystifying an otherwise relatively straightforward case.

A married woman, aged 26, whose periods had been regular till May 8th, and ceased from this date, had pains on September 15th; a carneous mole came away two days later. The bleeding after this was not at all excessive, and the pains ceased until, early on September 20th, far more severe pains than before set in; the patient became increasingly upset and exhausted, although there was scarcely any additional bleeding. Digital examination revealed a closed os, and when this was sufficiently dilated to admit a finger the walls of the uterus felt smooth and normal so far as they could be reached. Violent bearing-down pains, however, continued. A rectal examination showed that the uterus was somewhat retroflexed, and caused a brownish discharge to pass from the vagina. On a second vaginal examination the finger entered a dilating os, and at once felt membranes presenting. After the earlier negative examinations this seemed rather puzzling, but no speculum was available nearer than my surgery some miles away. A dead foetus of about three months' gestation was delivered with its membranes.

A *speculum* was now obtained, and displayed a septum dividing the vagina from a little above the vulva and the uterus into anterior and posterior positions. It was sufficiently flaccid in the vagina to fall against the normal vaginal wall, and thus allowed the finger to pass sometimes into the empty anterior uterus from which the mole had been expelled and sometimes into the posterior uterus in which pregnancy had advanced two months or so further.

R. T. BANNISTER, M.B., B.S.Lond.

Penzance.

AN UNUSUAL TUMOUR.

THE following account and illustration of a tumour of uncommon appearance may be of general interest. I should be interested to hear of any similar cases and their diagnoses.

A Basuto woman, aged 66, came to me for treatment for a large "swelling." On examination I found a huge tumour mass on the left side of the chest. The whole mass was dependent from the left supraclavicular region, where it was attached to the body by a comparatively narrow "neck" of skin.

The illustration gives an idea of the size and shape of this tumour. In consistency it was soft, almost fluid, and seemed to have fibrous bands running though it in a longitudinal direction. It was covered by loose skin, which in places had broken down, and there were several old scars at the most dependent part. Over the surface there ran large veins, which were varicose.

The patient stated that the tumour began as a small swelling in 1917, and had grown steadily since then. It gives rise to no pain, but the sheer bulk makes it unsightly and oppressive. I tried to persuade the patient to have the mass removed, but so far she has not come forward for operation.

My own provisional diagnosis is that it is a lipoma, but I should be glad to have the opinion of others with a wider experience.

Buchanan Medical Mission, Qumbu, South Africa R. L. PATERSON, M.B., Ch.B.

AN UNUSUAL CASE OF DIPHTHERIA.

THE following case illustrates, not only a curious type of diphtheria, but also the importance of confirming the diagnosis of laryngeal swellings by scientific methods before undertaking an operation or embarking upon a definite line of treatment.

A healthy-looking man, aged 55, came to see me because he had been suffering from hoarseness of the voice for five weeks. This he attributed to public speaking, since he had never felt ill.

On examination of the larynx by the indirect method his left vocal cord was found to be swollen and irregular about its centre. This swelling was white, and of the same shade of colour as the rest of the surface of the vocal cords, which were normal. His upper air passages were otherwise healthy, and his doctor could find no signs of disease in other organs. A diagnosis of intrinsic carcinoma of the left vocal cord was made. I decided to confirm this by removing a piece for section before performing the operation of laryngo-fissure for the removal of a growth which appeared to be in a favourable position for easy and complete eradication.

Accordingly, a few days later, under a general anaesthetic, I removed a piece of the growth by the direct method with Paterson's forceps. On section this specimen was reported to be old-standing diphtherial membrane.

London, W.1. H. MORTIMER WHARRY, F.R.C.S.

Reports of Societies.

A PARASITIC MONSTER.

AT a meeting of the North of England Obstetrical and Gynaecological Society in Liverpool, on December 14th, 1928, with the president, Mr. LEITH MURRAY, in the chair, Miss K. EDGECOMBE (Liverpool) showed a parasitic foetus removed from a female child; the patient had been apparently normal until the age of 6 months, at which time a swelling developed in the left groin, and grew rather rapidly during the next two months. There were no definite symptoms and no cachexia. Congenital sarcoma of the kidney was diagnosed, and the tumour was removed, but the child died of shock a few hours later.

The incision showed a cystic tumour lying behind the peritoneum, between the spleen and left kidney and below the pancreas. A considerable amount of mucoid fluid was removed by puncture, and the cyst was found to contain a partly developed foetus.

The foetus consisted essentially of two well-formed lower extremities, pelvis, and buttocks, three rudimentary upper extremities, and a face, the cranium being deficient. The whole foetus was covered by skin and vernix caseosa. The lower extremities were complete, showing feet, legs, thighs, and buttocks. The left foot had five toes with five nails, the second and third toes being fused; the right foot had four toes with no nails. The legs were flexed at the knee-joint and crossed, with the right leg on top of the left. The buttocks and nates were well formed, a dimple

presumably representing the anus. The vulva was well formed, the right labia were well seen, and were more prominent than those on the left side; a vestibule was present. The labia minora enclosed a cavity 7 mm. in length, 4 mm. wide, and 5 mm. deep, containing apertures presumably of the urethra and vagina. Above the pelvis there was a rudimentary abdomen; this was represented anteriorly by a deep groove, about 4 mm. in width, formed by the flexion of the head upon the pelvis and lower extremities. Posteriorly the back was well formed, extending upwards from the lower fold of the buttocks for 9 cm. Immediately above the back posteriorly and the groove-like abdomen anteriorly the head was situated. There was no thorax, but three upper extremities arose about the junction of the head and back. The right upper extremity arose from a groove between the head and the right side, 6 cm. above the right buttock; it consisted of a small wrist and a hand, on which there were four well-developed fingers, with nails, but there was no upper arm. There were two extremities on the left side; the lower one of these corresponded in position with the right hand, and consisted of a lower arm and hand with two fingers, but no nails. About 1 cm. above this the second right hand was situated, arising apparently from a groove in the head, and consisting of a hand with four well-formed fingers and nails, but no arm or forearm. The head comprised about half the foetal mass. It was acutely flexed on the abdomen, and rotated to the left side. The face was represented by a rounded fleshy protuberance on the left side, measuring 5 cm. in diameter, and separated from the rest of the head by a groove. A well-formed mouth, 1 cm. wide, was apparent in the centre of the face, showing two lips outside and definite upper and lower gums inside. There were no teeth. The other features were rudimentary, the nares being represented by two depressions, and the eyes by two similar depressions, above which, however, there were superciliary ridges with hair. The vault of the skull came behind the face, and consisted of a hairy scalp with no bony cranium. The scalp was defective in its upper portion, and was replaced by a white, glistening membrane attached to the wall of the sac. The inside of the skull was completely lined with vascular membrane, showing a well-marked tentorium cerebelli, but, owing to the deficiency of scalp, no falx cerebri. The skull had probably been filled with *fluid, and there was no evidence of brain substance. Immediately* behind the hairy scalp was a large, fleshy ridge, showing no definite structure, and probably corresponding to the posterior portion of the neck.

The whole foetus lay in a cyst, which was completely lined by two layers of membrane corresponding to chorion and amnion, and was attached to the surrounding structures of the host, being bounded by the diaphragm, spleen, pancreas, and kidney. The foetus had two attachments—one from the membranes forming the deficient scalp, fused with the membranous lining of the sac; the other was joined by means of a small cord from the abdominal groove to a rounded protuberance in the posterior wall of the sac. This protuberance was hollow, and contained a viscid mucoid material; it probably represented the remains of a yolk sac. The remainder of the wall of the sac was vascular, with ridges on its posterior surface. Lying immediately below and externally to the main cyst was a second smaller cyst, about 4 cm. in diameter. This contained viscid mucoid material resembling that from the yolk sac, but was apparently not connected with the main cyst. Sections had been made through various parts of the cyst and wall. The structure referred to as a cord showed a hollow vessel, resembling an artery from its thick, muscular wall, and containing red cells in its lumen but at a small part of its circumference it was lined by columnar epithelium, resembling vitelline duct: exactly similar epithelium was found lining the yolk sac. The *membranes were composed mainly of fibrous tissue, but here and* there a lining membrane of flattened epithelial cells, resembling epithelium from the foetal membranes, could be traced.

Miss Edgecombe said that radiograms showed no definite bone formation. The type of parasitic foetus was that described by Ballantyne as "gastro-parasitus." He had suggested that it was formed by the inclusion of the second twin in the first during the closure of the great anterior fissure. It was a very rare occurrence, only about thirty-five to forty of this type having been recorded. In the cases traced the parasite had been of the same sex as the autosite, which pointed to a uniovular origin. The parasite in these cases usually proved fatal to the autosite, either from operation or from pressure, but cases had been recorded with an external parasite where the host had lived for many years.

Torsion of the Pregnant Uterus.

Mr. LEYLAND ROBINSON and Dr. H. M. DUVALL reported jointly a case of torsion of the pregnant uterus during the eighth month in a primigravada, aged 38. The surgical anatomy of the specimen was demonstrated and the mechanism of rotation illustrated by diagrams and lantern slides.

The symptoms were atypical, but the case was regarded as one of concealed ante-partum haemorrhage, the chief clinical feature being the profound collapse which contraindicated operation. The patient died thirty hours after admission to hospital, and at the *post-mortem* examination it was found that the right gravid horn of a bicornuate uterus had undergone about 270 degrees of axial rotation. The left horn was small and not canalized, the tube being represented by the fimbriated extremity only and the ovary encased in a peritoneal fossa, somewhat resembling a teratological ovarian hydrocele. The left kidney was absent, although the corresponding suprarenal capsule was found *in situ*. There was no separation of the placenta and membranes, and the condition of the uterine muscle from the affected horn showed intense congestion but no interstitial haemorrhage. There was slight fibrosis in the liver and kidney, but no evidence of toxaemic change.

Investigation of the literature showed that this was a rare condition in the human subject and that the present case was, perhaps, the first to be recorded in England; it was, however, a common condition in veterinary obstetrics, and particularly affected the cow, which had a bicornuate uterus. From an analysis of the published cases, chiefly to be found in German literature, it was clear that torsion of the uterus was set up by three factors: (1) asymmetry, such as might be produced by the presence of tumours, or associated with a bicornuate or uni-cornuate maldevelopment of the uterus; (2) an unduly long cervix, often found with fibroids and occasionally in pregnancy, constituted a pedicle very prone to torsion, and thus acted as a strong predisposing factor; (3) irregular muscular action, due to falls and sudden movements, operated as the common exciting cause.

Sarcoma of the Uterus.

Dr. M. DATNOW (Liverpool) described a specimen showing sarcomatous change in a fibromyoma.

The patient, aged 51, had been married for twenty-six years and was a 12-para. The last child had been born in 1921. There had been amenorrhoea for about nine months before admission to hospital with a gradually enlarging abdominal tumour, which grew at about the rate of a normal pregnancy. The patient was rather pale; the abdomen was distended and gave the signs of free fluid. Arising out of the pelvis was a hard, irregular tumour reaching about half-way between the umbilicus and xiphisternum; this seemed to be movable from side to side. On vaginal examination the tumour was felt to be attached to the cervix, which was drawn very high up under the symphysis. A diagnosis was made of a malignant pelvic tumour and an exploratory laparotomy was suggested, but the patient refused operation and died two days later. At the necropsy the abdominal cavity was found to contain several pints of blood-stained fluid; the bleeding appeared to have come from the necrotic-looking part to which the omentum was adherent. The uterine cavity was elongated, but the endometrium was unbroken and there was no other sign of malignancy. Sections taken from the friable portions of the tumour were composed of cells of different size and shape; many were round, some elongated and spindle-shaped, and a large number were multi-nucleated giant cells. The nuclei were very active and stained well, and the whole afforded an undoubted picture of malignancy. At a distance from the breaking-down area the sections did not contain any evidence of malignancy, and merely showed advanced degeneration. The bluish-looking fibroid showed an increased number of blood vessels as well.

Dr. Datnow said that various authorities differed as to the incidence of malignant change in fibroid. St. Andrew Kynoch (*Archiv für Gynäkol.*) had stated that if all fibroids were examined systematically 4 per cent. would be found to be sarcomatous. Kelly and Cullen had reported seventeen instances of undoubted sarcomatous change in 1,400 cases, a little over 1 per cent. E. MacDonald (*Journ. Amer. Med. Assoc.*) found seven cases in 700. Most authorities seemed to think that the frequency was between 1 and 2 per cent. On studying the tumour cells with an oil-immersion lens many of the cells in the growth *had a morphological resemblance to muscle fibres.* Dr. Datnow thought that this was an example of malignant change of the muscular element, and resembled very closely the case illustrated in Kelly and Cullen's book, which they described as an undoubted instance of sarcomatous change of the myomatous tissue.

Dr. Datnow also showed a specimen of sarcoma of the body of the uterus.

An unmarried woman, aged 59 years, had always been healthy except for tuberculous glands of the neck when a child. The *menses commenced at the age of 16 and were quite regular up to* the menopause, which occurred at 48. On admission the patient complained of a yellow vaginal discharge which had persisted for two years and had never been blood-stained. For the last four months there had been persistent vomiting and also loss of weight. Examination revealed a slightly enlarged uterus, and a diagnosis of malignant disease of the body of the uterus was made, but owing to the absence of haemorrhage it was thought wisest first to dilate the cervix and procure a section for diagnosis. After passing the first few dilators some necrotic-looking material came away which was taken as diagnostic, and abdominal hysterectomy was performed. Subsequently the patient was treated with Rad.

receiving in all 0.4 gram. The patient, when last seen a month before the date of report, was quite well, except for slight pain in the right side and occasional attacks of vomiting. She had gained two stones in weight, and locally there was no evidence of recurrence. Sections of the growth were somewhat atypical, but suggested a round-celled sarcoma of rather rapid growth; several giant cells were also present.

Dr. Datnow said that the interest in the case lay in the fact that there was much constitutional disturbance, and the patient did not complain of the discharge until asked; in fact, she had been treated as a case of gastric carcinoma. In spite of the area of uterus involved it was not so enlarged as one would have expected.

A Hydrostatic Vaginal Plug.

Dr. E. FARQUHAR MURRAY (Newcastle) read a note on the hydrostatic vaginal plug. He expressed the view that vaginal plugging by wool or gauze in cases of accidental haemorrhage or placenta praevia damaged the mucous membrane of the vulva and vagina and predisposed to sepsis. Efficient vaginal plugging implied the use of a retractor and movement of the patient into the cross-bed or left lateral position. The hydrostatic vaginal plug avoided these difficulties. The plug consisted of a small balloon of the type which, when distended, became sausage-shaped. It was sterilized by boiling, and distended with weak lysol solution by means of a Higginson's syringe. The amount injected would naturally vary with the case, but in general twelve "pumps" would produce a mass the size of a baby's head, and twenty "pumps" a mass which would tightly fill a female bony pelvis. As the injection was made support was given at first by the levators, but slowly the balloon would protrude at the outlet, and this was essential if it was to be an efficient plug. A little practice soon indicated how much pressure at the vaginal vault was sufficient to produce suitable counter-pressure to a tight abdominal binder. When sufficient fluid had been injected the neck of the balloon was ligatured and the syringe was removed. A broad perineal pad kept the balloon in position. Its advantages were as follows: (1) When removed many hours later the mucous membrane was still glistening and undamaged. (2) It was possible by controlling the protrusion to lessen the internal pressure sufficiently to allow examination of the cervix; after which, if still required, the internal pressure could be easily re-established. (3) Its removal was extremely easy. (4) The insertion of the plug could be effected with a minimum of disturbance to the patient.

SEPARATION OF THE UPPER EPIPHYSIS OF THE FEMUR.

AT a meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland, on December 7th, 1928, Mr. S. T. IRWIN read a paper on separation of the upper epiphysis of the femur.

Mr. Irwin briefly reviewed the literature, and explained that this displacement was rare as the result of gross violence; he then described a case in a girl aged 11 years 11 months.

A three months history of so-called rheumatism with pain and limp was followed by a fall on a grass tennis court. The accident produced complete loss of function, the girl being quite unable to put her weight on the limb. At first there was no shortening, but eversion of the foot, with displacement backwards of the trochanter, and swelling over the front of the joint were the prominent features. A week later there was shortening of 1/2 inch, and an *x*-ray examination revealed a typical separation of the capital epiphysis of the femur.

He based his paper on this case and on seven others which he had had under his care. The condition occurred in about 1 per cent. of orthopaedic cases. Among children between the ages of 10 and 15 with symptoms suggestive of tuberculosis of the hip one out of every two or three might be expected to afford an example of the condition. The age was significant. Males were more affected than females, and unilateral cases exceeded bilateral by three or four to one. Traumatism was the usual causal agent, but the non-traumatic form was not rare. The symptoms and signs included preliminary pain, a limp, eversion of the foot, flattening of the hip, and limitation of all movements, especially flexion and abduction. There was no general disturbance; syphilis and tubercle were not causal agents, but endocrine disturbance was common, especially in bilateral cases in which the injury was often unrecognized if there had been one. There was at first no deformity, but after traumatism or a gross exacerbation of the pain a displacement downwards of the epiphysis occurred. The displacement continued in a downward and backward direction, the proximal end of the neck travelling upwards and forwards. The slipping might continue for months or years, but it eventually became stabilized by the epiphysis attaching its distal surface to the inner and lower aspect of the neck. Later on the upper part of the neck became rounded off, and entered into the formation of the hip-joint. At this stage the well-known deformity of adolescent coxa vara was produced, suggested simultaneously by Kocher and Hofmeister, and fully described in 1912 by Elmslie; if uncorrected before stabilization serious disability ensued due to pain, and limitation of all movements, even to the extent of complete ankylosis. Treatment by manipulation was advocated for early cases in which the epiphysis was still mobile. In recent cases with fibrous stabilization Wilson's treatment by open intra-articular operation was mentioned; for fully developed coxa vara of adolescence Wilson's intra-articular operation or extra-articular osteotomy was advised. The poor prognosis in unreduced cases was emphasized, and early diagnosis before fixation of the deformity was advocated as the only method of getting good results. A table showing differential diagnosis was prepared to indicate a comparison between pseudo-coxalgia, tuberculosis of the hip, and displaced epiphysis. A series of lantern slides and a number of pathological specimens illustrative of the paper were exhibited; these included the clinical course of one reduced case in which accurate anatomical reduction was obtained by manipulation.

The PRESIDENT, in congratulating Mr. Irwin on his interesting communication, said that the diagnosis of these cases was singularly important. He asked if there was any definite muscular spasm associated with limitation of movement or if there was any elevation of temperature.

Mr. F. J. HENRY said that the principal difficulty in cases of epiphysitis about the hip-joint was early diagnosis. He had seen a number of cases of uncomplicated irritability of the hip, described as non-tuberculous osteitis, which he thought might have been a premonitory stage of epiphysitis. He was doubtful about the treatment of such cases, because he did not like the idea of immobilizing them for any length of time, and he wondered if the prevention of weight-bearing by calliper was sufficient. He mentioned a case of true fracture of the neck of the femur in a small child, which he thought might possibly have gone unrecognized as one of these slipped epiphysis cases.

Mr. HENRY MACAULEY referred to three cases of adolescent coxa vara, in which there was limitation of abduction, with a good deal of shortening in advanced cases. In these adolescent coxa vara cases the epiphysis was displaced downwards. In the early radiograms there was usually a valgus condition of the neck seen, and in later stages there was a flattening of the neck. He said that coxa vara was a bad name to describe a condition which was a deformity of the angle between the neck and shaft of the femur.

Mr. C. J. MACAULEY drew attention to certain points in connexion with two cases of slipped epiphysis. Both patients were less than 20 years old, and in both there was a history of violence. In one case there was distinct limitation of flexion in the hip, and free movement, except for abduction and internal rotation; there was also tilting of the pelvis. The fact that the boy was able to walk about for two hours after the injury indicated that the epiphysis could not have been completely separated. A radiological examination revealed the epiphysis half-way down the exposed surfaces of the neck of the femur. Under anaesthesia he flexed the hip strongly, internally rotated it, and there followed a distinct "snap" at the hip-joint.

The other case he treated by operation after manipulative treatment had failed: he opened the hip-joint through an anterior incision, and replaced the head. Then he applied plaster-of-Paris, and later walking calliper.

Mr. IRWIN, replying, said that muscular spasm was present in early stages, but he did not think that it accounted for the limitation of movement in this condition. In some cases there was extreme limitation of movement which he could not explain. He had seen cases of displacement of both femoral epiphyses with free movement. Treatment was not responsible for the amount of movement; in a number of cases under extension there was no change in the amount of mobility. He thought that the fact that the epiphysis was forced into the cotyloid notch might explain limitation of movement in some cases. He had had no cases of extreme deformity, because he received the cases early. He referred to the age limits of the condition, and said that Perthes's disease was not present after the age of 10; it was characterized by a growth along the cartilage in the direction of the great trochanter, a break in the continuity of which would produce definite changes characteristic of Perthe's disease or pseudo-coxalgia. After manipulation he found the prognosis definitely worse; unless the epiphysis was replaced arthritis would ensue. The question of the amount of shortening was interesting, and the amount remaining after reduction was very small compared with that in unreduced cases. He was doubtful of the results obtained after intra-articular operation, and thought that traumatism might occur thus inside the joint. Mr. Irwin added that non-tuberculous coxitis was not a premonitory coxa vara condition; in many of these cases staphylococci had been found.

Syphilitic Synovitis.

Mr. WILLIAM PEARSON showed a case of syphilitic synovitis.

The patient was a lad, aged 17, who presented none of the facial or other characteristics of congenital syphilis, and whose general health was good. When first seen he complained of a considerable swelling of the right knee-joint of five days' duration, and a larger similar swelling of the left knee, which appeared four days later, and caused some pain on attempted flexion. When at rest the joints were painless. There was no history of injury or gonorrhoea. Examination showed bilateral synovial effusion in the knee-joints. There was no tenderness or increased local heat. The right knee was moderately distended, yielding a "patellar tap"; the left knee was so tense that no "tap" could be elicited. Movements of the right knee were painless and almost full; those of the left knee were much restricted owing to the size of the effusion. Mr. Pearson said that the absence of any history of injury or gonorrhoea, the bilateral character and almost simultaneous onset, and the clinical features suggested the symmetrical serous synovitis of congenital syphilis; a blood examination yielded a fully positive Wassermann reaction. When shown the effusions had greatly diminished in size as a result of three weeks' rest, and the condition had been painless throughout.

Mr. C. J. MACAULEY said he had a similar case at present in a lad, aged 17, who came to him with chronic, rather pulpy, thickening of the left knee-joint. There was, however, no evidence of fluid; there was slight muscular wasting, and considerable limitation of flexion and extension. It appeared at first to be a tuberculous joint, but there was no increased local heat. On the following day the other knee-joint was examined, and found to be full of fluid. The difference between the two joints was that the first was thickened and the other showed a serous effusion. A Wassermann test gave a reaction of *plus* 3. The boy stated that he was a haemophilic. He was now getting better.

Mr. F. J. HENRY had had two similar cases in children. The swelling was bilateral in both, and there was a considerable lapse of time between the appearances in the two joints. The first patient, a girl, aged 7, had a large, pale effusion in the knee-joint; this was followed several months later by a similar condition in the other joint. At times the joint became perfectly dry, and a fortnight later the swelling would recur, with slight limitation of movement. Mr. Henry asked Mr. Pearson if he had noted any association between congenital syphilitic joints and interstitial keratitis.

Mr. PEARSON, replying, said that joint lesions in syphilis were extremely rare. The cases he had seen were types of arthritis secondary to synovitis, and there was osteosclerosis of the adjacent ends of bone. In these cases the disease seemed to have been continuing in the bone for years before the joint was affected; there was a nodular thickening of the gummatous type in the synovial membrane. These cases were sometimes associated with interstitial keratitis, but they were also accompanied by other signs—namely, the Hutchinson triad of symmetrical deafness, characteristic teeth, and interstitial keratitis.

Partial Colectomy.

Mr. J. L. KEEGAN showed two patients upon whom partial colectomy had been performed.

A woman, aged 52, was admitted to hospital with urgent symptoms of intestinal obstruction; she was collapsed, and vomited a brownish fluid; there was abdominal distension, a rapid pulse, and subnormal temperature. Caecostomy was performed on the following day; distension of the colon from the caecum to the top of the sigmoid was found, and a small lump was felt in the region of the sigmoid, with collapse of the bowel below. Three weeks later the abdomen was opened in mid-line, and a resection of the growth involving the bowel was performed, with end-to-end anastomosis. The caecostomy wound was not closed. Now, seven months after the operation, the patient was well, with daily movements of the bowel.

The second patient was a woman, aged 60, who, for six months before admission to hospital, had suffered from loss of appetite and wasting. There was no constipation till shortly before her acute illness fourteen days prior to admission, during which time she had abdominal pain and vomiting. Fourteen days prior to admission she was seized with abdominal pain, vomiting, and distension, and till her admission there was no motion. At operation the caecum was found to be so tense and distended that rupture was feared. Mr. Keegan punctured it to allow gas to escape, and, having carefully protected the peritoneum, the bowel was lifted into the wound, and a purse-string suture applied. It was then attached to the edges of the incision in the peritoneum, and through a stab wound a large rubber tube was inserted for about 2 inches in the centre of the area outlined by the purse-string. This being drawn tight, a second one was placed 1/4 inch outside the first, and the incision closed by silkworm gut above and below. Resection of the growth was performed about four weeks later, and an end-to-end anastomisis was performed. Now, more than two years since operation, the patient was quite well, with good appetite and daily motion.

Mr. Keegan concluded from his experience that the high mortality in intestinal obstruction was often due to tardiness in making a differential diagnosis; therefore laparotomy should be performed at the earliest possible moment. Caecostomy was an operation easy to perform; it gave immediate relief, arrested toxic absorption, and enabled the surgeon to operate in a comparatively aseptic area should he wish to resect the descending or sigmoid colon.

ARTIFICIAL TERMINATION OF PREGNANCY.

AT a meeting of the Hunterian Society, held on December 3rd, 1928, at Simpson's Restaurant, with the president, Dr. WESTERMAN, in the chair, Mr. C. LANE-ROBERTS and Mr. A. C. MACALISTER opened a discussion on the artificial termination of pregnancy. Mr. Lane-Roberts divided conditions requiring such interference into three groups—namely, disproportion, conditions threatening the life of the mother, and those threatening the life of the foetus. Cases of disproportion were best treated in an institution, and while induction of labour was often advisable natural delivery might occur, and carried a lower foetal mortality. In eclampsia there was a tendency to use hypnotics and await natural delivery rather than to induce labour. Heart disease was dangerous especially in the first half of pregnancy; if the condition of the mother was serious towards the end of pregnancy the best procedure was Caesarean section under spinal anaesthesia. The speaker hoped that the hormone oestrin would soon be available as a means of inducing delivery. Mr. A. C. Macalister said that the law had nothing to say on the subject of the artificial termination of pregnancy which could not be left to one's conscience; there were very few indications for

this procedure, which was rare in hospital practice, but common in private practice. In general, interference with pregnancy was called for only when the pregnancy endangered the life of the mother. In Tsarist Russia abortion was illegal, and was liable to be followed by exile to Siberia of the mother and the abortionist concerned; in the Russia of to-day this operation could be carried out by any reputable doctor, and special hospitals were provided for the purpose. The number of such operations carried out had increased by some 600 per cent., while the incidence of infection in such cases had fallen to about 4 per cent. Some people denied the existence of pernicious vomiting of pregnancy, others regarded it, in its early stages, as neurotic in origin, in its later stages as toxic. If such vomiting was followed by jaundice or haematemesis the pregnancy should be terminated. In cases of heart disease little benefit could be expected from a termination of the pregnancy; it was better to allow it to proceed to term, and then do Caesarean section and remove the Fallopian tubes. A history of puerperal insanity was not an indication for interference with pregnancy; such insanity was usually due to preventable causes.

PERIODICITY IN DISEASE PREVALENCE.

AT a meeting of the Royal Statistical Society on December 18th, 1928, Mr. H. E. SOPER of the National Institute of Medical Research read a paper on the interpretation of periodicity in disease prevalence.

Mr. Soper said that the fact that epidemic diseases often came in the manner of surges, attended with great inconvenience and fraught with many special dangers when at their height, should be sufficient incentive for a close study of the fluctuations in disease prevalence. Many attempts to account for the periodic nature of the visitations of sickness had from time to time been made. It was true that the surmised mechanism of contagion, with its incalculable chances, might appear to give the lie to any possibility of a law being found which the epidemic would follow in directing its course; yet the stream flowed on through the tumult of eddies, and the fact that in a disease like measles the upheavals presented certain remarkable regularities could be taken as a challenge and a spur to the attack of the evasive problem.

Among the theories put forward to account for epidemic recurrence that most favoured presented a picture of a rise and fall in the new cases of a contagious disease as consequent upon a glut and dearth of susceptible persons; for, clearly, if there were a limit to the numbers who could contract the disease, the action might be supposed to go after the manner of a pendulum, where, as the energy of flow became exhausted, the energy of potential activity was stored up, to be released again when motion recommenced. The stored energy was the accumulation of susceptible children, by birth.

In a paper read before the Royal Statistical Society this view of the origin of the surgings of measles epidemics was taken and carried to a point a little beyond that already reached by the investigations of Sir William Hamer. It was shown, in fact, by arithmetic and algebra that a simple supposition in regard to the delayed or lapsing infectivity of an infected person, combined with a supposition of a constant inflow by birth of susceptible children, led, by invoking the statistico-chemical law known as "mass action," to an ever-sustained periodic wave, or swing of the epidemic pendulum, whose period could be interpreted. These idealized waves did not, however, give a very true replica of the curve of monthly cases of measles as presented by an actual chart, which (as shown by diagrams relating to Glasgow given in the paper) appeared to have the elements of order and chance somewhat cunningly interwoven.

Mr. Soper demonstrated that curves very similar in appearance to the curves of measles cases in Glasgow would be the foreseeable consequence of combining the natural epidemic swing with a forced seasonal impulse of a certain form, and that the form was one whose maximum coincided with fair truth with the time of assembly of schools after the summer vacation.

Reviews.

STUDIES ON MALARIA.

SIR RONALD ROSS'S *Studies on Malaria*[1] has been written to include in a small compass the essentials of the author's classical investigations from 1895 onwards, and it contains the essence of his larger *Memoirs* in a convenient and less expensive form. The first three chapters give a brief account of his researches in India from 1895 to 1898, which first established the development of human malarial parasites in the stomach of "dapple-winged" mosquitos (anopheles) in 1897, and the full development of the closely allied proteosoma of sparrows in mosquitos and infection through the salivary glands when they bit an uninfected bird in the following year. These investigations were unfortunately interrupted by a transfer in 1897 when war broke out on the Indian frontier, and by an investigation on kala-azar in the next year, and he was consequently prevented from tracing the full development of the human malaria in the anopheles, although he quickly did so in Freetown, Sierra Leone, a year later at the first opportunity. In the meantime, Italian workers had followed up his original discovery of the early stages in the anopheles, and completed the cycle on the lines he had demonstrated in the case of sparrow's proteosoma, and the longest chapter in the book is devoted to demonstrating his priority. As Sir Ronald Ross himself points out that the award to him of the Nobel Prize for his work on malaria, after a full investigation, sufficed once and for all to establish his claims, it is to be hoped that in a future edition this chapter will be omitted to make room for a fuller description of his early epoch-making researches, of which a much more graphic account is to be found in the author's *Memoirs* than in the present work. Most of the remaining two-thirds of the book describes the author's practical studies on malaria prevention in Freetown, Ismailia, Greece, Mauritius, and other countries, to which he has devoted so much labour; it reveals both the triumph of Ismailia and not unnatural disappointment at the failure of parts of our scattered Empire to reduce malaria as rapidly as he had hoped through the application of his methods of mosquito destruction. The author's extensive mathematical studies are frequently mentioned, but for accounts of his literary and poetic contributions his *Memoirs* must be turned to. The last chapter gives a lucid summary of the main facts about malaria, and the lay reader will find it easier to follow the earlier portions if he reads this account first. Portraits of Patrick Manson, whose help the author acknowledges, and of other workers on malaria are included in the volume, which affords a clear picture of a remarkable piece of medical research and of the many-sided genius of the man who accomplished it to the honour of English medicine.

LIPIODOL.

THE use of the iodized oil known as lipiodol during the last few years has grown extensively, and it was well recognized that the time was ripe for the appearance of an authoritative textbook on the subject. It is particularly gratifying that the two originators of the use of this substance, Professor J. A. SICARD and Dr. J. FORESTIER, have been able to write a large volume on diagnosis and treatment by lipiodol.[2] Their bibliography extends over sixty-six pages, and this gives a clear indication of the comprehensiveness of their work. The composition and properties of lipiodol are first dealt with, followed by an account of the methods employed, with general indications and contra-indications. Then the various diagnostic uses of lipiodol are described in detail: the intraspinal and epidural routes for its introduction in diseases of the nervous system come first, followed by an account of its use in the chest, genito-urinary passages, blood vessels, nasal sinuses, digestive

[1] *Studies on Malaria.* By Colonel Sir Ronald Ross, K.C.B., K.C.M.G., F.R.S., Nobel X Laureate. London: J. Murray. 1928. (Cr. 8vo, pp. xi + 196; 4 plates. 5s. net.)

[2] *Diagnostic et Thérapeutique par le Lipiodol.* Par J. A. Sicard et J. Forestier. Paris: Masson et Cie. 1928. (Med. 8vo, pp. 370; 49 figures. 50 fr. sans majoration.)

tract, and other less important situations. Finally, there is an interesting section on the therapeutic uses of lipiodol, principally for certain muscular and joint affections, where it undoubtedly appears to be of value in relieving pain. The diagnostic use of lipiodol in diseases of the nervous system is dealt with in most detail, and the localization of the exact position of spinal tumours by the combined use of ordinary lipiodol from above and a special "light" ascending mixture of lipiodol and olive oil from below, represents one of the very important advances which the use of this substance has made possible. The volume has been printed on a good quality glazed paper, which has allowed of the reproduction of *x*-ray photographs in the body of the book. These are without exception very good and well chosen. Indeed, the only fault to be found in this excellent and authoritative work is the absence of an index—an unfortunate omission all too common in books produced in France.

Dr. F. G. CHANDLER and Dr. W. BURTON WOOD have written a little book on *Lipiodol in the Diagnosis of Thoracic Disease*,[3] consisting of 133 pages of text and forty-seven illustrations grouped together at the end. They describe the various methods of using lipiodol in chest diagnosis, favouring the crico-thyroid membrane route as "on the whole most satisfactory," but they omit to mention an important point in the technique, which is the incision of the skin by a scalpel before the trocar and cannula is introduced. The dangers associated with the use of lipiodol are well set out in a short chapter, and the point that curiosity alone is not an indication for its use is emphasized. The section on interpretation of *x*-ray photographs of the chest after the use of lipiodol is unfortunately separated from the very good examples grouped at the end of the book, and is probably for this reason shorter than its importance would seem to warrant.

PROBLEMS OF THE CIRCULATION.

THE reader who looks for new observations in the Proceedings of the German Society for the Study of the Circulation[4] will be disappointed, but he will find several interesting discussions of some of the problems of the circulation. The papers read at the meetings of the society are grouped so that a small number of subjects are somewhat widely discussed from a multiplicity of aspects. The old problems of congestive cardiac failure are the subject of nine contributions. The mechanics of the blood distribution in this condition is not discussed, and one wonders if those who busy themselves with cardiac failure have sufficiently paused to consider why the venous side of the circulation becomes congested, and whether the raised venous pressure is a sequence to a failing heart or a reaction to its consequences. Eppinger directs attention to the peripheral part of the circulation where the functions of the blood are performed, and it may well be that there is to be sought the answer to our question. Dietrich supposes that the changes in the heart found at death from cardiac failure may be the *result* of a failing circulation, as the cardiac tissues are themselves supplied with peripheral vessels. Such unorthodoxy is welcome in a perplexing subject. The diagnosis of circulatory failure should be carried out, according to Hochrein, by measuring the venous pressure instrumentally. It is curious to observe how slowly the clinical side of modern English cardiology is penetrating into Europe. Cerebral haemorrhage in young people is discussed at some length, and considered to be massive diapedesis caused by functional closure of vessels. A good deal of space is given to papers dealing with the physiology of disorders of rhythm, but no new fact emerges. One paper is devoted to a classification of the various forms of high blood pressure. A case of diverticulum of the heart with transposed viscera is described, where the electrocardiogram seems to fail to confirm the dextrocardia.

[3] *Lipiodol in the Diagnosis of Thoracic Disease*. By F. G. Chandler, M.D., F.R.C.P., and W. Burton Wood, M.D., M.R.C.P. Oxford Medical Publications. London: Milford, Oxford University Press. 1928. (Demy 8vo, pp. xiii + 133; 47 figures. 10s. 6d. net.)

[4] *Verhandlungen der Deutschen Gesellschaft für Kreislaufforschung*. I. Tagung. Herausgegeben von Professor Dr. Bruno Kisch. Dresden und Leipzig: T. Steinkopff. 1928. (Med. 8vo, pp. xvi + 222; 77 figures, 3 plates. R.M.15.)

THE DUODENUM.

AN English translation has recently appeared of the volume entitled *The Duodenum*,[5] by Professor PIERRE DUVAL, Dr. JEAN CHARLES ROUX, and Dr. H. BÉCLÈRE, who for many years have collaborated in the study of this portion of the alimentary canal at the Hôpital Vaugirard, Paris. The translation is the work of Dr. E. P. QUAIN, and offers readers whose knowledge of French is limited a welcome opportunity of familiarizing themselves with the somewhat revolutionary views held by the original authors.

The French edition translated is that of 1923, but although more detailed volumes have since appeared in France, such as the two-volume work on the radiological aspects of the stomach and duodenum by the same observers, there has been no important modification of their views such as might make the present volume in any way obsolete. The most interesting part of their work is to be found in chapters ii and iii of the present volume, in which they discuss at great length the conditions described as periduodenitis and chronic duodenal ileus. In contrast to the majority of physicians especially interested in the diseases in the pyloric region, Duval, Roux, and Béclère believe that stenosing periduodenitis is not necessarily related to duodenal ulcer or to primary disease of the gall-bladder, and that it is a relatively common condition with a recognizable symptomatology. Again, they believe that an obstruction of the third part of the duodenum at the point where it crosses the pedicle of the mesentery is by no means an uncommon cause of chronic illness, and Duval has operated on many cases for the relief of these two conditions with results which are claimed to be excellent.

Surgeons and physicians in other countries have failed to confirm all the views expressed, but it is much too soon to treat them otherwise than with respectful interest, and we confidently recommend this book, with its beautiful *x*-ray photographs, to specialists not familiar with the original French literature.

ELEMENTARY PATHOLOGICAL HISTOLOGY.

IN the excellent preface to his *Elementary Pathological Histology*[6] Mr. W. G. BARNARD says, "Pathology is concerned with processes, not with states," and, later, he suggests that inflammation would be ideally illustrated by a cinematograph film. This book is, however, only a collection of single photographs and diagrams of sections from morbid states commonly met with at necropsy. The figures are attractively arranged, and are accompanied by short explanatory paragraphs and legends, in which the frequent repetition of "showing," "are shown," "are seen," etc., is aggravating and unnecessary. The expressions "a pericarditis" and "inspired food stuff" are questionable. The termination "-oma" does not mean benign, it is an abbreviation of *ογκωμα*—a swelling; "pyknotic" is derived from *πυκνος*, meaning "firm, compact." Some sentences in the paragraph on necrosis are awkwardly expressed and obscure the meaning.

Most of the illustrations are admirable, carefully chosen, and beautifully reproduced. The figures dealing with lobar pneumonia, typhoid, and tuberculosis are especially characteristic, although in Figs. 56 and 57 (high-power views of pneumonic exudation) the cell varieties are not easily distinguishable. Fig. 43 gives a good notion of purulent bronchitis, and Fig. 34 is a useful picture of organized fibrin. On the other hand, the high-power view of fibrin net and degenerated cells of diphtheritic membrane (Fig. 53) does not convey much information, and Fig. 155 is not a satisfactory representation of tubular cubical-celled carcinoma with mucous degeneration of the stroma. The note on actinomycosis and the section shown are not helpful; there is no reference to "clubs" or "rays" from which the organism receives its name.

The book should help students to recognize histological specimens and to construct the probable history of the diseased tissue.

[5] *The Duodenum*. By Pierre Duval, Jean Charles Roux, and Henri Béclère. Translated by E. P. Quain, M.D. London: H. Kimpton. 1928. (7 × 10½, pp. 212; 127 figures. 21s. net.)

[6] *Elementary Pathological Histology*. By W. G. Barnard. London: H. K. Lewis and Co., Ltd. 1928. (Cr. 4to, pp. 83, 175 figures on 52 plates. 7s. 6d. net.)

THE SPECIES PROBLEM.

THE first part of *The Species Problem*,[7] by Mr. G. C. ROBSON, is devoted to an exhaustive survey of those morphological or physiological attributes which differentiate species, and a discussion of the validity of such criteria as a basis for systematic grouping. This section is mainly of academic interest, but Part II includes problems which have a more distinct bearing upon medicine. Among these may be mentioned the action of a selective death rate, the modification of germ-cells by agencies such as x rays, radium, and alcohol, a review of the evidence for and against the inheritance of atrophic structure and other acquired characters, and the extent of reaction to environment. The author also discusses the relationships between structures believed to be mutually dependent during development, as, for example, primary sexual organs and secondary sex characters. The theory of "isolation" is of some interest in connexion with questions of sterility and incompatibility in mating. The term implies "any mode of separation that prevents the production of fertile offspring from the union of two distinct species"; its application is obviously limited when the human race alone is concerned. A very extensive bibliography is appended, and the text contains a wealth of data, which should make this volume a valuable source of reference.

NOTES ON BOOKS.

DR. O'DONOVAN has done good service in *Dermatological Neuroses*[8] by emphasizing the neurological factor in many dermatoses—a factor which dermatologists who are inclined to pay attention only to what they can see have usually neglected. Apart from the detection of artefacts, in which the specialty has always been skilled, there are many cutaneous conditions in which the mentality of the patient is of the greatest importance. There are others which often seem to be induced by sudden mental shock or a period of intense nervous strain. No clinician can doubt the effect of nervous strain on the physical health of the individual, but on what organ and in what way it will act no man can prophesy. It is prone to select the *locus minoris resistentiae*, and in some individuals, more perhaps than might be imagined, this is the skin. Dermatoses so produced are almost always of a pruritic character; and, vice versa, pruritus is often amenable to suggestion of one kind or another. All these matters will be found adequately dealt with in this little volume, which should be read by every practising dermatologist and physician.

The transactions of the first National Conference of the Anti-cancer Campaign in Italy[9] include an article by Professor NICEFORO, professor of statistics in the University of Naples. The article contains some timely observations on the errors of statistical interpretation. He has noticed that such errors are frequent in the interpretation of statistics of mortality from malignant disease, and that specialists in pathology and hygiene are particularly prone to them, whether they are dealing with official figures or with data collected by themselves. It is not infrequent, for example, in comparing groups in different localities or at different periods, to disregard the difference in age composition of the groups; hence there is no real basis for comparison. The author suggests a method of standardization of the rate of mortality for malignant tumours whereby this error may be eliminated. Again, a not uncommon error arises through comparing year by year the percentage of deaths from malignant disease among deaths from all causes; it is obvious that, even if the actual number of deaths from malignant disease remained the same in two consecutive years, the percentage of such deaths would vary inversely as the number of deaths from other causes varied. Many other pitfalls are discussed by the author, and his article, which is published separately, might be usefully consulted by those embarking on statistical inquiries.

The Principles of Chemistry and their Application,[10] by BARTLETT and INK, is a textbook for nurses. While it seems to be intended for adult nurses who have received no training in the elementary principles of chemistry at school, it nevertheless aims at explaining matters—such as osmotic pressure and the constitution of different sugars—which cannot be understood without an adequate foundation of learning. Although portions of the text may be read by the novice with interest and enlightenment, much of the meaning must remain obscure to all but those who have been previously instructed, and we think that the time and effort needed to digest the contents of the book would be better spent in attending an ordinary course of tuition in chemistry.

After her admirable life of her husband (reviewed in our issue of September 22nd, 1928, p. 530), Mrs. BATESON has edited *Letters from the Steppe, Written in the Years 1886–1887, by William Bateson*.[11] This expedition to the Steppes of West Central Asia was planned by Bateson in order to see the processes of evolution in action, and with two distinct objects in view: first, to find marine survivals of the Asiatic Mediterranean; but this after none months' almost exclusive search did not give any positive result; and secondly, to collect the fauna of a large number of isolated waters so as to ascertain if and how much the environmental differences produce changes in the fauna; in this, as he wrote to Sir Sidney Harmer, he was successful. The letters are interestingly written, and are illustrated by a number of extempore sketches.

[7] *The Species Problem*. By G. C. Robson, M.A. Biological Monographs and Manuals. Edinburgh and London: Oliver and Boyd. 1928. (Demy 8vo, pp. vii + 285. 15s. net.)

[8] *Dermatological Neuroses*. By W. J. O'Donovan, O.B.E., M.D., M.R.C.P. Psyche Miniatures, Medical Series, No. 5. London: Kegan Paul, Trench, Trubner and Co., Ltd. (Pott 8vo, pp. 99. 2s. 6d. net.)

[9] *La Statistica Sanitaria Demografica del Cancro in Italia*. Professore Alfredo Niceforo. Milano: Stucchi Ceretti (Soc. An.). 1928. (6¾ × 8¾, pp. 123.)

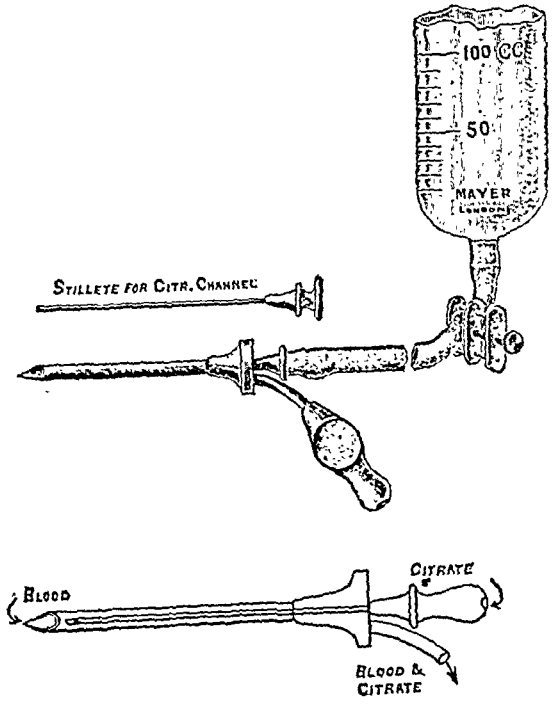
[10] *The Principles of Chemistry and their Application*. By Eleanor Hamilton Bartlett, A.B., A.M., and Katharine Ink, R.N., B.S. New York: The Macmillan Company; London: Macmillan and Co., Ltd. (Demy 8vo, pp. 418. 12s. 6d. net.)

[11] *Letters from the Steppe, Written in the Years 1886–1887, by William Bateson*. Edited, with an introduction, by Beatrice Bateson. London: Methuen and Co., Ltd. 1928. (Cr. 8vo, pp. xvi + 222; 1 portrait, 2 maps, and sketches in the text. 7s. 6d. net.)

PREPARATIONS AND APPLIANCES.

A NON-CLOTTING TRANSFUSION NEEDLE.

MR. O. POPPER, F.R.C.S. (London, W.1), writes: Some years ago I experienced a little difficulty in obtaining sufficient blood from a donor, owing to repeated clotting in the needle. To overcome this on future occasions I devised the needle illustrated, and as it has been successful in other hands it may be of interest. The drawings are almost self-explanatory. There is an extra channel, of very fine bore, within the lumen of the needle, which latter is of conventional shape. Through this channel a solution of sodium citrate (2 grams in 100 c.cm.) is sent. It escapes within one-eighth of an inch of the opening of the needle, thus playing within the lumen, and is washed down the needle by the donor's blood entering at the tip. A graduated Jena flask contains the citrate solution, and is connected by rubber tubing (on which is an adjustable clamp) to the previously mentioned citrate



channel. The rate of flow of citrate from the tip of the needle can be regulated in two ways: either by raising or lowering the flask, or by adjusting the clamp and fixing the flask at a constant height of about 12 inches above the vein. The latter course dispenses with the need of an assistant. With the citrate flowing freely from the tip of the needle the latter is introduced into the vein. Blood and citrate solution escape from the barrel of the needle through the separate channel illustrated, which leads to an appropriate receptacle containing a known quantity of citrate solution. The rate of flow of citrate can be reduced once free flow has been established. The actual amount of blood withdrawn is readily estimated by adding the citrate withdrawn from the flask to that originally in the receptacle and subtracting this from the total amount of fluid in the receptacle.

The instrument is made by Messrs. Mayer and Phelps, to whom I would like to acknowledge my indebtedness.

MILK CONSUMPTION AND THE GROWTH OF SCHOOL CHILDREN.

SECOND PRELIMINARY REPORT ON TESTS TO THE SCOTTISH BOARD OF HEALTH

BY

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AND

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THE preliminary report, by Dr. J. B. Orr, on the result of the 1926–27 investigation into the feeding of a large number of school children was published in the *British Medical Journal*, January 28th, 1928 (p. 140).

The conclusions which might be drawn from that work appeared to the committee in charge of the test to be so interesting and important that it was decided to continue the investigation over a further period of equal length. That has been done, and the present report* deals with this period of the repeated test—namely, November, 1927, to June, 1928.

The seven centres at which the investigation was carried out were Peterhead, Aberdeen, Dundee, Edinburgh, Glasgow, Greenock, and Belfast. The number of children involved was 1,425. At each place four groups of children were selected, and each group treated differently. One group received whole milk, another separated milk, a third a biscuit ration of the caloric value of the separated milk, while a fourth acted as controls, receiving nothing.

The children of 13 to 14 years received 1 pint of milk daily.
The children of 9 to 10 years received 1 pint of milk daily.
The children of 6 to 7 years received three-quarters of a pint of milk daily.

All the milk was given at the schools under supervision. The whole milk was pasteurized, except at Peterhead and Aberdeen, where it was "certified." The separated milk was machine-skimmed.

Samples of all the milk given were taken monthly and sent to the Rowett Research Institute, where they were analysed. These analyses show that the average fat percentage of the whole milk was 3.65, and that of the separated milk 0.33.

Measurements.

The measurements were all done by one of us (M. L. C.), and were done four times everywhere, except at Belfast, where they were done three times. As in the 1927 test the children were all weighed and measured in indoor garments and without shoes. This year the heights were recorded to the nearest eighth of an inch and the weights to the nearest quarter of a pound. To obtain a fairly accurate *average* increase in weight a careful record was made at each weighing of every article of clothing worn by the child, and from these records the average weight of clothing for boy or girl was calculated. The difference between the initial (winter) and final (summer) weight of clothing was then added to the final gross weight. In Belfast, in three schools, the children were weighed in one garment only, and the difference between winter and summer weights was, therefore, the exact increase made by the child.

To obviate fluctuations as far as possible the weights and heights were taken at the same hour of the day on each occasion, this being in the case of children receiving milk before the milk was drunk. As far as possible the schools were visited in the same rotation in order that the period between initial and final weights and heights might be identical. On each visit an accurate record was obtained for each child of all absences and illnesses. Thus the exact amount of supplementary feeding was known. Any child who had missed 25 per cent. of feeds, or showed other abnormality, was excluded when calculating the results. The number so excluded was 268.

Special Conditions of the Investigation.

In considering the results of this investigation the following points should be borne in mind. The number of children involved was very large, no fewer than 1,157 being available for the measurements from which the tables are compiled. These children were divided among seven centres of population, in which the test was conducted simultaneously. Their ages ranged from 5 to 15 years, including the beginning, the middle, and the end of their ordinary school life. All the children in the six Scottish centres were living in the ordinary conditions of Scottish working-class homes, and received the ordinary diet of such homes. The milk and biscuit given to them at the schools were therefore in the nature of a *supplementary ration to their home food*. The results, consequently, must be regarded as the effect of the addition of definite quantities of milk to the average home diet of children of school age living in ordinary working-class conditions in industrial centres. It would appear to be justifiable to infer that the same results, whatever they may be, would apply to the whole school population living their ordinary life. Those conditions, from the standpoint of a nutritional investigation, are, of course, very complicated, but this test was so devised as to bring out any *significant* differences which might arise within the limits laid down.

The following three tables show the total results of the investigation.

TABLE I.—*1928—Increases: Milk versus Non-milk Groups and Percentages.*

	No. of Children.	Height Increase.	Weight Increase.
13-year Groups:			
Milk	137	1.4699 in.	5.6337 lb.
Non-milk	133	1.1908 ,,	4.2318 ,,
		=+0.2791 in.	=+1.4019 lb.
		or 23.44%	or 33.09%
9-year Groups:			
Milk	188	1.3943 in.	3.4702 lb.
Non-milk	212	1.1568 ,,	2.0695 ,,
		=+0.2375 in.	=+1.3707 lb.
		or 25.93%	or 66.88%
6-year Groups:			
Milk	242	1.5021 in.	2.5331 lb.
Non-milk	245	1.2498 ,,	1.8531 ,,
		=+0.2523 in.	=+0.6800 lb.
		or 21.16%	or 36.70%
All Age Groups:			
Milk	567	1.4585 in.	3.5775 lb.
Non-milk	590	1.1810 ,,	2.4610 ,,
		=+0.2775 in.	=+1.1165 lb.
		or 23.50%	or 45.37%
1927 increases (Scotland—all ages):			
Milk	551	1.470 in.	3.617 lb.
Non-milk	731	1.212 ,,	2.974 ,,
		=+0.258 in.	=+0.643 lb.
		or 21.29%	or 21.62%

From this table it is seen that, taking all the ages combined of the 1,157 children and dividing them into milk-fed groups and non-milk-fed groups, there is an average increase in height of 23.5 per cent., and in weight of 45.37 per cent., in favour of the milk-fed groups over the non-milk-fed groups.

It is also seen that these increases are greater in this second and repeated test than they were in the first (1927) test.

* Owing to the death of Dr. L. Cruickshank and to the absence of Dr. J. B. Orr abroad, it was decided to place the organization of the second investigation in the hands of Dr. Gerald Leighton, Medical Officer of Foods, Scottish Board of Health. This also enabled the Board's wide knowledge of the nutrition of school children and the implications of such in connexion with public health to be more readily utilized.

TABLE II.—*1928—Increases in Age Groups.*

	No. of Children.	Height Increase.	Weight Increase.
13-year Groups:			
Whole milk	68	1.4540 in.	5.5652 lb.
Separated milk	69	1.4855 ,,	5.7101 ,,
Biscuits	67	1.1194 ,,	4.4179 ,,
Controls	65	1.2633 ,,	4.0530 ,,
	270		
9-year Groups:			
Whole milk	105	1.4238 in.	3.5333 lb.
Separated milk	83	1.3569 ,,	3.2771 ,,
Biscuits	101	1.1077 ,,	2.0396 ,,
Controls	111	1.1059 ,,	2.0586 ,,
	400		
6-year Groups:			
Whole milk	121	1.5589 in.	2.7107 lb.
Separated milk	121	1.4452 ,,	2.3554 ,,
Biscuits	115	1.2424 ,,	2.1609 ,,
Controls	130	1.2375 ,,	1.5808 ,,
	487		
Total number ...	1157		

This table shows the increase in height and weight in all the age groups, with the number of children in each group. In every case the milk-fed children are ahead of the "biscuit" and "control" groups. The greatest increase in height is in the 6-year-old milk-fed group. The greatest increase in weight is in the 13-year-old separated milk group. The difference between the "biscuit" group and the "controls" is but slight, except that the 13-year-old controls did better in height but not so well in weight. In the 6-year-old group the "biscuit" group is better in weight than the "controls."

Those familiar with the manner in which statistics of this kind are worked out will be aware that, in order that the difference between two groups and figures may be regarded as "significant," that difference must be at least three times as great as the "probable error." The results in this table are calculated on that basis.

In Table III there is set forth the mean increase in pounds and inches (that is, for weight and height) in each group at each age, together with the probable error involved and the significance or otherwise of the differences.

Other Observations.

In addition to the foregoing statistical observations, two other lines were adopted which cannot be stated in figures.

Dr. C. A. Douglas examined all the children clinically when they were measured. Her report states that "in practically every case it was noted that the children receiving milk showed, even where there was obviously poor maternal care, that sleekness peculiar to a well-nourished animal. Their hair had a glossy and bright appearance. Their nails were smooth, resilient, and looked as if polished. General alertness was common to all the children fed on milk. No difference could be detected with regard to these points between the children receiving milk irrespective of the kind of milk. It was gathered from teachers and janitors that the children receiving milk were much more alert and very much more boisterous and difficult to control than the others. This latter fact was only too evident when they were waiting in small groups to be weighed."

TABLE III.—*1928 Nutrition Test.*

A.—13 Years: Weights (Increases in Pounds).

			Increase I.	Increase II.	Difference.	Probable Error.	Result.	Remarks.
Whole milk	(68)	v. Separated milk (69) ...	5.5662	5.7101	−0.1439	0.2979	−0.483	Insignificant.
		v. Biscuits (67) ...	,,	4.4179	+1.1483	0.3080	+3.728	Significantly better.
		v. Controls (65) ...	,,	4.0530	+1.5132	0.2816	+5.374	,, ,,
Separated milk	(69)	v. Biscuits (67) ...	5.7101	4.4179	+1.2922	0.3100	+3.801	,, ,,
		v. Controls (66) ...	,,	4.0530	+1.6571	0.3163	+5.239	,, ,,
Biscuits	(67)	v. Controls (66) ...	4.4179	,,	+0.3649	0.3258	+1.120	Insignificant.
B.—Heights (Increases in Inches).								
Whole milk	(68)	v. Separated milk (69) ...	1.4540	1.4855	−0.0315	0.0424	−0.713	Insignificant.
		v. Biscuits (67) ...	,,	1.1194	+0.3346	0.0431	+7.763	Significantly better.
		v. Controls (65) ...	,,	1.2633	+0.1907	0.0441	+4.295	,, ,,
Separated milk	(69)	v. Biscuits (67)	1.4855	1.1194	+0.3661	0.0463	+8.041	,, ,,
		v. Controls (66) ...	,,	1.2633	+0.2222	0.0466	+4.768	,, ,,
Biscuits	(67)	v. Controls (66) ...	1.1194	,,	−0.1439	0.0472	−3.049	Significantly worse.
C.—9 Years: Weights (Increases in Pounds).								
Whole milk	(105)	v. Separated milk (83) ...	3.5333	3.2771	+0.2562	0.1468	+1.745	Insignificant.
		v. Biscuits (101) ...	,,	2.0396	+1.4937	0.1314	+11.114	Significantly better.
		v. Controls (111) ...	,,	2.0586	+1.4747	0.1360	+1.843	,, ,,
Separated milk	(83)	v. Biscuits (101) ...	3.2771	2.0396	+1.2375	0.1403	+8.820	,, ,,
		v. Controls (111) ...	,,	2.0586	+1.2185	0.1419	+8.587	,, ,,
Biscuits	(101)	v. Controls (111)	2.0396	,,	−0.0190	0.1290	−0.147	Insignificant.
D.—Heights (Increases in Inches).								
Whole milk	(105)	v. Separated milk (83) ...	1.4238	1.3569	+0.0669	0.0261	+2.563	Not quite significant.
		v. Biscuits (101) ...	,,	1.1077	+0.3161	0.0281	+11.249	Significantly better.
		v. Controls (111) ...	,,	1.1059	+0.3179	0.0263	+12.087	,, ,,
Separated milk	(83)	v. Biscuits (101) ...	1.3569	1.1077	+0.2492	0.0237	+10.515	,, ,,
		v. Controls (111) ...	,,	1.1059	+0.2510	0.0215	+11.674	,, ,,
Biscuits	(101)	v. Controls (111) ...	1.1077	,,	+0.0018	0.0239	+0.075	Insignificant.
E.—6 Years: Weights (Increases in Pounds).								
Whole milk	(121)	v. Separated milk (121) ..	2.7107	2.3554	+0.3553	0.1112	+3.195	Significantly better.
		v. Biscuits (115) ...	,,	2.1609	+0.5498	0.1020	+5.390	,, ,,
		v. Controls (130) ...	,,	1.5808	+1.1299	0.031	+10.939	,, ,,
Separated milk	(121)	v. Biscuits (115) ...	2.3554	2.1609	+0.1941	0.1055	+1.844	Insignificant.
		v. Controls (130) ...	,,	1.5808	+0.7746	0.1.66	+7.565	Significantly better.
Biscuits	(1 5)	v Controls (130) ...	2.1609	,,	+0.5801	0.0969	+5 987	,, ,,
F. - Heights (Increases in 'nches).								
Whole milk	(121)	v. Separated milk (121) ...	1.5589	1.4452	+0.1137	0.0250	+4 5'8	Significantly better.
		v. B scuits (115) ...	,,	1.2424	+0.3165	0.0243	+13.025	,, ,,
		v. Controls (130)	,,	1.2375	+0.3214	0 0250	+12.856	,, ,,
Separated milk	(121)	v. Biscuits (11) ...	1.4452	1.2424	+0.2028	0.0221	+9. 76	,, ,,
		v. Controls (130) ...	,,	1.2375	+0 2077	0.02 8	+9.110	,, ,,
Biscuits	(115)	v. Controls (130) ...	1.2424	,,	+0.0019	0.0221	+0.222	Insignificant.

Dr. G. W. Simpson made a different observation. He asked the headmasters to parade the children in their respective groups, he himself being unaware which group was milk-fed or otherwise. From this general survey he placed the groups in order of apparent standard of nutrition. Of five examinations thus made he found that first places of nutritional standard were accorded to three whole milk and two separated milk groups. Second places were accorded to two whole milk and three separated milk groups. Third places were accorded to all five biscuit groups, and fourth places to all five control groups. "The difference in nutrition between groups receiving milk and not receiving milk was plainly evident. No great difference was noticed between the whole milk and separated milk groups." A sixth examination did not correspond with the other five, but in this case the best nourished children had been selected as controls, while those apparently needing the milk most were put into the milk groups. The desired conditions for observation were thus not fulfilled.

A Test Reversed.

One very interesting result came out in this repeated investigation. In order to ascertain what would occur two of the previous feeding groups were reversed. A group which in the first investigation received separated milk now received biscuit. Another group which in the first investigation were "controls" now received whole milk. The general result in both cases was that they changed places, the former milk group now receiving biscuit fell to biscuit standard, while the former "control" group now receiving milk rose to the milk standard. Table IV shows the detailed results of this reversed test.

TABLE IV.—*Groups Reversed.*

	Average Increase in Height (inches).		Average Increase in Weight (lb.).	
	1927.	1928.	1927.	1928.
GLASGOW.				
5-year-old children:				
Separated milk 1927; biscuits, 1928	1.530	1.551	2.407	2.212
Biscuits, 1927; separated milk, 1928	1.101	1.454	2.234	2.237
8-year-old children:				
Separated milk, 1927; biscuits, 1928	1.297	1.215	3.471	2.065
Biscuits, 1927; separated milk, 1928	1.039	1.335	2.265	3.207
GREENOCK.				
5-year-old children:				
Whole milk 1927; controls, 1928	1.543	1.163	1.984	1.875
Controls, 1927; whole milk, 1928	1.473	1.473	1.695	2.639

The following table shows similar details for the other areas (groups not reversed).

TABLE IVA.—*Groups Continued.*

	Average Increase in Height (inches).		Average Increase in Weight (lb.).	
	1927.	1928.	1927.	1928.
PETERHEAD.				
5-year-old children:				
Whole milk	1.550	1.381	2.741	2.569
Separated milk	1.568	1.356	2.933	2.575
Biscuits	1.392	1.270	1.973	2.188
Controls	1.425	1.311	1.773	2.043
DUNDEE.				
5-year-old children:				
Whole milk	1.105	1.197	2.556	3.205
Separated milk	1.2 9	1.347	2.659	3.070
Biscuits	0.931	1.051	2.434	2.738
Controls	0. 72	1.156	2.433	1.911
EDINBURGH.				
5-year-old children:				
Whole milk	1.483	1.429	3.330	4.057
Separated milk	1.457	1.385	3.238	3.531
Biscuits	1.285	1.031	2.572	1.653
Controls	1.221	1.100	2.132	2.438
GREENOCK.				
5-year-old children:				
Separated milk	1.525	1.443	1.979	2.243
Biscuits	1.455	1.131	1.200	2.050

Conclusions.

As the result of this repeated investigation (1927-28), it may be said at once that the tentative conclusions drawn by Dr. J. B. Orr from the first investigation were more than justified.

The great value of an additional milk ration to that already taken at home is clearly demonstrated for all ages of school children.

In the repeated test the average increase in height in the milk-fed groups in all ages combined is actually *1.21 per cent. more than in the first test.* The average increase in weight in the milk-fed groups in all ages combined is *no less than 8.75 per cent. more than in the first test.* Not only have the same milk-fed children benefited again, but they have done so to a greater extent than before. Their initial improvement has *continued over the second year.*

Once more the value of separated milk for children of school age is shown. In most groups the difference in height and weight between the whole milk and separated milk groups is not "significant," but in the six-year-old group whole milk is "significantly" better than separated for both weight and height. In every case the whole milk and separated milk groups are better than the "biscuit" or the "controls." In this repeated test the difference between the "biscuit" and the "controls" is usually "insignificant"; the effect of the extra biscuit appears almost negligible. The improvement of the milk-fed groups in general health and appearance is clearly brought out in the reports of Dr. C. A. Douglas and Dr. G. W. Simpson. Many of the teachers have recorded similar opinions.

When these results are considered, along with those published by Dr. Corry Mann in this country and those of observers in other countries, the only conclusion possible is that they have a wide public health significance, especially with the nutrition of school children.

"In 1903, when the Royal Commission on Physical Training (Scotland) issued their report, two things became clear: first, that medical examination and superintendence were essential conditions of any system of physical education; second, that in the end *the fundamental problem is one of nutrition.* . . . When every preventable ailment is prevented, and every serious disease treated to its finish, the new battalions of children coming forward have to be superintended from the nutritional standpoint." (Sir Leslie Mackenzie.) The two reports of this investigation fully substantiate these views.

Committee of Investigation.

The investigation was conducted under the direction of a committee appointed by the Scottish Board of Health with Sir Leslie Mackenzie as chairman. The members consisted of the school medical officers for the cities and towns where the work was carried out.

We desire to thank Dr. J. F. Tocher, Aberdeen, and Mr. J. S. Thomson, Rowett Research Institute, for advice and help on the statistical side of this investigation.

The results of the investigation have also been submitted from time to time to Professor A. P. Cathcart, chairman of the Nutrition Committee of the Medical Research Council.

The cost of the investigation was defrayed by a grant made by the Empire Marketing Board to the Rowett Research Institute, Aberdeen.

THE seventh issue of the *Medical and Scientific Archives of the Adelaide Hospital* contains records of various cases of general interest, and a tabulation of certain lesions found during the course of 1,000 necropsies performed between 1920 and 1925. In this survey the conditions dealt with include diseases of the vascular system, the digestive system, the female generative tract, and the ductless glands: in the *Archives* of the previous year data were given for all neoplasms. The hope is expressed that the material thus tabulated will prove of value to those engaged in research work who require references to the occurrence of peculiar lesions. Any particular case can be followed up, fuller details being obtainable on application to the registrars at the Adelaide Hospital. It is suggested that unexpected associations between various lesions may be brought out in this way, and that if similar statistics were to be made at large hospitals throughout the world, a very important mass of information would be made available.

British Medical Journal.

SATURDAY, JANUARY 5TH, 1929.

THE TEACHING OF FORENSIC MEDICINE.

IT will hardly be denied that in Great Britain, and more especially in England, we are far behind the times in the teaching and practice of forensic medicine. England and Scotland possess between them fourteen universities with faculties of medicine, besides many fully developed institutions for medical education; yet only two teachers devote themselves entirely to forensic medicine—the regius professors of this subject at Edinburgh and Glasgow. Elsewhere, even in London, forensic medicine is taught by men whose livelihood and interests are essentially in other directions, or who have retired from more active practice. In some medical schools the remuneration is so poor that the lecturer may be almost out of pocket at the end of his teaching sessions. Small wonder that in such circumstances the community has no trained body of men to call upon.

There have been many illustrations in recent years of the need for expert investigation. The general practitioner, who is frequently called upon to make *post-mortem* and other examinations in criminal cases, does not profess to know much of the subject, and is therefore disinclined to undertake this duty. The same remark applies in general to the ordinary pathologist without any special forensic training. It is true that in most cases he can ascertain the cause of death, but he is often unfamiliar both with the requirements of the authorities and with other medico-legal observations which may play a vital part in the conduct of the case. As long as those in authority in this country are content to carry on with "untrained experts" little improvement in the teaching or the standard of knowledge is to be expected. The first need is for public authorities to realize that medico-legal work of this kind requires special training, and that expert investigations are necessary, not only for the detection of crime, but often also for the protection of accused persons. With the call for experts will come an improvement in the standard of teaching. In order to give adequate instruction the teacher should be engaged in the actual practice of his subject, and have at his disposal ample material for demonstration and research. From the special nature of the subject it follows that the practical material which is needed for a teaching institute and from which expert research receives its stimulus can only come to the institute from the public authorities.

The ninth series of the valuable *Methods and Problems of Medical Education*,[1] which the Division of Medical Education of the Rockefeller Foundation started in 1924, is entirely devoted to institutes for forensic medicine. Here will be found information about the teaching of this subject in seventeen countries—namely, Austria, Canada, Cuba, Czechoslovakia, Denmark, Egypt, France, Germany, Hungary, Italy, Poland, Portugal, Rumania, Scotland, Sweden, Switzerland, and the United States of America. The articles, which are generously illustrated with plans and photographs of the laboratories and *post-mortem* rooms, appear in English, German, or French. They contain much interesting historical information, and at the same time furnish evidence of the rapid strides that this subject is making on the continent of Europe, as shown by the recent erection of medico-legal institutes. Professor Knud Sand of the University of Copenhagen traces the development of medico-legal practice from classical times, and pays a tribute to the German and French pioneers. Professor John Glaister, whose chair in Glasgow dates from 1839, describes some of the recent research work that has been carried out in his department. Forensic medicine was first taught to medical students in Great Britain in 1791 by Andrew Duncan, sen., professor of medicine at Edinburgh, and it owes much to subsequent teachers in that university, especially Sir Robert Christison, Sir Henry Littlejohn, and his son and successor in the chair, the late Harvey Littlejohn. In Poland the University of Cracow has had a chair of legal medicine since 1804, and the institute, started in 1834, has occupied new quarters since 1895. In Rumania the practice of legal medicine is said to have reached the highest degree of perfection, and the claim is made by Professor Mina Minovici that it was the first country to establish an institute, thirty-six years ago. But according to Professor Cesare Biondi the institute in Siena has been in existence for over a century, and Professor Fritz Reuter says that Austria was the first to establish an institute of legal medicine—that founded in Vienna in 1804. It seems, therefore, that the word "institute" is somewhat differently interpreted in different countries. In Turin University the Institute of Legal Medicine and Criminal Anthropology has been on its present site for just over thirty years, having previously occupied small quarters, containing Lombroso's splendid criminal collection, in a building close to the university.

The departments or institutes of legal medicine reviewed in the Rockefeller report mostly fall into two groups: those which are part of a State medical service, as in Denmark, Egypt, Rumania, and other countries, and those in which the school relies on the personality and experience of its teacher and the goodwill of the local authorities to bring cases and material to its institute. In Paris the authorities have realized the advantage and economy of a properly conducted service. The State, the city of Paris, and the university have combined to share the effort. The university supplies the expert staff, the lay staff and the establishment are under the police, and the State contributes financially. The vast resources and material of a great city are thus available for teaching and research. Other large European cities also have central institutes where, in addition to much research, a thousand or more medico-legal necropsies are performed annually. In the medical schools of this country, on the other hand, while material is available here and there through the goodwill of local authorities, the great bulk of students pass through their curriculum without any practical instruction, and post-graduate courses in forensic medicine do not exist.

The neglect of this branch of medicine in our universities and schools is much to be deplored on every ground. We have already indicated our view that progress must depend on two things—the supply of adequate material for teaching, and recognition by the lay authorities that special training and study is needed before a man is competent to undertake responsible investigations affecting the safety of the individual and of the public. From these would follow in due course the organization and supplementing of the medico-legal resources of the country. The teaching

[1] *Methods and Problems of Medical Education.* (Ninth series.) New York: The Rockefeller Foundation. 1928. (Imp. 8vo, pp. 385; illustrated.)

bodies would then be in a position to avail themselves of the assistance and co-operation of the local official expert both in the providing of material and in the practical instruction of their students. In the United States also there appears to be room for much improvement in the medico-legal service, and the need for fully equipped institutes has been plainly stated by our contemporary the *Journal of the American Medical Association*.[1] "Probably the most significant advance in this field so far in the United States is the change from the cumbersome and archaic system of coroner to the much more effective system of medical examiner, which has been made in Massachusetts, New York, and New Jersey, and which should be introduced as rapidly as possible in other States."

GROUP RESEARCH IN GENERAL PRACTICE.

"NOBODY would imagine that the use of chemistry in botany tends to make of botany a science, nor can the chemist claim to belong to the scientific side of botany. Yet laboratory subjects such as chemistry, physiology, and bacteriology are sometimes spoken of as belonging to the 'scientific' side of medicine, the implication being that the clinical side is not 'scientific.' It cannot be too strongly insisted upon that the assistance rendered by these subjects is of an elementary kind, and, though necessary, they cannot provide that knowledge which is required for the solution of medical problems. Medical science demands the carrying of investigation far beyond the reach of the laboratory worker." Sir James Mackenzie, in an article that appeared in this *Journal* on June 28th, 1924 (the last we ever published from his pen), thus differentiated medicine as a subject with aims and methods peculiar to itself, and made a plea for the scientific study of clinical problems. Much earlier than this—in October, 1919, when he founded the Institute for Clinical Research at St. Andrews—the idea of the general practitioner as an individual with his own special field of scientific work, which nobody else could quite share with him, was completely formulated in his mind. Only the general practitioner, he believed, had the opportunity of studying disease before the occurrence of pathological changes in the tissues. Whereas the specialist necessarily saw fully formed disease, the general practitioner encountered minor maladies, and illnesses revealing their presence only in the patient's symptoms. It was in the study of disease at the stage when disturbed function rather than structural change dominates the picture, in the investigation of the relation between disease and environment, in the prolonged observation of symptoms and their bearing on the future health of the patient, that Mackenzie saw the unique opportunities of the general practitioner. It was for research into these problems that the Institute was founded. How plentiful is the material demanding such investigation has been made evident by the steady stream of papers that has come from St. Andrews year by year since 1919. In the past twelve months, for example, the staff of the Institute, in co-operation with the general practitioners in the St. Andrews area, have studied "The law of disturbed reflexes" as applied to the symptoms of disease and to the reactions which occur in the skin; they have investigated the variations in temperature and pulse which are consistent with health, and the modifications which are of value in the detection of early signs of disease; they have made records of the state of the tonsils and its relation to disease. Further studies have concerned the principles of James Mackenzie as applied to ophthalmology (of which one of the fruits was a paper, "The pathogenesis of acute primary glaucoma," published in our issue of May 12th last, p. 789); the diagnosis, mode of onset, prognosis, and treatment of cardiac infection; the cytology of the blood in health and in common ill-defined diseases; and the etiology of the common cold and its relation to influenza.

Further evidence of the vitality of the Institute is afforded in its recently published ninth annual report. The organization for obtaining full and trustworthy health records of children at St. Andrews is now complete. Ante-natal histories are provided by general practitioners and filed at the Institute; notes are kept at the welfare centre of the child's health from birth to the end of the second year of life; examinations of the same children between the ages of 2 and 5 are made at the Institute at regular intervals; and observations are continued during later years. In this way over 80 per cent. of all the children born in St. Andrews are being kept under supervision. Effective correlation of the public health activities of the local authority with the work of general practitioners continues under the administration of the medical officer of health. We note also that an ante-natal clinic was established in the Institute during the year under review. The volume of routine investigations in the laboratories does not diminish, and experimental work is also in progress. As foreshadowed in these columns a year ago, the series of lectures on gastro-intestinal diseases delivered to medical practitioners at the Institute during the winter of 1927 has now been published in book form, and a review appeared on September 22nd, 1928 (p. 531). A bibliography of the medical works and articles on medical subjects written by James Mackenzie has been prepared under the direction of the council of the Institute and issued as a pamphlet.[1] It is especially pleasing to us to be reminded thus of the long succession of papers by Mackenzie which were published in the *British Medical Journal* from the year 1901 onwards, during the editorship of his staunch supporter Dawson Williams.

Most of the Institute's work, it will be noted, has involved the correlation of the efforts of a large number of practitioners. It is in some ways a paradox that James Mackenzie, himself most individual of workers, should have been so passionate an exponent of the idea of group research; that he, of all men, should have founded an Institute which has done so much to vindicate the value of team work as applied to scientific discovery. We cannot but feel that the recent inquiry conducted by the British Medical Association into the treatment of varicose ulceration, and reported upon by Dr. Arthur P. Luff in our issue of December 22nd at page 1144, would have pleased Mackenzie both in its conception and its execution. It was an investigation that provided an opportunity to the lonely practitioner, lacking even the facilities of a cottage hospital, let alone the stimulus and inspiration of an organized institute, to contribute his share to the general pool of knowledge. The Council of the James Mackenzie Institute has reason for satisfaction in the thought that the incentive to study provided by the researches and initiative of its founder continues to stimulate a new generation to expand and intensify scientific research; and that the institution he planned carries on well its other purpose of enabling general practitioners to make themselves familiar with methods of clinical research applicable in private practice.

[1] *Journal of the American Medical Association*, vol. xci, No. 8.

[1] W. C. Henderson and Son, Ltd., University Press, St. Andrews.

PARLIAMENT AND MEDICAL MATTERS.

ALMOST the last thing which the House of Commons did before rising for the Christmas recess was to pass the chief medical provisions of the Local Government Bill through committee without a word of debate. The time-table of the bill had, indeed, been so arranged by the Government that these clauses were sure to be closured and put to the vote without discussion, and the Opposition, in their criticism of this time-table, did not select this point for protest. This is typical of the attitude of the House of Commons towards medical questions. While not actively hostile, it feels little interest in purely medical matters, and shows no desire to discuss them. When the Ministry of Health Estimates have come under discussion during the year the Opposition chose to debate them in order to talk about Poor Law administration and the relief of the unemployed and their families. Only late at night were medical members able to interpose speeches about public health, and these were treated as unwarrantable intrusions. The subsequent speakers returned abruptly to non-medical topics, and the final reply from the Government was concerned only with the latter. Somewhat similarly, the parliamentary consideration earlier in the year of the National Health Insurance Bill was concentrated most upon the proposals for preventing the unemployed from lapsing from benefit. Labour members proposed to add extensively to the additional medical benefits which might be paid by approved societies having accrued surpluses. These proposals, in several cases, were admittedly made as a counsel of perfection and in the knowledge that within the financial limits of the national health insurance scheme no society could provide the suggested benefits. On the other hand, certain Labour members denounced the theory that additional benefits should be expended on medical and cognate services, and enunciated the doctrine that the first need and right of an insured person, when a society had a surplus, was to increases of cash benefits. On the Labour benches the belief still lingers that the national health insurance scheme should be in part a sharing-out benefit club for providing occasional financial windfalls to wage-earners. Though medical and health subjects have been little debated in either House during 1928 —the only adequate debates, indeed, being in the House of Lords upon the Preservation of Infant Life Bill—no anti-medical bias has been shown. Members simply care little for health questions, and, with a general election approaching, do not see how any votes can be won on them. A few questions about "artificial sunlight" treatment in schools and under public authorities are almost the only medical inquiries which laymen on the back benches have put to the Government. The former flood of questions about the medical treatment and classification of ex-service men has almost ceased now that the Ministry of Pensions has applied the seven years limit to claims. Attention has been directed to the closing of hospitals by the Ministry, and Dr. Fremantle has suggested that special buildings and expert staffs might be taken over by civilian authorities. Fewer questions have been put concerning small-pox and vaccination since the report of the Royal Commission. The year 1928 saw one parliamentary session ended at the beginning of August and another well advanced at the end of December as a result of a new arrangement of the annual business of Parliament. In the first session the chief measure of medical importance was the National Health Insurance Act, which received the Royal Assent on July 2nd and came into force this week. Financial and tactical considerations prevented Mr. Chamberlain from incorporating in it all the proposals of the Royal Commission on National Health Insurance, but its provisions are consistent with the recommendations of that body. During the discussion of the measure in standing committee medical members of Parliament made effective contributions to the debate. The Registration (Births, Deaths, and Marriages) Bill, introduced by a private member with the concurrence of the Ministry of Health, passed the House of Commons but did not secure the Royal Assent. Its substance has now been incorporated in the Local Government Bill. Less direct medical interest attaches to the Shops (Hours of Closing) Act, the Slaughter of Animals (Scotland) Act, and the Rag Flock (Amendment) Act, all of which became law on August 3rd. The Representation of the People Act, passed in July, confers the parliamentary and municipal franchises on women at and above the age of 21 on the same terms as men, but does not otherwise affect the university franchise, although Opposition speakers urged its abolition. The Budget was noteworthy for the imposition of a tax on motor fuel—but not on lamp kerosene—for the purpose of financing the Government scheme for the relief of rates on industrial property. During the session the Government set up a committee to inquire into the causes of maternal mortality, and another to inquire into the training of midwives. In the session 1928–29, the last of the present Parliament, the House of Commons has so far passed more than fifty clauses of the Local Government Bill through committee, and the Lords have amended the Preservation of Infant Life Bill so as to safeguard more fully the doctor or nurse in bona fide attendance at a lying-in. The Government has secured sanction for a special grant to relieve destitution among women and children in the coal-fields. The Parliamentary Medical Committee has met regularly during the year, and has had useful conferences with representatives of the British Medical Association. Its members have made many sound speeches in the House, but when, as on the National Health Insurance Bill and the Local Government Bill, medical questions become party issues, the members of the committee generally keep in step with their parties, and not with one another.

THE CAIRO MEDICAL CONGRESS.

AN International Congress of Tropical Medicine and Hygiene was held at Cairo from December 15th to 22nd on the occasion of the centenary of the faculty of medicine and the Kasr-el-Aini Hospital. At the official inauguration of the congress on the morning of December 15th, in the presence of His Majesty King Fuad I, an address of welcome to the delegates was delivered by His Excellency Dr. Mohammed Shahin Pacha, Under Secretary of State for Public Health. Sir George Newman, chief of the British delegation, in his reply, expressed the hope that the congress would help to foster international co-operation in the study of disease, especially in relation to the problems of prevention. Sir Robert Philip, the official delegate of the British Medical Association, presented an address to the faculty of medicine congratulating it in the name of his 34,500 fellow members on having attained its centenary. The address, which was signed by Sir Ewen Maclean, President of the Association, and Dr. H. B. Brackenbury, Chairman of Council, recalled with pleasure the active part which members of the British medical profession had taken in the work and development of the faculty, and expressed the hope that the international congress to be held in connexion with the centenary celebrations would prove fruitful, not only in illustrating the advances that had been made during the last century, but in clearing the path for continued progress. On December 16th King Fuad laid the foundation stone of the new Kasr-el-Aini Hospital and medical school, erected at Roda Island to take the place of the old buildings. The new hospital will accommodate 1,500 in-patients. During the same afternoon Sir Berkeley Moynihan conferred the honorary Fellowship of the Royal College of Surgeons of England on Dr. Ali Bey Ibrahim, university professor of surgery. The various scientific

sections of the congress met daily from December 17th to 21st, two general meetings being held to discuss ankylostomiasis and bilharziasis respectively in all their aspects. Among those who made communications were Sir StClair Thomson, Sir William de Courcy Wheeler, Professor Munro Kerr, Dr. J. B. Christopherson, and Sir Frank Colyer. Sir William Wheeler was present with Sir Robert Philip as official representative of the British Medical Association. At the final meeting of the congress the honorary degree of Master of Surgery was conferred on Sir Berkeley Moynihan, Sir Holburt Waring, and Sir William Wheeler; and that of Doctor of Medicine on Sir Robert Philip, Sir Cooper Perry, and Professor G. H. F. Nuttall. Several important decisions were reached at this meeting. It was resolved to hold the next congress in Holland in 1931; a plea was made for the study of physical anthropology by faculties and schools of medicine in tropical countries; and a resolution was adopted to invite the Governments of all nations represented at the congress to co-operate to combat leprosy by improving the facilities for diagnosis, ambulatory treatment, isolation, and inspection of patients' relatives and contacts.

ASTHMA RESEARCH.

CONSIDERABLE progress has been made by the Asthma Research Council since we noted on March 17th last (p. 458) the preliminary steps that had then been taken to organize a massed attack upon the problem of asthma. Special research clinics are being established in eight hospitals; they will be financed by the council, but the work will be arranged and supervised by members of the local staffs. These hospitals are: Guy's, where Drs. H. W. Barber, R. D. Gillespie, and A. F. Hurst will be in charge of the clinic; the Royal Infirmary, Liverpool, under Professor John Hay; the Royal Infirmary, Edinburgh, under Dr. Cranston Low; the Stobhill Hospital, Glasgow, under Dr. James Adam; the Birmingham General Hospital, under Professor H. W. Wynn; the Royal Victoria Hospital, Belfast, under Sir Thomas Houston; the Royal Infirmary, Manchester, under Dr. F. E. Tylecote; and the Hospital for Sick Children, Great Ormond Street, under Dr. E. A. Cockayne. The question of providing facilities for such clinics is also being considered by the Brompton Hospital and the Bristol Royal Infirmary. The Leeds General Hospital, while not in a position to do this, has suggested a different scheme of co-operation. The laboratories of the Rockefeller Institute at the Edinburgh Royal Infirmary and of the University of Bristol will be utilized for research work, under the direction of Professor Murray Lyon and Dr. Cranston Low at Edinburgh and of Professor J. A. Nixon at Bristol. Moreover, the laboratories at King's College Hospital and St. Mary's Hospital, London, have arranged to work in conjunction with the medical advisory committee of the Council, while the Edinburgh Asthma Inquiry Committee and the Glasgow Asthma Investigation Committee will also co-operate. The British Humane Association having provided a grant of money for the investigation of special physico-therapy methods in use at Continental spas, Dr. Una Ledingham was enabled to visit Reichenhall, Mont Dore, Ems, Hamburg, Berlin, and Paris, and examine such procedures as saline and pine oil inhalations, automatic breathing apparatus, nasal gas applications, ultra-violet light therapy, and diathermy. The Medical Research Council has made a grant to Dr. G. H. Oriel for the continuation of his research at Guy's Hospital into the biochemical causation and treatment of asthma. From the Halley Stewart trust endowment a grant of £2,500, spread over four years, is forthcoming; part of this money is being devoted to the establishment of a clinic at Great Ormond Street Hospital for the study of asthma in children, under the direction of Dr. Cockayne, and the remainder to the provision of a clinic at Guy's Hospital to supplement and complete Dr. Oriel's research, using the methods of nasal treatment advocated by Dr. Haseltine of Chicago for other patients, who will thus serve as control cases. A form for the collection of asthmatic family histories and statistics has been prepared by the Asthma Research Council for circulation, with a view to tracing hereditary influences affecting the onset of asthma and its relationship with other syndromes. It is hoped that medical practitioners will encourage asthma patients to complete these forms in order that scientific data may become available for study. We publish elsewhere (at page 43) a letter from the secretary of the Asthma Research Council calling attention to a meeting at the Mansion House on January 15th, which it is hoped that many doctors will be able to attend. The Medical Advisory Committee has been enlarged, and now includes: Dr. A. F. Hurst (chairman); Professor R. J. S. McDowall (vice-chairman); Dr. James Adam, Dr. L. S. T. Burrell, Dr. Cockayne, Dr. John Freeman, Dr. Gillespie, Dr. Barber, Professor Hay, Sir Thomas Houston, Dr. W. E. Hume, Dr. Cranston Low, Mr. V. E. Negus, Professor Nixon, Dr. S. Gilbert Scott, Dr. Tylecote, Dr. G. W. Watson, and Professor Wynn.

SEASONABLE WEATHER.

ARE there any grounds for the popular belief that Christmas weather is milder than it used to be? The idea contains no inherent improbability, for nothing in the English weather is constant except change, nothing predictable except the passage of the seasons—"If winter comes can spring be far behind?" The old-fashioned Christmas, the Christmas of bright sunshine, cold crisp air, and a snow-decked countryside, may be a myth invented by Victorian novelists and fostered by the notoriously unreliable memories of people as they get on in years. The phenomenon of pseudo-memory is, after all, well known to psychologists. Through the haze that envelops our earliest years a single snowy Christmas may proliferate an uninterrupted series in the memory; Christmas cards are forgotten, but the images painted on them may be projected on to the outer world. The impulse to idealize the past, moreover, is one from which very few of us are exempt. The mind, regressing from the problems of the present, finds some compensation in a fantasy of past perfection. Perhaps it is this tendency that underlies the question, "Mais où sont les neiges d'antan?" Dr. C. E. P. Brooks, in an article published in *Nature* on December 22nd, suggests much the same idea. "A few frolics in the snow when we were young," he writes, "would colour all our memories of winter. The change may not be in the weather, but in ourselves." Virginia Woolf, on the other hand, seems to subscribe to the theory of a changed climate, of a climate that has lost its rigors, but at the same time shed much of its attractiveness. In that puzzling book *Orlando* she informs us gravely that the frost in Elizabethan times was so severe "that a kind of petrifaction sometimes ensued; and it was commonly supposed that the great increase of rocks in some parts of Derbyshire was due to no eruption, for there was none, but to the solidification of unfortunate wayfarers who had been turned literally to stone where they stood. . . . Frozen roses fell in showers when the Queen and her ladies walked abroad." In the eighteenth century there was snow, and the air was dry; but in the nineteenth century Orlando became aware that a change had come over the climate of England. "Rain fell frequently, but only in fitful gusts, which were no sooner over than they began again. The sun shone, of course, but it was so girt about with clouds, and the air was so saturated

with water, that its beams were discoloured. . . . A change of diet became essential. The muffin was invented and the crumpet. Coffee supplanted the after-dinner port, and as coffee led to a drawing-room in which to drink it, the home . . . was completely altered." Thus, Virginia Woolf tells us—and she does not flicker an eyelid—"stealthily and imperceptibly, none marking the exact day or hour of the change, the constitution of England was altered and nobody knew it." The writings of Henry Thomas Buckle have indeed accustomed us to the idea that at any historical epoch the prevailing meteorological conditions may serve in large measure to explain the character and the social, political, and economic life of a people. Such a climatic conception of history finds ready acceptance among the English people, who from day to day observe the profound influence of climatic and weather conditions upon their psychological make-up and their physical activities. The adventurous spirit of our race may thus have been no spontaneous emergence of national character; it may have been bred of an urgent desire to escape from the English climate. According to this line of thought the British Empire was built up by a people made hardy and adaptable by our climate, but none the less goaded to travel by a deep yearning for settled weather. One is reminded of the charming Persian Ambassador cited by Morier, who, asked by his hostess at an English party if it was true that in his country people worshipped the sun, replied, "Yes, madam; and so would you in this country also, if you ever saw the sun." Here, indeed, was a belief founded on a sketchy impression. Is the popular notion that weather conditions have changed established on any securer basis? Dr. Brooks thinks it is. "During the past century," he writes, "winters have become steadily warmer, and the average of the past ten years, 41.1° F., is the highest since records began. . . . There appears to have been a real change of climate about 1750. . . . This was the time of the great 'frost fairs' on the Thames, notably 1683–84, 1715–16, and 1739–40. . . . If the old-fashioned Christmas ever had a real existence no series of years is more likely to have given birth to the tradition." Surely Dr. Brooks has forgotten the Christmas of 1927.

OSLER AS EPIDEMIOLOGIST.

IN amplification of remarks made at the meeting of the Osler Club last July, to which we alluded on July 21st, 1928 (p. 117), Dr. J. D. Rolleston, in a recent article,[1] emphasizes the keen interest taken by Sir William Osler in the study of epidemic diseases, an interest doubtless inspired to some extent by the fascinating history connected with many of them. Osler's familiarity with the work of the early epidemiologists is illustrated in his textbook and his miscellaneous writings, particularly the essay on "Some aspects of American bibliography." Although small-pox, cerebro-spinal fever, and venereal disease formed the subject of some of his more important addresses, typhoid fever and tuberculosis were the infectious diseases to which he devoted most of his attention. The importance he attributed to typhoid fever—which, owing to the heavy toll it exacted of young persons, he called the "Minotaur of infectious diseases"—is shown not only by its occupying the first place in his textbook, but also by his dictum that a student could learn most of medicine and a good deal of surgery—the latter much at the patient's expense—by a study of this disease alone. The insanitary conditions responsible for the outbreaks of typhoid fever—which was rife in America, particularly at Baltimore, when Osler was professor of medicine at Harvard, frequently provoked a protest from him. The incidence of typhoid fever, he maintained, was the sanitary index of the community, and in the matter of purification of their large towns he accused the United States as being a generation behind Europe. Many years later, shortly after the outbreak of the war, he urged the necessity of antityphoid inoculation, and denounced the "sons of Belial" who had been trying to oppose the measure. In like manner his conviction of the value of vaccination against small-pox is illustrated in a characteristic passage in the essay entitled "Man's redemption of man," in which he issues a "Mount Carmel-like challenge to any ten unvaccinated priests of Baal." Osler's interest in tuberculosis assumed a very practical form. In 1902 he was responsible for the establishment of the first tuberculosis dispensary at Baltimore. He also took an active part in the campaign against tuberculosis in Philadelphia, and later in England, where he helped to form the National Association for Prevention of Consumption in 1903, and started an Oxford branch in 1910; it was only his fatal illness which prevented him from delivering an address before the association in 1919. Osler's interest in epidemic disease was maintained until the end. In June, 1918, he paid a special visit to the London Hospital to see the first cases of lethargic encephalitis, and a few months before his death he approached the Foreign Office for concerted medical action to deal with the deplorable sanitary conditions in Vienna, which were a menace to public health, not only in Germany and Austria, but also in the rest of Europe. In conclusion, Dr. Rolleston gives a short account of Osler's views on the alcohol problem.

[1] *Clinical Journal*, November 28th, 1928, p. 573.

THE FIELD OF BACTERIOLOGY.

THE world of microscopic creatures is being explored from many different points of departure by investigators with widely different scientific interests. The medical bacteriologist has, as his primary motive, the study of bacteria in relation to human disease, and he is comparatively uninterested in non-pathogenic germs. Urged by the pressing claims of health and disease, research work on the small group of pathogenic bacteria has made more progress than work undertaken for scientific interest alone, and to-day we find that the disease-producing microbes are more accurately described and their habits much better known than is the case with the harmless germs of water and the soil. The success which has attended the search for the cause of infectious disease, and the new means of prevention disclosed by these scientific triumphs, though they have proved of incalculable benefit to mankind, should not be allowed to eclipse the advantages to human welfare gained by progress in other branches of bacteriology. The preservation of food, the making of butter and cheese, the canning of meat, and the bottling of fruit—all these are carried out with more efficiency and security to-day because the work of microscopic allies and enemies is better understood in the industries concerned. Mankind has reaped advantages from progress made in the exploration of the microscopic world from whatever direction it has been undertaken, whether the starting point has been the bacteriology of water, of the soil, of milk, of vinegar, or alcoholic beverages. The time has now come when the medical bacteriologist cannot maintain a just perspective unless he knows something of the knowledge gained by non-medical investigations of bacteriological problems. Hitherto the attainment of this knowledge has not been an easy matter, for he cannot be expected to study textbooks written for farmers, dairy workers, bakers, and brewers, and there have not been many books which have attempted to interpret the science of bacteriology from a non-professional point of view. A book has recently been published, entitled *The Newer Knowledge of Bacteriology and Immunology*,[1] which serves a useful purpose in

[1] *The Newer Knowledge of Bacteriology and Immunology.* Edited by Edwin O. Jordan and I. S. Falk. Chicago: University of Chicago Press; London: Cambridge University Press. 1928. (Roy. 8vo, pp. x + 1,196; illustrated. 50s. net.)

correlating bacteriological problems. It has the outward appearances of a massive dictionary, its 1,196 pages being stoutly bound together in one volume. Eighty-two contributors have written on the particular branches of bacteriology of which they have special knowledge, and the book is edited by Drs. Jordan and Falk of the University of Chicago.

COCKTAILS AND THEIR EFFECTS.

THE practice of cocktail drinking appears to be almost as prevalent in medical circles as in other society gatherings, and might therefore be supposed to have been condoned rather than condemned by the profession. We have, indeed, heard the custom defended by one grave authority on the plea that it was a stimulant to the endocrine system. In the current issue of the *British Journal of Inebriety* Professor W. E. Dixon of Cambridge describes the composition and effects of this American importation, which has largely taken the place of sherry and bitters or gin and bitters as an *apéritif* before meals. The cocktail usually consists of a solution of volatile oil, more rarely bitters, with vermouth and spirits, such as gin, whisky, or brandy. The most important constituent in each case is alcohol, the oils serving mainly as a mild irritant to the stomach. The spirit is very rapidly absorbed from the empty stomach, and the rate of absorption is still further facilitated by the irritant action of the oils. Having reached the blood it is absorbed into the tissues, and especially the central nervous system, where it produces a stimulation of the nerve cells which continues until the tension of alcohol in the nerve cells and blood becomes equal, after which the alcohol exerts its ordinary action on the central nervous system. The action of the cocktail, unlike that of ordinary alcoholic beverages, is immediate, but its duration is transient, being limited to fifteen or twenty minutes at the most. This form of drinking, Professor Dixon maintains, is particularly pernicious for young people of either sex, who form a large percentage of cocktail drinkers, partly to lose their shyness and partly in a spirit of bravado. Not only does it impair their stomach, but it helps to promote the habit of excessive drinking more than any other type of beverage.

THE late Mr. J. H. Plummer of Southport has made a munificent bequest to the University of Cambridge for the endowment of two chairs for the promotion of modern scientific research. Almost the whole of his estate, valued at more than £250,000, is bequeathed to the University in the form of a trust to be known as the John Humphrey Plummer Foundation.

THE KING'S ILLNESS.

THE communiqué printed below has been authorized for publication in the *Lancet* and the *British Medical Journal*. It supplements the reports published on December 15th and 22nd, and is dated Wednesday evening, January 2nd. We believe that our readers generally will approve this policy of telling the public as much as possible, through the most appropriate channel, about the illness of their King.

"For true understanding of the position it must be emphasized that neither in its inception nor in its subsequent course has this illness conformed to what is called 'pleuro-pneumonia'; rather was it a streptococcal septicaemia which by fortunate happening localized at the base of the right lung, first imperfectly and later as an empyema ('fixation abscess') forming between the base of the lung and the diaphragm. In the second phase of the illness (vide report December 22nd) the clinical picture—dusky appearance, dry cracked tongue, delirium, subsultus, exhaustion—was that of a severe toxaemia, and resembled that of a case of severe typhoid fever in the third or fourth week. So now the picture is that of the aftermath of a severe general infection. The empyema wound is now clean and steadily diminishing in size, the discharge from the pleural cavity is small in amount, and the streptococcus grown from the pus (identical with that originally found in the blood) is diminishing in potency. Eusol has been an effective local application, and though—through the courtesy of an American colleague, Dr. Sherman of Pittsburg—a supply of Dakin's solution, electrolytically prepared, has been recently received, there has been no opportunity to use it because the necessity for any such local application has passed.

"On the other hand, the disinclination for food and the dryness of the tongue, the low blood pressure, the weakness and wasting, the notable exhaustion, though slowly improving, will for long be an anxious problem. It will be readily understood that while this exhaustion state is pronounced, the margin of reserve power must be narrow, and that small set-backs, inevitable at this stage, have a correspondingly more severe effect. It is important that the public should not interpret such set-backs or reports of 'no change' as relapses. During each week there will be ups and downs, and progress will consist of a slow and increasing predominance of the ups over the downs. One of the inevitable difficulties in so long an illness is to convey to the public a true picture—neither too bright nor too dark. It is for this reason amongst others that the courtesy of the medical press is valuable, in order to convey through their readers to the public fuller information, and so avoid the risk of misunderstanding.

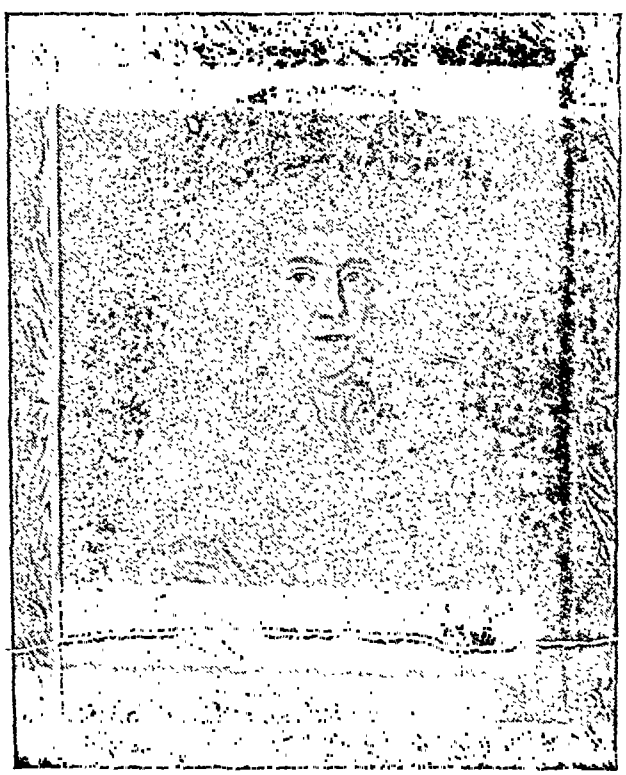
"As regards nourishment, about which so many suggestions have been received, the difficulties will be understood when it is stated that there is disinclination for most foods and dislike for many, and that weakness necessitates that nourishment be given by a nurse with a feeder. Adequacy of nutriment, both as regards quantity and variety, is now being secured, though not without difficulty. Moreover, the combating of loss of weight, which has been notable, depends not only on food taken but food digested and assimilated, and here again the exhaustion tells its tale. The blood pressure has fallen too low and the calcium content of the blood has of late considerably decreased. The administration of calcium, parathyroid extract, and strychnine is apparently beneficial. The same is true of ray therapy, which is being continued. It need hardly be stated that the question of blood transfusion has received full consideration. In an illness of this complicated character the indications for transfusion must be clear, and it must be remembered that with the most skilled procedure its employment would in this case entail risk. The striking results following transfusion—for example, in cases of anaemia due to either haemorrhage or infection—are apt to lead to its employment in other conditions without adequate consideration of the pros and cons. It is sufficient to repeat that in this grave illness it has been fully considered, and put aside at the present stage as definitely undesirable. Moreover, the red blood cell count is one of the most hopeful features, for whereas in the early days of the illness the red count was as low as 2,900,000, to-day it reaches 4,300,000.

"The exhaustion is as much a weariness of mind as of body. Though there is an increasing sense of the burden of his illness, the will of the King to live is there. Because of this exhaustion the course must be long and for the present anxious. None the less, improvement and progress are taking place slowly but surely enough to justify the hope that the King will be restored to his people."

Nova et Vetera.

JOHN MAPLETOFT, 1631–1720.

JOHN MAPLETOFT, to whom Sydenham dedicated the third edition of his *Medical Observations*, was the son of the Rev. Joshua Mapletoft, vicar of [illegible] Essex, and the godson and great-nephew of [illegible] jun., of Little Gidding. He was born at Margaretting in 1631, and in 1635, when he was 4 years old, his father died. Thereupon his godfather, Nicholas Ferrar, took charge of him and brought him up in the devout family community which he (Ferrar) had founded there. John Mapletoft was educated at Westminster under Dr. Busby; here he met John Locke, and formed a friendship with him that lasted all through their lives. He was originally intended for Holy orders, but the troublous times of the Civil War postponed the fulfilment of his desire. In 1648 he went from Westminster to Trinity College, Cambridge, took



John Mapletoft.

his B.A. degree in 1651, became a Fellow of his college in 1653, and in 1654 was incorporated B.A. at Oxford. He was expelled from his Fellowship by the Parliamentary Visitors, and, with many other graduates of Cambridge who were forced to leave Cambridge for their loyalty, retired to Oxford. Possibly he took this step for the reason given by Anthony Wood, "to avoid the cruelties and barbarities of the presbyterians." But Wood mentions another reason in his *Fasti Oxonienses* (under the year 1655), where he says that many of the graduates by incorporation came to Oxford "for the sake of the public library." In the case of Mapletoft the cause is not clear, because in 1655 he proceeded to the M.A. degree at Cambridge.

For three years (1658–1660) he travelled as tutor to Joscelyn, son of Algernon, last Earl of Northumberland. After 1660 he studied medicine in Italy, and, having been restored to his Fellowship, took his M.D. degree at Cambridge. Then he practised in London, where he made the acquaintance of many eminent physicians—Willis, Cox, and Sydenham—continuing there his close friendship with Locke. An interesting event occurred at Oxford in 1669.

"This year," to quote Anthony Wood again, "Sheldon's Theatre being opened, and dedicated for a learned use was a most splendid Act celebrated therein on the 12th of July and very many Cambridge men coming to the solemnity . . . were incorporated in a Congregation held in the House of Convocation the next day."

Among the Cambridge men thus honoured was John Mapletoft, described by Wood as "afterwards Professor of Physic in Gresham College and Fellow of the Royal Society." His first lecture as Gresham Professor was delivered in 1675. Unlike his friend Sydenham, who makes no mention of the work of Harvey, Mapletoft devotes considerable attention to this work.

"I will begin," he says, "with that celebrated and useful discovery which was first made and published to the learned world by that ornament of his own age and of this nation to all ages, the judicious Dr. Harvey concerning the motion of the heart, and circulation of the blood."

His admiration for Harvey did not end with mere words of eulogy; Mapletoft presented to the Royal Society that well-known portrait of Harvey in a skull cap which hangs in the rooms of the Royal Society at Burlington House.

When he resigned the Gresham Professorship in October, 1679, Mapletoft retired from the practice of medicine, an occasion which caused John Locke to write regretfully to him: "I like our calling the worse since you have quitted

Rebecca Mapletoft (*née* Knightley).

it." In November, 1679, at the age of 48, he married Rebecca, daughter of Lucas Knightley of Hackney, a Hamburg merchant, and lived in the country to prepare himself quietly for Holy orders. He was ordained deacon and priest in 1682, and became rector of Braybrooke in Northamptonshire soon after. In 1684 he was appointed vicar of St. Lawrence Jewry. In 1689 this remarkable man, who had seen Charles I visit Little Gidding in 1642, and again in his flight for safety in 1646, had the degree of D.D. conferred upon him when King William went to Cambridge. His ministry was no mere leisured evening to his life, for he was one of the active promoters and founders of the Society for the Propagation of the Gospel in Foreign Parts, a member of the Society for the Promotion of Christian Knowledge, president of Sion College, and a director of Greenwich Hospital. In 1710, after a serious illness, John Mapletoft resigned his living, and spent his last years in the house of his daughter and her husband, Dr. Gastrell, Bishop of Chester. There he enjoyed a soft and gentle old age, preserving to the last a gaiety and cheerfulness of temper, seeming always desirous to gain the affections of those about him that he might engage them to virtue and religion. He clung affectionately to the recollections of his early life in the family community of the Ferrars, giving to his son a Gidding Concordance, in which he wrote: "I desire that it may be preserved in his family as long as

may be." His long life covered an era in English history full of strife and change, yet such was the largeness of his heart that he could number among his friends Sydenham, who was one of Cromwell's captains, and Locke, whose father had been a captain in the Parliamentarian forces. He died in 1721, and was buried under the altar in St. Lawrence Jewry.

The portraits of John Mapletoft and his wife which illustrate this article are by John Riley, a well-known Court painter, whose fame has been depressed by his best works having been ascribed to Lely. Charles II, James II and his queen, and William and Mary all sat to him. We have been enabled to publish photographs of these portraits by the kindness of one of his descendants, Mr. A. J. Leonard of Bristol.

The portraits are at present in possession of Mr. J. Burford Leonard of 7, Hughenden Avenue, Belfast, who has had them photographed, and has generously sent prints for reproduction in the *Journal*. One of John Mapletoft's daughters married the Rev. Edward Burford, in whose family the portraits have been handed down as heirlooms, and have thus become the highly prized inheritance of Mr. Burford Leonard.

J. A. NIXON.

SOCIETY OF APOTHECARIES OF LONDON.

APPEAL FOR HALL RESTORATION FUND.

AN appeal has been issued by the Court of Assistants of the Society of Apothecaries of London to its licentiates in all parts of the world for contributions towards the restoration of its ancient hall in Water Lane, Blackfriars. It was found some months ago that the fabric was in danger of collapse owing to damage caused by the death-watch beetle in the main timbers, and it has therefore been necessary to make immediate provision for reparation and preservation. The work necessary has been extensive, and the cost, which it is estimated will exceed £20,000, has caused grave concern to the Court, which accordingly decided to ask those most intimately associated with the Society to assist. Great care has been taken to preserve the ancient character of the building and to retain the features which give the Hall its peculiar historic interest.

The building, it may be recalled, was erected in 1671 on the site occupied by the former home of the company, which had been burnt down five years earlier in the Great Fire of London. Its situation in the City itself, and the nomenclature employed in its administration—governed as it is by a master and wardens, with a court of assistants—remind us that the Apothecaries' Society of London is one of the old City Guilds, with an independent charter granted in 1617 by James I. The appeal for support in the restoration of the Hall is, therefore, made on two grounds—the desirability of preserving a monument of historic interest, and the duty of maintaining unchanged that which is associated with so much of significance in the history of the profession of medicine. On both grounds the request for financial aid seems to merit the support of the profession at large, while among those for whom the Hall of the Society of Apothecaries was the portal through which they entered our profession the appeal should be difficult to resist.

The following list shows donations to the restoration fund received up to December 19th, the total being £639.

First List of Donations.

£100.—H. H. Clarke.
£52 10s.—Sir William Wells and Alfred Hepburn.
£25 5s.—Colonel E. C. Freeman.
£21.—W. Adams Frost.
£21.—J. Bright Banister and Mrs. Courtauld.
£15 15s.—R. Erskine Gray, P. Traer Harris, Herbert R. Mosse, and T. D. Paradise.
£10 10s.—Thomas Wakefield, Cecil Wall, Algernon Brenchley, F. de Havilland Hall, Sir George Makins, Victor S. Partridge, and Sir Hugh Beevor.
£5 5s.—Horace Sworder, Sir George S. Buchanan, J. O. W. Barratt, H. J. Hett, R. W. Statham, Samuel Osborn, Lieut.-Colonel C. T. Samman, R. Austin Freeman, A. H. N. Lewers, John H. Chambers, Edmund Johnstone, Miss Mary Rathbone, R. H. Hayes, Sir Ronald Ross, and A. P. Gibbons.
£3 3s.—Peyton Beale, E. Treacher Collins, Frank P. Haviland, and William Handcock.
£2 2s.—James Brierley, D. Cotes-Preedy, L. V. Cargill, J. W. Carr, J. Fletcher Horne, Miss Katherine Heanley, Andrew Boutflower, Edmund Couchin, D. Colquhoun, A. P. Luff, Evan H. Hare, J. Müller, Louis Savatard, and Norman W. Rawlings.
£1 1s.—T. B. F. Eminson.
£1 1s.—Miss V. E. M. Bennett, T. M. Beattie, M. G. Biggs, Hobart J. W. Barlee, G. H. Bate, C. Bradford, A. C. Barrow, R. H. Birtwell, John Bate, Bertram Bond, S. H. Appleford, W. B. S. Relton, V. Ray Smith, H. Skelding, James B. Couche, R. H. Chadwick, George Aldridge, F. W. Cock, E. Vipont Browne, W. H. Brazil, H. J. Clutterbuck, Valentine Blake, Thomas S. Byass, Herbert L. Dowsing, James Ewing, J. Cooper, Alfred Duckworth, J. Coxhead Cook, Herbert A. Browning, W. E. K. Kirby, Eric Evans, J. Scott Challice, E. F. Hoare, Richard Hickman, F. H. Beattie, A. J. Dowck, Austin Fenniss, A. G. Everard, T. M. Angior, J. P. Llewellyn, E. Spencer Evans, W. Dunstan, W. H. Harsant, A. L. Joscelyne, E. E. Bowden, E. S. Killick, Miss Kathleen Dawson, Michael Bulman, James Harrison, Miss Laura G. Rees, G. Aubrey Jelly, G. E. J. Crallan, J. C. M. Given, G. Sydney Green, J. E. Elam, Francis Lowe, N. Pines, W. Eric Farnham, Arthur Lowndes, J. W. Papillon, Hugh S. Jeffries, H. F. M. Pope, E. L. Payne, S. R. T. Griffith, A. D. Owen, John W. Meek, J. Wallis B. Mason, H. Gilbert Nicholson, John Kendall, J. H. Lightbody, Miss Ada M. Browne, G. Foster Smith, S. B. S. Smith, M. Melglare, W. G. Sargent, James Miller, L. Maybury, and Edwin G. Firth.
10s. 6d.—T. W. Graves.

ROYAL MEDICAL BENEVOLENT FUND.

DURING the year 1928 the Fund has voted no fewer than 457 grants, amounting to £8,621.

The fact that the work of the Fund has greatly increased, and that the appeals for help are more numerous than ever, will be realized by comparing the above figure with that of the preceding year. The sum voted is £1,456 over that for 1927. Annuities amounting to £4,970 have been given to 185 persons. The average amount of the annuities is £40 per annum, but owing to a recent legacy the Fund has been able to grant six annuities of £100 each.

An increase of £1,456 on the grant account is very heavy, and for the Fund to extend its work as well as continue to help those already on its books necessitates an urgent appeal that subscriptions and donations in 1929 shall be not only maintained, but greatly increased. Cheques should be sent to the Honorary Treasurer, 11, Chandos Street, Cavendish Square, London, W.1.

At the last meeting of the committee £763 was voted to thirty-five applicants. The following short account of a few typical cases may serve to show how deserving are the persons helped by the Fund.

Widow, aged 54, of M.B. Owing to the lack of any special training is unable to earn more than £1 a week. Voted £36 in four instalments. Widow lives rent free in one room.

Daughter, aged 68, of L.R.C.S. and L.S.A. Has supported herself for twenty-one years. Earning at first £16 a year, afterwards £36, rising to £50 and then £80. Her employer has recently died, and, owing to her age (68), she cannot now find work and is practically destitute. Only income old age pension, £26 a year. Voted £36 in four instalments. Other charities will be asked to assist. Applicant at present living with her nephew.

Daughter, aged 66, of M.D. On death of her parents was left eldest of four children and very badly provided for. Has supported herself by teaching until her health gradually gave way at 65. Her only income is £61 a year. Voted £36 in four instalments.

Widow, aged 71, of M.D. Has supported herself by keeping a private school, but owing to her age (71) and to her out-of-date methods of teaching she has practically lost all her pupils, and is almost destitute. Income £65. Voted £36 in four instalments. Other charities are now interested in this case and will help.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing, especially for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles. The gifts should be sent to the Secretary of the Guild, 58, Great Marlborough Street, W.1.

Union of South Africa.

[FROM OUR CORRESPONDENT IN CAPETOWN.]

Prevention of Tuberculosis.

AT a meeting of the Association for the Prevention of Tuberculosis held at Capetown on November 15th, 1928, a report on the work of the executive since the reconstitution of the association in March, 1928, was received. The president, Dr. D. P. Marais, said that its activities were not so well known in Capetown as might be expected, this being due to the fact that the association was concerned more directly with work in the up-country districts. Propaganda work was being done through posters and literature, and arrangements were made for speakers to give addresses in connexion with health weeks, of which only recently there had been a very successful one at Paarl and another at Beaufort West. A native poster, published by the South African Health Society at Lovedale, together with suitable literature in the native language, had been distributed in the native territories. About one thousand of these were sent out to ninety-three missionaries and ministers, and several of those to whom they were sent out had promised to assist the association's work in the territories. The

Metropolitan Poster Advertising Company of Capetown had been kind enough to undertake to display the association's posters free of charge, when opportunity offered between contracts, on the hoardings of Capetown and suburbs. The police authorities, he continued, had been requested to enforce more strictly the regulations relating to spitting in public places, and a satisfactory acknowledgement had been received. New brass insets for the pavements had been supplied to the municipality. A bioscope film, entitled "Delay is Dangerous," was imported from America at a cost of about £16. The film was passed by the Board of Censors, and was recently sent to Beaufort West, to be shown in connexion with the health week there. The African Films Trust had been kind enough to promise to grant every assistance in the public exhibition of the film when it was returned. Negotiations were now proceeding with the South African Red Cross Society at Johannesburg for the purchase of other films. These negotiations were the outcome of correspondence with the National Tuberculosis Association of England and the Red Cross Societies at Paris, which took considerable time owing to the distance. It was hoped that it would be possible to have incorporated with the imported film a film of local interest, showing some of the local clinics, and life and work at the Nelspoort Sanatorium. It was also intended to have lantern slides of the latest poster made if the cost was found to be reasonable.

Edinburgh University Medical Graduates' Club.

The second annual dinner of the Edinburgh Medical Graduates' Club was held on December 7th, 1928, at the Western Province Sports Club, Kelvin Grove, Capetown, under the chairmanship of Dr. C. H. Kruger. Among those present were Mr. C. E. Jones-Phillipson, Professor W. A. Jolly, Professor W. Campbell, Drs. D. P. Marais, J. S. du Toit, J. Smith, A. J. Ballantine, F. Krone, F. H. Dommisse, A. W. S. Sichel, S. J. Rom, D. H. Wessels, D. Dowie Dunn, Mr. W. Lennox Gordon, and Dr. Louis Bosman. Besides the toast of "The King" there was only one other, "Alma Mater," which was proposed by Mr. Lennox Gordon, and Professor Campbell replied. An amusing feature of the dinner was the naming of each place at table after some old Edinburgh student haunt, the member sitting there being invited during the evening to recount his reminiscences of the particular place he happened to represent. Before dispersing, a ballot was held to ascertain which of these old haunts was the most popular, and a small memento was presented to the member who occupied the corresponding seat at table. Though the gathering comprised a very small proportion of the old Edinburgh graduates resident in Capetown and the surrounding districts, who number about 110, the evening proved entirely successful. It was originally the intention of the committee responsible for the dinner to entertain as guest of honour Sir Arthur Conan Doyle, a medical alumnus of the University of Edinburgh, at present on a visit to South Africa, but to the regret of all he found it impossible to be present. The club, which was formed only a year ago with the object of fostering a spirit of comradeship among Edinburgh graduates, and is purely a social one, has the following officials: president, Mr. E. Barnard Fuller, F.R.C.S.Ed.; vice-presidents, Professor W. A. Jolly and Dr. C. H. Kruger; honorary secretary and treasurer, Dr. F. Krone.

New Nursing Home.

The foundation stone was laid on November 3rd of the Volkshospital, the ceremony being performed by the Rev. G. J. Hugo, Moderator of the Dutch Reformed Church Synod. The chairman of the hospital committee, the Rev. F. X. Roome, referred to the valuable work that had been done at the Deaconess and the Monte Rosa hospitals, which were instituted, and were still being run, by the Dutch Reformed Church. The financial position, he stated, was sufficiently favourable for them to proceed with the work. They had £35,000 in hand, together with £3,500 bequeathed by the late Mr. Conradie of Worcester, and they required another £17,000 to provide for a building with 35 beds. Should they decide to add another 15 extra beds an additional £11,000 would be needed. On the spacious grounds (which had been bought for £6,000) quarters could be built for £10,000, by which the number of beds would be increased to 75. Their immediate aim, however, was not to have a separate building for the nurses, nor would the extra story be built, unless the necessary public support was forthcoming. The Volkshospital was really a hospital nursing home, continued Mr. Roome, being designed on the plan of a general hospital—with full equipment, including an x-ray room, and plenty of space for further development—which could be utilized by medical men, specialists, and others. The nurses would be bilingual, because the doors of the "home" would be open to all sections of the European population, and it would add to the comfort of a patient to be attended to in the language he or she knew best. Dean Lavis also addressed the gathering, and paid a glowing tribute to the great work carried out by the Dutch Reformed Church in the hospital institutions under its aegis, where there had never been any suggestion of religious discrimination. That the need existed for more hospitals, he remarked, there could be no question; it was a by-word and a scandal. Among those present at the ceremony were the Rev. J. P. van Heerden, Senator F. S. Malan, Rev. S. P. Fouche, Sir Carruthers Beattie (Principal of the University of Capetown), Dr. D. P. Marais, Dr. J. S. du Toit, Mr. P. M. Daneel, Dr. D. H. Wessels, and Mr. J. Luckhoff.

Snake Venom "Cure" for Epilepsy.

Publicity has been given lately in the lay press to a grievance ventilated by Mr. F. W. FitzSimons, director of the Port Elizabeth Museum, with regard to his claim to have produced a cure for epilepsy in the shape of snake venom. In a letter which appeared in the *Cape Argus* on November 27th, 1928, Mr. FitzSimons states:

"My attention has just been called to a paragraph in your journal to the effect that Sir Spencer Lister has stated that there was no foundation for my statement that laymen are debarred from publishing scientific articles in the medical journals. Early in 1921 an article of mine, entitled 'Snake venom for epilepsy,' was refused publication by the then *South African Medical Record* on the ground that the journal did not publish contributions by laymen. It was only owing to the special request of the Secretary for Health for the Union that this article was eventually published. Just recently I applied for formal permission to read a paper on 'Snake venoms and their therapeutic value' before the Medical Association at the forthcoming conference at Port Elizabeth, and I had already worked for a considerable time on the preparation of the paper. The official reply to my written application was to the effect that 'according to the regulations, papers may be read before congress only by members of the Medical Association of South Africa.'"

Meanwhile the editor of the *Journal* of the Medical Association of South Africa had written to the *Eastern Province Herald*, a daily paper published in Port Elizabeth, to the following effect:

"As editor of the *Medical Journal*, and as secretary of the Medical Association of South Africa (British Medical Association), I emphatically contradict Mr. FitzSimons's assertion that there is any rule that prevents a layman from publishing an article in the medical press or reading a paper before a meeting of my Association. There is no such rule. My journal has often printed articles written by laymen, and laymen have read papers before my Association. I have refused Mr. FitzSimons's article on the treatment of epilepsy by snake venom just as I should refuse to publish one on the treatment of epilepsy by hydnocarpus or kliprsweet. Both substances have had a fair and extended trial by the medical profession, and there can be no question whatever that they are no more 'cures' for epilepsy than common salt is a cure. For the same reason, possibly, the local branch of the Medical Association of South Africa has declined a paper on the subject. So far Mr. FitzSimons has quoted nothing that is new or that has not been told years ago."

India.

Health Propaganda in Madras.

INCREASING attention is being given in various parts of India to the development of propaganda work in connexion with the public health services as a means of educating the masses and disseminating knowledge of hygiene and of factors relating to the causation and prevention of disease. In the Presidency of Madras a separate section of the Public Health Department was constituted about eighteen months ago to deal with this work, and the report of the Director of Public Health for 1927 contains an interesting account of the propaganda activities of the district health staff and other agencies. An auxiliary committee has been

formed to preserve contact between the department and non-official bodies. In the course of the year over 91,800 lectures were given in 41,089 centres to audiences aggregating over 5,800,000 persons, and including about one-eighth of the population of the Presidency. Most of the lectures were given to labourers in rural areas by health inspectors and municipal sanitary inspectors, and were therefore of the simplest kind. It has been found that lectures accompanied by lantern or cinematograph displays are, as might be expected, the most popular and effective, and an endeavour is being made to equip every health inspector with a lantern. The Madras Health Council is lending valuable assistance in maintaining a supply of slides appropriate to the localities in which they are to be shown, but it has proved difficult to secure suitable films, and it is probable that the health department will in time find itself obliged to add film production to its activities. Large quantities of propaganda literature have been prepared and circulated, while the enactment of health dramas—of which a considerable number are in existence—by schoolboys has been found a valuable method of educating the public. Advantage is taken of large gatherings at fairs, festivals, and markets to further the work by the organization of exhibitions, lectures, lantern demonstrations, and the distribution of literature, while health instruction in the schools is being developed as rapidly as circumstances permit. The report of the Health Department expresses the view that the efforts so far made have been reasonably successful, but calls attention to the continued neglect of health propaganda in most of the municipal towns. It is added that in no town without a health officer is sufficient attention paid to this subject, and that this fact alone warrants the suggestion that the Government should insist on the appointment of a health officer in every municipality in Madras.

Extension of Medical Services in the Punjab.

Considerable progress has been made in recent years in the provision of facilities for medical attention in the Punjab. In 1927 the number of hospitals and dispensaries of all kinds in the province increased from 780 to 885, this being accounted for mainly by the creation of new rural dispensaries. Towards the end of 1925 the Punjab Government sanctioned the adoption of a scheme providing for the establishment of 375 new dispensaries in this category; of these 110 were opened in 1926 and 84 last year, leaving 181 to be established subsequently. In 1927 progress was somewhat slower than before, owing to the fact that certain district boards found the Government grants for construction, equipment, and maintenance insufficient to cover the expenditure involved. In other directions progress was less marked, and only two hospitals were taken over by the provincial Government from inferior authorities. Preparations were, however, made to accelerate the provincialization of a large number of hospitals. As in other parts of India, there is a pressing need for more women doctors in the Punjab; efforts are being made to afford improved facilities for the medical education of women, to extend female hospital accommodation, and to employ an increased number of women in hospitals and other branches of the medical service. Several new institutions for women have been established, or are contemplated. The figures given in the annual statement for 1927 of dispensaries and charitable institutions in the province illustrate at once the need for increased facilities for treatment and the extent to which advantage has been taken of the new services. There was an increase of 870,460 on the previous year's figure in the number of patients treated, the total for 1927 being 9,246,281. Of this number 1,418,188 were treated at rural dispensaries, as compared with 641,258 in 1926, an increase of 776,930.

Development of Child Welfare Work.

The annual public health report of the Central Provinces and Berar for 1927 calls attention to the development of maternity and child welfare work in that area, where special efforts have been made to secure a reduction in infantile mortality, which is higher than in any other province in India. It is the policy of the provincial Government, as funds permit and local assistance is forthcoming, to provide a well-equipped women's hospital, or women's branch of a main hospital, in each district. Meantime, the establishment of welfare centres is being encouraged, and satisfactory results have accrued from the activities of welfare organizations in the capital city of Nagpur, where the movement has naturally made the greatest headway. At the end of the year there were twenty-one centres affiliated to the provincial Red Cross Welfare Committee, which is entrusted with the direction of the movement, and it was expected that the opening of the full complement of thirty centres sanctioned for the province would be completed within a few months. The committee undertakes the training of health visitors and *dais*, and the arrangement of "baby weeks." In Nagpur seven centres have been established—the first in 1921—three being under the municipality, two (including a training centre) under the Welfare Committee, and two under branches of the Red Cross Society. It is considered that the ideal condition would be to have one small centre in each of the twenty-four circles into which the city is divided. The existing organization has, however, permitted the visiting and revisiting during early infancy of 4,387, or 63 per cent. of the total of 6,885 births recorded in the city. It has been found that the mortality rates per 1,000 births in respect of infant deaths under 1 month were 122.00 for the entire town, 109.64 for the cases visited, and 133.16 for other cases. These statistics relate only to the three municipal centres, and the "other cases" therefore include a number visited by other agencies, so that it is assumed that the mortality among those who were actually unvisited is probably even higher than the figures suggest. The mortality among cases visited is less than half the provincial average.

Shillong Pasteur Institute.

During 1927, 1,142 patients visited the King Edward VII Memorial Pasteur Institute and Medical Research Institute at Shillong, in Assam, for antirabic treatment, and among them there were 11 deaths, giving a mortality of 0.96 per cent. A classification of patients according to the period which elapsed between the time of the bite and the time of arrival at the Institute brings out the importance of early treatment. Lieut.-Colonel J. Morison, the director, in his annual report, states that among the 316 cases which arrived during the first four days after the bite there was one death; among the 240 patients who arrived five, six, or seven days after the bite there were three deaths. These patients died in from twenty-five to thirty-one days after being bitten, and in them, and in another case which arrived ten days, and ended fatally thirty-eight days, after the bite there was no evidence that treatment had any effect. The interval between the bite and death in the remaining six fatal cases was from 52 to 156 days, and it is suggested that in this group the treatment may have had a delaying effect. While the numbers are small, Colonel Morison points out that they illustrate a feature of antirabic treatment of which two explanations have been given, these being (*a*) that in the first group the virus had at once been planted in a nerve where it was shielded from the action of the protective bodies generated by the treatment, and (*b*) that there are strains of virus against which the strain of vaccine used in a particular institute has no effect. The general result shown by the year's figures is that among Indian patients who arrived within the first week after being bitten the mortality was 0.57 per cent., while among those who arrived after longer intervals the mortality was 1.77 per cent. With the success in the treatment of kala-azar with antimony compounds, and the increased accommodation available elsewhere for patients suffering from this disease, only doubtful and difficult cases are now received at the Shillong Institute, and Colonel Morison therefore suggests that the experimental ward hitherto used for kala-azar patients should be opened for cases of other diseases, such as chronic dysentery and sprue, on which research work is now being carried out.

Ranchi Indian Mental Hospital.

The accommodation for patients in mental hospitals in India appears in a number of cases to be inadequate. Reference was made in the *Journal* of October 27th (p. 763) to complaints of overcrowding in such institutions in Madras, in the Central Provinces, and in the Punjab, and

the report for 1927 on the working of the Ranchi Indian Mental Hospital, which receives patients from the provinces of Bengal and Bihar and Orissa, states that the congestion continued during the year. There is accommodation in the hospital for 1,286 patients—1,014 males and 272 females—and the daily average number under treatment was 1,410—1,182 males and 228 females. Owing to the lack of accommodation it was necessary to reject a considerable number of applications for admission as paying patients, while hydrotherapy could not be practised extensively as no suitable place was available. Early this year the management committee met to consider the questions of relieving congestion and providing additional buildings and staff, and its recommendations are receiving the attention of the local Government.

Scotland.

Passing of the Board of Health.

THE last meeting of the Scottish Board of Health was held in Edinburgh, on December 28th, 1928, and on January 1st, 1929, the functions and duties of the Board were taken over by the new Department of Health for Scotland. Dr. Walter Elliot, M.P., presided at the meeting. Reference was made to the retirement of Sir James Leishman, who was chairman of the Board, and the members resolved to place on record their high appreciation of his valuable services. Dr. Elliot recalled that Sir James Leishman first entered public life in 1903 as a member of the Edinburgh School Board, and in this capacity was specially associated with the development of evening continuation classes in Edinburgh. In the same year he became a member of the Edinburgh Town Council, and he afterwards continued to exercise an interest in educational matters as a representative of the town council on various educational institutions of the city. After six years' service on the town council he was elected to the important post of city treasurer in 1909. When the National Insurance Act was passed in 1910, and the National Health Insurance Commission was entrusted with the task of bringing its provisions into operation in Scotland, Sir James Leishman was appointed chairman. To this difficult task he brought organizing ability and driving power, which were invaluable in the successful inauguration of the scheme, and recognition of these services was made by the honour of knighthood being conferred on him in 1914. Since 1925 he had also been closely connected with the scheme of contributory pensions for widows, orphans, and aged persons, which was interwoven with that of health insurance by the passing of the Contributory Pensions Act in 1928. When the National Health Insurance Commission was merged with the Local Government Board of Scotland in the Scottish Board of Health in July, 1919, Sir James Leishman became a member of the new Board, and in March, 1928, he was appointed chairman. In this capacity, Dr. Elliot concluded, he shared in the responsibility for the administration of a great variety of subjects that came under the power of the Board in connexion with the various health services of Scotland.

Proposed Radium Institute for Scotland.

At a meeting of the board of management of the Royal Infirmary, Edinburgh, held on December 17th, 1928, it was decided to take steps for the establishment of a radium institute for the treatment of patients suffering from cancer and other conditions amenable to radium. For this purpose the managers proposed to reconstruct "Beechmount," a large house on the southern slope of Corstorphine Hill, which was bequeathed to the Infirmary some years ago. The managers also resolved, if necessary, to devote from the unrestricted funds of the Infirmary a sum of £40,000 to carry out this scheme and to provide accommodation for some thirty in-patients. It is intended that the institute should serve more especially for Edinburgh and the south-eastern area of Scotland. This is the first to be proposed in Scotland. The services of the staff of the [illegible]ment and other facilities of the Royal [illegible] for patients in this institute, where it is proposed that a relatively large quantity of radium shall be available under the care of an expert physicist.

The General Practitioner and the Public Health Service.

In his last annual report as medical officer of health for Aberdeen Dr. J. Parlane Kinloch, whose appointment as chief medical officer to the new Department of Health for Scotland was announced in the *Journal* of November 17th, discusses the relationship of the general practitioner to the public health organization. After dealing with the present inadequacy of hospital provision, which he suggests will be largely remedied by the unification of health services proposed by the Government, Dr. Kinloch states that there has been legitimate criticism of the failure to link the general practitioner with official services of his area. With every extension of the official health service the tendency has been to appoint whole-time officers to undertake the work, and he recalls that the British Medical Association is considering how the general practitioner may be enabled to participate in the official health service. The encroachment of public medicine on private practice, he states, is already practically complete; it is the declared policy of every political party to achieve an adequate health service for the whole community, and accordingly it would appear to be essential to incorporate the medical practitioner within the scheme. He expresses his personal conviction that "however admirable the administrative machinery of the Health Department may be, however adequate the hospital provision, however adequate the specialist, clinical, and laboratory aids to diagnosis and treatment, nevertheless the public health organization will fail to provide an adequate medical service for the community until such time as the general medical practitioner becomes an executive medical officer within the service." Dr. Kinloch contends that if the Government proposals are accepted they are at the parting of the ways, and that it is for the local authorities, the medical profession, and the public to determine whether the time is not overdue when the general practitioner should be re-established in his position of full responsibility as family doctor, responsible for watching over the family health, for the prevention of disease, and for utilizing to that end the whole of the efficient machinery that the local authority has provided. He is convinced that this is possible, and that, just as there must be complete interlocking between the work of the statutory health authority and the voluntary agencies, so the co-ordination of the work of the statutory health officer and the private medical practitioner within a complete medical organization will provide the adequate service that is the desire of everyone interested in social welfare.

Presentation to Dr. John Wilson.

On the occasion of his retirement, and on the completion of his fiftieth year in practice in the district, Dr. John O. Wilson was recently entertained at a public dinner in Huntly, when gifts were presented to him and to his wife. In the course of the proceedings reference was made to the fact that the medical connexion of the family with Huntly had lasted for over one hundred years, Dr. Wilson's father having been indentured as apprentice to a surgeon in the town in 1828, and having been joined in practice there by his son fifty years ago. Provost Christie, who presided, praised the readiness with which Dr. and Mrs. Wilson had always assisted any worthy cause; the people of Huntly owed a deep debt of gratitude to them. Mr. Robert Milne, in presenting Dr. Wilson with an inscribed gold watch and a wallet of notes, recalled the difficult conditions which prevailed in medical practice in the days before the advent of the motor car. No one, he remarked, had ever heard the doctor complain of his life or of unreasonable or irritating patients; he had always been the soul of geniality, even temper, and kindly personality. His poorer patients had received the same care and unremitting attention as the well-to-do, and he had made many a visit expecting no reward but gratitude. In his public appointments he had worked quietly, but none the less efficiently. After referring to Dr. Wilson's connexion with the Volunteer and Territorial Forces, Mr. Milne expressed the hope that he would have many years to enjoy his well-merited leisure. Proposing the toast of

"The Guests," Dr. Taylor of Keith said that he had attended the jubilees of several medical practitioners who were almost all decrepit. On the present occasion they welcomed one who was still gay and debonair, and who still had the tonic smile with which he greeted his friends and patients fifty years ago, a sprightliness of gait, and a seat in the saddle which would be the envy of many a man twenty years younger. Dr. Wilson, by his kindness and skill, had endeared himself to thousands of patients in Strathbogie and the district, and had always been most popular with his colleagues. In replying, Dr. Wilson expressed his warm appreciation of the kindness and honour shown towards him, and in a witty speech discussed the great developments in medical practice in his lifetime, recalling also many amusing incidents in his father's career in Huntly.

Presentation to Dr. W. G. Stevens.

Dr. W. G. Stevens, who is retiring from the post of medical officer of health for the burgh of Renfrew after fifty years' service, was, on December 26th, 1928, made the recipient of a presentation, when Provost M'Gregor handed over to him an address and cheque as a mark of appreciation by the town council and his friends of his long and faithful service in the burgh as medical officer of health and factory surgeon, and also as a medical practitioner. Dr. Stevens is now 88 years of age, and was a student under Lister when the latter took up his post in 1860 as professor in Glasgow Royal Infirmary. During his long career in Renfrew Dr. Stevens took an active interest in the local Volunteer and Territorial Forces, having been surgeon lieutenant-colonel to the 2nd Volunteer Battalion Argyll and Sutherland Highlanders, and afterwards lieutenant-colonel in the Territorial Sanitary Service of the R.A.M.C. He holds the Volunteer decoration for long service. Mrs. Stevens was presented with a gold brooch.

Edinburgh Samaritan Society.

The fiftieth annual report of the Samaritan Society of the Royal Infirmary of Edinburgh has just been issued. The society was founded in 1879 to assist the families of patients by providing clothing and travelling expenses, and to help patients leaving the Infirmary by finding work for them, and in other ways. Patients in other hospitals of the city are now included in the benefits of the society, which also undertakes a share in general social service work relating to patients under treatment in the wards. In 1908 the society received a bequest of £19,000, which considerably strengthened its position, and it is further supported from year to year by voluntary contributions. The society now maintains three almoners, and during the past year dealt with 441 new cases, against 393 in the previous year, the visits paid by the almoners being 1,456, as against 1,298 in 1927. In the past year its expenditure was £202 in excess of its income, and an appeal for new subscribers is therefore being made.

Ireland.

The Future of Medical Teaching in Dublin.

DR. R. J. ROWLETTE, who is president of the Section of Medicine of the Royal Academy of Medicine in Ireland, delivered recently a thought-provoking address on the aims and methods of medical teaching in Dublin. He said that the primary duty of a controlling body, such as the General Council of Medical Education and Registration, or the Irish Free State Medical Registration Council, was to satisfy itself that the educational course and examination tests were such as to ensure the possession by those obtaining admission to the *Register* of a degree of knowledge and skill requisite for the efficient practice of medicine, surgery, and midwifery; but a council had to go further, and to assist the qualifying bodies by direct advice. The General Medical Council, in its life of seventy years, had maintained a sound standard, but it had inevitably tended also to produce an undesirable uniformity. Too strict standardization and too close uniformity hampered individual thought and checked progress. The Council had naturally been most concerned with English conditions, and the Irish Council would have to consider whether the needs of those about to practise in Ireland required any special attention, and to ensure full advantage being taken of the local special facilities for teaching. Some changes made in recent years under the influence of the General Medical Council were open to criticism: the extrusion of the preliminary sciences to a pre-registration period interfered with the cultural education of the student; the insistence on certificates in a large number of special subjects prevented a due appreciation of the fundamental principles of the great unities of medicine and surgery, and encouraged specialization prior to qualification; in midwifery and gynaecology the standard traditionally required by the Dublin schools had been lowered in recent years. The most distinctive feature of Dublin teaching was its practical character, and its heart was the resident student system; it was worth considering whether that system should be made compulsory. At present sufficient care was not taken to ensure that students attended hospital regularly. The aim of clinical teaching should be to render the student familiar with the condition of the patient by first-hand observation, and to let him see and practise the several methods of diagnosis and treatment; observation of the course of the disease from day to day was necessary, but wandering from hospital to hospital in the early clinical years prevented this consecutive study. In the later years, however, such wandering broadened the mind. The special facilities which Dublin possessed for the study of midwifery and ophthalmology should be fully used, but, at present, there was little provision for teaching gynaecology. The large number of small hospitals in Dublin, though in some respects advantageous, had certain grave disadvantages. The small amount of material at the disposal of any clinical worker hampered research. The organization of the smaller hospitals was necessarily faulty in that they were not supplied with adequate auxiliary staffs, and there was a tendency to replace personal consultation by a series of written communications. Medical education in Dublin was likely to lag behind that in other centres unless a method was found of amalgamating some of the smaller hospitals. It ought to be considered whether there were not certain definite needs of Ireland which should receive particular special consideration in an Irish school. In two subjects the Irish practitioner required special knowledge—midwifery and public health. The people of Ireland had a right to demand a higher standard of knowledge than the schools had yet required. There was almost no provision for research in Ireland, and without research education became lifeless. Recently the Rockefeller Foundation had given generous help to both universities, but much more was needed. Unless there was unanimity in the demand for funds, wherever the demand was made, success could not be expected. An attempt made by the Academy a few years ago had failed to arrive at unanimity, but another attempt on different lines might have more success. The Dublin School had a great past, it had stood the test of time, and had shown adaptability to changing circumstances. In the future it could show further powers of growth and adaptation, but it was necessary to watch for signs of weakness, to promote development where this was desirable, and to remember that a school was a living thing.

Sir William Taylor (President of the Royal Academy of Medicine) emphasized the importance of reducing, not the teaching, but where possible the cost of it to the student. He deprecated in strong terms any tendency to specialization on the part of students of medicine, and urged that this should not be encouraged till after qualification. The study of large groups of cases of one disease by doctors particularly interested in that disease tended to the advantage of medical men and the general public; amalgamation of hospitals was necessary for such study to be practicable, and if the Dublin School was to regain its former position as a pioneer in medicine such amalgamation was necessary. Professor H. F. Moore emphasized the importance of maintaining and increasing close co-operation between the Dublin schools of medicine; he foresaw many advantages which would follow from it. Professor T. G. Moorhead deprecated any revolutionary changes in the student's curriculum, the object of which should be to

impart a thorough knowledge of the essential principles of medicine, surgery, and midwifery. Sir John Moore defined the status and powers of the General Medical Council; its position was purely that of an advisory body, and it had no power to alter the curriculum of any licensing body. Dr. Bethel Solomons advocated strongly a period of residence in a maternity hospital.

Vital Statistics for the Irish Free State.

The report of the Registrar-General of the Irish Free State for 1927 states that the estimated population at the middle of the year was 2,957,000; the population according to the 1926 census was 2,971,992. Deaths in 1927 numbered 43,677, or 1,937 more than in the previous year. The number of emigrants in 1927 was 27,309, and of immigrants 2,084. The death rate was equivalent to a rate of 14.77 per 1,000 of the estimated population, which is lower than the average for the previous ten years, but higher than the rate for 1925 (14.62) and 1926 (14.05), the increase being due chiefly to influenza and heart and respiratory diseases. In the epidemic diseases group Dublin county borough, with 1.59 per 1,000, had the highest rate of any county or county borough; the rate for the whole country was 0.52. The number of deaths from tuberculosis was the lowest yet recorded, deaths from all forms of the disease numbering 4,301, or 1.45 per 1,000. The corresponding rate in Northern Ireland was 1.41, in England 0.97, and in Scotland 1. The number of deaths from cancer—3,113—in 1927 was the highest yet recorded, being 92 more than in 1926; the increase occurred entirely among men. Deaths from bronchitis numbered 2,610 and from pneumonia 2,883, showing increases of 177 and 519 over the 1926 figures. The number of deaths of infants under 1 year of age registered in 1927 was 4,254, or 71 per 1,000 births, as compared with 74 in 1926, and an average of 75 for the ten years 1917–26. In recent years the infant mortality rate has tended to increase. The infant death rate in rural areas was 56 per 1,000 births, in urban areas 99 per 1,000, and in Dublin county borough 123 per 1,000. For Northern Ireland the infant mortality in 1927 was 78 per 1,000, for England and Wales 70, and for Scotland 89.

Galway County Hospital.

Galway Hospital Committee has adopted the recommendations of the visiting committee and the medical staff as to the filling of the vacancy created by the death of Dr. Michael Dexitt, visiting physician to the hospital. It is proposed that the salary, heretofore £600, be divided equally between the surgical and medical officers, giving £150 each to the surgeons, Mr. M. G. O'Malley, F.R.C.S., and Dr. R. B. Mahon, as annual honoraria, to cease when they no longer hold chairs in the University. The committee further recommended that two physicians be appointed—one to be honorary, for the present, provided he holds a chair in the University. The salary for the paid physician, it is suggested, should be £300 a year, provided he does not hold a chair in the University; if at any period he is allocated to a part-time chair the salary payable from the rates is to be reduced to £150 a year. The position is restricted to male persons under the age of 40, with at least five years' practice, and holding the degree of M.D. and the D.P.H. The appointment will be part-time, and the holder must practise only as a physician —both inside and outside the hospital—while his salary remains at £300.

Appointments at Coombe Hospital, Dublin.

Dr. Timothy M. Healy, late Assistant Master of the Coombe Hospital, and son of Mr. T. M. Healy, K.C., was recently elected Master of the Hospital for the usual term of seven years at a special meeting of the board of guardians and directors. Dr. Healy graduated M.B., B.Ch., and B.A.O. at the National University of Ireland in 1921. Dr. Ninian Falkiner has been elected by the directors to the post of gynaecologist to the hospital in succession to the late Dr. L. Cassidy. Dr. Falkiner was Assistant Master in the Rotunda Hospital for the maximum period of three years, and was mainly instrumental in organizing the pre-natal clinic in connexion with that hospital.

Professor D. T. Barry.

The President of the French Republic has appointed Professor David Thomas Barry a Knight of the Legion of Honour. Professor Barry, who has held the chair of physiology at University College, Cork, since 1907, received his medical education at the old Queen's College there, in Liverpool, and also in Paris. He graduated M.B., Ch.B. R.U.I. in 1894, proceeding M.D. in 1905; four years later he was admitted to the Fellowship of the Royal College of Surgeons of England.

England and Wales.

Home Service Ambulance Committee.

THE report of the Home Service Ambulance Committee of the Joint Council of the Order of St. John and the British Red Cross Society for the third quarter of 1928 shows that at the end of September there were 294 of the committee's ambulances in service, and 61 affiliated stations, making a total of 355; the number of patients carried during the quarter was 29,656. The report refers to the advantages gained from the adoption of the county as the basic unit for the organization of the service, and so thoroughly is the country equipped that there should now be no part which cannot be reached by a motor ambulance within a reasonable time. In connexion with finance, however, it is noted that there does not seem to be a universal appreciation of the extent of the support that, by energy and perseverance under a well-organized system, may be obtained from the general public for ambulance work. While an agricultural county may achieve such success as to be able, largely from its own resources, to provide for the replacement of its ambulances as they become worn out, other counties experience difficulty in providing adequately for maintenance, and, when new ambulances are required, appeal to the committee for the whole cost. The hope is expressed that all county representatives and committees will endeavour so to organize their areas that they may look to the future, not only without fear as to the permanence of the service as it is, but with the assurance that there shall be steady progress in the provision of improved ambulances, and consequently greater efficiency of service. The quarter under review proved a particularly busy one in the matter of road accidents, in connexion with which 2,852 cases were carried in the ambulances. There was a considerable increase in the number of roadside first-aid stations manned by members of the associated organizations during holidays and week-ends. At one of these stations a roadside appeal to motorists for assistance in meeting the cost of providing a hut, surgical equipment, and a telephone yielded in two days nearly £150.

Smoke Abatement League.

During the first part of the year ending June, 1928, the lack of secretarial assistance hindered the development of active propaganda work by the Smoke Abatement League of Great Britain, but some progress was made later. The annual report of the league mentions that at a conference last March, in Manchester, held jointly with other interested bodies, Dr. H. A. Des Voeux read a paper on the Public Health (Smoke Abatement) Act, 1926, the subsequent discussion being opened by Dr. R. Veitch Clark. A conference under the auspices of the Scottish branch was held in Glasgow in May, when it was decided to press for the application of a similar measure to Scotland. Efforts are being made to secure a wider measure of support for the work of the league by means of newspaper publicity, lectures, and correspondence with members and prospective members of municipal corporations. An appeal for subscriptions, which was addressed to about 290 local authorities, did not, unfortunately, secure a very cordial response. After the close of the year under review a conference was held at Harrogate, on September 29th and 30th, when the secretary of the league, Mr. Arnold Marsh, presented a report on an inquiry into the experience of users of solid smokeless fuels. This report contains an

interesting summary of the advantages and disadvantages encountered in the employment of such substitutes for coal. In general, and notably in respect of heat efficiency, economy, and cleanliness, users have found the various brands of smokeless fuel on the market superior to coal. Copies of the report, and of a paper on the influence of air pollution on vegetation, read on the same occasion by Mr. W. W. Pettigrew, general superintendent of the Manchester Parks Department, may be obtained from the offices of the league, 23, King Street, Manchester. The British Medical Association is represented on the council of the league by Dr. G. Clark Trotter and Mr. Bishop Harman.

London By-Laws for Nursing Homes.

By-laws with regard to nursing homes in the county of London under the Nursing Homes Registration Act, 1927, have been approved by the London County Council. The by-laws are based on the model laws issued by the Minister of Health, with certain alterations, to which the Minister sees no objection. One of the alterations is the substitution in the by-law No. 1, to meet the special circumstances of London, of Section 55 of the Public Health (London) Act, 1891, for the Infectious Disease (Notification) Acts, 1889 and 1899. The other alteration is the addition of a proviso to the by-law No. 3. This by-law lays it down that the keeper of a nursing home shall keep a case record giving a daily statement of the health of every patient in the home suffering from acute illness, and, if it is a maternity home, of every mother and infant, as well as a periodical statement of health of any other patient. To this the London County Council adds the proviso, not in the model by-law, "provided that such statement need not include any medical record relating to the patient." It is proposed to append to the by-laws suitable notes referring to the provisions of the Act as to the inspection of premises and the keeping of records, the definition of a maternity home, and the penalties for infringement of the by-laws. The by-laws, after they have been confirmed by the Minister, will be enforced by the Council.

Instruction in Health Work and Nursing at Hull.

With the approval of the Ministry of Health a scheme of training for health visitors has been arranged at Hull. Theoretical instruction will be provided at the University College, while practical teaching will be given in the public health department of the city. During the practical part the students will rank as probationer health visitors, and receive a salary from the corporation. The number of probationers under the Hull Public Health Department is limited to six annually. They are required to have had three years' training in a general hospital approved by the General Nursing Council for England and Wales, to possess the certificate of the Central Midwives Board, and to undertake to remain as probationer health visitors in the service of the Corporation of Hull for a period of twelve months. They will obtain experience of the work in the school medical and antituberculosis departments, as well as of the usual activities of a health visitor. It is proposed also to provide instruction at University College, Hull, in certain parts of the examination for the diploma in nursing of the University of London. The lectures will cover the subjects of Part A of the syllabus, which must be taken by all candidates, and also most of Part B, Section 8 (elementary economics, sociology, and hygiene in relation to the duties of public health nurses). If there is sufficient time a course in the methods of teaching and the elements of educational psychology will also be provided. Further information may be obtained from the secretary, University College, Hull.

Changes in Medical Practice.

Dr. R. W. Marsden took as the subject of his recent presidential address to the Manchester Medical Society "Changes in medical practice in the last forty years." He said that during the period under review a prominent feature of medical practice had been the increased attention given to prophylaxis. He instanced in this respect the wide ramifications of the public health service, and suggested that by its continual encroachments on private practice it might in the end necessitate the formation of a State medical service. He then referred to the changes which had taken place in the manifestations, management, or prevalence of certain diseases; to the rarity of once common diseases such as chlorosis, cirrhosis of the liver, polyneuritic psychosis, delirium tremens, and gout, attributing the first-named to notable change in social ideas and customs in the female sex, and the others to a more or less compulsory increase in sobriety. Dr. Marsden next spoke of the apparent decline in frequency of "dyspepsia" and "indigestion," and the apparent increase in frequency of ulceration, particularly ulcer of the duodenum, and its occurrence more especially among young male adults. The introduction of *x*-ray examination with opaque meals, and the enormous advances in the surgery of the abdomen, had, however, so revolutionized work and ideas on these subjects that it was difficult, if not impossible, to compare the conditions of forty years ago with those of the present time. Turning to the great increase in the number of cases of neurasthenia and of the various psychoses, he expressed the opinion that to a large extent this was a direct or indirect consequence of the war. Dr. Marsden then mentioned the changes in our knowledge of venereal diseases and their treatment; the introduction of serums and vaccines; the value of lumbar puncture; the advances resulting from the vast science of immunology; the importance and complexity of the various blood examinations; the attention given to the endocrines and vitamins; the use of artificial sunlight and other rays, as well as of radium, and the various forms of electrical energy. Finally, he asked whether there was any evidence of a new disease having appeared, citing particularly encephalitis lethargica and trench fever, and came to the conclusion that it could not be said that these were new developments.

Public Conveniences in London.

An inquiry into the public conveniences of London, their number, distribution, adequacy, and sanitary condition, has just been conducted by officers of the London County Council. The earliest general legislation on this subject was embodied in the Public Health Act, 1848, but it was not until the Public Health (London) Act, 1891, that there began to come into existence the now familiar underground vaults, with their white tiles, mosaic floor, and white glazed earthenware stalls. These conveniences, situated as far as possible on island sites in busy thoroughfares, took the place of old iron structures, with troughs and basins, which were always unsatisfactory and often foul. Since the nineties a great change has taken place in the social habits and conditions of the people of the metropolis, and this has made it necessary to review the existing provision and to determine its adequacy. During recent years an enormous number of women have entered the ranks of those who come daily from suburban to central London to pursue their occupation. The increase in road traffic and in facilities for public entertainment, and the habit of shopping at a distance, are all factors which lead to more people being away from home, and for longer periods, than formerly. For women, the present provision in central London is wholly inadequate, assisted though it is to some extent by special provision at restaurants, stores, and railway stations, the latter being preferred to the municipal provision on account of their greater privacy. Even for men the provision would be barely adequate were it not for a good deal of privately provided accommodation with access of a quasi-public character. In the outlying districts the public provision is very scanty; there it has been the custom to rely largely upon the accommodation which public-houses can offer, but the diminution in numbers of public-houses and the curtailment of opening hours has restricted this provision, which in any case was not very satisfactory. Dr. F. N. Kay Menzies, the medical officer of health to the Council, states that, apart from the great inadequacy of the provision for women, the principal need is for some improvement in directional indications to the whereabouts of the public conveniences; such directions should be as prominent as possible, while the accommodation itself should be inconspicuous. He adds some reference to the conditions in Continental capitals. In Berlin the construction of underground conveniences is now being pushed forward, and those above ground are being eliminated. In Paris by far the larger number of conveniences are above ground, and are used indiscriminately by men and

women; in the underground lavatories, numbering only thirteen at present, separate accommodation for the sexes is provided. In Rome there are only thirty-nine public lavatories, thirty-three of which are on the street level, but there is a good deal of semi-public accommodation at the restaurants and like places, and the same is true of Vienna, which has eighty-six public lavatories, of which only five are underground. In London the local authorities maintain 668 conveniences for men, 233 of them with w.c.'s, and the others with urinals only, and 184 conveniences for women. Dr. Menzies points out that while it would be ungracious to make comparisons where conditions are so different, yet the general standard of excellence of sanitation in London, the regard paid not only to decency but to delicacy of feeling, and the almost complete absence of gross nuisance, in spite of conditions of almost unparalleled intensity of occupation, constitute a civic achievement which no other city has surpassed. The London County Council is to give further consideration to the matter after the observations of the City corporation and the borough councils have been received.

The Cicely Northcote Trust.

The nineteenth annual report of the Cicely Northcote Trust, which was formed in 1909 to extend to the wards the social service work of the almoners' department at St. Thomas's Hospital, London, covers the year which ended last October, and again presents an interesting survey of varied activities. The expenditure of the trust was about £178 in excess of its income; this was due partly to expense upon repairs to the trust's hostel, but also to an increase in the work undertaken, which makes extended financial support desirable. The trust employs four almoners for social work in the wards, and the report contains convincing evidence of the value of this auxiliary service to that of the hospital proper. Advice and assistance are given on matters relating to insurance, compensation, convalescence, employment, and in many other ways less easily defined. The trust is also responsible for seeing that all insulin needed by patients is obtained, and undertakes the duty of ensuring the regular attendance of patients receiving this treatment. Another valuable activity is the after-care of cancer patients, in connexion with which efforts are made in appropriate circumstances to find suitable employment; the number of cases on the after-care register increased during the year to 1,289. It is intended in the course of time to extend the premises secured last year as a centre and club for fathers and mothers belonging to the St. Thomas's maternity department. In connexion with the International Social Service Conference held in Paris some months ago, the interesting fact emerged that when the hospital social service was started in Holland at the Wilhelmina Hospital in Amsterdam in 1913 it was modelled upon that of the Northcote Trust; similar services have since been instituted, following this example, in fifteen other hospitals in Dutch cities.

Correspondence.

A HINT TO MEDICAL TESTATORS.

SIR,—During 1928 I have seen in the press particulars of the wills of fully ten or a dozen medical practitioners who obviously, from the details given, had no dependants. Large sums were bequeathed to various deserving charities; but nothing at all to those charities which should have the first call on members of the profession—that is, Epsom College and the Royal Medical Benevolent Fund.

The bulk of us, of course, have to think first of our families when making a will; but to those who have none I urge the duty of preference to the proper charities of our own profession. At Epsom College the council are engaged on the uphill task of collecting money to build a new sanatorium. After a year and a half of effort about one-fifth of the large sum required has been obtained. A few good legacies would enable a start to be made with this most necessary improvement: *a fortiori*, from those who can afford them, immediate contributions of any size will be most gratefully accepted.—I am, etc.,

London, S.W.5, Dec. 30th, 1928. HENRY ROBINSON.

STANDARDS OF PUERPERAL MORBIDITY.

SIR,—All who are interested in obtaining reliable data regarding the frequency and distribution of puerperal sepsis and morbidity will agree with the Master of Rotunda when he says (*British Medical Journal*, December 22nd, 1928, p. 1155) that it is "most important that there should be absolute accuracy" in the standard of morbidity adopted. I should like, however, to point out that even if the standard of morbidity laid down by the British Medical Association is rigidly adhered to, reliable data will not necessarily be obtained. Puerperal morbidity is simply defined as a "rise of temperature to 100° F. or higher, on at least two occasions between the second and eighth days." But no instructions are given as to how the temperature is to be taken—whether in mouth or axilla. The same criticism applies to the standard of puerperal pyrexia laid down by the special subcommittee of the Royal Society of Medicine in 1925. It adopted the Strasbourg Convention standard which defined puerperal pyrexia as a "temperature of 100.4° F. (38° C.) or more, sustained during a period of twenty-four hours or recurring during that period."

Every ward sister knows that the mouth temperature is usually considerably higher than the temperature taken in the axilla. In order to test it, I took the temperature of a patient suffering from puerperal pyrexia. In the mouth the thermometer registered 100.4° F. after three minutes; after the same time in the axilla the same instrument registered 98.4° F.; this test was repeated with the same result. At University College Hospital all adult temperatures are taken in the mouth; at another large maternity hospital with which I am acquainted they are taken in the axilla. Obviously morbidity statistics from these two hospitals are quite incomparable. If unity in method of recording cannot be obtained it would be useful if a note were inserted in each hospital report stating definitely the standard of morbidity used and the method of recording adopted.

When the committee of the Royal Society of Medicine was sitting I wrote to the secretary drawing his attention to this point, but so far as I am aware no action was taken.—I am, etc.,

London, W.C.1, Dec. 28th, 1928. F. J. BROWNE.

STREPTOCOCCAL VACCINES FOR PUERPERAL SEPSIS.

SIR,—Dr. R. R. Armstrong and Mr. Wilfred Shaw, in your issue of December 15th, 1928 (p. 1082), draw from their work the conclusion that the prophylactic inoculation of streptococcus vaccine had failed, in their hands, to prevent puerperal infections. Does their investigation really justify that conclusion? In their summing-up at the end of the paper they assert that "morbidity in the puerperium is in the main due to a single cause, the *Streptococcus pyogenes*."

It will readily be seen that the validity of the conclusion about preventive inoculation really depends upon the truth of this latter statement; for, clearly, if there had been very little morbidity due to this streptococcus among the inoculated women, and much due to other causes, the benefit of preventive inoculation, directed specifically against this one microbe, would not be apparent in the morbidity rates. It may be well, then, to ask what is the evidence for the statement that *Streptococcus pyogenes* is the chief cause of morbidity in the puerperium. Dr. Armstrong and Mr. Shaw give us none—and so far as I know there is very little available. True, it is generally accepted—and I think quite rightly—that this microbe is responsible for most of the puerperal septicæmia and for most of the deaths; but it does not necessarily follow that the same holds true for the minor sepsis—the "morbidity"—of the puerperium.

During the past seven months an inquiry has been proceeding at Queen Charlotte's Hospital which throws some light on the matter. Almost every "morbid" and "clinically septic" case occurring in the hospital during this period has been bacteriologically investigated—by culture from the interior of the uterus, by examination and

cultivation of the urine, and, where there was high fever, from the blood also. The results up to date have been as follows:. 1,053 women have been delivered; 85 "morbid" and "clinically septic" cases of all degrees have been investigated—that is, practically all those in whom the febrile disturbance was judged to be due to infection arising from the genital or urinary tracts. Of these 85 cases only 6 have yielded a culture of *Streptococcus pyogenes*. In the remainder the predominant organisms recovered from cultures have been diphtheroid bacilli, *B. coli*, staphylococci, non-haemolytic streptococci, and various unidentified Gram-negative cocci and bacilli. The incidence of *Streptococcus pyogenes* infections may, then, be expressed as follows: 0.6 per cent. of the 1,053 women have developed morbidity associated with the presence of this microbe in the uterus; 7 per cent. of the group of "morbid" and "clinically septic" cases have been infected by it.

Possibly the investigation of a larger series will tend to raise these percentages somewhat. Meanwhile, it may be safely said that the figures fail to support the generalization of Dr. Armstrong and Mr. Shaw that *Streptococcus pyogenes* is the chief cause of morbidity in the puerperium; and they have, in consequence, an important bearing upon the statistical results presented by these authors. In the absence of evidence to the contrary, and in view of the fact that there was no epidemic in either series of cases, it would seem legitimate to assume that the incidence of infections by *Streptococcus pyogenes* among the St. Bartholomew's women was probably not greater than among those at Queen Charlotte's Hospital. (It may well have been a little less, owing to the fact that the Queen Charlotte's Hospital series almost certainly includes a larger proportion of difficult labours.) In that case, among the 668 women of the St. Bartholomew's series who received a prophylactic inoculation there would have been only four or five who might have been expected to develop morbidity due to infection by *Streptococcus pyogenes*. Surely in these circumstances there must be considerable doubt as to whether the determination of morbidity rates without bacteriological controls afforded a satisfactory basis for any conclusion. Any effect which the vaccination might have had could easily have been obscured by small fluctuations in the morbidity rate arising from causes other than infection by *Streptococcus pyogenes*.

Finally, I would submit that the same kind of criticism applies to the vaccine treatment employed by Dr. Armstrong and Mr. Shaw for the morbid cases of their second group. There must be considerable doubt as to how many of these cases were suffering from infection by *Streptococcus pyogenes*. Probably the majority were not.—I am, etc.,

London, W.2, Dec. 22nd, 1928. LEONARD COLEBROOK.

SIR,—I read the paper of Dr. Armstrong and Mr. Shaw (December 15th, 1928, p. 1082), and also Dr. Arkwright's comments thereon (December 29th, p. 1193), with much interest; but I should like to submit that the conclusion that vaccines have no therapeutic value in puerperal sepsis must be limited to the type of vaccine used in the investigation. It is now some years since I published a paper in the *British Medical Journal* upon two residual vaccines designed for use in acute infections, and I do not think that I am overstating the case for them when I say that they do not often fail to render the patient convalescent within twenty-four hours. This is not the place to describe them in any greater detail, but it should be said that they give rise to no sort of clinical reaction or shock: either the patient becomes rapidly well or remains exactly as if no vaccine had been given. It is now beginning to be recognized that the therapeutic action of a vaccine and the nature of the underlying mechanism of resistance is not nearly so simple as was formerly assumed. At the same time, I doubt if protein shock affords an adequate explanation; amongst a number of other reasons is the fact that these two vaccines produce their results with not the slightest trace of shock.—I am, etc.,

Manchester, Dec. 29th, 1928. C. E. JENKINS.

INVESTIGATION OF MATERNAL MORTALITY.

SIR,—The decision of the Maternal Mortality Committee to institute inquiries by public health officials into maternal deaths raises issues of great importance to general practitioners. We are told that the investigations are directed towards improving the maternity service of the country, but we are not told anything about the need for these investigations; we are not told what sort of information the Committee hopes to obtain that could not be obtained by other means, and we have not been asked whether we are willing to co-operate in this scheme.

General practitioners are as anxious as anyone to reduce maternal mortality, and I believe that they would not object to some form of consultation, with its traditional safeguards, to discuss a maternal death, but they object very strongly, I am sure, to any form of inquest.

To my mind there are grave objections to the Committee's scheme as it has been presented to practitioners:

1. The possibility of coercion. "I take it that if a doctor resents the inquiry he will say so." I quote an eminent public health official, and this, presumably, is the view taken by the Committee. The implication is clearly that if the doctor does not express his resentment the inquiry will be held. It is difficult to see what justification the Committee can have for acting on the assumption that if a doctor resents the inquiry he will say so, because it is obvious that the assumption may be mistaken and that such a mistake may be followed by very serious consequences. Let me put it in this way. A practitioner receives a letter to the effect that the county medical officer of health is directed by the Minister of Health to investigate the death of Mrs. X, and will be obliged if the practitioner will meet him. The doctor resents the inquiry, but, far from saying so, it never occurs to him to refuse to meet an official who comes down with all the prestige of the Minister of Health behind him. So that the investigator gets his information, but he gets it simply because the practitioner is overawed by his authority and feels compelled to speak. In my opinion an investigator who takes advantage of a feeling of compulsion to extract information is guilty of coercion, and whether he does so deliberately or unconsciously makes little difference to the victim. I submit that the bare possibility of coercion is intolerable, and especially so when this possibility can so easily be removed; all that is required is a second letter to practitioners asking them whether or no they are willing to have their cases investigated.

2. The answers to the following questions should have been made clear to practitioners:

> (*a*) Does the Maternal Mortality Committee propose to proceed with an investigation in which the doctor in attendance declines to collaborate? As the matter stands at present there is reason to believe that this is the intention of the Committee.
>
> (*b*) Is it clear that the investigator must not question relatives or nurses without first obtaining permission of the doctor in attendance?
>
> (*c*) Is it the intention of the Committee that its investigators should try to find out whether the disaster of a maternal death is attributable to lack of skill or care on the part of the practitioner or nurse?

3. The question of legal privilege is not made clear. In an explanatory note it is stated that information given on the inquiry form will be treated as strictly confidential. It is safe to say that a promise of secrecy signed by the Prime Minister himself would not induce a judge to go beyond established precedents in the matter of privilege, and that it would probably take an Act of Parliament to protect practitioners in the courts. In view of this difficulty practitioners may reasonably be asked to risk the question of "privilege," but if they do risk it it should be with their eyes open. It is very unlikely that the Committee would undertake to indemnify a practitioner who relied on its promise of secrecy and who had suffered in the courts in consequence. Perhaps one of the maternal welfare societies would agree to pay compensation. It is a possibility that might be explored.

4. There are other matters which are at present extremely unsatisfactory. One example must suffice. At the end of the inquiry form, after the space for the

comments of the doctor, there is a third space which gives the investigator the opportunity to add allegations which the doctor has no means of refuting.

I suggest, Sir, that the Maternal Mortality Committee should reconsider its decision, that a scheme with adequate safeguards should be worked out and submitted with full explanation of its scope and limitations to practitioners, and that practitioners should be asked to say whether or no they are willing to co-operate in the scheme submitted to them.—I am, etc.,

R. L. KITCHING.

Wetherby, Dec. 26th, 1928.

RADIUM AND CANCER.

SIR,—My attention has been drawn to a paragraph in the *Times* Weekly Edition of September 13th, 1928, headed "Radium and cancer," and quoting a statement by Mr. T. W. Paulin. In the course of this he refers to a "new technique" for the application of radium which has given most encouraging results.

> "The new technique, which has been in use on the Continent, at Brussels in particular, for some time past, consists in inserting a number of needles containing radium all round the cancerous growth . . . in favourable cases the growth is not only destroyed, but is prevented from spreading to the surrounding tissues."

This is perfectly correct, save for the statement that the technique referred to is new, and the inference that it was evolved on the Continent.

The technique was fully worked out here in Dublin, and has been in constant use for the last thirteen or fourteen years. The nature and theory of the technique were dealt with by the writer in a paper which appeared in the *Scientific Proceedings* of the Royal Dublin Society, May, 1914, p. 290 et seq., "On the local application of radium in therapeutics"; and evidence of its remarkable practical success appears in a paper contributed by Dr. Walter C. Stevenson to the *Dublin Journal of Medical Science* for March, 1915.

The following quotation from the latter paper shows that Dr. Stevenson was then quite cognizant of the value of boundary treatment as referred to in Mr. Paulin's statement. Dr. Stevenson is speaking of a case of cancer which, originating in malignant polypi of the nose, had, among other lesions, caused proptosis of the eye. With the object of inhibiting the growth from increasing upwards and pressing on the eyeball, Dr. Stevenson arranged a line of needles immediately under the orbit. His treatment had the desired effect. Dr. Stevenson adds: "This systematic radiation of a growing edge is only possible by the needle method, and is one of its great advantages." It is, therefore, evident that in every particular the technique Mr. Paulin refers to has been in use in this city since 1914 and 1915. So far as I know it originated and received its earliest trial and publication in connexion with the work done in the Radium Institute affiliated with the Royal Dublin Society.—I am, etc.,

J. JOLY, Sc.D., F.R.S.

Trinity College, Dublin, Dec. 18th, 1928.

THE INTERNATIONAL CANCER CONFERENCE.

SIR,—Our attention has been drawn to a statement—presumably a commentary on the recent Cancer Conference in London—by Dr. A. Leitch, which has been widely disseminated through the lay press. In this occurs the following remark: "Unfortunately the discussion failed to reveal much support for this particular mode of treatment [lead therapy], and it was unsparingly condemned by some of those in England and America who had given it a serious trial." As the result of this and other statements in the lay press we are expected by our patients and by their doctors to allay the fears which he and others have created in regard to our method of treatment. This can most properly be done in the medical press.

In the above quotation it will be noted that it is stated that our method was "unsparingly condemned by some of those . . . who had given it a serious trial." The so-called "serious trials" that led to the unfavourable opinions of which Dr. Leitch speaks must have been those mentioned in the report of the Cancer Committee of St. Bartholomew's Hospital, in that of the London Cancer Hospital with which Dr. Leitch is connected, and in the remarks of Dr. Burton Simpson of Buffalo, U.S.A.

At the Conference we treated the Bart's report more kindly than it deserved. We did, however, point out that it was hardly worthy of consideration for several reasons, one of which was sufficient to put it out of court—namely, that only twenty cases had been treated, and that of these fifteen were too ill to receive more than a very small, in some an infinitesimal, quantity of lead!

The remark made by Mr. Hume, who read the Bart's report, that the administration of lead converts the patients into "physical wrecks"—repeated in the press in headlines—was, we think, unfortunate, for it demonstrated only *his* inability to conduct the treatment properly. We are sure that if Mr. Hume could read some of the letters received from patients treated in Liverpool concerning the reports of his remarks as published in the lay press he would realize that he has still much to learn. We ourselves have observed no really serious reaction in any patient for some years. However, this report stood condemned by the illogical character of the evidence adduced.

With regard to the other report, that of the Cancer Hospital, the production of this at the Conference was a most unusual procedure, for the "observations" on which it was based had been published in the *British Medical Journal*[1] a short while previously—an action which could hardly fail to prejudice the discussion in advance. The interview granted to the lay press two or three days before the discussion by a member of that hospital staff, and the terms in which he then spoke of the treatment, must also have had a prejudicial effect.

It is, however, now necessary to recall what happened on the first publication of the report of the London Cancer Hospital, when it was severely handled by various correspondents in the *British Medical Journal*. Mr. Duncan Fitzwilliams wrote:[2] "From the results of this administration—I cannot call it investigation—Dr. Wyard [physician to the London Cancer Hospital] expresses an adverse opinion on the method of treatment by lead. It would be fairer, surely, if he had expressed an adverse opinion on his method of treatment by lead. Can any fair-minded or logical man say that anyone is justified in drawing conclusions from material such as this? I cannot think that even the most ardent opponents of the method . . . would care to quote such evidence."

We ourselves stated[3] that it was doubtful whether Dr. Wyard "ever seriously attempted to give the treatment a fair trial" at the London Cancer Hospital, and, among other criticisms, we demonstrated that Dr. Wyard had been lacking in "scientific and clinical acumen," and had drawn his conclusions "from this assembly of clinical and scientific errors."

With regard to Dr. Burton Simpson's remarks, although he spoke unfavourably of the method, it is interesting to note that in the report submitted he confesses that "all cases treated were in an advanced stage of the disease, and had previously been subjected to surgery or to radiation, or to both." Insufficient details are given to enable us to judge his methods of treatment, but he informs us of the terrible reactions from which his patients suffered. In support of his statements Dr. Simpson quotes Dr. Soiland, who treated thirty-one apparently similar cases and noted that "four are in good condition," and that in them the disease had been "apparently arrested"! Further, Dr. Simpson, with one of his colleagues (Dr. Marsh), had previously published[4] certain experimental work which was confirmatory of, rather than adverse to, our views.

Can these efforts be considered "serious trials," or must we simply regard them as the most serious work of which these authors are capable? The public, it seems, must be warned once more that the treatment is not only useless, but dangerous in unskilled hands. Professor Carter Wood of Columbia University, whose authority and caution in cancer research is undoubted, Dr. Loewy and Dr. Loiseleur of Paris, Professor W. Caspari of Frankfurt-a-M.

[1] *British Medical Journal*, 1926, i, 838.
[2] Ibid., 1926, i, 1017.
[3] Ibid., 1926, i, 958, 1087.
[4] *Journ. Cancer Research*, 1927, xi, 417

and Dr. A. P. Thomson of the Birmingham Cancer Committee gave encouraging reports. Others present, who had done a considerable amount of work on the subject, were prepared to speak in the same vein had the opportunity been given to them. As it was, we and many others left the meeting under the impression that a large majority was in sympathy with our work. This view has been confirmed by subsequent correspondence.

The refutation of ignorant criticism does not, of course, prove the value of the work condemned, and we would be the last to blind ourselves to this. Positive evidence alone can establish the promise of any effort. This we and other workers elsewhere have adduced, and, we hold, in a cautious manner. The following statement made by Professor Carter Wood at the Conference is surely the correct attitude of the really scientific man.

"It is evident from . . . carefully worded reports that the method is not at present one of general applicability, because of the high degree of clinical skill which is necessary for the proper treatment of patients and the dangers of the drug itself. Nevertheless, the fact that it is possible to cure even a relatively small number of otherwise hopeless patients is so important a discovery that every assistance should be offered . . . in the arduous work of ultimately defining the best practice of administration, in studying the method of action of the lead, and in attempting to improve the product." (Report of Cancer Conference, p. 204.)

In order that the profession may have more than fragments from which to judge, we hope in the spring to publish a volume in which our researches will be presented as fully as possible. Meanwhile, we would submit that the long-continued subversive attitude to our own work of Dr. Leitch, whose methods were so resented by the profession in 1926, is greatly to be deprecated, and should call for the serious consideration of all those who have the interests of cancer research at heart.—I am, etc.,

Liverpool, Dec. 19th, 1928. W. BLAIR BELL.

HEART SOUNDS.

SIR,—While heartily agreeing with Dr. Samways (December 8th, 1928, p. 1065) in his defence of the old-fashioned view as to the production of the heart sounds and also of the "pre-systolic" murmur, I feel that a word of physiological protest must be uttered with regard to his suggestion that, in spite of the absence of valves or adequate sphincter muscles, the auricle can develop a force comparable with that of the ventricle.

I think that before many more decades have passed the views expressed by Dr. Mayo Collier in 1889 in his able little book *The Physiology of the Vascular System* will have been generally accepted. This view was that the auricle is simply a reservoir from which the ventricle can fill itself during its very brief expansion phase (I believe it lasts only for one-tenth of a second).

The function of the appendix, however, is a more active one, for by a vigorous contraction it shoots a small quantity of blood through the closed (but not stretched) auriculo-ventricular valves into the ventricle, thus completing the filling of the ventricle and the stretching of its valves just prior to systole. As an addition to Dr. Collier's theory I believe that this sudden stretching of the heart muscles stimulates them to contract, and is, as it were, the spark which fires the powder.—I am, etc.,

Birmingham, Dec. 19th, 1928. T. STACEY WILSON.

DENTAL CARIES AND VITAMIN D.

SIR,—In his letter published on December 22nd, 1928 (p. 1155), Dr. J. Sim Wallace refers to some "essential facts" from which Mrs. Mellanby and Dr. Pattison's paper tends to divert our attention. So far as I can determine from the letter the "essential facts" seem to be: (1) that the addition of one ounce of bacon and half an ounce of cooking fat to a dietary will serve to retard caries; (2) that the addition of two ounces of sugar will serve to initiate caries. May I ask where one can find records that prove such implied statements to be facts? Why is sugar said to be more conducive to dental caries than any other carbohydrate? These, if facts, are vitally important, but one wants proof, not mere ex cathedra statements from an "authority." To prove these facts with proper controls must have involved great labour and care, comparable perhaps to the amount of labour and thought Mrs. Mellanby has given to her task.—I am, etc.,

Sheffield, Dec. 27th, 1928. A. E. BARNES.

SIR,—In your issue of December 15th, 1928 (p. 1079), you publish a paper by Mrs. Mellanby and Dr. Lee Pattison which, as you say in a leading article, is the latest of a long series relating to dental caries. The writers point out that their new group, A_3, has an average age of 5½, while the old (1926) Groups, A_2, B_2, C_2, are aged nearly 9, but they do not seem to attach much importance to the difference. They admit that the two groups are "not necessarily strictly comparable," but it does not seem to occur to them that some people might doubt if they were more than roughly comparable. Moreover, in a previous communication, they told us that Groups A_2, B_2, C_2 were all suffering from bone tuberculosis, but they do not think it worth while telling us whether the children of Group A_3 are suffering from the same disease. Are the children not necessarily strictly comparable in this respect as well?

The first thing that strikes one about the experiments themselves is that the duration is very short—about three months. This is roughly the shortest interval at which a dentist sees his small patients, and when he does see them so frequently he often finds that caries appears to be erratic. Some visits reveal several cavities, at others there are none. It is, of course, conceivable that the disease is intermittent, but a much more credible explanation is that diagnosis is erratic, while the disease is not. But if diagnosis of early caries is erratic even when performed by men who spend their lives using the mirror and probe, surely the writers are over-ambitious in trying to get comparative figures by the same means. To estimate the progress of caries may easily be more difficult still. The mouth of a cavity may remain unchanged for a short three months; does it follow that the inside of the cavity is also unchanged? Who, by looking at the outside of a tooth, can tell what is going on inside it?

I believe that the difficulties of the method used by the writers are so great that the results would have to be received with caution, even if the examinations had been made by dentists of experience and complete impartiality. Since writing the above I have seen Dr. Sim Wallace's letter. I confess I failed to detect the difference in diet which he has pointed out, but I entirely support his conclusions. The writers describe one adult patient, and she is almost a museum specimen, one of the fortunate few who, at the age of 22, are still unacquainted with the forceps or the dental engine. What one wants to know in a case like this is, not how much radiostol she had, but how she preserved her teeth for years before radiostol came. In any case, where twenty-nine teeth have taken care of themselves, the improvement in the remaining three is very doubtfully ascribed to radiostol.

It seems a pity that Mrs. Mellanby should spend her time on work of this inconclusive character, when, if her views are correct, a single set of experiments would go a long way to establish them. For if the inhibition of caries is due to pulp reaction, and this reaction is dependent on vitamin D, it should be a simple matter to produce caries experimentally, by giving a diet deficient in vitamin D to one group of animals, while a second group is kept caries-free on the same diet, *plus* the all-important vitamin. Why have not these experiments been made? Alternatively, if they have been made, why have not the results been published?—I am, etc.,

Oxford, Dec. 23rd, 1928. H. B. BARWISE.

ASTHMA RESEARCH COUNCIL.

SIR,—In March, 1928, I communicated to you and you were good enough to publish (March 17th, p. 468) the scheme of investigation and research which the Medical Advisory Committee proposed to carry out as, and when, the financial support of the Asthma Research Council permitted.

During the last nine months this committee has obtained the co-operation of many physicians in the provinces and

the consent of their local hospitals for the formation of research centres when these can be financed by the council. By means of grants made by the Halley Stewart Trust and the Medical Research Council, an asthma clinic and research centre has already been formed at Guy's Hospital to continue Dr. G. H. Oriel's investigation into the biochemical causation and treatment of asthma, and to supplement and control the results of such treatment by comparing them with those obtained by other methods. A second grant by the Halley Stewart Trust has been given for the study of the characteristics of asthma occurring in childhood; and a special clinic is now being organized at Great Ormond Street Hospital to carry out this work. A research fellow, endowed by the British Humane Association, has already visited many Continental spas, and is now investigating the results of the physico-therapy methods there employed by means of apparatus installed by that Association.

In order to obtain fuller statistics concerning hereditary influences on this disease and on the general asthma syndrome, family history forms have been approved and printed. They can be obtained from the medical secretary, and the medical advisory committee trusts that medical men who are interested in this subject will assist in circulating them among suitable asthmatic patients.

The Asthma Research Council itself, having meanwhile been strengthened and reorganized, will inaugurate a national appeal for funds at a Mansion House meeting at 3 p.m. on January 15th. The Lord Mayor will preside, and Sir Humphry Rolleston, Dr. Arthur F. Hurst, Colonel F. E. Fremantle, M.P., and Mr. Ben Tillett, among others, will speak. The attendance of medical men will be much appreciated.

The Council desires to raise a sum of £50,000; and donations should be forwarded to the honorary treasurer at the Council's office.—I am, etc.,

T. T. JEANS,
Surgeon Rear-Admiral (ret.),
Secretary,
Medical Advisory Committee.

Asthma Research Council,
42, Ranelagh Road, S.W.1,
Jan. 1st.

THE TREATMENT OF FEMORAL HERNIA.

SIR,—With regard to the letter from Mr. G. H. Colt in your issue of December 29th, 1928 (p. 1195), I beg to state that he will find that his queries were to some extent answered in an article on "The modern treatment of hernia" which I published in the *British Medical Journal* on January 27th, 1927. I there brought forward a comparatively large amount of evidence collected at the City of London Truss Society and at St. Bartholomew's Hospital, and tried to show (1) that femoral hernia recurred more often than was supposed after the "low operation" and after operations for the relief of strangulated hernia; (2) that the inguinal operation was efficient in a large series of patients with ordinary femoral hernia; (3) that a modification even of the inguinal operation was necessary in order to effect a cure in patients with large hernias—for example, with a wide neck to the sac, and with recurrences following the usual operation for strangulation.

After two years' further experience I have not found any reason for modifying the opinions which I then expressed.—I am, etc.,

GEOFFREY KEYNES.

London, N.W.1, Dec. 28th, 1928.

MENTAL HYGIENE.

SIR,—The leading article in your issue of December 29th, 1928 (p. 1183), raises many of the problems that demand research and solution if the standards of mental health of the community are to be raised. America, through its much more elaborate organization, has gone further than we have in these matters, and there are few who will not agree with you that enlightened public opinion is needed. If, however, we are to get this, is it not necessary that there shall be an enlightened medical opinion first of all? Better education in psycho-pathology and the treatment of early mental disorder is needed in the medical curriculum, but it would seem almost more important at the present moment that some effort should be made to give the general practitioners throughout the land some better guidance than they have yet had in dealing with these matters. Between the psychotic disorders and the illnesses of organic origin lie the psychoneuroses and the conduct abnormalities of children and adults. The general practitioner does his best with these conditions, which form a considerable part of his practice, but he has insufficient knowledge of them, and consequently is unable to make the best use of such modern theories and psycho-therapeutic methods as are of proved value.

A suggestion was made at the Psychiatric Section at the Cardiff Meeting this year, which was well received by general practitioners present, that the Association should take up this matter and aim at arranging a short course of lectures for every Division throughout the country. The management of the insane patient needs to be mentioned, but it is perhaps more the province of the general practitioner to deal with the psychoneurotic disorders, and it is to this primarily that attention should be directed. Mental deficiency, with its therapeutic and legal aspects, might advantageously be brought into the course. From the great interest that medical men as a whole take in investigating any new and useful method of treatment it seems improbable that there would be much difficulty in securing attendance at short courses of this sort, and there can surely be found in the various medical centres sufficient lecturers able and willing to undertake them. The Mental Hygiene Movement could receive no greater impetus than would be given by a movement of this sort on the part of the British Medical Association to institute post-graduate study of these problems from the therapeutic and preventive angles.—I am, etc.,

J. R. REES.

London, W.1, Dec. 30th, 1928.

SO-CALLED "WHITE ASPHYXIA" OF THE NEWBORN.

SIR,—Mr. Aleck Bourne's valuable letter in your issue of December 15th, 1928 (p. 1109), has been followed by communications which show clearly that the time is ripe for a general discussion on this important subject. It is probable that there would be a fairly wide acceptance of the view that the white baby is "shocked" rather than asphyxiated; but shock of the newborn is by no means identical with surgical shock of the adult, and the differences between the two conditions require to be defined as clearly as possible.

A discussion on this subject would not only help to clarify our views of a common and serious disability, but would serve to emphasize the need for more extensive investigations of foetal and neo-natal physiology, pathology, and pharmacology. Much has been done in recent years, but much remains to be accomplished.

Mr. Bourne has outlined his treatment of neo-natal shock, and it is probable that most clinicians would agree with him in general terms; but the actual details of treatment, including the use of lobeline, as well as the drugs mentioned by Mr. Bourne, would provoke a most helpful discussion in which obstetricians, paediatricians, and general practitioners could all join with advantage.—I am, etc.,

NORMAN B. CAPON, M.D., M.R.C.P.

Liverpool, Dec. 30th, 1928.

SIR,—Mr. Aleck Bourne, in writing a plea for abolishing artificial respiration for white asphyxia of the newborn, states of direct mouth-to-mouth insufflation, "Here nothing can happen but inflation of the stomach through the oesophagus." This, Sir, is surely too dogmatic an assertion. I can only state, equally dogmatically, that in the four cases in which I have used this method—other measures having failed—the lungs were inflated and natural respiration afterwards occurred. In one case this natural respiration was intermittent, and continued for some ten minutes only, when the child died; but in the other three cases healthy living children resulted. The method is unpleasant and, perhaps, not very safe for the operator; but I have no doubt whatever that, in many cases, it is the only hope for the child.—I am, etc.,

W. A. TRUMPER, M.R.C.S., L.R.C.P.

Devon, Dec. 21st, 1928.

TONSIL AND ADENOID OPERATIONS.

SIR,—I am in complete agreement with much of Mr. Tilley's contribution to this discussion (December 29th, 1928, p. 1194), but, while reluctant to differ from such an authority, I am still more reluctant to permit his advocacy of the routine application of ligatures in tonsillectomy to go unchallenged.

Experience and observation have demonstrated to me that such a procedure is not only unnecessary but also inadvisable. In the very great majority of tonsillectomies haemostasis occurs rapidly and conclusively without the application of ligatures. Moreover, in those cases where a ligature has been applied granulation tissue forms at the site of the ligature, healing is delayed, and ultimate scarring is more likely. These ill results are doubtless in part due to the inclusion in the ligature of other than purely vascular tissue, an occurrence which even with the greatest care cannot be altogether avoided.

In cases of tonsillectomy by the blunt guillotine the number requiring ligature is extremely small; in tonsillectomy by dissection—a method I reserve for adults and "recurrences"—I find that only about one case in twenty requires a ligature. This low figure is not obtained by any sacrifice of surgical principles, for no patient leaves the table bleeding, but by the occasional exercise of a little patience. In this connexion it may be noted that wool packed in the fossa is a very much more efficient haemostatic agent than the gauze mentioned by Mr. Tilley. If, when the fossae are empty and the pharyngeal reflexes are active, there is no bleeding, one can feel confident that there will be no reactionary haemorrhage.

Routine ligaturing must entail many unnecessary ligatures. Treatment of each case on its merits, with the application of a ligature only when necessary, results in so much speedier convalescence and so much better final results that any other course is to be deprecated.—I am, etc.,

Canterbury, Dec. 28th, 1928. THOMAS A. CLARKE.

SIR,—I wish to endorse strongly the remarks of Mr. Herbert Tilley in last week's *British Medical Journal* as regards haemorrhage in these operations. As one who also always employs the "dissection" method in private work I thoroughly agree with Mr. Tilley's insistence on the effective control of haemorrhage in the performance of the operation. Children do not bear haemorrhage well, and in those cases in which much loss takes place, either during or after operation, the child's health may be seriously affected for some weeks. No case should be considered finished and allowed to come round from the anaesthetic until both tonsil beds are dry, whether the case be that of an adult or a child; only in this way can post-tonsillar haemorrhage be reduced to a minimum. And though not always necessary in my experience in a child under 12 or 14, ligature of the vessels mentioned by Mr. Tilley is the only sure way of controlling them—occasionally other bleeding points, especially when close to the tongue, may also need ligature. Of course, I am not referring to those worrying cases, fortunately rare, when a general oozing persists or starts after operation, and where no ligature of any special point is of avail. In conclusion, I cordially agree with Mr. Tilley that we should emphasize most strongly the need for careful observation in these cases, and not consider as a light thing "the loss of a little blood."—I am, etc.,

Southsea, Dec. 30th, 1928. C. A. SCOTT RIDOUT.

CARDIOSPASM OR ACHALASIA OF THE CARDIA.

SIR,—The controversy between those who support these rival terms has been reopened in your columns by Mr. Greenwood's article in the issue of November 24th, 1928 (p. 932), and the replies of Dr. Hurst and Mr. Rake on December 15th (p. 1110). While disagreeing profoundly with many of Mr. Greenwood's statements and inferences, and while acknowledging that Dr. Hurst has introduced a most valuable method of treatment by means of mercury bougies, I cannot help feeling that neither name is entirely satisfactory. As Dr. Hurst is the originator and the principal exponent of the theory of achalasia of the cardia, I should like to ask him the following questions.

1. How does he explain the fact that the obstruction is not always at the cardia? With a typical history it may be in the middle of the oesophagus, and in one of my cases it varied in position—being at one time near the middle and at another time at the lower end. Would he regard these cases as spasmodic?

2. Does he think the comparison of the cardia with the anal sphincter is a satisfactory one, and would he seriously expect a spasmodic contraction of a sphincter like the cardia, which is so poorly developed that some authorities have even denied its existence, to grip the mercury tube as an anal sphincter in spasm will grip the finger?

3. Does he consider that in cases of achalasia of the cardia there is always a residue of eight inches of food in the oesophagus? Has every eight-inch column of food the same weight, and has every cardia exactly the same resistance to relaxation?

4. If the answers to question 3 are in the affirmative, what happens in the cases occurring in small children? The youngest of my patients was only 4 years old, and an eight-inch column of food would have overflowed into the pharynx.

5. If the cardia relaxes when the column of food exceeds eight inches, why does it close again as soon as the height falls once more to the exact level of eight inches? Once it has relaxed, why does not the relaxation persist until the whole column has fallen through?

I should also like to ask Mr. Rake whether he really meant that the wall of the oesophagus was 4 cm. thick at the upper end in his first case. Incidentally I may mention that the average thickness of the muscle at the cardia in his twenty normal cases slightly exceeds that found in a series of 123 cases measured for me by Drs. Woods and Bratton at the London Hospital, the average in these being just under 0.25 cm.—I am, etc.,

London, W.1, Dec. 31st, 1928. C. C. BEATTY.

PAPULAR URTICARIA.

SIR,—I am very pleased to learn that Dr. G. H. Lancashire proposes to admit to hospital one of the patients he supposes to be sensitized to a food protein, and I hope he will have the kindness to inform me should the characteristic lesions of papular urticaria follow the ingestion of the particular protein. I should then be convinced that one of the exciting causes of this peculiar complaint of infants is a food sensitization.—I am, etc.,

Sheffield, Dec. 31st, 1928. RUPERT HALLAM.

"THE RIGHT TO PRACTISE."

SIR,—In reply to Dr. A. G. Newell's letter (December 29th, 1928, p. 1197) may I refer him to the words of the Medical Act of 1858, Section 34?

"After the 1st day of January, 1859, the words 'legally qualified medical practitioner' or 'duly qualified medical practitioner,' or any words importing a person recognized by law as a medical practitioner or member of the medical profession, when used in any Act of Parliament, shall be construed to mean a person registered under this Act."

Anyone, therefore, who is not registered under the Act is not a "duly qualified medical practitioner," and has no "right" to practise as such.—I am, etc.,

Hyde, Cheshire, Dec. 28th, 1928. J. GORDON MACQUEEN.

SIR,—Surely Dr. A. G. Newell has also confused himself about the "rights" of this question. I refer to the concluding sentence of his letter, in which he illustrates the position of a man whose name has been removed from the *Medical Register*, and states, ". . . he still possesses the legal right to practise *provided* his university or other qualifying body has not taken away his degree or diploma." The proviso governing this statement is entirely misleading. Even if every degree or diploma was taken away the man in question would still

be free to practise medicine and/or surgery with impunity. Such is the law as it stands, and it is well that the issue should be clearly stated and understood.—I am, etc.,

Tunbridge Wells, Dec. 31st, 1928. W. E. HEMPSON.

SECURITY OF TENURE IN PUBLIC POSTS.

SIR,—I have been asked, as the writer of the first letter on the above subject, to make some remarks on the letters that followed. The consequences of insecurity are so widespread that any discussion must traverse regions apparently foreign to the subject. I can only deal at present, therefore, with the general aspects presented.

Readers will have noticed that whereas the two writers who acquiesced in the *status quo* signed their letters, three of the four who criticized it did so anonymously; a course doubtless distasteful, but thought necessary because of insecurity in their posts. One may suppose this feeling stifles in others also that frank expression of opinion so necessary for progress in any field of endeavour. A medical contributor to a contemporary, who abstracted my letter into its columns, stresses this point.

Under the present state of insecurity large bodies of doctors engaged in work of the utmost importance to the community are perforce inarticulate. They cannot unite in defence of their interests or betterment of their position. This is a grave situation which the British Medical Association cannot continue indefinitely to ignore. The importance of their work is known to all. Taking a minor branch mentioned in several of the letters—namely, the asylums, we find there are over 130,000 mental patients in public institutions in England and Wales alone. There are roughly 100 public asylums, with probably 450 doctors employed, of whom say 350 are subordinate and inarticulate. £8,000,000 of public money is spent annually on these asylums, the entire administration of which is deputed to the medical superintendents. Since each superintendent starts as an assistant medical officer, the training, habits of mind, and traditions of the subordinate medical staffs are essential factors in the welfare of the service as well as of their patients. Moreover, from the medical superintendents are chosen the medical members of the Board of Control—the official advisers of the Government in all that concerns the mentally ill of the nation.

"M.B." sees a connexion between insecure tenure and the rather low status of the assistant medical officer. This is a reflection on a devoted body of brethren working under conditions that smother initiative and professional enthusiasm. But there are grounds for his assertion. Again, taking the asylum doctors as a test, we find that the qualifications and records of original work possessed by the average medical superintendent do not compare with those of his "opposite numbers," the specialists of the big general hospitals. British alienism has not brought forth a Lister or a Jenner; if we would meet their compeers we must go to Austria, to France, to Germany, to Italy. It is a disturbing thought that inspires the question "Have we been rearing our young asylum doctors on the correct lines"? Even if we apply the test to the members of the central body itself we find (with one praiseworthy exception) little to suggest eminence. With regret we fail to find the D.P.M. attached to a single name. This, the simplest specialistic qualification in psychiatry, should be compulsory for every doctor in charge of the insane. It corresponds to the D.P.H., compulsory for years past on medical officers of health. Insecurity of tenure and the evils arising from it, cause promising men to avoid these national services. But the State has a claim to the best brains in the profession, and the conditions should be such as will attract them. How sad it is they fell into the hands of petty parochial bodies, and thus lost all co-ordination!

The Association may regard the subject from the standpoint of the material prosperity and comfort of the medical man, or with the more altruistic objective of the national health. In either case it has here the chance of performing a great work by raising the status of these services. As a first step let it take legal advice, and draw up a provisional form of agreement ensuring adequate security of tenure to every pensionable doctor. Then let it enforce this by refusing advertisements from authorities who decline to conform.

The greatest evil of the present position is that secret charges, which he has no means of discovering, and which result in the instant loss of his post and pension, can be made against a doctor. This may occur even if he has served more than the statutory number of years necessary to entitle to a pension. He is removed by "termination of the appointment," which is not "dismissal" in law; thus he can take no steps to defend his good name and professional reputation. This should be made impossible. The known existence of this Cheka-like machinery of repression, even if never used, is harmful alike to management and staff of an institution. It is easy to show that it is antiquated and father to a multitude of evils, and when this is done the case for a move on to a system more in consonance with the spirit of the times and the dignity of our profession is practically completed.—I am, etc.,

Wedmore, Dec. 2nd, 1928. H. C. MCMANUS.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following candidates have been approved at the examination indicated:

FINAL B.M., B.CH.—(*Medicine, Surgery, and Midwifery*): A. R. Bowtell, S. B. Davis, R. M. J. Harper, A. G. Hill, R. G. Macbeth, D. C. Shields, Margaret A. L. Herbertson, Joyce Wr[illegible]: P. M. F. Bishop, J. F. Brock, J. M. L. [illegible] W. J. Cotton, R. F. Lomax, R. L. H. [illegible] A. H. Bateman, F. Bell, J. F. Brock, J. L. Clapham, A. Guirdham, M. A. Hatt, J. C. Leedham-Green, W. H. McMenemey, J. C. Neely, J. N. O'Reilly, R. S. B. Pearson, B. T. Squires, Anne D. M. Adams, Olive M. Capper-Johnson, Amy C. E. Clarke, Victoria M. Robinson. (*Forensic Medicine and Hygiene*): H. R. J. Donald, J. A. Eddy, R. G. Macbeth, H. E. Mansell, J. C. Neely, J. C. Nicholson, G. P. Roxburgh, W. J. Walter, H. G. Wells, Ruth Sandeman.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examination indicated:

M.S.—(*Branch I, Surgery*): R. A. Brews, N. L. B. V. Eckhoff, D. H. MacLeod, O. W. Roberts, J. P. Ross.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE following candidates have been approved at the examination indicated:

FINAL FELLOWSHIP EXAMINATION.—J. C. Fouche, N. S. Narasimhan, M. J. Riordan, F. G. Stewart.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

FINAL EXAMINATION.—D. J. Herrick, J. F. Hynes, J. P. J. MacMahon, E. S. O'Sullivan, J. Ryan, W. J. Walshe.

D.P.H.—J. Molony.

D.P.M.—F. J. Deane, J. M. C. Speer.

UNIVERSITY OF CAPETOWN.

Graduation Ceremony.

AT the December graduation ceremony of the University of Capetown the following were admitted to the degree of Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.):

M. J. Cohen, G. J. Conradie, J. C. Downes, S. W. Jaffe, B.A., S. Kahn, B.A., P. Kushlick, L. J. J. Muller, W. H. Opie, D. H. Pfeiffer, R. B. Saunders, B.A., S. Schur, B.A., R. Turner.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—E. A. Johnstone, E. A. *Lipkin*, D. M. Nightingale, A. K. Rama Chandra, R. W. Scanlon.

MEDICINE.—W. S. Ghai, D. H. Haler, K. R. Lundeberg, K. G. Milad, T. A. P. Proctor, A. K. Rama Chandra, H. Tenenbaum.

FORENSIC MEDICINE.—W. S. Ghai, D. H. Haler, C. K. McCoan, J. H. McGibbon, K. G. Milad, T. M. White.

MIDWIFERY.—W. D. Glynn-Jones, D. H. Haler, K. G. Milad, B. J. Niall, K. M. Seedat, T. M. White.

The diploma of the Society has been granted to Messrs. W. S Ghai, E. A. Johnstone, W. D. Glynn-Jones, E. A. *Lipkin* K. R. Lundeberg, A. K. Rama Chandra, K. G. Milad, T. A. P *Proctor, H. Tenenbaum*

Obituary.

WILLIAM THORNBOROUGH HAYWARD, C.M.G., LL.D., M.R.C.S., L.R.C.P.I.,

Consulting Physician to the Adelaide Hospital, and Consulting Medical Officer to the Adelaide Children's Hospital.

WE have to record with great regret the death, at the age of 73, of Dr. W. T. Hayward, which took place on December 21st, 1928, at Adelaide, Australia.

William Thornborough Hayward was born at Reading on January 26th, 1854. He received his early education at St. John's College, Hurstpierpoint, proceeding to his medical studies at the Liverpool School of Medicine in 1869, where he became silver medallist in medicine, surgery, and pathology. In 1873, after gaining an exhibition at the Liverpool Royal Infirmary, he became an assistant to a general practitioner, qualifying L.R.C.P.I. and L.M. in 1874. In the following year, having in the interim made two visits to South America as ship surgeon, he became house-surgeon to Mr. Bickersteth, one of the earliest disciples of Lister, and was able to observe the development of aseptic surgery. During his term of office he assisted in the application of Thomas's splints, the first used in any general hospital, and became an enthusiastic exponent of the value of this surgical appliance. Indeed, a few months later, when he was appointed house-surgeon to the Liverpool Children's Hospital, he was successful in introducing this method of treatment for cases of hip and knee disease. Some years later, in 1883, he exhibited Thomas's splints at a meeting of the South Australian Branch of the British Medical Association, probably the first occasion on which the subject had been brought before a medical society in Australia.

DR. WILLIAM T. HAYWARD.

In 1877 Hayward again served as ship surgeon, and arriving at Adelaide in 1878 he settled down in private practice. He was elected honorary physician to the Adelaide Hospital in 1885, and continued to hold this appointment until 1914, when he was appointed honorary consulting physician. Between the years 1889 and 1899 he was honorary medical officer to the Adelaide Children's Hospital, being appointed honorary consulting medical officer on his retirement. Eight years after his arrival in Australia he was appointed lecturer in clinical medicine at Adelaide University, holding this office till 1914, and lecturer in materia medica and therapeutics from 1888 to 1920. He was appointed a member of the council of Adelaide University in 1899, a position he held until 1924. He represented the university on the board of management of Adelaide Hospital.

During the great war he was on active service with the Australian Forces, being gazetted major in the Army Medical Corps in 1915, lieutenant-colonel later in the same year, and colonel in 1918. He was employed on headquarters staff until 1915, when he was appointed officer commanding 1st A.A.H. Harefield. In September, 1917, he was transferred to Boulogne, where he was appointed senior physician to the 2nd Australian General Hospital, a position he held till 1918, when he became senior medical officer of the review board. He was mentioned in dispatches in 1917, and a year later received the honour of C.M.G.

Dr. Hayward was an active and enthusiastic member of the British Medical Association, and in 1879 he was in large measure responsible for the formation of the South Australian Branch, the first Branch of the Association in Australia. He became its vice-president in 1884, and was elected president in 1885. From that time onwards he held a number of important offices, representing his Branch on the Australasian Federal Committee from 1911 to 1922, and serving as a member of council for twenty-seven years. In 1912 he was elected first chairman of the Federal Committee, holding this office till 1922, and from 1914 to 1918 he was a member of Council in London for South Australia and Victoria, being elected a vice-president of the Association in 1914. The Federal Committee of the British Medical Association, Australia, presented him in 1914 with the gold medal of honour "for distinguished service." He was the first recipient of this medal in Australia. In 1914, on the occasion of the British Medical Association's Annual Meeting at Aberdeen, the University conferred on him the honorary degree of LL.D. This recognition of Dr. Hayward's merits gave great pleasure to his friends, and he himself took a legitimate pride in what he regarded as an honour not merely to him as an individual but to Australian medicine. In the same year he became an honorary LL.D. of the University of Adelaide.

As a physician Dr. Hayward held strong views, which he was always ready to convey with courage and conviction. In 1898 he brought the subject of pleural empyema before the profession in Australia. He strongly advocated the view that practically all cases of this disease in children were due to the pneumococcus, the so-called pus being broken-down fibrinous exudate which could be evacuated by rib resection. He recorded cases which showed that by this means drainage could be completed in twenty-four hours. He was an enthusiastic exponent of venesection in selected cases, and did a great deal to introduce its use to the notice of his colleagues in Australia. Convinced that the overfeeding of invalids was the cause of many troubles usually attributed to the disease from which they were suffering, he made a practice of greatly restricting the diet of his patients, of even forbidding food at certain periods, and gained thereby the name of "the starving-doctor." He believed that alcohol had been given far too important a place in therapeutics, and in the last decade of his practice at Adelaide Hospital he hardly ever prescribed it. His bedside teaching and lectures on therapeutics had a considerable influence in reducing the prescribing of alcohol in Australia. He was the author of a number of clinical papers in the *Australian Medical Gazette*.

During his stay in England Dr. Hayward made many personal friends, who will feel his loss keenly. By his death Australia has lost a public-spirited citizen and a fine physician and teacher, and the British Medical Association a devoted worker and a loyal colleague.

DAWSON TURNER, M.D., F.R.C.P.ED.,

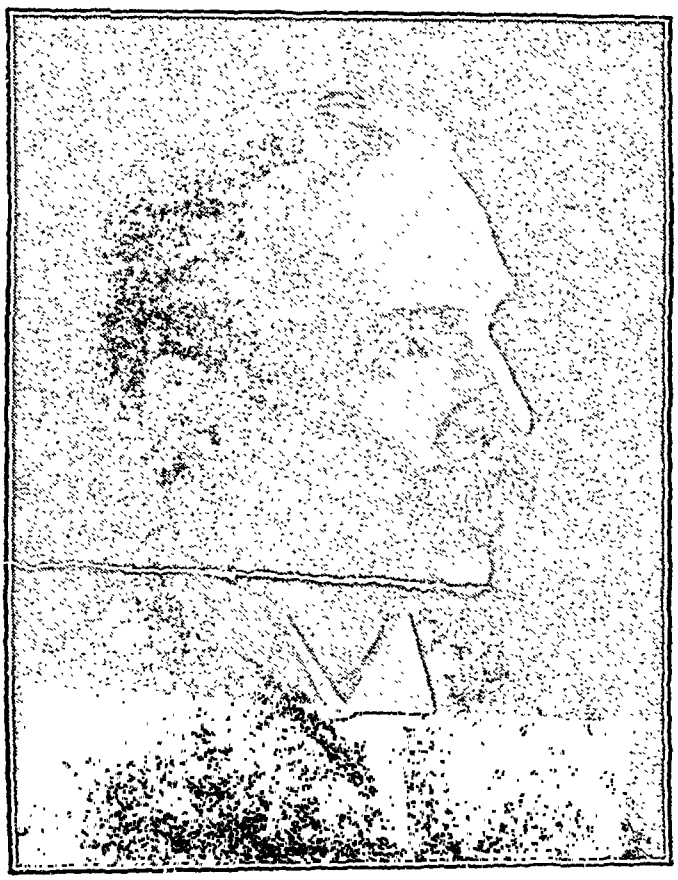
Honorary Consulting Physician in Radiology, Royal Infirmary, Edinburgh.

WE have to announce with deep regret the death of Dr. Dawson Turner, one of the pioneers in radiology in Edinburgh, which occurred on December 25th, 1928, at Godalming, Surrey, where he had been living since his retirement a few years ago.

Dawson Fyers Duckworth Turner was born at Liverpool in 1857, and after graduating B.A. at Dalhousie University, Canada, went, in 1884, to Edinburgh to study medicine. He graduated M.B., C.M. with honours in 1888, proceeding M.D. in 1890. In the same year he obtained the diploma M.R.C.P.Ed., being admitted to the Fellowship in 1891, and became also M.R.C.P.Lond. During the summer of 1889 he acted as resident physician in the Royal Infirmary with Sir James Affleck, having as fellow residents Dr. R. A. Fleming, Professor Robert Muir, the late Professor James Ritchie, and Mr. Alexander Miles, and was later house-physician in the Royal Maternity and Simpson Memorial Hospital. After a period spent in visiting foreign schools of medicine, he turned his attention to lecturing on physics in Surgeons' Hall, Edinburgh, being also clinical tutor in the extramural class of clinical medicine. Shortly after he had begun to lecture upon physics the *x* rays were discovered by Roentgen in 1895, and Dawson Turner was one of the first to recognize their possibilities in medicine. A primitive *x*-ray installation, which was the first in Edinburgh, was set up in his house at George Square, and attracted much attention when he demonstrated to his friends and colleagues its properties of showing up bones and foreign bodies in the tissues. When, a few years later, radium was discovered, he soon secured a specimen, to which he added from time to time. For many years this was the only supply of radium in Edinburgh, and Dr. Turner generously placed it at the disposal of the Royal Infirmary for the treatment of patients until the managers secured supplies for the institution. It was natural that when an *x*-ray department was installed in the Infirmary it should be placed under his charge, and although his health determined him a few years later to abandon the management of the radiological department, he retained his connexion with it as honorary consulting physician in radiology to the Infirmary, and for many years continued in charge of the treatment by means of radium. In common with many of the early workers in radiotherapeutics, Dr. Turner suffered considerable deterioration in general health from the ill effect of long exposure to the rays, which was in the early days of radiology little understood. He lost successively three fingers and an eye from this cause, and the effect of these losses on his general health led to a considerable curtailment of his activities.

In addition to his lectureship in physics, Dr. Turner acted as examiner in physics in the Royal College of Physicians of Edinburgh, and additional examiner in physics in Edinburgh University, and he was for a time vice-president of the Roentgen Society. His *Manual of Practical Medical Electricity* was a well-known textbook on this subject for many years, and went into a fourth edition, while his smaller work *Radium, its Physics and Therapeutics* was also widely used. He contributed many papers, mostly on physical subjects related to medicine, to various medical journals, such as an article on "The haemorenal salt index and deficiency of the kidney," published in the *Transactions of the British Association* in 1906, and an article on "Electrolysis in medicine and surgery" contributed to the *Edinburgh Medical Journal* in 1908. In that year, at the Annual Meeting of the British Medical Association at Sheffield, he was vice-president of the Electrical Section.

Apart from the affairs of his profession, Dr. Turner had many interests. He was an accomplished linguist, had travelled much, and possessed wide general culture. He was one of the earliest men in the medical profession to take up motoring in the closing years of last century, and enthusiastically recommended this means of progression as a method of applying open-air treatment in cases of phthisis. Although, for reasons of health, he had retired from medical work in Edinburgh and had sought a home in the South of England, he maintained communication with many friends in Edinburgh, by whom, as well as by the public bodies with which he was connected, his loss will be keenly felt. He is survived by a widow.



DR. DAWSON TURNER.

Dr. JOHN W. L. SPENCE, radiologist, Royal Edinburgh Hospital for Sick Children and Deaconess Hospital, writes:

Nearly thirty years have passed since I was asked by Dawson Turner to assist him in the newly organized X-Ray Department of the Edinburgh Infirmary. It then consisted of two rooms, well below the street level, and with a precipitous wooden stairway leading to it. From the very start Turner displayed the keen interest and masterly powers of arrangement which characterized all he did. He did much for radiology and later in the domain of radium. He was gifted with excellent observation and forethought. To his pioneer labours and wide outlook are largely due the present well-equipped radiological department of our Infirmary. Possessing a retiring and reserved disposition he did not make friends readily, but, hidden by this reserve, one found a staunch and loyal fellow worker. He was the soul of honour and carried with him an old-world courtesy—rare in his generation. His achievements have been an impetus to the progress of medicine, and his name will endure on the scroll of time. Those who knew him best will cherish the memory of an indefatigable student and worker, untarnished by selfishness and petty jealousy.

His researches, at a time when the evil effects of *x* rays were unknown, led to years of suffering, which undermined his strength and in the end killed him. Through it all he bore his sorrows and losses with a great fortitude and courage. Of Dawson Turner it may well be said, in the heroic endeavour to save human life, he serves God best who most nobly serves humanity.

[The photograph reproduced above is by the Central Press.]

PETER BROOME GILES, C.B., F.R.C.S.Ed.,
Colonel A.M.S.(T.).

We regret to announce the death on December 19th, 1928, at Folkestone, after a long illness, of Colonel Peter Broome Giles, who was prominently associated with the medical service of the old Volunteers, and later with that of the Territorial Force, and was long recognized as an authority on ambulance work.

He was born on April 5th, 1850, the eldest son of Peter Broome Giles of Staunton-on-Wye. His school days were passed at St. Catherine's Hermitage, Bath, kept by William Horner, son of the mathematician. From there he went to study medicine at University College, London, and obtained the M.R.C.S.Eng. diploma in 1871, the L.R.C.P.Ed. in 1872, and the L.S.A. in 1876. In 1897 he became F.R.C.S.Ed. After holding a succession of house appointments at University College Hospital he returned to the West of England, combining the work of a general practitioner with active participation in the Volunteer and ambulance movements and the enjoyment of country sports. He was a good shot, a keen fisherman, and for a number of seasons acted as Master of the Herefordshire Staghounds.

After many years of practice at Brobury, near Hereford, Broome Giles moved to Buckinghamshire, where he kept up his interest in all sides of public life. Having served on the magistrates' bench in Herefordshire, he was made a justice of the peace for the county of Buckingham, and in later life, after retirement from active medical work, he became justice of the peace for Folkestone. In 1906 he was elected to the Buckingham County Council, and served in the following year as high sheriff. Before leaving Wye-side he rose to be brigade-surgeon lieutenant-colonel of the 1st Herefordshire R.V. and Welsh Border Volunteer Infantry Brigade, and surgeon lieutenant-colonel in the Army Medical Reserve. He was made county director of the City of London Branch of the British Red Cross Society in 1905, and on the formation of the Territorial Force he became A.D.M.S. of the 1st London Division, with the rank of colonel. He received the Volunteer and Territorial decorations, and in 1911 was created C.B. The war gave him opportunities for employment in further army medical work. He was appointed commandant of the military convalescent hospital at Alnwick in 1915, and of that at Ashton-in-Makerfield in 1917, and served later upon a Pensions Board.

Colonel Broome Giles was an old member of the British Medical Association, and held office as chairman of the Aylesbury Division in 1905. In the following year he became a member of the Volunteer Medical Service Committee appointed by the Council to consider the question of reorganization; he attended the meetings regularly and took an active part in the committee's work until the issue of its report in 1907. He was the author of several books on the training of stretcher-bearers, and of papers on ambulance work and the organization of military medical units; and from time to time letters from his pen appeared in our columns. All that he wrote was in keeping with his vigorous open-air personality.

Colonel R. R. Sleman, M.D., writes: Peter Broome Giles commenced his military career in the ranks of the Artists' Rifles; when qualified he took a commission as surgeon in the Herefordshire Rifles, later being promoted to the rank of brigade surgeon in the Welsh Border Brigade. In this capacity he solved the difficult problem of the formation of Volunteer brigade bearer companies—namely, he enrolled the Welsh Border bearer company on the strength of one battalion. He rendered great assistance to the Army Medical Department before the formation of the Territorial Force, during which time, as commandant of the Volunteer Ambulance School of Instruction, he had had great experience in the teaching of Volunteer medical officers, and the regimental stretcher-bearers of the London district. When he was commandant of the Military Convalescent Hospital at Ashton-in-Makerfield during the great war he was severely injured in an air raid. A man of good physique, always enthusiastic and optimistic, he was much liked, and was a good judge of man or horse.

F. W. TUNNICLIFFE, M.D., M.R.C.P.,
Physician, King's College Hospital, London; Lecturer on Therapeutics, King's College Hospital Medical School.

We record with regret the death of Dr. Francis Whittaker *Tunnicliffe*, which occurred at his residence in Harley Street, on December 15th, 1928, at the age of 62. He was *the youngest* son of the late Frederick Warner Tunnicliffe, and was born at Blana, Eccleshall, Staffordshire. He received his medical education at St. Bartholomew's Hospital, where, after serving as house-surgeon, he came greatly under the influence of Sir Lauder Brunton. Hence his interest in the subject of pharmacology. After leaving St. Bartholomew's Hospital he studied in Vienna and Prague, and later was appointed to a position at King's College, where he was for some time professor of materia medica and pharmacology. He became physician to King's College Hospital, and lectured on therapeutics and the practice of medicine at the medical school.

Dr. Tunnicliffe was appointed a member of the departmental committee on preservatives and colouring matter in food; he examined in materia medica at the Royal College of Physicians; he was a member of the Medico-Legal Society, and a fellow of the Royal Society of Medicine. At one time he was physician to the North London Hospital for Diseases of the Chest. His contributions to medical literature consisted of papers on the physiology and pathology of the respiratory, circulatory, and digestive organs; and ranged from an article, with Sir Lauder Brunton, on the effect of massage on the circulation to observations on the effects produced in the human organism by such substances as piperidine, boric acid, formic aldehyde, and phosphorus compounds. Dr. Tunnicliffe served on the former Therapeutic Committee of the British Medical Association, and was secretary of the Section of Pharmacology at the Annual Meeting at Manchester in 1902. Owing to his devotion to a subject which, however useful, is not generally considered attractive by medical men, he was not perhaps as widely known as many consultants of his standing. But in that subject he had achieved for himself a position of prominence.

PETER MAURY DEAS, M.B., M.S.,
Formerly Medical Superintendent, Wonford House Hospital, Exeter.

We regret to have to record the death of Dr. P. M. Deas, which occurred at his home at Budleigh Salterton, Devon, on December 15th, 1928, at the age of 86. He had spent the larger part of his active life in mental hospital work, and at one time took a prominent part in the affairs of the British Medical Association, of which he was a member for over forty years.

Peter Maury Deas received his medical education in the University of Edinburgh and in Paris. In 1863 he obtained the diploma L.R.C.S.Ed., and graduated M.B. and M.S.Lond. in the years 1865 and 1866. In the course of his undergraduate career he won several scholarships and exhibitions, and a gold medal in forensic medicine at the University of London. He was for some time assistant physician at the Royal Edinburgh Asylum, and was later medical superintendent of the Cheshire County Asylum, ultimately being appointed medical superintendent of the Wonford House Hospital for the Insane at Exeter in succession to Dr. Sutherland Rees Philipps, who resigned the post on his appointment as medical superintendent at Virginia Water. Dr. Deas held office at Wonford House for twenty-five years. When he went there the establishment was still seriously hampered by a large debt, which had been incurred to move the hospital from its first situation in the lower part of the city and to build a new establishment on the present healthy site. He brought the institution safely throughout these difficulties, and enabled it to buy much of the surrounding land, which, with the present extension of suburban building in Exeter, is of great value. The most notable feature of his tenure of office was the high administrative capacity which he exhibited. The minutes show that he really reorganized the institution, and both he and Mrs. Deas displayed the greatest energy in the administration and in looking after the comfort of the inmates. He was the author of a number of contributions to medical journals on subjects

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

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QUERIES AND ANSWERS.

DRY SKIN

DR. E. C. MUDIE (Glasgow) writes: In reply to "H. M. C." (December 15th, 1928, p. 1120) may I suggest that, in addition to the administration of thyroid extract (or a mixed gland preparation), he should prescribe general tonic treatment, together with local erythema doses of the quartz mercury vapour lamp? In my own practice the Jesionek, with the quadrilateral reflector, is used for the body bath at three to five feet, while the Kromayer is most useful for the localizing of treatment in which a third degree erythema should be produced. I generally give treatment thrice weekly at first, gradually diminishing the frequency to one a week.

PTYALISM IN PARALYSIS AGITANS.

DR. E. J. JENKINS (Hunstanton) writes: I should be grateful if any of your readers could suggest a way of relieving excessive salivation in a man of 60, who is suffering from paralysis agitans. The saliva runs down his chin continuously, and is a source of much irritation. It is possible that some kind of pastille, sucked in between his meals, might relieve this annoyance, but I should like to hear first if anyone else has successfully treated this local condition *without interfering with the normal flow required for meals.*

TREATMENT OF MEMBRANOUS COLITIS.

DR. G. WILLETT (Keynsham) writes: In answer to "Country Doctor's" query as to the treatment of membranous colitis (December 29th, 1928, p. 1202), may I quote my experience of a similar case. I was reading up its literature and was much struck by this sentence—"When in doubt use your microscope, and make certain you are not dealing with a dysentery." I took the hint, and, finding the *Amœba hystolytica*, was fortunate enough to bring about a rapid recovery by using emetine hypodermically, followed by a short course of pills (salol covered) of emetine-bismuth-iodide 3 grains daily for twelve days.

MUSCULAR CRAMPS IN ARTHRITIS.

"ALPHA" writes: A married woman, aged 76, who is a victim of arthritis, is much troubled by muscular cramps at night. She was quite free during an attack of lobar pneumonia and for some weeks after. Can anyone suggest a remedy, or report the results given by luminal in such a case?

INCOME TAX.

Appointment and Locumtenent Expenses.

"P. L." holds a public appointment on condition that absence from any cause other than her own illness or the statutory holidays shall be provided for by the engagement of a locumtenent at our correspondent's own expense. The inspector of taxes objects to the deduction of such expenses incurred during the serious illness of "P. L.'s" father.

*** The inspector appears to be technically correct. The expenses which can be deducted are those incurred wholly, exclusively, and necessarily in the performance of the duties of the office. The expenses in question were undeniably incurred in order that for the period concerned "P. L." might be free from the performance of her duties. The alternative contention is that the contract between "P. L." and the local authority was for the performance of certain work by herself or another, and that as it is open to her to do the work or find a substitute at her own option the expense incurred by the latter method is not allowable. We fear, however, that the former view is sounder. With regard to the subscriptions paid, the amounts can be deducted as expenses, provided that membership of the societies or associations concerned is a condition of employment under the agreement with the local authority.

LETTERS, NOTES, ETC.

MIRROR-WRITING.

DR. A. A. E. NEWTH (Attenborough) writes: Referring to the subject of mirror-writing, your readers may be interested to know that a year or two ago I met an officer in the Royal Engineers who possessed the faculty. With his right hand he wrote ordinary [illegible] with his left hand he produced, equally [illegible] which on examination before a looking-glass, was found to resemble closely the forward writing of the right hand, so that one would have no hesitation in saying that the two were written by the same person. Writing backwards with the right hand, or forward with the left, was as laborious to him as it would be to a normal individual. He could read the mirror-writing of his left hand no more easily than a normal person, and so found difficulty in correcting what he had written, although he could feel in an instant when he made an obvious mistake. In sketching the human face he was accustomed to draw with his right hand when the subject was looking to the *left*, and with his *left* hand when he or she was looking to the right. He was right-handed in some games, left-handed in others. He had discovered his faculty for mirror-writing when, as a small boy he had injured his right wrist, and so had to write temporarily with his left hand. He developed his newly discovered accomplishment in order to amuse his fellows. Later in life, having to sit for an examination, he had the misfortune to injure his right hand again, and he obtained permission to write his paper with his left hand—mirror-writing.

DR. EVA MCCALL (London, W.1) writes: Two cases of mirror writing recently came under my notice in the infant department of a large L.C.C. elementary school. The children were between the ages of 5 and 6, and neither showed any evidence of mental deficiency. One case was obstinate, and all efforts on the part of the teacher to correct the mirror-writing (which was typical and extended to numerals) were in vain. The child, however, suffered from defective vision and squint. As soon as the parents could be prevailed upon to have this defect treated by suitable glasses she at once began to write normally, and has continued to do so since. The other case was one of a single aberration, due to excitement; neither before nor since has she written in this way.

EXAMINATION VAGOTONIA.

DR. C. FRASER BROCKINGTON (Leicester), in the course of a letter dealing with the mental paralysis which assails some candidates during the oral examination, writes. Vagotonia may not be the sole cause, but it is the cause of the worst degrees of "viva palsy." Such vagotonics normally exhibit sinus arrhythmia, have a pulse of 60, and in times of mental stress they sweat abnormally, experience inertia, and suffer from looseness of the bowel. There is a long latent period between the acception of the sensory stimulus and the resultant motor activity. As a result these candidates appear dull and stupid. When they are questioned they are seized with panic and feel they must answer something, even if it be the first available thought. Only too often they answer incorrectly. Perhaps these neurotics would be helped immensely by the knowledge that examiners were aware of their condition.

PHLEBITIS.

MR. A. P. BERTWISTLE, F.R.C.S.Ed. (Harrow), writes: I am much interested in the letter of "M.D." on December 15th, 1928 (p. 1112); a well-recorded personal case, as Paget showed admirably, is of infinite value. His phlebitis bears many points in common to one I reported in the *British Journal of Surgery* 1928 (p. 275). If, as appears *not improbable*, the lymphatics become infected, there is a grave danger of elephantiasis developing. I should like to know whether he has had his teeth x-rayed. If he has any dead ones I should recommend their extraction, as a radiogram may, at times, fail to reveal infection. I do not think that any staphylococcal vaccine or serum is of service in these cases, though antistreptococcal serum is of definite value for this and many other conditions.

A WARNING.

A CORRESPONDENT informs us that a person representing himself to be Dr. E. S. Duffy, of Oldbury Road, Smethwick, Birmingham (who died on September 11th, 1928), called upon a medical practitioner in London recently and obtained the loan of a sum of money, after stating that he had left his pocket-book at home. It is also stated that this person has been ordering goods at various London shops in the name of the late Dr. Duffy. We understand that the matter has been reported to the police, but medical practitioners will do well to be on their guard against persons who approach them in this manner.

VACANCIES.

NOTIFICATIONS of [illegible] vacant in universities, medical colleges, and at hospitals, with [illegible] and of vacant resi[illegible] our advertisement columns, be found at pages [illegible] ps, assistantshi and locumtenencies at pages 54 and 55.

A short summary of vacant posts notified in the advertisement columns appears in the Supplement at page 7.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

1. Chronic Fatigue Toxaemia.

M. GOLOB (*Med. Journ. and Record*, November 21st, 1928, p. 503) considers that chronic fatigue toxaemia is a definite morbid entity, which is too often overlooked or confused with organic disease presenting similar symptoms. Physiologists have fully recognized the importance of fatigue; animal experiments have revealed the harmful effect of undue exercise on the nervous system, and the existence in the blood of exhausted animals of definite fatigue-producing substances. Golob states that fatigue is unquestionably associated with the retention of and saturation with certain substances, among which are creatin, sarcolactic acid, monopotassium phosphate, and carbon dioxide. Imperfect removal of waste products, insufficient supply of oxygen, and poor nutrition are contributory factors in the production of these fatigue substances. Rest has been proved to be the physiological antidote to fatigue; it is of primary importance in the treatment of pulmonary tuberculosis; and anorexia may be a defensive symptom in disease, as it heralds the approaching malady and gives the digestive apparatus the needed rest beforehand. Golob classifies fatigue into acute and chronic. The former is divided into physiological fatigue arising from over-exertion, and symptomatic fatigue preceding the invasion of an infectious disease. Chronic fatigue is divided into basic fatigue, a symptom of organic disease, such as exophthalmic goitre, and essential fatigue or chronic fatigue exhaustion, without discernible organic pathology. The last-named type is chiefly dealt with in this paper. Mimicry of symptoms is characteristic of essential fatigue. Because of heightened sensitiveness to stimulation it may simulate other maladies, either of environmental or endogenous origin. Persons in all walks of life and of all ages are susceptible to fatigue intoxication. The institution of rest pauses in workshops, offices, and schools will assure more efficient work and better health. Complete rest and relaxation is the most logical treatment for chronic fatigue intoxication; diet and medication have only a secondary role, if any at all, in the treatment.

2. Pancreatitis following Mumps.

P. MERKLEN and H. GOUNELLE (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, November 15th, 1928, p. 1490) report a case of pancreatitis as a sequel to mumps. A woman, aged 23, suffered for a fortnight from gastric pain and diarrhoea; the pain was violent and constant, the point of maximum intensity being in the middle of the left hypochondrium. Nausea and occasional vomiting were present; food, especially meat and fat, increased the pain. Palpation only revealed acute tenderness over a point between the epigastrium and left hypochondrium. The patient gave a history of having had a swelling in the left parotid region, accompanied by slight pain. This attack preceded the other symptoms by a few days. The stools were liquid and contained much undigested material, together with muscular fibres; there were no fat droplets, but many crystals of amino-acids were seen. The urine contained no sugar or acetone bodies, but after salol had been given salicylic acid was found. The blood showed a rise of glycaemia to 1.41 grams. A strict vegetarian diet, without any other treatment, cured the diarrhoea in five or six days, though the pain continued for nine days. At the same time the glycaemia fell to 1.28 grams. After one more week the patient was discharged, without pain and with a good appetite; she began to eat meat, and the stools remained normal. During the next four months the patient had three attacks of pain and diarrhoea although on a vegetarian diet; the glycaemia figure was 1.24 grams, but there was no glucose in the urine. The authors report this case as being intermediary between the curable diabetes which may develop after mumps and severe diabetes with a glycaemia of 3.27 grams and coma. The case was one of early diabetes, and showed that glycaemia might be the sole biological manifestation of disordered pancreatic mechanism caused by an initial parotitis.

3. Gastric Dysfunction in Disseminated Sclerosis.

L. HESS and J. FALTITSCHEK (*Med. Klinik*, October 5th, 1928, p. 1538) have investigated the motor and secretory functions of the stomach by *x*-ray screening and Ewald's test meal in a number of cases of disseminated sclerosis in which there was no pain, tenderness, or other evidence of coincident gastric disease. They found that in each case there was hypermotility with diminished emptying time; in 20 out of 21 cases described in detail the stomach emptied in twenty to forty minutes, only one taking as long as seventy-five minutes. The acidity of the gastric contents, as compared with 1,200 other test meals, gave a high normal value in about half the cases, the rest showing hyperacidity. They also record that accelerated emptying has been found to occur in thoracic herpes zoster and post-encephalitic Parkinsonism, and mention cases recorded by others in which spinal caries was associated with disturbed gastric function, apparently produced by pressure interference in the spinal cord with fibres from the sympathetic ganglia. The authors contend that if a pathological process produces either irritation or interruption of the vagal or sympathetic nerve fibres or centres the motility of the viscera supplied is likely to suffer; the onset of disseminated sclerosis is often characterized by the early occurrence of parasympathetic disturbances in the innervation of the bladder, eye, and larynx. They have observed that extreme constipation, previously absent, was a frequent early symptom of disseminated sclerosis, and some observers have recorded such gastric symptoms as vomiting of the cerebral type. Hess and Faltitschek therefore consider it not unlikely that with the scattered distribution of lesions which occurs in disseminated sclerosis, sclerotic patches affecting areas controlling visceral innervation might produce the gastric hypermotility and hyperacidity which they have observed as well as the other autonomic nervous symptoms mentioned; they also suggest as an interesting point in the pathogenesis of this disease that vagal hypertonia may be a predisposing factor.

4. Cardiac Dyspnoea.

F. R. FRASER (*Med. Journ. of Australia*, October 20th, 1928, p. 491) classifies the causes of dyspnoea into chemical and nervous groups. The first group comprises alterations in oxygen and carbon dioxide pressure and in hydrogen-ion concentration. Such factors may operate singly or combined, according to the predominance of circulatory, pulmonary, or renal disease. An investigation of the blood gases in hyperpnoea due to mitral stenosis revealed no relevant changes in the arterial blood except in advanced cardiac failure, so that hyperpnoea in uncomplicated cases must be due to stagnation of blood and anoxaemia of the tissues, particularly those of the respiratory centre. Engorgement of the lungs with blood occurs in congestive heart failure and produces diminished vital capacity with dyspnoea. In the later stages of failure gross oedema of the lungs and hydrothorax must increase this effect, while shallow breathing may itself induce anoxaemia. The vital capacity is also dependent upon posture, being reduced in the prone position; hence the appearance of orthopnoea in advanced cardiac failure. For the occurrence of periodic breathing there must be oxygen lack at the respiratory centre and also capacity for considerable increase in pulmonary ventilation, so that rapid elimination of carbon dioxide and consequent apnoea may be produced. The reduction of vital capacity in congestive failure makes increased ventilation impossible, so that periodic breathing is rare in this type of failure. The paroxysmal attacks of dyspnoea typical of failure, with hypertension and myocardial degeneration, are believed by many to result from hyperpnoea and resulting engorgement of the right side of the heart and the lungs. Morphine, by quieting the respiratory movements, is of great benefit in this form of paroxysmal dyspnoea, but oxygen should be simultaneously administered to counteract the anoxaemia which may result.

5. Serum Immunization against Measles.

N. S. FERRY, E. J. GORDON, F. W. MUNRO, A. H. STEELE, and L. W. FISHER (*Journ. Amer. Med. Assoc.*, October 27th, 1928, p. 1277) report the clinical results obtained with a toxin procured from a streptococcus isolated from patients suffering from measles which was associated with the particular antitoxin. From 10 to 20 c.cm. doses of the serum were used, since it was found that 5 c.cm. doses were not sufficient to protect against measles. In hospital, where those treated with 20 c.cm. of antitoxin were controlled under similar conditions with an equal number of untreated persons, the actual protection was 88 per cent. In another hospital, where patients treated with 10 c.cm. of antitoxin were controlled with a larger number of untreated patients and with a larger number treated with 5 c.cm. of measles convalescent serum, the protection afforded by the antitoxin was 42 per cent., as compared with 19 per cent. in the case of those treated with

convalescent serum; at a convalescent home, where the susceptible patients were selected according to their reaction to measles toxin, the actual protection was 67 per cent. From the three series of cases in the three institutions the average computed actual protection was 66 per cent., and where the dose was 20 c.cm. it was 78 per cent. The fact that in thirteen out of thirteen cases (100 per cent.) at the convalescent home it was shown that infection and recovery from measles changed a positive skin reactor to measles toxin to a negative reactor, and that diluted measles convalescent serum neutralized measles toxin, is held to indicate a specific relationship of measles toxin prepared from *Strep. morbilli* to measles, and to favour the use of streptococcus antitoxin prepared from this toxin as a protective measure.

6. Lactic Acid Excretion during Exercise.

I. SNAPPER and A. GRÜNBAUM (*Nederl. Tijdschr. v. Geneesk.*, November 3rd, 1928, p. 5419) summarize their observations on 55 football players as follows. Before the game only a trace of lactic acid was found in the urine; after the game not more than a trace of albumin was detected, and in one instance glucose was present. In games played on warm days only 6 of the 55 players showed more than 60 mg. of lactic acid in the urine. On the other hand, in two games played on cold days the urine of 13 players showed more than 60 mg. of lactic acid. In view of the fact that the same player excretes less lactic acid on warm days than on cold days, it is deduced that during work lactic acid leaves the body in considerable quantities by other channels than the urine; large quantities of dextro-rotatory lactic acid have been found in the sweat. During a game of football lasting one and a half hours in sunny weather an average of from 1.1 to 2.2 grams of lactic acid was excreted in the sweat, and in some cases presumably more. At the onset of perspiration the sweat contained more lactic acid than at the termination of the process. It is suggested that the phenomenon of "second wind" may be partly connected with excretion of lactic acid by the sweat.

7. Alcoholism and Cancer.

J. FLAIG (*Med. Welt*, November 17th, 1928, p. 1704) alludes to the Medical Research Council report which showed that the incidence of cancer of the tongue and oesophagus was unusually high in those employed in the drink trade, whereas in occupations with an unusually low cancer mortality there was a corresponding low mortality from diseases due to alcoholism. American statistics in 1916, which could be regarded as a normal pre-war and pre-prohibition year, showed that the incidence of cancer of the alimentary tract went hand-in-hand with a high mortality from alcoholism and cirrhosis of the liver. Thus, the mortality per 100,000 inhabitants from alcoholism and cancer in prohibition States was 2.7 and 75.7 respectively, as compared with 5.6 and 83.5 in States with a partial licence, and 9.0 and 81.7 in those with a full licence.

Surgery.

8. Haemostatic Artificial Pneumothorax.

P. COURMONT and H. GARDÈRE (*Journ. de Méd. de Lyon*, October 20th, 1928, p. 581) recommend artificial pneumothorax as being the best method of arresting haemoptysis when this endangers the patient's life or has resisted ordinary treatment. Haemorrhage ceases usually after one or two insufflations, even when the pneumothorax is incomplete. In some very urgent cases it is necessary to insufflate immediately; in others repeated haemorrhages indicate the necessity for compression by an artificial pneumothorax. The authors record twelve cases in their own practice in which haemostatic pneumothorax was induced. They state that usually the results are excellent, both as regards the haemorrhage and as favouring healing of the tuberculous lesion. The technique of the operation is similar to that of ordinary pneumothorax. The gas employed may be oxygen, nitrogen, or ordinary air; nitrogen furnishes the most prolonged compression, while oxygen is absorbed most quickly; air is employed in urgent cases in the absence of other gases. An instrument fitted with a manometer must be used, and a guarded safety needle is recommended. When the haemoptysis is alarming, insufflation should be more rapid than in an ordinary pneumothorax. The quantity of gas required is much greater than in ordinary cases, and the compression should be higher. The authors have almost always used more than one litre, and sometimes as much as 2.5 litres in certain cases. Generally speaking, when there are no pleuritic adhesions a large amount of gas is required to produce a positive pressure. The insufflations are repeated frequently as in ordinary pneumothorax: sometimes this is necessary every day or on alternate days in order to maintain a positive pressure. In exceptional cases it has been performed twice a day. The authors have never seen any ill result. In some cases haemoptysis was arrested despite extensive pleuritic adhesions which prevented complete pulmonary collapse; a remarkable fall in temperature and a rapid improvement in the general condition have often been observed. In adults the age of the patient is not a matter of importance.

9. Benign Tumours of the Stomach.

J. T. MASON and M. F. DWYER (*Annals of Surgery*, November, 1928, p. 866) report three cases of benign tumours of the stomach which occurred out of four thousand cases examined clinically and by x rays. These tumours, though rare, may be the cause of an aty [illegible] complaint or an unexplained chronic [illegible] commonly called polyposis. In each case there was a lack of gastric symptoms; weakness, anaemia, and loss of weight were present, and diarrhoea was very persistent in one case, but none of the patients attributed their ill health to a lesion in the stomach. The tumours were diagnosed by means of x-ray examinations, and were located on the posterior wall of the stomach. The operative technique is simple, a small transverse incision being made in an avascular surface of the stomach, the incision being gently enlarged to three times its size by the use of small retractors. In approaching the tumours haemostats were applied to the base, being attached well on the side of healthy mucous membrane. The tumours were then removed and the actual cautery was applied to the base above the haemostat and held on the blade of this until the instrument had received enough heat to coagulate the tissues and blood vessels to the immediate tissues. The grasping area of the haemostat was then whipped over with a running suture of double dulox, and was slipped out of place before the suture was pulled taut. Over this approximation several interrupted wax sutures were placed. Convalescence in each case was uneventful.

10. ACCORDING to A. A. STRAUSS, J. MEYER, and A. BLOOM (*Amer. Journ. Med. Sci.*, November, 1928, p. 631), though gastric polyposis occurs rather infrequently, routine radiography has of recent years drawn attention to this condition, the most important of the benign gastric tumours. Several theories have been advanced as to the little-known causative factors of the disease; among these are heredity, chronic gastritis, a general systemic lymphatic hypertrophy, and metabolic changes. It occurs usually after middle age, and the sexes are equally affected. Menetrier's classification of these tumours, which is still accepted, is into polyadenoma polyposa and polyadenoma en nappe. The latter type is rare; only five cases have been reported in the literature, and the authors now report two more such cases. In the first group the ducts are principally involved, the tumour is more lobulated, and cysts are more common; in the second, usually located in the fundus, there is little lobulation, cysts are few or absent, and the hypertrophy forms a well-demarcated plaque. Gastric polyposis may exist for many years without causing any discomfort, though the symptoms may be very severe in some cases, depending on the size, location, and nature of the growth. The chief symptoms are chronic gastric discomfort, repeated gastric haemorrhages, nausea, achylia, abnormal amounts of gastric mucus of egg-white consistency, and increased or normal gastric motility, combined with a general appearance of well-being. Physical signs are usually absent, and the most marked finding is the x-ray picture, which shows a characteristic mottling at the site of the lesion. The diagnostic problem is its differentiation from chronic gastric ulcer, carcinoma, sarcoma, and syphilis. Complications which may arise during the course of the disease are prolapse of a pedunculated tumour into the pyloric opening, associated carcinoma, and carcinomatous degeneration of the tumour. Improvement has been noted in a few cases from x-ray and radium therapy. Most cases have been treated by radical operation, and, where the extent of involvement permits, gastric resection according to Polya's method is advised. The authors emphasize the necessity of careful clinical and radiological interpretation in order to eliminate malignancy.

11. Treatment of Haemorrhoids.

H. GARIN (*Journ. Med. Assoc. of South Africa*, October 27th, 1928, p. 549) emphasizes the importance of careful selection of haemorrhoid cases for operation. Many patients may be relieved, if not cured, by simple dietetic or medical measures; others require more active treatment on account of repeated attacks of inflammation, serious bleeding, or discomfort. Operations on neurotic patients are often disappointing, pain or discomfort persisting after apparent cure. In elderly patients who have arterio-sclerosis or hypertension serious cerebral trouble often develops within a few months

after operation. It is useless to operate on haemorrhoids when these are due to hepatic cirrhosis or intrapelvic tumours. Excision of the pile-bearing area is not without risk, even when performed by experienced surgeons. Garin considers the injection treatment of haemorrhoids to be safer than any other surgical procedure. He prefers the older treatment (80 per cent. phenol glycerin) under local (or preferably general) anaesthesia. A fine needle, 1½ inches long, is attached to the syringe filled with solution; it is wiped (to prevent any solution touching the skin) and inserted into the skin at a third or half an inch from the anal margin. With the left index finger in the rectum the needle is thrust into the centre of each pile, only one or two drops of solution being injected. After each injection the needle is withdrawn sufficiently to permit slight lateral movement, so that as many piles as possible are injected without withdrawing the needle from the skin. Usually two skin punctures suffice. If the piles are large it may be necessary to inject at four equidistant points around the anal margin. When the needle is withdrawn the region is irrigated or washed with alcohol to remove any trace of phenol. The exposure of the whole area outside the anus prevents sloughing of the subjacent tissues. When every nodule has been injected, vaseline or an antiseptic ointment is applied. The piles are left outside, and a small rectal tube is inserted. The patient remains in bed for three or four days. An aperient and an oil enema are given. In five or six days the sphincter recovers its tone. Warm Sitz baths aid the contraction of the piles, and in two weeks small nodules only remain. Very cold enemata relieve any congestion of the mucous membrane. Relapses seldom occur if patients ensure regular actions of the bowels. Pelvic thrombosis or embolism has never been recorded.

12. The Surgical Significance of the Abdominal Reflexes.

W. KLEIN (*Arch. of Surg.*, November, 1928, p. 854) considers that the cutaneous abdominal reflexes are a valuable aid in the diagnosis of acute intra-abdominal disease. These responses are of two kinds: (1) hyperaesthesia, which is a form of hyperalgesia and is defined as a response to a stimulus expressed in terms of pain; (2) the contraction reflex, which is a response to scratching of the skin over a particular area. Klein thinks that the second one has not received sufficient attention. Hyperaesthesia, which is of value in diagnosing conditions in adults, is present early in the course of abdominal disease in about 50 per cent. of cases, and diminishes later; any process which causes increased tension, increased peristalsis, or acute inflammation will give the sensation of increased pain when the skin over the affected area is pinched. The cutaneous contraction reflex, which is helpful in diagnosing disease in young persons, is produced by scratching the skin with a sharp object. It is seen as a homolateral, segmental contraction of the muscular segment at the site of stimulation. The linea alba and the umbilicus deviate to the same side. This contraction occurs almost simultaneously. Rigidity of the abdominal wall which is not the result of an intra-abdominal condition may be accompanied by an exaggerated contraction reflex, while that caused by the inflammation of the peritoneum results in the disappearance of this reflex. The degree of suppression is in direct ratio to the severity of the pathological process; the area of absence of this reflex overlies the diseased organ. When the peritonitis is diffuse the whole abdominal wall is non-responsive. Both reflexes are unilateral and segmental.

13. Phagedaenic Destruction of the Male Genitalia.

J. H. LABADIE (*Journ. Amer. Med. Assoc.*, November 10th, 1928, p. 1447) records seven cases treated during the last twelve years in the Michigan University Clinic of Dermatology and Syphilology of phagedaenic ulceration complicating genital lesions. The clinical course was essentially the same in all, varying only in degree. The cases were characterized by chronic painful destructive ulcers which began on the prepuce, glans, or sulcus coronarius, and spread by direct extension back along the shaft of the penis. In the severest cases the scrotum and even the abdominal wall were involved. The disease begins with a chancroidal infection, often complicated by chancre, and secondarily infected with the usual saprophytes of the skin. Untimely surgical intervention such as a dorsal slit, a circumcision, or local incision and drainage is perhaps the most important causative factor present, since this serves to open up new avenues for infection and aids in the implantation of the saprophytic organisms deep into the healthy tissue. Histologically the picture is that of a non-specific chronic inflammation. The cases are very refractory to all forms of treatment. Free drainage as provided by baths, irrigation, and frequent soaking is imperative. In severe cases the actual cautery or even amputation of the part may be needed.

Therapeutics.

14. Treatment of Rickets.

WHILE irradiated sterols have proved of undoubted benefit in experimental rickets in rats and in infantile rickets, E. LESNÉ, R. CLÉMENT, and S. SIMON (*Bull. et Mem. Soc. Méd. des Hôp. de Paris*, November 22nd, 1928, p. 1525) state that their therapeutic efficacy is affected by such factors as the age of the child, environment, diet, duration of the disease, and the degree of the lesions. Cure is more rapid if the patient dwells in airy, well-lighted surroundings, has a normal diet, and is not suffering from advanced lesions. Irradiated sterols have no greater effect than other medicaments on well-established osseous lesions. The authors report good results from the administration of daily doses of 4 mg. of ergosterol, one of the best results being from a daily dose of 1 mg. during two periods of five days each with an interval of a month without treatment. Ergosterols recently irradiated are said to have a striking anti achitic activity. The majority contain from 25,000 to 100,000 physiological units of antirachitic factor per gram, this unit being the amount necessary to protect a rat of the weight of 30 grams against the effects of a rachitigenous diet. A child with developing rickets should receive daily for a month about 100 units of antirachitic factor, which corresponds to 1 to 4 mg. of ergosterol correctly and recently irradiated; such ergosterols lose almost all their efficacy at the end of three months. Though certainly efficacious in rickets, they should not replace in all cases actinotherapy or cod-liver oil. Ultraviolet rays have as rapid an effect as ergosterols, and, moreover, are accompanied by a more marked eutrophic action, stimulation of appetite, and amelioration of the anaemia. Cod-liver oil contains 90 units of factor D per c.cm. It is very rich in the lipo-soluble factor of growth, of which irradiated ergosterols are totally devoid, and its fats are particularly assimilable. Flaudin has called attention to the difference between ergosterin and cholesterin: the first has a marked antirachitic power; the second possesses this in a lesser degree, but its action on growth is more obvious, and it has also an antitoxic and anti-infectious property. Preparations containing both these substances are said to produce better results than ergosterin alone, and to approximate those due to cod-liver oil, which is not always tolerated.

15. Stramonium in Parkinsonian States.

SOPHIE SHAPIRO (*Journ. of Nerv. and Ment. Dis.*, November, 1928, p. 488) calls attention to Juster's method of treating Parkinsonian symptoms by the oral administration of *Datura stramonium*. Increasing amounts of the dry leaves are given, beginning with 1-grain doses three times a day until 14 to 16 grains daily are being given. As soon as the optimal result is obtained the dose is decreased until 7 or 8 grains daily is reached. One day of intermission is allowed after five or six days of treatment. No evil effects have been reported. Twenty-three cases are described (16 of Parkinsonism and 7 of classical paralysis agitans). The results in 14 cases (11 Parkinsonism and 3 paralysis agitans) are said to have been excellent, and in 9 cases there was slow improvement. The majority consisted of post-encephalitis lethargica patients, in whom more improvement was noticed in both physical and mental condition. Chief among the signs improved by treatment were muscular rigidity, excessive salivation, posture, speech, and mental condition. Some previously bedridden patients were enabled to get up and dress themselves, intelligible articulation returned, the gait became more steady, and the mental outlook more normal and hopeful. It is said that prolonged dosage sometimes causes diarrhoea and mydriasis, but these effects vanish when the administration is stopped for a day or two. Aged people with considerable arterio-sclerosis and severe tremor show comparatively slight improvement. The author claims merely symptomatic and perhaps temporary relief, but adds that the absence of danger in administration, and the return from complete or partial invalidism to a more normal, useful, or pleasant life, make treatment by stramonium worthy of serious consideration.

16. Colloidal Mercury in General Paralysis.

M. PINARD, P. VERNIER, and Mlle VERSINI (*Bull. et Mém. Soc. Med. des Hôp. de Paris*, November 1st, 1928, p. 1456) report the case of a man who had suffered from general paralysis since 1925. He was at first treated with injections of novarsenobenzol, and subsequently with intramuscular injections of bismuth and quinine. Some slight improvement followed this treatment, but the Wassermann reaction remained positive. In spite of seven courses of novarsenobenzol the Wassermann reaction continued positive and his general condition was but little better, so in July, 1928, a course of intraspinal injections of colloid mercury in 2 c.cm.

doses was started. In August the Wassermann reaction was found to be negative, and he was then given a 5 c.cm. dose of colloid mercury, which produced a violent reaction. At the conclusion of treatment the patient's general condition had much improved and the Wassermann reaction remained negative. The severe reaction which occasionally followed the mercurial injections were combated by injections of morphine.

17. Theophylline-Ethylenediamine in Heart Disease.

J. H. MUSSER (*Journ. Amer. Med. Assoc.*, October 27th, 1928, p. 1242) discusses the use of theophylline-ethylenediamine in the treatment of cardiac disorders associated with pain. The preparation has been in general use as a diuretic, especially in congestive heart failure; it acts as a dilator of the coronary arteries to a greater degree than any other member of the xanthine group. In heart conditions with anginal attacks, in cardiac failure in conjunction with digitalis, and in hypertensive heart disease associated with cardiac pain it acts favourably by dilating the coronary arteries, increasing the circulatory rate, and allowing a greater supply of blood to reach the myocardium; it is also of use in cardiac dyspnœa and asthma, cases of heart-block, and in aortitis and coronary sclerosis. Its greatest value is seen in the treatment of angina pectoris or in patients who have survived the initial effect of coronary thrombosis. While it is difficult to estimate the action of a drug when given in conjunction with other measures to restore compensation, the author's experience, like that of others, is that patients with comparable signs and symptoms of cardiac failure of the congestive type improve more rapidly and completely with combined digitalis, theophylline-ethylenediamine therapy, and rest in bed than do those under the same conditions but without theophylline-ethylenediamine. F. M. SMITH (ibid., p. 1274) emphasizes the importance of combined dieting and theophylline in the treatment of cardiac failure. Attention is called to the beneficial action of the carbohydrates and sugars upon the injury to the liver produced by prolonged congestive failure, and to the value of the drug in doses of 2 or 3 grains after meals in the treatment of the failure due to arterio-sclerosis. The best results are obtained in the congestive type of failure and in fluid elimination from its influence on the coronary circulation.

18. Splenic Extract in Pulmonary Tuberculosis.

BAYLE (*Presse Méd.*, December 8th, 1928, p. 1563) has obtained good results from the administration of splenic extract in advanced cases of pulmonary tuberculosis in which pneumothorax was impossible, and in others where single or bilateral pneumothorax had failed to arrest the course of the disease. He employs an extract of pig's spleen unmixed with the extract of any other organs, and administers it by the mouth, by hypodermic injection, or by both methods when desirable, the usual length of treatment being three weeks. Twenty-two cases are recorded in which the treatment has been employed over various periods, and they are classified as follows: (1) splenic treatment alone without previous pneumothorax—5 cases, good results in all of them; (2) splenic treatment alone after pneumothorax had been abandoned—2 cases, one able to resume games, the other much improved; (3) splenic treatment accompanying pneumothorax, then alone—4 cases, in which the general condition was improved in 2 and the response was excellent in 2; (4) splenic treatment concurrent with pneumothorax—6 cases, in which the general condition became excellent in 2, was much improved in 3, and slightly improved in one; (5) splenic treatment in a case of purulent discharge arising during a course of pneumothorax treatment—the weight went up, the bacilli disappeared, the general state and signs by auscultation improved; and (6) splenic treatment concurrent with pneumothorax and methylic antigen—4 cases, in which the general condition was much improved in 3, and became excellent in the fourth. Tubercle bacilli persisted in 12 cases out of 22, but could not be found in the other 10 even after gastric lavage. Radiograms and charts of temperature and weight are given in some of the cases. The author claims that the treatment is safe and can be used in every case; that great improvement in the general condition ensues, with consequent cicatrization of the lesions and disappearance of physical signs and bacilli; and that it is therefore deserving of a place in the therapeutics of the disease.

19. Treatment of Soft Chancre by Iodoform and Ultra-violet Rays.

V. SOUKHAREFF (*Ann. de Derm. et de Syph.*, October, 1928, p. 869) finds that ultra-violet rays have a bactericidal, antitoxic, and stimulating action on soft chancre. He records eight cases of deeply ulcerated chancres, with inguinal buboes and balanitis, in which this line of treatment resulted in rapid improvement and ultimate cure. Soukhareff believes that iodoform is very useful in these cases; he suggests that the ultra-violet rays decompose it, with the production of nascent iodine and formalin. The technique is very simple. The initial dose is only half of the "erythema dose"—that is, the irradiation lasts for two minutes at a distance of twenty inches. This may be increased gradually to an exposure of ten minutes at a distance of ten inches.

Laryngology and Otology.

20. Nasal Respiratory Inefficiency.

G. WORMS (*Arch. Internat. de Laryngol.*, July–August, 1928, p. 769) describes his course of investigation of patients who show signs of deficient aeration. He investigates the case from two points of view. He measures first the total intake and output of air from the whole respiratory tract, and calculates the relative amounts of respired and residual air. In a vigorous subject with adequate air passages the proportion of residual to respired air is diminished, but in cases of respiratory insufficiency the ratio of residual to respired air is increased, and the tendency is for deficient aeration. The total interchange is estimated by means of some type of spirometer, of which a number are described. At the same time the movements of the chest wall and diaphragm are noted by means of radiography and by an elastic band placed round the chest wall and connected with a tambour. The nasal inefficiency is then calculated by posterior rhinomanometry—by holding a tube, long enough to reach to the fauces, between the closed lips, connecting it with a manometer which is calibrated in millimetres of water, and then breathing through the nose. This method is much more accurate than what is known as rhino-hygrometry—breathing on to a polished surface and estimating the deposition of moisture. When total aeration is normal and nasal respiration is subnormal the diaphragm and costal muscles are compensating by overworking. When the total respiration is decreased but the nasal is normal the nose is not at fault, but the other respiratory apparatus is not functioning normally, and should be re-educated after correcting any organic faults. Where both total and nasal respiration are below normal the fault probably lies in the nose. In children the cause of nasal deficiency is almost always adenoid vegetations; it is advised that these should be removed as soon as diagnosed, the author having operated on an infant of eleven days with consummate success. In adults deflected septa and hypertrophic rhinitis are the commonest defects; these should be removed and breathing exercises undertaken. The narrow nose and the arched palate of the pseudo-adenoid present more difficulty, but much can be done by means of exercises to improve their condition.

21. The Mechanism of Reflex Asthma.

U. L. TORRINI (*Arch. Ital. di Otol.*, September, 1928, p. 510) describes two cases of severe asthma in which cure followed the relief of nasal obstruction. Such obstruction is a very common cause of asthmatic attacks, and there are three ways in which it may set them in motion. The first is that the nerve endings in the nasal mucosa are mechanically compressed, and a reflex action is set up causing spasm of the bronchial muscles. The second is that the obstruction results in an increase in the percentage of carbon dioxide in the upper reaches of the nasal passages which stimulates the nerve endings, and the bulbar centres are irritated. The third theory is that the obstruction produces an excess of carbon dioxide in the blood and that this irritates the bulbar centres and causes the bronchial spasm. The author considers the mechanical theory the true one, since in many cases of complete nasal obstruction there is no asthmatic tendency. The two patients had masses of nasal polypi obstructing the nose and causing very severe asthma. The polypi were removed and a partial ethmoidectomy performed, the nose being packed for forty-eight hours with bismuth gauze; complete relief of symptoms followed. The author considers that the reflex arc consists of the sensory nerve supply of the pituitary epithelium of the nose, a synapse or synapses in the bulb, and an efferent impulse along the vagus to the bronchial muscles.

22. Sensorimotor Neurosis of the Larynx.

H. C. TODD (*Arch. Oto-Laryngol.*, September, 1928, p. 303) reports a case of loss of voice which was eventually found to be due to a laryngeal sensorimotor neurosis. The condition lasted for nearly two years, treatment by rest and sedatives proving useless. At the end of this time laryngeal exercises and the administration of phenobarbital brought about recovery within ten days. Todd discusses these cases, which he thinks are relatively frequent, though often

unrecognized. An important point in the diagnosis is the sudden occurrence of aphonia, without constitutional symptoms or the presence of an extralaryngeal disease which might affect the nerve supply; the larynx itself appears physically normal. The author adds that the condition very rarely persists so long as in the case he reports.

Obstetrics and Gynaecology.

23. Treatment of Septic Abortion.

G. GELLHORN (*Amer. Journ. Obstet. and Gynecol.*, October, 1928, p. 547) estimates that 90 per cent. of all abortions are criminal, and that the percentage of septic abortions is higher than 10. He stresses the advisability of treating any criminal abortion as a septic abortion, and of regarding every septic incomplete abortion as a criminal one until the contrary is proved. Gellhorn, in discussing the general treatment of such conditions, does not recommend the use of serums or vaccines, nor does he favour the intravenous injection of such agents as mercurochrome. He advocates, rather, non-specific protein therapy, where the natural resisting power to infection is raised by intramuscular injections of milk or repeated blood transfusions. With this he combines cardiac stimulation by using intravenous pituitary extract, as recommended by Hofbauer. He has abandoned such measures as the following: (1) the active policy of clearing out the uterus in all cases, and, by so doing, destroying the protective leucocytic barrier and perchance spreading infection; (2) the expectant one of waiting three to eight days and then emptying the uterus when the virulence of the organisms has decreased; (3) the conservative one of administering quinine and pituitary extract only. Instead of these measures he institutes general treatment at once, and does not deal with the uterus if any extrauterine infection is suspected after gentle examination. If gestation products protrude through the os they are removed with placental forceps. If severe haemorrhage is present in the first two days the vagina is packed with iodoform gauze, while on the third day, if no extrauterine complication or tenderness is present, curetting is performed irrespective of fever.

24. Pregnancy and Spontaneous Pneumothorax.

ACCORDING to A. SZENES (*Zentralbl. f. Gynak.*, November 3rd, 1928, p. 2858) spontaneous pneumothorax in pregnancy may occur either in a person suffering from advanced and active pulmonary tuberculosis or in one with apparently healthy lungs. In the former group the prognosis is bad, death being usually not long delayed; in the latter group recovery is the rule, although recurrence may follow (this not necessarily being of grave import). Cases of the second group are indirectly connected with tuberculosis, the cause of the pneumothorax being rupture of an apical emphysematous bulla in the neighbourhood of a scar which is connected with an antecedent healed tuberculous lesion. In these cases the pneumothorax is produced very suddenly, by coughing or singing; unfavourable signs are (1) severe bleeding, especially when this is directed towards the pleural cavity rather than externally, (2) bilateral pneumothorax. The occurrence of pneumothorax is favoured by the deeper thoracic and abdominal breathing from the eighth month of pregnancy onwards. Treatment of the pneumothorax is more urgent than that of the pregnancy, which should be conservative; rest and administration of morphine are called for, and puncture is indicated when the intrapleural pressure is greatly increased. That Caesarean section, for obstetric reasons, is not contraindicated is shown by Real's case, in which this mode of delivery was adopted in a patient with incarcerated pelvic dermoid cyst who had also a therapeutic pneumothorax. In general the occurrence of pneumothorax during pregnancy does not justify the forbidding or interruption of future pregnancy.

25. Melanotic Sarcoma of the Ovary.

J. R. MILLER (*New England Journ. Med.*, October 25th, 1928, p. 830) reports a case of pigmented ovarian neoplasm, with which was associated diffuse discoloration of the skin. The patient at the age of 20 had undergone an operation for the relief of acute obstruction of the ileo-caecal valve. A year later a tumour appeared in the abdomen, and was associated with vomiting and diarrhoea. The skin became increasingly bluish over the entire body, but there were no symptoms referable to the lungs or heart. At an operation a large bluish-black lobulated tumour of the right ovary was removed and diagnosed microscopically as being a melanotic sarcoma. Uninterrupted recovery followed, but four months later the abdominal symptoms returned and several pigmented moles of various sizes became obvious on the abdomen. The patient stated that these moles had always been present, but had not been noticed on previous examinations. She died within two months, and at the necropsy it was found that the suprarenal glands were completely replaced by darkly pigmented tumour growths. The remaining ovary was greatly enlarged and contained deep black tumour masses. The author attributes the skin pigmentation to the presence of a soluble melanin in the blood stream, though the influence of the involvement of the suprarenal glands is not disregarded. They were not invasive, however, and did not look like primary tumours; moreover, they were bilateral.

26. Myomectomy.

CHIFOLLIAU (*La Gynécol.*, August, 1928, p. 475) records four observations of pregnancy following myomectomy. The first patient was treated in 1907 by myomectomy for bleeding which followed childbirth, and was attributed to a single interstitial uterine myoma; subsequently she gave birth to three infants at term, but in 1927 hysterectomy had to be performed, the uterus containing numerous widely distributed myomatous nodules. In the second patient, who went to term, four interstitial and subperitoneal myomata were removed at the age of 33. The third patient aborted at the sixth month, two years after myomectomy, and the fourth patient when last seen was four months pregnant two years after myomectomy, at the age of 37. The author concludes that myomectomy is a relatively simple operation, which, employed in young women with healthy adnexa, gives excellent results; a certain number of recurrences, necessitating second operations, are, however, to be anticipated. Examples of pregnancy continuing to term after conception following myomectomy are also recorded by Labey and by Bazy (ibid., pp. 479 and 480).

27. Muck's Test in Pregnancy, Albuminuria, and Eclampsia.

G. GROSSI (*Ann. di Ostet. e Ginecol.*, October 31st, 1928, p. 1176) records his experience of Muck's test in eclampsia, albuminuria, and pregnancy. The test, described in 1924 (*Münch. med. Woch.*, October 17th), consists in the application of adrenaline chloride (1 in 1,000) to the anterior part of the inferior meatus of the nose; a positive result is shown by the appearance of a silvery grey area of blanching in the mucous membrane which has been touched. This local vaso-constriction is taken as a sign of sympatheticotonia; it is present in bronchial asthma. The test is negative in healthy non-gravid women; during pregnancy, according to the observations of Muck, Seysche, and the present author, it is positive in a considerable majority of women, especially during the second and fifth or sixth month. Grossi has obtained positive results by using the test in eight eclamptics, and a certain proportion of positive reactions in fourteen cases of albuminuria in pregnancy. Similar results have been described by Seysche. These findings are regarded as supporting the view that a reflex arterial spasm and a dysfunction of the vasomotor centre are concerned with the genesis of eclamptic convulsions. In the same connexion attention is directed to the arterial spasms which have been ophthalmoscopically noted in eclamptics.

28. Haemolytic Anaemia in Pregnancy.

W. ALLAN (*Surg., Gynecol. and Obstet.*, November, 1928, p. 659) maintains that the pernicious anaemia of pregnancy, being an acute haemolytic anaemia occurring in women under the age of 35, progressing steadily without remissions, and curable by blood transfusion, should not be classified as an Addisonian pernicious anaemia, which differs from it in being an essentially chronic disease appearing chiefly in men after 35 years of age, being characterized by remissions, and not curable by blood transfusion. The blood picture is similar to that of ordinary pernicious anaemia, with greatly diminished haemoglobin and red cells, a high colour index, and the usual variations in size, shape, and staining reactions of the red cells. Insidious in onset during the later months of pregnancy, the condition is generally discovered after delivery, usually in cases of miscarriage or premature labour. The loss of blood during labour is less than normal, and the child is not affected. In 90 per cent. of the cases directly the uterus is empty blood transfusion stops haemolysis, and there is a prompt recovery. The process is too acute for treatment by liver feeding only, and prompt transfusion is the safest therapeutic measure, though liver feeding may be beneficial after transfusion or during pregnancy as a preventive. The danger of recurrence need not contraindicate subsequent pregnancies under proper supervision, and the promptness with which the condition can be controlled by transfusion renders any suggestion of sterilization to prevent recurrence unwarranted.

Pathology.

29. Action of Ethylene on the Human Body.

J. D. BRUMBAUGH (*Journ. Amer. Med. Assoc.*, August 18th, 1928, p. 462) has made a carefully controlled study of the effects of ethylene-oxygen anaesthesia on the normal human being, without any complicating factors, such as surgical trauma, pre-anaesthetic medication, pathological conditions, and mental anxiety concerning an impending operation. Fifteen men, whose ages ranged from 21 to 37 years, volunteered for this study. A careful physical examination was made in all cases. The anaesthetic was given in the morning while fasting, and without pre-anaesthetic medication. As a preliminary the blood pressure, pulse, and respiration rates were recorded, the urine was examined, and the blood coagulation time, blood sugar, and urea contents, the CO_2 combining power, and the icterus index were determined. The subjects were fully anaesthetized for one hour: 85 per cent. ethylene and 15 per cent. oxygen was given, and this concentration was maintained as fully as the patients' condition would permit. Two standard brands of ethylene gas were employed. During anaesthesia the blood pressure and pulse and respiration rates were recorded every five minutes. At the termination of anaesthesia the various blood tests were repeated. Twenty-four hours after anaesthesia the urine and blood tests were repeated in the fasting state. The recovery time and post-anaesthetic morbidity were recorded. No unpleasant sensations during induction were described; nearly all the subjects lost the power to move before consciousness departed. Four men mentioned a sense of well-being; one talked freely during the second stage. The average time of recovery of consciousness after termination of anaesthesia was one minute forty-four seconds. Only one man had a high icterus index the next day, and he had eaten carrots on the night following anaesthesia. Brumbaugh's observations fail to confirm the statement of two other writers that the icterus index is very high after ethylene-nitrous oxide anaesthesia. He draws the following conclusions. Sensations are pleasant during induction and recovery. Neither the haemoglobin nor the icterus index alters, and there is no appreciable derangement of the biliary system. The blood sugar is definitely increased immediately after anaesthesia, but falls to normal in twenty-four hours. The blood urea is not increased immediately, but the next day there is definite increase. There is a temporary decrease of the CO_2 combining power, but it becomes normal in twenty-four hours. There are no changes in the coagulation time of the blood, the character of the blood clot, or the urine. Systolic and diastolic blood pressures are definitely increased during anaesthesia, but the pulse rate is not affected. Headache, nausea, and vomiting are much more frequent than in ordinary surgical anaesthesia; this is attributed to the absence of pre-anaesthetic medication and of careful post-anaesthetic control. Brumbaugh adds that he cannot draw comparisons with other anaesthetics, since he knows of no similar observations by others.

30. The Behaviour of Variola Vaccine Virus in Tissue Cultures.

E. HAAGEN (*Centralbl. f. Bakt.*, October 26th, 1928, p. 31) describes a method for the *in vitro* cultivation of vaccinia virus. The medium he uses consists of four parts of rabbit plasma and one part of rabbit spleen extract. Small drops of this mixture are placed on mica slips, and in each drop is deposited a tiny piece of rabbit testicle. The slips are then placed over hollow-ground slides, ringed round with paraffin, and incubated in the ordinary way. After three days pieces of testicle are taken out from the cultures and immersed for two or three minutes in a vaccine-containing fluid. This fluid is prepared by centrifuging the ground-up testicle of a rabbit that has received, four or five days previously, an intratesticular inoculation of vaccinia virus, and pipetting off the supernatant fluid. Each of the testicular explants, after being infected with the virus, is introduced into a fresh drop of culture medium and again incubated. Subcultures are made every four or five days. In order to guard against the dying out of the testicular culture, and hence of the virus, it is advisable at each subculture to add a small piece of fresh testicle. Using this method the author has been able to cultivate the vaccinia virus successfully; the virus was carried through 37 passages during a period of about eight months. From time to time the virulence of the virus was tested by removing a number of explants, grinding them up in an agate mortar, suspending them in 2 c.cm. of Ringer's solution, making suitable dilutions, and inoculating these into the cornea or the testicle of healthy rabbits. The results showed that the virulence of the virus remained about the same during the whole period of cultivation. Quantitative titrations rendered it clear that the virus not only remained alive but actually multiplied in the tissue cultures; in five days after inoculating the infected testicle into the medium the infective titre rose from 1 in 10,000 to about 1 in 10,000,000.

31. Ultramicroscopical Appearances in the Wassermann Test.

E. TRENTI (*Il Policlinico*, Sez. Med., October 1st, 1928, p. 525) found that by filtering a mixture of a syphilitic serum with a watery or alcoholic antigen through a colloidal membrane a precipitate immediately appeared. After filtering off the precipitate no traces of the antigen or the serum could be demonstrated in the filtrate, unless excess of either were present in the original mixture. By using the precipitate suspended in physiological solution complete deviation of the complement was obtained. The considerable physical modification caused by filtration did not alter the result of a subsequent Wassermann test performed with the filtrate. Both macroscopical and ultramicroscopical observations showed that a non-syphilitic serum gave a negative Wassermann reaction, but in certain cases, such as hepatic cirrhosis, a serum, although not syphilitic, could give a positive reaction. This method of filtration was claimed to give a means of distinguishing between a non-specific, self-deviated serum and a syphilitic one. The author is inclined to think that the inactivation of the complement in the Wassermann test is of the same order of phenomenon as that which caused the formation of a precipitate by the serum and antigen. The precipitate was insoluble in physiological saline solution and in distilled water. Its formation seemed to be in the nature of a chemical or bio-chemical bond, rather than a simple flocculation due to physical or physico-chemical processes. The ultramicroscopic observations confirmed the results obtained by filtration, and also those previously noted by Jacobsthal. But with his method the formation of a flocculent precipitate occurred only after several hours in the incubator, while with the filtration method the presence of a precipitate was immediately demonstrable almost before filtration was complete.

32. The Basis of Suprarenal Cortex Therapy.

J. MOUZON (*Presse Méd.*, October 31st, 1928, p. 1379) calls attention to the fact that experimental research on the suprarenal gland has been largely devoted to the medullary portion, to the neglect of the cortex, although, in animals deprived of the whole gland, it is the absence of the cortical portion which causes death. In the course of a comprehensive though rapid review of the experimental work on this subject he mentions that cases of Addison's disease have been temporarily improved by the administration of cortical extract by injection and by ingestion. He also cites a case of Goldzieher and Greenwald where a newly born infant, exhibiting signs of acute suprarenal insufficiency, probably caused by a suprarenal haemorrhage, was treated by intravenous and subcutaneous injections of "cortical hormone" for a fortnight. After each injection the signs improved and ultimately the child was cured. Many workers claim to have produced an extract from the cortical portion which appears to have a potent therapeutic value, sometimes being antagonistic to adrenaline. The author prefers for the present to keep an open mind, and concludes by suggesting that in practice we should confine ourselves to the view that treatment by suprarenal extracts, often recommended in acute or chronic suprarenal insufficiency, appears more and more firmly based on physiology, and that certain facts even induce the hope that this branch of therapeutics may become in the future more reliable and constant, either by the successful isolation of a definite specific chemical hormone, or at least by its ability to be controlled as to potency and dosage by biological tests.

33. Bactericidal Action of Cerebro-spinal Fluid.

T. SHIMIDZU (*Tohoku Journ. of Exper. Med.*, October 28th, 1928, p. 344) finds that the bactericidal power of cerebro-spinal fluid which has been heated to 100° C. for thirty minutes depends on the altered *p*H of the fluid causing an unsuitable alkalinity for the growth of the bacteria (*B. typhosus*) used in the experiments. When a requisite amount of potassium hydrogen phosphate is added to regain the optimal *p*H an uninterrupted growth of the organisms occurs in both the active and inactivated fluids. The bactericidal action of inactivated lymph seems to have no relation to the hydrogen-ion concentration. Most human serums retain the bactericidal property after heating to 60° C. for thirty minutes, and no relation to the hydrogen-ion concentration is observed. With active human serum in which the *p*H has been chemically adjusted there is no diminution of the bactericidal power. If the *p*H is similarly adjusted in serums previously inactivated by heat the bactericidal action is sometimes lost and sometimes retained, and shows no consistent relation to the hydrogen-ion concentration.

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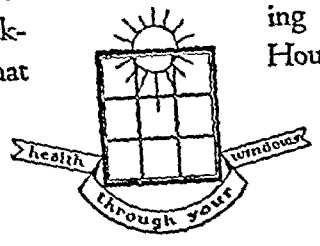

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Calling at the Institute to inquire into this new method he was asked whether he knew any Spanish. He replied that with the exception of a few words like "*primavera*," which he knew meant "Spring," he was entirely unacquainted with the language.

He was then handed a little book of 48 pages, printed entirely in Spanish, and asked to read it through.

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This is typical of the experiences of thousands of people who are learning French, Spanish, Italian, or German by this new method. Here are a few examples of letters received from those who are following it:—

"I have learnt more French during the last three months from your Course than I learnt during some four or five years' teaching on old-fashioned lines at school." (S. 382.)

"I have spent some 100 hours on German studying by your methods; the results obtained in so short a time are amazing." (G.P. 136.)

"I can read and speak Spanish with ease, though it is less than six months since I began." (S.M. 181.)

"I have obtained a remunerative post in the City solely on the merits of my Italian. I was absolutely ignorant of the language before I began your Course eight months ago." (I.F. 121.)

Matriculation Passed.

"I was able to pass London matriculation (in Spanish) last June with minimum labour and no drudgery, although I was always reckoned a 'dud' at languages." (S.B 373.)

"My grateful thanks to you for making so attractive the learning of French. I am 40 next week and am delighted to be able to say I accomplished at 40 what I turned aside from at 20 as too difficult." (T. 656.)

"I have only been learning German for four months; now I can not only read it but also speak it well." (G.M. 148.)

"I am extremely pleased with the (Italian) Course. I found it of the greatest possible service to me during a recent visit to Italy." (I.T. 127.)

"Your method is the pleasantest method of learning a language imaginable. I always found languages a very difficult subject at school, but have had no difficulty whatever with the (French) Course." (P. 684.)

"This is the perfectly delightful method (of learning Italian), and I shall not fail to recommend it to everyone I meet." (I.L. 108.)

"I am entirely satisfied with this (French) Course, and am especially pleased at the way in which all faults have been corrected and explained by your staff." (B. 1329.)

"How pleased I was when I heard that I had been successful in my examination. I attribute my success almost wholly to your methods, which are undoubtedly very good" (C. 885.)

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"I think your (French) Course is the best method I have ever seen." (C. 272.)

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"I think your German Course excellent—your method of language-teaching is quite the best I have come across." (G.F. 103.)

"In three months I have already learnt more Italian than I should have learnt in many years of study in the usual way. What astonishes me still more is that one can learn so well without using a single word of English." (I.M. 124.)

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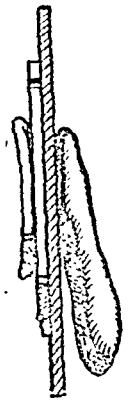

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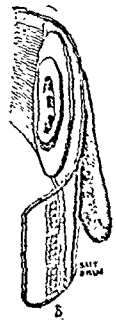

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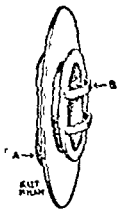

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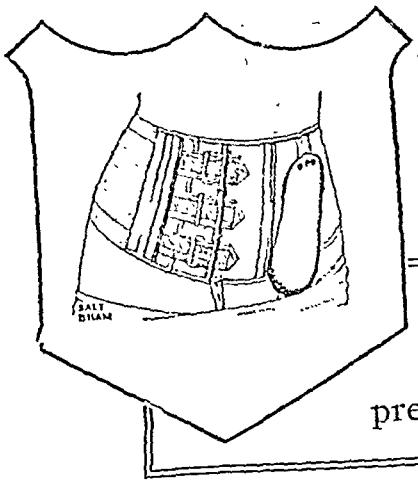

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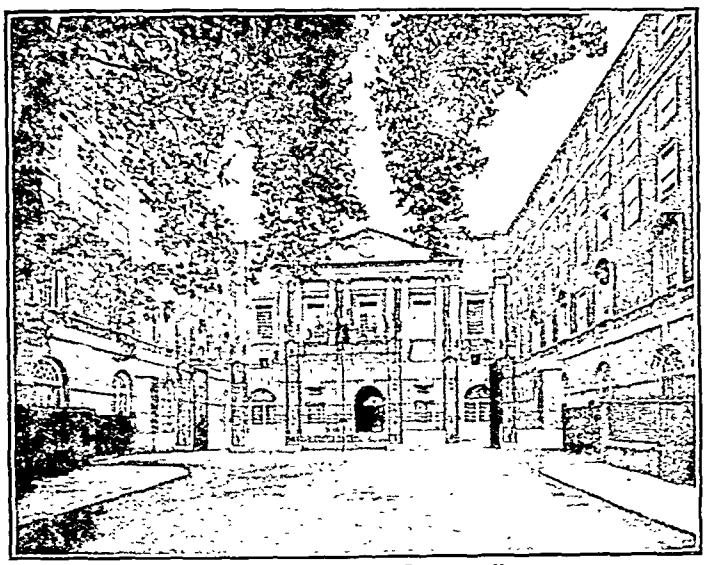

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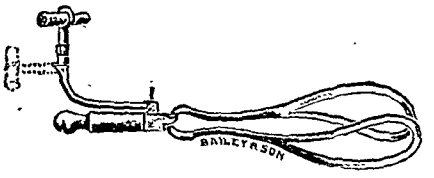

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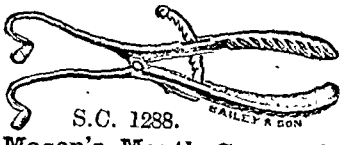

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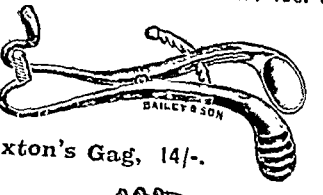

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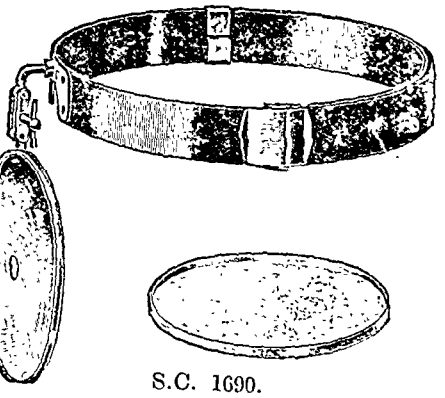

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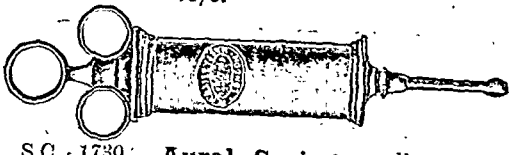

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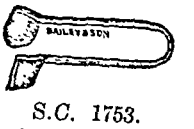

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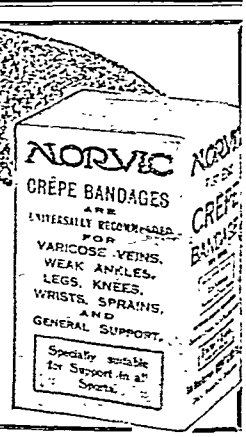

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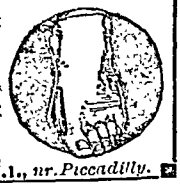

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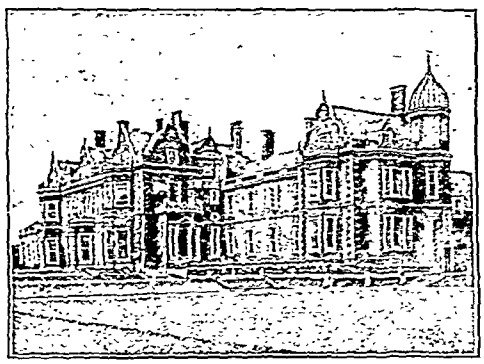

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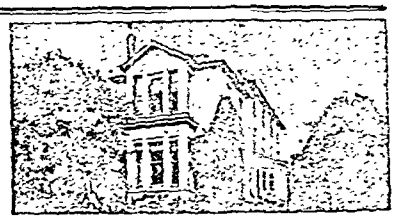

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For terms and further particulars apply to the Medical Superintendent (Telephone: No. 56 Northampton), who can be seen in London by appointment.

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CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

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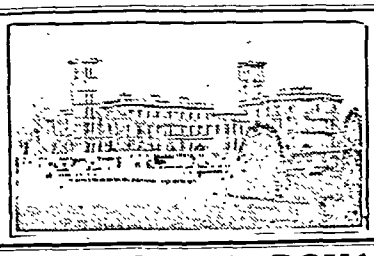

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A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods.

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Telegrams: Alleviated, London. Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for the treatment of special and suitable cases adjoin the Institution. There is a seaside branch to which holiday parties are sent during the summer months. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

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Completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Croquet, Squash Racquets, and all indoor Amusements, including Wireless and other Concerts. Occupational Therapy. Daily services in the Chapel.
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For the Early & Preventive Treatment of Disease & Convalescence after illness.

The Hospital is intended for the children of Members of the Institution of Civil Engineers, the children of architects, artists, authors, clergymen, members of the medical, legal, and other professions, members of scientific societies, officers of the Navy, Army, and Royal Air Force, officers of the Merchant Navy, schoolmasters and university professors.

Accommodation is provided for 50 Boys between the ages of 4 and 12 years, and 50 Girls between the ages of 4 and 14 years. In special cases the age limits may be raised to 14 for Boys, and 16 for Girls.

Fee 21/- per week, or as may be arranged, and travelling expenses.

Particulars can be obtained from the Secretary:—
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NORTHWOODS, Winterbourne, Bristol.
Telephone and Telegrams: Winterbourne 18.

This beautiful mansion in fifty acres of [illegible] was built specially for the *TREATMENT OF MENTAL ILLNESS.* Voluntary [illegible] patients of both sexes. Thorough clinical, bacteriological, and [illegible]. Private suites. Indoor and outdoor amusements. [illegible] therapy. Physical drill. Garden and dairy produce from farm on the estate. Reasonable terms.

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Unrivalled suites of Baths for Ladies and Gentlemen, including Turkish and Russian Baths, Aix and Vichy Douches, Massage and Plombières Treatment, an Electric Installation for Baths and other Medical purposes, Dowsing Radiant Heat, D'Arsonval High Frequency, Diathermy, Nauheim Baths, etc. Special provision for invalids. Milk from our farm. Large Winter Garden. Night Attendance. Rooms well ventilated and all bedrooms warmed in Winter. A large Staff (upwards of 60) of trained Male and Female Nurses, Masseurs, and Attendants.

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Special Wards for Paying Patients.

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Inclusive weekly terms 50/-.

Special preferential arrangements for a few *private cases at 4 guineas.*

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Doctor, highly qualified, with good-class practice in residential neighbourhood, within one hour of London, would receive ONE PATIENT, either sex, convalescent, m'd-mental, gastric, or diabetic. A tractive modern house, charming garden, one-and-a-half acres. Good tennis lawn. Golf. Terms from £5 : 5.—Address, No. 7480, B.M.A. House, Tavistock Square, W.C.1.

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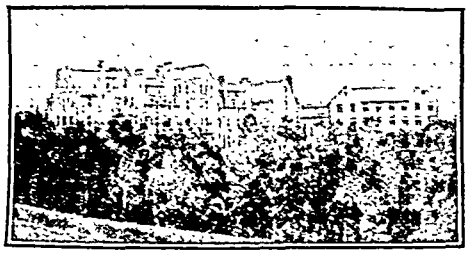

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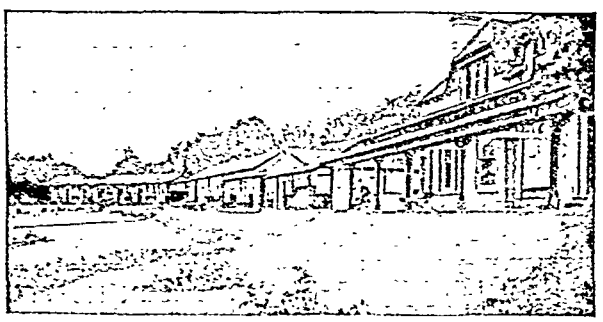

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Full day and night Nursing Staff.

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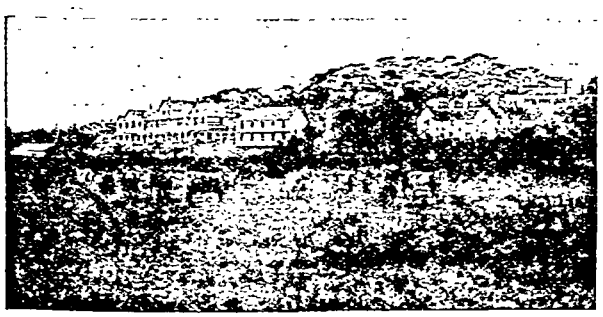

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Apply, Mr. D. C. FORD, Secretary,
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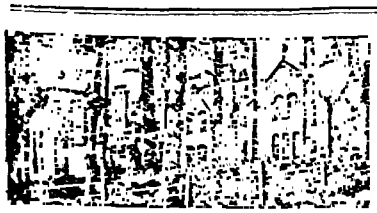

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POST-GRADUATE SPECIAL COURSES have been arranged for January and February as follows: Cardiology, Children, Medicine, Surgery, and the Specialities and Psychological Medicine; Gynæcology, Dermatology, Diseases of Chest and of Children, and Neurology. Fellowship also provides a General Course in connection with its affiliated Hospitals. Detailed syllabuses and specimen copies of the "Journal" may be obtained from the Secretary.

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The number is limited to 25.

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PRIVATE WARDS for paying patients.

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For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

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The Course for the June Examination will begin on January 29th, 1929, at 9.15 a.m.

Instruction will be given in Anatomy (incuding Embryology).

Physiology, Practical Biochemistry, Experimental Physiology and Histology.

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TWO RESIDENT HOUSE SURGEONS (male) required at above Hospital to commence on February 1st. Appointments are for a period of not less than six months. Salaries £150 per annum, with board and laundry.

Applications, stating age, nationality, experience, and qualifications, accompanied by copies of three recent testimonials, to be sent to the undersigned not later than Thursday, Jan. 17th.

LESLIE SPENCER,
December 31st, 1928. Secretary.

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Salary £190 per annum, with board, residence, and laundry.

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DEPARTMENT OF HYGIENE AND PUBLIC HEALTH.

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Assistant Lecturer & Demonstrator: (Bacteriology):—D. EMBLETON, M.A., M.B., M.R.C.S., L.R.C.P.
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Arrangements are made to suit the convenience of those engaged in practice.

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Full arrangements have been made to meet the requirements of the New Regulations for the D.P.H.

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MEDICAL SERVICE.

A limited number of candidates will be selected for COMMISSIONS as MEDICAL OFFICERS in the Royal Air Force in January, 1929.

The next course of instruction for Medical Officers on joining will begin on Feb. 1st., 1929.

There will be no entrance examination, candidates being appointed by selection.

Candidates wishing to submit applications should apply for full particulars as to the conditions of service and emoluments and forms of application to the Secretary (D.M.S.), Air Ministry, Adastral House, Kingsway, London, W.C.2.

They should be prepared to attend for interview and medical examination in London about the middle of January, 1929.

ROYAL ARMY MEDICAL CORPS.

TWENTY-FIVE COMMISSIONS in the Royal Army Medical Corps will be offered in January, 1929.

Candidates will be selected for Commissions without competitive examination, and will be required to attend in London towards the end of January for medical examination and interview.

Candidates must be under 28 years of age on February 1st, 1929, and registered under the Medical Acts.

Forms of application and all particulars may be obtained from the Under-Secretary of State, War Office (A.M.D.1), London, S.W.1, and all applications should reach the War Office not later than January 20th, 1929.

Shropshire Orthopædic Hospital
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Royal Northern Hospital,
Holloway, London, N.

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Candidates must possess the Degree of M.D. or M.B. obtained by examination at a British University and be Fellows of the Royal College of Surgeons of England.

Particulars of the office and details with regard to the submission of testimonials, etc., may be obtained from the undersigned, to whom applications should be sent not later than January 15th.

GILBERT G. PANTER, Secretary.

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VACANCIES exist for MEDICAL OFFICERS and MEDICAL OFFICERS OF HEALTH in the BRITISH WEST AFRICAN COLONIES.

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An outfit allowance of £60 is granted on first appointment.

PASSAGES.

Free first-class passages are provided on first appointment, and when proceeding on or returning from leave.

PENSIONS.

All appointments are pensionable; a minimum service of seven years is required to qualify for a pension. An officer may retire on reaching the age of 50 and may be called upon to retire at the age of 55. Officers of the West African Medical Staff are permitted to retire if they wish with a gratuity of £1,000 or £1,250 after nine or twelve years' approved service respectively, but in that event they receive no pension.

TOURS OF SERVICE AND LEAVE.

A tour of service in West Africa lasts from twelve to eighteen months at the discretion of the Colonial Government, and is followed by leave at the rate of one week for each completed month of residential service. Leave begins on the date of arrival in England.

PROMOTION.

There are good prospects of promotion in the West African Medical Staff.

COURSE OF INSTRUCTION.

Selected candidates are required to attend courses of instruction in tropical medicine and hygiene at either the London School of Hygiene and Tropical Medicine or the Liverpool School of Tropical Medicine or the University of Edinburgh.

Further information regarding the conditions of service, pensions, etc., may be obtained from the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1, to whom applications should also be addressed.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after two years' Indian service for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

PAY.

The monthly rates of pay for European officers in the Service who have a "non-Asiatic" domicile are as follows:

Rank.	Service in Rank.	Basic Pay.	Overseas Pay.	Year of Total Service.
1	2	3	4	5
		Rs.	Rs.	
Lieut.		500	150	1st
			150	2nd
			150	3rd
Capt.	(i) During first 3 years' service as Captain	650	150	4th
			£15	5th
			£15	6th
	(ii) With more than 3 and less than 6 yrs.' service as Captain	750	£25	7th
			£25	8th
			£25	9th
	(iii) With more than 6 years' service as Captain	850	£25	10th
			£25	11th
			£30	12th
Major	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years' service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years' total service	1500	£30	13th and over
	(ii) During 24th and 25th years' service	1600		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

WAR SERVICE CONCESSIONS.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion, retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

OUTFIT ALLOWANCE.

Officers on appointment will receive an outfit allowance of £50.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

PENSIONS.

The rates of pension are as follows:

	Per annum. £
After 17 years' service for pension	400
,, 18 ,, ,, ,, ...	430
,, 19 ,, ,, ,, ...	460
,, 20 ,, ,, ,, ...	500
,, 21 ,, ,, ,, ...	540
,, 22 ,, ,, ,, ...	580
,, 23 ,, ,, ,, ...	620
,, 24 ,, ,, ,, ...	660
,, 25 ,, ,, ,, ...	700
,, 26 ,, ,, ,, ...	750
,, 27 ,, ,, ,, ...	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all, the revision being undertaken triennially. With effect from July 1st, 1927, a reduction of 4½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with a free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. Applications should be submitted as soon as possible. The Selection Committee will meet shortly to make nominations, and the selected candidates will be required to attend a course of instruction commencing on February 4th, 1929.

The Barbados General Hospital.

Wanted, a duly qualified medical practitioner (male) as JUNIOR RESIDENT SURGEON of The Barbados General Hospital (224 beds). A man who has had experience in administering anæsthetics preferred.

Salary £250 per annum, with a temporary addition of 20 per cent., and quarters furnished for a single man, free water, lighting allowance, and no local rates. The appointment is for three years, with three months' notice on either side to terminate the engagement, and first-class passage out (direct from England) will be paid by the Hospital for the full term of service.

Applications, accompanied by a recent medical certificate of physical fitness, and professional and other testimonials, stating age and date of graduation, will be received by Dr. A. A. GIBBONS, at "Balmoral," 34, Prince's Square, Bayswater, London, W.2, and should reach him not later than January 15th, 1929.

Canadian Graduates must be registered in a province, registration in which will entitle them to be registered in the United Kingdom.

Candidates holding a United States degree must be registered in the State of New York.

By Order of the Court of Trustees and Directors,

General Hospital, Bridgetown, Barbados, B.W.I. J. WARD, Secretary.

Applications are invited for the post of a DENTAL SURGEON and a DENTAL MECHANIC for the DENTAL HOSPITAL to be established in LAHORE, on a pay of Rs.1,000—50—1,500 and Rs.400—20—800 per mensem respectively.

Candidates for the post of Dental Surgeon should possess a British or American registrable qualification in Dentistry, and should have undergone a special course of instruction in the theory and practice of Dental Surgery, and must produce documentary evidence to show that they are capable of imparting instruction in the subject.

Candidates should state their age, qualifications, experience, present appointment, place of domicile and nationality, and should submit their applications, with attested copies of certificates and testimonials (which will not be returned), not later than February 15th, addressed to the Inspector General of Civil Hospitals, Punjab, Lahore.

The Sudan Government.

A MEDICAL OFFICER is required for Public Health duty for the Sudan Medical Service.

The candidate should be single, under 30 years of age, and he must have a D.P.H. Degree.

Pay for the post commences at £E.780, rising by degrees to £E.1,200. On confirmation of the appointment the selected candidate will be eligible for Pension Service.

Applications (in writing only), with copies of recent testimonials, should be sent to Dr. HODSON, 100, Harley Street, W.1, from whom further particulars can be obtained.

Warrington Infirmary and DISPENSARY.

HONORARY MEDICAL STAFF.

The Board of Management invite applications for the positions of TWO ASSISTANT HONORARY SURGEONS to the above Institution. Candidates must be legally registered to practise medicine and surgery, and shall be resident in the area served by the Institution.

Applications, stating age and qualifications, should be sent in to the Chairman of the Board of Management not later than Thursday, January 24th.

By Order of the Board,
HENRY L. BOOT,
December 24th, 1928. Supt. & Secretary.

Victoria Hospital, Blackpool. (132 Beds.)

HOUSE SURGEON (Second), male. Salary £120 per annum, with residence, board, and washing. Applicants (who must be duly qualified and registered) are requested to send in their applications, stating age, qualifications, and experience, with three recent testimonials, not later than January 8th, and endorsed "House Surgeon," to—

JOHN HACKING, Hon. Secretary.

Rochdale Infirmary and DISPENSARY. (110 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male). Salary £175 p.a., including board, residence, and laundry. Applications, stating age, nationality, etc., together with copies of three testimonials, to be sent to the Secretary, endorsed "House Surgeon." Conditions of appointment may be had on application to the Secretary.

Infirmary Office, Rochdale. W. WYNNE, Secretary.

West Derby Union.

RESIDENT ASSISTANT MEDICAL OFFICER (Male).

The Guardians invite applications for the above position at the MILL ROAD INFIRMARY, EVERTON, LIVERPOOL, and also at the SMITHDOWN ROAD INSTITUTION, LIVERPOOL, at a salary after the rate of £200 per annum, together with rations, apartments, etc.

Candidates must be single, fully qualified, and registered.

Appointment will be for a period of one year in the first instance, subject to one month's notice to terminate on either side at any time, and to extension for a further period of twelve months at the option of the Guardians.

Applications to be sent, stating age, qualifications, etc., with copies of three recent testimonials, to the undersigned not later than first post on Monday, January 14th.

Union Offices, Brougham Terrace, Liverpool. G. O. HOLLOWAY, Clerk to the Guardians.

December 28th, 1928.

Swansea County Borough.

ASSISTANT MEDICAL OFFICER.

The Swansea Borough Council invite the applications from duly qualified medical practitioners for the post of Assistant Medical Officer to assist with the Medical services of the Corporation.

Resident hospital, school medical service, maternity and child welfare experience, together with special experience in the treatment of venereal diseases of women and children, are desirable qualifications.

Salary £600 per annum, subject to B.M.A. scale conditions. The appointment is subject to the approval of the Ministry of Health and Board of Education.

Applications, on special forms, which can be obtained from Dr. THOMAS EVANS, Medical Officer of Health, Public Health Office, Swansea, to be sent in not later than January 11th, 1929.

County of London.

The London County Council invite applications for appointment as EIGHTH ASSISTANT MEDICAL OFFICER (male) in its MENTAL HOSPITAL SERVICE. Candidates must be under 35 years of age and be registered to practise both in medicine and surgery in England. Salary £300 a year, rising by annual increments of £25 to £400 a year, plus fluctuating temporary additions, the present total commencing remuneration being approximately £414 a year. No emoluments. Charges made for board, lodging, etc. (at present £2 9s. weekly) if required to be resident. Candidates appointed will be pensionable under the Asylums Officers Superannuation Act, 1909. Form of application, on which full particulars are given, can be obtained from the Acting Chief Officer, Mental Hospitals Department, The County Hall, Westminster Bridge, S.E.1. Completed applications must be received by Tuesday, January 15th.

Canvassing disqualifies.

MONTAGU H. COX,
CLERK of the London County Council.

Willesden General Hospital.

SURGICAL OUT-PATIENT DEPARTMENT.

Applications are invited for the appointment of CLINICAL ASSISTANTS to the Surgical Out-patient Department, which is held on Monday and Friday at 2 p.m.

The successful applicants will be expected to attend the Hospital regularly, and to take charge of the Department when the Medical Officer is absent. The appointment is for a period of six months from January 1st.

Applications should be addressed to the undersigned not later than Wednesday, January 16th, from whom full particulars of the appointment can be obtained.

R. J. HEARNE,
November 26th, 1928. Secretary.

The King Edward VII Welsh NATIONAL MEMORIAL ASSOCIATION.

Required immediately at the NORTH WALES SANATORIUM, LLANGWYFAN, near DENBIGH (236 beds for Pulmonary and non-Pulmonary cases), THIRD ASSISTANT RESIDENT MEDICAL OFFICER (male). Salary £250 per annum, plus maintenance. This appointment is limited to a period of one year.

Applications, stating age, qualifications, and previous experience, together with copies of three recent testimonials, should reach the undersigned not later than Thursday, January 10th.

Memorial Offices, Westgate Street, Cardiff. D. A. POWELL, Prinicipal Medical Officer.

West Ham Union.

SPECIALIST CONSULTANTS.

The Guardians invite applications for posts as Specialist Consultants at their WHIPPS CROSS HOSPITAL, Whipps Cross Road, Leytonstone, E.11, as detailed below.

Applicants must be definitely of consultant rank and must be attached in that capacity to some Special Hospital or to a corresponding Special Department of a General Hospital.

The duties will consist of making visits to the Hospital, there to treat (or advise as to treatment in) such cases as are selected by the Medical Superintendent. The duration of each visit would vary with the number of cases arising; emergency visits, if any, would be very rare.

GYNÆCOLOGIST. Attendance when requested. Retaining fee of £50 p.a. and £5 5s. per visit.

ORTHOPÆDIC SURGEON. One afternoon fortnightly. Salary £100 p.a.

OPHTHALMIC SURGEON. One afternoon fortnightly. Salary £100 p.a.

NEUROLOGIST. One afternoon fortnightly. Salary £100 p.a.

The services of the Consultants will be retained for a period of one year in the first instance, and each Consultant will be required to provide his own locum tenens during holidays and absences.

Further information can be obtained from the Medical Superintendent at the Hospital by letter, or preferably by interview.

Applications, with copy testimonials, should reach the undersigned not later than 10 a.m. on Monday, January 28th.

Board Room, Union Road, Leytonstone, E.11. L. E. FRAQUET, Clerk to the Guardians.

January 1st, 1929.

Royal Surrey County Hospital, GUILDFORD.

(125 Beds, will shortly be 177.)

HONORARY ASSISTANT SURGEON (With charge of Beds.)

The Committee invite applications for the above post. Candidates must have experience in general surgery and must hold a University Surgical Degree or the Fellowship of one of the Colleges.

The elected candidate must be prepared to reside in the Guildford district.

Applications, with copies of three testimonials, should be sent to the Hon. Secretary, from whom any further particulars may be obtained, not later than Wednesday, January 16th.

Doncaster Royal Infirmary.

HOUSE SURGEON (SECOND) required at once. Staff of three. Experience in Anæsthetics essential.

Appointment offers opportunity to gain good surgical experience.

Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, experience, and full particulars, together with copies of three testimonials, should reach the undersigned by Wednesday, January 9th

J. LAWRENCE MEARS,
January 1st, 1929. Secretary-Supt.

Tyrone County Hospital, Omagh.

The Committee of Management of above Hospital will, at their meeting on Tuesday, January 15th, appoint a HOUSE SURGEON, with knowledge of Radiology, for a period of six months. Salary £100 per annum, with board and residence.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, to be forwarded to the Registrar on or before Tuesday morning, January 15th.

St. John's Hospital, Lewisham, S.E.13.

Applications are invited for the appointment of JUNIOR MALE HOUSE OFFICER. The appointment is tenable for three months beginning February 1st. The successful applicant may, if found suitable, succeed to the Senior House appointment for a further term of three months. Remuneration £100 per annum. Applications and copies of testimonials to be received by the Secretary of the Hospital not later than January 12th.

St. John's Hospital, Lewisham, S.E.13.

Applications are invited for the appointment of RESIDENT MALE CASUALTY OFFICER. The appointment is tenable for three months beginning February 1st. Remuneration £100 per annum. Applications and copies of testimonials should be sent to the Secretary of the Hospital not later than January 12th.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	BURGH OF MOTHERWELL & WISHAW. *(Resident Medical Officer (female) for Maternity and Child Welfare Department.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	NOTTINGHAMSHIRE COUNTY COUNCIL. *(Assistant School Medical Officer and Assistant Medical Officer for Maternity & Child Welfare.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	SURREY ADMINISTRATIVE COUNTY. *(County Medical Officer of Health.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec. Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies' Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
January 2nd, 1929.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Hospital for Consumption and DISEASES OF THE CHEST, Brompton, S.W.3.

The Committee of Management invite applications for the post of HOUSE PHYSICIAN (for which there are three vacancies). The duties include work in the Out-patient Department as well as in the Wards. The appointment is for six months, commencing on February 1st, 1929, with an honorarium of £50. Applications, with copies of testimonials, must reach the undersigned not later than Saturday, January 12th, 1929.

Brompton, December, 1928. FREDERICK WOOD, Secretary.

St. Thomas's Hospital.

VACANCY.—OBSTETRIC PHYSICIAN-IN-CHARGE OF OUT-PATIENTS.

Applications will be received for the post of Obstetric Physician-in-Charge of Out-patients at this Hospital.

Applications, accompanied by testimonials, are to be sent to the Dean's Office at the Hospital not later than Tuesday, January 9th, 1929.

A. P. B. IRWIN, Secretary.

St. Thomas's Hospital.

VACANCY.—OBSTETRIC PHYSICIAN.

Applications will be received for the post of Obstetric Physician at this Hospital.

Applications, accompanied by testimonials, are to be sent to the Dean's Office at the Hospital not later than Tuesday, January 9th, 1929.

A. P. B. IRWIN, Secretary.

West London Hospital, Hammersmith Road, W.6. (226 Beds.)

Required an AURAL AND OPHTHALMIC HOUSE SURGEON and RESIDENT ASSISTANT CASUALTY OFFICER (male). This appointment is tenable for a period of not less than five months from February 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodging, and washing allowance. Candidates must be registered under the Medical Act.

Applications (which must be made on printed forms obtained from me) must reach me not later than first post on Friday, January 18th, 1929. Candidates must call upon such Members of the Medical Staff as directed, and attend a Meeting of the Medical Council at 4 p.m. on Friday, January 25th, and the House Committee Meeting at 4.45 p.m. the same day, when the appointment will be made.

H. A. MADGE, Secretary.

The London Female Lock HOSPITAL, 283, Harrow Rd., London, W.9.

The Board of Management invite applications for the appointment of HOUSE SURGEON (male or female) at the Female Lock Hospital. Salary at the rate of £150 per annum, with furnished rooms, full board, and washing. Candidates, who must be doubly qualified and duly registered, should send in their applications by 10 a.m. on or before January 7th, 1929, accompanied by copies of three testimonials, to the Secretary, from whom further particulars can be obtained. The appointment is for six months commencing February 11th, 1929.

St. Mary's Hospitals, Manchester

TWO HOUSE SURGEONS for the WHITWORTH STREET WEST HOSPITAL (Maternity), and TWO for the WHITWORTH PARK HOSPITAL (one Children's Department and one Gynæcological Department), each for a period of six months from February 1st next. Salaries at the rate of £50 per annum, with board and residence. Applications, with copies of three testimonials, to be sent to the undersigned on or before January 16th.

R. RATCLIFFE, Secretary.

Paddington Green Children's HOSPITAL (Incorporated), London, W.2.

Applications are invited for the post of an additional HONORARY SURGEON to the Ear, Nose, and Throat Department. Candidates must be Fellows of the Royal College of Surgeons, England.

Applications, stating age and qualifications, accompanied by copies of three testimonials, should reach the undersigned not later than the first post on Thursday, January 24th.

JAMES A. HAMLIN, Secretary.

Paddington Green Children's HOSPITAL (Incorporated), London, W.2.

Applications are invited for the post of HONORARY SURGEON to Out-patients. Candidates must be Fellows of the Royal College of Surgeons, England.

Applications, stating age and qualifications, accompanied by copies of three testimonials, should reach the undersigned not later than the first post on Thursday, January 24th.

JAMES A. HAMLIN, Secretary.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(Address included.)

Sixpence should be added if replies to a box number are to be posted.

All advertisements must be received not later than first post Tuesday previous to date of publication.

ASSISTANCIES.

Wanted. — Assistant, male, English or Scotch Graduate, with view *Partnership and early Succession* to old-estab. Practice in London, N.E. Applicants should have had Ophthalmic experience, with a view to being admitted to Ophthalmic Register under N.H.I. Successful applicant will be given exceptional consideration re purchase, which might be arranged out of practice receipts. —Address, No. 7526, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistants (male) for General Practices; also Practitioners for Locum work. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, *Manchester.*

Wanted. — Indoor Assistant (male or female) desiring splendid experience—panel, works, private, and hospital. Beginner preferred. All particulars.—Address, No. 7527, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, *Nottingham.* Salary progressive, also interest. View permanency. Excellent experience *all branches of work. Send testimonials* and photo.—Address, No. 7456, B.M.A. House, *Tavistock Square,* W.C.1.

Wanted immediately in Midland city, for private and panel practice, male ASSISTANT to live with partner, with whom board arrangements may be made. Dispenser kept. Hospital and G.P. [illegible] essential. English or Scotch; single; Salary £400 p.a. State age; references.—Address, No. [illegible] *Tavistock Square,* W.C.1.

Wanted immediately.— Outdoor ASSISTANT, for panel practice in Liverpool. Commencing salary £275 per annum, with board and lodgings.—Address, No. 7476. B.M.A. House Tavistock Square, W.C.1.

Wanted immediately, Indoor male ASSISTANT for general practice, Yorkshire. Salary 250.—Address, No. 7478, B.M.A. *House, Tavistock Square,* W.C.1.

Wanted immediately, in a Yorkshire Practice, an ASSISTANT (*indoor*). £250 a year. Able to ride motor cycle. Usual bond.—Address, with references, to No. 7454, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view to Partnership, by ex H.S. H.P. (Teaching Hospital), aged 27. Cambridge and *London trained.* Considerable experience ophthalmic work, mids., and gynæcology.—No. 7525, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, with view to *Partnership or Succession,* by well-qualified and experienced University Graduate of five years' standing, aged 28 and single. Free *now* in London. Excellent testimonials.—No. 7525, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship by young Jewish M.B., B.Ch, six months' qualified. Has been engaged in private, panel, and hospital locum work. Good testimonials. Free now.—Address, No. 7452, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship anywhere by Scots Graduate (woman), M.B., Ch.B.Glas.(1926), D.P.H. Hospital experience; ex H.P., ex R.M.O., exper. Children's Diseases. *Drive car.*—Address, No. 7484, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted. — Scotch, male, grad. preferred; two or three years' experience. £200 panel.—Address, with full particulars, No. 7469, B.M.A. House. Tavistock Square, W.C.1.

Indian Doctor wants Part-time ASSISTANTSHIP or LOCUM in London; M.R.C.S., L.R.C.P.; experienced. Excellent testimonials. *Free now.*—Address, No. 7485, B.M.A. House, Tavistock Square, W.C.1.

M.B., B.Ch., B.A.O., seeks ASSISTANTSHIP; ex H.S. and H.P., experienced G.P., excellent testimonials, Jan. View partners'p. Tavistock Sq., W.C.1.

M.B., Ch.B. (Glasg.), well qualified, excellent testimonials, young and energetic, at present in London, seeks ASSISTANTSHIP or LOCUM. *Keen on midwifery.* — *Address,* No. 7485, B.M.A. House, Tavistock Square, W.C.1.

M.B., B.Ch., æt. 28, Irish, single, seeks [illegible] experienced G.P., panel, No. 7520, B.M.A. House, Tavistock Sq., W.C.1.

M.B., Ch.B., married, 4 yrs. experience, *desires Outdoor* ASSISTANTSHIP in the S.W. of England. Would do locum. Aged 29. — Address, No. 7466, B.M.A. House, Tavistock Square, W.C.1.

Part-time male Assistant required for London panel practice. Suit post-graduate worker.—Address, No. 7473, B.M.A. House. Tavistock Square, W.C.1.

Part-time Assistant wanted temporarily in S.E. district private Practice, male. One reading for higher degrees and who understands Ultra-violet Ray treatment pref. Young and abstainer. Give full particulars of time available and salary wanted. — Address, No. 7522, B.M.A. House, Tavistock Sq., W.C.1.

Part-time Assistant wanted, West London, to live in, suitable for qualified man reading for higher degrees. Hospitality or small remuneration. — Address, with full particulars, to No. 7455, B.M.A. House, Tavistock Square, W.C.1.

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Birmingham or District.— EVENING SURGERIES and OCCASIONAL WEEK-ENDS desired by M.B., B.S.(Lond.), ex-H.P. Experience G.P. Qualified *six years.* Kindly state terms and exact requirements.—Add., No. 7477. B.M.A. House, Tavistock Square, W.C.1.

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Applications are invited for the post of BACTERIOLOGIST and PATHOLOGIST, woman preferred. Small well-equipped Laboratory and other facilities for research work. Large Out-patient Department.

Applicants will be required to do the work of the Hospital free. Honorarium £50 first year. Opportunities for private work.

Applications, stating full particulars, to be sent on or before January 15th.

37, Charlemont St., M. FFRENCH-MULLEN,
Dublin. Secretary.

Royal Sussex County Hospital.
(STEPHEN RALLI MEMORIAL DEPT.).
BRIGHTON.

JUNIOR ASSISTANT PATHOLOGIST required. Salary £250 p.a., non-resident.

Candidates must apply, submitting particulars of medical qualifications, and copies of not more than three recent testimonials, by January 26th, to the undersigned, from whom further information regarding the duties of the office may be obtained.

L. L. W. LANCASTER-GAYE,
Secretary-Supt.

Ancoats Hospital, Manchester.

A RESIDENT MEDICAL OFFICER required to commence duty on February 1st next. Salary £150 per annum, with board, residence, etc. Previous experience in a similar position preferred. Applications, stating age, qualifications, previous experience (including appointments held), together with copies of three recent testimonials, to be forwarded to the undersigned on or before January 17th next.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary

North Staffordshire Royal INFIRMARY,
HARTSHILL, STOKE-ON-TRENT.

VACANCY FOR AN HONORARY ASSISTANT PHYSICIAN.

The Committee invite applications for the post of Honorary Assistant Physician.

Candidates for appointment to the Honorary Medical Staff of the Infirmary will be required to produce evidence that they hold the Degree of Doctor of Medicine of a British or Irish University or that of Member of a Royal College of Physicians.

All members of the Honorary Medical and Surgical Staff must reside within the City of Stoke-on-Trent, or within a radius of five miles of the North Staffordshire Royal Infirmary, and must be communicable by telephone.

Candidates will be required to attend before the Election Committee at this Infirmary on Thursday, January 24th, at 3 p.m.

Applications to be sent to the undersigned before January 21st. Further particulars will be forwarded if required.

By Order of the Committee,
W. STEVENSON,
Dec. 28th, 1928. Secretary & House Gov.

Devonshire Hospital, Buxton,
DERBYSHIRE. (300 Beds.)
(A Special Hospital for Rheumatism and Allied Diseases.)

ASSISTANT HOUSE PHYSICIAN.

The Committee invite applications for this post. To commence duties immediately. The successful candidate will be engaged for a period of not less than six months. The appointment is not open to ladies. Salary commencing £150 per annum, rising to £175 after three months' service, with furnished apartments, board (excepting stimulants), and laundry. Applications, with copies of three recent testimonials, endorsed "Assistant House Physician," to be sent in at once. The Medical Staff consists of eight Honorary Physicians, an Honorary Surgeon, a Bacteriologist, a Radiologist, a Biochemist, and two Resident House Physicians. The Hospital contains a Pathological Laboratory and X-ray Department. This appointment offers special facilities for anyone preparing a thesis or wishing to do research work.

Canvassing will disqualify.

By Order,
TOM B. HARRISON,
General Superintendent and Secretary.

Central London Throat, Nose, AND EAR HOSPITAL,
Gray's Inn Road, W.C.1.

ASSISTANT OUT-PATIENT REGISTRARS.

There are vacancies for Two Assistant Out-patient Registrars.

The appointments are honorary, and tenable for one year, subject to re-election.

Attendances are required on two afternoons each week to assist the Surgeons in seeing patients, and to assist in keeping records.

Applications, with copies of testimonials, should be sent to the undersigned on or before January 7th, 1929.

JOHN H. YOUNG, Secretary.

Lady Chichester Hospital, Hove.
(For Early Nervous Breakdowns.—50 Beds.)

Medical Woman required as HOUSE PHYSICIAN for six months, commencing February 1st. Salary at the rate of £100 per annum, with board, lodging, and laundry.

Also JUNIOR required, with board, lodging, and laundry, and honorarium at the rate of £50 per annum. The present Junior Officer is an applicant for the Senior post.

Applications must be made in writing and be accompanied by testimonials, and sent to the Secretary, Mr. A. F. GRAVES, 117, North St., Brighton, not later than Monday, January 14th.

London Temperance Hospital,
Hampstead Road, N.W.1.

Applications are invited for the post of MEDICAL REGISTRAR, which will become vacant on February 1st. The appointment is open to qualified men and women, and is for a period of one year. Honorarium 40 guineas.

Applications, accompanied by not more than three testimonials, to be addressed to the Secretary by January 25th.

Grosvenor Sanatorium, Ashford,
KENT.

SECOND ASSISTANT MEDICAL OFFICER (male, single, under 40 years of age) required for above Institution. Salary £250, with board, lodging, and laundry. Applications, together with copies of recent testimonials, to Dr. J. ABERDEIN MILNE, Medical Superintendent.

Chester Royal Infirmary.
(211 Beds.)

Applications are invited for the appointment of THIRD HONORARY SURGEON, a vacancy having been created by the retirement of Mr. E. CYRIL DOHIE. Candidates must hold the Degree of Master of Surgery of a University in the United Kingdom or the Irish Free State or be a Fellow of a Royal College of Surgeons, provided that any Junior Member of the Royal Infirmary Staff, not holding one of the above higher qualifications, and undertaking to secure the same within two years' after the date of election, shall be at liberty to apply, and, if appointed, to hold the office as Acting Honorary Surgeon, on condition of success within that period.

Applications, stating age and qualifications, together with copies of testimonials, must be sent addressed to the Chairman of the Board of Management, on or before Wednesday, January 30th.

Canvassing is prohibited.

By Order of the Board of Management,
J. ROWSE MITCHELL,
December 18th, 1928. Secretary.

West End Hospital for Nervous DISEASES (In-patient Dept.: Gloucester Gate, Regent's Park, N.W.1).

The Committee of Management invite applications from British male candidates for the following vacancies:

(1) SENIOR HOUSE PHYSICIAN for In-patients. To start duty February 1st. Salary £150, with board, residence, and laundry.

(2) JUNIOR HOUSE PHYSICIAN for In-patients. To start duty February 1st. Salary £100, with board, residence, and laundry.

In each case, appointment in first instance for six months. Applications, with copies of three testimonials, must be received by the undersigned not later than Tuesday, Jan. 15th.

J. P. WETENHALL,
73, Welbeck Street, W.1. Secretary.

St. Paul's Hospital for Diseases (INCLUDING CANCER) OF THE GENITO-URINARY ORGANS AND SKIN,
Endell Street, London, W.C.2.

HOUSE SURGEON required (February 1st). Candidates must be doubly qualified and registered. Salary at the rate of £150 per annum, with board and residence. The appointment is for a period of six months, on the termination of which the holder is eligible for the position of Resident Medical Officer. Preference will be given to those candidates who have previous experience in Urology, including Venereal Diseases. Applications, with copies of recent testimonials, to be sent to the Chairman of the Medical Committee not later than Jan. 18th.

The Northern Infirmary,
INVERNESS. (100 Beds.)

Wanted, for beginning of February next, HOUSE PHYSICIAN and JUNIOR HOUSE SURGEON, fully qualified and registered, male, unmarried. Salary £100 per annum, with board, residence, and laundry. Applications, stating age, medical school, qualifications, and experience, with copies of recent testimonials, to be sent before January 19th to Mr. RONT. GILBERT, Hon. Secretary to the Institution, 20, Church Street, Inverness.

General Hospital, Gt. Yarmouth.
(72 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry. Duties to commence February 13th. Candidates (male, and unmarried) must be fully qualified and registered.

Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be sent immediately to the undersigned.

T. H. G. GARTLAND, Secretary.

Westminster Hospital,
Broad Sanctuary, S.W.1.

There is a vacancy for a HOUSE ANÆSTHETIST. The appointment is for three or six months (non-resident), with an honorarium at the rate of £50 per annum.

Applications should be submitted to the undersigned not later than Saturday, January 12th.

CHARLES M. POWER, Secretary.

Applications are invited for the post of HONORARY CLINICAL ASSISTANT in the Ophthalmic Out-patient Department for a period of one year. Applications must reach the Secretary, UNIVERSITY COLLEGE HOSPITAL, Gower Street, W.C.1, not later than noon on Tuesday, January 15th.

Ashton - under - Lyne Union.

RESIDENT ASSISTANT MEDICAL OFFICER.

The Guardians invite applications, from gentlemen duly registered and qualified by law to practise both medicine and surgery, for the combined office of Resident Assistant Medical Officer of LAKE HOSPITAL and DARNTON HOUSE, the staff of which includes a Medical Superintendent (non-resident), a Surgeon (non-resident), and two Assistant Medical Officers (resident). The appointment is for a term not exceeding three years. Salary £150 per annum, plus residential emoluments valued at £120 per annum, which salary and emoluments are subject to 2 per cent. deduction in accordance with the provisions of the Poor Law Officers Superannuation Act, 1896.

Selected candidates will be required to produce to the Guardians a Diploma, Certificate of Degree, Licence, or other instrument granted or issued by competent leading authority in Great Britain or Ireland testifying to their medical and surgical qualifications.

Direct or indirect canvassing of members of the Board will disqualify a candidate.

Applications, stating age and experience, etc., and accompanied by copies of not more than three recent testimonials, must reach my hands not later than Wednesday, January 16th.

By Order,
St. Michael's Sq., H. HALL DALEY,
Ashton-under-Lyne. Clerk to the
December 22nd, 1928. Guardians.

Borough of Mansfield.

ASSISTANT (Male or Female) MEDICAL OFFICER OF HEALTH.

Applications are invited for the appointment of Assistant (male or female) Medical Officer of Health for the Borough of Mansfield at an inclusive salary of £600 per annum

The duties will include the Medical Inspection of School Children, work in connection with Maternity and Child Welfare Centres, Antenatal Clinic, etc. In the absence of the Medical Officer of Health the Assistant appointed will be required to act as Deputy Medical Officer of Health.

Candidates must be registered medical practitioners, hold a Diploma of Public Health, and have had at least three years' experience of Post-Graduate work.

The successful candidate will be required to devote the whole of his or her time to the duties of the office and to reside in the Borough.

The appointment will be subject to the approval of the Ministry of Health.

Applications, which must be made on forms obtainable from the undersigned, accompanied by copies of three recent testimonials, endorsed "Assistant Medical Officer of Health," must be received at my office not later than Monday, January 14th, 1929.

Town Clerk's Office, J. S. ROBINSON,
Mansfield, Notts. Town Clerk.

Romford Union.

OLDCHURCH HOSPITAL.

RESIDENT SECOND ASSISTANT MEDICAL OFFICER.

The Guardians of the Romford Union invite applications for the appointment of a Second Assistant Resident Medical Officer (male) at their Oldchurch Hospital, Romford, which has a present accommodation of 510 beds.

Candidates must be single, and preference will be given to one who has held the position of House Surgeon or House Physician in a General Hospital.

The appointment is governed by the regulations laid down in the Orders of the Ministry of Health.

The salary will be at the rate of £250 per annum, subject to deductions under the Poor Law Officers Superannuation Act, 1896, with furnished apartments, maid, rations, and laundry.

Forms of application may be obtained from the undersigned upon receipt of a stamped addressed foolscap envelope, and must be returned not later than January 14th, 1929.

By Order,
Union Offices, R. H. MASON,
Romford. Clerk to the Guardians.
December 21st, 1928.

Finsbury Treatment Centre,

31, Spencer Street, E.C.1.

Applications are invited from registered medical practitioners for the following posts: Two Minor Ailment SURGEONS; One ANÆSTHETIST; one SECRETARY.

Appointments are under L.C.C. regulations, and commence April 1st.

Preference will be given to local practitioners.

Applications, with testimonials, to be forwarded to the Secretary before January 11th

County Borough of Blackburn.

ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from unmarried men for the post of Assistant Medical Officer of Health, whose principal duties will be to act as Tuberculosis Officer for the town and Resident Medical Officer of the Corporation Hospital in which cases of Tuberculosis and other Infectious Diseases are treated. Applicants must not be less than 25 years of age and have held House appointments in a General Hospital, and also have had experience of the diagnosis and treatment of Tuberculosis

Preference will be given to candidates who, in addition to the requirements mentioned above, hold a Diploma in Public Health, and who have had special experience in the diagnosis and treatment of cases of infectious diseases.

The salary will be £600 per annum, together with board and residence; no bonus will be paid.

A form of application may be obtained from the undersigned.

Applications, together with copies of three recent testimonials, endorsed "Assistant Medical Officer of Health," to be sent to the undersigned not later than noon on Wednesday, January 16th, 1929.

Town Hall, LEWIS BEARD,
Blackburn. Town Clerk.
December 19th, 1928.

City of Nottingham.

ASSISTANT MEDICAL OFFICER (Resident).

The Guardians of the Poor of the City of Nottingham invite applications from gentlemen for the appointment of Resident Assistant Medical Officer at their BAGTHORPE INSTITUTION AND INFIRMARY, for a period of six months certain, subject to renewal. Applicants must be registered medical practitioners.

The Hospital is a separate modernly designed building, comprising four pavilions and providing accommodation for 700 patients. The staff consists of a Consulting Surgeon, Visiting Medical Officer, and two Resident Assistant Medical Officers. There is opportunity for experience in all departments, including Medical, Surgical, and Midwifery cases, and Bacteriological work. An X-ray apparatus is installed.

Salary at the rate of £300 per annum, with furnished apartments, service, board, laundry, etc.

Applications, giving age and full particulars of experience and qualifications, accompanied by copies of three recent testimonials, to be sent to me on or before January 7th.

J. ALLAN BATTERSBY,
Poor Law Offices, Clerk to the Board.
Shakespeare Street,
Nottingham. December 31st, 1928.

Metropolitan Asylums Board.

ST. LUKE'S HOSPITAL, LOWESTOFT.

Applications are invited for the appointment of JUNIOR ASSISTANT MEDICAL OFFICER at St. Luke's Hospital, Lowestoft, Suffolk (205 beds) for Adults (male and female) suffering from Non-pulmonary Tuberculosis. There are two other medical officers on the staff. Previous tuberculosis experience is not essential Preference will be given to candidates under 30 years of age. Salary £500 per annum.

The candidate appointed will be required to reside in the Institution and pay for board, lodging, and washing at the rate fixed from time to time by the Board's Finance Committee. At present the rate is £130 per annum. There is no accommodation at the Hosppital for a married officer.

Application to be made not later than 10 a.m. on Monday, January 14th, 1929, on form obtainable from the Clerk, Metropolitan Asylums Board, Victoria Embankment, London, E.C.4, by forwarding stamped addressed foolscap envelope.

ALLAN POWELL,
Dec. 29th, 1928. Clerk to the Board.

Metropolitan Asylums Board.

The Bo [illegible] ntment as JUNI [illegible] FICER in their [illegible] Commencing salary £500 per annum.

Candidates must be under 40 years of age and should hold, or should be prepared to undertake to read for, the Diploma in Psychological Medicine.

If the person appointed is required to reside in the Institution, a charge (at present fixed at £130 per annum) will be made for board, lodging, and washing.

Form of application may be obtained by sending stamped addressed foolscap envelope to the Clerk to the Board, Metropolitan Asylums Board, Victoria Embankment, London, E.C.4, to whom they should be returned not later than January 23rd.

ALLAN POWELL, Clerk to the Board.

Warwickshire and Coventry

JOINT COMMITTEE FOR TUBERCULOSIS.

ASSISTANT TUBERCULOSIS OFFICER.

Applications are invited from qualified and registered medical practitioners for the post of Assistant Tuberculosis Officer. Applicants must be prepared to devote the whole of their time to the duties of the office, and must have had special practical experience in the treatment of Tuberculosis in Sanatoria, Dispensaries and otherwise, and must be thoroughly acquainted with modern methods of diagnosis and treatment.

The salary is at the rate of £650 per annum, and is subject to a deduction of 5 per cent. in respect of contributions under the Local Government and Other Officers Superannuation Act, 1922; in addition, motor car allowances in accordance with the Committee's scale and reasonable travelling expenses are paid. The appointment is also subject to a satisfactory medical examination by one of the Committee's independent Medical Referees.

Forms of application and statement of the duties and terms of the appointment can be obtained from the undersigned. Applications, marked "Assistant Tuberculosis Officer," with copies of not more than three recent testimonials, must be received by me not later than Monday, January 21st, 1929.

Canvassing, directly or indirectly, will be considered a disqualification.

42, Warwick St., L. EDGAR STEPHENS,
Leamington. Clerk of the Joint
December 19th, 1928. Committee.

Administrative County of SOUTHAMPTON.

MENTAL DEFICIENCY — COLDEAST COLONY.

APPOINTMENT OF MATRON.

The County Council invite applications for the appointment of Matron of the Colony for Mentally Defectives at Goldeast, Sarisbury, near Southampton.

The Institution is designed to accommodate 500 patients of both sexes and is at present open for 60 female patients

The candidate must be not more than 45 years of age at the date of application, and will be required to devote the whole of her time to the duties of the appointment.

Experience in the administration and management of an Institution is essential. Experience in the nursing and training of mental defectives is desirable.

The salary will be £150 a year in addition to emoluments valued for pension purposes at £120 a year. The salary will be subject to review as soon as the number of patients in the Institution is materially increased.

Canvassing, either directly or indirectly, will [illegible] for purposes of [illegible] on the prescribed [illegible] ticulars of duties and conditions of appointment may be obtained from me), must be addressed to me, endorsed "Matron," and be delivered at the Castle, Winchester, on or before Friday, February 15th.

The Castle, ALBAN WILSON,
Winchester. Resident Medical Supt.

Administrative County of London

TEMPORARY ASSISTANT MEDICAL OFFICERS

The London County Council invite applications from registered medical practitioners (men and women under 45 years of age on January 21st, 1929) for inclusion in the panel for 1929-30, for filling vacancies for temporary Assistant Medical Officers for School Medical work. The inclusive rate of pay is 30s. a session of 2½ hours, subject to periodical review.

Except in special circumstances married women are ineligible.

Special experience of the medical examination of children is necessary. Employment will depend upon the needs of the work, but normally practitioners will work three sessions a week during school terms. Applications must be made on official form, copies of which (with full particulars) may be obtained by sending a stamped addressed foolscap envelope (marked "Temporary Medical Staff") to the Clerk of the Council, The County Hall, Westminster Bridge, S.E.1.

Forms must be returned by January 21st.

Canvassing disqualifies.

MONTAGU H. COX,
Clerk of the London County Council.

Leeds Public Dispensary.

Wanted, JUNIOR RESIDENT MEDICAL OFFICER. Salary £150 per annum, with board, residence, and four shillings weekly for laundry. Applications, with copies of three recent testimonials, to be addressed to the Secretary of the Faculty, Public Dispensary, North Street, Leeds.

Manchester Royal Infirmary.

HOUSE SURGEONS (Male). Five Vacancies.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointments, which will become vacant on February 15th

Applicants must be registered and hold a Medical and Surgical qualification.

The appointments are for twelve months (six months as Junior and six months as Senior), subject to the provisions of the By-laws as to notice, etc.

Salary £50 per annum, with board, residence, and allowance for laundry.

Applications, stating age, should be addressed to the Chairman of the Medical Board not later than January 16th.

By Order,
FRANK G. HAZELL,
Dec. 29th, 1928. Gen. Supt. & Secretary.

N.B.—Owing to changes in the University regulations it is probable that there will not be a sufficient number of local candidates for all the resident appointments shortly to become vacant.

Manchester Royal Infirmary.

HOUSE SURGEON (Male): AURAL GYNÆCOLOGICAL & OPHTHALMIC DEPARTMENTS.

The Board of Manchester Royal Infirmary for the above appointme ne vacant on February 15th.

Applicants must be registered and hold a Medical and Surgical qualification.

The appointment is for six months (three months as Junior and three months as Senior), subject to the provisions of the By-laws as to notice, etc.

Salary at the rate of £50 per annum, with board, residence, and allowance for laundry.

Applications, stating age, should be addressed to the Chairman of the Medical Board not later than January 16th.

By Order,
FRANK G. HAZELL,
Dec. 29th, 1928. Gen. Supt. & Secretary.

Manchester Royal Infirmary.

HOUSE PHYSICIANS (Male). Four Vacancies.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointments, which become vacant as follows: Two on February 15th, and Two on March 15th.

The applications of candidates will be considered to be for any of these posts, unless it is specially stated to the contrary.

Applicants must be registered and hold a Medical and Surgical qualification.

The appointments are for six months, subject to the provisions of the By-laws as to notice, etc.

Salary at the rate of £50 per annum, with board, residence, and allowance for laundry.

Applicants must state age, and address their applications to the Chairman of the Medical Board not later than January 16th.

By Order,
FRANK G. HAZELL,
Dec. 29th, 1928. Gen. Supt. & Secretary.

The Victoria Hospital for CHILDREN,

Tite Street, Chelsea, S.W.3. (130 Beds.)

The Committee of Management invite applications for the posts of HOUSE PHYSICIAN and HOUSE SURGEON (both vacant February 1st, 1929). The appointments are for six months. Salaries at the rate of £100 per annum, with board, lodging, and washing.

Candidates must attend the Hospital for the purpose of an interview at 3.30 p.m. on Friday, January 11th, 1929. (No travelling or other expenses will be paid.) They must hold Medical and Surgical qualifications, and be registered under the Medical Act.

Applications, with copies of three recent testimonials, should be sent to the Secretary, not later than first post on Wednesday, January 9th, 1929.

By Order,
D. ST. JOHN BAMFORD, Secretary

Seamen's Hospital Society,

Greenwich, S.E.

RESIDENT MEDICAL OFFICER required at QUEEN ALEXANDRA MEMORIAL HOSPITAL, MARSEILLES, for six months from February 1st. Salary £150 per annum, with board, residence, and laundry. Candidates must be male and know some French. Applications, with copies of three recent testimonials, to be sent in by January 22nd to the undersigned, from whom further particulars can be obtained.

R. L. BAX,
Secretary.
Greenwich.
December 27th, 1928.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

NURSES

MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

THE NURSES' ASSOCIATION
(In conjunction with the MALE NURSES' ASSOCIATION),
29, York St., Baker St., London, W.1.
Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

ST. LUKE'S HOSPITAL.

FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26 65.

The Hospital for Sick Children,

Great Ormond Street, London, W.C.1.

There will be a Meeting of the Joint Committee on Wednesday, January 16th, 1929, to elect an ANÆSTHETIST.

Gentlemen are invited to send in their applications, addressed to the Secretary, with copies of not more than three testimonials, written specially for the purpose, before 12 o'clock on Monday, January 14th, 1929.

Candidates must be registered medical practitioners and be prepared to take up the duties of the appointment on January 17th, 1929.

The successful candidate will be appointed for a period of one year, and will be eligible for re-election, an honorarium of £15 15s. being voted on the expiration of each year of office, and an allowance of £6 6s. is granted also to provide a substitute during three weeks' annual leave of absence.

All candidates must appear before the Joint Committee at their Meeting on Wednesday, January 16th, 1929, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY,
December, 1928. Secretary.

The Hospital for Sick Children,

Great Ormond Street, London, W.C.1.

A RESIDENT MEDICAL SUPERINTENDENT is required on January 17th, 1929.

Gentlemen are invited to send in their application to the Secretary, before 12 o'clock, on Monday, January 14th, 1929, accompanied by copies of not more than three testimonials given specially for the purpose.

The appointment is made for one year, but may be held, subject to re-election, for a period of three years.

Salary £300 per annum, with board-residence in the Hospital, £10 allowance for laundry, and £18 18s. for the purpose of providing a substitute during annual leave.

Candidates must be unmarried and possess a legal qualification to practise, and must have held a responsible Hospital appointment at a General Hospital.

All candidates must be in attendance on Wednesday, January 16th, 1929, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
December, 1928. Secretary.

The Ilford Emergency Hospital,

ESSEX. (70 Beds.)

Wanted, JUNIOR unmarried), Medical
Salary £100 per
board, and laundry. Applications, stating age, qualifications, and experience, with copies of testimonials, should be sent to the Secretary immediately.

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Nottinghamshire. — Steadily increasing NUCLEUS £600 to £700 p.a. Mids. 5 gns up. Visits 5/6 to 21/-. Small panel. Corner house and garage to rent. Premium £900.—No 8397.

Kent Suburb.—Over £2,600 p.a. ONE-HALF SHARE for disposal. Visits 7/6 to 21/-. Panel about £400 p.a. Good house, 4 bed., etc., large garden. Part premium deferred.—No. 8396.

Wiltshire. — Country Practice returning £500 or more p.a. Visits 5/- up. Panel £100 p.a. Slight opposition. Good flat, 2 bedrooms, etc., to rent. Premium only £400.—No. 8395.

Kent.—About £6,000 p.a. One-THIRD SHARE for sale. Panel about 2,600. Visits 5/- to 21/-. Detached house, 5 bedrooms, etc., to rent £36 p.a. Premium 2 years' purchase.—No. 8394.

South Coast Death Vacancy.—About £1,700 p.a. Private, non-panel, non-dispensing, residential. Mids. 5 to 15 gns. Visits 5/- to 10/-. House, 6 bed., large garden, etc. Prem. 1 yr.'s purchase or offer.—No. 8393.

Berkshire.—Steadily increasing NUCLEUS about £1,000 p.a. Visits 5/- to 21/-. Mids. 3 to 5 gns. Small increasing panel. House to rent.—No. 8392.

Lancashire.—About £2,000 p.a. One-third or one-half share. Preliminary assistantship six months. Panel 2,500. Appts. nearly £200 p.a. Visits 5/6 to 5/-. Premium only 1½ years' purchase. House, 4 bed., etc., to rent.—No. 8391.

Kent. — Nucleus, £300 p.a. Visits 2/6. Panel 100, scope for increase. Eight-roomed house, large garden.—No. 8390.

N. Wales.—Share worth about £700 net. Panel about 2,500. Colliery £400 to £500 p.a. Mids. 2 gns. House, 5 beds., and large garden, with tennis court, to rent.—No 8589.

Lincolnshire.—About £1,370 p.a. Unopposed. Panel and appts. about £500 p.a. Mids. 3 gns. Fees 4/- to 6/-. House, 6 bed., etc., good garden, with garage, to rent.—No 8586.

Kent. — Average £1,250 p.a. Mids. 7½ gns. up. Visits 7/6 to 21/-. Non-panel. House, 5 bed., etc.—No. 8580.

Western County.—£600 to £700 p.a. Unopposed. Clubs and appts. over £100 p.a. Fees 5/6 to 12/6 Panel about £300 p.a. Good house and garden. Premium, house and practice, £2,100.—No. 8375.

Co. Durham.—About £700 p.a. Visits 5/6. Mids. 2 gns Panel 652. House, 3 bed., etc., to rent.—Apply, No 8354.

South Wales. — Residential. — £1,600 p.a. Panel 450. Fees 5/- to 21/-. Corner house, 6 bed., etc.—Apply, No. 8348.

Midland Town. — Over £2,800 p.a. Mixed PRACTICE. No panel. Some surgery, also eye, ear, nose, and throat work. Fees 5/6 to 42/-. Mids. from 3 gns. Large house. Tennis.—Apply, No. 8345.

Within 12 miles London North. —£1,500 p.a. Panel 800. House, 3 recep., 6 bed. Separate surgery, etc. Over one acre garden.—Apply, No. 8344.

London, S.E.—£1,800 p.a. Cash and panel of 1,846. 1/3 share for sale. Visits 3/6 up. Very little midwifery. Small accommodation over surgery.—Apply, No. 8342.

SPECIAL NOTICE.

FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants prepared to pay part of purchase money down and balance by instalments over 7 years (on the security of a Life and Sickness Policy). Full particulars on application to Mr. Percival Turner.

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MIDDLESEX.—Close proximity to town.—Well-established growing PRACTICE in rapidly developing residential district, with scope for increase. Medium-sized house. Receipts £750. Panel 250. Fees 3/6 up. Premium 1½ years' purchase.

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HOME COUNTIES (on borders of Kent and Sussex).—Non-dispensing good-class G.P. Receipts over £1,200 p.a. Good-sized house (5 bedrooms) for sale. Scope for surgery. Good fees. Premium £1,900 or near offer for quick sale.

WEST COUNTRY.—PARTNERSHIP with view to Succession in old-established non-panel G.P. Receipts over £2,000 p.a. One-fourth share to commence at two years' purchase. Suitable only to Varsity Graduate. Scope for surgery.

HERTS.—In close proximity to London. Middle-class G.P. Good-sized house standing in own grounds. Receipts £1,500. Panel 800. Premium 1½ years' purchase. House £2,200. Part could remain.

MIDLANDS.—X-Ray and Electrical PRACTICE, situated in large town. Excellent corner detached house for sale, or would be rented on long lease. Receipts over £1,200 p.a. Two appointments worth £150 p.a., possibly transferable. Premium for practice, to include instruments and appliances, £1,500, payable to suitable candidate, part by instalments. Excellent scope for experienced man.

LONDON, N.W.—Good house with small PRACTICE doing £300 to £400 p.a. Premium for house and practice £3,000.

KENT.—NUCLEUS Practice in industrial and residential town. Receipts approx. £300. Panel 100. Medium-sized house for sale or could be rented. Premium for practice £300.

BUCKS (River 11/).—Death Vacancy.—Well-established small but growing practically unopposed G.P. Bungalow residence. Separate surgery. Receipts approx. £700. Panel 300. Excellent scope. House for sale or could be rented. Premium 1 year's purchase.

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If the investment you are seeking is not advertised here, let us know your wants, and we will gladly forward details of others suitable to your requirements.

LONDON.—NUCLEUS G.Ps.—We have several small G.Ps., with and without living accommodation, with incomes from £150 to £400 p.a. Details sent on application.

LONDON, W.—Well-established middle-class G.P., situated in residential locality. Receipts approx. £3,000 p.a. One appointment. Panel 2,400. House for sale with garden and garage, or would let on long lease. Premium for practice, £4,200 cash.

EAST MIDLANDS.—NUCLEUS G.P. near seaside resort with excellent scope for a keen and improvement. Small panel of approx. 60. Premium for nucleus practice and house, £900.

DEVON.—PARTNERSHIP in well established middle-class G.P., situated in market town. Suitable house to rent. Panel over 600. Receipts £1,500 p.a. One-third share to commence at 2 years' purchase. Scope for surgery.

EASTERN COUNTIES.—Old-established middle-class non-panel, non-dispensing G.P. Several appointments. Medium-sized house to rent or for sale. Receipts over £2,640 p.a. Suitable only to experienced man, preferably one keen on surgery. Premium £2,500. Scope for panel.

GLOS.—PARTNERSHIP in small country town G.P. Average receipts over £1,000 p.a. Panel 670. Premium for half share £750. Suitable accommodation available.

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4. MANCHESTER.—Rapidly growing middle and working-class PRACTICE, worth at present £400. Panel 200. Good corner house at £40. Price £500, to include debts, valuable surgery equipment, drugs, etc.
5. LONDON.—JUNIOR PARTNER required in sound middle-class Practice. Share for sale £1,000 to £1,200 at 1½ years' purchase. Valuable appts. and select panel. House on lease at £52.
6. MIDLAND COUNTY.—Borough Town PRACTICE of over £2,500 a year. No panel. Suitable for up-to-date man of activity. Leasehold residence for sale or rent. Price under a year's purchase for prompt sale.
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The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

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1 KENT.—Partnership in better middle-class Practice about £2,500 p.a. in delightful residential district. Premium one-half share 2 years' purchase. Public School or University man preferred.

2 DEATH VACANCY.—South Coast.—Old-established PRACTICE in growing suburb of fashionable health resort. Net profits past 5 years £1,350 p.a. No panel. Good house (6 bedrooms), with large garden, for sale.

3 DEATH VACANCY. — Berks. — Practice about £600 in growing country district. Panel over 300. Bungalow residence (3 bedrooms), garage, and land. Scope.

4 SOUTH COAST. — Partnership in non-dispensing Practice about £2,700 p.a. in favourite watering-place. Panel 800. House, with 7 bedrooms, for sale. Plenty of scope. Premium one-third share 2 years' purchase. Short preliminary assistantship.

5 EASTERN COUNTIES.—Unopposed PRACTICE about £1,600 (appointments and panel £500). Good house (7 bed. and dressing rooms), garden and orchard, to rent. Premium 1½ years' purchase.

6 LONDON, N.—Practice averaging £3,300 p.a. in well-populated district. No panel or appointments. House, with 4 bedrooms, etc., to let on lease. Moderate premium.

7 N. MIDLANDS.—Practice worth between £600 and £700 p.a. in residential district on outskirts of first-rate town. Small panel offering plenty of scope. Excellent modern house to rent. Premium £900.

8 WILTSHIRE.—Country Practice (carried on by Medical Woman) doing £500 p.a., including £100 from panel. Centrally situated flat, with 2 bedrooms, to rent on lease. Premium £400. Considerable scope.

9 SOUTH AFRICA. — Old-estab. Practice. Receipts last year £1,816. Travelling and midwifery light. Climate ideal—no tropical diseases (altitude nearly 5,000 feet). Delightful residence (5 bedrooms), in perfect order, with 2 acres grounds. Excellent scope. Local Hospital. Premium £1,200, with option to purchase house.

10 MIDLANDS.—Partnership in middle-class Practice averaging £5,450 p.a. in flourishing and growing town. No panel and little midwifery. Applicant should be between 25 and 40 years of age, and preferably, though not essentially, a University Graduate. Premium one-fourth share (ultimately increasing to one-half) 2 years' purchase.

11 S. WALES.—Practice worth over £700 p.a. (chiefly panel and appointments) in small seaside town. Small house (3 bedrooms), to rent. Premium £700 cash.

12 S. WALES.—Practice over £1,200 p.a. in small country town, amidst beautiful scenery. Panel about 320. Old-fashioned house, with garage and garden. Cottage hospital. Premium £1,500.

13 OPHTHALMIC PRACTICE doing over £1,200 p.a. Consultations usually £2 2s. Scope for considerable increase.

14 LONDON, N.W.—Practice worth between £400 and £500 p.a. in good residential district. Panel 330. No midwifery. Large well-situated house, good part of which is sub-let. Premium, leasehold house, practice, etc., £3,500.

15 S. MIDLANDS.—Practice over £1,700 p.a. in country town 100 miles from London. No panel, appointments, or midwifery. House (5 bedrooms), with garage and garden, for sale. Premium—Practice 1½ yrs.' purchase.

16 N. WALES COAST. — Partner required in old-established Practice. Receipts £5,670 p.a. Panel 2,000. Short preliminary assistantship. Premium for one-fifth share 2 years' purchase. Applicants must have held H.P. and H.S. appointments.

17 CHESHIRE. — Partnership in old-estab. Town Practice near Manchester, £3,000 p.a. (not including appointments). Panel over 2,000. Third share at 1½ yrs.' purchase. Short preliminary assistantship if preferred.

18 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 13 acres of land for sale. Premium, practice, 1½ years' purchase.

19 LONDON, S.E. — Partnership in well-established Practice of £1,900 p.a. in good residential district. Exceptionally well-built detached house (6 bedrooms) to be rented. One-half share at two years' purchase. Good scope.

20 SOUTH OF ENGLAND.—Partnership in non-dispensing Practice about £3,000 p.a., in flourishing and attractive town about 100 miles from London. Panel 1,470. Nice detached house in own grounds (5 bed and dressing rooms) for sale. Premium one-half share at 2 years' purchase.

21 DEVONSHIRE.—Partner required (after preliminary assistantship) in Practice worth £3,000 p.a. in first-rate country town. Panel over 2,100. Well-equipped Hospital. One-third share to suitable man at 2 years' purchase.

22 SURREY.—Partnership in Practice about £2,700 p.a., in outlying suburban district. Panel 1,000. Corner house (5 bedrooms) to rent. Cottage hospital. One-third share at 2 years' purchase.

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Practices and Partnerships for Disposal (continued).

23 MIDLANDS.—Country Practice of over £1,000 p.a., within 5 miles of good town. Panel 531. Comfortable and convenient house (5 bedrooms, etc.), with electric light, central heating, and acre garden, for sale. Premium, practice, 1½ years' purchase.

24 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. No panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

25 LANCASHIRE.—Practice averaging over £3,700 p.a. in first-rate town. Panel 2,600. House (4 bedrooms) to be sold or let. Premium 1½ years' purchase.

26 LONDON, E.—Partnership in exceptionally old-established Practice averaging £3,580 p.a. Good fees and appointments. Two-fifths share for disposal at 1½ years' purchase, or one-third could be purchased at first. Small house may be bought or rented at a moderate figure.

27 LONDON, N.—Practice about £1,000 p.a. Small panel. No midwifery or night work. House (8 bedrooms) Premium, house and practice, £1,500.

28 SOUTH OF ENGLAND. — Practice about £900 p.a. in first-rate seaport town. No panel or midwifery, but ample scope Well-situated house to rent. Premium £1,500.

29 NURSING HOME. — CROYDON. — Receipts about £2,000 (profit £650). Large well-situated house. Premium, to include goodwill and freehold, £5,250.

30 N. OF ENGLAND. — Sound Practice £1,090 p.a. in Cathedral City. Panel 300. House (4 bedrooms and attics) in best residential part for sale. Premium 1 year's purchase.

31 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. Partner should be keen worker and a good surgeon. One-third to two-fifths share at 2 years' purchase.

32 HOME COUNTIES.—Partnership in Practice about £8,000 p.a. in growing residential watering-place. House (4 bed and dressing rooms) to rent. Partner must be well qualified (Oxford, Cambridge, or London). Premium one-fifth share 2 years' purchase.

33 SOUTH OF ENGLAND.—Practice about £1,000 p.a. in Cathedral Town. Conveniently arranged house (6 bedrooms) for sale. Premium 1½ years' purchase.

34 MIDLANDS. — Practice about £350 p.a. in manufacturing village. Panel 190. House (4 bedrooms, etc.), and one acre of garden. Premium—Practice and house, £2,000.

35 SUFFOLK.—Country Practice averaging £360 p.a. in beautiful agricultural district. Panel 300. Very attractive residence (5 bedrooms, etc.) in half acre garden, etc., for sale. Premium—Practice £540.

36 N. WALES. — Seaside Practice, approximately £500 p.a. *Furnished house* (4 bedrooms) to rent, or others to rent or purchase. Premium £500 for quick sale.

37 SOUTH AFRICA (NATAL). — Practice over £1,000 p.a., including appointment (District Surgeon) £200. House (4 bedrooms, bathroom, etc.). 2 acres garden and land. Price for House and Practice £3,000.

38 PEMBROKESHIRE. — Practice about £1,000 p.a. in small town. Panel 361. Well-situated house (7 bedrooms) to rent. Scope for increase. Premium £1,500. Preliminary assistantship if desired.

39 SUSSEX. — Country Practice about £300 near coast. Picturesque house (3 bedrooms), with garden, for sale. Premium—Practice £300.

40 NORTH WALES. — Country Practice averaging £1,230 p.a. in Welsh-speaking district. Panel over 550. Centrally situated house (5 bedrooms). Premium one year's purchase.

41 S. WALES. — Easily worked Panel and Contract PRACTICE over £1,000 p.a. in colliery district. Small house (4 bedrooms) to rent. Premium one year's purchase.

42 N. KENT.—Practice averaging £286 p.a. in industrial district offering enormous scope. Small panel. House to rent. Premium £450.

43 ESSEX. — Practice averaging £1,216 p.a. in outlying district—30 minutes by rail from London. Panel 550. Nice detached house (5 bedrooms) for sale. Premium for practice 1½ years' purchase.

44 NEW ZEALAND.—Ear, Nose, and Throat PRACTICE averaging £1,500 p.a. in good town in N. Island. Nice house with large garden for sale. Fine opening for one with experience who would obtain Hospital appointment. *Premium £500.*

45 N. LONDON.—Practice of between £950 and £1,000 p.a. Small panel. No midwifery. Detached corner house (7/8 bedrooms) for sale. Premium—Practice 1½ years' purchase.

46 MIDLANDS. — Partnership in Practice over £2,000 p.a. in good town. Panel 1,800. Good house (5 bedrooms) available. Partner should be able to undertake major operations. Well-equipped hospital. One-half share for disposal.

47 HOME COUNTY.—Partnership in Practice over £2,000 in residential district within 12 miles of London. Panel 730. House, with 5 bedrooms, to rent. Premium one-third share 2 years' purchase.

48 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. Panel over 1,400. Partner should be good at midwifery. Premium one-third share 2 years' purchase.

49 YORKSHIRE (N.R.).—Partnership (with view to succession) in Practice about £1,000 p.a. in small country town. Panel 420. Good rooms available. One-half share at moderate premium. Scope for minor surgery.

50 MIDLANDS. — Mixed Practice nearly £2,800 p.a. in prosperous town. No clubs or panel. Modern house for sale. Premium, practice, 1½ years' purchase.

51 LONDON, E.—*Rapidly increasing* cash and panel PRACTICE. Receipts for year ending September, 1923, £971. Panel 450. *Shop-fronted house on lease* at a profit rental. Premium, to include drugs, surgery equipment, etc., £1,250.

52 S. DEVON. — *Old-established* Country PRACTICE £700 to £800 p.a. Easy distance of the coast. Panel 400. House (2 sitting, 4 bedrooms, large garden, paddock, garage, etc.). Rent £45 Cottage Hospital. Premium £1,200.

53 N. YORKSHIRE. — Country Practice worth about £500 p.a. in agricultural district. Panel over 200. Modern house (6 bedrooms) for sale. Premium, practice £560.

54 NT. NEWCASTLE-ON-TYNE.—Old-estab. Town PRACTICE over £800 p.a. Panel 440. Pleasantly situated house (4 bedrooms) to rent. Plenty of scope. Prem. 1½ years' pur.

55 GLOUCESTERSHIRE.—Country Practice averaging £535 p.a. Panel 450. Convenient (small) house, and excellent garden, 1 acre. Garage small car. Premium, house and practice, £3,000.

56 NORFOLK. — Country Practice nearly £1,100 p.a. in agricultural district. Panel 530. Modernized house (6 bedrooms, electric light, etc.) and 1½ acres garden for sale. *Sport of all kinds. Premium £1,500*

57 S. WALES.—Non-dispensing Practice in large seaport town. Receipts for past 3 years averaged £1,543 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,500.

58 N.W. COAST.—Ophthalmic Practice (with some general practice). Receipts average £1,850 p.a. Good house in excellent position. Premium 1½ years' purchase.

59 GLOUCESTERSHIRE.—Country Practice averaging £620 p.a. (600 feet above sea-level). Close to two good towns. Panel 500. Large house, with garden and paddock. Scope for increase. Premium £800.

60 CO. DURHAM. — Practice of £1,460 in growing suburb of seaport town. Panel 646. *House (5 bedrooms)* on main road to be sold or let. Premium 1½ years' purchase.

"MEDICAL PARTNERSHIPS, TRANSFERS AND ASSISTANTSHIPS" (BARNARD & STOCKER). *Published by B.M.B., post free 12/6.*

All communications to be addressed to Mr. A. V. STOREY, General Manager.

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Telegrams: BOVMEDICAL, WESTRAND-LONDON. *Telephone*: GERRARD 3643 (3 Lines).

Under the personal direction of Dr. J. FIELD HALL and Mr. J. C. NEEDES

who have both had many years' experience as Medical Transfer Agents.

The commission chargeable in respect of any practice or partnership in Great Britain placed exclusively in the hands of this Agency has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being fifty pounds (£50).

No charge is made to Principals for the introduction of Locum Tenens or Assistants.

Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges.

1. LONDON, NORTH-WEST.—GOOD RESIDENTIAL SUBURB.—Very sound well-established non-dispensing, non-panel PRACTICE, held many years by present incumbent, who is retiring owing to advancing age. Average cash receipts for the past three years £2,222. Exceptionally good residence, with ample accommodation. Price for freehold £3,750. Premium 1½ years' purchase.

2. KENT.—GROWING DISTRICT, within 15 miles of London.—PARTNERSHIP.—A one-half share is for disposal in a very sound chiefly better and middle-class Practice, established many years, and held by the remaining partner over 4 years. Gross cash receipts for the past three years £2,528, including panel of 900. No appointments. Fees from 5/- to 21/-. Midwifery 3 to 30 guineas (about 25 cases yearly). Very suitable modern house, with 2 reception, 4 bedrooms, good bathroom, etc. Consulting room. Electric light. Small garden. Garage. Price for freehold about £2,100, nearly all of which could remain on mortgage. Good sport and schools, and excellent social facilities. Premium 2 years' purchase.

3. NOTTINGHAM.—Good middle-class PRACTICE offering good scope and having small panel which could be largely increased. Gross cash receipts are between £600 and £700 p.a. Fees 5/6 to 21/-, medicine extra. Very good modern corner house in pleasant residential district. Rent on lease £80 p.a. Premium £900.

4. ESSEX.—SMALL COUNTRY TOWN.—Well-established and increasing PRACTICE, producing for the past twelve months £768, including panel of 525, and appointments worth over £60 p.a. Advice and medicine chiefly 3/6 to 7/6, visits 3/6 to 21/-, medicine extra. Mids. (discouraged) 2 to 5 guineas. [illegible] nice house, with rooms lounge hall, 3 reception, 5 bedrooms, garden, and usual offices. Hot water supply, [illegible] Price with tennis court. Garage for two cars. for freehold £3,100. Premium 1½ years' purchase.

5. LANCASHIRE.—SUBURB OF LARGE TOWN.—Old-established PRACTICE, held by Vendor 30 years. Average income for the past twelve months £1,530, including panel of nearly 1,500. Fees 2/6 to 10/-. Very good house, standing in its own grounds, and containing 3 reception, 4 bedrooms, dressing room, 3 professional rooms. Central heating. Electric light. Garden, with greenhouse. Garage for 3 cars. Price for leasehold £2,100, of which about £1,500 could remain on mortgage. Premium 1½ years' purchase, part by instalments.

6. LONDON, NORTH.—OUTLYING RESIDENTIAL SUBURB.—PARTNERSHIP.—A one-third share (to commence with) is for disposal, owing to the retirement of the senior partner, in sound middle-class Practice, situated in rapidly developing district. Income for the immediate past year £2,124. Consultations 3/6 to 10/6, visits 4/6 to 21/-. Good freehold house, price £1,500; or would be rented on lease at £90 p.a. Low expenses. Premium 2 years' purchase.

7. OUTLYING WESTERN SUBURB.—Old-established mixed general PRACTICE. Income for the immediate past year about £2,300, including panel of between 1,400 and 1,500. Fees 3/6 to 10/6. Midwifery from 3 gns. The district is rapidly developing and there is great scope. Good house, with garden and garage. Price £2,000. Premium £5,500.

8. NEAR CROYDON.—Very well-established growing mixed general PRACTICE, situated in pleasant district within easy reach of town. Gross cash receipts for immediate past twelve months nearly £2,650. Panel of 2,120. Appointments worth about £60 and stated to be transferable. Fees 2/6 to 7/6. Midwifery from 3 gns. (about 40 cases yearly. Moderate expenses. Seven-roomed house, with kitchen, 2 waiting rooms, dispensary, and consulting room. Garden. Brick-built garage. Price for freehold £1,500. Premium £4,500.

9. NORTH DEVON.—COUNTRY TOWN.—A one-third share (with increase up to one-half later) in a very old-established and increasing mixed-class PRACTICE, averaging about £3,000 p.a., including panel of over 2,100, and appts. worth nearly £150. Fees 3/6 to [illegible] 2 to 7 gns. Choice of houses. Sport of all kinds [illegible] 2 years' purchase, part by arrangement if [illegible] outdoor assistantship offered at a salary of £450 p.a. Scotch Graduate preferred, about 30 years of age.

10. SOUTH OF ENGLAND.—FAVOURITE SEASIDE RESORT.—Mainly better-class PRACTICE, producing for the last twelve months about £700, and rapidly increasing. Panel of 150. One appt. worth about £40 p.a. Fees 3/6 to 7/6. Only a few cases of midwifery. 2 gns upwards. Good house in excellent repair, with 2 reception, 5 bedrooms, etc. Electric light. Garden. Garage. Price for freehold £2,300. Premium £1,400.

11. MIDLANDS.—COUNTRY PRACTICE, within 100 miles of London. Easily worked practice, producing about £1,000 to £1,200 p.a., including panel of 600. Large and exceptionally attractive house, in first-rate order, with 3 reception, 11 bedrooms, and professional accommodation, etc. Electric light. Stabling for four horses. Well-stocked garden of 1½ acres, and several acres of grassland. Good hunting centre. Price for practice and house £6,500.

12. PARTNERSHIP.—PLEASANT SURREY SUBURB.—The Third Share of an old-established Practice offers to a purchaser desirous of doing major and minor surgery owing to the retirement of the junior partner through prolonged ill health. Held by senior 24 years. Cash receipts about £2,700 p.a., including appts. worth about £340, and panel 1,000. Visits 3/6 to 21/-. Mids. 3 gns. upwards, 75 cases yearly. House available containing consulting room, dispensary, 2 reception, 6 bedrooms, bathroom. Garage. Rent £85 p.a. Premium 2 years' purchase. Hospital (27 beds) in the place, and excellent scope.

13. CHANNEL ISLANDS.—Old-established general PRACTICE. Present income approximately £700, but large scope. Advice and medicine 3/6 to 10/6, visits and medicine 5/- to 15/-. Midwifery refused. Commodious house, with 2 reception, 6 bedrooms, etc. Vendor's freehold. Good schools. Price for practice and house £3,000.

14. WEST OF ENGLAND.—Very easily worked unopposed Country PRACTICE, averaging about £600 p.a., including panel of 500. Fees from 2/6 to 12/6. Midwifery 3 to 5 gns. Nice house, with 2 reception, 6 bedrooms, etc., professional rooms. Large garden and paddock. Price for freehold £1,200. Premium 1½ years' purchase.

15. BORDERS OF NORFOLK AND SUFFOLK.—Old-established middle-class PRACTICE, producing about £1,100 p.a., including panel of over 500. Visits 3/6 upwards. Midwifery from 2 gns., about 30 cases. Modernized old country house, with ample accom. and large garden; e.l.; all in good order. Price for f'hld. £2,500. Prem. £1,500.

16. DERBYSHIRE.—PARTNERSHIP.—A half share in a very sound panel and club practice, producing £3,200 p.a. Panel of over 3,000. Fees 3/6 to 5/-, medicine extra. Expenses small. Modern house, in good order, with pleasant garden. Garage. Price for freehold £1,500, part on mortgage. Premium £3,200, half down and balance by instalments over 4 years.

17. LANCS.—In a rapidly growing good-class suburb of large town (pop. nearly 200,000), a very old-estab. PRACTICE, held by Vendor over 30 years, and averaging about £900 p.a., including Union (£80, with prospect of increase shortly) and panel of nearly 1,000. There is a surgery in centre of town to which bulk of practice and panel work is attached. Private residence contains 2 reception, 3 bedrooms, bathroom, etc., and small garden. Both Vendor's properties. Price £1,750, £900 on mortgage, or would be rented. Prem. 1½ yrs ' pur.

18. [illegible] old-estab. Country PRACTICE, situated in [illegible] d averaging £700 p.a., including Union [illegible] oducing £450. Nearest opposition 3½ miles. Railway station 2 [illegible] House stands in own grounds of 1½ acres, with tennis court, garage, etc., and contains surgery, 3 reception, 5 or 6 bedrooms, bathroom (h. & c.). Electric light plant installed. Vendor's freehold, price £2,500, all of which could remain on mortgage if wished. Premium £1,050.

19. MANCHESTER.—Rapidly developing outlying suburb. Good middle- and working-class PRACTICE, increasing and producing for the last 12 months over £1,500. Panel of 700. Fees from 3/6. Particularly good house, specially built, and containing 3 reception, 5 bedrooms, etc. Electric light. Garden. Garage. Price £3,550, part on mortgage. Premium £2,250.

20. ESSEX COAST.—FAVOURITE RESORT.—PARTNERSHIP.—A one-third share to commence with in an old-established middle-class Practice. Average income of about £2,800. Panel of 600. Visits 4/6 to 21/-. Little midwifery. Suitable accommodation can be obtained. Premium 2 years' purchase.

21. BEDFORDSHIRE.—Small Country PRACTICE, at present producing at the rate of £400 p.a., but offering good scope. Fees 3/6 to 10/6, medicine extra. Good house, with 2 reception, 6 bedrooms, etc. Separate entrance to professional rooms. Can be rented on lease. Premium £250, or practice and house will be sold for £1,050.

22. SOUTH COAST.—FAVOURITE HOLIDAY RESORT.—Well-established non-dispensing PRACTICE. Average income about £1,100, including panel of 1,200. Consultations 2/6 to 10/6, visits 3/6 to 21/-. Practically no midwifery. Very good house, in best position on sea-front. Price for leasehold (with 20 years to run at a ground rent of £4 p.a., and renewable) £2,250. Premium £1,800.

23. KENT.—COAST TOWN.—Well-established mainly industrial PRACTICE. Steady average income of over £1,500. Panel of 1,350. Advice and medicine mainly 3/- and 5/-, and a few at 7/6; visits and medicine from 3/6 to 21/-. Convenient house, with 5 bedrooms. Rent on lease £100 p.a. Premium 1½ years' purchase.

24. NEW ZEALAND (North Island).—Increasing Town (pop. 2,500, with further 6,000 in district) amidst beautiful surroundings 30 miles from large city, on main line, well-established PRACTICE, producing £1,150 for last financial year, including £100 from Lodges. Consultations 10/6. Midwiferies 5 gns. Two opponents. Very good Bungalow residence, with ample accommodation and ½-acre of garden. Garage. Rented on lease or can be bought. Premium £1,000. Purchaser should have fair knowledge of surgery.

REQUIRED.—Experienced ASSISTANT, with London qualifications, for Town Practice in Suffolk. Unmarried, aged 25 to 30. Must have held Hospital appts. Good salary, and prospect of partnership later.

REQUIRED.—Indoor ASSISTANT (or outdoor by arrangement) for Country Practice in Suffolk. Must be English, and pref. Bart's man. Salary £300 p.a. indoor, and equivalent outdoor.

Full Schedule of Terms and Conditions will be forwarded on application.

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ATOQUINOL

(allyl ester of phenylcinchoninic acid)

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Gout acute and chronic, rheumatic affections, uric acid diathesis, arthritis, migraine, sciatica, lumbago, etc.

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Atoquinol Tablets, 4 gr. (Tubes of 20 and bottles of 100 and 500).
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Atoquinol possesses many advantages over phenylcinchoninic acid, the chief being its low melting point—36°C. in comparison with 212°C. for the acid. It has no known incompatibles and acts in comparatively small doses as a most active uric acid eliminant.

❖ ❖

The following tables are extracted from an article published in the *Schweizerische Medizinische Wochenschrift*, by Drs. Uhlmann and Burow:

MEAT DIET (WITH PURINS)

In 24 hours	Without Treatment	Atoquinol	Phenylcincho-ninic Acid
Urine	3930 c.c.	3345 c.c.	3450 c.c.
Uric Acid	2.03 grm.	3.01 grm.	2.63 grm.

VEGETARIAN DIET (WITHOUT PURINS)

In 24 hours	Without Treatment	Atoquinol	Phenylcincho-ninic Acid
Urine	3550 c.c.	3515 c.c.	3515 c.c.
Uric Acid	0.91 grm.	2.20 grm.	1.28 grm.

COMPARATIVE TESTS

Daily Uric Acid Elimination	Atoquinol (oral)	Atoquinol (cutaneous)	Phenylcin choninic acid (oral)	Piperazine (oral)
	11.92 grm.	10.08 grm.	10.92 grm.	7.68 grm

It will be seen from the above tables that the daily elimination of uric acid is greater when Atoquinol is used than with the phenylcinchoninic acid. Also in the third table it will be noticed that the cutaneous administration of Atoquinol by means of the ointment is most effective in causing an active elimination of uric acid

❖ ❖

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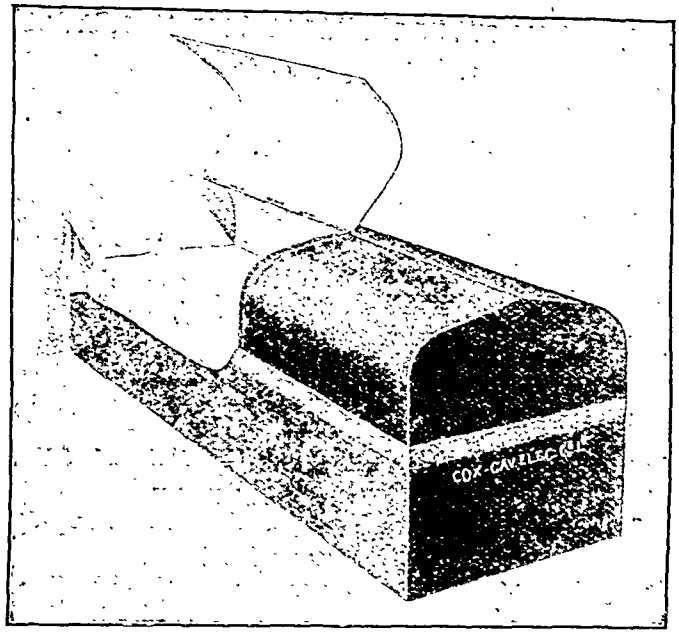

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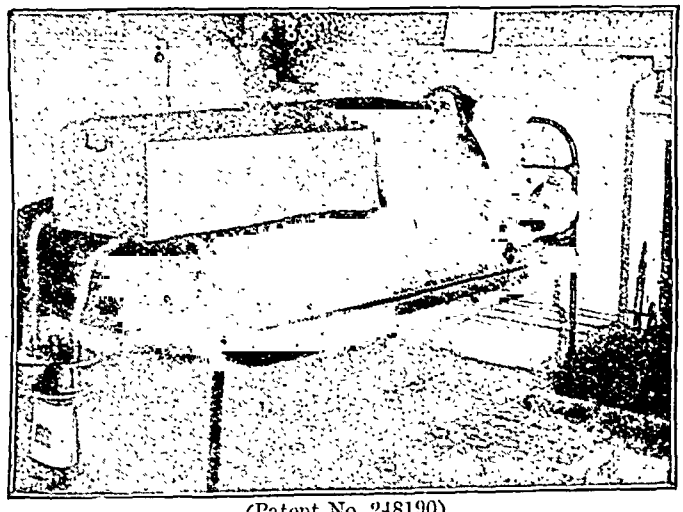

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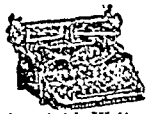

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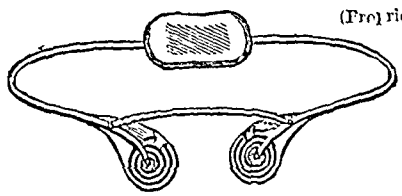

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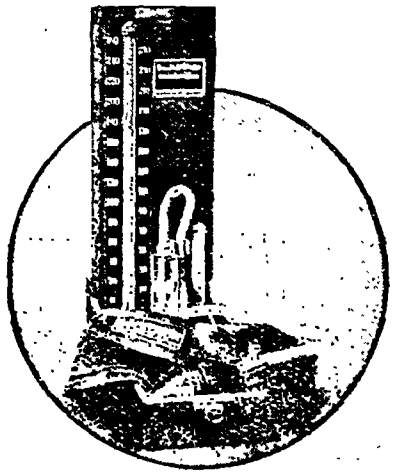

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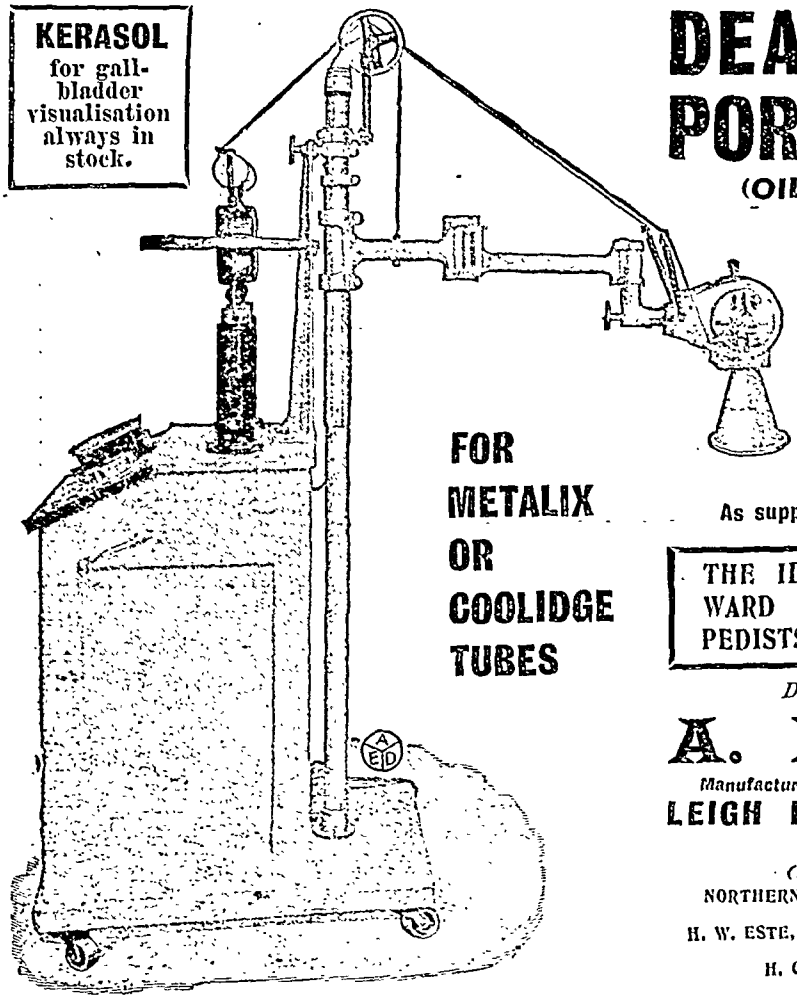

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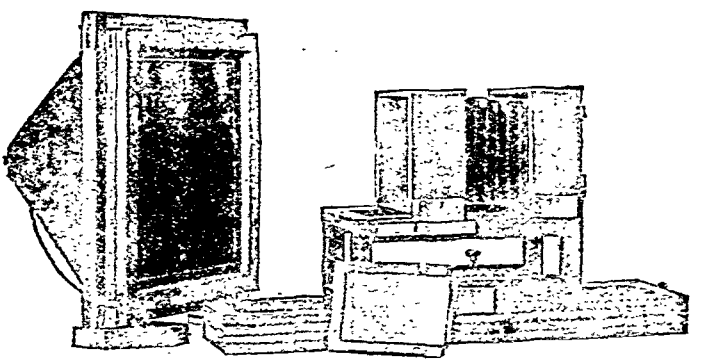

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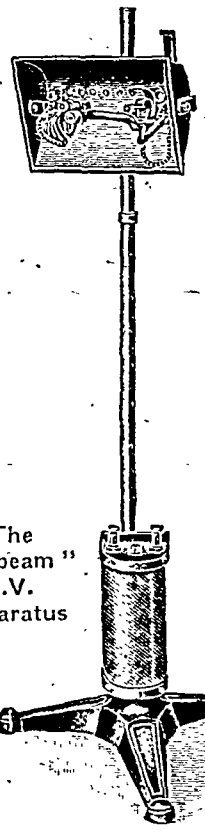

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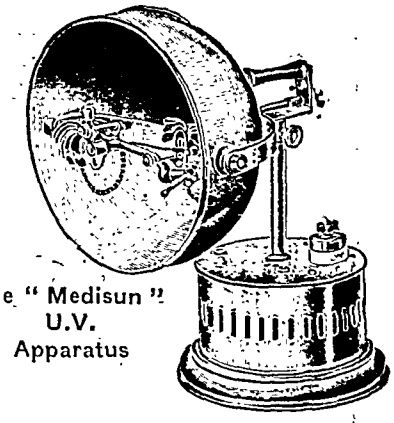

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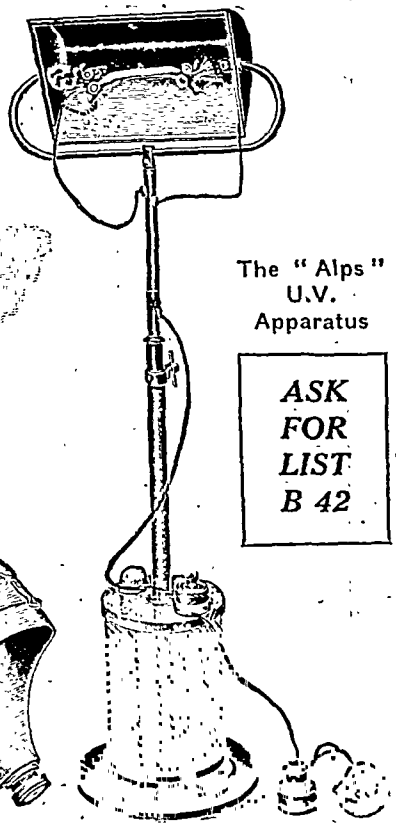

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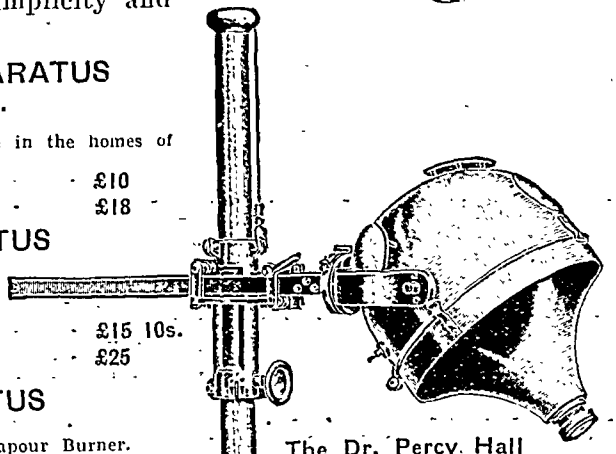

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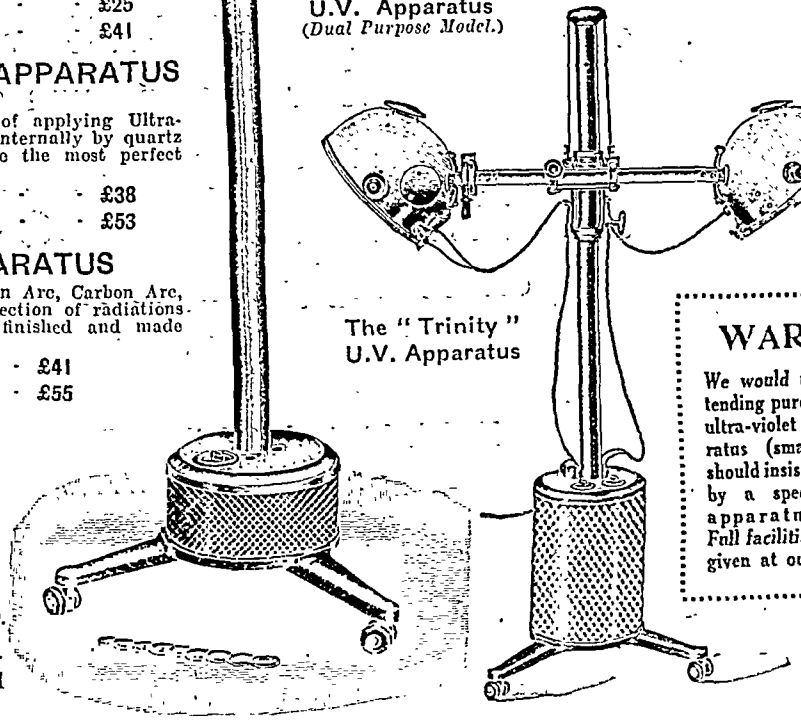

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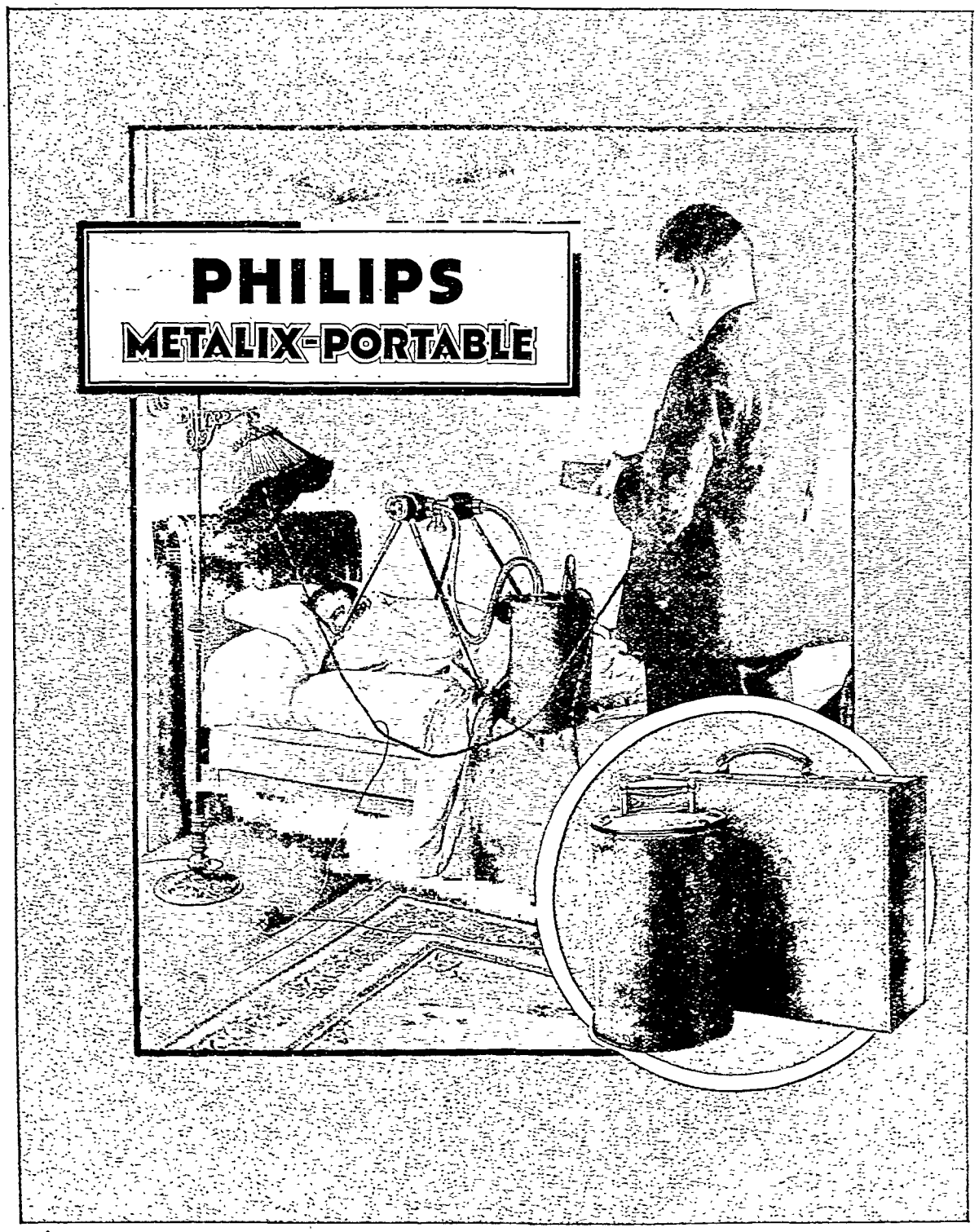

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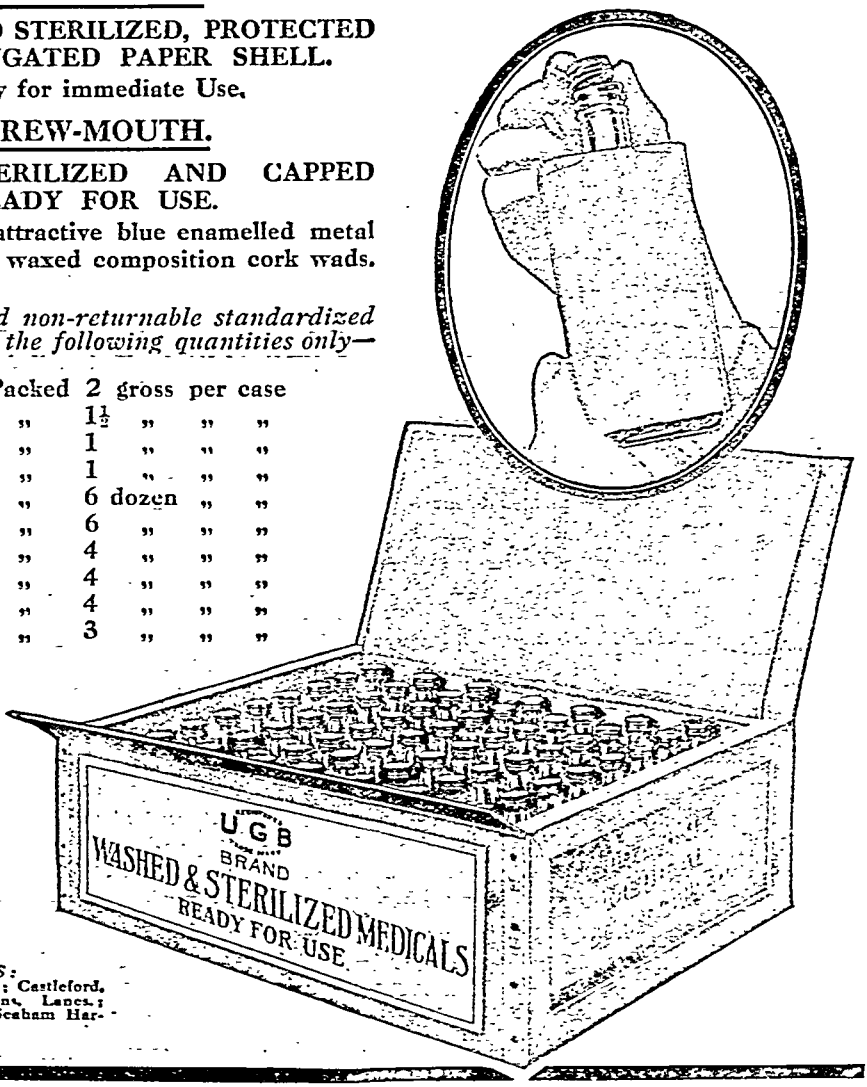

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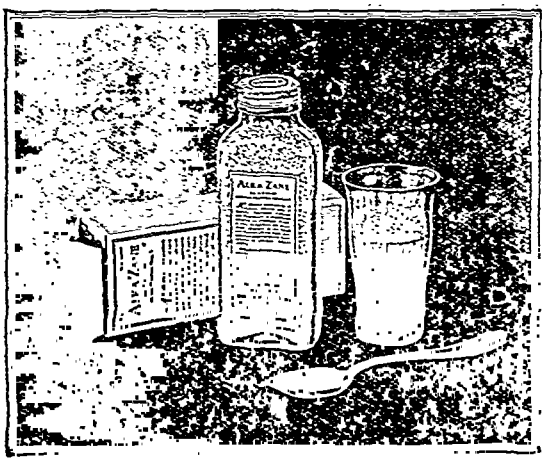

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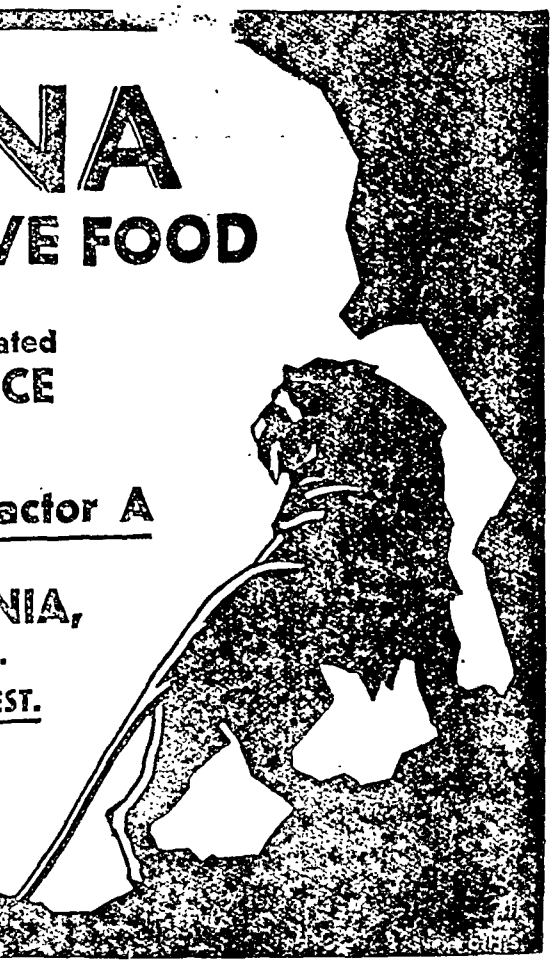

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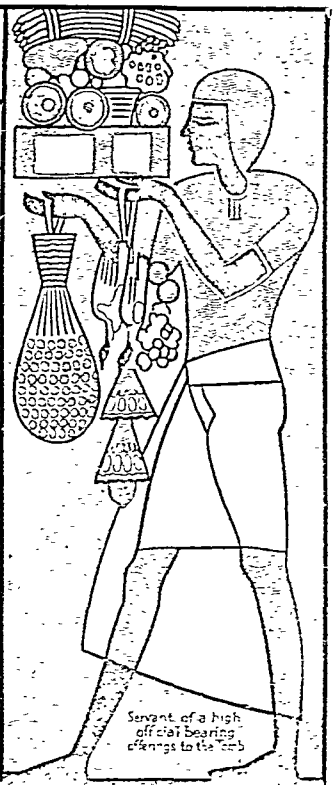

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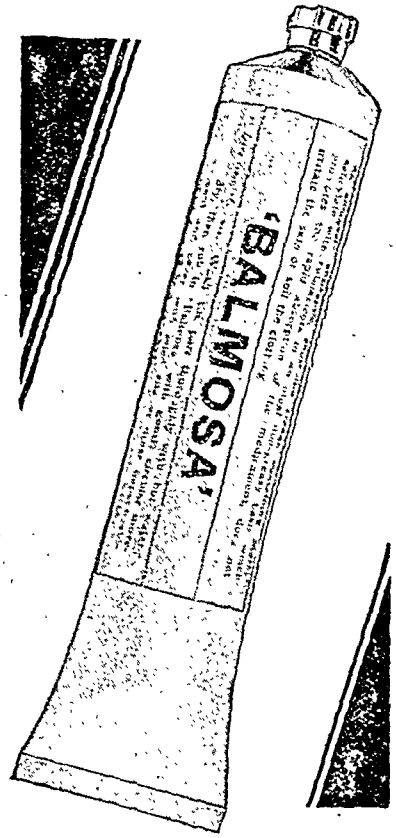

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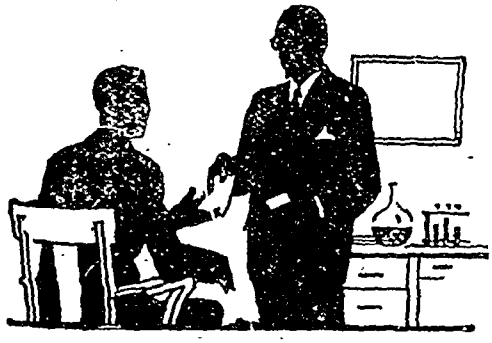

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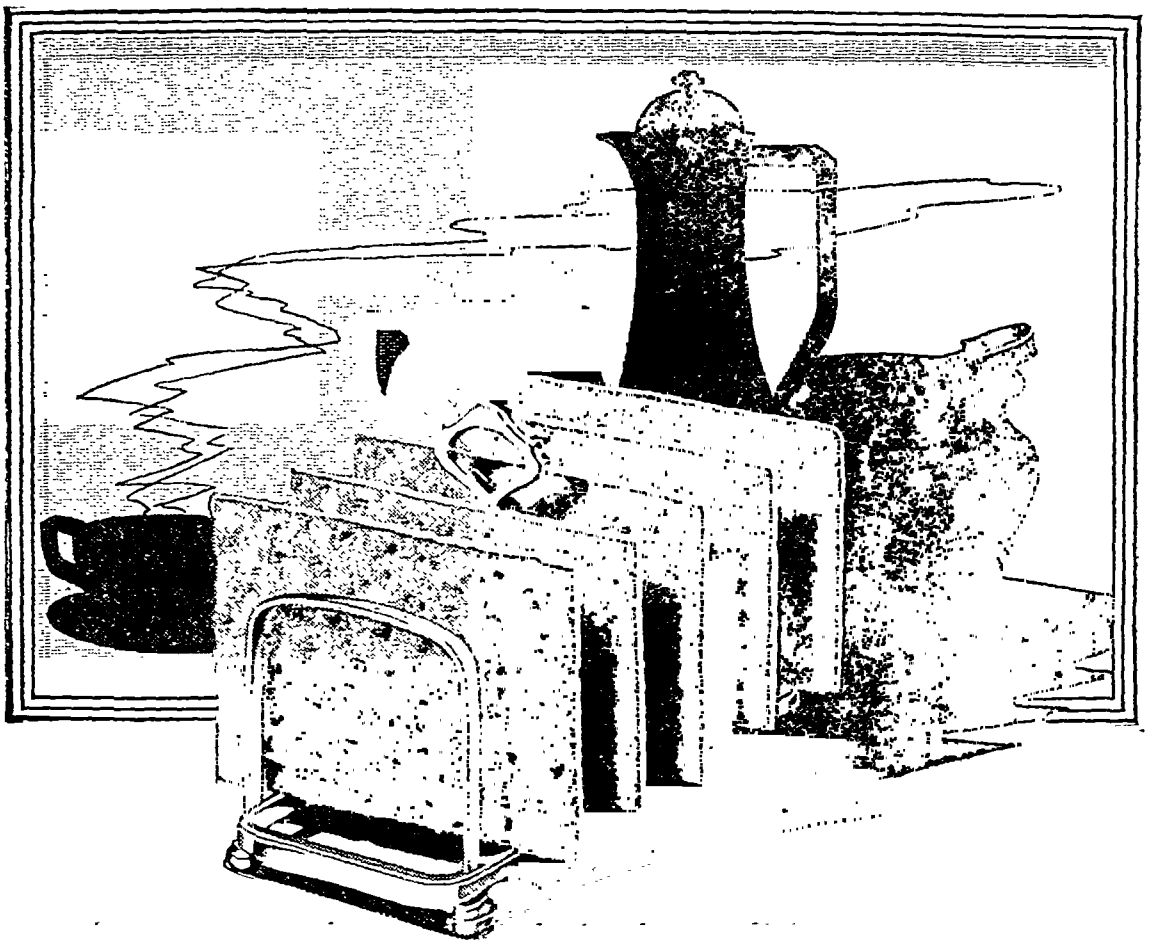

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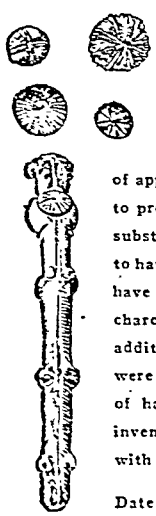

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A British Medical Association Lecture
ON
CEREBRAL TUMOURS.

DELIVERED BEFORE THE SHEFFIELD DIVISION, NOVEMBER 9TH, 1928,

BY

H. S. SOUTTAR, C.B.E., D.M., M.CH., F.R.C.S.,
SURGEON, LONDON HOSPITAL.

CEREBRAL tumours are unique in the nature and the variety of the symptoms they produce, in the diagnostic problems they present, and in the difficulties which must be overcome by the surgeon who endeavours to approach them. Moreover, they are by no means uncommon in every class of practice, and the general physician, the ophthalmic surgeon, and the aural specialist must all be prepared to meet them; they are more destructive to the patient than any other class of tumour, and they affect personality in a manner which must always arrest our interest and arouse our sympathy. There can be few conditions which make a more widespread appeal.

In the short time at my disposal I propose to glance at cerebral tumours from three points of view—those of the physiologist, the physician, and the surgeon—and to reply briefly to three questions: How do these tumours produce symptoms? What symptoms do they produce? How may they be approached? Naturally a full reply to these questions would involve an elaborate treatise, but even their brief consideration gives some insight into the problems which confront the cerebral surgeon.

THE PRODUCTION OF SYMPTOMS.

The brain differs from all the other organs of the body in the fact that it is enclosed in a rigid case, which entirely modifies the conditions of its circulation, and in the existence within and around it of a secondary and independent circulation, that of the cerebro-spinal fluid. Tumours produce their effects not, as might be supposed, from the pressure they exert on the cerebral tissue, but from the interference they produce with the arterio-venous and the cerebro-spinal circulations. Let us first consider the latter.

The cerebro-spinal fluid is continuously secreted by the choroid plexuses, chiefly in the lateral ventricles, and from these it flows through the foramina of Monro into the third ventricle, from which it is conveyed by the aqueduct of Sylvius to the fourth ventricle, escaping by the foramina of Luschka and Magendie into the subarachnoid space, to be finally discharged by the Pacchionian bodies into the superior longitudinal sinus. A tumour involving the cerebral hemispheres may grow to a huge size without ever affecting this circulation. On the other hand, even a small tumour situated in the interpeduncular space, in the corpora quadrigemina, or at any point below the tentorium, may obstruct the flow, and by producing a secondary hydrocephalus may cause a sharp rise in the intracranial pressure. Such a rise in pressure is associated with general symptoms of the utmost severity, and to this consideration alone is very largely due the contrast in immediate danger between supra- and infra-tentorial tumours. Above the tentorium the general symptoms are mild, and surgery is comparatively easy: below, the conditions are always critical, and surgical intervention will only too often be fatal. By the secondary hydrocephalus the cerebellum is forced down through the foramen magnum till it forms a cone, which may reach as low as the third cervical lamina, crushing beneath it the medulla and the vital centres it contains.

These general indications include the classical symptoms of intracranial pressure, headache, vomiting, and papilloedema. I would insist, however, that only in a secondary sense are these the symptoms of an intracranial tumour, and that every effort should be made to effect a diagnosis before they arise. To wait for them is as unreasonable as to wait for acute intestinal obstruction before diagnosing a tumour of the colon. When, however, these classical symptoms occur they are of great importance, and present very definite characters. The headache is constant, but with severe exacerbations. It is often severe on waking, and it is increased by anything which raises the intracranial pressure, such as exertion, excitement, or even stooping. Vomiting is also marked on rising in the morning; it is independent of food, unaccompanied by abdominal pain, not preceded by nausea, and therefore occurs as a sudden projectile act without warning. Papilloedema may be present in a severe degree before it becomes subjectively obvious to the patient in blurring of vision, but, as a rule, when it is at all marked, a careful examination of the visual fields will show some degree of contraction for small, white objects. Transient attacks of blindness may occur, but persistent diminution of vision means that atrophy has commenced, and complete recovery of visual power is then impossible. The swelling of the disc may be accompanied by retinal haemorrhages, and is generally, though not always, most marked on the side of the lesion.

Among other general symptoms are a certain loss of initiative, mental lassitude and drowsiness, attacks of giddiness, slowing of the pulse, and possibly generalized epileptiform convulsions. A transient diplopia, occurring, as it may, at a very early stage, should be regarded as a symptom of the very first importance. These are all symptoms of high intracranial tension, and as such they may appear apart from cerebral tumours in such conditions as renal disease, severe anaemia, or lead poisoning. The latter are, however, readily excluded.

It is, however, to the local effects produced by a cerebral tumour that we must direct our attention if we are to discover its precise situation. The mere pressure of a tumour on the actual cells of the brain would probably be entirely without result were it not for the interference with the cerebral circulation by which this pressure must in practice be accompanied. It is a clearly established law of cerebral pathology that congestion means irritation, and anaemia paralysis. Now the first effect of the pressure of a tumour must be interference with the venous return and congestion of the region of the brain concerned. If this happens to be the sensorimotor cortex the irritation may show itself in the production of Jacksonian fits, starting in that region of the body which the particular portion of the motor cortex supplies. As the tumour grows and the pressure increases the capillaries will be compressed, anaemia will be produced, and paralysis will replace the irritation; but, in addition to an increase in the actual pressure at any one point, we have an extension of the area involved, so that, in fact, we shall have a spreading area of paralysis surrounded by a zone of irritation. The whole effect is enhanced by the fact that every now and then an acute oedema may arise around the advancing tumour, increasing the general pressure and producing a dangerous exacerbation of the symptoms, sometimes the abrupt prelude of a fatal termination.

TUMOURS OF THE ROLANDIC AREA.

The most important portion of the cerebral cortex, from the point of view of intracranial tumours, is undoubtedly that which lies in front of the fissure of Rolando, the precentral or ascending convolution. It differs histologically from any other portion of the cortex, since here alone are found clusters of giant pyramidal cells of Betz, from which arise the great pyramidal tracts. It is essentially the final area through which the volitional control of the brain is conveyed to the muscles. It originates nothing, but it transmits movement formulae for the execution of various skilled acts, the formulae being prepared by the synthetic action of other centres—visual, auditory, sensory, or psychic. It has, in addition, the important function of inhibiting muscular tone, the muscles being thus held ready for instant response to the transmitted formulae. Its destruction, therefore, leads to a loss of volitional control and to an increase in muscular tone which hampers useful action.

In this area the different portions of the body are represented by centres arranged in a very precise manner (*Fig. 1*). At the extreme upper end commence the centres

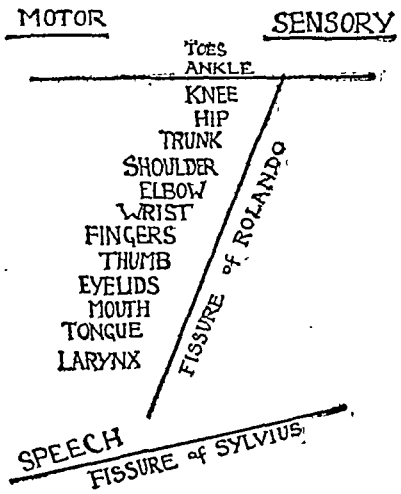

FIG. 1.

for the leg, the toes and ankle being represented actually on the mesial surface of the hemisphere. Passing downwards, the knee and hip are followed by the trunk, which lies just opposite the superior genu of the fissure. Below this come in order the shoulder, elbow, wrist, fingers, and thumb. The tongue and larynx follow. Just in front of the hand area is a special area for the control of the conjugate movements of the eyes and rotation of the head to the opposite side.

When a tumour affects this region it gives rise to symptoms, as we have already explained, by the interference with the circulation which it produces. When the pressure is slight and only congestion results, irritation is produced; when it is more severe we have anaemia and paralysis; and inasmuch as the tumour is steadily advancing there will usually be a zone of paralysis surrounded by a zone of irritation. The phenomena of irritation in this region have a very characteristic form, first described by Hughlings Jackson, and universally known as Jacksonian fits. The characteristics of these are that they start in a precise region of the body, always the same, and that they spread to other regions in a definite order, corresponding exactly to that in which the centres are arranged in the cortex. They may be preceded by twitching or tingling in the part, and they commence with a stage of tonic spasm, passing into a series of clonic jerks as the centres become exhausted. Consciousness is only lost if the convulsions become generalized. The fits may occur at any interval, from months down to minutes, and a very important feature is that they are always followed by definite weakness in the portion of the body in which the fit starts.

Cortical paralysis has equally striking features. It is essentially a paralysis of movements, and not of individual muscles, or even muscle groups. Stimulation of the centres in the motor cortex gives rise to definite movements, such as flexion of the elbow or abduction of the arm, in each of which certain muscles contract with nicely balanced force, whilst other antagonistic muscles are relaxed in suitable degree. Destruction of the centre removes from the individual the power of initiating the movement concerned, and at the same time the removal of cortical inhibition and control compels the limb to take up a characteristic attitude. Thus, in a complete hemiplegia, where the whole cortical control is removed, the arm will take up a position of adduction, with flexed wrist and fingers. The leg, on the other hand, will be adducted and extended at the hip, and extended at the knee and the ankle. In partial lesions other attitudes may be adopted. In all cases the paralysis will be accompanied by an increase in tone in the muscles and by an increase in the deep reflexes.

The growth of a tumour pressing on the motor area will therefore give rise to a characteristic clinical picture—Jacksonian fits, followed by weakness in the region of origin, and a steadily advancing paralysis. The latter spreads, as before, in accordance with the arrangement of the cortical centres, and thus presents certain peculiar features.

As an example of the mode of spread I may cite a case where the fits always started with twitching of the left thumb. After a few moments the tonic stage came on, a tonic spasm spreading successively to the fingers, wrist, and arm, and simultaneously to the left side of the face and tongue, whilst at the same time the head and eyes were forcibly turned to the left. The spasm terminated in a series of clonic jerks, and only occasionally did the fits spread to the leg, when they became general, with loss of consciousness.

Immediately in front of the precentral area lies the intermediate precentral area, in which it is probable that motion formulae are constructed and retained, and that the memory for skilled acts resides. Upon its integrity depends the accurate performance of actions which we have learnt by practice to execute with facility, whilst its destruction, especially on the left side, may abolish the possibility of such acts, although there may be no paralysis in the ordinary sense. Such a condition is known as motor apraxia. By far the most important example is in lesions of the posterior extremity of the left inferior frontal convolution in right-handed individuals, the area of Broca, in which is stored the memory of those movements involved in speech. The loss of this area makes voluntary speech impossible, although the individual may know exactly the words he wishes to use, and may be able to look them up in a dictionary. In the involvement of the area by a tumour these symptoms are diagnostic, but the area is of further importance to the surgeon, since, whenever possible, he will avoid its neighbourhood, and will plan his explorations so as to leave it intact.

Behind the fissure of Rolando lies the post-central convolution, where are grouped centres for sensory reception, roughly corresponding in arrangement with the motor centres we have just described. Injury to this area may produce in the corresponding region of the body a loss of postural sense, of localization, of touch, or of the perception of the degrees of heat and cold, and it is of diagnostic import that this loss is irregular in distribution and in the extent to which each element of sensation is affected. Irritation produces a sensation of tingling in the corresponding area, and as these sensory centres are in such close proximity to the motor centres it follows that a tumour is likely to involve both, and that tingling in a limb may be the definite precursor of a Jacksonian convulsion.

It will thus be seen that on the lateral aspect of the brain there exists a wide area interference with which produces characteristic symptoms. A tumour in this region may therefore be located in many cases with the most minute precision, but the area is of almost equal importance in the diagnosis of tumours which reach it from other regions of the brain. Thus, the first indication of a frontal tumour may be given from involvement of the motor area in its backward extension, whilst tumours of the occipital and temporal lobes may remain equally obscure until the sensorimotor cortex is affected. We have, however, another means at our disposal for the localization of cerebral tumours—in the effects which they produce upon the visual tracts—and these we must now consider.

TUMOURS INVOLVING THE VISUAL TRACTS.

The tumours of which I have so far spoken have as their chief characteristic some interference with motion. Another group, not perhaps so common, but even more fascinating in the problems it furnishes for diagnosis, interferes with vision. Visual impressions starting in the retina pass through the whole length of the brain to the occipital lobe behind. The fibres of the optic nerves decussate in the optic chiasma in such a way that the visual impressions from the visual fields on each side of a median plane are transmitted entirely to the opposite side. Through the optic tracts impulses from the contralateral fields are carried back to the external geniculate body and the pulvinar of the thalamus. From the former run tracts connecting it with the mid-brain and with the centres which control the movements of the eyes. From the latter spread out the optic radiations, looping round the descend-

ing horn of the lateral ventricle to reach their destination in the cortex of the occipital lobe. It is to this final portion of the optic path that I would for a moment direct your attention.

The optic radiations are so arranged that the upper fibres receive impulses from the upper portions of the retinae, the lower from the lower. This order they maintain right up to the point when they terminate in the cortex above and below the calcarine fissure on the mesial aspect of the occipital lobe. In relation to tumours of the occipital lobe itself this distinction is not of importance, for, as a rule, the whole visual area is involved, with resulting disturbances of vision in the contralateral visual field. These disturbances may be of two kinds—irritative or paralytic. The former are more likely to be produced by cortical tumours, and appear as flashes of light, often coloured and suggesting fireworks. Probably the fortification lines of migraine are due to vascular disturbance in this region. Deep tumours, on the other hand, produce a gradual contraction of the visual field on the opposite side, best shown by testing with small objects, white or coloured. The superficial tumours again tend to spread forwards over the cortex and to involve the lower sensorimotor areas, producing numbness in the opposite face or hand. The deep tumours tend to involve the posterior part of the internal capsule, producing sensory changes in the opposite leg. of the body and paresis in the opposite half

But to the optic radiations themselves we owe a syndrome as beautiful as any in cerebral pathology, and in the hands of Cushing they have supplied the key to what was one of the most obscure regions of the brain (Fig. 2). These

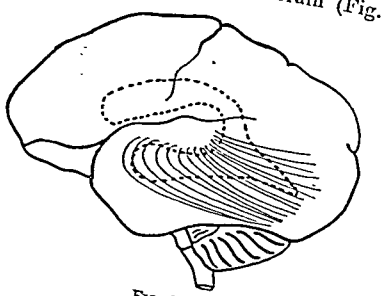

FIG. 2.

radiations as they leave the optic thalamus wind forwards, outwards, and finally backwards round the descending horn of the lateral ventricle, occupying as they do so the posterior part of the temporal lobe. Their arrangement in upper and lower groups connected with the upper and lower portions of the retinae has already been noted. A tumour, then, in the lower part of the right temporal lobe will involve those fibres which carry impulses from the opposite upper visual field, and the left upper quadrant will be blind, and we have the condition known as a left upper quadrantic homonymous hemianopia. The discovery of these quadrantic hemianopias has revolutionized localization in the temporal lobes.

It is typical of quadrantic hemianopias that the visual defect is incomplete, and it is owing to this fact that they have so long escaped attention. They can only be discovered by the most accurate and painstaking perimetry, and only at an early stage of the development of the tumour. A rough perimetry will miss them entirely, and in a late stage they will be merged in a complete hemianopia, but if found they are almost conclusive evidence of a tumour in the temporal lobe.

But the temporal lobe yields another symptom as bizarre as any in cerebral symptomatology. When a tumour involves the uncus the patient is liable to peculiar attacks, lasting for a few seconds and perhaps recurring many times in the day. In these he is overpowered by a dreamy sensation, the world seems remote, and voices sound far away. In this state he may have curious hallucinations of smell, taste, hearing, or vision. The first two are perhaps the most common, and though sometimes pleasant are usually so repulsive as to produce an expression of disgust on the face. Those of vision are very curious, and form definite pictures, such as a row of black cats or a little figure, in contrast to the visual disturbances seen in tumours of the occipital lobe. These pictures are always in the same on every occasion, and they are always in the blind portion of the visual field. The combination of a quadrantic hemianopia with uncinate attacks thus forms a very complete and exact syndrome, distinguishing sharply, when it occurs, tumours of the temporal lobe.

SURGICAL ACCESS TO THE BRAIN.

The problem of obtaining easy access to the interior of the skull has become of increasing importance with the modern demand for large openings, in which it shall be possible to replace the bone without fear of risking its vitality. The problem raises several questions, the first of which is that of access to the skull itself. It is a curious example of tradition that until quite recently it was generally believed that contact with the scalp must be maintained if the blood supply of a bone flap was to be preserved.* I have, however, demonstrated conclusively that the vascular supply of the bone and of the scalp are entirely independent, so that the scalp may be turned down freely without the slightest prejudice to the vitality of an osteoplastic flap, which derives its vascular supply entirely from its muscular pedicle. The free exposure of the skull is obviously the first stage towards easy access to the brain.

There are three primary regions from which the brain can be approached—the temporal, occipital, and frontal—and in each instance the scalp flap required presents certain peculiarities.

In the temporal region a flap of any dimensions may be formed, care being taken that the anterior portion of the incision lies well in front of the ear, so as to avoid injury to the superficial temporal artery. In this instance a great advantage is gained by first marking out the pedicle with two small incisions, one in front of, and one behind, the ear, tunnelling through with a blunt dissector in the areolar layer, passing one blade of a soft intestinal clamp through the tunnel so formed, and with it clamping the base of the pedicle. If this is done there will be no bleeding whatever from the cut margin of the flap itself, and the attention of the surgeon can thus be directed solely to preventing bleeding from the opposite side of the incision. After the incision has been made and the bleeding arrested the whole flap can be turned down as far as the clamp at its root without the division of anything except soft areolar tissue, and without bleeding from a single point.

In the occipital region the scalp can only be turned down as far as the superior curved line of the occipital bone, since below this point it is firmly attached to the muscles. If an attempt is made to raise it beyond this point the origin of the occipitalis muscle must first be divided, and the skin must then be dissected away from the muscles, to which it is united by dense and vascular fibrous tissue, and bleeding may be considerable. With the methods of approach which we now adopt we always respect this attachment, and never go beyond it. None the less we can turn down osteoplastic flaps in this region, and even remove the bone, without ever detaching the scalp from the muscles to which it so firmly adheres.

In the frontal region superb access to the bone may be obtained by very simple means. If an incision is carried boldly across the bregma, coming down just in front of the ear, it will be found that the whole of the forehead can be turned down without the slightest difficulty, even beyond the upper margins of the orbit. It is true that the anterior branch of the superficial temporal artery is divided, but the forehead has an ample blood supply apart from this. I would again point out that even in this region the vitality of the bone is in no way jeopardized, and that an osteoplastic flap consisting of one-half of the frontal bone may be formed with perfect success on the temporal muscle as a base. When the scalp flap is replaced the suture line is entirely out of sight, and the nerve supply of the forehead is still intact. I have repeatedly carried out all these procedures under local anaesthesia with a conscious patient; there has been an entire absence of

* Hunterian Lecture, *British Medical Journal*, February 25th, 1928.

either shock or pain; and in the case of the frontal flap the only additional precaution taken was to cover the patient's eyes and face with a sterile bandage.

CONTROL OF HAEMORRHAGE.

The control of haemorrhage from the scalp is a matter of the very first importance to which sufficient attention is rarely paid. Any loss of blood at this point is entirely unjustifiable and may prejudice the further stages of the operation very seriously. Bleeding from the smaller vessels is best controlled by a preliminary injection of the whole line of incision with 1/2 per cent. novocain, to which about 1 per cent. of 1 in 1,000 adrenaline has been added. At the same time it is our custom to infiltrate the whole of the subaponeurotic space in the operation area with the same solution. If this is done half an hour before the operation there will be no bleeding at all from the smaller vessels, and only the larger arteries will require attention. These may be seized in special forceps, such as those of De Martel, which grasp the whole thickness of the scalp, or they may be compressed by seizing the galea in artery forceps and drawing it over the cut area. The arteries themselves it is impossible to seize owing to the density of the tissue in which they lie. Personally I use small steel clips which are crushed with forceps on to the margin of the scalp. They hold it quite firmly without injury, they are so small that they are not in the way, and at the end of the operation they are very easily removed. In the case of the temporal flap I have already described the means by which bleeding from its margins is prevented. In the frontal flap the incision lies in a watershed area where vessels are very small, and the only two vessels which bleed are the anterior branches of the superficial temporal artery. The absolute bloodlessness of this line of incision is remarkable and a very great advantage.

DIVISION OF THE BONE.

Even when the skull has been freely exposed the actual division of the bone presents a mechanical problem of no mean order. With the old methods it involved an expenditure of time and a degree of exertion on the part of the surgeon which only too often left both patient and surgeon physically exhausted, at a moment when the real business of the operation was only about to begin. It has long seemed to me that it should be possible to cut through the skull entirely by hand if the problem could only be reduced to the terms of ordinary engineering. I have now succeeded in devising an appliance by which the skull can be divided entirely by hand with great facility and so smoothly that the operation can be easily accomplished on the conscious patient under a local anaesthetic. The appliance was specially designed for the formation of large osteoplastic flaps, and it enables the surgeon to form these with a facility, a rapidity, and a precision hitherto unapproached.

The principle on which it works is the entirely novel one of securing a steel peg in the skull at the centre of the proposed flap and using this as a fulcrum round which can turn a powerful lever carrying a cutting tool. The cutting tool is a narrow chisel such as is used by turners for parting their work, and it cuts in the skull a narrow circular channel with extreme precision. The groove is cut on a bevel, and one advantage of the method is that the bone flap can be replaced with the absolute accuracy of a ground glass stopper. Naturally so novel an instrument requires some practice before it can be used with facility, but when this is attained large bone flaps can be cut with an ease and rapidity hitherto unattained, and we have seen a four-inch flap turned down in the temporal region in four minutes without any apparent effort on the part of the surgeon.

OSTEOPLASTIC FLAPS.

Having shown the possibility of obtaining a full exposure of the skull by first removing the scalp, and having described the apparatus at our disposal for dividing the bone, I will now discuss the actual formation of osteoplastic flaps. These are required in three regions—lateral, posterior, and anterior—and as the method of formation is in each case distinct, I will deal with them separately and in this order.

Lateral approach by means of a temporal flap is the commonest mode of access to the brain. Not only is it required for the removal of tumours in the sensorimotor region and in the temporal lobe, but it is often the most convenient and effective method of obtaining decompression. A large scalp flap is first turned down, as has been already described, bleeding from the flap being controlled by a clamp across its base, and from the scalp by clips attached to its margin. The total loss of blood should be trivial, and all bleeding must be absolutely checked before the next step is taken. The scalp flap and the exposed area are carefully protected by gauze pads moist with warm saline.

The bone flap required is now marked out with a compass, and the bone is divided round three-quarters of a circle with the craniotome, the temporal muscle which is to form the hinge being carefully preserved. Elevating levers are inserted and the thin bone in the temporal fossa is cracked, when the bone flap can be turned down and out of the way. The bone usually cracks at a point half an inch or more from the base of the skull, and it is convenient to strip down the temporal muscle as far as the temporal crest and to remove the thin bone with punch forceps. In this way maximum use can be made of the opening in the skull, and if the bone is replaced the defect left at its base forms a very useful subtemporal decompression.

Posterior approach to the brain has usually been obtained by piecemeal removal of the occipital bone below the lateral sinuses, and this has been generally regarded as a region entirely unsuited to the formation of osteoplastic flaps. The situation has, however, been entirely altered by the craniotome, which enables huge osteoplastic flaps to be turned down in this region with precision and safety, affording an access to the cerebellum, the brain stem, and the occipital lobes never before achieved. At the same time the bone, in whole or in part, can be replaced with perfect accuracy and with absolute security. The effectiveness of the method can be sufficiently judged from the fact that the whole of the back of the skull, from the lambda to the foramen magnum, can be turned down in five minutes with the utmost ease, without the slightest violence, and often without any change either in the pulse rate or the blood pressure of the patient.

A scalp flap is first turned down, as we have already described, as far as the superior curved line of the occipital bone, to which it is attached. This flap should overlap the proposed skull flap by half an inch. A point is now selected about half an inch above the external occipital protuberance, and here a hole is drilled for the centre pin. The bone at this point is very thick, and it may not be necessary to drill completely through; indeed, it is an advantage not to do so, as a large emissary vein may be encountered. Should, however, bleeding occur, it is immediately stopped by the insertion of the centre pin, which is then secured in place. The skull is cut as usual, and as it is here often half an inch or more in thickness the power of the craniotome is fully demonstrated. A channel is cut which divides the thick bone completely and extends below the lateral sinus on each side. With a specially guarded chisel the extremities of this channel are extended towards the foramen magnum, when it will be found that on raising the bone the whole posterior margin of the foramen magnum is included in the fragment. Seizing the upper margin of the bone in forceps it is drawn forcibly backwards, so as to avoid injury to the medulla, and it is then turned downwards over the nape of the neck, still attached, of course, to the whole of the nuchal muscles.

The only risk in this procedure is that of haemorrhage from the large emissary vein which communicates between the torcular Herophili and the vascular diploë of the occipital bone. In raising the bone this vein is torn, and the finger of an assistant must be immediately applied to stop the haemorrhage. A small piece of muscle, cut ready for the purpose, is now applied and held in place by the finger for three minutes, when it will be found to adhere firmly and to have stopped the bleeding. Occasionally a similar but smaller vein may be torn from the superior longitudinal sinus, but it is easily dealt with in a similar

manner. There would seem to be no risk whatever of injury to the sinuses themselves.

The field now obtained is very remarkable. In the centre lies the torcular, the lateral sinuses spreading outwards on each side, whilst above these the occipital lobes are exposed to an extent of perhaps two inches. Ideal access to the cerebellum is offered, and, if necessary, the posterior arch of the atlas can be removed. But most important of all is the relaxation of the tentorium which results from the removal of its posterior support, so that it can now move upwards freely and release the pressure on the medulla. Provided there is no undue pressure on the upper chamber this may provide sufficient decompression without any opening of the dura, and in a case of midbrain tumour with secondary hydrocephalus this procedure alone was sufficient to secure permanent relief. In any case a combination of this with aspiration of the ventricles will give all the relief of tension that can be desired.

Mobilization of the tentorium, so far as I am aware, is an entirely new procedure, and it is only rendered possible by the occipital osteoplastic flap which has been described. Without the craniotome the formation of such a flap is scarcely a mechanical possibility, for it demands the clean cutting of the densest part of the skull over a very large circle. The trauma to the patient which would result from attempting to do this by any other method would be so serious as to prohibit its performance. Moreover, the flap must be turned down with great rapidity if serious haemorrhage is to be avoided from the large emissary vein, to which reference has been made. With the method here described the actual turning down of the bone flap is practically instantaneous, and in no case has the bleeding remained uncontrolled for a longer period than two seconds. I am so impressed with the value of mobilization of the tentorium that I feel that this possibility alone justifies the invention of the craniotome.

Anterior approach is rendered much easier by the frontal scalp flap, which has already been described. This places the whole of the frontal region at our disposal, and allows the formation of osteoplastic flaps on a generous scale. The thick anterior portion of the temporal muscle, the origin of which extends right up to the angular process of the frontal bone, furnishes an ideal hinge and preserves an adequate blood supply. If the craniotome is used the centre will generally be placed a little above the temporal line, and the line of division of the bone will be just above the superciliary arch and to one side of the middle line, although the latter may be crossed without risk if a really full exposure is desired.

This method of approach furnishes admirable access to the frontal lobe, and, if this is displaced, to the falx cerebri, in its anterior portion. It is, however, of still greater value in the approach which it offers to the pituitary gland. If the bone flap is properly formed it will be found that the whole of the bone overlying the frontal lobe has been removed, and that the lobe can therefore be displaced upwards with quite unusual facility. If the hyperextended position of the head is adopted it will be found that the frontal lobe actually falls away from the orbital plate, so that the route to the pituitary is opened up even without mechanical retraction, and all contusion of the brain is avoided.

There is no art in which the human factor is more important than in surgery, and it is therefore well that surgeons should have at their disposal a large variety of methods from which to choose. The stock of any instrument maker will show the efforts that have been made to meet their individual requirements, but I have sometimes wished that surgeons themselves would realize the essentially mechanical nature of some of the problems by which they are faced and the technical skill required to use successfully the elaborate appliances now placed at their disposal. It would be an immense advantage to the student if at some point of his training he were taught something of the mechanic's art, and realized the cunning of the hand involved in the dexterous use of even the simplest tool; for whatever the ingenuity of the instruments provided for the surgeon's use their success must ultimately depend on the skill of the hand which uses them.

THE SPA TREATMENT OF DISEASE.*

BY

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ALTHOUGH it cannot be claimed that there is anything strikingly new or original in the remarks that follow, it should in extenuation be borne in mind that systematic study of this branch of medicine has hitherto, I believe, found no place even in British universities so enlightened as that which this Branch is fortunate enough to possess within its area, and a presentation of some of the problems involved may not be without interest.

The virtues of the chalybeate waters of Spa, near Liège in Belgium, were known as early as the fourteenth century, and so famous was this resort some 300 years later that the word "spa" or "spaw" was adopted in this country as the generic term for any spring or well possessing medicinal properties, and later became extended to comprise any town or locality in the neighbourhood of such a spring.

The use of natural waters in the treatment of disease is, however, much older than this, and has obtained from remote times in most widely separated parts of the world—for instance, amongst the Greeks, Romans, Mexicans, Japanese, and Russians, to mention only a few. Even the Father of Medicine himself, Hippocrates, admittedly the greatest exponent of the healing art of all time, has every right to be regarded as a spa physician, since the site of the temple at Cos, where he practised, was, like that of the other Asclepia, selected for its climatic and other natural advantages, and great use was made of hydrotherapeutic and other physical methods of treatment—combined, however, it must be confessed, with a good deal of ritual and mystification. At one time there were as many as sixty or seventy of these temples of health or Asclepia in Greece, and many of them, being situated in the neighbourhood of healing springs, may be said to have combined the functions of present-day hospitals and spas.

In the early days of the revival of spa treatment haphazard drinking of, and bathing in, the waters were resorted to, but with their later development, as the result of experience and the scientific study of hydrology, their internal administration and external application became to some extent systematized, though modifications were, and always will be, necessary to meet individual needs. Many valuable adjuncts in the form of douches, massage, electrical treatments, physiotherapy, and so on have been added.

It is estimated that every year over one million persons seek relief at the European spas alone, and the fact that spa treatment has held its own for so long and is increasing rather than waning in popularity—notwithstanding the fierce competition of the latest synthetic drugs, animal extracts, vaccines, serums, psychotherapy, and the great development of surgery—leads to the natural query, What are the factors to which its success is to be ascribed? The answer, even by those who firmly believe that certain classes of patient will obtain benefit from spa treatment which they will obtain so rapidly and completely in no other way, is by no means easy.

These factors may be considered under three heads. The first may be termed the hydrotherapeutic—namely, the benefit to be gained from the administration of water internally and its application externally, considered as water simply and without regard to any other constituents. Secondly, the pharmacological factor—that is to say, the effect of the salts, gases, colloids, radium emanations, etc., which may be present in the water concerned, its electrical conductivity, and osmotic function. And thirdly, the general hygienic and psychical factors.

Internal Administration of Waters.

It is possible that much of the benefit of spa treatment is due to drinking large quantities of water. Many natural waters are isotonic, or nearly so, and can be taken in

* Presidential address to the Bath and Bristol Branch of the British Medical Association.

considerable amounts without damage to the gastric mucous membrane. This is not true of distilled water or other water of extreme purity, such as glacier water or that of the so-called "poison spring" at Gastein, which are known to have a definitely deleterious effect on digestion. Many natural waters, too, are thermal, and in certain cases it may be an advantage to avoid the abstraction of heat occasioned by the ingestion of much cold fluid. It was found, for instance, by Winternitz that the drinking of 500 c.cm. of water of a temperature of 46.5° F. caused a fall in the rectal temperature of nearly two degrees in twenty minutes.

Both reason and experience dictate that the ingestion of large quantities of water, such as is the practice at many spas, should take place when the stomach is empty. Otherwise, not only may digestion be retarded by dilution of the gastric juice and distension of the stomach, but absorption and excretion proceed less rapidly; and since, according to prevailing views, the object to be attained is a flushing effect on the tissues, this would be an obvious disadvantage. It has been shown that water taken when the alimentary tract is relatively empty reaches the duodenum in thirty seconds and the colon in five or six minutes, so that it is very rapidly absorbed and excreted, and conceivably helps in the elimination of bacterial toxins or poisons formed as the result of faulty metabolism.

Copious water-drinking leads to an augmented excretion of fluid—to some extent from the bowel, to a greater extent from the skin, but more still, at ordinary temperatures, from the kidneys. Not only is a greater amount of water passed, but there is said to be also increased excretion of urea, chlorides, sulphates, and phosphates. With regard to chlorides the increase is but temporary and is followed by a diminution, so that the total quantity of chlorides voided remains the same. The increase of urea, of phosphates, and of sulphates, however, is persistent—that is to say, continues as long as the additional fluid is imbibed—and, since no loss of body weight occurs, the probability is that not only is there a greater disintegration of the tissue elements which give rise to these, but that there is, in addition, an increased formation—in other words, a definite quickening of metabolism. This is confirmed by the recent experiments of J. B. Orr,[1] which show that excessive ingestion of water in healthy individuals leads to increased excretion of urinary nitrogen, increase of total nitrogen excreted as urea, marked increase in excretion of ammonia, and decrease in faecal nitrogen—results which he considers as evidence that both the anabolic and katabolic phases of protein metabolism are accelerated.

It was shown as long ago as 1910 that increased water ingestion diminished the number of bacteria in the faeces, and since one source of the pressor substances responsible for hyperpiesis appears undoubtedly to be bacterial action upon the proteins in the intestine, it is interesting to note that Orr[2] has found a definite fall of the systolic and diastolic pressures in both normal and hypertensive individuals after drinking three or four litres of water, though where diuresis is unable to keep pace with the intake the fall may be preceded by a rise above the original level. Increase in the parotid and pancreatic secretions has been observed in animals after copious water-drinking; the bile, too, is said to be increased both as regards its fluid and solid constituents, and its specific gravity diminished.

External Application of Waters.

With regard to the external application of water there is no need, after the admirable cinematograph demonstration given to the society as recently as last year by Dr. R. G. Gordon, even to enumerate the various methods employed, but some of the physiological alterations produced in the body may perhaps be considered—that is, as far as they are known, for although many careful and exhaustive experiments have been carried out there still remains much to be learned.

It has been calculated that the pressure in an ordinary bath of plain water is as much as 500 kilograms. The tendency of this pressure—a tendency which, however, may be counteracted by other factors—is to constrict the superficial blood vessels and thus to drive the blood into internal parts. This is probably the explanation of the diuresis which may result even from hot bathing. The chief effects of baths, however, probably depend upon the temperature at which they are administered. Baths at or about the temperature of the skin—namely, 93° F.—are designated athermal or indifferent. They have no thermal results, but have a markedly sedative action on the nerve endings in the skin, and through them on the nervous system as a whole, and are thus of value in relieving pain and facilitating movement in conditions where muscular spasm is present, as in some cases of chronic arthritis and the results of injury.

The subjects of paralysis from organic disease of the nervous system at one time formed a considerable proportion of those sent to spas, and R. G. Gordon[3] has of recent years given an impetus to the revival of this practice by stressing the value of the sedative influence of warm baths in relaxing muscle rigidity and the counteraction of the effect of gravity by the water in rendering passive and re-educative movements more readily performed. Baths of a higher temperature have additional effects. In the first place, the amount of perspiration is increased, and as much as a pound of weight may be lost in sweat by immersion in a bath for thirty minutes at a temperature of 100° F., or for a less period at a higher temperature; whilst Raiment's researches at the Royal Mineral Water Hospital show that its composition may undergo modifications the significance of which we are not yet in a position to appreciate. At the same time the body temperature rises. This is only to be expected, since loss of heat from the skin, whereby some 90 per cent. of heat loss normally takes place, is, with the exception of the small area of the face and scalp, entirely prevented. It is difficult to imagine in these circumstances, with the body immersed in a medium hotter than itself so that loss of heat by conduction, by radiation, and by evaporation is almost completely in abeyance, how the temperature can fail to rise if the production of heat is maintained at the former level. Indeed, it seems wonderful that it does not rise to a greater extent than is actually the case, for observations show that the intake of oxygen and the output of carbon dioxide may be increased by as much as 50 to 100 per cent., indicating apparently that metabolism is not diminished and slowed down, as might be anticipated, but actually increased. These facts are very difficult to reconcile, since the body temperature seldom rises as high as that of the bath, though Dr. J. B. Burt[4] found a slight rise of temperature in patients bathing in simple water at a temperature below blood heat—namely, about 96° F.

Recent experiments at the Department of Physiology at Pennsylvania showed that immersion in baths at 36° C., rapidly raised at the end of an hour to 40.2° to 43° C., caused a rise in body temperature at the rate of from 1.9° to 5.3° C. per hour, greater depth and rapidity of breathing, with marked diminution of the alveolar carbon dioxide tension, increase of the *p*H value of the plasma, and diminution of carbon dioxide in the blood. The urine was increased in quantity and became alkaline, in half the cases becoming even more alkaline than the blood.

These observations seem to show that the effect of hot bathing on metabolism is much more complex than was formerly supposed, and other detailed investigations into this interesting problem might profitably be undertaken. It is easy to understand, for instance, how an air temperature of 70° F. feels comfortably warm, whilst a bath at the same temperature feels cold, since water is a much better conductor of heat than is air; but it is difficult to explain the difference in one's sensations in water and in air at temperatures ranging from 100° to 105° F. The artificial pyrexia may persist for an hour or more after the bath, and is in all probability an important factor, especially in many so-called rheumatic conditions where the body temperature tends to be subnormal.

Of equal importance with the temperature is the length of stay in the bath. A hot bath of brief duration acts as a stimulant, but a bath too prolonged is succeeded by a condition of lassitude and debility, and even of tetany—results carefully to be avoided in practice. In this country the best results, where thermal effects are desired, have usually been obtained from baths at a temperature of 99° to 105° F., with a duration of fifteen to twenty minutes.

At Kusatsu in Japan the temperature of the water is 130° F.; the bather has to be encouraged to enter the water by the beating of gongs, and can only remain there two or three minutes. As a contrast to this, at Kawanaka, also in Japan, where the temperature of the water is just below blood heat, the patient stays in the bath for weeks on end, with stones in his lap to prevent him floating during sleep.

It has been stated that one result of hot bathing is to augment the amount of urea excreted; but the evidence on this point is conflicting, and though, as has been explained, it is difficult to conceive that metabolic processes can be increased whilst the person is actually in the bath, and while they, with the exception of the lungs and respiratory muscles, are perhaps rested, it may be that they are speeded up subsequently, especially if, as is frequently the custom, the patient is packed in hot blankets afterwards.

Schamberg and Rule[5] have demonstrated that syphilitic infection of rabbits after testicular implantation of the virus can be prevented by eleven daily baths, each for fifteen minutes, at 113° F., with an average rise of body temperature of 5° F., if the first bath be given within three or four days of inoculation; and that the disease in the chancre stage can be completely cured by fifteen such baths. Schamberg and Tseng showed that an emulsion of *Spirochaeta pallida* heated for one hour at a temperature of 40° C. failed to produce syphilis, though the spirochaetes were still motile. In treating by hot baths human beings suffering from syphilis they found perceptible improvement in the cutaneous manifestations, sometimes to the point of disappearance, but only a slight change in the Wassermann reaction. It must be borne in mind, however, that the normal temperature of rabbits is some four or five degrees Fahrenheit higher than that of man, and while the temperature of the rabbits was in some cases raised as high as 109° F., the highest point reached in human beings was several degrees lower.

These experiments suggest the possibility that the rise in temperature produced by hot bathing may have either a direct devitalizing action on the micro-organisms responsible for some forms of infection, or else may have an effect in raising the body resistance. Colebrook, Eidinow, and Hill,[6] in an inquiry into the effect of radiant and other heat on the bactericidal power of the blood, came to the conclusion that heat and other "insults" to the skin provoke or increase the defensive power of the body (*a*) by a direct effect in improving immunity, and (*b*) by stimulating the immunizing mechanism through the absorption of the products of tissue damage. Schamberg and Tseng also found, consequent on the hot baths given to syphilitic subjects, (*a*) a transient leucocytosis, followed by a brief reduction in the white cells; (*b*) a slight rise in systolic blood pressure and frequently a great drop in the diastolic pressure, both of temporary duration; (*c*) a fall in the blood cholesterol averaging 10 per cent.; (*d*) a rise in the blood sugar averaging 10 per cent.; and (*e*) no material influence upon the urea, nitrogen, blood uric acid, or proteolytic or lipolytic enzymes. Both hot and cold stimuli of a gentle nature are said to assist the circulation by stimulating the unstriped muscle fibres of the blood vessels, causing an alternate contraction and relaxation, the so-called peripheral heart of Onimus.

It is also claimed that bathing has an important effect on the "perspiratio insensibilis," which may include fluid not only from the sweat glands, but also water from the body tissues and the blood stream itself, whereby waste products, probably mainly acid, which the lungs are unable to deal with, are eliminated in the form of gases or vapours. Baruch showed, in a number of experiments on both healthy and diseased persons, that the number of red blood cells and leucocytes was almost constantly increased after hot bathing, and that there was a less marked increase of haemoglobin. A considerable increase of the relative quantity of acid phosphate in the blood, sometimes to as great an extent as 100 per cent., has also been demonstrated. The action of vapour baths, which, however, are given at a higher temperature—100° to 115° F.—resembles that of hot immersion baths as regards the production of pyrexia; but with hot-air baths, there being no hindrance to evaporation from the skin, there is little or no rise of body heat, whilst the amount of perspiration is even greater.

The effect of douches varies with the temperature at which they are given and the pressure employed. At extremes of temperature they are powerful stimulants, both locally, to the circulation at the spot where applied, and generally, by their reflex action on the nervous system. Subthermal douches at a low pressure are, on the other hand, pronounced sedatives.

The action of cold baths need not be exhaustively considered, since their chief therapeutic indications are in acute diseases rather than in the chronic maladies dealt with at spas. They cause an enormous increase of heat production, a slowing and strengthening of the circulation, and rise of blood pressure, and are, or should be, followed by a reaction in which the skin flushes and the mental and bodily vigour is increased. Cold, either as a brief immersion bath or as a douche, has therefore a valuable stimulant effect where this power of reaction is present, but must be used with caution in the debilitated and at the extremes of life, where this power is apt to be lacking. Of great importance, however, is the improvement which can be wrought by these means in the power of reaction of the skin. The Russian is said to go straight from his vapour bath to roll in the snow, and though it is not usual in this country to aim at a contrast quite so violent as this, there is no doubt that the nutrition and readiness of response of this organ, so essential in a changeable climate, can be vastly bettered by suitably adjusted hydrotherapeutic measures.

Pharmacological Effects.

When we come to discuss the pharmacological effects of natural mineral waters we find ourselves on even more debatable ground. Though he does not appear to be referring exclusively to waters of this kind, Hippocrates, over two thousand years ago, said that "as waters differ in their taste and weight so do they differ in their action upon the body."

Spa waters may be divided into the following groups: (1) the indifferent thermal, (2) alkaline, (3) acidulated, (4) calcareous, (5) sulphur, (6) muriated, (7) sulphated, (8) chalybeate, and (9) arsenical. Whilst many of these waters may produce the pharmacological effects to be expected from their chemical constituents it is not proposed to spend time on these, but to consider whether there may be, in addition, any specific factor or factors common, perhaps, to all, for it cannot be denied that waters differing widely in their characters often appear to be beneficial in the same classes of disorders.

The, at first sight, astounding theory has been advanced by some geologists that many thermal waters, and perhaps other natural mineral waters, are not derived, like the water of ordinary springs, by percolation from the earth's surface, but are formed primitively in the bowels of the earth by the union of nascent hydrogen and oxygen liberated in the breaking up by heat of granite rocks. Be this as it may, it appears to be established beyond question that it is impossible to reproduce by artificial means the conditions which are found in a natural mineral water, and there are various properties to which the therapeutic value of spa waters has been attributed, such as radio-activity, the presence of elements in the form of free ions, the colloidal condition of the substances present, and the presence of rare metals in minute quantity; whilst some hold that it is not so much in the variety of the elements and in their respective quantities, as in the relative proportions of those elements, that the property of a mineral water resides.

Although the water of ordinary springs, and even tap water, may contain traces of radio-activity, the amount is usually very much greater in the waters of spas, and some hold that this is an important therapeutic factor, especially since benefit has been claimed in diseases such as are usually alleviated at spas by the administration of artificially prepared radio-active water, which, too, has been shown to produce diuresis and increase the excretion of uric acid, carbon dioxide, etc., and to lower the blood pressure.

If radio-activity is indeed a factor of importance it affords a reasonable explanation of the time-honoured dictum that a spa water must be drunk at its source and not taken away in a bottle, for radium emanation is rapidly disintegrated, its period of decay, according to Ramsay, being four days. It must not be forgotten, however, that the quantity of radium or its products varies enormously in the different mineral waters, and that spas having little, claim—probably with justice—as good results for the same class of disorders as those having much, and it has recently been suggested that the secret may lie in the ionized or in the colloidal state of substances contained

in the water, or in the interrelationship between radio-active substance, ions, and colloids.

Noteworthy in this connexion are some experiments by Sarmento and Kopazcewski[7] with the water of Vidago, an alkaline water somewhat similar to that of Vichy, which, however, on standing becomes first opalescent, then yellowish, and finally clear again as the suspended particles settle. These investigators injected thirty-six guinea-pigs each with 0.4 c.cm. of 5 per cent. rabbit serum. Six were kept as controls; of the remainder, fifteen were injected daily with 3 c.cm. of fresh Vidago water, and fifteen with water which had been kept four or more days. At the end of twenty days all the guinea-pigs received an injection of 0.2 c.cm. of horse serum. The six controls died of anaphylactic shock. The animals injected with "dead" water showed distress, some becoming comatose, but all recovered within a few minutes. Those injected with fresh water showed no symptoms whatever.

Ferreyrolles[8] has shown that guinea-pigs and rabbits injected intraperitoneally or intravenously with Choussy Perriere water exhibited an increase of leucocytes in the blood to, roughly, double their previous number. A similar injection fifteen days later produced no leucocytosis, while a dose of typhoid toxin, lethal for animals of similar size, produced no effect.

Billard[9] injected three guinea-pigs with a dose of tetanus toxin—lethal in ninety-two hours—two days, seven days, and ten days respectively after injecting them with Choussy Perriere water. The first showed local tetanus of the abdominal wall but eventually recovered, the two others showed no symptoms. Billard has further demonstrated that certain neurotoxins—such as sparteine, snake venom, diphtheria toxin, and tetanus toxin—when mixed with various mineral waters may be inactivated so that doses ordinarily lethal produce no effect, different mineral waters inactivating different toxins.

Results such as these, of which only a few examples have been quoted of numerous similar experiments carried out on the Continent, suggest that there is still much to be learned if full use is to be made of these natural agencies.

Sneider, Bricaud, and Grigaut, in an examination of the blood of gouty patients undergoing treatment at Contrexéville, found that uric acid, excessive at the start, instead of diminishing, actually increased during the course of treatment, but was found to be much less a month or two later, the explanation suggested being that excess of uric acid in the tissues was being "washed out" into the blood, and only gradually eliminated by the kidneys. These findings have been confirmed at Buxton, the average increase of blood uric acid at the end of a three weeks' course being 1.9 per cent., while at the end of a further three weeks a reduction equal to 25.5 per cent. had taken place.

Another property of spa waters which has of recent years been the subject of investigation is their power of activating ferments. It has been shown, for instance, that trypsin added to various of the French natural mineral waters has from two to five times the digestive power of an equal amount in distilled or tap water, and no description of a French mineral water is now considered complete without mention of its "zymosthenic index." Examination of spa water by modern methods, and especially by the use of the quartz spectrograph, has in many cases revealed the presence of a much greater number of metals than older analyses showed, and when we learn that so infinitesimal a quantity of manganese as 1 part in 40,000,000 parts of water will determine the fruiting or not of certain plants, and that broad beans will perish unless they get boron, though so little as 1 part in 12,500,000 is sufficient, we may well hesitate to conclude that traces of rare metals such as caesium or rubidium are altogether without therapeutic effect.

J. B. Burt claims that there are three phenomena characteristic of the action of natural thermal baths which are not found after the use of simple baths: (1) that diseases are alleviated, the action on true gout being so decided that it might almost be called specific; (2) the occurrence of thermal crises, usually in the second week of treatment, characterized by increase of pains, lassitude, and mental depression; and (3) the supervention after treatment by too many baths or baths of too long duration of the condition known as thermal debility. None of these, he states, follow the use of baths of ordinary water. In a patient with a biliary fistula, Mayo Robson found that an aerated alkaline water increased the flow of bile more than any of the reputed cholagogues; other experimenters, however, have failed to confirm this.

Conclusions arrived at as the result of investigations into the effect of spa waters on the output of urine are somewhat at variance. Race[10] found that Buxton water given to gouty subjects has a definite and specific diuretic effect over and above that of distilled water: that it increases the elimination of sodium chloride; and that it decreases the hydrogen-ion concentration and favourably influences nitrogen metabolism by increasing the percentage excreted as urea and reducing the percentage excreted as uric acid and undetermined nitrogen.

It is important, of course, to remember, both as regards diuresis and diaphoresis in the maladies treated at spas, that it is not as a rule simply the elimination of water that is aimed at, but the removal by these means of deleterious substances or the products of increased tissue change.

Peskett and Raiment,[11] in a careful and laborious investigation, found that in healthy subjects Bath mineral water had no effect, as compared with tap water, in increasing either the volume of urine or the amount of total nitrogen, urea, or uric acid contained in it, but that there was some increased excretion of acid radicles and of phosphates. The value of their experiments, however, is very largely, if not entirely, discounted by the fact that the mineral water was given with meals, and not, as has always been the spa custom, on an empty stomach. Although its mineralization is so low as to bring it into the class of "indifferent" waters, the total solids only amounting to about 230 parts per 100,000, the Bath water when fresh presents under the ultramicroscope a perfect colloidal picture, and if the most recent views with regard to the importance of the degree of colloidal dispersion are correct, and when it is realized how readily the colloidal condition is destroyed by, for instance, an acid, it may well be that the time-honoured practice of insisting on these waters being taken before meals may be of paramount importance, and no experiments can be regarded as in any way conclusive unless carried out under these conditions.

General Factors in Spa Treatment.

Finally, there remains to be considered the influence of the various subsidiary factors which come under the heading of general hygienic and psychical. Every practitioner is alive to the profound effect which may be produced by transference from a bleak, dry, wind-swept area to a soft sheltered one, or, conversely, from a still, enervating climate to one fresh and bracing. Other differences of environment are of almost equal importance. Of still greater value is the enforced rest from the strain and anxieties of business, the worries of domestic details, or the enervating effects of dissipation. Change of diet, too, plays a part in assisting the change in metabolism which spa treatment is directed to bring about, while the drinking of large quantities of water, besides the physiological effects which have been mentioned, may mean the drinking of less whisky or less tea—no mean advantage in some instances. Then comes the question as to what part suggestion plays. The very use of the word "cure" for a course of treatment—considered by some a master stroke on the part of whoever originated it—at the outset tends to put a patient in the right frame of mind for responding to the influences that are brought to bear on him, and the effect is doubtless enhanced by the optimism of bath attendants, masseurs, etc., and by mingling with others who are receiving or have received benefit. Another factor of importance is the special experience that masseurs and masseuses obtain in regard to the particular class of patient that frequents the spa. Further, physicians at spas amass an experience of certain diseases much greater than falls to the lot of the general practitioner, and naturally tend to take a keener interest in them, especially since, being as a rule diseases of a chronic nature and not endangering life, they are likely to appeal less strongly to the family doctor than more dramatic happenings.

The foregoing observations, imperfect though they be, may incline you to believe that the potentialities of balneology are not inconsiderable. It will be evident, however, that treatment to be effective must be varied to meet different conditions and to suit different constitutions, and that any attempt to stereotype methods in the many diverse departures from health amendable to spa treatment is foredoomed to failure.

If there be, as many think, some specific influence in these natural waters, it must ever be remembered that it is not to be supposed that diseases will be cured by any direct action of such a remedy, but rather that it will,

like any other remedy, act as a stimulus to those defensive powers in the human body which need to be called into play, and that different individuals cannot all be expected to respond to the same stimulus to the same extent or even in the same manner. Analogies with the treatment of syphilis are suggestive in this connexion: it is well recognized that over-treatment of this malady may be as bad as, or perhaps worse than, no treatment at all, and that the problem in the cure of syphilis is not to get as much of the specific remedy into the body as possible, but that amount which is capable of producing the optimum response by the tissue defences in the individual concerned. Such a view of the mode of the specific action, if any, of a mineral water would go far to explain certain difficulties and anomalies which are sometimes encountered.

There is no doubt that there is a vast field for experimental research into the many problems connected with spa treatment, of which only the borders have as yet been explored. Further, there is need for more publication of the results of treatment of series of cases. It is to be regretted that physicians at spas so seldom put on record their experiences. For this there are probably three reasons: first, a natural, but perhaps undue, apprehension that such a proceeding lays the writer open to the charge of advertisement; secondly, the difficulty of following up the after-histories of patients who are only under direct observation for a short time; and, thirdly, the fact that many of the cases met with are of a very chronic character, and that so much damage has been already done that several courses of treatment may be necessary before the complaint is brought to a standstill, and even then full functional restoration may be impossible. I think it was Sydenham who said, "Chronic diseases require chronic treatment," and this is as true of spa therapy as of any other—a point perhaps not sufficiently recognized and insisted upon.

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FRACTURES OF THE LOWER END OF THE RADIUS IN ADULTS

(*COLLES'S FRACTURE AND BACKFIRE FRACTURE*).

BY

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THE following account is based on an analysis of 424 cases of fracture of the lower end of the radius treated in the fracture clinic of King's College Hospital during the three years 1924–26. Of these fractures 251 occurred in women and 173 in men and youths. Of the latter number, no fewer than 84 were caused by backfire injury from cranking a car. The remainder, and all those occurring in women, with one exception—a backfire fracture—were of the Colles type. Cases of separation of the lower epiphysis of the radius, except those occurring from backfire injury, have not been included within the scope of this article.

THE COLLES TYPE OF FRACTURE.

In all there were 339 cases which might be regarded as of the Colles type, and sustained by falling on the outstretched hand: 250 were in women, and 89 in men. Radiograms, both antero-posterior and lateral, were available for examination in 275 of these cases.

(*a*) *The Radial Fracture.*

In the majority of cases the fracture was transverse, and at the upper limit of the radial surface which enters into the formation of the inferior radio-ulnar joint (Fig. 1). In a few cases the fracture was at a higher level (Fig. 2), and in others a shade lower (Fig. 3). In one case the line

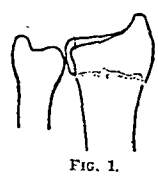

FIG. 1.

FIG. 2.

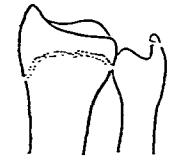

FIG. 3.

of fracture ran obliquely downwards from a point fully 1¼ inches above the radial styloid process (Fig 4). In cases where severe comminution was present the radiating line of fracture ran vertically up the shaft, and in some cases down to the joint surface. In a number of cases there was a single vertical split passing from the transverse fracture to the joint surface. *Radial rotation of the* lower fragment was present in all cases, but varied very much in degree in different fractures.

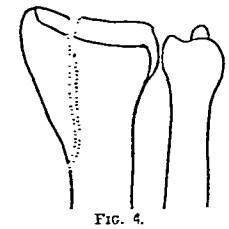

FIG. 4.

Lateral views showed a varied picture. In some there was no sign of fracture in the lateral plane. In a fair proportion of the cases the posterior lip of the radial articular surface was broken off. In a few cases there was little or no appreciable displacement, but in the vast majority there was backward tilt of the lower fragment, so that the articular surface of the radius faced downwards and backwards. This was usually, but not invariably, associated with bodily backward displacement of the lower fragment. In cases where the posterior lip of the radial articular surface was fractured the backward tilt was very marked. In a few cases the carpus was carried bodily backwards with the fractured posterior lip, so that the condition was actually a fracture-subluxation. It is important to remember that this is likely to be present when the deformity is gross, so that steps may be taken to ensure complete reduction. The articular surface appeared to be involved, usually in the manner described above, in 95 of the cases. It is not always possible to be certain of this point from the radiograms, but the figure indicates that the wrist-joint is involved in a high percentage of the cases.

It is doubtful how often the inferior radio-ulnar joint was involved, it being extremely difficult to determine this point. In some cases the joint was very obviously involved, but in the majority the fracture appeared to be just above the upper limit of that joint. It is a common experience to find pronation and supination the last movements to return fully after fracture, and although no correlation between delay in obtaining these movements and fracture into this joint has been found possible in this series, it appears very probable that joint involvement is the cause of the delay in most instances.

(*b*) *The Ulnar Fracture.*

In 153 of the 339 cases the ulna was fractured. In all but 8 of these the fracture was of the styloid process. In one case it was through the shaft fully three-quarters of an inch from the lower end. Fracture of the styloid process occurred in all situations, from the base to the tip. In one case two fragments were broken off.

Whether the ulnar styloid does or does not fracture depends to a great extent upon the amount of radial abduction into which the hand is forced at the time of impact. It would also appear to depend upon the anatomy of the styloid process itself. This varies very considerably. In some cases it is long and narrow, with a curve to the radial

side (Fig. 3). This type invariably fractures. In others the ulna ends in a rounded extremity, with little or no suggestion of a styloid process at all. All degrees are met with between these two extremes. In some cases the process is conical, with a pointed distal extremity and an extremely wide base (Fig. 8). This type rarely fractures.

Fracture of the ulna appears to make very little difference to the end-result. In fact, we have had frequent occasion to note that patients in whom the ulnar styloid is not fractured are more likely to complain of tenderness over the internal lateral ligament than those in whom fracture of this bone has occurred.

(c) *Other Fractures.*

In only one case was the scaphoid fractured in addition to the radius or ulna.

DIAGNOSIS.

There is little need to discuss diagnosis, which is usually a simple matter. Antero-posterior and lateral radiograms should always be taken, even when the diagnosis of fracture on physical signs is certain. Radiograms should be taken in all cases of wrist injury, for a linear impacted fracture may be present with no well-marked physical signs.

BACKFIRE FRACTURE.

There were 85 cases of backfire fracture, and the radiograms of all were available for examination. They comprised the following types in order of frequency.

1. Oblique fracture through the radial styloid process, with or without fracture of the ulnar styloid. The line of fracture was usually from the outer side to a point about midway along the articular surface, corresponding to the interval between the scaphoid and semilunar bones (Fig. 5). In some cases the line of fracture was longer and more oblique. In extreme cases it ran into the distal end of the inferior radio-ulnar joint (Fig. 6).

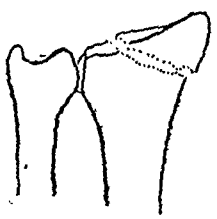

FIG. 5.

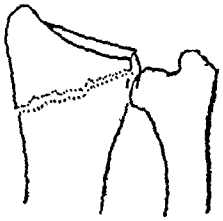

FIG. 6.

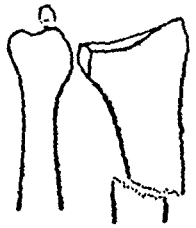

FIG. 7.

Displacement was not marked as a rule. The total number of cases was 28.

2. Colles's fracture (16 cases).

3. Injury to the epiphysis, in some cases with separation and backward displacement (12 cases).

4. High fracture (10 cases). The line of fracture was at or just below the junction of the lower and middle thirds of the radius, and was transverse or slightly oblique (Fig. 7). In two cases the ulnar styloid was also fractured. In this type the upper end of the distal fragment is carried just in front of the lower end of the proximal fragment, and the carpus and lower end of the radius are carried backwards.

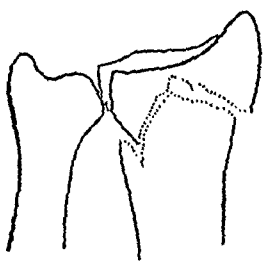

FIG. 8.

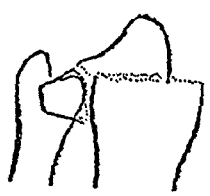

FIG. 9.

5. V-shaped fracture (7 cases). The styloid process was broken off, as in the oblique type, and in addition a fragment of similar size from the ulnar aspect of the radius (Fig. 8). The lines of fracture met at the mid-point of the radial articular surface, corresponding to the interval between the scaphoid and semilunar bones. In one case there was gross displacement of the fragments to the inner side (Fig. 9).

6. "High Colles" (6 cases). Fracture occurred well above the usual site for a Colles (Fig. 10). In one case both bones were broken at the same level. In the other cases the epiphyses had not yet united. This is of interest in that it suggests that the fracture resulted from a direct blow from the starting handle of the car.*

7. Ulna only, just above the distal end (2 cases).

8. Colles's fracture with inward displacement (1 case).

9. Atypical Colles's fracture, a combination of types 1 and 2 (1 case).

10. Trapezium only (1 case).

11. Radial styloid and scaphoid (1 case).

TREATMENT.

The treatment adopted in this clinic as a routine when deformity is present is reduction of the fracture under gas anaesthesia as soon as the diagnosis is made. The method used is that advocated by Sir Robert Jones—that is, disimpaction of the distal fragment by direct backward force, followed by replacing the fragment by direct force forward. The actual way in which this manœuvre is carried out varies with the individual operator, but there is never any call for the use of the older metl[illegible] the hand in order to obtain the necessary [illegible] care is always taken to correct the backward tilt of the lower fragment, and the radial deviation. This is of far more importance than the correction of the backward displacement, though this also should receive attention. When reduction has been obtained the wrist is kept in flexion, and is held in this position until the splint is applied. As has been stated, the carpus may be bodily displaced backwards (fracture-subluxation). This displacement is easily corrected if the wrist is fully flexed. A lateral *x*-ray photograph is taken immediately after reduction and fixation on the splint, as a routine. If the backward tilt is uncorrected (except in certain instances—*vide infra*), a further attempt at reduction is made.

The results of treatment go to show that unless perfect reduction of the backward tilt is achieved a perfectly functioning wrist-joint is not obtained. In interpreting the radiogram after reduction it should be borne in mind that normally the radial articular surface faces slightly *forwards*. The only exceptions to the rule of obtaining perfect reduction of the backward tilt are:

(*a*) In old people, if this has not been effected at the first attempt. Each case is seen by the surgeon at the clinic, and in the aged, rather than submit them to the ordeal of a second anaesthetic, it is usually adjudged satisfactory if the tilt is corrected sufficiently to allow the radial articular surface to face directly downwards.

(*b*) When severe comminution is present. In such cases, although it may be possible to replace the lower fragments by manipulation, it is often impossible to retain them in position. The bone is so pulped that the splint fails to give the necessary support, and the deformity recurs.

It may well be asked why in this clinic we attach such importance to the correction of the backward tilt. In our experience an uncorrected tilt invariably results in a weak wrist. Reference to the diagram (Fig. 11) will show that when this tilt is uncorrected the flexor tendons cannot act

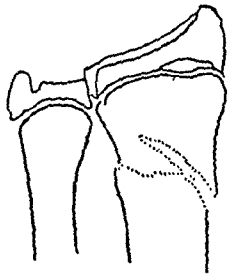

FIG. 10.

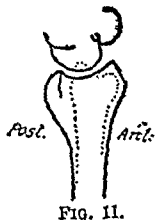

FIG. 11.

along their normal straight line, and this may impair their mechanical efficiency to some extent. The main cause of the weak wrist, as Mr. H. A. T. Fairbank permitted one of us to point out in the previous communication already referred to, lies in the fact that the radial articular

* For a more detailed account of the mechanism of backfire fracture see communication by one of us (H. E.) in the *Journal of Bone and Joint Surgery*, vol. 8, No. 4, pp. 701-717.

surface faces downwards and *backwards*. The pull of the long tendons passing over the back of the wrist-joint tends to make the carpus slip backwards over the obliquely disposed radial articular surface. For this reason the muscles act tentatively, and not to the full extent of their power, and the natural outcome is a weakened wrist. In late cases of unreduced backward tilt a successful result has attended operative reduction of the deformity by means of a curved osteotomy.

The chief significance of an uncorrected radial deviation lies in the remote rather than in the immediate result. The mechanism of the wrist is permanently upset, and though perfect function may be obtained for the patient before he finishes treatment, yet the joint is predisposed to the development of arthritis in succeeding years. Except for the unsightly deformity, an unreduced backward displacement is of little importance, and in no way interferes with the obtaining of a perfect functional result. It is the joint which matters, and be a fracture of the radial shaft anywhere along the course of the bone, near to the wrist-joint or remote from it, minor degrees of malalignment do not prejudice the issue.

Splinting.

The essential feature is to keep the wrist straight or slightly flexed to prevent the distal fragment from slipping back into deformity. In this clinic Carr's splint is used as a routine. Used in the correct way, Carr's splint is very efficient, and possesses many advantages over the various splints which have been invented to supplant it. It is very cheap and easily made, and when well applied is comfortable. It is important not to have the splint too wide. It should be a shade narrower than the diameter of the forearm just above the wrist. If wider the wrist will not lie snugly, and lateral movements will be possible. The splint does not hamper finger movements, which we regard as being of extreme importance in preventing stiffness and preserving the tone of the long flexor and extensor muscles. The patient is encouraged to perform them from the outset. Lastly, the splint is made of wood, and permits of *x*-ray examination after reduction. The splint is applied as follows:

The forearm, after reduction, is placed on the splint, which is covered with a very thin layer of wool. One pad of wool in addition is arranged under the lower end of the proximal fragment. The height of the pad can be varied to suit each individual case, and the extent of palmar flexion required thereby adjusted. A second pad is carefully placed over the distal fragment to maintain its position and prevent it from slipping back. With the arm held on the splint by an assistant fixation is obtained by means of two strips of adhesive plaster one inch wide. One, the first applied, passes over the pad on the distal fragment to secure the latter firmly in position, and a second is placed higher up the forearm to hold the splint in position. A calico bandage is bound over all, one turn passing between the thumb and first finger to prevent wrist movement, and after ascertaining that the circulation in the fingers is unimpaired, a lateral radiogram is taken: this should be examined before the patient leaves hospital. A poor result, particular attention being paid to the backward tilt, will necessitate a further attempt at reduction, unless this is contraindicated by age or the degree of comminution of the fracture. This second attempt should not be delayed for more than a few hours.

We do not adhere rigidly to Carr's splint, however, although it is used in the vast majority of the cases. If there has been very gross backward displacement and tilt, a posterior curved splint of aluminium is occasionally used, which permits of holding the wrist in full flexion. This splint has been found particularly useful in cases of fracture with complete separation of the radial epiphysis —one of the types of backfire fracture, and one often extremely difficult both to reduce and to hold in reduction.

Treatment of the various types of backfire fracture is carried out upon similar lines, with obvious exceptions. In the high type (No. 4) the arm is usually placed in supination on a back splint after reduction, followed by plaster in a few days. In one case in the present series it was found necessary to perform an open operation and plate the bone.

Massage and Movements.

Massage and movements are undertaken chiefly by students training as masseuses, who work under supervision. The interval elapsing between the injury and the time of commencement of massage varies. No hard and fast rules are followed with regard to the time of commencement, but, generally speaking, massage is commenced during the first week in old patients, and delayed for anything up to fourteen days in younger patients. The general routine carried out by the masseuse is as follows:

For the first fortnight after reduction massage is given on the splint, and the only movements permitted are finger movements. These, as stated previously, are very important. When there is much pain and swelling, or stiffness of the joints, or when the patient is nervous, these movements are assisted by the masseuse. Massage consists of effleurage to the fingers, back of hand, and forearm. This is given with the utmost gentleness, since undue pressure over the forearm might result in recurrence of the displacement of the distal fragment. We have found that pain over the internal lateral ligament of the wrist is a common complication. Friction massage is therefore given over the ligament after the seventh day, making this deeper after three weeks. For swelling and stiffness of the fingers friction massage is employed over the joints and dorsal tendons in addition to effleurage. Early in the treatment the shoulder movements are tested. When any limitation is found, the joint is taken through its range of movement at each attendance, and the patient instructed to perform this exercise at home.

After fourteen days the forearm is lifted off the splint on to a table. The anterior surface of the forearm is now massaged as well as the posterior, kneading massage being employed as well as effleurage. Flexion and extension and rotation movements are usually commenced at this stage. The wrist is gently flexed and extended over the edge of the table, either passively or assisted, the masseuse placing one hand over the lower end of the radius to support the fracture. It is important that the distal fragment be firmly supported to prevent movement occurring at the site of fracture instead of at the joint. Flexion and extension movements are followed by very gentle passive or assisted supination and pronation. The hand is held in ulnar deviation to avoid strain on the internal lateral ligament while these various movements are being performed. The splint is worn from three to four weeks, and followed by a sling for a few days, when active wrist, pronation and supination, and full finger movements are practised by the patient at home.

Duration of Treatment.

The average duration of treatment for all cases is nine and a half weeks. This figure takes into consideration a number of chronic patients who attended the physiotherapeutic department for upwards of nine months. If these be excluded it is found that the average duration is about six weeks. In the winter months it tends to be longer than in the summer months. This observation suggests that radiant heat may be of some value in the treatment.

We do not propose to enter into a discussion of the merits and demerits of immediate massage and movement as advocated in some clinics, this article being intended as a simple review of the treatment of cases as carried out at King's College Hospital Clinic. It would not be out of place, however, to point out the reasons why, at this clinic, the after-treatment of the fractures described above is followed.

In the first place, great emphasis is laid upon obtaining and maintaining a good reduction of the fracture. Experience shows that a good alignment affords the best prospect of obtaining a perfect wrist. It cannot be denied that good function often follows a poor reduction. Neither can it be denied that an occasional perfect reduction is attended by a relatively poor function. In the main, however, when a large series of cases are reviewed, there is no doubt that good reduction yields the higher percentage of good results. It must be borne in mind, also, that a malunited fracture, in respect of the radial deviation and the backward tilt, predisposes the wrist to the development of arthritis, and this may mar what had been regarded as a good result in the first year or so after the injury. Massage and movement in the first few days—especially movement—is attended by a very real risk of the distal

fragment being redisplaced. Doubtless the skilled surgeon can safely perform early passive movement, but in the busy rush of hospital practice, where this type of fracture is of such frequent occurrence, this is impracticable, and the work must be done in a department wherein students are being instructed. Apart from this there is a very cogent reason for the postponement of movement. The wrist-joint has been subjected to very severe trauma, and for the first few days it needs complete rest. Movement at the outset probably does more harm than good, and possibly favours the development of traumatic arthritis. The period of complete rest must not be too long, however, especially in old people, for fear of obtaining a stiff joint. A happy mean between too prolonged rest and too early movement is the ideal, and in this clinic we try to attain it. With regard to massage itself, we are convinced that it is not of great importance in the younger patient. Active finger movement does far more to preserve the tone of the long flexor and extensor muscles than massage can possibly do. In old patients the soothing effect of massage is of value, and, as stated, is usually employed during the first week.

It is difficult to give full credit to the very high percentage of good results claimed by some clinics for Colles's fracture. There are so many factors which tend to deprive the surgeon of a perfect result in every case. Not the least of these is the personal factor. We have had frequent occasion to note how two identical fractures undergoing identical treatment vary in the end-result. One patient may obtain a wrist sufficiently sound to admit of his discharge at the end of four or five weeks, while the other drags on for many months with stiffness of the joints, and perhaps pain over the internal lateral ligament. Another factor which is an absolute bar to obtaining uniformly good results is pre-existing arthritis of the wrist and fingers. Examination of this series of radiograms shows this to be of very frequent occurrence. It was present in 26 out of 360 cases (7.2 per cent.). The injury always makes the arthritis worse and the fingers more stiff, despite the fact that in such cases massage is employed at the outset.

The following table has been compiled from the notes of the cases, and gives some indication of the relation borne by the time of commencement of massage and movement to the result obtained. It will be seen that the percentage of good results remains fairly constant irrespective (within reasonable limits) of the time of commencing massage and movements.

	No. of Cases.	Average Duration of Treatment (days).	Percentage of Perfect Results.
Massage commenced—			
Under 10 days	92	67	70
Over 10 days	95	69	78
Wrist movement commenced—			
Under 14 days	65	68	75
Over 14 days	116	62	77
Splint discarded—			
Under 21 days	31	66	84
Over 21 days	155	67	73

These figures are not to be regarded as absolute, and are not intended to be final arguments for or against early massage and movement. They are merely mathematical calculations based upon the material available. For instance, the fact that of 31 cases in which the splint was discarded before three weeks the proportion of good results is 11 per cent. higher than those in which the splint remained on for a longer period in no way indicates that this is the optimum time for splint removal in every case. Of these 31 cases many were linear fractures without displacement, and probably would have done equally well had they not worn a splint at all.

LATE RESULTS.

When it comes to making a definite standard of results difficulties at once arise. It is impossible to set a standard of efficiency beyond which all results are declared good and the others poor. What would be considered a good result in an old arthritic patient might be deplored as a comparative failure in a young working man. Moreover, the following results are based upon answers to a questionary. One patient with a determination to be well will submit a satisfactory report. Another, determined to make the most of it, will discover some complaint even if he has every reason to be satisfied with the result obtained.

The number of copies of the questionary sent out was 416, and the replies totalled 321 (this includes the backfire fractures). In 235 of these (73.2 per cent.) there was no complaint of any kind, and no degree of incapacity to carry out the normal occupation. Many of these cases were in old people, who were obliged to do little or no work, and the fact that they admit being able to carry on with their normal occupation means nothing. For them, however, the result was satisfactory, and they are therefore included in the perfect results.

In the next category are placed all patients who put forward minor complaints, such as "feels stiff in cold or damp weather," "aches after use," "rheumatism in the fingers," "occasionally swells after use." The number of these cases is 74 (23.1 per cent. of the total). All are able to carry out their normal occupations. It is not easy to find causes for every one of these minor complaints: 23 of them had arthritis of the wrist or finger-joints, or both, before the injury; some of them, no doubt, have developed arthritis since. (The cases, it will be remembered, are those of from two to four years ago.) In some of the older patients reduction was not perfect, and they were left with a minor degree of backward tilt. Two of the patients developed small localized thickenings of the palmar fascia; one was a rheumatic subject, but the other was definitely not so; the thickenings were tender. It may be that they arose from irritation of the cross-piece of the splint, or from being bound too tightly in the splint after reduction.

A fairly common complaint is tenderness over the internal lateral ligament. This occurs early after fracture, and has been referred to previously. It appears to be more common in the female than in the male patients. The tenderness usually disappears after treatment, but in a few cases persists. In some of the cases there is some degree of limitation of both flexion and extension, and of rotation at the time of discharge, but this appears to clear up very quickly on the patient's return to work. Occasionally the limitation is very marked both in the wrists and fingers, and persists in spite of treatment. A few of these cases are functional, for the joints become quite mobile under anaesthesia without forcing. An anaesthetic usually cures all but the worst cases of this type. Limitation of movement in one plane only is invariably due to adhesions. Such cases are manipulated under gas anaesthesia. One manipulation is usually sufficient to cure the condition, but occasionally it has to be repeated, for the tendency to relapse is a very strong one. Limitation of rotation is more common than that of flexion and extension, and a certain number of these cases are manipulated. The delay in the return of full pronation and supination probably depends upon involvement of the inferior radio-ulnar joint in the fracture.

The type of work the patient has to do is a factor. Swelling and aching after use are more likely to occur if the occupation be a hard manual one than if it be, say, clerical. Some of the patients write to say that they have no discomfort with ordinary work, but notice pain or weakness after playing tennis. Such patients are mostly of the typist class. The majority of the female cases are occupied in housework, with its varied and manifold duties, some light, some heavy. It is after a day at the wash-tub that their wrists are most likely to make themselves felt.

Such complications as these enumerated are treated upon the following lines. Radiant heat, constant current

or diathermy, is used in addition to massage for pain over the wrist; when this is associated with stiffness, faradism to the forearm muscles is sometimes tried, also sinusoidal current arm baths. When stiffness of the joints persists after eight weeks without pain, the masseuse gives movement of the stiff joints with a steady pull on the resisting muscles. The patient also performs active mobility exercises—pronation and supination with a weighted stick, and wrist flexion and extension by means of a pulley, the patient assisting movement by pulling on the rope with the sound hand. To lengthen the lever arm, the hand is fixed in a clamp and the rope attached to a bar projecting from the distal end.

The remaining 12 cases (3.7 per cent. of the total) may be regarded as bad results. This group is at once the most interesting and instructive, as it gives some indication of loopholes in the treatment. The cases are given in detail.

Ref. No.	Sex.	Age.	Type.	Notes.
C15	F.	57	Colles	Open operation at another hospital. [illegible]
D45	F.	50	Colles	[illegible] ness of wrist and fingers.
A30	M.	61	Backfire, Type 1	Attended for 73 days. Pain and stiffness in wrist: no displacement. Commenced massage on sixth day and wrist movement on thirteenth.
C5	M.	40	Backfire, Type 2	Painful weak wrist, with marked limitation of movement. Marked osteo-arthritis before injury. (There was severe comminution in this case.)
D12	F.	53	Colles	*Painful weak wrist; grip poor; fingers stiff.* Marked osteo-arthritis before injury.
D3	F.	43	Colles	Painful stiff wrist; third and fourth fingers stiff. Very marked comminution with severe backward tilt before reduction. Massage commenced ninth day, and wrist movement on eleventh. Splint discarded on eighteenth day.
E2	F.	41	Colles	Marked limitation of rotation; wrist painful. Massage commenced on third day, wrist movement on sixteenth.
E26	F.	56	Colles	Always stiff and very painful after use. Osteo-arthritis present before injury. Massage commenced on third day, wrist *movement on sixteenth.*
F12	F.	42	Double Colles	*Right wrist:* Weak, with marked backward tilt. Operation by Mr. Fairbank, 1925. Now satisfactory. *Left wrist:* Perfect result.
J16	F.	52	Colles	Wrist and fingers very stiff. Attended for 18 months. Slight unreduced backward displacement.
K11	F.	52	Double Colles	*Right wrist:* Constant pain in wrist; swollen at night. Marked unreduced backward tilt. *Left wrist:* Perfect result. Slight backward displacement, but no tilt.
L9	M.	38	Backfire, Type 2	Backward tilt with a weak stiff wrist.

It will be noted that in three of the cases arthritis was present before injury, and was probably responsible for the bad result. One case (C15) came to the clinic after an open operation at another hospital. Another (D45) attended for a few days after injury, and was then not seen for a period of nine months.

An instructive case is that of F12. Both left and right wrists were fractured. In the left the position was good, and a perfect result was obtained. In the right there was marked backward tilt and a weak wrist in consequence. This was operated upon by Mr. Fairbank, the tilt being corrected by a curved osteotomy. Two years later the patient reports that the wrist is satisfactory, and gives no trouble with housework. K11 also had a double fracture. On the left there was a slight degree of backward displacement, but no tilt, and a perfect result was obtained. On the right there was backward displacement with tilt, and a bad result was obtained. L9 was also left with an unreduced backward tilt. These three cases well illustrate the importance of correction of the backward tilt. In the four remaining cases, no cause for the failures can be assigned.

We wish to thank Mr. H. A. T. Fairbank for the very kindly interest he has taken in this article, and both Mr. Fairbank and Mr. St. J. D. Buxton for allowing us to make free use of the material upon which it is based. Our thanks are also due to Dr. Grace Batten for looking up the very numerous radiograms.

MINERS' CRAMP.

BY

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A CASE of miners' cramp which has lately been under my care is, I think, of sufficient interest to record as the complaint is not uncommon, although references to it in literature are very scarce, and whilst it arises out of and during the course of employment and may make a man lose time for a couple of weeks or more, it is not a scheduled disease under the industrial section of the *Workmen's Compensation Acts.*

A miner, aged 44, was sent to me by his doctor for curious attacks of cramp, which came on while he was working. They began suddenly in the fingers and toes (in tetaniform manner), increasing in severity and gradually ascending the limbs to the back and neck. The cramp in the trunk and limbs lasted a few minutes, then eased somewhat in the limbs, but the hands and feet still remained more or less contracted and would continue so for three to four days. He would then feel well enough to return to work, although not in his former vigour. He has vomited with the severity of the pain. He has had about six or seven attacks during the last two years. He works in a mine, *which he says is very hot and dry, and perspires to a considerable* amount whilst working, and also when walking about after recovering from an attack of cramp.

During his working hours (one shift 5.30 a.m. to 2.30 p.m.) he drinks five to six pints of water, followed by about a pint of tea with his dinner, and half a pint for tea, and he takes about four glasses of beer in the evening—that is, about 8½ pints of fluid in the day. He does not take salt except with his food, and has no particular desire for salt food, as some miners who suffer from the cramps have. His other workmates have complained of similar troubles, but not to such a marked degree. He had been a miner since sixteen years of age, except for fourteen months in 1919-20, when he worked in a bleach-works. He is below the average stature and the robust physique of a miner. Two years ago a large piece of coal fell on his head, and he was laid up for seven to eight weeks, septic poisoning following in the wound. A few weeks after resuming work his face became swollen for nearly a week, and he was off work about three to four weeks with this illness. It was shortly after this that the cramp commenced.

There were no objective signs of any organic disease. The urinary chloride content was not investigated because I must confess to have not known what was the cause of the man's illness until I looked up the very scanty literature on the subject, and then it was too late for thorough clinical examination. The cerebro-spinal fluid was normal. There was no evidence to show that the injury had anything to do with causing the cramp, unless it had debilitated his system and made him more liable to it than he had previously been.

Descriptions of fireman's or stoker's cramp in medical literature are fairly common, but I have only been able to find two references to miners' cramp anywhere. One is of a somewhat popular but striking nature by J. B. S. Haldane.

"Perhaps the hottest place in England is about a mile underground in a well-known Lancashire coal-pit, where the miners work in boots and bathing drawers, and empty the sweat from their boots at lunch. One man sweated eighteen pounds in the course of a shift, and it is probable that even this figure has been exceeded. This sweat contained about an ounce of salt—twice what the average man consumes in all forms per day. The salt loss was instinctively made up above ground by means of bacon, kippers, salted beer, and the like. And as long as they did not drink more than a quart of water underground no harm came to the miners. But a man who has sweated nearly two gallons is thirsty, and coal-dust dries the throat, so this amount was often exceeded, and the excess occasionally led to appalling attacks of cramp, often in the stomach, but sometimes in the limbs or back. The victims had taken more water than was needed to adjust the salt concentration in their blood, and the diversion of blood from their kidneys to their muscles and skin was so great that they were unable to excrete the excess. The miners in question were offered a solution of salt in water, which was of about the composition of sweat, and would be somewhat unappetizing to the average man. They drank it by quarts and asked for more. And now that it has become their regular beverage underground there is no more cramp, and far less fatigue. It is almost certain that the cramp of stokers, and of iron and glass workers, which is known to be due to excessive water drinking, could be prevented in the same way."

The other paper is by K. Neville Moss, professor of coal-mining, Birmingham University, and is so important from a medical point of view that I take the liberty of quoting freely from it, and recommend all interested in the subject to read it in its complete form. Its title is "Some effects

of high air temperatures and muscular exertion upon colliers."

Miners' cramp has hitherto been observed only among the workers in hot mines where the temperature varies between 98° and 102° F. dry bulb, and 83° to 87° F. wet bulb, and, as far as Moss knows, only in Agecroft and Pendleton pits. Where cases of severe cramp do not occur miners may be partially disabled in respect of working capacity by the same cause that leads finally to attacks of cramp. This subject is of general importance, therefore, in connexion with deep mining problems of the future, and in connexion with other industries where men are performing hard work at high temperatures.

The number of cases severe enough to warrant the carrying of the men out of the pit was only nine in two years, but minor attacks of cramp occurred more frequently, and would no doubt have developed into severe cases had not the men ceased work immediately.

The cramp may be attributed to: (*a*) high air temperature, (*b*) excessive drinking of water due to (*a*), (*c*) continued hard work. Men are generally affected by it during the second half of the shift, and always in the muscles actually being strained at the time. Sufferers are generally men of poor physique. If a man is attacked whilst lifting a full tub on to the rails cramp might occur in the arms, legs, or abdomen. If the latter, the man is put out of action immediately, the contortion of the abdominal muscles being so great as to form a lump the size of a cricket ball.

In severe attacks of cramp it may take half a dozen men to hold down a sufferer and straighten out the affected limb. Such treatment produces excessive exhaustion of the sufferer, and sal volatile is usually administered to revive him. Professor J. S. Haldane suggested that cramp may depend on excessive loss of chlorides by continued sweating, and the matter was then investigated by Professor Moss, Mr. J. B. S. Haldane, and Professor A. V. Hill at a deep coal face at Pendleton Colliery. A sample of urine obtained at the end of the shift from one of the colliers who was subject to cramp gave not the slightest cloudiness with silver nitrate, though only 5 c.cm. were secreted during four and a half hours. This excessive shortage of chlorides in the urine must have been brought about by a combination of excessive sweating and drinking of water. Sweating by itself could have no such effect, as sweat contains only about 0.2 per cent. of chloride, and sweating by itself would tend to concentrate the chloride in the blood plasma.

Rowntree produced water poisoning in animals by injection of large quantities of water into the stomach through a tube. The animals showed the severest symptoms, including twitching of muscles, passing into convulsions.

Water poisoning, or miners' cramp, can be avoided by supplying the miners with a drink containing just sufficient salt to balance the loss of salt by sweating—that is, 6 grains of sodium chloride in a gallon of water. The results recorded by Professor Moss are most interesting and of importance, as will be seen from the account of one case in which the saline drink was given.

The man was of poor physique; he drank eight pints of water during the shift. He had been a frequent sufferer, but since taking salt each day for three months had had no sign of cramp. His evidence was as follows: Appetite much improved; feels quite fresh after a shift's work, where formerly he was obliged to cease work at about 12.30 p.m. each day owing to excessive fatigue; his life at home was changed from one of laziness and sleep to one full of energy; in general he feels a changed man.

My own patient was given a similar saline to drink and he has kept well at his work up to date.

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PREGNANCY ASSOCIATED WITH DIABETES MELLITUS.

BY

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PREGNANCY in a diabetic patient is commonly regarded as an extremely rare event. Not only is there a predisposition to sterility in diabetes, but it was, until recently, held that there is a strong probability of death or miscarriage should pregnancy occur. A. L. Walker[1] last year reported a case of pregnancy and labour in a diabetic woman, the first to be treated in the department of obstetrics at the Middlesex Hospital in a series of 10,000 confinements. Not a single case could be found in the records of the City of London Maternity Hospital among 27,567 patients confined. In reviewing the problem Walker argued that with the advent of insulin, and by the abolition by this agent of hyperglycaemia and acidosis, the risks attending pregnancy in a diabetic woman are not so great as in the days before the isolation of the internal secretion of the pancreas. It further seems to us that by the employment of insulin pregnancy in diabetic patients is rendered more likely.

The following case is of interest since it illustrates certain features of the association of diabetes with pregnancy, and it further throws some light upon the effect of insulin in this combination.

The patient, aged 34, was admitted to the Middlesex Hospital under the care of Dr. C. E. Lakin on June 14th, 1928, on account of diabetes associated with pregnancy.

There was nothing relevant in the family history except that one cousin had diabetes. There had been one previous pregnancy, in 1918, when a healthy child of 6½ lb. was delivered at term. In 1924 the patient began to lose weight, and sugar was discovered in the urine. She was then treated for diabetes in the Middlesex Hospital for four weeks, continuing to attend thereafter as an out-patient. In 1926 her condition deteriorated, and she [illegible] put on insulin treatment. Equilibrium was [illegible]tained by doses of 10 units twice daily on a [illegible]130 calories. In [illegible], she became pregnant; the date of the last menstrual period was not accurately known, but she thought it was at the end of October, 1927.

No new symptoms had been experienced since she became pregnant, and on admission the patient appeared to be in good health. The urine contained a trace of sugar; Rothera's and Gerhardt's tests were positive. The blood contained 202 mg. of sugar per 100 c.cm. This and subsequent routine estimations were conducted four hours after breakfast. The tests for albumin were negative. No physical signs were observed in the cardio-vascular system, in the respiratory system, or in the nervous system. She was then from 31 to 32 weeks pregnant. The vertex was below, the back in front and to the right. Foetal movements could be felt, and on June 30th the foetal heart was heard.

The patient was put on Allen's twelfth day diet (1,560 calories) and given 10 units of insulin daily. While under this treatment the blood sugar fluctuated between 200 and 220 mg. per 100 c.cm., but the excretion of sugar by the kidneys increased, the urine on the fifth day after admission containing 1 per cent., or 32 grams of sugar in twenty-four hours. The dosage of insulin was accordingly increased to 20 units twice daily, under which treatment the blood sugar gradually fell to a normal level, which was reached two weeks after admission. With this dosage of insulin and on Allen's tenth day diet (1,300 calories) the hyperglycaemia did not recur and the urine remained sugar-free but for occasional traces. Rothera's test, however, remained constantly positive, while Gerhardt's test was generally negative.

At 7.30 p.m. on August 15th, nine weeks after admission to the hospital, she went into labour and was transferred to the department of obstetrics under the care of Mr. Comyns Berkeley. Labour was normal; the presentation was a second vertex; the three stages of labour occupied respectively 2 hours, 15 minutes, and 15 minutes. The puerperium was apyretic and involution took place normally. The condition of the urine remained the same as before labour, a trace of lactose being present occasionally and Rothera's reaction remaining positive.

The child, a male, was healthy at birth and weighed 7 lb. 11½ oz., measuring 20 inches in length. It was fed at the breast from birth. During the first three days of life the weight fell to 7 lb. 4½ oz. On the eighth day after delivery the weight was the same as that recorded at birth. Thereafter a steady gain in weight was recorded. The content of sugar in the child's blood was normal and the urine showed no abnormality.

On August 16th, the day following delivery, the blood sugar of the mother was normal—100 mg. per 100 c.cm.; but by August 20th it fell to 45 mg. per 100 c.cm. A specimen of blood withdrawn before breakfast on August 21st contained only 41 mg. of sugar per 100 c.cm. of blood, while the patient complained of drowsiness and blurred vision. She became hot and cold alternately. An onset of hypoglycaemic coma being feared, she was at once given two teaspoonfuls of sugar with the juice of an orange. By 2 p.m. on the same day, as a result of this treatment, the blood sugar had risen to 165 mg. per 100 c.cm. and she had lost her feeling of drowsiness.

Thereafter the dose of insulin was reduced to 10 units twice daily in association with Allen's tenth day diet (1,300 calories). The blood sugar during the remainder of the patient's stay in hospital fluctuated between 65 and 90 mg. per 100 c.cm. She was discharged on September 6th, and seven weeks later was found to be sugar-free on the same diet and insulin dosage.

This case illustrates several important points and confirms Walker's conclusions. First, it shows that treatment with insulin renders sterility less probable in diabetic patients. Far-reaching conclusions cannot be drawn from a study confined to one case, but it appears to us at least possible that the patient would not have become pregnant before the days of insulin. Support is given to this conclusion by one of Bowen's cases.[2] Secondly, it suggests that the dangers associated with pregnancy and labour in diabetic women no longer exist. Thirdly, there can be no doubt that the requirements of a growing foetus put a strain upon the resources of a diabetic patient, as was taught by the older writers. This is shown by the fact that six days after delivery the blood sugar fell to an alarmingly low level. Only half as much insulin had to be given after the birth of the child as before. Parsons, Randal, and Wilder[3] recorded two cases of pregnancy in association with diabetes in which the dose of insulin required reduction after labour. In both their cases the larger dosage had to be resumed some time later. Fourthly, a warning arises in that hypoglycaemic coma may occur after delivery if the dose of insulin is not reduced. The reduction should, of course, be made in accordance with frequent blood sugar estimations.

We are indebted to Dr. C. E. Lakin and to Mr. Comyns Berkeley for allowing us to publish this case, and to Dr. E. C. Dodds, the Courtauld Professor of Biochemistry, under whose direction the blood and urinary investigations were conducted.

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PROTEIN THERAPY IN INSANITY OF PUERPERAL ORIGIN.

BY

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THE successful employment of protein therapy in a case of puerperal mania may well be a matter of general interest. The following clinical details of such a case suggests that it is possible in some instances to avoid the necessity of certification.

A married woman, aged 19, was admitted to Napsbury Mental Hospital on June 10th, 1926. Parturition had occurred six weeks prior to admission. There was no family history of insanity. The patient was very restless and confused, indifferent to her surroundings, incapable of giving any account of herself, and entirely influenced by hallucinations. About three months later she passed into the katatonic state, assuming peculiar attitudes, and exhibiting negativism. This condition was replaced about six months afterwards by one of excitement. She was continuously restless, noisy, destructive, abusive, obscene, very dirty in habits, and incessantly picked her skin. Occasionally she threw herself violently to the ground, sustaining various injuries. This state persisted, and there were signs of impending dementia.

Treatment.

On November 13th, 1927, the patient was put on a light diet: the intestinal tract was well cleared, and a minor degree of dental sepsis was treated. The cerebro-spinal fluid was under tension, but revealed no gross pathological change. The blood had an abnormal tendency to haemolysis and there was a mild degree of chlorosis. A stock mixed vaccine (T.A.B. 2,500 million per c.cm.) was used and a preliminary dose of 100 million was injected into the median basilic vein. The axillary temperature was recorded every half-hour; the maximum pyrexia (104° F.) was noted four hours after the injection, and the patient complained of intense headache; cyanosis was marked. This condition was maintained for twelve hours, after which the temperature gradually subsided and reached the normal at the end of thirty-six hours.

The intravenous injection was repeated on alternate days with gradually increasing doses of T.A.B. vaccine until fourteen injections had been given, the maximum dosage being 2,500 million. During this period a nourishing light diet was augmented by unlimited lemon juice and bland fluids.

Course of Mental State.

After the third induced pyrexia the patient was on the whole less restless and had occasional lucid intervals. She was very impulsive and occasionally threw herself out of bed. Later she had periods of confusion in the morning, which cleared towards noon. Her hallucinations were freely admitted and discussed, and she developed some insight into her condition. Her habits became clean and she abstained from the use of obscene terms.

The mental state of the patient improved; she began to take an active interest in domestic and other details, and she appeared to be convalescing, although she still admitted hearing "imaginary voices" at times. This abatement of her condition was short-lived, for while attending a patients' party she relapsed spontaneously into an intensely confused state. She became very restless, violent, noisy, destructive, obscene, and filthy in habits.

A second course of intravenous T.A.B. vaccine injections was given consisting of nine increasing doses, from a minimum of 125 million to a maximum of 5,000 million. The reactions in most instances were more severe than in the initial course; they were accompanied by rigors and marked constitutional disturbances. Her mental state at this time compared closely with that of a recent acute mania. She was very violent and aggressive, and had to be treated in a padded room owing to her frequent resort to self-injury and violence. This period of excitement persisted for several weeks, but gradually subsided. Since then a gradual improvement has been maintained. She has developed a bright and sensible manner, talks rationally, and takes a normal interest in her surroundings. She realizes her previous mental state, and her memory is good for recent events and for incidents which occurred prior to her mental breakdown. Her emaciated physical state has benefited considerably; her weight has increased by 3 st., an acneiform skin eruption and a seborrhoeic condition of the scalp have disappeared, and menstruation has recurred and functions normally. After a period of three months' convalescence under careful observation she was discharged recovered.

This history suggests that the intravenous administration of vaccines in a mental case, in which a toxic element is probable, appears to have a beneficial effect; that no very alarming signs or symptoms have resulted from these injections when used cautiously; and that the control of pyrexia is easily maintained. On one occasion a reactionary pyrexia of 105° F. occurred after the expected rise had subsided to normal. This was rapidly reduced by tepid sponging, and remained normal. Constipation was obstinate during the course of treatment, and was most effectually dealt with by daily bowel irrigation.

I am indebted to the medical superintendent, Dr. A. O'Neill, for permission to publish this case.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACUTE GASTRIC DILATATION ASSOCIATED WITH PULMONARY TUBERCULOSIS.

THE occurrence of acute dilatation of the stomach in a patient suffering from advanced pulmonary tuberculosis may be considered of general interest in view of the relative rarity of the condition and the uncertainty attaching to its etiology. The following clinical details of such a case may therefore be worthy of recording.

A young woman, aged 21, was admitted to the Osler pavilion, Radcliffe Infirmary, on August 21st, 1928, for the second time. Her illness had begun in January, 1924, with left-sided pleurisy. Since that date the patient had been in various institutions, in one of which, during 1925, artificial pneumothorax was carried out for six weeks. The patient was first admitted to the Osler pavilion on June 17th, 1927, and was discharged on November 11th, 1927. There was extensive disease in the left lung, but the right side was comparatively free from physical signs. On discharge, following sanocrysin injections and general routine treatment, the patient was described as being "much improved." Phrenic avulsion, or other surgical intervention, was refused by the parents.

On readmission, nine months later, the patient was obviously very ill. Considerable fever was present and there were frequent night sweats. For the first time tubercle bacilli had been found in the sputum at an examination shortly before admission. The physical signs on the left side were, if possible, even more extensive than at her first admission, and there were gross signs of infiltration and breaking down in the right lung in the neighbourhood of the angle of the scapula.

At noon on August 27th, 1928, the patient complained of fullness and discomfort in the abdomen, and vomited. The vomiting was repeated in the early afternoon, and the discomfort gave place to acute lancinating pain soon afterwards. The patient was then in a state of collapse. The abdomen was rigid but not tender, and there was no obliteration of the liver dullness. The pain was referred to the left of the epigastrium and later to the umbilical region. The bilious vomiting persisted and hiccup set in. Early in the day the bowels had been open naturally. Micturition and menstruation were normal and there was no history of a previous attack.

In the evening the patient was seen by my surgical colleague Mr. D. A. Abernethy, who has kindly supplied the subsequent notes of the case.

"Patient looks ill. Face anxious and drawn, tongue slightly furred, temperature 101° F., pulse 92, respirations 24. The abdomen moves poorly with respiration and is slightly distended generally, and tender over its whole area. On percussion there is a tympanitic area round the umbilicus, marked shifting dullness in both flanks and almost complete absence of liver dullness."

In view of these physical signs the diagnosis of a ruptured viscus was very naturally made and an immediate operation was deemed necessary.

"Under gas and oxygen anaesthesia the abdomen was opened by a right pararectal incision at the level of the umbilicus. An enormously dilated atonic stomach presented into the wound, and on rapid exploration no cause for this condition could be found. There was no constriction about the duodenum, and the superior mesenteric vessels were not occluding its third part. In view of the patient's general condition the wound was closed as quickly as possible, and a stomach tube passed; meanwhile about a quart of bile-stained fluid was drawn off and the stomach was washed out with two pints of sodium bicarbonate solution."

After the operation the patient survived for as long as eight days. A *post-mortem* examination was refused.

In the *Lancet* (1926, vol. i, p. 758) will be found a description by L. R. Shore of a case of acute dilatation of the stomach complicating artificial pneumothorax.

Reviewing the literature in the same article the writer noted that, out of the ten instances where intrathoracic disease was regarded as responsible for acute dilatation of the stomach (in a total of sixty cases), in one post-operative case pulmonary tuberculosis was found *post mortem*.

Oxford. WILLIAM STOBIE, M.D., M.R.C.P.

VIRULENT DIPHTHERIA AFFECTING FOUR MEMBERS OF THE SAME FAMILY.

THE severity of the disease which ran through this family, together with some of the points in the first case, seem to render the sequence of events worthy of record.

On September 17th, 1928, a boy, aged 15, complained of sore throat. A membrane developed over the fauces and tonsils, and there was great swelling of both sides of the neck. A nasal discharge developed a few days later. A swab was taken of the throat, and a small dose of combined diphtheria and scarlet fever antitoxin was given. The swab was returned negative to the Klebs-Loeffler bacillus. Progress was satisfactory, and by September 22nd the throat and nose were clear and the boy was regarded as convalescent. The next day he was not seen. On September 24th, the seventh day of illness, he vomited several times and became very collapsed. He was found to have a palatal paralysis and paralysis of accommodation, and his heart was beating at the rate of 30 per minute. He was treated with cardiac stimulants. The paralysis was not sufficient to interfere with swallowing, and nasal feeding was not necessary. The heart rate fell and remained below 25 until the end, on one occasion being as low as 18 beats per minute. On September 27th the rate rose to 24, but in the evening he died suddenly. The fact that he was fretting for his brother—who had died a week before from tetanus—and did not want to recover, was not in his favour.

On October 10th the family [illegible] for a change, leaving two girls here in [illegible] an aunt. The following day one of these girls, aged 9, developed a throat very similar to that of her brother. The swab in this case also was negative, but was nevertheless notified as diphtheria, and the child was removed to the fever hospital. She was given 16,000 units of antitoxin intramuscularly, followed by 4,000 units on each of the two succeeding days. She had a severe attack, and is now recovering from cardiac sequelae.

A sister, aged 7, in Birmingham, sickened on the same day as the previous patient, and on October 12th was admitted to the Birmingham City Hospital. Like her sister she had a "bull-neck." She was given an initial dose of 40,000 units intravenously, followed in two days by another 40,000, to which had been added 15 c.cm. of concentrated scarlet *fever antitoxin, since* she was regarded as having a double infection of diphtheria and streptococci. She is still under treatment at Birmingham.

On October 19th the father developed a throat which was at first thought to be a quinsy, to which he was subject. He was admitted moribund to the Birmingham City Hospital on October 26th, and died within twenty-four hours, *in spite of* vigorous treatment. The *post-mortem* findings were as follows: Diphtheria membrane was present on the throat and completely lining the larynx, trachea, and both bronchi. The bronchioles throughout the whole of the left lung were filled with membranous plugs. He also had an old mitral lesion, tuberculous scarring of both apices, and small granular kidneys. The membrane in this case formed a tree-like cast of the bronchi and some of the larger bronchioles, his condition being really one of diphtheritic bronchopneumonia.

It is rather interesting to note that the mother, a girl of 12, and a baby of 10 *months* escaped, as well as the aunt and her husband and child in whose house the second patient spent her first two days of disease.

The chief interest in the case of the first patient lies in the slow pulse. I have read that unconsciousness usually *results* with a pulse of 20 or under in cases of Stokes-Adams syndrome. This boy was never unconscious.

My thanks are due to Dr. E. H. R. Harries, *superintendent* of the City Hospital, Birmingham, for kindly letting me have details of the two cases which were treated in that hospital. I am also *indebted to Dr. Bonner for permission to publish the first two* cases.

Peterborough. L. B. PHILLIPS, M.B., Ch.B.

THE ELECTRO-MAGNET IN SURGERY.

THE following two cases emphasize the occasional value of a magnet in the removal of a minute and inaccessible foreign body, if made of steel.

CASE I.

A dental surgeon sought my help in the case of a young man in whom he had been producing novocain anaesthesia by blocking the inferior dental nerve. The minute needle had broken off, and was impacted in the region of the inferior dental foramen, between the internal pterygoid muscle and the ascending ramus, and presumably between periosteum and bone. In skiagrams the needle showed clearly.

Through a small vertical incision in the soft overlying tissues it could not be identified, either by sight, or by palpation with finger or probe. The nozzle of an electro-magnet was inserted into the incision, and the current switched on for about six seconds. On withdrawal the needle was adherent to the magnet.

CASE II.

I was asked by the operator to see a woman on whom he had performed a cortical mastoid operation five days previously. He had passed Stacke's guard into the aditus, to satisfy himself that he had really opened the antrum. Some hours later it was noticed that about 1/8 inch was missing from the fine distal end of the guard. Skiagrams in two planes showed the metal in the region of the aditus. I reopened the wound, but could not find the fragment. The magnet, fitted with an L-shaped steel termina], was inserted into the aditus; first from the antral side and afterwards, since there existed a total loss of membrane, from the middle ear. The steel fragment was removed, sticking to the magnet.

The electro-magnet, with terminals of various shapes, which can be boiled, was obtained from Messrs. Allen and Hanburys.

London, W.1. H. LAWSON WHALE, M.D., F.R.C.S.

IDIOPATHIC HAEMORRHAGE IN THE NEWBORN: RECOVERY AFTER TREATMENT WITH WHOLE BLOOD.

THE following case seems of sufficient interest to record, since such cases are rarely met with in general practice.

A primipara was confined on October 7th, 1928. Labour was normal, and the child, a boy, appeared to be quite healthy. Twenty hours later I was urgently sent for by the nurse. On arrival I found the child in a state of extreme anaemia and collapse, due to melaena *neonatorum* and haematemesis, which had suddenly started half an hour previously. Fortunately the father of the child was in the house, so that I was able to give the child parental blood intramuscularly within a few minutes of my arrival.

A 2 c.cm. hypodermic syringe was the only one available, but by filling it three times with parental blood 6 c.cm. of whole blood was introduced deep into the pectoral region of the infant. Hot-water bottles were applied, and *frequent sips* of a whey and cream mixture given to help to make up for the loss of fluid. A teaspoonful of the following mixture was also given hourly: Gelatin alb. 30 grains, sodium chloride 2 grains, distilled water 3 oz.

Six hours later, although no fresh haemorrhages had occurred, I thought it advisable to give a further intramuscular injection of blood. This time a 10 c.cm. Record syringe was used, and 10 c.cm. of the whole blood injected. The child made an uninterrupted recovery, and although the motions remained "tarry" for the next two days no fresh bleeding occurred.

In conclusion, I think the child's recovery was due to the following line of treatment: (1) intramuscular injections of blood were given at once; (2) whole blood was used, as advised by Dr. Cruickshank; (3) artificial feeding was started at once, and was continued until the arrival of the mother's milk, which was then pumped off and the child spoon-fed until he had sufficient strength to suck.

Wadhurst, Sussex. G. H. ROBERTS, M.B., B.S.Lond.

Reviews.

STUDIES ON SCURVY.

In their *Studies on Scurvy*[1] Professor ARTHUR W. MEYER and Dr. LEWIS M. MCCORMICK, of the Department of Anatomy, Stanford University, have provided a monograph of interest, not only to students of nutritional problems, but to physicians who seek for explanation of obscure conditions of ill health with which they have to deal in practice. The monograph furnishes another example of the widespread changes which may occur in various organs and tissues of the body as a result of diets deficient in vitamins.

The original object of these studies was "to ascertain, if possible, the causes of the appearance of peculiar phenomena in guinea-pigs kept on ordinary feeds and used in experimental anatomy. Among these phenomena were marked nervous manifestations and permanent, as well as profound temporary, locomotor disabilities." The animals did not appear to suffer from scurvy nor was the food on which they were fed suspected as being deficient until Professor Meyer had cured them by the subcutaneous injection of tomato juice, or by feeding some of the younger animals on tender lettuce leaves. Their marvellous recovery, following these measures, pointed to a dietetic origin of the peculiar symptoms from which the animals suffered. Experiments were accordingly undertaken to determine the nature of the responsible deficiencies. The experimental animals were given a basic diet of raw alfalfa hay, rolled barley, and water in abundance, which undoubtedly contained some anti-scorbutic vitamins. Some animals received this diet without its previous subjection to heat; others the same diet after it had been heated to 100° C. for an hour. The same lesions were produced, whether the diet had been heated or unheated; the only differences being that the lesions were more intense and their onset more rapid, while the point of death was more quickly reached, in those that received the heated food. Additions of wheat-germ (to increase the vitamin B content of the diet) or of dried whole milk (to increase the vitamin A content), or of both, to the heated and to the unheated diet, failed either to prevent or to cure the disease. It was concluded, therefore, that the responsible deficiency was one of vitamin C, and that the disease from which the guinea-pigs suffered was scurvy. The details of the experiments are scanty; but from a perusal of the 46 pages of the monograph dealing with the gross and minute morphology of the condition, it is evident that the changes which occurred in the various organs and tissues of the body are those known to be associated with deficiency of vitamin C. Some may doubt whether it be legitimate to attach the diagnostic label "scurvy" to a condition in guinea-pigs which did not present the classical signs and symptoms associated with this label. But the label is unimportant in itself; what is important is the fact that tomato juice and tender lettuce leaves cured the condition and dispelled a widespread state of tissue deterioration. It matters not what the condition be called, provided the cause be recognized and the simple means of its cure applied.

The authors describe anew the lesions noted to occur in various organs and tissues of the body by earlier workers on this subject; as well as some observations that are new—subcutaneous, muscular, pericostal haemorrhages; pulmonary, gastric, duodenal, caecal, vesical, and adrenal haemorrhages; and marked degenerative changes in cartilages, bones, teeth, muscles, many glandular organs, blood vessels, and also in the central, the peripheral, and the sympathetic nervous systems. The cytological changes in the blood are described; changes which became evident in guinea-pigs after ten days on the diet above mentioned. They consist in a decrease of the red blood cells, haemoglobin, and colour index, a relative decrease in the number of lymphocytes, an absolute increase in polymorphonuclears, and an increase in reticulated and nucleated red blood cells and leucocytes. It is to be noted that these changes in the blood, as well as others in the gastro-intestinal tract and urinary bladder, are definitely pre-scorbutic in their onset.

In laying down this monograph after a first perusal of it a number of impressions remain. How many are the obscure phenomena of disease which are traceable to faulty food: how well it is, in the experimental study of nutritional problems, to depart sometimes from the use of so-called synthetic diets deficient in (or supposedly deficient in) a single food factor, and to employ for such studies the ordinary food materials used by the man in the street or by the stock laboratory animal, in both of whom obscure phenomena of ill health so often appear; how instructive it is to work at times with diets which are not wholly lacking in a given food factor, but in which an insufficiency of one or of several is combined with food faults of another order, such as lack of balance in proximate principles; how closely intertwined in the exercise of their functions are the several vitamins; how necessary is an adequate supply of all of them to the maintenance of nutritional harmony, and how readily is this harmony disturbed by the insufficient supply of any one of them; how variable may be the reports of equally competent observers relating to a particular vitamin defect, and how much do these reports depend upon the composition of the diets and the age and strain of the experimental animals, as well as on the conditions of climate and altitude in which the different observers are working; finally, how important it is to recognize that complete deprivation of any vitamin is not a matter with which the physician is greatly concerned in practice, though he is often confronted with an insufficient supply of one or other or several of them in diets often faulty in other regards.

This monograph illustrates the fact that certain manifestations of ill health in guinea-pigs, which bore no close clinical resemblance to the classical picture of "scurvy," were definitely shown to be of scorbutic nature, and to be due to an insufficient supply in their diet of such foods as tomatoes and lettuce leaves. And if in guinea-pigs, why not in man?

R. MCCARRISON.

ANAEROBIC BACTERIA.

ALTHOUGH of the nature of a review, the work by Drs. WEINBERG and GINSBOURG on recent advances in anaerobic bacteria[2] is to be regarded as a supplement to Weinberg and Séguin's well-known monograph on the anaerobic bacteria of war wounds. The work contains analyses of the various publications which have appeared on anaerobic bacteria since the war up to 1926. The immense amount of labour entailed can be gathered from the fact that something like 1,200 references are cited.

The first part of the volume deals mainly with technical advances in the identification of anaerobes, and contains a list of all the new anaerobes described since 1915. Later the more important anaerobes—*B. chauvoei*, *B. botulinus*, *B. tetani*, *B. welchii*, etc.—are dealt with separately and in a very complete manner, including the various procedures suggested for the preparation of toxins and immune serums. Thus under *B. welchii* the newer researches on the relation of this microbe to pernicious anaemia are dealt with at some length.

This work, however, cannot be regarded in the same light as the original monograph on anaerobes by Weinberg and Séguin, but, even allowing for this, there are several points to criticize in the volume. In the first place its value would undoubtedly have been raised had the authors been a little more critical; researches obviously of widely different merit are treated with equal respect. This tends to make the survey colourless and not quite what was to be expected from workers with so much experience in this branch of bacteriology. The volume also shows a great indifference to the correct rendering of names. Moreover, there are a certain number of errors and omissions, as, for example, in dealing with the fermentation reactions as an aid to the differentiation of *B. chauvoei* from *Vibrion septique*, the authority cited is wrong, for the possibility of this was pointed out some

[1] *Studies on Scurvy.* By Arthur W. Meyer and Lewis M. McCormick. Stanford University Publications, University Series. *Medical Sciences*, Vol. II, No. 2. Stanford University Press, California. 1928. (Sup. roy. 8vo, pp. 107; 6 figures, 10 plates. Paper cover, 1.50 dollars; cloth, 2.25 dollars.)

[2] *Données récentes sur les microbes anaérobies et leur rôle en pathologie.* Par M. Weinberg et B. Ginsbourg. Monographies de l'Institut Pasteur. Paris: Masson et Cie. (Roy. 8vo, pp. 281. 35 fr. sans majoration.)

five years earlier in Report No. 12 of the Medical Research Council. No mention is made of the occurrence of *B. chauvoci* in human lesions, although a good deal of discussion has centred round this question.

A summary at the end states in general terms the most salient features of the works quoted. But we cannot agree with the view that the exact identification characteristic of *B. chauvoci* has not yet been settled, because the features of this anaerobe were clearly given in the two reports published by the Medical Research Committee (Council). The confusion that existed was due to the fact that *Vibrion septique* had not infrequently been mistaken for *B. chauvoci* owing to the former's presence in animal lesions, and also to the fact that the so-called Kitt strain of Rauschbrand circulating in Germany was, in reality, *Vibrion septique*. Again, the evidence brought forward in support of the view that *B. putrificus* is a separate identity is unconvincing. The authors have not attempted any form of systematic classification, which is perhaps wise in the present state of our knowledge.

This book, speaking generally, should prove of great value as a guide to the identification of the rarer types of anaerobic bacteria, and the authors are to be congratulated on having produced so important and useful a review of the subject.

BLUE SCLEROTICS AND FRAGILE BONES.

PART III of the second volume of the *Treasury of Human Inheritance*, edited by Professor KARL PEARSON, is devoted to the subject of *Blue Sclerotics and Fragility of Bone*.[3] The article is written by Dr. JULIA BELL. It contains, in the first place, a complete bibliography of the subject, which has evidently been carefully analysed by the author; secondly, a hundred pedigree diagrams, with very valuable descriptions of the members of each so far as they were obtainable, including details not only as to the occurrence of the two conditions under discussion, but also of all other associated anomalies; and, thirdly, a number of very fine plates illustrating the anatomy and clinical appearances of cases of blue sclerotics, fragilitas ossium, and osteogenesis imperfecta. The article embodies the whole of our present knowledge of the subject, and will take its place as the standard work of reference in future investigations.

In her introduction Dr. Julia Bell has drawn some interesting conclusions relating to the nature of the relationship between blue sclerotics and fragility of bone. Although the two conditions are relatively uncommon, they are well known owing to the distressing conditions exhibited in marked cases; for example, of one patient, suffering from fracture of the spine and ribs resulting from a fall, the family report that "they dare not take off the plaster lest she should fall to pieces," and an examination of some of the illustrations in the present volume shows that the fear could hardly be exaggerated in many cases. The presence of blue, or thin, sclerotics does not in itself produce any disability; the point of interest is whether, and how far, it carries with it a tendency to the graver condition of fragilitas ossium, and Dr. Julia Bell has addressed herself to the consideration of this problem in so far as the available material permits. It is only necessary to glance through the pedigree diagrams to satisfy oneself of the marked hereditary tendency to the occurrence of blue sclerotics; in No. 662, for example, the condition—[illegible] four out of five children and in eleven of the two succeeding generations. The importance of determining from cardiac sequelæ predispose to fragilitas

A sister, aged 7, in Birmingham
the previous patient, and on Octo
Birmingham City Hospital. Like he
neck." She was given an initial dose
venously, followed in two days by another
been added 15 c.cm. of concentrated scarlet
she was regarded as having a double infection
streptococci. She is still under treatment at Birmingham City Hospital.

On October 19th the father developed a throat which was thought to be a quinsy, to which he was subject. He was admitted moribund to the Birmingham City Hospital on October 26th, and died within twenty-four hours, in spite of vigorous treatment. *The post-mortem findings* were as follows: Diphtheria membrane was present on the throat and completely lining the larynx, trachea, and both bronchi. The bronchioles throughout the whole of the left lung were filled with membranous plugs. He also had an old mitral lesion, tuberculous scarring of both

ditions as independent, but linked together in such a way that the factor leading to the production of blue sclerotics merely predisposes to a faulty bone production. The theory of a double anomaly is suggested by the fact that there is no direct relationship between the severity of the two conditions, for very blue sclerotics may be unassociated with other defects, while less blue sclerotics may accompany a history of repeated spontaneous fractures. A further important conclusion drawn by the author is that in pedigrees showing associated defects of blue sclerotics, liability to fracture and deafness, the presence of blue sclerotics determines the addition of one or both of the allied defects in the descendants affected. In other pedigrees both conditions may occur independently in a hereditary form without blue sclerotics. Among the adult population of individuals affected with blue sclerotics approximately 60 per cent. have an associated liability to fractures, approximately 60 per cent. have an associated deafness, and 44 per cent. suffer from all three defects.

In enumerating the merits of Dr. Julia Bell's work we must not fail to mention the charming coloured portrait of "Peggy with the Blue Sclerotics," which forms the frontispiece to this attractive volume.

GONORRHOEAL ARTHRITIS.

A LARGE monograph of over five hundred pages on gonorrhoeal arthritis[4] has been written by a French surgeon, M. HENRI MONDOR. It is unusual for this disease, in Britain at least, to be treated by the surgeon, except to correct late deformities, and after medical treatment has come to the end of its resources. It is therefore interesting to read a surgeon's views on the disease as seen in all its stages, and to consider his summary of the forms of treatment which afford relief. M. Mondor declares definitely his hatred for the term "*gonorrhoeal rheumatism*," which he considers a poor and misleading name for one of the most severe and most destructive forms of acute arthritis known. He states that he has seen joint damage and destruction produced by the gonococcus in a few weeks such as the tubercle bacillus might take years to bring about. He draws attention also to the intensity of the pain in affected joints which surpasses in severity that of any of the other acute joint diseases.

Two interesting tables are given—one from the collected experiences of others and one from the author's personal records—to show which joints are most frequently involved. The knee-joints easily come first in frequency, and the wrist-joints second. Next in order of frequency come the os calcis, the cervical vertebrae, and the hip-joints, but the list seems to include almost every joint in the body. A full account of the pathology of the affected joints is given, especially of the destructive changes in cartilage and bone which may lead to ankylosis or to subluxation and dislocation of the joint. It is evident that of all the serious results the tendency to ankylosis is the worst; and in certain joints such as the wrist ankylosis is practically the rule. All the varying forms of treatment by drugs, vaccines of different kinds, and antiserums to the gonococcus are discussed, and the conclusion is reached that little trust can be put in any of them. M. Mondor is equally candid in admitting that surgical intervention, especially incision of the joint (arthotomy), is uncertain as a cure, and may be followed by progressive ankylosis and joint destruction just as after treatment by any of the other suggested remedies. What he does claim for surgery is immediate relief from the agonizing pain, rapid cessation of fever, and an immediate improvement in the patient's general condition, such as is effected by no other means.

Orthopaedic measures which may be necessary to correct gross deformities in old-standing cases are not considered in detail in the book, which concentrates on what can be done for the relief of the acute disease and the prevention of joint destruction. The drawings illustrating the pathology of the disease in joints are good, but many of the x-ray pictures are so poorly reproduced that they are quite useless to the reader, even when assisted by the descriptions given below them.

[illegible] Wadhu[illegible]

[4] *Arthrites Gonococciques.* Par Henri Mondor. Paris: Masson (Roy. 8vo, pp. 527; 121 figures. 70 fr. sans majoration.)

OPERATIVE SURGERY.

DR. J. SHELTON HORSLEY, of St. Elizabeth's Hospital, Richmond, Virginia, has lately published a third edition of his *Operative Surgery*.[5] The work serves a twofold purpose: it considers in detail the physiological and biological factors which underlie surgical procedure, and it affords a useful record of the author's personal operative experience. "Some Surgical Operations" would appear to be a more accurate title to the work, for the operations described belong to only two categories: those performed by the author, and those he personally regards as best adapted to the condition under consideration. The work must therefore be judged as one for post-graduates with a knowledge of surgery rather than as a textbook that would guide a candidate through the final fellowship examination.

All surgeons must perforce develop tendencies according to their interests and opportunities, concentrating on some aspects of surgery and paying less attention to others. Dr. Horsley shows in his book that he is no exception to this rule. For instance, undue space would appear to be given to plastic surgery and repair of aneurysms, to both of which excellent chapters are devoted, compared with the relatively slight treatment of such subjects as the ligation of arteries and amputations. The style in the chapters devoted to these latter is somewhat lax: precise landmarks for incisions are lacking, and in the general context there is an undue preponderance of "ifs." We do not think there would be any general agreement with the view expressed in the chapter on neurological surgery as to the use of fat grafts in operations for epilepsy; nor would we all agree with the author's opinion that the dura should be sutured in every spinal operation. In operating for peptic ulcer Dr. Horsley performs pylorectomy by stitching the duodenum to the lesser curve and leaving the "dangerous angle" below.

The illustrations to the book are excellent and numerous; the subject-matter is well up to date, and readers will find much of interest and profit within its covers.

NOTES ON BOOKS.

WE have received two short handbooks on the injection treatment of varicose veins. In *The Treatment of Varicose Veins by Intravenous Injections*[6] Dr. J. D. P. MCLATCHIE describes briefly the procedure and gives various practical hints. A good bibliography is appended. Dr. R. THORNHILL contributes a volume to the Minor Monograph Series on *Varicose Veins and their Treatment by "Empty Vein" Injection*.[7] The apparatus and technique are indicated and some illustrative cases are recorded. In a foreword Sir BERKELEY MOYNIHAN commends this method as a simple, safe, and quick device.

Dr. STRICKLER of Temple University, U.S.A., has produced a sound textbook on dermatology.[8] All the usual subjects are included and dealt with in an efficient manner. We have noticed no serious omission, although some of the chapters are rather scrappy. The chief novelties we have discovered are the diagnostic tables for those diseases of the skin, such as eczema, psoriasis, lupus erythematosus, etc., which are notoriously liable to give rise to difficulties of diagnosis, and many will doubtless find these schematic representations of the critical points of differentiation quite useful, although it must be remembered that there is no short cut to successful diagnosis and nothing that can be substituted for the daily work of examining and treating patients. Apart from this there seems no real reason why this textbook should have been written, seeing that there are already more than enough excellent textbooks on the subject. Dermatologists would be much better employed in writing monographs on special departments or diseases than in compiling general treatises which, although they often show signs of original and personal observation in some section which may happen to appeal especially to the author, must in the nature of things be principally drawn from previously existing works. No man can reap a good crop from the whole vast field of dermatology. Having entered this criticism we may add that Dr. Strickler's textbook is at least equal to most others. It is well got up and adequately illustrated. Most of the illustrations are good and clear, but there are a few which are not up to the general standard, and should be improved in the next edition, which will no doubt be called for in due course.

In continuance of its policy of encouraging post-graduate study, the Dental Board of the United Kingdom arranged, during the winter of 1927-28, a course of four lectures on *Radiology and Radio-therapy*,[9] which are now published under one cover. The physics of radiology are dealt with by Dr. G. W. C. Kaye, superintendent of the Physics Department, the National Physical Laboratory; instruments and apparatus, their construction and purpose, and radiographic technique by Dr. Robert Knox; the interpretation of dental skiagrams by Mr. H. M. Worth; and ultra-violet ray treatment by Professor Leonard Hill. The lectures maintain the high standard which the Board requires, and that by the late Dr. Knox will be especially valued, both for its technical value and as a memento.

SADTLER'S *Chemistry of Familiar Things*[10] is a book for the casual reader who, knowing nothing of chemistry as a science, would yet acquire some of the knowledge possessed by chemists. The author, an American writer, has avoided technicalities as far as possible, and has accordingly encountered the inevitable difficulty of conveying clear impressions without them, but he has mastered the difficulty in his own way, and very successfully; for, although his discourse contains many allusions to matters which are left unexplained, the main course of the text is easy to follow. It covers a broad range dealing with the relationships of the elements, natural phenomena, industrial and physiological chemistry, foods, and hygiene. A good deal of useful information is given about the percentage composition of foods and other data, as well as sundry matters of curious interest, such as directions for silvering glass. It is altogether a readable and instructive book, but we must protest at the sentence which reads: "A German physicist, Robert Mayer, found a value that constituted the mechanical equivalent of heat." Surely the name of Joule is not unknown in America.

The Very Thing,[11] by FRIDA WOLFE, is essentially curative, and it may therefore be said to have established a claim for notice in the austere columns of a medical journal. We are all called on to deal with fractious children every now and then. Here is a remedy. The delightful child verses, read aloud by the right sort of mother or aunt, are guaranteed to cure the very worst case of fractiousness. Little woodcuts by Elizabeth Rivers add to the attractions of a charming nursery book.

[5] *Operative Surgery*. By J. Shelton Horsley, M.D., F.A.C.S. Third edition. London: H. Kimpton. 1928. (Sup. roy. 8vo, pp. 835; 756 figures. 63s. net.)

[6] *The Treatment of Varicose Veins by Intravenous Injections*. By J. D. P. McLatchie, M.D., C.M.Ed. London: W. Heinemann (Medical Books) Ltd. 1928. (Cr. 8vo, pp. vii + 51; 1 illustration. 3s. 6d. net.)

[7] *Varicose Veins and their Treatment by "Empty Vein" Injection*. By Ronald Thornhill, M.B., Ch.B. With a foreword by Sir Berkeley Moynihan, Bart., K.C.M.G., C.B., M.S. Minor Monograph Series. London: Baillière, Tindall and Cox. 1929. (Cr. 8vo, pp. xi + 64; 1 figure. 5s. net.)

[8] *Textbook of Diseases of the Skin and Syphilis*. By Albert Strickler, M.D. Philadelphia: F. A. Davis Company. (Med. 8vo, pp. xxi + 689; 218 figures, including 6 plates. 8 dollars net.)

[9] *Radiology and Radio-therapy*. Four lectures delivered under the auspices of the Dental Board of the United Kingdom, 44, Hallam Street, London, W.1. 1928. (Roy. 8vo, pp. vii + 92; illustrated. 5s. net.)

[10] *Chemistry of Familiar Things*. By Samuel S. Sadtler, S.B. Fifth edition, revised and enlarged. London: J. B. Lippincott. (Demy 8vo, pp. xiii + 336; 6 figures, 23 plates. 15s. net.)

[11] *The Very Thing: Read-out-able Rhymes for Children*. By Frida Wolfe, with woodcuts by Elizabeth Rivers. London: Sidgwick and Jackson, Ltd. 1928. (5½ × 8½, pp. xiv + 110; illustrated. 6s.)

PREPARATIONS AND APPLIANCES.

MENISCOTOMY KNIFE.

MR. H. A. T. FAIRBANK, D.S.O., M.S., F.R.C.S., writes: Accurate division of the posterior end of the so-called bucket-handle lesion of a semilunar cartilage, close to its attachment to the bone, is difficult or impossible with a straight tenotome or other knife. The advisability of dividing the cartilage close to the tibia arises from the occasional finding of a tag at the back of the joint, with its sole attachment to the rest of the cartilage close to the bone. To avoid such a tag being missed the dividing knife must cut close to the bone in an oblique plane. The curved end of a

FULL SIZES

Macdonald's dissector has been found a useful instrument for determining the precise direction in which the knife should cut. Messrs. Allen and Hanburys have made for me a knife with a similar curve, a probe point, and a short cutting edge, and this has been found to answer the purpose admirably. Since it is wiser not to use a double-edged knife inside the knee-joint, the knives are made in pairs, to cut to the right and left respectively. Experience has shown that these knives are sometimes useful in knee-joint surgery for purposes other than that for which they were designed.

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SATURDAY, JANUARY 12TH, 1929.

CITIZENSHIP AND CIVILIZATION.

SINCE 1902 the Yale University Press has been publishing at intervals in book form the Yale Lectures on the Responsibilities of Citizenship. The latest of the series is *Citizenship and the Survival of Civilization*,[1] by Sir George Newman, and it is described as being based upon the Dodge Lectures he gave last year at Yale University. The text is doubtless modified and amplified a little from what was actually spoken, and the prologue and epilogue, each of notable beauty, are probably new. The whole volume is such as the medical profession and the thoughtful reading public have now learnt to expect from Sir George Newman—scholarly, well arranged, suggestive, and enlightening. The field surveyed is immense, almost all-embracing, and to have accomplished so much in little more than two hundred pages, with sufficient breadth of view to make it comprehensive, with sufficient system to make it intelligible, yet in sufficient detail to make it interesting and practical, is no small achievement.

Sir George Newman's political philosophy, expounded as the basis of his position and traced from its more remote origins, is not that the individual exists for the sake of the State, which is the fundamental creed of Fascism; or of the Class, which is that of Communism, and, in practice, of too many socialists, though not necessarily of Socialism. It is rather that of T. H. Green, who "believed in the essential work and divinity of the individual, upon whose moral and spiritual growth everything depended; behind the individual was the State, an organization for the liberation and education of this moral individual; behind the State he visualized an eternal mind or supreme consciousness which reproduces itself as human personality"; and who claimed that "good consists in the realization of personality which can only be reached in some society of persons who, while remaining ends in themselves in the sense that their individuality is not lost but rendered more perfect, find perfection only attainable when their separate individualities are integrated as parts of a social whole; the law of our being, therefore, involves the growth of personality with civic and communal duties." Citizenship is regarded as a number of different but not incompatible loyalties, harmonized in one living addition to a common interest which makes human life purposive so far as it is not of undirected or misdirected. These harmonizing loyalties to self, family, profession or trade, science, art, etc., are leading on to a yet wider culture which is civilization. There its cultivation, emancipation, and social insurance are education and in education.

Meanwhile, in the body politic there are only too evident vestiges of a different philosophy—the dominance of the economic factor in society, the materialistic measurement of success and interpretation of history, the extravagant claims of the superman, the apotheosis of force. These incompatibilities have to be removed more or less drastically, and there are a large number of other disharmonies which have to be reconciled in order to accomplish or complete the emergence into civilization. Such are those due to the overpopulation of localities and to the mixture of races, those which in the body and mind of man arise from physiological neglect and a misunderstanding of eugenics, those connected with maternity and infant upbringing, and those due to unwisdom in personal hygiene, whether bodily or mental.

Sir George Newman has a very interesting chapter on "Disease in history," which contains lessons for the historian, the sociologist, and the general reader. Here, more perhaps than anywhere else in the book, does the author direct his erudition and his idealism to the service of practical ends. He founds his faith in the future of preventive medicine on the growing synthesis of mutual aid, communal co-operation, and mental development. "Our objective," he says, "must be not a longer life only but a better one—an enlarged, enriched, emancipated life, full of work and search, inspired by loyalty and hopefulness, with a forward-looking mind." It is in this spirit that the whole of the book is conceived. If, here and there, the smooth steps of the discourse seem to halt a little, or if the exact logical reason for fitting some section into its particular niche escapes us, the work, both as a whole and in its several parts, is a fine scientific and literary accomplishment.

FRACTURES NEAR THE WRIST.

Two years ago we discussed a paper by Mr. Harold C. Edwards on backfire fractures, in which were set forth the particulars of forty-two cases treated in the fracture department of King's College Hospital.[1] A study of these cases went to prove that backfire fracture is not a clinical entity; that is to say, that it is not to be distinguished clearly from other fractures of the radius, and that the nature and exact site of the injury appear to vary just as much as they do in other fractures in this region. This is hardly surprising seeing that, as Mr. Edwards has pointed out, backfire fractures are not all produced in the same way, for some are due to indirect and some to direct violence, while the mechanism of some others is obscure. In their paper on fractures of the lower end of the radius in adults, which appears at page 61 in our present issue, Mr. Edwards and Dr. E. B. Clayton describe and discuss 424 cases of fracture, among which are included various fractures of the radius, but of which the vast majority are Colles's and backfire fractures. As these cases were all treated at King's College Hospital in the three years 1924–1926, we may assume that the forty-two previously recorded cases are among them, as well as forty-two other backfire injuries.

The sex incidence of these injuries is interesting, for while only one backfire fracture was suffered by a woman, 250 of the 339 cases of Colles's fracture—that is, nearly three-quarters—afflicted the female sex. Indeed, Colles's fracture might almost be called the "women's fracture," since the male sex suffers fracture of other parts of the body far more often

[1] *Journal of Bone and Joint Surgery*, vol. viii, No. 4. (Old series vol. Wadhams, 4, Boston, Mass., October, 1926, p. 702.)

recovering from cardiac sequelæ. ...mpleted. The two immediate previous patient, and on Octo... Birmingham City Hospital. Like ...ree things—interneck." She was given an initial dose ... venously, followed in two days by another ... been added 15 c.cm. of concentrated scarlet ... she was regarded as having a double infection ... streptococci. She is still under treatment at Birm...

On October 19th the father developed a throat ...urture as first thought to be a quinsy, to which he was subject. ...e free admitted moribund to the Birmingham City Hospital on ... 26th, and died within twenty-four hours, in spite of vigorous treatment. The *post-mortem* findings were as follows: Diphtheria membrane was present on the throat and completely lining the larynx, trachea, and both bronchi. The bronchioles throughout the whole of the left lung were filled with membranous plugs. He also had an old mitral lesion, tuberculous scarring of both

than the female. These statistics bring out also the prevalence of a backward tilt of the lower fragment in the vast majority of impacted Colles's fractures, and the authors of the paper rightly lay great stress on the importance of correction of this angular displacement, which, if allowed to remain, upsets the whole modus operandi of the joint. Correct replacement of the joint surfaces in their normal relation to one another is of far more importance than restoration of the exact contour of the shaft of the radius; indeed, without the former a good functional result is not to be hoped for.

There has been some difference of opinion among surgeons as to the importance of anatomical correction in fractures, which may perhaps be explained by supposing that they have not all meant the same thing by this term. In a discussion on the treatment of recent fractures by operation, held last spring in the Orthopaedic Section of the Royal Society of Medicine,[1] two most distinguished surgeons expressed different opinions on this matter, Dr. Charles Scudder of Boston saying that exact anatomical correction was of the first importance, while Sir Robert Jones maintained that a good functional result was the ideal to be aimed at, no matter what deformity persisted. Yet no surgeon has insisted more upon the importance of accurate anatomical correction of Colles's fracture than Sir Robert Jones, and, as Mr. Edwards states, good end-results are only to be hoped for when his teaching is strictly followed and the backward tilt of the lower fragment of the radius converted into the slight forward inclination which is anatomically normal. We take it that any apparent discrepancy in the views of two such eminent and experienced authorities on this matter is not real. Both would agree that in fractures involving joints or disturbing their alignment the most exact anatomical correction is desirable, and neither would deny that in fractures not involving interference with articulations a thoroughly good functional result is often compatible with some gross deformity, which it is not necessary to correct by operation.

The statistics of these 424 cases are of considerable interest, yet, like all statistical statements, they might mislead if not carefully interpreted. For instance, they might be taken as showing that the goodness of the end-result was in inverse ratio to the length of splint treatment, yet this inference is at once upset when we reflect that the less serious cases were the soonest released from splints. Extended experience seems to have confirmed the opinions as to the value of massage and the stage at which it should be used, which Mr. Harold Edwards expressed in his former paper. He and Dr. Clayton designate 12 cases, or 3.7 per cent. of the total, as bad results, and present them in tabular form. This table is very instructive as an indication of what to expect. Three of these cases had osteo-arthritis before the injury, others were old cases or unusually severe. Among these 12 were 2 cases of double Colles's fracture, in each of which there was a perfect result on one side but an imperfect result on the other, and this difference was in each case clearly due to insufficient correction at the outset. In falls on the hand, such as caused the 339 Colles's fractures, the force is not all expended on the wrist and forearm, but considerable violence may also reach the shoulder. We are therefore surprised to find no mention of obvious shoulder injury, although it is stated that early in the physiotherapeutic treatment the shoulder movements are tested. It would be of interest to know whether in any case shoulder-joint trouble of late onset occurred, such as some surgeons have attributed to contusion of the cartilage of the glenoid cavity.

This paper is most instructive, and it deserves careful study by all who have to treat fractures. Such a piece of work shows the value of a fracture department of a general hospital, and its publication gives us an opportunity of expressing once again our hope that the example of King's College Hospital, and of some other hospitals in the provinces as well as in London, will be generally followed as regards the treatment of fractures.

[1] *British Medical Journal*, April 14th, 1923, p. 656.

INFLUENZA.

THE Ministry of Health has issued to sanitary authorities in England and Wales a circular (No. 955) bringing to their notice the fact that during the last few weeks a very rapid spread of influenza has been reported from the United States and Canada. It is therefore considered advisable to call the attention of local authorities to the revised Memorandum on Influenza (Memo. 2/Med.) which was issued to them in January, 1927, when an epidemic of influenza occurred in this country after other countries had suffered a similar visitation. This memorandum, which contains the principal considerations to be taken into account by local authorities in the event of a sudden increase in the prevalence of influenza, was the subject of a leading article in our issue of January 29th, 1927 (p. 202), when we commended it to the notice of all concerned. It deals concisely with the history and nature of the disease, describes suitable measures of personal protection, and gives details of the action to be taken by sanitary authorities to combat outbreaks. The concluding sentence states: "The most important services . . . consist in the organization of the available nursing service and the provision of assistance to influenza-stricken households." In the Ministry's circular local authorities are reminded that in the event of an outbreak the Minister's general sanction has already been given to the provision by them of medical assistance (including nursing and the dispensing of prescriptions) for the poorer inhabitants of their districts who are suffering from the disease. Copies of the memorandum may be obtained from H.M. Stationery Office, or through any bookseller, price 2d. net. The recent epidemic which swept through the United States has led to the appointment by the Surgeon-General of a special sanitary board to advise the public. In Berlin, according to press reports, a very widespread epidemic of mild influenza is being experienced. It is stated that the hospitals can admit no more than about 35 per cent. of the cases reported to them by the sick funds, and that only those cases complicated by pneumonia are being accepted. One estimate of the numbers affected places the total at about 100,000 in the city, and about 4 per cent. of the employees in the municipal offices are believed to be suffering from the disease.

THE DOCTOR AND THE NEXT WAR.

BRITISH faith in the possibility of "muddling through" in all conceivable circumstances has received many rude shocks since the end of the nineteenth century, when this complacent doctrine was most widely accepted, and it seems reasonable to suggest that after four years of war and ten of troubled peace the general lack of interest in "preparedness" arises rather from a feeling that human foresight is vain in the face of fate than from any deep confidence in our ability to master the course of events as they arise. Dr. Leonard P. Lockhart of Beeston looks with some concern on the ostrich-like policy of hiding our heads in the

hand at the mention of anything connected with war, and of ignoring the new problems of national defence; he has accordingly devoted himself to a study of the situation to be faced by the civil population in the event of its exposure to gas attacks from the air, and has set forth the results in an article entitled "Chemical warfare and the medical profession" in the January number of the *National Review*. Dr. Lockhart makes no claim to originality, and at least one of his points—that treaties and conventions and protocols offer no definite security against the use of gas—will probably be generally accepted. His second point (based in great part on the argument in Mr. J. S. B. Haldane's *Callinicus*), that poison gas is a less cruel and less disabling weapon than shrapnel and high-explosive shells, is one on which many members of the medical profession who saw active service in the war will be in a position to pass a reasoned judgement. Dr. Lockhart finds statistical corroboration for this view in the fact that towards the end of the war, when troops were adequately protected and trained in anti-gas measures, the mortality among casualties from high-explosive shells was 25 per cent., while among gas-shell casualties it was only 3 per cent. He is anxious, however, to emphasize the great demoralization likely to be caused by gas attacks—and, it might be added, by the immediate threat of gas attacks—and to urge that the public must be educated in the need for, and means of, defensive organization. It is his considered opinion that "gas is going to be used in the next war for precisely the same reason that the Chicago police use it—it works." Dr. Lockhart argues in effect that the advantages which it offers as a weapon will make the temptation to use it irresistible. The ease with which civil chemical plant can be converted for the production of "war" gas, the facility with which commercial aircraft can be equipped to launch it in enemy territory, and the possibility of employing this mode of attack immediately war has been declared, give it the ideal military quality of surprise. The fourth element, with which he is most closely concerned, is the dilemma in which civilian medical and [illegible]tal authorities will find themselves when faced with an [illegible]l gas attack in their area with little or no previous [illegible]arning. He pleads, therefore, for the instruction of the public, so that they may realize that with proper measures they will have little to fear, and for the preparation of defensive schemes. He then reviews the modern chemical agents used in war, and gives a summary of a suggested defence scheme formulated by Squadron Leader A. P. Lawrence, director of medical services in the Royal Australian Air Force. This scheme embodies much useful information about practical anti-gas measures, and outlines the framework of a civil anti-gas organization. It is assumed that "gas masks for all" is an impracticable suggestion, and that political considerations will in time of peace prevent the wholesale dissemination of information among the public. All local authorities, and police, fire brigades, and medical personnel, should, it is suggested, be carefully instructed in their duties, and should be informed of their place in the defensive organization. In the proposed system of control the main executive authority is placed upon the chief constable in each area, the medical officer of health being in a position of great responsibility with the duties of co-ordinating ambulance and hospital services, instructing the staffs in their duties, arranging for protected buildings in congested areas, providing for "decontamination," and securing the purity of food and water supplies. It is suggested that consideration of the possible results of an attack may lead to the removal of hospitals from central urban areas. Dr. Lockhart believes that civil gas defence as a branch of State medicine will sooner or later become part of the medical curriculum, and contends that in the meantime nothing can relieve the medical profession from the duty of being ready to treat the casualties of chemical warfare. It may well be questioned, however, if the proposed organization will necessarily be as effective as Dr. Lockhart suggests. Dr. Lewin, toxicologist to the University of Berlin, at a recent conference convened at Frankfurt by the Women's International League for Peace and Liberty, stated that there were to-day twenty-five varieties of poison gas against which all antidotes and protective measures were virtually valueless. He was supported in this view by Dr. Steck, chief of the Swiss Federal Office for Protection against Gas, and by Herr Nestler, a German gas officer during the war, who said that all forms of defence of the civilian population were either too expensive or inadequate, or both. Dr. MacCartney, speaking at the same conference, shifted the responsibility for prophylaxis from the doctor to the chemists. The chemists, he said, were responsible for the production of poison gas; the protection of the public against its ravages was therefore primarily their concern. The remedy he suggested was that the chemical industries should be subjected to control. From these views some may draw the pessimistic conclusion that in face of chemical warfare medical science is likely to prove of little avail; most doctors will rather conclude that there is need for redoubling their efforts to discover means by which the effects of the new weapons of warfare may be successfully countered. In the words of a writer in the *Journal of the American Medical Association*: "Human protection and relief cannot complacently await the millennium, when warfare will have been relegated to the background of antiquity and abandoned atrocities."

THE MARCH OF PHYSICS.

EVERY year the Physical and Optical Societies unite for an exhibition of recent developments in their respective fields. The exhibition this year, which was held at the Imperial College of Science, South Kensington, from January 8th to 10th, was the largest in the nineteen years' history of this event. It was divided nominally into two sections—one research and experimental, the other trade. In actual fact the methods and results of recent research in physics were illustrated as elaborately in the exhibits of some of the commercial firms in the trade section as in those of the National Physical Laboratory in the other. Looking round the exhibition one got an impression that the present "push" in physics is in the extension of the domain of the ear rather than of the eye, for everywhere the wireless loud-speakers, the automatic gramophone, and the public speech amplifier were roaring like giants. Yet the optical exhibits, quiet as they are in comparison, never cease to fascinate, and here was an array of microscopes and telescopes, epidiascopes and cinematograph projectors, photographic lenses and prism binoculars, more highly specialized than ever. The historical section, with its relics of some of the old opticians, was as engrossing as usual, and the Wheatstone stereoscope was still an attraction. Among the exhibits were a number of photomicrographs, chiefly of biological and histological subjects, the work of Dr. C. L. Martin and Mr. Johnson, taken by ultra-violet illumination through an optical system entirely of quartz. Dr. E. W. Scripture, now professor of experimental phonetics in the University of Vienna, showed interesting apparatus for the registration of speech, including some charts illustrating the speech in various conditions of aphasia and dysarthria. By his apparatus both the fine vibrations, which are transmitted and heard in the voice, and the mass air movements, which are not transmitted or heard, are made to move a diaphragm of oil-silk, the vibrations of which are registered on the moving surface of a recording drum. Such substitution of accurate measurement for the somewhat vague judgements of the ear has obvious educative value; it may even find diagnostic

application. The large exhibit of the Meteorological Office included a sky photometer for determining the visual intensity of daylight during gloomy periods, such as those accompanying high fogs; an instrument called a psychrometer, for measuring temperature and humidity on aeroplanes used for meteorological observation; and a wind direction recorder actuated by electricity.

OUR HOMES.

THE architect does not often resort to the pen: he is mostly content to let his work make its own appeal. And whose work has a greater and more lasting appeal than that of the good architect, or whose work brings down upon his memory more anathemas from those who have to put up with it than the work of a bad architect? Mr. Gordon Samson is both an architect and an author. His latest book, *Houses Planned for Comfort*,[1] is designed to make a special appeal to our profession. "Many, probably most, of us," he says, "can never repay the debt we owe to those kindly wizards called doctors, who, called in when we are ill or broken down, mend us with marvellous skill and send us on our way—more or less rejoicing. But the houses in which we live generally work against, and not with, the efforts of our kind wizards (through faults and omissions which could easily be avoided in the initial planning of every house), and this to such an extent that when old age or chronic illness overtakes—as sooner or later it always does overtake—some member of the family, much that the doctor could do in prolonging the life and powers, the usefulness and happiness, of the patient is frustrated by the fundamental faultiness of the arrangement of most houses." The aim of this book is to show how, with a little care and forethought, these faults can be avoided. The directions are sound and eminently desirable of attainment. But, alas! the world is not large enough for all of us to attain these advantages. "Where the subsoil does not happen to be rock, gravel is the best. Clay, as it retains the water, is the worst, in that respect, that you can build on." If clay be barred, then we must pull down most of London, and much of England, for the clay is always with us. We have learned of the virtues of the southern aspect, and lament that so many delightful old houses, so desirable in their dignified antiquity, show that our forefathers cared for none of these things. But when the author advises his readers to "avoid building on sites where the sunshine could, at some future date, be cut off from you by high buildings or by high trees," we feel we must migrate to the illimitable spaces of the high veld of South Africa, for this security cannot be found by those who have to work in England; not even is the social Olympus of Park Lane exempt from such dangers. Mr. Samson is at his best in his exposition of the internal fittings of houses, and there is much sense in his plea that at least one bedroom in every house should be so fitted that it can be used effectively as a sickroom in case of need. There still lingers a preference for being at home rather than at "a home" when one is sick, and every doctor must have deplored the inadequacy of the otherwise well-provided house in respect of the simplest conveniences for nursing. Mr. Samson shows how this lack may be supplied with ease, though we are not entirely at one with him in his love of electrical gadgets, for when these are not in constant use they are apt to be out of order when wanted. This is a book well worthy of study, and the illustrations make it intelligible to the least technical of readers. It is dedicated to the memory of Dr. George Charles Bright, who died at Cannes in 1922, aged 82 years.

[1] *Houses Planned for Comfort, and with Special Conveniences for Invalids and the Aged.* By G. Gordon Samson, Architect. London: Crosby Lockwood and Son. 1928. (6 × 9¾, pp. xv + 191; 8 plates. 8s. 6d. net.)

QUACKS OF OLD LONDON.

IN a pleasantly written and well-illustrated volume Mr. C. J. S. Thompson, lately of the Wellcome Historical Museum, who is the author of a number of other interesting books dealing with certain aspects of medical history, tells the story of *The Quacks of Old London*.[1] Human nature and credulity remain much as they always were, and so the conditions have ever been favourable for mystery-mongering and quackery; but in the Middle Ages there was no real line between the regular practitioner and the pretender to the art of healing. Little is known about the quack doctors who began to flourish here about the sixteenth century, in spite of the Act passed in 1511 in order to suppress them. Two centuries later they were enjoying their golden age in this country, which has been called their paradise; it was then that one of them, William Read, was sworn-oculist to Queen Anne, who knighted him in 1705, and to George I. Roger Grant and John Taylor, "ophthaliator," in due course succeeded Read as quacks in this line of advertised activity. A royal protégé, Joshua Ward, was so successful in curing the pain in the thumb of George II that he received a vote of thanks from the House of Commons, and was protected from any interference by the College of Physicians with his practice. The account of Mrs. Mapp, or "Crazy Sally," the bone-setter, who was "all the cry" of the town at one time, but took to drink and died miserably near Seven Dials, is enlivened by some contemporary verses in her praise. Instances of the absence of honour among quacks are given: for example, Mrs. Phillips of the "Green Canister" in Half Moon Street, Strand, made a fortune by selling contraceptives and retired; a rival then personated her, and when the real Mrs. Phillips returned to the trade there was a struggle of advertisements. Early in the sixteenth century the Royal College of Physicians was founded, with a charter conferring powers to summon quacks before it and imprison them; but though these powers were exercised the evil grew all the same. Mr. Thompson traces the history of quackery from Tudor times to the end of the eighteenth century, giving many examples of the activities of charlatans and their bills of advertisement. Moses Stringer, who appears to have knighted himself, proclaimed that his *Elixir Renovans* would cure old age and the gout; like Mrs. Phillips, a rival spread abroad the announcement of his death, and so led to the not unnatural protest on Moses's part that the announcement was premature. This interesting "Who's who" of metropolitan quacks of a bygone age—and they have too many present-day successors—contains also accounts of bagnios, cuppers, and beauty specialists, and is a book the public would do well to read, mark, and inwardly digest.

JEWISH HEALTH ORGANIZATION.

THE fourth annual report of the council of the Jewish Health Organization of Great Britain is a document entirely without frills. It presents a terse, almost laconic, statement of the work of the various committees of the organization during the past year, but makes no attempt to point a moral or adorn a tale. The organization promotes health education by means of lectures and publications, by instituting an annual Health Sabbath in connexion with the Health Week of the Royal Sanitary Institute, and by arranging health exhibitions. It has set itself the task of studying systematically the health and diseases of Jews and non-Jews with a view to discovering what, if any, are the factors of race and of custom determining the differences in the incidence of certain diseases. To this end Dr. M. Sourasky has investigated cancer diseases among Jews,

[1] *The Quacks of Old London.* By C. J. S. Thompson. London: Brentano's Ltd. 1928. (Demy 8vo, pp. xvi + 356; 35 illustrations. 12s. 6d. net.)

and has produced evidence, first submitted to the International Cancer Conference in July (*British Medical Journal*, July 26th, p. 171), suggesting that there is no reason to believe that Jews are either more or less liable to cancer than other races. On the other hand, the relative immunity of Jews from cancer in individual organs —for example, in the penis and the uterus—deserves consideration in relation to prevailing Jewish social and hygienic customs. A comparative study of visual defect in non-Jewish and Jewish children, undertaken by a committee of ophthalmic surgeons appointed by the council, showed that in a large group of boys in the East End of London the percentage of Jews with visual defect was about twice that of non-Jews. The committee believes that this difference is determined, not by intensive school work among Jewish children, but by a racial factor. The results of a carefully planned investigation of the comparative intelligence and attainments of Jewish and non-Jewish school children are also included in the report, and appear to bear out the common belief that up to the age of 13 the average mental ratio of the Jewish child is greater than that of the non-Jewish child, though investigations of groups of older children would appear to be desirable. An important activity of the organization is child care and guidance. Just over a year ago it established an undenominational child guidance clinic, and up to the time of the issue of the report had dealt with 63 cases. The clinic was open on 104 evenings, and during that period there were 309 attendances of patients. Those who know how much time must be occupied in the study and treatment of each individual case in such a clinic will realize what a record of work these figures indicate.

BIRTH CONTROL CLINICS

THE North Kensington Women's Welfare Centre gives advice on birth control to women unable to afford the fees of a private medical practitioner. The fourth annual report just published gives a record of work for the year ending July 31st, 1928, during which period 1,183 visits have been paid by patients to the centre at 12, Telford Road, Ladbroke Grove, W.10. The policy of this organization is to discourage women from using contraceptives until they have had at least one baby, and to suggest the advisability of having more than one. A medical supplement gives a useful account of the experience of the centre as to the relative efficiency of various contraceptive devices. In the preface to the annual report of the Society for the Provision of Birth Control Clinics (153A, East Street, London, S.E.17) the fact is emphasized that in the distressed mining areas the infant population is still growing almost as rapidly as in times of prosperity. "There is no visible outlook in life for these children, and both husband and wife would be relieved of a heavy load of anxiety if they were taught sound methods of avoiding unwanted conceptions." This society, which now works through twelve centres in London, the provinces, and Scotland, aims at giving such instruction, and a noteworthy aspect of its work is the establishment of a clinic in a Midland mining area. The report observes further that many miners' wives attend the Glasgow clinic. During the year 3,914 new cases have been dealt with by the various clinics, 1,377 by the society's pioneer centre at Walworth, and there have been in addition 7,606 return visits (3,250 at Walworth). A recent analysis of the first 5,000 cases on the books at Walworth has revealed some matters of special interest. Of these 5,000 women, 315 were found to be pregnant on the first visit, and have not returned; 18 sought advice for sterility; and 32, of whom to date 31 have attained their wish, discontinued using contraceptives so as to have a baby. Many years must elapse, however, before any definite conclusions can be drawn as to the effect of the practice of conception control on the incidence of child-bearing among a given set of patients.

THE seventh British Congress of Obstetrics and Gynaecology will be held in Dublin on April 24th, 25th, and 26th, 1929, under the presidency of Dr. Gibbon FitzGibbon. The chief subject for discussion is "Disproportion," and there will, in addition, be numerous papers on matters relating to obstetrics and gynaecology. An exhibition of pathological specimens will be arranged. It is hoped to have a representative gathering from all parts of Great Britain and Ireland. Those wishing to read papers, and those who hope to be present at the congress, are asked to communicate as soon as possible with either of the joint honorary secretaries, Dr. Bethel Solomons, Rotunda Hospital, Dublin, or Mr. Gerald Tierney, F.R.C.S.I., 22, Lower Baggot Street, Dublin.

THE KING'S ILLNESS.

TAKEN as a whole, the brief bulletins issued from Buckingham Palace during the past few days have pointed to a slight but not negligible improvement in the King's condition, after seven weeks of an extremely acute illness. This is in accordance with the carefully worded estimate given in the medical communiqué of Wednesday, January 2nd, which appeared at page 31 of our last issue. With exhaustion of body and mind remaining so conspicuous a feature of the case, progress cannot but be slow and difficult. All that has been said in recent reports about the great weakness, the wasting, and the trouble with feeding will obviously hold good for some time to come; and therefore, as every doctor must realize, the position is still by no means free from anxiety. Early and smooth convalescence is out of the question after a streptococcal septicaemia associated with empyema in a patient well on in middle age.

No further communiqué has been authorized for publication in the medical press this week, but our readers will gather from what follows that His Majesty is making as much headway as can be expected at this stage of his long and grave illness. Since the beginning of the New Year the upward steps towards recovery have, we believe, outnumbered the steps down. The empyema wound is healing very satisfactorily, and the chest symptoms are now regarded as of secondary importance. We learn also that the pulse rate has improved and is less easily disturbed.

Estimations of the urea content and the calcium content of the blood, and other biochemical analyses, are being made at intervals by Professor E. C. Dodds, whose signature appeared on the evening bulletin of January 1st. We regret that in this matter, as in one or two others bearing on the King's illness, so much random speculation should have been indulged in of late by a few of our non-medical contemporaries. It contrasts unfavourably with the restraint of the newspapers as a whole throughout all the earlier and more trying phases of a situation without parallel in the history of the press. Irresponsible and wildly erroneous guesses are unfair to all those of our profession who are sharing the heavy task of attendance upon His Majesty, and not least to the colleague whose name has had this unsought publicity in connexion with one of the many therapeutic measures employed during the past two months.

THE HEALTH OF THE SCHOOL CHILD.

ANNUAL REPORT FOR ENGLAND AND WALES.

THE Annual Report for 1927 of the Chief Medical Officer of the Board of Education,[1] Sir George Newman, is a document of much interest, and it is one which should be read, not only because it is a storehouse of facts regarding the growing generation, but because it is inspired with a wide view of what is of the highest value in national well-being. It is a book that should be widely read, both by doctors and laymen.

The facts are derived from the examination of some two million children. In this country, where in normal times there is no conscription and therefore records of such massed medical examinations are lacking, there is no more convenient and comprehensive means of evaluating the health of the people than through the school children. But the true purpose of school medical work is not merely statistical; it is to ensure that the children shall be in a fit state of health to take advantage of the schooling provided for them. It is futile to spend vast sums of money on the education of pupils who are unable, on account of physical or mental defect, to reap advantage from it.

The report opens with a lively picture of the work of the school medical staff, first in a country school and then in a town school. To the casual eye of the untrained visitor the children in each school may seem blooming and healthy. To the trained eye of the doctor and school nurse, with their high standards of health and efficiency, are visible defects, both inherent and acquired, which are detrimental to the child. The systematic medical inspection of children is heavy and exacting work, but absolutely necessary. It is the grand inquest of the nation, the sole means of discovering and then strengthening the weak points of the individual child. By dealing with the individual the national health is built up. In former days the utmost ideal lay, in Milton's words, with the general "betterment of man's estate"; now the ideal is the betterment of man. Sanitation is surpassed by social evolution.

School medical work makes practicable a fuller education of the people as a whole; it adds to life "the joy of those who are healed"; it is the prelude of national efficiency. The science and art of medicine have contributed substantially, not to say immeasurably, to the higher evolution of school life. It was the apostles of medicine who demanded more warmth, light, and air in the schoolroom, who made evident the need for the practical teaching of hygiene, who proved that the child must be fed before it could be taught, who won for it the larger physiological interpretation of physicial training and of games, who said that the system of education must be adapted and modified for the defective child. Count up the thoughts with which these five scientific reforms have filled the heart of England, and consider what they are accomplishing in bringing "sweetness and light" into the child's schooldays, and still more into his after-days. This is a service of science "which is silently but certainly changing the prospects and hopes of the English people."

Physical Examination of School Children.

During the year under review 2,685,739 children had one examination—rather more than half the total in attendance; and besides these, no fewer than 1,719,844 re-examinations were made with the purpose of finding out whether or not the recommendations of the first examination had been carried out. There is little variation in the incidence of individual defects: defects of eyesight constitute approximately one-third of the total sum of defects, enlarged tonsils and adenoids a nearly equal proportion. The only appreciable increase has been in the incidence of enlarged tonsils and adenoids, of which the total numbers referred for treatment, both from routine and special inspections, considerably exceed those of the previous year. Such an increase does not necessarily mean any change in the physical condition of the children; it may well be due to the improved facilities for such treatment and, consequently, the greater readiness of medical officers to avail themselves of its advantages. With this exception there has been generally a very slight decrease in the numbers and proportion of children referred for treatment for most physical defects, aural defects, heart disease, tuberculosis, and deformities. There has been a perceptible decrease in the numbers of children found suffering from severe malnutrition, a decline of from 9.6 to 9.0 per 1,000 among children examined at routine inspection.

Some remarkable figures are given of the comparative findings of the examinations of groups of children in Liverpool and other cities, showing the differences between the averages for previous years and for last year. There is definite evidence of increase of height and weight. The school medical officer for London remarks: "The lessened number of children noted year by year as chronically absent from school is another proof of the improving health of the child population." This tendency towards improved nutrition and a higher standard of health appears to be general, though not universal. In London "the returns show that the children in the schools are better nourished than they have ever been before." Even in the industrially depressed areas of South Wales this tendency is felt. "The amount and nature of the evidence available," writes Dr. Jenkins of Rhondda, "justifies the opinion that if the year 1927 be taken as a whole, there has been during its course an appreciable and progressive improvement in the physical condition of the children attending the elementary schools." Dr. Pritchard of Aberdare found that, in spite of the great industrial depression, there was no increase in the numbers suffering from anaemia or malnutrition. Further, there is steady and satisfactory progress as regards personal cleanliness. The percentage of individual children found unclean in 1924 was 7.4; in 1925 it was 6.5; in 1926 it was 6.4; and for the year 1927 it was 5.6.

Provision for Treatment.

The report shows that the local education authorities are, generally speaking, fully alive to the needs of their areas. The most notable advance during the year has been the extension of provision for orthopaedic treatment. New schemes have been approved in respect of twenty-eight areas. Also new schemes for treatment by artificial light have been approved for twenty-six areas. The total number of clinics of all sorts at work last year in England and Wales numbered 1,520. Of these 936 provided treatment for minor ailments, 1,039 for dental defects, 579 for visual defects, 80 for tonsils and adenoids, 45 for the x-ray treatment of ringworm, 150 for orthopaedic defects, 26 for light treatment. The increasing popularity with parents and children of these centres is illustrated by the enormous growth of the attendances made by the children. In three Yorkshire cities the total number of attendances made at the clinics in 1914 was 123,039; in 1919 it was 323,990; and in 1927 the number was 663,305.

A new method of treatment for chronic nasal catarrh known as "diastolization" has been introduced by certain specialists in Paris, and has been subjected to trial in London and Liverpool. The essence of the treatment consists in massaging the unhealthy nasal passages by means of soft inflatable rubber bougies. It is reported that considerable improvement has resulted in the few cases that have so far been treated.

The success of ionization as a method of treatment for otorrhoea has led to its adoption by five additional authorities during the year; forty authorities now use this process. In eleven areas, 60.7 per cent. of cures are reported. Dental treatment is provided in 299 areas, an increase of five for the year; there are eighteen in which no provision has been made. It is recorded that three-fifths of the children examined and treated at each annual inspection

[1] *The Health of the School Child.* Annual Report of the Chief Medical Officer of the Board of Education for the year 1927. London: H.M. Stationery Office. 1928. Pp. 294. Price 1s. 6d. net.

are found to have some dental decay. But this fact taken by itself would create an entirely wrong impression. It is the amount and extent of decay that really matter, and these are not shown by the figures. But the figures indicate that a high proportion need some treatment year by year, and prove the necessity for continuous dental schemes. The value and efficiency of dental schemes are shown by the general improvement in the permanent dentition. In Cambridge, where there is an unusually complete dental scheme, it is found that there is a steady decline in the extraction of permanent teeth. The total worked out at one for every fourteen children examined, whereas in the country as a whole the proportion is rather more than one for every four children treated.

Artificial Light Therapy.

Approval was given during the year to schemes for treatment by artificial light in twenty-six areas; altogether forty-four authorities now have such schemes. It is evident that there is no decline in the popularity of this method of treatment, with its vivid appeal to the imagination; it is carried out at fifteen hospitals and twenty-six school clinics. Detailed reports of the results have been received from only a few medical officers. For the most part their reports have been confined to a statement of the numbers treated, with general comments on the results. This is a matter for regret. It is admittedly difficult and tedious to keep detailed and accurate records, but until this can be done on a fairly large scale, we shall not be in a position to estimate the value of the treatment for specific defects and ailments. The reports received suggest that, so far as school children are concerned, the chief benefit derived from artificial light may be attributed to tonic action. As regards any specific action on particular ailments evidence is generally conflicting and indefinite. Catarrhal cases are said to have done well in certain districts, but on the whole the evidence is negative, and this is also true in regard to nervous and choreic children. On the other hand, cases of non-pulmonary and especially glandular tuberculosis usually do well under the treatment. Broadly speaking, it may be said that this form of treatment, when undertaken by experienced practitioners, has justified itself as an adjuvant to other forms of treatment for children whose standard of health and nutrition is subnormal.

Treatment of Crippling Conditions.

New schemes for orthopaedic treatment were approved during the year in 28 areas, bringing the number of areas in which such schemes have been established up to 160. In many other areas voluntary provision, which in some cases amounts practically to a complete scheme, has been made for the treatment of cripples. Universal experience shows that the crippling conditions found among children of school age in the great majority of cases follow disabilities incurred in the period of early childhood. In Birmingham, for example, a census of cripples taken during the year revealed that 84.5 per cent. of the non-tuberculous crippling conditions arose from causes acting before school age. For this reason it is an essential of any orthopaedic scheme that there should be a system of co-operation between the various committees or authorities concerned, so as to provide for the ascertainment and treatment of cripples at the earliest possible occasion. Delay inevitably results in a prolongation of the period of treatment, with a corresponding increase in its cost; and the ultimate results are far less likely to be satisfactory.

Open-air Schools.

The view is commonly held that in open-air school work health considerations receive so much attention that education has necessarily to take a secondary place. Results from Nottingham indicate that this need not in fact be the case. It may be true that there is—as indeed there ought to be—less formal education than in the ordinary public elementary school, but any loss that might accrue on this account is more than made up for by the child's gain in brightness and general interest and pleasure in its work and play. Open-air school education requires a special technique of its own. This view was well enforced at the recent conference on open-air schools and education held in connexion with the International Child Welfare Congress at Paris. The papers read there emphasized the fact that the open-air movement is destined to have an effect, not merely in its own specialized sphere, but on methods of education generally.

(To be continued.)

EPSOM COLLEGE SANATORIUM FUND.

SECOND LIST OF CONTRIBUTIONS.

IN December, 1926, an appeal was issued by the chairman of council of Epsom College to the medical profession for financial assistance to enable the council to build a new sanatorium and isolation block, and a year later, in our issue of December 3rd, 1927 (p. 1035), we published a detailed description of the proposed building, with plans and a sketch, together with a list of donations to the new sanatorium fund.

Donations to that date amounted to almost £4,208, and subscriptions since received bring the total at the credit of the fund to just over £5,300. Until at least £15,000 is in hand it will not be possible for the council to proceed with the erection of the buildings. The second list of contributions is as follows:

£200.—St. Bartholomew's Hospital Medical Staff.

£100.—Mr. Oswald Addison and Hampstead General Hospital Honorary Medical Staff.

£79 5s. 11d.—Colonel J. Paul Bush (Stock).

£26 5s.—Mr. H. C. Highton.

£25.—Dr. E. L. Adams.

£21.—Mr. H. S. Pendlebury.

£20.—Sir William Hale-White, M.D.

£10 10s.—Dr. William A. Carden, Mr. W. Sampson Handley, and Dr. Prideaux G. Selby.

£8 15s.—Surrey Branch, British Medical Association (further donations).

£5 5s.—Mr. Andrew Cunningham, Dr. Henry J. Dunbar, Dr. C. B. Heald (*second donation*), Mr. G. J. Jenkins, F.R.C.S., Jessop Hospital (Sheffield) Medical Staff, Dr. Claude W. Morris, Mr. A. C. Palmer, and Dr. Ffrangcon Roberts.

£5.—Cambridge Medical Society, Mrs. S. M. V. Richardson, Dr. Charles Slater, and Dr. F. W. W. Smith.

£3 3s.—Dr. C. F. Peyton Baly.

£2 2s.—Brixton and Streatham Medical Book Society, Dr. E. B. Clayton, Dr. F. W. W. Griffin, Dr. R. H. Knight, Dr. T. C. Mugliston, and Dr. Frank G. Penrose.

£2.—Dr. F. M. Neild.

£1 1s.—Dr. Thomas Baker, Mrs. Theodore Bell, Dr. J. Percival Brown, Dr. E. G. Bunbury, Dr. J. A. Drake (*second donation*), Dr. Framjee Gotla, Dr. William Douglas Kirkwood, Dr. A. L. Morris, and Dr. H. A. Richards.

Victoria.

[FROM OUR OWN CORRESPONDENT.]

New Chair of Obstetrics at Melbourne.

As the result of the promise of £2,500 per annum by the Premier of Victoria, which will be supplemented by a gift of £20,000 from the Edward Wilson Trust, the council of the University of Melbourne has decided to proceed at once with the establishment of a chair of obstetrics. The council has resolved that the salary attached to this appointment shall be £2,000 per annum. The holder will not be permitted to engage in any private practice for fees while he is the occupant of the chair, and will be available, free of charge, for consultations with the medical advisers of the Women's Hospital and the Queen Victoria Hospital in confinement cases presenting features of serious difficulty or risk. Subject to these conditions the council has remitted to the faculty of medicine the task of drafting the regulations for the establishment of the chair; the faculty has not yet prepared its report.

Resignation of Professor R. J. A. Berry.

After having been associated with the University of Melbourne for nearly twenty-three years, Professor R. J. A. Berry, dean of the faculty of medicine, has tendered his resignation of the chair of anatomy to the council, and in recognition of his valuable services has

been granted six months' leave of absence, commencing in August, 1929. During his term of office as professor Professor Berry devoted himself wholeheartedly to the building up of a school of anatomy and to the teaching of students, in both of which his efforts have been most successful and much appreciated. He has also spent a great amount of time on the study of the structure and functions of the nervous system, and has embodied the results of his work in this direction in a recent publication, *Brain and Mind*. For the past several years, as dean of the faculty of medicine, his efforts have been directed particularly to forwarding the establishment of a university clinical hospital. It would have been a great source of gratification to him, and a fitting termination to his career in the city, if this had been achieved before his departure, but although this seems unlikely his work will probably bear fruit in the future. Professor Berry has many years of useful activity still ahead of him, and those who have had the privilege of being associated with him wish him every success in his future career.

Memorial to the Late Dr. R. J. Bull.

The Victorian Branch of the British Medical Association has erected a memorial tablet in the Bacteriology School of the University of Melbourne, and a statuette in the Medical Society Hall, in recognition of the valuable services rendered by the late Dr. R. J. Bull both to the University of Melbourne and to the medical profession of Victoria. Dr. Bull was director of the bacteriological laboratories of Melbourne University, and his valuable advice and kindly assistance were always willingly given to members of the profession in the state. He had a keen and original mind, and a charming personality, and but for the large amount of routine and teaching work required of him would probably have devoted more time to research. He took a lively interest in medical politics, and at the time of his death was president of the Victorian Branch of the British Medical Association. His untimely death was deeply felt by his many friends, and was a great loss to the University and the medical profession.

Future of the Veterinary School.

The report of the committee which was appointed to inquire into the future of the veterinary school has been adopted by the council of the University, and a deputation has been selected to place its recommendations before the Ministry. The committee recommended that teaching for the veterinary degree course should be continued in Melbourne up to the end of the third year, and that students should then go to Sydney for the fourth year. It was also urged that the University should continue to conduct laboratory, diagnostic, and reporting work, together with investigations of outbreaks of disease in animals, for the stock branch of the Department of Agriculture, with University officers, staff, and equipment as at present. The milk laboratory should also continue on present lines. Other recommendations were that there should be continuance of the facilities afforded to the research officers of the Commonwealth Science Industrial Research Institute up to the limits of the accommodation of the school, and an increase and extension of the endowment fund and other provisions for research work relating to matters of disease in animals by University officers. Finally, the committee proposed that a new Act be obtained providing for the above measures, and including provision for ten retainers of £1,500 per annum to veterinary practitioners located in country districts of Victoria.

Proposed Appointment of a Paid Vice-Chancellor at Melbourne University.

The council of the University of Melbourne has adopted the report of the committee appointed to consider the advisability of appointing a paid vice-chancellor. The committee has recommended that the sum of £2,000 should be provided to include salary, contribution to provident fund, and hospitality allowance, that the vice-chancellor be a full-time officer and should represent the University in dealing with outside bodies, and that he should be the chief administrative officer of the University. His tenure of office, the council decided, would be limited to a period of five years. It was decided to ask the committee to lay the proposal before the Premier and to ask for the necessary funds to carry it into effect.

Lectures by Professor F. R. Fraser.

Professor F. R. Fraser, director of the medical teaching unit at St. Bartholomew's Hospital, London, who visited Melbourne at the invitation of the Post-Graduate Committee, recently delivered a series of lectures at the Medical Society Hall. The lectures were very much appreciated and were attended by several hundred practitioners, many of whom had come from different parts of the state.

Scotland.

Maternal Mortality in Aberdeen.

A REPORT on maternal mortality in Aberdeen for the ten years 1918–27, with special reference to puerperal sepsis, has just been issued by the Scottish Board of Health, the authors being Drs. J. Parlane Kinloch, J. Smith, and J. A. Steven. In a prefatory note Dr. T. F. Dewar of the Scottish Board of Health recalls that such an inquiry was proposed by Professor Matthew Hay in 1917, prior to the suggestion of the Scottish Departmental Committee which reported on puerperal morbidity and mortality in 1924, and notes that the report falls naturally into two parts, one being a critical analysis of data collected in the ten years' investigation, and the other dealing with the essential nature and bacteriology of puerperal septic infection.

The report states that in Aberdeen the local registrars are required to forward daily to the medical officer of health a report of the deaths of women which occur during pregnancy or within four weeks after childbirth. During the ten years there were 252 puerperal deaths, but in only 219 of these was reference made to pregnancy or parturition in the death certificate, so that one in every eight of the maternal deaths was discovered by means of the special system of inquiry thus provided. It was found that of the quinquennial age periods from 15 to 49 the death rate was lowest at the period 25 to 29, amounting then to 5 per 1,000 births, while at the age period 35 to 39 the rate was doubled. A predominant part was played by sepsis and albuminuria in these maternal deaths, and the death rate from haemorrhage was found to increase steadily from 30 years onwards. The death rate among mothers of illegitimate children was found to be fully twice as great as among others. Of the 252 women concerned, 203 were engaged in household duties, 10 were fish-workers, 6 mill-workers, 13 factory workers, and the others were engaged in light employment. Alcoholism cannot be said to have played any important part as a cause of death, for the health visitors found that there was definite evidence of intemperance in the proportion of 1 in 93 of expectant and nursing mothers in general, while this occurred only in the proportion of 1 in 126 among women who died from puerperal conditions. Cleanliness of the house had a certain amount of influence, as only 92.8 per cent. of houses where puerperal deaths occurred were described by the health visitors as good, compared with 95.4 per cent. of good houses among all those visited by them. The curious fact was noted that the puerperal death rate per 1,000 births was 9.2 in houses of three or four rooms, as compared with 4.4 in one-roomed houses. The proportion of deaths from albuminuria and convulsions was definitely highest in the least crowded houses. The state of health during pregnancy had an important bearing, for the records of the health visitors showed that among all cases of births (nearly 3,000 a year) the mothers in 80 per cent. had retained satisfactory health during pregnancy, whereas among the mothers who died the health had been satisfactory during pregnancy in only 40 per cent. of cases. Only 55 per cent. of the women whose deaths were brought under review reached the normal period of gestation. With regard to the influence of syphilis, the death rate per 1,000 births among mothers of

stillborn children was eight times as great as that among mothers of live-born children, and in regard to haemorrhage it was twenty-one times as great. In Aberdeen it is the practice to have the bodies of all stillborn children who are attended by midwives and in the Maternity Hospital examined for spirochaetes, and the result showed that 12.1 per cent. of the stillbirths were due to syphilis. In respect of the danger of different confinements the second was found to be the safest, for the mortality of second confinements was about one-third that of the first confinement, while after the second the fatality again gradually increased. It was found that in the practice of midwives the death rate was 2.8 per 1,000, in the practice of doctors 6.9, and in institutions 14.9. On the other hand, the evidence showed that instrumental delivery was not associated with any increase in sepsis. Emphasis is laid upon the importance of restricting the number of patients and their spacing in maternity wards if contagion is to be reduced. The suggestion is made that infection may be brought by droplet infection of streptococci from the throats of carriers.

Bacteriological examinations were made in a series of 88 cases of puerperal fever. Examination of uterine cultures, blood cultures, and pus from secondary suppurative processes showed that in all cases the organism most frequently found was a *Streptococcus haemolyticus*. In connexion with the prevention of maternal mortality the report concludes that an important reduction would be secured by the expansion and improvement of ante-natal services. It is also suggested that such organization should be made that midwives should conduct normal deliveries, and that doctors should provide the ante-natal services and deal with obstetrical complications. For the destruction of organisms that have invaded the maternal tissues it is suggested that the production of a type (serological) specific antibacterial serum is necessary.

Edinburgh Royal Infirmary.

The annual report of the Royal Infirmary, Edinburgh, was presented to the annual meeting of the court of qualified contributors on January 7th. The report points out that on August 6th the institution will have completed 200 years of service. During the past year 19,680 patients were treated in the wards of the institution, of whom 13,176 were discharged cured, while the deaths numbered 1,084. Of the 18,792 cases admitted 4,326 were medical and 14,466 surgical. The total number treated showed an increase on that of the previous year by 957, and the average daily number of patients in the institution was 913, an increase of 10 on the previous year. The largest number of patients on any one date was 940, and the average time spent in the institution was 16.39 days, against 17.09 in the previous year. Of the cases admitted 8,815 were from Edinburgh and 9,964 from the country. The percentage of deaths in cases treated was 5.5, or deducting deaths occurring within forty-eight hours of admission, 3.8. New out-patients numbered 62,085. The total ordinary income of the Infirmary was £117,191, of which £72,749 was derived from contributions; the increase in income over that for 1927 was £5,695. Extraordinary income amounted to £49,392, of which £16,737 was carried to permanent capital. Ordinary expenditure was £136,831, against £140,539 for the preceding year, and the extraordinary expenditure was £5,849. The cost per occupied bed for the year was £149 17s. 5d., or £5 15s. 4d. less than in the preceding year, and the average cost per patient was £6 19s. 1d. According to the report, the success attending the systematic scheme of collecting small subscriptions from employees showed that this form of support was well maintained. During the year £21,435 was collected from 1,450 groups of subscribers, comprising employees engaged in public works, business establishments, staffs of schools, banks, and Government and other offices. The contributions of miners and oil workers engaged throughout the coal and shale areas served by the institution amounted to £11,141, an increase of £916. Ten tons of silver paper were collected, producing £570 for the Infirmary; it is considered that the spirit of community giving engendered by this means is well worth fostering.

Correspondence.

THE TEMPERATURE IN PULMONARY TUBERCULOSIS.

SIR,—Dr. Colin Milne contributes to your pages in the issue of December 29th, 1928 (p. 1173), a most interesting article on the temperature in pulmonary tuberculosis. There are one or two points, however, which appear to me to be somewhat ambiguous in the course of this article, or open to criticism. He states that to take the rectal temperature requires more time than other methods; yet in the next paragraph he says that with the thermometer in the mouth it is often three minutes before the mercury begins to move at all. Now in taking rectal temperatures three minutes with a minute thermometer is always long enough; whereas, as Dr. Milne indicates, and as was long ago pointed out by Dr. W. Burton-Fanning, even fifteen minutes is not always long enough to record the proper oral temperature in cold weather; and in over 70 per cent. of cases the maximum reading will not be reached after five minutes (see *Tubercle*, vol. vi, p. 179).

Dr. Milne states that an oral temperature of 99° may be considered fever. If he were more used to rectal readings I think he would be more precise and strict. He speaks frequently, too, of a normal temperature. There is no such thing as a normal temperature. The temperature varies according to the conditions under which it is taken, even when it is taken by the same method. Furthermore, as he rightly points out, one individual's normal temperature differs from another, and one sex's from that of the other. He gives interesting facts under the head of this latter point. The temperatures after resting for at least half an hour in a reclining position are the most valuable from the point of view of pulmonary tuberculosis. A further twenty years' experience confirms the conclusion which I reached many years ago and expressed in an article published in the *Lancet* in 1909 (vol. ii), that a rectal rest temperature above 98° in the morning, and above 99.3° in the evening, should be considered fever, at all events in a man. In most men, in fact, a rectal rest temperature of 98° a.m. and 99.4° p.m. will be found to be one degree higher than the average temperature of health. The temperature for oral readings should be one degree lower than this, Fahrenheit, and half a degree lower is the usual reading for urine temperatures. The presence of fever in phthisis demands rest; hence the great importance of these points.

Dr. Colin Milne speaks of a pre-menstrual rise of one week as "long." In my experience seven days' pre-menstrual rise is common, but not much less common is one which is ten days or even fourteen days.

Some references to the subject of the normal temperature will be found under the heading of "Subnormal temperatures" in the *British Medical Journal*, vol. ii, 1925; and, to the subject Dr. Milne deals with, in an article by Dr. C. G. Goodwin, published in *Tubercle*, vol. iv. He does not refer to Dr. Varrier-Jones's recent little book on *The Significance of Temperature Variations in Tuberculous Disease*.—I am, etc.,

S. VERE PEARSON.

Mundesley, Jan. 5th.

THE DEFINITION OF PUERPERAL PYREXIA.

SIR,—The standard of puerperal morbidity adopted in a recent paper in the *Journal* (December 15th, 1928, p. 1082) having been questioned by Dr. Bethel Solomons (December 22nd, p. 1155), and the matter being clearly of great importance, I have approached Dr. Alfred Cox for information regarding the "British Medical Association standard," referred to in our paper. He has kindly allowed me to publish the apposite portions of his reply as follows:

"So far back as 1905 the Council set up a Puerperal Morbidity Committee, which consisted of obstetricians from all parts of the United Kingdom. This committee met on two occasions, and issued a report of which one recommendation was that the table of puerperal morbidity should include all fatal cases and also all cases in which the temperature reaches 100° F. on any two of the bi-daily readings from the end of the first to the end of the eighth day after delivery.

"I cannot find that this report was ever submitted for the approval of the Representative Meeting, although it was reported to the Section of Obstetrics and Gynaecology in 1906. I have no doubt that it was this recommendation which was adopted, and has been referred to by some people as the B.M.A. standard of morbidity.

"In 1925, on the request of Sir George Newman, our Special Committee on the Causation of Puerperal Morbidity and Mortality considered a report issued by the Section of Obstetrics and Gynaecology of the Royal Society of Medicine. In this report appeared the following paragraph: 'For the purposes of the notification Acts and the investigations to be initiated after notification the following should be the definition of sustained puerperal pyrexia: sustained pyrexia means and includes any febrile condition occurring in a woman within twenty-one days after childbirth or miscarriage in which a temperature of 100.4° F. or higher is sustained or recurs during a period of twenty-four hours.'

"Our committee's comment on this paragraph was that the period mentioned in the second part of the paragraph should be 'more than twenty-four hours.' The Ministry of Health did not see its way to accept this suggestion of ours, and when the notification of puerperal pyrexia regulations appeared it was found that the expression 'puerperal pyrexia' was defined as meaning 'any febrile condition (other than the condition which is required to be notified as puerperal fever under the *Infectious Diseases (Notification)* Acts) occurring in a woman within twenty-one days after childbirth or miscarriage in which a temperature of 100.4° F. or more has been sustained *during a period* of twenty-four hours or has recurred during that period.'

"It is unfortunate that this confusion should have arisen, but we shall have to abide by the decision of the Puerperal Morbidity and Mortality Committee in 1925."

It appears, then, that Dr. Solomons's standard and ours conform neither with each other nor with the standard adopted by the Ministry of Health. One may deplore the lack of clarity in the language employed to give an official definition of "puerperal pyrexia" for the purpose of its notification, but it may be best, nevertheless, if all workers in this field agree to accept henceforth what seems to be intended by the Ministry's definition of "puerperal pyrexia"—that is, *a pyrexia of 100.4° F. or more affecting a woman within twenty-one days after childbirth or miscarriage, and lasting for twenty-four hours on end or occurring more than once in any given twenty-four hours.*

The actual detail of the standard seems to me to be of less importance than that it should be intelligible and unanimously accepted. I am grateful to Dr. Solomons for his criticism, but propose in subsequent studies to adopt the reading of the Ministry of Health standard which appears in (my) italics above, unless good cause can be shown to the contrary.—I am, etc.,

St. Bartholomew's Hospital, London, E.C., Jan. 2nd. RICHARD R. ARMSTRONG.

DENTAL CARIES AND VITAMIN D.

SIR,—Dr. A. E. Barnes will, I think, find sufficient evidence that the increased consumption of sugar is the chief factor in the causation in the widespread prevalence of caries if he will refer to Sir Frank Colyer's textbook on *Dental Surgery and Pathology*. Apart from the fact that "there is abundant clinical evidence to show that the use of sugar is closely connected with the amount of caries," he will be able to note that there is satisfactory statistical and other evidence leading to the same conclusion.

For the present discussion, however, it is hardly necessary even to trouble about the information he might thus derive, since Mrs. Mellanby seems to recognize that "Miller proved that the local or immediate cause of the disease was a chemico-parasitic process" (*British Dental Journal*, July 16th, 1928, p. 769). This chemico-parasitic process, as is well known, comes about from the fermentation of the sugars by bacteria, the end-product being chiefly lactic acid, which initiates caries by its action on the enamel. In view of this it seems strange that three groups of children getting from 50 to 200 per cent. more sugar than the group receiving radiostol should have been represented, as far as I can see, as being in the nature of controls.

With regard to the effect of fat in the diet, nearly thirty years ago, from clinical and other evidence, I claimed that the eating of fat was positively antagonistic to dental caries, and with regard to bacon I recently indicated that it was especially satisfactory in preventing caries, not only because it is rich in fat, but because its fibrous nature stimulates mastication, and, of course, it could not leave, indeed it actually clears away, any carbohydrate residue which might otherwise be left clinging about the teeth. As these views are somewhat widely recognized, surely care ought to have been taken by Mrs. Mellanby and Dr. Lee Pattison not to have included these foods in one group when they were not included in the other.

When highly satisfactory results are got experimentally by restricting the amount of sugar consumed and increasing the fat and detergent bacon, are we not justified in claiming it as evidence of the truth of our theory? That radiostol has nothing to do with what occurs, whether seen clinically or experimentally, is further indicated, since there appears to be little or no vitamin D in bacon fat.—I am, etc.,

London, W., Jan. 5th. J. SIM WALLACE.

CLASSIFICATION OF THE GENUS STREPTOTHRIX.

SIR,—Dr. T. Warwick Preston's article on pulmonary actinomycosis in your issue of December 29th, 1928 (p. 1172), raises an issue which is of particular interest to the bacteriologist. He describes two cases of this disease which proceeded to recovery, the diagnosis in each case being based on the demonstration of branching Gram-positive filaments in the sputum.

Assuming these organisms to have been causative of the condition, which is doubtless justifiable if they were repeatedly found predominating in fresh specimens, I wish to submit that this does not necessarily indicate a true actinomycosis. In this disease material from the lesion contains yellow granules, seen microscopically to be composed of mycelium, and culture in anaerobic media yields a characteristic growth composed of similar bodies. During the past few years I have examined material from about fifteen cases of actinomycosis of the jaw, lung, or abdomen, in which the fungus had these characters, but nearly as many others in which it departed from them. Granules may be absent; the filaments may be broken down into short lengths, easily mistaken for bacilli, or even into bodies resembling cocci, some or all may be Gram-negative; culture in anaerobic blood-broth may yield a flocculent growth instead of the solid rounded colonies of the typical *S. actinomyces*; blood is sometimes a necessary adjunct for growth, sometimes not; the rate of growth may be slow or rapid; the characteristic smell of the culture may be absent. In my experience the atypical streptothrix is more commonly found in pulmonary lesions than elsewhere; this assertion is based rather on the examination of specimens of pus from empyemata and lung abscesses than on findings in sputa. The clinical features of some of these cases differed from those of classical actinomycosis.

Although not wishing to suggest that the term actinomycosis be confined to lesions from which typical granules can be recovered, I submit there is ample evidence of the existence of more than one pathogenic streptothrix capable of causing visceral lesions in man. The prognosis, no doubt, depends on the type of organism, as may the response to various forms of treatment. The classification of the genus streptothrix as found in human disease is therefore an unsolved problem of more than academic interest.—I am, etc.,

London, W., Dec. 31st, 1928. LAWRENCE P. GARROD.

SO-CALLED "WHITE ASPHYXIA" OF THE NEWBORN.

SIR,—We were much interested in Mr. Bourne's letter of December 15th, 1928 (p. 1109), especially as it fully endorses the teaching of the past four years by Professor A. L. McIlroy in this unit.

During this period artificial respiration, hot baths, and all other mechanical forms of stimulation have been entirely

discarded in the treatment of newborn infants suffering from shock. These methods have been replaced by warmth and rest, cardiac and respiratory stimulants such as camphor and lobeline, the use of the mucous catheter, and the administration of 5 per cent. carbon dioxide + 95 per cent. oxygen by means of the apparatus devised by Professor McIlroy (*Lancet*, August 20th, 1927, p. 397).—We are, etc.,

MARGARET SALMOND,
Senior Assistant in the Unit.
BEATRICE TURNER,
Gynaecological Registrar.
Obstetrical and Gynaecological Unit, Royal Free Hospital, Gray's Inn Road, W.C., Jan. 2nd.

SIR,—In the recent correspondence on so-called "white asphyxia" of the newborn I have seen no mention of treatment by carbon dioxide inhalation.

It has been shown by repeated trials that if an infant's lungs are expanded rhythmically with a mixture of 95 per cent. oxygen and 5 per cent. carbon dioxide spontaneous respiration will be established rapidly, provided that the blood is circulating and that the respiratory centre is not hopelessly damaged.

There is little doubt that the frequent success of mouth-to-mouth insufflation (mentioned by Dr. Trumper) is due to the relatively high percentage of carbon dioxide in the operator's expired air. It is difficult to understand Mr. Aleck Bourne's assertion that in mouth-to-mouth insufflation, "nothing can happen but inflation of the stomach through the oesophagus." It is a fact that very considerable pressure can exist in the nose and mouth without any leakage into the stomach. For example, in abdominal operations, in which the stomach is in full view, I have upon several occasions increased the pressure of nitrous oxide and oxygen in the facepiece to the highest practicable point, but I have never been able to satisfy myself that any gases have passed into the stomach. Again, when performing oesophagoscopy under general anaesthesia, although the voluntary muscles are completely relaxed (as in "white asphyxia") the superior constrictor is always found to be closed, and it seems doubtful whether gases at moderate pressure would leak past it. Furthermore, if Mr. Bourne's assertion was correct, one would expect that patients upon whom intrathoracic operations were performed under differential pressure anaesthesia would suffer afterwards from abdominal distension and flatulence, but I have never heard of trouble arising from this cause.

Carbon dioxide has a much greater potency than lobeline or any other respiratory stimulant. For example, if an average man at rest inspires seven litres of air per minute, and then inhales air containing 5 per cent. carbon dioxide, he will inspire nearly thirty litres of air per minute within a few breaths. This forced breathing is of great benefit in cases of atelectasis, while a further action is a marked rise of blood pressure, which also tends to combat the shock condition of "white asphyxia."

In conclusion, I venture to suggest that if all newly born infants who showed the signs of "white asphyxia" were given carbon dioxide-oxygen inhalations without delay, their mortality rate would be considerably diminished.—I am, etc.,

C. LANGTON HEWER.
London, N.W.1, Jan. 7th.

SIR,—A mode of treatment which I have used for many years, and often with marked success, in cases of "white asphyxia" is to pass a No. 8 gum-elastic catheter into the trachea of the devitalized child.

Air should be blown into the lungs about eight times per minute. The child's head can be kept low, brandy put into the mouth, the child kept warm, and direct cardiac massage can be performed at the same time. It is quite easy, using the forefinger of the left hand as a guide, and feeling for the epiglottis, to pass the catheter into the larynx with the right hand.

After even one or two "blows," almost invariably, one feels the increased rapidity of the heart's action. When the child does make a spasmodic gasp on its own, air is drawn into the lungs free of all mucus. A soft rubber catheter can be passed, but with much more difficulty than if a gum-elastic one is used. This mode of treatment is harmless and very much more efficacious than mouth-to-mouth insufflation or other form of artificial respiration, which, as Mr. Bourne states, increases the shock.—I am, etc.,

STEPHEN SOUTHALL, M.D.
Birmingham, Jan. 1st.

SIR,—So far in this correspondence no one has suggested that there may be two types of "white asphyxia." Infants born after a difficult or prolonged labour (with or without the use of forceps) in a state of "white asphyxia" may be fairly deemed to be suffering from shock; but I would suggest that there are at least two kinds of true asphyxia in whose causation shock plays a minor part.

First, cases are not uncommon where, after the birth of the head, considerable delay occurs in the birth of the shoulders. In these cases, particularly when the cord is twisted round the neck, one sees the face go blue ("blue asphyxia"), and then, if the delay continues, the child passes, after a number of ineffective respiratory efforts, into a state of "white asphyxia." Secondly, premature inspiration resulting in the filling of the air passages with liquor amnii and blood, such as may occur in breech presentations, will produce true asphyxia. The former type is comparable with the asphyxia produced by strangulation or suffocation, and the latter with the asphyxia produced by drowning. Surely neither a drowned nor a strangled man can be said to have died of shock, but of asphyxia.

With regard to the treatment, I agree that the same measures should be adopted with the "shocked" baby as with any other person suffering from surgical shock; but, in my experience, babies who are suffering from the effects of obstructed respiration (which includes obstruction of the placental interchange of gases) respond very quickly to artificial respiration so long as the body is prevented from getting chilled. This is the type of "white asphyxia" that the midwife is most likely to be called on to treat, and a knowledge of the correct method of artificial respiration should enable her to revive most of her asphyxiated babies. From the fact that the large majority of babies so revived show no subsequent symptoms one must assume that there can be no gross lesion in the brain or meninges in most cases.—I am, etc.,

K. J. AVELING.
Watford, Herts, Jan. 6th.

SIR,—I have some forty-two years of experience in midwifery. For the past ten years I have abolished artificial respiration. I lay the baby across the bed, head hanging down and tongue out. I simply apply towels wrung out of hot water—one after the other—for a reasonable period.—I am etc.,

I. CRAWFORD.
Tredegar, Mon., Jan. 6th.

THE INTERNATIONAL CANCER CONFERENCE.

SIR,—In the course of Dr. Blair Bell's letter under this heading (January 5th, p. 42) he refers to a contribution made by me on the treatment of cancer by lead. Dr. Blair Bell makes certain statements which are so misleading as to call for correction.

With regard to the number of cases treated, twenty very carefully selected cases should be sufficient to estimate the likelihood of the method being of practical value, especially as each case was studied with great thoroughness.

To say that fifteen patients were "too ill to receive more than a very small . . . quantity of lead" is to imply that these cases were unsuitable from the beginning, and were moribund before treatment was commenced. This was not the case, as it was clearly pointed out in my paper that the patients were not moribund, and all were cases which, in the estimation of my senior colleagues, had a fair expectation of life. Every patient had to pass the very stringent clinical and laboratory tests as laid down by Dr. Blair Bell himself before being submitted to the treatment. The fact that some cases, certainly not as many as fifteen, received only a small quantity of lead was due to the grave results actually produced by the treatment.

The observation that the patients were converted into "physical wrecks" was not made only by myself, but by many of my colleagues on the committee which had charge

of the investigation. In some cases they declined to share the responsibility of continuing the treatment.

Dr. Blair Bell seems to be of the opinion that the treatment was not conducted on proper lines. I would remind him, however, that the preparation of lead used was kindly supplied by him direct from Liverpool, and that he was cognizant of the methods employed when he visited St. Bartholomew's Hospital to hear a preliminary report and to see the patients.

The treatment was conducted throughout with the greatest care, full investigations being carried out before each dose was administered. The method conformed in every detail to that laid down by *Dr. Blair Bell himself*, several members of the staff, including myself, having studied it at Liverpool.

I am still of the opinion that the treatment of cancer by lead in its present form is wholly unjustifiable, if on humanitarian grounds alone.—I am, etc.,

London, W.1, Jan. 7th. J. BASIL HUME.

POST-PARTUM ANAEMIA.

SIR,—With reference to the case of post-partum anaemia reported in your issue of December 22nd, 1928 (p. 1131), I am surprised to see no reference made by the authors to the work of Dr. Margaret Balfour of the Haffkine Institute, Bombay, on the anaemia of pregnancy and of the post-partum period.

Cases similar to that recorded are relatively common in Indian practice. One is inclined to suspect that a grave degree of anaemia was present in the last weeks of pregnancy, and that, as is usual in this disease, the profundity increased rapidly after delivery. My own experience has been that the disease, when definitely developed and under ordinary methods of treatment, is extremely fatal, either towards the end of the pregnancy or within a few weeks of delivery, and I agree that the case quoted would have inevitably terminated fatally without blood transfusion.

Two or three recent and very severe cases at St. George's Hospital, Bombay, I treated by blood transfusion, combined with liver, and these patients recovered rapidly. I give about 300–400 c.cm. of blood on three or four occasions within a week by the citration method, and I formed the opinion that the recoveries were due to the blood transfusion and not to the liver. This is fortunate in that the vegetarian Hindu will not take liver, although I understand there is now a liver extract administrable by injection which could be used.

There is no question that many cases in India go unrecognized owing to the prevalence of other profound anaemias. "Malaria" is a frequent diagnosis, owing to the invariable occurrence of fever in pregnancy anaemia. Treatment by quinine not only does not touch the fever, but actually appears to aggravate the anaemia. Compare in the present case the "influenza" from which the patient suffered before her confinement. How convenient "malaria" in the tropics and "influenza" at home to the busy practitioner for the diagnosis of unexplained fevers!—I am, etc.,

W. C. SPACKMAN, M.B., B.S.Lond.,
London, S.W., Dec. 22nd, 1928. Major I.M.S.

CARDIOSPASM OR ACHALASIA OF THE CARDIA.

SIR,—The direct questions put to me by Mr. C. C. Beatty in your issue of January 5th (p. 45) compel me to break a New Year's resolution at this early date.

1. Mr. Beatty asks me to explain the fact that the obstruction is not always at the cardia, but the answer is given in the heading of his letter, as "Cardiospasm or achalasia of the cardia" is obviously a condition of the cardia and of nothing else. I have only seen one case of the kind he mentions: in this obstruction was present in three different places, and I regarded the condition as probably one of multiple spasmodic strictures.

2. The fact that I believe in achalasia of the cardia does not make me deny the possibility of spasm of the cardia. I have seen three or four cases in which the cardiac sphincter resisted the passage of the mercury tube and gripped it after its passage, just as the anal sphincter in a state of spasm resists and grips the finger. The condition was primarily due to achalasia, but the oesophagitis caused by prolonged retention of fermenting food had led to spasm, the degeneration of Auerbach's plexus being presumably incomplete. Lavage of the dilated oesophagus resulted in the disappearance of both the oesophagitis and spasm in a few days, but the achalasia persisted until it was finally cured by the mercury tube.

3. The exact height of the residue of food in the oesophagus varies in different cases. In those which I have measured accurately it has been approximately eight inches, but no doubt the resistance of the closed cardia varies in *different individuals*.

4. The resistance of the closed sphincter is probably less in small children than in adults, owing to its slighter development, but the only measurements I have made have been in adults.

5. The sphincter does not *relax* when the column of fluid above it exceeds eight inches, as it is incapable of relaxation in achalasia; relaxation indicating an active process, the exact opposite of contraction. The sphincter is forced open, and is only kept open so long as the pressure is sufficient; its action is comparable with that of a safety valve to a boiler, which allows steam to escape when a certain pressure is reached, but closes again as soon as the pressure falls to the level at which it opens.

As Mr. G. W. Rake is at present in America I am answering the question put to him by Mr. Beatty. I find a mistake was made in copying the figures from his paper. The thickness of the wall of the oesophagus in his first specimen was 0.2 cm., 0.8 cm., and 0.45 cm. respectively at the upper end, in the middle of the hypertrophied area and just above the cardia, the measurements given in his letter being those of the diameters of the lumen.—I am, etc.,

New Lodge Clinic, Windsor Forest, Jan. 5th. ARTHUR F. HURST.

TREATMENT OF VARICOSE ULCERATION.

SIR,—In the interesting report (December 22nd, 1928, p. 1144) on the treatment of varicose ulcers, one table (No. XI) is of special interest for the following reasons. This table gives the percentage of healing in cases treated by different methods, and appears at first sight to give a guide to the relative value of various methods of treatment. It is probable that many readers will interpret it in this way, and will feel supported in doing so by the statement in your leading article on page 1147, that "the report conclusively indicates the best treatment prevailing at the present time."

However, a close inspection of the report shows that it is not justifiable to draw such conclusions from the data actually published, and I venture to suggest that if Dr. Luff is able to publish certain further data the value of the table and of the whole report would be much enhanced. The further data desired are those showing how far the cases in each group are truly comparable (of which data the duration of ulceration prior to the treatment is of most importance), and the data concerning the use of two or more methods of treatment for one case.

The duration and extent of the complaint prior to treatment are of the utmost importance in appraising the value of various methods, owing to the contrast between the ease with which the first ulcers usually heal and the difficulty which is met with in healing old ulcers surrounded by extensive areas of indurated tissue. Owing to this contrast the percentages in the table may easily be influenced by a preponderance of cases of one or other type in certain of the groups. Indeed, in the treatment by removal of veins it seems probable that a selection of especially suitable cases was made, as such selection would be most fully justified.

The desirability of indicating the conjoint use of several remedial measures is evident from the statement early in the report that 56.2 per cent. of all cases were treated with rest in bed, and 44 per cent. with bandaging. Since rest in bed alone will cure a large percentage of ulcers it is evident that the position of a method of treatment in Table XI may depend more on the extent to which the

physicians insisted on rest (or on careful bandaging) than on the value of the special treatment employed.

If such data cannot be given for all the cases they would still be of much interest for the group treated by ultra-violet light. This group shows a surprisingly high percentage of cures, especially in view of the cautions given as to the need of skilled technique and care in dosage. These warnings suggest some wider experience of cases in which ultra-violet radiation has been unsuccessful than the six cases mentioned in the report, and in the absence of details it seems possible that the high percentage of cures in this group may have been due to exceptional care or skill on the part of the physicians concerned, rather than to the specific action of the radiation.

These questions are put, not with a desire to belittle a successful piece of work, but in the hope that Dr. Luff may be able to add further weight to the evidence already given. It is also hoped that, should further collective investigations into treatment be undertaken, the need for observation and tabulation of all the pertinent variables may be yet more fully recognized.—I am, etc.,

National Institute of Medical Research, Hampstead, Jan. 7th. R. B. BOURDILLON.

CYSTICERCOSIS OF THE BRAIN.

SIR,—The case of cysticercosis of the brain described in the *Journal* of December 1st, 1928 (p. 980), recalls to my mind a very similar picture in an Indian shepherd boy who came to the *post-mortem* table in Madras Medical College some five or six years ago. The patient was admitted to the wards with a history of commencing blindness associated with fits. The true cause of his condition was obscure during life, and only revealed at the necropsy, conducted by my assistant, Dr. A. Vasudevan. The pathological description by Dr. Broughton-Alcock would equally apply to our case. The cysts were almost entirely relegated to the grey matter generally, and the optic thalamus particularly was stuffed with them. Over seventy cysts were picked from one hemisphere. These showed hooks and suckers, and were diagnosed as the bladder-worm stage of *Taenia solium*. It was somewhat curious to find a typical *Taenia saginata* in his intestine. One of the hemispheres is now to be seen in the museum of the pathology department of Madras Medical College.—I am, etc.,

W. LEONARD FORSYTH, M.B., D.P.H.,
Major I.M.S. (Ret.),
December 15th, 1928. Professor of Bacteriology, Egypt.

TONSIL AND ADENOID OPERATIONS.

SIR,—May I express my agreement with most of Mr. Herbert Tilley's letter of December 29th, 1928 (p. 1194); but, like Mr. T. A. Clarke, who writes in this week's issue, I am unable to acquiesce in the routine use of ligatures in tonsillectomy. It is most important to avoid loss of blood, and to send the patient back to bed with all haemorrhage arrested. In the majority of cases this can be achieved by the use of the "La Force haemostatic guillotine." My colleague Mr. F. C. Wrigley and myself have now used this instrument in over 500 cases, and are both enthusiastic about its value. In successful cases there is no bleeding at all, or at most a mere tingeing of the mucus, and it is unnecessary to use a single swab.

Like other guillotines, it occasionally fails, and resort must be had to dissection. I have never experienced this in children, and in only about 5 per cent. of cases in adults. We have only had one case of reactionary haemorrhage after the patient had been removed to bed. In a few cases—I do not know the exact proportion—the instrument does not arrest the haemorrhage, and then the usual methods, including possibly that of ligature, have to be adopted.

The instrument is condemned as unsurgical by Mr. Irwin Moore in his recent book *Tonsils and Adenoids*, but I have found it to produce less trauma, less post-operative discomfort, freer faucial pillars, and less cicatrization than any other. It is rather more difficult to use than other guillotines, and some practice is necessary for its efficient employment. I feel very strongly that the "La Force" guillotine should be more widely known and used in this country.—I am, etc.,

Manchester, Jan. 5th. D. LINDLEY SEWELL.

SIR,—Like your correspondent Mr. Clarke (January 5th, p. 45), I would also like to express my strong opposition to Mr. Tilley's advocacy of the routine application of ligatures in tonsillectomy.

I can truthfully affirm that I have *never* found it necessary to apply a ligature, though I have been constantly doing the operation since it was first introduced about twenty years ago. Of later years I remove *all* tonsils by the propulsive avulsive method with an abnormally blunt guillotine, and I must underline Mr. Clarke's contention that the "occasional exercise of a little patience," combined on rare occasions with the application of a pressure pad, will obviate any alarming loss of blood.

In a surgical operation the safety and efficacy of which is largely dependent upon the celerity with which it can be carried out in the average case, the elimination of every unnecessary complicating factor is highly desirable.—I am, etc.,

Cork, Jan. 7th. J. B. HORGAN.

LIPIODOL.

SIR,—In the review of our brochure on *Lipiodol in the Diagnosis of Thoracic Disease* (January 5th, p. 21) we were astonished to read the following words: "They describe the various methods of using lipiodol in chest diagnosis, favouring the crico-thyroid membrane route as 'on the whole most satisfactory,' but they omit to mention an important point in the technique, which is the incision of the skin by a scalpel before the trocar and cannula is introduced." We consider the use of a scalpel unnecessary and most undesirable, and its employment clear evidence of a faulty instrument or an imperfect technique.—We are, etc.,

F. G. CHANDLER.
London, Jan. 7th. W. BURTON WOOD.

*** Our reviewer states: "Pressure upon the trachea, especially in children, is the most frightening part of the operation for the introduction of lipiodol. A trocar sharp enough to penetrate the skin with very slight pressure is a dangerous instrument to insert into the trachea. Only by making a small incision in the skin with a scalpel can a trocar of moderate bluntness be introduced without producing discomfort."

ASTHMA RESEARCH COUNCIL.

SIR,—In view of statements which have recently appeared in the press to the effect that a "certain cure" for asthma has been found, we, the undersigned, desire to place on record that there is no such "cure" known to medical science, and that there is not any one form of treatment which is effective in all cases of asthma.

Investigations are being made under the auspices of the Asthma Research Council, and with the approval and support of the Medical Research Council and the Ministry of Health, into the mysteries of this distressing complaint which, it is hoped, will lead to a better knowledge of its origin and to the discovery of improved methods of prevention and treatment.

We hope that all interested in the subject, and especially well-to-do sufferers, will give their moral and financial support to the campaign, which will be inaugurated by the Lord Mayor of London at the Mansion House on January 15th, for a national fund to provide research centres at several of the leading London and provincial hospitals, where asthma and its allied diseases will be scientifically and exhaustively investigated. Donations and offers of assistance should be sent to Sir Albert Stern, Honorary Treasurer, Asthma Research Council, London Clinic, Ranelagh Road, London, S.W.1.—We are, etc.,

HUMPHRY ROLLESTON.
DAWSON OF PENN.
ARTHUR F. HURST.
London, Jan. 8th. F. E. FREMANTLE.

Obituary.

WILLIAM WARWICK WAGSTAFFE, O.B.E.,

M.B., B.Ch.Oxon., F.R.C.S.Eng.,
Honorary Surgeon, Radcliffe Infirmary.

THE death of Mr. William Warwick Wagstaffe in the Acland Nursing Home, Oxford, after a short illness entailing two operations, has been a painful blow to his professional colleagues and to his wide circle of friends.

Born in 1886, the son of Mr. W. W. Wagstaffe, one-time surgeon to St. Thomas's Hospital, London, "Billy" Wagstaffe was not long in showing his mettle. Starting his school life at The Beacon, Sevenoaks, he gained a scholarship at Charterhouse, and passed on to Oxford as a biological scholar of New College. While at Oxford he came under the influence of Sir William Osler, with whom he was associated in the study of the writings of Vesalius and other early anatomists. It is known that Osler held an extremely high opinion of his ability and character. Having finished his Oxford career with a first class in the Honours School of Natural Science, he entered St. Thomas's Hospital, where he soon showed that his abilities were in no way those of a mere examinee. He graduated M.B., B.Ch. in 1911, and obtained the diplomas M.R.C.S. and L.R.C.P.

After taking his medical degree he became a house-surgeon to Sir Henry Makins and Sir Cuthbert Wallace, and afterwards served as casualty officer. In 1913 he made a rapid rush to the Balkan war as a Red Cross surgeon, but had the misfortune to arrive too late for active service. He obtained the diploma F.R.C.S. in 1914. The outbreak of war in the same year found him characteristically prepared, and, as an officer of the R.A.M.C. Special Reserve, he was one of the first and most eager to respond to the call. His service in France, in which he rose to the rank of major, was marked throughout the war by a cheerful devotion to duty and an unostentatious efficiency, for which he was deservedly enrolled in the Order of the British Empire.

At the termination of the war Wagstaffe was appointed assistant to the surgical unit at St. Thomas's Hospital, where he gained first-rate experience of modern civil surgery, and thence he passed on to Oxford. He was a keen member of the British Medical Association, and served on the executive committee of the Oxford Division in 1927–28. He was married in 1916 to Margaret Cuthbertson, who was then serving as a nurse in a war hospital in the British Expeditionary Force. He is survived by his widow and two children, aged 9 and 7.

In the course of a twenty years' friendship the writer has never known "Billy" Wagstaffe anything but master of himself, content with his lot, and full of love for his fellow men. A capable athlete at half a dozen games, a lover of good books and good company, courageous and single-minded in all his dealings—while laying no claim to sainthood or genius, he was one of those completely integrated, utterly trustworthy, and lovable personalities who enrich the lives of all those with whom they come into contact. *Requiescat in pace.* A. D. G.

Dr. W. COLLIER, consulting physician to the Radcliffe Infirmary, writes:

Mr. Wagstaffe was appointed second assistant surgeon to the Radcliffe Infirmary and County Hospital in the earlier part of 1924. He had to wait but a short time for promotion, as three years later, on the retirement of Mr. Dodds Parker, he was elected honorary surgeon, with a full complement of beds. At the very outset of his Oxford career he showed his interest in all branches of surgery, attending the meetings both of the Oxford Medical Society and of the Oxford Division of the British Medical Association with the greatest regularity. At these meetings he not only took his full share in the discussions of cases and papers connected with his subject, but made several valuable surgical contributions, which added materially to the success of the meetings. This work was bringing its reward, as Mr. Wagstaffe was rapidly gaining an increasing share of the surgical work both in the city and county. The esteem in which he was held by his medical friends was amply proved by the very large number of medical men, both from the city and county, who attended his funeral. His published writings include an article (with Mr. W. W. Trotter) on "Gunshot wounds of the head," in the *Official Medical History of the War*, and a number of articles on abdominal disease from the surgical point of view, in various journals. He was secretary, treasurer, and manager of a small travelling surgical club, and its annual visits abroad helped to keep him in touch with his surgical contemporaries, and with the progress of surgery in foreign countries.

Professor ARTHUR THOMSON writes:

Directly Wagstaffe settled in Oxford (1922) he was appointed a part-time demonstrator in the department of human anatomy, and he held that post for the next six years. One likes to think that he got his love of the subject from his father, whom some senior readers will remember as not the least distinguished of the older school of "surgeon-anatomists." Be that as it may, his capacity for clear statement of facts and his careful methods of observation made him an excellent teacher for medical students, who readily appreciated his constant insistence on the practical application of what they were learning in the dissecting room. At the same time, the intimate acquaintance with the details of anatomy he thereby obtained was of the greatest advantage to him in the surgical practice which he subsequently proved himself so well fitted to undertake, and which he pursued with marked success in a career, alas! too brief. His kindness of heart and ever helpful assistance to those in difficulty made him a general favourite, and his premature death will be a source of regret to all those with whom his relations were intimate.

JAMES CHALMERS, M.D.,

Consulting Physician, Children's Hospital, and Physician, Royal Infirmary, Sunderland.

WE regret to announce that Dr. James Chalmers, who had been in practice in Sunderland for about thirty-five years, and who was well known in professional circles in the North-East of England, died suddenly at his residence there on December 31st, 1928, in his sixty-first year.

James Chalmers was born at Cummertrees, in Dumfriesshire, in 1868, and received his early education at the Wallace Hall Academy, Closeburn, pursuing his medical studies at the University of Glasgow. He graduated M.B., C.M. in 1890, proceeding M.D. in 1909. After being house-surgeon and resident physician at the Glasgow Royal Infirmary, he commenced practice in Sunderland in 1893, and in the years that followed built up an extensive connexion, giving his services freely to various institutions. He became honorary physician to the Sunderland Royal Infirmary, and, after holding a similar post at the Children's Hospital, was latterly consulting physician; in both institutions he also took an active part in the business of management. Dr. Chalmers was also intimately associated for many years with the Sunderland Orphan Asylum for Boys, as honorary surgeon and as a member of the governing body, and was honorary physician to the Parker Memorial Home. The work of the St. John Ambulance Association gained his ready support, and during the war he was commandant of a V.A.D. hospital.

In the British Medical Association he became a member of the Executive Committee of the Sunderland Division in 1912, and held various other offices later, being vice-chairman of the Division in 1920–21, and its representative in the Representative Body from 1926 until last year. In the year 1919–20 he was vice-president of the North of England Branch. He took a keen interest in the medical charities and acted as charities secretary for the Sunderland Division. He was a past-president of the North of England Glasgow University Club.

Dr. Chalmers was a deacon of the Union Congregational Church, Sunderland, where the funeral service was held on January 3rd. Among those present were many members of the medical profession and representatives of the institutions with which Dr. Chalmers was connected. He is survived by his widow, a son, and a daughter.

JAMES STEWART, F.R.C.P.Ed.

WE regret to record the death on December 2nd, 1928, of a veteran member of our profession, Dr. James Stewart, which took place at his residence in London in his eighty-ninth year. He was the son of Dr. Robert Stewart, superintendent of the Mental Hospital, Belfast. He received his education at Queen's College, Belfast, and after taking the degree of B.A. studied medicine in Dublin and Edinburgh. He took the diplomas of L.R.C.S.I. in 1864, M.R.C.P.Ed. in 1880, and F.R.C.P.Ed. in 1889. He became a surgeon in the Royal Navy in 1865, and he was serving in Jamaica at the time of the yellow fever epidemic in 1867. After leaving the service in 1870 he acted for two years as resident medical officer to the Dorset County Mental Hospital, Forston, and was senior assistant medical officer of the Kent County Mental Hospital from 1873 to 1875. In the following year he established a home for the treatment of inebriates at Clifton, Bristol, which he conducted until 1906. He was one of the original members of the Irish Medical Schools' and Graduates' Association, and was for many years its energetic provincial secretary, devoting much time and enthusiasm to the work. He was for over fifty-five years a member of the British Medical Association, was a member of the Executive Committee of the Richmond Division in 1913–15, the representative of the Lambeth Division in the Representative Body in 1921–24, and a member of the Westminster and Holborn Division, in addition to being an associate member of the Gloucestershire Branch.

DR. JAMES STEWART.

Dr. Stewart was a man of scholarly attainments, with an intimate knowledge of Greek and Latin authors, especially Homer and Horace, with apt quotations from whom it was his wont to delight his friends. A lifelong abstainer and non-smoker, he regarded his robust health as in large part due to these habits. Intensely interested in his profession and everything pertaining to it, it was his pleasure to read the *Journal* weekly, in his own phrase, "from cover to cover." Not the least of his great good qualities was his wonderful sense of humour; and his constant jokes, which were always in good taste, made him a most entertaining companion. He will be sadly missed.

Dr. Stewart was twice married, and had one son and two daughters by his first wife; he is survived by his widow. Among those present at the service at Golder's Green Crematorium on December 5th were several of his old friends and colleagues.

MR. ADAM WILSON, who died in a nursing home at Newcastle-on-Tyne on December 8th, 1928, at the age of 80, had spent the greater part of his life in that city, where he occupied a leading place among civic workers. Born in Scotland, he received his medical education at the Anderson College of Medicine, Glasgow, and obtained the diplomas L.R.C.P.Ed. and L.R.F.P.S.Glas. in 1869, being admitted F.R.C.S.Ed. in 1877. He commenced practice in Newcastle soon after qualifying, and attained a considerable degree of success. In the course of his career he was associated with many of the hospitals and allied institutions in the district, having been at one time assistant surgeon at the Walker Hospital and later surgeon to the Newcastle Dispensary and to the industrial schools. He was a keen member of the old Volunteer Force, and at the time of his retirement from it, after receiving the Volunteer Decoration, was surgeon colonel with the 2nd Volunteer Battalion Northumberland Fusiliers. In spite of the heavy claims of his professional duties Mr. Wilson found time to give his services to local public affairs. He entered the Newcastle Council in 1885, and from that time onwards took a large share in the government of the city, devoting himself particularly to the work of the sanitary committee. He was also keenly interested in educational matters and was a governor of the Royal Grammar School. In 1904 he was appointed an alderman of the city, but although he was on several occasions pressed to undertake the office of mayor the extent of his private practice prevented him from agreeing to do so. Some eighteen months ago he was made a deputy lieutenant for the county of Northumberland. Mr. Wilson was a member of the British Medical Association and a trustee of the Hospital of St. Mary the Virgin. While he identified himself intimately with Newcastle he maintained a close association with his native country and preserved contact throughout his life with many medical friends in Glasgow and Edinburgh. In his recreations also he adhered to the Scottish tradition, having been a leading member of the Newcastle Burns Club and a keen and skilful golfer.

Medico-Legal.

BOGUS DOCTOR CONVICTED.

A MAN of 50, named Robert Harry Andrews, was found guilty at Buxton Police Court on December 29th, 1928, of having on two occasions unlawfully, wilfully, and falsely pretended to be a doctor of medicine; the magistrates imposed a fine of £5 in each case, or two months' imprisonment.

The offences were committed in December, 1927, and a summons was subsequently issued, but the accused did not appear in answer to it. He was arrested at Burton-on-Trent on December 20th last. A woman witness stated that Andrews called at her house at Fairfield, Buxton, and said that he was Dr. Holloway of Tideswell, that he was travelling for the firm of Holloway, and that he gave his services free to the public every fifth year. She said she was suffering from an illness, and Andrews examined her with a stethoscope; he offered her a bottle of medicine, saying it would cure her in a month, and she paid 8s. 6d. for it. Another woman witness told of a similar call, when the prisoner asked if anyone in her house was ill, and examined her daughter, who had been ill for seven years. In this case, also, Andrews gave a bottle of medicine, and said it would cure the patient in a month. The woman paid him 2s. 6d. on account. Later, Andrews gave her husband pills to cure a cough, and subsequently called for the remainder of the money. This was refused, and information was sent to the police. A police constable stated that, in consequence of a complaint, he saw the accused, and asked him if he was a doctor. Andrews replied that he was not, but that he was a nerve specialist, admitting that he had no special qualification to act as such. In his attaché case were found a stethoscope and other instruments; the accused told the constable that he used the stethoscope to test the patients' chests to see if they could stand his treatment. It was stated that when the arrest was made Andrews was staying in Burton-on-Trent under the name of Dr. Robertson. Andrews, in his evidence, stated that he had never called himself a doctor, but had said he came "from Dr. Andrews; he never prescribed for anyone individually, or pretended in any way to be a doctor." His treatment, he said, was patented medicine, and it was not stated on the bottle that it was prepared by a doctor. He added that he had always asked his prospective patients if they were in a doctor's charge, and if so, he had told them they had better keep to the doctor.

It was stated that the accused had been previously convicted on a number of charges during the past twenty-five years, including one of embezzlement and several of obtaining money by false pretences.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE following have been recognized as teachers of the University in the subjects indicated: Guy's Hospital Medical School, Dr. A. H. Douthwaite (medicine); St. George's Hospital Medical School, Dr. C. B. Levick (medicine); Middlesex Hospital Medical School, Mr. V. R. Hudson (surgery). It has been decided to institute a University Chair of Anatomy, tenable at St. Thomas's Hospital Medical School.

UNIVERSITY COLLEGE.

The following lectures will be given at University College, Gower Street, W.C.1, at 5 p.m.: Mr. G. P. Crowden, three lectures on Fatigue, on Mondays, January 14th, 21st, and 28th. Dr. A. S.

Parkes, six lectures on the Physiology of Reproduction, on Wednesdays, January 16th, 23rd, and 30th, and February 6th, 13th, and 20th. Mr. C. F. Pantin, ten lectures on Comparative Physiology, on Fridays, January 18th and 25th, February 1st, 8th, 15th, and 22nd, March 1st, 8th, 15th, and 22nd. Dr. R. J. Ludford, six lectures on Cytology in Relation to Physiological Processes, on Thursdays, January 24th and 31st, February 7th, 14th, 21st, and 28th.

The following candidates have been approved at the examination indicated:

M.P. [illegible]

R. K. Ford, M. E. MacD. Jago, Lucy Parker, H. W. Parrott. (*Branch VI, Tropical Medicine*): A. N. Kingsbury, J. N. Leitch.

UNIVERSITY OF BIRMINGHAM.

DR. R. G. MACGREGOR has been appointed lecturer in physiology.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

D.P.H.—A. Halpenny, R. F. G. Dickson.

DIPLOMA IN PSYCHOLOGICAL MEDICINE.—J. F. W. Leech, M. A. Walsh.

Medical News.

THE Royal Society of Medicine has arranged a joint discussion on post-operative thrombosis by the Sections of Pathology, Surgery, and Obstetrics on Friday next, January 18th, at 8 p.m. The openers will be Dr. Howel Evans, Mr. D. H. Patey, and Mr. Victor Bonney.

AMONG the courses of public lectures at University College, London, during the current term are several of some interest to members of the medical profession. On January 17th and five following Thursdays, at 5 p.m., lectures on "The chemistry of some natural drugs" will be given by Mr. H. R. Ing. A course of similar duration dealing with "The current work of the biometric and eugenics laboratories," will be given on Tuesdays, at 5.30 p.m., from January 29th to March 5th, the lecturers including Professor Karl Pearson, F.R.S., Dr. Julia Bell, and Dr. Percy Stocks. "Hygiene of the mercantile marine" is the subject of three lectures to be delivered by Dr. J. Howard Jones, medical officer of health, Newport, on Fridays, February 22nd, March 1st and 8th, at 5.30 p.m. Dr. J. H. Burn, director of the laboratory of the Pharmaceutical Society, will be the lecturer at three illustrated lectures on "The properties of, and methods of estimating, some therapeutic agents," at 5 p.m., on Wednesday, Thursday, and Friday, February 27th, 28th, and March 1st. On Thursday, February 14th, at 6 p.m., Professor P. Abercrombie will speak on "Town planning in town and country"; and on the following evening, at 5.30 p.m., Mr. Geoffrey Peto, M.P., will discuss "The Local Government reform scheme and de-rating." Dr. A. Maitland Ramsay will give three lectures in the Medical School on "The eye in general medicine," with lantern illustrations, on March 4th, 6th, and 8th, at 5.30 p.m. These lectures will be given at the College, Gower Street, W.C.1, admission being open to all without fee or ticket.

THE Fellowship of Medicine and Post-Graduate Medical Association announces that on Wednesday, January 16th, at 4.30 p.m., the new series of demonstrations arranged at the Wellcome Museum of Medical Science, 33, Gordon Street, W.C., will begin, when Dr. Helen Mackay will speak on some recent work in connexion with rickets. There is no fee for this demonstration. The new series of lectures entitled "Pitfalls in medicine and surgery" will start on Monday, January 21st, at 5 o'clock, at the London Medical Society, 11, Chandos Street, Cavendish Square; Dr. Robert Hutchison is the first lecturer, his subject being "Pitfalls in the diagnosis of dyspepsia." A lecture, for which there is no fee, will be given on Thursday, February 14th, at 4.30 p.m., at the Medical Society, by Dr. Gerald Slot, on calcium therapy. An intensive course in cardiology at the National Hospital for Diseases of the Heart, and an all-day course at the Queen's Hospital for Children, begin on January 14th, continuing for a fortnight. From January 28th to February 9th an intensive course in medicine, surgery, and the specialties will be given by the staff of the Prince of Wales's General Hospital, Tottenham. *On Tuesdays and Saturdays, at 11 a.m.*, from January 29th to February 23rd, a series of lecture-demonstrations in psychological medicine will be given at the Bethlem Royal Hospital by Dr. Porter Phillips and his staff. Copies of the syllabuses and information regarding the general course of the Fellowship of Medicine will be forwarded on application, as also copies of the *Post-Graduate Medical Journal*. Weekly demonstrations in medicine and surgery, to which admission is free, will be resumed shortly. A full list covering the next three months, may be obtained from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

THE first of a series of special post-graduate courses at the Royal Northern Hospital begins on Monday, January 28th, when the opening lecture in a course on gastro-enterology will be given at 2.30 p.m. In all, the course will comprise fourteen lectures covering the subject in its medical, surgical, radiological, and pathological aspects. Applications for admission to the course, which is intended primarily for those engaged in general practice, should be accompanied by the fee of £2 2s., and should reach the secretary of the hospital, Holloway, N.7, not later than January 21st. Further particulars and information relating to other special courses to be held during the year may be obtained from the dean at the above address.

A COURSE of advanced lectures on infant care in preparation for the crèche nurses' advanced certificate granted by the National Association for the Prevention of Infant Mortality and the National Society of Day Nurseries will be given, under the auspices of these bodies, by Dr. Victoria Bennett at Carnegie House, 117, Piccadilly, W.1, on Thursdays from January 17th to March 21st at 7.30 p.m., followed by an examination on Saturday, March 23rd, at 2.30 p.m. Full particulars may be obtained from Miss Maddocks, secretary, National Society of Day Nurseries, at the above address.

THE People's League of Health announces that the ninth annual series of Sims Woodhead Constructive Educational Health Lectures will be given at the Medical Society of London, 11, Chandos Street, London, W., on Fridays, from January 18th to March 22nd, and on April 12th and 19th, in each case at 6 p.m. The first lecture, on "The need for a national stocktaking," will be given by Mr. C. J. Bond; most of the others are also by medical men, the series forming a connected study on the physiology and care of the body and mind. There will be an optional examination at the close of the course for those who have attended the series; certificates will be issued by the medical council of the League, and it is proposed to award a travelling scholarship enabling a visit to be made to a foreign country with facilities for seeing its health centres. The fee for the series is 12s.; tickets and further particulars may be obtained from the general secretary of the league, 12, Stratford Place, W.1.

THE annual meeting of the Royal Microscopical Society will be held in the Lecture Hall at 20, Hanover Square, W., on Wednesday, January 16th, at 8 p.m., when Mr. Joseph E. Barnard, F.R.S., will deliver the presidential address on "Some aspects of ultra-violet microscopy." The Biological Section will meet in the Library on Wednesday, February 6th.

A JOINT meeting of the Medico-Legal Society and the Maternity and Child Welfare Group of the Society of Medical Officers of Health will be held on Thursday, January 24th, at 8.30 p.m., at 11, Chandos Street, W.1. Sir William Willcox, president of the Medico-Legal Society, will take the chair, the subject for discussion being: "Criminal abortion and measures necessary to restrict the sale of abortifacient drugs." The speakers will include Sir Bernard Spilsbury, Professor Beckwith Whitehouse, Mr. H. D. Roome, Dr. F. J. McCann, and Dr. R. A. Lyster. Members, on producing their private cards, may introduce guests to the meeting. An invitation to be present is extended to all members of the Society of Medical Officers of Health, particularly those of the Metropolitan and Home Counties Group. Representatives of the press, other than medical and legal journals, will not be admitted to the meeting.

MESSRS. J. and A. CHURCHILL announce for early publication: *Surgery in the Tropics*, by Sir Frank Connor; *The Radium Treatment of Cancer*, by Mr. Stanford Cade; and *Surgical Radiology*, by Mr. A. P. Bertwistle. Also two new volumes in the recent advances series: *Psychiatry*, by Dr. Henry Devine; and *Cardiology*, by Drs. C. F. T. East and C. W. B. Bain.

WE have received a bound copy of the sale catalogue of *Early Books on Medicine, Natural Sciences and Alchemy*, published by L'Art Ancien S.A. of Zürich. The work, the first three parts of which were issued separately at Lugano, and were noticed in previous issues of the *Journal*, contains scientific and bibliographical descriptions of 1,988 books published between 1463 and 1800, illustrated by contemporary woodcuts. A subject index is appended.

THE January number of *Leprosy Notes* contains the first section of a series of notes on leprosy in European countries, attention being devoted in the first place to those bordering the Baltic Sea. Dr. Henry Fowler contributes a brief sketch of the extent and general conditions of leprosy in China, and Dr. H. C. de Souza-Araujo discusses its incidence in Brazil. Leprosy work in British Guiana is described by Dr. F. G. Rose, and several short therapeutical articles make up the bulk of an interesting issue.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (*telegrams: Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

WANTED—A HOME.

"X." would be glad to hear of an institution where a recent case of paraplegia would be received for treatment. The patient, a retired medical man (of small means), has had considerable naval and military service.

CHROME ULCERATION.

DR. J. S. GRIFFITHS (Eaglescliffe, Durham) asks for information how to treat chrome sores and the ulceration of the nasal septum which occurs in workers with chromic acid in the manufacture of bichromate of potash. He states that these sores are most persistent, and, although painless, burrow deep down and become septic, rather assuming the appearance of the perforating ulcers which occur in diabetics.

TREATMENT OF MEMBRANOUS COLITIS.

DR. J. CURTIS WEBB (Cheltenham) writes: In reply to the inquiry of "A Country Doctor" (December 29th, 1928, p. 1202), I would like to urge him to try ionization of zinc sulphate by means of enemata, a method which I described in the *Lancet* (April 22nd, 1911). If "A Country Doctor" would care to communicate direct with me I should be very glad to give him all information of a treatment which I and others have found most satisfactory.

INCOME TAX.

Cash Basis.

"J. M." was in a partnership which was dissolved as from May 1st, 1927. He has been assessed for 1927–28 on the amount of the receipts earned prior to May 1st, 1927, which came to hand after that date, and also on the earnings for the eleven months to April, 1928, whether received or not.

*** The assessor is correct in declining to apply the cash basis to the new practice for the period subsequent to the date of dissolution of the partnership, but we are clearly of opinion that his method of dealing with the cash received for prior work is wrong and is unfair to our correspondent. So far as that work is concerned, "J. M.'s" only liability is to bear his share of an assessment on the partnership for the period April 5th to May 1st, 1927. That assessment should be calculated at 25/365ths of what would have been the amount of the assessment on the firm for 1927–28 if the partnership had not been dissolved. We suggest that "J. M." should press for a reply to his letter to the assessor, and in the absence of a proper revision of the assessments should place the facts before the Controller of Inland Revenue, Edinburgh.

LETTERS, NOTES, ETC.

SUDDEN DEATH IN UNRECOGNIZED SCARLET FEVER.

DR. F. STANLEY ROSE (Sunderland) writes: I was called in September, 1928, to see a boy, aged 3½, at a farmhouse, who had been taken suddenly ill with vomiting and diarrhoea. It was stated that he had been quite well up to a few hours previously, except that he complained of thirst. On arrival, within an hour, I found he had died. I could glean no facts which would enable me to formulate a cause of death. Two days later, at the necropsy, I was struck by the pallor of the omentum, stomach, and intestines. The stomach contained some pale yellow, odourless fluid: I thought of poisoning, as at that period of the year children often eat tares and such-like. The gall-bladder was tightly distended with green bile, but the liver seemed normal. Both kidneys were slightly congested; the appendix was eight inches long and trailed over the pelvic brim. The spleen was enormously enlarged, soft, and friable. Remnants of the thymus were prominent. The heart musculature was firm, but the valves showed early endocarditis; there was some excess of fluid in the pericardial sac, and its lining was dull. The right lung was normal, but in the upper lobe of the left lung there was a marked and well-defined infarction on the antero-lateral surface. After completing the examination I was called to see a sister (twin) and found her suffering from scarlet fever: another of the same family later developed it. I am of opinion that the boy must have had scarlet fever and been running about with it on him. The interesting point is the large size of the spleen. These odd cases are always worthy of record. I found that the boy's home was partly a dairy farm, but no worker complained of sickness or otherwise, and the cows were reported healthy.

TREATMENT OF CHRONIC RHEUMATISM IN MALARIAL PATIENTS.

LIEUT.-COLONEL G. H. YOUNGE, R.A.M.C.(ret.), F.R.C.S.I., writes: Relapses of malaria, which occur among returned Anglo-Indians during the cold and damp of winter, are not infrequently complicated by trying forms of muscular rheumatism, affecting chiefly the muscles of the back and lower extremities. A feature of these cases is that quinine frequently loses its efficacy, and in some cases may even aggravate the patient's suffering. Recently in these cases I have been led to try what is to me a new combination; I have found it distinctly more beneficial than preparations of quinine. The prescription is as follows: Sodium salicylate gr. xx, potassium bromide gr. x, tincture of cinnamon ℥j, water to ℥j; three times a day. This combination is especially indicated when insomnia is a feature of the case. The addition of cinnamon is a distinct improvement, since it not only masks the nauseous flavour of the salicylate, but it has a remedial action against the malarial poison. The patients often need a moderate allowance of alcoholic stimulant.

PAINFUL SHOULDER.

DR. F. G. BUSHNELL (Plymouth), with reference to Mr. P. B. Roth's letter on traumatic synovitis of the shoulder-joint, published in our issue of December 22nd, 1928 (p. 1156), writes: I have had a similar personal experience of a painful left shoulder following a heavy fall. I had limitation of movement, pain spontaneous and worse on movement, tender spots on pressure at the insertion of the deltoid and at the outer end of the infra-clavicular fossa, and some muscular wasting of the shoulder. The condition was treated as "fibrositis," though in the skiagram a well-known Swiss orthopaedic surgeon pointed out some rather doubtful rarefaction of the cancellous tissue, possibly of traumatic origin. Six months' treatment by massage, movements, radiant heat, etc., gave little or no relief, but all symptoms disappeared during the summer months when I took some sun baths, and the massage and forced movements were omitted. If rest can relieve such a case in two or three weeks, and movements, etc., fail in six months, Mr. Roth's warning is very timely.

THE HISTORY OF CINCHONA.

"B." writes with reference to the article by Mr. C. J. S. Thompson on cinchona (December 29th, 1928, p. 1188): In *Blackwood's Magazine* for May, 1927, there is an article on "The savage as scientist," in which the treatment of general paralysis of the insane by malarial infection, and the cure of the malaria by "bitter herbs," is described. I would like to ask if the "bitter herbs" there mentioned were probably plants containing some of the cinchona bases? If this were so, would it not show an earlier use of the bark as a cure for malaria than that mentioned in the article?

ASTHMA RESEARCH.

IN our reference to the work of the Asthma Research Council on January 5th (p. 29) it should have been mentioned that the clinic in course of establishment at the Hospital for Sick Children, Great Ormond Street, will be under the joint direction of Dr. E. A. Cockayne and Dr. D. N. Nabarro.

CORRIGENDA.

DR. H. MARTIN GREY calls attention to a clerical error in his note on "A Normal Ventriculogram," published in the *Journal* of January 5th (p. 15). The words "of the pupils," in the fourth line of the small print, should be omitted.

WE are asked to state that Dr. Ninian Falkiner was recently appointed visiting gynaecologist to the Royal City of Dublin Hospital and not to the Coombe Hospital, as mentioned in the *Journal* of January 5th (p. 38).

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 44, 45, 46, 50, 51, and 52 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 48 and 49.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 15.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

34. Medico-Legal Aspects of Suprarenal Insufficiency.

P. MAZEL and A. COSTEDOAT (*Journ. de Méd. de Lyon*, November 20th, 1928, p. 659), who record an illustrative case, state that the forms of suprarenal insufficiency which are interesting from the medico-legal standpoint may be divided into two groups: (1) the fulminating forms causing sudden death; and (2) acute forms in which death occurs in a few hours or days with gastro-intestinal signs and abdominal pain resembling acute intoxication which may therefore suggest criminal poisoning. The causal lesions may be of a tuberculous or haemorrhagic nature. In the last case they are frequently accompanied by cutaneous manifestation in the form of purpura, and are found in the adult or child, their occurrence in the latter being favoured by the frequency of infections and gastro-intestinal intoxications as well as by excessive functional activity of the suprarenal glands at that age. There is no necessary relation between the haemorrhagic or caseous nature of the lesions and the clinical course. Sudden death appears to be most frequent in apoplexy of the suprarenals, but it is also found in tuberculosis of these organs. Acute or fulminating suprarenal insufficiency may sometimes follow an accidental trauma, surgical operation, or delivery. The authors remark that a knowledge of these facts is essential for the medical jurist, and necessitates a systematic examination of the suprarenals which is frequently neglected in the performance of a necropsy. The authors' patient was a labourer, aged 38, who died after three days' illness with acute abdominal symptoms suggesting an intoxication. The necropsy showed caseation of both suprarenals with numerous tubercles in the right gland. Subsequent inquiry revealed the fact that the patient had suffered from increasing asthenia for the previous three years.

35. Therapeutic Meningitis.

S. KATSENELBOGEN (*Rev. Méd. de la Suisse Romande*, November, 1928, p. 967) remarks that the intraspinal route, which was first reserved for injection of serums and afterwards for anaesthetics as well, is now employed for the introduction of all kinds of drugs. As a general rule, more or less marked meningeal reactions follow an intraspinal injection, whatever drug is employed. The author records fifteen cases in which the symptoms followed injection of various doses of casein which were given at intervals of two to four weeks for the treatment of tabes, the sequels of epidemic encephalitis, and disseminated sclerosis. The symptoms usually first appeared five to six hours after injection and reached their height in eight to twenty-four hours; they then gradually disappeared in the course of three or four days. The intensity of the meningeal symptoms did not always have a direct relation to the dose of casein injected. On the other hand, intense clinical symptoms were always accompanied by well-marked reaction in the cerebro-spinal fluid, which consisted in a very pronounced leucocytosis in every case, but not invariably in a considerable increase of albumin. The author recommends that in giving intraspinal injections of any drugs it is always advisable to start with a very small dose in order to determine the sensitiveness of the meninges.

36. Diagnosis of Tuberculosis by Duodenal Intubation.

J. DE PALACIOS G. CORTINA (*La Med. Ibera*, November 17th, 1928, p. 469), who records ten illustrative cases in patients aged from 16 to 37, emphasizes the importance of examining the duodenal fluid removed by Einhorn's tube in cases of latent pulmonary tuberculosis. In two of the ten cases the sputum had at one time contained tubercle bacilli, and of the remaining eight patients one had had no sputum, and examinations of the others had always yielded negative results. While direct examination of the bile showed tubercle bacilli in only two cases, inoculation of guinea-pigs gave a positive result in all but one. The author concludes that the method is of considerable value in doubtful cases, while the technique is relatively simple.

37. The Functional Factor in Thyroid Diseases.

B. BREITNER (*Wien. klin. Woch.*, November 15th, 1928, p. 1592) emphasizes the importance of the advance made by modern research in defining the function of the thyroid gland in health and the modifications which occur in various types of pathological conditions. The use of iodine in goitrous manifestations, hitherto empirical, has now been placed on a scientific basis, and the indications for its effective employment have been definitely established. Not only does success in the treatment of thyroid disease depend on these underlying functional factors being kept in mind, but it is in this way alone that effective prophylaxis can be secured. Pathological changes in many cases are found to have a functional origin which requires attention. Surgical procedures are, however, still necessary on occasion: indeed, the discovery of the importance of functional factors has led to a fuller knowledge of the way in which operations bring about their good results in suitable cases.

38. Herpes Zoster and Varicella.

H. ALTERTHUM (*Monatsschr. f. Kinderheilk.*, October, 1928, p. 330) reports that in the course of eight years 36 cases of herpes zoster occurred in a children's institute at Berlin, 23 of which were undoubtedly connected with varicella, while the remaining 13 had no such connexion. The majority of varicella cases therefore were of varicellar origin. The number of cases of varicellar zoster did not run parallel with the incidence of varicella in the institute, but there was a rather striking outbreak of herpes zoster of varicellar origin in certain years. Seven cases of zoster following treatment by neosalvarsan or bismuth were observed, and 6 of these cases were undoubtedly connected with subsequent attacks of varicella. These observations, therefore, are in favour of the view that arsenical zoster may be of varicellar origin. An attack of varicella does not confer immunity against herpes zoster or vice versa. The practical conclusion to be drawn from these observations is that if an institute is to be kept free from chicken-pox every case of zoster should be at once isolated, and the ward in which it occurs should be placed in quarantine.

39. Paratyphoid B Infection with Purpura and Broncho-pneumonia.

H. P. JAMESON and A. SIGNY (*Arch. Dis. Child.*, October, 1928, p. 238) record a fatal case in a girl, aged 8, who during convalescence from paratyphoid B infection developed purpuric patches in the skin, subconjunctival haemorrhages, haematuria, and haematemesis. Death ensued about ten days after the first appearance of purpura; the necropsy showed suppurating pneumonia almost confined to the upper lobe of the right lung, punctate haemorrhages all over the pleurae, pericardium, brain, and intestines, and an extensive subperitoneal haemorrhage in the left iliac fossa. *B. paratyphosus* B was recovered from the lungs and mediastinal glands. There was an almost complete absence of any intestinal lesions.

Surgery.

40. The Sesamoid Bones in Hallux Valgus.

H. TIMMER (*Deut. med. Woch.*, November 16th, 1928, p. 1927) has studied the anatomy of hallux valgus in a number of necropsy cases and by *x* rays, and states that the shape and position of the sesamoid bones, which can be recognized in radiograms, is of considerable importance in the diagnosis and treatment of this condition. In mild cases the lateral sesamoid still lies partly under the head of the first metatarsal; in more severe cases it is displaced under the interosseous space; and in the worst cases both sesamoids lie laterally to the first metatarsal. Though the short plantar muscles of the great toe are attached to one or both sesamoids before their insertion into the first phalanx, and the tendon of flexor longus hallucis lies between them, it was found that the actual displacement of the sesamoids, and therefore of these muscles, was always less than seemed probable from the clinical picture. In shape the sesamoids are normally spherical in their lower part, and covered with saddle-shaped cartilage on the articular surface. If the lateral sesamoid is displaced to the lateral side of the head of the first metatarsal, and is semilunar in shape, it indicates that considerable contraction of the lateral part of the corresponding metatarso-phalangeal joint has occurred. If treatment is to be successful an attempt must be made to rectify this, and the flexor and abductor tendons of the toe must also be made to return to their normal position; evidence of this can best be obtained from an *x*-ray examination of the position of the sesamoids to which they are closely related.

41. Collapse Treatment of Pulmonary Tuberculosis.

J. GRAVESEN (*Ugeskrift for Laeger*, November 29th, 1928, p. 1111) reports the following statistics from Vejlefjord Sanatorium, Denmark. There were 77 patients on whom thoracoscopy and cauterization of pleural adhesions were attempted, and 54 on whom these procedures could be completed; 5 of these patients were still undergoing treatment at the time of the report. Of the remaining 49, as many as 20 were discharged as much improved, and 23 as improved. Tubercle bacilli had been found in the sputum of all 49 patients, and could no longer be found in 20 patients on discharge. Of the 41 patients who had been thus operated on two to ten years earlier, as many as 17 were found to be fully fit for work, and 5 partially fit. Five still suffered from their tuberculosis, and 14 had died from it. Among the 182 patients on whom thoracoplastic operations were performed, there were 13 whose deaths were caused or hastened by the operation. Thus, there was an operation mortality of 7.1 per cent. The first 9 operation deaths occurred among the first 100 patients, whereas the operation mortality for the last 82 patients was much reduced. This reduction was traced to improvements of the technique and the employment of preliminary partial operations. Of the 182 patients, 8 were still undergoing treatment. Of the remaining 174, as many as 41 were discharged as much improved, 78 as improved, 2 as unimproved, and 21 as worse. The remaining 32 patients died in the sanatorium. Tubercle bacilli were found in the sputum of all these 174 patients, and 62 of them were sputum-negative on discharge. To ascertain what the permanent results were the author analysed the fate of the 155 patients whose operations dated back two to twelve years. He found that 37 were fit for ordinary work and 28 for light work. Eight still suffered from tuberculosis, 74 had died from it, 4 had died from some other disease, and the fate of the remaining 4 was unknown. As many as 52 of the survivors were sputum-negative. Thus, in a class of case in which only 10 or 15 per cent. of the patients can expect to achieve fitness for work as a result of conservative treatment, thoracoplastic operations brought up the percentage to 42.

42. Complete Inversion of the Viscera.

G. GANELLI (*La Pediatria*, November 15th, 1928, p. 1220) reports a case of complete inversion of the viscera. A boy, aged 6, was admitted into hospital for broncho-pneumonia, and on examination was found to have the heart on the right side, the liver on the left, and the spleen and stomach on the right; by means of a barium enema the sigmoid was shown to be on the left side. There was a double mitral lesion, but apart from this and the bronchial attack the boy was healthy. When 2 years old he had a slight attack of anterior poliomyelitis affecting the right forearm, from which he had practically recovered; otherwise he had had no illness. The family history was good, and there was nothing to suggest why this child should be so affected. The author discusses the various theories which have been put forward to explain these cases, but does not find any of them applicable to his case. There was no evidence of left-handedness in the boy, and apparently the inversion of the viscera did not in any way affect his health.

43. Thorn Wounds.

IN view of the statement that the thorns of certain trees are peculiarly poisonous UTEAU and BOUGET (*Bull. et Mem. Soc. Chir. de Paris*, November 2nd, 1928, p. 715) made a careful inquiry in one particular case and found the fact of virulence established in so far as the particular bush was concerned. The cause, however, did not lie in the thorn, but in the nature of the material with which it was soiled. This consisted of the decaying remains of various forms of small animal life (mice, insects, birds, etc.) impaled on the thorns by a bird of prey (a shrike) which used this bush as a sort of larder for food which it could not immediately make use of. When the thorns were properly cleansed they did not cause infected wounds.

44. Trauma and Carcinoma.

J. M. WAINWRIGHT (*Amer. Journ. Surg.*, November, 1928, p. 433) reports three definite cases to prove that a single trauma can cause carcinoma or sarcoma, but he admits that such cases are rare. In each instance the trauma was of sufficient severity to devitalize or alter considerably normal tissues. Wainwright considers that the trauma must also be sufficient to cause definite pain, swelling, ecchymosis, and more or less impairment of function—that is, conditions which leave some real scar tissue. The time between the injury and the tumour symptoms varies: in one instance it was eight weeks, in another seven months, and in the third two years. Cases have also been known of carcinoma developing in the scar of a burn as long as thirty-five years after the burn had healed, and a case is reported of a man, aged 74, in whom a malignant growth developed in the scar of a foot amputation operation performed in childhood. Carcinoma in the male breast is frequently due to blows, gunshot wounds of the nipple, or the continued pressure of tools as used by carpenters or shoemakers. Again, the constant irritation of the skin, particularly of the scrotum, by the oil with which a mule-spinner in the cotton industry is continuously in contact, causes mule-spinner's cancer. A severe trauma of any kind applied directly to a carcinoma may aggravate it and make it grow more rapidly.

Therapeutics.

45. Treatment of Psoriasis.

BURNIER and LOTTE (*Journ. de Derm. et Syph.*, July, 1928, p. 625) record results of treating 58 patients with a compound of bismuth, arsenic, and pyridine, introduced by Debucquet, Jausion, and Pecker under the name of psothanol. They gave intravenous injections three times weekly up to an average total of 20 doses. In general, though not always, recent lesions were found to clear up quicker than those of long standing, the thicker and more squamous plaques being least responsive. In favourable cases the plaques disappeared, first at the centre and last at the periphery, cure being complete after three to twenty injections. Total disappearance of lesions resulted in 21 per cent., and great improvement in 44 per cent., the scales and discoloration remaining only at the periphery of the lesions. Slight improvement occurred in 23 per cent., the scales becoming less numerous and thick, though still present over the whole area of the lesions. In 10 per cent. of the cases there was complete failure. Recurrences appeared in six cases, of which only one yielded entirely to a further course of treatment. New lesions developed during the course of treatment in six cases. Mild complications, such as slight rises of temperature, headache, toothache, stomatitis, albuminuria, vertigo, articular pains, occasional pruritus, but never erythrodermia, were noted in ten cases. Intolerance, shown by marked stomatitis, bad articular pains, and albuminuria, was manifested in two cases. The authors conclude by remarking that, though the drug is not always efficacious, the results with it are more constant, and the treatment less dangerous, than is the case with gold salts. They describe two cases of the articular variety where treatment resulted in the freeing of contracted joints, and enabled previously bedridden patients to resume a certain degree of activity.

46. Reduction of Cerebral Hypertension.

As the result of clinical and experimental investigation RISER and R. SOREL (*Paris Méd.*, December 1st, 1928, p. 475) conclude that for the reduction of cerebral hypertension the most appropriate procedure is the intravenous injection of 100 c.cm. of a 50 per cent. glucose solution in serum, raised to body heat, the injection being spread over five minutes. If sodium chloride is used, the amount given should not exceed 0.25 gram of dried salt per kilogram of body weight in a 10 per cent. solution. The authors find that the administration of salt, though more constant in its effects, is much less safe, and unpleasant sequels may occur. Injections of glucose are said to be indicated in such transitory hypertensive conditions as follow lumbar puncture; in severe headache due to serous meningitis in the course of infections; in certain traumatic, but transitory, hypertensions; and, above all, in medical haemorrhagic meningitis, which is nearly always accompanied by headache and cerebral hypertension, and must not be treated by lumbar puncture. The authors believe that such hypertonic injections are also very valuable in cases of tumour of the brain before or during an operation.

47. Antipyretics in Pulmonary Tuberculosis.

E. GARCIA DEL REAL, jun. (*Ibera Medica*, December 8th, 1928, p. 565), states that in cases of ambulatory fever in pulmonary tuberculosis it has to be decided whether the fever is directly due or not to pulmonary tuberculosis. In the former case the symptoms yield readily to a rest cure, while in the latter this has hardly any effect, and benefit may be obtained by opium preparations, especially in some forms of juvenile phthisis. Occasionally, and especially in private practice, it is necessary to resort to antipyretics, one of the most useful of which is pyramidon, given in powder or solution in doses of 15 to 30 cg. Gardan, which is a combination of pyramidon and novalgin, has recently been advocated, since, unlike pyramidon, aspirin, and other antipyretic drugs, it causes a fall of temperature without sweating. The dose is half or one tablet three-quarters of an hour before the usual rise of temperature.

48. Treatment of Epidemic Meningitis by Antibody Preparations.

J. B. NEAL, H. W. JACKSON, E. APPELBAUM, and E. J. BANZHAF (*Journ. Amer. Med. Assoc.*, November 10th, 1928, p. 1427) state that in view of the unsatisfactory results from the use of ordinary antimeningococcal serum an antibody preparation was made from it. The results were generally favourable, the mortality among the first twenty-four cases treated by it being only 12.5 per cent. Of the three fatal cases, one patient had been ill six weeks before the meningitis was recognized, one died during a relapse which had been present more than a week, and the third patient developed severe meningeal haemorrhage and died as the result of it. Of the patients who recovered from the meningitis, two died within a few weeks, one from streptococcal septicaemia and the other from pneumonia, but in both instances all clinical and spinal fluid evidence of meningitis had disappeared. Some of the patients were treated with the antibody from the first, and responded with unusual promptness; in other cases the antibody was used after the ordinary serum had failed to produce results.

49. Intravenous Injection of Hexamine in Pleurisy.

DR. J. GAZÁREK (*Bratislavské Lekarské Listy*, November, 1928, p. 601) reports the obtaining of very good results in pleurisy with effusion by administering intravenous injections of hexamine. There was a rapid fall of the temperature to the normal in ten to fifteen days and a relatively quick absorption of the effusion. The treatment, which is said to be simple and harmless, prevented also recurrence of the exudation after withdrawal of the fluid by puncture. Recent cases of so-called idiopathic pleurisy respond particularly well, but the results were less favourable in symptomatic pleurisy in tuberculosis or syphilis. The author adds that this procedure has hardly any influence on possible sequels of pleurisy, such as formation of adhesions.

Radiology.

50. Radiotherapy in Angina Pectoris.

C. LIAN and M. MARCHAL (*Paris Méd.*, December 1st, 1928, p. 465) strongly advocate *x*-ray irradiation in cases of angina pectoris, especially when medical measures have proved of no avail. Lian previously formulated a wider definition of this disease than that usually held, and concluded that it might complicate any myocardial or pericardial valvular condition, and might also be a sequel of certain digestive affections, biliary lithiasis, intoxications, and neuropathic states; in fact, he considered that angina pectoris was present in all paroxysmal pain of the sternal or precordial region with left brachial irradiation, and anguish (thoracic constriction and sensation of impending death). The present authors state that angina pectoris is due to a vaso-constrictor or pressure reflex, which, caused by an excitation of the cardiac plexus, sharply aggravates the cardiac disturbance, of which pain is the clinical expression. They have found that great and usually lasting benefit follows *x*-ray treatment in angina pectoris, and that the danger of its causing cardiac insufficiency or increased pain is negligible. Improvement usually commences during the second week of treatment, and gradually increases. Weak irradiation is advised, since strong doses are liable to cause exacerbations and to delay improvement, but the irradiations must be frequent (three a week). They employ a spark equivalent of 25 cm., a 6 mm. aluminium filter, an intensity of 2.5 milliamperes, and a skin-anticathode distance of 30 cm. Two fields are irradiated: a precordial one of 20 cm. diameter over the internal part of the third left intercostal space, and a dorsal one of the same diameter over the third dorsal vertebra. The thyroid is protected by an opaque covering. Three treatments are given each week. During the first week each treatment lasts five minutes and a dose of 100 R units is given over each field. In each of the three succeeding weeks the duration is increased by five minutes and the dosage by 100 R units at each treatment, the patient thus receiving a total of 2,000 R units in the four weeks. This treatment is contraindicated in debilitated subjects, in cases of marked cardiac insufficiency, and in old persons aged 70 or more.

51. Gastric Examinations.

G. MAINGOT (*Rev. de Méd.*, 1928, No. 5, p. 645) states that in making radiological examinations of the stomach the opaque meals should be stable and homogeneous, denser than and only slightly miscible with water. Preparations which excite gastric secretion, or which are decomposed by it, are useless. Suitable meals are dense, pasty, and made by the incorporation of opaque salts with a farinaceous or mucilaginous fluid. All normal stomachs do not have the same rhythm and time of retention. Short stomachs (*estomacs encorné boeuf*) generally contain only a trace of the meal one and three-quarter hours after its ingestion, while long J-shaped stomachs take a little more than four hours to empty themselves completely. Maingot defines gastric retention or stasis by the pre-ence of the opaque salt in the stomach six hours after the ingestion of 300 c.cm. of a mixture of 100 grams of powdered barium sulphate or 200 grams of gelobarine (a salt preferred by the author) in a neutral excipient. Retention of an opaque meal is not necessarily a sign of pyloric stenosis. Old stenoses are complicated with stasis, but recent ones do not always retard, and sometimes even accelerate, gastric evacuation. Stasis without pyloric stenosis may be intermittent or permanent. Certain extra-gastric conditions of general nervous and psychological origin, such as migraine, also certain emotions and intoxications, influence gastric retention; the same is true of abdominal causes, which may be extraperitoneal, as nephritic colic, or intraperitoneal, as peritonitis. Various conditions affecting gastric retention and secretion, besides those already mentioned, such as appendicitis, cholecystitis, duodenal and gastric ulcers, and neoplasms, are discussed, together with their effects on the radiological picture. From a causal point of view Maingot divides gastric stases into two main groups: the nervous and toxic, associated with a general affection, and those dependent on an abdominal condition. The latter group is divided into extra- and intra-peritoneal, and the last-named is further classified according as the lesion is distant from the stomach, near that organ, is gastric, or is pyloric. A table is given of the various causes of gastric retention.

52. X-Ray Treatment of Prostatic Hypertrophy.

R. OFFENHEIMER (*Urol. and Cut. Rev.*, October, 1928, p. 652), who reports an illustrative case, remarks on the considerable divergence of opinion about the value of *x*-ray treatment in prostatic hypertrophy. The difference in the results is, he says, due partly to the variability of doses. Moreover, there is no agreement as to what forms, and above all in what stages, of prostatic hypertrophy *x*-ray treatment is applicable. As the result of his experience Offenheimer comes to the following conclusions: (1) Moderate *x*-ray doses combined with massage of the prostate improve the irritative symptoms of the first stage, especially the strangury in a great number of cases. (2) On the other hand, this form of treatment does not prevent the further development of the disease, and particularly the occurrence of chronic retention. (3) *X*-ray treatment of the prostate may have a favourable effect in cases of prostatic haemorrhage. (4) Small doses prove ineffective in acute retention, and any form of *x*-ray therapy is useless in chronic retention. (5) The application of large doses aggravates a pre-existing cystitis, makes prostatectomy more difficult, and retards or completely prevents healing of the wound.

Obstetrics and Gynaecology.

53. Vaginal Hysterectomy for Cancer of the Cervix.

T. HEYNEMANN (*Zentralbl. f. Gynäk.*, September 15th, 1928, p. 2330) agrees that the vaginal radical operation in cases of cancer of the cervix is worthy of considerably wider employment than it has had since the introduction of the Wertheim abdominal operation. Heynemann at present performs both operations, preferring the abdominal route when the pubic angle is small and the pelvis narrow, when adnexal tumours are present, when a previous laparotomy has been done, and when involvement of lymphatic glands is expected. Preference is given to the vaginal route in fat patients and those with chronic heart or lung disease, when the growth has extended in the vagina, and when deep-seated infiltration of the parametria is detected. In the vaginal operation great assistance is afforded by a bilateral Schuchardt paravaginal incision; preliminary infiltration of these incisions with adrenaline diminishes as a rule the loss of blood and gives clearer vision. By the vaginal route the paravaginal and paracervical tissues are easily accessible, but infiltrations near the bladder may lead to considerable difficulty. Freeing of the ureters is not always easy, but is not an essential point of the operation, surprisingly large amounts of the connective tissue in this neighbourhood being removable after the bladder and ureters have been displaced upwards. Removal of the ovaries is stated not to be essential for success of the operation. The chief advantage of Wertheim's operation is the greater accessibility of the lymphatic glands; if these are not to play an important part in the operation there is little purpose in subjecting the patient to the more serious risk of the Wertheim procedure. For vaginal hysterectomy anaesthesia by means of nitrous oxide and small amounts of ether is recommended.

54. Inflammation in and around the Pouch of Douglas.

R. CONDAMIN (*Lyon Méd.*, October 21st, 1928, p. 479) believes that there is an etiological as well as a pathological difference between posterior parametritis and inflammation of the pouch of Douglas. Posterior parametritis is secondary to uterine infection, which spreads to one or other utero-sacral ligament through the lymphatics or veins. It causes, at first, contraction of one or both ligaments which produces uterine displacement; this is sometimes followed by stretching of the ligaments, with consequent prolapse. Inflammation of the pouch of Douglas usually follows suppurative generalized parametritis, salpingitis, or oöphoritis; it may cause a series of symptoms involving uterus, bladder, vagina, or rectum, or even in more distant organs. Condamin believes it possible to establish a differential diagnosis. Posterior parametritis is rarely confined to the pouch of Douglas, but almost always extends to the lateral culs-de-sac and the bases of the broad ligaments, the contraction of which is more definite towards the left side, resulting in its resembling hard, rigid cord, often more sensitive than tender. A previous history of puerperal infection, of abortion (particularly when induced), and of other sources of infection may assist in the differential diagnosis. Many pelvic inflammations produce a septic exudation which gravitates towards the pouch of Douglas, where it is absorbed or encysted, causing peritoneal thickening and sclerosis, with contractions leading to chronic inflammation of Douglas's pouch. Condamin believes that occasionally adnexal infections may produce lymphangitis or phlebitis terminating in posterior parametritis, but more frequently a pyosalpinx causes inflammation in Douglas's pouch. Usually it is chronic, with painful retractions and adhesions, which result in the pain characteristic of salpingitis, especially when the Fallopian tubes are small and prolapsed in Douglas's pouch and drag upon the utero-sacral nerves. The weight of a slightly enlarged uterus may produce the same effect. The author believes that the conditions described under the terms "atrophic parametritis" and "periproctitis" are only later developments of inflammation of Douglas's pouch. The former is non-puerperal in origin, and is said to terminate in uterine atrophy. Condamin believes that constipation is due to chronic inflammation of Douglas's pouch, and is not the causative agent.

55. Dangers and Limitations of Support of the Perineum.

ACCORDING to R. T. v. JASCHKE (*Arch. f. Gynäk.*, June 26th, 1928, p. 193) support of the perineum during the passage through it of the foetal head is unnecessary, in normal conditions, with normal pelvis, normal head, normal presentation, and elastic, wide, and distensible soft parts. Where these conditions are not present support is harmful, even in those cases in which it appears most successful. In other words, the perineum, which is easily repaired, is spared at the expense of the deeper parts of the levator ani, which are repaired with difficulty. Even if the levator is not torn, prolonged pressure of the "supported" foetal head injures irretrievably the deep muscle fibres and interstitial tissue of the pelvic floor. Utero-vaginal prolapse, according to this view, is favoured rather than prevented by energetic and prolonged holding back of the foetal head. It has been shown that a spontaneous and even precipitous delivery of a normal foetus through normal bony and soft parts is frequently associated with preservation o. the levator ani, while careful and successful support of the perineum, in spontaneous as well as operative deliveries, is very frequently followed by wide tears of the levator muscle, usually most marked on the side of the foetal occiput. Jaschke concludes that attention should therefore be directed during labour to the deep parts of the muscular pelvic floor, especially the pubo-rectal fibres; perineal tears will become a little (but not a great deal) more frequent, but the levator will be more often spared, and descent and prolapse be rendered less frequent. Where the soft parts are narrow and inelastic, the pubic angle is small, or the head is large, it is advisable either to abandon perineal support or perform a prophylactic deep median episiotomy. Subsequent repair is much easier than that of a torn levator, especially when the lesion is near the anterior end. The author does not go so far as to recommend median episiotomy as a routine in primiparae; it is definitely indicated, he thinks, where infantile characters are well marked in the pelvis or soft parts, in elderly primiparae, and where cephalic flexion is deficient.

56. Ulcus Vulvae Acutum.

S. A. GLAUBERSOHN (*Derm. Woch.*, November 17th, 1928, p. 1766) of Kieff has collected from Russian literature twelve cases of non-venereal ulcer of the vulva described by Lipschütz, including a personal case; nine occurred in virgins and three in married women. In eight cases the characteristic *B. crassus* was found. The disease usually begins with malaise, fever, headache, and shivering; the genital ulcers appear six or ten days later, and are usually mistaken for chancroids. Examination of the blood and internal organs is negative. The ulcers are situated on the labia majora, or more frequently the labia minora. The inguinal glands are not affected. The course is favourable and no complications ensue. As the disease was described by Czapin of St. Petersburg in 1907, at the same time as Lipschütz, Glaubersohn suggests that the disease should be named after both observers.

Pathology.

57. Survival of Leucocytes in Pus.

ACCORDING to S. FRANCESCO (*Il Policlinico*, Sez. Prat., November 26th, 1928, p. 2319) the amoeboid movements of the leucocytes in pus were first described in man by von Recklinghausen in 1863. Achard in 1909 found that the number of leucocytes diminished after incision of the abscess, and also observed that in a case of meningococcus meningitis the number of dead leucocytes increased before death. Francesco has tried to determine whether the leucocytes in all forms of suppuration possessed amoeboid movements; he has also studied the duration of these movements, their relation to intercurrent diseases, and the possibility of there being differences in the behaviour of leucocytes according as the disease ended in recovery or death. His conclusions are as follows. The leucocytes proved capable of movement on the warm stage in all forms of suppuration, with the following exceptions: (1) leucocytes removed by exploratory puncture or during operation from the abscess cavity; (2) in cachectic states which ended fatally. The motility of the leucocytes was most marked on the first day on which the pus was taken, became less on the second day, and had entirely disappeared by the fourth day. If the author's observations are confirmed by others, he is of opinion that the study of the survival of leucocytes in pus, in addition to its scientific interest, will acquire a practical value as an important prognostic guide.

58. The Nature of Anthrax Infection.

G. BOVIDA and E. SCHWARTZ (*Lo Sperimentale*, November 5th, 1928, p. 765) have found that, notwithstanding the vigorous bactericidal action of gastric juice on the vegetative growth of *B. anthracis*, and the anti-germinative action of the intestinal juice on the spores of this bacillus, the failure of the germs to pass out from the gastro-intestinal system into the circulation cannot be ascribed to the action of these juices. After introducing sporulating or non-sporulating *B. anthracis* into the alimentary canal by various experimental methods, it was possible to retrieve from the intestinal contents of the animals both living and virulent spores, and also bacilli derived from them. Since it is demonstrated by the authors' experiments and also by those of other observers that it is not possible for the germs of the organism to pass the digestive mucous membrane and so infect laboratory animals, it is concluded that the failure is due to some impediment more anatomical than functional which is opposed as a barrier to the *B. anthracis* by the intestinal mucous membrane. From the results of their cultural and animal experiments the authors are unable to demonstrate the antagonistic action of *B. coli* on *B. anthracis* described by Sanarelli, and they failed to confirm the views of Carbonieri that *B. anthracis* has a lytic action on *B. coli*.

59. Splenectomy and Experimental Gastric Cancer.

G. C. PERACCHIA (*Rev. Sud-Amer. de endocrinol., immunol. y quimioterapia*, October 15th, 1928, p. 682) reviews the literature, and records experiments on rabbits to determine the effect of splenectomy on the growth of tar tumours of the stomach. Splenectomy was performed, after injection of morphine, on fifteen rabbits, and at the same time drops of tar were injected into the cardiac region of the gastric wall: while a few rabbits also had some drops of tar sprinkled over the peritoneal cavity or injected into the liver or kidneys. Control animals received the same treatment with tar, but did not undergo splenectomy. The results were as follows: Eight animals died from twenty-four hours to five days after the operation without showing anything beyond ulceration of the gastric mucosa. The diminished resistance to cancer resulting from splenectomy, which produced a rapid onset of cachexia, was indicated by the fact that an epithelomatous growth only appeared in two animals which had undergone this operation, while in the others the lesions were merely of an inflammatory type.

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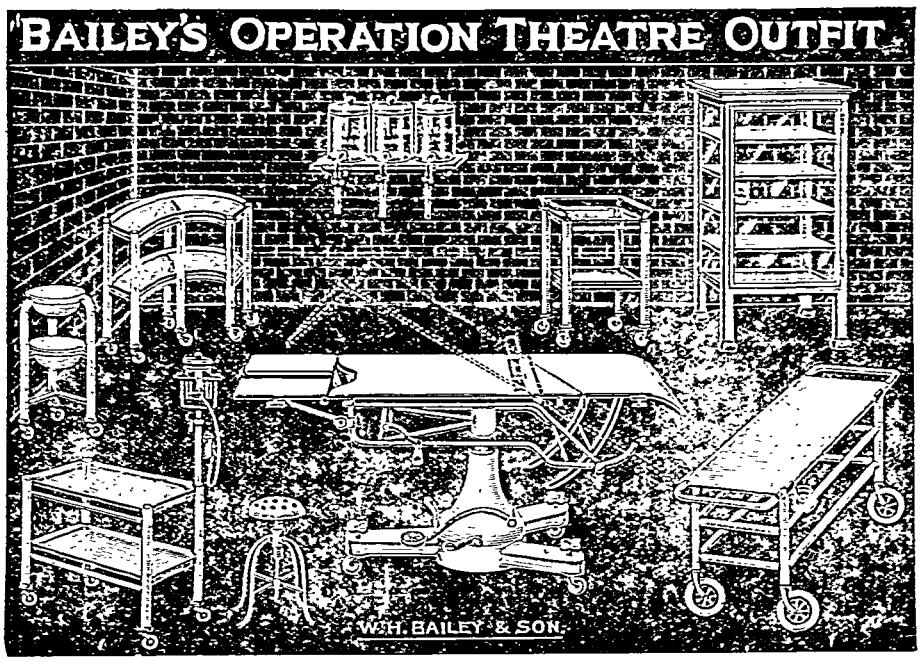

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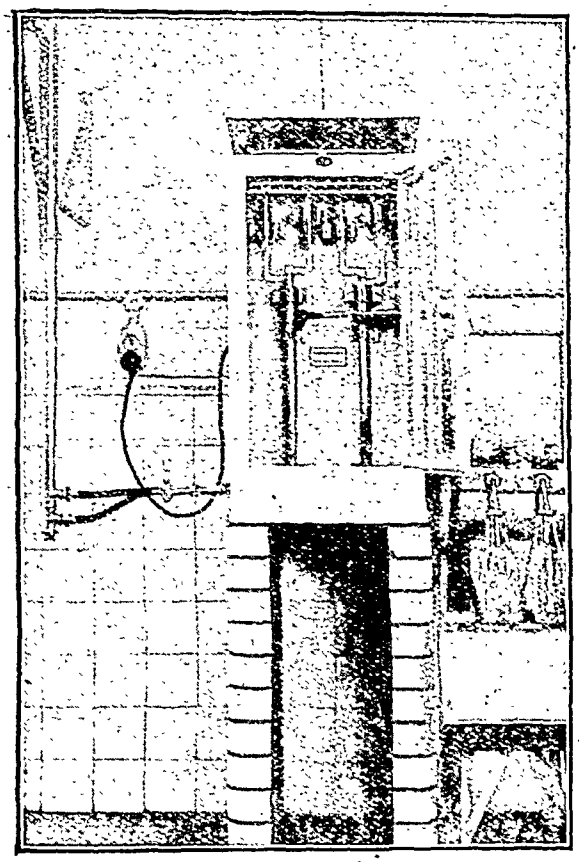

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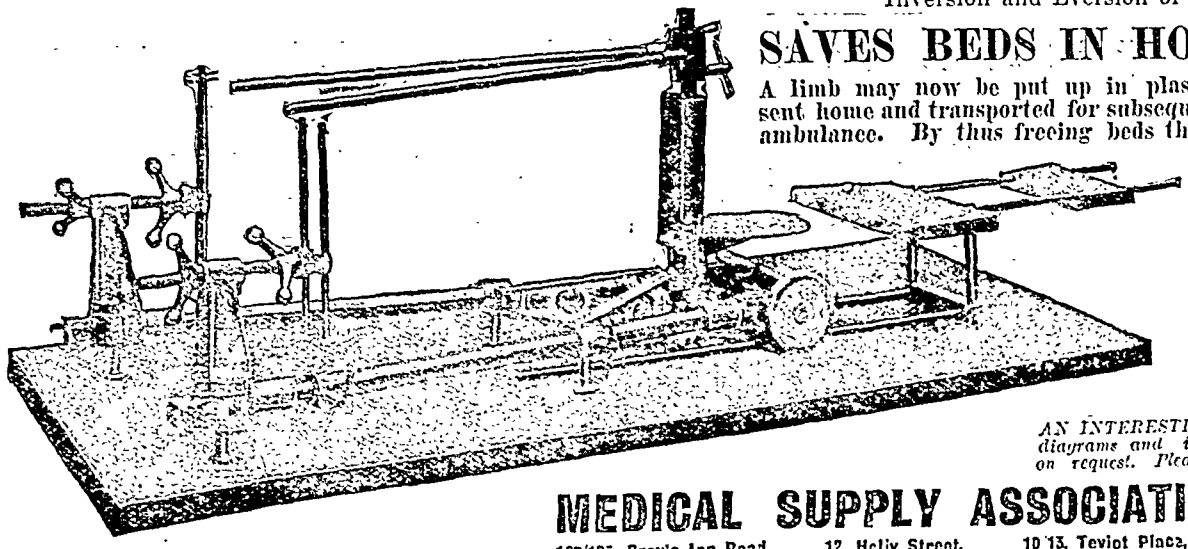

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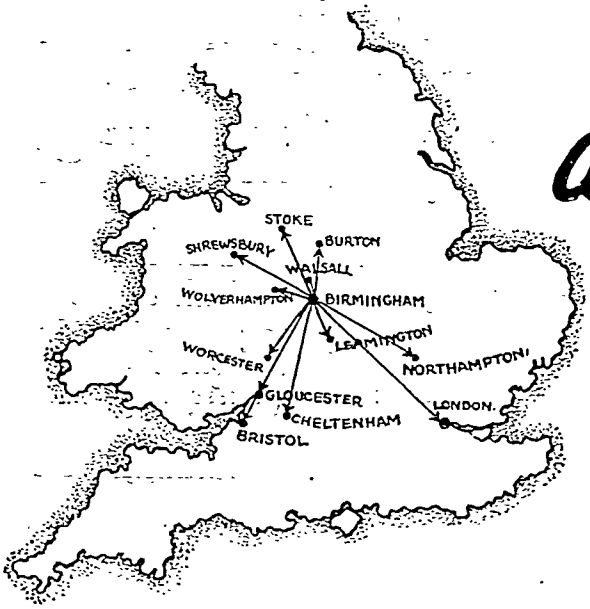

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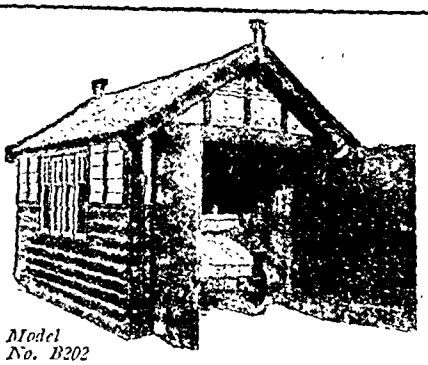

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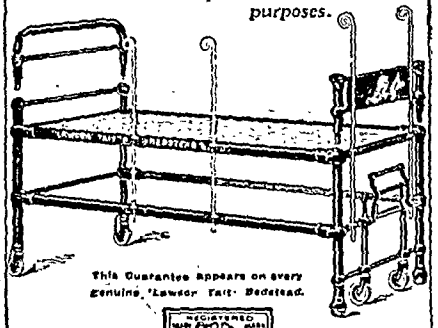

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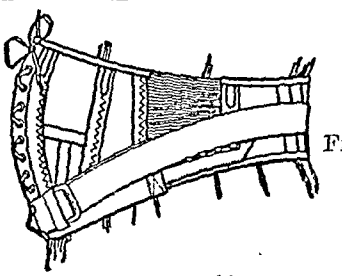

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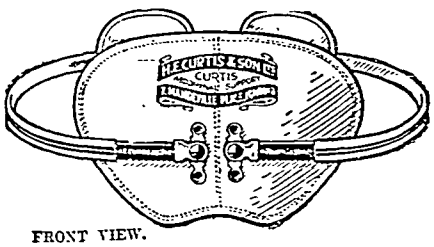

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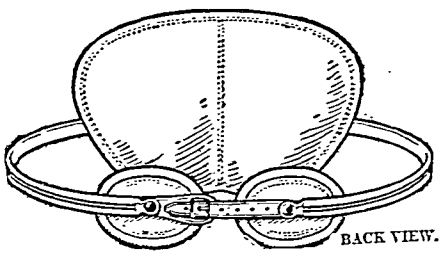
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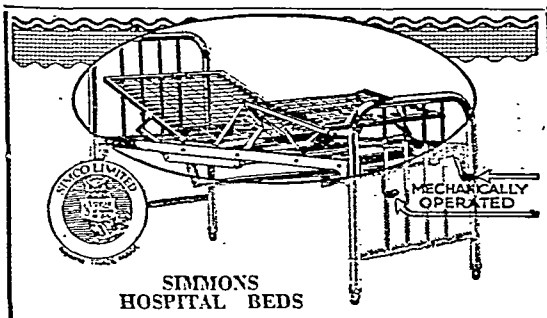

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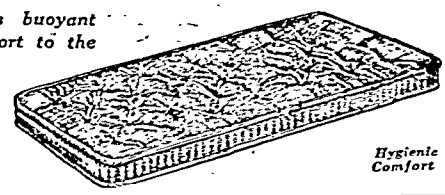

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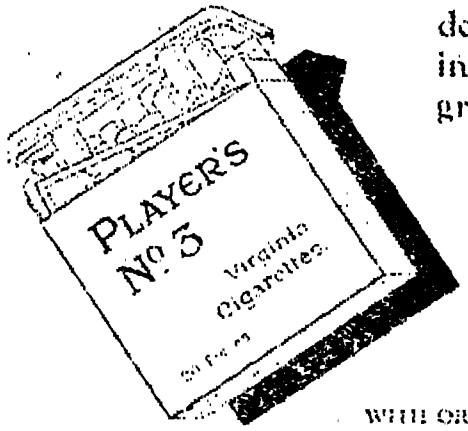

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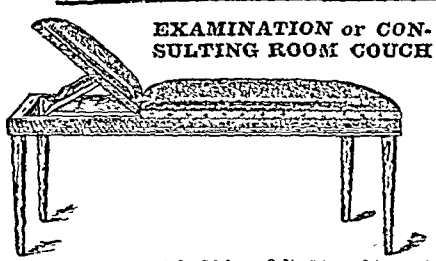

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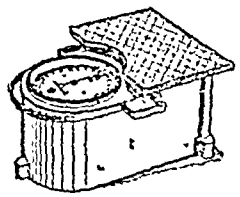

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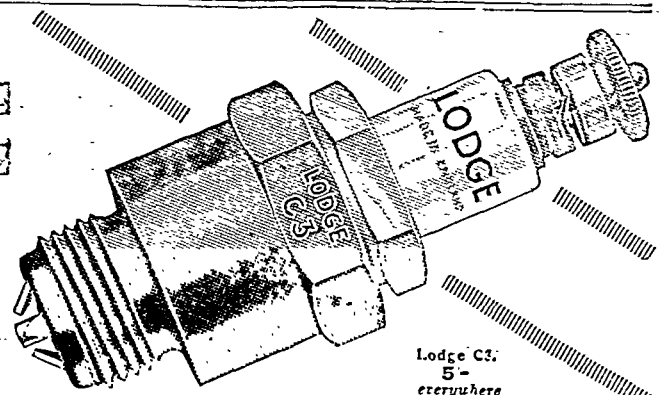

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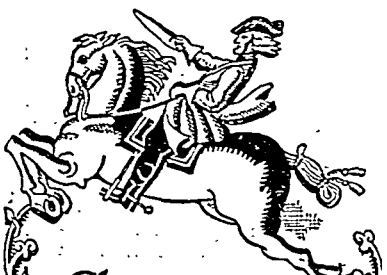

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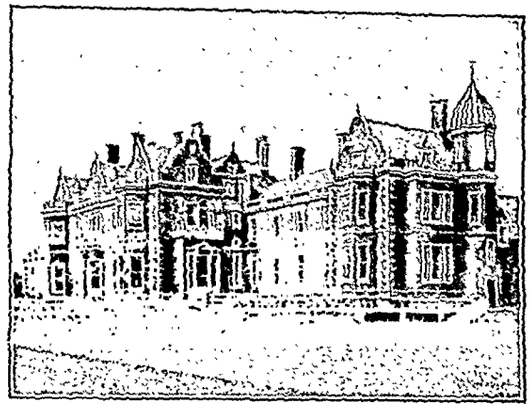

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Telegrams: Alleviated, London. Telephone: Rodney 4741—4742.

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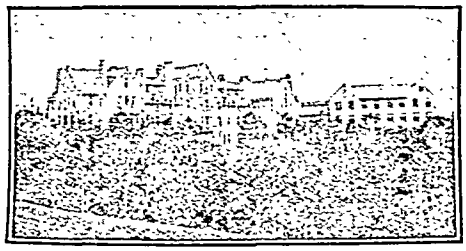

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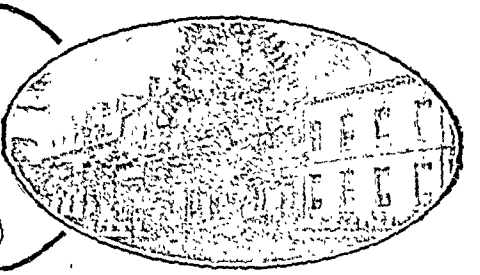

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FRANK HAYDON, Secretary.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.

Paddington, W.2.

(University of London.)

PRIMARY F.R.C.S. COURSE.

A Course of Instruction for the JUNE EXAMINATION will begin on FEBRUARY 4th, 1929, and will be conducted as follows:

ANATOMY AND EMBRYOLOGY.—*Prof. J. ERNEST FRAZER, F.R.C.S. (Professor of* Anatomy in the University of London).

PHYSIOLOGY AND HISTOLOGY (with Practical Classes).—*Prof. R. J. COLLINGWOOD, O.B.E., M.D. (Professor of Physiology* in the University of London).

Fee for the Course, 15 gns., or 9 gns. for either section separately. This fee includes membership of the Students' Club during the period covered by the Course.

For further particulars apply to the School Secretary.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL).

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 7th, and for the Diploma in Tropical Hygiene on January 12th and April 26th (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

SCHOOLS for BOYS and GIRLS.

TUTORS FOR ALL EXAMS.

Messrs. J. & J. PATON, having an up-to-date knowledge of the BEST SCHOOLS and TUTORS in this Country and on the Continent, will be pleased to AID PARENTS in their choice by sending (free of charge) prospectuses and TRUSTWORTHY INFORMATION and ADVICE.

The age of the pupil, district preferred, and rough idea of fees should be given.

J. & J. PATON, Educational Agents, 14S, Cannon Street, London, E.C.4. Tel.: 5053 Central.

University of London.

The following Lectures have been arranged:

A Course of Three Lectures on *"Fatigue,"* by Mr. G. P. CROWDEN, M.Sc., M.R.C.S., L.R.C.P., at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on MONDAYS, JANUARY 14th, 21st, and 28th, at 5 p.m.

A Course of Six Lectures on *"The Physiology of Reproduction,"* by Dr. A. S. PARKES, at UNIVERSITY COLLEGE, LONDON, on WEDNESDAYS, JANUARY 16th, 23rd, and 30th, and FEBRUARY 6th, 13th, and 20th, at 5 p.m.

A Course of Ten Lectures on *"Comparative Physiology,"* by Mr C. F. PANTIN, at UNIVERSITY COLLEGE, LONDON, on FRIDAYS, JANUARY 18th, 25th, FEBRUARY 1st, 8th, 15th, 22nd, March 1st, 8th, 15th, and 22nd, at 5 p.m.

Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

University of London.

A Course of Six Lectures, with Demonstrations, on *"Cytology in Relation to Physiological Processes,"* will be given by Dr. R. J. LUDFORD (Fouderton Research Student of the Royal Society, and Honorary Lecturer in Cytology, Department of Anatomy and Embryology, University College, London), at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on THURSDAYS, JANUARY 24th and 31st, FEBRUARY 7th, 14th, 21st, and 28th, at 5 p.m.

Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

ROYAL ARMY MEDICAL CORPS.

TWENTY-FIVE COMMISSIONS in the Royal Army Medical Corps will be offered in January, 1929.

Candidates will be selected for Commissions without competitive examination, and will be required to attend in London towards the end of January for medical examination and interview.

Candidates must be under 28 years of age on February 1st, 1929, and registered under the Medical Acts.

Forms of application and all particulars may be obtained from the Under-Secretary of State, War Office (A.M.D.1), London, S.W.1, and all applications should reach the War Office not later than January 20th, 1929.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after two years' Indian service for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

PAY.

The monthly rates of pay for European officers in the Service who have a "non-Asiatic" domicile are as follows:

Rank.	Service in Rank.	Basic Pay.	Overseas Pay.	Year of Total Service.
1		3	4	5
		Rs.	Rs.	
Lieut.		500	150	1st
			150	2nd
			150	3rd
			150	4th
Capt.	(i) During first 3 years' service as Captain	650	£15	5th
			£15	6th
			£25	7th
	(ii) With more than 3 and less than 6 yrs.' service as Captain	750	£25	8th
			£25	9th
			£25	10th
	(iii) With more than 6 years' service as Captain	850	£25	11th
			£30	12th
Major	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years' service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years' total service ...	1500	£30	13th and over
	(ii) During 24th and 25th years' service	1600	-	
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

WAR SERVICE CONCESSIONS.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion, retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

OUTFIT ALLOWANCE.

Officers on appointment will receive an outfit allowance of £50.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

PENSIONS.

The rates of pension are as follows:

	Per annum.
	£
After 17 years' service for pension	400
„ 18 „ „ „	430
„ 19 „ „ „	460
„ 20 „ „ „	500
„ 21 „ „ „	540
„ 22 „ „ „	580
„ 23 „ „ „	620
„ 24 „ „ „	660
„ 25 „ „ „	700
„ 26 „ „ „	750
„ 27 „ „ „	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all, the revision being undertaken triennially. With effect from July 1st, 1927, a reduction of 4½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with a free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. Applications should be submitted as soon as possible. The Selection Committee will meet shortly to make nominations, and the selected candidates will be required to attend a course of instruction commencing on February 4th, 1929.

ROYAL ARMY MEDICAL CORPS.

TWENTY-FIVE COMMISSIONS in the ROYAL ARMY MEDICAL CORPS will be offered in January, 1929. Applications should reach the War Office not later than January 25th.

Candidates will be selected for Commissions without competitive examination, and will be required to present themselves in London for interview and medical examination towards the end of January. They must be under 28 years of age on February 1st, 1929, and registered under the Medical Acts.

Officers of the R.A.M.C. are liable to serve in any part of the world where British Troops are quartered.

Ample opportunities exist in the Army for clinical professional work, both Medical and Surgical, as well as for the study and practice of Hygiene, Pathology, and all the special branches.

The cost of Post-Graduate study, which is compulsory, is met from Army Funds.

Officers serve on an average 3 to 4 years at home to 5 years abroad.

Pay and Allowances.—Pay from £500 to £2,000 a year according to rank and length of service.

Gratuities on retirement.—After 7 years' service £1,000.
„ 15 „ „ £2,800.
„ 18 „ „ £3,500.

Current rates of retired pay range from £372 per annum normally earned by a Major after 20 years' service to £940 per annum, the maximum for which a Major-General is eligible.

The rates of pay and retired pay are subject to periodical variation consequent on fluctuation in the cost of living.

Outfit Allowance.—An officer on joining receives £50 as outfit allowance.

Marriage Allowance.—Officers of 30 years of age and over who are married are entitled to draw special rates of allowances.

A Voluntary Widows' and Orphans' Fund exists for officers of the Corps.

All particulars may be obtained by application, in writing or personally, to The Under Secretary of State, The War Office (A.M.D.1), Whitehall, London, S.W.1.

The Barbados General Hospital.

Wanted, a duly qualified medical practitioner (male) as JUNIOR RESIDENT SURGEON of The Barbados General Hospital (224 beds). A man who has had experience in administering anæsthetics preferred.

Salary £250 per annum, with a temporary addition of 20 per cent., and quarters furnished for a single man, free water, lighting allowance, and no local rates. The appointment is for three years, with three months' notice on either side to terminate the engagement, and first-class passage out (direct from England) will be paid by the Hospital for the full term of service.

Applications, accompanied by a recent medical certificate of physical fitness, and professional and other testimonials, stating age and date of graduation, will be received by Dr. A. A. GIBBONS, at "Balmoral," 34, Prince's Square, Bayswater, London, W.2, and should reach him not later than January 15th, 1929.

Canadian Graduates must be registered in a province, registration in which will entitle them to be registered in the United Kingdom.

Candidates holding a United States degree must be registered in the State of New York.

By Order of the Court of Trustees and Directors,

J. WARD,
Secretary.

General Hospital,
Bridgetown,
Barbados, B.W.I.

County of London.

The London County Council invite applications for appointment as EIGHTH ASSISTANT MEDICAL OFFICER (male) in its MENTAL HOSPITAL SERVICE. Candidates must be under 35 years of age and be registered to practise both in medicine and surgery in England. Salary £300 a year, rising by annual increments of £25 to £400 a year, plus [illegible] temporary additions, the present [illegible] muneration being approx[illegible] No emoluments. Charges made for board, lodging, etc. (at present £2 9s. weekly) if required to be resident. Candidates appointed will be pensionable under the Asylums Officers Superannuation Act, 1909. Form of application, on which full particulars are given, can be obtained from the Acting Chief Officer, Mental Hospitals Department, The County Hall, Westminster Bridge, S.E.1. Completed applications must be received by Tuesday, January 15th.

Canvassing disqualifies.

MONTAGU H. COX,
Clerk of the London County Council.

Wrexham and East Denbighshire War Memorial Hospital.

(105 Beds.)

TWO RESIDENT HOUSE SURGEONS (male) required at above Hospital to commence on February 1st. Appointments are for a period of not less than six months. Salaries £150 pe[illegible] with board and laundry.

[illegible]ge, nationality, experi[illegible] accompanied by copies of three recent testimonials, to be sent to the undersigned not later than Thursday, Jan. 17th.

LESLIE SPENCER,
Secretary.

December 31st, 1928.

Rochdale Infirmary and Dispensary. (110 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male). Salary £175 p.a., including board, residence, and laundry. Applications, stating age, nationality, etc., together with copies of three testimonials, to be sent to the Secretary, endorsed "House Surgeon." Conditions of appointment may be had on application to the Secretary.

W. WYNNE,
Secretary.

Infirmary Office,
Rochdale.

St. Mary's Hospitals, Manchester

TWO HOUSE SURGEONS for the WHITWORTH STREET WEST HOSPITAL (Maternity), and TWO for the WHITWORTH PARK HOSPITAL (one Children's Department and one Gynæcological Department), each for a period of six months from February 1st next. Salaries at the rate of £50 per annum, with board and residence. Applications, with copies of three testimonials, to be sent to the undersigned on or before January 16th.

R. RATCLIFFE, Secretary.

Paddington Green Children's Hospital (Incorporated), London, W.2.

Applications are invited for the post of HONORARY SURGEON to Out-patients. Candidates must be Fellows of the Royal College of Surgeons, England.

Applications, stating age and qualifications, accompanied by copies of three testimonials, should reach the undersigned not later than the first post on Thursday, January 24th.

JAMES A. HAMLIN, Secretary.

West Ham Union.

SPECIALIST CONSULTANTS.

The Guardi[illegible] for posts as Specialist [illegible] WHIPPS CROSS HOSPI[illegible]d, Leytonstone, E.11, a[illegible] consultant rank and mu[illegible] capacity to some Special Hospital or to a corresponding Special Department of a General Hospital.

The duties will consist of making visits to the Hospital, there to treat (or advise as to treatment in) such cases as are selected by the Medical Superintendent. The duration of each visit would vary with the number of cases arising; emergency visits, if any, would be very rare.

GYNÆCOLOGIST. Attendance when requested. Retaining fee of £50 p.a. and £5 5s. per visit.

ORTHOPÆDIC SURGEON. One afternoon fortnightly. Salary £100 p.a.

OPHTHALMIC SURGEON. One afternoon fortnightly. Salary £100 p.a.

NEUROLOGIST. One afternoon fortnightly. Salary £100 p.a.

The services of the Consultants will be retained for a period of one year in the first instance, and each Consultant will be required to provide his own locum tenens during holidays and absences.

Further information can be obtained from the Medical Superintendent at the Hospital by letter, or preferably by interview.

Applications, with copy testimonials, should reach the undersigned not later than 10 a.m. on Monday, January 28th.

L. E. FRAQUET,
Clerk to the Guardians.

Board Room,
Union Road,
Leytonstone, E.11.
January 1st, 1929.

The Hospital for Sick Children,

Great Ormond Street, London, W.C.1.

There will be a Meeting of the Joint Committee on Wednesday, January 16th, 1929, to elect an ANÆSTHETIST.

Gentlemen are invited to send in their applications, [illegible] the Secretary, with copies of not [illegible] monials, written specially [illegible] 12 o'clock on Monday, [illegible] medical practitioners and be prepared to take up the duties of the appointment on January 17th, 1929.

The successful candidate will be appointed for a period of one year, and will be eligible for re-election, an honorarium of £15 15s. being voted on the expiration of each year of office, and an allowance of £6 6s. is granted also to provide a substitute during three weeks' annual leave of absence.

All candidates must appear before the Joint Committee at their Meeting on Wednesday, January 16th, 1929, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary.

By Order of the Board of Management,

JAMES McKAY,
Secretary.

December, 1928.

The Hospital for Sick Children,

Great Ormond Street, London, W.C.1.

A RESIDENT MEDICAL SUPERINTENDENT is required on January 17th, 1929.

Gentlemen are invited to send in their application to the Secretary, before 12 o'clock, on Monday, January 14th, 1929, accompanied by copies of not more than three testimonials given specially for the purpose.

The appointment is made for one year, but may be held, subject to re-election, for a period of three years.

Salary £300 per annum, with board-residence in the Hospital, £10 allowance for laundry, and £18 18s. for the purpose of providing a substitute during annual leave.

Candidates must be unmarried and possess a legal qualification to practise, and must have held a responsible Hospital appointment at a General Hospital.

All candidates must be in attendance on Wednesday, January 16th, 1929, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,

JAMES McKAY,
Secretary.

December, 1928.

London Hospital, E.1.

There is a vacancy for a DENTAL ANÆSTHETIST in the London Hospital and Dental School, to attend one morning a week. A small honorarium is attached to the appointment. Further particulars may be obtained from the House Governor, London Hospital, E.1.

E. W. MORRIS, House Governor.

Borough of Hartlepool.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH, SCHOOL MEDICAL OFFICER, AND TUBERCULOSIS OFFICER.

The Council invite applications for the above appointments.

In addition to the qualifications prescribed by any statute, candidates must be experienced in the treatment of Tuberculosis and also be either registered in the *Medical Register* as the holder of a Diploma in Sanitary Science, Public Health, or State Medicine, or must have had not less than three years' experience in the duties of a Medical Officer of Health.

The offic[illegible] will be required to undertake the [illegible] Medical Officer under th[illegible] Council for the Hartlepool Dispensary, and for the area covered by the Dispensary area.

The appointment will be subject to the provisions of the Sanitary Officers Order, 1926, and to the approval of the Government Departments concerned. It will be a whole-time appointment (the person appointed will not be permitted to engage in private practice), and will be determined by three calendar months' notice on either side.

Inclusive salary £800 per annum, to be apportioned in respect of the offices held, and subject to deduction under the Local Government and Other Officers Superannuation Act, 1922.

Applications, accompanied by copies of not more than two recent testimonials, must reach the undersigned not later than the 23rd inst.

J. W. PORTER,
Town Clerk.

Town Clerk's Office,
Hartlepool.
January 8th, 1929.

The Royal Liverpool Children's Hospital,

MYRTLE STREET, LIVERPOOL.

The Committee invi[illegible] from Graduates, with previou[illegible] for the appointment of [illegible] OFFICER.

The appointment will be for a period of one year from March 1st, and the holder of the post will be eligible for re-election.

Salary at the rate of £120 per annum.

Further particulars may be obtained from the Secretary of the Hospital, to whom applications should be sent, with copies of recent testimonials, on or before Thursday, January 17th.

The Royal Liverpool Children's Hospital.

There will be vacancies on April 1st next for Two RESIDENT HOUSE PHYSICIANS and Two RESIDENT HOUSE SURGEONS at the CITY BRANCH, Myrtle Street. The appointment will be for a period of six months. Salary in each case at the rate of £60 per annum.

Applications, with copies of recent testimonials, to be sent to the Secretary, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool, on or before Thursday, January 17th.

The Royal Liverpool Children's Hospital.

The Committee invite applications from Graduates, with previous Hospital experience, for the post of RESIDENT MEDICAL OFFICER at the HESWALL BRANCH of the Institution, vacant on April 1st next. Salary at the rate of £120 per annum.

The appointment will be for a period of six months. Applications, with copies of recent testimonials, to be sent to the Secretary, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool, on or before Thursday, January 17th.

Seamen's Hospital Society,

Greenwich, S.E.

RESIDENT MEDICAL OFFICER required at QUEEN ALEXANDRA MEMORIAL HOSPITAL, MARSEILLES, for six months from February 1st. Salary £150 per annum, with board, residence, and laundry. Candidates must be male and know some French. Applications, with copies of three recent testimonials, to be sent in by January 22nd to the undersigned, from whom further particulars can be obtained.

R. E. BAX,
Secretary.

Greenwich.
December 27th, 1928.

General Hospital, Gt. Yarmouth.

(72 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry. Duties to commence February 13th. Candidates (male, and unmarried) must be fully qualified and registered.

Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be sent immediately to the undersigned.

T. H. G. GARTLAND, Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.)*.	**PUBLIC HEALTH** *(continued.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	NOTTINGHAMSHIRE COUNTY COUNCIL. *(Assistant School Medical Officer and Assistant Medical Officer for Maternity & Child Welfare.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	SURREY ADMINISTRATIVE COUNTY. *(County Medical Officer of Health.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	WEST HAM UNION. *(Anæsthetist Posts at Whipps Cross Hospital.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
	BURGH OF MOTHERWELL & WISHAW. *(Resident Medical Officer (female) for Maternity and Child Welfare Department.)*	

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec. Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies' Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
January 9th, 1929.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

SCALE OF CHARGES FOR ADVERTISEMENTS.

	£ s. d.		£ s. d.
Whole page	20 0 0	Half single column	3 15 0
Half page	10 0 0	Six lines and under	0 0
Whole single column (three columns to page)	7 10 0	For each additional line ...	1 6

An average line in column contains six words. Births, Marriages, Deaths, 9s. per insertion.

Advertisements should be delivered, addressed to the Financial Secretary and Business Manager, B.M.A. House, Tavistock Square, W.C.1, not later than first post on Monday preceding publication.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(Address included.)

Sixpence should be added if replies to a box number are to be posted.

All advertisements must be received not later than first post Tuesday previous to date of publication.

ASSISTANCIES.

Wanted. — Indoor Assistant, male, young English or Scotch Graduate, ex H.S. preferred, but not essential. To commence duty in February. Exceptional salary and prospects. Send photo and full particulars. —Address, No. 122, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant *(male), for large mixed practice. Good* salary and prospects to suitable man. State age, religion, experience hospital and private practice, testimonials, etc.—Address, No. 210, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, about end of March, with early view to Partnership in old-estab. Practice, indus. area, Northern City. Capital an advantage, but not essen. Good salary while Assistant. Essn. details. —No. 127, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistant for London working-class Practice. To reside at Surgery. Protestant. Salary £260 p.a., all found. — Address, No. 110, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, qualified male ASSISTANT in a panel and general practice. Furnished room, attendance, coal, and light. Salary £300 p.a. — Address, No. 107, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistantship, Town or Country, by *Woman Graduate*; Hospital experience (3½ years), G.P. (1½ years). Can drive car. Free March.—Address, No. 114, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by M.B., Ch.B., British, 28, single, 6 yrs.' exper. Excellent refs., good appearance, temperate. Now free. £25 monthly indoor, £35 out. Would accept Locum, 7 guineas weekly.—Add., No. 111, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, with view to Partnership, by M.R.C.S.(Eng.), L.R.C.P.(Lond.), aged 31, and single; 3½ years' varied experience in general practice. Well received. Excellent testimonials.—Address, No. 108, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view, by M.B., Ch.B.(Aberd.), æt. 26; 4½ years' experience private and panel practice. Single. Own car. Free by arrangement.—Add., No. 117, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, with *Principal of religious convictions (Pro*testant), in London area (preferably), by M.B. (Glasg.), 1926, Scot, æt. 27, single. Two years' exper. in indus. practice with panel over 5,000. —No. 126, B.M.A. House, Tavistock Sq., W.C.1.

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January 8th, 1929.

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By Order of the Board,
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[illegible] invited for the post of [illegible] which will become [illegible] The appointment is open to qualified men and women, and is for a period of one year. Honorarium 40 guineas.

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THREE HOUSE PHYSICIANS.

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R. ARMSTRONG,
January 5th, 1929. Medical Supt.

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J. K. MILLWARD,
January 8th, 1929. Secretary-Supt.

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Applications to be addressed to J. A. SMITH, Esq., Secretary, 3, Silk Street, Leigh, Lancs.

St. Marylebone General DISPENSARY, 30, Marylebone Lane, W.1.

A vacancy exists for a CLINICAL ASSISTANT in the Ultra-Violet Radiation Department. Candidates must be registered medical women possessing a *degree in Medicine or Surgery* of a recognized University of the British Empire or a Diploma of the Royal College of Physicians.

Full particulars can be obtained from the Secretary.

FRANK BETHELL, Secretary.

West London Hospital,
Hammersmith Road, W.6.
(226 Beds.)

Required an AURAL AND OPHTHALMIC HOUSE SURGEON and RESIDENT ASSISTANT CASUALTY OFFICER (male). This appointment is tenable for a period of not less than five months from February 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodging, and washing allowance. Candidates must be registered under the Medical Act.

Applications (which must be made on printed forms obtained from me) must reach me not later than first post on Friday, January 18th, 1929. Candidates must call upon such Members of the Medical Staff as directed, and attend a Meeting of the Medical Council at 4 p.m. on Friday, January 25th, and the House Committee Meeting at 4.45 p.m. the same day, when the appointment will be made.

H. A. MADGE, Secretary.

West End Hospital for Nervous
DISEASES (In-patient Dept.: Gloucester Gate, Regent's Park, N.W.1).

The Committee of Management invite applications from British male candidates for the following vacancies:

(1) SENIOR HOUSE PHYSICIAN for In-patients. To start duty February 1st. Salary £150, with board, residence, and laundry.

(2) JUNIOR HOUSE PHYSICIAN for In-patients. To start duty February 1st. Salary £100, with board, residence, and laundry.

In each case, appointment in first instance for six months. Applications, with copies of three testimonials, must be received by the undersigned not later than Tuesday, Jan. 15th.

J. P. WETENHALL,
73, Welbeck Street, W.1. Secretary.

Warrington Infirmary and
DISPENSARY.

HONORARY MEDICAL STAFF.

The Board of ... for the position... ARY SURGEON... Candidates must... tise medicine an... in the area ser...

Applications, stating age and qualifications, should be sent in to the Chairman of the Board of Management not later than Thursday, January 24th.

By Order of the Board,
HENRY L. BOOT,
December 24th, 1928. Supt. & Secretary.

The Sheffield Royal Hospital.
(340 Beds.)

There will be vacancies on the Resident Staff on February 1st, fo...

...ill be ...ent to ...y £80 ...undry. ...red for ...lidates ... with ... s soon as possible to the undersigned.

W. H. BOOTH,
Jan. 7th, 1929. Supt. & Secretary.

The Royal Portsmouth Hospital,
PORTSMOUTH.
(Four Resident Medical Officers.)

CASUALTY OFFICER (male, qualified) *required to commence on February 1st. Salary at the rate of £100 per annum*, with board, etc. Six months' appointment. Eligible on completion of term for appointment as House Surgeon.

Application, stating age, nationality, etc., and copies of three recent testimonials, to be sent to the undersigned on or before January 22nd, from whom all particulars can be obtained.

B. WAGSTAFF, Secretary.

St. Ultan's Infant Hospital,
TEAC ULTAIN, Inc.
(35 Beds—Infants only.)

Applications are invited for the post of BACTERIOLOGIST and PATHOLOGIST, woman preferred. Small well-equipped Laboratory and other facilities for research work. Large Out-patient Department.

Applicants will be required to do the work of the Hospital free. Honorarium £50 first year. Opportunities for private work.

Applications, stating full particulars, to be sent on or before January 15th.

37, Charlemont St., M. FFRENCH-MULLEN,
Dublin. Secretary.

Royal Devon & Exeter Hospital,
EXETER. (225 Beds.)

ASSISTANT HOUSE SURGEON (Male).

Applications are invited for the post of *Assistant House Surgeon at this Hospital*, vacant on February 8th next. The appointment is for six months, but candidates are *eligible for re-election*.

The duties include assisting in the Ear, Nose, Throat, Radiological, and Casualty Departments, and the giving of anæsthetics.

Salary at the rate of £100 per annum, with board, apartments, and washing.

Applications, giving particulars as to age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned on or before Thursday, 17th inst.

By Order of the Committee,
S. S. COLE,
January 4th, 1929. Secretary.

Royal Devon & Exeter Hospital,
EXETER. (225 Beds.)

HOUSE SURGEON (Male)

Applications are invited for the post of HOUSE SURGEON at this Hospital, vacant on February 8th next. The appointment is for six months, but candidates are eligible for re-election.

Salary at the rate of £130 per annum, with board, apartments, and washing.

Applications, giving particulars as to age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned on or before Thursday, 17th inst.

By Order of the Committee,
S. S. COLE,
January 4th, 1929. Secretary.

Royal Sussex County Hospital,
BRIGHTON.

Notice is hereby given that a Meeting of the Elective Committee will be held in the Board Room at the Hospital, on Wednesday, February 6th, at 12.15 p.m., for the purpose of electing an HONORARY MEDICAL CLINICAL ASSISTANT, and such Elective Committee is hereby ...

...lis office from ...embers of the ...London, Edin... in Medicine of one of the Universities of the British Empire, and who are duly registered under the Medical Acts.

Applications, with proof of the necessary qualifications, must reach the Secretary-Supt. at the Hospital before 12 noon on Jan. 28th.

By Order of the Board of Management,
L. L. W. LANCASTER-GAYE,
Secretary-Supt.

Royal Sussex County Hospital,
BRIGHTON. (225 Beds.)

HOUSE SURGEON (male) required about the end of January, with charge of beds, part casualties and anæsthetics. Salary £150 per annum, with board, residence, and laundry. Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried and, when elected, under 30 years of age. Applications, with copies of testimonials, should be sent to the undersigned immediately.

L. L. W. LANCASTER-GAYE,
Secretary-Supt.

Royal Sussex County Hospital.
(STEPHEN RALLI MEMORIAL DEPT.).
BRIGHTON.

JUNIOR ASSISTANT *PATHOLOGIST* required. Salary £250 p.a., non-resident.

Candidates must apply, submitting particulars of medical qualifications, and copies of not more than three recent testimonials, by January 26th, to the undersigned, from whom further information regarding the duties of the office may be obtained.

L. L. W. LANCASTER-GAYE,
Secretary-Supt.

District Infirmary,
ASHTON-UNDER-LYNE.
(General Hospital, 200 Beds, Mainly Surgical.)

A HOUSE SURGEON required. Six months' appointment.

Salary at the rate of £150 per annum, with board, residence, and laundry. Preference given to candidates with previous Hospital experience.

The Resident Staff comprises a Resident Surgical Officer and three House Surgeons.

Applications, with testimonials, to be sent at once to the undersigned.

FRANK OLIVER,
Jan. 7th, 1929. Gen. Supt. & Secretary.

Princess Louise Kensington
HOSPITAL FOR CHILDREN,
North Kensington. (42 Beds.)

HOUSE SURGEON (woman) required for six months from February 1st. During the first three months the House Physician will be the Senior Resident, after which a new House Physician is appointed and the House Surgeon becomes Senior.

Salary at the rate of £75 per annum for first three months, and at the rate of £100 for last three months, with board, residence, and laundry.

Applications, together with copies of not more than three testimonials, must be submitted on a form to be obtained from the Hospital's Financial Office. Address, Secretary, Princess Louise Kensington Hospital for Children, Town Hall, Kensington, W.8.

Applications must reach this office not later than Monday, January 21st.

Exeter City Mental Hospital.

The Visiting Committee of the Exeter City Mental Hospital invite applications for the appointment of ASSISTANT MEDICAL OFFICER at a salary of £350 per annum, rising by annual increments of £25 to £450 per annum, with furnished apartments, board, attendance, and laundry. The appointment is subject to deductions under the Asylums Officers Superannuation Act, 1909. Experience in a Mental and General Hospital essential. Forms of application and further particulars may be obtained at my office, No. 8, Southernhay West, Exeter.

Applications, endorsed "Assistant Medical Officer," together with copies of not more than three recent testimonials, must reach me not later than January 22nd.

H. LLOYD PARRY,
Town Clerk and Clerk to the Visiting Committee.

Willesden General Hospital.
SURGICAL OUT-PATIENT DEPARTMENT.

Applications are invited for the appointment of CLINICAL ASSISTANTS to the Surgical Out-patient Department, which is held on Monday and Friday at 2 p.m.

The successful applicants will be expected to attend the Hospital regularly, and to take charge of the Department when the Medical Officer is absent. The appointment is for a period of six months from January 1st.

Applications should be addressed to the undersigned not later than Wednesday, January 16th, from whom full particulars of the appointment can be obtained.

R. J. HEARNE,
November 26th, 1928. Secretary.

Northampton General Hospital.
APPOINTMENT OF HONORARY PATHOLOGIST.

The Board of Management invite applications for the appointment of Honorary Pathologist.

Candidates must be registered medical practitioners.

Full particulars of the appointment may be obtained from the undersigned, to whom applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, should be sent on or before Wednesday, January 23rd.

The present salaried Pathologist, appointed in 1919, will be a candidate.

H. ST. JOHN WOOD,
January 1st, 1929. Secretary-Supt.

The Queen's Hospital for
CHILDREN,
Hackney Road, London, E.2.
President: H.R.H. The Duke of York.

The Committee invite applications for the post of ASSISTANT SURGEON. Attendance required twice a week. Honorarium to cover travelling expenses. The Assistant Surgeons are entitled to beds. Candidates, who must be Fellows of the Royal College of Surgeons, England, should send in their applications, with copies of not more than four testimonials, by February 11th.

T. GLENTON-KERR,
January 1st, 1929. Secretary.
Telephones: Bishopsgate 6305 & 2334.

Lewisham Treatment Centre
(L.C.C.).

Applications are invited for the post of AURAL SURGEON (Treatment of Tonsils and Adenoids). Attendances required, one per month inspections, and one per month operations, at the WOOLWICH IN-PATIENT CENTRE. Salary £40 per annum. Applicants must have held an appointment at a Throat Hospital or have had similar special experience. Applications to be sent to the Chairman, British Dental Hospital, 31, Camden Road, N.W.1, before January 26th.

North Staffordshire Royal INFIRMARY, HARTSHILL, STOKE-ON-TRENT.

VACANCY FOR AN HONORARY ASSISTANT PHYSICIAN.

The Committee invite applications for the post of Honorary Assistant Physician.

Candidates for appointment to the Honorary Medical Staff of the Infirmary will be required to produce evidence that they hold the Degree of Doctor of Medicine of a British or Irish University or that of Member of a Royal College of Physicians.

All members of the Honorary Medical and Surgical Staff must reside within the City of Stoke-on-Trent, or within a radius of five miles of the North Staffordshire Royal Infirmary, and must be communicable by telephone.

Candidates will be required to attend before the Election Committee at this Infirmary on Thursday, January 24th, at 3 p.m.

Applications to be sent to the undersigned before January 21st. Further particulars will be forwarded if required.

By Order of the Committee,
W. STEVENSON,
Dec. 28th, 1928. Secretary & House Gov.

Chester Royal Infirmary. (211 Beds.)

Applications are invited for the appointment of THIRD HONORARY SURGEON, a vacancy having been created by the retirement of Mr. E. CYRIL DOBIE. Candidates must hold the Degree of Master of Surgery of a University in the United Kingdom or the Irish Free State or be a Fellow of a Royal College of Surgeons, provided that any Junior Member of the Royal Infirmary Staff, not holding one of the above higher qualifications, and undertaking to secure the same within two years' after the date of election, shall be at liberty to apply, and, if appointed, to hold the office as Acting Honorary Surgeon, on condition of success within that period.

Applications, stating age and qualifications, together with copies of testimonials, must be sent addressed to the Chairman of the Board of Management, on or before Wednesday, January 30th.

Canvassing is prohibited.

By Order of the Board of Management,
J. ROWSE MITCHELL,
December 18th, 1928. Secretary.

Royal Berkshire Hospital.

The Board of Management invite applications for the appointment of HONORARY ASSISTANT PHYSICIAN.

Candidates must be Fellows or Members of the Royal College of Physicians, London, or Medical Graduates of one of the Universities of the British Empire, and their names entered on the *Medical Register*.

The elected candidate will be appointed for the period ending on the third Tuesday in January, 1930, and will be eligible for re-election. Candidates are required to provide 80 copies of their application, and of not more than four recent testimonials.

The applications and testimonials must be addressed to the Secretary, and reach him not later than January 25th.

The election will take place on February 5th.

Canvassing by or on behalf of a candidate will disqualify him.

Reading. HERMAN BURNEY,
January 12th, 1929. Secretary.

Jenny Lind Hospital for Children NORWICH.

Appointment of RESIDENT MEDICAL OFFICER (male). Salary £150 per annum, with board, furnished apartments, and laundry. Candidates must be fully qualified and registered. Duties to commence the first week in February. Appointment to be for six months and renewable for a similar term at the expiration thereof.

Applications, stating age, nationality, and qualifications, together with copies of not more than four testimonials, should be sent to—

Bank Chambers, Mr. H. HARPER SMITH,
30, London Street, Hon. Secretary.
Norwich.

Saint Mark's Hospital for Cancer, FISTULA, AND OTHER DISEASES OF THE RECTUM, City Road, London, E.C.1.

HOUSE SURGEON (male) required. Must be fully qualified. Salary £75 per annum, with board, residence, and laundry. The appointment is for a minimum of six months from February 1st next.

Applications, with copies of testimonials, must reach the Secretary (from whom further particulars may be obtained) not later than Saturday, January 26th.

PROSPECTIVE PURCHASERS

OF PRACTICES

and those seeking

PARTNERSHIPS

should consult

The

BRITISH MEDICAL BUREAU

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12, Stratford Place, Oxford St., London,

or its Northern Branch at

24, London Rd., Manchester,

or its Newcastle Branch at

7, Windsor Place, Newcastle - on - Tyne.

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W. J. HICKS, *Secretary.*

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19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

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London, N.—Lock-up. — About £700 p.a. Panel over 500. Mids. 5 gns. Visits 3/6 up. Two rooms, rent 35/- p.w. Premium £900 or offer.—No. 8402.

Kent Suburb. — About £1,100 p.a. Good middle-class PRACTICE. Mids. 5 gns. up. Visits 5/- to 10/6. Select panel of 200. Appt. £52 p.a. Good house, 6 bed., etc.—No. 8401.

Nottinghamshire. — Steadily increasing NUCLEUS £600 to £700 p.a. Mids. 5 gns up. Visits 3/6 to 21/-. Small panel. Corner house and garage to rent. Premium £900.—No. 8397.

Kent Suburb.—Over £2,600 p.a. ONE-HALF SHARE for disposal. Visits 7/6 to 21/-. Panel about £400 p.a. Good house, 4 bed., etc., large garden. Part premium deferred.—No. 8396.

Wiltshire. — Country Practice returning £500 or more p.a. Visits 5/- up. Panel £100 p.a. Slight opposition. Good flat, 2 bedrooms, etc., to rent. Premium only £400.—No. 8395.

Kent.—About £6,000 p.a. One-THIRD SHARE for sale. Panel about 2,600. Visits 5/- to 21/-. Detached house, 5 bedrooms, etc., to rent £36 p.a. Premium 2 years' purchase.—No. 8394.

Berkshire.—Steadily increasing NUCLEUS about £1,000 p.a. Visits 5/- to 21/-. Mids. 3 to 5 gns. Small increasing panel. *House to rent.*—No. 8392.

Lancashire.—About £2,000 p.a. *One-third or one-half share.* Preliminary assistantship six months. Panel 2,500. Appts. nearly £200 p.a. Visits 3/6 to 5/-. Premium only 1½ years' purchase. House, 4 bed., etc., to rent.—No. 8391.

Kent. — Nucleus, £300 p.a. Visits 2/6. Panel 100, scope for increase. Eight-roomed house, large garden.—No. 8390.

N. Wales.—Share worth about £700 net. Panel about 2,500. Colliery £400 to £500 p.a. Mids. 2 gns. House, 5 beds., and large garden, with tennis court, to rent.—No. 8389.

Lincolnshire.—About £1,370 p.a. Unopposed. Panel and appts. about £500 p.a. Mids. 3 gns. Fees 4/- to 6/-. House, 6 bed., etc., good garden, with garage, to rent.—No. 8386.

Kent. — Average £1,250 p.a. Mids. 7½ gns. up. Visits 7/6 to 21/-. Non-panel. House, 5 bed., etc.—No. 8380.

Western County.—£600 to £700 p.a. Unopposed. Clubs and appts. over £100 p.a. Fees 3/6 to 12/6. Panel about £300 p.a. Good house and garden. Premium, house and practice, £2,100.—No. 8375.

Co. Durham.—About £700 p.a. Visits 3/6. Mids. 2 gns. Panel 652. House, 3 bed., etc., to rent.—Apply, No 8354.

South Wales. — Residential. — £1,600 p.a. Panel 450. Fees 5/- to 21/-. Corner house, 6 bed., etc.—Apply, No. 8348.

Within 12 miles London North. —£1,500 p.a. Panel 800. House, 3 recep., 6 bed. Separate surgery, etc. Over one acre garden.—Apply, No. 8344.

London, S. E.—£1,800 p.a. Cash and panel of 1,845. 1/3 share for sale. Visits 3/6 up. Very little midwifery. Small accommodation over surgery.—Apply, No. 8342.

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HERTS.—In close proximity to London. Middle-class G.P. Good siz[illegible] grounds. Receipt[illegible] Premium 1½ years' Part could remain.

WILTS.—NUCLEUS G.P., practically unopposed. Receipts approx. £400 p.a. Panel nearly 300. Small house and garage to rent. Premium £450.

MIDDLESEX.—Close proximity to town.—Well-established growing PRACTICE in rapidly developing residential district, with scope for increase. Medium-sized house. Receipts £750. Panel 250. Fees 3/6 up. Premium 1½ years' purchase.

KENT.—Within easy and short distance of London.—PARTNERSHIP in well-estab. G.P. Good f[illegible]es. Scope for surgery. Receipts over £2,500 p.a. Panel 1,000. Premium 2 years' purchase for half share. Suitable for youngish man not over 40. Preferably 'Varsity Graduate with experience.

If the investment you are seeking is not advertised here, let us know your wants, and we will gladly forward details of others suitable to your requirements.

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SOU[illegible] [illegible]romising fruit farm, near coast. Excellent. Schools. Receipts from practice, [illegible]ice, farm, freehold property, £5,000. [illegible]rdental work.

LONDON.—NUCLEUS G.Ps.—We have several *small G.Ps., with and without living accommodation* with incomes from £150 to £400 p.a. Details sent on application.

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British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

12, Stratford Place, Oxford Street, W.1.

Tele. Address: Triform, Wesdo—London.

Telephone: Mayfair {1782 1783

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

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NORTHERN BRANCH.

The Manchester Medical Agency, lately under the control and management of the Manchester Medical Committee, has now been taken over by the British Medical Bureau as their Northern Branch.
Medical Practitioners in the North requiring the services of the Bureau are recommended to consult the Branch Manager, at the Offices, 24, London Road, Manchester.
(Telephones: CENTRAL 3925; after Office Hours: RUSHOLME 2549.)

Practices and Partnerships for Disposal. **Full particulars sent free.**

1 DEATH VACANCY.—N.E. COAST.—PRACTICE averaging £1,030 p.a. in large seaport town. No panel. Excellent commodious house in best part to rent.

2 DEATH VACANCY.—Berks.—Practice about [illegible] country district. Panel over 300. Bungalow [illegible] garage, and land. Scope.

3 UNIVERSITY TOWN.—Partner required in Practice about £3,100 p.a. Panel about 1,300. Partner should have a University degree and have held good Hospital residential appointments. Premium two-fifths share 2 years' purchase.

4 S.E. COAST.—Partnership in high-class Practice about £2,500 p.a., in favourite summer resort. No panel. Partner should have University degree and some experience. One-third share at 2 years' purchase.

5 S. OF ENGLAND.—Junior Partner required in Practice in first-rate residential town within 40 miles of London. House, with 4 bedrooms, to rent. Share worth about £900 p.a. at first at 2 years' purchase.

6 SOUTH MIDLANDS.—Practice about £1,150 p.a. in county town. Panel 485. Good house (7 bedrooms), with garage and garden, for sale. Very good Hospital.

7 N. LONDON.—Partnership in compact and easily worked Practice nearly £2,000 p.a. in suburban district. Panel 3,400. No midwifery. Premium one-half share 2 years' purchase.

8 SOUTH COAST.—Increasing Practice in steadily growing seaside village. Receipts 1928, £1,064. Panel 350. House (5 bedrooms) to rent on lease. Very mild climate. Premium £1,500.

9 ITALY.—Season (March to October) PRACTICE about £560 p.a. in famous city. No midwifery. Up-to-date Hospital. Premium £700.

10 GLOUCESTERSHIRE.—Country Practice averaging £654 p.a. (Elevation 600 feet). Near two good towns. Panel 500. Large house, with garden and paddock, for sale. Scope for increase. Premium £800.

11 KENT.—Partnership in better middle-class Practice about £2,500 p.a. in delightful residential district. Premium one-half share 2 years' purchase. Public School or University man preferred.

12 SOUTH COAST.—Partnership in non-dispensing Practice about £2,700 p.a. in favourite watering-place. Panel 800. House, with 7 bedrooms, for sale. Plenty of scope. Premium one-third share 2 years' purchase. Short preliminary assistantship.

13 EASTERN COUNTIES.—Unopposed PRACTICE about £1,600 (appointments and panel £500). Good house (7 bed. and dressing rooms), garden and orchard, to rent. Premium 1½ years' purchase.

14 N. MIDLANDS.—Practice worth between £600 and £700 p.a. in residential district on outskirts of first-rate town. Small panel offering plenty of scope. Excellent modern house to rent. Premium £900.

15 WILTSHIRE.—Country Practice (carried on by Medical Woman) doing £500 p.a., including £100 from panel. Centrally situated flat, with 2 bedrooms, to rent on lease. Premium £400. Considerable scope.

16 SOUTH AFRICA.—Old-estab. Practice. Receipts last year £1,816. Travelling and midwifery light. Climate ideal—no tropical diseases (altitude nearly 5,000 feet). Delightful residence (5 bedrooms), in perfect order, with 2 acres grounds. Excellent scope. Local Hospital. Premium £1,200, with option to purchase house.

17 MIDLANDS.—Partnership in middle-class Practice averaging £5,450 p.a. in flourishing and growing town. No panel and little midwifery. Applicant should be between 25 and 40 years of age, and preferably, though not essentially, a University Graduate. Premium one-fourth share (ultimately increasing to one-half) 2 years' purchase.

18 S. WALES.—Practice worth over £700 p.a. (chiefly panel and appointments) in small seaside town. Small house (3 bedrooms), to rent. Premium £700 cash.

19 S. WALES.—Practice over £1,200 p.a. in small country town, amidst beautiful scenery. Panel about 500. Old-fashioned house, with garage and garden. Cottage hospital. Premium £1,500.

20 OPHTHALMIC PRACTICE doing over £1,200 p.a. Consultations usually £2 2s. Scope for considerable increase.

21 LONDON, N.W.—Practice worth between £400 and £500 p.a. in good residential district. Panel 350. No midwifery. Large well-situated house, good part of which is sub-let. Premium, leasehold house, practice, etc., £3,500.

22 S. MIDLANDS.—Practice over £1,700 p.a. in country town 100 miles from London. No panel, appointments, or midwifery. House (5 bedrooms), with garage and garden, for sale. Premium—Practice 1½ yrs.' purchase.

23 N. WALES COAST.—Partner required in old-established Practice. Receipts £5,670 p.a. Panel 2,000. Short preliminary assistantship. Premium for one-fifth share 2 years' purchase. Applicants must have held H.P. and H.S appointments.

24 CHESHIRE.—Partnership in old-estab. Town Practice near Manchester, £5,000 p.a. (not including appointments). Panel over 2,000. Third share at 1½ yrs.' purchase. Short preliminary assistantship if preferred.

25 MIDLANDS.—Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 15 acres of land for sale. Premium, practice, 1½ years' purchase.

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Practices and Partnerships for Disposal (continued).

26 LONDON, S.E. — Partnership in well-established Practice of £1,900 p.a. in good residential district. Exceptionally well-built detached house (6 bedrooms) to be rented. One-half share at two years' purchase. Good scope.

27 SOUTH OF ENGLAND.—Partnership in non-dispensing Practice about £3,000 p.a., in flourishing and attractive town about 100 miles from London. Panel 1,470. Nice detached house in own grounds (5 bed and dressing rooms) for sale. Premium one-half share at 2 years' purchase.

28 DEVONSHIRE.—Partner required (after preliminary assistantship) in Practice worth £3,000 p.a. in first-rate country town. Panel over 2,100. Well-equipped Hospital. One-third share to suitable man at 2 years' purchase.

29 SURREY.—Partnership in Practice about £2,700 p.a., in outlying suburban district. Panel 1,000. Corner house (5 bedrooms) to rent. Cottage hospital. One-third share at 2 years' purchase.

30 MIDLANDS.—Country Practice of over £1,000 p.a., within 5 miles of good town. Panel 531. Comfortable and convenient house (5 bedrooms, etc.), with electric light, central heating, and acre garden, for sale. Premium, practice, 1½ years' purchase.

31 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. No panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

32 LANCASHIRE.—Practice averaging over £3,700 p.a. in first-rate town. Panel 2,600. House (4 bedrooms) to be sold or let. Premium 1½ years' purchase.

33 LONDON, E.—Partnership in exceptionally old-established Practice averaging £3,580 p.a. Good fees and appointments. Two-fifths share for disposal at 1½ years' purchase, or one-third could be purchased at first. Small house may be bought or rented at a moderate figure.

34 LONDON, N.—Practice about £1,000 p.a. Small panel. No midwifery or night work. House (8 bedrooms). Premium, house and practice, £1,500.

35 SOUTH OF ENGLAND. — Practice about £900 p.a. in first-rate seaport town. No panel or midwifery, but ample scope. Well-situated house to rent. Premium £1,500.

36 NURSING HOME. — CROYDON. — Receipts about £2,000 (profit £650). Large well-situated house. Premium, to include goodwill and freehold, £3,250.

37 N. OF ENGLAND. — Sound Practice £1,090 p.a. in Cathedral City. Panel 300. House (4 bedrooms and attics) in best residential part for sale. Premium 1 year's purchase.

38 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. Partner should be keen worker and a good surgeon. One-third to two-fifths share at 2 years' purchase.

39 HOME COUNTIES.—Partnership in Practice about £8,000 p.a. in growing residential watering-place. House (4 bed and dressing rooms) to rent. Partner must be well qualified (Oxford, Cambridge, or London). Premium one-fifth share 2 years' purchase.

40 SOUTH OF ENGLAND.—Practice about £1,000 p.a. in Cathedral Town. Conveniently arranged house (6 bedrooms) for sale. Premium 1½ years' purchase.

41 MIDLANDS. — Practice about £350 p.a. in manufacturing village. Panel 190. House (4 bedrooms, etc.), and one acre of garden. Premium—Practice and house, £2,000.

42 SUFFOLK.—Country Practice averaging £360 p.a. in beautiful agricultural district. Panel 300. Very attractive residence (5 bedrooms, etc.) in half acre garden, etc., for sale. Premium—Practice £540.

43 N. WALES. — Seaside Practice, approximately £500 p.a. Furnished house (4 bedrooms) to rent, or others to rent or purchase. Premium £500 for quick sale.

44 SOUTH AFRICA (NATAL). — Practice over £1,000 p.a., including appointment (District Surgeon) £200. House (4 bedrooms, bathroom, etc.). 2 acres garden and land. Price for House and Practice £3,000.

45 PEMBROKESHIRE. — Practice about £1,000 p.a. in small town. Panel 361. Well-situated house (7 bedrooms) to rent. Scope for increase. Premium £1,500. Preliminary assistantship if desired.

46 SUSSEX. — Country Practice about £300 near coast. Picturesque house (3 bedrooms), with garden, for sale. Premium—Practice £300.

47 NORTH WALES. — Country Practice averaging £1,230 p.a. in Welsh-speaking district. Panel over 550. Centrally situated house (5 bedrooms). Premium one year's purchase.

48 S. WALES. — Easily worked Panel and Contract PRACTICE over £1,000 p.a. in colliery district. Small house (4 bedrooms) to rent. Premium one year's purchase.

49 N. KENT.—Practice averaging £286 p.a. in industrial district offering enormous scope. Small panel. House to rent. Premium £430.

50 ESSEX. — Practice averaging £1,216 p.a. in outlying district—30 minutes by rail from London. Panel 550. Nice detached house (5 bedrooms) for sale. Premium for practice 1¼ years' purchase.

51 N. LONDON.—Practice of between £950 and £1,000 p.a. Small panel. No midwifery. Detached corner house (7/8 bedrooms) for sale. Premium—Practice 1½ years' purchase.

52 MIDLANDS. — Partnership in Practice over £2,000 p.a. in good town. Panel 1,800. Good house (5 bedrooms) available. Partner should be able to undertake major operations. Well-equipped hospital. One-half share for disposal.

53 HOME COUNTY.—Partnership in Practice over £2,000 in residential district within 12 miles of London. Panel 750. House, with 5 bedrooms, to rent. Premium one-third share 2 years' purchase.

54 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. Panel over 1,400. Partner should be good at midwifery. Premium one-third share 2 years' purchase.

55 YORKSHIRE (N.R.).—Partnership (with view to succession) in Practice about £1,000 p.a. in small country town. Panel 420. Good rooms available. One-half share at moderate premium. Scope for minor surgery.

56 LONDON, E.—Rapidly increasing cash and panel PRACTICE. Receipts for year ending September, 1923, £971. Panel 450. Shop-fronted house on lease at a profit rental. Premium, to include drugs, surgery equipment, etc., £1,250.

57 S. DEVON. — Old-established Country PRACTICE £700 to £800 p.a. Easy distance of the coast. Panel 400. House (2 sitting, 4 bedrooms, large garden, paddock, garage, etc.). Rent £45 Cottage Hospital. Premium £1,200.

58 N. YORKSHIRE. — Country Practice worth about £500 p.a. in agricultural district. Panel over 200. Modern house (6 bedrooms) for sale. Premium, practice £500.

59 Nr. NEWCASTLE-ON-TYNE.—Old-estab. Town PRACTICE over £800 p.a. Panel 440. Pleasantly situated house (4 bedrooms) to rent. Plenty of scope. Prem. 1½ years' pur.

60 GLOUCESTERSHIRE.—Country Practice averaging £535 p.a. Panel 450. Convenient (small) house, and excellent garden, 1 acre. Garage small car. Premium, house and practice, £3,000.

61 NORFOLK. — Country Practice nearly £1,100 p.a. in agricultural district. Panel 530. Modernized house (6 bedrooms, electric light, etc.) and 1½ acres garden for sale. Sport of all kinds. Premium £1,500.

62 S. WALES.—Non-dispensing Practice in large seaport town. Receipts for past 3 years averaged £1,543 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,300.

63 N.W. COAST.—Ophthalmic Practice (with some general practice). Receipts average £1,850 p.a. Good house in excellent position. Premium 1½ years' purchase.

64 CO. DURHAM. — Practice of £1,460 in growing suburb of seaport town. Panel 646. House (5 bedrooms) on main road to be sold or let. Premium 1½ years' purchase.

"MEDICAL PARTNERSHIPS, TRANSFERS AND ASSISTANTSHIPS" (BARNARD & STOCKER). *Published by B.M.B., post free 12/6.*

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1. PARTNERSHIP.—The third share of a very old-established mixed-class Practice, in a pleasant London suburb, is for disposal owing to the retirement (through ill health) of the Junior partner. Held 24 years by remaining. Cash receipts average about £2,700 p.a., including appts. producing £340 and panel of 1,000. Visits 3/6 to 21/-. Good house available, with ample accommodation. Rent £85 on lease. Premium 2 years' purchase. Excellent scope.
2. LONDON, SOUTH-WEST. — RESIDENTIAL DISTRICT. — PARTNERSHIP.—A three-tenths share, to commence with, is offered in a rapidly increasing good mixed-class Practice, producing about £2,500 p.a., including panel of over 2,000. Surgery fees 2/- to 5/6, visits 3/6 to 5/-. Suitable corner house, with 2 reception, 6 bedrooms, etc., consulting room, and dispensary. Small garden. Rent on lease £100 p.a. Six months' preliminary assistantship. Scotch Graduate, having Hospital experience, essential.
3. LONDON, NORTH-WEST. — GOOD RESIDENTIAL SUBURB. — Very sound well-established non-dispensing, non-panel PRACTICE, held many years by present incumbent, who is retiring owing to advancing age. Average cash receipts for the past three years £2,222. *Exceptionally good residence, with ample accommodation.* Price for freehold £3,750. Premium 1½ years' purchase.
4. KENT.—GROWING DISTRICT, within 15 miles of London.—PARTNERSHIP.—A one-half share is for disposal in a very sound chiefly better and middle-class Practice, established many years, and held by the remaining partner over 4 years. Gross cash receipts for the past three years £2,528, including panel of 900. No appointments. Fees from 3/- to 21/-. Midwifery 3 to 30 guineas (about 25 cases yearly). Very suitable modern house, with 2 reception, 4 bedrooms, good bathroom, etc. Consulting room. Electric light. Small garden. Garage. Price for freehold about £2,100, nearly all of which could remain on mortgage. *Good sport and schools, and excellent social facilities.* Premium 2 years' purchase.
5. NOTTINGHAM.—Good middle-class PRACTICE offering good scope and having small panel which could be largely increased. Gross cash receipts about £400 per annum. Fees 3/6 to 21/-, medicine extra. Very good modern corner house in pleasant residential district. Rent on lease £80 p.a. Premium 1½ years' purchase.
6. ESSEX.—SMALL COUNTRY TOWN.—Well-established and increasing PRACTICE, producing for the past twelve months £768, including panel of 525, and appointments worth over £60 p.a. Advice and medicine chiefly 3/6 to 7/6, visits 3/6 to 21/-, medicine extra. Mids. (discouraged) 2 to 5 guineas. Exceptionally nice house, with lounge hall, 3 reception, 5 bedrooms, and good professional rooms and usual offices. Hot water supply, electric light. Large garden, with tennis court. Garage for two cars. All in perfect order. Price for freehold £3,100. Premium 1½ years' purchase.
7. LANCASHIRE.—SUBURB OF LARGE TOWN.—Old-established PRACTICE, held by Vendor 30 years. Average income for the past twelve months £1,500, including panel of nearly 1,500. Fees 2/6 to 10/-. Very good house, standing in its own grounds, and containing 3 reception, 4 bedrooms, dressing room, 3 professional rooms. Central heating. Electric light. Garden, with greenhouse. Garage for 3 cars. Price for leasehold £2,100, of which about £1,500 could remain on mortgage. Premium 1½ years' purchase, part by instalments.
8. LONDON, NORTH.—OUTLYING RESIDENTIAL SUBURB.—PARTNERSHIP.—*A one-third share* (to commence with) is for disposal, owing to the retirement of the senior partner, in sound middle-class Practice, situated in rapidly developing district. Income for the immediate past year £2,124. Consultations 3/6 to 10/6, visits 4/6 to 21/-. Good freehold house, price £1,500; or would be rented on lease at £90 p.a. Low expenses. Premium 2 years' purchase.
9. OUTLYING WESTERN SUBURB.—Old-established mixed general PRACTICE. Income for the immediate past year about £2,300, including panel of between 1,400 and 1,500. Fees 3/6 to 10/6. Midwifery from 3 gns. The district is rapidly developing and there is *great scope. Good house*, with garden and garage. Price £2,000. Premium £3,500.
10. LONDON, S.E.—Outlying Suburb.—Very well-estab. growing mixed general PRACTICE, situated in pleasant district within easy reach of town. Gross cash receipts for immediate past twelve months nearly £2,650. Panel of 2,120. Appts. worth about £60 and stated to be transferable. Fees 2/6 to 7/6. Midwifery from 3 gns. (about 40 cases yearly. *Moderate expenses. Seven-roomed house, with kitchen*, 2 waiting rooms, dispensary, and consulting room. Garden. Brick-built garage. Price for freehold £1,500. Premium £4,500.
11. SOUTH OF ENGLAND.—FAVOURITE SEASIDE RESORT.—Mainly better-class PRACTICE, *producing for the last twelve months about* £700, and rapidly increasing. Panel of 150. One appt. worth about £40 p.a. Fees 3/6 to 7/6. Only a few cases of midwifery, 2 gns. upwards. Good house in excellent repair, with 2 reception, 5 bedrooms, etc. Electric light. Garden. Garage. Price for freehold £2,300. Premium £1,400.
12. MIDLANDS.—UNOPPOSED COUNTRY PRACTICE, situated in good hunting centre. Gross cash receipts for past 12 months about £1,000 p.a., including panel of 600. Advice and medicine from 3/6, visits 3/6 upwards, with medicine extra. Lowest midwifery 2½ gns. Exceptionally attractive house, with oak panelling, etc., 2 reception, 10 bedrooms, and professional rooms. Well-stocked garden of 1½ acres, and 12 acres of grassland. Recently re-decorated throughout. Electric light. Price for freehold £4,500, of which £2,200 could remain on mortgage. Premium 1½ years' purchase.
13. CHANNEL ISLANDS.—Old-established general PRACTICE. Present income approximately £700, but large scope. Advice and medicine 3/6 to 10/6, visits and medicine 5/- to 15/-. Midwifery refused. Commodious house, with 2 reception, 6 bedrooms, etc. Vendor's freehold. Good schools. Price for practice and house £3,000.
14. WEST OF ENGLAND.—Very easily worked unopposed Country PRACTICE. Gross cash receipts for immediate past 12 months £657, including panel of 500. Fees from 2/6 to 12/6. Midwifery 3 to 5 gns. *Nice house*, with 2 reception, 6 bedrooms, etc., professional rooms. Large garden and paddock. *Price for freehold* £1,200. Premium 1½ years' purchase.
15. BORDERS OF NORFOLK AND SUFFOLK.—Old-established middle-class PRACTICE, *producing about* £1,100 p.a., including panel of over 500. Visits 3/6 upwards. Midwifery from 2 gns., about 30 cases. Modernized old country house, with ample accom. and large garden; e.l.; all in good order. Price for f'hld. £2,500. Prem. £1,500.
16. DERBYSHIRE.—PARTNERSHIP.—A half share in a very sound panel and club practice, producing £3,200 p.a. Panel of over 3,000. Fees 3/6 to 5/-, medicine extra. Expenses small. Modern house, in good order, with pleasant garden. Garage. *Price for freehold* £1,500, part on mortgage. Premium £3,200, half down and balance by instalments over 4 years.
17. LANCS.—In a rapidly growing good-class suburb of large town (pop. nearly 200,000), a very old-estab. PRACTICE, held by Vendor over 30 years, and averaging about £900 p.a., including Union (£80, *with prospect of increase shortly*) and panel of nearly 1,000. There is a surgery in centre of town to which bulk of practice and panel work is attached. Private residence contains 2 reception, 3 bedrooms, bathroom, etc., and small garden. Both Vendor's properties. Price £1,750, £900 on mortgage, or would be rented. Prem. 1½ yrs.' pur.
18. WILTSHIRE.—Unopposed old-estab. Country PRACTICE, situated in very pretty district and averaging £700 p.a., including Union appt. £70, and panel producing £450. *Nearest opposition 3½ miles.* Railway station 1 mile. House stands in own grounds of 1½ acres, with tennis court, garage, etc., and contains surgery, 3 reception, 5 or 6 bedrooms, bathroom (h. & c.). Electric light plant installed. Vendor's freehold, price £2,500, all of which could remain on mortgage if wished. Premium £1,050.
19. MANCHESTER.—Rapidly developing outlying suburb. Good middle- and working-class PRACTICE, increasing and producing for the last 12 months over £1,500. Panel of 700. Fees from 3/6. Particularly good house, specially built, and containing 3 reception, 5 bedrooms, etc. Electric light. Garden. Garage. Price £3,550, *part on mortgage.* Premium £2,250.
20. ESSEX COAST.—FAVOURITE RESORT.—PARTNERSHIP.—A one-third share to commence with in an *old-established middle-class* Practice. Average income of about £2,800. Panel of 600. Visits 4/6 to 21/-. Little midwifery. Suitable accommodation can be obtained. Premium 2 years' purchase.
21. BEDFORDSHIRE.—Small Country PRACTICE, at present producing at the rate of £400 p.a., but offering good scope. Fees 3/6 to 10/6, medicine extra. Good house, with 2 reception, 6 bedrooms, etc. Separate entrance to professional rooms. Can be rented on lease. Premium £250, or practice and house will be sold for £1,050.
22. SOUTH COAST.—FAVOURITE HOLIDAY RESORT.—Well-established non-dispensing PRACTICE. Average income about £1,100, including panel of 1,200. Consultations 2/6 to 10/6, visits 3/6 to 21/-. Practically no midwifery. Very good house, in best position on sea-front. Price for leasehold (*with 20 years to run at a ground rent* of £4 p.a., and renewable) £2,250. Premium £1,800.
23. KENT.—COAST TOWN.—Well-established mainly industrial PRACTICE. Steady average income of over £1,600. Panel of 1,350. Advice and medicine mainly 3/- and 5/-, and a few at 7/6; visits and medicine from 3/6 to 21/-. Convenient house, with 5 bedrooms. Rent on lease £100 p.a. Premium 1½ years' purchase.
24. RIVERSIDE TOWN, within 60 miles of London.—Well-established upper and middle-class PRACTICE, producing about £1,600 p.a., including panel of 200. Surgery fees from 2/6, visits 3/6 to 21/-. Little midwifery. Good house, with large garden. Garage. Rent on lease £100 p.a. Premium £2,200.

[illegible]nced ASSISTANT, with London qualifications, for Suffolk. Unmarried, aged 25 to 30. Must have ts. Good salary, and prospect of partnership later.

REQUIRED.—Indoor ASSISTANT (or outdoor by arrangement) for Country Practice in Suffolk. Must be English, and pref. Bart's man. Salary £300 p.a. indoor, and equivalent outdoor.

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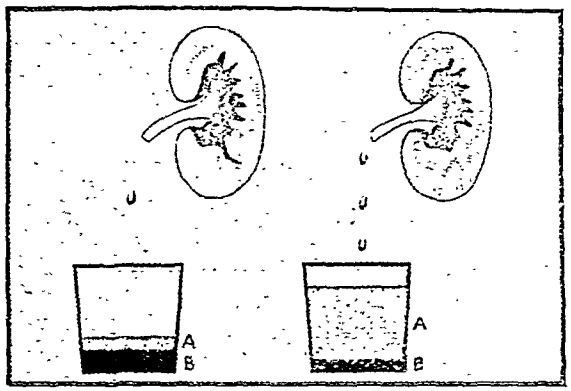

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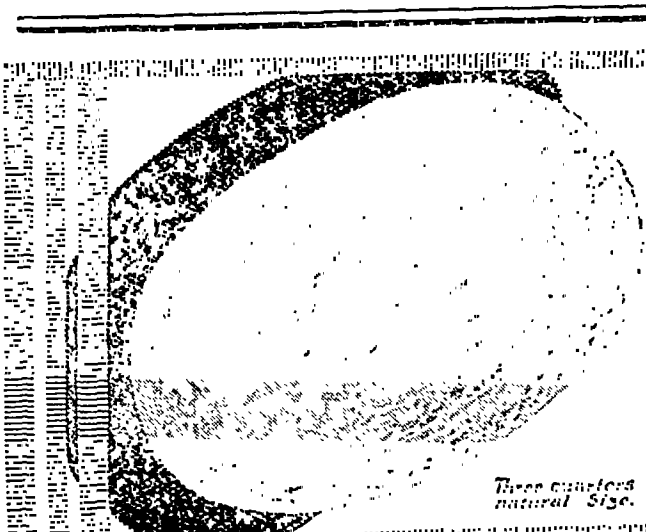

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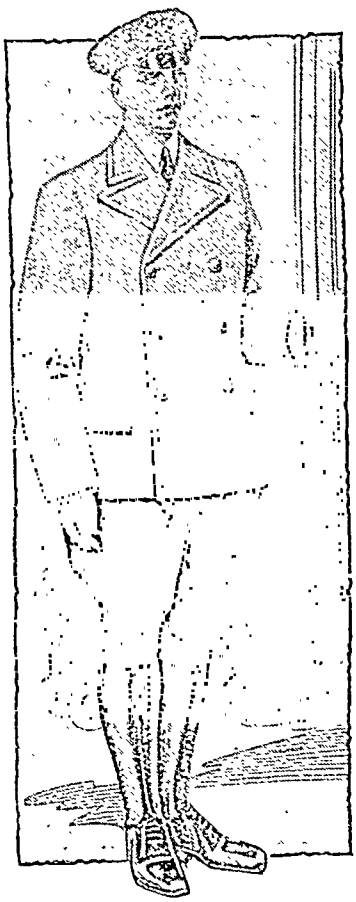

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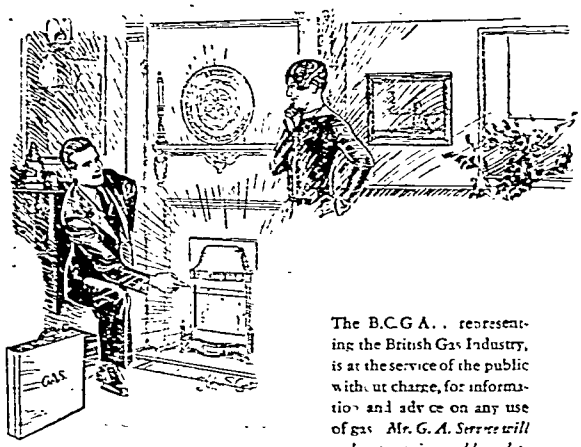

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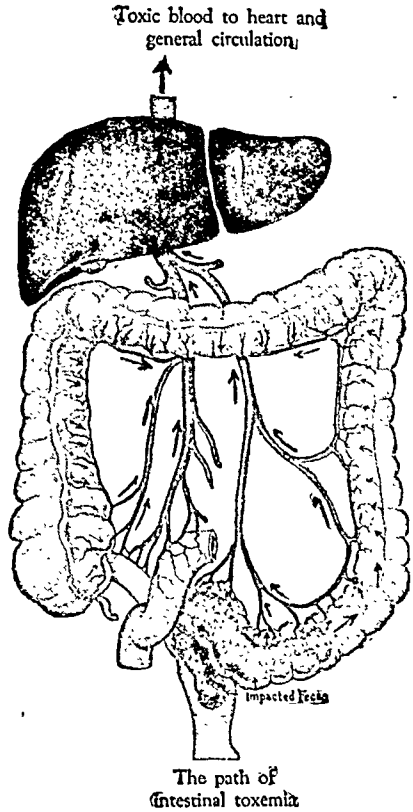

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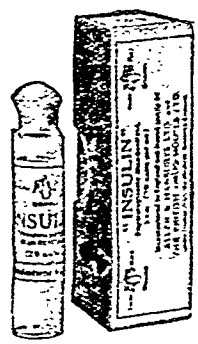

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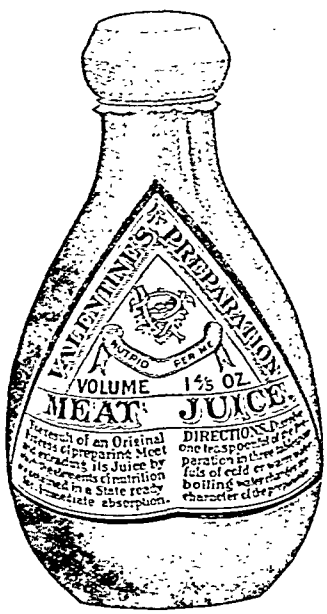

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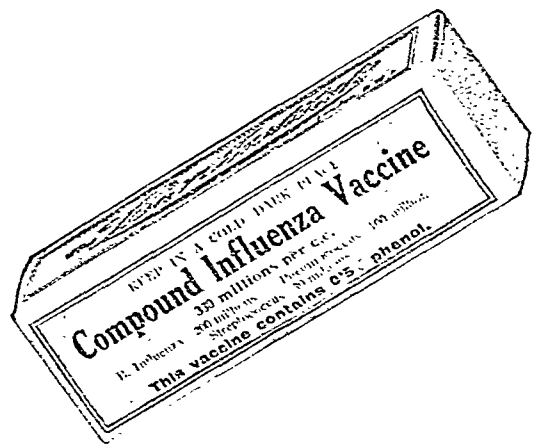

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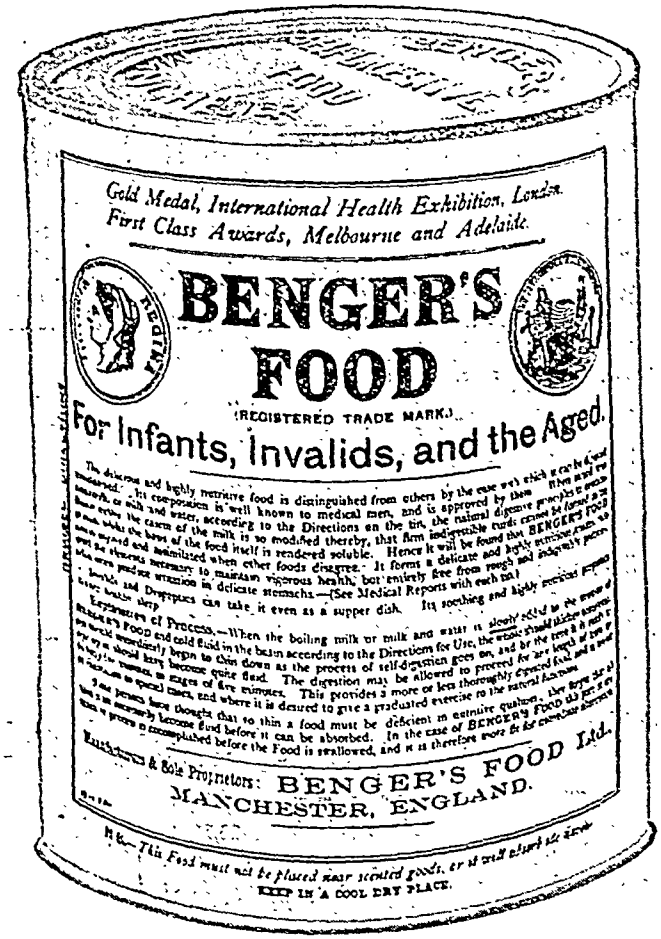

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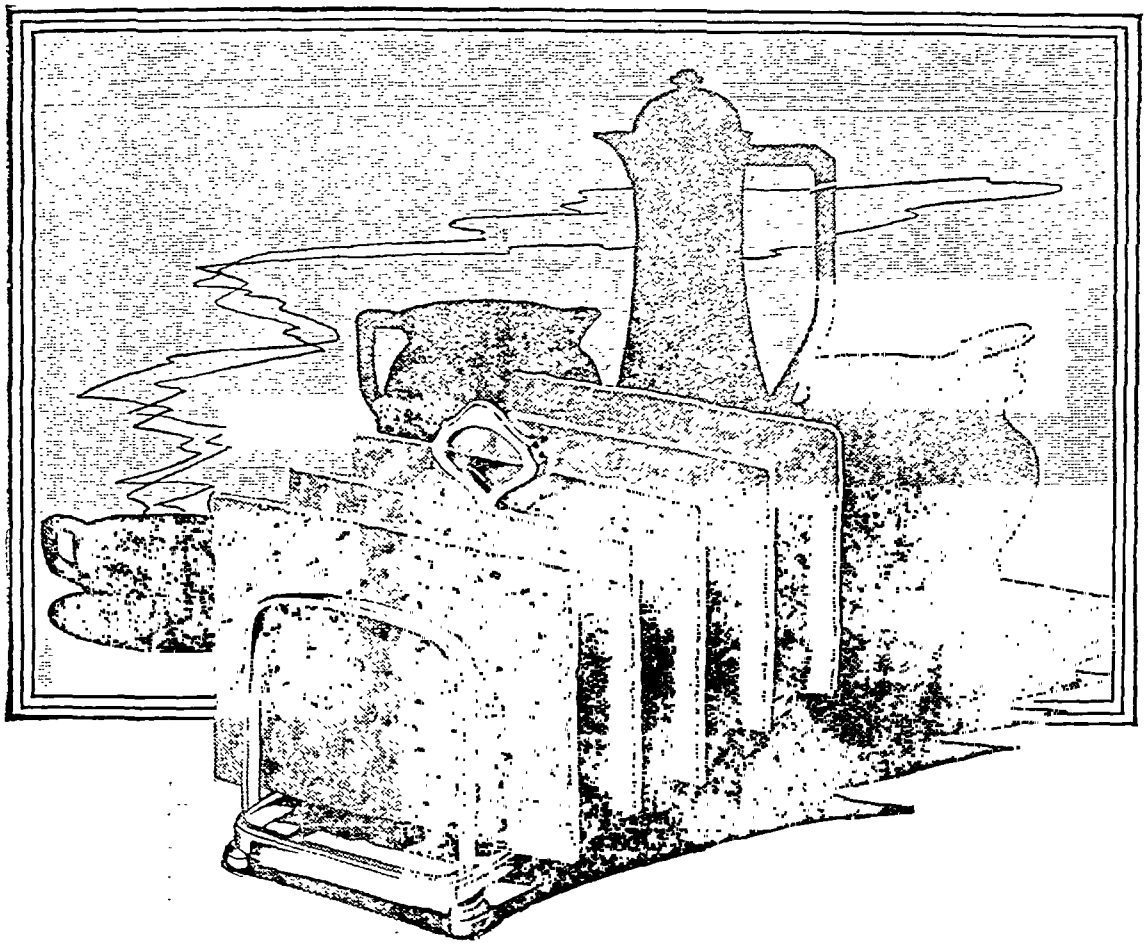

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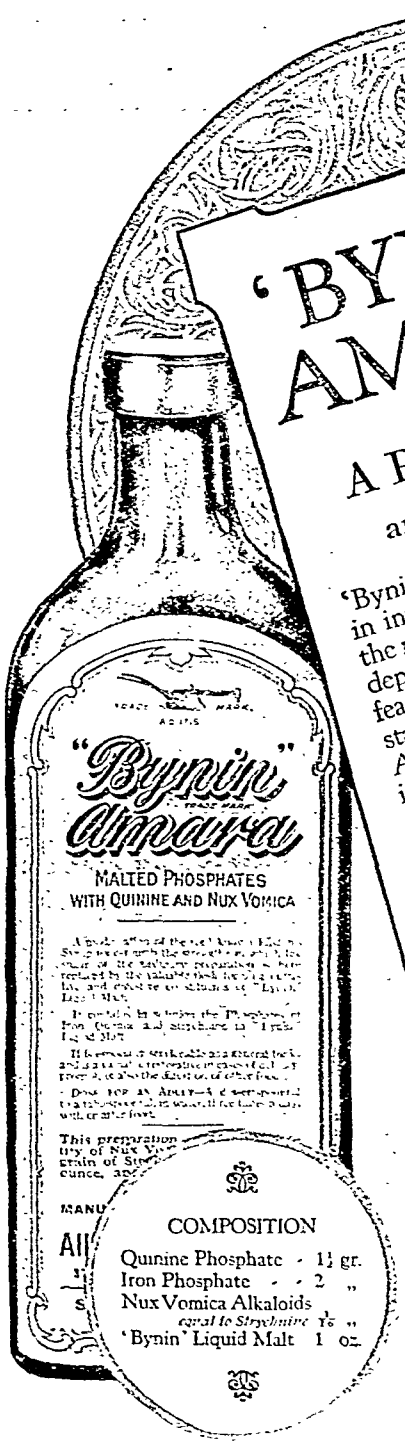

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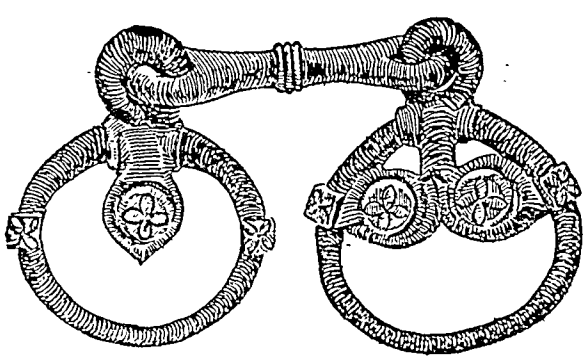

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Remarks ON THE TREATMENT OF EMPYEMA.*

BY

F. G. THOMSON, M.A., M.D., F.R.C.P.,

PHYSICIAN, ROYAL UNITED HOSPITAL, BATH.

If we study the statistics of empyema we cannot help being impressed by the fact that it is a very serious disease. Thus, of 1,310 cases in the London Hospital in fifteen years (1909–23) the total mortality was 23.9 per cent.[1] Of 499 cases treated at St. Bartholomew's Hospital the mortality was 28.2 per cent. In infancy the disease is peculiarly fatal. Most observers agree that during the first year the mortality is about 75 per cent., and during the second to fourth year anything from 40 to 60 per cent. Holt puts the mortality during the first year as high as 90 per cent.[2] In older children and in young adult life the mortality is much less, 6 to 20 per cent., but in older people the figures rise again, the London Hospital figures being 31 per cent. at 40 to 50 years of age; 39.4 per cent. at 50 to 60; and 38.4 per cent. at 60 to 70.[3]

The percentage of deaths from empyema among soldiers in 1918–19 during the epidemic of influenza was appallingly heavy. The Surgeon-General's statistics in America showed the average mortality to be about 30 per cent., and in some of the military camps it rose as high as 70 per cent.

When we regard these extremely high figures of mortality, and when we consider, moreover, how many cases which recover for the time being are left with chronic empyema which renders them permanent invalids, and possibly leads to death some few years later, we cannot help wondering whether it should not be possible, by a better understanding of the principles of treatment, or the adoption of a more suitable technique, to obtain more satisfactory results than have hitherto been possible. As the result of the heavy mortality in the military camps in America in 1918, a special commission was set up to study this question, and certain definite principles were enunciated which, it was claimed, made an enormous difference in the results obtained.

Before going on to discuss methods of treatment I should like to remind you of certain facts concerning the physiology of respiration and the physics of pleural effusion and pneumothorax. In a normal healthy adult the average vital capacity—that is, the maximum amount of air that can be expired after a full inspiration—is about 3,700 c.cm. During ordinary quiet respiration, however, the amount of air taken in during each inspiratory effort, the so-called tidal air, is only about 500 c.cm.—rather less than one-seventh of the maximum vital capacity. In the case of a patient with a pleural effusion, or a closed pneumothorax, it follows that though the maximum vital capacity is diminished in proportion to the size of the effusion, the patient is able to carry on quite comfortably so long as he is at rest, provided the effusion is not large enough to prevent the inhalation of some 500 c.cm. of air during each inspiration. Directly he begins to move about, however, and the normal tidal air is not sufficient to provide for his increased need of oxygen, he becomes very short of breath.

Now the usual conception of the physics of a pleural effusion implies that the mediastinum, though subject to more or less displacement according to the size of the effusion, does, as a matter of fact, impose some barrier between the two sides of the chest, so that, although one side may be almost full of fluid and the lung almost entirely thrown out of action, the lung on the other side is able to carry on in virtue of being shut off by the mediastinum.

Now Dr. E. A. Graham[4] and the other members of the U.S.A. Empyema Commission appear to have proved by a series of experiments that this conception of the physics of pleural effusion is fundamentally wrong. By introducing a water manometer into each side of the pleura, both in animals, and in patients recently dead from diseases not affecting the thorax, Graham showed that injection of air into the pleura of one side affects the intrapleural pressure on the other side to an equal degree. By injecting the trachea with plaster-of-Paris and then removing the lungs he was also able to demonstrate that the density of the two lungs was equal. In other words, the compression induced in one lung by injection of air into the pleura on that side was accurately reflected in the compression induced in the lung on the contralateral side.

Now so long as we are dealing with a pleural effusion or a pneumothorax, in a closed chest, it is not a matter of very vital importance whether the mediastinum imposes an effective barrier between the two sides or not. So long as there is sufficient space left in the thorax for the patient to inhale some 500 c.cm. of air every time he breathes, it does not much matter whether he inhales it into one lung or both; but when we convert a closed pleural effusion into an open pneumothorax, which is what we virtually do when we treat an empyema by resection of a rib and open drainage, the question of the imposition of an effective barrier by the mediastinum between one side of the chest and the other becomes one of the utmost urgency. If at each effort of inspiration air is sucked into the pleural cavity by way of a large open drainage tube, at the same time as it is sucked into the lung by way of the trachea, the amount of air which enters the thorax by these two routes respectively is governed entirely by the resistance offered by the trachea and bronchial tubes on the one hand, and by the open drainage tube on the other; and if, as Graham asserts, and I think asserts truly, there is no effective barrier between one side of the chest and the other—if, in other words, we must regard the thorax as a single cavity and not as two separate cavities—it is possible, by increasing the size of the opening in the chest wall, to produce a condition in which all the air enters into the pleura and none into the lung. In other words, to produce sudden asphyxia and immediate death; and as a matter of fact this is what actually does happen, provided the opening in the thoracic wall is sufficiently large. Short of this it is found experimentally that an attempt is made, by means of forced respiratory efforts, to overcome the disability induced by the open pneumothorax. Inspiration becomes very much deeper, and results in partial compensation. The intrapleural pressure becomes negative during the height of inspiration, and so enables the animal to inhale a sufficiency of air to keep it alive. If the pneumothorax is temporarily closed the animal experiences immediate relief, and by the end of about five or six minutes the negative pressure in the pleura has attained its normal range during the whole respiratory cycle. Owing to the partial compensation effected by forced inspiration it is possible to sustain life with a much larger opening in the chest than would otherwise be the case, and Graham has worked it out on mathematical principles that the largest opening compatible with life in an average healthy adult man is about 8 sq. in. (2 in. by 4 in.).

In a patient suffering from empyema, however, the additional embarrassment of respiration produced by an open pneumothorax is a much more serious matter. One lung at least is partly thrown out of action by consolidation, and in streptococcal broncho-pneumonic cases both lungs are involved—and this at a time when more oxygen than normal is required to keep pace with the increased metabolism of fever. The muscles of forced inspiration have already been brought into play, and, owing to the patient's general toxaemia and weakness, they are in no condition to make any sustained effort of compensation to counteract the effects of an open pneumothorax. We can readily appreciate, therefore, that an open resection, followed by the introduction of a large drainage tube, in a patient already desperately ill, may easily give an adverse turn to the balance between life and death.

In order to test the effect of open drainage, Graham performed an interesting series of experiments on animals. After some difficulty he was able to isolate a strain of streptococci which produced empyema when injected into the pleura of dogs. Ten pairs of dogs, carefully graded as regards weight and general condition, were inoculated, and

* An address given to the Trowbridge Division of the British Medical Association, November, 1928.

twenty-four hours later a stiff open drainage tube, 1/4 in. in diameter, was inserted into the thorax of one of each pair. Of the ten drained dogs all died except one which tore out the tube, and was found later, when killed, to have had an empyema which had healed. Of the undrained dogs seven died, one as the result of injuries by fighting with another dog, and three recovered. When both dogs of a pair died, the one that had been drained died sooner than the other in every case. So far as they go, then, these experiments show that open drainage, instead of being of value, was attended by greater mortality and earlier death.

The statement that treatment of an empyema by open drainage imposes an additional handicap by further embarrassment of respiration only applies, of course, to cases in which there are no adhesions. In those patients in whom the empyema is sealed off from the rest of the thoracic cavity by dense adhesions between the visceral and parietal layers of the pleura it is a matter of little or no importance, as far as the physics of respiration are concerned, whether the cavity is closed or open, and whether it is filled with pus or atmospheric air.

It is necessary, therefore, to distinguish clearly between two classes of empyema—those in which the pus is lying free in the cavity of the thorax, and those in which it is shut off by adhesions. Now the formation of adhesions is entirely a matter of time. In cases of ordinary lobar pneumonia, where there is always a certain amount of pleurisy as well, an empyema is usually a comparatively late manifestation. It develops gradually as the pneumonia begins to subside, and by the time it is diagnosed it is usually cut off entirely from the rest of the thorax by the formation of thick masses of adhesive fibrin. On the other hand, in the case of streptococcal empyema associated with broncho-pneumonia the condition is just the reverse. The invasion of the pleura by infective organisms takes place quite early in the illness. An empyema develops almost at the same time as the broncho-pneumonic changes in the lung, and it may appear so rapidly as to constitute almost a primary manifestation of the illness. In such cases there has been no time for adhesions to form, and the empyema is lying perfectly free in the cavity of the thorax. Such cases, which are specially common in infancy, are always severe, and the patient, especially if a very young child, is usually desperately ill, and any elaborate or immediate operative intervention, especially if it involves even a temporary open pneumothorax, is much more likely to kill it than to save its life. If it is determined to apply open drainage at all to a case of this type it is absolutely essential to temporize, and to be content with aspiration, to evacuate the pus, till such time as adhesions have had time to form and seal off the cavity from the rest of the thorax. Aspiration itself is a somewhat painful and distressing procedure, and to perform with success a second or even a third aspiration on a desperately ill and probably terrified child is not necessarily as easy or satisfactory as it might at first sight appear. It is in such cases especially that the performance of continuous suction drainage, by the introduction of a soft self-retaining catheter attached to a water-pump, appears to offer such enormous advantages over other methods of treatment. The introduction of the catheter itself is a very trivial affair, and entails very much less shock than any more elaborate surgical intervention, and since it avoids the risk attached to the induction of an open pneumothorax this method may be employed at the earliest moment, even in streptococcal cases, in which no adhesions may be expected to have formed.

Whatever method is adopted to drain an empyema there is one important principle to be observed in the after-treatment, and that is the paramount necessity of sterilizing the cavity at the earliest possible moment and of preventing any secondary infection through the opening made in the chest.

Bacteriological examinations seem to show that secondary infection of the cavity during the period of drainage is largely responsible for delay in the recovery of a great many patients. Prolonged inflammation of the pleura, whether it results from the primary infecting organism or from some secondary infection, causes the ordinary endothelium of the pleura to be replaced by fibrous connective tissue, with the result that the lung is firmly bound down and prevented, possibly for ever, from completely expanding to fill up the chest. A permanent thick-walled cavity may thus be formed, and a chronic empyema result, with all its attendant risks to health and even to life. The sooner, therefore, that we are able to disinfect the cavity in the thorax, and the more successful we are in preventing the introduction of fresh organisms from without, the more likely we are to prevent the formation of a chronic empyema.

As a general principle, therefore, it may be said that an empyema cavity should be rendered sterile at the earliest opportunity, and in order to do this, frequent irrigation with some suitable antiseptic is of very great assistance. Of all antiseptics chlorine solution seems to be the most efficient and suitable. During the last two years of the war, when I was chiefly concerned with the treatment of some hundreds of patients with penetrating and, in many cases, heavily infected chest wounds, I found, in common with others, that frequent irrigation with Dakin's solution was of the utmost value. In the first place, it is non-toxic, and can be freely used without any fear of ill effects; and, secondly, it appears to have a special action in softening and breaking down those large masses of fibrinous exudate which so often make efficient drainage a matter of great difficulty.

There is one point in connexion with the disinfection of an empyema cavity that is of some practical importance, and that is, that the upper part of the cavity seems less easy to render sterile than the lower part. This is probably because the rounded surfaces of the lower part of the cavity are more accessible to the antiseptic than the narrow sinus between the expanding surface of the lung and the upper part of the chest wall. Whatever the explanation may be, it is found in practice that it is more satisfactory to make the opening in the chest wall near the upper limit of the cavity rather than, as one would naturally expect, at the most dependent part.

Though I have directed my remarks chiefly to the principles which it appears ought to be observed if the treatment of empyema is to be satisfactorily carried out, I may perhaps be allowed to make a few remarks about the methods by which these principles would appear to me to be best put into practice. Before doing so, however, it may be as well to recapitulate shortly what those principles are. The principles to which any ideal form of treatment should conform are:

1. Operative procedure should be such as involves the minimum of time and the minimum of shock.
2. If it is necessary to employ the method of open drainage, this should never be performed until it is reasonably certain that the empyema cavity has become sealed off from the rest of the thorax by adhesions.
3. In connexion with the last it is imperative to distinguish between pneumococcal empyema, in which adhesions are usually formed by the time the empyema is diagnosed, and streptococcal empyema, where adhesions are not usually formed till later.
4. In order to minimize the risk of secondary infection the opening in the chest wall should be no larger than is sufficient to admit a suitable drainage tube, and should fit closely around the tube when it is placed in position.
5. The cavity should be sterilized as early as possible by frequent irrigation with some suitable antiseptic, to prevent the formation of dense fibrous adhesions, which prevent the expansion of the lung and the early closure of the cavity.
6. The lung should be encouraged to expand by ensuring a negative pressure in the pleural cavity throughout the period of drainage.
7. Convalescence should be assisted by giving plenty of nourishing food, and, whenever possible, by treating the patient entirely in the open air.

The method of treatment which would appear to fulfil these principles more completely than any other is that of closed continuous-suction drainage. This method is, of course, by no means new. It has been tried by various people and in different hospitals for a good many years. For certain reasons, however, it does not seem to have attained that measure of popularity which I venture to think it deserves. The technique usually employed, of introducing a stretched rubber tube through a metal cannula, which is allowed to remain in position, presents

a very real disadvantage in the fact that the cannula is very apt to become displaced, especially in a restless child, and come out of the chest, pulling the drainage tube with it. This difficulty is entirely obviated by using a self-retaining rubber catheter, which is either introduced direct through a very small incision into the chest, or through a cannula, which is withdrawn immediately the drainage tube has been inserted. I have had an oval trocar and cannula specially made to enable a larger catheter to be introduced between the ribs than would otherwise be possible, but I am not sure that this method presents any material advantage over the method of direct introduction through a small incision in the chest wall. Two other disadvantages have been cited against this form of treatment—namely, that it is difficult to ensure adequate drainage, and that after-treatment requires almost continuous supervision by specially trained nurses. With regard to efficiency of drainage, we have not found the difficulties so great as would be thought. Irrigation of the cavity by Dakin's solution, two or three times a day, seems to soften or disintegrate those large masses of fibrin which so often impede the free passage through the tube. If the latter appears to be blocked it is detached from the suction apparatus, and, by means of a glass syringe, Dakin's solution is alternately forced gently through the tube and sucked out again. By doing this a large amount of fibrin can often be removed, and when the suction apparatus is replaced drainage is found to proceed quite satisfactorily. The last objection to continuous suction, that it requires unremitting attention, is only partially true. Once it is satisfactorily started very little attention is required, unless the tube gets blocked and requires syringing out, as it occasionally does. Irrigation with Dakin's or some other antiseptic ought to be carried out at least two or three times a day, no matter what method of drainage is adopted, and it is much easier to detach the suction pump and irrigate through the catheter than it is to remove the messy dressings from a patient's chest and irrigate through an ordinary open tube. One way and another, I do not think that this method requires more attention than can easily be given in the ordinary routine way in a hospital ward or a nursing home.

During the last eighteen months I have treated all cases of empyema coming under my care, twelve in all, by this method. Of these twelve cases, one, a man of 35, who had a large chronic empyema of some five months' duration, died as the result of multiple cerebral abscesses three weeks after admission, and while the empyema was still draining. The other eleven cases have all done uniformly well.

After removal of the catheter I have, in all cases, put a fine tube into the sinus to drain the small cavity remaining. The sinus is usually healed completely after three or four days, but in four of my patients the wound, after closing up, has broken down again, and a small abscess has discharged, after which the sinus has again closed up and given no further trouble. This is perhaps due to the wall of the sinus itself being infected, and can probably be obviated by treating the latter with flavine or some similar preparation. In all cases except one the cure has, I believe, been complete, and, so far as one can tell, permanent. One patient, who originally had a very large staphylococcal empyema of ten weeks' duration, returned to his work as a miner some six weeks after discharge, and came back to hospital two months later with an abscess pointing over the old sinus; some six ounces of pus were evacuated from the cavity, which rapidly healed and has not, so far, recurred. Another patient had a double empyema, both sides being drained simultaneously, and closing on the seventeenth and eighteenth days respectively. This patient has remained fit ever since, and I am informed he has been for some months working about his farm as usual.

The average period during which drainage has been required has been nineteen days. One particularly satisfactory feature in all has been the rapid expansion of the lung, as shown by the amplitude of respiratory movements on the affected side, and the return of breath sounds at the base.

The ages of the eleven patients still living ranged from 4 to 50 years; the organism isolated was the pneumococcus in eight cases, combined in one instance with the streptococcus and the tubercle bacillus; in two cases the staphylococcus; and in one case the *Bacillus coli*.

The advantages that I think one can justly claim for treatment by continuous suction drainage are:

1. Introduction of the catheter is rapid and easy, and entails virtually no shock.
2. Anaesthesia is correspondingly brief, and, if necessary, the operation could be done, except perhaps in infants, with a local injection of novocain.
3. The tube causes little or no pain.
4. Nursing of the patient is much easier and cleaner.
5. The risk of secondary infection of the empyema is very much diminished.
6. The wound closes quicker than by open drainage.
7. Re-expansion of the lung is more rapid and complete.

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THE PROGNOSIS AND TREATMENT OF ECLAMPSIA AND ALBUMINURIA:

WITH SPECIAL REFERENCE TO THE RISK OF RECURRENCE IN SUBSEQUENT PREGNANCIES.*

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IT is in some ways remarkable that, despite the close study which the clinical features of the toxaemias of late pregnancy have received, we should now be discovering, not only that there are still a few fields left for us to explore, but that some of our teaching on the basic clinical facts has proved to be incomplete and in certain respects actually unsound. Take, for example, eclampsia. It has been almost a commonplace in our teaching that a woman who has suffered from this condition is little likely to suffer in any similar way in her next pregnancies. A study of such cases proves this to be incorrect. At the British Congress of Obstetrics and Gynaecology in 1927 I[1] showed that in 47 consecutive cases of eclampsia in parous women admitted to the Edinburgh Royal Maternity Hospital eclampsia occurred six times in a previous pregnancy and "albuminuria" nine times. This gave a total recurrence figure of 31.9 per cent. Adding to this six cases, in which there had been abortion, accidental haemorrhage, premature or stillbirth without toxaemia in the previous gestations, we got a total recurrence of abnormality of 44.7 per cent.

Dr. Jessie C. B. Sym has since carried out a similar investigation of the subsequent obstetric history of the surviving cases of eclampsia treated in the hospital from 1919 to 1926, and in a total of 67 cases which were traced she found that 42 had become pregnant again, with a total of 60 completed gestations. Of these, 3 had developed eclampsia for the second time, with a fatal result in one case, whilst in 15 of the other pregnancies "albuminuria" occurred, giving a total of 18 out of 60 subsequent pregnancies which were toxaemic, or 30 per cent. Adding to this 6 more, in which abortion, etc., took place, we get 24 abnormal pregnancies out of a total of 60, or 40 per cent., a figure which emphasizes the risk which is run by an eclamptic patient should she become pregnant again.

A similarly sinister record is revealed when the "albuminuria" cases are studied. In the paper to which I have already referred I recorded a recurrence of toxaemia, and of abortion, etc., without toxaemia, in 42 out of a total of 118 studied—that is, in 35.6 per cent. These figures referred to the previous pregnancies in parous women admitted to the hospital with "albuminuria." By following the surviving cases into their subsequent obstetric life we have found that 51 out of 81 cases subsequently became pregnant again, and had between them 84 completed pregnancies. Of these, 44 had "albuminuria" (this diagnosis was based on clinical evidence supplied by the patient in 5) —that is, 52 per cent. In 14 of the other pregnancies there occurred abortion, accidental haemorrhage, etc.,

* A paper read before the Section of Obstetrics of the Royal Society of Medicine, November 16th, 1928.

without toxaemia, making a total abnormality recurrence of 58 in 84, or 69 per cent. The considerable increase in the percentage of recurrence in the pregnancies occurring after the first toxic gestation treated in hospital as compared with those in the pregnancies prior to this is to be accounted for by the fact that in many instances the follow-up proved the attack of toxaemia treated in the hospital to be the beginning of the recurring sequence.

We thus see that 82 out of a total of 144 subsequent pregnancies in cases of toxaemia (eclampsia and "albuminuria") were vitiated by toxaemia or intrauterine disaster to the foetus without toxaemia—that is, a percentage of 57. Furthermore, 3 of the 93 women who became pregnant subsequent to their leaving hospital died from toxaemia in a subsequent pregnancy—that is, more than 3 per cent. It is probable that this death rate would have been actually higher could all the cases have been followed up, for it is known that "deaths" are notoriously difficult to trace.

Findings similar to those here recorded have been reported by other observers—by Greenhill[1] and Gibberd,[2] for example. Greenhill studied the subsequent completed pregnancies of 16 women who had had eclampsia, and found that in 9 these were normal, whilst in 7 they were toxaemic—that is, in 43 per cent. Gibberd found that in 26 cases of albuminuria there was a recurrence of the toxaemia in 19—that is, 68 per cent.

This large incidence of recurrence in all classes of toxaemia carries with it implications of far-reaching importance. In my opinion this fact of recurrence, applying as it does to all types of the disease—eclampsia, pre-eclampsia, etc.—constitutes the most significant addition to our knowledge of the subject made within recent years, and it must be regarded as an important new clue in our efforts to trace the underlying causes.

The first lesson it teaches is the inadequacy of our present classification, for this has been based on the view that eclampsia and "pre-eclampsia" are essentially non-recurrent. The type in which recurrence is the characteristic feature we have thrown into a category by itself. We have classed it as "recurrent," or, in view of the observable kidney lesion sometimes accompanying it, as "nephritic." The new discoveries obviously render this classification unsound, for it is clear that in respect of the criterion of recurrence there is nothing to distinguish one kind of late pregnancy toxaemia from another. Furthermore, it is apparent that the view which attributes recurrence to a defect in renal function must, if well founded, apply equally over the whole range of these toxaemias.

I have elsewhere discussed the discrepancies in fact and in theory which seem to me to lie at the back of any such view, and I cannot enter into the matter fully on this occasion. At the outset I would direct your attention specially to the fact that the attitude we adopt towards this question has implications which are not merely academic in their nature. Bound up with them are important issues of an essentially practical nature. We may, in the first place, in accordance with the usual teaching, attribute the tendency to recurrence to a chronic renal defect, which leads to a breakdown of function in succeeding pregnancies. In support of this view we may cite the nephritis which punctuates these recurring toxaemic gestations, and, in addition, the evidence of nephritis which is sometimes found in the intervals between the pregnancies. On the other hand, we may regard the nephritis as caused by the toxaemia, which in such women tends to recur during their pregnancies, and the accumulated result of which in some instances may be to produce persisting and chronic nephritis. These two standpoints are distinct and mutually exclusive. According to one the recurring toxaemia springs from the kidney defect. According to the other the kidney defect springs from the recurring toxaemia.

For many years I have been unable to satisfy myself that in endowing the kidney with ætiological properties of a primary character we were not theorizing beyond our facts. As I now see it I am satisfied that, whilst we are still far from a complete understanding of all the phenomena, the data, when fairly marshalled and analysed, drive us in a very compelling manner to regard the kidney as an organ which in the sequence of events plays a part which is entirely secondary, and which in its liability to suffer damage by the specific toxins elaborated during the development of a vitiated pregnancy is in no way different from such other organs as the liver and the heart. The arguments in favour of this view may be summarized as follows.

1. A recurrent attack of eclampsia or albuminuria is in no essential fact different from the initial attack in the first pregnancy involved. Now there is no evidence that this initial attack is in any way, directly or indirectly, dependent upon a renal defect. There is, on the other hand, ample evidence that the kidney damage invariably occurring in such a case is directly caused by the toxins elaborated in a specific manner in some other region of the pregnant organism. Why in a recurrent attack should the relation of the kidney in the sequence be different?

2. Just as the initial eclampsia or albuminuria occurs typically in a woman whose kidneys were previously healthy, so typically in the intervals between the pregnancies, which are recurrently toxic, the kidneys reveal no evidence of any deficiency. Furthermore, subsequent to a series of toxaemic pregnancies, in each of which the kidneys have suffered, the patient may enjoy good health with no cardio-vascular or renal disease so long as she does not again become pregnant.

3. The chronic renal lesion found occasionally in such women is easily explained as due to the effects of one bad attack or to the accumulated results of the damage sustained during a recurrent series of toxic pregnancies. Dr. Jessie Sym has carried out an examination of the cardio-vascular system, of the blood urea and the urea concentration test, in 66 post-eclamptic and 73 post-albuminuric cases treated in the Edinburgh Royal Maternity Hospital. This revealed evidence justifying a diagnosis of chronic renal change in 2 of the post-eclamptic cases (3 per cent.) and in 6 of the post-albuminuric cases (8 per cent.). The significant fact is that in 7 out of these 8 cases the patients had two or more toxic pregnancies. Of those cases—comprising approximately half of the total number—in which a single toxic pregnancy had occurred, in only one was chronic renal change found, and in this case the toxaemia lasted for eighteen weeks. These facts indicate that the degree of involvement of the kidney is directly related to the interval over which it is exposed to the toxins of an abnormal pregnancy.

4. Marching side by side with the tendency to recurrent toxaemia there is a well-recognized tendency to the succeeding pregnancies of such women being terminated prematurely by abortion, stillbirth, or accidental haemorrhage. This tendency has usually been attributed to a chronic renal deficiency. In my previous papers I have called attention to the fact that these abortions, etc., may be unassociated with any toxic manifestations or any recognizable renal defect, although they occur in women known to have this tendency to recurrent toxaemia in their other pregnancies.

For lack of a better explanation in the past we have in similar contingencies had recourse to the "nephritic" conception. In this view these damaged pregnancies would be attributed to a deficiency in renal function which is so meagre that it fails to reveal itself in the ordinary ways. How, it may be asked, could such a minimal defect, which is insufficient to cause any clinical evidence of its presence, precipitate the intrauterine disasters which these crises necessarily imply?

It was considerations of this order that led me some years ago to approach these problems from a new angle. A critical analysis of the available data early proved that whilst the fact of toxaemia was the dominating clinical phenomenon, and as such had naturally obtruded itself into the forefront of the problem, it was by no means invariable and essential. It was rather of the nature of an accident or incident, which might occur in some circumstances but not in others. Thus, for example, it might be present in one pregnancy ending in accidental haemorrhage, whilst in the same woman it might be absent in the next pregnancy which ended similarly. Whilst toxaemia was thus purely incidental, there was, on the other hand, one factor, and one factor alone, which seemed to run

throughout the process as an invariable accompaniment of the abnormal pregnancies, toxic and non-toxic alike. This was disease of the placenta. In all the affected pregnancies, whether they ended by abortion, accidental haemorrhage, or stillbirth, and whether they ended in toxaemia or not, one could always find placental damage. The existence of such a pronounced lesion, which, according to this reading, must be considered as arising independently of the toxic process, naturally pointed to a possible source of the toxic elements, which all agree to be responsible for the toxaemia of pregnancy. As I have shown, it is possible to account for all the known facts by predicating in such women the existence of some factor which during pregnancy may precipitate a toxaemia by involving the life of the placenta. This factor, whatever it be, is liable to persist in the intervals between the pregnancies, during which it may cause no apparent trouble, but it is apt to reassert itself in the same way during the next pregnancy. Whether, after the placental damage has occurred, toxaemia will follow will depend on two variables: (1) the amount of placental tissue involved, and (2) the time during which the damaged placenta is retained in the uterus.

OBSERVATIONS ON TREATMENT AND PREVENTION.

From this study of the subsequent fate of toxaemic cases we may draw lessons regarding (*a*) the management of, and the indications for terminating, an existing pregnancy, and (*b*) the question of future pregnancies.

Management of Existing Pregnancy.

In every toxaemic case the immediate outlook is uncertain, and, even in the mildest case, it is impossible completely to exclude the risk that at any moment the clinical picture may change rapidly for the worse. For these reasons, were we to consult the interests of the mother alone, we would be justified in terminating the pregnancy in almost every instance so soon as the first toxic manifestations appear. In addition to these immediate dangers there is the more remote risk of the patient suffering lasting damage to her cardio-vascular system and kidneys. In this series of hospital cases, which, of course, comprise those suffering most severely, this risk assumes the proportion of 8 per cent. of the total. As I have previously shown it is minimal in the woman with her first attack, the major danger being reserved for those with repeated toxic pregnancies.

Against these sombre admissions there must be urged the experience of all that many toxaemic pregnancies respond with rapidity to ante-natal care and hygiene, with special reference to the diet, the bowels, and rest. It is in this class of work that modern ante-natal treatment has claimed some of its greatest triumphs. At the same time there is, it seems to me, a risk that we may overestimate our powers in this connexion, for we must acknowledge that in this disease, which affects 3.5 per cent. of all pregnant women (Eden and Holland), the majority of the cases are destined from the beginning to pursue a simple course, just as we know that the greater proportion of the severe cases resist all our efforts to cure them.

The only sanction we have for an expectant line of treatment is that we may thereby carry the pregnancy over into a period that will ensure the viability of the child. In this very matter, however, our decisions are still further complicated by the fact that the disease, which so heavily prejudices the life and health of the mother, is even more unkind to the foetus. Of all the maternal diseases toxaemia is the one which is most lethal to the child. Thus Holland, in a series of 301 foetal deaths, showed that 77 were caused by albuminuria, eclampsia, or accidental haemorrhage—that is, 26 per cent. In the present record of albuminuric cases 49 out of 168 children died *in utero*—that is, 29 per cent. It is known that many of those born alive survive only a short time.

These considerations show that whenever we elect to treat a toxaemic patient expectantly we may be gambling with the life or health of the mother in the interests of a child whose survival is problematical. I am convinced that in the past we have often been over-zealous in our regard for the child and too little attentive to the interest of the mother.

Where and whilst the manifestations are slight and the patient is under adequate supervision one may often safely temporize. In such a case, however, the termination of pregnancy as soon as the eighth month is well entered upon may be in the best interests of the infant.

Where there is marked oedema of the limbs and face, a blood pressure raised 30 or 40 mm. or more, a heavy deposit of albumin in the urine, a marked drop in the urinary secretion, and more especially if there are headache and visual symptoms, delay is dangerous. In less severe cases a delay sufficiently long to test the response to treatment may be considered justifiable, but any change for the worse, such as a rising blood pressure, a sudden drop in the quantity of urine, severe headache, etc., or a refusal of the symptoms to abate under rest in bed, watery diet, and active eliminative treatment, indicates the need for intervention.

In all toxaemic cases, except those that are mild, which are seen before the seventh month, experience has taught me that delay is rarely if ever justified, for this necessarily implies a dangerously long interval of waiting before viability of the child is reached. I would like to see it laid down as an axiom that, except in mild cases, no toxic patient should ever be kept under treatment for more than two weeks, and then only if the progress is good. A disregard of this precept may damage a woman's health irreparably; these risks, as we have seen, are especially to be guarded against in women who have suffered damage in their previous pregnancies.

For ordinary routine purposes, where the urgency is not immediate, the best means for the induction of premature labour is the gum-elastic bougie or some similar method. Pituitary extract is of little avail for this purpose until the last days of pregnancy, although the hypodermic administration of 5-minim doses of this drug is of value in reinforcing the action of the bougies once uterine efforts commence. I then use 5 minims every half-hour till a total of 2 c.cm. has been administered. Where the blood pressure is high, pitocin, which contains the ecbolic principle of the posterior lobe without the pressor agent, may be employed.

For cases of grave urgency the bougie method for inducing labour is too slow and too uncertain, and for such cases I employ Caesarean section under spinal anaesthesia. With this operation we obtain immediate evacuation of the uterus in a case where every hour's delay may jeopardize the prospects. By means of spinal anaesthesia we reduce the shock and we eliminate the risk of further damage to the organs associated with a general anaesthetic. Among these risks one of the greatest is irritation of the bronchioles, passing on to bronchitis and bronchopneumonia, from which toxaemic cases are specially liable to suffer.

For these reasons I have come to regard spinal anaesthesia as the ideal method in such cases. The immediate fall in blood pressure attending its use may in some ways be regarded as an added advantage in patients in whom an elevated pressure often constitutes a dangerous feature. At the same time I should like to take this opportunity of commending a wider employment of spinal anaesthesia as the routine procedure in Caesarean section. One of the most striking effects of the removal of the control of the spinal centres resulting from its use is a spontaneous and immediate contraction of the muscle of the uterine wound, producing a sort of natural haemostasis, which in many cases is so marked that the operation can be carried out literally without the loss of more than a few drachms of blood. In many instances—for example, in collapse from the exhaustion of a protracted labour or from loss of blood, as in placenta praevia—this fact may lead to a considerable reduction in the risk associated with the management of the case. A series of about 40 cases of Caesarean section so carried out by myself and my assistant with no mortality and in which are included a considerable number of grave cases of toxaemia, of placenta praevia, and of obstructed labour with potential sepsis, has led me to conclude that spinal anaesthesia has brought into the operation of Caesarean section a measure of safety which it

did not possess before. In cases where a drop in blood pressure is to be feared—as, for example, in the collapse from haemorrhage or in bad cardiac cases—I have, in addition, employed adrenaline, and, latterly, vasopressin.

At this point I would make it clear that once the toxaemia passes over into an eclamptic seizure any active intervention is to be rigidly avoided, and the patient must be treated along such lines of expectancy as those laid down by Stroganoff and others. On two occasions, it is true, I have carried out Caesarean section under spinal anaesthesia where the patients made a good immediate recovery under the Stroganoff treatment, but where, several days afterwards, there was a sudden and alarming recrudescence of the clinical features—rise in blood pressure, fall in urinary secretion, etc. The operative delivery was carried out with the idea that the risk of delay was greater than the risk of terminating the labour with the help of the spinal anaesthesia. A further indication in these cases was the continued intrauterine survival of the child, which I regard as a feature adding greatly to the gravity of the prognosis.

The Question of Future Pregnancies.

Among the lessons to be drawn from the data assembled in an earlier part of this paper there is one which is of profound importance. It is that the risk of toxaemia in subsequent pregnancies is so great that all such women should be warned of the importance of placing themselves under medical supervision from the early stages, should they again become pregnant. In the present state of our knowledge on ultimate causation we are not equipped with any certain method of protecting a woman with this taint against the risk of recurrence, but we can do much to safeguard life and health by emphasizing the imperative need of this ante-natal care if the major risks are to be avoided. The necessity for explaining these facts is all the greater because of the rapid recovery which usually follows on one attack and which often gives the patient a sense of security which is little justified. The woman who has already suffered from several toxaemic pregnancies should be the object of very special ante-natal supervision in the event of a future pregnancy.

The next point we have to consider is the advice to be given in regard to preventives. So great is the risk run by women with this taint that this matter of prevention may be considered as arising in practically all cases. Personally I believe it may be laid down as a rule that no woman should be exposed to further risk if she has had two or more toxic pregnancies, for the risk of future recurrence rises rapidly with the number of pregnancies already so vitiated. Where, on the other hand, the disease has involved the loss of the child on each occasion, there may be such a desire for a further attempt that the medical attendant may require to be satisfied with urging that this can only be sanctioned if the patient adequately recognizes the need for supervision throughout the pregnancy.

In anticipation of a future pregnancy everything should be done to build up the strength of the patient and to remove any factors that may, even indirectly, have a bearing on this tendency to recurring trouble. It has been suggested by some observers that focal sepsis may play a contributory part in the taint which these women carry over from pregnancy to pregnancy. In a previous paper I have referred to some considerations which are in keeping with this view, and have suggested that it is conceivable that some such factor is at the back of the tendency to placental disease, which, as I have pointed out, is the only essential lesion of the pregnancy in such cases. In a few instances I have found that, following the removal of gross sources of focal sepsis—for example, tonsils and teeth—a previously unbroken sequence of damaged pregnancies has been interrupted and has been succeeded by normal gestations. The data are still too meagre to allow of a definite pronouncement on this matter, and I merely throw out the suggestion tentatively. In eliminating this factor of potential sepsis, however, we are taking a step likely to help the general health and resistance even should the subsequent history fail to establish it as a factor of primary value.

Conclusions.

1. In a series of hospital cases treated for eclampsia and albuminuria there was found to be a recurrence of toxaemia or non-toxaemic interruption of pregnancy (abortion, accidental haemorrhage, etc.) in succeeding gestations in over 50 per cent.

2. There is no evidence that this tendency to recurrence is directly or indirectly dependent upon any persisting renal defect. Chronic nephritis is found in only a small proportion of cases, and there is evidence that this is the result of the toxaemia.

3. In view of the large risk of recurrence the need for ante-natal supervision from an early stage in the event of a subsequent pregnancy should be clearly explained to the patient.

4. Toxaemia in two or more pregnancies is an indication for the prevention of any further pregnancy.

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THE PRESENT POSITION OF ULTRA-VIOLET LIGHT THERAPY.*

BY

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It is now so generally realized that ultra-violet light radiations consist of a small block of waves in the electro-magnetic spectrum that it is unnecessary to enter at any length into the physical nature of this source of energy. It is also realized that this electro-magnetic spectrum stretches from beyond the gamma rays of radium through x rays on to ultra-violet light, then through the visible spectrum to infra-red, and on to the Hertzian waves, which are employed both in wireless and in diathermy.

Owing to the extreme differences in wave-lengths between one end of the spectrum and the other, it has been found impossible to use the same unit of wave-length measurement, and this has constituted one of the difficulties in understanding the nature of ultra-violet light. The Angström unit is nothing more or less than an agreed subdivision of the metre or millimetre which gives a number to the shorter waves of the spectrum that is neither absurdly large nor carried to an absurd number of decimals. For instance, it would be extremely inconvenient to think or talk of the distance between Edinburgh and London as being, say, six thousand million million Angström units; and it would be equally inconvenient to talk of a hair having a diameter of, say, point seven or eight noughts one of a kilometre.

The Angström unit has, therefore, an arbitrary length of one ten thousand millionth part of a metre—that is, one ten millionth part of a millimetre. This arbitrary length enables us to talk of gamma rays in terms of tenths and hundredths of this unit; of x rays in tenths and small units; of ultra-violet light in figures round about three thousand, and of light up to about seven thousand. It is only when we get to infra-red that the numbers begin to get so big that it is worth while changing over from these units to actual millimetres or decimals of a millimetre. Thereafter, by keeping to the ordinary metric measurements, we eventually reach the well-known wave-lengths of 2 LO and 5 GB, and it is these latter wave-lengths that are employed in diathermy.

The relationship between the length of a wave and the frequency, or number of complete waves that can pass a given point in one second, can be made clear by a simple analogy. Suppose one is standing on a bridge watching a train composed of sleeping cars and ordinary cars passing underneath. The complete train will be travelling at a uniform rate, just as ether waves travel at a uniform rate, but the more lengthy sleeping cars will take a longer

* A lecture given to the Border Counties Branch of the British Medical Association.

time to emerge from under the bridge than the shorter ordinary cars. The sleeping cars would therefore have a longer "wave-length" and a lower "frequency," and the ordinary cars a shorter "wave-length" and greater "frequency."

The particles of dust on the surface of the cars would emerge, in comparison with the sleeping cars, at a very high frequency, but even then their frequency, in comparison with that of the sleeping cars, would not be as great as the differences between the frequency of gamma rays and those of wireless waves. It has been estimated that if the whole spectrum were set out to a scale in which one wave in the ultra-violet light block of waves was represented by one foot, and the whole block, therefore, by about 300 yards, it would be necessary to have a scale of more than one million miles in length. These facts give some idea of the minute proportion of the electro-magnetic spectrum that has produced such world-wide interest.

Apparatus for Making Ultra-violet Light.

In the course of a year I am frequently asked which is the best ultra-violet light lamp to buy. This question is impossible to answer without knowing all the circumstances under which the lamp is most likely to be used.

The common sources of ultra-violet light are:

1. The carbon arc.
2. The tungsten arc.
3. The mercury vapour arc.
4. Variations and combinations of 1 and 2, and arcs involving the use of other metals.

Each of these sources has its advocates, but I am of opinion that each has its own fields of utility, and I would not consider a department well equipped unless it contained representatives of at least 1, 2, and 3.

When arranging for the installation of one or more sources of ultra-violet light it is important, for the purposes of satisfactory and controlled work, that each lamp should have its own voltmeter and ammeter, so that the quantity of energy supplied can be kept fairly constant, or intelligently altered.

The carbon arcs are manufactured in various types, the commonest being:

(*a*) The 20-ampere arc lamps; three of these can, with a suitable main supply, be used in series if desired.
(*b*) The 75-ampere arc lamp.
(*c*) The Eidinow 30-ampere flame arc.
(*d*) The Finsen-Reyn lupus lamp.

Practically all the tungsten arcs rely upon swaged tungsten sticks, and only vary in such mechanical details as methods of adjusting the arc, reflectors, stands, etc.

The mercury vapour lamps, besides varying in detail as to the methods of cooling, are manufactured in five important types:

(*a*) The Cooper-Hewitt vacuum type.
(*b*) The atmospheric type.
(*c*) The Jesionek type.
(*d*) The Kromayer water-cooled type.
(*e*) A type suitable for use with an alternating current.

Each class of lamp has certain advantages and disadvantages, and these may be set out in tabular form.

1. Carbon Arcs.

Advantages.	Disadvantages.
1. Suitable for giving multiple treatments.	1. The 75-ampere type requires special motor. Current consumption great.
2. Function automatically and with little attention for long periods.	2. Tend to spit, splutter, make noises, and are affected by any draught.
3. Accidental overdoses produce less malaise than other types.	3. Smoke and smell somewhat, and carbon stick dirty.
4. Generate reasonable amount of heat at same time.	4. Slow in treatment.

2. Tungsten Arcs.

Advantages.	Disadvantages.
1. Consume only small quantity of current.	1. Much smoke and smell.
2. Simple in action.	2. Arcs require continuous watching and adjustment.
3. Rapid in treatment.	3. If much used, deposit a fine white dust over everything.
4. Rich in short wave-lengths.	4. Expense of tungsten sticks—5s. per inch (approximately).
5. Portable to patients, not difficult to use, and cheap.	

3. Mercury Vapour Lamps.

Advantages.	Disadvantages.
1. Consume only a small quantity of current.	1. Broken very easily; cost £10 to replace, and the vacuum type is liable to deteriorate.
2. Simple in action.	2. Work only when in one position—that is, the burner cannot be tipped.
3. Rapid in treatment.	
4. Rich in short wave-lengths.	
5. Clean and pleasant to use and almost inodorous.	

The above notes on the various types of lamp are extracted practically verbatim from a lecture I first gave some three years ago, and on looking through them I find so little to add to-day that I cannot help being struck by the fact that, despite various disguises, the intrinsic sources for the generation of ultra-violet light remain the same.

One technical point I should like to make is that the mercury vapour lamp is the only lamp that can be made to run easily, efficiently, and consistently on alternating current, which in the near future will be the current supplied to practically all districts. The mercury vapour lamp is therefore likely to find an increasing market, especially among medical practitioners, who will be content with one lamp.

Tests for Efficiency.

Various methods have been devised for the measurement of the actual quantity of ultra-violet light given to a patient, but one and all, I am glad to say, have had to be given up and dosage graded as a result of clinical experience. Dosage in ultra-violet light cannot be determined by mere rule of thumb; the response of individuals to this form of energy varies so widely that only by treating the individual, and not the average, can satisfactory results be obtained.

If, therefore, from clinical experience of the physical and pathological condition of a patient we decide that a dose just short of one that would produce an erythema is necessary, we can only ensure this by test doses *with* the lamp that is to be used; *on* small portions of the skin that is to be treated; and *at* the distance at which such treatment is to be carried out. This is the only method for measuring dosage that can safely be relied upon. If, in a busy department, other methods have to be employed, then initial dosage must be based on the assumption that each patient has a maximum degree of sensitivity, otherwise overdosage will inevitably occur.

Physical and Physiological Effects from Applications.

From the many theories of the physical effects of light and the consequent physiological response of the body, only one has emerged really clearly—namely, that cholesterol exists near the surface of the skin, and that irradiation of this manufactures vitamin D, which, when absorbed, improves the nutrition of the body. A number of workers are inclined to consider that this is the only effect of ultra-violet light on the body. But to limit the effects of ultra-violet light in this way is a mistake, for even a brief clinical experience with this method of treatment shows that the most striking feature of all is the variety of response shown by patients.

We know from the work of Colebrook, Hill, Eidinow, and others that, experimentally at any rate, temporary increase of the haemo-bactericidal properties of the blood can be secured. We also know that certain parts of the ultra-violet light spectrum are capable of inhibiting the growth, or even of killing certain kinds of bacteria. Careful observers have also suggested that these rays are capable of coagulating albumin, thereby destroying the superficial cells of the skin, with the result that a kind of protein shock may follow the absorption of these destroyed cells.

Professor Dixon has advanced the interesting theory that fluorescent substances in the skin, such as quiniodine, when irradiated, can become toxic to micro-organisms, and that this toxic substance can stimulate nerve endings. The best attitude to adopt to-day is, therefore, one of patient inquiry and close clinical observation, remembering, however, as Professor Dixon emphasized at Cardiff, that artificial ultra-violet light contains wave-lengths not found in natural sunlight, and is therefore essentially different.

Type Methods of Application.

In reviewing the very large number of cases that have now passed through the light department of the Royal Free Hospital it is seen that treatment by ultra-violet light is of four types. For want of a better terminology these may be called: (1) destructive, (2) counter-irritant, (3) stimulative, (4) sedative.

1. The destructive type of treatment is best exemplified by the Finsen-Reyn treatment of lupus and allied conditions. In lupus, unless the treatment is actually pushed until destruction of at least part of the irradiated tissue is secured, permanent improvement in the lupus nodules will not result. Similarly, destruction of lymphoid tissue in tonsils and throat can only be effectively achieved if the local dose is sufficiently strong to secure an intense inflammatory reaction, and it is obvious that a reaction of this nature is not to be preferred to clean surgery where this can be carried out.

2. In a counter-irritant dose a definite degree of erythema should be secured, and is indicated in exactly the class of case in which the old-fashioned mustard plaster would have been used. This type of effect can be secured locally—that is, over a single chronic joint—by means of the Kromayer lamp, which, applied directly to the skin, is capable of achieving an intense erythema in sixty seconds or less. Another method of producing the same effect, but over a wider area, is by exposing the body in areas of about eight inches square at a time, and producing a bright erythema after initial test measurement. This method is the method of Dr. Eidinow, and, according to his researches, produces the best haemo-bactericidal response.

3. Stimulative effects are apparently best produced by doses of ultra-violet light that do not produce an erythema, and may consequently be called sub-erythema doses. These may be given to large areas of the body. This method of treatment is one that would obviously be chosen, therefore, in conditions such as rickets and other diseases of malnutrition, and the carbon arc is the apparatus of choice.

4. Sedative effects are secured when the dose is about 25 per cent. of an erythema dose and the area of the skin exposed at each treatment is not more than about 10 per cent. of the body. Phthisical patients without pyrexia, cases of burns, and patients in physically debilitated states respond best to this method of treatment.

These methods have been set out very briefly, and exact details have purposely been avoided. Age, physical condition, race, disease, type of lamp employed, and many other variables have all to be taken into consideration. Nor has any attempt been made to bring out the effects of ultra-violet light on the body when its temperature is altered either by heating or cooling the skin before, during, or after treatment.

Conditions for which Ultra-violet Light is the Treatment of Choice, and Some Others that call for Special Remarks.

Having briefly reviewed the nature of ultra-violet light apparatus, tests for efficiency, and possible physiological effects, one comes naturally to a consideration of the conditions that are helped by this method of treatment. It is, however, just this aspect of the subject that presents the greatest difficulty. A study of the literature reveals the fact that nearly every disease has been claimed by one or another author to have been cured, or at any rate greatly relieved, by exposures to ultra-violet light. Such wide claims naturally bring the method into discredit, and are entirely unjustified and misleading.

Statistics of cures are extremely likely to lead to error unless most carefully handled, and unless they cover long periods of time and a very large number of cases. I have therefore prepared an alphabetical list of every ailment mentioned as having been treated by ultra-violet light in a number of books on the subject. I have "combed out" this list several times, rejecting many conditions, either because the evidence of the value of ultra-violet light was bad, or because my own personal experience convinced me that such treatment was a waste of time. In the final list I endeavoured to leave all those conditions in which (*a*) I have had, or seen, gratifying results; in which (*b*) I considered light should be tried with a reasonable prospect of benefit in a percentage of cases, and (*c*) about which I wished to sound a particular warning note.

Since the war the majority of medical practitioners have become familiar with the system of assessing disability as a percentage; and in my list I have noted against each disease my own estimation of the value of light treatment for that disease, 100 per cent. meaning that ultra-violet light is not only the treatment of choice but will yield a high percentage of cures, 50 per cent., that light is well worth trying and that a considerable number will benefit from its use, and so on down to zero. Even with this guide I have found it necessary to add some explanatory remarks.

The list probably contains diseases that might well have been "combed out," and omits others that could have been incorporated with advantage. Also I am fully aware that my attempted valuation is merely an abbreviated method of stating my own opinion and will not find universal agreement, but in the preparation of this list I have endeavoured to provide a general guide which errs on the side of caution.

LIST OF AILMENTS TREATED BY ULTRA-VIOLET LIGHT.

In the following list the type of treatment recommended appears immediately after the ailment, the author's assessment of the value of light treatment is shown in parentheses, and his remarks follow in separate paragraphs.

Alopecia. Counter-irritant. (50 per cent.)
Without an erythema lasting results appear never to be obtained and the scalp requires large doses. Treatment every five days is ample.

Asthma. Sedative. (15 per cent.)
Stimulative or counter-irritant doses help a few cases, but more frequently do harm.

Boils. Counter-irritant or even destructive. (10 per cent.)
The Kromayer lamp utilizing the quartz rods is best.

Bursitis. Counter-irritant. (75 per cent.)
Intense erythema is essential, and the Kromayer lamp should be used.

Burns. Sedative. (90 per cent.)
Two minutes of the mercury vapour lamp at 36 in. through a film of liquid paraffin is the best dose.

Catarrh. Stimulative. (40 per cent.)
One relies on the temporarily raised haemo-bactericidal properties of the blood to bring about a reaction to the infection.

Cervicitis. Counter-irritant. (20 per cent.)
Unless applied locally by means of Kromayer lamp and rods ultra-violet light seems to be of little benefit in this condition.

Conjunctivitis. Sedative. (20 per cent.)
Requires very special technique, and is not safe without practical instruction.

Corneal ulcers. Sedative. (20 per cent.)
Requires very special technique, and is not safe without practical instruction.

Debility. Sedative at first, stimulative later. (80 per cent.)
Probably the most responsive of all general ailments to ultra-violet light, provided erythema doses are avoided and there is no "master" ailment inhibiting benefit.

Dermatitis. Sedative. (5 per cent.)
Many of these cases unless carefully selected are made worse by ultra-violet light.

Fractures (delayed union of). Counter-irritant. (70 per cent.)
A very valuable adjunct in securing union; should be used in conjunction with cathodal galvanism.

Furunculosis. Stimulative. (75 per cent.)
The mercury vapour lamp yields the best results in these cases.

Glands (Tuberculous). Sedative. (80 per cent.)
Tuberculous glands react well in a high percentage of cases provided small initial doses are given.

Impetigo. Stimulative. (65 per cent.)
Results if observed over long periods are usually unsatisfactory, however good the initial response.

Lumbago. Counter-irritant. (30 per cent.)
A small percentage yields brilliant results provided the lumbago is not secondary to some other disease.

Lupus. Destructive. (95 per cent.)
Should only be treated where a Finsen-Reyn lamp treatment can be obtained under a skilled operator.

Marasmus. Sedative. (60 per cent.)
These children almost always require concomitant abdominal diathermy if benefit is to be rapid, genuine, and maintained.

Neuralgia. Neuritis.
Frequently exacerbated by ultra-violet light, and almost always by erythema doses.

Osteo-arthritis. Stimulative or counter-irritant. (35 per cent.)
Light should always be given a trial, particularly in patients of Jewish extraction, but many disappointments and failures occur.

Phthisis. Sedative. (35 per cent.)
Of all conditions the one that calls for the greatest care and watchfulness on the part of the physician, and records of weight, temperature, etc., should be kept.

Pruritus.
Results, despite fantastic claims to the contrary, are most disappointing.

Psoriasis. Stimulative. (15 per cent.)
Results, if observed over long periods, are usually unsatisfactory, however good the initial response.

Rickets. (*a*) Sedative, (*b*) Stimulative. (80 per cent.)
The efficient formation of vitamin D can best be started by small doses, especially in cases with extensive changes.

Synovitis.
No general guide can be laid down, as the nature and present condition of the synovitis are of prime importance in selecting treatment.

Ulcers. (*a*) Sedative, (*b*) Stimulative. (30 per cent.)
Moderately small doses should be tried first; if no response, chronic ulcers are well worth treating with counter-irritant doses.

The foregoing list, which even after many "comb-outs" still contains twenty-seven conditions, includes only seven in which I have estimated ultra-violet to have a value of 75 per cent. or over. That the valuation is approximately correct I have little doubt, just as I have complete faith that ultra-violet light treatment constitutes a valuable advance in modern therapy if a sober view is taken of its field of activity.

Conclusion.

Before drawing this review to an end I would like to refer briefly to a small investigation that has just been completed, thanks to the facilities given me by Professor Mellroy, and to the unsparing work of Dr. Bunbury, my late clinical assistant. In this investigation the mothers of every alternate baby born in the maternity wards at the Royal Free Hospital from January to June were given a series of doses of light, and record was kept of the weights of their babies at birth, at 11 days, at 6 weeks, and at 12 weeks. The remaining babies constituted the controls. In this way approximately 1 ton weight of babies have been observed. Though the final figures have not yet been collated it is possible to state that the increase of weight of sixty-five babies whose mothers had had irradiation was *plus* 28.5 per cent. at the end of six weeks, and of a similar non-irradiated group *plus* 29.3 per cent. All other figures are on the same scale, and indicate how careful one must be before claiming that "light treatment" is "wonderful" for nursing mothers or for any other purpose.

In the near future, however, I hope to see such genuine knowledge of this subject that prescriptions with full instructions as to lamp, distance, dose, area of skin exposed, etc., will be the rule rather than the rare exception. I hope also that when these prescriptions are not dispensed by the doctor they will be given in writing, as an ordinary prescription is given to a chemist, to workers on a national roll compiled as recommended in Cardiff by the Representative Body.

ABDOMINAL ANEURYSM CAUSING THROMBOSIS OF THE INFERIOR VENA CAVA.

BY

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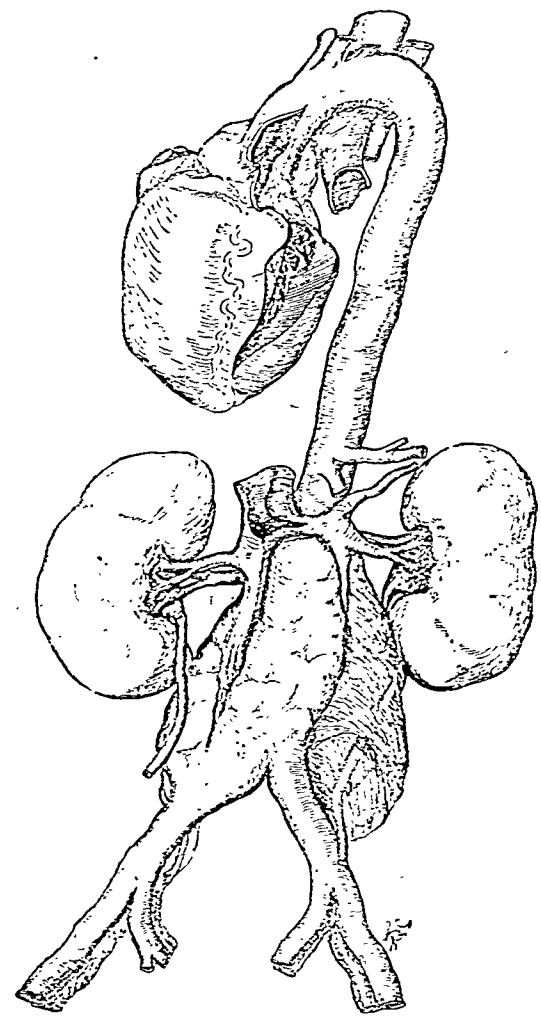
THE following case is worthy of being recorded by virtue of the rarity of the condition, the very unusual course of the disease, and the difficulty experienced in reaching an accurate diagnosis until a catastrophe preceding a fatal termination made it obvious.

An engineer, aged 35, was admitted to the General Hospital, Birmingham, on August 21st, 1928, giving the following history. In 1912, at the age of 18, having previously been in good health, he was treated for iritis, which, he stated, followed a blow on the eye. The iritis cleared up rapidly under treatment, the nature of which is not known. Two years later he was admitted to this hospital, under the late Dr. Saundby, complaining of swelling of both legs, the onset being sudden and accompanied by pain in the legs. A diagnosis of bilateral femoral thrombosis was made, but no local or general cause was discovered. There was no clinical evidence of syphilis, but the Wassermann reaction was not determined. After some weeks the legs ulcerated and the oedema diminished. During the ensuing six years he had several transient recurrences of oedema, but no pain occurred with these attacks. In 1918 he began to have difficulty in walking of the type associated with intermittent claudication. This symptom persisted to a variable extent for the rest of his life. In 1920 large veins appeared over the abdomen and the ulcers healed. A year later he was readmitted, under Dr. Stanley Barnes, complaining of severe aching pains in the lower part of the back, and he was found to have the large superficial venous collateral circulation typical of obstruction of the inferior vena cava. He was tender over the lower lumbar spines, and had a bilateral extensor plantar response. The Wassermann reaction was negative. Thrombosis of the inferior vena cava, with a light degree of myelitis, was diagnosed, the myelitis being thought to be due to a local impoverishment of the blood supply secondary to the thrombosis. His pain disappeared under electrical treatment, and he returned to work. He remained free from pain until 1927,



when he had a recurrence of symptoms, of a short duration, similar in every respect to those of 1921.

Four weeks before admission he had a similar recurrence of pain of very great severity, especially located in the left side of the abdomen. The pain caused complete insomnia, and after two weeks of acute distress a swelling appeared in the left groin, followed by numbness and uselessness of the left leg. Violent nocturnal stabbing pain arose, shooting down the left thigh.

On examination (August 21st, 1928) extensive symmetrical pigmented papery scars were found on both legs. Large tortuous veins coursed over the abdomen from the groins to the substernal notch and the axillae, the blood flow in every case being upwards. A diffuse, solid, tender swelling occupied the left groin, and the left leg was flexed at the hip, any attempt at extension causing violent pain. No pulsation could be detected in the arteries of the lower extremities except a feeble intermittent pulse in the left posterior tibial. There was no oedema of the legs. The radial pulses were regular, rapid (120), and of high tension, the blood pressure being 160 systolic and 105 diastolic. The abdomen was

uniformly distended and tympanitic, prohibiting palpation of its contents. There were now no signs of myelitis.

Thirty-six hours after admission he had *an attack of agonizing* pain shooting down the left leg, the abdominal distension increased, and vomiting and collapse occurred. From that time until death the pain recurred at intervals, necessitating the frequent use of morphine, and the radial pulses became very thin and rapid, being imperceptible at times. The swelling in the groin gradually diminished, and the left common femoral pulse was felt for a few hours on the third day. On the fourth day a large mass became visible and palpable in the left side of the abdomen, extending from the costal *margin* to the iliac crest, and from the left kidney region to within three *inches* of the umbilicus, and exhibiting pulsation of an expansile character. A soft systolic murmur was audible over the swelling. An *x-ray examination* at this time showed no sign of *abdominal* aneurysm, but a lateral view was impossible. The swelling increased steadily in size until it filled the greater part of the left side of the abdomen and the *meteorism subsided*. A spreading *discoloration* of the skin of the left loin and groin *appeared*. The day before death, which occurred a week after admission, a collection of fluid was detected in the left pleural cavity, but it was not tapped, as the patient was dying.

At the necropsy he was found to *have*, at the bifurcation of the aorta, a large saccular aneurysm, which had eroded the bodies of the fourth and fifth lumbar vertebrae to within half an *inch* of the *spinal canal*. The posterior wall of the aneurysmal *cavity* was formed by *this eroded* surface, and on the left side the junction of the sac with the lip of the *vertebral* hollow had broken down, allowing the escape of blood into the *retroperitoneal* tissues, where a huge *haematoma* was formed. The *swelling* in the left groin was due to this extravasation of blood tracking down the psoas muscle. The inferior vena cava was indistinguishable two *inches* below the renal veins, where it became *stretched out over* the sac of the aneurysm as a fibrous band. The femoral and *iliac* veins were represented by thick fibrous cords partly recanalized by *small* vessels running outwards near the *bifurcation* of the *aorta, apparently* into the lumbar veins. The arteries of the *legs* were *patent*, but a loose mass of laminated clot was partly blocking the openings from the aneurysm *into the common* iliac arteries. The heart was normal, and the aorta showed *no aortitis or atheroma*. The other organs were examined and found to be healthy. No signs of syphilitic infection were found. In the left pleural cavity a quantity of *blood* was discovered that had tracked up through the crura of the *diaphragm*.

Comment.

The *condition revealed* at the necropsy explains the course of this distinctly puzzling case.

There can be little doubt that, fourteen years before death, *a developing* aneurysm of the abdominal aorta caused thrombosis of the inferior vena cava, with its subsequent train of symptoms, and, slowly eroding the *vertebrae*, gave rise to the attacks of lumbar pain. The myelitis and intermittent claudication must have been due to a *deficient* arterial supply from the vessels partly obstructed at their origins by the mass of *clot in the sac*. The sac then broke away from the vertebrae posteriorly, allowing leakage into the left *psoas sheath*. More extensive *tearing* preceding death caused the formation of a large false aneurysm, rendering the condition obvious for the first time.

Apart from the rarity of this *condition several points* of interest arise. In the first place the etiology of the aneurysm is difficult to determine. With the possible exception of the iritis no evidence, clinical or pathological, of syphilitic infection was present. The aneurysm itself, however, was of the saccular variety, and, in the absence of any possibility of *occupational trauma*, must be considered to be syphilitic. The onset before the age of 20 implies that the infection was congenital or *neo-natal* in *origin*, although no stigmata of congenital syphilis were *present*. It was unfortunate that the grave condition of the patient prohibited the *taking* of a second Wassermann *reaction*.

The slow *progress*, fourteen years, and the absence of lumbar pain, except for two short periods, *are remarkable* when the *degree* of bone involvement is considered.

Lastly the absence of any *sign* of erosion on an antero-posterior *radiograph* is noteworthy, and *suggests* the desirability of a lateral view in cases of "backache" of obscure causation.

I have to thank Dr. Stanley Barnes for permission to publish these notes.

OCCUPATIONAL PRESSURE NEURITIS OF THE DEEP PALMAR BRANCH OF THE ULNAR NERVE.

BY

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PRESSURE paralysis of the whole ulnar nerve is not uncommon, either as the result of pressure of the head of the humerus in the axilla following dislocation of the shoulder, or as the result of pressure upon the nerve during sleep, or under prolonged anaesthesia, from the forearm being kept acutely flexed at the elbow, or resting against the sharp edge or back of a chair. It is rare for the nerve to suffer from the results of pressure in the forearm itself, though a certain degree of neuritis may accompany Volkmann's ischaemic myositis as the result of too tight bandaging of the limb. As the result of prolonged pressure in the palm of the hand upon the median nerve branches I have seen numbness and partial anaesthesia of the three middle digits; and prolonged repeated pressure, as in floor-scrubbers, or in gardeners, from the use of the trowel, may cause atrophy of the thenar eminence from an occupation neuritis of the branches of the median to the opponens and abductor pollicis.

Until recently I have never seen a pressure neuritis of the deep palmar branch of the ulnar, nor do I know of any description of such condition, but two cases which I saw within a week were so clearly limited to this nerve branch that possibly its apparent rarity may be due to want of recognition. Both cases were identical in the type of paralysis and in the complete absence of complaint of pain or of anaesthesia. The first patient was a bootmaker, whose constant use of one weapon, a knife, in cutting out the leather, had raised horny callosities of the skin of the palm on the inner side of the hypothenar eminence. The other was a motor-cyclist, whose hobby was long week-end rides on a high-powered *machine*, and whose *right* hand had suffered from his trick of gripping the handle-bar and controls too tightly. In each case the paralysis was limited to abduction and adduction of the three outer fingers, and adduction of the thumb. There was no wasting of either the thenar or hypothenar eminence, and no weakness of abduction or opposition of the thumb and little finger, but great difficulty was experienced in writing and in picking up a small coin or pin. Neither the first, second, nor third fingers could be moved laterally in abduction or adduction, nor could the little finger be adducted towards the ring finger, nor could the thumb be adducted towards the *index*, though abduction of the little finger could be performed normally.

It will be remembered that the deep palmar branch of the ulnar nerve supplies the adductor pollicis, the inner head of the flexor brevis pollicis, all the interossei, and the two inner lumbricals. The four dorsal interossei abduct the index and ring fingers away from the middle finger, and move the middle finger laterally, in both directions, while the outer two palmar interossei adduct the first and ring fingers towards the middle finger, and the third palmar *interosseus* adducts the little finger towards *the ring* finger. The deep palmar branch of the ulnar, after supplying the hypothenar muscles, passes deeply to follow the course of the deep palmar arch, crossing the metacarpal bones just below their heads. It is here that prolonged and repeated pressure against the inner side of the palm damages the *deep palmar* ulnar branch, and the recognition of this condition depends on the loss of the lateral movements of the three middle fingers, and of adduction of the *thumb* and *of the little* finger, while abduction of the *little finger remains* normal, and there is no pain or sensory paralysis. *A rare* abnormality in the nerve supply of the two outer *dorsal* interossei is sometimes met with, as I have seen on *three* occasions, when these are supplied by the median nerve, and consequently in such a case these two muscles *would* escape paralysis from pressure on the *deep palmar* ulnar branch.

PYORRHOEA ALVEOLARIS.*

BY

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THE object of the following remarks is to bring into focus such knowledge as we have on the subject of pyorrhoea, some important additions to which have been made in the last year or two. The inaccurate and vague nature of its title is perhaps justified partly by the lack of certainty that shrouds its pathology, partly by its very general use, and I shall not devote time to a description of its signs and symptoms. I shall deal only with the condition most usually understood by "pyorrhoea alveolaris," the special features of which are its general distribution over the mouth and its extreme chronicity. This limitation will exclude from my purview, on the one hand, localized conditions such as the gingivitis, so often seen round the front teeth in mouth-breathers, and inflammation due to local injury, such as tooth restorations, dentures, and orthodontic treatment; and, on the other hand, the acute general conditions such as may be caused by the chemical poisons mercury, phosphorus, and iodine, and special infections like those that produce ulcerative stomatitis, "trench gums," etc. We are left with a condition which, though the clinical picture varies from case to case, has as its lowest common denominator a progressive loss of the tooth-supporting structures, characterized by the two features already mentioned — general distribution and extreme chronicity.

PATHOLOGY.

Perhaps the most important fact in its pathology—which I think we may now safely regard as established—is a negative one: that is, that no specific organism plays the part of *causa causans*. It is now pretty generally accepted that the organisms present are those non-specific germs normally to be found in the mouth, generally streptococci and staphylococci, sometimes spirochaetes and fusiform bacilli. One qualification should perhaps be added. The formation of calculus is a constant and, as I shall show, a vitally important feature of the disease; and the work of Bulleid,[1] since confirmed by other workers, shows that the *Leptothrix buccalis* plays an essential part in calculus formation, and may thus perhaps in a sense be regarded as a prime cause in the production of pyorrhoea. Our conception of the sequence of the pathological changes involved has been much clarified by the researches carried out in the last few years at the Bland-Sutton Institute of the Middlesex Hospital by Warwick James and Counsell,[2] and by other workers, both in that institute and elsewhere. The most important points now made clear are:

(*a*) That the condition commences on the interdental septa and thence spreads both vertically into the periodontal membrane and laterally on to the labiobuccal and lingual surfaces.

(*b*) That the initial lesion consists in a deep proliferation of the gingival epithelium at the expense both of the gum corium and of the periodontal membrane, and that *pari passu* with this deep proliferation goes a superficial desquamation, resulting after a time in the formation of a "pocket," which thus, throughout the whole course of the disease, continues to be lined with epithelium. (The discovery that normal healthy gum is attached to the enamel[3] has compelled us to abandon the conception of a normal "trough" between the gum and the crown of the tooth.)

(*c*) That calculus or "tartar" is invariably present, though not always in sufficient quantity to be detected macroscopically.

(*d*) That absorption of the alveolar bone and periodontal membrane is secondary to the primary epithelial change.

(*e*) That the discharge of pus from the pockets instead of being, as the name of the disease implies, an essential feature, is to be regarded as a complication which, as we know from clinical experience, does not occur in a large proportion of cases. When it does occur it is due to a secondary infection of the pockets by pyogenic organisms with a positive chemiotaxis. Of course, when the pockets have become large a discharge of some sort can generally be expressed from them, but this is not normally pus, but the so-called materia alba, and consists chiefly of food debris and masses of putrefactive organisms.

CAUSATION.

It is still considered by some that in pyorrhoea we have to deal not with a single disease, but with a group of diseases linked together by the fact that they all attack the same organ. This is suggested partly by the variation in the clinical picture, partly by the difference of the bacterial flora in different cases, and partly by analogy with other groups of imperfectly understood diseases, such as chronic rheumatism and rheumatoid arthritis. But just as physicians now appear to regard rheumatoid arthritis and chronic rheumatism more and more as due in nearly all cases to infection from some focus in the body, so I think we are now justified in believing pyorrhoea to be a single disease, and it is certainly a great aid to treatment if we can take up this positive standpoint. The differences we observe in the clinical picture must, then, be regarded as due to a difference in the reaction of the patient rather than to a difference in the cause. As in all other diseases, causes divide themselves into a predisposing group and an exciting group. Most of the hoary controversies between the advocates of a general or systemic and those of a local origin of pyorrhoea have had their root in the failure to appreciate that both a predisposing or general and an exciting or local cause must always be present in every case.

Predisposing Causes.

The first of these is the essentially transient and temporary nature of the teeth and their supporting structures, a physiological fact due to the evolutionary history of the mammalia. The reptiles from which they sprang are polyphyodont—that is, they have a succession of teeth limited in numbers only by the life of the individual; each set after a short period of use is cast off and replaced by another. In that class of reptiles (the Theriodontia) from which it is believed that mammals were evolved we see that the life of each set of teeth became more and more prolonged, till in some species two sets were sufficient for the normal life of the individual. This arrangement became stereotyped in mammals, and all the sets of teeth after the second were suppressed. But throughout the mammalia, if an animal lives much beyond its normal allotted span, there is a tendency for its teeth to become lost, till it finally becomes edentulous. The exceptions are teeth of persistent growth, and if they are so arranged that no wear reduces their size these teeth continue to grow larger throughout life—for example, the tusks of elephants.

The loss of the permanent teeth due to wear and the atrophy of the tooth-supporting structures is, then, a normal feature of old age, and there is no clinical difference between the loss of teeth as a normal senile change and their premature loss from pyorrhoea in middle life. Of the reasons for this prematurity in the victims of pyorrhoea we are still ignorant. They may act either directly on the tooth-supporting structures, predisposing them to atrophy and absorption, or they may act by encouraging the deposit of calculus, the most vital of the exciting causes. They probably signify some biochemical change in lime metabolism, perhaps due to an altered endocrine activity. In this connexion F. W. Broderick[3] and Weston Price[4] have made some interesting suggestions, pointing out that pyorrhoea becomes more common as caries becomes less common—a contrast that applies not only to the age incidence, but to the type of tooth most severely attacked—and that pyorrhoea is a disease of lime excess in the blood, caries one of lime deficiency. But a coherent explanation of these matters has still to be worked out, and for the present we must be content to realize that there is undoubtedly some unknown predisposing cause which helps to determine why amongst individuals in whom the exciting causes are equally operative some are attacked by pyorrhoea and others remain immune.

Exciting Causes.

While the predisposing causes are still obscure and are not as yet susceptible to treatment, the exciting causes are now beginning to be understood, and, what is more

*A post-graduate lecture delivered in Birmingham on November 8th, 1928.

important, are to some extent capable of being controlled. They may be summed up in the single word "stagnation." Consider the pathological picture whose salient features I have described. The disease starts in the interdental spaces, the only position where even assiduous oral hygiene cannot entirely prevent stagnation from occurring. It is characterized by the deposit of calculus from the oral secretions, a deposit that can only occur when those secretions stagnate. It commences by a proliferation of epithelium, a process which all over the body denotes, except in the case of new growths (and often in this case also), a local irritant of some sort. The conclusion which obtrudes itself is that stagnation of the oral secretions in the interdental spaces—assisted, as we now believe, by the activities of the *Leptothrix buccalis*—produces a deposit of calculus; this, in its turn, acts as an irritant to the epithelium covering the interdental septum, causing it to proliferate deeply and desquamate superficially till a pocket is formed. A vicious circle is now established: the presence of the calculus and the existence of the pocket will still further encourage stagnation, not only of the oral secretions, but of fermentable food debris, and leads in turn to the formation of more calculus and deeper pockets, and the existence of a culture medium for bacterial growth. Infection from this, spreading along the blood vessels and lymphatics which pierce the crest of the bony interdental septa, produces absorption of the bone till every detail of the pathological picture is accounted for. If this conception covers the facts we have only to consider the factors which favour oral stagnation.

1. The first and most important of these is modern diet. The teeth and jaws of man were evolved before cooking was invented, and the friction of a natural diet on the gums, with the thorough mastication involved by it, promotes a flow of the oral and salivary secretions sufficient to prevent any of that oral stagnation which is to some extent inevitable with modern food. The point is well illustrated by comparative pathology. Wild animals rarely if ever suffer from pyorrhoea apart from loss of the teeth in extreme old age. Animals, however, in captivity and domestic species are not infrequently attacked by the disease owing to their artificial diet.

2. Irregular arrangement of the teeth and malocclusion, due either to faulty development of the jaws or to premature loss of teeth, will obviously encourage stagnation, and we find, in fact, that pyorrhoea is more common in such mouths, as it also is in mouths where the saliva is unduly viscid.

3. Dental restorations, whether fillings, crowns, bridges, or dentures which from faulty design or imperfect execution tend to trap food and impede a free flow of oral secretions, will obviously provide an exciting cause for pyorrhoea.

TREATMENT.

It is an axiom that all sound treatment of disease should be directed towards its cause, and not to its symptoms. Over the predisposing causes of pyorrhoea we have as yet no control, and if the conception of its exciting causes which I have put before you is well founded it follows that our sole aim in treatment should be the continued prevention of oral stagnation; and in fact the conception of oral stagnation as its cause rests not only on the evidence of pathology, but on the clinical fact that the therapeutic measures directed against it are the only ones that do produce a permanent result. What measures, therefore, are open to us? We cannot expect to see the adoption of a diet so coarse and astringent that it would be sufficient in itself, and the treatment possible divides itself into surgical and medical procedures.

Surgical Treatment.

The paramount surgical treatment is a complete removal of all the calculus, and this scaling, in the great majority of cases, will have to be repeated at regular intervals. It is obvious that, however thoroughly the calculus is removed, the cause that led to its deposit in the first instance will bring about the same condition again; and the medical measures I shall describe, directed to the removal of that cause, are seldom so thoroughly carried out or so perfectly effective that the need for subsequent scalings will not arise. Another surgical measure of great value is the abolition of any pockets that may exist—that is, the removal of the gum to the level of the floor of the pockets, by the knife, the cautery, or by escharotic drugs. The existence of pockets renders the task of preventing stagnation around the teeth, which is the goal of all our treatment, peculiarly difficult, and the clinical results of gum resection are uniformly excellent.

Medical Treatment.

The surgical measures I have mentioned, though they arrest the course of the disease for the time being, cannot be expected to effect a permanent cure. The patient will be no less liable to oral stagnation, a fresh deposit of calculus, and a recrudescence of the disease than he was before, and the surgical measures must be followed up by some daily measure of oral hygiene which will, as far as is humanly possible, prevent a recrudescence of pyorrhoea by preventing oral stagnation. No measure that is not repeated daily can hope to maintain a permanent cure, and it follows that effective medical treatment can only be undertaken by the patient, and will be effective in proportion to the diligence we can persuade him to practise.

There are three methods I have tried in my own practice: (1) daily irrigation of the gums and interdental spaces with a powerful spray from an atomizer; (2) daily cleansing of interdental spaces, and any pockets in the gum that are not resected, with hydrogen peroxide applied through a fine root syringe; and (3) saline massage. The salt promotes a flow of serum into the pockets and interdental spaces by osmosis; the massage first squeezes this out and then causes the pockets to fill up again with serum. Stagnant areas are thus sluiced out by the patient's own serum.

Daily medical treatment by the patient himself somewhat on these lines is, I believe, the only treatment likely to give results that are permanently satisfactory. The other forms of medical treatment are mostly aimed at what we now know to be complications of the disease, such as infection of the pockets with pyogenic organisms, rather than at the primary condition; and conditions such as pus formation usually disappear spontaneously in response to the measures I have mentioned. If they do not, then a course of special treatment may sometimes do good—either the old method of treating the pockets with caustic drugs, or a course of vaccine therapy, or ionic medication, or treatment with high frequency current. Nothing is more easy than to effect a cure of pyorrhoea if by cure is meant an arrest of pus formation. Only too often the so-called cures have meant little more than success in eliminating this particular complication of the disease for the time being.

PYORRHOEA AND SYSTEMIC INFECTION.

The time is not far distant when physicians were addicted to ordering the wholesale extraction of teeth attacked by pyorrhoea, in the interest of the patient's health. To-day the attitude of medical men appears to have changed, and we find their attention directed to teeth with non-vital pulps as the most important dental factor in general disease, together with an implicit reliance on *x* rays as the only reliable method of diagnosis. Except that I believe radiographic evidence, taken alone, to be wholly inadequate and often misleading, I am fully in agreement with this attitude. The cases in my own clinical experience where teeth with pyorrhoea have damaged the general health are an insignificant minority compared with the vastly greater number where such damage has been wrought by non-vital teeth, and I find that physicians with sufficient knowledge of dental pathology clearly to distinguish between the two have the same experience. Weston Price, in the most extensive and important study of the dental factor in systemic disease yet published,[1] goes even further and appears to regard active pyorrhoea as evidence of the establishment of a local quarantine or immunity reaction to the rheumatic group

of diseases. Stanley Colyer has published a book[5] taking the opposite view, and regards the alveolar bone in all cases of pyorrhoea, even where no pus is obvious, as infected. Unfortunately, in the cases he cites as evidence of improvement in health following extraction, he fails to distinguish between non-vital and vital teeth, and this seriously impairs their value. Lazarus-Barlow[6] found that over 80 per cent. of cultures taken from the bone below the floor of a pyorrhoea pocket were sterile.

While it remains true that active pyorrhoea does not adversely affect the general health as much as was formerly believed, and far less frequently than apical infections, it is not to be thought that it is wholly innocuous. Its ill effects are most often seen in diseases of the digestive tract, as its toxic products drain into the mouth rather than into the blood; very few cases have occurred in my clinical practice where diseases of the rheumatic group were produced.

The relatively innocuous nature of pyorrhoea compared with apical infections is usually explained as the difference between an open and a closed infection, the toxic products of pyorrhoea draining freely into the mouth and the bacteria being killed by the gastric juices, while the toxic products of apical infections must of necessity find their way into the system. But there is another and more significant difference between the two conditions. An infection of the gums is freely exposed to all the defensive mechanisms of the body, phagocytes, antibodies, and antitoxins, which in most cases constitute an adequate defence. But an infected pulp chamber constitutes a stronghold for bacterial growth, completely protected from all the natural defence forces of the body, where germs can multiply and discharge their toxins and themselves into the system with impunity.

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NOTES ON A PEDIGREE OF AMAUROTIC FAMILY IDIOCY (TAY-SACHS DISEASE).

BY

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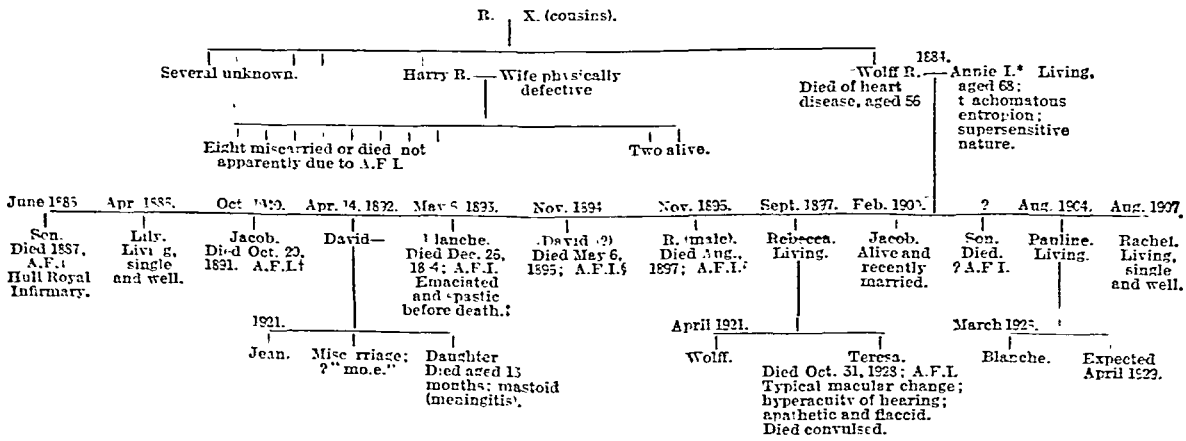
INTEREST in this disease appears to have waned during the past twenty-eight years, and references to the condition are as few during this period as they are plentiful in the twenty years succeeding its first description by Waren Tay in 1881. The condition has apparently been shelved as incurable, largely because it seems to develop prenatally, and it has been impossible previously to forecast that the offspring of any particular Jewess was liable to this affliction.

It has been my good fortune to see at the Hull Victoria Hospital for Sick Children a case of this disease which has proved on investigation to represent the second generation of the classical R—— family. Their vicissitudes were recorded by Mr. Kingdon of Nottingham; of twelve children, six died of this complaint, and in two cases extensive *post-mortem* examinations were performed by Dr. Risien Russell.

Of the remaining six, the eldest daughter is unmarried; the elder son has one living child, one pregnancy terminated apparently in a "mole," and one other child died of meningitis secondary to mastoid trouble. My patient was the second child of the next daughter. I do not intend to report the case fully, as it followed so typically the abler description of its uncles and aunt published by Mr. Kingdon in Volume 80 of the *Transactions of the Medico-Chirurgical Society*. Though flaccid throughout, the patient died convulsed. A boy born to the same mother seven years ago is alive and well.

The next son has married recently, shortly before he knew of the dangerous heredity, and he is disinclined to procreate on this account. The next living member of the family is a woman, who has a healthy daughter aged 2½ years, and is pregnant for the second time, expecting to be delivered in April. The last is a woman of 21, and unmarried.

My object in publishing this pedigree is twofold. First, I consider that the appearance of the disease in the second generation is of general interest, and if it should occur elsewhere in the family it will be important to determine whether or no the succession is solely through the distaff line. Secondly, I desire the consensus of opinion of my colleagues on the manner they think best of meeting the situation. Should Jacob practise rigorous contraception? Should Rachel be advised against matrimony? Will the profession offer any suggestions as to the ante- and post-natal treatment of Pauline's expected child, and any future pregnancies of hers, Rebecca's, or Rachel's if she marries? Kingdon suggested that the dietary of the mother be investigated, and that the babies be weaned from birth, but that was at a time when the disease was regarded as familial rather than hereditary.



* Other members of this family have no abnormal history so far as known.

† *Transactions* of the Ophthalmological Society, vol. xii, p. 125. Quoted in the *Transactions* of the Royal Medical and Chirurgical Society of London, lxxx, 87.

‡ *Transactions* of the Ophthalmological Society, xiv, 129. *Transactions* of the Medico-Chirurgical Society, lxxx, 87.

§ *Transactions* of the Royal Medical and Chirurgical Society of London, lxxx, 87.

‖ Ibid., Addendum.

S.M.D. 9202

COMPLETE INVERSION OF THE URINARY BLADDER.

BY

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COMPLETE inversion of the urinary bladder is a condition of such extreme rarity that the publication of the clinical details in such a case would seem to be warranted.

An undersized, rather poorly nourished Chinese girl, aged 15, with a facies suggestive of hereditary syphilis, and mentally very stupid, was admitted to hospital on August 10th, 1927.

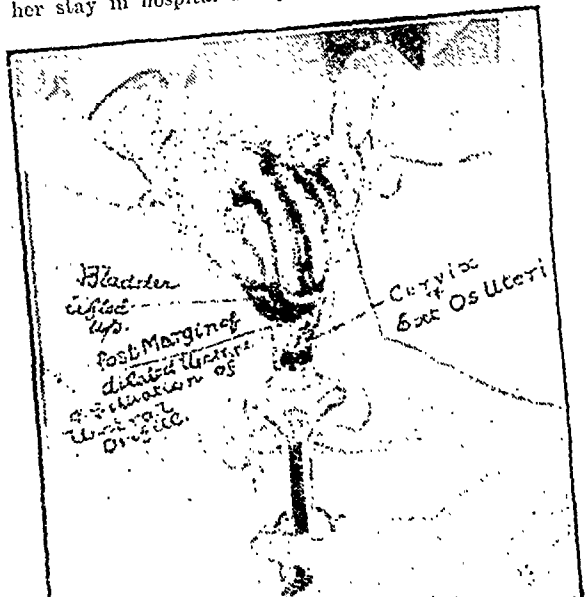
History.—About two months previously the patient had noticed a small and tender swelling between the vulvae; this she had "pushed back." There was apparently a recurrence some five weeks later. About two days before her admission she was carrying two heavy casks of water when she felt something "give." On reaching home she found a large mass between the vulvae. On the following day she remained in bed and attempted to push back the mass, but failed.

On admission to hospital she was seen and examined by the lady medical officer, Dr. Hewitson, who concluded that the protruding mass was possibly the urinary bladder. Shortly afterwards I saw her, and, under chloroform anaesthesia, made a thorough examination.

Condition on Admission.—I found that the protruding mass was without doubt the entire urinary bladder inverted. The mucous membrane was intensely red and inflamed, bleeding on palpation. On gently raising the mass urine could be seen flowing from the ureteral orifices, which were visible just inside the posterior margin of the enormously dilated urethra. Vaginal examination showed that the hymen was absent, the cervix normal, and the uterus small and normally placed. The anterior fornix was obliterated.

Having thoroughly cleansed the parts with warm sterile saline, I returned the protruding mass by steady and gentle pressure. Digital examination proved that no growth of any sort was present. The urethra easily admitted my thumb. The patient was put to bed with buttocks raised, and for a few days the bladder was washed out with 1 in 2,000 acriflavine. She was kept in the recumbent position for three weeks, by the end of which time she seemed able to retain her urine.

At her own request she was permitted to leave hospital, and was instructed to return at once should inversion recur. During her stay in hospital her pulse and temperature remained



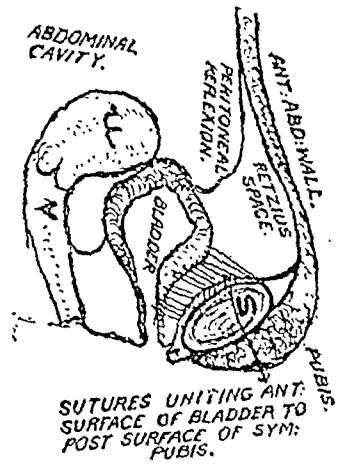
normal; the urine also was normal. I was most disappointed not to have been able at this time to obtain photographs of the condition.

The patient was readmitted to hospital on September 23rd suffering from bronchitis and subtertian malaria. The next day I was sent for, as, following a severe fit of coughing, the bladder had again inverted. She was anaesthetized and photographs were obtained which clearly showed the conditions present.

The bladder was again replaced and the patient was returned to bed, quinine in 10-grain doses being ordered.

It seemed evident that some form of operation was required to prevent further recurrence. A search through all available literature failed to give any information, save an article entitled "Prolapse of urethra in female children," by Thomas N. Hepburn, F.A.C.S., published in the *American Journal of Surgery* for March, 1927 (p. 400), wherein the writer very clearly describes an operation. I determined to try a similar technique.

On October 10th, under general anaesthesia, the space of Retzius was freely opened up. The peritoneal reflection from the anterior surface of the bladder was defined and drawn upwards. The bladder was gently grasped with rubber-protected forceps and drawn upwards. The posterior aspect of the symphysis pubis was lightly scarified. The anterior surface of the neck of the bladder was rubbed with gauze and then firmly sutured to the pubis. The wound was closed without drainage, and dry dressings were applied. It was noticed that this procedure had the effect of drawing up the urethra, which before operation was pouching.



The patient suffered from considerable post-operative vomiting, but no sign of prolapse of the urethra or bladder occurred.

It will be interesting to see if this operation cures the condition. I should be thankful for any information bearing on the case, both as regards incidence, causes, and treatment.

A CHYLOUS MESENTERIC CYST.

BY

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THE following case is noteworthy on account of its rarity, and of the satisfactory immediate result of conservative operative treatment.

A boy, aged 8, was admitted to Mansfield Hospital on April 3rd, 1928, from a neighbouring sanatorium "for relief by laparotomy of ascites due to tuberculous peritonitis."

The first symptoms had been noticed two years previously. The boy was developing a ravenous appetite, especially marked in the early part of the day, and was unusually sleepy in the evening. He would "eat all day"—a mixed diet with an excess of bread, butter, and potatoes—and then sleep ten or eleven hours each night. Shortly after this the abdomen was observed to be rather large, but the increase had been much more marked during the last six months, and it was not until this period that the boy became thin. The bowels were opened each morning urgently following a slight griping sensation; nothing abnormal was noted in the stools. The boy played games, and his general health remained fairly good.

Previous to these symptoms he had been an exceptionally healthy child, being 11 lb. at birth, and but slightly troubled by measles and chicken-pox. When 6 years old (six months before anything of the present trouble was noticed) he broke his leg, but no concomitant injury to the abdomen or back was noted or remembered.

Condition on Admission.—The patient was very thin. No irregularities were palpated in the very large abdomen, but percussion revealed that the umbilical region was as dull as the flanks, the only resonant area being in the epigastrium. There was no thought, however, of questioning the diagnosis.

Operation.—The abdomen was opened through a subumbilical incision, but no fluid was found. Across a soft, white, cystic swelling was stretched a band of small gut, rather bluish in colour. By palpation the swelling was found to extend upwards, pushing the transverse colon, great omentum, and stomach well up under the diaphragm. Laterally the cyst extended behind both ascending and descending portions of the colon; it was pouched in the flanks, thereby becoming trilocular, but all parts communicated freely. In the pelvis were coils of gut. The cyst wall was uniform, and by pinching it was found to be extraordinarily thin. The contents appeared to be opalescent in thin layers, white in thicker, and a diagnosis of chylous mesenteric cyst was arrived at. A small opening was made, and four and a half pints of fluid, exactly resembling milk, was drained off. The opening was closed by ligature, the cyst wall being so thin that the finer stitch holes caused leaks. A certain quantity of fluid was left behind, probably less than a pint. The abdomen was closed. Convalescence was uneventful.

Analysis of the fluid gave the following main facts: specific gravity 1,013; faintly alkaline; total solids 9.58 per cent.—ash 0.9 per cent. (sodium chloride, trace of potash and phosphates), fat 4.05 per cent., protein 3.50 per cent. (almost wholly serum globulin and albumin); there were traces of blood cells, with an excess of *mononuclear types*; *no organisms* were found. This is within the limits of composition of pure chyle. The fat was in a very finely divided state, a many times finer emulsion than cow's milk.

Subsequent Progress.—The boy left for home on the sixteenth day, a detailed diet having been prescribed, largely, but not wholly, fat-free. He was a most depressing sight—pinched face, splayed-out ribs over a flaccid, rather scaphoid, abdomen, and match-like legs. Five weeks later (May 22nd, 1928) the change in the child surprised me, and I regretted not having taken the weight (now 4 st. 3½ lb.) and the waist measurement (now 26 in.) previously. The thorax and abdomen were within normal limits of shape, a moderate layer of subcutaneous fat had appeared, and the boy was now of lively disposition. The clinical signs of cyst or fluid were doubtfully obtainable.

Nine weeks later (July 28th, 1928) the weight was 4 st. 5½ lb. and the waist 26½ in. There seemed now to be definite evidence of a flaccid cyst in the abdomen, and I should think that the fluid is collecting again very slowly.

In discussing the probable origin of the cyst I must express my great indebtedness to Dr. G. Payling Wright of University College Hospital for references to the literature and many suggestions of practical value.

The cyst may be classed broadly as mesenteric, and may, therefore, be primarily chylous, or due to an effusion of chyle into a preformed cyst. C. N. Dowd[1] reviews the subject, and is of opinion that the latter view is correct. If this is so, "false" cysts—inflammatory, parasitic, neoplastic, and dermoid—can hardly be applicable to this case, leaving traumatic and "true" mesenteric cysts only to be discussed.

Of the "true" cysts those suspected to be of urogenital (Wolffian) or enteric origin are lined with epithelium (sometimes very flattened), and although this has been described, the present cyst was so thin-walled, and under such low tension, that there can be little doubt that the wall consisted solely of endothelium and the barest supporting framework of areolar and fibrous tissue. Therefore, it would approach the lymphatic cyst (comparable to a cystic hygroma, which it did not in the least resemble), or a mesocolic cyst (formed of layers of mesentery which failed to fuse after the rotation of the gut in the embryo). Theoretically the superficial position of the cyst, lying against the small gut anterior to the mesenteric vessels, fits in with the mesocolic theory, but I have found no definite evidence that such cysts ever occur.

A traumatic cyst should be associated with adhesions, which were not found. Such cysts are said to occur after a blow on the spine, causing rupture of the receptaculum chyli or thoracic duct. A novel suggestion may be of interest in this connexion—namely, that the condition was one of retroperitoneal effusion of chyle held up by the more firm attachments of the peritoneum to the diaphragmatic, pelvic, and transversalis fascias than to the lumbar and perinephric fascias. However, I have not been able to confirm that these attachments are more firm.

There remains the view that the condition might be primarily chylous—that is, a cystic dilatation of a chylous lymphatic duct, due to obstruction possibly from traumatic or tuberculous fibrosis. This, a simple view at first sight, presents the difficulty that there is such a free anastomosis between ducts; even the entrance to the receptaculum chyli is usually by two or three channels. Had a cure been obtained, the only reasonable explanation would have been that a partial valvular obstruction in a duct had been overcome by complete relief of tension, but a cure now seems a doubtful possibility.

One can therefore only consider three likely explanations: (1) effusion into a preformed mesocolic cyst; (2) a true obstructive cystic dilatation; (3) a retroperitoneal effusion. In view of the very extensive nature of the cyst the last view cannot be put aside lightly. Finally, as the condition may require further surgical intervention, suggestions as to procedure and investigation at the time would be of considerable value.

I am indebted to the kindness of Dr. Arthur Hunnard for permission to publish this case.

REFERENCE.

[1] *Annals of Surgery*, 1900, vol. xxxii, p. 515.

ELECTROTHERAPY IN NON-GONOCOCCAL CERVICITIS.

BY

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BY means of the electrical treatment detailed below it is usually possible to clear up cases of discharge from the cervix and urethra where douches and other means have failed.

In hospital practice diathermy is applied to the cervix and urethra as a routine for the first four sessions, Dr. Cumberbatch's special technique being employed. This kills any gonococci which may remain and stimulates internal secretions to combat toxins, but is not essential in non-gonococcal cases. During the next six sessions a well-lubricated zinc or copper electrode an inch and a half long by three-sixteenths of an inch in diameter (at the end of which is placed a circular disc to insulate the parts round the introitus urethrae) is introduced into the urethra; an indifferent pad electrode, eight inches by six, and half an inch thick, soaked in salt solution, being placed over the lower abdomen. The urethral electrode being steadied by a suitable stand the cables are connected to the electrodes and the galvanic current slowly turned on till a strength of 5 to 7 ma. is reached. The positive pole is always connected to the urethral electrode, and after twenty minutes' treatment the galvanic current is slowly turned off. More than 5 ma. should not be used at first as the patient may complain afterwards of pain on micturition.

When treatment of the urethra has been completed a speculum is introduced into the vagina till the cervix is clearly seen, and an electrode of the same shape and material, but a foot in length, is passed down the speculum and introduced gently about three-quarters of an inch into the cervix; if endometritis is present it may pass an inch or more. A piece of rubber tubing is slipped over the electrode as far as the cervix, thus preventing any short-circuiting with the speculum or possible burn of the vagina. The indifferent electrode being in position as before, the negative cable is attached to the electrode passing to the cervix and a current of 15 to 25 ma. passed for twenty minutes. This not only causes copious secretion from the cervical mucous membrane and draining away of pathological products, but has a caustic action as well.

At the last two sessions, by which time the discharge has become less or nearly ceased, the positive cable is applied to the electrode in the cervix, and the current turned on till 40 ma. is slowly reached. This current is passed for twenty minutes and slowly turned off. The result is to dry up the cervical secretion, and at the same time (according to type of electrode used) introduce into the cervix zinc or copper ions, both of which are strongly antiseptic. The average number of treatments necessary is about a dozen, but this will depend on the amount of cervical and urethral inflammation and induration, which within limits vary with the duration of the discharge. This brings out the importance of early treatment, which makes for a good prognosis. In every such case it is essential to treat the urethra.

I will illustrate the results of treatment by giving two typical cases.

CASE I.

A woman, aged 21, complained of discharge and frequency of micturition (the date of onset was not stated). Treatment was begun at the Royal Northern Hospital on September 13th, 1926. On examination the cervix was seen to be congested and indurated, maculae were present on the vulva, and pus exuded from the cervix. A smear showed no gonococci. Only slight improvement followed treatment with silver nitrate douches. She was sent to my department on November 15th, 1926. The urethra was swollen, the cervix red and swollen, and thick pus was obtained from both. Three treatments by diathermy caused the cervix to become less red and swollen. Ionization was performed weekly till December 26th (eight treatments), when no pus was to be seen in either cervix or urethra. The patient reported in a fortnight and again in a month, and at the last examination some chronic thickening of the cervix was found, with rather excessive clear mucous discharge, from which the patient had no discomfort whatever. No pus was found, and cultures from the cervix were negative.

CASE II.

A married woman was treated for cervical discharge six years previous to September, 1926, when she came to the Royal Northern Hospital complaining of burning pain in vulva and vagina; she had noticed no discharge. A smear taken showed no gonococci. After douches had failed to benefit the patient she was sent to my department on November 1st, 1926. I found the cervix red and swollen, with pus round the os and on the vaginal walls. On November 15th a small erosion was seen. Eight treatments by diathermy cleared up the erosion and the pus became less thick, though there was now some to be seen in the urethra. After four treatments by ionization no pus was seen in the urethra and the cervix was much less red and swollen. After eight treatments there was complete cessation of discharge and the cervix appeared normal.

The patient reported a month later that she felt quite well; the cervix and urethra both appeared quite normal; no chronic thickening was seen.

I could only treat these cases once a week, but twice a week would be more efficient and would lessen the number of sessions required. I hope these notes may be of service to those in general practice who use a galvanic apparatus.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PSEUDOCYST OF THE PANCREAS.

PSEUDOCYSTS of the pancreas are undoubtedly rare. The following clinical details of a case therefore seem worthy of record.

A boy, aged 7 years, had the upper part of his abdomen crushed by a cart. He was taken to another hospital, and was detained. The following two days he vomited some bright red blood, but otherwise his condition was normal. X-ray examination of his chest revealed no bony injury, and after being kept under observation for one week he was discharged apparently normal. Ten days later he had an attack of vomiting, and the following day he had pain in the left side of his abdomen. The vomit this time showed no traces of blood. He was brought to this hospital, and on examination the following condition was revealed.

A large swelling was present in the left epigastric region; it was tender on palpation, was rounded off, and extended almost to the umbilicus. The percussion note was dull, and the stomach outline could be made out at its upper border. The tumour therefore occupied the position of the lesser peritoneal sac. The temperature was 100° F., pulse 120. Two days later Mr. Irwin operated. The abdomen was opened by a left rectus incision under local anaesthesia. The transverse colon was greatly distended, and in order to explore the lesser peritoneal cavity ether was resorted to. The mass was found to be an intraperitoneal pseudocyst of the pancreas occupying the lesser sac. It was approached through the gastrocolic omentum. The wall was incised, and the contents of the cavity (blood-stained fluid and a coagulated mucilaginous substance) evacuated. A cavity about the size of a hazel-nut was present in the substance of the pancreas. This cavity was covered by a thin membrane, and had evidently been a haematoma. A drainage tube was left in for two weeks, during which time a clear fluid discharged in decreasing amounts. This fluid on examination contained pancreatic enzymes. The boy made a complete recovery in five weeks.

The origin of the cyst was probably a small haematoma in the substance of the pancreas, caused by injury to the upper abdomen. The haematoma had occupied the cavity in the substance of the pancreas revealed at operation. This would be in agreement with the original article on the subject by Jordan Lloyd in the *British Medical Journal* (1892, ii, p. 1051). He was the first to point out that the majority of such cysts following abdominal injury were not true retention cysts of the pancreas. He reported two cases, both occurring after abdominal injury—one three weeks and the other three months. Both cases had been discharged from hospital, and were readmitted subsequently. He believed both to be associated with injury to the pancreas, probably by pressure against the first lumbar vertebra, but in neither case was the pancreas specially examined for evidence of injury.

Of 117 cases collected from the literature by Körte in 1911 there was a definite history of abdominal injury in 33. Among 41 cases collected by Judd in the records of the Mayo Clinic trauma seemed to be an etiological factor in one case only, the cyst occurring two months after the injury. Lazarus produced a cyst by crushing the pancreas of a dog. A haematoma was first formed, which later became an encapsuled cyst containing 100 c.cm. of fluid.

I am indebted to Mr. Irwin for permission to publish this case.

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VARIATIONS IN THE BLOOD UREA CONTENT.

THE following case is of interest as showing the remarkable variation possible in the blood urea content within a relatively short space of time.

A woman, aged 55, was admitted to St. Luke's Hospital, Bradford, on July 10th, 1928, with a history of renal colic, haematuria, and the passage of gravel. The pain was referred to the left side, but x-ray examination showed a large number of stones in the right kidney, with the left kidney area quite clear. Next day, at an operation, the right kidney was removed. The kidney was enlarged and its pelvis and calyces were almost solidly filled with calculi of varying size and shape. There was so little kidney substance present that the kidney was to all intents functionally useless. Subsequently the patient had a normal convalescence until August 14th, when she complained of some left-sided abdominal pain; the temperature rose to 102° F., and the passage of urine ceased completely. On August 16th no more urine had been passed, and the blood urea was 48 mg. per 100 c.cm. During the next week not more than 3 ounces of blood-stained urine were passed, and the general condition became steadily worse with progressive headache, drowsiness, and vomiting. There was no improvement in spite of treatment by the usual methods. On August 21st the blood urea was 330 mg. per 100 c.cm. During the next week no more urine was passed, and catheterization showed that no urine was present in the bladder. The symptoms became more distressing, but there were no signs of twitchings or commencing uraemic convulsions. On August 28th the blood urea had risen to 500 mg. per 100 c.cm. Then there came a dramatic change in the condition. That day a little blood-stained urine and some stones were passed per urethram, and this was followed by intense diuresis—over 15½ pints of urine being passed in the next sixteen hours. Subsequently there was a steady improvement in the general condition, and urine was passed normally. On September 4th the blood urea was 25 mg. per 100 c.cm.; on September 12th it was 30 mg. per 100 c.cm., and the patient was discharged in a satisfactory condition.

The chief features about this case are the steady rise in the blood urea associated with the progressive development of uraemic symptoms and the remarkable fall in the space of one week from 500 to 25 mg. per 100 c.cm. associated with the diuresis. It is to be noted that this fall was accomplished with one kidney, a tribute to its functional capacity.

I am indebted to Mr. Hughes for permission to publish this case, and to Dr. Ritchie for the blood urea estimations.

Bradford. GEORGE BROWN, M.B., Ch.B.Ed.

IDIOSYNCRASY TO QUININE INJECTIONS.

THE following case of quinine idiosyncrasy in which rather alarming symptoms occurred after intravenous injection for varicose veins, seems worthy of note.

A married woman, aged 65, presented herself as an out-patient at the Skin Department of the Edinburgh Royal Infirmary suffering from varicose dermatitis, and it was decided to treat the causal condition—namely, the varicose veins. Accordingly 1 c.cm. of quinine and urethane solution, containing 0.13 gram quinine hydrochloride and 0.065 gram urethane, was injected into a varix in the lower third of the right leg above the area of dermatitis. Almost immediately after the injection the patient began to cough, and five minutes later she collapsed, falling from a chair to the floor. She was extremely cyanosed, and complained of inability to breathe and a sense of constriction of the chest. The pulse could hardly be felt, and was irregular in time and force. A subcutaneous injection was given of strychnine 1/40 grain and digitalin 1/100 grain. She gradually improved, and her first question was whether quinine had been given. She stated that twenty-four years previously she had taken quinine by the mouth and had suffered from breathlessness; she had been advised never to take quinine again. She was kept under observation in one of the medical wards and was able to return home next morning.

Ten days later she returned and declared she felt none the worse. A firm thrombus was present at the site of injection. The opportunity was taken to perform a cutaneous test with a 1 per cent. solution of quinine hydrochloride. One drop of the solution was placed on the forearm and the skin scarified under it. Sterile water was used as a control. Ten minutes later a definite wheal, surrounded by an area of erythema, was seen. The control showed only very slight redness due to the scarification. A similar test was performed on my own arm and no reaction occurred.

When there is any reason to suspect idiosyncrasy to quinine the simple test described should be employed. I have treated over thirty cases of varicose veins with quinine and urethane solution intravenously, and, apart from the case described, with no untoward result.

Dr. Cranston Low, physician, Skin Department, Edinburgh Royal Infirmary, has kindly granted me permission to publish this case.

A. G. CRUIKSHANK, L.R.C.P. and S.Ed.,
Clinical Tutor, Skin Department, Edinburgh Royal Infirmary.

PARESIS OF THE MOTOR OCULI NERVE.

IN the latter part of their course the third, fourth, fifth, and sixth cerebral nerves are all intimately connected as they traverse the sphenoidal fissure and the cavernous sinus. At their deep cerebral origin they are also closely related, more especially the nuclei of origin of the third and fourth nerves. The former lies close above the latter in the floor of the aqueduct of Sylvius connecting the third and fourth ventricles of the brain. It is reasonable, therefore, to expect that any peripheral or central lesion of the third nerve will also be accompanied by symptoms arising from complication of any or all of the fourth, fifth, and sixth cerebral nerves. In practice this is the usual experience.

The following case in which symptoms of paresis of the motor oculi nerve alone, unaccompanied by symptoms of other nerve complication, is perhaps deserving of record owing to its comparative rarity.

Eighteen months ago I was consulted by a man, aged 42, who complained of diplopia, the onset of which first became apparent about six weeks previous to his seeking advice. There was a history of syphilis contracted about six years before this date. The knee-jerks were absent.

On examination of the left eye it was apparent that there was slight but definite ptosis of the upper eyelid, together with slight external strabismus. Upward movement of the eyeball was defective, as also was inward movement of the organ. Movement of the eyeball downwards and outwards was unimpaired. On comparing the pupils of both eyes there was obvious mydriasis on the left side. The conjunctiva was perfectly clear, with no sign of venous congestion. Ophthalmoscopy revealed no optic neuritis, retinal changes, or hyperaemia. The right eye was normal. The Wassermann reaction was positive. The fourth nerve was obviously unaffected, since the superior oblique muscle, which causes the eyeball to turn downwards and outwards, appeared to be functioning well. Implication of the fifth nerve was eliminated by the fact that there was no neuralgia either of the supraorbital or any other type. There was no internal strabismus which would be caused by paresis of the sixth nerve affecting the function of the external rectus muscle. The lesion could not have been peripheral, not only because the third nerve alone was implicated, but because there was no venous congestion of the eye or orbit pointing to pressure on the cavernous sinus.

Here, then, was a condition of central origin, affecting only the motor oculi nerve. In view of his history I thought the condition was most probably due to a gumma, situated close to the nucleus of origin of the third nerve in such a position, and of such a small size as not to encroach upon the closely placed nucleus of origin of the pathetic nerve, and to give rise to no retinal changes indicative of intracranial tension.

I gave him a course of injections of grey oil, at weekly intervals for eight weeks, and increasing doses of potassium iodide, orally, three times a day after meals for four months. At the end of that period the troublesome diplopia had completely disappeared, together with the ptosis, and the external strabismus was hardly noticeable with the eye at rest. The pupil reacted quite briskly, and had become the same size as its fellow. The Wassermann reaction, however, still remained positive.

Unfortunately, the later history of the case could not be followed as the patient left the district, and has failed to communicate with me regarding his condition.

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Late Honorary Surgeon, Hull and East Riding Institute for the Blind.

Reports of Societies.

ENDOCRINE TUMOURS.

AT the Section of Medicine (Royal Society of Medicine) on January 15th, with Dr. ARTHUR F. HURST presiding, a paper on the subject of endocrine tumours was presented by Dr. F. PARKES WEBER. A second paper, by Dr. O. Leyton, which had been announced, was not taken, owing to the illness of the author.

Dr. Parkes Weber, who only made certain comments on his lengthy and comprehensive paper, began by remarking that he had taken a great deal of interest in the subject of endocrine tumours since, in the early years of the present century, he had participated in a discussion on a case of suprarenal cortical tumour brought forward by Bulloch and Sequeira. He recalled also bringing before the old Pathological Society a case of primary carcinoma of the liver in which, apparently, bile was secreted by the cancer cells. He found, however, that that case was by no means the first of its nature to be published, and, indeed, it was cases of this kind which first afforded evidence that tumour cells continued to function more or less like the cells from which they originated—that is to say, endocrine functions belonging to the cells from which the tumour originated were continued by the endocrine tumour.

Endocrine tumours must, of course, be exceptionally rare. To get a "full-blown" endocrine tumour it was necessary that the patient be of the right age; if the subject was too old there was no capacity left, and the manifestation of the tumour was blurred. The tumour cells, while probably not equal in physiological power to the normal cells from which they were derived, were in enormous numbers—say one hundred tumour cells to one original cell—and by that very fact were enabled to multiply the physiological action. The same symptoms need not always be evidenced as a result of the same kind of tumour. A person with acromegaly, for example, might react differently, according to age and sex and the different constitution of the parts involved. One of the effects of acromegaly was an extreme thickening of the scalp. The scalp got so big and thick that in order to fit the skull it had to be corrugated. Recently he had had occasion to refer to a case in which this occurred only on one side of the body. His explanation was that in some cases only one side of the body was so constituted that it reacted readily to an endocrine stimulus.

Pineal tumours, Dr. Parkes Weber went on, presented some difficulty. From the pineal tumour there could be no doubt that we got what he called "macrogenitosomia"; the usual term was "macrosomia," but he preferred to reserve this for excessive bodily growth, and to use the other term to express excessive sexual development. Some people thought this to be due to destruction of the normal function of the pineal body, but the fact remained that tumours of the pineal body did certainly produce macrogenitosomia in some cases. Turning to the testes, the speaker said that in modern textbooks it would be found that pathologists stated that certain tumours of the testes looked as if they were derived from the interstitial cells. Unfortunately, all these cases occurred in adults, after general growth had ceased, and therefore one could not expect to get macrogenitosomia; but Mr. Rowlands had lately had a remarkable case of macrogenitosomia in a boy of 9, photographs of which he permitted to be shown. A tumour was removed from this boy, which was pronounced to be a tumour of the interstitial cells of the testes. The boy, previous to removal of the tumour, had adult sexual characters, and returned to childhood afterwards. A point to be noted was that in a number of conditions in men, an upset of the endocrine balance was associated with unilateral or bilateral enlargement of the breast, and in some cases with a certain secretion of milk. This was known to follow pineal tumour, it was known in acromegaly, in traumatisms of the testes, and in some other conditions. One must not argue that because a male developed mammary enlargement therefore he had not got one of these virilism-producing tumours.

Turning to the pancreas, he said that no tumour which produced endocrine symptoms was known in the pancreas until quite recently, although it was known that in some cases of primary cancer of the pancreas the tumour cells resembled those of the islands of Langerhans. Tumours of the thyroid gland scarcely needed to be mentioned; one of the most famous cases in this connexion was published as far back as 1894. There was more difficulty with regard to the parathyroid; some of the tumours might have represented an adenomatous form or an attempt at compensatory hyperplasia. Was there any function of the spleen or parts of the spleen? There was evidence of symptoms produced by the action of the spleen which might be called "hypersplenism" by analogy with hyperthyroidism. The symptoms included haemorrhage and anaemia, but if one wanted to find out exactly what they were one must look to the diseases in which removal of the spleen produced an apparent cure. One rare disease manifested nodules

originating in the Malpighian corpuscles of the spleen; this was accompanied by anaemia, thrombocytopenia, and tendency to haemorrhage, and might prove to be one form of tumour issuing from the endocrine organ, but the subject was too speculative to dwell upon.

When it was borne in mind that an affection of one endocrine gland must almost necessarily cause reaction in others, it was not surprising that the clinical picture might sometimes be obscured by pluriglandular symptoms. Moreover, precocious growth, combined in most cases with precocious sexual development, might be caused by endocrine tumours of the suprarenal cortex, of the anterior lobe of the pituitary gland, possibly of the pineal gland, of the interstitial cells of the testes, and likewise of the ovary. Functionally active primary tumours and tumour-like hyperplasia of the various endocrine glands might be subdivided into those which arose as a pathological manifestation of a compensatory reaction on the part of the body, counteracting a specific hormonic deficiency, and those—specially considered in this communication—which arose independently of any obvious need or stimulation, and were rather the cause of hormonic over-activity, which in some cases might be injurious rather than beneficial to the rest of the body. In both these classes secondary symptoms, including further endocrine symptoms, might be produced by the local pressure and irritation, and, moreover, malignancy might supervene. Non-endocrine tumours might also by local irritation, pressure, or destruction give rise to endocrine symptoms.

Dr. A. F. HURST mentioned the case of a man who, as a result of parathyroid tumour which was operated upon, developed, among other symptoms, the exact opposite of macrogenitosomia. His hair ceased to grow, and he lost all sexual sensation and power. He was given parathyroid gland and recovered completely, beginning again to shave every day, though previously it had been sufficient for him to shave once a month. He had to take full doses of parathyroid over two or three years, and lessened doses over an extended time. Sexual vigour completely returned.

Dr. W. LANGDON-BROWN spoke of some cases of virilism which had come within his experience, and commented on the remarkable fact that these disturbances might be produced by a lesion in the cortex of the suprarenal gland or in the anterior lobe of the pituitary, or both. With regard to the pineal gland, he thought the undoubted effects were rather through the vegetative nervous system than by any endocrine action.

Dr. ARTHUR ELLIS spoke of another case bearing on Dr. Parkes Weber's reference to tumour cells in primary cancer of the pancreas resembling those of the islands of Langerhans. He also asked about the clinical syndrome associated with tumours of the anterior lobe of the pituitary.

LIGHT THERAPY IN MENTAL HOSPITALS.

AT a meeting of the Section of Psychiatry of the Royal Society of Medicine on January 8th, with Sir MAURICE CRAIG in the chair, a discussion took place on light therapy in mental hospitals.

Dr. H. DOVE CORMAC (Macclesfield), in opening, said that only sixteen mental hospitals had apparatus for administering artificial sunlight; eight others hoped soon to have an installation, though it was now five years since actinotherapy was first used at Horton Mental Hospital, under the direction of Colonel Lord. During 1925 an investigation was undertaken at his (the speaker's) hospital as to the results of irradiation of about 50 cases, the patients having been treated for periods of from two weeks to two months. An 80-ampere carbon arc was used, the electrodes being high-intensity carbons. Six to eight patients were treated at a time, the whole body being irradiated. All suitable admissions during the year were so exposed. These did not include any cases of epilepsy, mania, or general paralysis of the insane. Five minutes' exposure to the front of the body and the same to the back was given at the commencement, until a maximum of thirty minutes was reached, the arc being 3 ft. from the patient. The metabolic rate and the pressure and differential count of the blood were recorded before, during, and after treatment, and a weekly note was made of body weight and of mental variations, appetite, sleep, and skin condition. There was a marked and general increase of body weight after the treatment, to an average of 3½ lb. per patient. Generally also the appetite improved, and in most of the patients there was more muscular activity, with an accession of cheerfulness after the treatment. The metabolic rates and the blood counts showed no constant variation. On the average there was a slight decrease of the systolic pressure. It was soon recognized that such conditions as melancholia with agitation and hyperthyroidism were aggravated by the irradiation. Cases of manic-depressive insanity responded most readily, for the rays led to a material curtailment of the period of depression. Mild cases of melancholia were benefited by the treatment. Delusional cases, with much mental irritability due to the delusions, became more amiable under the rays. In dementia praecox the treatment produced no amelioration of the mental condition, but some of these cases showed greater motor activity and talkativeness. Some declared that the irradiation augmented the bactericidal power of the blood and improved the body immunity. Murray Levick had declared that the neurasthenic symptoms accompanying rickets had been made to disappear under ultra-violet ray treatment. Dr. Cormac reminded the meeting that many so-called neurasthenics were really cases of melancholia with hypochondriacal tendencies. It was now generally held that the ultra-violet rays affected not only the vasomotor system, but also other parts of the vegetative nervous system, such as those controlling the pigmentation of the skin, the fibres supplying the hair follicles, and those affecting the muscle tone. It was justifiable to infer that the whole of the sensory division of the nervous system was influenced by general irradiation. Ultra-violet rays could be said to paralyse certain inhibitions and to produce a general sense of well-being. In some people hypersensitivity to light rays might be an idiosyncrasy, and this possibility should always be borne in mind in deciding individual dosages.

Sir HENRY GAUVAIN explained that his work did not consist in treating mental cases, but perhaps his contribution might have some bearing on that special aspect. Irradiation with ultra-violet rays had a tonic and stimulating action, but its prolonged employment caused progressive loss of response, while excessive exposure to the rays produced depression, listlessness, and exhaustion. Interrupted and periodical exposure to the rays seemed preferable to long courses. In the study of the chemical changes in the blood following exposure to ultra-violet light it had been demonstrated that such exposure was followed by an increase in the inorganic blood phosphate. It had been suggested that the rays might be an important factor in effecting tissue change, and so might improve the nutrition of the grey matter of the brain, thus increasing the mental activity. These facts seemed to have an important bearing on the education of the normal as well as of the subnormal child or ailing child. When planning treatment it should be borne in mind that there were seasonal and diurnal variations in response to the rays. General light baths should only be regarded as auxiliary means of treatment, and should not be held to supplant other methods of proved utility.

Dr. A. C. HANCOCK spoke of his experience of the rays at Horton Mental Hospital in earlier days. He said the carbon arc lamp was cheap to install, and many cases could be treated by it at the same time. In many hospital patients no definite focus of infection could be found, but their general appearance was unsatisfactory. In all with a definite septic focus the results of the ultra-violet treatment were very satisfactory and lasting. A good deal of notice should be taken of what the patient himself said about the treatment; in many cases the remark was volunteered that they felt much better in every way; spontaneous expressions of gratitude were forthcoming from 70 per cent. of the patients. Cases of dementia praecox did not usually benefit by the treatment, but most cases of the simple type were improved. He had come across cases of definite malaise among nurses and patients in association with the administrations; there was a

complaint of giddiness, sweating, etc. Generally speaking, the installation and use of this treatment had been fully justified in mental hospitals.

Dr. G. DE M. RUDOLF (Claybury Mental Hospital) objected to the use of the term "light rays" for the ultra-violet rays. It led to confusion with the light and red ray treatment of Dr. Murray Levick. Ultra-violet radiations having been proved to be of value for certain conditions in general hospitals, they were clearly also of value in mental hospitals for the same conditions. For that reason alone he thought that every mental hospital should be equipped with such installations; 185 patients in Claybury Mental Hospital had had this treatment in the last three years. It had been shown that ultra-violet rays did not of themselves change the metabolism of the body. Experience at Claybury had taught caution in forming a judgement as to the effect of ultra-violet rays on mental and physical disorders. Two types of cases were particularly difficult to judge. The first was that of general paralytics who had previously been treated with malaria and were then subjected to these rays to tone up the body after the course of quinine. It was almost impossible to get adequate control cases. His own impression was that the patients who were given ultra-violet rays improved more rapidly than those who did not have this treatment. The other type of case he referred to was the poorly nourished, pale, melancholic, toxic patient. Treated with the rays soon after admission, it was impossible to know whether their improvement was due to the rest, food and regular method of living in the hospital, or to the rays.

Dr. R. BOURDILLON made a plea for the employment of more visible light in treatment and less ultra-violet radiation. At present most irradiation treatment was done with mixed rays. Tungsten arcs and mercury arcs gave only a fractional portion of the benefit which was traceable to direct sunlight. The value of the burning of the skin was difficult to appraise. Less was at present known as to the effects of visible light than as to those of ultra-violet radiation.

Dr. W. A. POTTS (Birmingham) spoke of the importance, when dealing with mental patients, of giving the treatment in batches, otherwise the fear as to what was going to happen was liable to cancel any mental benefit which might otherwise accrue. He had convinced himself of this by comparing cases treated by arc lamps in hospital with those treated singly in private.

Dr. A. EIDINOW pointed out that the mercury vapour lamp emitted very high intensity short waves, and caused a rapid erythema. The purpose of that lamp was to treat acute and subacute conditions. If such cases were treated with light and radiant energy the results would not be good. In mental patients one was treating chronic conditions, therefore longer rays and visible light and heat rays were indicated. Personally he did not see that mental conditions needed the ultra-violet rays.

Sir ROBERT ARMSTRONG-JONES expressed his approval of the attitude of the Ministry of Health in requiring that the ultra-violet and other irradiations should be given only under competent medical supervision. In the improvement brought about by this treatment there were a multiplicity of factors. It seemed to be contraindicated for tuberculosis.

Dr. ELIZABETH C. MUDIE said she had never encountered any cases of malaise in those associated with the treatment, such as nurses. In only one case in her practice was there a setback, and that was one of conjunctivitis due to carelessness in connexion with the goggles.

The PRESIDENT said that what was most needed at the present time was a definite lead as to the kinds of cases which were likely to benefit from exposure to ultra-violet rays.

Dr. CORMAC briefly replied, remarking that he had not encountered any instances of malaise in the treatment, as mentioned by Dr. Hancock. When a patient had abnormally high blood pressure the ray treatment reduced it, but in cases of low blood pressure the exposure to the ultra-violet rays caused no alteration. When a patient was made worse by the treatment he attributed it to the state of the sensory nerves.

TREATMENT OF DIABETIC COMA.

AN informal discussion of the treatment of diabetic coma took place on January 8th, in the Section of Therapeutics and Pharmacology of the Royal Society of Medicine, with Dr. H. H. DALE in the chair.

Professor E. C. DODDS, who opened the discussion from the standpoint of a chemical pathologist, said that at the Middlesex Hospital reliance was wholly placed upon the dosage of insulin and the blood sugar determinations. When a comatose patient was admitted the blood sugar figure was estimated at once, usually before insulin was given. The patient was then given a dose of insulin, usually 100 units. The important point was that the blood sugar was always controlled. It was possible to work for a time entirely on urine sugar estimations, until the patient was losing his air hunger and the sugar in the blood was getting near normal; but risks were taken in working purely on urine. In showing a chart illustrating the progress of some cases, he pointed out that with all the specimens of blood the alkali reserve was also determined. This determination was worth while because it yielded more information than a simple blood sugar test or a simple test for alkaline bodies in the urine. He then spoke of the patients who, treated in this manner in hospital, did not recover, but died. The reasons for death might be classified as follows: (1) diabetes uncontrollable; (2) failure to respond to insulin on account of kidney damage, with retention of urea, producing a symptom-complex very similar to diabetic coma; (3) failure of circulatory system. It was out of the question to present statistics, because no fair comparison could be made between cases brought into hospital at the commencement of coma and cases which had already been in coma for twenty-four or forty-eight hours. The first category of deaths from uncontrollable diabetes occurred in his experience usually in septic conditions, and *ipso facto* were ruled out of the present discussion. As for the second category, the view that people could die of diabetic coma purely through failure of the kidney was put before the Society some time previously by Professor Snapper of Amsterdam (*British Medical Journal*, May 5th, 1928, p. 759), who found that the urea and non-protein nitrogen was always raised in diabetic coma, and particularly in those fatal cases which did not respond to insulin, so that he concluded there was failure of the kidney which was responsible for death. Experience at the Middlesex had not tended to show that this theory was of any practical importance. A high urea and non-protein nitrogen was extremely common in diabetes, particularly in diabetic coma, and simply from the blood analysis and the evidence of nitrogen retention one could not say that the patients died from uraemia. With regard to the third category, that of circulatory failure, he had watched practically all diabetic comas continuously in the Middlesex Hospital, and had always noticed that patients who died had a low blood pressure and appeared to die from circulatory failure. In one case which he described the subcutaneous injection of ephetonin and pituitrin at half-hour intervals had no effect on the low blood pressure, and circulatory failure was the cause of death in this case also.

Dr. GEORGE GRAHAM gave a particularized account of a recent case of a boy, aged 16, who, after doing well on insulin treatment, suddenly developed coma and was admitted to hospital. He showed charts illustrating the administrations of insulin and glucose, with the blood sugar and other determinations, over a period of six critical days, after which the lad recovered. It was clear that this lad went into coma because he was unable to excrete his acetone bodies; what was wrong with the kidneys the speaker could not say. As for treatment, plenty of insulin and plenty of sugar were given. It was quite clear that the blood in this case flowed with difficulty and was sticky. The haemoglobin, which twenty-four hours after he became ill was 110 per cent., went down to 80 per cent. two days later. Fluid was given intravenously. He believed that some of the patients who died had a condition akin to surgical shock. They could not keep the fluid in their blood. Plenty of fluid should be given, by the mouth if

diarrhoea commenced well before the vomiting. One complication of cholera which he had seen described was gangrene of the feet, and on going to the civil hospital one day he was told by the experienced matron that a patient who had died several hours before showed marked gangrene of both feet. He went to the mortuary, and on lifting the shroud was astonished to see that the feet were of exactly the same waxen colour as the rest of the body; apparently the condition which had been taken as gangrene was merely extreme localized cyanosis.

Bacillary dysentery was common in Shanghai, reaching its maximum in September, but there were only 28 cases of dysentery in the force. Diarrhoea was common also, and few Europeans went through the summer without one or more attacks. Pneumonia was responsible for the largest number of deaths from disease—namely, 13 out of a total of 23. As elsewhere in the tropics, pneumonia in Shanghai was mainly a disease of the hot weather. There was always a possibility of infection owing to the overcrowding in the streets and in public vehicles, combined with the constant spitting habits of the Chinese. As a race they eschewed handkerchiefs, and nothing was more distressing than to find oneself in the middle of a crowd of persons noisily ejecting their bronchial and nasal secretions on to the pavement. Among minor affections various forms of tinea were common, as well as prickly heat and inflammation of the external auditory meatus.

Colonel MacArthur, in conclusion, said that what struck him most on arriving at Shanghai was the position held by the medical authorities. It was not a question of visiting an unwilling staff officer to persuade him to do this or that, but it was a question of the staff officer asking the medical authorities if there was anything further that they wished done, and "what the R.A.M.C. said, went." The gratifying absence of epidemic disease, in spite of the dire prophecies of those most familiar with Shanghai, was due to the ceaseless vigilance of the people responsible for the health of the troops, the excellence of the preventive measures instituted, and the thoroughness with which they were carried into effect.

DIAGNOSIS OF CHRONIC APPENDICITIS.

AT a meeting of the Brighton and Sussex Medico-Chirurgical Society on January 3rd, with the president, MR. GEOFFREY BATE, in the chair, MR. H. N. FLETCHER read a paper entitled "Chronic appendicitis and other conditions which simulate it."

Mr. Fletcher, in the course of describing the varieties of pathological appendix seen at operation, mentioned a rather uncommon form, usually seen in children, in which there was very marked hypertrophy of the adenoid tissue of the mucosa and large fleshy glands of the ileo-colic mesentery. Colicky pain of short duration, coming on especially after food, was the principal symptom; it appeared to be due to spasm set up by the hypertrophied mucosa, which did not necessarily show any histological evidence of inflammation. The enlarged glands might cause slight tenderness; it seemed probable that their enlargement was due to absorption of toxins from the appendix. There was no apparent enlargement of glands elsewhere, nor of the tonsils. As regards the diagnosis of chronic appendicitis, the speaker approved the emphasis laid by Sherren and others on the importance of a history of a preceding acute attack, starting centrally; any case in which the pain had started in, or had been confined to, the right iliac fossa should be viewed with suspicion. None the less there were exceptions. Mr. Fletcher had operated on not a few patients with acute appendicitis who insisted that the pain had started in the right iliac fossa, and this was especially the case when the appendix lay in an extra- or retro-caecal position. Again, there were cases of undoubted chronic appendicitis where there had been no acute attack; these were notably of the type in which a faecal calculus caused a mild inflammation of the mucosa surrounding it. Cases not conforming to Sherren's rule should be scrutinized with the greatest care, and every other possible cause be considered in turn, with the help, if necessary, of the *x* rays, and always with a routine microscopic examination of the urine. The investigation must include in its survey the urinary, generative, digestive, and biliary systems. The speaker reviewed 100 cases in which he had operated for supposed chronic appendicitis, and in all of which at least one year or more had elapsed before inquiry was made; 68, or just over two-thirds, had been cured of the pain for which they sought relief, and 32 had had a return of pain, or had minor disturbances which precluded them from being regarded as definite cures. Errors of diagnosis, the majority being cases of tuberculous glands, accounted for twelve of these failures. Sixteen patients, in 5 of whom there was undoubtedly appendicitis also, had ptosis of the proximal colon or congenital membrane formation in it; this probably caused their renewed pain. It was significant that of these 16 patients 15 were females, of whom 11 were young adults. Twenty-nine patients with true appendicitis had dyspepsia also; of these, 22 were cured by appendicectomy; 12 had the flatulent and 17 the painful type. Of these last there was in 8 cases a strong mimicry of gastric or duodenal ulcer, in that the pain was of a severe gnawing, cramping, or gripping type, constant in its time incidence after food, the attacks lasting one, two, or more weeks, with periods of complete relief between. Six of these patients were entirely cured by removal of the appendix. The concurrence of attacks of dyspepsia and the lighting up of appendicular symptoms were noted in several cases. Mr. Fletcher discussed the differential diagnosis between chronic appendicitis, and pelvic, urinary, glandular, cholecystitic, and proximal colon diseases, paying special attention to the last, which was the most common source of error in the female sex. He had found skin hyperaesthesia in appendicitis, involving the neighbouring halves of the tenth and eleventh right dorsal segments far more frequently than any other area, and though the caecum might possibly also be represented in those segments, he regarded such hypersensitiveness as a valuable confirmatory sign of appendicitis.

IDIOPATHIC CARDIAC HYPERTROPHY.

AT a meeting of the Liverpool Medical Institution on December 6th, 1928, DR. NORMAN B. CAPON read a paper on hypertrophy of the heart in infancy, with special reference to the interesting type usually named "idiopathic hypertrophy of the heart in young children."

Dr. Capon described an example of this form of hypertrophy occurring in a male twin baby, aged 4 months; the radiographic and microscopical features were illustrated by lantern slides. The necropsy showed that, in addition to very great hypertrophy and dilatation of the left ventricle, there was abnormal origin of both coronary arteries. The left artery took its origin from the left anterior sinus of Valsalva of the pulmonary artery; the right artery arose from the aorta, but its orifice was situated in the right posterior sinus of Valsalva instead of in the anterior sinus. The thymus was of the normal size for the age. The myocardium, especially the left ventricle, showed fragmentation, disappearance of nuclei, and atrophy; there was no evidence of inflammatory or lymphocytic invasion, nor were any of the special cells described by Ceelen and Riesenfeld seen. Dr. Capon then discussed the circulatory changes which probably occurred during life in the myocardium of the left ventricle as a result of the anomalous origin of the left coronary artery. The investigations of Anrep, Cruickshank, King, Wearn and Hilton, and Eicholtz were referred to, and the probable importance of the Thebesian veins was emphasized. Dr. Capon said that although the literature contained several examples similar to that described, in all of which it might be thought that the supply of venous blood to the myocardium of the left ventricle was the cause of its hypertrophy and dilatation, the following facts must be remembered. Howland and others had described cases of idiopathic cardiac hypertrophy in which the coronary arteries arose normally. Gross had referred to five cases of single coronary artery, apparently causing little or no ill effect. The McGill case (described by Abbott) had demonstrated that a woman was able to live to the age of 60 apparently without cardiac symptoms, although her left coronary artery arose from the pulmonary artery. Dr. Capon concluded by referring to the various theories of the causes of idiopathic cardiac hypertrophy.

SURGERY OF THE OESOPHAGUS AND LUNGS.

LECTURE BY PROFESSOR ZAAIJER.

A MEETING of the Hunterian Society was held at the Mansion House, London, on January 14th, under the chairmanship of Dr. A. WESTERMAN, when Professor J. H. ZAAIJER of the University of Leyden delivered the annual Hunterian Lecture, taking for his subject the surgery of the oesophagus and the lungs.

Professor Zaaijer, who spoke in excellent English, after paying a tribute to John Hunter, gave what amounted to a demonstration, with the aid of lantern slides, of the methods pursued since 1909 in his surgical clinic at Leyden. He began by describing a simplified positive pressure apparatus constructed by his assistants for use in intrathoracic surgery. In passing, he pointed out as a curious historical fact that what twenty years ago was thought to be a new invention was described as long ago as 1543 by the famous anatomist Vesalius, in writing of the danger of suffocating an experimental animal through collapse of both lungs: "But to keep the animal alive one must try to open the windpipe and place therein a tube made from a quill pen or a hollow reed; into this the air must be blown so that the lung swells and the animal gets sufficient air. By a slight blowing the lungs swell so much as to fill the thoracic cavity, and the heart regains its force."

In bilateral pneumothorax, said the lecturer, there was no doubt that such an apparatus was necessary for maintaining life, but he thought that Lilienthal was quite right when he said, in his well-known book on thoracic surgery, that it was unwise not to have regard to positive pressure in unilateral pneumothorax also, because one was never sure that this would not cause very severe symptoms, and at least the danger was lessened by using such a means. Professor Zaaijer described cases in which he had operated successfully under pressure, including one patient who had an immense tumour extending from the side of the neck and front of the chest, where the danger of air embolism when cutting the vessels under the tumour was very great. This patient was operated upon under pressure, and, as subsequent photographs showed, made a very good recovery.

The special anaesthesia outfit employed in the surgical clinic at Leyden was also described and illustrated, including a mask so constructed as to allow the head to lie easily in the side position. The lecturer began carrying out operations for carcinoma of the oesophagus in 1912, having convinced himself as a result of animal experiment that there ought to be a possibility of the resection of such malignant growths. His experience had proved to him the technical operability of carcinoma situated low in the oesophagus, though it was true that he had not many such cases to bring forward, and those in which the operation had shown a successful result, so that the patient lived for some while after, had ended fatally from some recurrence or complication or adventitious circumstances. But he still believed that it was worth while trying to cure a patient with carcinoma of the thoracic oesophagus by operation. Diagnostic and operative technique was slowly but certainly improving. The latest improvement was the mobilization of the stomach, introduced by Kirschner, whereby the stomach could be pulled high up into the thoracic cavity. There was also the more extensive use of the transpleural exploration of the oesophagus, as described by Romanis and others. At Leyden, at all events, they had not lost hope or courage, and he was glad to learn that in England there were optimistic surgeons who shared the same conviction. Some of the lecturer's devices for tube-feeding of the patients subjected to these operations, shown on the screen, were ingenious and elaborate. Professor Zaaijer admitted, however, that so long as it was possible to do so little in the way of radical treatment of oesophageal carcinoma, special gratitude was due to men like Mr. Souttar, who had carried to such a high state of development the palliative treatment of this disease. By the use of flexible metal tubes through the previously dilated tumour area, the patient was given the opportunity of swallowing in the normal way right until the end. It was possible that Mr. Souttar had something of the idea of John Hunter, who, in the case of paralysis of the oesophagus, introduced into the stomach the skin of an eel, extended over a stiff sound, then withdrew the sound, and fed the patient through the soft tube.

Professor Zaaijer then went on to discuss cardiospasm, and the causes, not truly spasm, which gave rise to this condition. He had found a number of such cases following a long-standing abdominal ptosis. He explained by diagrams what he judged to be the mechanics of cardiospasm, and said that he had treated eight cases by the method published by Heller in 1913, splitting the circular muscle bundle of the cardia with fair success and no mortality.

Turning, finally, to the surgery of the lungs, the lecturer described the treatment of bronchiectasis as it had been developed in his clinic. Here appropriate operations had been devised at successive stages according to the extent of the disease, so as to lead up to a climax—that is to say, the operation at any stage might cure the patient, but if it failed to do so, at least it lessened the danger to the patient and eased the task of the surgeon in the wider operation which afterwards became necessary. He began with evulsion of the phrenic nerve. French authors, especially Chauffard, were very well satisfied with this procedure, which they regarded as the operation of choice: in England and Germany, however, the results did not seem to have been very good, and for his own part he had seldom seen a good result from this procedure. The second stage was thoracoplasty, but if this was practised it was advisable to remove also the intercostal muscles. Resection of the periosteum and intercostal muscles was not only in itself valuable in directly improving the therapeutic effect of the thoracoplasty, but in his opinion it lessened the shock of the operation should the thoracoplasty prove insufficient, and an intrathoracic operation in the same territory—which thus became a soft tissue operation—be necessary. Another stage was intrapleural plugging of the pleura after loosening the affected lobe as much as possible from its adhesions to the root. This method could give a complete and lasting cure by compression of the diseased lobe, and the cure was attained with the minimum of danger. Any of the different stages of the treatment might be necessary in a given case, and if one treatment proved ineffective the subsequent more radical operation could be undertaken with less risk and more promise. The lecturer showed a number of remarkable photographs illustrating his technique in these operations and the after-result, an extensive scar, but the retention of a high degree of muscular function.

The PRESIDENT, in expressing the thanks of the gathering to Professor Zaaijer, reminded the audience that the last hostile Dutchman to come to England, Admiral Tromp, sailed the Channel with a broom at his masthead, while his adversary Blake put up a whip. Their Dutch colleague on the present occasion had come, in all friendliness, with both a broom and a whip, the former to sweep away some of the difficulties with regard to lung surgery, and the latter to stimulate thought and action among British surgeons.

Mr. J. E. H. ROBERTS remarked that there was something about the northern countries of Europe which induced the surgeons there to tackle the surgery of the oesophagus. Little was heard here, however, about this noteworthy work, largely owing to ignorance of the Dutch and Scandinavian languages and literature, so that it was very useful to have surgeons coming, as Professor Zaaijer had done, to speak of their work at first hand. The lecturer's set of cases of bronchiectasis had interested him very greatly. He agreed as to the value of minor operations in many cases of unilateral basal bronchiectasis, but the trouble was that surgeons usually had to tackle the condition at a more advanced stage, when it was neither unilateral nor basal.

Sir JAMES DUNDAS-GRANT, joining in the compliments to the lecturer, commented on the absence of any mention of radium. It must not be supposed that radium was going to do away with surgery in this territory, but he thought that one could not neglect the possibilities which radium afforded. Combined with surgery of access, he believed that it would lead to much better results in the future in the conditions which had formed the subject of the lecture.

Reviews.

MODERN BIOLOGY.

THERE are many reasons for extending a welcome to a book on *Modern Biology*[1] by Mr. J. T. CUNNINGHAM. He is one of the leading biologists of our time, and has devoted a long career to the single aim of explaining how living things have become so perfectly fitted to their place in Nature. He began his investigations when Weismann was winning adherents to the doctrine that the machinery of adaptation was inherent in the germ plasm, and could not be influenced by anything which lay outside the germ plasm. From his student days onwards Mr. Cunningham has done his own observing and thinking, and soon came to the conclusion that purposive modifications of the animal body could not be explained if with Weismann we regarded the germ plasm as immune from outside influences. His own early studies, particularly those on the structural modifications which fit flatfish to a life on the sea bottom, convinced him that the essentials of Lamarck's doctrine were true, and that somehow the soma could transfer its experiences and acquired modifications to the germ plasm within it. He gave clear expression to this conviction in the introduction to Eimer's *Organic Evolution as the Result of the Inheritance of Acquired Characters*, which he translated in 1890.

In the present work Mr. Cunningham again tests his Lamarckian convictions by passing in critical review all that has fallen in recent years from laboratories where the processes of life are studied by experimental methods. His is not an armchair criticism; Mr. Cunningham is an experimental naturalist, and is therefore well qualified to estimate the value of experimental results obtained by others. He accepts the opinions of those who believe that the functions of living matter are purely physical and chemical in their nature, but refuses to believe that any combination of physics and chemistry can explain the phenomena of adaptation and evolution. The belief held by Professor T. H. Morgan, based chiefly on his well-known studies of the banana fly, that new characters arise suddenly as mutations, is rejected by Mr. Cunningham as totally inadequate to explain recapitulation in the embryo and the purposive modification of structures. All recent attempts made by experimental embryologists, experimental zoologists, and biometricians to penetrate the secrets of evolution are reviewed and their bearing on present problems examined. Mr. Cunningham reserves his most rigorous criticism for the experiments of those who, like himself, believe that characters acquired by the body can be passed on to the germ plasm, and thus become inherited. His close examination of the laborious and prolonged experiments carried out by the late Professor Kammerer is most searching and valuable. Mr. Cunningham admits that the experimental evidence in support of Lamarckism is still unconvincing, but, on the other hand, the circumstantial evidence in its favour seems to him to be overwhelming.

Mr. Cunningham was the first to apply Starling's theory of hormones to explain how characters acquired by the body or brain might, in the course of repeated generations, be transferred to the germ plasm. He illustrates his conception of the manner in which hormones may serve as messengers from the soma to the gametes by many concrete examples, and those in search of a clear statement of his views will find them in this, his latest work. If Mr. Cunningham could bring forward convincing evidence that such a transference is possible, then he would have proved a matter of the greatest importance to humanity; for if the degree and manner in which parents use their brains influence ever so slightly the facility with which their children use theirs, then the accumulated effect would, in the course of time, lead to an enormous change in human mentality. It was supposed that Professor Pavlov had proved the inheritance of conditional reflexes in animals; this claim Mr. Cunningham finds to be now withdrawn. But in some of Professor McDougall's experiments on rats there is evidence that the experience of adults may be transferred to their progeny, but even in this case Mr. Cunningham admits that the evidence may be explained otherwise than by inheritance of experience.

Some of Mr. Cunningham's experiments, carried out on soles thirty-five years ago, seem to have an important bearing on the interpretation of Professor McDougall's results. Mr. Cunningham observed that when the non-pigmented undersurface of soles was exposed constantly to light the degree of darkening which resulted varied greatly, some fish pigmenting readily, others remaining unchanged. If the tendency to the deposition of pigment was not inherent in the animal no amount of stimulation could produce pigmentation. The power to deposit pigment must first be present; light by itself cannot produce that power. This is in keeping with what is known of the human body; the power of muscle and bone to react to exercise varies enormously from individual to individual; unless that power is present in the individual's body Lamarckism can do nothing; if the power is already inherent in the body Lamarckism can elicit it, and that power, being already an intrinsic possession of the body, is passed on by heredity. The rats which solved Professor McDougall's tests were, we may well suppose, animals which already possessed a superior cerebral equipment for dealing with the experimental situations presented to them, and we may therefore suppose that it was not their experience they handed on to their progeny, but their inherited cerebral outfit. Mr. Cunningham, of course, is fully alive to such a contingency, but perhaps does not emphasize the alternative explanation sufficiently.

Although there are both minor and major matters in which biologists will disagree with views and statements made by Mr. Cunningham, all will admit he has written a book which deserves to be read and studied by medical men as well as professional biologists.

[1] *Modern Biology.* A Review of the Principal Phenomena of Animal Life in Relation to Modern Concepts and Theories. By J. T. Cunningham, M.A. London: Kegan Paul, Trench, Trubner and Co., Ltd. 1928 (Demy 8vo, pp. xii + 244. 10s. 6d. net.)

REQUISITES AND METHODS IN SURGERY.

SENIOR students [illegible] are fortunate in having a few very good [illegible] guidance, and one of these is *Requisites and Methods in Surgery*,[2] by Mr. CHARLES CATHCART of Edinburgh and Mr. JACKSON HARTLEY of Carlisle. It is published by an Edinburgh firm, and may be looked upon as the Scottish counterpart of Russell Howard's *The House Surgeon's Vade-mecum*.

This book by Cathcart and Hartley has a simple, direct, and effective atmosphere of its own. It is written in the careful and lucid style of the generation which was brought up to observe and study clinical facts for itself, and it is not surprising, therefore, that as a guide to general surgical principles, and their application to the details of practical treatment, this account of requisites and methods would be difficult to surpass. In addition, there are to be found references to all the modern methods of investigation on matters within its scope. The context is freely illustrated by means of refreshing pen-and-ink sketches. These have been skilfully executed and impart a homely touch of "local colour": the nurse holding an unruly child, and the occupant of Gatch's bed-rest indicating the Fowler position and others, could be found nowhere but north of the Tweed. The book deals in the main with minor surgery, wounds, haemorrhage, shock, fractures, dislocations, tuberculous disease of joints, minor operations, emergencies, treatment before and after operation, and anaesthesia. Students can read with profit the chapters on case-taking, bandaging, massage, bruises, and sprains. Chapters of general information include medico-legal notes, hints on *post-mortem* examinations, on hospital economy, on cutting fresh sections, on trusses and artificial limbs, and on making casts. Where treatment is mentioned actual prescriptions are given, as well as the composition of the various reagents used for special tests.

We can thoroughly recommend this book, and feel sure that it deserves an introduction beyond the portals of Edinburgh University.

[2] *Requisites and Methods in Surgery.* By Charles W. Cathcart, C.B.E., M.B., F.R.C.S.Eng. and Ed., and J. S. Jackson Hartley, O.B.E., M.B.Ed., F.R.C.S.Eng. and Ed. Edinburgh and London: Oliver and Boyd. 1928. (Cr. 8vo, pp. viii + 476; 256 figures. 12s. 6d. net.)

TEXTBOOKS OF HISTOLOGY.

DR. A. McL. WATSON'S *Handbook of Histology*[3] may be recommended to students who are commencing the practical study of that subject. It is short, and confined to those matters which a student who is examining histological sections for the first time needs to understand. The author has apparently aimed at the greatest possible conciseness compatible with full and clear histological definition. The general plan adopted is to explain the structure of the organ by proceeding from its macroscopical to its microscopical features; from the conception thus gained the student should, without difficulty, be able to interpret his sections. The book should prove a useful and trustworthy companion in practical work.

A different standpoint is taken by Dr. H. E. JORDAN in his *Textbook of Histology*,[4] which has reached its fourth edition, and may therefore be considered to have established its reputation. The aim of the work is to present the subject in such a way as to awaken a more lively interest than is afforded by bare histological details, by associating the descriptions with considerations of practical import. With this object the subject is approached largely from the point of view of function, the known or believed function of the organ being first described, and its microscopical structure correlated with this. The result is an interesting volume, and the interest is increased by the sections on embryology and references to comparative anatomy. The book is copiously illustrated with good figures.

Professor ANGELO RUFFINI'S pamphlet on embryological technique[5] deals with the well-known difficulties attending the microscopical examination of certain ova in the early stages of development, more especially those of amphibia. The good fixation of these has always proved a troublesome matter, and Professor Ruffini claims to have worked out a method by which these difficulties are satisfactorily surmounted. His ingenuity has also invented an exact method for the orientation of the ovum in the paraffin block, of preparing a paraffin mixture which will not deform the ovum in the process of embedding, and of spreading the sections on the slide in a manner to ensure uniformity in their dimensions. The accurate determination of the mode of formation of the blastodermic layers of the ovum depends largely on perfection of technique, and Professor Ruffini appears to have made a definite contribution towards the latter.

Professor P. BOUIN'S *Eléments d'Histologie*[6] is a fairly up-to-date compilation of what is known about the anatomy and physiology of cells. After several chapters dealing with the general morphology and function of "the cell," the author proceeds to the description of tissue cells in which differentiation of form is associated with specialization of function. The first volume, now under review, is concerned with the histology of the skeletal and muscular tissues, of the blood and haemopoietic organs, the lymphatic and vascular systems. The book is intended primarily for medical students, and it is claimed that only essential descriptions are given in the main text; but, although many details of structural and functional significance and physico-chemical interest (which, as yet, are not fully explained or accepted) are printed in smaller type, there still remains much interesting matter not directly related to histology, which tends to distract the reader, and would be better introduced into a separate volume. To each section of the subject are appended a concise and useful summary and a sufficient bibliography. The numerous illustrations are beautifully reproduced and add greatly to the value of this attractive book. The second volume, which is now in preparation, will be concerned with the histology of the organs of nutrition, digestion, respiration, excretion, nervous system, and organs of reproduction.

[3] *A Handbook of Histology.* By A. McL. Watson, Ph.D. Edinburgh: E. and S. Livingstone. 1928. (Cr. 8vo, pp. xi + 207; 53 illustrations. 8s. 6d. net.)

[4] *A Text-book of Histology.* By Harvey Ernest Jordan, Ph.D. Fourth edition. New York and London: D. Appleton and Co. (Demy 8vo, xxviii + 857; 584 figures. 25s. net.)

[5] *Processi di Tecnica Embriologica ed Istologica.* Professore Angelo Ruffini. Bologna: L. Cappelli. (Cr. 8vo, pp. 169; 7 figures. L.10.)

[6] *Éléments d'Histologie.* I. Par P. Bouin. Paris: F. Alcan. 1928. (Demy 4to, pp. vii + 334; 199 figures. 120 fr.)

PLASTIC SURGERY OF THE ORBIT.

SOME two years ago Dr. EASTMAN SHEEHAN of New York published a book on the *Plastic Surgery of the Nose*, which was noticed in our issue of July 10th, 1926 (p. 64). He has followed that up with another handsome volume on *Plastic Surgery of the Orbit*.[7] It is a massive volume of nearly 350 pages, of fine large clear type, and profusely illustrated with line drawings in the text and coloured plates. There is a preface by the veteran Professor PIERRE SEBILEAU of the Faculty of Medicine of Paris, and the book is dedicated to Harold Delf Gillies, whose valuable work for disfigured soldiers at the Sidcup War Hospital is so well known.

In this new book Dr. Sheehan begins with the anatomy of the parts, insisting that there can be no success in such delicate operations without a full and intelligent appreciation of the tissues and structures concerned. True to his belief, he has devoted sixty pages, with a dozen figures and nine plates, to these matters. Next, the preparation of the skin of the patient is dealt with in the same minuteness of detail, for here again the author maintains with truth that if the slightest laxity is allowed in this matter there can be no success in securing fine, little-recognizable scars, free from thickenings and from that bugbear of the skin surgeon, keloid. The preparation of the skin must be commenced many days before the operation. Here the interested co-operation of the patient is valuable in securing, through repeated steaming and massage of the skin, that evacuation of the grease glands which is necessary for the action of a delicate and efficient antiseptic. Of iodine the author will have none, since it irritates if it does not burn the skin, and gives it a leathery consistency. The preparation of grafts, both mucous membrane and skin, is described with meticulous care, for material such as this is so precious that any waste is little short of criminal, and may jeopardize a promising operation, with discouragement of the patient. Thereon follow accounts of a series of considered plans for restoration of eyelids which have suffered damage of various kinds from wounds or disease. Many of these are old familiar friends to ophthalmic surgeons, that have been handed down and practised for generations. Some of the operations are of later date, particularly those which deal with the lacrymal sac, after West's and Totti's methods, and the operations for restoration of contracted eye sockets.

At the end of the work there are two appendixes. One dealing with anaesthesia, and written by Dr. I. W. Magill of the Westminster Hospital, is excellent in its terse brevity. The second, by the author of the book, is a scathing condemnation of the use of paraffin injections; he says that the evils of this practice are now so well known to surgeons that few if any practise it, but the method still has a considerable vogue among unqualified practitioners, to the great harm of those to whom they minister. With regard to reparative operations in general the author says that these are ever fresh in their variations, but by way of warning to the venturesome he adds: "The fact is that whoever engages in this constructive branch of surgery must feel that he is 'called' to the work."

TUBERCULOSIS IN CHILDREN.

FOR some years Dr. P. F. ARMAND-DELILLE has given frequent courses of lectures at various centres in Paris on the subject of tuberculosis in children, and now one such course has been taken down as the lecturer delivered it and published in a small booklet, entitled the principal clinical aspects of tuberculosis in children.[8] This presents a very good summary of modern Continental views on an important subject by a physician with wide experience both in France and elsewhere, and it should be studied carefully by all those interested. The general etiology is first discussed, with contagion stressed as the important factor in causation, followed by sections on tuberculosis of the tracheo-bronchial glands, on generalized tuberculosis, and

[7] *Plastic Surgery of the Orbit.* By J. Eastman Sheehan, M.D., F.A.C.S. With a preface by Pierre Sebileau. New York: The Macmillan Company: London: Macmillan and Co., Ltd. (Cr. 4to, xxv + 348; 191 figures, 11 plates. 52s. net.)

[8] *Les Principaux aspects cliniques de la tuberculose infantile.* Par Dr. P. F. Armand-Delille. Les Publications Médicales. Paris: N. Maloine. 1928. (5½ × 6, pp. 74, 5 fr.)

on tuberculosis in the various organs. An interesting section devoted to the "fever of tuberculization" is important, for it stresses the possibility of tuberculosis as a cause of obscure fever in children and discusses the differential diagnosis. In further lectures on treatment Dr. Armand-Delille deals with artificial pneumothorax, heliotherapy, and the preventive measures carried out by the "Œuvre Grancher," whereby healthy children are removed from tuberculous families. All these three methods deserve close study, and indeed the whole of Dr. Armand-Delille's remarks on this subject have a value for workers in other countries. An index would be a useful addition to this little book in future editions, and also some illustrations.

CHEMISTRY FOR STUDENTS.

SIMON and BASE'S *Manual of Chemistry*[9] is a textbook for students of medicine, pharmacy, and dentistry. The thirteenth edition now before us has been produced by Dr. KRANTZ, who is professor of pharmacy in the University of Maryland. Dr. Krantz's preface expresses the hope that the manual "will furnish to the student a clear presentation of the science, an intelligent discussion of those substances which are of interest to him and a trustworthy guide to his work in the laboratory." We have seen many books on chemistry written for students of the subjects named, and too many that fail to accomplish the objects here expressed. Their failure arises from the fact that they offer the student something to learn instead of something to understand. Krantz's work is not of that kind. It is prepared with intelligent endeavour to engage the student's interest; it not only achieves the desire above expressed, but is the most admirable volume of its kind that we have seen for a long time. It is not only a book for elementary students, but it is full of information valuable for reference after the period of academical study. No embarrassment is caused to the elementary student by this fact, because fundamental learning is distinguished in the text from supplementary information by different types of print. The choice of reactions for inclusion in the text has been most capably made with a view to effective representation of the typical characters and properties of elements and compounds, and we note with satisfaction the inclusion of many valuable tests that are not widely known. Such a book could only be produced by one who is a learned and experienced chemist. It is the kind of book to buy for a lifelong possession.

NOTES ON BOOKS.

Burdett's Hospitals and Charities[10] has always been welcome as a handy book of reference which depicts the progress of philanthropy and hospital management, and the thirty-ninth edition indicates how the problems are changing. It has been decided to publish henceforth an article at the beginning of each annual volume bringing the statistical sections into relation with the most recent developments in hospital work. In the issue for 1929 Captain J. E. Stone examines the present financial situation of the voluntary system, and considers the new sources of hospital income from patients' contributions, and the provision that has to be made for road accidents of all kinds and for middle-class patients. An appreciable enlargement of the section devoted to mental institutions has enhanced definitely the practical value of the book, and more information is now given about King Edward VII's Welsh National Memorial Association. The most generally useful section is the concise directory of medical and educational institutions, philanthropical societies, and the similar organizations controlled by the London County Council and the Metropolitan Asylums Board. New entries include accounts of the aims and organization of the Merseyside Hospital Council, the blood transfusion service of the British Red Cross, and the Liverpool Hospital for Diseases of the Heart—the only institution of the kind outside London—and a note on recent administrative changes affecting hospitals in the Transvaal Province. Throughout the book every effort has been made to bring the information completely up to date; the index is good, and this year's edition may justly claim to be an improvement upon the best of its predecessors.

With the issue of a second edition of the *Manual of Hygiene and Public Health*,[11] by Dr. JAHAR LAL DAS, officiating assistant director of public health in the province of Bihar and Orissa, opportunity has been taken to revise the text and to add several new appendixes. This textbook, written from the standpoint of Indian life, is intended to meet the needs of public health officials and students in India, and deals more particularly with conditions incidental to tropical life. The first edition was reviewed in these columns two years ago.

The fifty-first volume of the *Transactions of the Medical Society of London*[12] includes the papers communicated at its meetings during the 155th session, from October, 1927, to May, 1928. Among these are the presidential address on "Surgery in the early days of the Medical Society of London," given by Mr. H. W. Carson, F.R.C.S., in October, 1927, the Lettsomian Lectures on "Rheumatic heart disease in children" by Dr. F. J. Poynton, the Lloyd Roberts Lecture on "The criminal law and insanity" by Lord Hewart, and the society's annual oration on "The lessons of rare maladies" by Sir Archibald Garrod. Most of the papers and discussions now published in full in the *Transactions* were reported at the time in our columns.

Volume xlviii of the *Transactions of the Edinburgh Obstetrical Society*[13] contains the papers read during the session 1927–28, many of which have been reported in these columns from time to time. Among the papers included is the valedictory address on "The preventive frame of mind in obstetrics" given by Professor R. W. Johnstone on relinquishing office as president.

Reprints of the various papers, memoranda, etc., contributed by the members of the staff of the Middlesex Hospital Medical School during the session 1927–28 to various British and American medical and scientific periodicals have now been collected and bound together in volume form.[14]

[9] *A Manual of Chemistry.* By W. Simon, Ph.D., M.D., and Daniel Base, Ph.D. Thirteenth edition, enlarged and thoroughly revised by John C. Krantz, jun., Phar.B., Sc.D. London: Baillière, Tindall and Cox. (Cr. 8vo, pp. xvi + 695; 55 figures, 6 plates. 25s. net.)

[10] *Burdett's Hospitals and Charities*, 1929. Founded by Sir Henry Burdett, K.C.B., K.C.V.O. Thirty-ninth year. London: Faber and Gwyer, Ltd., The Scientific Press. 1929. (Demy 8vo, pp. xxiv + 946. 21s. net.)

[11] *Manual of Hygiene and Public Health.* By Jahar Lal Das, D.P.H. With an introduction by Lieut.-Colonel W. C. Ross, M.B., Ch.B., D.P.H., I.M.S. Second edition. Calcutta: Butterworth and Co. (India), Ltd. 1928. (Cr. 8vo, pp. xviii + 661; 105 figures. 6s. net.)

[12] *Transactions of the Medical Society of London.* Edited by T. P. Legg, C.M.G., M.S., F.R.C.S. Volume the fifty first. London: Harrison and Sons, Ltd. 1928. (5¼ × 8½, pp. iii + 470; illustrated.)

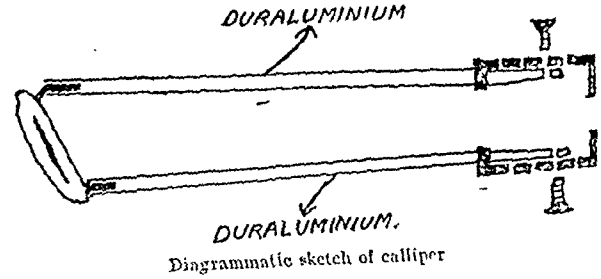
[13] *The Transactions of the Edinburgh Obstetrical Society.* Session 1927–1928. Vol. xlviii. Edinburgh: Oliver and Boyd. 1928. (Med. 8vo, pp. xx + 195.)

[14] *Published Papers by the Staff of the Middlesex Hospital Medical School, 1927–28.* (7¼ × 10½; illustrated.)

PREPARATIONS AND APPLIANCES.

A LIGHT TUBULAR CALLIPER.

MAJOR MEURICE SINCLAIR, C.M.G., R.A.M.C.(ret.) (London), writes: Whenever the weight-bearing function of a lower limb in an adult has to be suspended for any cause, and it is desired to permit the patient to walk with the aid of a Thomas calliper splint, the instrument shown in the accompanying diagram will be found advantageous. In it I have adhered to all the original principles, and have substituted side bars with duraluminium tubing; these are made for my patients by the Surgical Supply Depot, 23, Upper Phillimore Place, Kensington, W.8, and have been very satisfactory on account of their



Diagrammatic sketch of calliper

extreme lightness and comparative cheapness (45s.), and are every bit as solid. The comparative weights of callipers of similar sizes are interesting. One made with 3 8-inch round iron throughout was 3¾ lb., while the other, manufactured with tubing, was only 2 lb. The part of the tubular one which weighs the heaviest is the ring; so the patient not only derives great benefit from the loss of 1¾ lb. dead weight, but at once observes the lessened resistance to leverage in bringing forward the leg more easily. The gratitude expressed by the wearers has been so encouraging that I am anxious to submit the idea to the profession.

British Medical Journal.

SATURDAY, JANUARY 19TH, 1929.

MATERNAL MORTALITY INVESTIGATIONS.

NEARLY a year ago the Ministry of Health initiated a scheme for the investigation by local health authorities of the causes of puerperal deaths, and appointed a departmental committee to lay down the form and method of investigation and correlate the returns. This system of inquiry had been recommended by the Scottish Departmental Committee on Puerperal Morbidity and Mortality that reported in 1924, but had been anticipated in 1917 by Professor Matthew Hay, then medical officer of health for Aberdeen, who, with the concurrence of the local medical profession, at once put his scheme into action in that city. The result of its working during the ten years 1918–27 has now been published as a report to the Scottish Board of Health by Professor Hay's successor and his staff.[1] The Aberdeen report, therefore, calls for special attention and critical review, because it is the first of its kind and will give an impression of the results that may be obtained from this type of inquiry, and possibly also influence the form and fashion of subsequent reports from other areas.

During the ten-year period there were 252 deaths —a number, as the authors of the report state, "too small to permit of final conclusions," and only allowing of "*certain tentative deductions which the trend of* evidence would appear to warrant." Many interesting figures are given, such as the death rates at first and subsequent labours, and the influence of various personal factors—such as occupation, habits, and illegitimacy—for the most part confirming what was already known. The absence of any relationship between environmental conditions and maternal mortality is shown, the death rate in confinements in one-roomed houses being less than half that in those of four rooms and over. The death rates in the practices of midwives, medical practitioners, and institutions are compared, transferred cases being put back to the original attendant, and the mortality is found to work out at 2.3 per 1,000 deliveries for midwives, 5.6 for institutional outdoor practice, 6.9 for doctors, and 14.9 for institutional indoor practice.

There is a regrettable tendency, in the interpretation of these figures, to jump to conclusions from inadequate data. Among the midwives' cases the forceps rate was 5.8 per cent., and among the 445 cases in which the forceps were used there were no deaths. "The available evidence suggests, therefore, that so far as the midwife cases are concerned the application of the forceps has no prejudicial effect." Here the death rate is the only criterion, and no account is taken of morbidity, trauma, or recovery after invalidism with possibly permanent disability. On this principle the inference might equally well be drawn from the figures we have quoted earlier that if all the confinements in Aberdeen were conducted in one-roomed houses the maternal mortality would be halved. Then a little later we find: "It may be argued that in midwife cases there is no improper use of forceps, labour generally being advanced and dilatation commonly complete before the doctor is required to intervene, and that it is the improper use of forceps with the object of accelerating delivery that is responsible for trauma with ensuing sepsis in the practice of doctors." This assumption has truth enough in it to be accepted as a rough generalization, but it gives a wrong impression by its disregard of the conditions of medical midwifery practice. Responsibility for the "improper" use of forceps appears to be laid entirely upon the doctor, and no mention is made of the insistent pressure of the patient and her relatives on him to shorten her time of trial. Their demands may be irresistible if he is to retain his clientele. Often the sole reason for his being engaged is to secure anaesthesia, with its consequent slowing of the processes of labour, and the relief that his forceps brings.

The indoor institutional figures undoubtedly call for improvement, and in discussing the reasons for the high mortality emphasis is laid on spray or droplet infection from carriers, especially in overcrowded wards. The throat-carrier origin of streptococcal infection is accepted whole-heartedly by these observers, and colours their attitude towards puerperal infection. "Doctors, from the nature of their work, are of necessity repeatedly exposed to spray or droplet streptococcal infection, and may reasonably be assumed to have developed the degree of immunity which is necessary to the true carrier condition"—hence, it is argued, the higher incidence of puerperal sepsis in their practice. The principal suggestions made for lowering maternal mortality are the improvement and expansion of the ante-natal services, and the development of a new midwifery organization in which midwives conduct all normal deliveries while doctors provide the ante-natal services and deal with obstetrical complications. How the doctor is to be a sound practitioner of midwifery without a wide experience of normal cases is not precisely indicated.

In endeavouring to appraise the value of this very thorough investigation of ten years' puerperal deaths we may accept unhesitatingly its benefit to the locality. The collection of information of this kind is bound to tighten the strings wherever slackening is noticed—as, for example, in the high institutional death rate in Aberdeen. When adopted widely such critical surveys must tend to level up backward areas. We venture to express the hope, however, that in issuing similar reports, which are abstracted in the public press and are readily available to an uninstructed public, greater care will be taken in drawing, from small numbers and scanty data, inferences that may be open to misconstruction by those without knowledge of all the factors involved. Dr. T. F. Dewar, in his prefatory note to the report, clearly anticipates criticism of this kind directed against what he terms "tentative or provisional inferences." Nevertheless, all must agree with him that the Aberdeen inquiry has served an important purpose by "exciting a renewed interest among an extended circle upon a subject that every public health worker and good citizen must have deeply at heart."

[1] Report on Maternal Mortality in Aberdeen, 1918–27, with Special Reference to Puerperal Sepsis. 1928. H.M. Stationery Office. Price 1s. A summary of this report, from a correspondent in Scotland, appeared in the *British Medical Journal* of January 12th (p. 78).

PYORRHOEA ALVEOLARIS.

FOR years the problem of pyorrhoea alveolaris has been the battle-ground of investigators; and if it be true that doubt is the life-blood of progress the problem should be fast nearing a solution. Every pronouncement on this disease has inspired some sceptic with a diametrically opposed opinion. There are those who doubt its very existence; what we see, they maintain, is not disease, merely dirt. Others wish simply to change its name, which, by suggesting the presence of pus, may indeed serve to divert attention from the early

and less obtrusive stages of the disease. Views as to its etiology are no less varied and conflicting. There are those who maintain that pyorrhoea alveolaris is of constitutional origin: in the middle-aged to be ascribed to an arterio-sclerotic tendency, to a defect inherent in a "terminal circulation," or to premature old age of the alveolar structures; in younger persons to endocrine disturbances and vitamin deficiency. Others hold that it is a local disease of bacterial origin, beginning at the gum edge and attacking the constitutionally healthy and unhealthy alike. Some maintain, and others deny, that pyorrhoea and dental caries are mutually antagonistic. Bacteriologists are in a no happier plight. Every germ that has been held responsible has been acquitted by some sceptic or other. Even the histologists can find no measure of agreement. "Osteitis fibrosa," says one group; "Chronic inflammation," replies another; "Neither of these," maintains yet a third. Some clinical observers profess to classify their cases as true pyorrhoea, dirt pyorrhoea, pyorrhoea due to traumatic occlusion, and so forth. Others are content to avow that they cannot identify such groups. Is the disease curable or incurable? Are its effects serious or negligible? Even to these questions clinicians give the most diverse and conflicting replies.

How is the ordinary practitioner to create order out of this chaos and to harmonize the evidence supplied by his own experience? In his practice he sees pyorrhoea—real pyorrhoea with pus formation—in the young and the old, in the healthy and the unhealthy, in foul mouths and in mouths he would pass as clean. He knows that the disease can be cured by wholesale extraction of teeth, so is inclined to subscribe to the theory of a local origin. All cures short of extraction commonly fail him, and local cleanliness, which some tell him is effective both in prophylaxis and cure, he believes to be unattainable. Again, though in any particular patient he may not be certain that pyorrhoea is responsible for remote disease, he has seen enough to know that extraction is often an invaluable remedy. What can those who combine clinical and pathological experience do to resolve these doubts? An attempt is made by Mr. Humphrey F. Humphreys in a paper we publish this week at page 99. Mr. Humphreys differentiates between predisposing and exciting causes of pyorrhoea alveolaris, and among the former he cites the transitory nature of teeth and their supporting structures, and biochemical changes in calcium metabolism probably due to endocrine disturbances. Whatever may be said on behalf of the first of these causes—and explanations of pathological phenomena based on a consideration of evolutionary history are generally to be taken with some reserve—most of us, until there is further proof, would be inclined to share Mr. Humphreys's own scepticism about the second. But it is into his theory of the exciting causes that we would wish to follow him more closely. The *Leptothrix buccalis*, he maintains, acting jointly with oral secretions stagnant in the intradental spaces, produces a deposition of calculus, and thus is set up a vicious circle of irritation, pocket formation, secondary infection, and further stagnation. This description of an apparently logical sequence of events would appear, however, to need some qualification. If by oral secretion the author means normal saliva it is difficult to follow him. Mucus may stagnate, but hardly normal saliva, which, from whatever source, is always fluid. Nor can one accept, without some saving clauses, Mr. Humphreys's presentation of the part played by *Leptothrix buccalis* and calculus in the production of pyorrhoea. Does he use "calculus" and "tartar" as interchangeable terms? If so, does he differentiate between subgingival (serumal or black) tartar, which forms very slowly and is always deposited under the gum edge in masses cut off from the rest of the buccal cavity, and ordinary light-coloured tartar, which forms in large masses on any unrubbed intrabuccal portion of a tooth? Mr. J. G. Turner a few years ago showed that, whereas subgingival tartar always produces on culture a pure growth of *Leptothrix buccalis*, light-coloured tartar produces a growth of various organisms, but free from leptothrix. If, then, Mr. Humphreys by calculus means subgingival tartar, his theory as to the part played by *Leptothrix buccalis* would appear to be well founded; but if he means ordinary light-coloured tartar, or both forms of tartar, we think he is not in so strong a position. But once the leptothrix is inculpated is it necessary to suggest the complicity of oral stagnation? May not the *Leptothrix buccalis*, safely established in a periodontal sulcus and cut off from the buccal cavity and its secretions, get its supply of tartar-forming lime salts from blood serum exuded by the slightly irritated gums?

We feel that Mr. Humphreys in his general argument has gone to the root of the problem of the etiology of pyorrhoea alveolaris. His stimulating and provocative paper has moved us to make these criticisms on points of detail in the hope that useful discussion may follow on what we believe to be an important problem.

SOME EDUCATION PROBLEMS.

THE early days of each calendar year, during the Christmas vacation of the schools, witness a large number of education conferences. Owing mainly to a lack of co-ordination and an absence of direction to specific problems, the results of these gatherings are invariably disappointing. Their output is miscellaneous and indigestible. The work of some of these conferences is negligible, but that of others is often important, and an attempt to use these as a gauge of the trend of educational thought in certain circles, though difficult, is not without its value. During the present month the more influential of these pronouncements and discussions have been those concerned with the need for a closer co-operation between our educational system and the industrial and commercial life of the nation, the place of examinations in that educational system, and the importance of biology as a subject in the curriculum of secondary schools and universities or university colleges.

The first of these subjects was the main theme of Lord Londonderry's presidential address to the North of England Education Conference. It is, of course, a subject of the first importance, but not one which can profitably be discussed in any detail in this place. It is, however, some comfort to note the opinion of a responsible member of the present Government that "nothing could be more fatal to the country than that we should lose ground as an educated people under the stress of industrial and trade depression," and that "the chief guarantee of the future of our children is the undiminished provision of the means of education." A more immediate and practical application of these sentiments by the President of the Board of Education would be widely welcomed.

The second subject, that of the proper place of examinations, is of more direct interest to the medical profession, both because such tests are a necessary part of the course leading to professional qualification, and because medical practitioners in their daily work are becoming more and more aware of the deleterious

effects which the dread of examination, or the shrinking from an impending, even though not immediate, test of this nature, may have on certain types of children. In the medical course examinations must necessarily be a test of knowledge. This is no doubt true also of the general school and matriculation examinations; but the earlier we go back in the school course the more such tests should be directed towards the gauging of intelligence rather than knowledge, and this has, in fact, been recognized in such examinations of recent years. Moreover, factors other than examination results are now often taken into account in forming a judgement; but it remains true that the present compulsion to submit whole classes of pupils, rather than selected individuals, to severe external examination tests, and the growing tendency among many employers to regard success in such tests as a criterion of suitability for employment, may be in practice both dangerous and unjust. Sir Michael Sadler dealt with this subject fully in addressing the New Education Fellowship. He drew attention to a type of English folk, often refined, alert, scientific in their observation, and just in their moral judgement, who cannot reduce the operations of their minds to the currency of words; and very effectively said: "So long as most of the boys and girls of this primitive English sort could pass through childhood and youth unworried by examinations it did not matter that children of the other sort enjoyed the stimulus and reward of the examined life. But now that we are trying to sweep all English children into the net of secondary education it has become necessary to protect the interests of both sorts. The time is near when every little English child that comes into the world alive will, if it grows up, pass under the harrow of examinations. At present the harrow is blunt. But the spikes will get sharper." The reality of this danger may well be emphasized from the medical side also.

The third subject, the place of biology in an educational curriculum, is becoming yearly of more urgent importance. In general it is evident that the opportunity and the demand for biological experts in various capacities throughout the Empire is far greater than the supply; and it is at least highly probable that the number of those who cultivate this subject in institutions of university rank would be appreciably increased if it obtained a place, in an elementary form, in the curriculum of many secondary schools. The same is true of medical education. This matter was referred to at the Conference of Headmasters. Some rather wild remarks were made about the attitude of the General Medical Council, and, though it is clear that if headmasters were submitted to an examination on the character and functions of that Council they would almost all fail to pass, it may be agreed that with regard to making biology a pre-registration subject the General Medical Council moves with extreme slowness and a superabundant caution. In view of the movement for a lengthening of school education, now generally accepted except by Lord Eustace Percy, and for the completion of a full secondary school course for a large number of pupils, it would seem to be not untimely to give long notice that, as from some definite year, the age for registration as a medical student would be raised to 18 years, and that some knowledge of elementary biology would be required before registration. The Education Committee of the Council has merely raised the question in a very tentative form. In this connexion it may be well to direct attention to the need for further definition of the standard required in the preliminary scientific subjects in general, and to the short discussion in the November session of the General Medical Council raised by Mr. Monsarrat on behalf of the University of Liverpool, and by Dr. Brackenbury from the point of view of secondary schools, and reported in the *Supplement* of December 8th last (p. 245).

POTT'S FRACTURE.

ABOUT a hundred years ago that great authority Dupuytren, with all his skill and experience, felt compelled to admit that even under the most favourable conditions fractures at the ankle almost always resulted in deformity and lameness which rendered progress difficult or painful. It must be admitted that until comparatively recent times this statement remained true, as was shown by the statistics as to the Metropolitan Police published by the late Mr. Clinton Dent. But there are good grounds for the belief that very much better results are now generally obtained, thanks to the teaching of surgeons such as Sir Robert Jones and Mr. Harry Platt. Against Dupuytren's depressing prognosis may be set the dictum of Sir Robert Jones that such injuries are easy to treat if certain principles are borne in mind and followed. Recently Dr. Frank Dickson of Kansas City read an instructive and lucid paper on fractures of the ankle before the Section of Surgery, General and Abdominal, at the seventy-ninth annual session of the American Medical Association.[1] He quoted Ashurst's figures of 300 cases, and agrees with his and Platt's conclusion that Pott's fractures (abduction and external rotation) form over 80 per cent. of fractures of the ankle. The greater part of the remaining 15 to 20 per cent. are inversion fractures, which are easier to treat and less disabling ultimately. Dr. Dickson's description of the various forms of fracture of the lower ends of the leg bones and of their treatment is clear, and it is well illustrated by *x*-ray pictures. He recommends immediate reduction and the application of plaster-of-Paris, which is at once divided on each side so as to form a bivalve splint; this can be removed to permit inspection of the ankle, and, if necessary, to allow for oedema of the soft parts. In these, as in all other actual or suspected fractures, *x*-ray examination and the recording of its results is a *sine qua non*. There should be no exception to the rule that, when possible, two plates—lateral and antero-posterior—should be used, for in some cases the bone injury and displacement may be invisible from one direction, though obvious from another. We would add, too, that it is a great advantage in dubious cases to be able to compare the radiograph of the injured limb with one taken of the sound limb. From the point of view of restoration of function, it has been shown by various authorities that the broken fibula is of small importance in comparison with the concomitant displacement of the astragalus and damage to the ankle-joint. The surgeon must remember that the displacement of the astragalus is generally twofold, as radiographs will show him; it is tilted and displaced outwards, and it is also displaced backwards. As a rule the lateral displacement is easily recognized, even without the help of a radiograph, and is not likely to escape correction; backward displacement, however, is less obvious, and too often it is not properly corrected, in which case the range of dorsiflexion is more or less reduced and the disability may be permanent, unless it is corrected by a secondary operation. In these injuries the form of splint or nature of the retentive apparatus used is of minor importance so long as reduction of the deformity is complete in the first instance, which fact can be demonstrated by the entire restoration of the normal dorsiflexion movement in the ankle-joint proper, exclusive of movements of the tarsal articulations. The normal astragalo-tibio-fibular articulation is a remarkably rigid mechanism, allowing only of angular movement

[1] *Journ. Amer. Med. Ass.c.*, vol. 91, No. 12, p. 855.

in the sagittal plane—that of flexion and extension—a fact which is almost completely masked by the extensive rotatory, abduction, and adduction movements immediately below it. In the event of the ankle mortise being in any way deranged the incidence of the body weight and of shocks transmitted upwards through the foot is altered prejudicially; pain and secondary osteo-arthritis follow, no matter how much the displacement may be masked by adaptation of the position of the subastragaloid portion of the foot.

NOTIFICATION AND CONTROL OF VENEREAL DISEASE.

AT a general meeting of the Society of Medical Officers of Health held in November last there was a very interesting discussion on the advisability of adopting compulsory methods in relation to any schemes in operation for dealing with venereal diseases. The three introductory papers, written from entirely different points of view, were read by Dr. A. K. Chalmers, Dr. R. A. Lyster, and Dr. William Robertson, the medical officer of health for Edinburgh. These papers, together with a report of the discussion which followed, are printed in this month's *Public Health*. It will be remembered that at the meeting of the Representative Body of the British Medical Association at Cardiff in July last a motion was proposed on behalf of the Edinburgh and Leith Division favouring compulsion "in order to secure continuance under treatment until discharged by a registered medical practitioner," and an amendment was moved by Mr. E. B. Turner in favour of the exercise of such compulsion by local option. Both amendment and motion were negatived by large majorities. The discussion was fully reported in our *Supplement* of August 4th, 1928 (p. 64). These reports may well be read in conjunction, for their subject is both important and difficult, and it is bound to come up for reconsideration from time to time. It may be recalled that a bill to give certain powers to apply compulsion to persons requiring treatment for venereal diseases was promoted by Edinburgh Corporation as a private measure last session, and was refused a second reading, after a prolonged debate, by 156 votes to 93, in the House of Commons on April 19th. Glasgow Corporation, about the same time, approved a draft bill of an even more drastic nature; a summary of its provisions was given in our issue of April 28th, 1928 (p. 727). It is therefore evident that the advocates of compulsion are strong in at least certain quarters in Scotland, and are unlikely to let matters rest. Nevertheless, there can be little doubt that the general body of medical opinion, as of public opinion, in this country will be with Dr. Chalmers rather than with Dr. William Robertson. Liberty is, fortunately, very dear to the English mind. Never in this country has compulsory submission to a particular form of medical treatment been imposed on a subject. There is compulsory confinement, under proper conditions and with very elaborate safeguards, of individuals suffering from some forms of mental disease who are unable to exercise volition of their own. There may be compulsory isolation (but not compulsory treatment necessarily) of persons suffering from certain forms of infectious disease of short and relatively definite duration. There is in certain cases compulsion on parents or guardians to see that proper treatment is secured for children who are unable to protect themselves. Beyond this, however, English law has not gone, and it is quite unlikely that public opinion will tolerate any greater element of compulsion in the sphere of venereal disease. Dr. Robertson is, of course, right when he says that "every medical officer of health knows that the liberty of the subject doctrine, if literally interpreted, would spell ruin to many of the activities directed at prevention," but he thereby begs the question. He is no doubt correct, too, when he says that the present position "is galling to the administrative officer," and that his "highly qualified lady almoner" was "disheartened and worn out" because she could not threaten defaulters with legal pains and penalties as well as physical ones. But English law has objects other than an unconditioned support of the laudable zeal of administrative officers, medical or other. Moreover, it has yet to be shown that there are any detailed administrative methods of enforcing continued treatment that would be effective in practice. The difficulties between a private practitioner and his patient might be immense, and, as one of the speakers in the discussion said, "until a recognized amount of treatment was decided upon by the profession it would simply be a question of luck whether an individual received a certificate in a fortnight or in ten years." Further, Dr. Lyster seems undoubtedly right in logic when he points out that if the arguments for compulsion be valid there might as well be compulsion to prevent, which is relatively easy, rather than to cure, which is often very difficult. As a matter of fact, the measure of success in the campaign against venereal disease already attained is not unsatisfactory, though imperfect in some 25 per cent. of the cases. The position is well set out by Dr. Chalmers in the one discussion, and by Mr. Bishop Harman in the other. There must certainly be a continuance of the present campaign of education and propaganda. There should be an increase in the facilities for obtaining skilled and continuous treatment in any localities where this is not now available or adequate, for it is the lack of these facilities which sometimes leads to discontinuance of treatment. The one direction in which it seems possible to adopt further measures is in the protection of infancy and childhood. Where a child has been born suffering from the effects of venereal disease in the parents it would be within the limits of present public policy to take measures, involving a degree of compulsion, to protect any future offspring, and the Society of Medical Officers of Health certainly came to a wise conclusion when, in the end, it resolved "to consider whether any scheme of action can be recommended in reference to the parents of children infected with venereal diseases."

HEALTH SERVICES IN IRAQ.

THE building up of the new kingdom of Iraq since 1921 has been followed with sympathetic interest in Great Britain, partly because the State owed its existence largely to the ultimate success of the forces of the Empire in the Mesopotamian campaigns, and partly because of the romance attaching to the land which includes within its boundaries Baghdad and Nineveh. In the constructive work undertaken since the establishment of the State British doctors and officials have played a considerable part, and it is interesting to learn from the report for 1925 and 1926 of the British inspector-general of health services in Iraq that, in spite of many difficulties, appreciable progress has been made in the sphere of medicine in this period. Five or six years ago the attitude of the Government towards health services was unsatisfactory, the policy being to undertake the minimum degree of responsibility in regard, for example, to the provision of hospitals, and to leave this task largely to the impoverished local authorities. Later, however, a more enlightened view gained acceptance, and in the end the Government admitted financial responsibility for all medical institutions. In recent years the main obstacles to the development of health services have been lack of funds and the difficulty of securing suitable recruits for the staff. These two factors are closely associated, and the conditions of service for local medical officers leave room for improvement. The inspector-general, Major T. J. Halliman, takes occasion, however, to congratulate the service on possessing a solid nucleus of competent and conscientious Iraqui doctors, who have been with it from its

commencement. Valuable work has also been done by subordinate medical personnel, notably pharmacists and dressers; several pharmacists have been given special training in hospital out-patient departments before taking charge of dispensaries for which it has been impossible to obtain doctors. The shortage of State-provided hospital accommodation is accentuated by the fact that charitable institutions, although efficient where they exist, are few in number in Iraq. In the hospitals administered by the health service there were during 1926 1,190 beds, an increase of only 20 over the number of beds provided in 1924. Several additional institutions were, however, under construction, but much more extensive works are required before the hospital provision can be regarded as adequate. Schemes for the doubling of the bed accommodation at the Royal Hospital at Baghdad, and for the rebuilding of the Mosul Civil Hospital, have been submitted to the Government. Steady progress has been made in the establishment of dispensaries in the smaller towns; ten new dispensaries were opened in 1925, and ten in 1926. While deficiencies in personnel and equipment have prevented the full development of the service in the way desired by those responsible for its conduct, their efforts have been rewarded by a gratifying access of esteem in the eyes of the public, whose appreciation is reflected in the figures of attendance at the Government hospitals and dispensaries: in-patients numbered 18,756 in 1926, as against 15,632 in 1923, while the number of new out-patients rose from 835,904 in 1923 to 1,610,445 in 1926. Had facilities been available there is no doubt that the rise in the number of in-patients would have been much greater, and it seems certain that as the public demand for medical treatment becomes more extensive and insistent the Legislature will be obliged to find means of increasing the resources of the health service. Major Hallinan, in his introduction, points out that the success of any of the projects for the agricultural development by large irrigation schemes depends on a sufficiency of population to exploit the areas so gained, and that the existing population barely suffices for present labour requirements. He urges, therefore, the importance of conserving the country's potential human resources by adequate health measures—directed notably to the reduction of child mortality—and suggests that it is a matter for careful consideration by the Iraq Government whether the present rate of progress in the health service should only be maintained, or whether it would not be more advantageous, for economic reasons, to develop it at a greater rate than other departments.

BAYLISS-STARLING MEMORIAL.

THE appeal for subscriptions to a memorial to the late Professors Sir William M. Bayliss and Ernest H. Starling has up to the present resulted in a sum which, with interest, will amount to over £2,600. The sum has been contributed principally by personal friends, relations, and pupils of the two distinguished physiologists, but very liberal subscriptions have also been received from their admirers in America, various European countries—principally Germany—from learned societies, and from various physiologists and members of the medical profession in all parts of the world. The committee which has been concerned with the memorial fund considers that the objects outlined in the printed appeal have been achieved. A small part of the fund has been employed for the provision of a simple memorial tablet, designed by Professor A. E. Richardson, F.R.I.B.A., which will be erected in the entrance hall of the department of physiology and biochemistry, where it will occupy a suitable place over the bust of Sharpey. A material memorial or an annual lecture would, however, have been less acceptable to Bayliss and Starling than the provision of means whereby young workers of suitable training and ability might be attracted into these fields of study. The bulk of the sum, therefore, will be used for the creation at University College, London, of a Bayliss and Starling studentship, which will be open to a graduate or undergraduate in medicine or science of suitable standing to enable him to spend a year or more in such training in physiology and biochemistry as would fit him for research. For this purpose the sum of £2,500 will shortly be transferred to the University of London to be held in trust for the creation of such a studentship. A further sum will be added to this when the cost of the tablet and other small expenses have been covered. The Governing Body of University College has agreed to assist this scholarship in a very material way by remitting all fees for instruction and ordinary expenses payable by the selected candidate, and, further, it is hoped that it will be possible to make the first award of the scholarship in June of the present year.

SKIN CANCER IN AUSTRALIA.

EVEN sunshine may not be an unmixed blessing, and for some time it has been thought that the unenviable frequency of various forms of malignant disease of the skin in Australia is due to the abundance and peculiarly vivid power of the sun's rays enjoyed on that continent. Several Australian dermatologists, notably Molesworth and Paul, have called attention to the importance of this factor in producing rodent ulcer and epithelioma of the skin, and Dr. Herman Lawrence[1] has analysed the cases occurring in his own practice during a period of twenty years. He finds that during that time there has been a steady increase of rodent ulcers and keratoses (so often the pre-malignant stage of skin cancer). He distinguishes keratoses, rodent ulcer (perhaps better termed basal-celled epithelioma), and squamous-celled epithelioma as the epithelial triad. Now there are other countries where the sun shines just as strongly as it does in Australia, but which do not suffer to anything like the same extent from the epithelial triad. What, then, is the cause of this unfortunate pre-eminence? Dr. Lawrence suggests two reasons. In the first place, other countries where the sun's power is so manifest are chiefly inhabited by the pigmented races of mankind, who find in their darker skins the natural protection against the pathogenic properties of sunlight. Secondly, in Australia not only is there abundant sunshine, but the humidity of the atmosphere is remarkably low. In many regions in Australia the humidity is half that in southern England, while there are twice as many hours of sunshine a month. The importance of this lies in the fact that moisture in the air is a powerful absorbent of the ultra-violet rays. The irritant qualities of these rays have, of course, long been known, and it has been suspected that they were the chief factor in producing Dr. Lawrence's epithelial triad. Unexpected confirmation of this theory has been obtained by him from the case of a young man, aged only 27, who had undergone treatment by ultra-violet rays consisting of half-hour exposures of both the front and back twice a week for over a year and a half! The consequence was the formation of numerous multiple keratoses. It is true that no epithelioma was produced, but, after all, the duration of this intensive ultra-violet radiation was comparatively short, whereas dwellers in the backblocks of Australia are exposed to excessive sunlight for a lifetime. Dr. Lawrence asks if it is possible to prevent the apparent increase of skin cancer cases in Australia. He suggests that blonde individuals who produce little or no pigmentation in response to light stimulation should be discouraged from outdoor work in low humidity areas of the continent. He points out that the French already refuse blonde applicants for Government service in hot climates, since they appear to have less

[1] *The Relative Low Humidity of the Atmosphere and Much Sunshine, as Causal Factor for the Great Prevalence of Skin Cancer in Australia.* By Herman Lawrence, M.R.C.P.Ed.

resistance to tropical diseases than darker men. Otherwise he can only recommend broad-brimmed hats for men and dark veils for women; for golfers and tennis players he suggests the use of ointments and powders containing quinine, which has a special power of absorbing ultra-violet rays to produce fluorescence. For the treatment of the epithelial triad when established he speaks enthusiastically of radium, but the chief difficulty is to persuade the patients to apply for aid sufficiently early. In Australia the help of the wireless has been enlisted for this purpose, and after a broadcast by one of the higher officers of the Commonwealth Health Department on cancer, in the course of which he indicated the importance of obtaining early advice about small warty-looking formations on the skin, a considerable number of persons came up for treatment with keratoses and early rodent ulcers.

POISONING BY METACETALDEHYDE TABLETS.

IN the current (December) issue of the *Archives of Disease in Childhood*[1] Dr. Reginald Miller describes two cases of poisoning in children by "meta fuel." This preparation, which appears to consist of metacetaldehyde, is supplied in the form of white tablets to take the place of methylated spirits for lamps and stoves. As might be anticipated, the tablets are occasionally mistaken for sweets by small children; the symptoms described by the author are those of acute poisoning of the central nervous system—namely, drowsiness and convulsions. In one of these cases, a boy aged 16, there was some albuminuria, while in the other, a child aged 4, the left leg was held rigid, the right being extended in the tetany position. These tablets, attractive in appearance, though hardly so in taste, may be left within the reach of small children, and the author considers that the public should realize their poisonous properties when swallowed. We have previously made some reference to the first of these two cases (see *Epitome*, 1927, vol. ii, para. 274). Metacetaldehyde is only slowly absorbed, and the treatment should, therefore, include gastric lavage and the administration of a purge.

PHRENOLOGY AND CRIME.

IN a recent lecture[2] Dr. W. Norwood East, Medical Inspector, H.M. Prisons, reviewed the attempts which have been and are being made to recognize and treat the born criminal by the application of scientific methods. A century ago Dr. George Combe maintained that every criminal should be examined phrenologically; if his or her organs of "combativeness," "destructiveness," or "acquisitiveness" were found to be developed to an exaggerated degree, while those of "benevolence" and "conscientiousness" were undersized, then the case required the special consideration of judge and jury. Phrenological methods proved to be useless. So, too, did the methods which sought to isolate a criminal type by a study of physiognomy. A similar fate has overtaken the Lombroso school of anthropologists, who held that born criminals were marked by developmental stigmata. The investigations undertaken by Dr. East's own service, the results of which were published by the late Dr. Charles Goring,[3] demonstrated that the criminals of England could not be distinguished from her law-abiding citizens by any means known to anthropologist or anatomist. Dr. East holds that the criminologists of to-day must look to psychology for scientific guidance, both for means of recognizing the pathological criminal and for just methods of treatment. He is not over-sanguine that psychology in its present state can give effective help. He sums up his attitude to psychology thus: "Intelligence tests devised by psychologists and educationists have done much in recent years to assist us in the diagnosis of the mental condition of delinquents. By their aid subnormal mental states have emerged clearly from the material with which they were surrounded and confused. We are not in so advantageous a position when dealing with temperamental defects, and further progress in the prevention of delinquency may result if reliable tests of temperament are resolved. But the criminologist must look again to the psychologist for help in grading temperamental defect, as this presents peculiar difficulties, inimical to accuracy if the subject has already offended against the law."

[1] *Archives of Disease in Childhood.* Issued by the British Medical Association. Yearly subscription (six numbers), 25s.; a single number, 4s. 6d.

[2] *The Relation of the Skull and Brain to Crime.* By W. Norwood East, M.D.Lond., M.R.C.P.Lond. The Henderson Trust Lectures, No. VIII. Edinburgh and London: Oliver and Boyd. 1928. (Cr. 4to. pp. 28; 14 figures. 6d.)

[3] *Biometrika*, 1901. Vol. 3. Part 1.

BRITISH EMPIRE CANCER CAMPAIGN.

THE MARQUESS OF READING presided at the quarterly meeting of the Grand Council of the British Empire Cancer Campaign held on January 14th, when a number of grants were made, including a sum not exceeding £2,500 for cancer research work at St. Bartholomew's Hospital; £150 to Professor A. J. Clark, M.D., of Edinburgh for radiological research work; and a contribution of £100 towards statistical investigations being carried out by the Yorkshire Council of the Campaign. The Grand Council confirmed the recommendation that two prizes of £500 each, with an appropriate medal, should be offered in the years 1931 and 1933 respectively for the best original piece of work carried out in the British Empire on the investigation of cancer. The prizes will be known as the Garton prizes and medals, and the subjects will be chosen by the Investigation Committee of the Campaign. The competitors may be either single research workers or a team of scientists working together. The following were invited to become members of the Grand Council: Mr. Malcolm Donaldson, F.R.C.S., of St. Bartholomew's Hospital; Mr. R. G. Hogarth, F.R.C.S., of Nottingham; Major-General Sir Ernest Swinton, professor of military history at Oxford; and Mr. Cecil Rowntree, F.R.C.S., of the Cancer Hospital, London. Vacancies on the Scientific Advisory Committee were filled by nominations through the Royal Society—namely, Dr. Mervyn Gordon, F.R.S., consulting bacteriologist, St. Bartholomew's Hospital; Dr. J. C. Drummond, professor of biochemistry, University College, London; and Professor Sidney Russ, D.Sc., of the Middlesex Hospital.

THE HALF-YEARLY INDEXES.

THE usual half-yearly indexes to the *Journal* and to the *Supplement* and *Epitome* have been printed; they will, however, not be issued with all copies of the *Journal*, but only to those readers who ask for them. Any member or subscriber who desires to have one or all of the indexes can obtain what he wants, post free, by sending a postcard notifying his desire to the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1. Those wishing to receive the indexes regularly as published should intimate this desire.

THE KING'S ILLNESS.

WE understand that for the time being there is nothing of consequence to add to the information given in this column last week [illegible] authoritative medical statements p[illegible] 8th (p. 1051), December 15th (p. 1106), December 22nd (p. 1151), and January 5th (p. 31). The recent bulletins have all recorded quiet days; and comparing them with those issued earlier in the month we may infer, without undue optimism, that His Majesty has definitely gained ground. The outlook is more hopeful now than at any time in the past seven weeks.

THE MEDICAL USES OF RADIUM.

RECENT discussions on the use of radium in the treatment of cancer have served to emphasize the opposed attitudes of the general public and the medical profession towards new remedies for disease. During the past few months any person gaining his knowledge exclusively from the lay press might have been forgiven for concluding that radium had proved so certain a remedy against cancer that the only reasons for the continuance of surgical treatment in this disease were the shortage of radium supplies and the determination of surgeons to retain, at whatever cost to the public, a lucrative source of income. To form such a conclusion he would have required, indeed, no undue power of ratiocination; the actual statements have been made categorically and repeatedly in some of the most reputable organs of public opinion. The group mind reacting to a new therapeutic device appears to be governed by an "all or nothing" law—the device is either a panacea or it is valueless. The attitude of the medical profession by contrast has been one of scientific scepticism, which must not, however, be confounded with a mere sterile agnosticism.

If any indisputable fact has emerged from the scientific discussions on the value of radium, as contrasted with those animated by propagandist zeal, it is that there are not yet sufficient facts on which any final conclusion may be based. Admittedly there exists, in addition, some evidence suggesting that radium therapy may be proved superior to excisional surgery in the treatment of cancer in certain parts of the body, notably in the cervix uteri, the breast, the larynx, and the tongue. But it is well to bear in mind, as Mr. Victor Bonney pointed out in this *Journal* on December 8th, 1928 (p. 1064), that prognosis of cure involves an important time factor—in his view up to ten years—and that dogmatic pronouncements at this stage can be made only at the cost of scientific truth.

A favourite expedient of the popular propagandist in favour of radium therapy has been to compare the Continental and the British investigations, much to the disadvantage of the latter. The boundary method of limiting the spread of cancerous growths by surrounding them with needles containing radium has, for example, been described as a new technique emanating from the Continent, Brussels in particular. In point of fact, as Professor Joly of the Irish Radium Committee pointed out in our issue of January 5th (p. 42), the technique is not new, and it was evolved not on the Continent but in Dublin. Another popular writer has stated that whereas great progress has been made in Belgium and in Germany, "our record in this country, apart from following very slowly, may be described as *nil*." The value of such statements may perhaps be described with equal brevity. Ignorance is no excuse for those who presume to instruct the public, and incidentally to indict the scientific workers of a nation.

The papers recording work in radiotherapy by individual investigators and groups of investigators may perhaps be overlooked by those who do not regularly read the medical and scientific press and the journals of learned societies; but since 1922 a series of reports issued from the Stationery Office has made available for anyone who has cared to look for it a knowledge of systematized research in this country on the problems connected with radium therapy. The latest of these reports,[1] just issued, shows the record of work done with a stock of radium salt entrusted by His Majesty's Government to the Medical Research Council, and distributed by the Council on loan to various research centres. This report, as may be expected, is but poor reading for those who prefer final pronouncements to statistical data. No conclusions are drawn beyond those warranted by the available facts; though new methods have been developed no attempt is being made to evaluate them. The claims of any technique, it is pointed out, can be established only by a statistical inquiry after a sufficient period has elapsed since its adoption. Moreover, exploration of all the technical possibilities of radio-surgical access and of variations in dosage is essential before any final conclusion can be reached as to the value of radium in the treatment of cancer.

[1] Medical Uses of Radium. Summary of Reports from Research Centres for 1927. Medical Research Council, Special Report Series, No. 126. Price 1s. net.

PRESENT-DAY RADIOLOGICAL METHODS.

The reports from the various centres reveal a general tendency to use less intense radium foci, but with a corresponding prolongation of exposure time. Although the older practice of relying on short exposures from tubes containing as much as 20 or 30 milligrams of element still prevails in many centres for the treatment of certain cancers, notably of the cervix uteri, exposures for a week or more from tubes containing one or two milligrams are now relied upon in the treatment of cancer affecting the buccal cavity, vulva, and larynx. A similar technique has been adopted by the surgical unit of St. Bartholomew's Hospital in the treatment of a series of 27 cases of operable breast cancer. Thirteen of these cases have been apparently cured (though one died of intercurrent disease); local improvement was secured in 4, but the patients died of metastases; and 10 cases are believed to be improving. At the Middlesex Hospital, where radium therapy of breast cancer is used most frequently as supplementary to radical operation, tubes containing 10 to 20 milligrams of element are inserted into the intercostal spaces, supraclavicular fossa, and apex of the axilla, and are left in position for twenty-four hours. Visible recurrences are treated by a boundary method, which in a majority of cases appears to secure the disappearance of the local growth.

Cancer of the Cervix Uteri.

Cases of cancer of the cervix uteri are generally classified for statistical purposes into three groups—operable, borderline, and inoperable. A statistical survey is, however, complicated by the fact that some workers adopt only the first and last classification, while where all three are adopted there would probably be differences of opinion about the allocation of cases into the borderline group. Furthermore, there are degrees even of inoperability. A study of the data from the various research centres brings out the fact that whereas a considerable proportion of inoperable cases remain alive one or two years after radium treatment, this proportion is much smaller when the interval is three or four years. From this two separate conclusions may be drawn: either many cases now apparently well will recur within three or four years, or the technique has so far improved that the results really are better than those obtainable three or four years ago. Which of these conclusions is correct can be proved only after a sufficient time has elapsed. It is noteworthy that when treatment with radium is supplemented by means of *x* rays or by externally applied gamma rays, better results are obtained than when radium is employed alone. Probably results vary with the effective range of irradiation, though admittedly not with this factor alone. A patient with a purely localized growth, for example, treated by radium applied per vaginam may die of old age. One in whom the disease is a little further advanced may have just beyond the zone of effective action, a very early growth, which would continue to develop slowly in spite of complete cure of the disease in the vagina and cervix. Recurrence *in situ* occurs only very rarely. The disease is graded, and though technical advances may extend the limits of irradiation, at present diagnosis and treatment while the disease is strictly localized affords the best chance of complete recovery.

With increasing experience has grown up more detailed and more precise knowledge of the clinical phenomena associated with the use of radium therapy. Haemorrhage, it has been found, ceases in the vast majority of cases, though in some it returns shortly before death. In inoperable cases there is usually no difficulty in getting rid of the growth in the uterus, but growth tends to continue in the deeper tissues, causing strictures. Stricture may, however, be due to the laying down of ordinary fibrous tissue.

Pelvic and rectal pain, tenesmus, and blood and mucus from the rectum, characteristic of late radium reaction, may appear six to twelve months after irradiation. Such symptoms may pass after a week or two, or, if severe, may persist for several weeks. The associated pathological changes vary in intensity from a mere œdema to a considerable pelvic infiltration with deep rectal ulceration and vesical fistula. The clinical picture, indeed, may so far simulate recurrence of cancer, with rapid extension, that it is important to stress the undesirability of repeating the radiological treatment of these cases. Fortunately, in the majority, even when the reaction is intense, symptoms subside rapidly and the tissues regenerate; in some cases repair is slow. Attempts are being made to lessen the risk of injury to the superficial tissues, without, however, appreciably diminishing the distance dose, by cutting out some of the softer rays.

Mouth and Nasopharynx.

The various methods used in the radium treatment of cancer of the tongue differ from each other in points of detail, but there is a consensus of opinion that these growths respond much better when comparatively small quantities of radium are used and allowed to act for periods of from five to eleven days than when larger quantities are used for periods of twenty-four hours or less. In some centres radium treatment of the primary growth is followed some weeks later by the surgical removal of the glands of the neck, radium being put into the glandular region to deal with any residual growth; in some, after the initial treatment of the primary growth, surface applications of radium are made to the glands; in others, irradiation has been made by the simultaneous insertion of radium into the tongue and into the glands. Some workers insert radon seeds into the tissues by means of an introducer consisting of a hollow needle down which the seed is pushed by a stylet. The method is one especially adapted to outpatient practice, but suffers from the possible disadvantage that the filtration is inadequate, the reaction in mucous membranes is more severe than with needles, and the radon is rather concentrated. These difficulties appear, however, to have been overcome at St. Bartholomew's Hospital. A slow necrosis of the alveolus, due to the tubes being placed too near the bone, occasionally follows the irradiation of mouth cases. The condition can be prevented by taking care not to give too concentrated a dose near the bone. Radium and x-ray ulcerations have been successfully treated by syringing sloughs with normal saline solution, and then, when these have separated, packing the ulcer crater with saline-soaked cotton-wool.

Larynx and Œsophagus.

A majority of cases of intrinsic cancer respond favourably to radium treatment; but when the cancer has transgressed the boundaries of the larynx proper improvement is rare. Of four cases of intrinsic cancer treated at St. Bartholomew's Hospital only one failed to respond favourably; but only one case in five of extrinsic cancer showed signs of improvement. Growths of the œsophagus do not appear to be benefited by radium treatment; even when temporary improvement occurs it is followed only too often by speedy relapse. The treatment of these cases raises peculiar technical difficulties. Not only is the method of approach intricate, but it is often impossible to determine the length of œsophagus involved and the extent of the lateral growth.

Cancer of the Rectum.

A combined technique of operation and irradiation is generally used in the treatment of rectal cases. A preliminary colostomy is followed by exposure of the growth from behind, with temporary closure of the anus and removal of the coccyx. An average of 14 mg. are used for the glandular areas, and 30 to 50 for the growth, and if the patient can stand a maximum dose the radium is left in for such time, not exceeding 240 hours, as will bring it to approximately 10,000 milligram-hours. The results of treatment are not considered in the report, but the indications are that operable cases are at present more likely to benefit from surgical treatment than from treatment by radium.

Sarcoma and Lympho-sarcoma.

The response of sarcoma to treatment by irradiation appears to vary with the histological nature of the growth. Of 31 cases thus treated, 17 were apparently cured, and 8 relieved; the best results were obtained in the treatment of fibro-sarcoma, the worst in the treatment of lympho-sarcoma.

Nova et Vetera.

THE ORIGIN OF "QUARANTINE."

THE word "quarantine" is, of course, synonymous with, if not derived from, the French word "quarantaine," which merely means a group of forty—be it of days or of anything else. Its application to the detention of travellers or goods on a sea or land frontier, in the interests of public health, arose from the fact that such detention was most frequently one of forty days. Of the many uses of the word in non-medical matters little need be said here.* In its more modern application the origin of the word has been largely lost, and it has come to mean a detention of any duration, mostly on a frontier of some kind. But it has not infrequently in the past been applied also to the purely interior measure of shutting up infected persons and their families and dependants in their houses for a period of time. Defoe, in his semi-historical account of the Great Plague of London, repeatedly uses the word in this sense; and in one passage he speaks of a "demi-quarantine," as implying a detention of twenty or thirty days; and in another, of "not a quarantine of days only, but a soixantine—not only 40 days, but 60 days or longer."

A detention of some period or other, for the purposes of observation, is one of the oldest of public health measures. The seven days' isolation, outside the camp, of persons suspected of leprosy, required by the Mosaic law, was more or less of the nature of a quarantine.† At what era in history the period of forty days came to be chosen for such detention has not, it would seem, ever been clearly ascertained. It has, however, been asserted by at least one writer that a detention of forty days was first adopted during the great plague epidemic of the latter half of the sixth century, and that herein lies the true origin of the measure and of the word. The statement to this effect is so categorical, and, could it be confirmed, this early origin of a true "quarantine" would be of such interest and importance, that it has seemed worth while to follow the matter up and endeavour to search out the original authorities for the assertion. Unfortunately such endeavour has not been crowned with success.

The statement was first made in the following passage from a letter addressed, in 1819, to the then President of the Board of Trade and Treasurer to the Navy by Dr. A. B. Granville:‡

"The positive belief in contagion, and the consequent idea of seclusion as a means of preservation from it, can be traced to a much earlier epoch even than the Crusades; for we find both explicitly mentioned in the acts and edicts of some of the Oriental Emperors during the sixth century, issued with a view of preventing the propagation of the plague. It is there enjoined to those who come from a country known to be infected, to repair to a particular spot, there to be watched for the term of *forty days*, in order to ascertain whether they brought with them the seed of the disorder. Here then is the true origin of the word *quarantine* —and here we may place the date of the first enactment of quarantine laws, under the impression that the plague was contagious. So that these laws, far from being of the short standing of scarcely *three* centuries, reckon a succession of more than thirteen hundred years."†

* The "King's Quarantine" denoted a "truce of 40 days, appointed by St. Louis, during which it was expressly forbidden to take any revenge" (*Chambers's Cyclopædia*); while others define it as the forty days "allowed the friends or relations of a principal in a private war to grant or find a security" (*Murray's Dictionary*). In law the term "widow's quarantine" was given to the forty days during which a widow, entitled to a dower, had the right to remain in the chief mansion of her deceased husband" (ibid.). Robert Curzon, in his *Monasteries of the Levant*, speaks of "the Mountain of Quarantine, the scene of the forty days' temptation of our Saviour."

† Leviticus xiii. This isolation was analogous to, rather than identical with, a true quarantine; it was apparently a purely interior measure, applied to persons already showing signs of disease; while quarantine has come mainly to mean the detention of apparently healthy persons, usually at a frontier, lest they should be harbouring the germs of disease.

‡ *A Letter to the Right Hon. F. Robinson, M.P., President of the Board of Trade and Treasurer to the Navy, on The Plague and Contagion, with reference to the Quarantine Laws*, etc., by Augustus Bozzi Granville, M.D., F.R.S., F.L.S., M.R.I. London, 1819, pp. 29-40

In another letter, addressed by the same author in 1825 to the Right Hon. W. Huskisson, M.P., then President of the Board of Trade, the assertion is repeated, in a slightly different form. It is there stated positively that the forty days' quarantine was decreed in "an Edict of Justinian."

In neither letter is any indication given of the exact date, number, or title of the supposed edict. But in the earlier letter the following reference is given as the authority for the assertion: "*Follerius, in libello pro Custodiâ Pestis.*" A fairly diligent search, however, in the British Museum and other large libraries, lay and medical, has failed to bring to light this opuscule of Follerius.

The story of the great plague epidemic of Justinian's time is, of course, fairly well known. It began in Egypt in A.D. 542, spread to Syria, Byzantium, and Europe, and did not come to an end until the close of the century. It is possible—probable, indeed—that precautions of some kind, however rudimentary, were taken to check the spread of the pestilence from one country to another, or from one district to another. But, if so, no positive evidence, apart from Granville's assertion, is now available as to the nature of those precautions. It has further to be added that very considerable doubt must attach to his statement that forty days' detention was decreed in "an Edict of Justinian"; for, in the opinion of two authoritative writers on historical questions, no such law, decree, or edict was ever promulgated by Justinian. The late Dr. J. S. Reid, professor of ancient history at Cambridge, was good enough, a few years ago, to make some further researches for me in this matter, and he wrote: "I came to the conclusion that no such edict as that which Justinian was supposed to have issued in 542 against the plague ever existed." And again, the late Professor J. B. Bury, whom Dr. Reid further consulted, wrote: "No such edict as that supposed to have been issued by Justinian is extant, nor is there any reference to anything of the kind to be found in the historical authorities known to me."

Finally, Gibbon himself remarks on the lack of measures for checking the progress of the epidemic, in the following passage:

> "Those salutary precautions to which Europe is indebted for her security were unknown to the government of Justinian. No restraints were imposed on the free and frequent intercourse of the Roman provinces: from Persia to France the nations were mingled and infected by wars and emigrations; and the pestilential odour which lurks for years in a bale of cotton was imported, by the abuse of trade, into the most distant regions."*

It would seem, therefore, that the assertion that "quarantine," or a true forty days' detention of persons coming from an infected country, was an invention of the time of Justinian, must, at best, be regarded as "not proven," and must remain so unless and until the missing pamphlet of Follerius should be found and should contain some definite reference to the supposed edict enjoining that measure.

At whatever era in history the period of forty days was chosen, it is an unquestionable fact that, throughout the later Middle Ages and down to comparatively recent times, that period was most generally adopted for the detention of suspected persons. The reason for such choice has never been satisfactorily explained—unless it be, as some think, connected with the Hippocratic dictum that the fortieth day of a disease is a specially critical one.

Apart from the alleged edict (or edicts, for Granville, it will be noted, in his first letter, speaks in the plural—"the acts and edicts of some of the Oriental Emperors") of the sixth century, the earliest known record of a forty days' quarantine would seem to be contained in the first code of Venetian laws against plague, which are stated to have been drawn up probably as early as A.D. 1127. This, it is said, required all merchants and other travellers coming from the Levant to stay for forty days in the house of St. Lazarus before being allowed to enter the city.† Other instances of such true "quarantines" abound in later centuries, and it would serve but little purpose to cite specific examples. What is of more interest (and perhaps less well known) is that, so great is the power of tradition, the forty days' period of detention continued to be applied in some countries until comparatively recent times, and a few instances in support of this assertion may be given.

In Melbourne, Victoria, actually infected ships were subjected, in the earlier part of last century, to quarantine varying from seven to forty days. In the Virgin Islands forty days was the period of detention for a cholera-infected ship in the middle of the century. In like manner, in British Guiana, in 1851, when cholera was present in Jamaica, forty days' quarantine was imposed on arrivals from that island; and in 1854, when Barbados was infected, a quarantine of the same duration was, at the request of the principal inhabitants of the Guiana capital, applied to persons coming from Barbados. Again, in the Dutch possession of Curaçao, where the quarantinable diseases included "yellow fever, measles, small-pox, cholera, and all contagious diseases," actually infected ships were, in 1859, required to perform forty days' quarantine; while in another Dutch possession, Surinam, or Dutch Guiana, the same detention was imposed on cholera-infected arrivals. Later still, when, in 1874, plague (limited to five cases in the village of Namaz) had appeared in the Arabian province of Assyr, Egypt imposed a twenty-one days' quarantine on arrivals from the Hejaz, reserving the right to raise it to forty days "if positive news from a good source and from competent persons did not give assurances of an improvement in the sanitary state of Assyr and particularly of the village of Namaz."* Then, under the Austrian law of 1879, if a case of plague had occurred on a ship during its voyage, forty days' quarantine was applied in ports of that country without distinction of vessel.†

It is, however, unnecessary to quote further examples. It is beyond question that the conception of a forty days' detention—a true "quarantine"—dominated the whole world of sanitarians and administrators from quite early times down to comparatively recent decades; and this note has been written with the object of endeavouring to ascertain when that particular period came to be adopted, and in the hope that some reader may perhaps be able to throw further light upon the supposed edict, or edicts, of a Byzantine emperor or upon the lost pamphlet of Follerius.

F. G. CLEMOW, M.D.

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* *Decline and Fall*, vol. v, chap. xliii.

† *The Nautical Magazine*, 1836, p. 982. Article by the late Sir Sherston Baker on "Quarantine in the United Kingdom and the Public Health Act of 1836." The authority for the statement is not given.

* *Procès Verbaux* of the Constantinople Board of Health, November 17th, 1874.

† "*The Laws relating to Quarantine . . .*" by Sir Sherston Baker, London, 1879 (from which some of the other statements in the text are also quoted). In the year 1879 most nations took unusually severe precautions, owing to the outbreak of plague at Vetlianka and other places on the Volga.

ASTHMA RESEARCH COUNCIL.

MEETING AT THE MANSION HOUSE.

THE objects of the newly formed Asthma Research Council were expounded, and an appeal made for financial support, at a large public meeting held at the Mansion House under the presidency of the Lord Mayor of London (Sir KYNASTON STUDD) on the afternoon of January 15th. A letter was read from Mr. Neville Chamberlain expressing the interest of the Ministry of Health in what was proposed.

Sir HUMPHRY ROLLESTON gave an address on asthma as one of a large group of idiosyncrasies. Persons who suffered from asthma and allied conditions, he said, had unluckily a special constitution, with a peculiar responsiveness to things which did not trouble ordinary people: thus a process essentially the same might result in diseases which, being in different parts of the body, appeared to be quite unlike. If the bronchial tubes of these hypersensitives were affected they had asthma; if the skin bore the brunt they got eczema; if the stomach and intestines reacted they had acute indigestion, vomiting, or "colitis." This hypersensitiveness probably played a part in other disorders, such as migraine or sick headache ("the disease of great minds"), gout (which was said to attack more wise men than fools), and even a form of epilepsy. The frequency of these diseases of allergic origin, Sir Humphry Rolleston continued, was unknown, but they were probably much commoner than might be thought. Research into the

causation and treatment of these many conditions would therefore benefit far more people than those who had frank asthma, and very probably would throw light on other diseases. Hypersensitiveness to foods, pollens, emanations, and so forth could be removed by desensitization, though more information was needed to perfect this method. Scientific research, said Sir Humphry Rolleston in conclusion, was so specialized that its methods and language seemed difficult and perhaps unintelligible to the outside world, but it provided the new knowledge from which reliable and simple tests for the detection of the causes of disease could be made, and so cleared the way for the prevention of disease—the ideal of medicine—or for its cure.

Dr. ARTHUR F. HURST, who is chairman of the Medical Advisory Committee in connexion with the Council, said that he himself had been interested in asthma from a personal point of view for thirty-five years. The one thing he felt sure about with regard to asthma was that there was still no cure for it. He gave the audience some account of his own experiences with various treatments, including an intranasal treatment which was said to have led to the disappearance of asthma from Chicago. He had also been invited to a clinic in America where a cure by dieting was promised, but a friend who had undergone the treatment said that he preferred asthma to the diet. No wonder that the prospect of a new and well-organized attack on asthma from the point of view of causation was widely welcomed. So far it had been possible to organize three centres for research into asthma. The first was owing to the generosity of Mr. Campbell-Johnston, and was directed to methods of physical therapy. The first Research Fellow was sent to Mont Dore and Reichenhall, the French and German meccas of asthmatics, and afterwards to Vienna, Berlin, Bad Ems, and Hamburg. Recently Mr. Halley Stewart had provided a fund for the organization of asthma research clinics at Guy's and Great Ormond Street; at the latter it would be possible to attack the problem by investigating asthma in its simplest form in childhood. It was hoped before long to start asthma units at other general hospitals in London and the provinces. Dr. Hurst mentioned a number of large provincial hospitals which had agreed to provide research centres, subject to the necessary financial support from the Council, as recorded in the *British Medical Journal* of January 5th (p. 29). At Leeds General Infirmary and the Birmingham General Hospital it was hoped to start research work in the near future. At Bristol the Royal Infirmary and the University would co-operate. Only that day an offer of assistance in research had been received from the Faculty of Medicine of Sheffield University. The Council hoped to be in a position to finance further research at St. Mary's Hospital under Dr. John Freeman. At King's College the physiology of asthmatic spasm was being studied. Dr. Hurst pleaded for the endowment of whole-time or part-time fellowships which would attract men already interested in the subject and already trained as expert observers, who only required the opportunity to carry out valuable investigations. Another project was to send out one or more research fellows to study what was being done in asthma clinics in Canada, the United States, and Holland. Asthma itself, Dr. Hurst continued, hardly ever killed. Sir John Floyer, the author of the first book on the subject, "panted on to ninety," according to Dr. Johnson. But it caused much suffering and interfered with earning capacity. In some cases there was spontaneous cure, but the great majority of asthmatics had to fall back upon some palliative treatment. The injection of adrenaline made life bearable to many who would otherwise feel like the old farmer dying of asthma who told Dean Swift, "If I can get this breath once out, I'll take care it shall never get in again." But adrenaline and the various powders, cigarettes, and sprays were mere palliatives. The Council proposed to get to work on the investigation of the asthmatic constitution, and from that point of view there was a real prospect of curing asthma and not merely relieving it.

Dr. HURST moved a resolution commendatory of the work of the Council, and this was seconded by Dr. F. E. FREMANTLE, M.P., who, in passing, told a good story of an asthmatic lady who had sought the advice of some obvious quack, and, on being reproved by her physician, said she was sure he was a good man because he advertised in a religious paper. Mr. BEN TILLETT, who also supported the resolution, spoke as one who had been often incapacitated by asthma over many years, and mentioned that on one occasion he had a severe attack while staying in a hotel in Swansea. Near the hotel was a herbalist's shop, with the words "Sure Asthma Cure" in large type in the window. He went in and found the proprietor suffering in worse extremity than his own. Mr. Tillett paid a very fine tribute to the humanity and disinterestedness of the medical profession.

Others who spoke briefly on the subject were Lord KNUTSFORD, Lord GREENWAY, and Mr. P. J. HANNON, M.P., and before the meeting separated uniformed nurses collected from the audience a large number of cards bearing promises of donations.

THE HEALTH OF THE SCHOOL CHILD.

(*Concluded from page 78.*)

IN our last issue we gave a summary of the first part of the Report of the Chief Medical Officer of the Board of Education, which dealt generally with the elementary school child. The later sections of the report are concerned with exceptional children, with the children of the secondary schools, and with several special subjects of inquiry.

Difficult Children.

Increasing interest is being taken, both by school medical officers and by educationists generally, in the physical and educational problems of the mentally retarded child. Allied to these problems are those of the nervous, unstable, maladjusted, and difficult child. The subject is one that has received special attention in Canada and the United States, and as an outcome there has been, since the war, a development of what are known as "child guidance clinics." The interest arose largely through the study of problems presented by the delinquent child. This work revealed how long and complicated was the history behind the delinquent act, and thus attention was drawn to abnormal traits in behaviour. There are in this country no clinics so fully developed as those in the United States, but a beginning has been made in some London hospitals, at Tavistock Square, the Jews' Free School, and the medical department of the London County Council. A great impetus is likely to be given to the movement by the establishment next year, under the auspices of the Child Guidance Council, of the proposed child guidance clinic in London, made possible through the generosity of the Commonwealth Fund of New York. The clinic has secured the full co-operation of the London County Council, which will be represented on the board of management, and will therefore be closely associated with education and the school medical service.

Defects of Vision and Speech.

London reports a gratifying decrease in the number of children certified as blind. The number of new cases between 1918 and 1925 inclusive was on the average 77 per annum (ranging from 59 to 89). In 1926 the number was 33, and in 1927 35. An analysis of the figures shows that a considerable part of the decrease is in those cases in which blindness is associated with venereal disease, and may be due to the great improvement in supervision and treatment brought about by the scheme for the diagnosis and treatment of venereal diseases, and by the closer supervision of midwives. Investigation of the physical conditions of children with high myopia shows that the percentage of under-nourished children is two and a half times as great as among the ordinary school population, and that after allowing for the children operated upon for tonsils and adenoids the percentage requiring operation is twice as great as that found amongst ordinary children.

Dr. Betenson of Cardiff investigated the condition of 452 stammerers, of whom no fewer than 371 were boys, and

only 81 girls. He reports that there appeared to be no connexion between stammering and any of the forms of left-handedness.

School Desks.

School desks are a perennial source of interest. One after another new types of desks have been evolved, only to prove in practice not to fulfil the hopes of perfect results which have been held out. It is not good physiology for children to remain at a desk for the greater part of a morning or afternoon, and the most perfect adaptation that could be possible of desk and seat to anatomical measurements of a particular child could not ensure throughout a session that the children would maintain correct postures. There has been a revolt against foot-rests. More significant than the question of modification of school desks is the revolt against desks altogether, which is gradually gathering head, and has taken especially the form of the substitution of tables and chairs, an experiment which is being watched by the medical staff with much interest and sympathy. This reform is generally to be welcomed as it is a move towards greater freedom. The combined desk and fixed seat is rigid. Separate and movable chairs give an increase of freedom of movement which is a boon. Already desks have been banished from the infants' departments.

The Secondary School Child.

The general inference drawn from the figures and reports of the school medical officers is that the incidence of definite malnutrition is less in secondary school children than in the elementary school children. On the other hand, the incidence of subnormal nutrition is greater. Further, it appears that the state of subnormal nutrition is more common in secondary school girls than in the boys. The greater stress and competitive strain of secondary school life, acting at a time when strain has its dangers, may be one factor producing this result. Outside school environment may contain other factors of equal importance. The domestic responsibilities often undertaken by girls, limiting their opportunities for physical recreation in the open air, combined with the anxiety of examination work, may account for the incidence of subnormality falling more heavily upon them. The incidence of defects of nose and throat ranges between 25 and 29 per 1,000, which compares favourably with the figure for elementary school children, which is 67.4 per 1,000. The large majority of such patients are suffering from enlarged tonsils and adenoids. An examination of the records of reformatory school children between 12 and 17 years showed a much higher percentage of abnormal throat conditions. Among 487 boys of ages 16 to 17, 30 per cent. were found with slightly enlarged tonsils on admission, while another 9 per cent. had marked enlargement.

Writing on the occurrence of defective vision in secondary school children, Dr. Auden of Birmingham draws attention to the fact that errors of vision may remain latent in the earlier years and become apparent as the demands upon the eyesight increase in later years. He thus raises the all-important question of what is the effect of the secondary school curriculum on eyesight. If the greater demands on eyesight tend to produce defective vision, then we should expect a significant increase in its incidence as we ascend the age groups of secondary school children. Evidence on the whole confirms this expectation. Defective eyesight is more frequent in girls than boys. The general incidence of defective vision increases with age in secondary schools; further, the occurrence of more marked errors of refraction is greater the higher the age group. There is, therefore, definite deterioration of vision.

The survey of the incidence of various defects found at the medical inspection of secondary school children leads to the general conclusion that their health as a whole compares favourably with that of the elementary school children. With the exception of minor conditions of subnormality, rightly or wrongly attributed to overstrain, all other specific medical defects are less common in the secondary scholar. But there is evidence that the elementary school child is improving at a greater rate than the secondary school child. The latter, as a rule, attends a better equipped school and has a midday meal at school; there is a general tendency for his defects and their treatment to receive more attention. Yet there are disadvantages. There is usually a longer school journey; there are longer hours of study, more home-lessons, and more pressure and keenness to excel.

The Young Worker.

One of the aims of the school medical service is to turn out strong men, healthy citizens, and efficient workmen. It is claimed that this aim is to some extent secured; there is a measurable improvement in the state of the leaving children; but when they leave school they tend to go backwards in health. There is no continuity in health action apart from certain movements such as boy scouts and girl guides. There is a gap between the age of 14, when the child leaves school, and 16, when the benefits of the insurance medical service begin. Ample evidence is forthcoming that by the close co-operation of education with industry much and lasting benefit may accrue to the young employee and correspondingly to the industry in which he is engaged. There is the certifying factory surgeon, but his duties are well defined and limited. He must examine all candidates for work within a certain stipulated period of their employment inside a factory. His examination is to determine fitness or unfitness, and no more. There is evidence that the certifying factory surgeons are in favour of an arrangement by which medical histories of the child during pre-school and school age would be at their disposal, especially in cases of disease of respiratory organs, myopia, rheumatism, and heart disease. But this provision would not bridge the gap of the two years. Many large firms, by the institution of factory welfare schemes, have done much to meet the difficulty, and despite industrial depression these schemes are steadily expanding in scope and number. The chief inspector of factories reported in 1925 that this form of welfare is definitely established in industry and is operating on a far larger scale than is generally realized. The movement was initiated by philanthropists, but it was soon found that the gain in health, happiness, and working capacity of the employee more than repaid the expenses incurred in conducting the welfare schemes. Sickness decreased and output increased. A comprehensive scheme provides for the medical inspection and treatment, dental treatment, physical training and games, canteens, social training and recreation, and education of employees. Many examples are given of the arrangements made for this useful work. In a sense it is the answer to the question, "What does the business man think of the school medical service?" The business man knows that prosperity depends upon efficiency. He finds that a more efficient youth is turned over to him from the schools, and he finds that similar and continued care of his employee maintains and increases his efficiency. It is held, therefore, that more systematic action to fill the gap between 14 and 16 is needed.

Health Education.

It is urged that every elementary school in the country chargeable to the rates and taxes should give practical and sensible health teaching, and that such teaching should never be neglected or allowed to fall into abeyance. The study and practice of health must from the first form part of the everyday life of the school. Hygiene should be systematically taught at least once a week, and practised every day, throughout the nine years of the child's school life. The instruction should be given, as a rule, by the school teacher, from the one with whom the child is most often and most closely in contact. The Board of Education issued last year a new *Handbook of Suggestions on Health Education*. One part contains hints for the training of children under 11 years of age, another for the elder children. The Board has announced that a knowledge of the contents of this handbook should be regarded as part of the necessary equipment of every teacher. All classes of the community desire knowledge and guidance in regard to a healthy way of life. There has probably never been such eagerness to know about these things. Some of the great newspapers have sought to meet the need by giving health instruction in plain and homely words. Sense of proportion may at times have been lacking, but the better

sort of articles have probably done much more good than harm. For future enlightenment it is necessary that every school in the land should make the science of health an integral part of its everyday life.

Feeding of School Children.

There is much else in this report that merits close attention, particularly the beginnings of the teaching of "mothercraft" in the girls' schools; the general improvement in the development of physical education and games; and the provision of school meals. In the last section it is noted that in 1921 and 1926, the years of coal stoppage, school meals went up from an average of ten million meals a year to sixty and seventy million meals. There is, therefore, evidence that the purpose of the school meal provision is being diverted from its original purpose to become a sort of poor relief, to feed the hungry. Special investigations were made into the state of the children in South Wales and Durham, and it was found that the children were no worse than the average attending the elementary schools in their district. The investigators were surprised that there were no greater manifestations of excessive sickness and impairment of health; but whilst no literal starvation may be evident many silent people are not having as much food as is necessary for their health and mere physical efficiency, and still more are passing through a period of grave mental distress.

The Need for Research.

The section upon the investigations and research work done by the school medical officers is worthy of study. It is urged that if a good return is to be obtained for the money spent on medical inspection school authorities should encourage work of this kind, and take it into account when considering the size and nature of their medical staffs. School medical officers have exceptional opportunities for research which are denied to most of their profession, in that they have a complete section of the population available for their field of investigation.

England and Wales.

Care of the Mental Defective.

THE activities of a large number of voluntary organizations, public bodies, institutions, and homes concerned with the welfare of mental defectives and other persons coming under the supervision of the Board of Control are co-ordinated by the Central Association for Mental Welfare, whose annual report for the period 1927–28 has just been issued. The Central Association acts as a means of communication between the local voluntary organizations and Government departments and public authorities, organizes the training of teachers, visitors, attendants, and others responsible for the care and treatment of defectives, promotes, watches, supports, or opposes legislation relating to mental deficiency, and in general does whatever it can to induce to the efficiency of voluntary work in connexion with the mentally defective. The Mental Deficiency Act, passed in December, 1927, and now in force, was drafted by the Board of Control in consultation with the president and other members of the Central Association for Mental Welfare, the association as a whole carrying out an active campaign to secure its passage. Propaganda and education—the former by means of lectures, films, and publications, the latter by means of special courses of instruction in psychiatry and allied subjects—are among the association's chief activities. During the year under review it organized separate training courses for social workers, medical officers, teachers, and magistrates. Each of these courses fulfils a vital need. The training of social workers is essential for the maintenance of an adequate supply of competent and experienced people to fill vacancies as they arise in administrative, teaching, or nursing work for defectives; the courses for medical officers provide those attending with the opportunity, usually otherwise lacking, of visiting a number of institutions, schools, and homes, and making a comparative study of methods of supervision and treatment. Magistrates require a knowledge of legal administration under the Mental Deficiency Act, and, so that injustice may be avoided, an understanding of the psychology of the juvenile offender; and, finally, the dearth of teachers for special schools and for special classes of dull and backward children can be met only by training suitable persons at courses conducted on the lines of those of the Central Association.

The Teaching of Cleanliness.

The Health and Cleanliness Council, which carries the excellent motto, "Where there's dirt there's danger," aims at spreading information by means of education and propaganda as to the advantages of cleanliness and other healthy practices, and at promoting cleanliness by co-operating as far as possible with other organizations engaged in similar work. Representatives of public health authorities, education authorities, boards of guardians, national health insurance committees, and various voluntary organizations, are associated with the council in its activities. The chief of these are the supply of posters, leaflets, and other publications to schools, clinics, and local authorities; sending lecturers and demonstrators to infant welfare centres, day nurseries, and schools at the request of the authorities concerned; and assisting organizations and local authorities during health weeks and baby weeks in connexion with local campaigns. In the council's fifth Occasional Bulletin, just issued, a survey is made of work done during 1928. This is a year the council can look back upon with some pride, for the records afford evidence of its extending activities and influence in connexion with all branches of its propaganda. A year ago the council announced that since its inauguration in 1926 it had distributed publications to 1,200 different areas; in the year under review it was in touch with approximately 2,300 districts in Great Britain. During 1927 the council sent out some 2 million publications; in 1928 this number had risen to 4½ million. The council has furthermore assisted in no fewer than 286 local health weeks, of which 156 took place during 1928. A travelling cinema under its control made its appearance during October, touring the country and displaying educational films, sometimes in streets, sometimes in halls. The council invites applications for the services of this cinema outfit, which has already been an asset to a number of localities conducting their own health campaigns. An indication of the response of school children to cleanliness propaganda is illustrated in some of their essays, written after receiving instruction from one of the council's lecturers, or by means of its literature or films, and reprinted in the Bulletin.

Health Visitors at Papworth Village Settlement.

A party of health visitors, drawn from the staffs of a number of local authorities, on January 7th visited the Papworth village settlement, where they were received by Dr. P. C. Varrier-Jones, who explained the methods employed in the cure of tuberculosis, in preventing its recurrence by providing patients with suitable homes, and in securing their re-establishment in appropriate occupations. He said that money spent on the institutional treatment of tuberculosis would be wasted unless adequate provision was made for the after-care of the patients. It was of the utmost importance that the breadwinner should be restored as soon as possible to a position in which he could maintain his family. In the course of the tour of the colony it was shown that Papworth is not only a sanatorium for the treatment of consumption, but a sociological experiment having for its purpose the effectual reduction of the incidence of the disease. The provision of the settlement is intended to counteract the common conditions under which treatment is often nullified by the return of patients to unhealthy homes, where many of them become, in spite of earlier efforts on their behalf, a burden upon their relatives and a source of infection. At Papworth, after patients have passed the convalescent stage, they become settlers in the village, single men and women being accommodated in chalets and hostels, while separate dwellings are provided for married men, where they may live with their families. In the workshops employment of

various kinds is provided, so that men and women can find callings which do not overtax their strength, but afford them an opportunity of regaining some measure of economic independence. The health visitors saw these establishments, of which an account was given in the *Journal* of June 30th, 1928 (p. 1115), on the occasion of the opening by H.R.H. the Prince of Wales of the cottages erected as a memorial to Sir Clifford Allbutt. When the grants paid by local authorities for the support of patients during their sanatorium treatment cease on the disease being arrested, the inmates of the settlement become wage-earners; they are remunerated by the management, who undertake the marketing of the goods manufactured. It is interesting to note that of the families who have entered the settlement to reside with former patients not a single member has contracted tuberculosis.

Central Midwives Board.

At a meeting of the Central Midwives Board for England and Wales on January 3rd, with Mr. L. H. West in the chair, in the absence, through indisposition, of Sir Francis Champneys, it was resolved—in view of the facts disclosed at the hearing of charges against two midwives at the last meeting of the Penal Board—that approval of training at the Wolverhampton District Nurses' Home, which expires on March 31st, should not be renewed after that date. It was decided that no new pupils should meanwhile be taken at the home, and that no application for re-approval should be considered before March 31st, 1930. Pupils now in training there who will not have completed their course by the end of next March will be transferred to other institutions or teachers. The Board appointed Dr. J. J. Jervis as its representative at the congress of the Royal Sanitary Institute, to be held at Sheffield in July, and Dr. R. A. Lyster as its representative at the congress of the Royal Institute of Public Health, to be held at Zürich in May. It was agreed that the Nether Edge Hospital, Sheffield, be permitted to train four pupils at a time instead of two.

Scotland.

Royal College of Physicians, Edinburgh.

THE annual dinner of the Royal College of Physicians of Edinburgh was held on January 11th, with Dr. R. A. Fleming, president of the College, in the chair. The principal guest was the Rt. Hon. Lord Elphinstone, K.T. The toast of "The Imperial Forces" was submitted by the vice-president, Dr. Robert Thin, and acknowledged by General Sir William Peyton, K.C.B., General Officer Commanding-in-Chief in Scotland, and by Sir Matthew H. G. Fell, K.C.B., Director-General of the Army Medical Service, who stated that the Royal Army Medical Corps was not receiving a sufficient number of new applications for commissions. The toast of "The Guests" was proposed by Dr. Alexander Goodall, and replies were given by the Rev. Dr. J. Harry Miller, moderator of the United Free Church of Scotland, the Rt. Hon. Lord Alness, Lord Justice Clerk, and Principal Sir James Irvine of the University of St. Andrews. "The Prosperity of the Royal College of Physicians" was proposed by Lord Elphinstone and acknowledged by the president.

Edinburgh Royal Infirmary.

The annual meeting of the court of qualified contributors to the Royal Infirmary, Edinburgh, was held in the City Chambers on January 7th. Lord Provost Sir Alexander Stevenson, who presided, in moving the adoption of the report, of which a summary appeared in the *British Medical Journal* for January 12th (p. 80), said that all-round progress has been a marked feature of the year, and recalled that on August 6th next the institution will have completed 200 years of work. He referred particularly to the fact that voluntary contributions last year amounted to over £72,000, an increase of £3,400 on the preceding year's total, and also to the fact that there was an increase of £5,690 on the gross income. After expressing gratitude to the students of Edinburgh University, whose efforts had raised £1,955, he said that the need for extension, which had been decided upon by the managers, was indicated by the existence of an average waiting list of over 2,000 persons.

Glasgow Royal Infirmary.

In accordance with a custom which has lasted over sixty years, the first day of the new year was celebrated at Glasgow Royal Infirmary by an annual meeting of the managers with the nurses of the institution. Lord Provost Mason, who presided, referred to the gratitude felt by the managers and by the citizens of Glasgow for the able work done by the nursing staff. Mr. James Macfarlane, chairman of the board of managers, made some reference to recent developments in the hospital, saying that he was glad that the buildings, which for the past six years had been constantly undergoing additions, were for the present complete. The high standard of efficiency which had been reached by the medical and nursing staffs, he continued, might be gathered from the fact that the average duration of stay of patients in the hospital had been reduced to seventeen days as compared with thirty-two days in 1897. The financial position of the hospital was such that all the available free capital was now in stone and lime; the buildings had been equipped to the highest possible degree, and what was chiefly required now was annual income. A favourable feature in this respect was that the contributions from employees in the past year had amounted to £28,661, which was £962 in advance of the amount contributed in this way during 1927. They were faced, however, with a deficit of £11,282, although this was smaller than the deficit a year ago, which had amounted to £12,896. The prizes gained by the nurses in examinations were thereafter presented.

Presentation to Dr. John Harrison.

A public meeting, at which the Rev. Dr. Gillies presided, was held in the Parish Church Hall, Lesmahagow, on January 11th, to celebrate the completion of fifty years of medical work in the town by Dr. John Harrison. The chairman remarked that Dr. Harrison had taken up practice in Lesmahagow shortly after graduating M.B., C.M. at Glasgow University in 1878, and for fifty years had pursued his labours in the parish of which he was a native. His work had gained great appreciation from the residents, as was shown by the representative meeting which had met to make the presentation. Unfortunately Dr. Harrison had been indisposed for some time, and was unable to be present to receive the gifts in person. Arrangements had, however, been made for a special wireless installation, by which he was able, from his bedroom, to listen to the speeches made at the meeting.

New South Wales.

[FROM OUR CORRESPONDENT IN SYDNEY.]

The University of Sydney.

THE University of Sydney a year ago, on the occasion of its seventy-fifth anniversary, launched an appeal for funds, and set the sum of £250,000 as its goal. A year was devoted to the collection, and when the fund closed in September last over £350,000 had been received. Among other sums was one of £20,000 given by Dr. Gordon Craig for the foundation of a fellowship in urology. Mr. George H. Bosch gave property to the value of roughly £250,000. Mr. Bosch in 1927 presented to the university the sum of £27,000 for the endowment of a chair of histology and embryology, and for assistance to the research work in the department of anatomy. In 1928 city property to the value of £220,000 was added. The donor, in his deed of gift, expresses the belief that it is in the best interests of the medical faculty that there should be full-time professors of medicine and surgery, and that there should be a department of bacteriology in the university, the professors devoting their whole time to university duties. Accordingly he offered the university—to provide for these appointments and for new buildings and equipment—city property and securities to the value of £220,000. From the trust fund

so established the income is to be applied in paying the professors of surgery, medicine, and bacteriology such salaries as shall enable them to devote their whole time and attention to their duties at the university. Additional income is to further the teaching and research in branches of medical science, particularly in medicine, surgery, obstetrics, bacteriology, and paediatrics. The Bosch professors of medicine and surgery are to act also as directors of studies of clinical medicine and clinical surgery, and to undertake and direct clinical research. The donor provides that the extra payment to the professors of medicine and surgery shall be conditional upon their being appointed in the first instance for seven years, subject to renewal for such a further term or terms as the Senate, on the report of a select committee, shall agree. The deed also provides that, if full-time chairs of medicine and surgery are found to be not in the best interests of the university, the Senate may appoint part-time professors, and that the income so set free shall be devoted to medical research in several branches. Any income not expended on the above-mentioned objects may be expended on departments in the faculty of medicine as shall best further the interests of the faculty, with a proviso that the expenditure shall not be more than one-sixth of the revenue from the investment of the trust funds, it being the intention of the donor that the costs of subsidiary services usually paid by the university out of its general revenue shall continue to be so paid, and not be a burden on the fund.

New B.M.A. Building, Sydney.

A contract has been signed for the erection of new premises for the New South Wales Branch of the British Medical Association. This has been rendered necessary by the resumption of the present premises by the city council for special and important purposes. A description of the design selected was published in the *Supplement* of August 11th, 1928 (p. 92). The new building, which will contain twelve stories and a basement, will be built on a 60-ft. frontage, and, in addition to lecture hall, library, and committee rooms, will accommodate the staff of the New South Wales Branch of the British Medical Association. The cost of the land was £45,000, and the building will cost £130,000. It is to be hoped, in addition to housing the Association, that the portion of the building to be let to tenants will show a profit, and that the moneys derived from this will be expended on benevolent relief and scientific work.

The College of Surgeons of Australasia.

The first annual meeting of the College of Surgeons of Australasia was held at Canberra on March 31st, 1928, with Sir George Syme, the president, in the chair. There were on the platform His Excellency Lord Stonehaven (Governor-General of the Commonwealth of Australia), His Excellency Sir John Goodwin (Governor of Queensland), the Hon. Earle Page (Treasurer of the Commonwealth), Sir Neville Howse, V.C. (Minister for Home and Territories and for Health of the Commonwealth), the Hon. W. G. Gibson (Postmaster-General of the Commonwealth), and Senator A. J. McLachlan. Delegates from the universities of Australasia were presented, and Sir John Goodwin and Mr. Victor Bonney of London were elected honorary Fellows. The Commission of the Federal Capital Territory at Canberra granted to the College, for future buildings, a site of three acres in the area reserved for scientific societies, immediately opposite the site for the University and next to the site of the Museum of Comparative Anatomy. A discussion on the improvement of hospitals and hospital methods was held, and a series of resolutions was adopted urging the need for providing opportunities for affording hospital training for surgeons, dealing with the question of payment of hospital staffs and with their appointment, and defining the views of those present on the relations between public hospitals and their patients. Resolutions emphasizing the importance of providing for post-graduate instruction in surgery and for medical research in teaching hospitals were also adopted. The rest of the meeting was devoted to scientific papers and discussions. During the latter half of 1929 clinical meetings were held in various Australian States and in New Zealand.

Reference to the fact that the *Journal of the College of Surgeons of Australasia* made its first appearance in July last appeared in the *British Medical Journal* of November 17th, 1928 (p. 906), when a brief account was given of the early history and constitution of the College and of its present position.

Correspondence.

FRACTURE CLINICS.

SIR,—The paper on fractures of the lower end of the radius in adults, by Mr. Harold Edwards and Dr. Bellis Clayton, which appeared in your last issue (p. 61), seems to me to furnish an excellent illustration of the benefit to surgery and the public which such a fracture service affords. It seems that at King's College Hospital, at any rate, the treatment of fractures of the upper extremity is well organized, more or less upon the lines advocated by Sir Robert Jones at Bath in 1925, and by Professor Hey Groves in his address published by you on December 1st, 1928 (p. 993).

It is to be hoped that fractures of the lower extremity are as efficiently treated at King's College Hospital as those of the upper, but in the former case the difficulty of want of beds may come in the way. Since the meeting of the British Medical Association at Bath in 1925 you have more than once advocated the establishment of fracture departments in general hospitals, but so far as I know without much result. This is the more surprising because at the Bath meeting of the combined Sections of Surgery and Orthopaedics the opponents of change, as represented by Mr. Gask, admitted that it was desirable that a special hospital for the treatment of fractures and for clinical instruction should be established in London. This is more than Sir Robert Jones or Professor Hey Groves has asked for. Those of us who were present at that meeting were struck by the overwhelming evidence of a desire for a radical reform of methods of dealing with fractures in hospitals.

In a letter published in your issue of December 15th, 1928 (p. 1108), Messrs. Seymour Barling and Percival Mills of Birmingham criticize the scheme outlined by Professor Hey Groves. While they recognize the importance of the part to be played by the general practitioner in the treatment of fractures, and the need for his better instruction, before or after qualification, they dislike the idea of a fracture department under a special surgeon and his team, and advocate that it should be placed under four surgeons and four assistant surgeons. In Birmingham general surgeons may be more keen upon fractures than they are in London, but if they are not, it seems likely that the "senior resident or registrar" who is to "exercise general supervision, initiate the new house-surgeons into the work of the unit, and be responsible for out-patient fractures attending the clinic" would very soon become in fact the fracture specialist to the hospital, and the outcome of the one scheme would be very much the same as that of the other.

To an onlooker the crux of the whole fracture problem is made up of the lack of interest in fractures which is shown by many general surgeons, and the lack of beds in which fractures of the lower extremity can be adequately treated; if these deficiencies were remedied sound principles and methods could be inculcated. Messrs. Barling and Mills do not discuss this last difficulty, which Professor Hey Groves would solve by utilizing the municipal hospitals and adding to their staffs and equipment. This seems to many of us a promising way out of the difficulty of want of beds, but the suggestion is often met by the objection, made again by Messrs. Barling and Mills, that its adoption would involve ignorance of fracture treatment by students. But how much useful knowledge of the treatment of fractures of the lower extremity does the student acquire under the old system, and is not the ultimate benefit to the patient to be more considered?—I am, etc.,

MELMEAD LITTLE.

London, Jan. 13th.

TREATMENT OF VARICOSE ULCERATION.

SIR,—In your issue of January 12th (p. 83) Dr. Bourdillon asks for some further data in connexion with the report on this subject (December 22nd, 1928, p. 1144).

As regards the duration of ulceration prior to the treatment it might be possible by again going through the 1,092 returns to furnish the information in some (perhaps in most) of the cases, but many were relapses which finally healed. I will bring the matter before the committee concerned in the investigation, with a view to a decision whether this further work should be undertaken. The extent of the ulceration prior to treatment was given in diagrammatic form in most of the cases, but I found it impossible to tabulate this information.

With regard to Dr. Bourdillon's inquiry as to data concerning the use of two or more methods of treatment for one case, I at first endeavoured to collate such information, but abandoned the attempt on account of the fact that the material could not be tabulated, and would consequently in print have taken up several pages of the *Journal*, without, as I think, fulfilling any really useful purpose. In many of the cases several methods of treatment were tried, and those that were finally successful are the tabulated ones.

I am not quite clear whether Dr. Bourdillon has assumed that the 56.2 per cent. of all cases treated with rest in bed or its equivalent were healed. He states, "Since rest in bed alone will cure a large percentage of ulcers it is evident that the position of a method of treatment in Table XI may depend more on the extent to which the physicians insisted on rest (or on careful bandaging) than on the value of the special treatment employed." Here I can be of assistance to Dr. Bourdillon, since I find on reference to my notes that out of the 656 cases that were treated only eleven cases healed without the use of a direct application or treatment to the ulcers; ten were dealt with by rest in bed and bandaging or strapping, and one by strapping only without rest. With the exception of one of the cases which remained healed at the end of five years only short periods had elapsed since this healing of the ulcers and the returns of the reports of the other ten cases.

In conclusion, I would like to add that Dr. Bourdillon's criticism and suggestions are welcome and useful, since this somewhat novel method of collective investigation presents difficulties in collation; I cordially assent to his suggestion that in future investigations of a similar character the pertinent variables should be fully recognized.—I am, etc.,

Limpsfield, Jan. 14th. ARTHUR P. LUFF.

STATISTICS ON PUERPERAL MORBIDITY.

SIR,—Dr. Bethel Solomons, in your issue of December 22nd, 1928 (p. 1155), calls attention to the necessity for accuracy in taking a uniform standard of puerperal morbidity, and he refers to that which we have hitherto regarded as the B.M.A. standard. On January 5th (p. 40) Professor Francis Browne further points out that even if a standard were rigidly adhered to reliable data would not necessarily be obtained, and he illustrates his point. I entirely agree with both, for they are simply calling attention to the widespread feeling that the present statistics of puerperal morbidity are based upon data which are not only misleading but to a great extent valueless. Hitherto much confusion has existed when compiling statistics, both as regards the actual standard used and the method employed in obtaining it.

The letter by Dr. R. R. Armstrong in the *Journal* of January 12th (p. 80) should serve as a most useful fillip at a time when the true value of reliable statistics on puerperal morbidity has made itself so keenly felt. Dr. Armstrong took the trouble to approach Dr. Alfred Cox for an authoritative statement in regard to the generally accredited B.M.A. standard of 1905, and his reply is most interesting. Dr. Cox says: "It is unfortunate that this confusion should have arisen, but we shall have to abide by the decision of the Puerperal Morbidity and Mortality Committee in 1925."

It is impossible to emphasize too strongly the importance of what Dr. Solomons, Professor Browne, and Dr. Armstrong have pointed out—that is, the acceptance of a standard which will receive universal recognition in this country. We have at present two standards before us. (1) That which has been adopted by the Ministry of Health for the notification of puerperal pyrexia—that is, a pyrexia of 100.4° F. or more affecting a woman within twenty-one days after childbirth or miscarriage, and sustained for twenty-four hours on end or occurring more than once in any given twenty-four hours. (2) The other standard is that suggested by the B.M.A. Committee of 1925, which apparently differs from the former in this respect, that the words, "sustained for twenty-four hours" should read "*more* than twenty-four hours."

It is for lack of a definitely accepted standard that much valuable time has been lost and much valuable material has either been wasted or rendered incomparable. Perhaps some of your readers who are workers in this field may be able to put forward a suggestion whereby the leading maternity hospitals might be consulted in regard to the standard which each proposes to adopt for the future, as also the method of obtaining it. This would be an achievement of very considerable value.—I am, etc.,

University College, Dundee, Jan. 12th. JOHN MCGIBBON.

SIR,—I believe that a lengthy correspondence on this subject will not serve a useful purpose, but it should be of extreme value that such an important matter has been ventilated.

If a questionary were submitted to the various maternity hospitals of the kingdom I believe it would be found that the uniform standard of morbidity is the B.M.A. standard—that is, that if the temperature taken *in the mouth*, morning and evening, should reach 100° F. on any two occasions between the second and eighth days, the patient is regarded as morbid. All deaths, with or without fever, are included. We take this as our standard at the Rotunda in order that we may compare our results with others, but we are also "trying out" the Rotunda standard.

Evidently much confusion exists, and this is made very evident by the letter of Dr. Cox, quoted by Dr. Armstrong in your current issue. I suggest that the time has come to investigate this all-important subject once more, and that it might be well for those who are drawing up the programme for the next Annual Meeting of the B.M.A. to consider whether a discussion on puerperal morbidity might not be of interest and value to the profession and to the community at large.—I am, etc.,

Rotunda Hospital, Dublin, Jan. 12th. BETHEL SOLOMONS.

STREPTOCOCCAL VACCINES AND PUERPERAL SEPSIS.

SIR,—We welcome Dr. Colebrook's trenchant criticism (January 5th, p. 41) of our paper in your issue of December 15th, 1928 (p. 1082). We by no means surrender the view that streptococcal vaccine is of subsidiary importance in the prevention and treatment of puerperal sepsis as compared with conservative and aseptic midwifery, but we are glad to qualify the statement that puerperal morbidity, as defined by the Ministry of Health, is in the main due to *Streptococcus pyogenes*.

When our inquiry on the extern midwifery district of St. Bartholomew's Hospital was initiated in 1925 it was generally believed that *Streptococcus pyogenes* was responsible for the majority of morbid puerperia, and this was confirmed by Dr. Colebrook in a paper read before the Section of Obstetrics and Gynaecology of the Royal Society of Medicine, December 3rd, 1925. Dr. Colebrook then stated: "As to whether the haemolytic streptococci play a predominant part in the localized puerperal infections one cannot speak with quite as much assurance, but our experience leads us to think that they do. Swabs taken with care from inside the cervical canal in non-septicaemic febrile cases usually give an almost pure culture of this organism." Substantiation by bacteriological tests was not possible in our own series of cases, for the women were delivered in their homes.

In view of the evidence Dr. Colebrook has now produced it seems that a whole variety of relatively innocuous

bacteria may cause pyrexia of moderate degree. Clearly, however, it is undesirable that the all-important question of the detection and prevention of major puerperal sepsis should be obscured by the consideration that cases of sub-ordinate clinical importance are often due to indifferent organisms.—We are, etc.,

RICHARD R. ARMSTRONG.
WILFRED SHAW.

St. Bartholomew's Hospital, London, E.C., Jan. 4th.

DENTAL CARIES AND VITAMIN D.

SIR,—The enormous importance of the fact that the family doctor and parents are for the first time presented with the possibility of preventing and of assisting in the treatment of dental caries prevails upon me to ask for further space in which to answer Dr. Sim Wallace's letter published in your issue of December 22nd, 1928.

I have renewed my acquaintance with Sir Frank Colyer's textbook, but I have failed to find any evidence which would show that an ounce or two of bacon or sugar have ever had any influence on caries. There are no records of feeding experiments with controls. There is plenty of indirect evidence that dental caries can be correlated with a diet rich in soft cereals and sugars, but the evidence is of a very general and diffuse nature. It will, of course, support equally well the lodgement theory or the deficiency theory. A school inquiry (quoted) as to the effect of eating sweets is worthless, as there must be innumerable uncontrolled factors in such work. Sir Frank Colyer's cautious conclusion—"A consideration of the question of etiology would seem to suggest that the prevalence of caries in modern races is due to the soft character of the food and the increase in the use of carbohydrates which undergo rapid fermentation"—is one to which I should imagine little exception can be taken by either side, as free use of such food implies in most cases a diminished intake of fat-soluble vitamins. In regard to bacon I still know of no evidence which shows that it is actually antagonistic to caries, and in fact a comparison of the dentures of my Jew and Gentile patients would, if it were not worthless, like so much of the quoted evidence, lead me to an opposite conclusion.

As a matter of fact the question of bacon and sugar does not affect the results of the feeding experiment (recorded on December 15th, 1928) in the very slightest, as on referring to the dietaries of the various groups recorded in Table III, as recorded in the paper itself and in the *British Dental Journal* of October 1st, 1926, it is clear that they all contained the same quantity of bacon and sugar. In spite of this the average number of new carious teeth appearing in one group was ten times that in the other group (2.4 against 0.2). Quite apart from comparisons the absolute figures are striking enough. Here were a group of children who had on the average over eight carious teeth per head and the teeth practically ceased to become carious.

To the thoughtful family doctor or parent the figures given in Table III of Mrs. Mellanby and Mr. Lee Pattison's paper will probably prove more stimulating than any theory, for here are some results of research which can be applied to practice without having to alter all the habits of the nation. We can all try it and see for ourselves. It is, of course, open for a theorist to claim that the difference between these two groups is due to the oatmeal which was in B_2 diet and absent from A_2, but the practical man will simply stop oatmeal and give cod-liver oil or some form of irradiated ergosterol and watch results.—I am, etc.,

A. E. BARNES.

Sheffield, Jan. 13th.

SIR,—I think the answer to Mr. Barwise's cheery suggestion (January 5th, p. 43) that the points at issue might be settled by a few crucial feeding experiments on animals is that Mrs. Mellanby has already reported quite frankly that she has been unable always to produce experimental caries in animals by feeding them with vitamin-D-deficient or saccharine diets. She has induced caries by the former diet, but for some reason the results vary. It is obvious that there is some other factor connected with resistance. Clinically, too, every unprejudiced dental surgeon I know has met with patients whose teeth remain free from caries in spite of the fermentable carbohydrate diet they consume, their neglect of the toothbrush, and the fact that the vitamin content of their diet is the same as that of other members of their family whose teeth are often carious. Susceptibility varies, moreover, in the same individual without appreciable variation of diet.

There are, however, two recent observations which are closely relevant to this problem. Dr. E. W. Fish has contributed a cogent argument to the effect that injured dentine, its circulation being destroyed, cannot react against caries; I have reported that in certain cases of cervical caries of the teeth, with acid food debris and materies alba adhering to the gum margins, body baths of ultra-violet light render the mouth self-cleansing and the cervical surfaces insensitive. It is true that such radiation induces the formation of vitamin D in the skin, and that vitamin D increases the calcium content of the saliva; but that is certainly not the only result of irradiation. Among the other results may be the factor or factors which we are seeking. Admittedly we are in a position to recommend a diet which promotes the formation of sound teeth and makes for their freedom from caries. We can avail ourselves of Mrs. Mellanby's work as well as that of Dr. Harry Campbell and Dr. Sim Wallace; and still there will be something more to learn about the causes and treatment of dental caries.—I am, etc.,

F. TALBOT.

London, W., Jan. 10th.

TREATMENT OF CANCER BY LEAD.

SIR,—In your issue of January 12th (p. 82) Mr. J. Basil Hume ends his letter with the following startling statement: "I am still of the opinion that the treatment of cancer by lead in its present form is wholly unjustifiable, if on humanitarian grounds alone."

I do not question that Mr. Hume was unable to help his patients with the preparation he used, but I do question his right to stigmatize the practice and discredit the work of others by so foolish a general statement. Others are able to help the unfortunate inoperable cases of cancer by the use of lead preparations. Why cannot Mr. Hume simply say that he was unable to do so? Instead he accuses me, and others, of unprofessional conduct, inasmuch as we continue to use a "wholly unjustifiable" remedy.

He states that his treatment converted some of his patients into physical wrecks; again I do not doubt him. But if he will come to the Bristol Royal Infirmary any Friday about 11 a.m. he will see about thirty patients with advanced and inoperable cancer, most of whom are doing very well on a lead treatment. He will find few, if any, "physical wrecks," except those just starting the treatment, and among the cases he will see:

Case W. Carcinoma of the breast, treated for fourteen months, the patient having received 0.7 gram lead metal. There has been much gain of weight and loss of symptoms; it is doubtful whether there is any cancer remaining.

Case M. Carcinoma of the prostate, treated for fifteen months. The fistula remains closed, and the patient has gained much weight, the only trouble being absence of control of the sphincter. He has received 1.2 grams of this "*unjustifiable remedy.*"

Case D. Epithelioma of the tongue. The patient has been treated for a year, and has received 0.8 gram metal lead; is quite well, and no evidence of growth can be found.

Case Cx. Recurrent epithelioma of the lip after two operations. The *patient has gained weight*, lost symptoms, and appears to have been freed from his masses of cancer; he has received 0.6 gram metal lead.

Case C. Large sarcoma of ileum. The patient, who was unable to walk owing to paralysis and anaesthesia of the leg, has been treated for about a year. She is now very well and can walk several miles without any support.

Case E. Carcinoma of the rectum. The patient has been treated for ten months, and is now able to work again; has received 0.9 gram metal lead.

Case S. Rapidly growing ovarian carcinoma, with recurrence in operation scar, and ascites. The patient has been treated for seven months, and received 0.5 gram metal lead, she is now able to do her work.

These are a few instances taken at random from the patients who have received the largest amounts of this metal. Mr. Hume will see more cases than these, and can learn of other patients who, though now dead, yet proved that with this metal we have a hopeful beginning of a new system of treatment.

He can find an account of this treatment in the brochure *Chemotherapeutic Researches on Cancer*, published by Messrs. Arrowsmith, price half a crown. As it has not been reviewed so far by the English medical journals of wide circulation, Mr. Hume perhaps has some excuse for his unscientific statement.—I am, etc.,

Department of Pathology, Bristol University, Jan. 13th. A. T. TODD.

THE "CARDIAC SIGN" OF CARCINOMA OF THE STOMACH.

SIR,—In his valuable paper on carcinoma of the stomach in the *Journal* of December 29th (p. 1163) Dr. William Gordon states that diminution or absence of the cardiac dullness is a very valuable confirmatory sign when carcinoma is suspected, and he mentions only two other conditions in which this sign occurs—namely, starvation and severe diarrhoea.

If this statement goes unchallenged it may lead to many errors of diagnosis, for this absence of the cardiac dullness is very frequently found in simple cardiac weakness such as that which occurs after influenza or diphtheria; and complete absence of the cardiac dullness may sometimes occur when the heart weakness is not enough to prevent the patient from walking about and living a life of normal activity.

With regard to the explanation of this physical sign, several factors may be concerned. One factor—though not the commonest—is, I believe, a lessening of the elastic tension of the heart walls due to poor muscular tone. This is, I believe, the explanation of the cases occasionally met with where a heart is so greatly dilated that the apex may be in the seventh interspace in (or even external to) the anterior axillary line, but nevertheless the whole of the cardiac area may be resonant and no area of cardiac dullness can be defined. If a solid organ overlies one containing air, it will only give a dull note when sufficiently elastic to absorb the vibrations due to the percussion stroke, and thus prevent them from causing vibration of the air in the subjacent "resonant" organ. This change of quality owing to lowered elastic tension of an organ is well illustrated by the disappearance of the dullness of the liver in cardiac weakness, even when only slight.

These questions are discussed in a paper of mine in the *British Medical Journal* for June 27th, 1925, on "The estimation of the cardiac output"; and also in my book *The Early Diagnosis of Heart Failure* (London, John Murray; pp. 184–206).—I am, etc.,

Birmingham, Jan. 9th. T. STACEY WILSON.

SERUM TREATMENT OF SCARLET FEVER.

SIR,—With reference to Dr. W. Brown's article in the *British Medical Journal* of January 5th (p. 13) on the subject of the Dick test in scarlet fever, I notice that he calls attention to the possibility of patients treated with anti-scarlatinal serum giving a positive Dick reaction, indicating that they have probably not developed their own antitoxic immunity. The defensive forces of the body have not had to fight as they would have done in the absence of serum.

Having treated over 800 patients without a single death directly due to scarlet fever during the past three years in Darlington I have become convinced of the marvellous value of anti-scarlatinal serum in the treatment of all early severe toxic scarlet fever patients. I have not, however, tested the Dick reaction in cases treated with serum, but my attention has been drawn to the increased tendency for late complications in convalescence, particularly in the form of minor articular rheumatism with occasional cardiac involvement, beginning about the third or fourth month after attack, in patients who left the hospital perfectly fit in their fourth or fifth week. One of my serum-treated patients developed a typical attack of scarlet fever five months after the first attack, but, as Dr. Brown states, it is too early yet to look for confirmation of this aspect of the effect of serum administration, since the occurrence of second attacks of definite scarlet fever was not so rare as to escape recognition before the introduction of serum therapy.—I am, etc.,

January 7th. G. A. DAWSON, Medical Officer of Health, Darlington.

CARDIOSPASM OR ACHALASIA OF THE CARDIA.

SIR,—It is evident that Dr. Hurst believes that those who sow the wind should reap the whirlwind; his tempestuous comments on my contribution to this intricate subject (December 15th, 1928, p. 1110) are tinctured by a dogmatism that tends to cloud rather than clarify the obscurity. At the outset he and Mr. Rake challenge my statement that "the existence of any hypertrophy of the muscular coat remains a subject of contention." That statement may appear ambiguous, but reference to the context would have saved both of them much superfluous criticism, referring, as it does, to the cardiac sphincter and not to hypertrophy of the oesophageal wall. Hypertrophy of the oesophageal wall has been found by all observers so constantly that it has become accepted as an invariable concomitant of the disease. In the matter of hypertrophy of the cardiac sphincter it should suffice that Moore has recorded two cases and Brown Kelly one, where definite hypertrophy of the sphincter was found, to justify the assertion that there remains difference of opinion as to fact.

Dr. Hurst three times refers contemptuously to the futility of founding deductions on my "one case." Yet in the *Proceedings of the Royal Society of Medicine* of January, 1915, we find (following his injunction to "consult the extensive literature") that Dr. Hurst reported "a case of achalasia of the cardia," and on the strength of that "one case" deduced his belief that the term "spasm" was incorrect and that "similarly many cases of so-called pylorospasm are due to pyloric achalasia, and ileo-caecal achalasia is the most frequent cause of ileal stasis"—sweeping conclusions to base on so slender a foundation.

Despite the implications of his declaration that "the word was first applied by me in 1914 to the cardiac sphincter," etc., the plain truth is that the term "achalasia" (*a*, not; *χαλάω*, I relax) was coined by Sir Cooper Perry and adopted by Dr. Hurst. Many years previously, in the *Transactions of the Pathological Society*, 1896, xlvii, 37, Sir Humphry Rolleston first suggested the pathology so strenuously advocated later by Dr. Hurst. It was Sir Humphry Rolleston's conception of a pathology that suggested to Sir Cooper Perry an alternative nomenclature. Since those days an enlarged experience and a more critical examination of the known facts have led many to believe that this pathology is inadequate, so that the term "achalasia" represents a premature attempt to crystallize in a word our conception of the disease. From 1913 onwards, until Walton's significant article in 1925, most of the published cases, treated by operation, were single cases.

Lest Dr. Hurst should feel any remorse for his temerity in publishing, with comments, his one case of achalasia, I offer this consolation, that more than fifty years ago (1877) James Paget reported one case of osteitis deformans so accurately and with such a wealth of acute observation that little of essential importance has since been added to our knowledge of that disease. Nor did Newton need to see more than one apple fall to enable him to make some very pertinent deductions as to the laws of gravity.

Treatment by bougies proving sometimes dangerous, often ineffective, and always tedious, a dilatable bag was devised by Plummer, who (with Vinson) reported in 1921 no fewer than 391 cases—some of these, however, required operation. The mercury tube is claimed to be more effective and to pass painlessly, but on these points there is divergence of opinion. In February, 1927, Mr. Harry Morley recorded in the *Lancet*, under the title "Cardiospasm," four cases. There emerge from his experience, from that of Walton, and from the experience of others, these facts—that the mercury tube does not always pass painlessly, that the passage is often difficult, that there is usually marked gripping of the tube, and that treatment by this means is tedious and often ineffective. Economic considerations (loss of time, loss of work, and the factor of expense) cannot be disregarded where alternative procedures are available. Mutch instances a case where the mercury tube required passing thirty-five times in one week, with little or no ultimate benefit; one of Morley's

patients, at the end of two years' treatment by the mercury tube, was "given a mercury tube to use daily." On the other hand, in Walton's fourteen cases, as in mine, operation conferred on the patient immediate, complete, and permanent cure, healing and complete convalescence being ensured within a fortnight.

Dr. Hurst might cease to refer to "Walton's operation" since the procedure of dilating digitally the cardiac orifice, after a preliminary gastrostomy, was first used and described by Mikulicz in 1881. Incidentally, Walton refers to it as "Mikulicz's operation."

Dr. Hurst seems to display a carelessness of statement and a disregard for logic when he says, "Hirschsprung's disease is probably acquired in early childhood, and is not congenital." Here he passes from the tentative "is probably" straightway to the definite "is not congenital." Again, "The relief following Walton's operation . . . the effect of which is to produce a more favourable postural tone of the sphincter" can scarcely be regarded as a pattern of lucidity; the term "postural tone" may hold some occult meaning for Dr. Hurst, but to less agile minds it requires further elucidation. In what way, precisely, is the tone of the cardiac sphincter modified by posture? Again, he tells us, "There is no question of *curing* this condition by any form of treatment . . . as the changes in Auerbach's plexus are of a permanent character, the hypertrophy and dilatation . . . remaining unaltered." It might induce Dr. Hurst to modify the confidence displayed in this *non sequitur* to learn that Plummer, out of the experience of 301 cases, declares that both hypertrophy and dilatation do disappear after the operation. The term "cure" has a definite meaning, being with reason applied to patients when all symptoms have completely disappeared, leaving no physical defect or depreciation in health. In this sense the cases treated by operation are assuredly cured, whatever term Dr. Hurst cares to apply to those treated by the mercury tube, who seem not infrequently to require daily, weekly, or monthly repetition of the treatment over an indefinite period.

There is no evidence of any change in the nervous mechanism of cases that recover. From such a mechanical obstruction death can only ensue as a direct result by starvation, or indirectly by a complication, as, for example, a mediastinitis. It must be a rare occurrence that, for lack of a gastrostomy, a case is allowed to terminate fatally from starvation alone, so that the changes in Auerbach's plexus found *post mortem* are not demonstrably due to the primary disease, but to the complication that caused death. Mere end-products seen in other terminal conditions are interesting, of course, but there are pitfalls in the way of correctly correlating them with the essential primary cause of the disease.

Professor Langmead is reported to have said at a meeting of the Brighton and Sussex Medico-Chirurgical Society that it was difficult to understand how a paralytic lesion could lead to hypertrophy down to the zone of structure, or how so much hypertrophy could result from obstruction imposed by a zone of muscle in normal tone.[1] Accepting the evidence adduced by Mr. Rake and others derived by dissection of advanced cases as to degeneration of the nerve fibres, it seems strange that an isolated area of degeneration can occur as a primary lesion in an otherwise healthy individual—it is assumed to be unnecessary even to hint at any first cause such as a toxaemia from syphilis or other known antecedent of a neuritis, etc. Again, as regards "spasm," Professor Langmead is said to have referred to the positive evidence of gripping by the cardia which was vouched for by some surgeons. Somewhere in the region of the diaphragm there must be a physiological sphincter, one capable of holding back for an indefinite period a column of food, 8 inches or more, against the powerful peristaltic contraction of an oesophagus with grossly hypertrophied walls. For this tonic contraction no better term than "spasm" has yet been found.

In cured cases, as frequently figured in the literature, and in my case, there remains for a time a flaccid dilated oesophagus down which the barium meal is seen on the screen to fall like a tenuous waterfall. As surely as hypertrophy of muscle only occurs in response to an intermittent obstruction, just as surely does atrophy occur when the obstruction has been removed and the muscle ceases to have work to do. The hypertrophy of the muscle of the oesophageal wall may be expected on first principles to disappear, and even if it can be proved that the dilated tube never regains its original calibre, so long as it fulfils its function of conducting food without let or hindrance to the stomach and no symptoms reappear, the mere existence of dilatation does not invalidate the claim to "cure."

In saying that cure does not occur because "the changes in Auerbach's plexus are of a permanent character," Dr. Hurst is again guilty of a *non sequitur*, since it is by no means proved that the changes found by Mr. Rake and others have anything to do with the true cause of the disease. To describe the essential cause as being due to an inco-ordination of the neuro-muscular control of deglutition only leads us to ask what causes the inco-ordination, and to that question there has hitherto been no adequate answer.

There is a paucity of information as to the habits of life, etc., in the recorded cases; perhaps a more searching inquiry into the previous history as to imperfect mastication and the bolting of masses of solid food, suggested by my case, may establish this as one at least of the primary causes. It is true that cases occurring at so early an age as 2 years are on record, but even at that tender age the bolting of food is not unknown. There remain those said to occur within a few days or weeks of birth; these are few in number and demand very careful analysis before being accepted as true cases of cardiospasm; Professor Langmead instanced two of these juvenile cases, one of which was completely cured by suggestion.

The operation is admittedly severe, but in careful hands it is reasonably safe (none of Mr. Walton's operated cases died); recovery and cure followed with impressive rapidity and with a completeness that inevitably challenges the tedious, protracted, and expensive course of those treated by the mercury tube; the scope of the latter method would appear to be in mild cases, or in cases complicated by some other serious disease. Certainly the results achieved by the mercury tube do not prove it to be the counsel of perfection in all cases, nor do they confer on their protagonist any prescriptive right to generalize and to refer disparagingly to the deductions of those who report single cases.—I am, etc.,

H. H. GREENWOOD.

Swindon, Jan. 9th.

[1] *British Medical Journal*, December 29th, 1928, p. 1180.

TONSIL AND ADENOID OPERATIONS.

SIR,—"Whenever a laryngologist brings forth some fresh instrument for the prevention of haemorrhage or to simplify the operation for the removal of tonsils and adenoids, I can tell exactly how far he has got in laryngology" is the saying of one of my former chiefs.

I can suggest no golden rule to meet every difficulty that may be encountered in the course of this perplexing operation; but having performed many thousands of operations by the guillotine method, and many hundreds by the method of dissection, perhaps I may be allowed to express an opinion on this somewhat worn subject. I have had only seven cases of haemorrhage in over 5,000 cases treated by the guillotine. Three of these required ligaturing; a gauze plug and Watson-Williams pressure forceps sufficed for the remainder. Haemorrhage after the guillotine operation usually means that a piece of tonsil has been left behind.

While admitting that dissection is the ideal surgical method, I suggest that it is one that cannot, as a general rule, be practicably applied in such large clinics as I have had to deal with. In dissection, haemorrhage will result unless care is exercised not to go beyond the capsule or to injure the faucial pillars. Anything that Mr. Tilley says must be taken as advice from a teacher; I am heartily in agreement with him.—I am, etc.,

J. ALDINGTON GIBB.

Maidstone, Jan. 7th.

SIR,—I can never understand why the tonsil should recurrently be the butt of controversy as regards the risks of haemorrhage, and why a blood vessel in this situation cannot be treated as elsewhere on plain surgical principles—namely, by picking it up, leaving a forceps attached, and proceeding with the dissection. As I said some time ago at the discussion on anaesthetics at the Laryngological Section of the Royal Society of Medicine chloroform is the best anaesthetic in tonsil surgery, but it demands the best administration. If well given the patient is got quickly under without struggling, and is kept sufficiently deeply under to avoid disturbance as the dissection goes on. The instrument employed is a first essential. After many years' experience I have ended in using only my own dissector (Mayer and Meltzer), which is blunt, slightly curved at one end, and more so at the other, with which instrument the turning-out of the tonsil can be quickly and safely proceeded with; by the invention of long, curved artery forceps (Allen and Hanburys) any bleeding vessel can be readily caught. I also thought out a specially large, oval-shaped, serrated-edged guillotine, which has been very useful for adults, judging by its sale. With this the tonsil can be rapidly and safely evulsed when preferred to dissection.

I have given much attention to this subject of tonsillar haemorrhage, and would certainly never ligature if at all avoidable, since the spot tied must become septic. I consider the use of pressure forceps far preferable for safety, celerity, and efficacy. I cordially agree, therefore, with Drs. Clarke, Lindley Sewell, and Horgan, and cannot speak too strongly against ligature.—I am, etc.,

London, W.1, Jan. 12th. WM. STUART-LOW.

SIR,—Three months' use of the La Force guillotine had led me to discard it for other methods. The disadvantages of this guillotine operation appear to be, first, its tediousness, even in adult cases, and its impracticability when faced with long lists of children; secondly, its doubtfulness (in my experience) as regards complete haemostasis.

One can tell pretty well beforehand if haemorrhage is going to be troublesome by taking notice of the condition of the anterior pillar, especially in its superior part. If adherent and its margin not properly defined, haemorrhage may be troublesome, especially if the tonsil is small and fibrotic. It should be the surgeon's first thought before the use of the blunt guillotine to have a free pillar by stripping it back with tissue forceps; or if its anterior edge is well defined, and the tonsil large and not fibrotic, to see that the guillotine blade does no damage. If, by the aid of an electric head mirror (the patient on the back with the head well down, pharyngeal reflexes abolished, and the air-way clear), large cotton-wool swabs attached to tapes are placed in the tonsil fossa after complete enucleation one need have very little bleeding. If the anterior pillar is well adherent and the tonsil small and fibrotic the only practicable procedure appears to be dissection. Very little is heard nowadays about the cold wire snare which appears to be a surer method of compression than that obtained by the La Force guillotine.—I am, etc.,

Manchester, Jan. 12th. L. D. MERCER.

SIR,—After tonsillectomy, by whatever method, it always appears to be waste of time to spend "a few minutes" trying to stop haemorrhage by the uncertain method of gauze pressure when the perfect security afforded by pressure forceps and ligature can be achieved in a few seconds.—I am, etc.,

London, W.1, Jan. 10th. H. MORTIMER WHARRY.

SACRO-ILIAC PAIN.

SIR,—In your issue of December 22nd, 1928 (p. 1157), there appears a report of a discussion at the Medical Society of London on sacro-iliac pain, and some of the statements seem to call for comment.

On the question of sacro-iliac displacement, Mr. P. Jenner Verrall gives the impression that "anyone who had felt or heard the click while performing the manipulations for reduction . . . must be convinced of its existence." This same click may be produced while manipulating the sound joint, and in fact may easily be produced in any of the spinal joints, so that it need not necessarily signify the reduction of any displacement whatever. It would, however, be easy to convince patients that something had been out of place, and one rather imagines that this explanation has been used by bonesetters and osteopaths to their advantage. The sound is in every way comparable to what takes place when people "crack" their fingers. There is no necessity to produce this sound when manipulating joints, but it is useful in letting the operator know that the joint has been moved to its *full extent*.

Mr. Verrall also thinks it impossible to perform manipulations of the sacro-iliac joint otherwise than under anaesthesia. Sometimes this may be an advantage, but I am daily manipulating sacro-iliac and lumbar joints without any anaesthetic, and usually they are not painful.

Dr. Wilfred Harris is reported to have said that "American surgeons particularly . . . had helped to rescue many sufferers with chronic pain in the back from chiropractors and osteopaths." With this we can all rejoice, though had we not hitherto neglected this subject the cases would not have drifted into the hands of those other practitioners.—I am, etc.,

London, W.1, Jan. 1st. THOMAS MARLIN.

ACTINOTHERAPY AND DEAFNESS: POST HOC OR PROPTER HOC?

SIR,—The following case, which occurred in this institution, may prove of interest to your readers.

A staff nurse, who has been with us for many years, had become progressively deaf. For all practical purposes she was stone deaf. Five weeks ago she was transferred to the charge of a large ultra-violet ray room, where all types of lamps, mercury vapour, tungsten, iron-cored, and carbon lamps, were used. She was on duty several hours a day and every day. Her hearing has undergone a remarkable betterment; indeed, to-day I carried on a conversation without having to raise my voice at all.

If progressive deafness is a degenerative process, as pointed out by Mr. Fred Stoker in his paper, "The nature of progressive deafness: a degenerative disease," the revivifying action of the rays might possibly be an explanation. As, however, I am not an otologist, and my aim is merely to record a case which is exceptional in that we do not find deaf nurses so constantly exposed to ultra-violet rays, I will only add the hope that I may not have given a further impetus to the charlatanism which besets this form of treatment.—I am, etc.,

Morpeth, Northumberland, Dec. 18th, 1928. T. C. HUNTER, M.D.

SO-CALLED "WHITE ASPHYXIA" OF THE NEWBORN.

SIR,—Like many others I have read with great interest Mr. Aleck Bourne's observations on the resuscitation of the "white baby." On one point, however, I venture to disagree, and that is his condemnation of the efficacy of mouth-to-mouth insufflation. In numerous cases I have seen excellent and almost miraculous results from mouth-to-mouth breathing, care being taken to prevent inflation of the stomach through the oesophagus by placing the hand on the abdomen and exerting a fair amount of pressure. May I make the instrument makers the present of an idea and suggest a rubber teat with a valvular opening to be placed in the child's mouth and a rubber flange to protect us from the unpleasantness of the little manœuvre?—I am, etc.,

Ashton-under-Lyne, Jan. 8th. MARGARET GORMAN.

ASTHMA.

SIR,—What was the urgency or necessity for the intensive publicity campaign in the daily and evening papers of January 11th, proclaiming that there is no cure for asthma? In the past these unfortunate people, the asthmatics, have been treated as neurotics, and their symptoms stigmatized as nervous manifestations, and they were told they were incurable. While admitting that we are painfully ignorant of the full biochemical phenomena taking place in this complaint, certain procedures have

been discovered in recent years which have led to such an amelioration of symptoms as many patients are satisfied to call a cure. Instead of reiterating the ancient parrot cry that there is no cure for asthma we can now encourage the asthmatic by telling him of the great advances made in treatment, and that, with few exceptions, there is hope for all.

The following methods of outstanding value have each cured scores of cases: The regime of diet and exercise advocated by Dr. John Adam, the intravenous injection of peptone of Dr. Auld, the mixed coliform or entero-antigens of Professor Danysz, the radiation of the chest of Mr. Gilbert Scott, the use of tuberculin and other work of Professor Storm van Leeuwen, and last, but not least, the dermal reactions as elaborated by Meltzer and other American workers. Given a knowledge of the various types of asthma there is only one that is at present incurable, though even that type may be helped.

Naturally I am entirely in favour of all research which may throw light on the problems of asthma, but I consider the public will be more ready to subscribe to a venture that has paid a dividend and can promise more than to one which advertises its insolvency, especially as I, for one, believe the latter assertion to be untrue.—I am, etc.,

London, W.1, Jan. 12th. FRANK COKE.

*** While the bald statement that there is "no cure for asthma" may give a wrong impression, it is far less misleading than to announce that "a certain cure" for asthma has been found. The position was accurately and concisely stated by Sir Humphry Rolleston, Lord Dawson, Dr. Hurst, and Dr. Fremantle in their letter printed last week at page 84: "there is not any one form of treatment which is effective in all cases of asthma."

TUBERCULOSIS BOARDS.

SIR,—Dr. T. Readman, in his letter under this heading (November 10th, 1928, p. 868), makes the cruel insinuation that 75 per cent. of the men who were discharged from the army suffering from tuberculosis have not got the disease and probably never had. It would be most interesting to know the official percentage of men who were originally discharged as suffering from this disease and who have since died from it. Many of those who are left have learnt to take care of themselves, and should go on for an indefinite period, provided they are not badgered and worried over their pensions.

Dr. T. Readman also states that he is of the opinion that if a man really has tuberculosis which originated in the war he will not now be in a condition to take a railway journey of, say, four hours each way. If this is really his opinion it merely demonstrates that, although he is a medical superintendent of a sanatorium, he has not yet grasped what can be accomplished by prolonged and intelligent sanatorium treatment, followed by a quiet, well-regulated life in the country. I have personally found sanatoriums and sanatorium treatment to vary greatly in quality. If Dr. Readman's patients have all been looked upon as potential malingerers, to perhaps the extent of 75 per cent., it is not surprising that after ten years they are either dead or bedridden.

I have the misfortune to belong to the group of disabled men whom he goes to such pains to malign. I have suffered from tuberculosis for the last twelve years. At times I am perfectly healthy and strong, at others I have positive sputum, night sweats, slight fever, etc. As a result my practice is small, but nevertheless it contains three men who contracted tuberculosis in the war, and who, in consequence of the very careful life they have led, are still able to enjoy prolonged periods of almost perfect health. If they were examined at such a time by a trio of medical men with a similar outlook to Dr. Readman they would undoubtedly have their pension reduced. The hardship thus entailed would no doubt seriously and irretrievably damage, if not destroy, their chance in the gallant fight they are putting up against one of the most disheartening and treacherous of diseases.—I am, etc.,

December 19th, 1928. M.B., CH.B.

LIPIODOL.

SIR,—May I express my agreement with Drs. F. G. Chandler and W. Burton Wood (January 12th, p. 84) in their dislike of the scalpel incision as a preliminary to lipiodol injection. Contrary to your reviewer I feel much safer with an instrument with a sharp (but short) point. When a moderately blunt point was used I found that much greater care was required in order to avoid injury to the posterior wall following the sudden cessation of resistance as the anterior wall is penetrated; this danger is increased by the fact that the trachea is so elastic that considerable flattening may take place before it is pierced. However sharp the instrument used, anyone with practice in pneumothorax treatment will have no difficulty in feeling the lack of resistance as the point enters the lumen of the trachea.—I am, etc.,

Mundesley, Jan. 14th. ANDREW MORLAND.

"THE RIGHT TO PRACTISE."

SIR,—Section 34 of the Medical Act, quoted by Dr. J. Gordon Macqueen, clearly defines what a "qualified medical practitioner . . ." means "*when used in any Act of Parliament.*" This in no way defines who shall or shall not practise. It is illogical to conclude that a person not "registered" is not a "duly qualified medical practitioner." A duly qualified medical practitioner is not bound to register. Such a person would have every "right" to practise, and would still legally be a "duly qualified practitioner."

I quite agree with Mr. W. E. Hempson that if every degree or diploma was taken away a man could still practise medicine or surgery, *but as an unqualified practitioner.* In fairness to me, he must see that my remarks applied to the discussion so far as a "qualified" medical practitioner was concerned.—I am, etc.,

St. Leonards, Jan. 5th. A. G. NEWELL, M.D.

Obituary.

FERNAND WIDAL, M.D.,

Professor in the Faculty of Medicine, University of Paris.

WE greatly regret to announce the death, on the night of January 14th, of Professor Fernand Widal. Our Paris correspondent, Dr. Gustave Monod, writes:

The standard-bearer of French medicine is dead. Cerebral haemorrhage has suddenly destroyed that beautifully organized brain. All round the world let us observe one minute's silence.

Widal was born in Algeria in 1862. An exceptionally brilliant student, he climbed up quite young the stiff steps of the various concours leading to professorship. Laboratory work appealed to him from the start, and the combination of both the gift for research and the gift of a born clinician seems to give the explanation of his exceptional contribution to modern medicine. Let us mention his method of cytodiagnosis, the agglutination reaction in typhoid fever which bears his name throughout the world, his studies on the influence of sodium chloride upon oedema. With Chantemesse he has been one of the promoters of typhoid vaccination. The hall-mark of his work is experimental accuracy, and his publications are clear and precise, giving every opportunity and facility for control.

Those who have visited his wards at the Hôpital Cochin know what an organizer he was. Every patient was examined systematically by the staff, and every morning the master sat at the bedside and started a sort of Socratic exposition, asking questions and inspiring answers. He began with the first-year man, and finally himself concluded in a few words. Once a week the theatre was packed to the ceiling when he delivered a clinical lecture, speaking for an hour in his easy way without referring to any notes. Those who knew him more intimately can be the witnesses of what careful preparation led to his apparent facility.

Widal was, and will remain, in our thoughts perpetually young. He said he had no time to grow white hair. His secret was work and the love of the young ones. Official

honours came in showers from his own country and from every scientific centre. But neither titles nor ribbons nor the praise of the world were his reward. May he rest in peace—he who has been to scientists the pioneer, to his patients the doctor, to his pupils "*le Patron*."

WILLIAM LATIMER STOREY, M.D.,

Honorary Secretary, Belfast Division, British Medical Association.

WE regret to have to record the death of Dr. W. L. Storey, one of the best-known medical practitioners in Northern Ireland, which occurred at Belfast on January 4th.

William Latimer Storey was a native of Quebec, but left Canada for Ireland at an early age, settling in Belfast, where he was educated. He received his medical training at Queen's College in that city, and graduated M.D., B.S. in the Royal University of Ireland in 1889. In the years that followed he built up a considerable practice in the city of his adoption, and became a prominent figure among his colleagues there. He developed and maintained a lively interest in professional affairs, more especially on the medico-political side. A Fellow of the Ulster Medical Society, he filled the office of librarian for many years.

To the British Medical Association Dr. Storey gave ungrudging service. He was elected honorary secretary of the Belfast Division in 1914, and held that office without a break until the time of his death; in the years 1915–18 he acted as representative of the Division in the Representative Body of the Association, and he had also served for seven years as a member of the Irish Committee. During the past eighteen months he visited headquarters in London from time to time as a member of the Propaganda Subcommittee.

A colleague writes: The untimely death of Dr. Storey has awakened widespread regret among the members of the medical profession in Belfast, by whom he was held in universal respect and esteem, both on account of his outstanding gifts and his high character. Although naturally of a modest and retiring disposition, he took an active part in the various medical organizations. His frequent contributions to the proceedings of the Ulster Medical Society were all carefully prepared, elegant in composition, and invariably illuminated by irresistible flashes of humour. It is, however, as secretary of the Belfast Division of the British Medical Association that he will be best and longest remembered. His labours on its behalf were unceasing and indefatigable. He carried on a perpetual propaganda for the enrolment of new members, and never ceased his efforts to interest his professional brethren in the important issues that came up for consideration by the Representative Body. He leaves behind him very fragrant memories and a vacant position which will not easily be filled. The regret at his death and the sympathy with his sorrowing relatives experienced in Belfast are shared by all those at the headquarters of the Association, who realized and appreciated his great services.

SIR DAVID SERJEANT, M.D.,

Camberwell.

WE have to announce the death of Sir David Serjeant, which occurred at his home in Camberwell on January 12th, a few days before the date on which he would have attained the age of 99.

David Maurice Serjeant was the son of a lawyer in Huntingdonshire, and was born at Ramsey in that county in January, 1830. While he was in his teens he was apprenticed to a Peterborough surgeon, but at the age of 22 he went to Australia, where, rejecting an offer of a position in the civil service, he decided to try his fortune in the gold-fields. Success did not attend his efforts, and he became successively gardener, painter, paperhanger, and lawyer's clerk in Melbourne—then in the early stages of its development—and played in the first two intercolonial cricket matches in Australia for Victoria against New South Wales. He was the last survivor of the teams. In 1859 he returned to England and resumed his medical studies at Guy's Hospital, graduating M.D.St. And. and obtaining the diploma M.R.C.S.Eng. in 1862 and the L.S.A. a year later. Serjeant afterwards spent several years in the medical service of the P. and O. line as a ship surgeon, ultimately settling down in Peckham Road, Camberwell, about sixty years ago, when he became medical superintendent of the infirmary now known as St. Giles's Hospital.

Apart from his professional duties Serjeant took an active part in the life of the district, and had held many public offices, having been a vestryman, a guardian of the poor, and a councillor and alderman of the borough of Camberwell. In politics he was a strong Conservative, and gave effective support to the local party organization; it is only two years since he made his last public speech at the Peckham Conservative Club. It was claimed on his behalf that he was the oldest Volunteer in the country, and he preserved his association with the auxiliary forces during the war, when he was medical officer to the Camberwell National Reserve. His knighthood was conferred upon him in 1922 in recognition of his public services in various spheres of activity.

Sir David Serjeant delighted in reminiscences of his early life, and often recalled his experiences in the days of the gold rush in Australia. He was particularly proud of the fact that he had played the first ball in the first intercolonial cricket match at Melbourne, then Port Phillip. The development of Camberwell, which he had watched in its growth from a wealthy semi-rural residential district to a closely built, densely populated area, was a continuous source of interest to him, and he had often described the striking changes in society and transport which occurred in his lifetime. It is significant of his affection for the district in which he laboured that he showed no desire to leave it when he retired. Until a few months ago he was a familiar figure in the neighbourhood, and it was in a street near his home, early last November, that he fractured his leg as the result of a fall, from the effects of which he never fully recovered. His wife died about twenty years ago; he had three daughters and one son, all of whom, with the exception of one daughter, entered the medical profession.

THOMAS EDWARD HOLMES, M.D., D.P.H.,

Medical Officer of Health for Nottinghamshire.

WE regret to have to announce that Dr. T. E. Holmes, medical officer of health for Nottinghamshire, died on December 24th, 1928, at the age of 52.

Thomas Edward Holmes received his medical education at the University of Cambridge and at Guy's Hospital, graduating B.Ch.Camb. in 1900, M.B. in 1901, and proceeding M.D. four years later. In 1909 he obtained the Diploma in Public Health of the English Conjoint Board. After serving as house-physician and ophthalmic house-surgeon at Guy's Hospital and as clinical assistant at the Evelina Hospital for Sick Children he was appointed assistant physician and pathologist to the Royal Hospital for Sick Children and Women at Bristol. Subsequently he entered the public health service on the staff of the Nottingham County Health Department, where he was employed successively as assistant and deputy to the medical officer of health before being himself appointed to that office, with the duties also of chief tuberculosis officer and school medical officer for the county, in 1925. During the war he held a temporary commission as major in the R.A.M.C. In the British Medical Association his main interest was in the scientific side, and at the Annual Meeting at Nottingham in 1926 he was vice-president of the Section of Public Health. He was a Fellow of the Royal Society of Medicine, of the Royal Sanitary Institute, and of the Society of Medical Officers of Health.

A colleague writes: Dr. Holmes witnessed great developments in public health work in Nottinghamshire. While he was cautious to a degree, once he was convinced that it was not in advance of public opinion, he did all he could to forward any new movement that he felt would benefit the community. He was anxious that public money should not be wasted, and in his department the spending of every penny was carefully watched. Unknown to many of his colleagues he suffered for years from a severe physical disability, and the courage and persistence with which he carried on to the end is an example to all. He had a

strong sense of the responsibility of his post, but to understand him it was necessary to see him off duty and in his own home. His sudden death is greatly regretted by all who came into contact with him. Dr. Holmes leaves a widow and one child.

THE LATE DR. F. W. TUNNICLIFFE.

DR. T. W. PRESTON, assistant physician to the Croydon General Hospital, writes:

Although only associated with the late Dr. F. W. Tunnicliffe in the capacity of a ward clerk at King's College Hospital, his personality imbued me with such deep respect that I crave space for these few lines of appreciation. As a teacher of therapeutics and practical medicine his place will be difficult to fill; as a physician he evoked my admiration from the first. He was a sound diagnostician; and, moreover, his interest, even in the most hopeless case, was not merely to conjecture the probable *post-mortem* findings, but to apply his knowledge of therapeutics for the patient's comfort and benefit. Although untiring in his efforts to teach any student who followed him round the wards, he always remembered that the occupants of the beds were living beings like himself, and that their interests must be his primary consideration—not only in the healing of their bodies, but in the avoidance of the wounding of their susceptibilities. Truly a man who, as a practical physician, is entitled to take his place among the highest.

Dr. JAMES MCLACHLAN, whose death occurred at his home at Lockerbie on December 18th, 1928, was a well-known practitioner in Annandale district. He had reached the age of 82 years, and had been ill for some time, but he had been able to continue active practice until about a year ago. A native of Rothesay, he received his medical education at Glasgow University, graduating M.B., C.M. in 1874. He was subsequently resident physician in Glasgow Royal Infirmary, and medical officer at Glamorganshire County Asylum. At the time of his retiral he had been engaged in practice for fifty-one years at Lockerbie, where he was widely known and held in the highest esteem. He was an active member of the British Medical Association, and took a prominent part in many local interests outside medicine. For many years Dr. McLachlan was an enthusiastic Volunteer, and had been surgeon colonel to the 3rd Volunteer Battalion, K.O.S.B., receiving the Volunteer Decoration for his services. He was a justice of the peace for Dumfriesshire, and was closely associated with several local lodges of Freemasons, Foresters, and others. The local nursing association found in him an active supporter, and he was for many years an elder in the United Free Church at Lockerbie. Dr. McLachlan is survived by a widow and a family of three sons and four daughters. He had been assisted for some years by one of his sons, Dr. Charles F. McLachlan, who carries on the practice.

The following well-known foreign medical men have recently died: Dr. GEORG SCHNEIDEMÜHL, emeritus extraordinary professor of comparative pathology at Kiel University, aged 75; Dr. FRANZ SCHMITT, professor of special pathology and treatment at Munich University; Dr. E. CHRISTELLER, extra-ordinary professor of morbid anatomy at Berlin; Professor C. FIRKET, a Berlin pathologist, aged 39; and Dr. EDWIN STANTON FAUST, a Baslo pharmacologist, aged 58.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

Pinsent-Darwin Studentship.

THE managers of the Pinsent-Darwin Studentship have appointed Dr. R. A. McCance of the Pathological Department of King's College Hospital, as student for a period of three years from February 1st, 1929.

The first Pinsent-Darwin student is Dr. R. D. Gillespie, whose principal topics of investigation during the past three years have been (*a*) the relationships of traits of personality to psychoneuroses, and (*b*) the criteria for the differentiation of types of depression. An examination of eighty psychoneurotic patients has shown some fairly definite relationships of personality-traits both to the general type of psychoneurosis developing and to the individual symptoms. Of the various criteria that have been examined for the differentiation of depressive conditions, the most serviceable prognostically and therapeutically is that of reactivity, in the sense of responsiveness to psychological factors of whatever kind. A complicated assortment of other criteria has been examined in thirty cases so far and the cases grouped accordingly.

A subsidiary investigation, on hypochondriacal reactions, has dealt with their nosological position and therapeutic accessibility; the results have recently appeared in the medical press, especially (in detail) in the *Guy's Hospital Reports*.

UNIVERSITY OF LIVERPOOL.

THE following candidates have been approved at the examination indicated:

D.P.H.—R. M. Jones, J. Litt, F. R. O'Sheil, J. T. C. Roberts.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council was held on January 10th, when the President, Sir Berkeley Moynihan, Bt., was in the chair.

The diploma of Fellowship was granted to James Eastwood Sykes, and the diploma of Membership to M. K. Gyi, J. F. V. Lart, and B. W. Rycroft.

The following diplomas were granted jointly with the Royal College of Physicians:

DIPLOMA IN LARYNGOLOGY AND OTOLOGY.—M. I. Ashmawi, A. Blagoff, N. M. Endie, M. Husnain, N. H. Meacle, H. V. O'Shea, H. M. Petty, S. Roy, E. C. Tamplin, W. L. Thomas.

DIPLOMA IN PSYCHOLOGICAL MEDICINE.—R. W. Armstrong, Eileen A. Chennell, A. Craig, H. Hinchco, Phyllis M. Horton, D. L. McCullough, D. Menzies, J. E. Nicole, Muriel L. M. Northcote, Evelcon J. O'Brien, J. C. Ramsay, C. E. Roachsmith.

A report was read from the Board of Examiners in Anatomy and Physiology for the Fellowship stating that at the examination concluded on December 14th 168 candidates were examined, of whom 45 were approved and 123 rejected.

In pursuance of a report of the Board of Examiners in Anatomy and Physiology for the Fellowship, regarding the examination concluded on December 14th last, the Hallett Prize was awarded to Shantilal Jamnadas Mehta, M.B., B.S., of the Bombay University and Middlesex Hospital. The Hallett Prize was instituted as a tribute to the valuable services of Sir Frederick Hallett, late secretary of the Examining Board in England, during his fifty years' service with the College.

Following a report from the Examiners in Anatomy for the Fellowship, Clause 3, Subsection 3 of Section 3 of the Fellowship regulations was amended as follows:

Old Regulation.

3. Of having dissected at a recognized medical school or schools for a period of not less than six terms or eighteen months (Dissections during the regular vacations will be accepted provided that the certificate shows that they have been performed under the superintendence of an authorized teacher in a medical school.)

New Regulation.

3. Of having dissected at a recognized medical school or schools for a period of not less than sixty weeks. (Dissections during the regular vacations will be accepted up to a maximum of six weeks in any one year, provided that the certificate shows that they have been performed under the superintendence of an authorized teacher in a medical school.)

A letter was read from Dr. Ali Bey Ibrahim expressing appreciation of the honour conferred upon him by the grant of the honorary Fellowship of the College.

A letter was also read from Mr. Frank C. Madden, F.R.C.S., dean of the Faculty of Medicine, Cairo, reporting that the following resolution was adopted by the Faculty on December 6th:

That the congratulations of this Faculty Council be offered to Professor Ali Bey Ibrahim on his well-merited honour, and that the most cordial thanks of the Council be extended to the Council of the Royal College of Surgeons for the honour they had conferred on Professor Ali Bey and on this Faculty and their deep appreciation of this extraordinary mark of goodwill towards them on the part of the Royal College of Surgeons.

The President reported that he attended the centenary celebrations of the Faculty of Medicine, Cairo, held at Cairo from December 15th to 22nd last, and that he presented the diploma of the Honorary Fellowship to Dr. Ali Bey Ibrahim on that occasion. Sir Thomas Barlow was re-elected and Sir Anthony Bowlby was elected as members of the Executive Committee of the Imperial Cancer Research Fund. Mr. McAdam Eccles and Mr. Victor Bonney were appointed to assist the British Pharmacopœia Committee in deciding what articles or preparations in the last edition (1914) should be omitted from the next edition and what additions should be made to it.

Lectures.

In addition to the six Hunterian lectures by Sir Arthur Keith on the anatomy and evolution of the human brain, which we have already announced, the following lectures will be given at the College at 5 p.m. on the dates indicated:—January 28th—Professor Arthur Evans: Development of Diverticula; January 30th—Professor G. E. Gask: The Treatment of Malignant Disease by Radium, with demonstration of patients who have been treated; February 1st—Professor C. A. Pannett: Local Anæsthesia in the Surgery of the Upper Abdomen; February 4th—Professor R. J. McNeill Love: The Treatment of some Acute Abdominal Disorders; February 6th—Professor C. P. G. Wakeley: The Etiology, Pathology, and Treatment of Tumours of the Intestinal Tract; February 8th—Professor R. T. Payne: The Treatment of Varicose Veins and Varicose Ulcers by Injection; February 11th, 13th, and 15th—Professor H. A. Harris: Bone Growth in Health and Disease.

Medical News.

THE Hunterian Society of London will hold a banquet, to commemorate the two hundred and first anniversary of the birth of John Hunter, at the May Fair Hotel, Berkeley Street, W., on Thursday, February 14th, at 7.30 p.m. Communications should be addressed to Mr. W. E. Tanner, M.S., 38, Queen Anne Street, W.1.

THE annual dinner of past and present students of the Royal London Ophthalmic Hospital will be held at the Langham Hotel, Portland Place, on Thursday, February 7th, at 7 for 7.30 p.m., with Mr. Charles Howard Usher, F.R.C.S., in the chair. Early application for tickets (15s., without wine) should be made, enclosing remittance, to Sir William Lister, 24, Devonshire Place, W.1.

THE Eugenics Society will hold its Galton anniversary dinner on Saturday, February 16th, at 7.30 o'clock, at the Rembrandt Hotel, Brompton Road. The Galton Lecture, entitled "The coming of age of the society," will be given by Major Leonard Darwin, Sc.D.

THE Fellowship of Medicine and Post-Graduate Medical Association announces that on Monday, January 21st, at 5 p.m., Dr. Robert Hutchison will lecture on "Pitfalls in the diagnosis of dyspepsia," at the Medical Society of London, 11, Chandos Street, Cavendish Square. On the same day at the Children's Clinic, Western General Dispensary, at 3 p.m., Dr. Bernard Myers will lecture on "The nervous child in our midst" (Cases); he will be assisted by Dr. Mackenzie Wallis, who will demonstrate the method of biochemical examination of the blood in neurotic children. Two demonstrations will be given on Wednesday, January 23rd, one at St. Mary's Hospital, at 2 p.m., by Mr. Zachary Cope, and the other at the Wellcome Museum of Medical Science, 33, Gordon Street, at 4 p.m., by Professor Hugh MacLean, on "The medical treatment of gastric and duodenal ulcer." On Thursday, January 24th, Dr. Gerald Slot will give a special lecture-demonstration, at 12.15 p.m., at the Royal Waterloo Hospital. There are no fees for attendance at the above lectures, etc. Two special courses begin in the following week, one opening at the Prince of Wales's Hospital, Tottenham, on Monday, January 28th, being a two weeks' intensive course in medicine, surgery, and the specialties; the second beginning on Tuesday, January 29th, a series of eight lecture-demonstrations in psychological medicine, to be given at the Bethlem Royal Hospital, at 11 a.m., on Tuesdays and Saturdays. Detailed syllabuses of these and of other special courses, and information on general post-graduate work, may be obtained of the secretary of the Fellowship, 1, Wimpole Street, London, W.1.

A POST-GRADUATE course on diseases of the nervous system will be held at the National Hospital, Queen Square, from January 28th to March 22nd, consisting of clinical lectures and demonstrations daily, except Wednesdays and Saturdays, at 3.30 p.m., teaching in the out-patient department daily, except Saturdays, at 2 p.m., and seven pathological lectures and demonstrations on Mondays, at 12 noon. Another course, comprising twelve clinical demonstrations, chiefly on methods of examination of the nervous system, will be given on Tuesdays and Thursdays, at 12 noon; and if there are sufficient applicants a course of eight lectures on the anatomy and physiology of the nervous system will be arranged on Fridays, at 12 noon. A limited number of students can be enrolled as ward clerks. Detailed information regarding fees, etc., for the above courses and for clerkships may be obtained from the secretary, Medical School, National Hospital, Queen Square, London, W.C.1.

THE Royal Society of Medicine has received from Lady Singer the generous gift of £500, in memory of the late Sir David Ferrier. Lady Singer, who has long been interested in the activities of the Royal Society of Medicine, was for some years associated with Sir David Ferrier in his work. The income from the gift, which is to be invested in trustee securities, will be devoted to the purchase of neurological books for the society's library, a form of memorial which will not only appeal to those interested in the same work as Sir David Ferrier, but which may be regarded as a step towards the endowment of the library of the Royal Society of Medicine.

THE *English Review* for January has an interesting paper by Sir Michael Sadler on the educational needs of England, and an unsigned article discussing the provisions of the Bill for Local Government Reform.

FOR the benefit of those who are obliged to consider their holiday arrangements early in the year, attention may be drawn to the medical study tours in Italy conducted by the State Tourist Department. Next year's tour will be held in September and will last seventeen days. The comfort of members is the subject of minute attention, and a special train is provided. Particulars may be obtained from the Ente Nazionale Industrie Turistiche, Via Marghera 6, Rome, or from the Italian Travel Bureau, 16, Waterloo Place, Regent Street, S.W.1.

WE have received a copy of the twenty-fifth anniversary number of the Handbook of the American Medical Association of Vienna, which gives details of the post-graduate courses and other forms of medical instruction available in that city during the next two years. Besides full accounts of the work possible in various clinics, useful information is provided about residence in Vienna, and the Handbook can be confidently recommended to any who wish to make use of these well-known teaching facilities. Inquiries should be addressed to the secretary of the American Medical Association of Vienna, Alserstrasse 9, Vienna.

ACCORDING to the New York correspondent of the *Times*, 2,647 new cases of influenza and 1,438 fresh cases of pneumonia were reported to the Department of Health in that city during the week ending January 12th. In the last seven weeks of 1928 it is estimated that some 26,000 deaths had occurred in the United States from influenza and pneumonia. On December 13th a bill was introduced into Congress appropriating a large sum to combat the epidemic.

AN international hospital congress, the first gathering of its kind, will assemble at Atlantic City, New Jersey, on June 13th. The object of the congress, as its name suggests, is to bring about the exchange of ideas among those concerned with the construction, organization, and administration of hospitals throughout the world. In connexion with the congress there is being arranged a valuable exhibit of plans and models of hospitals, of various types of equipment and supplies, and of statistical data relative to the care of the sick throughout the world. The congress will be followed immediately by the annual convention of the American Hospital Association.

AT a resumed inquest at Battersea on January 10th on Mrs. Doria Ruth Simmons, a Streatham woman teacher, who died in hospital on December 13th, 1928, the jury returned a verdict of manslaughter against Dr. Daniel Evans Powell, High Street, Tooting. Sir Bernard Spilsbury, in evidence, stated that death was due to abortion, septic infection, and inflammation of the kidneys. Dr. Powell was committed for trial by the coroner, Mr. Ingleby Oddie, and appeared before Mr. Broderick at the London South-Western Police Court on the day following, when the case was adjourned until Saturday, January 19th. Bail was allowed.

AN international congress on light treatment will be held in Paris from July 22nd to the 27th, 1929, under the presidency of Professor d'Arsonval. Papers will be read on the unit of measurement for the therapeutic use of ultra-violet rays; the treatment of tuberculous peritonitis by light; the prophylactic value of ultra-violet rays; and the treatment of rheumatic conditions by infra-red rays. There will be an exhibition of apparatus, and also one dealing with the history and progress of heliotherapy and phototherapy. An elementary course on actiotherapy will be given, and technical experiments will be demonstrated. The subscription for enrolment as a member of the congress, including the supply of a copy of the *Transactions*, is 16s. 6d. Further information may be obtained from Dr. W. Kerr Russell, 12, Park Crescent, Portland Place, W.1.

THE fourth meeting of the Permanent International Committee on Occupational Diseases will be held at the Faculty of Medicine in Lyons on April 3rd. Among subjects to be discussed are silicosis, cataract of occupational origin, and the endocrine system and poisoning, with, in addition, unpublished communications on questions relating to occupational diseases. The final programme will be drawn up when the titles and texts or summaries of these communications have been received. Participation in the meeting is open to titular members of the committee and to persons introduced by them, by the executive, or by the organizing committee; the subscription for persons from Great Britain is 20 gold francs, which entitles those attending, among other things, to travel on the French railways at half the ordinary fares. The meeting will end, after a series of visits to factories, on April 6th, when it is hoped to arrange an official banquet. Dr. Mazel, 54, Avenue de Noailles, Lyons, France, is the secretary of the organizing committee.

PROFESSOR LEOPOLD ARZT has recently been appointed editor of the *Wiener klinische Wochenschrift*.

THE following appointments have recently been made in foreign medical faculties: Dr. Kapfhammer of Leipzig, professor of physiology at Freiburg in Baden; Dr. George Hermann, professor of psychiatry in the German University at Prague, in succession to Professor O. Pötzl; and Dr. Otto Goetze, professor of surgery at Erlangen, in succession to Professor E. Graser.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediscera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

TREATMENT OF A MOLE.

"BETA" writes: Two years ago I removed from the neck of a girl, aged 18, a small mole, present from childhood, but which had recently grown slightly larger. Later, I noticed in the edge of the scar a minute pigmented speck, showing removal to have been incomplete. This speck remains stationary, of pin-point size. I should be glad of advice as to whether to do anything further or to leave it alone.

PAIN IN VARICOSE VEINS.

DR. DUNCAN GREIG (London, S.W.1) asks for advice as to the treatment of pain in varicose veins, especially as to the value of ultra-violet therapy in this condition. He states that one of his patients, a very tall man of gouty diathesis, has suffered more than twenty years from extensive and bilateral varicose veins, in which severe pains occur after slight exertion.

MUSCULAR CRAMPS IN ARTHRITIS.

DR. F. W. STANSFIELD (Reading) writes: In reply to "Alpha" (January 5th, p. 52), I would suggest that the patient may have a temperature which is habitually subnormal; this causes a deposition of sarcolactic acid in the muscles and nerve trunks. The remedy is to raise the body temperature either by physical means (hot baths, warm clothing, etc.) or by chemical means, or by both. I have found iodo-thiosinamin (iodo-lysin of Messrs. Allen and Hanburys) m xv after breakfast a convenient drug for this purpose. I raised my own temperature to 99°, or a little over, every evening for two months and cured the sciatica from which I suffered, as well as the secondary cramps. It is advisable, however, to begin with a smaller dose, since in patients who are saturated with rheumatism this amount given as an initial dose may cause a rigor. In some cases I have found even mij sufficient to begin with, this being gradually and cautiously increased. It is significant that "Alpha's" patient was free from cramps during an attack of lobar pneumonia, and for some weeks afterwards. The explanation may be that the pyrexia of pneumonia dissolved out the rheumatic poison for the time being.

INCOME TAX.

A Question of Assessment.

"P. Q." bought a practice last August and has been assessed on his earnings as assistant in another practice up to then *plus* a sum representing the amount at which his predecessor would have been assessed for the period August to April, 1929. Is this correct?

*** The assessment in respect of the assistant's remuneration is correct. As regards the practice it is not strictly correct to base the assessment on the predecessor's earnings; the proper basis of liability is "P. Q.'s" actual earnings for the period. But that amount must be calculated on a book debt basis and not on cash receipts, so that if the change has not adversely affected the practice "P. Q." may not feel that it is worth his while to dispute the existing assessment.

Expenses incurred by Assistant.

"C. F. K." inquires what will be the position with regard to his claim to deduct motor expenses incurred by him as assistant if his principal gives him an allowance in respect of petrol.

*** The claim will remain valid, but will be reduced by the amount of the petrol allowance.

LETTERS, NOTES, ETC.

℥ AND ʒ.

DR. JAMES FANNING (London, E.C.) writes: The report of a recent inquest draws attention to the close similarity of the signs in use for the fluid ounce and fluid drachm of the imperial measure of capacity, a similarity which I have always felt to be undesirable. I suggest that it is time to consider altering the sign of the fluid ounce so that it shall be quite distinctive, and the risk of further such fatalities may be lessened. On several occasions it has been my experience to find the two confused (fortunately never with serious results), and I have no doubt that this has also been the experience of others. This confusion is not necessarily the result of ignorance, but may very easily occur as a result of temporary aberration while writing or copying prescriptions, or, on the other hand, a prescription need be only moderately illegible to be read mistakenly.

CREOSOTE IN PNEUMONIA.

DR. W. H. LEWIS (Llansantffraid) writes: The case of rapid recovery from pneumonia recorded by Dr. S. M. Wells on January 5th (p. 15) prompts me to give my experience of the creosote treatment. During the influenza epidemic of 1918 I had lost two cases of pneumonia in young adults, when I read a letter in the *British Medical Journal* giving an account of the value of creosote in pneumonia. I tried the drug in my next case with most gratifying results, the signs and symptoms subsiding after thirty hours. I subsequently recorded forty cases without a death. I have had no fatal pneumonia cases since where treatment with creosote has commenced within the first twelve hours, and my confidence in it is so profound that, if I see a patient within the first twelve hours, I promise a normal temperature after thirty hours. It may be that the type of pneumococcus I have had to deal with is particularly susceptible to creosote, but certainly the last ten years of my practice have been free from anxiety as regards treatment for this dread disease, which so frequently terminates young and promising lives.

SUDDEN DEATH ASCRIBED TO SCARLET FEVER.

DR. A. GORDON WILSON (Thurlstone, near Sheffield) writes: May I suggest that the cause of the sudden death attributed to scarlet fever by Dr. F. Stanley Rose of Sunderland in your issue of January 12th (p. 88) was due to von Jaksch's anaemia. The enlarged spleen, the sex, the fact that the boy was a twin, the pallor of the intestines, are all in favour of the boy having a disease which is known to terminate fatally when the patient is attacked by diarrhoea and gastric disturbance.

PAINLESS LABOURS.

DR. S. M. WELLS (Valparaiso, Chile) writes: Following the cases of painless labours reported on October 27th, 1928 (p. 745), by Dr. Mary DeGaris, I would like to record a case in my practice some three years ago. A primipara, who had had a normal pregnancy in every respect, went to bed one night feeling perfectly well and slept until the early hours of the morning. She awoke with a desire to go the lavatory, and while there a lot of water came away. This alarmed her, and although she had no pain, I was called to see her. On my arrival she was perfectly comfortable in bed; I found the bag of waters had ruptured and the head was bulging the perineum. She had no pain at all, only an intermittent desire to go to stool. On being told to bear down when this desire came, a full-term child was born, without even a perineal tear, within half an hour of my arrival at the house. The puerperium was normal.

BRITISH INDUSTRIES FAIR.

THE British Industries Fair has been arranged for the second fortnight of February at the White City, London, and at Birmingham. An advance catalogue of the London section which has reached us has about the same weight and measurements as an average brick, and contains particulars of the exhibits of more than 1,200 manufacturers, all of them British, and all of them showing goods only of their own manufacture. The Fair thus becomes an extended shop window of British industry. Any medical man who happens to be interested in the commercial production of the material and equipment used in his practice will find much to interest him in the large sections devoted to medical and surgical appliances and instruments, drugs and pharmaceutical preparations, x-ray and electro-medical apparatus, and laboratory and hospital fittings and ware. It is pleasant to learn to how small an extent we need depend upon the foreign manufacturer, and how versatile and enterprising are our own countrymen. An interesting feature of the catalogue is that all the goods are indexed in nine languages.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 46, 47, 48, 49, and 52 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 19.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

60. Bread-making as a Cause of Disease.

ELISABETH KRÜGER and E. SAUPE (*Med. Klinik*, November 30th, 1928, p. 1860) have contrasted the clinical appearances of thirty-three bakers and twenty-five millers. The pallor of the skin observable in all the cases is probably associated with indoor life, since in only six was the haemoglobin percentage under 90, and the minimum was only 70. In both classes slight conjunctivitis and pharyngitis was common, and in many the teeth were defective, owing possibly to the destructive action of the acids produced by the flour dust. The cardiac findings were unimportant: one baker had aortic aneurysm with aortic insufficiency; systolic murmurs were heard only in three cases. Blood pressures were high, but this was correlated with the comparatively advanced age of those that were examined. Twenty-six of the thirty-three bakers and ten of the twenty-five millers had flat-foot, and knock-knee was fairly common. Acne due to moisture and sweat was noted in many cases: scabies and nail disease, so prevalent among confectioners, was not met with. The elder bakers not infrequently had callosities on the ulnar side of the little finger. Among the millers fifteen had "millers' itch"—greyish-black patches on the hands and dorsal and radial aspects of the lower forearms, due to the action of small steel splinters and particles of stone detached while sharpening the millstone—and were well exhibited in *x*-ray pictures. The chests of both classes were more or less barrel-shaped, and scoliosis was found in fourteen bakers and twelve millers. Contrasting the *x*-ray pictures of the lungs, it was noted that the lungs of millers were more congested than the lungs of bakers, which the authors consider is caused by the frequent inhalation by millers of fine steel particles, impure flour dust, spelt, and grains of chalk, producing irritation and hyperaemia of the bronchial mucous membrane, resulting clinically in chronic bronchitis. Bakers are exposed to coal dust and ash dust, and suffer from slight pneumoconiosis with thickening of the interacinous connective tissue. Dry bronchitis was present in twelve bakers and in ten millers. The sputum occasionally showed particles of flour; tubercle bacilli were not detected in any case.

61. Lead Poisoning in Bronze Foundries.

F. G. PEDLEY and G. SPROULE (*Canadian Med. Assoc. Journ.*, November, 1928, p. 566) consider that the occurrence of lead poisoning in bronze founders cannot be very uncommon, and they record their observations upon ten patients with symptoms typical of plumbism: the blue line on the gums, stippling of the red blood cells, lead in the urine, and complaining of severe abdominal pain and constipation. No patient had any paralyses, and most were able eventually to return to work after treatment and diet. From experimental considerations and from observations in a foundry the authors found that 4.5 grams of lead are discharged into the atmosphere of the casting rooms in the six minutes required to dispose of 350 pounds of alloy, while the maximum daily dose allowable to be inhaled is 1 mg. of lead per day. They state that adequate ventilation is the main prophylactic, and that with a plenum system the air should be delivered at about the head level in various parts of the room, being chiefly concentrated about the moulds; the furnaces should be equipped with hoods connected with exhaust fans. Since some workers are more susceptible to lead poisoning than others, there should be periodical weekly medical examinations, and milk should be supplied. Provision should be made for washing and for meals to be taken away from the moulding room; smoking and chewing while at work should be forbidden.

62. Typhoid Septicaemia.

J. CHALIER and J. ROUSSET (*Lyon Méd.*, October 21st, 1928, p. 487) describe the case of a woman, aged 36 years, who was admitted to a fever hospital with a diagnosis of enteric fever. The serum reaction was positive. The patient and her three children had always been healthy. She had been taken ill suddenly, four days before admission, with lumbar pain, followed by frequent vomiting and, subsequently, diarrhoea. Two days later her temperature was 104° F.; she had rigors and severe headache. On admission her temperature was 104.7°; the tongue was dry and the bowels were constipated; the abdomen was slightly distended and showed no rose spots; the liver and spleen were enlarged. There was no delirium. In a few days the patient became deeply jaundiced; her temperature remained between 103° and 104° F. until her death a week after admission. At the necropsy the lungs were found to be slightly oedematous, but the heart was normal. The liver was enormously enlarged, weighing 5 lb. 14 oz.; its surface was studded with miliary abscesses, and on section similar deeper abscesses were found. The gall-bladder was normal. The spleen was very large, weighing 15.6 oz., but appeared otherwise normal. The right kidney was also normal. The left kidney was very enlarged and contained many small abscesses similar to those in the liver. The authors comment on the surprising fact that the intestines appeared to be normal. Pus from various abscesses yielded pure cultures of *B. typhosus*, and the condition was therefore undoubtedly typhoid septicaemia.

63. Immunization against Tuberculosis.

L. TOMARKIN (*Ind. Med. Record*, October, 1928, p. 288) discusses the problem of immunity with special reference to tuberculosis, and suggests a biological treatment for tuberculous toxaemia based on the view that toxins contain a crystalloid toxic principle resembling an alkali, together with a colloidal endo-enzyme having immunological properties; the first of these is readily eliminated through the kidneys, while the latter diffuses more slowly and accumulates in the body, becoming manifest as antibodies. By a complex biochemical and electrical process in five steps it is possible to split the toxin molecule into the two fractions, using the colloid as an agent for passive immunity. This substance, obtained by Tomarkin from tuberculin and called "catalysan," is thought to be the active antitoxic fraction in a pure state; it is an amorphous, brownish-yellow powder, insoluble in alcohol or ether, but soluble in distilled water to form a clear, slightly opalescent neutral solution. The colloidal endo-enzyme derived from tuberculin is stated to have acted beneficially when injected into patients with tuberculous toxaemia.

64. Diabetes Insipidus in Epidemic Encephalitis.

E. LEDOUX (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, November 15th, 1928, p. 1502), who reports an illustrative case in a man aged 20, states that all the cases of diabetes insipidus occurring during or after epidemic encephalitis present the same clinical picture, the polyuria being almost invariably the sequel of choreic and myoclonic manifestations. The disturbance of urinary metabolism in encephalitis may assume various forms. As a rule there is polyuria with polydipsia, which, however, may occur without polyuria, but also the amount of urine, instead of being increased, may be extremely reduced with or without a tendency to oedema. The present case was remarkable for the fact that the symptoms subsided on inhalation of powdered extract of the posterior lobe of the pituitary gland.

Surgery.

65. Haematuria in Surgical Diagnosis.

V. BLUM (*Wien. klin. Woch.*, December 6th, 1928, p. 1683) describes the various kinds of haematuria, the means of determining their origin, and how they may be treated. The haemorrhage may occur only at the commencement of micturition, when it is derived from the urethra; it may appear only at the termination of micturition, when it originates in the neighbourhood of the neck of the bladder, as in acute haemorrhagic cystitis, purpura, stone, foreign bodies, and small tumours. When the haemorrhage is derived from the prostate it is both initial and terminal. When the urine is uniformly mixed with blood this may be continual or intermittent; the blood may be detected only after a microscopical examination of the sediment. The urine may be bright red owing to the presence of fresh blood, may contain blood clots, or may only be brown-coloured. The presence of large clots suggests new growth of the kidney or kidney pelvis; when this is associated with large amounts of albumin, and granular, epithelial, and blood casts, the diagnosis points to haemorrhagic nephritis; if the haemorrhage is unilateral and accompanied by renal colic the presence of stone in the pelvis or ureter is suggested, and may be confirmed by an *x*-ray examination, the ureteral catheter, and a pyelograph. Unilateral renal haemorrhage in young subjects, associated with pus, is an indication of a tuberculous kidney, which may be confirmed by animal experiment. Unilateral or bilateral renal haemorrhage, with palpable tumour in the region of the kidney, raised blood pressure, swelling of the liver, and negative bacteriological and *x*-ray

findings, suggests the diagnosis of cystic kidney. Massive haemorrhage, with large amounts of clotting, occurs with tumours of kidney or pelvis, angioma, varix, acute and chronic nephritis, and renal infarcts. The site and origin of haemorrhage from the bladder, when severe, are revealed by catheterization and aspiration of the clots, followed by cystoscopic examination; if the bleeding is so profuse as to threaten a dangerous anaemia the bladder should be opened, the blood mass removed, and the site of the haemorrhage cauterized. The various sources of urethral haemorrhage are described. The author points to the necessity of estimating the quantity of blood in the urine, and of excluding other colouring matters, such as chrysophanic acid, which may give the appearance of haematuria. Generally treatment consists in rest in bed, application of cold, the administration of sodium carbonate, ergot, and calcium preparations; anaemia is combated by transfusion, the injection of saline, and unless otherwise contraindicated, by an operation such as nephrectomy, nephrotomy, decapsulation, or removal of stone. In cases of acute haemorrhagic cystitis a permanent catheter should be introduced and the bladder be washed frequently.

Inguinal Herniorrhaphy.

66. E. M. HODGKINS (*Surg., Gynecol. and Obstet.*, December, 1928, p. 831) advocates a modification of inguinal herniorrhaphy with living fascial sutures obtained from the rectus sheath for the construction of a firm barrier against recurrence. The steps of the operation are described; the skin incision and exposure of the canal are described so that the entire width of the sheaths of the recti is exposed, and the fasciae of the external and internal oblique muscles are disturbed as little as possible. The middle of the sac is transfixed by a suture, which is tied on one side and then wrapped round to be tied on the opposite side, both ends being left long. The excess of sac is amputated, and a few stitches are passed over the cut end to render its closure more secure. The ends of the suture on the sac are passed through a small opening in the internal oblique muscle and are carried upwards on needles through the medial leaf of the external oblique aponeurosis; the stump is fixed beneath this fascial layer. Attached sutures cut in the direction of its fibres are reflected from the rectus sheath to form fascial strips; the technique of weaving these into place is fully described. It is claimed that such sutures are adequate in length and tensile strength. By not being detached they are preserved living, and are bathed in normal lymph even during the operation; since there is no tension or constriction, no muscle necrosis is caused.

Duodenal Diverticula.

67. R. C. PENDERGRASS (*Amer. Journ. Surg.*, November, 1928, p. 491) defines diverticula of the duodenum as pouches or pockets arising from the duodenal wall and having a free communication with the duodenal lumen. Diagnosis from cholecystitis, duodenal ulcer, or duodenitis is difficult, and *x*-ray examination of the gastro intestinal tract furnishes the best means of reaching a correct conclusion. Careful fluoroscopic observations and oblique visualization of the duodenal loop are essential procedures in this examination. In all cases showing symptoms of some morbid condition in the upper abdomen the possible existence of a diverticulum of the duodenum should be borne in mind. If such a lesion is found to be present the decision must be made whether it is responsible for the symptoms noted or whether it is only an anatomical anomaly. In the former case, if the symptoms need early relief, operative treatment is indicated, which should be the ligaturing and excision of the diverticulum, with invagination of the base and suturing. If medical treatment is adopted it should be founded on that for duodenal ulcer; any diet securing alkalinization with little gas is helpful, and belladonna is indicated if there is spasm of the pylorus or duodenum. In cases showing definite clinical and *x*-ray evidence of colonic stasis, treatment of this condition will relieve the upper abdominal symptoms, thus indicating that the diverticulum, though present, may not be responsible for the symptoms.

Resection in Rectal Carcinoma.

68. K. STÖGER (*Deut. Zeit. f. Chir.*, November, 1928, p. 232) compares the immediate and ultimate results of various operations performed in 303 cases of rectal carcinoma during the period 1889–1922. He favours preservation of the sphincters, since colotomy, or the sacral anus left by Kraske's operation, are difficult to keep clean, frequently causing much mental distress. The chief objection to rectal resection, with preservation of the sphincters, is that fistulae occur frequently after the operation; this complication has caused some surgeons to abandon resection in favour of excision combined with sigmoid colotomy. In the author's series of 303 cases Kraske's operation was performed on 113 patients, with a primary death rate of 7.1 per cent. and 24.8 per cent. of recoveries. Death from recurrence accounted for 53.1 per cent. The best results followed rectal resection (76 cases). Although the primary death rate (15.8 per cent.) was more than double that following Kraske's operation, the ultimate recoveries were 44.8 per cent. Of the 34 patients who were cured, 8 were in good health after ten years, and 4 after twenty years, with normal function of the rectum. Stöger believes that this is the ideal operation for rectal carcinoma, since 80 per cent. of the patients who survived operation were cured. The difficulty arising, in many cases, from subsequent occurrence of fistulae can be overcome by excision and suture with flaps from the gluteal region. He has only employed Kirschner's operation as a routine method since 1924; therefore the results are not comparable with those of other operations, and they have not been included. Although abdomino-sacral excision permits a thorough examination of the peritoneum and abdominal viscera, together with the removal of retroperitoneal metastases as in Wertheim's operation for uterine carcinoma, the immediate mortality is very grave—33.3 per cent., while the ultimate recoveries were 35.1 per cent.—that is, 9.7 per cent. less than the recoveries from resection. Stöger performed abdomino-sacral excision only in the worst cases.

Therapeutics.

Trichlorethylene in Trigeminal Neuralgia.

69. I. OLJENICK (*Journ. Amer. Med. Assoc.*, October 13th, 1928, p. 1085) discusses the difficulties in the diagnosis of trigeminal neuralgia, and its usual treatment by ondoneural alcohol injections and avulsion of the sensory roots. During the late war certain symptoms were noted in men whose work involved the use of trichlorethylene and trichlorethane; among these were a slight swelling of the optic disc and particularly anaesthesia of the trigeminal area, the motor part of the nerve showing no alteration. Hearing of this elective action of the drug for the fifth nerve, Oppenheim tried inhalations of it in trigeminal neuralgia, with encouraging results in the first twelve cases. Oljenick states that this drug is now used at the University Hospital of Amsterdam in all cases of trigeminal neuralgia, but chemically pure trichlorethylene must be employed; this is a very strong-smelling liquid with the sweet odour of prussic acid. Giddiness and unconsciousness have followed its administration, so patients should be recumbent while inhaling it. Periods of exaltation may occasionally be observed, and sometimes pricking sensations in the hands and feet; these symptoms, however, disappear quickly. The author adds that, though it is not known why trichlorethylene has this elective affinity for the fifth nerve, it has been proved that the sensitiveness of the irritated nerve decreases after repeated inhalation. The method of treatment is to pour twenty to twenty-five drops of the drug on a small piece of gauze and inhale through the nose until the odour has completely disappeared; this should be done thrice daily. Care should be taken not to touch the nose with the liquid. From the Amsterdam results Oljenick concludes that in a comparatively small number of cases the inhalation of trichlorethylene, continued for some time, gives excellent and lasting results. In some cases the period of relief may be interrupted by renewed attacks, which usually are less violent than before. In most cases this treatment is a useful temporizing measure which, by diminishing the number and vehemence of the attacks, allows the patient's general and local condition to improve. He adds that since the pain is only rarely uninfluenced by trichlorethylene, it should be tried in every case; furthermore, as it has no effect on other facial neuralgias, it may occasionally be of value in differential diagnosis.

Therapeutic Measures in Arthritis.

70. FOR the treatment of acute and chronic arthritis F. KÜLBS (*Med. Klinik*, October 12th, 1928, p. 1575) recommends early movement with the use of hot air and morphine to control the pain. Acute articular rheumatism yields usually to salicylates, but the dosage must be sufficiently large and long-continued. In long illnesses the skin should be treated, either by rubbing soap in and leaving it on for at least an hour before washing off with hot water, or by prolonged hot baths, three to six hours daily. Acute polyarthritis may be complicated by meningitis. Külbs records a case in which lumbar puncture and the withdrawal of 40 c.cm. of cerebro-spinal fluid was followed by great improvement in the arthritis. In rheumatic purpura arsenic or salvarsan gives good results, and in erythema nodosum arsenic. Acute arthritis may develop not only with the acute infection, but with syphilis; such cases are difficult to diagnose and very important, as the treatment is that for syphilis, and while the blood Wassermann reaction may be negative, that of the joint effusion may be positive. There are two forms of chronic arthritis—polyarthritis and arthritis deformans; the first

comes on gradually, is resistant to treatment, and is difficult to distinguish from gout. In such cases colchicum is invaluable, also local measures such as hot air, hot sand baths, hot compresses made of a rubber sponge wrung out of very hot water, covered with gutta-percha tissue and thick flannel, renewed every fifteen to twenty minutes, and given three or four times in the forenoon and afternoon. Quick results follow injection of the patient's own blood into the joint capsule, the amount necessary varying with the duration and intensity of the illness and the size of the joint; as much as possible should always be given—for example, for the knee 20 to 40 c.cm. The syringe should be warmed and the piston smeared with glycerin. Sterile solutions of atophan or iodine may be used. The tonsils should be watched, and if necessary treated. Intravenous protein injections are a good adjuvant to other lines of treatment, also intramuscular injections combined with those of the patient's blood. Sun and radium baths may be helpful in chronic cases, probably because of their action on the skin. In every case individual attention for each patient, and the employment of energetic, systematic treatment, is of more importance than drugs given by the mouth.

71. Anti-coli-bacillary Serotherapy.

H. VINCENT (*Bull. de l'Acad. de Med.*, November 27th, 1928, p. 1232) recalls that there is no one particular type of *B. coli*; many atypical forms exist, termed para-coli or coliform bacilli. All these organisms possess the common characteristic of originating identical toxins—namely, a neurotropic exotoxin, causing coma and paralysis, and an enterotropic endotoxin, producing profuse diarrhoea and anatomical lesions of the epithelium of the small intestine. *B. coli* can be the agent in various acute or chronic infections, and no organ or tissue escapes its invasion. Vincent states that an antiserum has brought about rapid cures in cases of coli-bacillary septicaemia and acute and chronic suppurative pyelonephritis. It has also proved of great benefit after operations for gangrenous appendicitis in preventing general infection. Combined with multivalent antigangrenous serum it is a valuable adjunct in rendering the sequels of these conditions benign and simple. One of the most frequent and often grave effects of coli-bacillosis is suppurative pyelonephritis, which may complicate very different morbid states such as infections (influenza and typhoid fever), mechanical states such as *faecal stasis, entero-hepatic conditions*, and pregnancy. Primary suppurative pyelonephritis offers a great field for serum therapy. In many secondary cases due to conditions needing surgical intervention the serum acts only as a palliative; but in these cases also, in prophylactic doses, it is useful in preventing post-operative general infection. Where cure by the serum is incomplete or protracted, search should be made for lesions of the kidneys or bladder. The serum has been used with great benefit in the pyelonephritis of pregnancy. In mixed infections due to the association of other bacteria the serum has given remarkable results, and appears to have a marked specificity. Cure has sometimes followed serum therapy in chronic conditions and in carriers; in these cases especially disinfection of the renal pelvis and bladder should be employed simultaneously. Vincent emphasizes the need of instituting treatment as soon as the diagnosis is made.

Disease in Childhood.

72. Infantile Acrodynia.

M. PÉHU and R. CORREARD (*Arch. de med., cir. y esp.*, November 24th, 1928, p. 579 states that this condition, which has been variously denominated erythroedema (Swift), pink disease (Clubbe), dermato-polyneuritis (Thursfield), and neurosis of the neuro-vegetative system (Feer), is met with in children between the ages of 4 months and 5 years, and occasionally in adults. Clinically all the manifestations may be explained by an affection of the vegetative nervous system. The initial symptoms are those of vagotonia—namely, depression, profuse sweating, salivation, alternation of erythema and cyanosis of the extremities, and urticaria. In addition to these vagotonic signs, the insomnia, tremor, hypertension, and tachycardia may be traced to sympathicotonia. This disturbance of the vegetative nervous system may be attributed to an affection of the sympathetic centre in the mesencephalon. The authors regard acrodynia as an infectious disease, with its portal of entry probably in the nasopharynx; it is only slightly contagious and is closely related with epidemic encephalitis and poliomyelitis. There is no specific treatment. Many drugs have been recommended, such as quinine, calcium lactate, and thyroid or thymus extract. Feer has used atropine in fairly large doses and obtained satisfactory results, and Sweet has been very successful with ultra-violet rays. The authors consider that fresh air, good food, and hydrotherapy, combined with exposure to ultra-violet rays and injections of uroformin, constitute the best treatment.

73. Dieting of Newly Weaned Infants.

CLARA M. DAVIS (*Amer. Journ. Dis. Child.*, October, 1928, p. 651) reports an experiment on three newly weaned infants who were allowed to choose their own foods. The foods used included meat muscle, glandular organs, haddock, cereals, bone marrow and jelly, eggs, raw and lactic milk, fruits, vegetables, and sea salt. These foods were spread over three (in the early weeks, four) meals a day, both raw and lactic milk, animal proteins, and either fruits or vegetables being served at each meal. The preparation of the foods was as simple as possible: they were presented minced or ground, raw and cooked. The infant was permitted to eat in any way he could, or was fed from any dish he reached for or pointed to. There was no clue as to what influenced these infants in choosing the foods they tried first; occasionally they ejected what they had taken into their mouths. After the first few meals, however, the foods wanted were promptly recognized and chosen. All the infants showed themselves to be omnivorous, but with decided preferences. A tendency was observed in all to take certain foods—such as cereals, eggs, meats, or fruits—in waves, the quantity eaten each day rising gradually over a period of a week or longer to a maximum—seven eggs at a meal, for example, or four bananas—and then gradually declining to the previous level. No clear preference between raw and cooked foods was shown. The calorie value of the daily intake ranged between fairly wide limits. Appetite was uniformly good. There was no abdominal discomfort, diarrhoea, or constipation. From the standpoint of nutrition the immediate results appeared to be equal at least to the best results obtained by commonly prescribed diets. Two of the infants remained on this diet for six months and one for twelve months.

74. Non-tuberculous Cervico-thoracic Lymphadenitis in Children.

ACCORDING to R. COURTOIS (*Bruxelles-Médical*, October 21st, 1928, p. 1682) the tuberculin cutaneous reaction shows that in children non-tuberculous lymphadenitis occurs very frequently, and antituberculosis treatment should be combined with that of the probable causal infection. The author, who has used the tuberculin cutaneous reaction in 173 children, agrees with other writers that a positive reaction does not indicate that the patient has an active tuberculous lesion, but rather that there is a recent or old tuberculous focus. Courtois cites authorities in support of the view that chronic lymphadenitis in children is very frequently due to simple non-tuberculous infections, such as measles, scarlet fever, and whooping-cough. Among the 173 children examined 128 had lymphadenitis: in 47 children the cervical lymph nodes alone were involved, in 14 cases the tracheo-bronchial glands only were infected, while in 67 children there was cervical and tracheo-bronchial lymphadenitis. Among these 128 children only 57 had a positive cutaneous reaction; more than 55 per cent. had negative reactions and suffered therefore from simple non-tuberculous lymphadenitis. He adds that it does not follow that the remaining 44 per cent. who showed a positive reaction had a tuberculous infection, but rather that these patients are susceptible if exposed to infection. Courtois concludes that the site of infection must be treated rationally—that is, bacterial proliferation should be arrested; further infection should be prevented and the neutralization of toxins be promoted. He recommends that these patients should be sent to a "preventorium" where the children are under constant observation and the various infections can be attacked most successfully.

Obstetrics and Gynaecology.

75. Controllable Spinal Anaesthesia in Obstetrics.

G. P. PITKIN and F. C. MCCORMACK (*Surg., Gynecol. and Obstet.*, November, 1928, p. 713) advocate controllable spinal anaesthesia in obstetrics by the injection of a solution of novocain and gliadin (the mucilaginous content of wheat starch) into the subarachnoid space to produce caudal anaesthesia. With the head of the delivery table raised from 15 to 20 degrees so that the patient is in a slightly reversed Trendelenburg position, the puncture is made at the interspace between the fourth and fifth lumbar vertebrae, and after aspirating one or two drops of spinal fluid, a solution containing novocain, gliadin solution, strychnine sulphate, glucose, and normal saline solution is injected through the centre of a wheal raised at the site of puncture with novocain-ephedrine solution. Complete anaesthesia results in from one to three minutes, and becomes permanent in from ten to twelve minutes in over 99 per cent. of cases. By this

means only the sacral nerves are anaesthetized, producing a typical saddle anaesthesia, limited in front by the symphysis and extending over the lower part of the sacrum and down the inner side of the thighs for about six inches without any impairment of motion or anaesthesia of the legs. The cervix, vagina, perineum, vulva, and anal and bladder sphincters are completely anaesthetized, but sensation of the uterus remains. The patient may be recumbent or be placed in stirrups, provided the reverse Trendelenburg position of from 15 to 20 degrees is maintained. The advantages claimed for this procedure are that it is much safer than ordinary spinal anaesthesia and as safe as caudal anaesthesia; there is no shock or drop in blood pressure; the child is better protected than with any other form of anaesthesia; and there are no post-anaesthetic complications. The anaesthesia may be confined to the perineum or carried to any desired height, and it can be administered to patients for whom general anaesthesia is contraindicated.

76. Lipiodol in Gynaecological Diagnosis.

C. BÉCLÈRE (*La Gynécol.*, August, 1928, p. 477), from experience of one hundred cases, is convinced that intrauterine injection of lipiodol is of great utility in gynaecological diagnosis and treatment. The position and form of the uterus can be recognized; tubal patency can be assessed, and, therefore, feminine sterility be treated. Lipiodol is considered the best substance to employ, being very opaque, non-irritant, and antiseptic. In cases of obliteration of the abdominal ostium, division of adhesions or salpingostomy is indicated; isthmic or interstitial non-patency can be treated by excision of the obstructed zone and implantation of the pervious portion of the tubes into the cavum uteri—an operation which Cotte has performed in twelve cases, in six of which tubal patency was subsequently demonstrated. In a certain number of cases utero-tubal injections of lipiodol have been followed by pregnancy. P. MOCQUOT (ibid., p. 478) emphasizes the value of lipiodol injections in diagnosis of carcinoma of the corpus uteri, and in three cases has made this diagnosis without biopsy, but with subsequent operative confirmation. The shadows cast by the lipiodol are extremely irregular, in contrast with those given by fibroid polypi; hyperplastic endometritis causes scarcely any deformity of the cavum uteri.

77. Extrauterine Pregnancy.

E. BAMBERGER (*Zentralbl. f. Gynäk.*, November 24th, 1928, p. 3009) states that operations for extrauterine pregnancy at Mannheim have more than doubled since 1924. A similar progressive increase has been reported from more than one German clinic, and it seems likely that this is due in part to the fact that abortions, usually criminally induced, have been in late years relatively more frequent in young women, and in part to more general use of contraceptive measures, of which the favourite at present seems to be intrauterine injections of fluid after coitus. Of 150 ectopic pregnancies treated during the last four and a half years nearly one-half were in women aged less than 30, and 63 confessed to one or more antecedent abortions. In diagnosis of ectopic pregnancy reliance is placed chiefly on a careful taking of the case-history and on estimation of the sedimentation time of the erythrocytes. Pyrexia up to 100.5° or even 102° is not uncommonly encountered. Exploratory puncture of the posterior fornix, being thought to impair post-operative convalescence, is little used. The mortality was 3.3 per cent., and in cases with extensive intra-abdominal haemorrhage the infused blood, after mixture with citrate solution and the passage of oxygen through it, is reinjected into a vein of the arm.

78. Heart Disease in Pregnancy.

L. TRIAS DE BES (*Rev. Med. de Barcelona*, October, 1928, p. 329) records his observations on 47 cases of heart disease associated with pregnancy which he has observed during the last two years. The lesions were as follows: mitral stenosis 26 cases, aortic incompetence 5 cases, mitral incompetence 10 cases, mixed lesions 3 cases, active endocarditis 3 cases. In 19 of the cases of mitral stenosis, symptoms of cardiac incompetence, such as dyspnoea on exertion and palpitation, developed within the first few months of pregnancy, before the increase in the amount of blood or the size of the gravid uterus could interfere with the work of the heart, and were probably due to metabolic changes and especially to disturbance of the function of certain endocrine glands (thyroid, parathyroid, and suprarenals). The author maintains that pregnancy should not be permitted to occur whenever there is more or less marked evidence of cardiac inefficiency, or whenever, in the absence of obvious signs, its latency is suspected owing to its occurrence in a previous pregnancy. In the presence of an active endomyocardial process pregnancy should also be forbidden.

Pathology.

79. The Nature of Pernicious Anaemia.

J. H. MEANS and W. RICHARDSON (*Journ. Amer. Med. Assoc.*, September 29th, 1928, p. 923) discuss the physiological and pharmacological effects of liver administration in pernicious anaemia, and conclude that it is clear that deficiency of a specific hepatic substance is the cause of the derangements in this disease. The isolation by Cohn of such a body gives additional proof to this conclusion. The disease is clearly not an avitaminosis like scurvy or beri-beri; it seems more probable that there must be an acquired or hereditary defect in the individual, as well as a dietary error, for the production of the disease. The specific substance is found in mammalian liver and kidney, and apparently also in avian liver. It is unknown whether the individual usually manufactures the whole or part of the needed amount of the specific substance, or derives it wholly from his food; it cannot be regarded as an internal secretion of the liver, since it occurs in nearly as great concentration in a tissue so different as the kidney. Castle, working on the theory that the well-known achylia plays a part in the genesis of the disease, found that a response, similar to that produced by liver feeding, could be elicited by feeding skeletal muscle previously digested in a normal human stomach. The supply of this substance can be rendered adequate in patients by supplying them with large quantities of natural foods which contain it, or active fractions thereof, or perhaps also through the provision of means for normal gastric digestion. Shortage of the substance is clearly responsible for the abnormalities in the marrow and blood. Castle's work suggests that the gastric defect may be an important cause of the shortage. Whether the normal subject requires any extraneous supply of the specific substance or can synthesize what he needs is not known, nor whether the active substance now found is in the state that the body needs or is merely a necessary intermediate stage.

80. The Importance of Spirochaetes in Human Pathology.

J. BACIGALUPO (*C. R. Soc. de Biologie*, November 30th, 1928, p. 1622) draws attention to the frequency with which spirochaetes are encountered in cases of suppuration. In 1927, under the name of *Treponema uretritis*, he denoted a variety which he found in the urethra of a man who was suffering from a chronic discharge. In this case no gonococci could be detected in repeated examinations, and the Wassermann reaction was negative. The spirochaetes ranged from about 10 to 23μ in length, the average length being about 14μ. Cultures remained sterile, and animal inoculations were without any definite result. Intravenous injections of novarsenobenzol were without effect, but after a week's local irrigation with 1 per cent. and later with 10 per cent. solutions of this preparation, the discharge cleared up completely. The author has observed four cases of suppuration associated with the presence of Vincent's spirillum and fusiform bacilli, in which local treatment with novar-enobenzol has brought about a cure. He finds spirochaetes almost constantly in the haemorrhagic sputa of tuberculous and also of non-tuberculous patients, and he has been able to cultivate them on haemoglobin media. He regards them as responsible for the haemorrhages. Finally, he has observed spirochaetes in condylomata, and has obtained some successful results by local injections of novarsenobenzol.

81. Experimental Tar Cancer.

G. A. K. VON DEM BORNE (*Nederl. Tijdschr. v. Geneesk.*, November 17th, 1928, p. 5689) states that, with Lignac, he had previously shown (*ibid.*, 1927, ii, 1302; 1928, ii, p. 3534) that trypan blue affects the growth of an inoculated tumour (1) by considerably increasing the susceptibility of the organism to the transplanted growth, and (2) by the influence of the trypan blue on the transplanted tumour, as shown by an initial diminution in the "virulence" of the tumour cells. The relative proportion of these influences will determine the progress of the growth. It was found experimentally that when mice which had been painted with trypan blue were inoculated with sarcoma there was a much better and more rapid growth of the tumour than under other conditions. The author now describes experiments on white mice in which the skin of the back had been painted with trypan blue and afterwards with tar. It was found that, even after thirty applications of tar in the course of twenty-seven weeks, there was not a trace of blastoma formation detected, but the skin, on the other hand, became extremely atrophic and the corium hyperkeratinized. A large number of further experiments will be required before it can be proved that tumour formation can be effected by tarring mice which have been painted blue.

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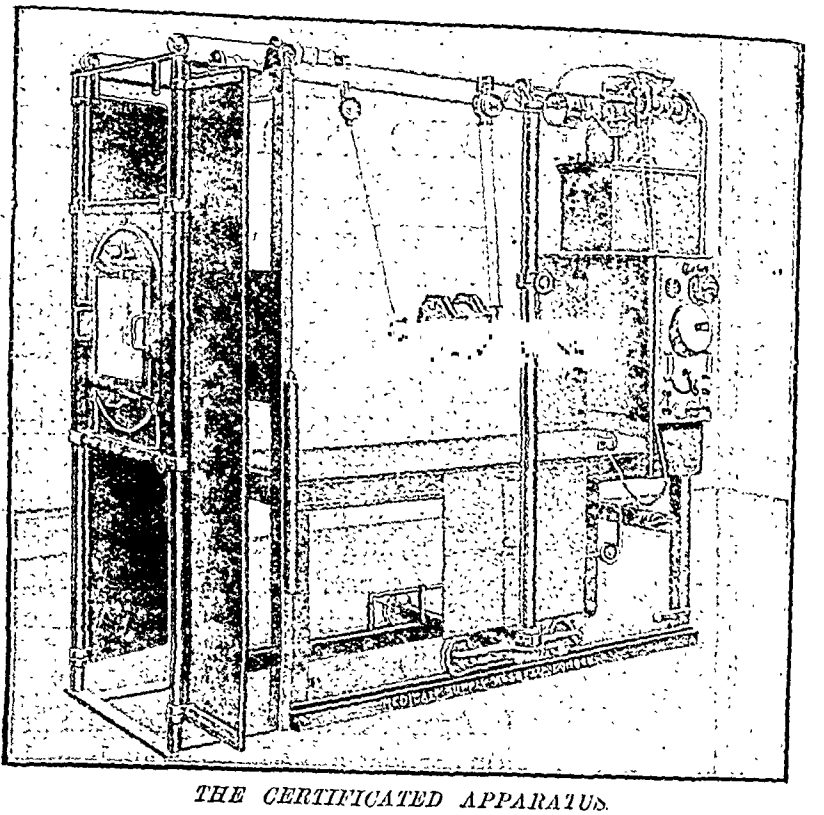

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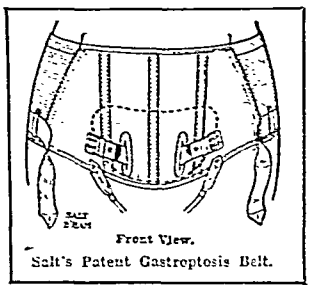

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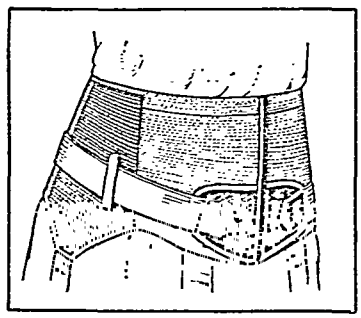

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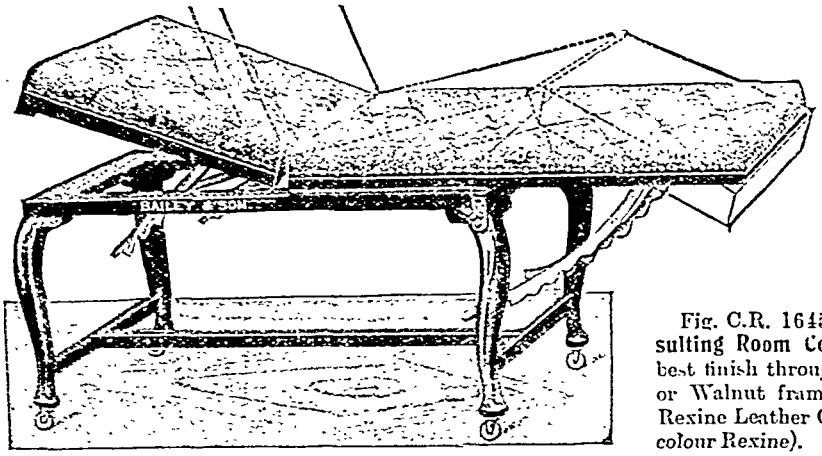

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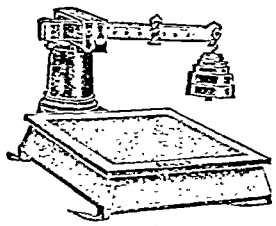

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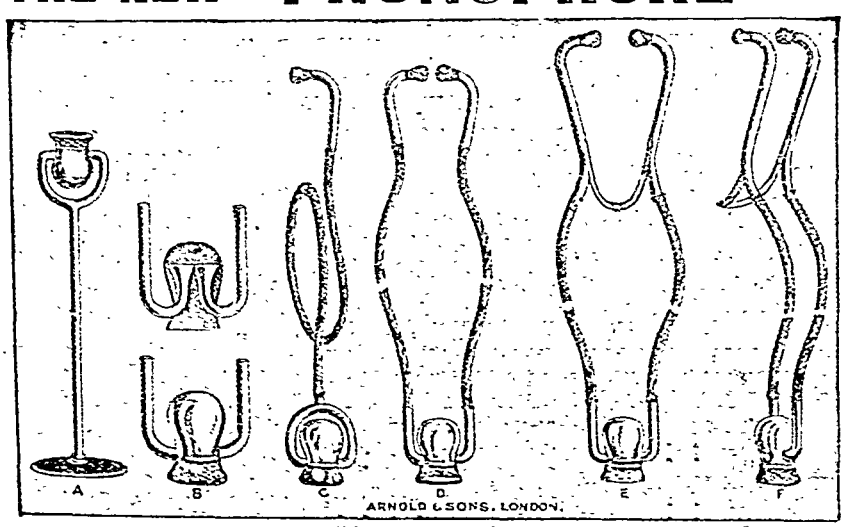

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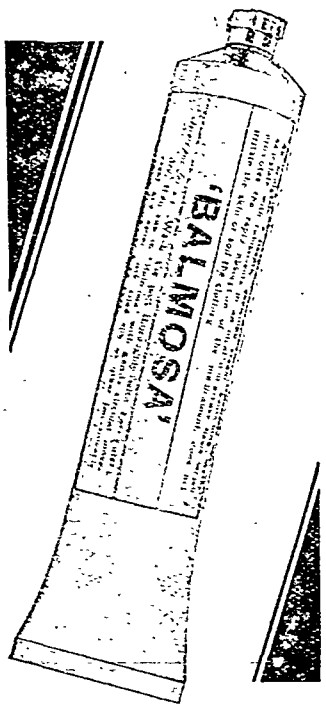

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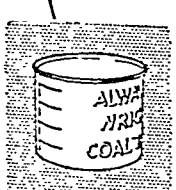

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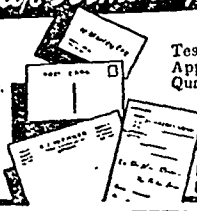

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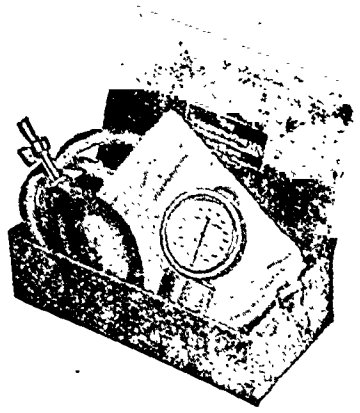

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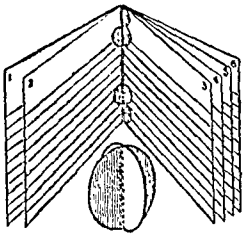

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*Liq. Æther Nitros. (Sp. Æther Nit. Substitute), 5 lb @ 2/5 lb.
*Liq. Ammon. Acet. Conc. (1-7), 6 lb. @ 1/- lb
" Aromat., 6 lb. @ 1/- lb.
Petroleum Jelly Flav., B.P., 7 lb. @ 7½d. lb.
Bismuth Carb., 5 lb. @ 11/11 lb.
Chloroform Pur., 8 lb. @ 5/4 lb.
Pot. Bromide, 7 lb. @ 2/11 lb.
Quinine Sulph., 4 oz. @ 2/2 oz.

PILLS TASTELESS COATED.

Potass Iodid., B.P., 3 lb. @ 18/6 lb.
Sod. Sulph. Feathery crvst., 7 lb. @ 3d. lb.
Sp. Æther Nit., B.P., 4½ lb. @ 4/6 lb.; 1 lb. 4/10
Sp. Ammon Aromat., B.P. 5 lb. @ 5/6 lb.
Syr. Cascara Aromat., B.P., 6 lb. @ 2/9 lb.
" Glycero-Phosp. Co., 6 lb. @ 1/9 lb.

SYRUPS.

Aurant., B.P., 7 lb @ 1/10 lb.
Easton's, B.P. 7 lb. @ 1/6 lb.
Ferri Iodid., B.P., 7 lb. @ 1/10 lb.
Ferri Phosp. Co., 7 lb @ 8d. lb.
Hypophosph. Co., B.P.C., 7 lb. @ 1/- lb.
Prunі Virg., B.P., 7 lb. @ 1/- lb.
Rhamni, 7 lb @ 1/2 lb.
Rhei, B.P., 7 lb. @ 1/1 lb
Scillae, B.P., 7 lb. @ 8d. lb.
Sennae, B.P., 7 lb. @ 1/2 lb.
Tolut., B.P., 7 lb. @ 10½d. lb.

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	Per 1,000
Blaud's (Sugar-coated), gr. 5... ...	... 3/10
Nitroglycerini, B.P., gr. 1-50th ...	... 5/-
Perchloride of Mercury (Coloured)	...15/-
One Tablet in 1 pint of water is equivalent to 1 in 1,000	
Thyroid Gland, gr. 5...	...12/6

We can supply smaller quantities at slightly increased rates.

We endeavour to adhere to prices quoted, but as same fluctuate from day to day, they must be considered as subject to change without notice

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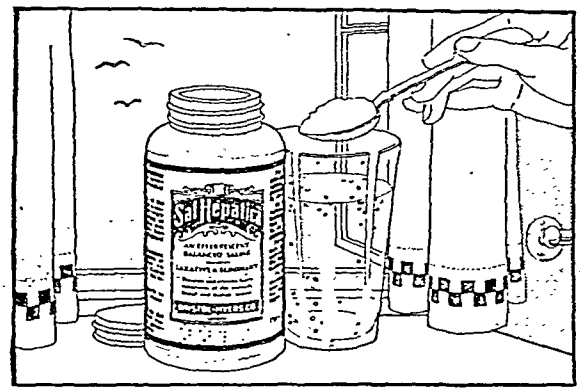
in 5-lb. Bottles.

	B.P.	Aquos.		B.P.	Aquos.
Belladon.	... 4/3	1/6	Hyoscyam.	... 4/3	2/4
Benzoin Co.	4/7	—	Nucis Vom.	5/10	1/4
Camph. Co.	... 5/-	1/6	Opii ...	... 5/7	4/6
Card Co.	... 2/6	1/6	Quin. Ammon.	5/3	—
Gentianae Co.	2/8	1/6	Rhei Co	... 2/8	1/9

Ung Acid Boric., B.P., 28 lb. pail @ 11d. lb.
" Hydrarg., B.P., 7 lb. @ 4/6 lb
" " Ammon., 7 lb @ 1/11 lb.
" Ichtamolis, B.P.C., 7 lb. @ 1/10 lb.
" Zinci Ox., Benz., 28 lb. @ 1/- lb.

*Minimum quantity at these prices: Home Trade 5. Export 12 Winchester Quarts assorted. We can supply smaller quantities than advertised at slightly increased rates.



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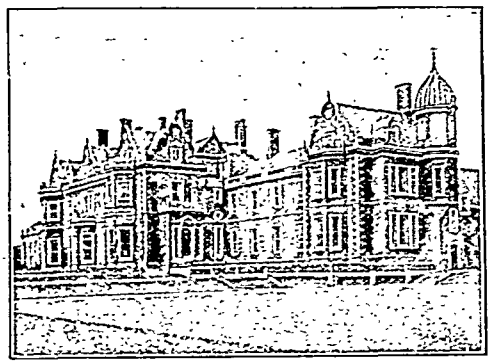

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ALCOHOL
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PRIVATE PATIENTS are received at a weekly charge of TWO GUINEAS and upwards.
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FOR THE UPPER AND MIDDLE CLASSES ONLY.

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Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This Registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

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Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

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The Seaside house of St. Andrew's Hospital is beautifully situated in a Park of 350 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

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For terms and further particulars apply to the Medical Superintendent (*Telephone*: No. 56 Northampton), who can be seen in London by appointment.

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HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Mapperley Hill and from its singularly healthy position and comfortable every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.

For terms, etc., apply to the Medical Superintendent

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For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

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Resident Physicians: BERTHA M. MULES, M.D., B.S.; ANNIE S. MULES, M.R.C.S., L.R.C.P.
Telephone: *Teignmouth* 289

NEURASTHENIA
BELVOIR NURSING HOME, ASTON-ON-TRENT, DERBY.

Private Nursing Home for Neurasthenia and allied Functional Nervous Disorders, for general Convalescent Cases, and those requiring Electrical Treatment.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes. In addition to the methods of general medicine, Psycho-Therapeutic treatment is used extensively in suitable cases. Certifiable cases are not received. Electrical Treatment, Radiant Heat, X-ray, Ultra-Violet Light, and Massage is available in the Nursing Home. Billiards, tennis, etc. Fees from 5 to 12 guineas per week. For further particulars apply to—
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Dr. Douglas-Morris can be seen by appointment in London.

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Telephone - Chiswick 0245.

A private mental hospital for the care and treatment of mental and nervous disorders in both sexes. Voluntary patients received for treatment.

The house is 6 miles from Hyde Park Corner, in the midst of beautiful grounds and pleasure gardens extending to 65 acres. In nearly all cases patients have their own bedrooms sitting-room, and private nurse.

Terms are from 10 guineas a week, including all expenses.

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Owing to extensions there are at present a few Vacancies at the

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Colony life gives to most people who have epilepsy the best chance of happiness and contentment.

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The David Lewis Colony,
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(for Mental Disorders).

Treasurer:
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Apply, Chief Physician, Office of the Hospital, 19, Nottingham Place, London, W.1
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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For terms, etc., apply to—
M.D., Resident Supt.
7 Barnwood.

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This DIETETIC ESTABLISHMENT is equipped for the complete investigation and treatment of patients on rational lines. Own X-ray and Laboratory. Biochemical investigation is made a special feature.

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Telegrams: Castle, Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

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A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

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(For the reception and treatment of cases of nervous and mental disease.) Tel.: Reliance 2182.

President: Colonel and Alderman Sir CHARLES CREERS WAKEFIELD, Bart., C.B.E.
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PHYSICIAN SUPERINTENDENT: J. G. PORTER PHILLIPS, M.D., F.R.C.P. Assisted by Physicians, a Pathologist, and a staff of Visiting Consultants.

Patients of the EDUCATED CLASSES, IN A PRESUMABLY CURABLE CONDITION, are eligible for admission. With a view to the early treatment of eligible cases VOLUNTARY BOARDERS are admitted. PATIENTS WHO CAN CONTRIBUTE THREE GUINEAS WEEKLY TOWARDS THE COST OF MAINTENANCE MAY BE RECEIVED AS VACANCIES ARISE. Treatment is carried out on the most modern principles. In connection with the Hospital is a Convalescent Home on the Surrey hills at Witley.
For further particulars apply to the PHYSICIAN SUPERINTENDENT.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: Alleviated, London. Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for the treatment of special and suitable cases adjoin the Institution. There is a seaside branch to which holiday parties are sent during the summer months. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0888.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

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Telegrams: "Psycholia, London." Telephone: Rodney 4731—4732.

FOR THE TREATMENT OF MENTAL DISORDERS.

Completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Croquet, Squash Racquets, and all indoor Amusements, including Wireless and other Concerts. Occupational Therapy. Daily services in the Chapel.
Senior Physician: Dr. HUBERT J. NORMAN; assisted by three Medical Officers, also resident. An illustrated Prospectus, giving full particulars and terms, may be obtained upon application to the Secretary.
HOVE VILLA, BRIGHTON. — A CONVALESCENT BRANCH OF THE ABOVE.

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Church Stretton, Shropshire.

A PRIVATE HOME for the treatment of Mental or Nervous allied disorders of Habit. All types of cases are received without certificates as Voluntary Boarders. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. Telephone: 10 P.O. Church Stretton.

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Near BEDFORD.

FOR MENTAL AND NERVOUS CASES.
(Phone. 3417.)

Physicians: DAVID AND CEDRIC W. BOWER.
Ordinary Terms, Five Guineas per week.
(Including Separate Bedrooms where suitable.)
Interviews in London by appointment.

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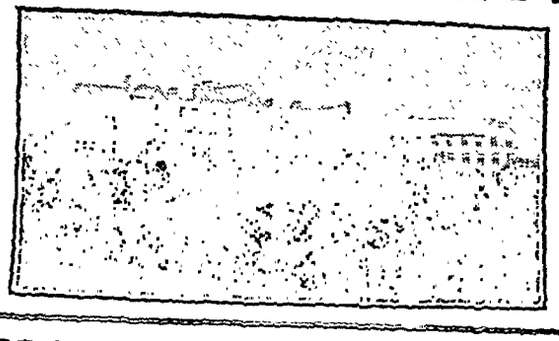

Medical Director: David Lawson, M.D., F.R.S.E.

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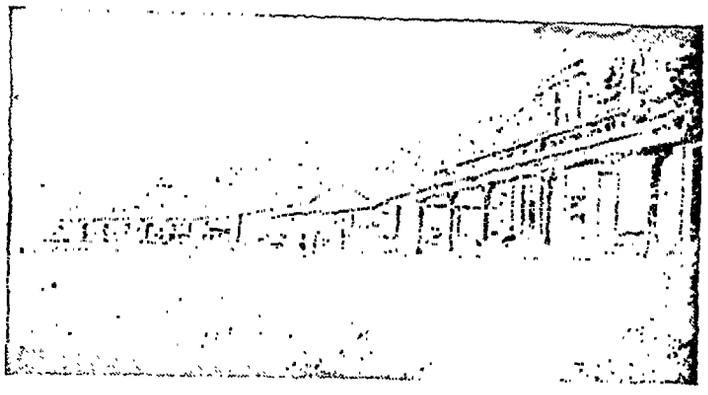

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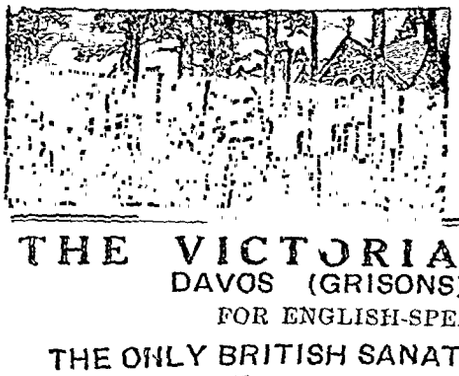

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The Fee for the Course is 15 guineas.
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An INTENSIVE REFRESHER COURSE will be held from JANUARY 28th to FEBRUARY 9th, 1929. Lectures, demonstrations, and cliniques in the various general and special departments.
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A similar Course will be held in September and October, 1929.
An Advanced Medicine Course will commence on May 14th, 1929.
Further particulars and the Syllabus of the Course may be obtained on application to the Dean (H. WILLOUGHBY LYLE, M.D., F.R.C.S.), King's College Hospital Medical School, London, S.E.5.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.

Paddington, W.2.
(University of London.)

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The Scholarship, which is open to candidates who have received part, at least, of their medical education at Guy's Hospital, is of the annual value of £55, and is tenable for three years.
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T. B. JOHNSTON,
January 15th, 1929. Dean.

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Admission free, without ticket.
EDWIN DELLER, Academic Registrar.

British Hospital, Port Said.

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A Resident Assistant Medical Officer is required for April 1st. Salary £350 per annum, rising to £400. Free quarters, board, and laundry provided, also first saloon passages out and home. Candidates should be young and have some experience in V.D. routine, Bacteriological work, and Anæsthetics. Applications, with recent testimonials, should be sent to the Secretary, British Hospital, Port Said, 19, Berkeley Street, London, W.1.
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Applications are invited for an Assistant in Pathological Chemistry, who will be required also to undertake research in the Department of Pathology.
The Assistant must have a registrable Medical qualification and special knowledge of Chemical Pathology. The duties will include teaching of Pathological Chemistry and Biochemical work for the Hospital. The Assistant must engage in research work in the Department of Pathology, and time for such work will be available.
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APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	NOTTINGHAMSHIRE COUNTY COUNCIL. *(Assistant School Medical Officer and Assistant Medical Officer for Maternity & Child Welfare.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	SURREY ADMINISTRATIVE COUNTY. *(County Medical Officer of Health.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	WEST HAM UNION. *(Anæsthetist Posts at Whipps Cross Hospital.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
	BURGH OF MOTHERWELL & WISHAW. *(Resident Medical Officer (female) for Maternity and Child Welfare Department.)*	

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec. Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies' Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANDON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
June 16th, 1925.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Royal Sussex County Hospital, BRIGHTON.

Notice is hereby given that a Meeting of the Elective Committee will be held in the Board Room at the Hospital, on Wednesday, February 6th, at 12.15 p.m., for the purpose of electing an HONORARY MEDICAL CLINICAL ASSISTANT, and such Elective Committee is hereby convened accordingly.

Applications are invited for this office from gentlemen who are Fellows or Members of the Royal College of Physicians of London, Edinburgh, or Dublin, or Graduates in Medicine of one of the Universities of the British Empire, and who are duly registered under the Medical Acts.

Applications, with proof of the necessary qualifications, must reach the Secretary-Supt. at the Hospital before 12 noon on Jan. 28th.

By Order of the Board of Management,
L. L. W. LANCASTER-GAYE,
Secretary-Supt.

The Royal Portsmouth Hospital, PORTSMOUTH.

(Four Resident Medical Officers.)

CASUALTY OFFICER (male, qualified) required to commence on February 1st. Salary at the rate of £100 per annum, with board, etc. Six months' appointment. Eligible on completion of term for appointment as House Surgeon.

Application, stating age, nationality, etc., and copies of three recent testimonials, to be sent to the undersigned on or before January 22nd, from whom all particulars can be obtained.

B. WAGSTAFF, Secretary.

Royal Sussex County Hospital, BRIGHTON. (225 Beds.)

HOUSE SURGEON (male) required about the end of January, with charge of beds, part casualties and anæsthetics. Salary £150 per annum, with board, residence, and laundry. Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried and, when elected, under 30 years of age. Applications, with copies of testimonials, should be sent to the undersigned immediately.

L. L. W. LANCASTER-GAYE,
Secretary-Supt.

City Mental Hospital, NOTTINGHAM.

Wanted, JUNIOR ASSISTANT MEDICAL OFFICER (male), preferably with some Post-Graduate General Hospital experience. Salary £350 to £400 per annum, by two £25 increases, all found, with an additional £50 per annum on obtaining the D.P.M. Application, with fullest particulars and names of two referees, should be sent to the Medical Superintendent of the above-named Hospital.

General Infirmary, Salisbury. (General Hospital—151 Beds.)

A RESIDENT MEDICAL OFFICER (male) required. Candidates must be unmarried, fully qualified, and registered. Salary £150, with board, etc. Applications, with copies of testimonials, to be sent to the House Governor and Secretary at once.

Cardiff City Mental Hospital, WHITCHURCH, Near CARDIFF.

OFFICE OF MEDICAL SUPERINTENDENT.

The Committee of Visitors invite applications for the above. Commencing salary £1,000 a year, with unfurnished house, rates, taxes, water supply, light, fuel, vegetables, and laundry free. Candidates, who must be of the male sex, must not exceed 40 years of age, must be duly qualified and registered under the Medical Acts, must be actually engaged in Mental Hospital practice, and hold a Diploma in Psychological Medicine. The appointment is subject to the conditions of the Asylums Officers Superannuation Act, 1909, and to all Rules and Regulations of the Mental Hospital, and any others which may hereafter be made. Three months' notice of termination of appointment on either side. Forms of application, with full details, to be obtained from the Town Clerk, City Hall, Cardiff. Canvassing, directly or indirectly, any member of the Committee will be a disqualification. The successful candidate will be required satisfactorily to pass a medical examination.

The Elizabeth Garrett Anderson HOSPITAL, Euston Road.

Wanted, fully qualified medical woman as ASSISTANT PATHOLOGIST (full-time). Particulars of post can be obtained from the Secretary, to whom applications, with testimonials, should be sent before February 1st next.

IMOGEN H. MURPHY, Secretary.

ROYAL ARMY MEDICAL CORPS.

TWENTY-FIVE COMMISSIONS in the ROYAL ARMY MEDICAL CORPS will be offered in January, 1929. Applications should reach the War Office not later than January 25th.

Candidates will be selected for Commissions without competitive examination, and will be required to present themselves in London for interview and medical examination towards the end of January. They must be under 28 years of age on February 1st, 1929, and registered under the Medical Acts.

Officers of the R.A.M.C. are liable to serve in any part of the world where British Troops are quartered.

Ample opportunities exist in the Army for clinical professional work, both Medical and Surgical, as well as for the study and practice of Hygiene, Pathology, and all the special branches.

The cost of Post-Graduate study, which is compulsory, is met from Army Funds.

Officers serve on an average 3 to 4 years at home to 5 years abroad.

Pay and Allowances—Pay from £500 to £2,000 a year according to rank and length of service.

Gratuities on retirement.—After 7 years' service £1,000.
" 15 " " £2,800.
" 18 " " £3,500.

Current rates of retired pay range from £372 per annum normally earned by a Major after 20 years' service to £940 per annum, the maximum for which a Major-General is eligible.

The rates of pay and retired pay are subject to periodical variation consequent on fluctuation in the cost of living.

Outfit Allowance.—An officer on joining receives £50 as outfit allowance.

Marriage Allowance.—Officers of 30 years of age and over who are married are entitled to draw special rates of allowances.

A Voluntary Widows' and Orphans' Fund exists for officers of the Corps.

All particulars may be obtained by application, in writing or personally, to The Under Secretary of State, The War Office (A.M.D.1), Whitehall, London, S.W.1.

Malayan Medical Service.

APPOINTMENTS.

VACANCIES exist at present for MEDICAL OFFICERS in the MALAYAN MEDICAL SERVICE. Candidates, who should be British subjects of European parentage and not over 35 years of age, should apply to the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1, for the necessary form of application. Preference is given to candidates who have held Hospital appointments as House Surgeons and House Physicians. Selected candidates are required to attend one of the Schools of Tropical Medicine, the fees for their tuition being defrayed by Government, and an allowance paid during their instruction.

Salaries.

2. The initial salary of a Medical Officer is $500 per mensem (£700 per annum), rising by annual increments of $25 per mensem (£35 per annum) to $550 per mensem (£770 per annum). Officers are appointed on probation for a period of three years and then become eligible for confirmation, after which the salary rises by annual increments of $25 per mensem (£35 per annum) to $800 per mensem (£1,120 per annum).

Allowances.

3. In addition to salary, there is at present a temporary allowance of 10 per cent. of salary to unmarried officers and 20 per cent. to married officers. A non-pensionable allowance of $100 per mensem (£140 per annum) is paid to officers holding the Diploma in Public Health.

Currency.

4. The Straits dollar is equivalent to 2s. 4d. of English currency. The rate is liable to alteration, but has remained unchanged for many years past, and so far as can be foreseen no change is anticipated.

Passages.

5. Free first-class passages are provided on first appointment and on leave.

Quarters.

6. Quarters are usually available and are provided at a rental which in no case exceeds 6 per cent. of the officer's salary.

Private Practice.

7. Private practice is not allowed, but consultation with another practitioner is permitted.

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Wanted. — Assistant, male, must have G.P. experience, to develop branch. Manchester district. Good opportunity for energetic man. Usual bond.—Address, No. 312, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant. Panel Practice, pleasant London suburb. Work light, afternoons free. £2 12s. 6d., all found. Comfortable home. State age, nationality, qualifications, experience.—Address, No. 323, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant in Industrial Practice near Manchester, with view to Partnership and early succession. Panel 2,000. Protestant. English or Scotch. References and essential particulars.—Address, No. 330, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately, Assistant, indoor, Leeds, young, recently qualified. Possibility Partnership ultimately. Send detailed essential particulars.—Dr. SUTHERLAND, Lytham House, Low Wortley, Leeds.

Wanted.—Lady Assistant, outdoor, for busy working-class London suburban Practice.—Address, No. 304, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, for six months. Mixed Practice, Nottingham district. Dispenser kept. Salary £25 monthly.—Address, No. 317, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant for March 1st next in an Industrial Practice in Lancashire. Must be capable, temperate, and trustworthy. Initial salary offered, £450, outdoor. — Address, No. 325, B.M.A. House, Tavistock Square, W.C.1.

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Wanted. — Married Assistant, with Hospital and general experience, capable of taking sole charge. £300 (indoor). Usual bond. State height, age, and send photograph (returnable).—Address, No. 322, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship or LOCUM by woman M.B., Ch.B. Three and a half years' experience in Hospital, private and panel. Interview Now in London.—Add., No. 362, B.M.A. House, Tavistock Sq., W.C.1.

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Wanted.—Part-time Work, Croydon or South London district, by G.P., 32, married. 3 years' experience building new practice. Keen midwifery, babies. Abstainer. Car.—Address, No. 324, B.M.A. House, Tavistock Square, W.C.1.

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We have just secured
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ROBERTS, SCHOLTE, et
OVERCOATS, DRESS, LO
etc., from 4 gns. Fur-lined Coats, etc.
ALTERATIONS ON PREMISES. — REGENT DRESS CO., Piccadilly Mansions, 17, Shaftesbury Avenue, Piccadilly Circus, W.1.
(Next door to Café Monico.) Gerrard 7611.
(*Ladies' Department on First Floor.*)

Medical Surgical Sundries Ltd.
Supply Instruments, Dressings, Attaché Cases, Electric Sterilizers, Palomino Foot and Leg Rest, combined with Bed Table, etc.
Showrooms: 97, Swinderby Road, Wembley.

Doctor has for Sale a number of ESSENTIAL INSTRUMENTS at 50% reduction:—Milne-Edwards' Tractor (new), Simpson's Long, Perforator Eraseur, Eye Instruments, Set Tonics, Tooth, etc. List sent.—Address, No. 321, B.M.A. House, Tavistock Square, W.C.1.

Special Notice.—Turn those outstanding accounts into £ s. d. We can collect them for you anywhere in Great Britain without any cash outlay on your part.—Write for particulars, TRADES PROTECTION ASSOCIATION, 27, Brighton Place, Wolverhampton.

HOUSES, CONSULTING ROOMS.

Wanted.—Wimpole St. — CONSULTING ROOM, one day (2 hours) a week, door plate, and service. Moderate offer only entertained. — Address, No. 371, B.M.A. House, Tavistock Square, W.C.1.

Wanted by Ophthalmic Surgeon CONSULTING ROOM twice weekly, in or near Harley Street.—Address, No. 328, B.M.A. House, Tavistock Square, W.C.1.

Adjoining Harley Street.—Part-TIME USE of CONSULTING ROOM available. Door plate, use of waiting room, good service. — Address, No. 6854, B.M.A. House, Tavistock Square, W.C.1.

Camberwell, best part, main road, FURNISHED FLAT, six rooms, large hall, good entrance. Six years medical practice. Shortly vacant. Three guineas per week.—Agents: ROBERTSON & SONS, 27, Camberwell Green, London, S.E.5.

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ELLIOTT, SON & BOYTON
(H. H. Holt, H. E. Allpress, H. C. Rowe),
Estate Agents, Auctioneers, and Surveyors,
6, VERE STREET, CAVENDISH SQUARE, W.1
are the BEST LOCAL AGENTS for HOUSES and CONSULTING ROOMS in the Harley, Wimpole, Queen Anne, and other Streets in the Cavendish Square district. Valuations for all purposes.
Telephone: 3204 MAYFAIR.

A Professional Suite House, near CAVENDISH SQUARE; very well furnished and decorated, with fully equipped surgeries. Net profit from rentals alone exceeds £1,200 per annum. Audited books. Long lease. Price £6,000 for everything.—WOODCOCK & SON, 20, Conduit Street, W.1.

Bournemouth West. — Exceptional Opportunity for Medical Man.—FREEHOLD HOUSE for Sale in the local Harley St. Recently occupied professionally. 3 rec., 6 bed. and dressing, bath, elect. light. In good order. S. aspect. Garage. Price £2,700.—Sole agents, HANKINSON'S, Bournemouth. (S. 1203).

Consulting Room. — Ground floor, with Secretary's room and/or work room. Portland Place district.—Box C., W. H. SMITH & SON, Great Portland Street, N.W.1.

Consulting Room, close to Harley Street (ground floor) Suit young Doctor. Furnished and equipped for immediate use. £150 p.a., includ. attendance, light, and use of waiting room. — Agents: FOLKARD & HAYWARD, F.A.I., 115, Baker Street, W.1.

Minehead. — 15 minutes from Sea, Hills, and Moors. — Detached RESIDENCE facing full south, with extensive hill and country view, large drawing room, dining room, sun lounge, kitchen, etc., 6 bedrooms, bathroom, boxroom. Electric light and gas. Large garden. Admirably suited for Convalescent Home. To be let furnished for three years or longer, or might be sold furnished.
Full particulars from HEDLEY RENDELL, *House Agent, Minehead.*

Nursing Home (suitable for).— A large detached Freehold double-fronted RESIDENCE, good garden, Leytonstone. £1,200. Large mortgage. — ARTHUR W. CAPE, F.A.I., 7, Finsbury Square.

Prominent Corner House in pleasant growing suburb for sale, with Nucleus of Practice. Excellent opportunity.—Address, No. 364, B.M.A. House, Tavistock Square, W.C.1.

Piccadilly. — Consulting ROOMS in Dental Surgeon's office, furnished and fitted for Ophthalmic work. £15 per month, incl. Receptionist, tel., light, etc. Chaise longue couch and ultra-violet lamp available at mod. price.—Address, No. 361, B.M.A. House, Tavistock Square, W.C.1.

Radiologist in Harley Street district would like to LET CONSULTING ROOM PART-TIME; with USE of Modern APPARATUS.—Address, No. 7101, B.M.A. House, Tavistock Square, W.C.1.

To Let. — Fully equipped modern PLOMBIERE DEPARTMENT, with attendance, in professional house near Harley Street. Moderate premium and rental.—Apply by letter first to No. 326, B.M.A. House, Tavistock Square, W.C.1.

To Let.—Queen Anne Street, W., full time CONSULTING ROOM, plate, etc., £160 per annum. Also part time from £50.—Address, No. 319, B.M.A. House, Tavistock Square, W.C.1.

Well-built Corner House, pre-war, at the Vale, Acton, for Sale. Seven rooms, bath, garage. Good cellarage and well appointed. Electric and gas. Splendid condition. Decoration to suit. Vacant possession. —Write, PETHICK, 43, Central Road, Wembley, Middlesex.

HOSPITAL VACANCIES.

Gloucester County Mental HOSPITALS, Wotton and Barnwood.

Required, JUNIOR ASSISTANT MEDICAL OFFICER (male). Candidates must be registered medical practitioners and unmarried. Salary £350 per annum, with board, apartments, laundry, and attendance. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.
Apply, with copies of three recent testimonials, to the Medical Superintendent.

Northampton General Hospital.
APPOINTMENT OF HONORARY PATHOLOGIST.

The Board of Management invite applications for the appointment of Honorary Pathologist.
Candidates must be registered medical practitioners.
Full particulars of the appointment may be obtained from the undersigned, to whom applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, should be sent on or before Wednesday, January 23rd.
The present salaried Pathologist, appointed in 1919, will be a candidate.
R. ST. JOHN WOOD,
January 1st, 1929. Secretary-Supt.

Bradford Royal Infirmary.
TWO HOUSE SURGEONS (male) wanted for March 1st.
Candidates must be single and legally qualified. Salary £150 per annum, with board, residence, and washing.
There are 215 beds and six resident officers.
Applications, stating age, qualifications, and previous experience (if any), with copies of recent testimonials, to be received by the undersigned not later than Thursday, January 24th.
J. J. BARRON, Secretary-Supt.

Charing Cross Hospital.
ASSISTANT PHYSICIAN

The Council invite applications for the post of Assistant Physician (male).
Candidates, who must be Members of the Royal College of Physicians of London, must send in their applications, together with copies of three recent testimonials, to the undersigned not later than Wednesday, January 30th.
Charing Cross Hospital, W.C.2. PHILIP INMAN, *House Governor.*

General Hospital, Gt. Yarmouth.
(72 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry. Duties to commence February 13th. Candidates (male, and unmarried) must be fully qualified and registered.
Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be sent immediately to the undersigned.
T. H. G. GARTLAND, Secretary.

Coventry and Warwickshire HOSPITAL, COVENTRY. (307 Beds.)

RESIDENT HOUSE SURGEON (male) wanted. Salary £125 per annum, board, lodging, and attendance provided. Candidates must be duly [illegible] and registered.
[illegible] age, and enclosing copies should be sent to the undersigned on or before January 29th
(Miss) R. HOOPER, Secretary.

Leigh Infirmary, Lancashire.
Wanted, a RESIDENT HOUSE SURGEON, male, single, for Hospital of 70 beds. Salary £150, with rooms, fire, attendance, and board. The position is vacant at the end of January.
The appointment is for six months, with eligibility for re-election. Must be good anæsthetist. Knowledge of Ear and Throat work desirable.
Applications to be addressed to J. A. SMITH, Esq., Secretary, 3, Silk Street, Leigh, Lancs.

Chiswick General Hospital,
The Mall, Chiswick, W.4.

Applications are invited for the post of additional SECOND HONORARY CONSULTING SURGEON. Candidates must be F.R.C.S.Eng., and on the staff of a General Hospital.
Applications should be sent to Chiswick Hospital, addressed to the Medical Secretary, not later than January 30th. Calling on the staff is not required.

The Infants Hospital,
Vincent Square, Westminster.

Applications are invited for the post of HOUSE PHYSICIAN (female). The appointment is for six months. Salary at the rate of £75 per annum, with board, residence, and laundry. Applications and copies of testimonials should reach the undersigned by February 9th.
ALFRED J. SMALL, Secretary.

Thakeham Union.

MEDICAL OFFICER & PUBLIC VACCINATOR.

The Guardians invite applications from fully qualified medical practitioners for the appointment of Medical Officer and Public Vaccinator of the No. 1 District (9 Parishes with an estimated population of 4,050).

The salary as Medical Officer will be at the rate of £112 per annum, and the fees paid in respect of vaccinations are 8/- for each successful case, the appointment of Public Vaccinator being subject to one month's notice on either side.

The appointment (other than that of Public Vaccinator) will be subject to the Provisions of the Poor Law Officers Superannuation Act.

The person appointed will be required to attend at the houses of the outdoor patients, to supply all drugs, medicine, and appliances free (other than anæsthetics and cod-liver oil), and generally conform with the Orders of the Ministry of Health and the Guardians.

Applications, in candidates' own handwriting, stating age, qualifications, and present and previous occupations, and accompanied by copies of recent testimonials, must reach my office not later than Wednesday, January 30th instant.

Canvassing, either directly or indirectly, will be deemed a disqualification.

Storrington, Pulborough, Sussex. January 14th, 1929

PERCY AYLING, Clerk to the Guardians.

West London Hospital,

Hammersmith Road, W.6. (226 Beds.)

Applications are invited for the post of HONORARY OBSTETRIC REGISTRAR for a period of one year. The holder of the post is eligible for re-election annually for a total period of not more than three years. The duties include the preparation of the Obstetric Registrar's Report for the year, and the supervision of the records of cases. The candidate appointed must be available as a substitute for the Surgeon and Assistant Surgeon for Diseases of Women, and for emergency operations when required, and be prepared to undertake such teaching for the Post-Graduate College as the Board may approve.

Candidates are required to be registered under the Medical Act; to send applications to reach me not later than Monday, February 18th; to attend the Medical Council Meeting on Friday, February 22nd at 4.30 p.m., and prior to that date to call upon and send copies of application and testimonials to each Member thereof; to abstain from canvassing, but nevertheless to send copies of application and testimonials to each Member of the Board of Management, at whose Meeting on Tuesday, February 26th, at 5 p.m., candidates must be in attendance.

H. A. MADGE, Secretary.

Borough of Leyton.

ASSISTANT MEDICAL OFFICER (Female).

Applications are invited for the appointment of Assistant Medical Officer.

Age not to exceed 45.

The inclusive salary will be at the rate of £600 per annum.

The duties will be principally in connection with maternity and child welfare and school medical services.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to the approval of the Minister of Health.

Applications must be made on prescribed forms, which can be obtained by sending a stamped, addressed envelope to the undersigned.

Applications, endorsed "Assistant Medical Officer," accompanied by copies of not more than three testimonials of recent date, must reach me not later than the 31st instant.

Canvassing, directly or indirectly, will be a disqualification.

Town Hall, Leyton, E.10. January 18th, 1929

JNO. ATKINSON, Town Clerk.

Torbay Hospital, Torquay.

(AMENDED ADVERTISEMENT)

Under the new Rules of the Hospital applications are invited for the post of an HONORARY OBSTETRIC PHYSICIAN, who shall be in charge of the Obstetric Department and the Ante-Natal Clinic.

Candidates must hold a degree from one of the British Universities or a Diploma from one of the Royal Colleges of Physicians and Surgeons, and be registered under the Medical Act.

Applications (accompanied by copies of not more than three testimonials) should be sent to the undersigned not later than Thursday, February 14th next.

E. L. GRIST, Secretary.

January 14th, 1929.

Royal London Ophthalmic

HOSPITAL (MOORFIELDS EYE HOSPITAL), City Road, E.C.1.

THREE OUT-PATIENT OFFICERS.

Applications are invited for the post of Out-patient Officer, to attend on two mornings each week as follows:

Monday and Thursday;
Tuesday and Friday;
Wednesday and Saturday.

Candidates must be registered medical practitioners. Salary at the rate of £100 per annum. The Out-patient Officers will be appointed for a period of one year and will be eligible for re-appointment.

Copies of regulations governing the appointment can be obtained on application.

Applications, stating age and qualifications, must be received not later than January 31st, by—

ARTHUR J. M. TARRANT, Secretary.

St. Marylebone General

DISPENSARY (Incorporated), 50, Marylebone Lane, W.1.

A vacancy having occurred in the office of DENTAL SURGEON to the LONDON COUNTY COUNCIL SCHOOL DENTAL CLINIC, held at the above Institution, the Council is prepared to receive applications for that office. Every candidate must be a Licentiate in Dental Surgery of one of the Royal Colleges. The appointment is subject to the confirmation of the London County Council Particulars as to the rates per session, number of sessions, etc., may be obtained from the Secretary. Applications and testimonials must be forwarded to the Secretary not later than Friday, January 25th, and selected candidates must attend the meeting of the Medical Committee on Wednesday, January 30th, at 5 p.m.

FRANK BETHELL, Secretary.

January 14th, 1929.

Royal Albert Hospital and Eye

INFIRMARY, DEVONPORT.

There will be a vacancy for an ASSISTANT HOUSE SURGEON (unmarried) on Jan. 30th.

Applicants must be fully qualified and registered, and the appointment will be for six months. Salary £50 per annum, with apartments, board, and laundry free.

Applications, stating age, accompanied by copies of not more than three testimonials, should reach the undersigned not later than Friday, January 25th.

By Order of the Committee, FRANK ROWE, Secretary.

January 14th, 1929.

Royal Victoria and West Hants

HOSPITAL, BOURNEMOUTH. (Boscombe Branch. 170 Beds.)

A HOUSE SURGEON (male, British nationality) required to commence duty about February 10th. Salary £120 per annum, with board, lodging, and washing. The appointment is tenable for six months, and candidates must be registered according to the provisions of the Medical Act.

Applications, stating place of birth, with copies of three testimonials, to be sent immediately to the undersigned.

Women and married men are ineligible.

GORDON M. SAUL, Secretary.

January 8th, 1929.

Woolwich and District War

MEMORIAL HOSPITAL, Shooters' Hill, London, S.E.18. (General Hospital. 112 Beds.)

The Appointments Committee invite applications for appointment as HOUSE SURGEON. An honorarium of £125 per annum will be paid in respect of such appointment, which will be for a period of six months as from February 15th.

Applications, accompanied by copies of not more than three recent testimonials, are invited from suitably qualified candidates, and should be addressed to the Secretary-Superintendent, Woolwich and District War Memorial Hospital, Shooters' Hill, S.E.18, to reach him not later than 10 a.m. on Thursday, January 31st.

The Royal Gwent Hospital,

NEWPORT, MON.

There will be a vacancy for a JUNIOR RESIDENT MEDICAL OFFICER on February 1st next. Salary at the rate of £125 per annum, with board, lodging, and laundry.

Applications, stating age and qualifications, with copies of three testimonials, to be sent to the undersigned not later than January 22nd.

Applications from ladies not entertained.

J. E. MILLWARD, Secretary-Supt.

January 8th, 1929.

Evelina Hospital for Children,

Southwark, S.E.1.

The Committee of Management requires a HOUSE PHYSICIAN (male) for eight months, from February 12th (during first four months duty in Casualty and Out-patient Department). Salary £120 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, to the undersigned at the Hospital, before 29th instant. Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates must attend Committee of Management. Date of meeting will be notified by the undersigned, from whom rules and other particulars relating to the post must be obtained.

By Order of the Committee of Management,
H. C. S. SMITH, Secretary-Supt.

January 14th, 1929.

The Queen's Hospital for

CHILDREN, Hackney Road, London, E.2.
President: H.R.H. The Duke of York.

The Committee invite applications for the post of ASSISTANT SURGEON. Attendance required twice a week. Honorarium to cover travelling expenses. The Assistant Surgeons are entitled to beds. Candidates, who must be Fellows of the Royal College of Surgeons, England, should send in their applications, with copies of not more than four testimonials, by February 11th.

T. GLENTON-KERR, Secretary.

January 1st, 1929.

Telephones: Bishopsgate 6305 & 2534.

Royal Waterloo Hospital for

CHILDREN AND WOMEN, Waterloo Road, S.E.1.

There is a vacancy for an HONORARY CLINICAL ASSISTANT (male or female) for an L.C.C. Clinic for Children suffering from Rheumatic Fever and Chorea. Attendance is required once weekly on Tuesday afternoons. Candidates should be interested in Children's Diseases and Cardiology. Previous children's experience desirable. Application, accompanied by testimonials, should be sent to the undersigned, of whom further particulars can be obtained, not later than January 23rd.

J. H. TEASDALE, Secretary.

Birkenhead General Hospital.

(156 Beds.)

VACANCY FOR HONORARY PHYSICIAN.

The General Committee invite applications for the post of Honorary Physician at the above Hospital.

Applications, stating age, qualifications, and full details of experience and posts held, together with copies of three testimonials, to be sent to the undersigned not later than February 4th.

W. H. DANIELS, A.C.I.S., Secretary-Superintendent.

Radcliffe Infirmary and County

HOSPITAL, OXFORD.

Applications are invited for the post of RESIDENT MEDICAL OFFICER to the OSLER PAVILION, HEADINGTON, OXFORD, for the treatment of Tuberculosis (40 beds), which will become vacant on March 1st.

Candidates must be qualified.

Appointment for six months, with salary at the rate of £120 per annum, with board, etc.

Applications, with four copies of three testimonials, to be forwarded to the undersigned on or before January 31st.

A. G. E. SANCTUARY, Administrator.

Radcliffe Infirmary and County

HOSPITAL, OXFORD.

Applications are invited for the post of HONORARY SURGEON to the above Hospital.

Twenty-five copies of applications and testimonials, which will be forwarded to members of the Electing Committee, must be sent to the undersigned, from whom further particulars may be obtained, not later than Saturday, February 9th.

A. G. E. SANCTUARY, Administrator.

Saint Mark's Hospital for Cancer,

FISTULA, AND OTHER DISEASES OF THE RECTUM, City Road, London, E.C.1.

HOUSE SURGEON (male) required. Must be fully qualified. Salary £75 per annum, with board, residence, and laundry. The appointment is for a minimum of six months from February 1st next.

Applications, with copies of testimonials, must reach the Secretary (from whom further particulars may be obtained) not later than Saturday, January 26th.

Metropolitan Asylums Board.

BIO-CHEMIST AT THE BOARD'S ANTITOXIN ESTABLISHMENT.

The Board invite applications for the appointment of BIO-CHEMIST at their Antitoxin Establishment. The Laboratories and Stables are at Sutton, Surrey.

The candidate appointed will be required to assist generally in the work of the laboratories, especially with the chemical side of the work, such as the concentration of toxin and anti-toxin, preparation of media, etc.; to make himself acquainted with the general running of the laboratories, and so be in a position to take charge, if required; and to conduct researches bearing especially on bio-chemical problems, subject to the approval of the Director.

Evidence of previous research work in bio-chemistry is desirable, and, although it is not essential that the candidate appointed should already be equipped with a special experience of bacteriology and serology, he will be expected to acquire knowledge of the current laboratory work on these subjects, with a view to the co-ordination of bacteriological and bio-chemical interests.

The commencing salary is at the rate of £600 per annum.

Application form containing full particulars of the appointment may be obtained by forwarding stamped addressed foolscap envelope to the Clerk, Metropolitan Asylums Board, Victoria Embankment, London, E.C.4, to whom completed applications must be returned not later than 10 a.m. on Wednesday, February 6th.

ALLAN POWELL, Clerk to the Board.

St. Bartholomew's Hospital,

ROCHESTER, KENT.
(126 Beds.)
Rochester, Chatham, Gillingham, and District.

The House and Finance Committee invite applications for the post of HOUSE PHYSICIAN, vacant March 1st.

Candidates must be unmarried, qualified, and registered medical men. The appointment is for six months. Salary is at the rate of £175 per annum, with board, residence, and laundry.

The officer appointed will have charge of the Medical beds. Some knowledge of Ophthalmic work is desirable.

Applications, stating age, qualification, and experience, accompanied by copies of three recent testimonials, to be sent to the Secretary not later than Thursday, January 31st.

C. SPEYER,
January 11th, 1929. Secretary.

Royal Berkshire Hospital,

READING.

The Board of Management invite applications for the appointment of an HONORARY ASSISTANT ANÆSTHETIST.

Candidates must be fully qualified and registered.

The elected candidate will be appointed for the period ending on the first Tuesday in March, 1930, and will be eligible for re-election.

Canvassing by, or on behalf of, a candidate will disqualify him.

Applications, accompanied by not more than three testimonials, should be addressed to the Secretary, and reach him not later than the first post on Saturday, February 2nd.

HERMAN BURNEY,
Reading, January 19th, 1929. Secretary.

Worcester County and City

MENTAL HOSPITAL, POWICK, NEAR WORCESTER.

JUNIOR ASSISTANT MEDICAL OFFICER required. Candidate must be duly qualified in Medicine and Surgery, and should be able to undertake chemical laboratory work. Salary £350 per annum, rising by two annual increments of £25 to £400 per annum, with furnished apartments, board, laundry, and attendance. The appointment is subject to the provisions of the Asylums Officers' Superannuation Act, 1909.

Applications, stating age, etc., together with copies of three recent testimonials, to be sent to the Medical Superintendent not later than Monday, January 28th.

Royal Edinburgh Hospital for

SICK CHILDREN.

Wanted for this Hospital, FIVE HONORARY RESIDENT MEDICAL OFFICERS (three Resident House Physicians and two Resident House Surgeons), to enter on April 1st next. Information as to duties, etc., can be obtained from the Ordinary Physicians and Surgeons at the Hospital. Thirty copies of applications and relative testimonials to be lodged on or before March 2nd with Messrs. HENRY & SCOTT, W.S., 56, Frederick Street, Edinburgh. No applications will be received after that date.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

NURSES

MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

THE NURSES' ASSOCIATION
(In conjunction with the MALE NURSES' ASSOCIATION),
29, York St., Baker St., London, W.1.

Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

ST. LUKE'S HOSPITAL.

FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

Royal Isle of Wight County

HOSPITAL, RYDE.

A VACANCY having occurred on the HONORARY MEDICAL STAFF, the Election Committee of the Governors will proceed to fill the appointment. Applications, stating registered qualifications, with copies of not more than three professional testimonials, to be sent to the Secretary at the Hospital not later than Thursday, January 31st. Candidates must be engaged in practice in the Isle of Wight, and must present themselves for interview by the Election Committee at 3.15 p.m. on Monday, February 4th.

Canvassing will be a disqualification.

A. S. GORDON, Secretary.

Stockton and Thornaby Hospital,

STOCKTON-ON-TEES.
(140 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male) to commence duties on February 8th. Salary £175, with residence, board, and laundry. Applicants must be doubly qualified and unmarried.

Applications, stating age and experience, together with copies of three testimonials, to be sent to the undersigned as early as possible.

J. WILKINSON, Secretary.

The Royal National Hospital for

CONSUMPTION FOR IRELAND,
NEWCASTLE, CO. WICKLOW.

The post of JUNIOR RESIDENT MEDICAL OFFICER at the above Hospital will be vacant on March 1st.

Salary £200 per annum, with residence and board.

Must be fully qualified.

Applications, with copies of three recent testimonials, to be sent to the Secretary, 13, South Frederick Street, Dublin, on or before Monday, February 4th.

Jewish Maternity Home,

24, Underwood Street, Whitechapel, E.1.

RESIDENT MEDICAL OFFICER required.

Applicants, who may be either male or female, should send their applications, together with copies of three testimonials, to the Hon. Secretary on or before January 30th. The Hospital offers excellent Obstetrical experience. Salary £50 per annum, together with board, residence, and laundry.

ALICE MODEL, Hon. Secretary.

Liverpool and District Hospital

FOR DISEASES OF THE HEART.
34, OXFORD STREET, LIVERPOOL.

HOUSE PHYSICIAN (male or female) required for the above Institution. The appointment will be for the period of six months from April 1st. Applications to be sent to the Secretary, Miss LEWIS, 14, Cook Street, Liverpool.

THE OLDEST AND LEADING MEDICAL AGENT.

PERCIVAL TURNER, LTD

(Established 50 years)
4 & 5, ADAM ST., STRAND, W.C.2.
Telegrams: "EPSOMIAN, LONDON."
Telephone: GERRARD 0399.

Terms post free on application.

North of Scotland.—£2,250.—1/3 share for disposal. Fuller details on application.—No. 8406.

Devonshire.—£1,500 p.a. 1/3 or 2/5 share for sale after preliminary assistancy. Panel over 2,000. Ultimate succession. Good house available.—No. 8405

Home Counties. — Over £1,250 p.a Country Practice. Panel and appts. nearly £750 p.a. Mids. 3 to 5 gns. Visits 5/- to 21/-. Good house, 6 bed., etc., and large grounds, to rent.—No. 8404.

West of England City.—About £750 p.a. Panel about 250. No mids. Visits 7/6 to 10/6. Appointment £50 p.a. Modern house, 5 bed., etc.—No. 8403.

London, N.—Lock-up. — About £700 p.a. Panel over 500. Mids 3 gns. Visits 5/6 up. Two rooms, rent 35/ p.w. Premium £900 or offer.—No 8402.

Kent Suburb. — About £1,100 p.a. Good middle-class PRACTICE. Mids. 5 gns. up. Visits 5/- to 10/6. Select panel 200. Appt £52 p.a. House, 6 bed., etc.—No. 8401.

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Kent Suburb.—Over £2,600 p.a. 1/2 SHARE for sale. Visits 7/6 to 21/-. Panel about £400 p.a. Good house, 4 bed., etc., large garden. Part prem. deferred.—No 8396.

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Kent. — Average £1,250 p.a. Mids. 7½ gns. up. Visits 7/6 to 21/-. Non-panel. House, 5 bed., etc.—No. 8380.

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2 DEATH VACANCY. — N.E. COAST. — PRACTICE averaging £1,050 p.a. in large seaport town. No panel. Excellent commodious house in best part to rent.

3 DEATH VACANCY. — Berks. — Practice about £600 in growing country district. Panel over 300. Bungalow residence (3 bedrooms), garage, and land. Scope.

4 HOME COUNTIES.—Partnership in Practice about £8,000 p.a. in growing residential watering-place. House (4 bed and dressing rooms) to rent. Partner must be well qualified (Oxford, Cambridge, or London) Premium one-fifth share 2 years' purchase.

5 SUSSEX.—Partnership in Country Practice nearly £2,800 p.a. in residential district, easy distance of coast. Good house to let on lease. Premium one-half share 2 years' purchase.

6 HOME COUNTIES.—Practice about £1,350 p.a. in good residential district within 25 miles of London. Panel 1,000. Large house (9 bedrooms) for sale. Premium, practice, £2,000.

7 N.W. ENGLAND.—Partnership in Practice about £3,500 p.a. in seaport town. Panel about 2,500. Choice of two houses to rent. Premium one-fourth share 2 years' purchase.

8 N. MIDLANDS. — Practice averaging £1,654 p.a. in first-rate county town. No panel or appointments. Well-built detached non-basement house in best part for sale. Ample scope. Premium for quick sale one year's purchase.

9 UNIVERSITY TOWN.—Partner required in Practice about £3,100 p.a. Panel over 2,000. Partner should have a University degree and have held good Hospital resident appointments. Premium two-fifths share 2 years' purchase.

10 S. OF ENGLAND. — Junior Partner required in Practice in first-rate residential town within 40 miles of London. House, with 4 bedrooms, to rent. Share worth about £900 p.a. at first at 2 years' purchase.

11 SOUTH MIDLANDS. — Practice about £1,150 p.a. in county town. Panel 485. Good house (7 bedrooms), with garage and garden, for sale. Very good Hospital.

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13 SOUTH COAST.—Increasing Practice in steadily growing seaside village. Receipts 1928, £1,064. Panel 350. House (3 bedrooms) to rent on lease. Very mild climate. Premium £1,500.

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15 GLOUCESTERSHIRE.—Country Practice averaging £654 p.a. (Elevation 600 feet). Near two good towns. Panel 500. Large house, with garden and paddock, for sale. Scope for increase. Premium £800.

16 KENT.—Partnership in better middle-class Practice about £2,500 p.a. in delightful residential district. Premium one-half share 2 years' purchase. Public School or University man preferred.

17 SOUTH COAST. — Partnership in non-dispensing Practice about £2,700 p.a. in favourite watering-place. Panel 800. House, with 7 bedrooms, for sale. Plenty of scope. Premium one-third share 2 years' purchase. Short preliminary assistantship.

18 EASTERN COUNTIES.—Unopposed Practice about £1,600 (appointments and panel £500). Good house (7 bed. and dressing rooms), garden and orchard, to rent. Premium 1½ years' purchase.

19 N. MIDLANDS.—Practice worth between £600 and £700 p.a. in residential district on outskirts of first-rate town. Small panel offering plenty of scope. Excellent modern house to rent. Premium £900.

20 SOUTH AFRICA. — Old-estab. Practice. Receipts last year £1,816. Travelling and midwifery light. Climate ideal—no tropical diseases (altitude nearly 5,000 feet). Delightful residence (5 bedrooms), in perfect order, with 2 acres grounds. Excellent scope. Local Hospital. Premium £1,200, with option to purchase house.

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23 S. WALES.—Practice over £1,200 p.a. in small country town, amidst beautiful scenery. Panel about 300. Old-fashioned house, with garage and garden. Cottage hospital. Premium £1,500.

24 OPHTHALMIC PRACTICE doing over £1,200 p.a. Consultations usually £2 2s. Scope for considerable increase.

25 S. MIDLANDS.—Practice over £1,700 p.a. in country town 100 miles from London. No panel, appointments, or midwifery. House (5 bedrooms), with garage and garden, for sale. Premium—Practice 1½ yrs.' purchase.

26 N. WALES COAST. — Partner required in old-established Practice. Receipts over £5,650 p.a. Panel over 2,000. Modern house (8 bedrooms, etc.) to rent. Premium for one-half share £4,000, part cash. Applicants must have held H.P. and H.S. appointments.

27 CHESHIRE. — Partnership in old-estab. Town Practice near Manchester, £3,000 p.a. (not including appointments). Panel over 2,000. Third share at 1½ yrs.' purchase. Short preliminary assistantship if preferred.

28 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 15 acres of land for sale. Premium, practice, 1½ years' purchase.

29 LONDON, S.E. — Partnership in well-established Practice of £1,900 p.a. in good residential district. Exceptionally well-built detached house (6 bedrooms) to be rented. One-half share at two years' purchase. Good scope.

30 SOUTH OF ENGLAND.—Partnership in non-dispensing Practice about £3,000 p.a., in flourishing and attractive town about 100 miles from London Panel 1,470. Nice detached house in own grounds (5 bed and dressing rooms) for sale. Premium one-half share at 2 years' purchase.

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32 SURREY.—Partnership in Practice about £2,700 p.a., in outlying suburban district. Panel 1,000. Corner house (5 bedrooms) to rent. Cottage hospital. One-third share at 2 years' purchase.

33 MIDLANDS.—Country Practice of over £1,000 p.a., within 5 miles of good town. Panel 531. Comfortable and convenient house (5 bedrooms, etc.), with electric light, central heating, and acre garden, for sale. Premium, practice, 1½ years' purchase.

34 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. No panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

35 LANCASHIRE.—Practice averaging over £3,700 p.a. in first-rate town. Panel 2,600. House (4 bedrooms) to be sold or let. Premium 1½ years' purchase.

36 LONDON, E.—Partnership in exceptionally old-established Practice averaging £3,580 p.a. Good fees and appointments. Two-fifths share for disposal at 1½ years' purchase, or one-third could be purchased at first. Small house may be bought or rented at a moderate figure.

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40 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. Partner should be keen worker and a good surgeon. One-third to two-fifths share at 2 years' purchase.

41 MIDLANDS. — Practice about £350 p.a. in manufacturing village. Panel 190. House (4 bedrooms, etc.), and one acre of garden. Premium—Practice and house, £2,000.

42 SUFFOLK.—Country Practice averaging £360 p.a. in beautiful agricultural district. Panel 300. Very attractive residence (5 bedrooms, etc.) in half acre garden, etc., for sale. Premium—Practice £540.

43 N. WALES. — Seaside Practice, approximately £500 p.a. Furnished house (4 bedrooms) to rent, or others to rent or purchase. Premium £500 for quick sale.

44 SOUTH AFRICA (NATAL). — Practice over £1,000 p.a., including appointment (District Surgeon) £200. House (4 bedrooms, bathroom, etc.). 2 acres garden and land. Price for House and Practice £3,000.

45 PEMBROKESHIRE. — Practice about £1,000 p.a. in small town. Panel 361. Well-situated house (7 bedrooms) to rent. Scope for increase. Premium £1,500. Preliminary assistantship if desired.

46 SUSSEX. — Country Practice about £300 near coast. Picturesque house (3 bedrooms), with garden, for sale. Premium—Practice £300.

47 NORTH WALES. — Country Practice averaging £1,230 p.a. in Welsh-speaking district. Panel over 530. Centrally situated house (5 bedrooms). Premium one year's purchase.

48 S. WALES. — Easily worked Panel and Contract PRACTICE over £1,000 p.a. in colliery district. Small house (4 bedrooms) to rent. Premium one year's purchase.

49 N. KENT.—Practice averaging £286 p.a. in industrial district offering enormous scope. Small panel. House to rent. Premium £450.

50 ESSEX. — Practice averaging £1,216 p.a. in outlying district—30 minutes by rail from London. Panel 550. Nice detached house (5 bedrooms) for sale. Premium for practice 1½ years' purchase.

51 N. LONDON.—Practice of between £950 and £1,000 p.a. Small panel. No midwifery. Detached corner house (7/8 bedrooms) for sale. Premium—Practice 1½ years' purchase.

52 MIDLANDS. — Partnership in Practice over £2,000 p.a. in good town. Panel 1,800. Good house (5 bedrooms) available. Partner should be able to undertake major operations. Well-equipped hospital. One-half share for disposal.

53 HOME COUNTY.—Partnership in Practice over £2,000 in residential district within 12 miles of London. Panel 730. House, with 5 bedrooms, to rent. Premium one-third share 2 years' purchase.

54 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. Panel over 1,400. Partner should be good at midwifery. Premium one-third share 2 years' purchase.

55 YORKSHIRE (N.R.).—Partnership (with view to succession) in Practice about £1,000 p.a. in small country town. Panel 420. Good rooms available. One-half share at moderate premium. Scope for minor surgery.

56 LONDON, E.—Rapidly increasing cash and panel PRACTICE. Receipts for year ending September, 1923, £971. Panel 450. Shop-fronted house on lease at a profit rental. Premium, to include drugs, surgery equipment, etc., £1,250.

57 S. DEVON. — Old-established Country PRACTICE £700 to £800 p.a. Easy distance of the coast. Panel 400. House (2 sitting, 4 bedrooms, large garden, paddock, garage, etc.). Rent £45 Cottage Hospital Premium £1,200.

58 N. YORKSHIRE. — Country Practice worth about £800 p.a. in agricultural district. Panel over 200. Modern house (6 bedrooms) for sale. Premium, practice £500.

59 Nr. NEWCASTLE-ON-TYNE.—Old-estab. Town PRACTICE over £800 p.a. Panel 440. Pleasantly situated house (4 bedrooms) to rent. Plenty of scope. Prem. 1½ years' pur.

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4. KENT.—GROWING DISTRICT, within 15 miles of London.—PARTNERSHIP.—A one-half share is for disposal in a very sound chiefly better and middle-class Practice, established many years, and held by the remaining partner over 4 years. Gross cash receipts for the past three years £2,528, including panel of 900. No appointments. Fees from 3/- to 21/-. Midwifery 3 to 30 guineas (about 25 cases yearly) Very suitable modern house, with 2 reception, 4 bedrooms, good bathroom, etc. Consulting room. Electric light. Small garden. Garage. Price for freehold about £2,100, nearly all of which could remain on mortgage. Good sport and schools, and excellent social facilities. Premium 2 years' purchase.
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7. LANCASHIRE.—SUBURB OF LARGE TOWN.—Old-established PRACTICE, held by Vendor 30 years. Average income for the past twelve months £1,500, including panel of nearly 1,500. Fees 2/6 to 10/-. Very good house, standing in its own grounds, and containing 3 reception, 4 bedrooms, dressing room, 3 professional rooms. Central heating. Electric light. Garden, with greenhouse. Garage for 3 cars. Price for leasehold £2,100, of which about £1,500 could remain on mortgage. Premium 1½ years' purchase, part by instalments.
8. LONDON, NORTH.—OUTLYING RESIDENTIAL SUBURB.—PARTNERSHIP.—A one-third share (to commence with) is for disposal, owing to the retirement of the senior partner, in sound middle-class Practice, situated in rapidly developing district Income for the immediate past year £2,124. Consultations 3/6 to 10/6, visits 4/6 to 21/-. Good freehold house, price £1,500; or would be rented on lease at £90 p.a. Low expenses. Premium 2 years' purchase.
9. OUTLYING WESTERN SUBURB.—Old-established mixed general PRACTICE Income for the immediate past year about £2,500, including panel of between 1,400 and 1,500. Fees 3/6 to 10/6. Midwifery from 3 gns. The district is rapidly developing and there is great scope. Good house, with garden and garage. Price £2,000. Premium £3,500.
10. LONDON, S.E.—Outlying Suburb.—Very well-estab. growing mixed general PRACTICE, situated in pleasant district within easy reach of town. Gross cash receipts for immediate past twelve months nearly £2,650. Panel of 2,120. Appts. worth about £60 and stated to be transferable. Fees 2/6 to 7/6. Midwifery from 3 gns. (about 40 cases yearly. Moderate expenses Seven-roomed house, with kitchen, 2 waiting rooms, dispensary, and consulting room. Garden. Brick-built garage. Price for freehold £1,500 Premium £4,500
11. SOUTH OF ENGLAND.—FAVOURITE SEASIDE RESORT.—Mainly better-class PRACTICE, producing for the last twelve months about £700, and rapidly increasing. Panel of 150. One appt. worth about £40 p.a. Fees 3/6 to 7/6. Only a few cases of midwifery. 2 gns upwards. Good house in excellent repair, with 2 reception, 5 bedrooms, etc. Electric light. Garden. Garage. Price for freehold £2,300 Premium £1,400.
12. MIDLANDS.—UNOPPOSED COUNTRY PRACTICE, situated in good hunting centre. Gross cash receipts for past 12 months about £1,000 p.a., including panel of 600. Advice and medicine from 3/6, visits 3/6 upwards, with medicine extra. Lowest midwifery 2½ gns. Exceptionally attractive house, with oak panelling, etc., 2 reception, 10 bedrooms, and professional rooms. Well-stocked garden of 1½ acres, and 12 acres of grassland. Recently re-decorated throughout. Electric light. Price for freehold £4,500, of which £2,200 could remain on mortgage. Premium 1½ years' purchase.
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21. BEDFORDSHIRE.—Small Country PRACTICE, at present producing at the rate of £400 p.a., but offering good scope. Fees 3/6 to 10/6, medicine extra. Good house, with 2 reception, 6 bedrooms, etc. Separate entrance to professional rooms. Can be rented on lease. Price for Practice and house £1,050.
22. SOUTH COAST.—FAVOURITE HOLIDAY RESORT.—Well-established non-dispensing PRACTICE. Average income about £1,100, including panel of 1,200. Consultations 2/6 to 10/6, visits 3/6 to 21/-. Practically no midwifery. Very good house, in best position on sea-front. Price for leasehold (with 20 years to run at a ground rent of £4 p.a., and renewable) £2,250. Premium £1,800.
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24. RIVERSIDE TOWN, within 60 miles of London.—Well-established upper and middle-class PRACTICE, producing about £1,600 p.a., including panel of 200. Surgery fees from 2/6, visits 3/6 to 21/-. Little midwifery. Good house, with large garden. Garage. Rent on [illegible] £2,200

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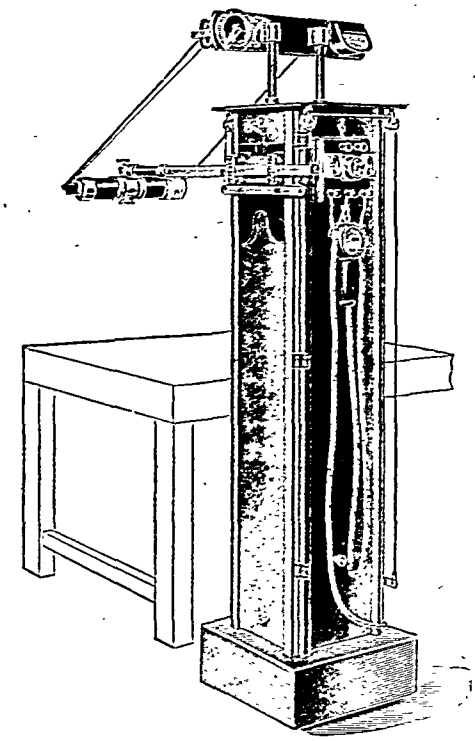

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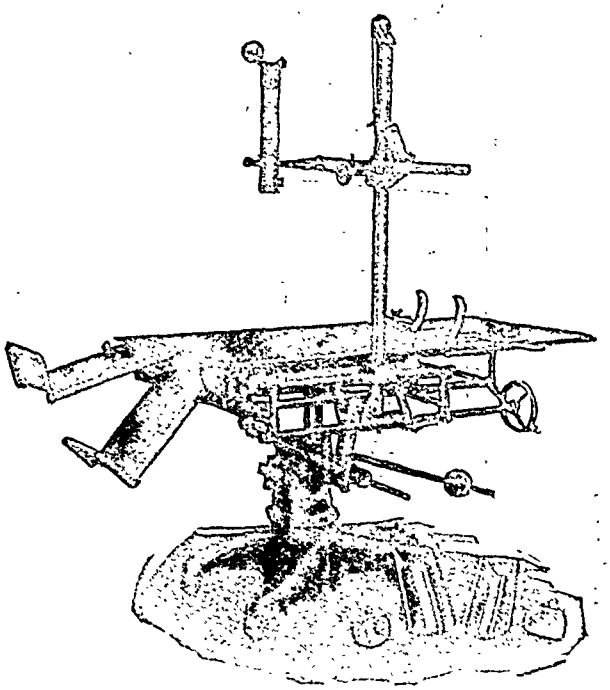

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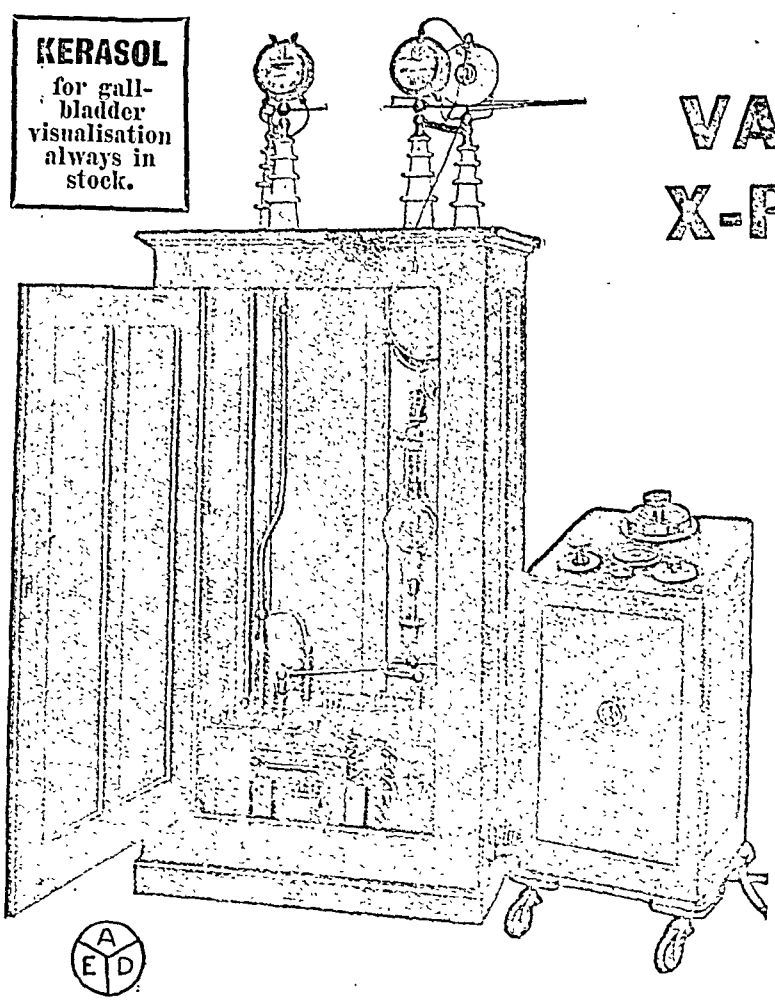

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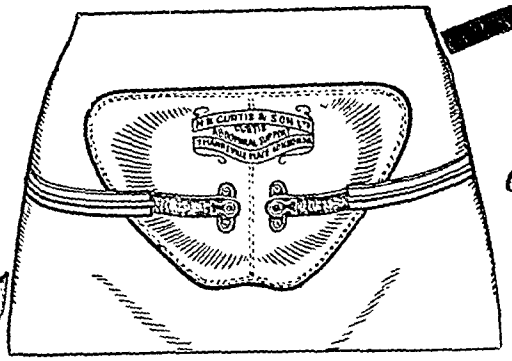

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THE BLOOD & NERVE FOOD

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the shield against
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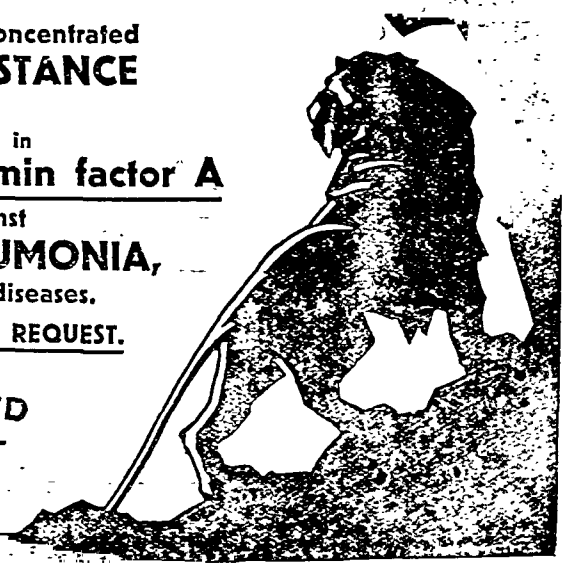

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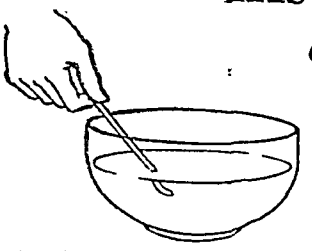

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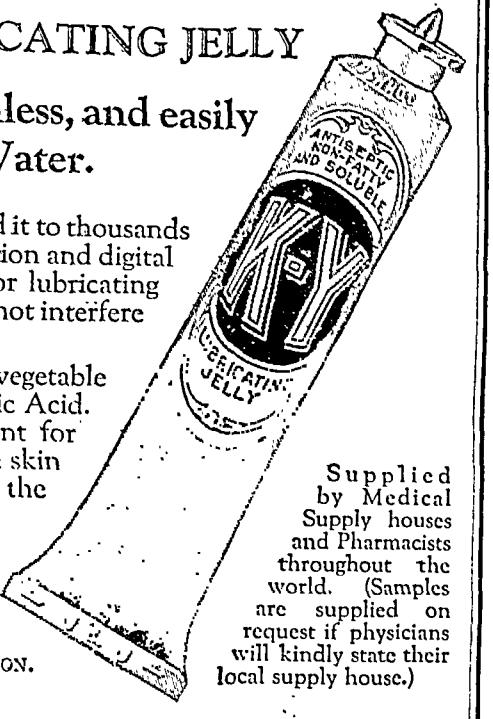

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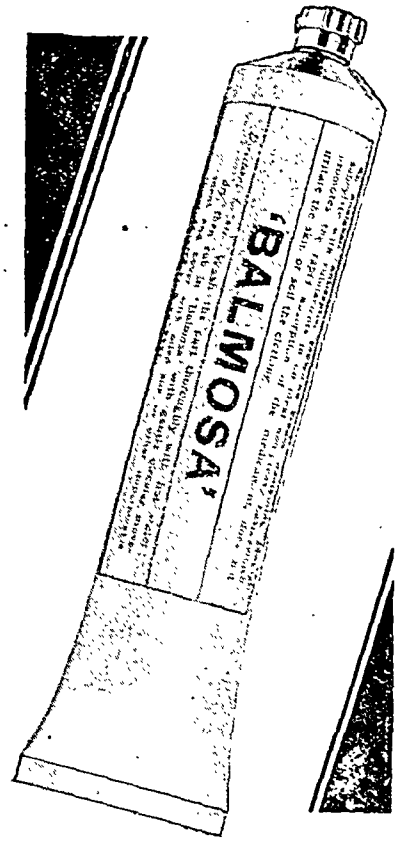

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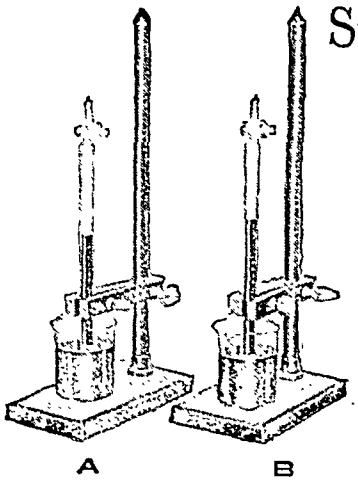

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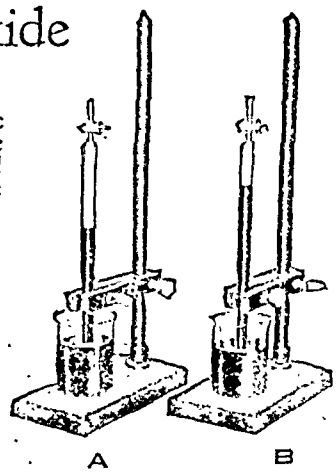

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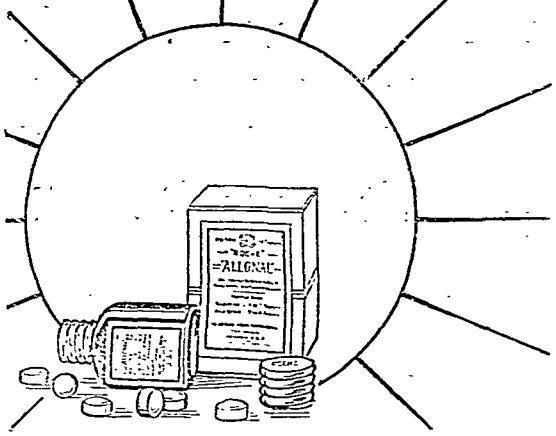

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Nujol

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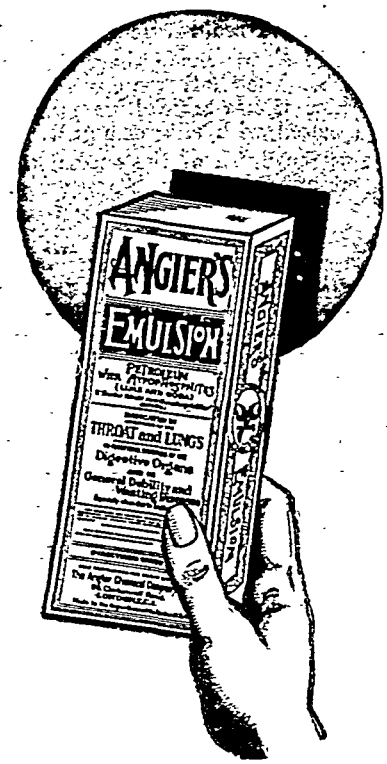
In Convalescence

after Influenza, Pleurisy, Pneumonia, Bronchitis.



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Anæsthesia: 60 c.c. of a 0.7 per cent. Novocain-Adrenaline solution.

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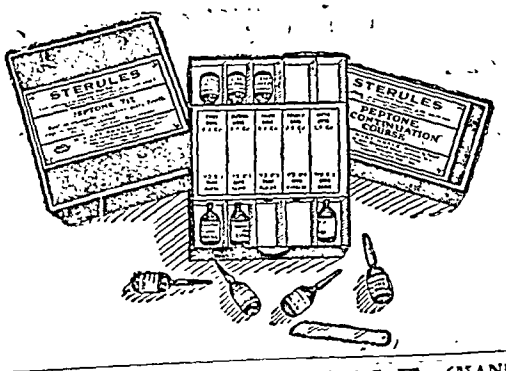

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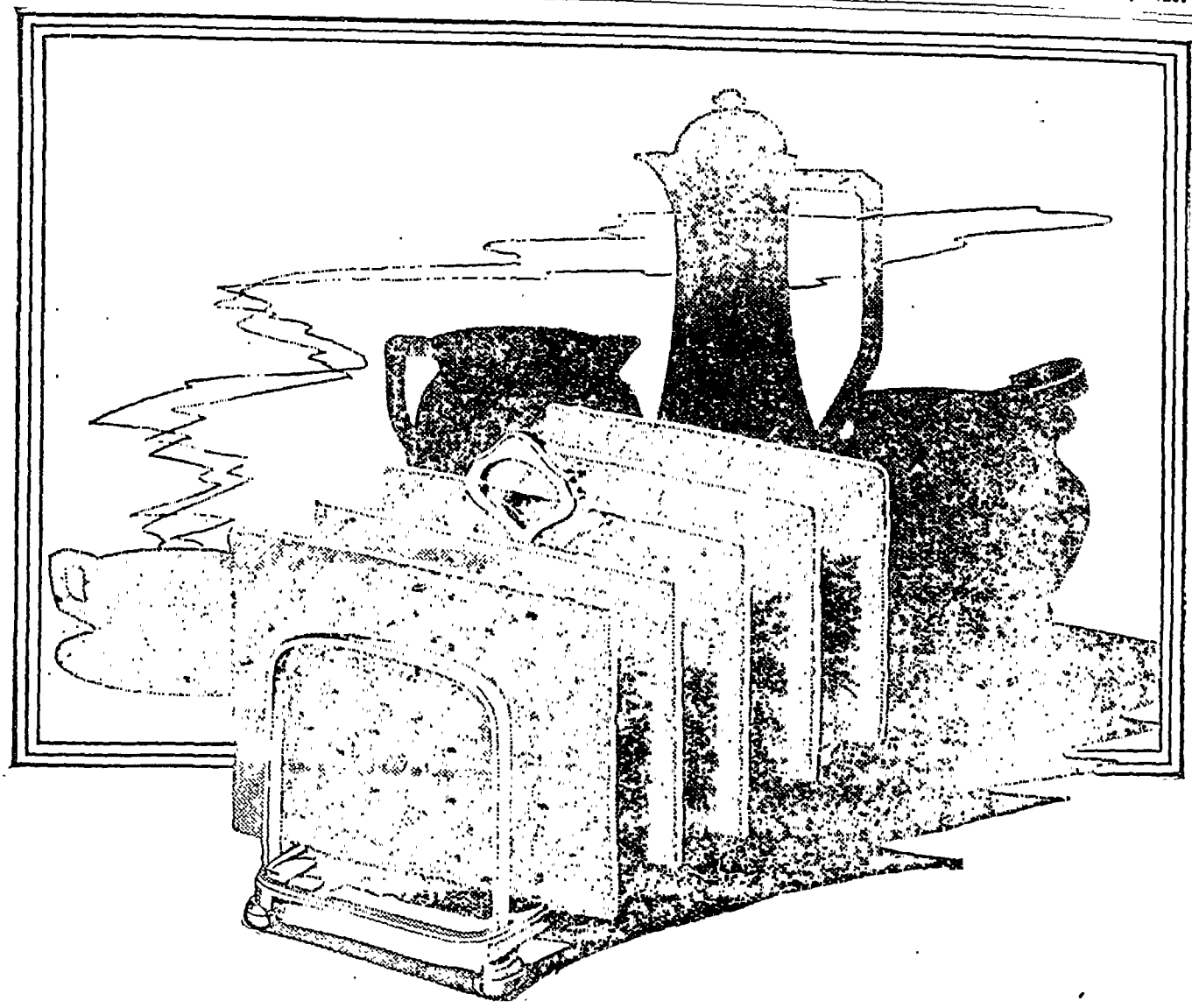

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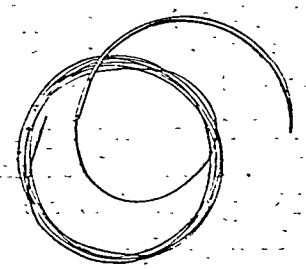
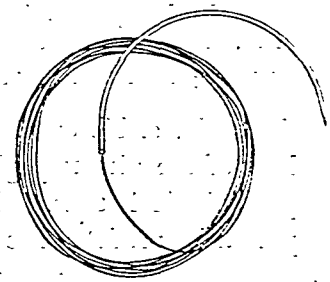
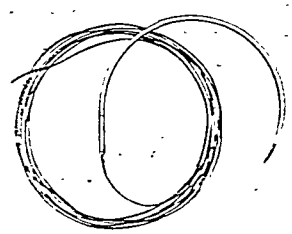


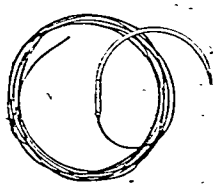
Curved Needle (Keith or Bantock) 3 side cutting edge. Sizes 3/0, 2/0, 0, 1, 2, 3. In boxes of 3 tubes, 4/6



Curved Mayo Robson Stomach Needle. Sizes 4/0, 3/0, 2/0, 0, 1, 2, 3. In boxes of 3 tubes, 4/6



Moynihan's Model. In 3-tube box, 4/6



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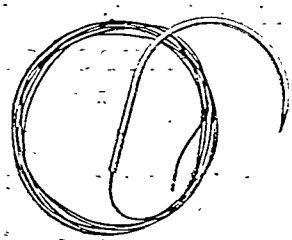
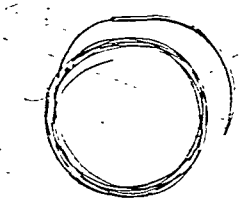


Symond's Round-Bodied Model. In boxes of 3 tubes, 4/6



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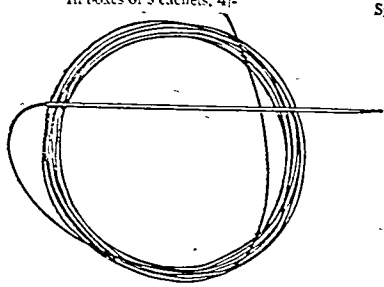

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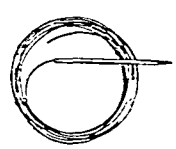

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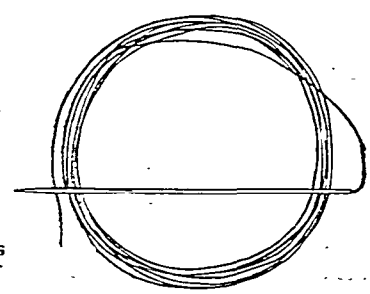

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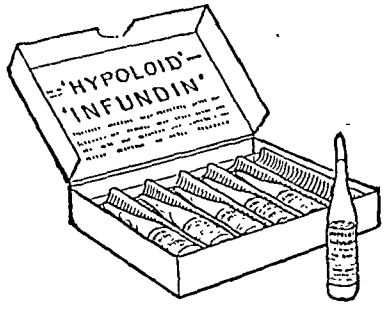

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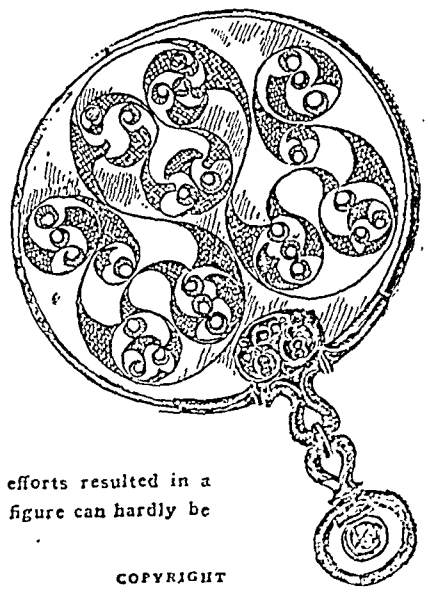

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VERCINGETORIX, THE KELTIC PATRIOT, WHO LED HIS PEOPLE IN A SUPREME EFFORT TO RETAIN THE INDEPENDENCE OF A NATION RENOWNED THROUGHOUT THE ANCIENT WORLD.—Vercingetorix, the heir of the chiefs of the Arverni tribe, declared (Cæsar tells us) to the assembled people: "I will unite the whole of Gaul in a single will, and to that national unanimity the world itself will be unable to offer resistance." He did, for a time, unite the cities, calling upon their inhabitants, not in the name of his tribe, but in the name of Gaul. When, before the fortress and holy city of Alesia, the confederated tribes made their last magnificent stand and were defeated by Cæsar—after a nine years' campaign—the ruin of the Keltic domination was practically accomplished. Cæsar's victory was assured by the rivalry between the tribes forming the confederacy in Gaul, and when, a little later, they had to make their final decision for peace or war with the Latin power, they chose equality in dependence to Rome, rather than suffer a Keltic hegemony. The Kelts of Central Europe succumbed to the Romans and lost their independence in a series of defeats lasting from 16 to 10 B.C. Agricola brought about the submission of Great Britain, A.D. 78 to 85. Thus, with the exception of Ireland, the immense territory of the Kelts was absorbed into the Roman Empire and their pioneer work was gradually woven into the fabric of world-civilisation. Under the influence of the "Latin genius" and the "Roman Peace," there sprang up the strong Gallo-Roman civilisation, one of the most important stages in the growth of modern France. Later, Keltic Britain became Roman Britain, each phase contributing its share to the future.

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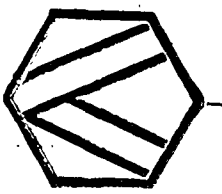

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An Address
ON
SOME PROBLEMS CONNECTED WITH BENIGN ENLARGEMENT OF THE PROSTATE.*

BY
C. A. R. NITCH, M.S., F.R.C.S.,
SURGEON TO ST. THOMAS'S HOSPITAL, LONDON.

THERE are many problems connected with benign enlargement of the prostate which provide material for serious thought and discussion. Some of these problems have not yet been solved satisfactorily, and others are treated in different ways by many of the workers in this field of surgery.

Some writers still employ the term "hypertrophy," but this is incorrect, for hypertrophy of an organ implies an increase in size of all its component parts, whereas in the pathological prostate the enlargement is essentially glandular. It is now generally agreed that the condition, which for want of a better name is usually called "enlargement of the prostate," is due to an adenomatous formation, but the actual origin of the adenomata is as yet unsettled.

Before discussing the theories which have been advanced to account for these pathological changes, a brief reference to the anatomy and histology of the normal prostate is essential.

The gland is traversed by three canals, the urethra and the two common ejaculatory ducts, by which it is arbitrarily divided into five lobes, an anterior lobe in front of the urethra, two lateral lobes surrounding the urethra above the ejaculatory ducts, a posterior lobe below the ejaculatory ducts, and a so-called middle lobe between the upper part of the two lateral lobes. This arrangement is useful for descriptive purposes, but has no real anatomical basis, for the tissues composing the lobes are continuous with each other and quite inseparable.

The stroma of the prostate is formed of a felt-like mass of unstriped muscle, fibrous, and elastic tissue containing plicated tubular glands in its meshes. The portion immediately in front of the urethra, called the anterior commissure, is usually devoid of glandular elements, thus accounting for the absence of adenomatous tissue in this situation in the ordinary type of prostatic enlargement. When glandular tissue is present it may undergo pathological changes together with the rest of the gland, giving rise to annular enlargement, or rarely the change may be confined solely to it.

Beneath the mucous membrane of the trigone and the posterior urethra are four groups of glands which are quite separate and distinct from those of the prostate. Collectively they are called the submucous or accessory prostatic glands. One group lies beneath the trigone; a second around the internal meatus; the third and most important, distinctively named the periurethral or subcervical glands of Albarran, is situated in the submucous tissue of the prostatic urethra. This group consists of thirty or more branched tubules which open into the floor of the urethra between the neck of the bladder and the verumontanum. The fourth group is in the anterior wall of the urethra.

Of the many theories which have been suggested to explain this disease two only are worthy of consideration—the degenerative and the neoplastic.

The degenerative theory is based on the resemblance of the changes in the prostate to those in the female breast at the menopause. The microscopical appearance of the enlarged prostate is so similar to that of chronic lobular mastitis that frequently prostatic can only be distinguished from mammary tissue by its characteristic corpora amylacea. The similarity is so great that Henry Wade considers the disease should be called "chronic lobular prostatitis"; he attributes the change to alteration in a normal internal secretion associated with normal diminution of sexual activity.

The neoplastic theory is the one now more generally held, but even if this be the correct explanation the underlying cause of the adenomatous formation may still be due to a degenerative process.

There are two views regarding the origin of the adenomata; one is that they are true tumours of the prostate gland itself, and that their capsule is formed by the compressed but unaffected remains of the gland, analagous to an adenoma of the thyroid. The other view, held by many Continental writers, is that the adenomata arise in the periurethral glands, and that the prostate takes no part in their formation, but undergoes atrophy and compression as the tumours enlarge. The latter theory can account for the well-known freedom from adenomatous formation of the prostatic tissue below the ejaculatory ducts, since the periurethral glands do not extend below the verumontanum.

In this connexion it is an interesting fact that, owing to the escape of the posterior lobe, the verumontanum is seldom seen in the tumour removed by the suprapubic operation; its presence in an operation specimen would signify involvement of the prostatic tissue below the ejaculatory ducts, and consequent destruction of these ducts by its removal. Tumour formation in the accessory glands can also account for the pedunculated adenoma, the so-called middle lobe, overhanging the internal meatus, and also for the occasional small adenoma in the posterior wall of the prostatic urethra just below the internal meatus, which is sometimes, though rarely, the sole cause of obstruction.

Some writers, notably Motz and Péréarnau,[1] Papin and Verliac,[2] and Lendorf,[3] consider that the adenomatous change is limited solely to the periurethral glands, and that the prostate takes no part in its formation but is compressed and atrophied by the new growth. It is difficult to reconcile such a view with the naked-eye appearance of many enlarged prostates in the early stage which show adenomatous masses scattered irregularly throughout the lateral lobes at a considerable distance from the anatomical position of the periurethral glands.

And, again, the theory of a periurethral origin is untenable in the rare cases in which, after removal of an enlarged prostate, a second re-forms, identical with its predecessor in every respect, and as easily enucleable. Since all the periurethral glands must have been removed at the first operation the second growth can only have arisen from prostatic tissue surrounding the original adenomata.

In all probability both views are more or less correct, since in many cases the adenomatous change involves both the prostatic and the periurethral glands, but the practical application of these views is of importance to both patient and operator. If the adenomata are considered to be of prostatic origin then, after enucleation, all remaining portions of the prostate should be removed to prevent recurrence; but if, on the other hand, the change is thought to be limited solely to the periurethral glands, there is no necessity to remove any portions of prostatic tissue remaining in the wall of the cavity, and consequently the patient is saved the shock of a prolonged operation.

When the etiology of the disease is settled the correct surgical procedure will follow naturally, but until then it seems best to be content with the Freyer operation if, after digital enucleation of the tumour, the walls of the prostatic cavity are quite smooth; but if the walls are uneven, and contain irregular masses of small adenomata, an open operation should be performed and as much of the prostatic tissue removed as possible.

Since it is now universally agreed that, whenever possible, "prostatectomy" is the best treatment for benign enlargement of the prostate causing symptoms, the problems connected with it fall naturally into three groups: pre-operative, operative, and post-operative. It will only be possible to discuss some of these, but before doing so I will consider the cases which are clearly unsuitable for prostatectomy.

INOPERABLE CASES.

In general they belong to the class that constitutes bad surgical risks, no matter what the operation, and are those with advanced senile changes, gross arterio-sclerosis, pronounced chronic nephritis, organic disease of the heart or nervous system, diabetes, and obesity. Some of the

* Delivered before the Oxford Medical Society, November 8th, 1928.

conditions, such as glycosuria and obesity, can be improved so greatly by appropriate treatment that they cease to be serious operative risks, but on the whole the "prostatic" with these added complications is better treated by other means. Of these diathermy and deep x-ray therapy are at present under trial, but the results are uncertain.

Diathermy is applied by means of a special metal electrode, containing a thermometer, which is passed into the rectum and pressed against the prostate. The current is started, and slowly increased until the initial sensation of heat becomes one of discomfort; it is then reduced until the discomfort subsides, and is kept at this strength for twenty minutes. At this stage the temperature of the electrode will be about 111° F., but the temperature of the prostate will probably not be above 107° F. The treatment is repeated every few days, with gradually increasing intervals.

Deep x-ray therapy has been tried frequently, with results sometimes brilliant but more often disappointing; still, these methods are well worth a trial before the patient is condemned to a catheter life. If for any reason diathermy or deep x rays cannot be employed, or if they have been tried and failed, the only two possible procedures are permanent suprapubic drainage or the regular use of a catheter.

Catheterization is indicated when the patient is either very old or is obviously going downhill; when he is sufficiently intelligent to keep and use the catheter aseptically, or sufficiently well off to have it done for him; when permanent suprapubic drainage is advised and refused; and when nocturnal frequency is due to a large amount of residual urine. Apart from severe cystitis, nocturnal frequency is the complication which troubles the patient most, for his nights are so disturbed that he gradually becomes worn out from loss of sleep. Contrary to expectation it is not always dependent upon the quantity of residual urine, for some patients with a healthy bladder and a 6 oz. residuum may only be disturbed twice in the night, while others with only 2 oz. may have to urinate as often as six times. When nocturnal frequency is associated with less than 4 oz. of residual urine it is due either to cystitis, to highly acid urine, or to irritability of the bladder, and can be relieved by appropriate remedies; but when it is due to 6 or more ounces it can be greatly diminished by catheterization at bedtime, provided the patient abstains from drinking after 8 p.m.

Permanent suprapubic drainage is required when catheterization cannot be tolerated, or when it is difficult or impossible owing to the size and shape of the prostate; when it either causes haemorrhage or there are repeated severe haemorrhages unconnected with catheterization; when the patient suffers from relapsing subacute cystitis or from toxaemia due to chronic cystitis; and when nocturnal frequency is not relieved by catheterization. It is impossible to lay down any hard-and-fast rule, for each case must be judged on its merits and on the home conditions of the patient, but, speaking generally, in cases that are clearly inoperable catheterization should be given a trial whenever possible, for on the whole it causes less mental disturbance and less physical disability than the suprapubic tube. The cystitis that is the inevitable sequel of regular catheterization, no matter how carefully it is carried out, seems to cause very little discomfort; if it becomes troublesome permanent suprapubic drainage must be established.

The catheter should be passed about four times in the twenty-four hours when retention is complete; in the morning and at night when the amount of residual urine is about 10 oz.; and at bedtime only when the residual urine does not exceed 6 oz.

PRE-OPERATIVE PROBLEMS.

Age.

Enlargement of the prostate generally commences between the ages of 50 and 60, but the patient takes little notice of the early symptoms, regarding them as a necessary accompaniment of advancing years, and usually only seeks advice after the age of 60. By then the signs and symptoms are quite definite and an operation is clearly indicated. But if the case is seen when both enlargement and symptoms are slight, the question arises whether an immediate prostatectomy should be advised.

Provided the residual urine is not above 1½ oz., an operation at this stage is, in my opinion, unnecessary, for two reasons: first, in a certain proportion of cases the condition remains stationary for many years; and secondly, the operation may be very difficult, for in the early stages the line of cleavage between the adenomatous tissue and its prostatic capsule may be so ill defined that digital enucleation is impossible. The surgeon is then obliged to dissect away the affected tissues with scissors and forceps, an operation which requires considerable skill and experience. Therefore if a patient is seen in the early stage he should be watched carefully, and examined every six months for residual urine and renal efficiency, and operated on as soon as these indicate the onset of prostatic obstruction. In these early cases residual urine is the best sign of obstruction, and my rule is to operate when it amounts to more than 1½ oz.

Advanced age is no great bar to operation, provided the patient is otherwise healthy; the octogenarian often gives less anxiety than the man of 60, for he has only attained his years by the help of a sound constitution, and therefore his condition and resistance are relatively equal to those of the younger man. In my experience the most dangerous age is between 65 and 75, for by then obstructive symptoms have been present for some years, and the patient's kidneys have been so damaged by back pressure, and possibly by sepsis as well, that an operation may easily prove fatal.

It therefore follows that the optimum age for the operation depends entirely on the symptoms and not on the size of the gland. The approximately young man, with symptoms of prostatic obstruction without pronounced enlargement of the gland, is in as great need of surgical activity as the old man, with a large prostate causing practically no symptoms, is in need of masterly inactivity.

The Condition of the Patient.

Recovery after prostatectomy depends mainly on two factors—the renal function and the resistance to sepsis. Therefore before an operation is performed the renal function must be estimated very carefully both clinically and chemically. The clinical signs of a defective renal function are of the greatest importance and are often more valuable than chemical tests. The chief clinical signs of a defective renal function are a dry tongue, increased thirst, a sallow complexion, a poor appetite, and a distaste for meat. If, in addition, there is polyuria or oliguria the picture is complete.

The most reliable chemical tests are (1) the blood urea, and (2) the urea concentration test. In cases of enlarged prostate the blood urea test is the best, for the urea concentration test is apt to give a false impression by being on the low side if there is much residual urine. This can be overcome by collecting the urine with an indwelling catheter during the test, but the catheter may act as an irritant and so influence adversely the action of the kidneys.

In a healthy man on an ordinary diet the blood urea should range between 25 and 50 mg. per 100 c.cm. of blood according to age, and the urea concentration in the urine after a dose of 15 grams of urea in 100 c.cm. of water given on an empty stomach should rise from 2 per cent. in the second hour to 3 per cent. or over in the third hour. The value of the urea concentration test lies not so much in the actual quantity of urea excreted by the kidney as in the ability of the kidney to increase the concentration in each hour, and so give an indication of its capacity under a strain. Thus kidneys that yield, say, 1.9 per cent. in each of the three hours are not so efficient as kidneys that excrete 1.7 per cent., 1.8 per cent., and 1.9 per cent. in consecutive hours. In such a complicated structure as the human body chemical tests and clinical signs are often deceptive, but when both are taken in conjunction they give the most reliable indication that we have at present of the functional capacity of the kidneys.

Is it possible to fix a minimum limit to the urea concentration and a maximum limit to the blood urea beyond

either of which prostatectomy would endanger the life of the patient? In a previous communication[4] on this subject I gave the following answers, to which I still adhere.

"In my opinion the limits are a urea concentration of not less than 1.7 in the third hour, and not more than 50 mg. of urea in 100 c.cm. of blood, always provided that the clinical condition is satisfactory. When the clinical signs of a defective renal function are definite no chemical test should influence the surgeon in favour of an operation; and, conversely, if the clinical condition is a good one and the chemical tests are not too far below standard, he need not hesitate to operate."

In employing these tests as indications for or against prostatectomy the condition of the patient at the time they are made must be taken into consideration. When complete retention supervenes on long-standing obstruction the renal function will be greatly depressed, and, therefore, the tests will not indicate the real capacity of the kidney; but if they are made some days after the retention has been relieved and the general condition of the patient has improved they will be comparatively reliable.

The following two examples point to the importance of taking both clinical and chemical evidence into consideration.

1. A man, aged 65, with marked clinical and chemical signs of a defective renal function from long-standing prostatic obstruction, underwent suprapubic drainage for acute retention. Three months later the clinical picture was that of a man in moderate health but with a sallow complexion. The blood urea was 79 mg. per 100 c.cm. and the urea concentration did not rise above 1.5 per cent. in the third hour. At the end of another three months the results of the chemical tests were unchanged. Operation was therefore contraindicated. Six months later, after a brief illness, he died of uraemia.

2. A thin man, aged 56, looking very ill, had pyelonephritis, thick foul urine, and comple
duration, necessitating
was 40 mg. The urea
cent., and 1.6 per cent. in the three hours. Suprapubic drainage was performed and there was improvement with bladder lavage and vaccine treatment. Two months later the tongue was moist and clean, there was no thirst, a good healthy appetite was present, and the patient had gained 1 st. in weight. The blood urea was 46 mg. and the urea concentration 0.55 per cent., 1.25 per cent., and 1.5 per cent. in the three hours. The concentration was very low, but a steady rise indicated a kidney capable of withstanding a strain. The blood urea was normal for the age, and the clinical signs were excellent. Prostatectomy was followed by uneventful recovery and departure from hospital in six weeks. Three years later the patient was alive and well.

The first case was only a fair risk clinically and a bad one chemically, while the second was a good risk clinically and a poor one chemically. Experience has shown that life will be seriously endangered by prostatectomy if the blood urea is much over 50 mg. per 100 c.cm. of blood and the urea concentration below 1.5 per cent. in the second or third hour.

Since clinicians and biochemists have co-operated in gauging the renal function, deaths from uraemia after prostatectomy seldom occur, and, excluding pulmonary embolism, which is an ever-present danger, the greatest post-operative danger nowadays is sepsis in the form of suppurative pyelonephritis. MacAdam and Shiskin[5] have pointed out that the cholesterol content of the blood gives a fair indication of the power of resistance to sepsis, and that patients with a high blood urea and a normal blood cholesterol all recovered from prostatectomy, whereas nearly all those with a high blood urea and a low blood cholesterol died. The normal cholesterol content ranges between 0.13 per cent. and 0.19 per cent.; when it is below 0.13 the resistance to sepsis may be considered so low as to constitute a bad operative risk.

When there is no immediate urgency the dangers of post-operative sepsis can be diminished very greatly by a course of preliminary treatment. The mouth and teeth should be inspected and treated by a dentist if necessary. Moderate infection of the bladder should be treated by diuresis, urinary antiseptics, and lavage. In many cases three or four doses of an autogenous vaccine at intervals of five days will increase the patient's resistance to sepsis. When cystitis is severe the bladder must be drained suprapubically and irrigated continuously in addition to the measures already advocated.

For *B. coli* infections the best antiseptic is hexamine, but as it only acts in an acid medium the urine must be kept strongly acid with ammonium benzoate or acid sodium phosphate; for coccal infections hexyl-resorcinol (caprokol) is better than hexamine. It is interesting to note that patients with mild cystitis are less liable to post-operative sepsis than those with a healthy bladder, for their immunity has been raised by the infection.

Many prostatic patients suffer from flatulent dyspepsia and intestinal distension, which occasionally become acute after operation. These gastro-intestinal disturbances may be due to dietetic indiscretions, but more probably, in these cases, they are symptoms of defective kidneys. When due to the latter they will only subside when the back pressure on the kidneys has been relieved by preliminary suprapubic drainage, but if the kidneys are efficient they must be treated before operation by dieting, intestinal antiseptics, and judicious purgation.

OPERATIVE PROBLEMS.

Preliminary vaso-ligation is performed regularly by many Continental surgeons, but in this country it is only employed as a routine measure by a few. It is useful as a certain preventive of post-operative epididymitis, and is definitely indicated in all cases of pre-operative epididymitis. The question of procreation need not be considered, for sterility is usual after prostatectomy. Where impotence is a consideration—and this matter should always be discussed with the patient beforehand—vaso-ligation is contraindicated.

Without discussing the merits and demerits of the suprapubic and perineal routes, it is sufficient to say that for many reasons the suprapubic operation is the one usually employed in this country. To those who operate I would only emphasize the importance of a long incision in the abdominal wall. This allows the hand to be sunk between the recti, and enables the finger in the bladder to reach the prostate with the greatest ease. This free access to the prostate also permits enucleation with a gloved and therefore sterile finger, and dispenses with the necessity for a finger in the rectum.

Pre-operative Drainage.

In many cases, the number of which will probably increase with the experience of the surgeon, preliminary drainage is required for a varying period, either by means of an indwelling catheter or a suprapubic tube. Cabot[6] has pointed out that in the early stages of prostatic enlargement hypertrophy of the bladder wall is accompanied by congestion of its mucosa, a condition which lowers its resistance and may lead to serious post-operative infection. Preliminary drainage lessens the risk by relieving the congestion. Increasing obstruction, with its accompanying residual urine, leads to so-called back-pressure effects on the kidney, manifested, at the commencement, by dilatation of its pelvis and calyces, congestion of its parenchyma, and depression of its function, and ending in chronic interstitial nephritis, renal deficiency, and retention of urea in the blood.

Relief of back pressure by drainage of the bladder will restore the depressed or tired kidney to normal in a few days, but without this relief the sudden strain thrown upon it by such a severe operation as prostatectomy might inhibit its function altogether. The diseased kidney, provided its function is not too severely impaired, will also respond to the rest afforded by drainage in a remarkable manner, and many a case which at first sight appears hopeless will eventually recover to such an extent that a successful operation can be performed.

The use of the indwelling catheter is practically restricted to cases with slight renal deficiency or chronic urinary retention, for it cannot be employed when the bladder or kidneys are infected or when the prostate is bleeding. By some patients it is tolerated well, but in others it causes discomfort and irritates the urethra and bladder, and through them the rest of the urinary tract, and so does not give such complete rest to the patient or his kidneys as the suprapubic tube. It is difficult to keep the catheter surgically clean, and it always sets up a mild urethritis which must be a source of infection when the prostatectomy is performed. Its only advantage is that it leaves the operation field clear for the subsequent prostatectomy.

In nearly all cases in which primary prostatectomy contraindicated preliminary suprapubic drainage—in o

words, a two-stage operation—is preferable to an indwelling catheter. The suprapubic tube gives absolute rest to the patient and his urinary tract, does not irritate or infect his bladder, and enables him to move about in bed and sleep in comfort.

Pre-operative drainage is necessary (1) when there is complete retention or more than 4 oz. of residual urine, (2) for renal deficiency, (3) for severe haemorrhage from the prostate, (4) for urinary sepsis and cystitis, and (5) for the patient worn out by nocturnal frequency. It may be necessary for a week only or for several months, during which time the bladder, if infected, is treated by regular lavage, and the patient's immunity raised by an autogenous vaccine.

When the kidneys are defective the duration of drainage depends solely upon the improvement in the clinical condition and the chemical tests. If the deficiency is only due to renal fatigue from back pressure, drainage for a week or ten days will generally suffice, but when it is secondary to organic changes in the kidney drainage may be required for many months. If by nine months the blood urea has not fallen and the urea concentration is still below normal, there is no hope of improvement, and the patient must be content to wear the suprapubic tube for the rest of his life.

We all know that a tired horse will carry a load uphill if given a rest half-way, but if forced he will either jib or drop down dead. The same applies to a kidney tired out by prostatic obstruction: increase the load by a severe operation and it will cease work altogether; but if it be rested by means of suprapubic drainage, prostatectomy will eventually be possible and safe.

There are many surgeons who object to the two-stage operation on the grounds that it necessitates two anaesthetics and two operations, that enucleation is more difficult, and that a subsequent open operation is not possible. The first disadvantage is almost negligible, for the cystostomy can be performed under gas and oxygen with little or no discomfort. Enucleation may be more difficult, but not if the opening in the bladder is made high enough to permit of its enlargement downwards at the second operation. Lastly, an open operation *can* be performed, but requires care in separating the bladder from its adhesion to the abdominal wall.

However optimistic we may be, it is impossible to overlook the many dangers, both local and general, of prostatectomy, and there is no doubt that its gross mortality would be greatly diminished if the two-stage operation were more generally adopted. Only recently I heard of a case of acute retention in which an energetic operator performed an immediate prostatectomy. The patient made an uninterrupted recovery, but it is enthusiasm such as that which helps to make the gross mortality of prostatectomy in the London hospitals round about 20 per cent.[7]—a figure which is far too high.

In conclusion, let me summarize, by three hypothetical cases, the problems I have dealt with.

No. 1.—A man, aged 60, with prostatism, enlargement of the gland, and 2 oz. of clear residual urine. The tongue is moist, the appetite is good, and the complexion is clear. The blood urea is 35 mg. and the urea concentration over 2 per cent. A one-stage prostatectomy can be performed with safety.

No. 2.—A man, aged 68, with pronounced prostatic symptoms and 4 oz. of clear residual urine. The tongue is slightly dry, thirst is increased, and the appetite is not so good as it used to be. The blood urea is 45 to 50 mg. per 100 c.cm., and the urea concentration is 1.9 per cent. This is a clear case of tired kidney requiring rest for a week or ten days before prostatectomy, either by means of an indwelling catheter or a suprapubic tube. My choice would be the latter.

No. 3.—A man, aged 70 or more, with 10 oz. of residual urine, cystitis, and obvious clinical signs of a defective renal function. The blood urea is well over 50 mg. and the urea concentration below 1.7 per cent. A two-stage operation is imperative, with an interval of anything from three weeks to eight months between the first and second stages.

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THE ISOLATION OF B. PARATYPHOSUS B FROM SEWAGE.

BY

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In the past the demonstration of specific pathogenic organisms in sewage and water has proved of the utmost technical difficulty. Methods of selective culture, however, have greatly facilitated the isolation of such bacteria (for example, typhoid-paratyphoid group) from material in which they are greatly outnumbered by other organisms, and these methods have been most successfully applied in the bacteriological examination of faeces from cases of enterica (Browning, Gilmour, and Mackie, 1913; Mackie, 1917; and others). A further development has been the application of selective methods in the examination of sewage and water. Even though the typhoid-paratyphoid bacilli are present in communal sewage containing the excreta of diseased persons or carriers, dilution must render them exceedingly scanty in proportion to other bacteria, and it might be expected that the greatest difficulty would be experienced in demonstrating them even by selective methods. The same would apply to water. The success obtained by Wilson (1928) in demonstrating *B. typhosus* in Belfast sewage by his method of selective culture marks a great advance in this branch of bacteriological investigation. I have applied Wilson's technique along with other methods in the examination of sewage in Edinburgh, and the object of this communication is to record the results of the investigation, which seem of considerable interest and importance from the point of view of public hygiene.

Methods.

The following cultural methods were employed.

1. The "*glucose-bismuth-sulphite-iron-brilliant-green medium*" introduced by Wilson and Blair (1928) and termed by them medium B. The rationale of the use of this medium is explained by Wilson as follows. In the presence of a certain excess of sodium sulphite, bismuth sulphite tends to suppress the growth of most coliform bacilli; when, in addition, a fermentable carbohydrate is present, *B. typhosus* reduces the sulphite to a sulphide, the latter reacting with the iron salt to form iron sulphide, which blackens the colonies. The brilliant green enhances the selective action of the medium for organisms of the enterica group.

With a view to obtaining definite knowledge of the colony appearances of various organisms on this medium, strains of *B. typhosus*, *B. paratyphosus* A, *B. paratyphosus* B, a typical *B. coli*, *B. proteus* and *B. fluorescens* types were plated out. The growths obtained varied very considerably in appearance with the strain of organism and the period of incubation.

B. typhosus produced, after twenty-four hours' incubation, minute clear discrete colonies which after a further twenty-four hours became jet black, or, more commonly, a bright green colour.

B. paratyphosus A was similar to *B. typhosus* except that none of the colonies were black.

B. paratyphosus B. After twenty-four hours' incubation all the laboratory strains of this organism produced clear discrete colonies each 1 mm. in width. After forty-eight hours' incubation these colonies became bright green. In addition, however, one of the strains produced black colonies with a metallic lustre, which after four days' incubation were 6 mm. in diameter and had a raised greyish centre.

B. coli produced, after twenty-four hours, colonies similar to those of *B. typhosus*. After further incubation most of these became bright green; some which grew slowly assumed a black colour, but without metallic lustre.

Some strains of *B. proteus* were inhibited for twenty-four or forty-eight hours, but later produced green colonies varying slightly in shade.

B. fluorescens was also inhibited for twenty-four or forty-eight hours, but later produced dull green colonies, which eventually became brown.

When this medium was inoculated with actual samples of sewage it was found that it inhibited the growth of a very large number of the coliform organisms present. The colony appearances of any one organism, however, varied; thus, "enterica" group may be present in a given sample of sewage and yet may not necessarily produce colonies with a specially distinctive appearance.

Contrary to Wilson's findings, I found that lactose-fermenting organisms might produce black colonies on the B medium. For this reason subinoculation of such black colonies on Wilson's modification of the Endo medium, in which saccharose replaces the lactose, was deemed less suitable than on one in which saccharose was present in addition to the lactose. The presence of the second sugar does not appear to influence any action an organism may have on the other substance. MacConkey's medium containing both sugars was found to give sharper demarcation between pale and pink colonies than the corresponding Endo

medium. Any black colony on medium B which, on subculture, produced a pink growth after twenty-four hours' incubation on the double-sugar MacConkey medium was discarded. Owing to the fact that *B. proteus* and *B. fluorescens* produced pale growths, representative pale colonies on the double-sugar medium were first subinoculated on slopes of Loeffler's inspissated serum. Two days later, if the serum was unliquefied, the morphology and cultural, fermentative and biochemical reactions of the colony were examined.

2. *The brilliant green enrichment method introduced by Browning, Gilmour, and Mackie (1913).* A series of tubes of peptone water containing varying amounts of brilliant green were inoculated and incubated for twelve hours; subinoculation from each tube on a MacConkey plate was then made. The variability in the optimum concentration of brilliant green for the selective enrichment of the enterica group necessitated the use of varying amounts of the dye. The actual amounts of brilliant green used for 5 c.cm. of peptone water were: (1) 0.2 c.cm., (2) 0.3 c.cm., (3) 0.4 c.cm., (4) 0.5 c.cm., (5) 0.6 c.cm., (6) 0.7 c.cm. of a freshly prepared 1 in 10,000 solution, and it was found that the best results were obtained from the tubes containing 0.4 c.cm. and 0.5 c.cm. of the dye.

3. *Rakieten and Rettger's modification of the original brilliant green method.* In this method, prior to the addition of the brilliant green 0.4 c.cm. of a phosphate buffer solution was added to each tube and the reaction adjusted to a *p*H 6.5. The buffer is added to prevent alkalinization of the medium during growth, with the consequent precipitation of the dye.

4. *MacConkey's medium.* In addition, the samples of sewage were plated directly on MacConkey's medium. It was found impossible to isolate paratyphoid bacilli in this way owing to overgrowth by lactose-fermenting organisms.

5. *Wilson and Blair's lactose-bile-salt-brilliant-green medium* (for the isolation of *B. paratyphosus* B) was not found sufficiently inhibitory to coliform organisms, and did not yield sufficiently characteristic colonies in the case of the enteric group. It was therefore not used for sewage.

Examination of the Sewage.

Six samples of sewage were taken in sterilized bottles first from main sewers of four different districts of the city, which may be named A, B, C, and D for reference purposes.

Each of the *selective* methods elicited the presence of *B. paratyphosus* B in the sewage from District A on two of the three occasions on which it was examined. In agglutination and agglutinin-absorption tests each of the strains of the organism corresponded exactly with *B. paratyphosus* B (Schottmüller), controls being performed in which *B. paratyphosus* B serum was treated with emulsions of the homologous organism and *B. aertrycke* and its agglutinating properties then tested with these organisms.

A considerable number of the black colonies on the B medium had to be subcultured and examined further to enable the paratyphoid bacilli to be picked out. This was probably due to the fact that, according to Wilson and Blair (1928), *B. paratyphosus* B behaved on bismuth sulphite media more like a reducing *B. coli* than *B. typhosus*, with the result that the plates had to be incubated for more than twenty-four hours before colonies of *B. paratyphosus* underwent blackening. Organisms other than those of the enteric group therefore had time in which to develop a black coloration.

Since the main sewer of District A contained *B. paratyphosus* B the contents of each of the various tributary sewers entering it were next examined on two occasions. These tributary sewers were numbered from 1 to 7, starting with the most outlying one and ending with the side sewer entering the main sewer nearest to the latter's termination. It was found that of these seven tributaries three contained *B. paratyphosus* B, the identity of the organism being established as before by serological tests. Sewers Nos. 4 and 7 were positive on both examinations, but No. 5 on the second examination only. Thus, in all, *B. paratyphosus* B has been isolated by selective methods from seven out of the twenty samples examined.

The numbers of black colonies on medium B from the same amounts of different samples varied greatly even when the samples had been obtained at approximately the same hour of the same day and therefore could not have been unequally affected by rainfall. For instance, in the first sample obtained from No. 4 there were 209 black colonies on the B plates inoculated with 2.5 c.cm. of the sewage, while a similar amount of the sample from No. 2 obtained at approximately the same hour of the same day showed only 56 black colonies. It may be noted here, too, that the sample from No. 4 was peculiarly rich in *B. paratyphosus* B, for these 209 colonies were all identical in appearance with eleven colonies examined, ten of which were finally identified as *B. paratyphosus* B. The unevenness in the distribution of the organisms producing black colonies on the bismuth sulphite media in one sample rendered useless any attempt at making a quantitative estimation as to the minimal amount of sewage from which *B. paratyphosus* B could be isolated.

Survival of B. paratyphosus B in Sewage.

Experiments were also performed with a view to determining the period of survival of *B. paratyphosus* B in the sewage. All the samples from the main sewers were examined one, two, and four days subsequent to their withdrawal from the sewer in a manner identical with that in which they were examined on arrival at the laboratory as above described. In no instance was *B. paratyphosus* B isolated, so that the evidence pointed to a short period of survival of the organism in sewage.

Comparison of the Selective Methods Employed.

It is difficult at the present time to draw a definite comparison between the selective methods employed. The results obtained by their use varied considerably. In some cases positive results were obtained by each method, but it was found that any one of the three selective methods might fail to reveal the presence of the paratyphoid bacilli, while at least one of the other methods gave positive results.

The plates of Wilson's medium when inoculated with the last four samples taken from the side sewers remained completely sterile. As far as could be ascertained the medium for this batch of plates was prepared in a manner identical with that adopted for the making of the previous samples of media. In the earlier tests the B medium had revealed the presence of *B. paratyphosus* B in every sample of sewage in which the organism had been found by the brilliant green enrichment methods. Wilson and Blair assert that "the bismuth sulphite media enormously increase the chances of isolating typhoid bacilli," and the same undoubtedly holds good for the paratyphoid bacilli.

The brilliant green enrichment methods, although usually effective, were found on occasion to give negative results, when the B medium revealed paratyphoid colonies. In the first sample taken from tributary sewer 4, plates of B medium inoculated with 2.5 c.cm. of the sewage yielded 220 suspicious colonies, ten of the eleven examined proving to be *B. paratyphosus* B; neither of the enrichment methods showed the presence of the organism at all. This was to a large extent due to overgrowth by *B. fluorescens* and *B. proteus* types. Many of the pale colonies, too, were found on identification to be types of Morgan's bacillus. After considerable experimentation it was considered that Rakieten and Rettger's modification did not produce results better than the original method, and in the first sample from side sewer 7 it proved negative while the original method gave a positive result.

Loss of Motility of B. paratyphosus B.

An interesting feature elicited was the loss of motility of certain of the laboratory stock strains of *B. paratyphosus* B, as well as of some of those isolated from the sewage, when grown on medium B. Their motility, however, returned on subinoculation into ordinary nutrient media. Loss of motility of *B. typhosus* in the presence of brilliant green was also observed by Rakieten and Rettger.

DISCUSSION OF THE FINDINGS.

The results are of special interest as they confirm (for another city in the British Isles) Wilson's finding of an enteric group organism in communal sewage.

So far samples from only four out of the twenty-three districts of the city have been examined, and all those found to contain the paratyphoid bacilli had been taken from sewers in one and the same district. At an early stage of the work enteric organisms were isolated from the main sewer of this district, and all sixteen samples of the second series were obtained from the same district, with

a view to ascertaining whether the organisms were limited to sewage from a localized area. The work was then discontinued owing to the onset of extremely cold and wet weather. The question of the distribution of enteric organisms in the other districts of the city therefore remains to be determined.

Since the city of Edinburgh is at present comparatively free from enteric fever, the presence of *B. paratyphosus* B in the sewage of a particular district is in all probability mainly due to resident "carriers," and it is significant that this district was the locus of an outbreak of paratyphoid B fever in 1927. The medical officer of health of Edinburgh, in his report for that year, has made special reference to sewage as a source of this outbreak. Owing to the inability of the main sewer of the district to carry off the excessive volume of water during a flood, two of the byre steadings concerned in the outbreak were inundated with overflow from drains and sewers near-by. It seems not unlikely that the milk may have become infected through contamination of the premises in this way. Of course, for the infection to have been thus transmitted the sewage dammed back into the byres must not only have contained the specific organism at the time in question, but must also have been fairly heavily contaminated in view of the dilution with the flood water. The presence of a "carrier" actually at or near the byres would, of course, increase the probability of this happening, but it must not be forgotten that such a "carrier" may have introduced the infection by more direct contamination of the milk vessels.

The suggestion is put forward that, by ascertaining the points of entry of the *B. paratyphosus* B into the various tributaries of the main sewers found to contain paratyphoid bacilli, "carriers" of the organism might be located with the help of public health officials. Criticism may be raised that the strains of *B. paratyphosus* B (Schottmüller) isolated might be of animal origin, for Jordan (1923) has recorded strains of porcine origin belonging to the Schottmüller type. In District A of the city, from which the sewage in question was obtained, there are a number of piggeries, but the rarity of strains of porcine origin and the small proportion of excretal matter from such piggeries in the communal sewage would render unlikely the possibility of these strains coming from such a source. The excreta from several of the piggeries in the district have been examined by the same methods as those which were applied to the samples of sewage, but no paratyphoid bacilli have thus far been isolated. The question, however, is still receiving attention.

SUMMARY.

1. *B. paratyphosus* B (Schottmüller) has been isolated by selective methods from 7 out of 20 specimens of sewage from the city of Edinburgh. Seventeen of the samples, including all the positive ones, were from one district, and were selected in view of the preliminary finding of the organisms in the main sewer of the district.

2. Comparison has been made of three selective methods: (1) Wilson and Blair's "glucose-bismuth-sulphite-iron-brilliant-green medium"; (2) Browning, Gilmour, and Mackie's brilliant green enrichment medium; and (3) Rakieten and Rettger's modification of the second. Any one of the three methods may fail to detect paratyphoid bacilli isolated by the others. Wilson and Blair's method has the advantage that it is a direct plating method, and the enrichment methods have the disadvantage that they tend to permit overgrowth of *B. fluorescens* and *B. proteus* types, which are prevalent in sewage.

3. The organisms are probably very unevenly distributed in the sewage.

4. No evidence has been obtained that paratyphoid bacilli survive for long periods in sewage.

5. The danger of the presence of *B. paratyphosus* B in sewage is discussed, particularly in relation to an outbreak subsequent to the flooding of two byres in 1927, and it is suggested that this method could be adopted in the tracing of "carriers."

6. The possibility of the strains of *B. paratyphosus* B isolated being of animal origin is considered unlikely.

I desire to express my thanks to Professor T. J. Mackie for his advice and guidance in the course of this investigation, and to the burgh engineer and his staff for their willingness in providing samples of sewage.

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TORSION AND STRANGULATION OF A HYDATID OF MORGAGNI.

BY

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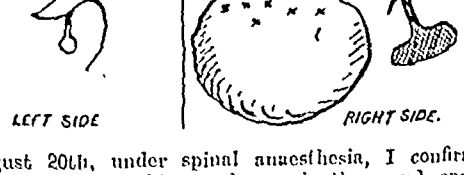
I RECENTLY removed a strangulated and thrombosed hydatid of Morgagni which was giving rise to symptoms resembling those of mild appendicitis. Such a lesion must be very uncommon, and the following details would therefore seem to be of general interest.

A woman, aged 33, who complained of right-sided abdominal pain, was seen by me on August 6th, 1928. She stated that during the previous three weeks she had had several attacks of pain in the right iliac fossa. This pain was colicky in character, and had become so much worse during the last three days before she came to hospital as to provoke vomiting on several occasions.

Her menstrual history was as follows. The last regular period was on May 8th; two months' amenorrhœa followed, after which she experienced irregular losses containing clots, but no obvious products of conception. She had had three pregnancies, all of which resulted in healthy children at full term. In 1921 she had an attack of pain in the right lower abdomen, which was diagnosed as appendicitis, but cleared up without operative intervention. She had never had any similar pain until the present time.

On abdominal examination pain and tenderness were found low down in the right iliac fossa above the lateral third of Poupart's ligament, and slight rigidity over the lower right rectus muscle; no other abnormality was noted. The temperature and pulse were both slightly raised—99.4° F. and 80.

A vaginal examination revealed that the cervix was soft; the external os admitted the finger-tip; the body of the uterus was normally anteverted and anteflexed, and was enlarged to the size of a nine weeks' pregnancy. On the left side there was palpable an ovarian cyst, about two inches in diameter; on the right side the adnexa were not easily palpable, and rather immobile. A diagnosis was made of incomplete abortion, possibly due to right-sided oöphoritis secondary to inflammation of a pelvic appendix.



On August 20th, under spinal anæsthesia, I confirmed these findings by a further bimanual examination, and explored the uterine cavity, from which were removed several necrotic fragments of placental tissue. Pelvic laparotomy was then performed in order to investigate the condition of the appendix and the adnexa on the right side. The appendix was long and showed some slight thickening, but was not markedly abnormal; there was an ovarian cyst on either side, and hanging from the fimbriated extremity of the right tube was a reniform body, black in colour, and measuring about 3/4 by 1/4 by 1/4 inch, in the position in which one would expect to find the hydatid of Morgagni. It showed two well-marked twists in its pedicle, and was much larger than the normal hydatid on the left side. The peritoneum covering it was thick and lustreless. This body was removed without salpingectomy, and appendicectomy was performed.

The appendix, examined subsequently, showed signs of some chronic but no recent inflammation. The reniform body, on pathological examination, was pronounced to be a strangulated hydatid

of Morgagni, and is preserved in the Pathological Museum of the University of Oxford. The patient made an uninterrupted recovery.

This case has seemed worthy of record rather on account of the rarity of the condition than of its clinical significance. I have failed to find any allusion to this lesion in the literature of the subject, nor do any cases appear to have been published recently, at least in this country, America, or on the Continent. It would be interesting to know whether previous cases have been observed but not published.

The description of the original colicky pain was suggestive of a uterine origin, and was attributed to the incipient abortion, but the severe right-sided pain which induced vomiting did not begin until the abortion was almost complete—that is, three weeks later—when the uterus contained nothing but a few necrotic fragments. It seems not improbable that this pain was due to the stretching of the covering peritoneum produced by the engorgement of the strangulated hydatid. No cause was found for the torsion. The ovarian cysts were both simple follicular cysts following an old perioöphoritis, which had produced on the right side a few inconsiderable adhesions; the appendix presumably could have had nothing to do with the condition.

TORSION OF THE APPENDIX OF THE TESTIS (HYDATID OF MORGAGNI).

BY

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THIS condition appears to be one of rare occurrence, in view of the fact that we can find no reference to it in standard textbooks or recent English literature. It is therefore of interest that during the year 1928 we have each operated on two such cases at the Queen's Hospital for Children. All four cases we were able to diagnose before operation.

In each case the patient was a boy aged 12 years, and had not attained puberty. The cases demonstrated a marked similarity of onset and subsequent history, and the following case may be taken as typical.

The patient, five days before admission, complained of sudden pain in the right testis, without history of trauma. There was no vomiting or constitutional disturbance. Pain continued in spite of rest in bed, and on attendance at hospital the following condition was observed. There was swelling and tenderness of the whole testis, the skin of the scrotum was reddened and oedematous, and the spermatic cord was thickened throughout its length. On palpation a small body, about the size of a pea, was felt lying between the upper pole of the testis and the globus major. This small swelling was exquisitely tender, and not freely movable.

At operation the tumour was found to be of a deep plum colour, and obviously full of blood clot. There was marked oedema of the spermatic cord. The tumour was in the position of the hydatid of Morgagni, and had a pedicle, which had obviously undergone torsion. The pedicle was ligatured and the hydatid removed. On microscopic examination the following report was obtained: Section shows organizing blood clot undergoing degeneration; here and there are cystic spaces lined with flat unciliated epithelium.

The patient was immediately relieved after operation, and made an uninterrupted recovery.

In one case of five days' duration the hydatid showed signs of commencing sloughing. Another case was brought to the hospital six hours after onset, and already demonstrated oedema and reddening of the scrotal skin. Two cases occurred on the right side, and two on the left.

In conclusion, we wonder if this condition is really of rare occurrence, or whether these cases are frequently treated as orchitis of unknown origin, and left until the twisted hydatid sloughs, and resolution eventually occurs; presumably a painful and protracted process.

VARICOSE VEINS: THEIR MODERN TREATMENT BY SCLEROSING INJECTIONS.

METHODS AND TECHNIQUE OF "SICARD AND GAUGIER" AS PRACTISED AT THE HÔPITAL NECKER, PARIS.

BY

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SCLEROSING injections for the treatment of varicose conditions have emerged successfully from the trial stage and are now almost universally regarded as being safe, effective, and the treatment of choice for varix.

The object of treatment is to obliterate the whole or part of the veins concerned in the superficial circulation of the limb—namely, the internal and external saphenous veins and their branches. These veins run in the subcutaneous tissue and have no support except their own walls; when the superficial circulation is occluded the blood returns by the deep veins, which are well supported by the muscles of the leg.

The principal points of interest to the doctor who intends taking up this work are: (1) methods of selecting cases suitable for treatment; (2) technique of injection; (3) choice of sclerosing fluid and strength of dosage; (4) number of injections necessary and interval between each; (5) the pathological effects of injection on the vein; (6) after-effects and possible complications. The advantages of this method are that when properly administered injections are safe and certain in their results, cause little pain or discomfort, and the patient need not lie up.

A bewilderingly large literature on injection treatment is being added to daily; most of it is interesting and helpful, but a lack of agreement on the essential points just mentioned is unfortunately a frequent and salient feature. In the confusion thus caused many who wish to take up this work find it difficult to decide what procedure to follow. Ill results of a serious character following treatment are being reported with increasing frequency, and are mainly due to defective technique and lack of authoritative knowledge on the subject. As it is universally conceded that it is to Professor Sicard of Paris we are indebted for establishing, in 1916, the treatment of varicose veins of the limbs by injection as a safe and effective procedure (the idea had been experimented with unsatisfactorily for seventy years), those who are about to adopt this method of treatment for the first time will be wise to follow the methods of this, the greatest authority, or at least adopt those methods as a sound basis on which to found their own experience. (The principle of employing sclerosing fluids for treatment of varix was, however, first successfully put into practice by British doctors, but only for the treatment of haemorrhoids. Morgan and Colles of Dublin were the pioneers seventy years ago, and Mr. Swinford Edwards, whose house-surgeon at St. Mark's Hospital it was my privilege to be, first introduced the method to this country, his article in the *British Medical Journal* of October 13th, 1888, being still one of the most instructive.)

Sicard's opinions and advice on this subject are as authoritative as Ehrlich's on the treatment of syphilis by arsenical injections. His special clinic at the Hôpital Necker, Paris, is of world-wide reputation, and here he and his colleagues, Gaugier, Paraf, Forestier, Haguenau, and Lermoyez, have treated many thousands of cases, necessitating hundreds of thousands of injections, with excellent results and without a single serious mishap.

Sodium salicylate is the sclerosing injection they recommend, and since the publication of their results many other workers, acknowledging their indebtedness to Sicard's work, have endeavoured to find, if possible, an even more effective chemical for injection: quinine (Génévrier), mercury biniodide (Montpellier and Lacroix of Algiers), glucose (Nobl), the citrate (Troisier), chloride (Linser), and carbonate of sodium, and other solutions, all have now their own advocates. Every new sclerosing fluid recommended by any authoritative worker is given an

extensive trial in a series of cases at the Hôpital Necker, and compared with a series of cases treated by sodium salicylate, and many thousands of injections of the solutions just mentioned have been given in this fashion. From this unique experience Sicard and his colleagues are of opinion, whilst appraising the work of the distinguished men just mentioned, that sodium salicylate is the most effective, safest, and gentlest in its after-effects, of all injections.

Thanks to the courtesy of Professor Sicard and Dr. Gaugier it was my privilege to assist on many occasions at the injection of a large number of cases at the Hôpital Necker, and I am deeply indebted and grateful to Dr. Gaugier for his kindness in explaining to me their methods and technique, which I have since followed with most gratifying results. I had for many years previously had much experience of sclerosing injections in the treatment of haemorrhoids, both at St. Mark's Hospital and in private practice, and had given many thousands of intravenous arsenical injections, mainly at the London Lock Hospital, so that the acquisition of the technique presented few difficulties. These methods and technique, which I will state as briefly as possible, are as follows.

1. *Selection of Cases.*

Every patient should first undergo a complete general examination—heart, kidneys, etc.

Contraindications to Injection.—(*a*) Obstruction in the veins of the deep circulation is the most important. To ascertain if the deep circulation is obstructed, fasten a tourniquet below the knee and make the patient walk round the room. If no obstruction is present the swollen veins empty themselves into the deep circulation, and then appear almost flat, but should occlusion exist the superficial veins of the leg become more swollen and the leg painful. Should this test be neglected and injection given when the deep circulation is occluded a most painful and oedematous condition of the limb, coming on rapidly, due to stirring up of the phlebitis, and lasting many weeks, may result. Phlebitis of the deep veins, of old or recent origin, is the commonest cause of obstruction, and phlegmasia alba dolens is the commonest cause of deep phlebitis. Marked dilatation in the veins of the pubic area when present is usually a relic of this condition, and should put one on guard. (*b*) Arteritis (intermittent claudication) and any condition in which embarrassment of the circulation already exists. The clinical history is the best guide in the diagnosis of intermittent claudication; in this condition the patient suffers whilst walking and is relieved on standing, whilst the varicose patient suffers while standing and is relieved on walking. (*c*) Cardiac insufficiency of any degree and advanced kidney disease are the next most important contraindications. When other cardiac lesions exist, and when albumin or sugar is present even in small amounts, injections should be administered with great caution. (*d*) Excessively high blood pressure. (*e*) Extreme old age. (*f*) Pregnancy is a contraindication, because varicose veins associated with this condition either undergo spontaneous cure or get considerably better soon after delivery, but especially because it has been demonstrated by Bar that the blood of pregnant women is hyperfibrinous, and therefore predisposed to phlebitis. Marked vulvar varicosities can, however, be injected, as they may be a serious complication at the time of delivery. (*g*) Multiple uterine fibromata may also be a contraindication.

2. *Technique of Injection.*

The patient stands on a chair beside a table, the latter being provided with a handrail on which the patient leans (it is now possible for special tables to be obtained). The upright position renders the veins tense, a tourniquet being useless. The most prominent point of the most prominent vein of the leg below the knee is selected; midway between ankle and knee is, as a rule, the best part to choose. The injection must be completely intravenous, and made with the usual aseptic precautions of sterilizing skin, needle, etc. The syringe should be of light weight: a small all-glass 5 c.cm. syringe is best. The injection, as a rule, is best made in two stages, especially when the veins are not very large. It is well to have two of the small glass syringes, one empty with needle attached, the other without needle and filled with solution. The size of the needle should be that of the ordinary small hypodermic syringe, and the point should be very short. The vein is entered with the needle attached to the empty syringe, the patient standing. To ascertain if the needle is in the vein the piston is slightly withdrawn, when blood should enter the syringe. When blood enters the syringe (and not before) the syringe is detached from the needle, and whilst the needle is still in the vein the patient is made to lie down. When the patient is lying down (not before) the syringe filled with solution is attached to the needle in the vein; injection should be done slowly, especially as regards the smaller veins, otherwise painful spasm or rupture, leading to escape of fluid and subsequent ulceration, may occur. The standing position makes it easy to enter the vein. The recumbent position causes the vein to empty itself, and if the solution is injected then it gets into immediate and intimate contact with the endothelium. The needle is allowed to remain in the vein for one minute at the end of injection, and is then briskly withdrawn, a tampon of cotton-wool being rapidly pressed over the point of exit. This is important, a common cause of pain, local discoloration, and ulceration after injection being the slow withdrawal of the needle, which allows some of the injected solution to escape into the surrounding tissues. Should the veins be large the injection can be made in one stage, with the patient lying down.

There are two causes of pain at injection; the first is injecting the fluid outside the vein. The patient complains immediately of pain and burning at the site of injection. The needle should be withdrawn at once and another part of the vein selected. The second kind of pain is cramp-like or stinging, and may extend the whole length of the limb. It usually comes on towards the end of, or immediately after, injection, and is due to vasomotor disturbance caused by the solution irritating the endothelial lining of the vein and thus exciting the sympathetic. It lasts about a minute or two, is quite bearable, and does not recur. This pain does not always happen, but does so frequently. The patient should be warned to expect it, and assured that it will only last a minute or two and will not return. It is best to keep the patient lying down for about ten minutes after injection, as muscular action is liable to aspirate the fluid from the superficial circulation into the deep. In the region of the malleolus and over bone the injections should be small in amount and of weak strength, otherwise pain and oedema lasting some weeks may result. As only large varicose veins are easy to inject, considerable practice in intravenous technique is advisable before consistently successful results can be attained.

3. *The Sclerosing Fluid and Strength of Dosage.*

Sodium salicylate is the injection of choice. It should be a chemically pure and colourless solution. Solutions which have turned violet should be rejected. The salicylate should be made up in specially hard glass which cannot be acted on by the solution. The first injection should consist of 2 c.cm. of a 20 per cent. solution, and this amount and strength should not be exceeded at a first visit. Two days later the second injection is given, the amount and strength of which depends on the effect produced by the first. The injections are gradually increased in strength and quantity, 3 c.cm. of 30 per cent. being given on the second and 4 c.cm. of 40 per cent. on the third occasion. One should never exceed 6 c.cm. in amount and 40 per cent. strength at one visit. The action produced by the preceding injection is the true guide to the strength and amount of each succeeding injection, and a little practical experience will soon teach the surgeon much on these points. The strength and amount of dosage should, however, be increased as rapidly as possible when no contraindications exist, in order to hasten the irritation of the endothelial lining of the veins; small and weak doses frequently repeated only harden the walls of the vein without causing obliteration, and the veins thus hardened will offer a great resistance to subsequent injections even though those injections be numerous and strong; this is the commonest cause of failure to procure obliteration. It is inadvisable to add novocain or any other

analgesic to the salicylate with the object of diminishing the cramp-like pain. The novocain renders the fluid anaesthetic, and in the event of the solution being injected by mistake into the perivenous tissues, the absence of pain may cause the doctor to be unaware of his error and subsequent ulceration will be the result.

4. *Number of Injections Necessary and Interval between each.*

This depends on the number, extent, tortuosity, and calibre of the veins, and on whether one or both limbs are varicose, five or six injections as a rule being sufficient for each limb. Three to five inches of vein on an average are usually occluded with 4 c.cm. of a 40 per cent. solution, but much more is not infrequently obliterated; two injections of 5 c.cm. of 40 per cent. solution are sometimes sufficient to obliterate completely the internal saphenous vein.

There is no fixed rule as to interval between injections. If both limbs are affected the patient may attend daily, each limb being injected on alternate days, a different segment of vein being selected each time, depending upon the amount of reaction of the previous injection. With experience the necessary knowledge on these points will soon be acquired.

5. *Effects of Injection on the Vein.*

The manner in which chemical injections cause obliteration of veins is different from that in which infective phlebitis is produced. The immediate effects of injection are vasomotor, especially vaso-constriction (through stimulation of the sympathetic which supplies the smooth muscle regulating the calibre of veins), pallor of the part, and a "goose flesh" appearance of the skin. A chemical endovenitis with thrombosis occurs during the first hour, and some hours later the inflammation spreads to all the coats of the vein and even outside the vein (periphlebitis). This has been proved (Jentzer and Askanazy) by adding collargol to the salicylate solution and then injecting the mixture. Part of the vein was then removed, the collargol being found in all tunics of the vein and seen in the tissues outside the vein. This type of inflammation is called "venitis"; it is localized, limited, and chemical in origin; as distinguished from infective "phlebitis," which is diffuse, of infectious origin, and attacks the deep veins. Embolism does not occur in "venitis," as the clot is aseptic and firmly adherent to the vessel wall, whereas in "phlebitis" the clot may be soft or brittle, and embolism is frequent. The termination of the "venitis" is as follows. The sclerosing fluid irritates the endothelium, which becomes congested and hypertrophied. The fibrin of the blood becomes deposited on the whole length of the irritated and injured endothelium, to which it adheres firmly. The clot becomes organized, sclerosis follows, and the venous cicatricial tissue becomes gradually absorbed in the following weeks. In venitis there is no fever as in phlebitis, because there is no infection; no oedema, because the superficial veins, and not the deep ones, are alone obliterated; and there are no continuous severe pains as in phlebitis, because the vessels of the nerves (the vasa nervorum) are not affected by the salicylate solution. It happens very occasionally that, owing to ulceration, an infective venitis—that is, of a superficial vein—is found; but even in this condition embolism is extremely rare, practically never occurring unless the deep veins are infected. Sicard and Gally proved radiographically (by means of lipiodol in the vein) that the blood flow in varicose veins is reversed, therefore even if embolism does occur it is not dangerous, as the embolus would be carried towards the periphery and not centrally. No case of embolism has occurred at the Hôpital Necker in over three hundred thousand injections, and in my own experience, including the treatment of haemorrhoids with sclerosing injections in many hundreds of cases, I have never had a single case of embolism. Dr. Bensaude of the Hôpital St. Antoine, Paris, the best known French authority on the use of sclerosing injections for the treatment of haemorrhoids, assured me that in the thousands of cases he has treated embolism had never occurred.

Painful Effects of Injection and their Causes.—When the injection has been properly given there are only two possible painful effects, the one immediate—that is, the cramp previously mentioned, a vasomotor phenomenon always temporary, quite bearable, and without danger—the other, more remote and not common, "perivenitis," which is never serious, and indeed when it occurs causes a more rapid and certain cure. Whilst perivenitis persists the part looks red and is tender and warm to touch, but there is no temperature and the patient need not lie up unless symptoms are excessively painful, which is rare. When ulceration occurs following injection it is due to the solution entering the perivenous tissues through faulty technique as follows: (*a*) Injecting fluid outside the vein; (*b*) rupture of the vein from employment of a too strong solution and especially an excessive quantity of a strong solution, and (*c*) injecting small veins too rapidly, causing rupture; (*d*) lack of asepsis. In several hundred cases in whose treatment I assisted at the Hôpital Necker and in my own practice I have not seen one instance of ulcer due to injection of sodium salicylate. As success depends mainly on skilful technique, sclerosing injections, either for haemorrhoids or varicose veins of the limb, should only be given when experience in rectal and intravenous work has been acquired.

6. *After-effects and Possible Complications.*

(*a*) Perivenitis, just mentioned, is the only important after-effect; it usually lasts a few days, rarely longer than a week, and no special treatment or bandage is necessary. In the rare cases where reaction is excessive, rest, local applications, and a supporting bandage are advisable. It must be understood that I am only speaking of the effects of sodium salicylate. With some other solutions marked and very painful perivenitis is not uncommon, and in these cases the treatment ceases to be ambulatory. All varices are not equally affected by injection. The single sinuous vein will frequently yield to even a weak sclerosing solution, and disappears rapidly with no after-effects such as pain or discomfort. In these days of short dresses this type of vein, by protruding through the thin stocking, causes much disfigurement. For this reason more women than men, from "mobiles de coquetterie," as Sicard says, present themselves for treatment, men as a rule only seeking advice when they suffer from voluminous varices which cause much discomfort and hinder them working. The after-effects are naturally more marked in the latter type of case. (*b*) A pigmented brownish line which marks accurately the course of the obliterated vein may persist for a long time; it is due to the destruction of the sympathetic in the sclerosed vein.

Complications of varicose veins such as eczema, ulcer, and haemorrhage, are not contraindications, but are themselves benefited by injections; in the case of ulceration local treatment should be employed in addition to the injections, which latter should be given in the healthy area away from the ulcer. The veins diminish in calibre from the day of injection, and the patient rapidly loses the feeling of heaviness in the limbs of which he previously complained, and all that can be felt (not seen, because the vein does not protrude under the skin after the first injection) is a hard cylindrical zone slightly painful to touch. The patient need not lie up after injection, but can carry on his work and social duties as usual.

Recurrence does not take place in veins which have been completely sclerosed, but occasionally sclerosis is incomplete (especially if the injection has been made perivenously as for haemorrhoids) and the central lumen persists. Fresh injections into the thickened vein will be necessary. New varices sometimes appear a few months after treatment. These readily yield to further injections.

When the sclerosing treatment is finished, general treatment should be instituted in most cases to maintain and prolong the effects of the local treatment. This general treatment should be directed towards the cause of the varices. Sicard and Gaugier are of opinion that varix (excluding that due to pressure and infection) is endocrine in origin—a special hormone circulating in the blood and acting on the sympathetic which regulates the calibre of the vein. When the internal secretion of the endocrine glands is defective or vitiated, varicosity results in their opinion the genital glands (testicles and ovaries) and hypophysis

cerebri are those chiefly concerned, and a course of treatment with extracts of these glands is suggested. Violent exercise, excessive standing, and constipation should be avoided and attention to general hygiene counselled.

The technical details in the foregoing paragraphs are written with the approval of Professor Sicard and Dr. Gaugier, to whom I again express my thanks and indebtedness for enabling me to place them before their British confreres.

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A NEW METHOD OF TREATMENT OF LEPROTIC INFECTION OF THE NASAL MUCOSA.

BY

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THOUGH in leprosy the nasal mucous membrane is no longer held to be a common site of the primary lesion, it nevertheless remains true that, particularly in cases of the so-called systemic type, the nose, either internally or externally, is a region of very great importance with regard both to frequency of involvement and persistence of infection. In pure nerve leprosy, however, nasal lesions are not common, and indeed probably all supposed nerve cases which show infection of the nasal mucous membrane should be considered to belong to the systemic type.

External lesions of the nose show features no different from those of lesions of the skin covering other parts of the face. Internally the nasal mucous membrane may be the seat of a generalized infiltration of the whole mucosa or localized infiltrations of the septal mucosa, which, when they ulcerate, as sometimes happens, are very difficult to treat. The lesion may spread to the cartilage of the septum, leading to perforation or to complete destruction, or it may extend to the skin at the margins of the alae nasi, forming a creeping ulceration, which gradually erodes the skin and underlying tissues. Probably in some cases the accessory sinuses become involved, and in many, generally advanced, cases it spreads backwards with infiltration and ulceration of the nasopharyngeal and laryngeal mucous membrane. A few early cases of the systemic type have been seen in which the first visible lesion was in the skin of the nose. In these the nasal mucous membrane, at first uninfected, later became involved, apparently by direct extension from the skin.

The affected mucous membrane is never insensitive, sometimes it is highly sensitive, and the ulcers which occasionally form tend to become encrusted and to remain so for long periods. The removal of these crusts causes haemorrhage, which may be severe, and one never fails to find numbers of bacilli beneath. If, when taking a swab, the crust is not removed, the smear may be negative. Wade and Solis[1] have stressed the importance of examining the nasal mucous membrane of the "negative" leper. In this country great emphasis has been laid on such examination, probably too great, for cases bacteriologically negative are not segregated and are *ipso facto* deprived of treatment, which is carried out only at the Leper Hospital. These cases at length swell the ranks of the mutilated victims, who still form a large proportion of our segregated lepers. Our experience here is that some 70 per cent. of cases of the systemic type and some 20 per cent. of cases of the nerve type show infection of the nasal mucous membrane before treatment.

Of late years we have been fortunate in obtaining a number of early cases where nodular infiltration has barely commenced, or at any rate is by no means widespread. In these cases, where nasal infection exists, it tends to persist after the nodules have disappeared. Moreover, in many cases, particularly of the nerve type, this persistence may postpone for some time the conditional discharge of the patient. From these considerations the importance is obvious of a line of treatment which will sterilize the nasal mucous membrane in a few months.

Technique of Treatment.

Ionization appears to bring about the required result. At first we used a 1 per cent. solution of sodium salts prepared in this laboratory by saponification from "*hydnocreol*," which is pure creosoted hydnocarpus oil supplied under this trade name by Messrs. Smith, Stanistreet and Co., Calcutta. Afterwards we used alepol, potassium iodide, and sodium chloride in 1 per cent. solution. The ionization current was obtained either from a galvanic battery or from the main through one of the galvanosets manufactured by the Medical Supply Association, London. Nasal electrodes were improvised from the ordinary small "button" electrodes, wrapped in absorbent wool which had been immersed for a short time in the solution to be used. One electrode was placed in each nostril, pushed well up and kept in position by means of bandages or rubber bands. The patient was told to breathe through the mouth, and a current, whose amperage (usually 20 to 30 ma.) was limited by his capacity of endurance, passed for twenty to thirty minutes.

Type of Cases Treated.

The patients treated may be divided into three groups. (1) Thirteen cases of both systemic and nerve types who had received the usual general and specific treatment for periods varying from nine months to two years, with disappearance of all signs save infection of the nasal mucous membrane. (2) Ten cases, all of the systemic type, under treatment for similar periods, but still showing other signs of activity besides intranasal infection. (3) Two cases of the systemic type before commencing treatment. All these patients were examined once weekly, the whole surface of the nasal mucous membrane being swabbed on both sides to the point of abrasion. The whole slide was examined before being returned as negative or as showing very few bacilli. Five controls, including representatives of the first two groups, were similarly examined week by week.

Results of Treatment.

No lessening of the number of bacilli is apparent until about ten to fourteen days after treatment. Bacilli may disappear after one or two sessions, but frequently there is a relapse, and at least three sessions, generally more, at fortnightly intervals, appear to be necessary for permanent cure. The treatment is somewhat unpleasant, but is readily borne, even by small children, and patients say that nasal breathing is much freer after the treatment. About two weeks after the last of three or more sessions, often after only one or two, the bacilli either disappear or become fewer in number and hard to find on the slide. Later there comes a stage when negative results alternate with positive, a stage which, as the Culion workers have pointed out, often precedes the permanent stage in cases improving under general treatment.

Thirteen of the twenty-five cases treated have been returned at least once as negative, some eight times in succession, though only six had at any time since their admission given a negative result, and then in each case on a single occasion.

Nineteen of the twenty-five have either become negative or show such a reduction in the numbers of bacilli that they have become very hard to find. In the other six cases, all of long standing, it is possible that the sinuses had become involved. The controls showed no such reduction or extreme variability in the results of nasal examination.

It is impossible at present to say whether the cure is permanent, for only two months have elapsed since the conclusion of treatment in many of the cases, but owing to the impending absence of the writer on long leave it was thought desirable to publish these results at once, with a view to confirmation by others who may wish to try the method.

Summary.

Ionization of the nasal mucous membrane with a 1 per cent. solution of certain drugs, especially alepol, produces in many cases an apparently complete cure of leprotic lesions in this site.

It is particularly effective in otherwise negative cases where infection of the nasal mucosa persists, but even cases which have not yet undergone other treatment react.

The ulcers heal and nasal breathing becomes freer after treatment.

Some of the cases have been consistently negative for two months, which is the longest period that had elapsed between the conclusion of treatment and the writing of this paper.

If these results are confirmed it is clear that in a large number of cases the duration of segregation may be considerably curtailed.

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THE COMBINATION OF ANILINE DYES AND RADIATION IN THE TREATMENT OF TUMOURS.

BY

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ANILINE dyes have been widely used in attempts to cure cancer in the human subject, and various claims have been made. Recently Mr. Frank Coke has been using preparations of the fluorescein series. The best results were obtained with sodium fluorescein, and he is of opinion that better results are obtained by a combination of this drug and hard *x* rays, than with *x* rays alone. The fluorescein was administered by local external application and by the mouth. Mr. Coke suggested to me that possibly some specific fluorescent action might be taking place. The following experiments have, therefore, been carried out to test this idea.

A slow-growing rat sarcoma was used. Small pieces, approximately 1 c.mm., were exposed to gamma radiation from two radium applicators of 110 mg. $RaBr_2.4H_2O$, having an area of 2 by 2 cm. It was found that whereas three hours' exposure *in vitro* killed the tumour cells, exposure for two and a half hours resulted in no more than delayed growth, when inoculated into rats, as shown in Table I.

TABLE I.—*Growth of Slow Sarcoma after Two and a Half Hours' Exposure to Gamma Radiation in vitro.*

	Days after inoculation—								
	5	7	10	12	14	17	19	21	24
Rat 1	5×4	6×5	8×6	10×6	13×8	16×11	18×12	22×16	25×20
Rat 2	3×3	5×4	7×5	11×6	14×7	15×9	19×10	21×13	24×15
Rat 3	0	3×3	5×5	6×6	9×8	12×10	15×10	15×15	23×18
Rat 4	0	0	0	6×4	7×5	8×6	11×7	15×11	21×12
Rat 5	4×4	5×5	6×5	7×6	8×7	10×9	13×12	14×14	19×15
Rat 6	3×3	4×4	4×4	5×5	6×6	7×6	9×7	17×3	17×12
Rat 7	0	0	0	0	5×5	8×6	11×7	10×7	15×9
Rat 8	0	5×5	6×5	11×6	9×8	10×9	12×11	12×12	15×15
Rat 9	4×4	5×4	5×4	5×5	6×5	7×5	8×5	8×7	10×10
Rat 10	0	0	0	0	0	0	6×6	6×6	11×8

In each of the tables the figures represent the size of the tumours in millimetres. 0=Small nodule not measurable.

Small pieces were likewise exposed to various concentrations of fluorescein in Locke's solution, and it was found that 1/80 per cent. solution applied for six hours had no decided effect on the rate of growth of the tumours resulting from the inoculations (Table II).

TABLE II.—*Growth of Slow Sarcoma.*

	Days after inoculation—											
	5		7		10		12		14		17	
	C	E	C	E	C	E	C	E	C	E	C	E
Rat 1	0	0	6×5	9×5	10×6	14×6	14×8	20×8	16×10	24×14	19×14	33×18
Rat 2	3×5	0	9×5	6×5	12×7	10×6	14×8	12×7				
Rat 3	0	0	0	0	4×4	8×4	7×5	10×6	10×10	14×11	18×11	20×12

C=Control. E=After six hours' treatment with 1/80 per cent. fluorescein.

To test whether the combination of the two agents exhibited any specific effect, exposures of two and a half hours to gamma radiation, and of five hours to 1/200 per cent. fluorescein, were used. The exposures were made in the following manner:

A. Eighteen pieces for two and a half hours in 1/200 per cent. fluorescein, Locke's solution. Then for two and a half hours in 1/200 per cent. fluorescein, Locke's solution, and exposed to gamma radiation at the same time. Then for two and a half hours in Locke's solution, after washing in Locke's solution to remove the dye.

B. Eighteen pieces for two and a half hours in Locke's solution and exposed to gamma radiation at the same time. Then for five hours in 1/200 per cent. fluorescein, Locke's solution.

C. Eighteen pieces, control, for seven and a half hours in Locke's solution.

A and B, therefore, had precisely the same exposures to gamma radiation and to fluorescein; the only difference was that in A the radiation was applied *after* fluorescein treatment, and in B *before* fluorescein treatment.

The fifty-four pieces of tumour were inoculated into nine rats, six pieces into each rat, and the resulting tumours are shown in Table III. There it is seen that the two

TABLE III.—*Growth of Slow Sarcoma under Conditions given in the Text.*

	Days after inoculation—																	
	5			8			11			15			17					
	A.	B.	C.	A.	B.	C.	A.	B.	C.	A.	B.	C.	A.	B.	C.			
Rat 1	—	—	0	—	—	8×7	—	—	12×10	—	—	18×14						
	—	—	0	—	0	—	—	—	—	—	—	—						
Rat 2	—	—	0	—	—	8×8	0	—	12×10	4×4	—	16×14	6×5	—	L.Ts.			
	—	—	0	—	—	6×5	0	—	9×9	0	—	14×11	4×4	—				
Rat 3	—	—	0	—	—	7×5	—	—	10×7	—	—	12×9						
	—	—	0	—	—	8×7	—	—	13×9	—	—	15×11						
Rat 4	—	0	0	—	0	7×7	—	0	11×9	—	9×7	L.Ts.	—	13×10	L.Ts.			
	—	—	0	—	—	8×7	—	0	12×9	—	3×3		—	5×5				
Rat 5	0	—	0	—	0	7×6	0	—	9×8	5×5	0	13×11	9×9	3×3	16×14			
	—	0	—	0	0	—	0	0	—	7×6	0	—	9×9	0	—			
Rat 6	—	—	0	—	—	5×5	—	—	8×8	—	—	12×9						
	—	—	0	—	—	5×5	—	—	7×7	—	—	10×9						
Rat 7	—	—	0	—	—	6×5	—	—	8×8	—	—	12×11						
	—	—	0	—	—	4×4	—	—	7×5	—	—	10×9						
Rat 8	—	—	0	—	—	6×5	—	—	9×7	—	—	12×10						
	—	—	0	—	—	4×4	—	—	6×4	—	—	9×8						
Rat 9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
	0	—	0	0	—	0	0	—	4×3	5×5	—	8×6	8×8	—	12×10			

L. Ts.=Large tumours. The animals were killed on the seventeenth day.

agents have summated their deleterious action on the tumour cells; alone, neither two and a half hours' gamma radiation nor five hours' fluorescein would have prevented the pieces from growing into tumours.

In A only five tumours resulted from eighteen inoculations, and in B only four tumours. Further, there is no evidence of any specific action; whether the radiation was applied before or after the fluorescein made no difference.

In a previous paper[1] it was shown that the intravenous inoculation of lead colloid into mice bearing tumours and the simultaneous irradiation of the tumour caused their disappearance with doses of these agents, which *alone*

would not produce this result. Here also there was summation, but no evidence of any specific action.

These results, in which more than one agent is brought to bear on a pathological condition, at any rate suggest that the summated action of several agents may be a better form of treatment than the pushing of a single agent to near the limit of the patient's tolerance.

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"DEBILITY" IN CHILDREN AND CYCLICAL VOMITING.*

BY

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ALL physicians are familiar with the large group of children who are brought for advice regarding the most varied symptoms, for which no adequate cause can be found, and yet which do not seem to be directly due to some antecedent illness such as scarlet fever, measles, or tonsillitis. Such children are for the most part labelled "debility," and are either given tonics or sent away to the country or seaside, the unlucky ones having their tonsils removed first. It is this group which forms the bulk of all the cases attending any out-patient department for diseases of children.

The object of the present communication is to show that, although the symptoms for which these children attend are varied, yet the common underlying set of causes are of the same nature as those found in the cyclical vomiting of children; in other words, that the "debility" and cyclical vomiting to be described hereafter may be regarded as the minor and major manifestations of one disorder, bearing to each other much the same relation as petit mal and grand mal in epilepsy. Further, it is desired to emphasize the frequency with which cyclical vomiting occurs in children of all classes, and not only among the well-to-do, as is commonly taught. Finally, it is hoped to show that both the minor and the major forms of this disorder are easily preventable by the same treatment.

In September, 1923, a group of 30 children suffering from attacks of cyclical vomiting was collected, observed, treated, and followed up for the following three years. It was then believed that this disorder was rare in children of the hospital class, but it soon became evident that this was not the case. On two separate occasions a census of such cases was taken in the out-patient departments of two London hospitals, and it was found that approximately 30 per cent. of all children over 2 years of age gave a history of typical attacks. Since then it has become apparent that cyclical vomiting in children of the social class that makes use of hospital out-patient departments is so frequent that it is regarded by the parents as a normal accompaniment of childhood. They regard it as a "bilious attack" attributable to indiscretions of diet, and do not as a rule consider it sufficiently important to require medical attention. Probably for these reasons, and because attacks rarely occur in children already in institutions, it has been regarded by the profession as an infrequent condition in hospital class children.

Early in the investigation an attempt was made to study the conditions in the blood and urine before, during, and after the attacks. At first several cases were admitted to hospital, but in none of them did attacks supervene. It therefore became obvious that in-patient observations of this disorder were impracticable, and the cases under observation attended as out-patients at fortnightly intervals. After some months it was noticed that, though new cases of cyclical vomiting were seen, none of those already under observation had further attacks, though no special treatment had been undertaken. In order to secure regular attendance malt extract had been given to all the cases as a placebo; but on further investigation it was found that it was the malt which was preventing the occurrence of attacks, and that sugar in other forms had a similar result. Thereafter all children with this complaint were given extra sugar as a routine, with the result that in the great majority of over 200 cases treated the attacks have been entirely prevented.

It is now well known that the whole subject of cyclical vomiting is intimately related to that of ketosis. Frew[1] in 1911 showed that acetonuria was present in 61.2 per cent. of 662 children admitted to hospital for various reasons. It was first shown by Marfan[2] that attacks of cyclical vomiting were regularly accompanied by excess of ketone bodies in the urine. Gamble, Ross, and Tisdall[3] state that the amount of acidosis present (reduction of serum bicarbonate of blood) is fully accounted for by the excess of ketone bodies in the blood. Ross and Josephs in 1924[4] produced attacks of cyclical vomiting in children by starvation, and from a study of the blood sugar under these conditions suggested that hypoglycaemia was probably an essential feature of the attacks. Brown and Graham[5] in 1926 also studied the blood sugar, plasma bicarbonate, and ketone bodies in the blood and urine of children given a ketogenic (high fat and low carbohydrate) and an antiketogenic (high carbohydrate and low fat) diet, and also the effects of treating the resulting ketosis with sugar, alkalis, and alkalis *plus* sugar. They concluded that sugar was the most useful method of treatment. Investigations on the children forming the subject of this paper show that, at least in many cases, there is not a progressive fall of blood sugar culminating in an attack. On the contrary, the blood sugar often remains normal right up to and during the early stages of the attack, though later it may fall quite suddenly to a very low figure, though not necessarily with any increase in the symptoms present. These facts, together with the knowledge that the prophylactic administration of sugar usually prevents attacks, suggests that the underlying defect is a too rapid depletion of the glycogen reserves of the liver in the circumstances existing at the time. To understand how this glycogen depletion is brought about it will first be necessary to consider the symptomatology of the condition, and then the predisposing and exciting causes.

The cardinal signs and symptoms of cyclical vomiting are extraordinarily constant. They are lassitude, drowsiness, headache, pyrexia, vomiting, and marked muscular prostration. Abdominal pain is frequently complained of, even before vomiting sets in, and constipation is generally present, though diarrhoea accompanies the vomiting in some cases. Pyrexia is invariably present at the outset, and often reaches 103° F. on the first day. In the complete absence of pyrexia cyclical vomiting is unlikely to be the correct diagnosis. The muscular prostration may be extreme, with transient squints, loss of knee-jerks, and carination of the abdomen. In such a case drowsiness may give place to actual coma, and not infrequently there is a mild jaundice with pale-coloured stools. The urine is as a rule acid, scanty, high-coloured, and contains an excess of acetone bodies. Often the attacks are preceded by a prodromal stage lasting from a few hours to a day, with lassitude, anorexia, and headache. Sometimes a sense of chilliness or actual shivering precedes the attack. The vomiting is persistent, and is brought on by the mere sight of food. The vomited material is usually acid, and is often highly coloured with bile. The attacks generally last two or three days and then gradually and spontaneously remit, leaving the child after a few days in normal health. Attacks usually begin at about 3 or 4 years of age, and continue at regular or irregular intervals until 12 or 13 years of age, when they tend to become less frequent and less severe, and by the time of puberty they have generally ceased altogether. Sometimes at puberty the attacks are replaced by symptoms of migraine. In some instances cyclical vomiting commences in infancy, though usually in an atypical form.

It is well recognized that cyclical vomiting only occurs in children with an inherited or acquired nervous instability. On examining the causes which excite the actual attacks it is found that they fall into three main groups, of which the first is by far the most important. They are: (1) mental excitement, such as occurs when attending parties, during examinations, and so forth; (2) infection accompanied by

* Part of this work was carried out with the aid of a grant from the Medical Research Council.

pyrexia, as at the onset of scarlet fever, tonsillitis, and "colds"; (3) muscular over-exertion, as after vigorous games in which there is a competitive element. Hilliger[6] has suggested that all these causes act by the over-production of adrenaline through sympathetic stimulation. The signs and symptoms, the nature of the predisposing and exciting causes, and the readiness with which the attacks can be prevented by the addition of extra sugar to the diet, can all be satisfactorily explained by such an hypothesis. It is common knowledge that most healthy children prefer sugar and "sweets" and dislike fats. This may be readily understood when it is remembered that the child always works on the "all-out" principle, while the adult, with greater cerebral inhibition, has learnt to conserve energy by the highly co-ordinated use of a few muscle groups. The child's need for relatively larger supplies of a readily combustible and assimilable food such as sugar is therefore much greater. The monosaccharides and disaccharides are necessary for sudden demands when glycogen stores are getting low. There can be no doubt that the child's desire for sugar and "sweets" subserves a valuable physiological function, and should be gratified.

Treatment.

The amount of sugar to be given varies in every case and in different circumstances. Thus a child who remains free from attacks on a certain allowance of sugar will require an extra supply before attending a party, or going for a ride, or being subjected to any other stimulus known to cause attacks. The following rules have been successful in a large number of cases, and may be of value as a rough guide. Apparently one form of sugar is as effective as another. At least two level teaspoonfuls of sugar are given in a cup of weak tea for breakfast and tea. For dinner, lemonade sweetened with sugar is given. Sandwiches of bread-and-butter and Demerara sugar are taken at each meal, and in some cases an extra sandwich for supper. Milk is allowed in the tea, and in milk puddings, but is not recommended as a beverage, though if desired it may be taken after being skimmed. Glucose powder, 2 or 3 drachms, is given in lemonade three times a day between meals, or, when this is not possible, the child is allowed and even encouraged to eat sweets (boiled sweets are excellent) instead. The extra glass of milk often provided in the mornings is forbidden, and often the school authorities are informed that the child should be allowed to eat sweets in school. As a result of such measures no untoward results have been encountered at any time during the past five years. Glycosuria has never been found in any of these patients. Occasionally during the first fortnight of such a diet urticaria has been complained of, but without exception it has proved quite transitory, and cleared up without any modification of the treatment. Giving sugar and sweets between meals does not impair the appetite in the majority of cases.

"Debility" and Sugar Shortage.

The term "debility" covers that large group of children who, though not suffering from any recognizable disease, are nevertheless persistently or temporarily in a subnormal state of health. They may seek advice for headache, constipation, listlessness, anaemia (pallor), backwardness, incipient tuberculosis, failure to put on weight, loss of appetite, growing pains, pyrexia, recurrent diarrhoea or colitis, "nervousness," night terrors, nocturnal enuresis, asthma, and cough. This group of symptoms, when not obviously associated with or due to some definite and well-recognized disease, occurs almost exclusively in highly strung nervous children. Acetone bodies are frequently found in the urine of many of these children. Their plasma bicarbonate is subject to much wider variations from the normal than that of children with a stable nervous system, and many of them suffer from persistent acidosis (deceased plasma bicarbonate), of which the exact cause has not yet been determined. The blood sugar, on the average, is not lower than in normal children, and is again subject to greater fluctuations. The conclusion appears to be justified that this great group of children, commonly called debilitated, is really suffering from relative or absolute insufficiency of sugar—that, in fact, it is suffering from a minor form of the disorder called cyclical vomiting. It is not suggested that the symptoms named are necessarily due to shortage of sugar. That they are frequently due to such shortage, however, is shown by the fact that very often they can be cured and prevented by the simple expedient of adding sugar to the diet. Broadly speaking, these minor symptoms are more frequently the manifestations of sugar shortage in younger children; as age increases the symptoms tend to become aggregated into definite major attacks with normal health in the intervening periods. At a later age, again, the major attacks become less frequent, and less severe, and ultimately cease altogether. The predisposing nervous instability may persist throughout life, but during the adult period increased cerebral inhibition exerts some measure of control over the biochemical responses to outside influence. In this connexion it is significant that with increasing age fluctuations in the amounts of many of the normal chemical constituents of the blood become progressively less marked.

Some Common Symptoms.

A detailed consideration of a few common symptoms may serve to illustrate some of the points already made, and perhaps throw some light on the nature of certain complaints frequently met with in paediatric practice.

Sugar shortage, in the sense already considered, would appear to be by far the most common cause of headache and constipation in children, both symptoms, in the majority of cases, yielding readily to extra allowances of sugar. The constipation is probably only an expression of defective tone of the intestinal musculature.

Abdominal pain, with and without obvious constipation, often clears up with sugar treatment. Major attacks of cyclical vomiting are also generally accompanied by abdominal pain, often in the right iliac fossa, and occasionally with tenderness and rigidity. Not infrequently children are seen who have undergone appendicectomy for such symptoms, but with attacks persisting until prophylactic treatment with sugar is instituted. In many cases the differential diagnosis between recurrent appendicitis and cyclical vomiting is quite impossible. Sometimes sugar given by the mouth, or as a 5 per cent. solution of glucose per rectum, produces such rapid amelioration of symptoms as to render postponement of operation reasonably safe. In recurrent cases of abdominal pain simulating appendicitis extra sugar in the diet should always be tried before resorting to operation. The point is of great importance, because the child subject to cyclical vomiting is especially liable to delayed chloroform poisoning.

The common symptoms of early tuberculous infection in children are lassitude, failure to put on weight, pallor, and anorexia. Large numbers of children are diagnosed as tuberculous on these criteria and without evidence of any local lesion. A considerable number of these children never develop active tuberculosis, and not infrequently all the symptoms subside when extra sugar is given.

"Growing pains" are commonly regarded as having a rheumatic origin, or as indicating a predisposition to acute rheumatism. But in many instances these pains may be due to abnormal stresses resulting from the faulty attitudes adopted by children with poor muscle tone. Quite often these pains disappear when the muscle tone is improved by means of an increased allowance of sugar. "Growing pains," it would appear, are more often related to poor muscle tone than to acute or subacute rheumatism, though this view is contrary to that of Goodhart and Still.

The only other single symptom which calls for detailed discussion is unexplained continued pyrexia. Quite commonly children retain a considerable degree of pyrexia, often without other symptoms, long after the apparent subsidence of an acute illness. Sugar treatment may be followed by an immediate and permanent return of normal temperature. The pyrexia in these cases may represent a continued variety of the pyrexia of shorter duration which invariably accompanies major attacks of cyclical vomiting. More than one child has been confined to bed for several months at a time for this reason alone. The following case will illustrate this point.

A boy, aged 7, was admitted to hospital on July 27th, 1927, for unexplained pyrexia, possibly due to tuberculosis. It was not known for how long pyrexia had been present, but it was discovered three weeks previously by his doctor. There was a history

of lassitude, headaches, and constipation for about two months. There was no family history of tuberculosis, and no signs or symptoms of this disease could be discovered in the child. A radiograph of the lungs showed nothing abnormal. He had never suffered from "bilious attacks," and was an only child. As will be seen from the accompanying chart, the temperature became

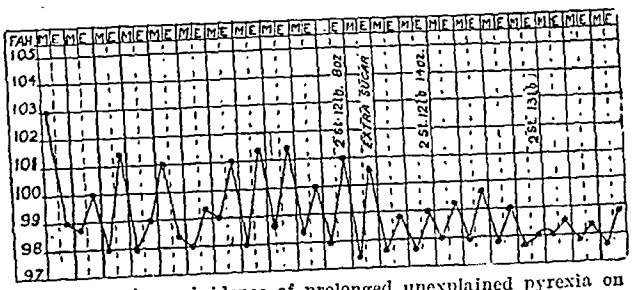

Chart showing subsidence of prolonged unexplained pyrexia on administration of sugar.

normal almost immediately after giving extra sugar (3 drachms of glucose powder in lemonade three times a day). It will be seen also that he at once began to gain in weight. Since then he has attended as an out-patient at intervals, and now (October, 1928) he is apparently in normal health, having had no further symptoms. During the whole of this period he has continued to take glucose.

The following conclusions would appear to be justified.

1. Cyclical vomiting is an extremely common affection in children of all classes.

2. It is due to depletion of the glycogen reserves of the liver.

3. It occurs mainly in "nervous" children, attacks usually being precipitated by mental stress.

4. It can generally be prevented by giving extra sugar in the diet.

5. The child's desire for sweets subserves a physiological function, and should be gratified.

6. A large proportion of cases of "debility" is due also to sugar shortage.

7. Such debility can generally be cured and prevented by increasing the allowance of sugar in the diet.

8. Sugar shortage is the most common cause of headaches, constipation, abdominal pains, and "growing pains" in children.

POSTSCRIPT.

Since writing the above I have read a paper on "The pre-rheumatic child," by Professor C. W. Vining of Leeds (Bath Conference on Rheumatic Disorders, 1928). In it he shows that a very large proportion of frankly rheumatic children give a preceding history of various symptoms of minor ill health, lasting for months or years. He groups these symptoms under the heading of "toxic debility," and shows that their incidence is very much less in normal children. This state of "toxic debility," Professor Vining suggests, is intimately and causally related to the incidence of acute rheumatic fever, and he concludes that "the success of our efforts to prevent and control rheumatism (acute) will be in proportion to the amount of recognition we give to the pre-rheumatic health defect, and I would suggest on the evidence brought forward in this paper that prevention lies first and foremost in the provision of a well-balanced diet from infancy onwards." The symptoms Professor Vining includes under the title of the "pre-rheumatic" state are identical with those I have suggested as being due to a relative insufficiency of sugar in the diet. As, moreover, they may be readily cured and prevented in the majority of cases by the addition of sugar to the diet, it is possible that this dietetic modification affords a means of preventing acute rheumatism, or at least of diminishing its frequency.

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SUDDEN DEATH FROM PNEUMONIA WITHOUT APPARENT SYMPTOMS.

BY

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SUDDEN deaths in marasmic infants in the first year of life are not uncommon, especially in the presence of severe anhydraemia. Heart failure, respiratory failure, or what appears to be a sort of general nervous collapse, sometimes brought on by an unsuitable meal, may extinguish suddenly the flickering little life. When the child seems to be doing well and death occurs without any warning symptoms the matter becomes very puzzling. Such deaths are commonly certified as being due to "marasmus," a term which is inadequate, if not actually inaccurate. The following case of this nature, therefore, seems to us of some importance and interest.

A female infant, born on November 13th, 1927, was admitted to the Burnside Infant Welfare Home, Aberdeen, on December 1st, 1927, weighing 6 lb. 9 oz. She was put on the routine feed for infants of her age—namely, lactic acid milk sweetened with dextri-maltose—but did not gain weight satisfactorily. Little could be made out clinically, except that after a few weeks a pustular eruption developed on the chin. This cleared up fairly readily with a coal-tar and zinc paste. There was no albuminuria. Progress, however, remained unsatisfactory, the gain being only 26 ounces in fifteen weeks. At this point one unit of insulin daily was given subcutaneously, followed by a drachm of glucose by the mouth, a method of treatment which has given some happy results in our hands. In the first week of this treatment the child gained 11 ounces, and in the next 3 ounces, and in every way appeared to be much improved. At 2.20 a.m. on March 25th she was found in her cot just dying. During the week prior to death the temperature, taken morning and evening, varied between 97° and 98.2° F., the pulse between 124 and 130, and the respirations between 22 and 28. The 10 p.m. feed on March 24th was finished as usual; at 1.45 a.m. on March 25th her napkins were changed, and there was no suspicion that anything was amiss. The last dose of insulin was given at 3 p.m. the previous day, nearly twelve hours before death.

At the *post-mortem* examination the lower lobes of both lungs were found to be solid and in the red hepatization stage of lobar pneumonia, microscopical sections showing the alveoli to be filled with red cells and leucocytes. A pure culture of pneumococci was grown from the affected lung substance. In the upper lobes were found scattered patches of broncho-pneumonia. The only other abnormality was a large thymus. The thyroid did not appear to be abnormal in any way. Unfortunately, these glands were not weighed.

Discussion.

The point of immediate interest in connexion with this case is that a sudden, unexpected, and apparently inexplicable death in an infant in the first year of life may be due to pneumonia. Dr. Simonds, in Abt's *Pediatrics* (vol. 8, p. 630), indeed, states that broncho-pneumonia is the most common cause of sudden death in the first year of life. Lobar pneumonia is not mentioned in this connexion. While lobar pneumonia is much less frequent in children under 1 year, and is held by some not to occur at all, our experience, confirmed by clinical, radiological, bacteriological, and pathological findings, is that it does occur, and in the case here recorded the pathological and bacteriological findings were as stated above. Discussing the mechanism of death in these cases, Simonds considers that the fatal result is brought about by toxic absorption from the focus, and, probably chiefly, by asphyxia induced by the great reduction in alveoli, which are small in infancy, available for blood exchange. In our case, if asphyxia were the chief cause of death, it would be necessary to postulate its very sudden onset, for it is difficult to see how a child with any degree of respiratory embarrassment could, without showing some recognizable signs of distress, take a feed of several ounces as this child did four hours before death, at which time the pneumonia must almost certainly have been fairly well established. An overwhelming toxaemia seems to be the more probable explanation. In reviewing the case from birth to necropsy four points stand out—namely, (*a*) the failure to gain weight normally on an adequate diet, arguing a faulty metabolism; (*b*) increase in weight in response to insulin;

(*c*) complete lack of resistance to infection, to the extent of failure to produce symptoms; and (*d*) the presence of a large thymus gland. The sequence of cause and effect may have been as follows. An innate weakness was present of endocrine outfit in particular, probably of thyroid, pituitary, and adrenals, indicated by the response to insulin, which we believe exerts its beneficial effect indirectly through stimulation of pituitary and thyroid; and possibly also by the presence of a large thymus. On account of this deficiency metabolism was faulty and gain in weight was unsatisfactory. Stimulation of the so-called "katabolic" glands by insulin brought about increased metabolic activity with consequent gain in weight. A pneumococcal infection occurred, and the endocrines, probably innately deficient, or perhaps weakened by stimulation, failed along with the autonomic nervous system to respond with defensive activity and consequent production of symptoms, and death occurred. This explanation is in line with that suggested by Ramsay in his interesting paper on "The resistance factor in disease" in the *Journal* of April 14th, 1928 (p. 628).

If this interpretation be approximately true, then it seems possible that another class of case may be rescued from that limbo of infantile diagnosis termed variously "marasmus," "wasting," "debility," and "atrepsia"; and, if this be a correct conception of the pathology of these cases, therapeusis based on it should hold out hopes of their more successful treatment. The rational procedure would appear to be to supplement the deficient glands by giving reliable glandular extracts, and concurrently, or probably later, to stimulate them by some such method as insulin injections.

Summary.

A case of sudden death in an infant of 4 months, from pneumonia which produced no symptoms, is reported. It is suggested that these cases are commoner than is supposed, and also that the underlying pathology is concerned with an innately deficient endocrine system. Treatment based on the latter supposition is proposed.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SPREADING SUBCUTANEOUS EMPHYSEMA AFTER FRACTURE OF RIB.

THE following case is of special interest since it illustrates an effective treatment of spreading subcutaneous emphysema following the fracture of a rib; two instances of this condition were recently published in the *British Medical Journal* by Mr. J. A. C. Macewen (November 17th, 1928, p. 892). The patient in the present case left the wards of the Albert Dock Hospital towards the end of December.

A dock labourer, aged 54, was admitted on October 5th, 1923, after having fallen 15 feet into the hold of a ship, together with a heavy wooden hatch, which fell across his chest. There was fracture of the seventh left rib in the posterior axillary line, with a small patch of emphysema over the site of fracture. On the succeeding days the emphysema spread rapidly as follows: October 5th: A circular patch about 6 inches in diameter. October 6th: Left scapular and both pectoral regions. October 8th: Left axilla and upper arm, left supraclavicular fossa. October 9th, 10 a.m.: Chest wall emphysematous throughout, with spread to the left side of the abdominal wall, the left arm down to the wrist, and the right arm down to the elbow. 6 p.m.: Emphysema covered both arms to the wrists, the entire surface of the body, and both legs to the knees. There was a sudden spread to the neck and face, up to the supraorbital ridges; the whole face was now uniformly spherical with the eyelids ballooned and standing out from the general level, giving an appearance not unlike that of two golf-balls on the surface of a football. 7 p.m.: "Eggshell" crackling could be felt in the finger-tips and nail beds, and respiration was becoming so seriously embarrassed that tracheotomy was contemplated. Acting on a suggestion by Mr. T. Pomfret Kilner, surgeon to the hospital, pleural puncture by a medium-sized trocar and cannula was performed on the affected side, permitting free ingress and egress of air, with partial collapse of the lung.

The theory advanced for this treatment was that the continuous increase of emphysema was due to escape of air by way of the pleural cavity into the subcutaneous tissues under pressure; if, then air were allowed to pass freely out of the pleural space this pressure would cease to operate.

There was no further spread of the emphysema, and after twelve hours the cannula was removed, respiration being less embarrassed. Recovery was uneventful, the emphysema passing off in the reverse order of its appearance; on October 25th there was none present.

It would appear from this experience that so simple an expedient as pleural puncture at an opportune moment would avert the necessity for the accepted treatment by multiple incisions in situations where the subcutaneous tissues are distended.

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AN UNUSUAL CASE OF HYPERKERATOSIS BLENNORRHAGICA.

CERTAIN uncommon characteristics would seem to render this case of hyperkeratosis blennorrhagica worthy of record.

A patient contracted [illegible] in August, 1924; he was ill for seven days, and had [illegible]. He was reinfected in December, 1927; there [illegible], and he was discharged cured after forty days' treatment. He was readmitted to the Royal Naval Hospital, Haslar, with gonorrhoea on March 1st, 1928; there were no complications, and he was discharged cured on April 9th.

The patient was readmitted to the Royal Naval Hospital, Haslar, on August 24th with well-marked hyperkeratosis blennorrhagica of both feet only. He stated that two months prior to admission to hospital he noticed dried skin appearing in different places, first on the right heel, secondly on the left heel, then spreading over the soles and toes, and becoming gradually more painful on pressure, especially while standing on guard. He finally was put on light duty on account of inability to perform his work.

It is stated by most authorities that the following three symptoms constitute the syndrome: gonorrhoeal urethritis, gonococcal arthritis, and hyperkeratosis. The point of interest is that the above patient has never had any form of joint trouble whatsoever since his first infection with the gonococcus in 1924, and no joint trouble has been present up to the time of his discharge "cured" from hospital on September 26th. Secondly, the patient had not noticed any urethral discharge prior to readmission to hospital on August 24th, and none has been present since.

Examination of a urethral smear after prostatic massage on August 27th, 1928, revealed a few Gram-positive organisms, together with an occasional pus and epithelial cell. Urine cultures on August 28th and September 11th were sterile, and a urethral smear on September 10th was negative. A urethroscope examination was negative, and the prostate was normal. The patient was a fit, healthy man in every other respect.

We have had four cases of hyperkeratosis in this hospital during the last two years: three patients had urethritis, and arthritis in conjunction.

In the present case hyperkeratosis was the only symptom, and probably the infection of March, 1928, could be held responsible for this. The point of interest is that if such a disease as gonorrhoeal iritis can occur ten years or more after initial infection, and appear as the only metastatic exhibition, is it not possible that hyperkeratosis may appear as the sole manifestation also?

The treatment applied was purely local—namely, alkaline foot baths and nikalgin ointment.

T. R. LLOYD JONES, Surgeon Commander, R.N.
Royal Naval Hospital, Haslar.

INJECTION TREATMENT OF VARICOSE VEINS.

I RECENTLY had a difficult case of varicose veins to deal with, and the satisfactory sequel to a change of procedure may justify its publication.

The internal saphenous was very bad, with nine large nodules from the internal condyle upwards, the lower leg being like a fisherman's net with veins of varying sizes. I began with a 0.5 c.cm. dose quinine urethane, and for the space of five weeks increased the dose until I gave three 1 c.cm. injections at the one sitting. The first injections were given at the upper end of the vein, and the later ones at the lower, all were given slowly and cautiously, and none had any effect. I decided, therefore, to adopt different tactics.

I thoroughly prepared the nodule at the internal condyle, emptied it, and kept it empty by digital pressure. I then partially dilated it by injecting forcibly 2.5 c.cm. of quinine urethane. This was kept in the nodule for thirty seconds and then the leg was lowered for thirty seconds, the patient standing on it; after this the leg was elevated for one minute, and then the patient was instructed to walk about. The result was sclerosis of the meshwork on the leg and of the nodule with two inches of the vein above it and of one other nodule. A week later I gave a similar injection half-way up the thigh, and after another week had elapsed found no further injection necessary.

The reasons for bringing this case to notice are the large single dose employed; the forceful injection, and finally, the injection in the middle of the vein, which ensured that either centrifugal or centripetal flow would be of equal advantage.

S. BARTLETT
Bentecula, South Uist.

LARGE URETHRAL CALCULUS.

THE following case is of so unusual a nature that it is deemed worthy of being placed on record.

A joiner, aged 54, was admitted to the Royal Infirmary, Glasgow, in June, 1928, complaining of the presence of a hard mass in the scrotum, and inability to pass urine per urethram. He stated that he first had difficulty in passing urine five years previously, and that he then had frequency also, necessitating his getting up during the night to pass water. Then a painful swelling developed at the base of the penis, which ultimately discharged urine. Many similar swellings developed subsequently. He denied gonorrhoea, and the Wassermann reaction was negative.

On examination eleven sinuses were found on the scrotum, two of which were discharging pus, and one urine. Condylomatous-like masses were present around the anus, one of which was discharging pus. Lying under the scrotum, in the middle line, a large, hard, irregular mass was felt, fixed to the deeper tissues of the perineum, but not to the pelvis. The inguinal glands were palpable on both sides. The patient had a right inguinal hernia. The urethra was found to be quite impermeable beyond the penile portion. A vertical incision was therefore made in the middle line of the scrotum down on to the hard mass, which was found to consist of a stone, chiefly phosphatic, occupying the dilated urethra, immediately proximal to the complete obliteration met by bougies when examining. The stone weighed 45 grams, and measured 5.25 by 3.5 cm. Beyond the stone the urethra was fully permeable up to the bladder.

Cultures taken from the pus yielded coliform organisms, Gram-positive cocci, and diphtheroid bacilli, but no gonococci.

The patient made an uneventful and satisfactory recovery.

J. MACEWEN,
Surgeon, Royal Infirmary, Glasgow.

ERYTHEMA NODOSUM.

IT may be of interest, following the review of the monograph by Dr. Odery Symes in the *British Medical Journal* of December 29th, 1928 (p. 1180), to report three cases of erythema nodosum which have occurred at this institution during the last two months. It would lead one to suspect that there may be an infective element present in the production of the disease. The two cases of definite erythema nodosum appeared in a class of eighteen patients who were kept apart from the other 1,200 cases in the institution. One nurse, who is in attendance on this special class, has also been under treatment during the last two months for the disease.

The first patient, an idiot girl, aged 13, had an attack of erythema nodosum in May, 1927, which lasted six weeks; node-like swellings were present on both legs. The lesions started on the left leg and later attacked the right one; finally the thighs, buttocks, and arms were affected. The girl has just recovered from another attack which started on November 3rd, 1928; one large patch about the size of a pigeon's egg was present on the extensor aspect of the left leg. The attack was milder and of shorter duration than the former one.

An imbecile boy, aged 11, who had signs suggesting tuberculosis of the lungs, complained of pains in his legs, and was sent to bed on December 18th, 1928, suffering from erythema nodosum. The lesions were first observed in the right leg, and the nodal swellings appeared later on the left one; no indurated areas were visible on the arms or scapular regions.

A nurse, aged 20, complained of pain and aching in the legs, arms, and back on December 18th, 1928; she also had malaise, and there was a tendency to constipation. The indurated patches were first seen on the thighs and buttocks as reddish spots; they later spread to her legs and arms. The attack was acute but of short duration, and she was able to get up on December 25th.

ROBERT MUNRO, M.B., Ch.B.,
Assistant Medical Superintendent, Royal Eastern Counties Institution, Colchester.

Reports of Societies.

POST-OPERATIVE THROMBOSIS.

ON January 18th, with Dr. J. S. FAIRBAIRN in the chair, the Sections of Pathology, Surgery, and Obstetrics of the Royal Society of Medicine combined for a discussion on "Post-operative thrombosis."

Dr. W. HOWEL EVANS discussed the changes in the blood after operation, and in other conditions associated with thrombosis and embolism, in particular parturition, fractures of bones, and acute generalized infections such as pneumonia. Such changes in the blood were only one aspect of a many-sided problem. He devoted himself principally to the question of blood platelets, and gave a series of fifty cases of surgical operations, minor and major, in most of which the platelet count before operation was within normal limits, and, following operation, rose to a maximum by the tenth day, returning to normal within another ten days. The rise began to be marked after an interval of four to six days. The average increase for the whole series was 60 per cent., but while a number—chiefly the trivial cases—showed little or no rise, the major cases showed sometimes a rise of 100 to 150 per cent. A similar sequence was observed after parturition, but in five cases in which Caesarean section was done the platelets began to rise more quickly, and showed an average increase of 200 per cent. During the febrile period of pneumonia the platelets were usually diminished, but following the crisis they began to rise. The platelet reaction appeared, from control observations, to be independent of mere loss of blood, or of confinement to bed, or of anaesthesia, or sepsis. The only apparent common factor of the demonstrated blood changes was tissue injury and the absorption of breakdown products. Such injury was inseparable from surgical procedures, and the blood changes might be regarded as a physiological response.

Mr. D. H. PATEY said that four manifestations of post-operative thrombosis were met with—namely, localized thrombosis, massive pulmonary embolism, minor pulmonary embolism, and latent thrombosis. The first two types were most easily studied, as they were the most readily diagnosed. In considering thrombokinase absorption theories, he described experiments reproducing conditions of tissue juice absorption, which might be presumed to take place in man after operation, and as all these experiments were negative he concluded that this type of theory could not be supported on experimental facts at present. He discussed the role of anatomical and pathological variations in the veins, and in passing said that certain investigations of his own went to negative the idea that the sitting-up position after operation was a factor in the production of post-operative thrombosis by causing kinking and possibly traumatism of the femoral vein. Dr. Howel Evans's work on platelets was a definite advance towards knowledge of the subject, though to establish the theory firmly collateral evidence was required—first, unequivocal proof that splenectomy (following which the platelet rise was most marked) was specially liable to be followed by thrombosis, and secondly, experimental verification. The stasis aspect of the question offered at present the most hopeful side for attack. Measures directed towards the tone of the abdominal wall were much more likely to be successful than efforts to induce movement of an inhibited diaphragm.

Mr. VICTOR BONNEY dealt with three theories of the process. In favour of the bacterial theory was the fact that thrombosis which was obvious either by the clot being palpable or by visible signs of venous blockage was always preceded by fever and local pain. Cases of pulmonary embolism did not usually exhibit these symptoms prior to embolism, though pain and fever occurred afterwards. Embolism was rare when there was prior evidence of thrombosis, suggesting that clots due to, or accompanied by, definite signs of phlebitis were too firmly anchored in the vein to shift easily. Thrombosis, if bacterial, bore no relation, however, to the degree of sepsis in the operation area, being commoner after "clean" operations, such as hysterectomy and shortening of round ligaments, than after operations on pyosalpinx or suppurative appendicitis. The second or toxic theory was unlikely, because there was no knowledge of any toxaemic conditions whose lesions exhibited anomalous distribution; thrombosis was always limited to veins of the lower half of the body, chiefly the legs, and usually the left leg. Toxaemic lesions were generalized. The third theory was that of a haemic process. Little was known about the conditions of increase of the clotting power of blood, but in haemophilia, in which the reverse was the case, lesions were generalized. The balance of evidence was in favour of a bacterial process, but there were difficulties. Thrombosis was far commoner after operations involving the peritoneal cavity, and this was against the theory of a septicaemic lesion, since septicaemia was no more common after operations on the peritoneal cavity than after operations elsewhere. Thrombosis was rare after operations to the uterus via the vagina, seeming to suggest that trauma to the uterus was not a sufficient cause unless there was also trauma to the peritoneum, but against this deduction was post-parturitional

thrombosis. The preference for the left leg pointed to the lesion being due to local infection, but left leg thrombosis occurred after right-sided operations, so that the route of infection was probably not through veins or lymphatics connecting directly with the leg. The period at which symptoms appeared—from the tenth day onwards—was significant; in ordinary infections symptoms appeared in two or three days. Therefore the organism probably did not belong to the group of ordinary septic organisms, whose incubation period was short. It was possible that post-operative thrombosis was due to anaerobic spore infection from the patient's own bowel. *B. coli* appeared in urine after all abdominal sections; organisms, coming from the bowel, found entrance to the urinary tract via the kidney, and probably across the peritoneal cavity. If so, the peritoneal cavity contained free organisms, and these, after operation, might enter the leg by lymphatic conduction. The anatomical relations of the parts on the left side might favour such transmission more than on the right. This would explain why the peritoneal cavity was so often a factor in the sequence leading up to thrombosis, and why the left side was more frequently affected. Such a suggestion, however, failed to explain leg thrombosis after operations on parts like the breast and vagina.

Mr. J. P. LOCKHART-MUMMERY said that this problem was entirely a physiological one, and would never be solved until a great deal more was understood about intravascular clotting. Post-operative thrombosis was far commoner after abdominal operations than after any other kind of operation, and this was due to interference with the abdominal wall. The common period for the occurrence of the post-operative infarct was about the tenth day. The actual thrombus occurred immediately after operation, but by the tenth day the intravascular clot softened and began to move. Mere stasis of blood within the vein did not cause intravascular clotting. Such clotting also did not occur in normal blood. The factors required were stasis *plus* something else, and what that "something else" was remained doubtful; it might be excessive blood platelets or thrombokinase. To some extent stasis in the vein could be prevented, and this appeared to be the only method available at present for averting post-operative infarct.

Dr. F. J. MCCANN said that in the vast majority of these cases the cause was some error of technique on the part of the surgeon or some mistake in after-treatment. It had been said that something must be done to bring the abdominal wall to the diaphragm. What could be done was to diminish the pain which the patient suffered in the abdominal wall. A stitch tied very tightly caused agony, and had an extraordinary influence on diaphragmatic contraction. If the abdominal wall was stitched carefully and the stitches were brought together without constriction, and if haemorrhage was carefully arrested, the patient should have very little pain indeed. One important error was to tie "chunks of tissue" with thick material. The idea surely should be to pick out the isolated vessels and tie them with thin material. In after-treatment the great point was movement from the first. Patients should be allowed to lie in any position they wished provided they were comfortable. Knee pillows should be thrown away. He let patients get up on the seventh day, before the stitches were removed. The contraction of the muscle promoted healing. As a consequence of these precautions, during the last twenty-five years he had not had a single case of pulmonary embolism, either in his hospital or private practice.

Mr. CECIL ROWNTREE said that all surgeons would congratulate Dr. McCann on the great success which had attended his surgical endeavours, although the points he had mentioned were familiar to most surgeons of experience, and they all endeavoured to follow them. It was true, of course, that thrombosis, when it occurred, usually followed operations, but occasionally it followed normal labour. In his experience pulmonary embolism had always been entirely unexpected. If, therefore, a patient was unfortunate enough to get an obvious femoral thrombosis, he felt quite happy about the case, being sure that pulmonary embolism would not ensue. A possible explanation of the occurrence was a mechanical one. There was a marginal clot, coming from the iliac vein, and "waggling about" in the blood stream, becoming detached at some moment and getting into the pulmonary artery. He mentioned some curious cases, which might have been coincidence, or, on the other hand, might have some significance. For example, in two small hospitals at which he had operated for some years, and in which the conditions, at least so far as he was concerned, were exactly the same, a number of these sequels had occurred at one, and none at all at the other. He was trying to discover what differences there might be in nursing, feeding, and so forth.

In some further discussion Dr. TOM HARE gave an account of the examination of the blood of some lambing ewes, in which the platelets followed much the same course after parturition as Dr. Howel Evans had described in the case of human blood. The increase above the normal count reached 140 per cent. Mr. DAVID LEVI exhibited a substance called "heparin," prepared in America, injection of which into blood was said to stop clotting. Dr. W. CRAMER entered into a discussion on the difference between intravascular clotting and thrombosis. Fibrin, he said, was formed by the blood platelets disintegrating, which was an entirely different process from agglutination. Miss FRANCES IVENS had found thrombosis much more likely to occur in pregnancy toxaemias, where organisms were present in large numbers in the urine.

Dr. HOWEL EVANS, *in reply*, took up the point made by Mr. Patey as to the operation of splenectomy, saying that there was some connexion between splenectomy and thrombosis, though he did not think the whole story was yet forthcoming. He had not brought forward the platelet theory as elucidating the problem, but only as one factor.

EPIPHYSEAL INJURIES OF THE WRIST-JOINT.

At a meeting of the Section of Electro-Therapeutics of the Royal Society of Medicine on January 18th Mr. C. THURSTAN HOLLAND read a *paper on epiphyseal injuries* at the wrist.

Mr. Thurstan Holland commenced with a short reference to the development of the bones at the wrist-joint from the point of view of the ossification of the carpal bones and the epiphyses; he pointed out the importance of accurate knowledge as regards this in considering *radiographs* of this region for the diagnosis of injury. He then commented on the statistics in Poland's book on epiphyseal injuries. A comparison was made between these statistics and those which it was now possible to obtain from *x*-ray examinations; and it was remarked that *x* rays here, as in most other fields of *x*-ray observation, had been revolutionary. Poland's statistics, largely drawn from *post-mortem* examination and what must have been somewhat uncertain clinical diagnoses, were shown to be obviously unreliable as a guide to the relative frequency of different epiphyseal injuries. Following this, an analysis was made of injuries to the lower parts of the radius and ulna within two inches of the wrist-joint, as seen in the *x*-ray department of the Liverpool Children's Hospital over a period of seven years, the age limit being 12 years. The statistics showed quite plainly that a backward displacement of the lower radial epiphysis, simple or complicated by other injuries, was by far the commonest lesion, and that, practically, it took the place in children of the Colles fracture in the adult, being brought about by the same kind of trauma. A true Colles fracture under the age of 12 was very rare: Mr. Holland had seen only one case. After this introduction there followed the main part of the paper—namely, the *x*-ray diagnosis of these injuries and the exact meaning of the *x*-ray appearances. It was concluded that in nearly all, if not in all of the cases in which the epiphysis was displaced, there was also a [illegible] This diaphyseal injury was either [illegible] (1) a flake or bone torn off the [illegible] in the direction of the displace[illegible] bone (described by Werenskiold [illegible] the diaphysis opposite to the [illegible] referred to the paper by Werenskiold [illegible] for disagreeing with some of the [illegible] was shown that technical care [illegible] examination to make sure of [illegible]

injury, but Mr. Holland believed that it did occur in all cases in which the epiphysis was definitely displaced. It became an important *x*-ray point in diagnosis (1) in cases in which only an antero-posterior view had been taken; (2) in those cases in which at the time the *x*-ray picture was taken the epiphysis had either slipped back into its normal position or had been induced by manipulation. If this diaphyseal injury was shown radiographically it could only mean that there had been a displacement of the epiphysis, since it could not occur as an injury by itself.

The paper was illustrated by about thirty radiographs, chosen to demonstrate the various points raised.

THE INJECTION TREATMENT OF VARICOSE VEINS.

AT a meeting of the Forfarshire Medical Association at University College, Dundee, on November 22nd, 1928, with the president, Professor J. A. KYNOCH, in the chair, Mr. JOHN TAYLOR read a paper on the injection treatment of varicose veins.

Mr. Taylor gave first a historical account of the method, and mentioned the various solutions employed; he then went on to consider the kinds of cases suitable for the treatment. In the "hose-pipe" variety the veins were tortuous, with sacculations in the thigh and leg, and involvement of the whole saphenous system; in another variety there were bunches of veins in the leg and commencing affection of the lower thigh. These types were found in both sexes. Another common female type was the parous, where the legs were fat and showed only little venous "pouchings" like strings of beads; and lastly, there was the variety with big saccules. Mr. Taylor said that phlebectasis in the lower limb began in general in the deep veins, and deep varices were more common than superficial. He called attention to the fact that Sir Benjamin Brodie's observation of eighty years ago that the venous flow in the saphenous system was reversed when the valves were incompetent had been confirmed by lipiodol injections and *x*-ray examinations. It followed that an embolus would have a tendency to be directed distally and not upwards towards the saphenous opening. In his own clinic he had frequently been able to demonstrate not only that the flow was directed distally in the valveless saphena, but that in some cases it continued so against gravity when the limb was elevated to an angle of 30 degrees. After injection one of three things might happen. In the ideal case the vein walls adhered at once, with immediate and permanent obliteration of the channel. This reaction occurred in various degrees, the least of which was a condition of gradual thrombosis taking three to four days, but with good functional and cosmetic results. Secondly, there might be an extensive reaction in both directions from the site of puncture, with sudden clotting and the ultimate formation of a fibrous cord which might take months to disappear. Thirdly, there might be no reaction at all, but when the injection was repeated a week later an extensive reaction might follow. With regard to leakage it had to be remembered that contractile power in the wall of the dilated vein was lost to such an extent that there was no chance of immediate and complete sealing of the puncture. The injection was rapidly diluted, and it appeared that the solution passed rapidly into the general circulation, for some of the patients tasted quinine a few moments after the injection. Mr. Taylor described how he tried to empty the veins when injecting; the patient had thus to be in the recumbent position; he had always failed to produce clotting in a normal vein with the usual doses. Further information was required concerning the detailed pathological changes in the intima of varicose veins and the reasons why reactions to equal doses in similar cases were so varied, apart from the rate of dilution and rate of injection. He insisted that the injection treatment of varicose veins was not simply the injection of a sclerosing agent into any varicose vein that came under observation. Bad results were undoubtedly occurring, and it was only by an understanding of the conditions and experience of the method that they could diminish therapeutic errors and prevent this treatment from falling into undeserved disrepute.

ULTRA-VIOLET MICROSCOPY.

AT the annual meeting of the Royal Microscopical Society on January 16th Mr. J. E. BARNARD, F.R.S., delivered his presidential address on the subject of microscopy with the aid of ultra-violet radiations, and gave a full description of the construction and manipulation of the elaborate apparatus necessary for this purpose.

Mr. Barnard mentioned that only three outfits of the kind he described were in existence; one was at the Rockefeller Institute in New York, another was at the Imperial College of Science, and the third was in his own laboratory in the institution of the Medical Research Council at Mill Hill. On one occasion he had transported the outfit for the purpose of demonstration, and it was a week before it could be got back into working order; he had resolved never again to remove it from its bed. The first difficulty in ultra-violet microscopy arose from the comparative scarcity of the materials which could be employed; these had to be natural, for artificial glasses and the like were at present of no real service. The first material was quartz, which could be obtained in the crystalline or the fused state. The crystalline form was variable—it might be coloured or colourless, and frequently disclosed impurities such as iron—but fused quartz was still more difficult to use on account of its lack of homogeneity. Another material, fluorite, might be quite useless owing to its fluorescence. In ultra-violet work the objectives were made from fused quartz, the slide on which the object was placed was crystalline quartz, and the cover glass was of fused quartz again. Mr. Barnard said that it would be better, if one could ensure a sufficiently good quartz, to have the slide of fused quartz also, but the difficulties in the way were considerable; the specimens had to be flawless, free from internal stresses and strains, and only small pieces usually could be found to meet these conditions. Another difficulty in the ultra-violet as compared with ordinary microscopy was the source of illumination. The ordinary worker with the microscope did not need to concern himself much about his source of light so long as it furnished sufficient good illumination, but in ultra-violet work the objective so far had been corrected for only one wave-length. It was necessary to use a spark spectrum, most generally of cadmium, on account of its bright line in the ultra-violet region. If the magnesium or zinc spectrum could be used it would in some ways be better, but the arrangement of the bands was not so convenient. The visible focusing was done with the aid of a mercury vapour lamp. The necessity for visible focusing, said Mr. Barnard, was one of the great embarrassments in dealing with the virus type of organism, which was so quickly destroyed by light. The visible focusing having been accomplished, an ingenious mechanism permitted a change over from the glass objective to the quartz objective without any dislocation or variation in the position of the image. An urgent necessity was an objective of higher numerical aperture than it was possible to work with at present. All the materials with which his work was done were of a watery consistency, the medium in which the objects were immersed having a refractive index of about 1.4. A numerical aperture of 1.35 would be a real help; the aperture used was about 1.20. Mr. Barnard added that the selection of photographic plates furnished another difficulty. The most rapid plates were not necessarily the best for ultra-violet work, and panchromatic plates, containing as they did a dye, usually fluorescent, were unsuitable. He used an ordinary plate, coated with a thin layer of paraffin oil, which caused a certain amount of brightening of the lines in the shorter wave-lengths of the spectrum. Mr. Barnard exhibited a few typical results, beginning with what Dr. Carpenter, the authority on the microscope, had called the "torment of microscope makers and rival diatom resolvers," the *Amphipleura pellucida*: he showed how the striations were clearly brought out under the ultra-violet method, whereas with the ordinary microscope they were scarcely visible. He also demonstrated the great enhancement in the structure of the image as the result of the ultra-violet method in the case of various micro-organisms. The results in many cases were certainly much more revealing than anything obtainable by transmitted light.

Reviews.

SIR WILLIAM HAMER ON EPIDEMIOLOGY.

A book by Sir WILLIAM HAMER on epidemiology is a literary event. His scholarly equipment, wide practical experience, and literary charm long since secured for him a high place upon the roll which includes the names of Creighton, Payne, and Greenhill. The Anglo-French Library of Medical and Biological Science could hardly have secured a contributor from this side of the channel with more of the intellectual finesse which appeals to our neighbours. Those who are already familiar with Sir William Hamer's papers and official reports may be a little disappointed that his book is not rather more of a unity and rather less of a compilation than it actually is. The phrase "as I said in the year so-and-so" is not an encouraging conversational gambit; it suggests a bore. Few men have less of the bore in them than Sir William Hamer, though he *does* quote himself rather often. But the quotations are very good, and will be new to most French and some English readers. Another general criticism is that, although the book is called *Epidemiology, Old and New*,[1] one could easily find a more appropriate title. Perhaps a contemporary of Sir William's hero would have entitled the book: "Of Catarrhal Epidemicks and Such as be infestuous to the Brain and Nervous Stock; whereunto are added an Anatomy of that most excellent Physician, Thomas Sydenham (*medicus in omne aevum nobilis*), and divers Animadversions glancing at the Schismaticks vulgarly known as Bacteriologists."

A reader who wishes to understand what is, in the reviewer's opinion, Sir William Hamer's principal contribution to knowledge should begin a first reading on page 52 and read straight on to page 102. He should then pass to page 131 and read the next twenty pages, studying the rest of the book afterwards. The sections cited exhibit the historical setting, as Sir George Newman called it, of epidemic influenzas, old and new, in a most attractive and instructive way. Nobody else, save perhaps Creighton or Dr. Crookshank, could have written those pages at all, and nobody else has so clearly illustrated the idea of a *sequence* of epidemic happenings, so well shown that the historical succession of "diseases" is something more than "a tale told by an idiot, full of sound and fury," and does signify something. This is a considerable achievement, more than enough to justify the existence of the book. If, therefore, the remainder of this notice is critical, that is not because the reviewer is blind to Sir William Hamer's great merits, or presumes to put himself upon an equal footing with so learned an epidemiologist. Still, to be quite candid, one feels that Sir William's sparkling manner often covers essentially confused ideas: that, for instance, much of the gospel according to St. Thomas is mythology, and would have moved that eminent physician Dr. Thomas Sydenham, in spite of his austerity, to hearty laughter. As an example one may take Sir William Hamer's reaction to Freind's criticism of his hero. Freind made the point that although Sydenham *said* the fevers, particularly the continued fevers, of his different constitutions were essentially different and needed different *treatment*, he did in fact treat them all in the same way, and reference to the fourth chapter of Book I, the third of Book III, and the second of Book V of the *Obs. Med.*, where the treatments of the continued fevers of 1661–64, 1667–69, and 1673–75 are laid down, seems to bear out Freind's remark. If there is a difference it has escaped both the reviewer and Sir William Hamer. For this is the way Sir William meets the criticism. He observes that the criticism gives expression to *the* difficulty, that which again and again troubled Sydenham himself. He goes on to say that in the dedicatory epistle to the third edition of *Obs. Med.* Sydenham expressly mentioned that his growing experience of fevers had shown him that in thinking, in earlier days, that he could forge "a Delphic sword, in the shape of some *methodus medendi*, which should meet all cases" he had been wrong. This reply is, surely, a classical example of *ignoratio elenchi*. The very point of Freind's criticism is that Sydenham's quite dogmatic statement (which Freind quotes) about the fevers of different constitutions requiring utterly different treatments is inserted (according to Greenhill) for the first time in the edition of 1676, but Sydenham does *not* give in this latest edition any indication of how he varied his treatment. Since nobody supposes that Sydenham, who was a great physician, would conceal an important rule of practice, Freind, like a sensible man, concluded that Sydenham's speculations about epidemic constitutions did not influence his conduct as a practitioner of medicine. It might perhaps be added that when Sydenham changed his opinion as to the epidemiological nature of the winter fever of 1679—a matter to which Sir William Hamer devotes much praise—he did not change his treatment. His recommendation in the postscript to the tractate on dropsy, when he thought the fever was an intercurrent, is identically the same with his recommendation in the monitory schedule when he had satisfied himself that it was a genuine "stationary fever."

There is, of course, an answer to Freind's criticism, but it is an answer which Sir William Hamer, in the role of hagiologist, is estopped from giving—namely, that in the famous Section 3 of Chapter II, Book I, of the 1676 edition of *Obs. Med.* Sydenham is displaying a confusion of thought. Surely fevers might be epidemiologically distinct and yet clinically identical. Water-borne typhoid and fly-borne typhoid are epidemiologically different, but the clinical treatment of the *patients* might well be the same. One could give many other instances of what seems illogical reasoning—for instance, the whimsical notion that the discovery of ultramicroscopical viruses is, in some mysterious way, a point against bacteriologists—but it would be ungrateful to end upon a discordant note. It may be that Sir William has found more genius and prescience in Thomas Sydenham than were really there, but respect for the mighty dead is not so common an attitude that we can afford to speak lightly of it. *Maxima reverentia*, no doubt, *debetur pueris*. But it will do the *pueri* no harm to see that a man who has played a great part in the sanitary administration of London of the twentieth century loves and reverences as his master a London practitioner of medicine who actually moved and had his being before even the Medical Department of the Privy Council came into existence.

M. G.

[1] *Epidemiology, Old and New.* By Sir William Hamer, M.D., F.R.C.P. The Anglo-French Library of Medical and Biological Science. London: Kegan Paul, Trench, Trubner and Co., Ltd. 1928. (8½ × 5½, pp. x + 180; illustrated. 9s. net.)

FEVER, CLIMATE, AND HORMONES.

It is a trite observation that the avenues to knowledge are strange and not to be predicted. We ask of Nature a definite question, and how often she answers by asking another! The obstinate inquirer who will not be deflected from his chosen path is dismayed, but happy is he who is content to give experiment its head. *Fever, Heat Regulation, Climate, and the Thyroid-Adrenal Apparatus*[2] is the embracing title of a volume in which Dr. W. CRAMER describes his investigations over many years along paths which may be traced back to an intended inquiry into the problem of cancer. The goal he set up was not attained, but the author's peregrinations were not mere idling. They led him to some definite and quite fascinating conclusions upon the diverse subjects indicated in the title.

Dr. Cramer's thesis may be briefly summarized: "With the exception of respiration, all the factors concerned in the heat regulation of warm-blooded animals are under the direct control of the sympathetic nervous system, and, therefore, subject to control by the functional activity of the thyroid and adrenal glands." The sympathetic system controls heat production through its effects upon metabolism, while it controls heat loss by the opposed effects upon the cutaneous vessels and the sweat glands. It follows that stimulation of the sympathetic by increasing heat production and restricting its dissipation produces a type of fever. It is argued that the stimulation of the thyroid-adrenal apparatus by toxins may be the physiological basis for the fevers of bacterial origin. The argument extends

[2] *Fever, Heat Regulation, Climate, and the Thyroid-Adrenal Apparatus.* By W. Cramer, Ph.D., D.Sc., M.R.C.S. London: Longmans, Green and Co., Ltd. 1928. (Med. 8vo, pp. ix + 153, 45 plates, 11 figures. 15s. net.)

... theory of the effects of climate upon man. ... to the invigorates us because it stimulates the ... and the appropriate endocrine organs. In a ... we are lethargic because this stimulus ... These views have all the merits of compact ... Their place in the body of physiological ... we shall be better able to assess when certain ... of the theory have been more rigorously ...

... investigations upon which these views have been ... depend to a great degree upon the author's histo- ... method for following the functional activity of ... gland. The principle employed is that of fixing and ... the adrenaline granules in the gland by means of ... acid vapour. Dr. Cramer believes that this method ... "direct and conclusive evidence of the actual process ... secretion of adrenaline from the medulla into the blood ...." Since his argument is chemical it is proper to ... that what osmic acid identifies is "reducing sub- ..." not, specifically, adrenaline. If it can be estab- ... that adrenaline is the only significant constituent of ... adrenal medulla which can reduce osmic acid, then the ... do become "direct and conclusive." As long as ... doubt the author's interpretation of the histo- ... investigations must remain inferential, though it ... highly plausible.

ARCHITECTURE OF THE CEREBRAL CORTEX.

STANDARD works of descriptive histology covering each the ... ground will continue to appear and to supersede one ... other so long as our methods of investigation continually ... In his monograph on the cellular structure of ... cerebral cortex Professor CONSTANTIN VON ECONOMO ... a better account of the results arrived at ... with Dr. Koskinas embodied in their monu- ... atlas, of which this is essentially an abridged ... and to which the author intends that it should ... an introduction. It brings the results of this ... detailed research within the reach of those, prob- ... the majority, for whom the atlas with its formid- ... price of £30 is an unhoped-for possession. This ... with its condensed mass of purely descriptive ..., depends for its usefulness upon rigid ... and clearness of outline, and while the ... have found, the latter might well have been ... emphasized. Since Baillarger differen- ... the transverse section of the cortex into a series ... and granular layers many investigators have ... and amplified the work, begun already by Meynert ... sixties, of dividing up the cortex into superficial ... delimited by the characteristic distribution of these ... layers: Hammarberg, Campbell, Elliot Smith, ... Brodmann, and many others have contributed to the ... in this field, successively dividing and again sub- ... the territory until the present author finds no ... than 109 different areas require individual descrip- ... It is obvious that this process of division, based ... careful mensuration of areas and volumes, may be ... continued indefinitely, and that until the physiology of ... cortex has advanced sufficiently for us to interpret and ... the contribution of anatomists, our knowledge will ... furthered rather by the suggestive integration of various ... functional components than by the analysis of innumerable ... isolated elements. This work of analysis seems here ... to be the modern microscopic technique applied with ... infinite patience and unrivalled skill can afford. ... of functional interpretation is left to the physio- ... who will conjure up cortical mechanisms ... which the more wary anatomist will ...

... English translation of these lectures by Professor ... on the microscopic anatomy of the cerebral cortex ... prepared by Dr. S. PARKER for the benefit ... English-speaking medical public, with a short ... preface by the author. The material is grouped in twelve chapters, with a short bibliography and a comprehensive index. The numerous photomicrographs which accompany the text are very well reproduced on excellent paper.

X RAYS IN UROLOGY.

VOLUME VII of *Annals of Roentgenology*,[5] edited by Dr. JAMES T. CASE, is devoted to the subject of urological roentgenology. The authors are Dr. HUGH YOUNG, clinical professor of urology at the Johns Hopkins University, and Dr. CHARLES WATERS, instructor in clinical roentgenology at the same university. In their preface they call attention to the fact that the great progress made in the last ten years in the diagnosis of urinary conditions is to a very considerable extent due to improvements in methods of *x*-ray examination. Previously *x* rays in urology were limited to the diagnosis of calculi. With the introduction of opaque solutions to delineate the contour of the bladder, renal pelvis, ureters, and urethra, vast new possibilities were opened up. The authors' object in writing the present volume is to interest the radiologist in the multiple problems of the urologist and to supply a large number of *x*-ray photographs, with their clinical histories attached, so that radiologists and urologists alike may have a store on which to draw and with which to compare cases coming under their own care. The opening chapter deals with equipment, and especially with different models of combined *x*-ray and cystoscopic tables. In Chapter II an account is given of the topography, anatomy, and physiology of the urinary tract. The remainder of the work is devoted to abnormalities and pathological conditions of the kidneys, ureters, and bladder. At the beginning of each chapter is a brief summary of the pathology of the conditions dealt with, and this is followed by a number of excellent radiograms illustrating these conditions, together with their case-sheets. By this method both surgeon and *x*-ray expert are able to obtain a more intimate knowledge of each other's problems. It is unnecessary to say that drawing, as the authors do, on the resources of the Johns Hopkins University and of the Brady Urological Institute, there is a wealth of material such as is at the disposition of few other writers. Moreover, no expense has been spared in the reproduction of the radiograms. Although the price that must be charged for such a volume will set a limit to the number of buyers, it will undoubtedly be of the greatest use to all surgeons and radiologists dealing extensively with genito-urinary conditions.

METABOLISM OF TUMOURS.

REFERENCE has already been made in these columns (December 11th, 1926, p. 1124) to Professor WARBURG's work on the metabolism of tumours.[6] A translation of the work has been included in the Nouvelle Collection Scientifique, issued by the Libraire Felix Alcan, with the addition of a chapter in which the author gives a summary of his views on the cancer problem. He considers that there is no specific excitant of cancer, and that, among possible causes, micro-organisms are not in a majority. For him the problem is one of cellular physiology, and he approaches it by attempting to distinguish the characteristics of cancerous as compared with normal metabolism. To this end he has compared the differences exhibited by the two tissues in regard to the functions of fermentation and tissue-respiration. He finds that cancerous tissue exhibits the lactic fermentation, while in ordinary circumstances normal tissues do not. Lactic fermentation, however, becomes manifest in the latter under asphyxial conditions, and it is found that the lactic fermentation of cancerous tissue is about ten times more abundant than in resting normal tissue under asphyxial conditions, but is quantitatively identical with that in normal proliferating (embryonic) tissue under those conditions. The characteristic of

[5] *Annals of Roentgenology.* Edited by James T. Case, M.D. Volume VII: Urological Roentgenology. By Hugh H. Young, M.D., and Charles A. Waters, M.D. New York: P. B. Hoeber, Inc. 1928. (8 × 11, pp. xiv + 499; 518 figures, 1 plate. 20 dollars net.)

[6] *Metabolisme Cellulaire et Métabolisme des Tumeurs.* Publié par Otto Warburg. Traduits par E. Aubel et L. Genevois. Tome i et Tome ii. Nouvelle Collection ... Paris: F. Alcan. 1928. (Cr. 8vo, Tome i, pp. viii + 233, ... figures; Tome ii, pp. 217, 25 figures. 30 fr. the volume.)

cancerous metabolism, therefore, as regards the two functions in question, is that the tissue-respiration is so far altered that it fails to eliminate the normal ferment action in proliferating cells. Among the agents which have the power of altering the respiration in this elective manner is arsenic, and the following experiments with that agent are cited by Warburg in support of his observations: Carrel treated chicken embryos with arsenic and other poisons, and on injecting them into fowls produced sarcomas; A. Fischer treated a culture of embryo spleen with arsenic, and found that the cells behaved under culture like cancer cells, and on injecting them into fowls produced sarcomas. In both experiments the malignant cells exhibited an intense fermentation. According to Warburg the cause of cancer resides in the anaerobic component of the metabolism of normal cells in process of proliferation, and in the fact that this component is more resistant to lesions than the respiratory component. The proliferative activity of cancer cells thus receives an explanation, but the destructive tendency on the surrounding tissues remains unexplained. Warburg suggests that the lactic acid resulting from the fermentation may perhaps render the tissues more vulnerable.

THE DIAGNOSIS OF SPINAL DISEASE.

THE book of DRS. OUDARD, HESNARD, and COUREAUD, with an introduction by Professor SICARD, on diagnosis in affections of the vertebral column in the adult[7] is highly specialized, for, as its title implies, its 250 pages are devoted to the symptomatology and diagnosis of spinal disease, without any reference to pathology or treatment. The exclusion of disease in children and adolescents narrows the field still more. The authors are officers of the French marine medical service and professors of the naval medical school at Toulon. Professor Sicard of the Necker Hospital in Paris points out that new means of diagnosis have of late years been discovered which to a great extent supersede the tactus eruditus and the experienced eye and mind of the surgeon of past generations. These means are x rays, lumbar and sacral puncture, and analysis of the cerebrospinal fluid, and injection of lipiodol, followed by radiological examinations with screen and plate. The application of these various measures is fully described, and stress is laid on their importance, somewhat to the neglect of methods that have been proved by time. Epidural as well as intrathecal injections are discussed, and the method of carrying them out described, especially the technique of injection into the lower part of the sacral canal, where there is no risk of injuring nerve trunks. Injuries of vertebrae, such as crush fractures, are dismissed very perfunctorily, the authors' chief interest being evidently in inflammatory and infective affections. Spondylitis from various causes, or supposed causes, osteomyelitis, neoplasms, syphilis, and congenital malformations are briefly discussed, and there is a chapter on spondylitis ankylosans or Leri's disease, and on rhizomelic spondylitis or the Strümpell-Marie disease. There is no index to this book, and the defect is not compensated by the table of contents, which is not at all full, and lacking in some page references.

A NEW TRANSLATION OF "DE MOTU CORDIS."

THE tercentenary of the publication of Harvey's *Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus* was celebrated in the United States, as in this country, by special commemorative meetings in a number of the chief medical centres—Philadelphia, New York, Baltimore, and Boston—and now a permanent historical milestone has been erected by Dr. CHAUNCEY D. LEAKE, professor of pharmacology in the University of California, in the form of a new translation[8] of the masterpiece in the language and spirit of the present day. The translation, which is preceded by a facsimile of the original (1628) edition, has been suitably but not excessively supplemented by critical footnotes containing references to biographical details and modern physiological knowledge. In a postscript Professor Leake says that, so far as he can find out, his is the third attempt to translate Harvey's classic into English, the other two being an apparently anonymous effort prefaced by Zachariah Wood of Rotterdam and printed in 1653, and Robert Willis's well-known translation in 1847. In Mr. Geoffrey Keynes's *Bibliography of the Writings of William Harvey, M.D.* (which Professor Leake, writing in June, 1928, would not have seen), there is a note of the translation made in 1832–33 by Dr. Michael Ryan, editor of the London *Medical and Surgical Journal*, in which it appeared. Our readers will remember that the 1653 translation was beautifully reproduced by the Nonesuch Press last year; as Mr. Keynes points out, it included "a poem on the death of the author seven years before he died, a grim, if unintentional, jest which Harvey no doubt knew how to appreciate." The present translation was in the first instance made from the miserably printed Longhine edition of 1697, of which the only copy Mr. Keynes could trace is in the library of the College of Physicians of Philadelphia; subsequently Professor Leake was enabled to collate this with a facsimile of the original edition and so to make corrections in his translation. The text is in good English and the reproduction of the illustrations and the general get-up of the volume are correspondingly satisfactory.

NOTES ON BOOKS.

WE reviewed the first edition of *Gould's Medical Dictionary*[9] in its present form in September, 1926. Its popularity and success is vouched for by the fact that it was sold out five months before this edition could be got ready. The 76,000 words of the first edition have been increased in the second to 85,000, and it has 125 more pages. The publishers properly draw attention to the fact that the tables of micro-organisms have been increased in number from seventeen to sixty-eight, into which all the names have been collected. Other additions are a table of operations, a physician's and veterinarian's dosage table, and a diet table. Were we to attempt to go through the 1,522 pages of this volume in search of corrigenda our notice would hardly be ready in time for the appearance of the next edition In reviewing the first we mentioned a few entries which we thought needed amendment. We are flattered to find that nearly all our suggestions have been adopted, though Glisson's sling is still absent and love-sickness is still defined as erotomania, and Houston and Allingham still hold the pride of place denied to Paget and Hutchinson. This is a great dictionary of medical terms, in quality as well as quantity. Whether the time has not come, or is not at least approaching, when the burden of the editor, publisher, and reader should be lightened by jettisoning the most ancient and archaic words in the vessel before its successor is launched, must be a question for careful consideration, as is a like problem in our larger public libraries.

In preparing the second edition of his *Physiotherapy in General Practice*,[10] the first edition of which was reviewed in these columns on November 21st, 1925, Dr. E. BELLIS CLAYTON has taken the opportunity to revise the work as a whole, and to enlarge it by including sections on the uses and administration of ultra-violet radiation, radiant heat, diathermy, and other forms of electrical treatment. The work is intended to guide the doctor in the selection of appropriate physiotherapeutic devices, and the masseuse who will administer them under his direction. Treatment by massage, movements, exercises, heat, light, and electricity are described, and some account is given of the indications for their use in diseases of the various systems. The book is clearly written, and on the whole the descriptions of treatment are sufficiently detailed; but the section on ultra-violet radiation would be improved by the inclusion of some account of the conditions contra-indicating its use. The only contraindication mentioned by the author is tuberculosis.

[7] *Le Diagnostic dans les Affections de la Colonne Vertébrale (chez l'adulte).* Par P. Oudard, A. Hesnard, et H. Coureaud. Préface du Professeur Sicard. Paris: Masson et Cie. 1928. (Med. 8vo, pp. 256; 75 figures. 36 fr.)

[8] *Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus.* By William Harvey, M.D., with an English Translation and Annotations by Chauncey D. Leake, Professor of Pharmacology, University of California. Tercentennial edition. London: Baillière, Tindall and Cox. 1928. (Roy. 8vo, pp. xii + 228; 10 illustrations. 16s. net.)

[9] *Gould's Medical Dictionary.* By George M. Gould, M.D. Second edition, revised and enlarged. Edited by R. J. E. Scott, F.C.L., M.D. London: H. K. Lewis and Co., Ltd. 1928. (Imp. 8vo, pp. xv. – 1522. 30s. net.)

[10] *Physiotherapy in General Practice.* By E. Bellis Clayton, M.B., B.Ch.Cantab. Second edition. London: Baillière, Tindall and Cox. 1928. (Demy 8vo. pp. x – 251; 50 figures. 12s. 6d. net.)

The seventh edition of Dr. RICHARD SUTTON'S textbook on *Diseases of the Skin*[11] is now before us, and bears convincing testimony to the popularity which it enjoys, more particularly in America. Like other textbooks, it has grown with its subject—to such a size, indeed, that it has been found impossible to contain it within a single volume. Consequently, like other less complicated organisms, it has increased by fission, and there are now two volumes. This is a distinct advantage, and makes the book much easier to handle. Apart from this, all the old excellences and characteristics are maintained. Dr. Sutton and his efficient assistants have brought the present edition well up to date, and we have sought in vain to find some serious omission. The printing, illustrations, and general turn-out are also good.

We have perused a book on *Pharmaceutical and Medical Chemistry*,[12] by SADTLER, COBLENTZ, and HOSTMANN. It contains an introduction to the study of chemistry, and deals chiefly (as the title implies) with drugs and medicaments. It also treats of general chemistry to the usual extent found in books of its kind. This voluminous book contains much information of practical value, some of it presented in a discursive, almost voluble, form, and some of it abrupt, if not fragmentary. The introductory part is not wholly satisfactory; it seems to have been written with more haste to set down facts than to illuminate them. Otherwise the facts are generally adequate for the needs the book is intended to serve, and the volume will be a useful aid in studying the chemistry of drugs.

A somewhat remarkable booklet by Dr. DENIS MULDER, director of the medical *x*-ray institute in Bandoeng (Java), in which the text is in English and in German (each page being divided longitudinally, is entitled *Total X-Fotos*.[13] Essentially it is a plea for long-distance radiography, but the author is not satisfied with the usual three metres used for so-called tele-radiography, and has taken radiographs at distances of from eight to ten metres. Profusely illustrated as it is by *x*-ray photographs of various kinds of things, such as flowers, shells, etc., perhaps the most interesting pictures are those of complete human beings, taken by one exposure on either a single film *plus* intensifying screens, or on a series of films and screens elaborately joined up together. The author is obviously an enthusiast who has spared neither time nor expense, and some of his results are really wonderful, even if not so useful as his enthusiasm leads him to believe. Radiographs of the entire human body—the living body—taken at a distance of ten metres from tube to film, and this without damaging the tube, appear to be unique, and are very interesting.

The Traveller's Pocket Reference[14] to the "XXth Century Health and Pleasure Resorts of Europe" is published by the Anglo-Continental and International Offices, and contains hints to travellers, maps, and information about the chief Continental countries which attract those in search of recreation or better health. It is of a convenient size for the pocket, and includes an up-to-date list of hotels, pensions, schools, and medical establishments. From the same offices also has been received a pamphlet[15] giving an illustrated list of medical and balneological establishments and cure resorts on the Continent.

Among the publications of the Church of England Zenana Missionary Society are stories illustrating medical work in India. *Some Women of Sindh*,[16] by Dr. RUTH WESTERN, describes something of the lives and thoughts of patients admitted into the hospitals at Sukkur and Larkana. Their fatalism is shown by the story of an attempt at general vaccination during a small-pox epidemic. The opinion in the bazaars was: "What is the use of trying to interfere with fate? If it is written that our children will get small-pox, no doubt they will get it; if not, they will escape." A child with convulsions had been treated by the local barber with a strong counter-irritant over a fontanelle. The result was a permanently bald spot; but the parents imputed no blame, for after all "man can only apply treatment, and leave the result to fate." There is pathos in the story of the mother who lost her child through small-pox, and was surprised at the distress of the hospital doctors, who had known the child a long time; she did not expect strangers to care. And the custom by which women have to give the eldest son all that he wants was useful when a small boy insisted on remaining in the hospital, from which his mother wished unwisely to remove him. In Dr. ETHEL BLEAKLEY'S *A Country Doctor in Bengal*[17] the miserable condition of the childless wife or widow in India is emphasized. She attributes many cases of blindness to constant weeping at mournings for the loss of husband and children.

[11] *Diseases of the Skin.* By Richard L. Sutton, M.D., etc. In two volumes. Seventh edition, revised and enlarged. London: H. Kimpton. 1928. (Roy. 8vo, vol. I, pp. 654, 506 figures, 5 plates, vol. II. pp. 740, 731 figures, 6 plates. 52s. 6d. net the two volumes.)

[12] *Pharmaceutical and Medical Chemistry.* By Samuel P. Sadtler, Ph.D., LL.D., V. Coblentz, Ph.D., F.C.S., and Jeannot Hostmann, Ph.G. Sixth edition, revised and rewritten by Freeman P. Stroup, Ph.M. London: J. B. Lippincott Company. (Med. 8vo, pp. xv + 748, 31 figures. 32s. net.)

[13] *Total X-Fotos.* By Dr. Denis Mulder Bandoeng, Java, and The Hague, Holland: G. C. T. van Dorp and Co. (9½ × 12½, pp. 61; 38 figures. 7s. 6d.)

[14] *The Traveller's Pocket Reference.* London and Lausanne: Anglo-Continental and International Offices. 1928. (Fcap. 8vo, pp. 198. 1s.)

[15] *XXth Century Health and Pleasure Resorts of Europe.* Part IV: Medical and Balneological Establishments and Cure Resorts on the Continent.

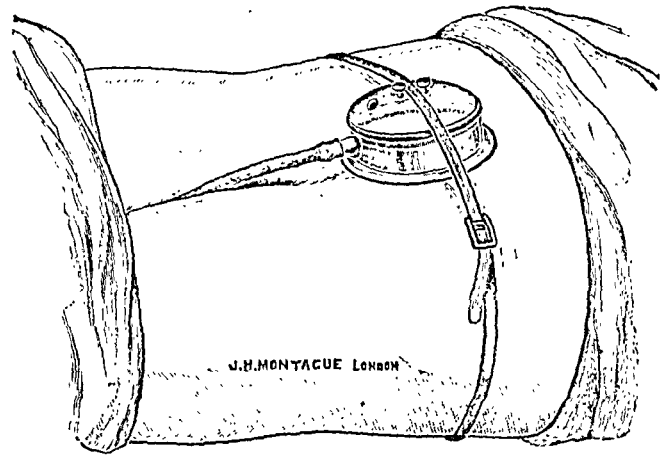
[16] *Some Women of Sindh in Home and Hospital.* By R. H. Western, M.D., B.S. London: Church of England Zenana Missionary Society. 1928. (Cr. 8vo, pp. 155; illustrated. 2s. net.)

[17] *A Country Doctor in Bengal.* By Ethel Bleakley, M.B., Ch.B.Manch. London: Church of England Zenana Missionary Society. 1928. (Cr. 8vo, pp. 72; illustrated. 1s. net.)

PREPARATIONS AND APPLIANCES.

AN IMPROVED BOX FOR USE AFTER SUPRAPUBIC CYSTOTOMY.

MR. SYDNEY G. MACDONALD, F.R.C.S. (London, W.), writes: The new box is an improvement on the old Hamilton Irving box; this is wrong mechanically, consisting as it does of an oval box which has to adjust itself to a convex or concave surface. To this end it is held by four straps, which can never maintain an equal tension, for with each movement the patient



tightens one at the expense of the rest, thus causing displacement of the box and leakage. The new box consists of a section of a sphere fixed at its top central point (by a single band of half-inch elastic) so that pressure is distributed equally to every part of the rim. Thus with every movement of the patient the sphere of the rim adjusts itself mechanically to the convex (or concave) surface of the abdomen. The boxes are made for me by J. H. Montague, 69, New Bond Street, London, W.

A PORTABLE ELECTRO-CARDIOGRAPH.

A portable electro-cardiograph was shown for the first time by the Cambridge Instrument Company, Ltd. (Grosvenor Place, S.W.), at the recent exhibition of the Physical and Optical Societies at South Kensington. It was claimed for this apparatus that its sensitivity was such that the records were comparable with those of the standard Einthoven galvanometer, over which it had the advantage in compactness and lightness. A novel form of camera, daylight loading, is used for taking films, which are wrapped around the cylindrical holes and exposed in three sections in the ordinary way. The operation of the camera and a small automatic time-marker is effected by depressing and releasing a button switch. The time-marker rules a line on the record at each twenty-fifth of a second, and a heavier line at each fifth.

BELTS AND CORSETS.

We have received from Salt and Son, Limited, of Birmingham, a catalogue of their surgical belts and corsets. This firm is one which does not approach the public direct, but advertises only to the medical profession, and makes surgical appliances to the prescription of the practitioner. A feature of the catalogue is the excellent descriptive illustrations, which are designed to bring out the points on which the makers desire precise information and measurement in the prescriptions forwarded. A large range of supports for abdominal and other conditions is provided.

THE X-RAY DARK-ROOM.

In our review of the trade exhibition at the Cardiff Annual Meeting we drew special attention to the "Metalix" portable *x*-ray apparatus shown by Philips Lamps, Ltd. (Charing Cross Road, W.C.), which was one of the outstanding exhibits. We have now received a pamphlet containing details of the necessary equipment to enable the radiologist using this tube to carry out the development of his own *x*-ray films with the minimum of trouble.

A NEW SALICYLIC ESTER.

We are asked to state that the new salicylic ester—"S.E.D." (Morson)—to which reference was made by Dr. A. Gordon Watson on December 22nd, 1928 (p. 1143), may be had from Messrs. Steele and Marsh, chemists, 6, Milsom Street, Bath.

British Medical Journal.

SATURDAY, JANUARY 26TH, 1929.

MILK AND THE RATE OF GROWTH OF CHILDREN.

ABOUT a year ago there was published in the *British Medical Journal*, and discussed in a leading article, a report on the influence of milk on the rate of growth of school children. This report, which was prepared by Dr. J. B. Orr, chairman of the Research Committee of the Scottish Milk and Health Association, set forth the results of an investigation carried out at the instance of a committee under the chairmanship of Sir Leslie Mackenzie of the Scottish Board of Health, the cost of the inquiry being defrayed by a grant made by the Empire Marketing Board to the Rowett Research Institute, Aberdeen. At the time of issue the preliminary nature of this report was emphasized, since it had been determined to repeat the tests before formulating a definite opinion. Nevertheless, the data emerging appeared to Dr. Orr to warrant a forecast that at the close of the further series of investigations it would be found, when all checks had been applied, that there were adequate grounds for the conclusion that the addition of milk to the dietary of school children leads to a greater rate of growth, as manifested by an increase of height and weight; that this increase is accompanied by an improvement in the general condition of the children; and that separated milk has a high efficiency as a growth-producing food.

A second preliminary report on the subject, made on this occasion, in the absence of Dr. Orr abroad, by Dr. Gerald Leighton, now of the Department of Health for Scotland, contains an account of the further tests which have been employed. The full text, with tables, appeared in our issue of January 5th at page 23. The total number of children investigated was 1,425. The centres at which the tests were made were Peterhead, Aberdeen, Dundee, Edinburgh, Glasgow, Greenock, and Belfast; the ages of the subjects were 13 to 14, 9 to 10, and 6 to 7. At each centre the children were placed in four groups, of which the first received whole milk, the second separated milk, and the third a biscuit ration of the caloric value of the separated milk. The fourth group had no addition to its diet, and acted as a control. The daily milk ration was one pint for the ages 13 to 14 and 9 to 10, and three-quarters of a pint for the age 6 to 7. At two of the centres the whole milk was certified, and at the remainder pasteurized. The separated milk was machine-skimmed. The period of the inquiry was from November, 1927, to June, 1928. Milk samples were tested at the Rowett Research Institute. The average fat content of the whole milk was 3.85 per cent., of the separated milk 0.33 per cent. At all age groups jointly the milk-rationed children—taking the whole-milk and the separated-milk groups together—increased in height by an average of 1.4585 inches, and the non-milk-rationed children by an average of 1.1810 inches, giving a difference in favour of the milk-rationed children of 0.2775 inch. The milk-rationed children increased in weight by an average of 3.5776 lb., and the non-milk-rationed by an average of 2.4610 lb., a difference in favour of the milk-rationed children of 1.1166 lb. These differences in the average increase of height and weight brought out by the further tests were more in favour of the milk-rationed children than the corresponding differences of the earlier report, which were 0.258 inch and 0.643 lb., mainly, it would appear, on account of the fact that in the earlier report the average increase of height and weight of the non-milk-rationed were relatively larger. It seems rather a pity that in the report percentages have been introduced with the view of interpreting these differences; they may convey to the mind of the casual reader an exaggerated impression of the magnitude of the quantities. Contrasting the four dietetic groups with one another under the three age periods it is seen that in every case the milk-rationed children are ahead of the biscuit-rationed and the controls. The greatest increase of height was found in the 6 to 7 year milk-rationed group. The greatest increase of weight was in the 13 to 14 year separated-milk group.

An outstanding feature of the second preliminary report is the test carried out in order to ascertain the effect of reversing the position of certain groups of the earlier inquiry. The following examples indicate the method and the results obtained. A group of 5 to 6 year children, who in 1927 received separated milk, with an average height increase of 1.500 inch and an average weight increase of 2.407 lb., were put on biscuits in 1928. Their height increase fell to 1.351 inch and their weight increase to 2.212 lb. Another group of 5 to 6 year children, who in 1927 had biscuits, with an average height increase of 1.101 inch and an average weight increase of 2.234 lb., were put on separated milk in 1928. Their height increase rose to 1 454 inch and their weight increase to 2.237 lb. In addition to changes for the better, like the above, which can be measured and weighed, the milk-rationed children improved in condition. The report states that they acquired a sleek appearance, that their hair was glossy, their nails were smooth, and their spirits high. Teachers and janitors found them more difficult to manage than the biscuit-fed and the control cases; this agrees with the observation in the leading article of a year ago that the aggressive races of the world have usually been milk consumers.

The second report bears out the forecast made in its predecessor, strengthening the claims of milk to be accounted a primary factor in the nutrition and growth of children. Much administrative effort is focused to-day on producing a cleaner milk; the problem of securing a more copious use of milk, especially by children, is of even greater importance. The clean milk movement is self-commended and merits cordial support, but it is no disparagement to suggest that more disease may be occasioned by the lack of milk than by the consumption of milk that is lacking in cleanliness.

AMERICAN IDEALS IN MEDICAL EDUCATION.

IN North America, where last year no fewer than 11,000 individuals tried to become medical students, the keen interest in medical education took practical form in the establishment in 1925 of a carefully chosen commission on this subject, under the chairmanship of President A. Lawrence Lowell of Harvard. The Commission issued its first report in 1927, of which a notice appeared in the *Journal* of May 28th, 1927 (p. 979), and it now provides, free of charge to those interested in these educational problems, a third but not final report.[1] This deals with the three divisions of pre-medical education, the teaching of the medical sciences (physics, chemistry, biology, human anatomy,

[1] *Third Report of the Commission on Medical Education.* Pp. 75. October, 1928. Office, 215, Whitney Avenue, New Haven, Conn.

and physiology), and clinical training, for each of which a special committee was appointed. The report is divided into two parts, and has several appendixes. In the first part the principles underlying these various branches are set out, and in the second part each subject is further discussed and amplified; in order to save time and repetition the two parts will be briefly considered together.

With the changing opinion attendant on progress and investigation of the problem, medical education is in America rapidly becoming recognized as one of the most important forms of higher education, and not an isolated problem of professional training. Further, the conception of the right line of general education is to encourage independent thought, individuality, and self-development. As even with a four-years college course a student may find it difficult to satisfy the specific requirements of the best medical schools, and at the same time to secure a good general education, it is important that the medical schools should not require from the entrants more than a grounding in the fundamentals of physics, chemistry, and biology. The instruction in these basic sciences provided in the college courses is not, however, always that best adapted for the future medical student. Much of the inorganic chemistry thus has commercial applications, a large part of organic chemistry is concerned with dyes and similar industries, physics is closely connected with engineering, and biology is not specially taught in its relation to the human organism. The laboratory work is regarded by the Commission as excessive, being too much directed to manipulative training at the expense of general principles. Mathematics and the rudiments of psychology are becoming more essential parts of the pre-medical instruction. Emphasis is laid on the axiom that though clinical medicine may not be a science, the basic sciences form not only its foundation but its scaffolding, and again and again the Commission urges the importance of allowing and encouraging students to think for themselves so as to acquire the intellectual equipment necessary for their future independent professional life. Sir Squire Sprigge, in his account of a recent visit to representative medical teaching centres in America, notes "how great a stress is laid in the United States upon the amount of time the student spends upon the various subjects of study, a stress that is entailed by the absence of a general system of examinations as we understand examinations in this country."[2]

The teaching in human anatomy, biochemistry, and physiology is criticized as being too much occupied, in the early stages, with a mass of detail, much of which, the Commission suggests, might be postponed until the student is engaged on neurology, orthopaedics, or other special clinical branches. This change would both shorten the period of preliminary scientific study and help to correlate the scientific and clinical subjects. With regard to this correlation between scientific and clinical instruction, the point is made that this should not be carried to the extent of "spoon-feeding," as one of the most important features in his training is that the student should work out many of these correlations for himself. The essential teaching in pathology, a subject on the borderland between the medical sciences and clinical instruction, is usually correlated with practical medicine by clinico-pathological conferences, and is becoming more experimental as distinguished from purely structural.

Clinical training begins by an extension of the scientific course, and the student should have free time to return to the basic sciences and expand his knowledge of them at the points where they bear directly on clinical problems. The changing character of medical practice in North America cannot be disregarded when considering the most suitable arrangement of the clinical training. We confess to some surprise in hearing that as many as 40 per cent. of recent graduates specialize, half of these without any experience at all of general practice; it is therefore highly desirable that a broad, comprehensive education and a resident appointment should be provided. More than once in the course of this report the Commission insists that the unit of medical and clinical study is the patient and not the disease, and that the student should accordingly gain an insight into the social, psychological, economic, and other aspects of human life and its environment. It is satisfactory to gather that the generally accepted opinion favours post-graduate training for specialists. Like Sir George Newman, the Commission considers that the ideal of preventive medicine should permeate teaching during the whole period of clinical instruction; but at present ordinary medical teachers, even if they are alive to this duty, are scarcely fitted to undertake it, and until this is altered there seems small prospect of instilling into the student's mind the much-needed general idea that prevention is a real and daily duty of the practitioner of medicine.

This report shows the deep and thoughtful interest taken in the difficult problems of medical education by the medical teachers of the United States. Among the points most prominently brought out are the Commissioners' anxiety to avoid the mass production of standardized medical men and women, and the stress they lay on securing individual treatment for all medical students and encouraging their self-development in every way possible.

[2] Lancet, Supplement, January 5th, 1929.

PARATYPHOID BACILLI IN SEWAGE.

THE task of tracking down the source of infection in an epidemic of intestinal disease may perhaps be simplified in the future. Dr. Allan Gray, whose paper appears at p. 142, has shown that it is possible for the bacteriologist to isolate paratyphoid bacilli from sewage, and has succeeded in proving the presence of these bacteria in some tributary sewers and their absence in others. He has not carried his investigations far enough to discover the source of the pathogenic germs, but probably they were derived from a carrier in a locality from which the sewer drained. In the event of an outbreak of paratyphoid fever in a large community with a water-carriage system of sewage disposal it might be possible to localize the source of the infection by systematic bacteriological examination of the leading sewers and their tributaries. Of course, in considering the significance of the paratyphoid-enteritidis group of bacilli, disease of animals as well as of man must be kept in mind. In this large and not very clearly defined group of bacilli there are some which cause disease in man only, others in animals only, and some in both man and animals. There are, however, refinements in bacteriological technique which allow these different types to be distinguished in most cases. There is nothing surprising in the announcement that paratyphoid bacilli are present in sewage, since it is likely that a carrier or two of paratyphoid lurks in every community. What is surprising is that Dr. Gray should have succeeded in separating out the pathogenic germs from the host of non-pathogenic. This achievement points to a useful advance in bacteriological technique, but unfortunately Dr. Gray does not give us sufficient information to decide which is the most profitable method to adopt in the search

for paratyphoid bacilli. His results seem to have been rather inconsistent, perhaps owing to the irregular distribution of paratyphoid bacilli in the material he was studying. It is to be hoped that if he pursues his investigations and gains a larger experience he will be able to give more definite guidance on this point. The presence of typhoid and paratyphoid bacilli in the underground currents of sewage need not cause any such uneasiness as did the recent gas explosions in the underground subways of Holborn. No danger is threatened by these germs provided the sewers are watertight and the sewage disposed of without risking contamination of the water supply. Pathogenic bacteria quickly disappear from sewage. Adapted to a different climate and diet, they quickly drop out of the race when competing with the hardy microscopic population of the sewage farm.

ELECTROCUTION FROM ULTRA-VIOLET RAY LAMP.

A CASE is reported in which a young man was found dead in a bath, with an ultra-violet ray lamp beside him. Death was attributed to shock, and an electrical expert, who examined the lamp at the request of the coroner, gave evidence to the effect that there were five ways in which an electric shock might have been sustained from the apparatus. The deceased had purchased the lamp in order to treat himself for blackheads on the back of the neck, and the makers had supplied a book of instructions. About this book the coroner remarked that it appeared to be a "puff," suggesting that the apparatus would cure every disease that mortal flesh is heir to, and that it gave no adequate warning of the dangers which might attend the use of the lamp when connected to a house current of 230 volts. It was stated that the lamp was of faulty construction, and that the insulating material used in it was very inefficient. In commenting lately on a case of electrocution in the *x*-ray room (December 29th, 1928, p. 1186), we suggested that the time had come when some further legislative action might be taken to ensure that electrical apparatus offered for sale should conform to a certain standard of safety, such is now exacted in the case of many other articles—for example, the cylinders used in storing compressed gases. Nearly all electro-medical apparatus is protected by patent, and it should not be difficult, when specifications are submitted for the granting of a patent, to have these examined with reference to the safety of the proposed device. Another question raised by this unfortunate accident is whether there should not be some kind of control over the sale to the general public of such a dangerous appliance as an ultra-violet ray lamp. We have frequently pointed out the dangers which may follow improper use of these rays. It must be remembered that the mercury vapour lamp produces rays which are absent from the solar spectrum, and to which, therefore, the human body is unaccustomed; these rays have been shown to have a powerful action in setting up chemical changes in the body cells; the nature of these changes has not yet been fully investigated. Sunlight at sea-level contains less than 2 per cent. of ultra-violet light, whereas the Kromayer lamp emits nearly 50 per cent. of such radiation. It is therefore very misleading to assert, as do the makers of some lamps on the market, that such lamps supply sunlight; they emit, as a matter of fact, a different kind of radiation, the effects of which may be very different from those following exposure to the sun. The experience of many workers in the past few years has established ultra-violet radiation as a valuable therapeutic agent; but, like most other methods of treatment, it has its definite indications and contraindications, and its effects depend largely on the technique employed. The subject is much too complicated to be adequately compressed into a booklet given away with every machine sold, or to be understood without special knowledge both of medicine and of electricity. There is, indeed, grave danger of serious harm being done, and a useful method of treatment brought into disrepute, if it is carried out otherwise than under the supervision of persons properly qualified to administer it. In a recent case in France a masseur was prosecuted and fined heavily for giving ultra-violet ray treatment, the court taking the view that he was not qualified to do so except under medical supervision. The French Council of Public Hygiene has declared that such treatment should be given only in hospital services and by specialist physicians, while in the United States the Council of Physical Therapy has drawn attention to the danger of the promiscuous sale of ultra-violet ray lamps to the general public. At the last Annual Meeting of the British Medical Association a strong plea was put forward for the establishment of a register of persons qualified in electrotherapeutics; this would at least afford the public an opportunity of distinguishing between those who have been properly trained to do certain skilled work and that vague and dangerous class of individuals who set out to do similar work without such training. We understand that a move in this direction has already been made.

CONSERVATIVE TREATMENT OF APPENDICITIS IN RURAL AREAS.

"SHOULD the treatment of appendicitis in the country be surgical or medical?" This question, it will be remembered,[1] was raised by Dr. N. Nissen in the journal of the Danish Medical Association, *Ugeskrift for Laeger*, for August 23rd, 1928. His conclusion was, in brief, that in a country district, far from a hospital, it is wiser to keep the patient absolutely quiet in bed, starved, and given periodic doses of morphine, than to send him in a cold and jolting ambulance to a hospital for operation, and he added that during twenty years of practice he had treated some four-score patients on these lines without a fatality. As was to be expected, his challenge to surgery was not left unanswered, and for the rest of the year the correspondence columns of *Ugeskrift for Laeger* have borne eloquent testimony to the interest, not to say passion, which this topic is capable of arousing. One factor calculated to raise the temperature of this discussion is the interest taken in it by the general public. Denmark is a small and highly civilized country where the layman looks over the shoulder of the doctor as he writes; and, Dr. Nissen's paper being commented on freely in the lay press, the readers thereof were not slow to appreciate its import. One of the correspondents in *Ugeskrift*, an exasperated surgeon, wrote that during the last few days he had seen two patients suffering from well-defined appendicitis, and in need (so he thought) of an operation. They had both asked to be given conservative treatment according to the new system which was capable of curing appendicitis without an operation and without risk. Smiling, they had supported their requests for immunity from operation with the suggestion that a conservative treatment which was feasible in the country might conceivably be so in a town also. This question was the subject of a lively discussion in *Ugeskrift* also in 1910, and when it was debated two years ago in the Medical Society of Copenhagen one speaker, a hospital surgeon, insisted that the doctor who indulged in conservative treatment of appendicitis was guilty of malpractice to such a degree that his [illegible] should be taken from him. One of the contributors to the present discussion points out that since the question was raised in 1910 there has been a tendency to treat many more patients conservatively. But of the advantages of this treatment he is far from being convinced. While all are agreed as to the comparative

[1] *British Medical Journal*, September 22nd, 1928, p. 532.

safety of an operation *à froid*, the best means to reduce the mortality of appendicitis in the acute stage remained, in his opinion, debatable; and the aspect he wished to emphasize was the psychological one—the influence of the emotions on the peristaltic movements of the gut provoked by fear of an operation. The aid of statistics was, of course, invoked on both sides, but one correspondent argued that it must be considered impossible for general practitioners to combine in producing statistics which will be generally accepted. But is he right? Dr. Nissen's paper has already encouraged two other Danish general practitioners to commit to print the records of their cases of appendicitis treated almost entirely on conservative lines and with remarkably few fatalities. Of the statistics already available one correspondent, a surgeon, quoted those of Reedel and Sahli, showing a mortality of 10 to 13 per cent. for medical treatment. On the other hand, in Sweden, where the efforts of Lennander and Bauer in favour of immediate hospitalization and operative treatment have favoured this procedure to the almost complete exclusion of conservative treatment at home, the combined statistics of all the hospitals have shown a mortality of only 2.5 per cent. The correspondent himself, L. Kraft, had treated in Denmark during the past ten years 1,529 cases of appendicitis on surgical lines with a mortality of 4.6 per cent. (71 deaths). On the other hand, Dr. Nissen, replying to Kraft's statistical attack, carried the war into the enemy's country with the calculation that in about 20 per cent. of all operated cases the appendix proves to be perfectly healthy—an argument which would have little force were anaesthesia *plus* a laparotomy devoid of all danger. In a correspondence such as this it is interesting to note the contrast between the outlook of the country general practitioner and that of the hospital surgeon.

RESTLESSNESS IN INFANCY.

A RESTLESS baby may be suffering from indigestion or from an unfastened safety-pin, and such common causes are generally first considered. At the annual meeting of the American Medical Association last year, however, in a discussion[1] before the section on diseases of children, Dr. Hyman S. Lippman considered restlessness in a much more scientific manner. Restlessness is one of the symptoms of the hypertonic baby who is "hyperactive, fussy, and restless, cries most of the time, vomits considerably, and has frequent loose stools." The cause of this hypertonicity is not known, but it appears that modern views favour either "congenital imbalance of the autonomic nervous system" or some unsettling factor in the post-natal environment, such as feeding or the emotional attitudes of the parents. Lippman has studied a group of 63 infants with an average age of 7 weeks. In this group the gain in weight was less than in a control group of normal children; vomiting and diarrhoea were frequent, and restlessness and crying occurred in 82 per cent. during the day and in 51 per cent. during the night. Holding to the essential nervous origin of these cases, he used atropine almost entirely as his therapeutic agent. The infants were observed, with a few exceptions, for one to two weeks before treatment with atropine was instituted. During this preliminary period various other measures were tried, including change of diet, complementary feedings, temporary removal from the breast, holding the infant over the shoulder to relieve air-swallowing, and keeping the infant in a quiet, darkened room away from visitors. Fifty-nine of the experimental group were then given atropine, beginning with half-drop doses of a 1 in 1,000 solution of atropine sulphate ten minutes before feeding. All precautions were taken to ensure the potency of the drug, and in 44 of the infants definite improvement was noted. In 24 of these the response was so prompt and the relief of symptoms so complete that Dr. Lippman is convinced that the drug acted as a specific. In 9 cases it was decided to check the value of the medication by omitting the drug, and in 7 of these the original symptoms returned, while in the remaining 2 the atropine appeared to have effected a cure. The length of time that the atropine must be used varies for each infant. Five infants were relieved within two or three days, but in most instances it was necessary to give the drug for a week at least, and if no relief had been obtained the dosage was increased. Eleven of the 63 infants failed to show any improvement with the use of atropine, and in these it was believed that other factors were present, of which the most important was air-swallowing due to restlessness while at the breast. Lippman points out that restlessness in infancy often leads to emotional difficulties in the older child, and he stresses the importance of the correct balance of the autonomic nervous system from the earliest days of life. His views command respect, but it also seems important, when concentrating on vagus nerve endings, not to forget the uncomfortable napkin or tight binder.

[1] *Journ. Amer. Med. Assoc.*, December 15th, 1928, p. 1848.

PAIN.

THE symptom of pain, which in clinical medicine and surgery is so important an aid in making a diagnosis, is peculiar in that it cannot be directly observed or measured. No norm exists whereby the pain of one patient may be compared in kind or in severity with that of another; even the existence of pain, except when it is unhappily the datum of one's own consciousness, must be inferred from the presence of concomitant phenomena, which themselves, however, are not pain. Most people know what toothache is like, but who can tell whether his own particular toothache is more or less severe than that of another? It may be argued that the reaction to pain is a trustworthy index of its quality or of its intensity, but one may well question whether the person who makes the greatest fuss is necessarily suffering the most. It used to be said that before the days of surgical anaesthesia in a certain hospital which ministered to people of various races, it was the labouring Irishman and the Jew who made the most noise on the operating table. Neither race was supposed to lack endurance, but it was held that the Hebrew cried out through fear that if he failed to attract full attention he might miss some of the benefits of hospital care; while the Irishman called loudly upon God and the saints, and wept and groaned, because he was an emotional being to whose nature the repression of feeling, whether pleasant or painful, was foreign. Neither was a coward, but the one had learnt the bitter lessons of persecution, and the other lacked adequate psychological inhibitions. Consideration of the moral significance or value of pain—a subject on which a member of our profession, James Hinton, wrote a memorable work, *The Mystery of Pain*—belongs to the domain of metaphysics and theology, but we who are devoted to natural philosophy may well be concerned with pain in its physiological and pathological aspects. It seems obvious that the pain following a breach of continuity or injury to the cutaneous outpost of the body is one of the expedients of a highly evolved protective mechanism. When the epidermis is penetrated and the true skin outraged the cutaneous terminations of protopathic nerves flash out the message of danger, and the consequent reflex muscular action results in the withdrawal and protection of the part from further injury. Here the biological value of painful stimuli to the organism is obvious, but only too often pain, even excruciating and persistent pain, appears to subserve no such protective function. Interesting in this connexion is the pain from

the exposed pulp of a carious tooth. What useful purpose does it serve? It may, and does, stimulate the sufferer to seek the dentist's help, but this expedient was probably not available to Neanderthal man, and was certainly not to the orang-outang. Yet both these creatures suffered from dental caries. Again, what use is a pain in the shoulder-blade to a man with a disordered liver? How does the agony of biliary colic help the sufferer to overcome the obstruction in his gall-duct? How, indeed, was prehistoric man helped by referred pains to obtain relief from the various morbid states associated with them? The teleologist might perhaps argue that the association of pain in a given skin area with disease of a viscus having the same segmental nerve supply is a protective provision, designed to enable the surgeon to arrive at a correct diagnosis. But of what use were such pains in the days before Head demonstrated the connexion between them and disease in deeper organs?

VARIATIONS IN WORK DONE UNDER TUBERCULOSIS SCHEMES.

THE circulation by the Ministry of Health of an analysis (Memo. 131 A/T.) of the work done in 1927 under tuberculosis schemes in England should be of considerable value to local authorities, providing them with standards which will enable them and their officers to estimate the efficiency and economy of the services they provide. It is perhaps unfortunate that the document presents a somewhat forbidding aspect to those who dislike figures, consisting mainly, as it does, of tabular information relating to about 160 local authorities with details, grouped under no fewer than forty-two headings. Before this serried mass of figures many will no doubt quail, but it is to be hoped that at least those directly associated with the administration of tuberculosis schemes will scrutinize the figures relating to their own areas and compare them with others. The value of such compilations is that they furnish opportunities for self-criticism, and enable those engaged in tuberculosis work in one area to form a clear idea of what is being done elsewhere. It is impossible to offer a summary of the matter contained in the memorandum, but a few examples will serve to indicate the nature of the questions it raises. In connexion with dispensary work the table shows that the number of contacts examined by the tuberculosis officer per 100 deaths from tuberculosis was in one county 585 and in another only 23, while for all county councils (excluding London) and joint committees the figure was 104, and for England as a whole 116. Clearly such a wide divergence from the mean as is given by the county figures calls for some explanation; there are evidently very considerable differences in the extent of the service provided. It is possible that both schemes err—one in carrying the practice beyond what is necessary, and therefore being over-costly, and the other in failing to develop an important feature of the work. Possibly, also, differences in local conditions may provide a complete explanation, but on the facts given this does not appear likely. To quote a further example, the number of cases on the dispensary registers per 100 cases on the notification registers at the end of 1927 was 58 for all England; for particular areas the figures range from 15 in a metropolitan borough to 98 in a North of England county borough. These figures show the proportion of the total tuberculous population in each area which was dealt with under the tuberculosis scheme, and here again the differences between one district and another are impressive. Even wider differences are shown in the figures given as an index to the extent of co-ordination in the work of tuberculosis officers and insurance practitioners in the domiciliary treatment of insured persons suffering from tuberculosis. The number of reports received on Form G.P. 36 per 100 patients on domiciliary treatment varied from 0 to 586. In connexion with institutional treatment particulars are given of the number of patients treated (excluding observation cases) per 100 tuberculosis deaths; for all county councils (excluding London) and joint committees the figure is 106, for all county borough councils (except those included in joint committees) it is 157, for London it is 114, and for all England 119. In two areas the proportion is as low as 40, and in one it is as high as 557. It is not suggested that the figures given, or those from which they have been selected, in themselves afford ground for condemning certain local authorities as backward or extravagant, or for praising others as progressive and efficient. The surprising differences in the figures do, however, show conclusively that the development of tuberculosis schemes has been very uneven, and the extent of the variations in the work done makes it equally obvious that in many areas the service is far from complete.

LEPROSY IN MEXICO.

THE Public Health Department of the Republic of Mexico has recently issued a report[1] containing the results of the first census of leprosy to be taken in that country, edited by Dr. Jesús González Urueña, a well-known dermatologist. The statistics are based on the replies received to questionaries sent out to all the medical practitioners throughout Mexico, as well as to the governor of each State. The points on which information was desired were the number of cases in the various States, the character of the disease, and the age, sex, birthplace, present habitation, environment, and civil state of the patients. The results of the inquiry in each of the States are given according to their alphabetical order. It is admitted that the statistics are by no means so complete as they would have been in a more civilized country, partly because out of the 2,756 doctors circularized only 1,406 sent any replies, and partly because some districts were entirely without doctors. The total number of lepers returned amounted to 1,450, or one for every 4,797 inhabitants, a figure probably not reached by any European nation, excepting Norway, with an incidence of one leper for every 4,266 inhabitants, and in America only exceeded by Colombia, Dutch Guiana, and Brazil. The largest number of cases were returned from the State of Jalisco, which contained 202, while Tlaxcala, the smallest of all the States, was the only one entirely free from the disease. In Mexico, as in other countries, leprosy shows a ubiquitous distribution. It is found not only in tropical climates, such as that of Yucatan, but also in temperate and cold zones, such as the Federal District and the States of Guanajuato, Jalisco, Michoacan, and Coahuila. In conclusion, we may add, for the benefit of those not familiar with Spanish, that Dr. Urueña's report contains a coloured map showing the distribution of cases throughout the country.

DANGERS OF COD-LIVER OIL.

THE knowledge widely disseminated among the public of scientific work on nutritional disorders has led to much administration of cod-liver oil without the agency or control of the doctor. Many parents believe that the larger the dose and the longer it is continued the better for the child. The work of Agduhr on the toxic changes produced in experimental animals with doses of cod-liver oil per kilogram of body weight corresponding to or even less than those not infrequently employed for children has already been mentioned in these columns.[2] Following upon this work Dr. N. Malmberg has recently published[3]

[1] *Primer Censo de la Lepra.* Mexico: Departamento de Salubridad Publica. 1927. (Pp. 565.)

[2] *British Medical Journal*, 1928, i. 639.

[3] *Acta Pediatrica*, viii, Fasc. 3, December 22nd, 1928, p. 364.

his findings in two cases of young infants dying after cod-liver oil medication. One of these was a premature baby who from the time of birth until death at the age of 4 months was in a hospital, where the diet and general care were under constant supervision. A weakly child at first, it appeared to thrive for a time, and then died without any obvious or acute symptoms except generalized oedema and debility during the last three weeks of life. It received half a teaspoonful of cod-liver oil twice daily until the age of 6 weeks, and then a teaspoonful twice daily until death. Histological examination of the heart showed atrophy and different forms of degeneration, even to the point of necrosis of the muscular cells. The changes agreed in a striking manner with those experimentally produced in animals by Agduhr, and to check the results Malmberg examined the cardiac muscle of other premature children without finding any such changes. In a second case, also a premature baby, the presence of a spina bifida with paralysis in the lower limbs and incontinence of urine made the outlook hopeless from the start, so cod-liver oil was given in large doses until the death of the child on the sixteenth day of life from urinary tract infection. Histological examination of the heart showed simple atrophy of the muscle cells with areas of sarcolysis and vacuolar degeneration. In both cases it is possible that terminal infection might have been responsible for the striking changes in the heart muscle, but such marked atrophy and even secondary replacement of connective tissue as was present appear to rule out any terminal change of short duration. The prematurity of both infants is also a matter of comment, for Agduhr showed that animals varied greatly in their susceptibility, and it is possible that there may be an intolerance of cod-liver oil in some infants. It is admittedly a difficult matter to determine with any degree of accuracy the minimum dosage of cod-liver oil necessary to prevent rickets in different children, and it is, moreover, uncertain whether the vitamin or something else in the oil is responsible for the pathological changes. Is it possible, for example, that contributing to the toxic symptoms was a ketosis produced by excessive fat feeding, and that similar results might have been obtained by feeding with fats other than cod-liver oil? Dr. A. A. Osman, in a paper on debility in children, published in our present issue (p. 150), suggests that many cases of so-called debility in children are due to ketosis, and curable by adding to the diet adequate quantities of glucose. It would seem to follow that treatment of such cases with cod-liver oil, by tending to increase the ketosis, might exacerbate rather than relieve the existing symptoms. Agduhr suggested from his work that even purified antirachitic extracts of cod-liver oil were not without danger; but the interpretation of his results must remain in doubt until control experiments have been carried out with each of the constituents of cod-liver oil separately. At present, however, the lesson of his experimental findings and the pathological findings in infants reported by Malmberg is that cod-liver oil is a potent substance for good or evil, and that its use as a medicament needs careful supervision.

FERNAND WIDAL.

PROFESSOR FERNAND WIDAL of Paris, whose death was announced in our last issue, was born at Dellys in Algeria on March 9th, 1862, the son of a medical inspector of the French army and director of the health service of the 19th Army Corps. He was educated in Paris, where he gained the gold medal in the examination for the *internat*, and later was awarded the Osiris prize conjointly with the late Professor Chantemesse. He was first appointed professor of pathology, and subsequently, on the death of Professor Dieulafoy in 1911, professor of clinical medicine in the Paris faculty. His discovery of bacterial agglutination and its application to the diagnosis of typhoid fever was published in 1896, and his work on the treatment of Bright's disease in 1906. Since the war he had paid special attention to the study of functional tests of the liver and of asthma, anaphylaxis, and kindred subjects. He was author of articles on infectious diseases in the *Traité de Médecine* of Bouchard and Brissaud (1899), and was co-editor, with Professors G. H. Roger and P. J. Teissier, of a *Nouveau Traité de Médecine*, of which twenty-two volumes have appeared, and to which he contributed, in collaboration with other writers, the articles on typhoid and paratyphoid fevers, affections of the kidneys, and haemoglobinuria. Professor Widal was elected a member of the Académie de Médecine in 1906, and of the Académie des Sciences in 1919, honorary Fellow of the Royal Society of Medicine in 1921, and foreign member of the Royal Swedish Academy of Medicine in 1922.

THE Metropolitan Counties Branch of the British Medical Association has arranged a meeting, to be held at the British Medical Association House, Tavistock Square, W.C.1, on Friday, February 15th, to which all fourth and fifth year medical students and recently qualified medical practitioners are invited. Tea and coffee will be served at 5 p.m., and at 5.30 Dr. Ronald Cove-Smith will give an address entitled "Some gaps in the medical curriculum and how we can fill them."

THE KING'S ILLNESS.

IF last week we could write with some optimism of His Majesty's progress, optimism is still more justified now. It is true that in the intervening days there has been no dramatic change in the general condition; rapid improvement was not anticipated, and its absence in no way alters our view that at last a more favourable prognosis may be made. Since December 28th the outstanding fact is that there has not been even a hint of a setback, while every now and then His Majesty's medical advisers have felt themselves justified in recording some slight, though definite, change for the better. When we look back to the period when almost every authoritative medical statement enjoined an anxiety that was only too justified by the critical nature of the illness and the state of the patient, when for days at a time hope was difficult to sustain, we can contemplate the present with deep-felt thankfulness.

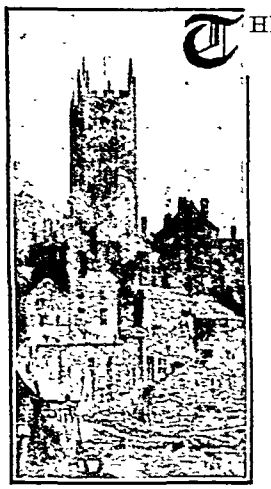
We have said that there has been no dramatic improvement in the general condition; but this is true only if one measures the day-to-day increments of improvement. Who, knowing the nature of His Majesty's illness, and aware of the usual prognosis in a general streptococcal infection complicated by broncho-pneumonia and empyema, could have ventured to predict at the onset that in eight or nine weeks the patient would be fit to be moved to the sea coast? One has but to compare the bulletin of to-day with those of a few weeks ago to realize how striking the improvement has been. Only the combination of a sound constitution, the will to live, and perfectly co-ordinated medical care could have achieved this. All danger of setback is not yet over, but we dare to hope that at last the tide has turned definitely in His Majesty's favour, and that the latest measures adopted in his treatment will bring the stage of convalescence appreciably nearer

NINETY-SEVENTH ANNUAL MEETING

of the

British Medical Association,

MANCHESTER, 1929.



THE COLLEGIATE CHURCH, MANCHESTER.

THE ninety-seventh Annual Meeting of the British Medical Association will be held in Manchester next summer under the presidency of Mr. Arthur H. Burgess, F.R.C.S., Professor of Clinical Surgery in the University of Manchester, who will deliver his address to the Association on the evening of Tuesday, July 23rd. The sectional meetings for scientific and clinical work will be held, as usual, on the three following days, the morning sessions being given up to discussions and the reading of papers, and the afternoons to demonstrations. The Annual Representative Meeting, for the transaction of medico-political business, will begin on the previous Friday, July 19th, at 9.30 a.m. The preliminary arrangements for the work of the nineteen Scientific Sections have been made by a special committee, consisting partly of Manchester representatives and partly of members appointed by the Council of the Association. The names of the officers of Sections were given in the *Supplement* of January 12th, and further details of the arrangements for the Annual Meeting will appear in later issues. During the week, and in particular on the last day of the meeting (Saturday, July 27th), there will be excursions to places of interest in the North-West of England. The British Medical Association has met four times at Manchester—in 1836, in 1854, in 1877, and again in 1902. We publish below the second of a series of descriptive and historical notes on Manchester and neighbourhood written for the occasion. The first article appeared on December 1st (p. 1003).

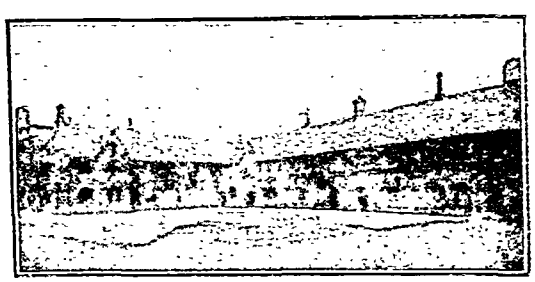
HISTORY OF MANCHESTER.

BY

E. M. BROCKBANK, M.D., F.R.C.P.

MANCHESTER owes its prominence in the industrial world to its position on the slopes of the Pennine Hills as they run towards the western coast and the Atlantic Ocean. Its original situation was at the junction of two rivers, the larger being the Irwell, into which ran the smaller Irk, now entirely hidden by extensive culverting. Both streams arise in the high lands and drain an area of what was once an extensive tract of bog, forest, and waste lands.

There is a high outcrop of red sandstone rock in the angle of the confluence of Irk and Irwell, and it was at this spot that the original settlement was formed, the manor house of Manchester was built, and from which the town subsequently developed. The river angle was further protected by an artificial ditch, traces of which still remain in basements of the buildings over its site. The Manchester Cathedral and the Chetham Hospital and the Grammar School have occupied the angle of the river junction since their foundation. The site was of great importance because of its water supply and because it commanded the agricultural land and roads of the foothills which intervened between the Pennines and the very extensive boggy lands south-west of the town, which constituted what are known as Carrington and Chat Mosses, referred to in Harrison Ainsworth's novel *Guy Fawkes*, which has some of its action in this district, and over which George Stephenson had such difficulty in making a track to bear the Manchester and Liverpool Railway.



CHETHAM'S HOSPITAL AND LIBRARY.

Such a position as that called by them "Mancunium" attracted the Romans because of its defensibility and because it commanded important roads. It was on their direct line of march between their headquarters at Deva (Chester) and Eboracum (York); from it a road ran to Coccium (Wigan), which was on the main Roman north road, just as it is now on the main L.M.S. railway line to Scotland; and another road to Bremetennacum (Ribchester), an important Roman centre in North Lancashire, on the high road from Mancunium to Lugdu-vallum (Carlisle). The Roman camp was, however, a mile lower down stream, at the junction of Medlock and Irwell, a district called Alport, again a position well elevated above the rivers. The only trace of the camp now remaining is a small part of a wall, which is protected by the city from further injury. The site of the camp is still known as Castlefield.

The earliest mention of the town in reputable history occurs in the *Anglo-Saxon Chronicle*, 923. When Edward the Elder was reconquering Mercia from the Danes he sent a detachment of troops to Mameceaster to repair and man it. The rock site in the junction of Irk and Irwell was also a desirable place because the Irwell was there fordable by the Sal ford. The expulsion of the Danes forms the subject of one of the Ford Madox Brown panels in the Town Hall, which illustrates some incidents in our history.

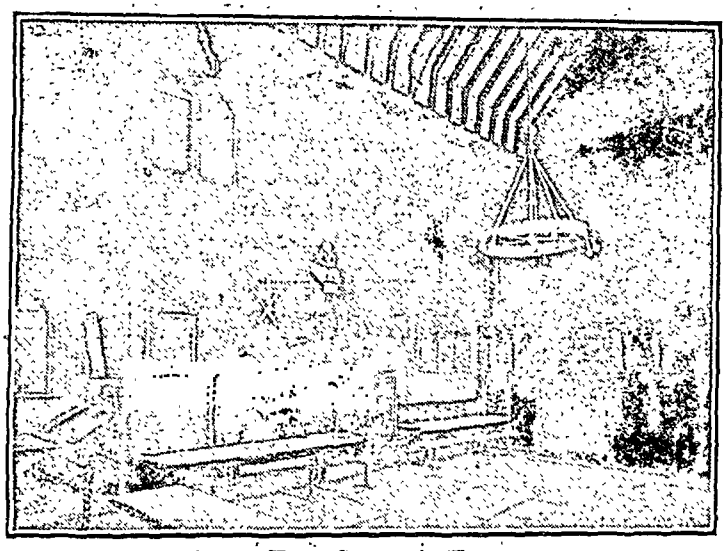
Mameceaster and Salford are referred to briefly in Domesday Book: "King Edward held Salford. There are

three hides and twelve carucates of waste land. There is a forest three leagues long and the same broad. There are many hays [enclosures] and an aerie of hawks there." "The Church of St. Mary and the Church of St. Michael hold in Mamecestre one ploughland free from all burdens save Danegeld." The Church of St. Mary, the earliest church in the neighbourhood, was a wooden building occupying the site of the present Cathedral. St. Michael's Church is at Ashton-under-Lyne, which was then in the parish of Manchester.

A century or two later Manchester is recorded as having aeries of hawks and eagles and a heronry in the woods in the Roman camp district, where, alas! nowadays we can only show rookeries, and treeless ones.

In the days of Edward the Confessor, before Domesday Book time, Manchester formed part of what was then the royal manor of Salford, which was the centre of a great hundred of Salford, 350 miles square, afterwards often called Salfordshire, which composed the whole of the basin of the Irwell and its tributaries. Salford County Court circuit still includes Radcliffe, Bury, Rochdale, Oldham, and Bolton in its jurisdiction. This hundred and other extensive lands between the Mersey and the Ribble were granted as royal demesne to Roger the Poitevin by William the Conqueror.

The township of Salford, though on the right bank of the Irwell, lay in the ecclesiastical parish of Manchester, and before the Crown grant to Roger the Poitevin the King's manor house at Salford had been the civil centre of the district which had St. Mary's Church on the left bank of the river for its ecclesiastical centre. It was in the eleventh century that the town charter was received (and not in the fourteenth century, as my former sketch of the relations of the two towns suggested), and during Roger's tenure that the great part of the parish on left bank of the river, with the exception of Broughton, was cut off from Salford demesne and given as a manor to an under-tenant in return for military service. Roger retained Salford in demesne, and it has since been held by the Sovereign as part of the Duchy of Lancaster. The reigning Sovereign is therefore lord or lady of the manor of Salford, and the Crown is thus toasted in Salford by royal permission. Professor Tait, from whose most interesting work on mediaeval Manchester much of my history is taken (as shamelessly as Homer is said by a soldier critic to have obtained what he thought he might require), says: "Thus a stroke of a Norman baron's pen divorced Manchester and Salford in all but their devotions, and what he sundered no one has been able to bring together again."



DINING HALL, CHETHAM'S HOSPITAL.

Manchester thus became a barony, and the first baron about whom anything definite is known was Albert Grellet, or Gresley, said to be a favourite of Roger the Poitevin. The manor house, as before mentioned, was built on the safe angle of Irk and Irwell junction. Grellet's name appears in Domesday Book as Albertus Greslet. The name Greslet was probably an instance of Norman love for giving distinctive names from some personal appearance, or behaviour, complimentary or otherwise, many of which, as Professor Tait tells us, are to be found in Domesday Book. Some of these were retained as surnames; for instance, "The Fair" became Blount or Blunt, and amongst the Earls of Cheshire, Hugh Lupus (the Wolf) and Randle Gernons (Mustachios). In humbler circles such names as William (not George), who cannot tell a lie (spernens mendacium), appear. Greslet had probably such an origin, and may have meant spotted or pock-marked, or slim of figure.

The Grelleys were absentee landlords, living on their Lincolnshire estate, and the great-grandson of the first Robert married a niece of William Longchamp, Richard I's Chancellor, and Regent during the King's absence. He joined the barons in extorting the Magna Charta from King John, and suffered forfeiture in consequence. However, there was a certain amount of balancing of accounts later, because it was in the Abbey at Swineshead, on the Lincolnshire estates of the Grelleys, that John had his surfeit of peaches and beer which caused his death.

The last of the Grelleys gave a town charter to Manchester in 1301, with power, amongst other things, to elect a burgess to the honourable position as head of the community; it was merely a confirmation of existing privileges. The town adopted the crest of the Grelleys on its armorial bearings. Salford had previously received its charter in 1231. The Grelley line died out in 1311, and the manor rights passed into the possession of relations and others until they were sold in 1596 for £3,500 to Sir Nicholas Mosley, a Manchester man, but a merchant and thrice Lord Mayor of London. The manor rights remained with the Mosleys until 1845, when they were purchased by the Corporation of Manchester for £200,000. Our Mosley Street is a reminder of these lords of the manor.

Thomas de la Warre, who married Joan Grelley and owned the manor, was rector of Manchester. He was much concerned with the inadequacy of the clerical staff in the huge parish covering 350 square miles, so, in 1421, he obtained royal licence to substitute a college of a warden and eight clerical fellows for the rector, and the church became collegiate. The clergy lived for a century on the site of the old Barons Hall, in the building which was subsequently purchased in 1654 by the will of Humphrey Chetham, a Manchester cotton merchant. Chetham then endowed the old hall to become the first public free library in England and as a hospital for the maintenance and education of forty poor boys, a purpose which it still nobly fills in its almost unchanged, mediaeval form. The boys, now numbering one hundred, are still to be seen in their original blue coat costumes.

Another foundation for education in the Irwell-Irk angle adjoining the Chetham Hospital was the Manchester Grammar School. Founded in 1515 by Hugh Oldham, a Manchester man, then Bishop of Exeter, it is one of the oldest public schools in England. Oldham was a close friend of Bishop Foxe of Winchester, and helped him to found Corpus Christi College, Oxford, and provided most of the money for it. He endowed the school as a feeder for the college, and also provided help for boys going from the school to any college at Oxford or Cambridge. Corpus Christi College still has a representative on the board of governors of the school.

After receiving its charter the town led its mediaeval life much as other English towns, with certain crafts of milling, fulling, spinning, weaving, and dyeing. Agriculture was, however, the chief occupation for some centuries until the persecution of the Spaniards in the Netherlands and of the Catholics in France drove many Protestant craftsmen to England. Some settled in Manchester and neighbourhood because of its water resources, and this incident also forms the subject of one of the frescoes in the Town Hall. In this way, amongst other trades, the spinning, weaving, and dyeing of wool and flax which was carried on in the town received a great stimulus. Leyland, visiting the neighbourhood in 1536, describes Manchester as "the fairest, best builded, quickkest and most populat towne of all Lancastreshire"; and Defoe, two centuries later,

in his tour through Great Britain (1724–26) visited Manchester and described it as "one of the greatest if not really the greatest mere village in England." The population then was below the 22,000 of 1770.

COTTON.

It was during the sixteenth century that "Manchester cottons" became known as a desirable article of trade. They were known under this description in Rouen in 1553. They were also known as fustians, a name derived from the Fustat quarter of Cairo, where similar goods were woven. Manchester cottons were at first only made of wool, linen, and some silk, but about 1600 a new material was introduced into the town, according to a petition of London merchants—"a kind of bombast or down being a fruit of the earth growing upon little shrubs or bushes brought into this country from Smyrna, Cyprus, Acra, and Sydon, but commonly called cotton wool."

Cotton is the Anglicized form of "kutun," which was the Arabic word for the new material. Each cotton fibre is the outgrowth of a single cell of the outer coat of the seed of the cotton plant, and important features about it are that it is a thin-walled, somewhat elastic tube sealed at both ends with a natural twist on its own axis and with varying diameter. These natural characteristics make cotton the easiest of all materials to twist into a thread, and consequently so cheap for cloth making that it is said that nine-tenths of the clothing of the world is made from it.

Cotton must have been spun in hot Eastern countries where the plant grew since artificial clothing became necessary. It was always done by hand, twisting the fibres with the fingers into a single thread, which was wound on a spindle or a wheel. This primitive process of cotton spinning continued wherever cotton was used, and only one thread, or at the most two threads, could be spun at a time until the middle of the eighteenth century, when the genius of a few Birmingham and Lancashire men revolutionized the whole industry of spinning and weaving cotton, and led to the production of machines on which 1,200 spindles, instead of one or two, can be rotated at then unthought-of speeds.

CHETHAM'S HOSPITAL: ENTRANCE TO CLOISTER COURT.

The impetus to these inventions came in 1733 from John Kay's flying-shuttle, which enabled the weaver to work much quicker and to weave wider cloths. Before Kay's invention, which was a very simple one, the weaver had to lend over his cloth and throw the shuttle by right and left hand alternately from each side through the loom. Kay put a "stick" into the weaver's hand, from the free end of which cords went to both sides of the loom, where they were attached to a metal weight which could be jerked forcibly by movement of the stick and cord against the shuttle, and so knock it through the loom to the other side, when an opposite movement of the stick sent it back through the loom. The principle is still in widespread use in the mechanical loom of to-day.

At that early period of the introduction of machinery every contrivance that increased production was looked upon by the workpeople as certain to deprive them of their means of existence: consequently they endeavoured to wreck all such new inventions. This wrecking was a frequent theme of Victorian novelists, as witness *Shirley* and *John Halifax, Gentleman*, to mention but two instances. A mob succeeded in wrecking the flying-shuttle, but only for the time being, for, like many inventions which decreased the cost of production, it increased the demands for a cheap material, and was therefore a means of additional employment.

Before Kay's time all the cotton was spun by hand, and there was no real increased demand for the new shuttle until twenty-five years after its invention, during which time mechanical spinning and weaving revolutionized the cotton industry. Although East Lancashire and West Cheshire are now the centres of the mechanical cotton-spinning industry, and most of the present-day machinery was invented or perfected there, the first useful steps towards substituting machines and artificial power for the human finger and muscles were taken at Birmingham. There Lewis Paul, in 1738, patented a machine in which successive pairs of rollers moving at different speeds attenuated a thick rope or roving of cotton fibres, which was prepared by hand, into a finer thread or yarn. He also patented (1748) a most important combing machine to prepare this preliminary roving. With these machines Paul started mills in London and in Birmingham, and, although the inventions were said not to be of much practical use, he made £20,000 out of them. Real progress in mechanical spinning was first achieved by three Lancashire men — James Hargreaves of Blackburn, who patented in 1767 the first commercially successful machine, called the "jenny," which could spin many threads at a time when driven by hand power; Richard Arkwright, born in Preston, but working in Bolton (1769), who improved Paul's roller drawing and combing machines to make them of real value, and applied first horse, then water, power to them; and lastly, Samuel Crompton of Bolton, who combined in one machine, called a mule, the essential features of Hargreaves's jenny and Arkwright's roller drawing machines. On one of these wonderful machines can now be spun on 1,200 spindles (not one only as aforetime) thread so fine that more than 150 miles of it may weigh only one pound.

With these machines so much cotton thread was produced that the looms worked by hand labour could not use it, even when the fly shuttle was adopted by weavers. The difficulty became known to Dr. Cartwright, a Leicestershire clergyman, who came to the rescue with the invention of a power loom, driven at first by a bull, and later, as he improved it, by water and steam (1790). The loom could then do with all the yarn produced in the mills, and the prosperity of operatives and owners and of Lancashire began.

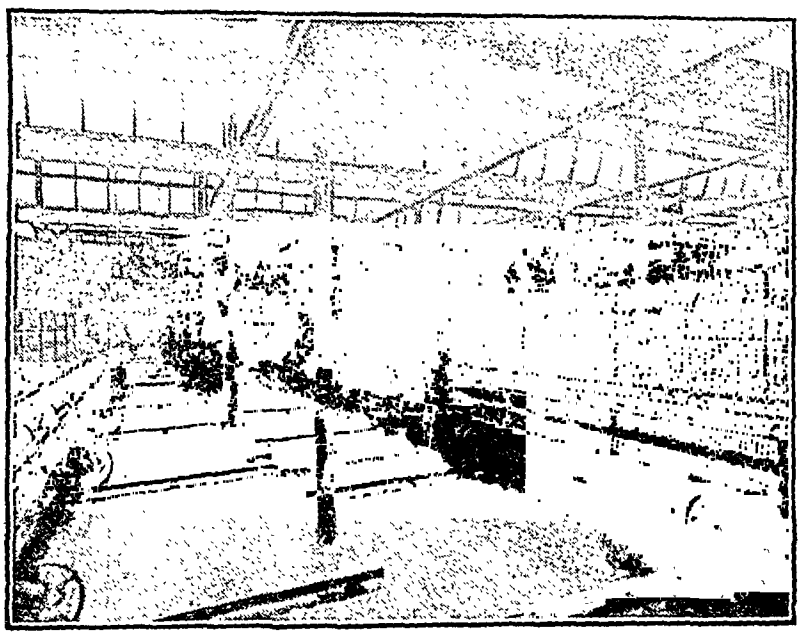
Spinning and weaving machines at first were worked by hand power, adult and child, in the people's homes; later they were driven by water power in mills set on the banks of streams, and so began the great mill industries of Lancashire valleys. Finally, in 1789, steam was used for power in cotton mills for the first time in Manchester. Such was the impetus given to the cotton industry by these inventions that the human labour for the mills of the district was soon exhausted, and it had to be imported from other parts, often from the workhouses of London and other large towns. The population of Manchester, in consequence of the increase in the cotton industry, grew from 22,000 in 1773 to 45,000 in 1788 and 70,000 in 1800, and sad indeed were the conditions of life among the working classes and the abuses of child labour by parents

and manufacturers. The hours of child labour in mills which ran night and day were unrestricted by law, and there was no supervision of the mills by factory inspectors.

PUBLIC HEALTH.

The result was, naturally, serious ill health in the cotton operatives, and such outbreaks of typhus fever occurred that the leading citizens became alarmed, and with the support of some of the medical men of the town, especially Dr. Thomas Percival and Dr. John Ferriar, formed a committee of public safety, or board of health, in 1796, the first of such committees to be formed in England.

Among the good employers who thought of the welfare of their workers, especially of the children, were the Grants, the prototypes of the Cheeryble Brothers of *Nicholas Nickleby*. Public action led also to factory legislation, and it is interesting, if sad, to read some of the evidence—venal, one would almost say suborned, on their own acknowledgement—given by medical men on the hours of labour of children. Let me get the worst over at once. One, a Manchester doctor giving evidence for the masters before a committee of the House of Lords, said he could not give any number of hours below twenty-four which might be above or below the line of which a child (of 6 or 9 years of age) could work without suffering. A surgeon and apothecary of Bingley in Yorkshire did not think that a little recreation or amusement during the day was contributory to the health of young persons. Fortunately, others thought that the hours of working of a person under 16, exclusive of the time allowed for meals, ought not to exceed *nine* hours in winter and *ten* in summer; and it was a question whether, with impunity, the strength of adults was capable of much longer exertion than this.



MACHINERY IN A MODERN COTTON MILL.

As I said in the opening line of this account of the development of Manchester, its geographical situation has had much to do with its commercial success and in making it the leading town in the cotton trade of the world. The district known as East Lancashire and West Cheshire, lying between the hilly background of the country and the western ocean, has a temperate, equable, and moist climate, one which is ideal for cotton spinning and weaving, and especially for producing the finest cotton products, for which Manchester is celebrated and unrivalled in any part of the world. The annual rainfall is only 36 inches, but Manchester has the reputation of being a wet place, especially among our gentlemen friends of Liverpool—Manchester men, Oldham lads, fellows from Rochdale, and Liverpool gentlemen, as the local saying is. As president of the Manchester Medical Society I attended the annual dinner of the Liverpool Medical Society, and exchanged a few stories with a legal guest. With magnetic guile he drew me on to talk of weather, and I said our rainfall was not so bad as Liverpool's. On replying for the guests he opened in courteous terms about his neighbour from Manchester who had told him some wonderful stories which he did not care to repeat, but amongst other things "he actually asked me to believe that Liverpool is a rainier town than Manchester." It was the speech of the evening. In addition to the plentiful supply of water, Manchester is in the middle of a rich coal-bearing district, which made steam power cheap, and it was close to a maritime outlet on the Mersey. Dr. W. F. Dearden has shown in his Milroy Lectures on the Health Hazards of the Cotton Industry how even the slight differences in the atmospheric content of water which occur in the large cotton manufacturing towns affect the fineness of the article which is manufactured in them.

The poor conditions of life of all the labouring classes in the eighteenth century were greatly improved in time by the development of the cotton industry. Much more money, small in total indeed though it was, reached a home by the earnings of those members of the family who worked in a spinning mill and those who were at home, and there was, consequently, more money to be spent on necessaries of life—food and clothing, boots, etc. Trade generally, therefore, was improved. Between 1760 and the Reform Bill (1832) the output of cotton manufactures increased one hundredfold, and in 1806 it was said to supply one-third of the total of British exports. The cotton trade, directly and indirectly, played a very great part in meeting the heavy National Debt incurred after the Napoleonic wars. It is said that Arkwright offered to finance the Government in the wars with France if they would continue his patent rights for a number of years.

The opening of the Duke of Bridgewater's canal, which brought coal from his pits at Worsley to Manchester at cheap rates, was a great help to steam power, and when the canal was extended to Liverpool, in 1772, this cheapened cotton at a time of great need for it. A further event of great importance to the cotton trade was the opening of George Stephenson's railway between Manchester and Liverpool in 1830. This was a great national event, with the Duke of Wellington present; it was marred by an accident which proved fatal to Mr. William Huskisson, one of the promoters of the railway and a member of Parliament for Liverpool. There is a marble tablet to his memory and the incident on the railway by Parkside, which he who travels may see. The original terminus of the railway is still in use in Liverpool Road, Manchester, where it forms part of the railway's goods department.

IMPORTANCE OF THE COTTON INDUSTRY.

Manchester is the centre of the cotton industry of the kingdom. Included in the industry now is the new material called artificial silk, which is having a very great influence on the trade when mixed with cotton in manufactured materials.

It is estimated that no fewer than 10,000,000 of the population of Great Britain are directly and indirectly dependent on the cotton trade for their daily bread, so great are the ramifications of the trade, the interdependence of one industry upon another, and the "wheels within wheels" of commerce. The cotton trade depends almost entirely on the export trade, and cotton goods comprise nearly one-third of all our exports of manufactured goods. The value to our home trade in cotton goods is estimated at only about one-fifth of the whole cotton trade. In 1927 more than 4,000,000,000 square yards of woven cotton goods, valued at £110,000,000, and over 200,000,000 lb. of cotton yarn, valued at nearly £23,594,000, were exported.

The profits from the cotton industry do not end with those received from the actual selling price of the finished material, yarn or cloth. There is, in addition, the cost of insurance, financing, freight, and merchants' commission and profits, almost all of which are a profit earned by this

country, and over £500,000,000 capital is engaged in, or directly dependent on, the trade. If the cotton trade ceased to exist to-morrow Great Britain would become a third-rate power, from a commercial point of view, and probably at least one-fourth of the population would have to emigrate, as it would no longer be possible for them to earn a living in this country. There is no other manufacturing export industry, either in this country or in any other part of the world, which can be compared with the cotton trade; and it enables Great Britain to pay for a large portion of the meat and grain and commodities which she has to purchase from other countries.

After the cotton industry in importance come the engineering, chemical, and rubber industries of the town and neighbourhood. A great factor in the development of the business of the town has been the influence of the Ship Canal, by means of which 15,000-ton ocean-going steamers can get into the heart of the city and bring the raw materials, food, and other goods which pay for the cost of manufactured articles sent abroad, and of the insurance, freight, and financing of the trade. Six and a half million tons of goods are brought to, or carried away from, Manchester and Salford in a year now by the Canal. Direct sailings are made from the docks to and from the chief ports "in all the seas of all the world."

Manchester has contributed to the enrichment of the country in other ways than those of commerce; but that is another story which awaits its telling.

Scotland.

Future of Hospital Services in Scotland.

A MEETING of the Voluntary Hospitals Liaison Committee was held on January 16th, on the invitation of the Department of Health for Scotland, in the offices of the department at Edinburgh to consider the bearing of the Local Government (Scotland) Bill on the future of the hospital services, particularly those of the voluntary hospitals. Dr. Walter Elliot, Parliamentary Under Secretary of State for Scotland, and officials of the department, were present. The meeting reviewed various suggestions for a clause designed to remove the Poor Law stigma from treatment in the hospitals which are at present under Poor Law administration; it was unanimously agreed that this was desirable, and that public bodies should be given power to provide hospital treatment apart from the Poor Law. It was considered essential, however, that adequate safeguards should be made to protect the voluntary system, and the attention of the meeting was mainly directed to finding a form of words which, embodied in the bill, would achieve this purpose, and also give the necessary powers to municipalities. It was decided to hold another meeting this week. The members of the Liaison Committee are Sir David Wallace, F.R.C.S., Colonel D. J. Macintosh, Mr. James Macfarlane, Major-General James Thomson, Mr. C. F. Henderson, and Mr. James Thomson. Dr. Elliot intimated that the Secretary of State for Scotland had appointed Mr. Niven F. M'Nicol as secretary of the committee.

Pneumonia Epidemic in Scotland.

An outbreak of pneumonia, which attained considerable proportions, has occurred in Glasgow and other parts of Scotland. At the opening of the week beginning January 13th there were 600 cases of pneumonia in Glasgow hospitals, and on January 14th there were applications for the admission of about 100 others. It is believed that many cases of pneumonia have been contracted by persons suffering from mild attacks of influenza who have returned to work too soon. The total number of deaths in the city in the week ended January 12th was 645, as against 388 in the preceding week; this gives a death rate of 31.2 per 1,000 of population per annum, against 19.5 in the previous week. Deaths from pneumonia numbered 118, including 40 children under 5. The staffs in large businesses appear to have been seriously depleted by the occurrence of influenza, bronchitis, and pneumonia; about 30 per cent. of the tramway workers were on the sick list, and the service was maintained with difficulty, whilst in the Post Office some 10 per cent. of the employees were absent. In the whole of Scotland during the week ended January 12th there were 1,164 deaths, giving a corrected death rate of 24.1 per 1,000; this rate is 6.8 above the average. Relatively high death rates were also recorded in Greenock (34.3), Paisley (23.5), Dundee (19.6), and Kilmarnock (26.1). In Edinburgh the death rate was 17.1, and in Aberdeen 16.7. Deaths from influenza numbered 56, and of these 50 occurred in Glasgow.

Cupar Hospital Extension.

The Adamson Cottage Hospital at Cupar has recently been extended through a gift of £5,000 to the trustees by Mr. and Mrs. J. B. Crichton, Luthriebank, who have also presented an annual income of £1,500 for the next seven years. The hospital was reopened on January 14th by Lord Cochrane of Cults, who said that the hospital was unique in the conveniences it offered amongst the cottage hospitals of the country. In referring to the King's illness, in which great advantages of skilled medical advice and devoted nursing had been available, Lord Cochrane remarked that a hospital equipped like the Adamson Hospital would bring similar advantages within the reach of all in the district who were suffering severely. The additions to the hospital consisted of an operating theatre, *x*-ray and electrical departments, private male and female wards, and waiting and dining rooms.

Edinburgh Royal Maternity Hospital.

At the monthly meeting of the board of directors of the Edinburgh Royal Maternity and Simpson Memorial Hospital, held on January 16th, reference was made to the retirement on the age limit of Dr. William Fordyce, who had been physician to the hospital for the past twenty-seven years. To mark their appreciation of his services the directors appointed Dr. Fordyce as consultant obstetrician to the hospital. At the same meeting Dr. Douglas Miller, who for some years has been assistant physician and registrar to the hospital, was elected as physician to fill the vacancy caused by the retirement of Dr. Fordyce.

England and Wales.

Society of British Neurological Surgeons.

THE fifth meeting of the Society of British Neurological Surgeons was held in London last month under the presidency of Sir Percy Sargent. A visit was paid to Guy's Hospital, where Mr. Lancelot Bromley operated, turning an osteoplastic flap by de Martel's method. The society was addressed by Dr. Hurst on "The cause of trophic disturbances in nerve injuries," and Dr. C. P. Symonds showed cases, including radiograms of a calcified angioma of the brain, to which Mr. Bathe Rawling was able to exhibit a parallel. Dr. Symonds further exhibited a case illustrating tonic innervation of the hand in a young woman, clinically diagnosed as a congenital aneurysm, and a case of cervical rib with cerebral embolism. The relationship between vessel compression and embolism was discussed. Mr. Bromley presented a female patient from whom he had enucleated a spinal tumour; persistent contractures of the hamstrings had necessitated tenotomies, so successfully carried out by Mr. Trethowen that the patient was now able to walk up and down stairs. At the resumed meeting, held in the afternoon at the National Hospital, Queen Square, Sir Percy Sargent opened a discussion on the radium treatment of cerebral tumours, and Mr. Ross described the technique and results so far obtained in a small group operated upon at St. Bartholomew's Hospital. This subject, theoretically so full of promise for the glioma patient, was fully discussed by other members of the society. Dr. Greenfield read a paper on the "Haemangiomatous cysts of the cerebellum (Lindan's tumour)," illustrated by a series of cases in which the pathology of the condition was built up step by step. Other papers read were Professor Archibald Young's on "Chordoma," Mr. Julian Taylor's, advocating a more posterior approach than by the classical London method to the root of the Gasserian ganglion, Mr. A. A. McConnell's

on "Mistakes in the interpretation of ventriculograms," and Mr. Lambert Rogers's on "Elephantiasis neuro-fibromatosa." The society's dinner was held at the Langham Hotel, with Mr. Donald Armour in the chair. On the following morning Mr. L. R. Broster divided the sensory root of the trigeminal nerve for neuralgia, and showed a number of patients, including a young woman with a suprarenal tumour and virility (the second example of this unusual condition which he has placed before the society). Dr. Adie read a brief paper describing cases of spinal and pituitary tumours, and emphasized the importance of being on the watch for these latter in cases of non-syphilitic optic atrophy. Dr. A. B. Rosher contributed a talk on the chemistry and cytology of cerebro-spinal fluid. Dr. Viner discussed the histology of the gliomas, and showed a number of specimens.

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The Midwives Acts Committee of the Council states that while a rule of the Central Midwives Board requires that candidates for examination must have witnessed not fewer than ten labours, and in addition have attended and watched the progress of not fewer than twenty labours, it is doubtful whether this rule is strictly complied with, as pupil midwives are often moved from one case to another, which prevents their having sufficient opportunities to see a case in all its stages. Institutions which teach midwifery, says the report, should be so staffed that they do not depend upon the work of the pupils, and are not compelled to arrange the work in order to get it done most easily, rather than to the best advantage of the pupils. The ideal to be aimed at should be the teaching and training of the pupil midwife at institutions adequately staffed at which the whole course of training, intern and extern, can be given. The committee has found some midwives apt to leave certain duties concerning both mother and child to handywomen, who may also be employed in the respective cases. Many midwives are extremely ignorant of the matters referred to in the footnote to Rule C 5 of the Board, regarding a knowledge of ophthalmia neonatorum, puerperal fever, and venereal diseases, among other matters, and the committee suggests that this be included in the rule itself and made compulsorily. Again, many midwives, not trained nurses, do not realize the importance of, and cannot even recognize, such conditions as general illness, impending collapse, cyanosis, urinary abnormalities, symptoms of lung disease, and so forth; they have insufficient knowledge of anatomy and of the theory and technique of sepsis and asepsis. The proposed evidence also deals with the qualifications for teachers in midwifery (who should be either medical practitioners with special experience in obstetrics, or fully trained nurses holding the Central Midwives Board certificate and with definite experience of practical midwifery), and, again, with post-certificate courses, which, the committee thinks, should be made compulsory on all practising midwives at intervals of four or five years. The report adds some information regarding midwifery practice in London. In East London the average fee for primiparae is between 25s. and 30s., and for multiparae between 16s. and 21s. The corresponding fees in West London are between 42s. and 50s., and between 30s. and 35s. respectively. With regard to the training of medical students in midwifery, the Midwives Acts Committee cannot regard as satisfactory the extern practice at some hospitals. Sometimes the student goes to a case unaccompanied, and in others the students' cases are nursed by handywomen. It is regarded as essential that medical students shall see only the best midwifery nursing, and shall be accompanied at their cases only by certified midwives with a good standard of work. The proposed evidence goes on to deal with the powers and duties of the Central Midwives Board. The procedure of the Board, it is considered, in connexion with the hearing of prima facie cases of malpractice, negligence, or misconduct on the part of the certified midwife submitted to the Board by the local supervising authority is in need of revision. The normal procedure should be for the prosecution of such midwives to be conducted by the legal representative of the local authority, and power should be given to the Board to enable it to compel the attendance of witnesses and to take evidence on oath. It is also thought that the constitution of the Board should be amended so as to provide for the election of a smaller number of members than at present, and for the inclusion of a member possessing legal training. Another suggestion is that the administrative duties of the Central Midwives Board in connexion with the approval of training centres and of midwives or other persons desirous of undertaking the training of pupil midwives should be transferred to the Ministry of Health, which should have the assistance of an advisory committee representative of local supervising authorities, medical practitioners, and certified midwives.

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The emphasis now generally laid on the value of suitable and specialized treatment of early nervous disorder and borderline mental cases finds expression in the activities of the Lady Chichester Hospital (Hove), founded in 1905 for poor women suffering from early nervous breakdown. In the report for the year 1927 it is stated that a large proportion of the patients treated at this hospital make a satisfactory recovery. The treatment adopted is catholic in its scope. At present, rest, fresh air, and generous diet form the basis of treatment on the physical side. A sun-cure court and ultra-violet ray apparatus are being added in the course of the year. Stress is laid on the importance of occupation and amusements, which exercise their therapeutic effect by reawakening objective interests in patients otherwise preoccupied with their own symptoms. When such patients, for example, develop a special capacity for hand-loom weaving, or spinning, or gardening, or are prepared to enter into the spirit of a fancy-dress dance, they have made a definite advance towards cure. Every patient is thoroughly examined on admission, and wherever possible treatment is directed to the removal of any physical disability from which she may be suffering. Habitual constipation, dyspepsia, pyorrhoea, and any septic focus in the tonsils, nasopharynx, ear, or elsewhere, are appropriately dealt with. Physiotherapy—including massage, hydrotherapy, electrical treatment, and remedial exercises—is prescribed in suitable cases. Some patients derive benefit from organotherapy. The psychological methods of treatment include simple suggestion, persuasion, re-education, and mental analysis, and in each case a constructive effort is made to help the patient to redirect her mental energies into socially useful channels. The treatment adopted for any patient is based on a long and sympathetic study of her individual characteristics and preferences, and every attempt is made to avoid the rut of routine methods. Accommodation is provided for fifty-three in-patients, and there were 1,778 attendances at the out-patient department during the past year. The hospital has educational as well as curative activities, and provides tuition for nurses desirous of specializing in the care of patients suffering from early nervous and mental disease.

India.

Public Health Problems in India.

THE annual report of the Public Health Commissioner with the Government of India for 1926 has recently been published in two volumes, the second being devoted to the health of the European and Indian forces and of the jail population, while the first deals with health conditions in their more general aspects. The report has been based upon the vital statistics of the country, supplemented by information from administrative medical officers, directors of public health, medical officers of health, and others in close touch with the medical situation in the provinces, and from officers engaged upon special surveys or inquiries on various diseases. It should be remembered that since the inception of the Montagu-Chelmsford reforms the subject of public health has been under the sway of the provincial Governments, and conditions in regard to public health—as in almost every side of life—vary widely from one part of the subcontinent to another. The central Government has little direct influence in the development of health services, and there is consequently no uniform standard and no co-ordinated policy applicable to British India as a whole. In view of these points, and also of the fact that many of the topics dealt with in the report having already been touched upon in these columns, perhaps the main general interest in the report lies in the views expressed on certain broad questions relating to public health in India.

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is stated to have met with "phenomenal success." In connexion with malaria, the most important preventable disease in India, the suggestion is made that possibly the main hope of salvation lies in steady improvement of the general health, which will increase the resistance to the disease. The importance of nutritional research is emphasized. It will be noted that, in the case of the three diseases mentioned, the problems they present are financial and administrative rather than purely medical; in the words of the report:

"The knowledge is there, but the means or the will to apply it are lacking." Colonel Mackie, expanding this theme, states that in the case of five of the principal diseases of India—malaria, plague, small-pox, cholera, and kala-azar—the natural history of the disease has been sufficiently elucidated "to enable preventive medicine to stamp them out if only money, energy, and co-operation were combined in one grand attack."

Too much praise cannot be given to the various research agencies who have made such a statement possible.

After paying a tribute to the work of the leading voluntary organizations, and referring to the importance of public co-operation in public health, the summary concludes with a note on certain administrative problems which are the consequence of the reforms. Mention has already been made of the fact that under the diarchal system the provinces are practically autonomous in the sphere of public health. It is urged that some central co-ordinating and advisory body on the lines of a Ministry of Health is necessary to organize, among other things, the control of epidemics, and to establish a definite standard in health services for the provinces. Occasion is taken to direct attention to the importance of preventive, as compared with curative, medicine. In conclusion, a plea is put forward for the provision of adequate facilities for training in public health work under Indian conditions, in view of the fact that this is being more and more handed over to Indians. Colonel Mackie writes:

"It is our duty when the time comes to hand over the government of the country to its own sons to see that we leave it with a strong, well organized, and efficient public health service; and that is, I believe, the greatest boon which Western medical science can confer upon India."

Prince of Wales Medical College, Patna.

The annual report of the Prince of Wales Medical College, Patna, for the year 1927–28 is of special interest in view of the fact that that institution is of recent foundation, and is endeavouring to raise its standard in the hope of securing recognition for its degrees from the General Medical Council. The college commenced its third session in July, 1927, with 195 students on the rolls, including 41 new entrants. Applications for admission numbered 82, against 183 and 270 in the two previous years, and the principal, Lieut.-Colonel H. R. Dutton, fears that a further decrease may make it difficult to maintain a satisfactory standard of quality in the students. In the course of the year the first group of regular students, who commenced work in 1925, reached Part II of the second M.B., B.S. examination, which only 12 of the original 31 succeeded in passing. At the end of the year the new extension of the department of physiology was almost complete, and work on various other buildings had made considerable progress. Nothing had been done, however, towards the foundation of the proposed new public health laboratory. Important additions have been made to the equipment of several departments, but the library is deficient in books of reference and in files of medical and scientific journals. Despite the difficulties inseparable from the early years of a new institution of this kind, research work has been started in all departments.

Provincialization of Medical Services in the Punjab.

The tendency in most of the provinces of India in recent years has been definitely towards the substitution of a provincial health service comprising the health officers employed in the districts for the system under which such officers were employed by the individual district boards. In a number of provinces this change is being carried out gradually, and in the Punjab the scheme for provincializing the service of district medical officers of health, which received administrative sanction in 1926, came into force on April 1st, 1927. In his annual report for that year the director of public health, Lieut.-Colonel C. A. Gill, states that the cadre comprises 37 appointments: 28 are district officers, 3 assistant epidemiologists, 2 are held in reserve for emergencies, and the remaining 4 officers constitute a leave reserve. The existing incumbents of provincial and district board appointments were posted to 21 districts, and 6 additional appointments were made during the year, leaving only one district (excluding Simla) without a whole-time medical officer of health holding a diploma of public health. Three of the reserve posts have also been filled, but the auxiliary staff originally sanctioned for district work has been considerably curtailed, so that it was only possible to provide each district with one sanitary inspector and one dispenser, the remainder—including 24 sub-assistant surgeons and 19 sanitary inspectors—being engaged on a temporary basis for combating epidemics. One of the most urgent needs noted in the report is the provision of whole-time or part-time medical officers of health in the towns. Whole-time municipal medical officers of health were employed in nine towns, and three other large towns agreed to do so on condition that half the cost of the salaries was met by the Government.

Correspondence.

HEART SOUNDS.

SIR,—Dr. T. Stacey Wilson says, very rightly, when criticizing my letter on heart sounds (January 5th, p. 43): "I feel that a word of physiological protest must be uttered with regard to his suggestion that, in spite of the absence of valves or adequate sphincter muscles, the auricle can develop a force comparable with that of the ventricle."

I do not think that I have ever maintained that the auricle can exert such a "force." I maintain that it can, theoretically, exert such a *pressure*. With a Bramah press a small force can exert a pressure which can overcome a much greater force, and when the auricle, by contracting, becomes small, it has only a small internal area of resistance to oppose its contraction; whereas, should the ventricle begin to contract against it, supposing their contractions at any time to overlap, the ventricle would have a large internal area of resistance to oppose its contraction. For this reason chiefly, but also from the advantage a decreasing chamber has in piling up its muscles, if the mitral valve were stenosed the auricle could, theoretically, drive the residue of its blood into the ventricle. Could it do this practically? All depends, as Dr. Wilson suggests, on whether the sphincter at the great veins be adequate. Now the cardiac cycle begins at these great veins and spreads to the auricle. An effort is therefore made to prevent regurgitation. Is it adequate?

The cardiac contraction is a masked peristalsis, consequent on the mode of development of the heart from a tube. Starting at the great veins the auricle urges the blood away from them during its contraction. Roy and Adami[1] have shown how the pressure rises in the auricles, and how unlike a passive or "simple reservoir" the auricle is.

In mitral stenosis the left auricle hypertrophies (it is commonly taught that it dilates and hypertrophies, but I have shown, by examining the records of all cases of death with stenosis during ten years at Guy's Hospital, that *hypertrophy* is the characteristic change[2]), and sometimes approximates to a ventricle by the extent of its hypertrophy.

It is scarcely conceivable that a "simple reservoir," as Dr. Stacey Wilson says, approvingly, Dr. Mayo Collier considered the auricle to be, can have any purpose in hypertrophying. It would be less useful than before. The hypertrophy, on the other hand, of a contracting auricle which propels blood onwards is clearly advantageous, provided it does not leak backwards. Should it so leak it would accelerate death, which is obviously not its role.

[1] *Practitioner*, vol. 44, p. 170.
[2] *British Medical Journal*, February 5th, 1893

It hypertrophies to help, and gets the blood through the stenosed orifice for years. The sphincters at the great veins is adequate in practice; and sphincters are as good as valves, or we should have no birds.

The main purpose of my various communications on this subject has been to indicate the theoretical possibilities of the auricle, and to remove the impression that because the ventricle is thicker and has more muscle than the auricle it must necessarily overcome it. On equal terms it would do so, but the auricle scores by contracting first and becoming small. If the sphincters at the great veins be adequate, as I maintained in my letter on the genesis of the venous pulse,[1] the auricle should be more than a match for the ventricle, should their contractions overlap, as occurs apparently in many cases of mitral stenosis.—I am, etc.,

Mentone, Jan. 11th. D. W. SAMWAYS.

THE DICK TEST IN SCARLET FEVER.

SIR,—The article by Dr. William Brown on the Dick test in scarlet fever (*British Medical Journal*, January 5th, p. 13) confirms some of the work published by Dr. A. H. G. Burton and myself last year ("Relapses in scarlet fever," *Lancet*, May 26th), in particular, the effect of scarlatinal antitoxic serum in increasing the number of Dick-positive reactors during convalescence, and therefore the greater possibility of relapses and second attacks in serum-treated cases.

Dr. Brown does not state the size of the Dick reaction he obtained in his cases nor the area of erythema he accepted as a minimum for a Dick-positive result to be recorded, hence it is difficult to compare his work with that of other investigators. He refers to the disparity between his results in the first few days of the disease and those of Zingher, and suggests that it may be due to the toxin used. In the article above referred to we pointed out that the reason for Zingher's high percentage of positive reactors was that he included all grades of reaction. One cannot agree with Dr. Brown when he says "that it is impossible to state that the positive Dick test does indicate a lack of immunity to scarlet fever," and he gives no evidence for this statement, while the body of evidence against it is very considerable. Further, he contradicts himself when, with regard to the eight Dick-positive reactors out of his seventy-six serum-treated cases, he states that, "these eight patients had not developed their antitoxic immunity." Also when he says that of eighty-three patients "the Dick test was negative, thus indicating that they are no longer susceptible to scarlet fever," he is in direct contradiction to the case he quotes previously of a nurse who was twice found to be Dick-negative and yet developed a typical attack of scarlet fever. It would have been informative if he had stated in this instance how long before the attack the nurse had been Dick-tested. The fact that eighty-three patients were Dick-negative five years after an attack of scarlet fever by no means proves that it was the attack of scarlet fever that caused them to develop immunity.—I am, etc.,

Public Health Offices, Ilford, Jan. 14th. A. R. BALMAIN.

SEQUELS OF HEAD INJURIES.

SIR,—In Dr. C. P. Symonds's paper on cerebral states consequent upon head injuries, published in the *British Medical Journal* on November 10th, 1928, the following statement appears: "It would seem even that a fracture of the skull, if not fatal, may carry with it some degree of immunity from disabling after-effects" (p. 831). This statement is based on the observation that among ten cases of head injury with fracture not one patient was completely disabled, but seven were able to do full work and three light work; whereas in sixty-one cases without fracture the corresponding figures were seven, twenty-six, and twenty-eight respectively.

At first glance the difference between the two sets of figures is sufficiently striking; analysis, however, by the method described in chapter iv of Fisher's *Statistical Methods for Research Workers* leads to the result $P=0.24$, or, expressing this in words, the odds against the occurrence, through the agency of chance alone, of a difference as great as that found, or greater, are about three to one. This falls far below the limit demanded by most statisticians—namely, twenty to one. An illustration will make this clearer. If two cards drawn at random from a pack were found to belong to the same suit, no one would conclude or even suggest that the pack was in any way abnormal; yet the probability of this happening with a normal pack is no greater than the probability that the figures recorded by Dr. Symonds would be obtained if there were no relationship whatever between fracture and the frequency of after-effects.

In these remarks I do not, of course, mean to imply that a rigid statistical backing is required for every tentative suggestion—if this were insisted upon we should get nowhere; I merely wish to point out that Dr. Symonds's findings *can* be accounted for perfectly adequately by chance alone.—I am, etc.,

Pretoria, Dec. 12th, 1928. I. LIEBAITZKY, M.Sc., M.B.

PYORRHOEA ALVEOLARIS.

SIR,—In a paper on pyorrhoea alveolaris by Mr. Humphreys in the *Journal* for January 19th (p. 99), and also in your leader on this subject, it would seem to be taken for granted that the deposition of the "subgingival or soruminal" tartar is the result of the growth of the *Leptothrix buccalis*; yet the fact is noted that this organism is only found in conjunction with this type of tartar, and is absent with the more common salivary variety. No reasons, however, have been brought forward to explain why the leptothrix should flourish in this situation and bring about this specialized tartar in this place. Is it not possible that, given this type of tartar, the circumstances become favourable for the growth of this special organism, and that the leptothrix is the result of the tartar rather than that the tartar is the result of the leptothrix?

In a book recently published by me, and referred to by Mr. Humphreys, I have considered at some length the biochemical changes which would result in such a deposition, and have attempted to show that these upsets are such as might commonly be expected at those periods of life in which pyorrhoea is most usually found. Further, the visualization there presented explains the reasons behind the antagonism between dental caries and pyorrhoea mentioned by Mr. Humphreys, and provides an explanation of the etiology of both conditions dependent upon alterations in the acid-base balance of the blood and the compensatory changes which these will bring about—an explanation which is not necessarily antagonistic to the suggestions of Mrs. Mellanby, but complementary thereto, in that it accounts for many cases of dental caries which cannot be explained on her hypothesis.—I am, etc.,

Bournemouth, Jan. 20th. F. W. BRODERICK.

SIR,—The article by Mr. Humphrey Humphreys on pyorrhoea alveolaris and the editorial comment thereon open up a subject of widespread interest to the medical profession.

In dealing with the causal factors Mr. Humphreys mentions diet, irregular arrangement of the teeth, and dental restoration in their varied forms, all in one way or another favouring stagnation. Besides these I would like to suggest another cause—namely, the commonly used tooth-brush. It seems to me that the extremely prevalent condition of pyorrhoea alveolaris as observed in practice to-day in early adult life, in mouths with otherwise good teeth, must have some other common cause than those enumerated by Mr. Humphreys, and I cannot help thinking that the vigorous use of a hard brush, which is always septic, and frequently filthy, must, by infecting the gums and separating the alveoli from the teeth, help to form those very "pockets" on which so much emphasis is laid.

For some years it has been my custom to recommend these patients, and with satisfactory results, to discard the toothbrush altogether and make the necessary alteration in their diets, particularly an apple with the skin on after a meal; the teeth are then cleaned with an orange stick, that is, the alveolar margin and interdental spaces,

[1] *British Medical Journal*, April 13th, 1912.

and finally the mouth washed out with a hydrogen peroxide wash. The method has, at least, the merit of being hygienic, easy of application, and not requiring any more time than the use of a brush. In my opinion if this practice were more generally adopted we should in time hear less of and see fewer patients with that annoying malady.

Who ever heard of anyone trying to make an article clean by using something dirty, or a surgeon endeavouring to cleanse the skin with a dirty septic nailbrush. Yet that is actually what is being done to-day when endeavouring to cleanse the teeth and gums with a dirty brush. A brush may be all right for dental plates, but not for healthy gums and teeth.—I am, etc.,

London, W.9, Jan. 20th. R. J. MAYBERRY, M.B., Ch.B.

SIR,—At the risk of being dubbed a crank on dead and infected teeth may I enter into the discussion you invite in your leader of January 19th (p. 115) on the effects of pyorrhoea, if any, on health.

How pyorrhoea can affect the general health, provided the gastric secretion be normal, is an enigma to me. Most of the organisms formed must be destroyed in the mouth, unless it is grossly septic; what escape must undergo the same fate in a normal stomach.

Mr. Humphreys's article is admirable and clears up a great deal about pyorrhoea. He rightly attributes most of the diseases of dental origin to dead and infected teeth. I fully endorse his opinion that a negative radiogram means nothing, though a positive one is invaluable. Weston Price goes further, and states that it is just those teeth which present no radiographic evidence of disease which are the worst offenders, since there is no protective granuloma at the apex.

The teeth which occasion constitutional disturbances fall into four main catagories[1]: (*a*) Teeth which have been filled and in which all caries has not been removed; decay proceeds under the filling, and if the filling is intact there is no exit for the pus. (*b*) Teeth in which the pulp was septic at the time of filling and in which root treatment was instituted; a procedure based on very doubtful principles.[2] (*c*) Those in which the pulp has died as the result of some failure of technique and has become infected through the blood stream. (*d*) Root fragments which were septic at the time of the extraction or have become infected autogenously. In all such teeth there is a bead of pus enclosed in rigid walls out of reach of any tissue which can replace it, though occasionally nature deals with it by calcification. Organisms develop in it, being derived from the original caries or from the blood stream. Especially important among these are the anaerobic ones which generate tension by forming gas, so that one can visualize pus being actually squirted into the bone marrow sinusoids, thence entering the blood stream.

In all patients presenting vague or atypical symptoms I make it my practice to examine the teeth. I have almost lost count of the cases of so-called rheumatic disease which have resulted from infected teeth. Among the rarer diseases due to them I have seen recurrent lymphangitis,[3] pyrexia, gleet.[4] An excellent list of such cases was published by Mackey.[5]

At one time I thought that a vital pulp would not transmit infection, but a recent case has made me dubious. The patient had had attacks of fibromyositis, which cleared up for a year after the extraction of an infected dead tooth. He then had a recurrence, though in the slightest possible form; the attacks ceased on having a tooth refilled, the original filling showing decay around it. Is it possible that the patient had been rendered so susceptible by the previous attacks as to be affected by the small amount of toxin liberated by the subsequent caries? The lowering of a patient's immunity to streptococci is well known.

The importance of dead and infected teeth is but now being recognized. That they occur among the educated classes who take scrupulous care of their teeth makes them all the more unsuspected.—I am, etc.,

London, W.1, Jan. 19th. A. P. BERTWISTLE, F.R.C.S.Ed.

TREATMENT OF CANCER BY LEAD.

SIR,—As colleagues of Dr. Todd we feel justified in supporting his contention that Mr. J. Basil Hume wrote his general condemnation of the treatment of cancer by lead from his own experience of particular cases. Dr. Todd, in his letter published last week (p. 130), quoted cases well known to us, and we have seen many others which, in our opinion, justify us in asking Dr. Todd to co-operate with us in treating cancer cases with lead compounds. Relief from pain and sufficient improvement to allow patients to return to work are the usual results. It has not been our experience that the patients were converted into physical wrecks, and we have not been impelled to decline to share the responsibility of continuing the treatment. On the contrary, we have not hesitated to recommend the University of Bristol and the Royal Infirmary to contribute to the maintenance of the research in which Dr. Todd is engaged.—We are, etc.,

J. A. NIXON,
Professor of Medicine in the University of Bristol; Senior Physician to the Bristol Royal Infirmary.

C. FERRIER WALTERS,
Senior Surgeon, Bristol Royal Infirmary.

R. S. STATHAM,
Bristol, Jan. 21st. Gynaecologist to the Bristol Royal Infirmary.

VACCINE TREATMENT OF PUERPERAL SEPSIS.

SIR,—With reference to the paper by Dr. R. R. Armstrong and Mr. W. Shaw, published on December 15th, 1928 (p. 1082), in which they give the results of an investigation to decide the utility of sensitized vaccines in the prophylaxis and treatment of puerperal sepsis, might we suggest the following views to explain the disappointing results of these authors?

In this investigation the authors used a sensitized killed *Streptococcus pyogenes* vaccine. Dr. J. A. Arkwright (December 29th, p. 1193) criticizes the value of sensitized vaccines, "which the authors [Armstrong and Shaw] themselves, in agreement with most other workers, declare to be of very doubtful value." Whether or not sensitized vaccines are a failure, it must be admitted that in the past the results of treatment of puerperal sepsis by vaccines, and even antistreptococcal serums, are varied, and though by no means unfavourable are somewhat disappointing, more especially as most investigators are agreed that puerperal sepsis, especially the graver septicaemic forms, are due to *Streptococcus pyogenes*.

A review of the literature upon the subject of vaccine therapy reveals the fact that the best results were obtained from the use of autogenous streptococcal vaccines. In our opinion the main difficulty is to get the correct type of streptococcus with which to make the vaccine. There are an enormous number of species of streptococci; for example, the *Streptococcus viridans* group consists of at least fifty distinct varieties. The haemolytic group also consists of many types. It was formerly believed that *S. pyogenes* and *S. erysipelatis* were identical. Birkhaug, however, has now proved that *Streptococcus erysipelatis* is a definite specific type. Moreover, treatment in the past of erysipelas by an antiserum prepared from *Streptococcus pyogenes* was more or less a failure. It has been demonstrated, however, that an antistreptococcal serum made from the *Streptococcus erysipelatis* is extremely efficient.

In puerperal fever streptococci have been isolated from the uterine discharges, and several of these have been claimed to be the cause of puerperal fever. The streptococci isolated, however, have not been sufficiently identified. It is not enough to say that the streptococcus is haemolytic, because there are many varieties of haemolytic streptococci. A streptococcal vaccine prepared from such discharges may or may not contain the specific streptococcus, and may therefore fail to give results. In our present state of insufficient knowledge it is a question of

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[1] A. P. Bertwistle: The Role of Dead and Infected Teeth in Autogenous Infections, *British Medical Journal*, April 7th, 1928.
[2] C. Jent ... Dead and Infected Teeth: Ibid, April 28th, 1928.
[3] A. P. ... *Brit. Journ. Surg.*, 1926, p. 295.
[4] A. P. Bertwistle: The ... of Suppurating Pulps on Health, *The Dental Surgeon*, 1928, p. 596.
[5] L. Mackey: Dental Sepsis and Apical Infection, *The British Dental Journal*, September 1st, 1922.

luck whether the vaccine, be it autogenous or stock, really contains the causal organism. A streptococcus isolated in pure culture from the blood of a puerperal fever patient is more likely to be the true causal species.

The number of species of streptococci is enormous, and the identification of the various types is exceedingly difficult and baffling. Many varieties are certain to be obtained from uterine or vaginal discharges. It is not surprising, therefore, that the results of vaccine and anti-streptococcal serum treatment in the past have been disappointing, but this is not the fault of such modes of treatment. The reason of the failure is inability to isolate the proper species of streptococcus.

In our publications on the streptococci[1] we have shown that by the use of Warren Crowe's chocolate agar medium and photomicrography the whole problem of the differentiation of streptococci is rendered much more definite and accurate. We may mention the following examples to illustrate the difficulties and to impress the importance of this medium in differentiating the streptococcal group. Thus Warren Crowe has shown that a broth culture is never representative of the streptococci at the root of a tooth. Certain ones grow out to the exclusion of the others; thus, for example, one tooth extracted produced twelve varieties on his differential medium, whereas only three were found in the broth culture from the scraping of the apex of the tooth. In another case fifteen varieties of streptococci were cultured, and only one organism occurred in the broth. We mention Warren Crowe's medium in order to emphasize its utility as a differential medium for streptococci, as we feel this is not generally well known.—We are, etc.,

D. THOMSON.
R. THOMSON.

London, W.1, Jan. 16th.

THE TEMPERATURE IN PULMONARY TUBERCULOSIS.

SIR,—I am very grateful for the commendation and criticisms of Dr. Vere Pearson on January 12th (p. 80), and also welcome his references, because of the difficulty of finding them in the recent literature.

From 1921 to 1928, while I was medical superintendent of Creaton Sanatorium, I frequently attended meetings of the Society of Medical Superintendents of Tuberculosis Institutions, but I did not hear any discussion on the important subject of temperature. My paper was intended to give hints to beginners in the tuberculosis service and to interested general practitioners rather than to experts.

My contribution was originally entitled "Some points concerning the temperature in pulmonary tuberculosis," because it did not profess to cover the whole subject. It contained some observations on the history of thermometry, and reference was made to the admirable outline of the history contained in Dr. Varrier-Jones's book *The Significance of Temperature Variations in Tuberculous Disease*, but editorial exigencies compelled their withdrawal. In fact, the idea of the "plateau" and "valley" were borrowed from him for quite a different use; for this I hope he will forgive me.

I should like to clear up some of my "ambiguous points." As regards the time necessary for taking temperatures I was thinking more of the time of the overworked nurses rather than that of the patients. I would prefer that a nurse should insert the thermometer for a rectal temperature, in view of the possible risk of accident in a careless insertion by the patient. For the oral temperature, where each patient has his own thermometer, the nurse can go round and read the temperatures in rapid succession. I agree that "there is no such thing as a normal temperature" for all persons, and that is why I suggested that previous records for each patient should be obtained if possible. I had many female patients with a continued premenstrual rise of temperature lasting ten to fourteen days, but a week was about the average. Dr. Pearson takes this "normal" rise as a matter of course, but I could find no mention of it in the literature. The "febrile" premenstrual rise only is noted.—I am, etc.,

COLIN MILNE.

Banbury, Jan. 13th.

[1] *Annals of the Pickett-Thomson Research Laboratory*, vol. iii, et seq.

SIR,—The importance of a close study of the variations of the temperature of the body in pulmonary tuberculosis, especially in its chronic form, cannot be adequately and fully realized until extensive and exhaustive investigations have been made. Obviously Dr. Colin Milne's records and analyses are too sketchy and casual to help those who wish to understand the meaning of the changes of temperature and thereby to help their patients.

I have been studying the temperatures of chronic pulmonary tuberculosis since the discovery of tuberculin, by means of which we may at will produce temperatures of every kind and degree. I even venture to say that those who have not studied the fever phases induced by experiments with tuberculin under many conditions cannot realize the revelation that awaits them in this fascinating study. Of recent years I have taught many physicians to sense the music of a temperature chart as though it were a score of music written by a musical genius, and I would invite Dr. Colin Milne and Dr. Vere Pearson to come and learn for themselves at our institution what temperatures in chronic pulmonary tuberculosis mean, and how to create these entrancing charts for their own delight and the delight of their patients.

I must be candid and tell Dr. Colin Milne that his method of taking temperatures is but a jangle of discords; too many notes in the music are lost. He refers to a number of cases in which the temperatures have all been taken in the same perfunctory way. I fear that he is dealing with material he cannot control and his deductions may be open to criticism. It is not possible to learn much of temperature variations in pulmonary tuberculosis if one takes the temperatures only twice a day. Although Dr. Milne postulates that the temperatures must be determined with exactness he is satisfied with taking temperatures twice daily for three weeks and drawing conclusions thereon.

In my observations over some decades of years I have stipulated that the temperatures must be taken every four hours—even every two hours—and under conditions which are familiar to all my old pupils in Australia and my new pupils in England. Those who have studied with me in England will vouch for the thoroughness and trustworthiness of our method of taking the temperature, and I would invite all who wish to learn the lesson to be read from accurate temperatures taken according to our ideas to spend a few months at the Tuberculin Dispensary, 32, Fitzroy Street, W.1. Here we are producing at will temperatures in pulmonary tuberculosis, which on close study reveal to us some of the mysteries of tuberculosis and its laws of immunity and, still more, enable us to exploit tuberculin—the greatest discovery in medicine of modern times—so as to build up and strengthen the mechanism of immunity and thus give relief and hope of recovery to the myriads of human beings enmeshed in the coils of this insidious and treacherous disease.

When systematic and careful analyses have been carried out in conformity with the general principles I have followed, there will be no more talk of the advantages of rectal temperature records over mouth temperatures. Rectal temperatures, except in children, are as little required in chronic pulmonary tuberculosis as in other febrile conditions.—I am, etc.,

W. CAMAC WILKINSON, M.D.Lond.

London, W.1, Jan. 17th.

AMAUROTIC FAMILY IDIOCY.

SIR,—With reference to Dr. Stenhouse Stewart's article and interesting family tree of amaurotic family idiocy (January 19th, p. 101) I think Mendelism gives the answer to several of his questions. The disease is obviously a recessive characteristic, as otherwise two unaffected parents could not have affected children. It must therefore have occurred on the sides of both the parents (Wolff R. and Annie L.), who are of the Mendelian type DR. Rebecca is also a DR, and Lily, David, Jacob, Pauline, and Rachel are either DR or DD. The disease is such a rare one that the chances of a DR marrying into another tainted family are exceedingly small, hence the rarity of the occurrence in the second generation; nevertheless, this

happened in the case of Rebecca. Is she a cousin or more remotely a relation of her husband?

The answers to the questions are therefore: (1) It is exceedingly unlikely that Jacob's or Pauline's children will be affected, unless they have married near or distant relatives. (2) Rachel should be cautioned against such a marriage. (3) Rebecca should certainly have no more children unless she is willing to expect idiot children in the proportion of one in every four, always remembering that in a small series the laws of chance are such that two or more affected children may follow one another, as in the previous generation.—I am, etc.,

Sheffield, Jan. 19th. ROBERT PLATT, M.D., M.R.C.P.

TONSIL AND ADENOID OPERATIONS.

SIR,—As a general surgeon I should like to emphasize, in a very few words, what Mr. J. Aldington Gibb has said in your issue of January 19th (p. 132), on the subject of haemorrhage following tonsillectomy. He says, "Haemorrhage after the guillotine operation usually means that a piece of tonsil has been left behind." No truer words than these have been spoken on the subject, and I will go even further and say that haemorrhage after any operation for tonsillectomy usually means incomplete eradication of the tonsil, excepting, of course, "bleeders" in all their phases.

Many years ago I was a victim of "dissection" at the hands of perhaps the greatest man of the time, and I well remember coming out of the anaesthetic, which had lasted for an hour and a half, biting on a gag, and no less than three pairs of Spencer Wells forceps affixed to bleeding points in my fauces. On a holiday a fortnight later on board ship I had a severe haemorrhage from the fauces, and have since had tags of tonsil removed on two occasions. Though this operation might by some be referred to the "dark ages," yet the haemorrhage was due to imperfect eradication of the tonsil, and it does not in one whit contradict what Mr. Gibb has said.

Having performed many hundreds of these operations as surgeon to a children's hospital I have witnessed only two cases of severe haemorrhage, both due to a piece of tonsil being left behind. For this reason I think that what appears a simple operation to-day is not without risks of a serious kind, and it should be left to an expert.—I am, etc.,

Bradford, Jan. 19th BASIL HUGHES.

SIR,—The importance of this subject and the sharp conflict of opinion expressed in your columns move me to take definitely and plainly a side in the controversy.

Despite the imposing array of contributors to the discussion who have proclaimed their adherence, for divers reasons, to the "let it rip" method of treating tonsil bleeding, I am bold enough to challenge their opinions and practice. Surgeons, as we all know, vary regarding their sensitiveness to haemorrhage, and the more sensitive encounter more haemorrhage: the less, less. Personally, I am afraid that in earlier years I belonged to the latter variety, until a succession of humiliating and most uncomfortable afternoons led to a sharpening-up of my reactions.

Haemorrhage, during and after operation for the removal of tonsils, sufficiently severe to blanch the patient, is not uncommon if the surgeon contents himself merely with gauze or other temporary pressure. But death therefrom is rare. When it does occur it is apt to escape the attention—the frank attention—of the surgeon's mind, by masquerading under the title of a death from "shock," or "delayed chloroform poisoning" (characterized, be it said, by the vomiting of large quantities of dark liquid). The young operator would do well, therefore, to make a point of ligaturing all bleeding points that do not stop after a reasonable amount of pressure by gauze or pressure forceps, just as he would similar points in an external neck wound. Why the tonsil wound should be exempted from the ordinary rules of operative surgery, and by what magic it is free from the risks of wounds elsewhere, I confess I do not understand, in spite of the firm and decided tone of the "let it rippers." The fear of ligatures setting up sepsis is a bogy and may be safely ignored.

Finally, let me say that my experience as an operator, the experience of more years than I care to number, leads me to agree with every word that Mr. Tilley has written.—I am, etc.,

London, W.1, Jan. 19th. DAN MCKENZIE.

SIR,—I should like to endorse the views expressed by Dr. Lindley Sewell in your issue of January 12th (p. 84). Practically bloodless tonsil enucleation can be achieved with the La Force guillotine. This scores over other two-bladed guillotines which I have tried in the past two years, in that a crushing force can be applied which is many times greater than that of any other type I know. Hence the efficient haemostasis. One of its defects is that the cutting blade must be carefully readjusted after each tonsil is removed, otherwise the sharp blade may be sent home first, which would negative the bloodless object of the operation. This unnecessary obtrusion of the cutting blade is a definite objection when one considers that its function is quite subsidiary. The tonsil could equally well be cut off the crushing blade with a pair of scissors.

I hope to publish shortly details of a new guillotine and technique which I have used for the past six months. I utilize the recoil of the crushing blade when the latter is released from its crushed stump to set back automatically the cutting blade. This simple, fool-proof device makes it impossible to close the instrument sharp blade foremost. The crushing and locking device is mechanically more simple and powerful, and practically instantaneous, being effected by one half turn of a lever. These features make it, I think, almost as easy to use as an ordinary guillotine.

With regard to haemostasis, my results are practically identical with those of Dr. Sewell. If Dr. Sewell were to incorporate the "non-skid head" in his instrument (*British Medical Journal*, October 20th, 1928) I believe he could still further lower the figure of 5 per cent. of adult tonsils in which he finds it necessary to resort to dissection.

My recollection of Mr. Irwin Moore's condemnation is that it refers particularly to the torsion-avulsion manœuvres, in which the tonsil is literally torn out of its bed. Such crude procedures have no parallel in other departments of surgery, and, in the circumstances, the adjective "unsurgical" would appear to be particularly mild.—I am, etc.,

London, W.1, Jan. 13th. O. POPPER.

SIR,—Mr. Stuart-Low informs us that he "can never understand" this, and that he has "thought out" that, and has "given much attention" to the other. He also informs us that he "said some time ago" something about chloroform. It would be more interesting for us to know how many operations he has done under chloroform with how many deaths, if any.—I am, etc.,

Kensington, January 20th. J. MCNAMARA, M.D.

ASTHMA.

SIR,—With Mr. Frank Coke's complaint in the *Journal* of January 19th (p. 133) I sympathize. The impression given by the joint letter which he criticizes is too lugubrious as to the prognosis of asthma. Extended experience only confirms what I wrote in 1913: "there is no distressing and disabling diseased condition more amenable to correct handling than asthma." Others have confirmed that statement and I hope will again confirm it, so I content myself here by adding (what I have also said before) that in 50 per cent. of asthmatics the ailment begins before the age of 16, and that of these at least 90 per cent. can be cured, and stay cured, if treatment be begun before that age and the patient is not permanently a mouth-breather. The percentage, of course, steadily diminishes with duration of the ailment, and especially in senile asthma, but the general statement above in inverted commas remains true.

The most important remedial agent is a way of life. Heredity and infections are important causal factors; but asthma is largely a disease of civilization and the indoor life, and it is largely by a rational ordered way of life it can be met. Nevertheless, the more research, and particularly biochemical research, we have the better; it is surprising that this has been so much neglected.—I am, etc.,

Glasgow, Jan. 20th. JAMES ADAM.

SIR,—Mr. Frank Coke has stated very clearly the mischievous effect of "the ancient parrot cry that there is no cure for asthma," which is a totally illogical perversion of the truth as expressed by Sir Humphry Rolleston, Lord Dawson, Dr. Hurst, and Dr. Fremantle that "there is not any one form of treatment which is effective in all forms of asthma." He refers to methods which have cured scores of cases, but strangely omits one from which the most gratifying results have been obtained—namely, the judicious treatment of the nose. No one who has acquainted himself with the experiments of Dixon on the etiology of asthma (*Trans. Path. Soc.*, London, vol. liv, p. 17, and *Journ. of Physiol.*, vol. xlv) can entertain any doubt as to the share which nasal disease can take in the production of the asthmatic "explosion," even if only as the "detonator" which fires the cartridge." In these experiments it was found that in the decerebrate animal contraction of the bronchial muscle could be brought about by irritation of the nasal mucous membrane, especially in the upper and posterior part of the septum.

There is ample clinical evidence that judicious nasal treatment (as Mr. Coke says of other procedures) has "led to such an amelioration of symptoms as many patients are satisfied to call a cure."—I am, etc.,

London, Jan. 21st. JAMES DUNDAS-GRANT.

SIR,—Mr. Coke appears to have misinterpreted the statement in the publicity campaign of the Asthma Research Council of which he complains. It did not state that there was no cure for asthma; it merely emphasized the fact that no "certain cure" had been discovered. As the editorial footnote to his letter in your issue of January 19th (p. 134) added, this is far less misleading than to announce that "a certain cure" for asthma had been found, and the position was accurately and concisely stated by "there is not any one form of treatment which is effective in all cases of asthma." Surely Mr. Coke will agree with this, even though he could have devised a better method of evoking the financial support of the public for a comprehensive scheme of research. The Asthma Research Council has, however, no cause to complain of the financial support it has obtained, so far, as a result of the Mansion House meeting on January 15th.—I am, etc.,

T. T. JEANS,
Surgeon Rear-Admiral,
Medical Secretary, Medical Advisory Committee.

London, S.W.1, Jan. 21st.

CARDIOSPASM OR ACHALASIA OF THE CARDIA.

SIR,—I wish to thank Dr. Hurst for his letter in your issue of January 12th (p. 83) replying to my questions in the previous issue, but the answers are not very convincing.

In the first reply he begs the question completely when he states that "cardiospasm or achalasia of the cardia is obviously a condition of the cardia and of nothing else." Merely to state the fact that two names, devised to express two opposed theories, both include the word "cardia," is no argument at all. It would be just as reasonable to say that because hysteria is so called, it must obviously be an affection of the uterus and of nothing else. My point is that neither name is entirely satisfactory, partly because a similar condition does occur in the oesophagus at a distance from the cardia and there appear to be no sufficient grounds for assuming a different pathology. Dr. Hurst says he has only met one such case, but I can add three others apart from those in the literature, and they are not great rarities.

I still find it difficult to believe that a feeble sphincter like the cardia could grip the mercury tube as firmly as the anal sphincter can grip the finger unless the cardia were greatly hypertrophied, but Dr. Hurst agrees that such hypertrophy does not occur. I have watched the *x*-ray screening of these cases on various occasions, and frequently, after some minutes, the opaque meal begins slowly to trickle through into the stomach, even without an eight inch column. In one case the barium meal at first passed into the stomach without any evidence of obstruction, and then the cardia closed and no more passed through for about five minutes. This would suggest an active closure rather than achalasia, but I never found any gripping of the mercury tube.

I am not well versed in mechanics, but I should have thought that, in his answer to question 5, the comparison with the safety valve of a boiler did not help his theory of achalasia. Surely the action of a safety valve more nearly resembles an active contraction—or spasm—than a failure of relaxation. When the pressure within the boiler rises sufficiently high steam escapes, but as soon as the pressure falls there is an active closure of the valve brought about by a spring or other means. When the cardia is forced open by the weight of more than eight inches of food in the oesophagus, how can an "inability to relax" make it close again?

Dr. Hurst does not deny the possibility of spasm of the cardia or of other parts of the oesophagus, and I do not suggest that achalasia of the cardia does not exist. Indeed, it would seem to be one of the necessary results of complete degeneration of Auerbach's plexus. It appears to me that the condition is an affection of the oesophagus, as a whole or in any part, and that both names at the head of this letter attempt to fix the lesion at one particular part—the cardia.—I am, etc.,

London, W.1, Jan. 14th. C. C. BEATTY.

LIPIODOL.

SIR,—I get my lipiodol from a French firm, and as they advertised a special lipiodol syringe I applied for one on approval. It had a screw piston action and cannulae of different sizes screwed on to it, but there were no trocars supplied, showing that on the Continent and elsewhere where this syringe was used the operator had to cut right into the trachea. I take it that what your reviewer meant in his criticism of the book by Drs. Chandler and Burton Wood (January 5th, p. 21) was that a little slit should be made in the anaesthetized skin, the cannula and trocar being then introduced and pushed home. I am using Dr. Chandler's cannula and trocar now, and agree with your reviewer about the slit, as it accelerates the operation and causes less manipulation. I have just injected lipiodol into a patient who has a left side thoracoplasty with a discharging sinus, through which a good amount of pus periodically comes, and it will be interesting to see if the sinus is discharging from a bronchus or not.

Lipiodol will be useful in a small percentage of cases, but the operation is not pleasant to the patient, and the one thing against the use of the scalpel is that it adds to the psychological and unavoidable thought that he is "feeling his throat cut," as one patient expressed it to me.—I am, etc.,

Winsley, Jan. 20th. J. D. MACFIE.

DENTAL CARIES AND VITAMIN D.

SIR,—For more than two decades I have had under my professional care as school dentist many thousands of children for the whole period of their school lives. One lesson I have learned is to distrust these cases of so-called "arrested caries," and, from the frequency with which, after a time, extraction of such teeth has to be resorted to, I very much doubt whether the "arrest" is ever complete and final. This view, I think, finds some support from the Mellanby-Pattison paper, for the writers tell us that even in those sections of teeth where caries appeared to be completely arrested the dentinal tubules contained micro-organisms—though these latter, most obligingly, were apparently inactive. Also in Case 1 (of K. C., aged 3½) a tooth was extracted though arrest was taking place, and on being examined microscopically showed organisms "still present in patches." Now why, in so young a child, was that tooth extracted? It is a fair question to ask, and it ought to be answered.

If all these cases were followed up, not only for weeks or months, but for years, it is more than probable that the "bacterial onslaught," so far from being completely arrested, would be found still possessed of great powers of mischief. Was it not so in the case of K. C., aged only 3½?

Most of the points have already been dealt with by your earlier correspondents, Dr. Harry Campbell, Dr. Sim Wallace, and Mr. Barwise, with whose views I am in

complete accord. There is, however, one other feature of the investigation to which I feel bound to call attention. The children concerned were very young, and all had eight or nine badly carious teeth. Apparently it was found possible to probe the carious cavities with sufficient force to record in some way the degree of resistance met with. Where, then, was the difficulty, with such well-controlled children, of deciding whether certain teeth were dead or alive? Why could not the usual tests be applied to determine the point? It was evidently regarded as important, but it was found "impossible in many cases" to be sure of one way or the other. May I suggest that in a purely dental investigation, sponsored on the one part by the Dental Board, such an admission is truly surprising.

For my part I should rejoice if a short cut to the prevention and cure of dental caries could be found; but I know too well how it is brought about to have any doubt as to the right lines on which to proceed, if it is to be avoided—and in this connexion it would be difficult to overstate my indebtedness to the teaching and writings of Dr. Sim Wallace.—I am, etc.,

London, S.W., Jan. 13th. FREDK. BREESE.

THE DOCTOR AND CHEMICAL WARFARE.

SIR,—In your annotation on an article by Dr. Lockhart in the January *National Review* it is suggested that attempts to prepare the medical profession to meet attacks upon the civil population in the guise of chemicals from the air should await the discovery of an antidote to injury caused by poison gas. Dr. Lockhart's admirable article suggests both the necessity for an organization to meet an attack and the form the organization should take. Your suggestion is for treatment; his is for prevention.

The enormous number of persons likely to suffer in an attack upon one of our huge and densely populated towns may be gauged by the effect of the first use of poison gas upon unprepared troops at Ypres in 1915, when 5,000 were killed in five minutes and a very large number of casualties occurred. Surely to organize beforehand is a better way to prevent the terrible panic and loss of life certain to follow a gas attack from the air than to await the arrival of an antidote, however valuable; since several gases are likely to be employed in the attack, and there can be no certainty as to the nature of any of them, the chance of getting any such antidote to the expected casualty in time to be of any value is unlikely, and its value problematical.

In my manual on the protection of the civil population in chemical warfare, published by the St. John Ambulance Association (see *Journal*, December 29th, 1928, p. 1202), there is a description in a simple form of the principles and some of the details of an organization very similar to that of Squadron Leader Lawrence which was mentioned in your annotation. I venture to suggest that the subject as a whole is a very fitting one for the British Medical Association to take up; it might issue some practical scheme for the use of medical practitioners, in conjunction, of course, with the War Office Department for Chemical Warfare. There is much preparation to be done, and the available time may not be more than is necessary.—I am, etc.,

Wokingham, Jan. 14th. F. R. HUMPHREYS.

RADIUM AND CANCER.

SIR,—The letter which appeared in your issue of January 5th (p. 42), over the signature of the professor of physics at Trinity College, Dublin, on the subject of priority of claim to the radium needle technique, is timely. When I was working in the cancer research laboratories of the Middlesex Hospital in 1913 and 1914 Dr. W. C. Stevenson, during his visits to us, discussed the technique of treating malignant disease by small doses of radium put up in needles. His paper on this subject was read with great interest.

It is a pity that some of those who have been converted to believe in the value of radium therapy since the termination of the war should only quote our Continental colleagues as the originators of this particular technique.—I am, etc.,

A. CLIFFORD MORSON.

London, W.1, Jan. 21st

MEDICAL FOUNDATIONS.

SIR,—In your issue of January 5th (p. 40) Dr. Henry Robinson directed attention to two most excellent medical charities—namely, the Royal Medical Benevolent Fund and Epsom College. May I bring to the notice of your readers a third, the Society for Relief of Widows and Orphans of Medical Men, which is older than either of the two mentioned above, having been founded in 1788 and incorporated by Royal Charter in 1864? The objects of this society are to help the necessitous widows and orphans of its deceased members, and the income of the society enables it to make substantial grants yearly to those in need. Membership is open to any registered medical practitioner who at the time of his election is resident within a twenty-mile radius of Charing Cross. The privileges of membership are, however, retained should a member remove outside the area. The annual subscription is very small—£2 2s., £3 3s., £4 4s., according to the age of the candidate. Should any medical man who resides within the area be desirous of joining the society, or any benefactor desire to give a donation or bequeath a legacy, I shall be pleased to send him full particulars.—I am, etc.,

EDWARD J. BLACKETT, Secretary.

Society for Relief of Widows and Orphans of Medical Men, 11, Chandos Street, Cavendish Square, W.1, Jan. 10th.

Obituary.

DR. FRANCIS WILLIAM HARTLEY, whose death occurred from pneumonia, while on holiday at Llandudno, on January 1st, at the age of 63, retired from practice at Heywood, Lancashire, three years ago, after spending the greater part of his professional life in that, his native town. He received his medical education at Owens College, Manchester, and obtained the diplomas M.R.C.S., L.R.C.P. in 1893. After serving as an assistant in various towns for several years he began practice on his own account in Heywood. During the war he held a commission in the R.A.M.C. and served for a time in the South of England. He was keenly interested in professional affairs, and in the Rochdale and District Medical Society was president in 1913–14 and vice-president in 1920–21. He was also a member of the British Medical Association. We are indebted to a colleague for the following appreciation: Although a very loyal member of the Association and a regular attendant at meetings, Dr. Hartley could not be persuaded, owing to his retiring disposition, to accept any office, but; nevertheless, he always exercised a very real influence among his colleagues, having a high ideal of duty and professional behaviour, which he maintained with unfailing courtesy. The loss of his son at the age of 16, last spring, was a severe blow, borne with typical fortitude. Dr. Hartley is survived by his widow and one daughter. His funeral on January 3rd at Heywood was attended by several of his colleagues and by a large gathering of his former patients, who came to mourn the passing of a "very perfect gentleman."

We regret to record the death from septic pneumonia of Mr. JOHN LISTER WRIGHT, which took place at his home at Southsea on January 4th. In the Portsmouth district, where he had practised for many years, he was very well known and highly respected, and had been, at an earlier period, equally prominent in medical circles in Derby. He was born in 1859 at Launceston in Cornwall—where his father was in practice—and subsequently removed with his family to Wynberg, near Capetown, in South Africa, where he received his early education at the Diocesan College. He afterwards came to England, and pursued his medical studies at St. Bartholomew's Hospital, obtaining the diplomas M.R.C.S.Eng. and L.R.C.P.Ed. in 1884. A few months afterwards he returned to South Africa, and was appointed assistant resident surgeon to the New Somerset Hospital at Capetown. Two years later he joined his uncle, Dr. F. W. Wright, in Derby, and later succeeded him in practice in that town. Mr. Lister Wright had a preference for surgical work, and he was before long

appointed surgeon to the Derbyshire Hospital for Sick Children, an office which he held for about five years. Later he was elected to the surgical staff of the Derbyshire Royal Infirmary, but his work in this capacity was cut short by the failure of his health, which necessitated his removal to the South of England. Mr. Wright obtained a commission in the R.A.M.C. on the formation of the Territorial Force, and during the war served as a captain with the 5th Southern General Hospital at Portsmouth. He was medical officer to the Portsmouth and Isle of Wight Home and School for the Blind for twenty-seven years. His connexion with the British Medical Association extended over a considerable period, and from 1904 to 1907 he was a member of the Executive Committee of the Portsmouth Division. Although his interest in professional affairs was keen, he was of a somewhat retiring nature, and his kindly disposition and idealistic outlook led him to avoid controversy and conflict. At the funeral service in Portsmouth Cathedral Church the Bishop of Portsmouth paid a notable tribute to the personal and professional qualities of Mr. Lister Wright. Among those present were many members of the medical profession, including Dr. F. C. B. Gittings, honorary secretary of the Portsmouth Division of the British Medical Association. Mr. Wright leaves a widow and one daughter.

Dr. ROBERT GEORGE DE LA POER BERESFORD, whose death occurred on January 14th, at the age of 86, had spent about sixty years in practice at Oswestry, and had been mayor of that town for two years. He received his medical education at the Ledwich School of Medicine in Dublin and at the University of Glasgow, and in 1865 obtained the diplomas L.R.C.P. and L.R.C.S.Ed.; four years later he obtained the diploma L.R.C.P.Lond., and in 1871 he graduated M.D.Glas. Many years afterwards he renewed his studies, and so recently as 1916 obtained the D.P.H. of Liverpool University. After qualifying he held resident posts in Dublin, at Cork Street Fever Hospital and at Mercer's Hospital, subsequently commencing practice at Oswestry. Dr. Beresford was closely associated with the work of a number of institutions in that area; he was at one time physician to the Oswestry Joint Infectious Hospital, surgeon to the Cambrian Railway Company, and at the time of his death was consulting surgeon to the Oswestry Dispensary and the Oswestry and Ellesmere Cottage Hospital. He had completed fifty years' service in this capacity when, in 1927, he resigned his part-time appointment as medical officer of health for the Oswestry rural and urban districts. His association with the auxiliary forces as a medical officer covered many years also; he received the Volunteer Decoration, and retired after reaching the rank of surgeon-colonel. During the war he served as senior surgeon at the Oswestry Auxiliary Military Hospital. He took a keen interest in medical affairs, and was a Fellow of the Society of Medical Officers of Health, of the Royal Institute of Public Health, and of the Chemical Society. He was also an honorary serving brother of the Order of St. John. His many services to Oswestry and district were recognized in 1927, when he received the freedom of the borough. He was also a justice of the peace for the county of Salop.

Dr. DAVID JAMES GRAHAM, who died at a sanatorium in Aberdeenshire on January 14th, after a long illness, was a well-known Edinburgh practitioner. Not long after his return from military service in France Dr. Graham contracted a disorder in the throat which compelled him to lay aside active work, and despite his pursuit of health in various places the disease ultimately spread to the lungs and caused his death. He received his medical education at Edinburgh University, and graduated M.B., C.M. in 1895, proceeding M.D. in 1899. At the time of graduation he obtained the James Scott scholarship in midwifery, and he was afterwards successively assistant medical officer at the City Hospital for Infectious Diseases, Edinburgh, and resident medical officer in Chalmers Hospital, Edinburgh. He obtained the Membership of the Royal College of Physicians of Edinburgh in 1898, proceeding to its Fellowship in 1901. After commencing general practice, he was assistant to Dr. Haig Ferguson for several years. Dr. Graham gradually established an extensive practice, and held several public appointments, including those of medical officer to Donaldson's Hospital and to George Heriot's School, and surgeon apothecary to His Majesty's household at Holyrood Palace. For a short time he acted as physician to the Royal Public Dispensary, Edinburgh. Shortly after the formation of the Territorial Force he joined the 3rd Lowland Field Ambulance, and was later transferred to the 2nd General Scottish Hospital as registrar, in which capacity he served for some three years during the war before proceeding to France. In the neighbourhood of St. Omer and at Etaples he acted as commanding officer of the 58th and 11th Scottish General Hospitals, and for his services was awarded the O.B.E. He received the Territorial Decoration, and retired from the force with the rank of brevet colonel. He took an active interest in the V.A.D. service and Red Cross work before the war, and on his return from military service this interest was continued in the reorganization of the Red Cross work on a peace footing. His interest in professional affairs was not limited to any one aspect; he was a Fellow of the Edinburgh Obstetrical Society and of the Edinburgh Medico-Chirurgical Society, and a member of the Royal Medico-Psychological Association. He was also for many years a member of the British Medical Association. The sympathy and affection of many friends and patients, gained by his early work in practice, were increased by his vain search for health in recent years, and his death will be deplored by many friends in Edinburgh. Dr. Graham is survived by a widow, a son, and a daughter.

Dr. ARTHUR HENRY HEADLEY HUCKLE, who died suddenly on January 13th, after a long period of ill health, was well known and deeply respected in East Sussex, where he had been in practice in Hastings for many years. Born in Australia in 1870, he came to England at an early age, and was educated at Dulwich College, pursuing his medical studies subsequently at Guy's Hospital. In 1895 he obtained the diplomas M.R.C.S.Eng., L.R.C.P.Lond., and L.S.A., having, a year before, qualified as a Licentiate in Dental Surgery in the Royal College of Surgeons. Later he was called to the Bar as a member of the Middle Temple, and in 1910 he obtained the D.P.H. of the English Royal Colleges. In Hastings Dr. Huckle built up an extensive practice, and held a number of public and other appointments, the nature of which will serve to indicate the wide range of his interests. He was consulting physician to the Hastings Union Infirmary, medical superintendent of the Hastings Borough Sanatorium, honorary pathologist and honorary dermatologist to the East Sussex Hospital, and medical officer to the Hastings and East Sussex Venereal Disease Clinic. He was also a member of the British Medical Association and of the East Sussex Medico-Chirurgical Society. Among outside affairs Freemasonry was perhaps his chief interest. He was a justice of the peace. We are indebted to Dr. William Gover for the following tribute: The sudden death of Arthur Headley Huckle has come as a personal grief to many of his colleagues, in whose affections and esteem he held a high place. He had been in poor health for some months, but the end came unexpectedly. Huckle was a man of very wide knowledge. He had qualified in dentistry and had been called to the Bar, while years of general practice, illuminated by constant study, had given him a vast experience, which he placed at the disposal of his friends in a spirit of humility and self-effacement that was entirely characteristic. Of late years he had somewhat contracted the sphere of his activities, and devoted himself mainly to pathology, fevers, and venereal disease. In the laboratory he was a pioneer, for ever trying out some new line of treatment or fresh method of diagnosis, with all the enthusiasm of youth. His work in the sanatorium was on the same plane. His treatment of fevers always gave confidence to brother practitioners and to patients alike, and they knew that any fresh discovery in medicine would be immediately available. If Huckle could not save a case no one else could have done so. It was perhaps in the

venereal diseases clinic, where the qualities of a gentleman are most required, that he seemed particularly to shine, and where his sympathetic understanding, kindly tact, and vast knowledge of medicine had their widest scope. It would hardly appear possible to fill the gap he has left.

VITAL STATISTICS FOR ENGLAND AND WALES, 1928.

We are indebted to the Registrar-General for the following statement regarding the birth rates and death rates and the rates of infantile mortality in England and Wales and in certain parts of the country during 1928. The statement is issued for the information of medical officers of health. The birth rate and infantile mortality rate for London have been provisionally corrected for transfers.

ENGLAND AND WALES.

Birth Rate, Death Rate, and Infantile Mortality during the Year 1928 (Provisional Figures).

	Live Births per 1,000 Population.	Deaths per 1,000 Population (Crude Rate).	Deaths under One Year per 1,000 Live Births.
England and Wales (on 1928 estimated population)	16.7	11.7	65
107 county boroughs and great tow... [illegible] London (on 192 156 ...ilations from 20,000 ... in 1921—on 1927 estimated population)	16.9 16.7	11.6 10.6	70 59
London (on 1927 estimated population)	15.9	11.6	67

The death rate for England and Wales relates to the whole population, but that for London and the two groups of towns to the civil population only.

England and Wales.

The birth rate is 0.1 per 1,000 above that of 1927. The death rate is 0.6 per 1,000 below that of 1927, and only 0.1 per 1,000 above the lowest recorded (1923 and 1926). The infant mortality rate is the lowest on record, 4 per 1,000 births below that of 1923.

Universities and Colleges.

UNIVERSITY OF OXFORD.

A RHODES Travelling Fellowship has been awarded to Malcolm H. MacKeith, M.D., Fellow of Magdalen College.

UNIVERSITY OF CAMBRIDGE.

At a congregation held on January 18th the following medical degrees were conferred:

M.B., B.Chir.—S. W. Savage, F. Smith.
B.Chir.—L. Foulds, E. Clayton-Jones, A. J. Dix-Perkins, H. F. Bateman, L. T. Hilliard, J. C. F. Lloyd-Williamson.

UNIVERSITY OF DUBLIN.

TRINITY COLLEGE.

At the second winter commencements, held on January 19th, the degree of M.D. was conferred on H. E. Murray of the Indian Medical Service.

The Services.

NAVAL MEDICAL COMPASSIONATE FUND.

At the quarterly meeting of the directors of the Naval Medical Compassionate Fund, held on January 22nd, when Surgeon Vice-Admiral Arthur Gaskell, C.B., O.B.E., Medical Director-General of the Navy, was in the chair, the sum of £100 was distributed among the several applicants.

DEATHS IN THE SERVICES.

Surgeon Lieutenant Henry Johnson Scott, R.N., was recently drowned at Shanghai. He was educated at Glasgow University, where he graduated as M.B. and Ch.B. in 1925, took a short service commission in the navy on July 9th, 1926, and was posted to H.M.S. *Cricket*, on which he was serving at the time of his death, on September 22nd, 1928.

Major Alexander Oswald Cowan Watson, R.A.M.C.(ret.), died suddenly in Edinburgh on January 4th, aged 70. He was born in Bombay on November 7th, 1858, the second son of the late Rev. Alexander Boog Watson, LL.D., of Cardross, and was educated at Edinburgh University, where he graduated as M.B. and C.M. in 1883, after taking the L.R.C.S. and P.Ed. in 1882, and subsequently took the F.R.C.S.Ed. in 1889 and the B.Sc. in public health of Edinburgh in 1897. He also studied in Aberdeen, London, and Vienna. Entering the army as surgeon on February 5th, 1887, he became major after twelve years' service, and retired on September 5th, 1908.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

Both Houses of Parliament assembled on January 22nd to resume a session which may end with a dissolution about Whitsuntide. In the Commons three more days were assigned to the Committee stage of the Local Government Bill. Discussions were arranged in the House of Lords on de-rating and on the Channel tunnel.

A meeting of the Parliamentary Medical Committee was summoned for January 23rd. The business proposed was discussion of the public health clauses of the Local Government Bill. An application suggesting a conference on the bill was before the Committee from the Society of Medical Superintendents, as was also a proposal from the National Council of Social Service for an interview with the Committee about prescribing under the National Health Insurance Act.

Local Government Bill.

Consideration of the Local Government Bill in committee was resumed in the House of Commons on January 22nd, this being the fifth allotted day under the time-table motion. On Clause 55, which gives relief from rates in respect of industrial and freight transport hereditaments, Mr. BRIGGS moved an amendment to exclude from the benefits of de-rating breweries, distilleries, and tobacco factories. Mr. CHAMBERLAIN resisted the amendment. Miss WILKINSON, in supporting the amendment, said that the common sense of the country, and especially of the women, would be against handing over this public money to the liquor and tobacco industries, when the Government was cutting down the grants for maternity and child welfare. The grants for milk and nursing mothers were also being reduced. Yet this was at the moment when the Queen had written to the newspapers to say that she was disturbed by the appalling increase in deaths in cases of motherhood. The amendment was rejected by 84 votes. Clauses 56 to 67, which were subsequently passed, dealt largely with adaptations of enactments.

Slum Clearance Schemes.—Sir KINGSLEY WOOD, on January 22nd, told Commander Kenworthy that between April 1st, 1925, and December 31st, 1928, the latest date for which particulars had been furnished, 8,540 buildings had been acquired for demolition, 6,092 buildings had been demolished, and 6,949 new dwellings had been erected in connexion with slum clearance schemes. Approximately 31,000 persons had been rehoused in these new dwellings. Commander KENWORTHY asked if there was any prospect of these operations being expedited. Sir KINGSLEY WOOD replied that local authorities were displaying more vigour in slum clearance schemes. Sir J. GILMOUR, replying to Mr. Stephen, said that the total number of houses completed in Glasgow under slum clearance schemes was 996 in 1926 and 838 in 1927. The number of slum houses in the city remaining to be dealt with was estimated to be 13,000.

Medical News.

At the meeting of the Royal Sanitary Institute to be held at 90, Buckingham Palace Road, S.W., on Friday, February 1st, Dr. F. R. Humphreys will open a discussion on the civil population and chemical warfare. The chair will be taken by the Earl of Halsbury at 5 p.m.

A POST-GRADUATE course in orthopaedic surgery will be held at the Royal National Orthopaedic Hospital, 234, Great Portland Street, W.1, from March 11th to 23rd, with lectures and demonstrations daily. Further particulars may be obtained from the secretary of the Hospital or from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

THE Fellowship of Medicine and Post-Graduate Medical Association announces that Mr. Malcolm Hepburn will give a lecture on "Some apparent difficulties of general practitioners in ophthalmic work" at the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Monday, January 28th, at 5 o'clock. On the following day, at 4.30 p.m., Dr. Batty Shaw will give a clinical demonstra-

tion at the Brompton Hospital for Consumption, and at 4 p.m. Mr. Rodney Maingot will lecture on "The injection treatment of varicose veins," with a demonstration of the methods and results in over fifty cases, at the Royal Waterloo Hospital. Dr. R. A. O'Brien will demonstrate the prophylactic and therapeutic value of vaccines and serums in general practice at the Wellcome Museum of Medical Science, 33, Gordon Street, W.C., on Wednesday, January 30th, at 4 p.m. There is no fee for attendance at these lectures and demonstrations. At the Prince of Wales's General Hospital a two weeks' intensive course in medicine, surgery, and the specialties will begin on January 28th, while from January 29th to February 2nd a series of lecture-demonstrations in psychological medicine will be given at the Bethlem Royal Hospital. Special [illegible] February will deal with gynaecology, [illegible] of the chest and of children, and neurology. Detailed syllabuses and information regarding the general course may be had from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

THE new recreation and lecture rooms at the Queen Mary's Home for St. Bartholomew's Nurses were opened by Sir Kynaston Studd, Lord Mayor of London, on January 17th. The new rooms lie immediately behind the main buildings of the home, which provides accommodation for 312 nurses and superintendents.

WESTMINSTER HOSPITAL has received a cheque for £2,000 from an anonymous donor towards the erection by the hospital of scientific laboratories in connexion with the new radium annexe to be opened shortly.

THE Queen has given her consent to the new wing of the Elizabeth Garrett Anderson Hospital being named "The Queen's Wing." At the official opening of the hospital in the spring she will receive the purses and casket of jewels that are at present being collected. It is intended to utilize the proceeds of the sale of the jewels for the endowment of a bed. The new building has already been completed and equipped, and was recently dedicated.

AN appeal has been issued for financial support for the Industrial Health Education Society, signed by Sir Humphry Rolleston, the honorary president. The society, which was formed about three years ago, exists to provide information and advice to industrial workers on occupational diseases, personal hygiene, general health, and accident prevention largely by means of lectures by medical men. Its work has gained a wide measure of support among members of the medical profession, employers of labour, and representatives of employees' organizations. Several pamphlets have been prepared and circulated. An account of the activities of the society was given in the *Journal* of April 7th, 1928 (p. 605). Hitherto no request has been made for outside assistance, but the expansion of its work has made it necessary to raise the sum of £5,000 to meet the demands made upon it. Communications regarding the appeal or the work of the society should be addressed to the general secretary, Mr. James Mackenzie, 84, Kingsway, W.C.2.

THE late Mrs. Sowerby of Cumwhinton, near Carlisle, has left the residue of her estate, which will probably amount to about £6,000, to the Cumberland Infirmary.

THE second congress of the German Society for the *Investigation of the Circulation* will be held on March 4th and 5th at Bad Nauheim, when papers will be read on the signs of age and wear in the vessels, by Dr. Gruber of Göttingen, and on oedema and its treatment, by Dr. Nonnenbruch of Prague. Further information can be obtained from Dr. Arthur Weber, Nauheim.

THE fourth Congress of Industrial Medicine will be held at Lyons on April 3rd, 1929, when the following subjects will be discussed: (1) silicosis, introduced by Dr. Mavrogordato (South Africa), Professor Boehme (Germany), Professor Irvine (South Africa), Professor E. L. Collis (Great Britain), Professor Thiele and Professor Sternberg (Germany); (2) cataract as an industrial disease, introduced by Professor Elschnig (Czechoslovakia) and Professor Rollet (France); (3) endocrine organs and intoxications, introduced by the Italian Professors C. Biondi, L. Ferranini, and N. Prude. Further information can be obtained from the secretary, Dr. Mazel, 54, Avenue de Noailles, Lyons.

THE thirty-third congress of French-speaking alienists and neurologists will be held at Barcelona from April 3rd to 9th, under the presidency of Dr. Lalaune, medical superintendent of the Mareville Asylum (Meurthe-et-Moselle), and Dr. Jimeno-Rieto, director of the National Asylum at Saragossa. The following subjects among others will be discussed: hereditary syphilis in the etiology of mental disease, sensory symptoms in disseminated sclerosis, and psychiatric examination of criminals.

AN International Congress of Medical Women will be held in Paris from April 11th to 15th.

THE second international congress on malaria will be held at Algiers from May 19th to 21st, 1930, simultaneously with the celebration of the fiftieth anniversary of Laveran's discovery of the *Plasmodium malariae*. Further information can be obtained from the General Secretary, Institut Pasteur, Algiers.

THE following appointments have recently been made in the French faculties of medicine: Dr. Labat as successor of Professor Barthe in the chair of toxicology and hygiene, and Dr. Henri Bonnin as successor of Professor Le Dantec in the chair of colonial medicine and tropical diseases at Bordeaux, Dr. Carrière, professor of children's diseases, as successor of Professor Lemoine in the chair of clinical medicine; and Dr. Minet, professor of therapeutics, as successor of Dr. Carrière in the chair of children's diseases at Lille.

THE Academy of Sciences, Medical Faculty, and Medical Society of Vienna have jointly set up a committee to arrange for the celebration, on April 26th, of the centenary of the birth of the celebrated Vienna surgeon, Theodor Billroth, who died in 1894.

THE Health and Cleanliness Council has published two excellent little pamphlets—*Health and Beauty*, by Miss Edith A. Cocher and Dr. Elizabeth Foley, and *Keep Fit*, by Colonel R. J. Blackham, M.D., and Mr. George H. Green—intended for distribution to girls and boys respectively. Supplies are offered free of charge to teachers whose charges are about to leave school and to the leaders of juvenile clubs and organizations. Both booklets are clearly written and brightly illustrated, and contain a wealth of common sense and practical advice. They are commendably free from the error of "preaching," which young people are quick to detect and resent. Inquiries about supplies should be addressed to the secretary of the Council, 5, Tavistock Square, London, W.C.1.

EDWARD ARNOLD AND Co. announce for early publication a second and enlarged edition of Professor Robert Muir's *Textbook of Pathology*.

IN a supplement to the issue of *Nature*, dated January 19th, is published an abridged and revised version of Professor A. E. Boycott's presidential address on filterable viruses, delivered on October 16th, 1928, before the Section of Pathology of the Royal Society of Medicine.

WE have received the first issue of a new monthly journal entitled *Le praticien du Nord de l'Afrique*, published under the editorship of Dr. L. Prou at Algiers, which already possesses two other medical journals—*L'Algérie médicale* and *La Revue générale de médecine et chirurgie de l'Afrique du Nord*. The issue contains original articles on pneumotomy in gangrene of the lung, treatment of gastric atony, synechiae of the nasal fossae and their treatment by diathermy, pleural eclampsia in artificial pneumothorax, clinical notes, abstracts from current literature, and reviews of books.

THE *Year Book* for 1929 of the United Kingdom Alliance contains, in addition to a variety of material relating to the temperance question and relevant statistical matter, an interesting article on "The place of the alcohol question in social hygiene," by Sir Arthur Newsholme, who discusses the effects of the use of alcohol particularly in relation to health. The *Year Book* may be obtained from the office of the Alliance, 1, Victoria Street, S.W.1, price 2s.

THE Alvarenga prize of 300 dollars offered by the College of Physicians of Philadelphia for the best original work on any subject in medicine will be awarded on July 14th. Competitors should send in their essays to the secretary, Dr. John Girving, 19, South 22nd Street, Philadelphia, by May 1st.

A GIFT fund amounting to over £280,000, raised by the Swedish people in celebration of the seventieth birthday of King Gustaf V, is to be devoted to subsidizing a campaign against cancer. Six grams of pure radium, costing £63,000, have been purchased for distribution to various centres under the direction of Professor Goesta Forsell, and with the remainder of the fund it is intended to pay for the technical equipment of institutions engaged in cancer research.

MAJOR JOHN HERBERT BANKES, late R.A.M.C., has been appointed a deputy lieutenant for the County of London.

DR. CUNÉO has been elected president of the Société de Chirurgie, and Professor F. Besançon president of the Société Médical des Hôpitaux de Paris, for 1929.

THE tenth salon des médecins, organized by Dr. Paul Fabier for the exhibition of pictures, sculpture, engravings, and decorative art by medical and dental practitioners, veterinary surgeons, pharmacists, students, and their families, will be held at the Cercle de la Librairie, 117, Boulevard St. Germain, Paris, from April 21st to 30th.

A BELGIAN society of gastro-enterology has recently been founded at Brussels, under the presidency of Dr. Georges van Damme.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863, and 9864* (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:
EDITOR of the *British Medical Journal*, *Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediscera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

HOUSE AND SURGERY.

D. X., "who is about to have a house built with surgery attached, would be glad of practical information on this matter from any doctor with recent similar experience.

TREATMENT OF DEAFNESS.

"W. D. H." invites suggestions for the treatment of a very deaf man, aged 50. The blood pressure ranges between 120/240 and 140/300. The Wassermann reaction is positive, but there is no history of infection, which probably dates back at least six years. No improvement followed the administration for one month of potassium iodide gr. xlv, with fractional doses of calomel and lig. hydrarg. perchlor. daily, followed by six ten-daily injections of 914 intravenously and bismuth and thiosulphate intramuscularly. The deafness is increasing. The patient is not very tolerant of arsenic, the doses of which ranged from 0.15 to 0.45 gram. He is now taking 60 grains of potassium iodide daily. The urine shows a slight but definite trace of albumin, and the blood pressure is 130/260.

PAIN IN VARICOSE VEINS.

DR. ADA MCLAREN (London, W.1) writes: I think Dr. Duncan Greig would find the result satisfactory if he advises ultra-violet therapy in the case he writes about of pain in varicose veins. I have not had a failure during the four years I have used a tungsten lamp for that condition.

INCOME TAX.

Car Transaction.

"T. B. E." a year or two ago purchased a second-hand R 12-h.p. car for £200. In March of last year he sold it for £40 and bought a 14-h.p. M car for £250. He is now on the point of selling the M car for £76 and buying a 16-h.p. A car for £315; both transactions fall in the same financial year. What should he be allowed?

*** He cannot claim for the cost of improving his car equipment, but nominal horse-power is only one point for consideration out of several, and an increase in horse-power does not *necessarily* connote an increase in capital outlay. The allowances due are as follows:—*First transaction*: £200−£40=£160. There was some capital outlay here, as the first car was second-hand. *Second transaction*: £250−£76=£174. It is clear that there was capital improvement here. Taking the series of transactions as a whole "T. B. E." has expended £200+£250+£315=£765, and has received £40+£76=£116—that is, his net expenditure has been £765−£116=£649. The two allowances to be made are £160+£174=£334, which sum deducted from £649 leaves £315, the price of the car on which no allowance has yet become due.

LETTERS, NOTES, ETC.

RISK OF INFECTION FROM WASHING APPLIANCES.

DR. LACHLAN GRANT (Ballachulish) informs us that he has addressed to the chief medical officer of the Health Department of Scotland an "open letter" on some causes of the spread of infectious diseases and their prevention, in which he seeks to indicate the dangers to health associated with the use of the ordinary types of earthenware wash-hand basin (as commonly placed in bedrooms) and of lavatory wash-basin. Dr. Grant points out that in both types deposits of dirt of many kinds are frequently to be detected; even the lavatory type of basin, fitted with hot and cold water taps, is by no means satisfactory. A deposit is often left at the level of the water surface, which mixes with the clean water placed in the basin by the next user. Even the practice of allowing the water to run while washing does not, he considers, give much greater security from micro-organismal infection, and ordinary cleansing measures are not sufficient to ensure sterilization. Dr. Grant has carried out exhaustive examinations of lavatory basins in common use; on microscopical examination, following the centrifuging of the basin fluids, much filthy matter was detected, and bacteria of the cocci, bacilli, and spirilli classes were observed. In bacteriological tests, with culture media inoculated direct from the basins themselves, apart from the contaminating micro-organisms, like the *Bacillus subtilis* and numerous moulds, the two predominating growths were the ordinary pus-forming [illegible] *pyogenes* and *albus*—and the *Bacillus* [illegible] cocci, resembling the *Micrococcus ca* [illegible] a bacillus of the diphtheroid type. Dr. Grant suggests that the present methods of washing make for infection by the nasopharynx—the channel by which most infectious diseases are spread. His remedy is the fitting of all wash-basins with a raised tap (having a rose, spray wave, or jet outlet) removed some distance from the side of the basin, so as to avoid the need for contact with this source of contamination: by means of this appliance the washing of the hands and face would be done by the continuous use of pure, uncontaminated water. In his letter he describes at length the ideal type of fitting and explains its advantages; he gives a list of infectious likely to be disseminated by the present common type of basin, and indicates the dangers arising from their use by "carriers," finally emphasizing the importance of supplies of uncontaminated running water in maternity work. Dr. Grant urges the need for a publicity campaign to advocate the use of fittings of the new type, and suggests that a conference be summoned by the Minister of Health to consider the questions raised, and to arrange for further research in connexion with present-day sanitary appliances.

TREATMENT OF EMPYEMA.

DR. STUART TIDEY (London, W.) writes: The treatment of empyema has always been a source of anxiety to the surgeon, owing to the persistence of the suppurating cavity after the pus has been first evacuated. This is due in part to the rigidity of the thoracic wall not allowing the outer wall of the abscess cavity to fall in, and in part to the absence at the seat of lesion of the physiological pull which would normally keep the lung in contact with the chest wall. To overcome the obstruction to falling in of the chest wall it is the practice to resect portions of one or more ribs, a measure which is frequently successful. Pending rib resection, however, and in the event of resection being contraindicated by the condition of the patient, there is a simple measure which I have often found to be attended with gratifying results, namely: the constriction of the lower part of the chest wall by a bandage or binder passing directly over the lesion. The bandage may be kept from contact with the operation wound by means of a suitably adapted "surgical bridge," such as I described in the *Medical Press and Circular*, September 21st, 1927. The constriction compresses the lower thorax and its contents, thereby relaxing tension on the abscess cavity and allowing it to close. It must not be employed, however, till a free opening has been made for the escape of pus.

TREATMENT OF ASTHMA.

DR. W. J. MIDELTON (Bournemouth), referring to Dr. S. Gilbert Scott's article on the treatment of asthma by radiation (January 5th, p. 9), wishes to call attention to the value of such measures as the cautery, blisters, and irritants which promote the formation of pustules. He ascribes the benefit that follows in some cases to stimulation of the vagus or to local breaches in the skin, providing an outlet for toxins or leucocytes carrying micro-organisms.

MIXED HISTORY.

THE confusion in the lay press between the General Medical Council and the British Medical Association is interminable, so that it is perhaps no wonder that men of light and leading in other professions stumble at the same little stile. Not long ago a distinguished Cambridge professor referred in a public address to the "British Medical Council," but a new version (writes a correspondent) was forthcoming the other evening from a member of the council of the Royal Institute of British Architects, who was expounding to a general meeting a scheme of reform for that body. Drawing a parallel from the medical profession, he said that when doctors became registered "the two Royal Colleges were entirely swamped as an executive for voicing the views of the profession by the General Medical Council of the British Medical Association."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 48, 49, 52, 53, and 54 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 27.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

82. Seasonal Variation of Infectious Diseases.

P. WORINGER (*Journ. Méd. de Lyon*, December 5th, 1928, p. 707) believes that the study and treatment of the exanthemata have been retarded by the fact that attention has been concentrated hitherto upon bacteriology to the exclusion of the consideration of other factors, such as seasonal variations, which have an important effect on human beings. Statistics of infectious diseases in temperate climates show that almost all conform to a type, either hiberno-vernal with a maximum prevalence in March, or aestivo-autumnal having a maximum incidence in September. To the first group belong pneumococcal, meningococcal, and streptococcal infections, tuberculosis, and epidemic encephalitis; in the second group are enteric fever, dysentery, cholera, and poliomyelitis. The only exception is diphtheria, which has a definitely hibernal incidence. Woringer believes that these seasonal variations are not due to changes in bacterial type, but to alterations in the patient's systemic resistance under changing meteorological conditions. In hiberno-vernal infections deficiency of sunlight has prepared the soil for infection, while sunlight reinforces cellular resistance. Woringer terms hiberno-vernal infections which are inhibited by sunlight "heliophobic," and aestivo-autumnal diseases which are not thus inhibited "heliophilic." The action of sunlight on heliophobic infections appears to be due to immunization through the skin, termed "dermophylaxis." The author finds it more difficult to determine the meteorological factor which prepares the soil in heliophilic diseases, and suggests that immunization in them does not occur in the skin, but in the intestine (enterophylaxis). He concludes that on these lines it is possible to define the exact position that helio-and actino-therapy should occupy in the fight against infection. Systematic employment of light as a prophylactic and therapeutic agent appears to reduce definitely the morbidity and mortality from heliophobic infections. He provides a number of curves showing the seasonal variations of different infections, and advocates the establishment of heliotherapeutic centres under medical supervision.

83. Paroxysmal Ventricular Tachycardia.

H. MOORE (*Irish Journ. Med. Sci.*, December, 1928, p. 754) describes a case of ventricular paroxysmal tachycardia, and contrasts the rarity of this condition with the relative frequency of auricular and nodal tachycardia. The patient, a boy aged 12, who had had no rheumatic manifestations, experienced an attack of violent palpitation following a severe fright. Five months later a similar attack occurred, and he was found to have moderate congestive failure with cyanosis; the pulse rate was 166 and regular. Vagal pressure gave no result. An electro-cardiogram showed anomalous Q R S complexes, which were notched and nearly three times the normal duration; the P wave could not be identified. Digitalis therapy was unsuccessful, but normal rhythm was restored after 2.6 grams of quinidine had been given, and the failure quickly disappeared. Subsequent attacks were terminated by quinidine, but administration of this drug did not prevent recurrence. The abnormal rhythm was observed to be sometimes slow and sometimes rapid, the latter often succeeding the former. The intramuscular injection of atropine sulphate (1/100 grain) was found always to provoke a paroxysm of tachycardia, which in turn could be terminated by quinidine. Electro-cardiograms showed the tachycardia to be ventricular, since transitional cycles were demonstrated in which the P R interval was so short that the ventricle must have responded to its own impulse as well as to that of the auricle. The patient has been under observation for nearly five years, and the attacks have diminished in severity and frequency despite the cessation of treatment during the last nine months.

84. Peribronchial Syphilitic Sclerosis.

IN addition to the clinical syndrome occurring in chronic syphilitic bronchial catarrh, R. BENDA (*Arch. Méd.-Chir. de l'Appar. Respir.*, August, 1928, p. 283) describes an anatomical and radiological syndrome of peribronchial sclerosis, which is not less diagnostic. Syphilis has a marked affinity for the bronchi, the blood vessels being little attacked; this contrasts with its effect in other organs, such as the kidneys and liver. Syphilis can attack any part of the tracheo-broncho-alveolar tract, and the lesions vary in degree. Syphilitic sclerosis proceeds by large tracts which dissect the lobe and lobules, creep between the alveoli, and surround the bronchioles and vessels. The sclerosis forms rings, the thickness of which is directly proportional to the size of the tubes. The bronchi are either thickened or mutilated, as the sclerosis may be of two types—namely, the hypertrophic, and the mutilating or destructive. In the latter the bronchial walls are infiltrated, and, in extreme cases, are reduced to scattered particles. Though the vessels are less affected, a number of arterioles are encircled by a periarteritis. The sclerosis consists of newly formed tissue in which collagenous fibres and capillaries predominate. In places are found follicular islets, rich in plasmatocytes and young vessels which bear a strong resemblance to syphilitic gummata. Only in extensive infections does ectasis occur. On radiological examination the broncho-vascular arborizations, rendered visible by the sclerosis, appear on the screen and plates as large fan-shaped tracts, which can be followed to their ultimate endings; between these tracts the concomitant peri- and intralobular sclerosis appears as fine marblings or more or less homogeneous mottlings. These last are very limited, and the essential characteristic of the syndrome—namely, the great arborescences—remain of first importance. Calcified nodules are not found in uncomplicated syphilitic bronchitis, but abundant calcareo-sclerosis is present when tuberculosis is an associated condition. A marked diagnostic point is the presence between the broncho-vascular tracts of numerous dark rings in the parahilary regions.

85. Post-typhoid Myocarditis.

L. ENGEL (*Thèses de Nancy*, 1927–28, No. 388), who records twenty-two cases in patients aged from 17 to 80, states that post-typhoid myocarditis may occur either progressively after the acute stage of the fever or suddenly after a latent period as the result of cardiac fatigue, when it is manifested by symptoms of ventricular insufficiency of the anginal type. As a rule the condition rapidly yields to cardiac tonics, and the immediate prognosis is good in most cases when treatment is applied in time. The prognosis, however, is more serious when the symptoms develop rapidly after the acute stage. The symptoms are to be attributed to a granular degeneration of the muscle fibres or to vascular lesions chiefly involving the arterioles. In every case the lesions are much less pronounced than in diphtherial myocarditis. The author concludes that a careful examination of the heart should be made in the case of every convalescent from typhoid fever.

Surgery.

86. Complications following the Injection Treatment of Varicose Veins.

H. O. MCPHEETERS and C. O. RICE (*Journ. Amer. Med. Assoc.*, October 13th, 1928, p. 1090) assert that, though the mortality rate following the injection treatment of varicose veins is much less than with operation, the method should not be attempted by those unaware of the possible complications. The authors describe the microscopical changes which develop after the injections, and the solutions in daily use are enumerated. They think that no one solution can be considered adequate for every purpose; each solution has quite definite indications. The most dreaded complication is pulmonary embolus, and some cases have been reported of this occurrence, which, however, is very rare. Emboli are more likely to follow the injection of solutions which cause coagulation of the blood, but these are now little used. Emboli are to be feared when phlebitis is present or has recently subsided, and injections should not be made until all tenderness and signs of phlebitis have entirely disappeared. Other non-fatal complications may occur. The most common of these is the formation of a blanched ecchymotic patch or slough following the perivascular injections of sodium chloride and sodium salicylate. If an excess of the solution is injected into this area within half an hour after its appearance the reaction is terminated and the viability of the tissues is preserved. If a slough forms, excision with primary closure at the end of forty-eight hours is the best treatment. Sometimes a very painful chemical cellulitis occurs, due to osmosis through the thin wall of the vein of a certain amount of fluid. This responds quickly to heat applied locally and followed by a tight bandage. This reaction is less evident following injections with invert sugar solutions than with any other, and is much more intense and persistent with sodium chloride, sodium salicylate, and mercuric iodide or chloride.

The reaction can be definitely lessened by applying rubber sponge strips over the vein and bandaging the leg tightly. At times an ascending venitis with a firm thrombus formation occurs in the saphenous vein up to the sapheno-femoral opening. Staphylococcal infections can occur at the injection site, but these can be avoided by a careful technique. Fatalities occurring concurrently with the injections are often erroneously attributed to the treatment.

87. Treatment of Obstructed Ureteral Calculi.

By the term "mobilization" A. G. CASARIEGO (*Journ. d'Urol.*, October, 1928, p. 331) denotes the non-surgical treatment of ureteral calculi. Congenital conditions in the ureter may render it difficult to promote renal drainage, and so may predispose to the arrest of calculi; these then set up pathological changes in the ureteral walls, which may cause immobilization of the calculus and thus originate renal troubles. If the obstruction is prolonged the renal lesions become more intense, and in some cases may terminate fatally; hence the importance of mobilizing the calculi as early as possible. The form, rather than the size, of the calculus plays a great part in its arrest; irregular ones may become fixed, even though small, owing to the changes in the ureteral walls and the development of adhesions, while larger ones pass unchecked. The aim of mobilization is to re-establish renal drainage. Calculi are most often found near the ureteral opening into the bladder; at other times they can be better approached from the pelvis of the kidney. Mobilization is performed by means of ureteral sounds or fine bougies; the latter pass between the calculus and the wall, thus dilating the canal and rendering easy the descent of the calculus. In the author's practice vesical and ureteral anaesthesia with a 2 per cent. solution of novocain is induced. With the aid of a cystoscope, a special ureteral sound of variable size (in some cases a No. 10 can be used), with a cut end and whalebone in its interior, is passed. When the calculus is reached, oil is injected into the sound and thus envelops the stone. It is then repeatedly struck with the whalebone, becomes dislodged, and easily descends. By this method Casariego has obtained mobilization of calculi in cases where other measures have failed.

88. Absorbable Haemostatic Plugging.

As a haemostatic in wounds and oozing cavities in the tissues H. FERIZ (*Zentralbl. f. Chir.*, December 15th, 1928, p. 3138) has used a preparation which consists of 96.3 per cent. of centrifugalized sterile ox serum, 3.5 per cent. of sodium citrate solution 1 in 10, and 0.2 per cent. of an antiseptic quinoline derivative. The preparation is heated to about 37.5° C. in a water-bath and activated by the addition of 0.5 per cent. of a 4.5 per cent. solution of calcium chloride immediately before it is used. When this fluid is injected into oozing tissues coagulation occurs almost directly; if a wound cavity is filled with it coagulation follows in two or three minutes. If possible the tissues surrounding the oozing cavity should be compressed at the same time, or the tissues and the cavity may be injected simultaneously. It is said to be advisable to wait a few minutes before closing a wound treated in this way in order to make sure that the coagulum is not being raised from the surface of the tissues by a haematoma. Experiments on guinea-pigs have demonstrated that the coagulum thus produced is ultimately absorbed to a large extent, while the small portion which is not absorbed becomes organized. Attempts were made to use the preparation as a plate culture medium for staphylococci and other organisms, but no growth ensued. Experimental intracutaneous and subcutaneous injections of the preparation into dogs showed that incised wounds in the injected area healed as quickly as control incisions. No anaphylactic symptoms were observed after repeated injections in guinea-pigs; it is suggested that there is little risk of such occurring, since the protein constituents of the preparation are absorbed so slowly. The main advantage of the method of treatment appears to be that the coagulum can serve as an effective substitute for plugs of gauze and other non-absorbable substances in the control of haemorrhage. It has been found particularly useful in the surgery of the brain and skull, as well as after removal of the prostate, provided that in the latter case the surrounding tissues are infiltrated with the solution before the cavity is filled with it.

89. Plastic Mammectomy.

DARTIGUES (*Bull. et Mém. Soc. Chir. de Paris*, November 2nd, 1928, p. 739) describes, with photographs, an operation he practises for the removal of hypertrophied breasts with the minimum of disfigurement. The aesthetic element in his procedure consists in preservation of the nipple and areola by grafting these on to the portion of the breast left. The author finds this method gives far more satisfactory results than others he has tried. It avoids the objection that many women make to the absence of the nipple or areola after removal of the breast. In one of the author's cases the aesthetic benefit of his operation persisted up to three years.

Therapeutics.

90. Oxygen Treatment after Thyroidectomy.

W. BOOTHBY (*Svenska Läkar. Forhandl.*, November 30th, 1928, p. 244) records his observations on 59 cases of exophthalmic goitre, 27 of hyperfunctioning adenomatous goitre, 4 of adenomatous goitre without hyperthyroidism, and 1 of carcinoma of the thyroid gland, treated at the Mayo Clinic in an oxygen chamber after thyroidectomy; 67 of the patients survived and 24 died. The oxygen concentration in the chamber varied only slightly in the different cases. As a rule, oxygen was kept at a concentration of 50 to 60 per cent., but if cyanosis persisted higher concentrations were occasionally used, although possibly concentrations of more than 60 per cent. were not of any particular advantage. As the clinical condition improved the oxygen tension was gradually decreased to 30 per cent. before the patient was removed from the chamber. The most striking clinical effect in patients suffering from pulmonary oedema, bronchopneumonia, slight cyanosis, and fever was the fall of temperature following admission to the oxygen chamber. Among the survivors the average drop was 1.3° C., and among those that died 0.8° C. The most marked fall in temperature occurred in cases of pulmonary oedema and bronchopneumonia. Patients with laboured respiration from frank pneumonia, or obstruction of the upper respiratory tract from any cause, were greatly and immediately relieved by the oxygen treatment. The cyanosis was controlled at once in all cases, but in a few cases reappeared as the pneumonia progressed. Although a direct comparison of mortality rates in the treated and untreated groups was not possible, Boothby has no hesitation in concluding that the mortality from goitre during the last two years has been somewhat lower than it would have been without the use of oxygen.

91. Trypaflavine in Gonorrhoea.

M. ALVAREZ (*Arch. de med., cir. y esp.*, December 15th, 1928, p. 673) reviews the literature and records his observations on 100 cases of gonorrhoea treated by trypaflavine. Of these 68 were acute or subacute and 32 chronic cases; 9 were complicated by epididymitis, which was bilateral in one case, 7 by acute cystitis produced by intraurethral injections by the patients themselves, and 15 by prostatitis. In 35 cases urethro-vesical lavage according to Janet's method was employed with solutions of 1 in 1,200 to 1 in 5,000. In 20 instances intravenous injections exclusively were given in doses of 10 c.cm. of a 0.5 per cent. solution; 10 patients received doses of 5 c.cm. of a 2 per cent. solution, 5 were given intravenous injections of 10 c.cm. of trypaflavine and intraurethral injections of 5 per cent. argyrol daily, and 30 had both lavage and intravenous injections. Alvarez's conclusions are as follows. (1) Trypaflavine and acridine derivatives generally form a good method of treatment for gonorrhoea both in its acute and chronic form, without being specific. They should be preferred to all other methods, since they considerably shorten the acute stage and the total duration of treatment. (2) Trypaflavine constitutes the treatment of election for acute gonococcal cystitis. (3) Its use in other complications of gonorrhoea yields similar results to those obtained by the ordinary methods. (4) In chronic cases intravenous injection should be associated with suitable local treatment. (5) Intravenous injections, if administered carefully and slowly, do not give rise to any dangerous symptoms.

92. Combined Injections of Luminal and Scopolamine.

E. HEINRICI (*Deut. med. Woch.*, December 7th, 1928, p. 2056) has used a mixture of luminal and scopolamine as a sedative in a number of patients suffering from morbid excitement with hallucinations and other mental disturbances. The preparation was injected subcutaneously, the dose for most of the injections being 1.2 c.cm. of a preparation containing 0.2 gram of pure luminal and 0.001 gram of scopolamine per c.cm., while a few received 2.2 c.cm. of a mixture containing 0.4 gram of pure luminal and 0.001 gram of scopolamine in 2 c.cm. One hundred injections were administered to a total of twenty-one patients, and in nearly every case a prolonged sedative effect resulted; in most instances sovereral hours' sleep supervened in from ten to forty-five minutes after the injection. In a few cases sleep was interrupted by a period of wakefulness lasting up to two hours, but this was again followed by several hours' sleep, which was, however, never so deep that involuntary evacuation of the bladder or rectum

occurred. The injections were found effective in a number of cases in which the use of morphine and scopolamine (0.5 c.cm. of ½ per cent. solution of morphine and 0.5 c.cm. of 0.1 per cent. solution of scopolamine) or scopolamine alone (1 c.cm. of 0.1 per cent. solution) had either failed to produce a sedative action or had increased the excitement. One patient became delirious for a time after the injection, but in no other instance were undesirable local or general effects observed after injections of 1.2 c.cm., even when these were repeated. The larger (2.2 c.cm.) injections frequently resulted in a marked fall in blood pressure and weakening of the pulse, and were therefore avoided as far as possible. In cases of pure motor excitement the treatment appeared to have no advantages.

93. Ortho-iodoxybenzoic Acid in Arthritis.

A. G. YOUNG (*New England Journ. Med.*, December 13th, 1928, p. 1194) reports a clinical study of the effect of o-iodoxybenzoic acid in the treatment of arthritis, and records twenty-five cases of arthritis of unknown etiology, nine of gonorrhoeal arthritis, and ten of rheumatic infections; good results were obtained in all three types. The drug was administered by the oral, rectal, and intravenous routes, but Young considers that the best clinical results are obtained when intravenous injection is employed. When this is impossible, high rectal enemas usually give fair results, but the oral form of administration appears to be the least promising. Each patient received about six to nine doses. The author states that painful reactions can be avoided if the solution is prepared from sterile freshly distilled water. The rubber tubing of the gravity set must be kept absolutely clean, and at least ten minutes should be taken in administering the drug. It is added that ambulatory patients may be allowed to return home within half an hour to an hour after being treated.

94. Treatment of Rickets by Ergosterol.

P. ARMAND-DELILLE (*Bull. et Mem. Soc. Méd. des Hôp. de Paris*, November 29th, 1928, p. 1555) alludes to the previous communication made by Lesné, R. Clement, and S. Simon (see *Epitome*, January 5th, para. 14) to the effect that the cure of rickets by irradiated ergosterol is more rapid in children who are not living in an environment deprived of air and light. Armand-Delille also emphasizes the fact that treatment by ergosterol is the most effective means of producing recalcification in rickety bones. In order to obtain a cure of the hypotonus of the striated and smooth muscles characteristic of rickets there is need not only of artificial ultra-violet rays, but also of sunlight; this probably acts by stimulating the action of a series of vitamins distinct from vitamin D, which is concerned in the fixation of calcium.

Dermatology.

95. Dermatitis due to Rhus toxicodendron.

A. GIUSEPPE (*Rif. Med.*, October 15th, 1928, p. 1344) discusses allergic phenomena caused by the *Rhus toxicodendron* (North American poison ivy). This shrub was brought to Europe from America in 1622, and has long been recognized as toxic to certain individuals (see *Journal*, 1924, vol. i, pp. 506 and 1112). The author reports the case of a man, aged 56, who had been a gardener in the botanical gardens at Padua for thirty-three years. At his first contact with the plant he developed toxic symptoms. To susceptible persons all parts of the plant—root, stems, and leaves—whether fresh, or dried even for a long time, were poisonous, especially when the plant was flowering. The clinical manifestations appeared from two to ten days after direct contact. In the acute stage a papulo-vesicular eczema appeared on the hands (interdigital spaces and wrists), face, neck, and scrotum. This was accompanied by severe symptoms of general poisoning. Histologically there was nothing characteristic. One attack of dermatitis did not confer immunity, although, according to McNair, there is apparently a relative immunity, as instanced by the fact that among eighteen patients with acute or chronic urticaria of other forms only one manifested a sensibility to *Rhus toxicodendron*. An alcoholic extract of part of the fresh plant provoked a typical reaction even in a dilution of 1 in 100,000. The entire skin and mucous surfaces were sensitive. The severity of the reaction depended on the thickness of the corneal layer. An attempt to transmit hypersensitiveness from man to man or man to animal did not succeed. Apparently the serum of the hypersensitive contained no antibody capable of neutralizing the entire toxin, and there was nothing comparable with the Bordet-Gengou reaction. The idiosyncrasy depended on the sensitiveness of the skin. In the latent period there might be an antigen-antibody reaction between the cells of the skin and the toxin. The gardener showed hypersensibility to the first contact with *Rhus toxicodendron*, but no predisposition to eczema was recorded in any of his relations or ancestors. It was considered that the allergic symptoms displayed by susceptible individuals were due to some unknown constitutional condition.

96. Hereditary Dystrophy of the Nails.

H. B. THOMPSON (*Journ. Amer. Med. Assoc.*, November 17th, 1928, p. 1547) reports a case of hereditary dystrophy of the nails in a girl, aged 5, who otherwise seemed to be perfectly healthy. The bases of the nails appeared to be normal, but they increased in thickness towards the distal ends and were very brittle and dry. Apparently they grew in thickness at the expense of length; occasionally one or more nails became infected, loosened, and separated in one piece without much soreness; the new nail gradually repeated this process. The author illustrates in a chart the inheritance of this condition by his patient, and records that, of thirteen children born to the original pair, five were affected—four males and one female. In the next generation, out of twenty-six offspring, five were again affected—four males and one female. In the last generation, including the present patient, four were affected out of twenty-five offspring—two males and two females. In all cases save one the dystrophy was inherited directly from an affected parent; the exception had normal unaffected parents and grandparents. Thompson points out that the ratio of affected progeny to the total number appears to diminish gradually in each generation, as does also the severity of the condition. Treatment by *x*-ray applications was employed, divided doses of unfiltered radiation being given up to the point of commencing erythema. Following this treatment a definite line developed from the base, gradually growing outward with the nail; the portion behind this line appeared to be much thinner and more nearly normal. The author proposes to use thyroid therapy in conjunction with *x*-ray treatment in these cases, but he is not very sanguine as to the probable permanence of the results.

97. Pityriasis Rubra.

R. E. BARNEY (*Arch. Derm. and Syph.*, November, 1928, p. 716), from an analysis of cases reported in the literature as pityriasis rubra of Hebra, concludes that they can be classified in five groups, since with similar clinical pictures they present diverse pathological and etiological differences. The first group consists of cases associated with active tuberculosis, and represents the cutaneous manifestation of visceral and glandular affection. The second group, which includes the types of scaly erythroderma, is allied with the lymphoblastomas, and includes leukaemia, Hodgkin's disease, lymphosarcoma, and the initial stage of granuloma fungoides. A third group comprises cases secondary to underlying dermatoses, such as eczema and psoriasis, and in the fourth group are cases suggestive of other disease entities; the fifth group contains cases of chronic exfoliative dermatitis of obscure origin owing to lack of microscopic and post-mortem observations. Barney emphasizes the importance in all chronic cases of exfoliative dermatitis of repeated investigations of the blood and skin, and urges the above group reclassification in place of the name "pityriasis rubra of Hebra."

Obstetrics and Gynaecology.

98. Ovarian Cysts and Pregnancy.

E. FORGUE (*Paris Méd.*, December 15th, 1928, p. 527) remarks that when an ovarian cyst is associated with pregnancy the question arises of its treatment during gestation, labour, and the puerperium. The degree of diagnostic difficulty varies in the different stages of pregnancy: at the commencement recognition of the coexistence of the two conditions is difficult, while in the later stages of pregnancy the presence of a concomitant cyst becomes obscure. These difficulties are especially noteworthy when the cyst is large and develops in the abdomen, and when it is small and evolves in the pelvis. Conditions requiring differential diagnosis are uterine malpositions and fibromas, ectopic gestation, and, in cases of right ovarian cysts, acute appendicitis. The effect of a cyst on pregnancy depends on its size, position, nature, and origin (abdominal or pelvic). A large cyst causes abortion or premature labour in nearly a fifth of the cases. When the cyst and uterus rise into the abdomen and do not obstruct each other, pregnancy can proceed uninterruptedly. A large cyst may push back the uterus into an abnormal position, thus causing troubles in accommodation and engagement, and, by pressure on the bladder, diaphragm, and circulation, give rise to dysuria, dyspnoea, oedema, and ascites. A small pelvic cyst does not hinder uterine development, though it becomes

an obstacle to natural delivery. The most dangerous effect of pregnancy on the cyst is pedicular torsion of the tumour. Forgue maintains that all ovarian cysts detected during the first part of pregnancy should be removed as soon as possible, in both the maternal and foetal interests. During the second part of pregnancy, especially from the seventh month, if the tumour is well tolerated, only a watchful, expectant treatment is advised. During labour, when dystocic cysts are present, the treatment of choice, if conditions are favourable, is abdominal ovariotomy followed by natural delivery. If conditions are unsuitable for this, the cyst should be either replaced or reduced in size by puncture or incision. If cystic complications, such as torsion, suppuration, or intracystic haemorrhage, occur during the puerperium, immediate surgical intervention becomes necessary; in the absence of these, ablation of the cyst can be deferred till the end of the puerperal period.

99. Aspiration of the Uterus in Chronic Metritis.

In order to obtain satisfactory drainage of the uterus and the cervix in cases of chronic metritis, E. VILLARD and O. MANTELIN (*Lyon Méd.*, November 18th, 1928, p. 581) have devised a special apparatus which consists of a glass speculum of the Fergusson type to which can be attached an aspiratory pump. The mouth of the speculum is closed by a rubber cork, through which passes a small piece of glass tube; this is connected by rubber tubing with a flask. A manometer is attached laterally to regulate the pressure, and a decompression tap is also attached to the speculum. The patient is placed in the gynaecological position and the speculum inserted in the ordinary way. A negative pressure is produced amounting to about 15 cm. of mercury, the manometer readings being carefully watched and also the patient's reactions. At the first treatment patients complain of twinges in the pelvis and lumbar region. Each treatment lasts about five minutes; at the end of that time the pressure is slowly brought back to the normal, when the cervix is seen to be bathed in a more or less abundant muco-purulent secretion. Ten to twenty treatments are given, at first twice weekly and then weekly. The results were in general satisfactory. The secretion became clean and less in quantity after four or five treatments. There was also a remarkable diminution of the pains complained of by the patient.

100. The Decidual Reaction in Tubal Pregnancy.

A. R. MORITZ and MARION DOUGLASS (*Surg., Gynecol. and Obstet.*, December, 1928, p. 785) have studied the uterine and tubal decidual reaction in tubal pregnancy, making histological examinations of the tubes and endometria in fifty-three cases of ectopic gestation in order to determine the frequency of the occurrence of uterine and tubal decidua in such cases, as well as the frequency of vaginal bleeding and its relation to the state of the chorionic villi, endometrium, and embryo. In only eight instances was uterine decidua detected; when it is present it is to be found at the implantation site if the chorionic villi are intact. Vaginal bleeding was a common symptom, but it was not necessarily associated with the death of the foetus, the condition of the chorionic villi, or the physiological state of the endometrium. In four cases the foetus was found at operation to be in excellent preservation or living, but only two of these showed a decidual reaction in the uterus, and in each instance where the foetus was dead the vaginal bleeding had been present prior to the possible date of foetal death, showing thereby that such bleeding does not invariably indicate foetal death. The authors' conclusions agree with those of B. S. Kline, who stated that the tubal decidual reaction persisted as long as the chorionic villi were intact.

101. Danger of Curetting in Uterine Cancer.

VICTOR-PAUCHET (*Bull. et Mém. Soc. Chir. de Paris*, November 2nd, 1928, p. 726) reports a case which illustrates the danger of diagnostic curettage in cancer of the body of the uterus. A woman, aged 60, was curetted for diagnostic purposes, and during the operation the uterus was perforated. The perforation healed spontaneously, but a year later laparotomy was performed and fungating cancer was found in the site of the perforation, involving the small intestine. Hysterectomy and enterectomy were performed. Six months later metastases occurred in the great omentum. It has been pointed out how easy it is to perforate in this class of case, and many authorities consider that laparotomy in these cases is less dangerous than curetting and more satisfactory in diagnosis. When perforation occurs it is safest to proceed as soon as possible to laparotomy. Cases have been reported where perforation had been caused by the introduction of radium.

Pathology.

102. Fowl Tuberculosis in Man.

E. LÖWENSTEIN (*Med. Klinik*, November 16th, 1928, p. 1783) describes a form of tuberculosis occurring in fowls which is transferable to cattle and pigs, and is found widely distributed in the poultry farms, stock farms, and slaughterhouses of America. It also infects man. The infection is conveyed usually by food contaminated with fowl dung. Cases are reported of direct skin infection of farm employees working with bare feet. The disease in man is epidemic, and clinically a septicaemia like paratyphoid fever. The illness starts with a prolonged period of intermittent fever uninfluenced by antipyretics, associated with enlarged spleen, and followed by pyaemic-like metastases in the bone marrow, liver, and kidneys, in which are found masses of acid-fast bacilli. The bone marrow infection is accompanied by an increase in the number of red blood cells and white cells, and sometimes is associated with myelogenous leukaemia, in which case the enlarged spleen does not react to *x*-ray treatment. The lungs are not usually attacked. In fowls the bacilli are found chiefly in the mesenteric glands, bowel, ovary, and cloaca. The organism is characterized by quick growth on most artificial media, especially in glycerin broth. Most strains have a slight pathogenicity for guinea-pigs, which almost completely disappears after several subcutaneous passages. Rabbits and fowls are susceptible in varying degrees to intravenous injection. In man the disease does not react to old tuberculin, but reacts strongly up to 1 in 50,000 dilution to a specific fowl tuberculin. Fowl tuberculin gives no reaction in persons infected with mammalian tuberculosis.

103. The Serological Races of Clostridium welchii (B. perfringens).

MLLE A. HOWARD (*Ann. de l'Inst. Pasteur*, November, 1928, p. 1403) has made a serological study of sixty strains of *Cl. welchii* recovered from various sources. She prepared agglutinating antiserums to fifteen of them, and then tested these serums against all the strains. The best method of preparing the serums was found to be the injection of rabbits at three-day intervals with large and increasing doses of organisms obtained by centrifugalization of a twenty-four-hour glucose broth culture. In this way fairly high titre serums were obtained within four weeks. No definite serological grouping could be demonstrated. Most of the strains agglutinated with one or more—sometimes all—of the serums; four of the strains, however, were agglutinated solely by their homologous serums, though the serums prepared against them were able to agglutinate several of the other strains. Biochemical grouping by means of the glycerin and inulin fermentation tests was conducted, as originally recommended by Simonds, and a distribution was found not unlike that recorded by Simonds; but attempts to relate the biochemical to the serological grouping proved hopeless. A serum, for example, prepared against a strain which did not attack inulin agglutinated strongly a strain which did ferment inulin, and so on. The present author concludes that most strains of *Cl. welchii* show an evident relation to one another, but that no relation exists between the serological types and the biochemical types.

104. The Synovial Fluid in Chronic Arthritis.

C. E. FORKNER, A. R. SHANDS, and MARY A. POSTON (*Arch. Intern. Med.*, November, 1928, p. 675) report an attempt to correlate the bacteriology and cytology of synovial fluid in chronic arthritis and to ascertain whether any difference exists between the cytological observations in sterile synovial fluid and in that showing positive bacterial cultures. Sixty-three cases were studied, of which fifty-two were of the infectious type, nine of the hypertrophic type, and two of the infectious and hypertrophic type. Bacteriologically it was found that positive cultures could be obtained from the joint fluids and regional lymph nodes in a fair percentage of cases of chronic arthritis of non-tuberculous and non-syphilitic origin, and in positive cases repeated positive cultures could be obtained from the same or similarly involved joints. The coincidence of isolating the same organism from both the lymph nodes and the joints points to these organisms being the causative agents of the arthritis. In all the cases the white cell counts in the synovial fluid were increased, and the average count in the bacteriologically positive cases was approximately double that in the negative cases. The number of polymorphonuclear neutrophils was higher in the group giving positive cultures from the joint fluid, while the number of monocytes and lymphocytes was higher in the group giving negative cultures.

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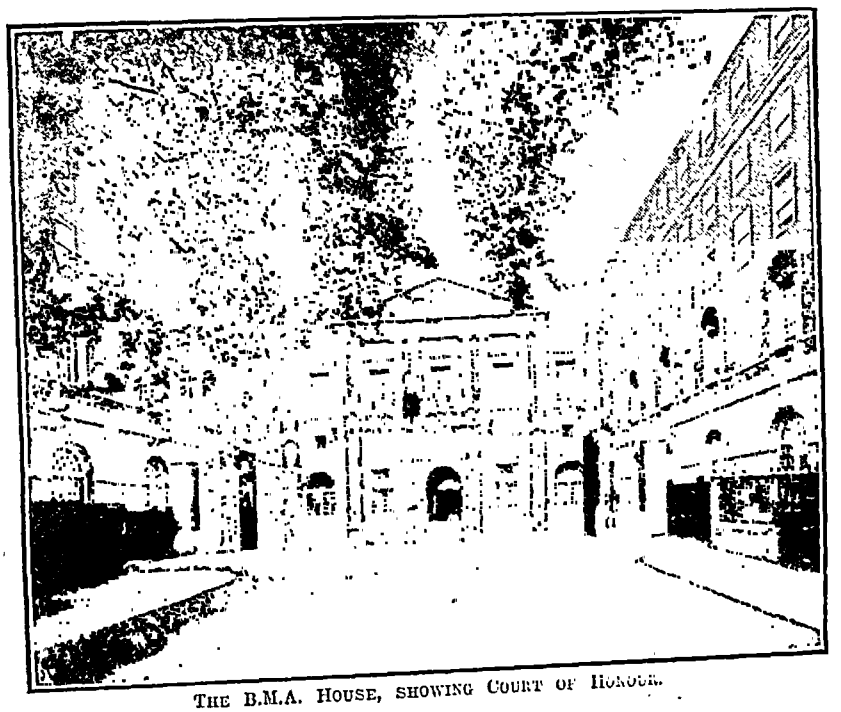

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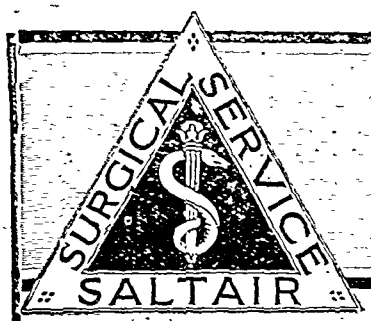

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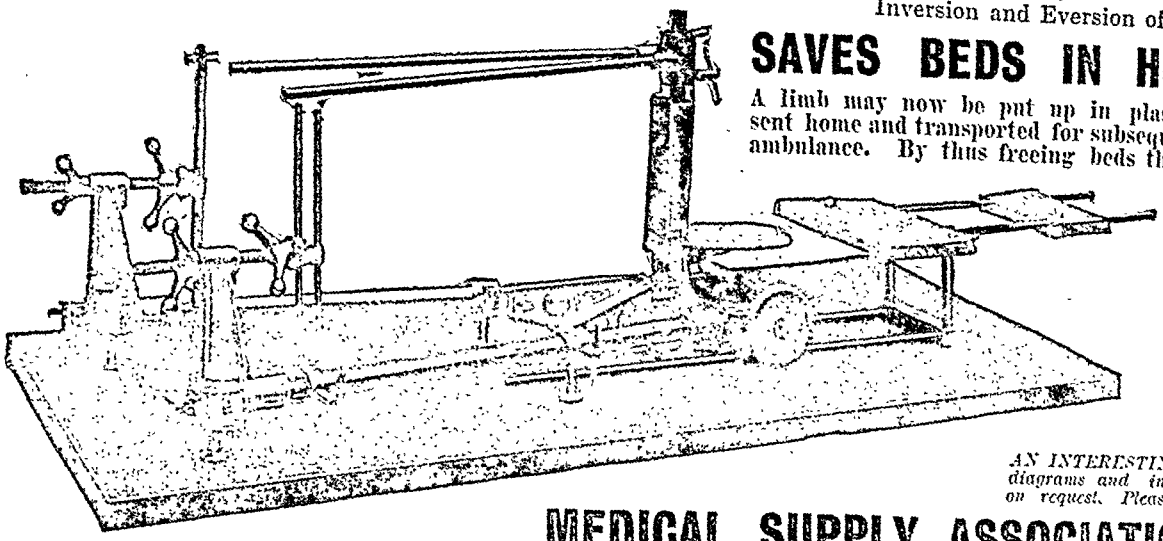

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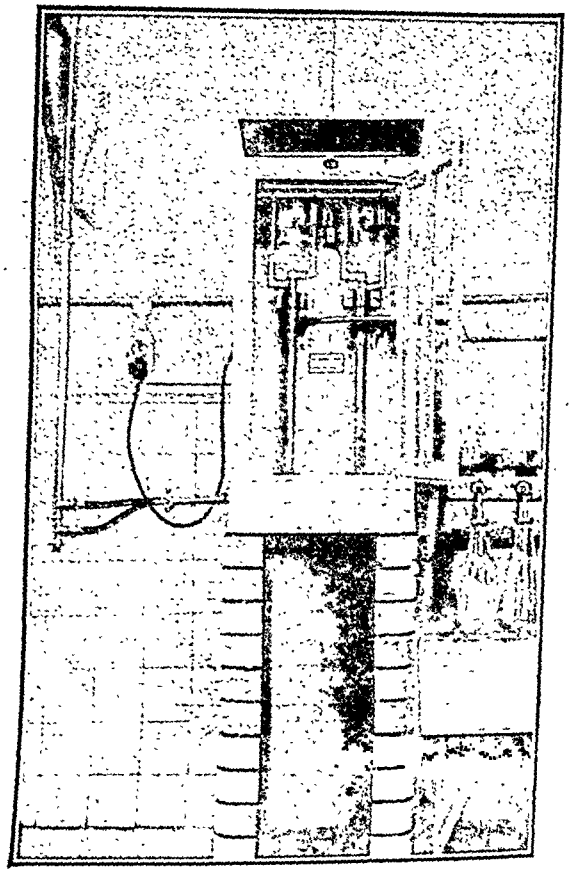

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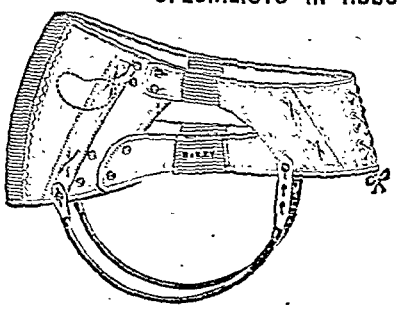

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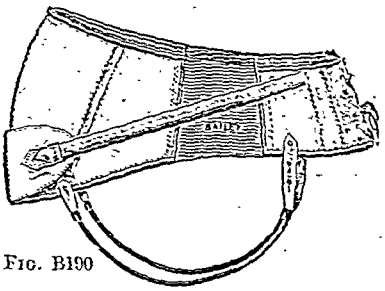

FIG. B190

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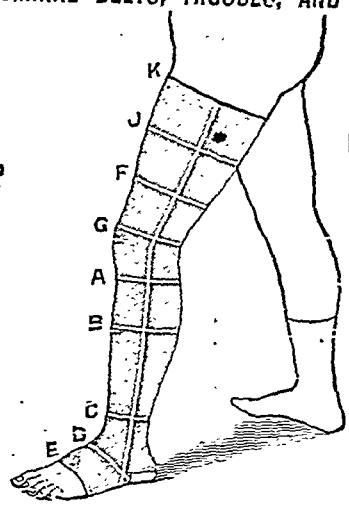

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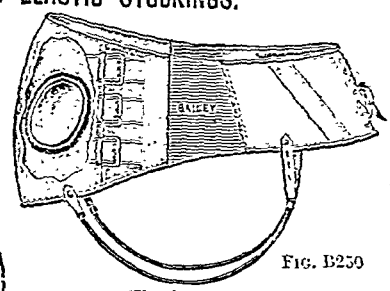

FIG. B250

(Showing Interior of Cup.)

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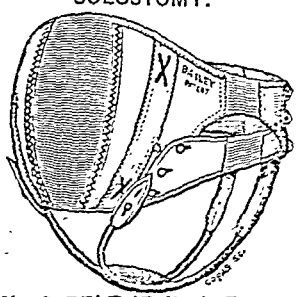

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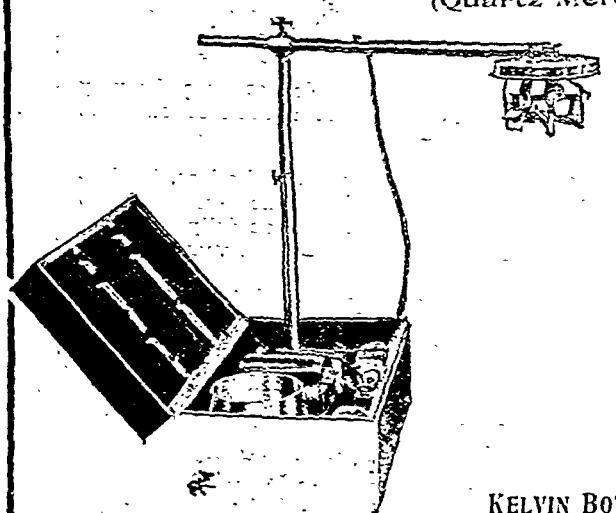

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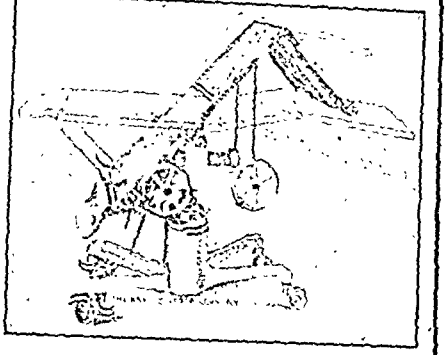

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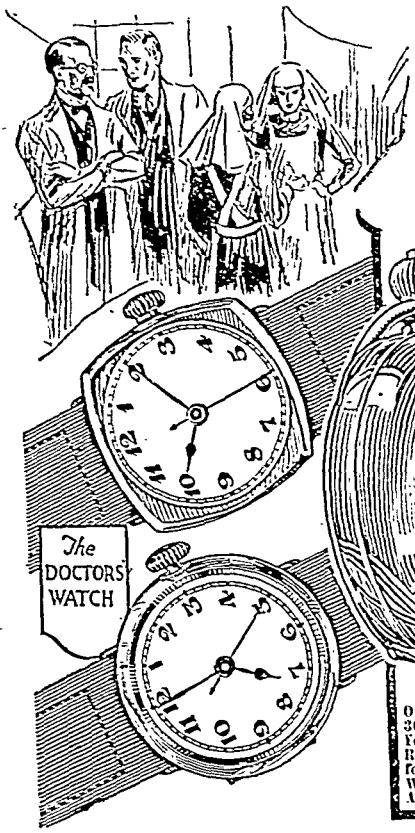

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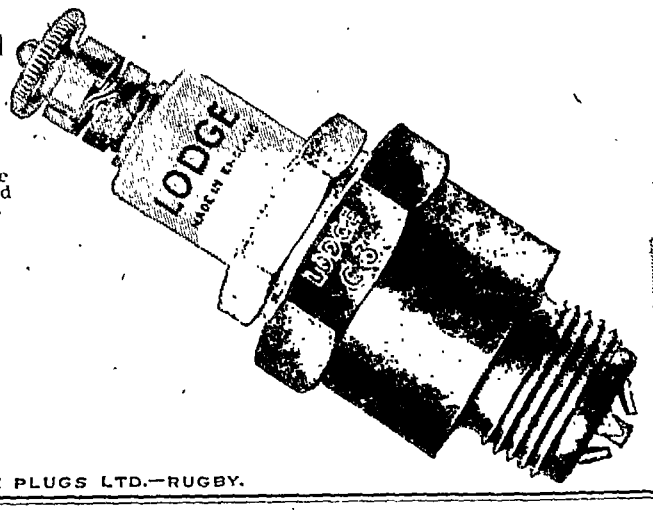

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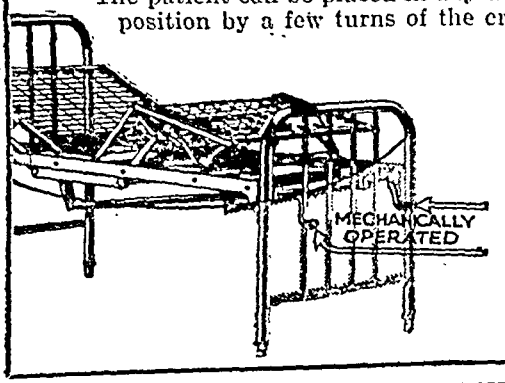

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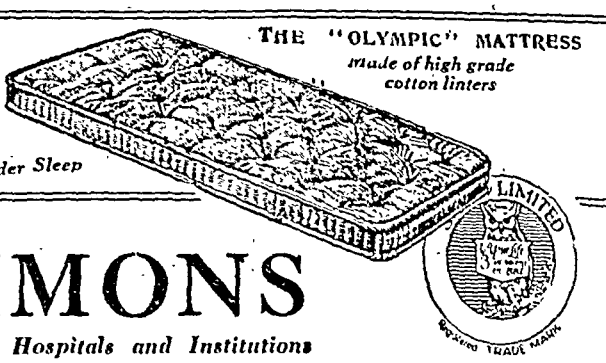

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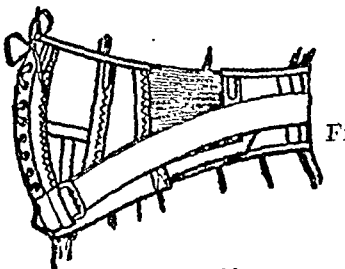

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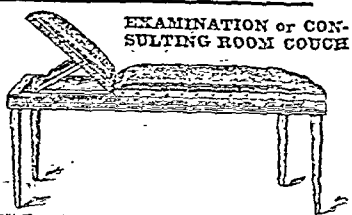

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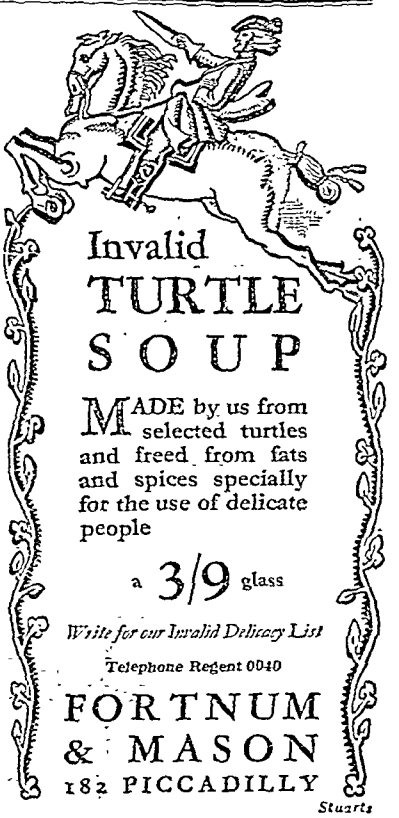

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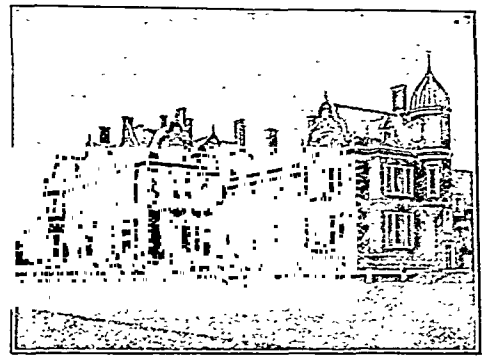

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This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES Voluntary Boarders received.

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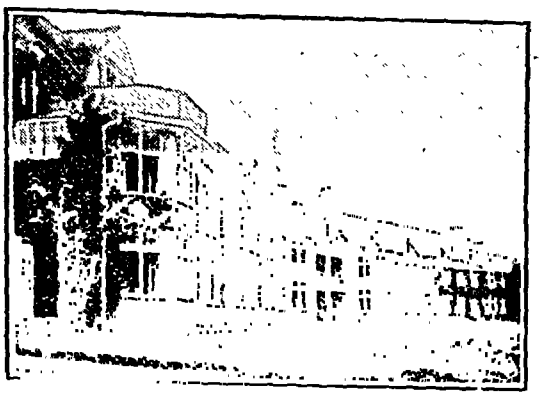

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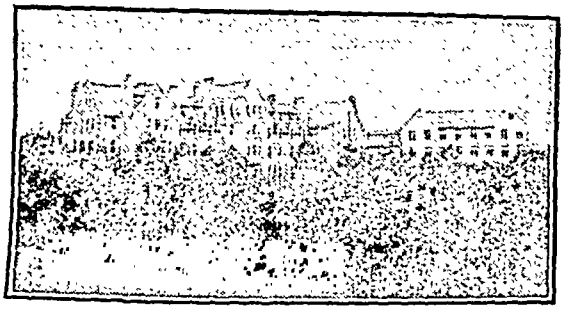

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CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications.

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The age of the pupil, district preferred, and rough idea of fees should be given.

J. & J. PATON, Educational Agents, 143, Cannon Street, London, E.C.4. Tel.: 5053 Central.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL).

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 7th, and for the Diploma in Tropical Hygiene on January 12th and April 26th. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

THE MIDDLESEX HOSPITAL MEDICAL SCHOOL, W.1.

(University of London).

PRIMARY F.R.C.S.

The Course for the June Examination will begin on January 29th, 1929, at 9.15 a.m.

Instruction will be given in Anatomy (including Embryology).

Physiology, Practical Biochemistry, Experimental Physiology and Histology.

Fee.

Anatomy } £21
Physiology } inclusive.

Above subjects if taken separately—Anatomy £12 12s.; Physiology £12 12s.

These fees include use of Dissecting Room, Dissected "Parts," Library, Common Rooms, and Restaurant.

Further particulars may be obtained from the Dean or School Secretary.

LONDON SCHOOL OF DERMATOLOGY,

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN,

LEICESTER SQUARE, W.C.2.

Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals. Lectures and Demonstrations every Tuesday and Thursday, at 5 p.m., from October to March, and four times weekly during May. Clinics daily at 2 p.m. and 6 p.m., Saturdays, 2 p.m. only. Pathological Laboratory for Instruction or Research Work.

For further particulars, fees, etc., apply to A. C. ROXBURGH, M.D., Dean.

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam. will commence shortly. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

The Tavistock Square Clinic for Functional Nervous Disorders,
51, Tavistock Square, W.C.1.

A SHORT COURSE of Lectures on
FUNCTIONAL NERVOUS DISORDERS
FOR PRACTITIONERS AND STUDENTS
will be given at the Clinic beginning February 11th, 1929.

4.45 p.m.	J. R. REES, M.D.
Mon., Feb. 11.	*The Nature and Scope of Psychotherapy.* Organic and Functional Disorders. Neurosis and Moral Disorder. Case taking.
Tues., Feb. 12.	*Methods of Treatment.* Physical Methods. Environmental Changes. Persuasion. Re-education.
Wed., Feb. 13.	*Methods of Treatment.* Suggestion. Hypnosis. Conscious Adjustments.
	W. LANGDON BROWN, M.D., F.R.C.P. St. Bartholomew's Hospital.
Thurs., Feb. 14.	*The Biology of the Endocrine System* and its alliance with the Visceral Nervous System. Its general part in regulating Instinctive Behaviour.
Fri., Feb. 15.	*The Function of the Endocrines* in Bodily and Mental Growth. Infantilism.
Mon., Feb. 18.	*The Interaction of the Endocrine System with the Gonads.* The evolution of the three layers of the Nervous System, and the rôle of the Mid-brain in Metabolism as well as Emotional Expression.
Tues., Feb. 19.	*Psychoneuroses* associated with the Thyroid, Pituitary and Adrenals.
	J. R. REES, M.D.
Wed., Feb. 20.	*Methods of Treatment.* The Use of Mental Analysis. Methods of Working. Free Association.
Thurs., Feb. 21.	*Methods of Treatment.* The Unconscious Factors. Value of Dreams. The Responsibility of the General Practitioner.
	JOHN FREEMAN, M.D. St. Mary's Hospital.
Fri., Feb. 22.	*Toxæmia* in Relation to Functional Disorder.

5.45 p.m.	H. CRICHTON-MILLER, M.D.
Mon., Feb. 11.	*Adaptation*, successful and unsuccessful. Environment. Heredity.
	JAMES YOUNG, M.D.
Tues., Feb. 12.	*Freud, Jung, Adler.* Inter-relation.
	H. CRICHTON-MILLER, M.D.
Wed., Feb. 13.	*Conflict and Repression*: Phantasy. Transference
Thurs., Feb. 14.	*Emotional Development* and its Phases. Œdipus and Electra Complexes.
	GEORGE RIDDOCH, M.D., F.R.C.P. The London Hospital.
Fri., Feb. 15.	*Differential Diagnosis of Post-encephalitic and Functional Conditions.*
	H. CRICHTON-MILLER, M.D
Mon Feb. 18	*Hysteria.* The Physical and Emotional Factors
Tues. Feb. 19	*Neurasthenia* The Toxic Factor. Vagotonia.
Wed., Feb. 20.	*Anxiety States.* Compulsions. Obsessions. Sympathicotonia
Thurs., Feb. 21.	*Dementia Præcox* and *Manic Depression.*
Fri., Feb. 22.	*Insomnia* as a Symptom of Maladjustment.

2.30 to 5 p.m. Saturday, February 16th. *Suggestion and Hypnosis with Practical Demonstrations.*
8.15 p.m. each evening an *Informal Seminar on Dream Interpretation* will be conducted by Dr. CRICHTON-MILLER.

FEE for the course - Medical Practitioners £2 2s. 0d.
Medical Students (i.e., unqualified) 10s. 6d.

Tickets for the course to be obtained in advance from the Hon. Lecture Secretary at the Clinic.
These lectures are not open to the general public.

LONDON HOSPITAL MEDICAL COLLEGE.
Primary Fellowship Examination.

A COURSE OF INSTRUCTION for the above Examination will begin on Monday, Feb. 11th.
Anatomy.—Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S.; R. J. M. LOVE, M.S., F.R.C.S.; C. DONALD M.B., Ch.B., F.R.C.S.
Physiology.—W. A. M. SMART, M.B., B.S., B.Sc.; C. E. BRUNTON, M.D.
The Fee for the Course is 15 guineas.
Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, Mile End, E.1.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL COLLEGE.
Final F.R.C.S. Class.

A Course of instruction, suitable to the requirements of candidates for the Final F.R.C.S. Examination in May, will begin on February 14th, 1929.
For syllabus and full particulars, apply to the DEAN, Medical College, St. Bartholomew's Hospital, London, E.C.1.

A REALLY GOOD SCHOOL FOR GIRLS.
REASONABLE INCLUSIVE FEES.
MARLBOROUGH COLLEGE,
Tytherington Hall, nr. Macclesfield.
Sound Education. Upper and Lower Schools. Preparation, when desired, for all University Entrance Examinations. Particulars from Sec.
Special Terms to Medical Men.

Rossall School. — Some twelve Open SCHOLARSHIPS for boys between the ages of 12 and 14, on March 1st next, value from £90 a year downwards, will be awarded by Examination, beginning March 5th, 1929. Boys examined at Rossall and in London.—Apply, THE BURSAR, Rossall School, Fleetwood.

LONDON HOSPITAL MEDICAL COLLEGE.
F.R.C.S.

A COURSE OF INSTRUCTION for the Final Fellowship Examination will begin on Friday, March 1st.
Fees: (exclusive of Operative Surgery) 20 guineas. Operative Surgery 5 guineas.
A separate entry can be made for all Classes other than those of a strictly Clinical character. (Men students only are eligible for admission.)
Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, London Hospital Medical College, Mile End, E.1.

M.D. THESIS
(Camb., Edin., Glasg., Durh., &c.)
SKILLED COACHING, GUIDANCE, and ADVICE.
From Specialist Tutors, in conformity with the Regulations of the various Universities. Apply for particulars and free booklet, "Hints on Writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

STAMMERING, SPEECH DEFECTS.
BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and, in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.
"Pre-eminent success in the education and treatment of stammering and other speech defects."—"Times."
"Thoroughly physiological principles."—"Lancet."
"The method is scientifically correct and perfectly effective."—"Guy's Hospital Gazette."
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Principal: Mr. E. S. WEYMOUTH, M.A.(Lond.). POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS.

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M.D.(Lond.),	1901-28 (9 Gold Medallists during 1913-28)	308
M.S.(Lond.),	1901-28 (including 4 Gold Medallists)	20
M.B.,B.S.(Lond.),	*Final* 1906-28 (Completed Exam.)	237
F.R.C.S.(Eng.), (1906-28)	*Primary*	149
	Final	135
M.R.C.P.(Lond.),	1914-28	152
D.P.H.	(Various) 1905-28 (Completed Exam.)	280
F.R.C.S.(Edin.),	1918-28	39
M.R.C.S., L.R.C.P.	*Final* 1910-28 (Completed Exam.)	402
M.D.(Dur.)	(Practitioners) 1905-28	36
M.D.	Various. By Thesis. Numerous successes	

Preparation for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.
M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.). Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

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CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Course. Openings for Women. Hints for writing theses. Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

POST-GRADUATE MIDWIFERY.
Qualified Medical Women are admitted to
The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5,
for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clines, and antenatal clinics. For further particulars, fees, etc., apply to the Secretary.

F.R.C.S. (Edin.).
The TUTORIAL CLASS for the next Examination will commence shortly. Correspondence tuition if desired. — For particulars apply FRED. GRAHAM, M.D., F.R.C.S.Ed., Surgeons' Hall, Edinburgh.

Medical and Dental Students.
Special Classes for Pre-Medical and Dental Exams. Matric., and Prelims.
Chemistry, Physics, and Biology Labs.
MANCHESTER TUTORIAL COLLEGE,
527, Oxford Road, Manchester

Preliminary Examinations.
The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

Gordon Hall School of Pharmacy FOR WOMEN. DRAYTON HOUSE, W.C.1. Students trained for Pharmaceutical and Dispensing Examinations. Qualified Dispensers can be supplied without charge. — Apply the Principals. Phone MUSEUM 5950

The Chadwick Trustees invite

application for TWO TRAVELLING SCHOLARSHIPS of £400 a year each, tenable for one year, to be awarded next July; one Scholarship to be in SANITARY SCIENCE, and the other in MUNICIPAL ENGINEERING.

The object of the Scholarships is to enable the holder to travel abroad to study, either generally or in some particular aspect, the methods adopted in different countries for the prevention of disease and the improvement of the public health, or the sanitary administration and engineering applied in urban or rural areas.

Candidates must be British subjects, between 25 and 30 years of age, who have graduated in a British University, or who can produce evidence of attainments or of intellectual equipment proving them to be capable of methodical study and research.

A candidate prior to appointment must submit for the approval of the Trustees a scheme of study which he would be prepared to undertake and the itinerary he would propose to follow.

He would be required upon his election to undertake to conform to any plan approved by the Trustees, and from time to time and at the termination of his Scholarship to furnish reports to the Trustees on the results of his investigations in the course of his tour, which reports may be printed and published at the expense of the Trustees, who may require to retain the copyrights.

No other Scholarship shall be held nor any remunerative employment be undertaken during the tenancy of the Chadwick Travelling Scholarship without the express sanction of the Trustees.

The award of the Scholarships, and the acceptance or refusal of any applications, are entirely at the discretion of the Trustees, who may also, at their discretion, renew a Scholarship for a year.

Applications should be made by letter to the Clerk of the Chadwick Trustees, at 204, Abbey House, Westminster, S.W.1, stating name, qualifications, age, and proposed object of study or research, accompanied by copies of testimonials and evidence of previous work undertaken or published.

January, 1929.

University of London.

A Course of Three Lectures on *"Electrical Phenomena in Muscle and Nerve"* will be given by Dr. W. H. CRAIB, at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on MONDAYS, FEBRUARY 4th, 11th, and 18th, at 5 p.m.

Admission free, without ticket

EDWIN DELLER, Academic Registrar.

All Saints' Hospital (For Genito-

URINARY DISEASES),
49/55, Vauxhall Bridge Road, S.W.1.

DEMONSTRATIONS IN CYSTOSCOPY are held on:

Wednesdays ...	Mr. Coyte ...	1.30 p.m.
Thursdays ...	Mr. Attwater ...	1.30 p.m.
Saturdays ...	Mr. Loughnane...	1.30 p.m.

Special classes and tuition by arrangement.

Bolton Union.

TOWNLEYS HOSPITAL.

ASSISTANT MEDICAL OFFICER.

Wanted for the Townleys Hospital, Farnworth, near Bolton, an Assistant Medical Officer (male). The appointment is for a period of two years only.

Candidates must have been for at least two years in Medical practice and must have had Hospital experience.

Salary £400 per annum, and rations, furnished apartments, laundry, and attendance.

Forms of application, together with conditions of appointment (for which a stamped addressed foolscap envelope must be enclosed), may be obtained from me.

Last day for applications, February 4th.

28, Mawdsley St., Bolton. H. I. COOPER, Clerk to the Guardians.

January 15th, 1929.

Swansea County Borough.

RESIDENT MEDICAL OFFICER.

INFECTIOUS DISEASES HOSPITAL.

The Council invite applications for the above appointment from duly qualified unmarried medical practitioners. The salary will be at the rate of £350 per annum, together with emoluments. Previous experience in an Infectious Disease Hospital is desirable.

Applications (on special forms with particulars of duties, can be obtained from the Medical Officer of Health, Public Health Offices, Swansea) to be sent in not later than February 13th.

[AMENDED NOTICE]

University of Cape Town.

ASSISTANT IN PATHOLOGICAL CHEMISTRY.

Applications are invited for an Assistant in Pathological Chemistry, who will be required also to undertake research in the Department of Pathology.

The Assistant must have a registrable Medical qualification and special knowledge of Chemical Pathology. The duties will include teaching of Pathological Chemistry and Biochemical work for the Hospital. The Assistant must engage in research work in the Department of Pathology, and time for such work will be available.

Salary.—£800 per annum, but for pension purposes it will be regarded as being on the scale £500—25—650. The Assistant must become a member of the University Teachers' Superannuation Fund. Salary commences from date of assumption of duty.

Transport.—£50 will be allowed for transport expenses, subject to a proportionate refund in the event of the Assistant terminating his agreement within 3 years of the assumption of duty.

Candidates must state the earliest date on which they will be able to assume duty.

Applications, together with copies of testimonials (all in quadruplicate) should reach the Secretary, Office of the High Commissioner for the Union of South Africa, South Africa House, Trafalgar Square, W.C.2, from whom forms of application and further particulars may be obtained, not later than the 26th February, 1929.

University of Melbourne,

VICTORIA, AUSTRALIA.

CHAIR OF OBSTETRICS.

Applications are invited for the above Chair. Salary £2,000 per annum. For particulars apply to the Agent-General for Victoria, Victoria House, Melbourne Place, Strand, London, W.C 2, with whom applications must be lodged on or before March 31st.

States of the Island of Jersey.

COMMITTEE FOR THE JERSEY MENTAL HOSPITAL.

MEDICAL SUPERINTENDENT.

This office being vacant, the States will proceed next month to appoint a Medical Superintendent for the above establishment, who will be required to enter upon his duties about the end of February or beginning of March next.

The appointment is for three years, at a salary of £650 per annum, with house (and garden) in which the person appointed will be required to reside. The Medical Superintendent must devote the whole of his time to the duties of his office. Candidates must be Members or Licentiates of one of the Faculties of Medicine and Surgery of Great Britain or Ireland.

Sealed applications, stating qualifications, with testimonials, to be sent on or before February 9th, addressed to the President of the Committee for the Jersey Mental Hospital, Greffe Office, Jersey.

Greffe Office, Jersey. ERNEST LE SUEUR,
January 18th, 1929. Greffier.

Metropolitan Asylums Board.

BIO-CHEMIST AT THE BOARD'S ANTITOXIN ESTABLISHMENT.

The Board invite applications for the appointment of BIO-CHEMIST at their Antitoxin Establishment. The Laboratories and Stables are at Sutton, Surrey.

The candidate appointed will be required to assist generally in the work of the laboratories, especially with the chemical side of the work, such as the concentration of toxin and antitoxin, preparation of media, etc.; to make himself acquainted with the general running of the laboratories, and so be in a position to take charge, if required; and to conduct researches bearing especially on bio-chemical problems, subject to the approval of the Director.

Evidence of previous research work in biochemistry is desirable, and, although it is not essential that the candidate appointed should already be equipped with a special experience of bacteriology and serology, he will be expected to acquire knowledge of the current laboratory work on these subjects, with a view to the co-ordination of bacteriological and biochemical interests.

The commencing salary is at the rate of £600 per annum.

Application form containing full particulars of the appointment may be obtained by forwarding stamped addressed foolscap envelope to the Clerk, Metropolitan Asylums Board, Victoria [illegible] London, E.C.4, to whom completed [illegible] urned not later than [illegible] bruary 6th.

Clerk to the Board.

County Council of Durham.

EDUCATION DEPARTMENT.

ASSISTANT SCHOOL MEDICAL OFFICER.

The County Education Committee invite applications from duly qualified men for the post of Assistant Medical Officer to act under the School Medical Officer in connection with the Inspection of School Children, and such other duties as may be required by the Education Committee. Commencing salary £600 per annum (provided the candidate has had not less than three years' post-graduate experience), rising by annual increments of £25 to £650 per annum, together with travelling expenses according to the County scale. The successful candidate will be required to devote his whole time to the duties of the office, and reside in or near the district to which he will be attached at a place to be approved by the Education Committee The appointment will be subject to three calendar months' notice on either side, such notice to date from the last day of any calendar month. Applicants must have had experience in the work of school medical inspection, and preference will be given to candidates who:

(*a*) Have had experience in the work of School Clinics;

(*b*) Have been accustomed to make special reports on Mentally Defective, Physically Defective, Epileptic, and other Defective Children.

The possession of a Diploma in Public Health is desirable, though not essential.

Copies of not more than three testimonials are required.

Canvassing, directly or indirectly, is prohibited and will disqualify.

A deduction of 5 per cent. will be made from the salary in accordance with the Local Government and Other Officers Superannuation Act, 1922, which has been adopted by the Council, and the appointment will be subject to passing the County Council's medical examination in connection therewith

Forms of application, to be returned not later than Saturday, February 9th, may be obtained from the Director of Education, Shire Hall, Durham, on receipt of stamped addressed envelope.

Shire Hall, Durham. A. J. DAWSON, Director of Education

January 19th, 1929.

City of Birmingham.

VISITING SURGEONS.

The Public Health Committee propose to appoint Two General Operating Surgeons, practising exclusively as such in Birmingham, to carry out between them all surgical work, consultative or operative, for which their services may be requested by the Medical Superintendent of the CITY HOSPITAL FOR INFECTIOUS DISEASES, LITTLE BROMWICH. It is suggested that the two Surgeons appointed should take alternate duty. An honorarium of £200 each per annum is offered. As the scheme is experimental, it will be reviewed by the Committee at the end of a year. Any further details will be furnished by the Medical Superintendent, to whom applications, endorsed "Visiting Surgeon," should be forwarded on or before Saturday, February 9th.

City of Birmingham.

FOURTH ASSISTANT MEDICAL OFFICER required at the CITY HOSPITAL FOR INFECTIOUS DISEASES, LITTLE BROMWICH. Previous resident hospital post essential. The appointment will be made for 12 months only. Duty to commence on April 1st.

Salary £300 per annum, together with board, residence, and laundry.

Forms of application may be obtained from the Medical Superintendent, and should be returned to him on or before Saturday, February 9th.

Preston Union.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER.

Salary at the rate of £104 per annum, with board, lodging, etc.

Candidates must be duly qualified and registered under the Medical Acts.

The appointment is for six months commencing on March 1st.

Duties include work in any Wards of the Hospital, in the Institution as required, and also in the Sharoe Green Maternity Home adjoining.

Applications should be made by letter, accompanied by copies of three testimonials of recent date, and should reach me on or before 10 o'clock a.m. on Tuesday, February 5th.

Union Offices, Lancaster Road, Preston. THOMAS H. BENTHAM, Clerk to the Guardians. January 16th, 1929.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A Whole-time ASTHMA RESEARCH SCHOLAR is required on February 21st, in the Asthma Clinic established at this Hospital, under the Halley Stewart Trust of the Asthma Research Council, for special research work in the causation and treatment of Asthma and kindred complaints in children.

Gentlemen are invited to send in their applications addressed to the Secretary, with copies of not more than three testimonials, written specially for the purpose, before 12 o'clock on Monday, February 18th.

The appointment is non-resident, and is made for one year, but may be held, subject to re-election annually, for a period of four years.

Candidates must possess a legal qualification to practise.

Salary £300 per annum, with luncheon and tea provided by the Hospital when on duty.

All candidates must be in attendance on Wednesday, February 20th, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary at the Hospital.

By Order of the Board of Management,
JAMES McKAY.
January, 1929. Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A CASUALTY OFFICER is required on February 21st.

Gentlemen must be registered medical practitioners, and are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, February 18th, accompanied by copies of not more than three testimonials, written specially for the purpose.

The appointment is made for one year, but may be held, subject to re-election annually, for a period of three years.

The appointment is non-resident, and wholetime.

Salary £400 per annum, with luncheon and tea provided, and allowance of 24 guineas for substitute for annual holiday of four weeks.

All candidates must appear before the Joint Committee at their meeting on Wednesday, February 20th, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY.
January, 1929. Secretary.

Rochford Union.
MALE ASSISTANT RESIDENT MEDICAL OFFICER.

The Guardians of the above-named Union invite applications for the appointment of Male Assistant Resident Medical Officer at the POOR LAW HOSPITAL, ROCHFORD.

The appointment will in the first instance be for twelve months and the salary at the rate of £300 per annum, with increase to £350 per annum in the event of the Officer being reappointed after twelve months' service, together with an allowance at the rate of £200 per annum in lieu of residential emoluments. The salary and value of emoluments are subject to deductions under the Poor Law Officers Superannuation Act.

Applicants must be fully qualified and have had at least two years' resident Hospital experience.

Application forms, which must be properly filled in and returned to me not later than Wednesday, February 6th, together with particulars of the duties, can be obtained from the undersigned upon receipt of a stamped addressed foolscap envelope.

By Order,
W. HARDING ROBERTS,
27, Victoria Avenue, Clerk.
South-end-on-Sea.

County Mental Hospital,
STAFFORD.

SECOND ASSISTANT MEDICAL OFFICER, male, single, required. Salary £600, rising by £25 per annum to £700; £50 per annum in addition if or when in possession of Diploma in Psychological Medicine. £130 per annum will be charged for furnished quarters, board, laundry, and attendance.

Candidates with good knowledge and experience of pathology preferred. Every opportunity afforded for study and research, serodiagnosis, etc., in well-equipped laboratory.

Appointment subject to conditions of Asylums Officers Superannuation Act, 1909.

Applications, stating age, qualifications, and enclosing copies of recent testimonials, to be addressed to the Medical Superintendent.

Borough of Leyton.
ASSISTANT MEDICAL OFFICER (Female).

Applications are invited for the appointment of Assistant Medical Officer.

Age not to exceed 45.

The inclusive salary will be at the rate of £600 per annum.

The duties will be principally in connection with maternity and child welfare and school medical services.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to the approval of the Minister of Health.

Applications must be made on prescribed forms, which can be obtained by sending a stamped, addressed envelope to the undersigned.

Applications, endorsed "Assistant Medical Officer," accompanied by copies of not more than three testimonials of recent date, must reach me not later than the 31st instant.

Canvassing, directly or indirectly, will be a disqualification.

Town Hall, JNO. ATKINSON,
Leyton, E.10. Town Clerk.
January 18th, 1929.

County Borough of Southampton
APPOINTMENT OF SCHOOL DENTIST.

Applications are invited for the position of an Assistant School Dentist to carry out the Dental Examination, Treatment, etc., of Elementary School Children.

The gentleman appointed must be fully qualified and registered. He will hold office during the pleasure of the Council, and will be required to devote the whole of his time to the duties of the office and to act under the administrative direction of the School Medical Officer.

Salary £450 per annum.

The Local Government and Other Officers Superannuation Act, 1922, will be applicable to the appointment, and contributions to the Superannuation Fund will be deducted from the salary. The selected candidate will be required to pass a satisfactory medical examination.

Forms of application may be obtained of the Medical Officer of Health, Municipal Offices, Southampton.

Applications on the prescribed form, endorsed "School Dentist," together with copies of not more than three recent testimonials, must be delivered at the Town Clerk's Office on or before February 2nd.

R. R. LINTHORNE,
January 21st, 1929. Town Clerk

Woolwich and District War
MEMORIAL HOSPITAL,
Shooters' Hill, London, S.E.18.
(General Hospital. 112 Beds.)

The Appointments Committee invite applications for appointment as HOUSE SURGEON. An honorarium of £125 per annum will be paid in respect of such appointment, which will be for a period of six months as from February 13th.

Applications, accompanied by copies of not more than three recent testimonials, are invited from suitably qualified candidates, and should be addressed to the Secretary-Superintendent, Woolwich and District War Memorial Hospital, Shooters' Hill, S.E.18, to reach him not later than 10 a.m. on Thursday, January 31st.

The Willesden General Hospital,
Harlesden Road, N.W.10.

The Executive Committee are prepared to receive applications for the appointment of an HONORARY OPHTHALMIC SURGEON, who will be expected to take charge of Out-patients.

Candidates must be Fellows of the Royal College of Surgeons of England. They will be required to interview the members of the Medical Committee, whose names and addresses can be obtained on application to the undersigned, and to submit 50 copies of their application and testimonials, which must be received not later than Monday, February 11th, by—

R. J. HEARNE,
January 12th, 1929. Secretary.

Bolingbroke Hospital
(120 Beds.)
Wandsworth Common, S.W.11.

HOUSE SURGEON (male) required.

The appointment is for six months, commencing on March 1st next. Salary £120 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered. Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before February 7th.

W. S. RANDOLPH BISS, Secretary-Supt.

Warwickshire County Council.
ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from qualified and registered medical practitioners for the post of Assistant County Medical Officer of Health. The duties will include Medical Inspection of School Children.

The salary is at the rate of £600 per annum, and is subject to a deduction of 5 per cent. in respect of contributions under the Local Government and Other Officers Superannuation Act, 1922. In addition, motor car allowances in accordance with the Council's scale and reasonable travelling expenses are paid. The appointment is also subject to the production of a medical certificate satisfactory to the County Medical Officer of Health. Preference will be given to one who holds a Diploma in Public Health.

Forms of application and statement of the duties and terms of the appointment can be obtained from the undersigned. Applications (marked "Assistant County Medical Officer of Health"), with copies of not more than three recent testimonials, must be received by me not later than Monday, February 11th.

Canvassing, directly or indirectly, will be considered a disqualification.

42, Warwick St., L. EDGAR STEPHENS,
Leamington. Clerk of the County
January 22nd, 1929. Council.

Newcastle Throat, Nose, and Ear
HOSPITAL.

VACANCIES FOR CLINICAL ASSISTANTS.

Clinical Assistant-ships are to be established at the above Hospital and application is invited for the positions. The appointments will be for a period of six months, which may be extended at the discretion of the Committee.

Candidates shall be registered Graduates in Surgery of any University recognized by the General Medical Council of Great Britain, or shall be a registered Fellow, Member, or Licentiate of one of the Royal Colleges of the United Kingdom.

Application for the appointment must be sent in writing to the undersigned within 10 days of the date hereof.

Dated this 26th day of January
2, Saville Place. ALFRED J. SPARK.
Newcastle-upon-Tyne. Hon. Secretary

Evelina Hospital for Children,
Southwark, S.E.1

The Committee of Management requires a HOUSE PHYSICIAN (male) for eight months, from February 12th (during first four months duty in Casualty and Out-patient Department). Salary £120 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, to the undersigned at the Hospital, before 29th instant. Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates must attend Committee of Management. Date of meeting will be notified by the undersigned, from whom rules and other particulars relating to the post must be obtained.

By Order of the Committee of Management,
H. C. S. SMITH,
January 14th, 1929. Secretary-Supt.

Tynemouth Victoria Jubilee
INFIRMARY

TWO HOUSE SURGEONS (male or female) required March 1st. Applicants must be doubly qualified and registered. Salary £75 per annum, with board, residence, and laundry.

Applications, stating age and other essential particulars, and accompanied by copies of recent testimonials, to be addressed to the undersigned, from whom all particulars may be obtained.

The Hospital has two Resident House Surgeons, and contains 80 beds and cots, an X-ray Dept., and an out-patient Dept., where accident cases are received.

1, Northumberland Place, T. E. ROWELL.
North Shields. Secretary.

Elsie Inglis Memorial Maternity
HOSPITAL, ABBEY HILL EDINBURGH.

Applications are invited from qualified women for the post of HOUSE SURGEON at this Hospital.

Two appointments will be made, for periods of nine months, from April 1st and July 1st respectively.

Residence, board, and laundry provided.

Applications, with copies of testimonials, should be sent to the Convener of the Medical Committee, at the Hospital, not later than Friday, February 15th.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
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Tel.: MUSEUM 9861 (4 lines).

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ASSISTANCIES.

Wanted. — Assistant, single, male, abstainer, must be energetic, loyal, cyclist, for Midland Town. Panel and private. English or Scotch. Salary £360, also rooms and attendance. — Address, No. 409, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Assistant, with view to PARTNERSHIP, in very old-estab. good-class and panel practice in Market Town. Must be Public School Boy, and F.R.C.S. preferred. Scope for surgery, hospital.—Address, No. 404, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, with view to Partnership, in large Seaport, Glamorganshire. Welsh not needed. Experienced. Absolutely steady. Protestant. Share £800. Lovely district. General Practice.—No. 429, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, male, for London general and panel practice. Must be experienced and good obstetrician. State height, age, nationality, married or single. Share may be offered.—Address, No. 417, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant from now till March. Country Practice, Gloucestershire. £5 5s., all found.—Address, No. 420, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Lady Assistant, recently qualified, outdoor, for busy working-class London suburban Practice.—Address, No. 418, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Assistant, male, married, to Manage Country Branch, Essex (25 miles). Scotch or English Graduate preferred. Salary £400, with free house and rates, with additional £50 p.a. if providing own transport. Good prospects. Essential particulars only.—Address, No. 510, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Indoor ASSISTANT. Would suit recently qualified man. In reply, state age, religion, and other essential particulars. Photo if possible.—Address, No. 505, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, about Feb. 18th, for cash, panel, and private Practice, Birmingham. Protestant, English or Scotch. References and essential particulars. Sole charge at times.—Address, No. 421, B.M.A. House, Tavistock Square, W.C.1.

Wanted (middle March) Lady ASSISTANT (or male). Cash and Panel. Central London. Experienced and capable of entire charge. £275 p.a. to begin, one half mids. Sm'l furnished flat. References and particulars essential. Usual bond.—Address, No. 415, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, in Colliery Practice within seven miles of Newcastle-upon-Tyne. Usual bond. State full particulars as to age, experience, etc. —Address, No. 509, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for General Practices. State full particulars as to qualifications, experience, etc.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Outdoor Assistant sober and reliable, for two or three months in Colliery Practice in County Durham. Salary £6 per week. Usual bond.—Address, No. 506, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship by M.B., Ch.B.(Glasgow), 1926, single, æt. 27, sound experience G.P. and panel (2½ years), Cottage Hospital 1 year. Excellent testimonials. Well received.—Address, No. 408, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by M.B., Ch.B., beginning of March. Over five years' good experience in private, panel, and indus. practices. Outdoor or indoor, former pref. Good testimonials. Own car if desired.—No. 410, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship or LOCUMS by woman M.B., B.S. Several yrs.' exp. G.P., priv. and panel, and disp. Accus. sole charge. Ex. refs. Would undertake part-time work in Lond. 'Phone, Temple Bar 8620.—No. 449, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, pref. with view, by M.B., Ch.B.(Glas.), aged 29, single; 18 months' experience Cottage Hospital, G.P., midwifery, and anæsthetics. Capital available.—Address, No. 507, B.M.A. House, Tavistock Square, W.C.1.

Wanted by Woman Graduate, ASSISTANTSHIP or long LOCUM. Excellent experience home and abroad. Hospital 3½ years, G.P. 1½ years.—Address, No. 433, B.M.A. House, Tavistock Square, W.C.1.

Wanted, in or near London, Part-time ASSISTANTSHIP by M.B., ex H.S., R.S.O., etc.—Address, No. 412, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted immediately for Country Practice, with Cott. Hosp. (golf, tennis, etc.). Male, ex H.S. or some surg. exp. pref. Salary £400, outdoor. No immediate view. Send partics., exper., and testimonials.—No. 423, B.M.A. House, Tavistock Sq., W.C.1.

Assistantship, part-time, or with ample time for study, wanted by keen and energetic man reading for higher examinations. Must be in London district. Excellent references.—Address, No. 424, B.M.A. House, Tavistock Square, W.C.1.

Assistantship, Locum, or PART-TIME WORK wanted by Lady Doctor. Aged 28. Ex H.S. Children's Hospital.—Address, No. 414, B.M.A. House, Tavistock Square, W.C.1.

Indian qualified Doctor desires ASSISTANTSHIP or Part-time work. Experienced. Can drive car. Please write—BM/MFXW, London, W.C.1.

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Dispenser and Book-keeper, experienced, wanted immediately. State salary required and experience.—Apply, Drs. PAULIN & RITCHIE, Maipas, Cheshire.

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Lady Dispenser (Hall certificate) desires POST with Doctor. Ten-and-a-half ye[illegible] Miss [illegible]

Matron, State registered, Gen. hosp. trained nurse, with good theatre, surgical, medical, housekeeping, and administrative experi[illegible] MATRON'S POST, hospital, institution [illegible] Add., No. [illegible]

Medical Student. — Position in London offered to recent fourth or fifth year student, with literary ability, by important firm of [illegible] State age, medical [illegible] No. 511, B.M.A. House,

Nurse - Secretary, disengaged, desires POST, with Surgeon or Physician, in West End of London. Expert shorthand and typewriting. C.M.B. certificate. Excellent experience in both capacities. Highest refs.—No. 405, B.M.A. House, Tavistock Sq., W.C.1.

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Wanted by M.R.C.S., L.R.C.P. (Lond.), LOCUM or SHORT ASSISTANTSHIP. Englishman, public school, experienced private practice, æt. 24.—Address, No. 422, B.M.A. House, Tavistock Square, W.C.1.

Woman, Irish, aged 27, M.B., D.P.H., D.S. and H.P. Children's Hosp. H.S. Ear and Throat, good Anæsthetist, two years' experience G.P., wishes appointment, LOCUM or ASSISTANT. — Address, No. 411, B.M.A. House, Tavistock Square, W.C.1.

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M.B., Ch.B., single, 28, male, 6 years G.P. Good appearance. Excellent references. Temperate. Seven guineas per week and travel expenses. Free.—Address, "Locum," 72, St. George's Road, S.W.1. Telephone: Victoria, 4781.

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Wanted.—Partner for old-estab. Practice in North Wales. Large panel and dispensing. Returns approximately £2,000 per annum (net). Fullest particulars and certified returns may be obtained from HENRY R. DAVIS, Accountant, 1, Hunter Street, Chester.

Junior Partner required for large Middle-class and Panel Practice. Share for disposal £1,500 to £1,600. Small house to be rented.—BM/KVOG, London, W.C.1.

Partnership.—Half Share in old established PRACTICE, Lancs. town. Average cash receipts £3,000 p.a. Panel 2,516. Excellent house for sale, 5 bedrooms, garden, and garage. Price £1,000. Premium 2 years' purchase (to include surgery fittings, etc., and value of bad debts).—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Yorkshire Town, near Hull.—PARTNERSHIP in exceptionally old-established Practice showing gross fees £5,000 per annum. Splendid opportunity for young, energetic, and up-to-date practitioner. Panel 2,750. One-third share at 2 years' purchase.—No. 405, B.M.A. House, Tavistock Sq., W.C.1.

PRACTICES.

Wanted.—Practice or PARTNERSHIP, in good-class, non-dispensing Practice—Country town, South or South-West preferred, about £1,500 p.a., with scope for major surgery, midwifery and panel not essential, —by well qualified Public School and University man. Capital available. Good house, 5 bedrooms, to rent or purchase. Preparatory schools.—Address, No. 501, B.M.A. House, Tavistock Square, W.C.1

Wanted.—Country Practice in the Home Counties. Income £1,000–£1,500. Indefinite expanding area. Moderate sized house with garden. Capital available.—Add. No. 428, B.M.A. House, Tavistock Square, W.C.1

Wanted immediately, Practice or PARTNERSHIP of £2,000 a year or more in Hampstead or similar North or North-West suburb. Applicant is experienced in general practice, and can pay cash down for any suitable investment.—Particulars, in confidence, to No. 3181, c/o Mr. PERCIVAL TURNER, 4, Adam Street, Strand, W.C.2.

Wanted.—Practice or Partnership, by M.B., F.R.C.S.Edin., aged 36. Sound operator. Scope for surgery essential. Income not less than £1,200. Strict confidence. No agents.—Address, No. 407, B.M.A. House, Tavistock Square, W.C.1.

Wanted at once.—Practice, with good panel, London or district; 2½ yrs.' purchase, cash. Ample capital. Reply in confidence, c/o PERCY BOND GRIFFITH, Solicitors, 45, Great Marlborough St., W.1.

Wanted.—X-ray and/or Electro-Therapeutic PRACTICE, APPOINTMENT, or PARTNERSHIP, by M.B., D.M.R. & E.—Address, No. 415, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—We have innumerable applicants for sound investments in all districts, incomes from £600 to £4,000, with and without panel. Correspondence invited from prospective Vendors. — THE MEDICAL AGENCY (W. H. Grant), Watergate House, 15, York Buildings, Adelphi, W.C.2.

Birmingham Area.—Unopposed, long-standing Village PRACTICE for sale, within seven miles of Birmingham. Panel 1,200, average income £2,500. Good house and garden, good fees, excellent educational facilities. Superior surgery accommodation. Introduction.—Apply, "MEDICO," 144, Edmund St., Birmingham.

Country Practice wanted in South or South-West. About £700. House, not large, with garden. Preferably on lease. Cash available. In strict confidence.—Address, No. 482, B.M.A. House, Tavistock Square, W.C.1.

Cheshire.—Old-estab. Practice in pleasant district; nice house, garden, garage; rent £80 on lease; receipts over £700, with good scope; panel 360. Price £600, half deferred. Golf, tennis.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Doctor, at present in own prac- tice, desires to hear of another with VIEW TO PURCHASE, South or South-West of England pref., but not essential. Good climate and pleasant locality. Income £3,000 to £4,000 per annum, with large panel, and workable with Assistant.—Address (in confidence), with all essential particulars, No. 502, B.M.A. House, Tavistock Square, W.C.1.

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For Sale.—Derbyshire.—Good-class Country PRACTICE, increasing yearly. Receipts £1,400 per annum. Good house to let (rent £60), containing 5 bedrooms, 2 entertaining rooms, surgery, and waiting room. Garage. Premium £2,200, or near cash offer.—Apply, STOWELL & BAYLEY, Chartered Accountants, 46, Pall Mall, Manchester.

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For Sale. — Old-estab. Medical PRACTICE, 16 miles from Aberdeen. 400 panel patients apart from private practice. —For particulars, address, No. 513, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Cornwall.—An old-established PRACTICE, worth from £1,700 to £2,000 per annum, not including midwifery. Panel about 750. Good appointments.—Address, No. 406, B.M.A. House, Tavistock Sq., W.C.1.

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For Sale, Manchester.—P[illegible] panel: [illegible] class. [illegible] fitted, [illegible] linen, drugs, furniture, fittings, etc. Cash or instals. —No. 426, B.M.A. House, Tavistock Square, W.C.1.

Glasgow. — General Practice wanted, with scope. Good panel. Income about £1,000 or over. — Address, No. 514, B.M.A. House, Tavistock Square, W.C.1

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Camberwell, best part, main road, FURNISHED FLAT, six rooms, large hall, good entrance. Six years medical practice. Shortly vacant. Three guineas per week.—Agents: ROBERTSON & SONS, 27, Camberwell Green, London, S.E.5.

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Radiologist in Harley Street district would like to LET CONSULTING ROOM PART-TIME; with USE of Modern APPARATUS.—Address, No. 7101, B.M.A. House, Tavistock Square, W.C.1.

Rooms wanted (three), by March 15th, for old invalid lady and companion, in very quiet part of London, preferably Chelsea. Comfort and good simple cooking essential. Doctor's house *preferred*—No. 416, B.M.A. House, Tavistock Sq., W.C.1.

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Tulse Hill, S.W.—Superb *Detached RESIDENCE*, standing in own *grounds of approximately 2 acres*, situate on summit of hill. Twelve bedrooms, 6 reception *rooms, 2 bathrooms*, billiard room. Panelled hall. *Domestic offices. First-class repair.* Price £10,000, *freehold or might be Let.*

Further particulars from sole agents, ELLIS & SONS, Empire House, St. Martin's le Grand, E.C.1.

Tunbridge Wells. — Doctor's RESIDENCE for sale, *facing Common*, 2 recep., surg., and *waiting room, 5 beds., bath*, and offices. Elec. light and power. Ind. h.w. supp. Small gdn. £1,800 free'h'd.—*RICHARDSON & PIERCE.* The Great Hall, Tunbridge Wells.

Wimpole Street (best part).—A remarkably fine SUITE OF ROOMS to be Let, suitable for radiologist. Two very large rooms, which can hold complete modern installation for every form of diagnosis and treatment, and dark room. Smaller consulting room and use of waiting *room.* Rent moderate.—Address, No. 431, B.M.A. *House*, Tavistock Square, W.C.1.

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APPOINTMENTS.—Contd.

Edinburgh Hospital for Women AND CHILDREN, WHITEHOUSE LOAN, EDINBURGH.

Applications are invited from qualified women for the following posts at this Hospital:
1. SENIOR HOUSE SURGEON. *Residence*, board, and laundry provided.
2. HOUSE PHYSICIAN. *Non-resident.*
3. *JUNIOR HOUSE SURGEON. Non-resident.*

Remuneration for non-resident posts at the rate of £25 per annum, lunch provided. Appointments are for six months from April 1st.

Applications, with copies of testimonials, should be sent to the Convener of the Medical Committee, at the Hospital, on or before Friday, February 15th.

Bradford Royal Infirmary.

TWO HOUSE SURGEONS (male) wanted for March 1st.

Candidates *must be single and legally qualified.* Salary £150 per annum, with board, residence, and washing.

There are 216 beds and six resident officers.

Applications, stating age, qualifications, and previous experience (if any), with copies of recent testimonials, to be received by the undersigned not later than Thursday, January 31st.

J. J. BARRON, Secretary-Supt.

The Glasgow Royal Cancer HOSPITAL.

MEDICAL OFFICER, with *qualifications in* Radiology, for charge of Radium Department of the Glasgow Royal Cancer Hospital. Salary about £600 according to experience. Applications, with references and testimonials, to be lodged with the Secretary, 156, St. Vincent Street, Glasgow, C.2, on or before Thursday, February 7th.

Tyrone County Hospital, Omagh.

The *Committee of Management* of above Hospital will, at their meeting on Tuesday, February 19th, *appoint a* HOUSE SURGEON, *with knowledge of Radiology*, for a period of six months.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, to be forwarded to the Registrar on or *before Thursday* morning, February 14th.

Salary £100 per annum, with board and residence.

Cardiff Royal Infirmary.

Applications are invited for the undermentioned posts:

GYNÆCOLOGICAL HOUSE SURGEON.
OPHTHALMIC HOUSE SURGEON. (Must have knowledge of *refractions.*)

Appointments are for six months, commencing February 20th.

Salary at the rate of £50 *for Gynæcological* House Surgeon, and £75 for Ophthalmic House Surgeon, with board and *lodging.*

Application forms can be had from the undersigned, and should be *returned*, with copies of three recent testimonials, on or before February 4th.

R. ARMSTRONG,
January 21st, 1929. Medical Supt

Central London Throat, Nose, AND EAR HOSPITAL, Gray's Inn Road, W.C.1.

RESIDENT HOUSE SURGEON (Male).

There will be a vacancy for a *SECOND* RESIDENT HOUSE SURGEON, to enter on duty on *March 1st.* Remuneration at the rate *of £75 per annum.*

Applications, with copies of not more than three recent testimonials, should be *sent* to the undersigned on or before February 6th next.

JOHN H. YOUNG, Secretary & Supt.

Junior Assistant Medical Officer (male) required for GARTLOCH MENTAL HOSPITAL, *GARTCOSH*, under the Glasgow District Board of Control. Salary at the rate of £300 per annum, with board, lodging, and laundry, during probationary period of *service*, rising on completion of six months' *service to* £350, subject to deduction under the Asylum Officers Superannuation Act, 1909. Preference will be given to a candidate with General Hospital experience. Applications, with testimonials, to be forwarded to the Medical Superintendent, Gartloch Mental Hospital, Gartcosh.

The Haywood Hospital, Burslem.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male or female), unmarried. Salary £175 per annum, with board, residence, and laundry.

Applications to be sent to me not later than February 6th, stating qualifications, age, and experience, together with copies of three recent testimonials.

Duties to commence on February 19th.

Public Offices, *Price Street*, Burslem. F. C. POWELL, F.C.I.S., Clerk to the Governors.

Hospital of St. John and St. ELIZABETH, 60, Grove End Road, London, N.W.8.

There is a vacancy for the post of ASSISTANT SURGEON at the above Hospital. Candidate must be a Fellow of the Royal College of Surgeons of England. Duties include charge of beds. There is *no Out-patient* Department. Applications, with copies of three testimonials, must reach the Secretary, from whom further particulars may be obtained, on *or before Monday*, February 11th.

F. DUDLEY HOBBS, B.A., Secretary.

General Hospital, Gt. Yarmouth. (72 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry. Duties to commence February 13th. Candidates (male, and unmarried) must be fully qualified *and* registered.

Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be sent immediately to the undersigned.

T. H. G. GARTLAND, Secretary.

Ilford Isolation Hospital.

TEMPORARY RESIDENT MEDICAL OFFICER (lady) required. Applicants must have held a resident *appointment* in an Isolation Hospital. Salary £350 per *annum*, with *residential* emoluments. Applications to be made to Dr. A. H. G. BURTON, Medical Officer of Health, Public Health Offices, Ilford.

London Temperance Hospital, Hampstead Road, N.W.1

Applications are invited for the post of MEDICAL REGISTRAR, which will be vacant on February 1st. The appointment is open to qualified men and women, and is for a period of one year. Honorarium £60 per annum. Applications, accompanied by not more than three testimonials, to be addressed to the Secretary by *January 31st.*

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	BURGH OF MOTHERWELL & WISHAW. *(Resident Medical Officer (female) for Maternity and Child Welfare Department.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	SURREY ADMINISTRATIVE COUNTY. *(County Medical Officer of Health.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	WEST HAM UNION. *(Anæsthetist Posts at Whipps Cross Hospital.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE.
(Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec. Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies' Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
January 23rd, 1929.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Royal Edinburgh Hospital for SICK CHILDREN.

Wanted for this Hospital, FIVE HONORARY RESIDENT MEDICAL OFFICERS (three Resident House Physicians and two Resident House Surgeons), to enter on April 1st next. Information as to duties, etc., can be obtained from the Ordinary Physicians and Surgeons at the Hospital. Thirty copies of applications and relative testimonials to be lodged on or before March 2nd with Messrs. HENRY & SCOTT, W.S., 55, Frederick Street, Edinburgh. No applications will be received after that date.

Radcliffe Infirmary and County HOSPITAL, OXFORD.

Applications are invited for the post of HONORARY SURGEON to the above Hospital. Twenty-five copies of applications and testimonials, which will be forwarded to members of the Electing Committee, must be sent to the undersigned, from whom further particulars may be obtained, not later than Saturday, February 9th.

A. G. E. SANCTUARY, Administrator.

The Elizabeth Garrett Anderson HOSPITAL, Euston Road.

Wanted, fully qualified medical woman as ASSISTANT PATHOLOGIST (full-time). Particulars of post can be obtained from the Secretary, to whom applications, with testimonials, should be sent before February 1st next.

IMOGEN H. MURPHY, Secretary.

Birkenhead General Hospital. (156 Beds.)

VACANCY FOR HONORARY PHYSICIAN.

The General Committee invite applications for the post of Honorary Physician at the above Hospital.

Applications, stating age, qualifications, and full details of experience and posts held, together with copies of three testimonials, to be sent to the undersigned not later than February 4th.

W. H. DANIELS, A.C.I.S.,
Secretary-Superintendent.

Mildmay Mission Hospital, Austin Street, Bethnal Green, E.2.

Wanted, an ASSISTANT RADIOLOGIST one half-day per week (Thursday *morning*). The Department has been recently equipped with modern apparatus. The members of the Council are anxious that all members of the Hospital staff should be in full sympathy with the religious work of the Hospital.

Applications should be sent at once to the Medical Superintendent.

General Infirmary, Salisbury. (General Hospital—151 Beds.)

A RESIDENT MEDICAL OFFICER (male) required. Candidates must be unmarried, fully qualified, and registered. Salary £150, with board, etc. Applications, with copies of testimonials, to be sent to the House Governor and Secretary at once.

Charing Cross Hospital.

ASSISTANT PHYSICIAN

The Council invite applications for the post of Assistant Physician (male).

Candidates, who must be Members of the Royal College of Physicians of London, must send in their applications, together with copies of three recent testimonials, to the undersigned not later than Wednesday, January 30th.

Charing Cross Hospital, W.C.2. PHILIP INMAN, House Governor.

Jewish Maternity Home, 24, Underwood Street, Whitechapel, E.1.

RESIDENT MEDICAL OFFICER required. Applicants, who may be either male or female, should send their applications, together with copies of three testimonials, to the Hon. Secretary on or before January 30th. The Hospital offers excellent Obstetrical experience. Salary £50 per annum, together with board, residence, and laundry.

ALICE MODEL, Hon. Secretary.

Coventry and Warwickshire HOSPITAL, COVENTRY. (307 Beds.)

RESIDENT HOUSE SURGEON (male) wanted. Salary £125 per annum, board, lodging, and attendance provided. Candidates must be duly qualified and registered.

Applications, stating age, and enclosing copies of recent testimonials, should be sent to the undersigned on or before January 29th.

(Miss) E. HOOPER, Secretary.

Redhill Hospital, Edgware.

RADIOLOGIST.

The Hendon Board of Guardians invite applications from qualified medical practitioners for the post of Radiologist to their new Hospital of 190 beds.

A Sister-Radiographer (Guy's Diploma) has already been appointed.

Candidates must hold Diploma D.M.R.E. The appointment will be made in the first place for one year. Salary 150 guineas per annum.

The candidate selected will be required to attend for a session of two hours on one afternoon each week (preferably Thursdays). Particulars of the amount and nature of the work to be done can be obtained from the Medical Superintendent.

Applications, stating age, qualifications, experience, etc., together with copies of not more than three recent testimonials, should reach me on or before February 5th.

C. W. WYLES,
Clerk to the Guardians.

Hendon Union Offices,
Edgware.
January 17th, 1929.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of PHYSICIAN, with charge of Out-patients, at the DREADNOUGHT HOSPITAL, GREENWICH. The elected candidate will have beds allotted to him and will be appointed for twelve months, but will be eligible for re-election.

Candidates must be Doctors or Bachelors of Medicine of an University in the United Kingdom, and Fellows or Members of the Royal College of Physicians of London.

Applications to be sent in, on or before February 6th, to the undersigned, from whom further particulars can be obtained.

By Order,
R. E. V. BAX,
Secretary.

Greenwich.
January 21st, 1929.

South Devon and East Cornwall Hospital, Plymouth. (185 Beds.)

CASUALTY HOUSE SURGEON (male). Salary at the rate of £100 per annum, with board, residence, and laundry. Appointment is tenable for six months, and is subject to renewal. Duties to commence February 11th. Candidates must be registered under the Medical Acts. Applications, stating age and qualifications, together with copies of recent testimonials, to reach the undersigned by February 1st.

ARTHUR R. CASH,
Gen. Supt. & Sec.

January 18th, 1929.

St. Mary's Hospital for Women and Children, Plaistow, E.13.

Applications are invited for the posts of RESIDENT and ASSISTANT RESIDENT MEDICAL OFFICERS (vacant March 1st), male or female.

The appointments are for six months. Board, residence, and laundry are provided. Salaries at the rate of £175 and £120 per annum respectively. The duties of the Resident Medical Officer are mainly surgical, and those of the Assistant Resident Medical Officer mainly medical. Personal canvassing not desired. Applications, with copies of three recent testimonials, to be sent to the undersigned not later than January 29th.

A. ERNEST WILKS, Secretary.

The Queen's Hospital for Children,

Hackney Road, London, E.2.
President: H.R.H. The Duke of York.

The Committee invite applications for the post of ASSISTANT SURGEON. Attendance required twice a week. Honorarium to cover travelling expenses. The Assistant Surgeons are entitled to beds. Candidates, who must be Fellows of the Royal College of Surgeons, England, should send in their applications, with copies of not more than four testimonials, by February 11th.

T. GLENTON-KERR,
Secretary.

January 1st, 1929.
Telephones: Bishopsgate 6305 & 2534.

The Retreat, York.

(A Mental Hospital under the Management of a Committee of the Society of Friends.)

Wanted, a JUNIOR MEDICAL OFFICER (lady). Applicants should preferably have previous Mental Hospital experience, and should possess, or be prepared to work for, the Diploma in Psychological Medicine. Salary (with rooms and board) according to qualifications; minimum £300.

Applications to be addressed to the Deputy Chairman, ALFRED B. SEARLE, 440, Glossop Road, Sheffield.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

NURSES
MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

THE NURSES' ASSOCIATION
(In conjunction with the MALE NURSES' ASSOCIATION).
29, York St., Baker St., London, W.1.
Mrs. MILLICENT HICKS, Supt.
W. J. HICKS, Secretary.

ST. LUKE'S HOSPITAL.
FOR MENTAL DISORDERS.

Private Nursing Staff Department.
Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

West London Hospital, Hammersmith Road, W.6. (226 Beds.)

Applications are invited for the post of HONORARY OBSTETRIC REGISTRAR for a period of one year. The holder of the post is eligible for re-election annually for a total period of not more than three years. The duties include the preparation of the Obstetric Registrar's Report for the year, and the supervision of the records of cases. The candidate appointed must be available as a substitute for the Surgeon and Assistant Surgeon for Diseases of Women, and for emergency operations when required, and be prepared to undertake such teaching for the Post-Graduate College as the Board may approve.

Candidates are required to be registered under the Medical Act; to send applications to reach me not later than Monday, February 18th; to attend the Medical Council Meeting on Friday, February 22nd at 4.30 p.m., and prior to that date to call upon and send copies of application and testimonials to each Member thereof; to abstain from canvassing, but nevertheless to send copies of application and testimonials to each Member of the Board of Management, at whose Meeting on Tuesday, February 26th, at 5 p.m., candidates must be in attendance.

H. A. MADGE, Secretary.

Kent County Ophthalmic and Aural Hospital, Maidstone. (72 Beds.)

Applications are invited for the posts of OPHTHALMIC HOUSE SURGEON and HOUSE SURGEON to the Ear, Nose, and Throat Dept., which will shortly become vacant. Candidates must be duly qualified and registered medical practitioners, male, single, and of British birth and nationality, and should have had experience of the work. Candidates for the Ophthalmic appointment should have some experience in refractions. Each appointment will be for six months, with an option of a further six months. Salary for each appointment at the rate of £200 per annum, with board, residence, and washing.

Applications, together with copies of not more than three testimonials, should be sent to the undersigned not later than February 7th next.

JOHN W. STRICKLAND, Secretary.

Worcester County and City Mental Hospital, Powick, near Worcester.

JUNIOR ASSISTANT MEDICAL OFFICER (male) required. Candidate must be duly qualified in Medicine and Surgery, and should be able to undertake Clinical laboratory work. Salary £550 per annum, rising by two annual increments of £25 to £600 per annum, with furnished apartments, board, laundry, and attendance. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909. Applications, stating age, etc., together with copies of three recent testimonials, to be sent to the Medical Superintendent not later than Friday, February 1st.

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4 & 5, ADAM ST., STRAND, W.C.2.
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West End.—1/3 share in Electro-therapeutic, Sunlight, and X-ray PRACTICE. About £1,400 p.a., including profit rentals. Cons. from 2 to 3 gns. Treatments about 1 gn. Prem., including share in all furniture and X-ray equip., £550.—No. 8368.

Sunderland.—Death Vacancy.—£1,030 p.a. Visits 3/6 to 10/6. No panel, but scope. Mids. 2 gns. up. Good house available.—No. 8408.

Devonshire.—£1,500 p.a. 1/3 or 2/5 share for sale after preliminary assistancy. Panel over 2,000. Ultimate succession. Good house available.—No. 8405.

Home Counties. — Over £1,250 p.a. Country Practice. Panel and appts. nearly £750 p.a. Mids. 3 to 5 gns. Visits 5/- to 21/-. Good house, 6 bed., etc., and large grounds, to rent.—No. 8404.

West of England City.—About £750 p.a. Panel about 250. No mids. Visits 7/6 to 10/6. Appointment £50 p.a. Modern house, 5 bed., etc.—No. 8403.

London, N.—Lock-up. — About £700 p.a. Panel over 500. Mids. 3 gns. Visits 3/6 up. Two rooms, rent 35/- p.w. Premium £900 or offer.—No. 8402.

Kent Suburb. — About £1,100 p.a. Good middle-class PRACTICE. Mids. 5 gns. up. Visits 5/- to 10/6. Select panel 200. Appt. £52 p.a. House, 6 bed., etc.—No. 8401.

Nottinghamshire. — Increasing NUCLEUS £600 to £700 p.a. Mids. 5 gns. up. Visits 3/6 to 21/-. Small panel. Corner house to rent. Prem. £900.—No. 8397.

Kent Suburb.—Over £2,600 p.a. 1/2 SHARE for sale. Visits 7/6 to 21/-. Panel about £400 p.a. Good house, 4 bed., etc., large garden. Part prem. deferred.—No. 8396.

Lancashire.—About £2,000 p.a. Panel 2,500. Appts. nearly £200 p.a. Visits 3/6 to 5/-. House, 4 bed., etc., to rent. —No. 8391.

N. Wales.—Share worth about £700 net. Panel about 2,500. Colliery £400 to £500 p.a. Mids. 2 gns. House, 5 beds., and large garden, with tennis court, to rent.—No. 8389.

Lincolnshire.—About £1,370 p.a. Unopposed. Panel and appts. about £500 p.a. Mids. 3 gns. Fees 4/- to 6/-. House, 6 bed., etc., good garden, with garage, to rent.—No. 8386.

Kent. — Average £1,250 p.a. Mids. 7½ gns. up. Visits 7/6 to 21/-. Non-panel. House, 5 bed., etc.—No. 8380.

Western County.—£600 to £700 p.a. Unopposed. Clubs and appts. over £100 p.a. Fees 3/6 to 12/6. Panel about £300 p.a. Good house and garden. Premium, house and practice, £2,100.—No. 8375.

Co. Durham.—About £700 p.a. Visits 3/6. Mids. 2 gns. Panel 662. House, 3 bed., etc., to rent.—Apply, No. 8354.

South Wales. — Residential. — £1,600 p.a. Panel 450. Fees 5/- to 21/-. Corner house, 6 bed., etc.—Apply, No. 8348.

Within 12 miles London North. —£1,500 p.a. Panel 800. House, 3 recep., 6 bed. Separate surgery, etc. Over one acre garden.—Apply, No. 8344.

London, S. E.—£1,800 p.a. Cash and panel of 1,845. 1/3 share for sale. Visits 3/6 up. Very little midwifery. Small accommodation over surgery.—Apply, No. 8342.

SPECIAL NOTICE.

FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants prepared to pay part of purchase money down and balance by instalments over 7 years (on the security of a Life and Sickness Policy). Full particulars on application to Mr. Percival Turner.

THE MEDICAL AGENCY

(ESTABLISHED BY J. A. REASIDE IN 1893)

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FOR SALE.

LONDON, W.—Well-established Lady Doctor's PRACTICE in middle and working-class locality. Receipts over £530. Panel about 350. Fees 2 6 up. Medium-sized house. Premium for practice £750. House £1 100. M ght be rented.

SOUTH OF ENGLAND.—ASSISTANTSHIP with view to PARTNERSHIP within one year. Receipts approximately £4.000 p.a. Panel 2,000. One-half or one-third share at 1½ years' purchase. En glish 'Varsity man ...ferred, aged about 30.

VACANCY — ...P. in middle and better working-class locality. Good fees. Receipts average over £1,000 p.a. Scope for physician. House for sale or would be let. Prem.um for practice 1 year's purchase.

LONDON, ... G.P., ... locality, ... £600; ... hold. P...

LONDON, ... practice. Receipts average over £3.500 p.a. Panel over 1,000. Premium for one-third share, with view to larger share, 1½ years' purchase, cash; 2 years' purchase if part of purchase price remains.

LONDON, S.W.—Well-established G.P. in growing suburban residential district. Medium-sized house on main thoroughfare. Cash receipts over £700 p.a Small panel; scope. Good fees. Prem.um £1.000. House on mortgage.

HOME COUNTIES.—Good-class G.P. situated within easy distance of London. Admirably suited for semi-retired practitioner. Income over £500 p.a. Small but select panel. Excellent house with ample accommodation. Premium, £3,5 0 for house and practice.

KENT.—Within easy and short distance of London.—PARTNERSHIP in well-established G.P. Good fees. Scope for surgery. Receipts over £2.500 p.a. Panel 1,000. Premium 2 years' purchase for half share. Suitable for youngish man not over 40. Preferably 'Varsity Graduate with experience.

If the investment you are seeking is not advertised here, let us know your wants, and we will gladly forward details of others suitable to your requirements.

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1 DEATH VACANCY. — South Coast. — PRACTICE worth about £600 (£240 from panel) in favourite health resort. Excellently situated and convenient house to be sold or let. Ample scope.

2 HOME COUNTIES.—Partnership in Practice over £8,000 p.a. in country town. Incoming Partner must be well qualified (preferably University man) and have held Hospital appointments. One-fourth share at 2 years' purchase.

3 HOME COUNTIES. — Non-dispensing PRACTICE about £1,300 in residential district, adjoining first-rate town. Practically no panel. Modern house (5 bedrooms) for sale. Golf, fishing, etc. Premium £1,650.

4 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

5 MIDLANDS.—Country Practice averaging nearly £1,500 p.a. in beautifully situated village easy reach of several good towns. Panel 600. Large modernized house, with electric light, gas, etc., for sale. Sport. Premium £1,900.

6 LONDON, W. — Practice (carried on by Medical Woman) in suburban district. Receipts 1928, £536. Panel 360. House (3 bedrooms, etc.) to be sold or let. Premium £750.

7 EAST COAST.—Practice (suitable for two) in small watering-place. Receipts £2,800 p.a. (including panel worth about £600 p.a.); Very little opposition. Two houses to rent. Premium 1½ years' purchase.

8 SOUTH OF ENGLAND. — X-Ray and Electro-therapeutic PRACTICE in important town. Receipts last year £1,650. Detached house for sale or rent. Premium £1,500.

9 SOUTH OF ENGLAND.—Ear, Nose, and Throat PRACTICE in a watering-place. Receipts average over £600 p.a. (one day a week only). Income easily doubled by one resident. Premium £750.

10 DURHAM.—Practice averaging £424 p.a. in small pleasantly situated country town. Panel 70. House (8 rooms) to let. District is growing and there is plenty of scope for increase. Premium £450.

11 DEATH VACANCY.—S. Coast.—Fashionable health resort. Practice worth about £500 p.a. Panel 527. Convenient and well-situated house to be sold or let. Great scope.

12 DEATH VACANCY. — N.E. COAST. — PRACTICE averaging £1,050 p.a. in large seaport town. No panel. Excellent commodious house in best part to rent.

13 DEATH VACANCY. — Berks. — Practice about £600 in growing country district. Panel over 300. Bungalow residence (5 bedrooms), garage, and land. Scope.

14 HOME COUNTIES.—Partnership in Practice about £3,000 p.a. in growing residential watering-place. House (4 bed and dressing rooms) to rent. Partner must be well qualified (Oxford, Cambridge, or London) Premium one-fifth share 2 years' purchase.

15 SUSSEX.—Partnership in Country Practice nearly £2,800 p.a. in residential district, easy distance of coast Good house (6 or more bedrooms) to let on lease. Premium one-half share 2 years' purchase.

16 HOME COUNTIES.—Practice about £1,350 p.a. in good residential district within 25 miles of London. Panel 1,000. Large house (9 bedrooms) for sale. Premium, practice, £2,000.

17 N.W. ENGLAND.—Partnership in Practice about £3,500 p.a. in seaport town. Panel about 2,500. Choice of two houses to rent. Premium one-fourth or one-third share 2 years' purchase.

18 N. MIDLANDS. — Practice averaging £1,654 p.a. in first-rate county town. No panel or appointments. Well-built detached non-basement house in best part for sale. Ample scope. Premium for quick sale one year's purchase.

19 UNIVERSITY TOWN.—Partner required in Practice about £3,100 p.a Panel over 2,000. Partner should have held good Hospital resident appointments. Premium one-fifths share 2 years' purchase.

20 SOUTH MIDLANDS. — Practice about £1,150 p.a. in county town. Panel 485. Good house (7 bedrooms), with garage and garden, for sale. Very good Hospital.

21 N. LONDON.—Partnership in compact and easily worked Practice nearly £2,000 p.a. in suburban district; Panel 3,400. No midwifery. Premium one-half share 2 years' purchase. (Partner must be English or Scotch).

22 ITALY.—Season (March to October) PRACTICE about £560 p.a. in famous city. No midwifery. Up-to-date Hospital. Premium £700.

23 GLOUCESTERSHIRE.—Country Practice averaging £654 p.a. (Elevation 600 feet). Near two good towns. Panel 500. Large house, with garden and paddock, for sale. Scope for increase. Premium £800

24 KENT.—Partnership in better middle-class Practice about £2,500 p.a. in delightful residential district. Premium one-half share 2 years' purchase. Public School or University man preferred.

25 N. MIDLANDS.—Practice worth between £600 and £700 p.a. in residential district on outskirts of first-rate town. Small panel offering plenty of scope. Excellent modern house to rent. Premium £900.

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26 SOUTH AFRICA. — Old-estab. Practice. Receipts last year £1,816. Travelling and midwifery light. Climate ideal—no tropical diseases (altitude nearly 5,000 feet). Delightful residence (5 bedrooms), in perfect order, with 2 acres grounds. Excellent scope. Local Hospital. Premium £1,200, with option to purchase house.

27 MIDLANDS.—Partnership in middle-class Practice averaging £5,450 p.a. in flourishing and growing town. No panel and little midwifery. Applicant should be between 25 and 40 years of age, and preferably, though not essentially, a University Graduate. Premium one-fourth share (ultimately increasing to one-half) 2 years' purchase.

28 S. WALES.—Practice worth over £700 p.a. (chiefly panel and appointments) in small seaside town Small house (5 bedrooms), to rent. Premium £700 cash.

29 S. WALES.—Practice over £1,200 p.a. in small country town, amidst beautiful scenery. Panel about 300. Old-fashioned house, with garage and garden. Cottage hospital. Premium £1,500.

30 OPHTHALMIC PRACTICE doing over £1,200 p.a. Consultations usually £2 2s. Scope for considerable increase.

31 S. MIDLANDS.—Practice over £1,700 p.a. in country town 100 miles from London. No panel, appointments, or midwifery. House (5 bedrooms), with garage and garden, for sale. Premium—Practice 1½ yrs.' purchase.

32 N. WALES COAST. — Partner required in old-established Practice. Receipts over £5,650 p.a. Panel over 2,000. Modern house (8 bedrooms, etc.) to rent. Premium for one-half share £4,000, part cash. Applicants must have held H.P. and H.S. appointments.

33 CHESHIRE. — Partnership in old-estab. Town Practice near Manchester, £3,000 p.a. (not including appointments). Panel over 2,000. Third share at 1½ yrs.' purchase. Short preliminary assistantship if preferred.

34 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 13 acres of land for sale. Premium, practice, 1½ years' purchase.

35 LONDON, S.E. — Partnership in well-established Practice of £1,900 p.a. in good residential district. Exceptionally well-built detached house (6 bedrooms) to be rented. One-half share at two years' purchase. Good scope.

36 DEVONSHIRE.—Partner required (after preliminary assistantship) in Practice worth £3,000 p.a. in first-rate country town. Panel over 2,100. Well-equipped Hospital. One-third share to suitable man at 2 years' purchase.

37 SURREY.—Partnership in Practice about £2,700 p.a., in outlying suburban district. Panel 1,000. Corner house (5 bedrooms) to rent. Cottage hospital. One-third share at 2 years' purchase.

38 MIDLANDS.—Country Practice of over £1,000 p.a., within 5 miles of good town. Panel 531. Comfortable and convenient house (5 bedrooms, etc.), with electric light, central heating, and acre garden, for sale. Premium, practice, 1½ years' purchase.

39 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. No panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

40 LANCASHIRE.—Practice averaging over £3,700 p.a. in first-rate town. Panel 2,600. House (4 bedrooms) to be sold or let. Premium 1½ years' purchase.

41 LONDON, E.—Partnership in exceptionally old-established Practice averaging £3,580 p.a. Good fees and appointments. Two-fifths share for disposal at 1½ years' purchase, or one-third could be purchased at first. Small house may be bought or rented at a moderate figure.

42 SOUTH OF ENGLAND. — Practice about £900 p.a. in first-rate seaport town. No panel or midwifery, but ample scope Well-situated house to rent. Premium £1,500.

43 NURSING HOME. — CROYDON. — Receipts about £2,000 (profit £650). Large well-situated house. Premium, to include goodwill and freehold, £3,250.

44 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. Partner should be keen worker and a good surgeon. One-third to two-fifths share at 2 years' purchase.

45 MIDLANDS. — Practice about £350 p.a. in manufacturing village. Panel 190. House (4 bedrooms, etc.), and one acre of garden. Premium—Practice and house, £2,000.

46 SUFFOLK.—Country Practice averaging £360 p.a. in beautiful agricultural district. Panel 300. Very attractive residence (5 bedrooms, etc.) in half acre garden, etc., for sale. Premium—Practice £540.

47 N. WALES. — Seaside Practice, approximately £500 p.a. Furnished house (4 bedrooms) to rent, or others to rent or purchase. Premium £500 for quick sale.

48 SOUTH AFRICA (NATAL). — Practice over £1,000 p.a., including appointment (District Surgeon) £200. House (4 bedrooms, bathroom, etc.). 2 acres garden and land. Price for House and Practice £3,000.

49 PEMBROKESHIRE. — Practice about £1,000 p.a. in small town. Panel 351. Well-situated house (7 bedrooms) to rent. Scope for increase. Premium £1,500. Preliminary assistantship if desired.

50 SUSSEX. — Country Practice about £300 near coast. Picturesque house (3 bedrooms), with garden, for sale. Premium—Practice £300.

51 NORTH WALES. — Country Practice averaging £1,230 p.a. in Welsh-speaking district. Panel over 630. Centrally situated house (5 bedrooms). Premium one year's purchase.

52 S. WALES. — Easily worked Panel and Contract PRACTICE over £1,000 p.a. in colliery district. Small house (4 bedrooms) to rent. Premium one year's purchase.

53 N. KENT.—Practice averaging £286 p.a. in industrial district offering enormous scope. Small panel. House to rent. Premium £430.

54 ESSEX. — Practice averaging £1,216 p.a. in outlying district—30 minutes by rail from London. Panel 550. Nice detached house (5 bedrooms) for sale. Premium for practice 1½ years' purchase.

55 N. LONDON.—Practice of between £950 and £1,000 p.a. Small panel. No midwifery. Detached corner house (7/8 bedrooms) for sale. Premium—Practice 1½ years' purchase.

56 MIDLANDS. — Partnership in Practice over £2,000 p.a. in good town. Panel 1,800 Good house (5 bedrooms) available. Partner should be able to undertake major operations. Well-equipped hospital. One-half share for disposal.

57 HOME COUNTY.—Partnership in Practice over £2,000 in residential district within 12 miles of London. Panel 750. House, with 5 bedrooms, to rent. Premium one-third share 2 years' purchase.

58 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. Panel over 1,400. Partner should be good at midwifery. Premium one-third share 2 years' purchase.

59 YORKSHIRE (N.R.).—Partnership (with view to succession) in Practice about £1,000 p.a. in small country town. Panel 420. Good rooms available. One-half share at moderate premium. Scope for minor surgery.

60 LONDON, E.—Rapidly increasing cash and panel PRACTICE. Receipts for year ending September, 1928, £971. Panel 450. Shop-fronted house on lease at a profit rental. Premium, to include drugs, surgery equipment, etc., £1,250.

61 S. DEVON. — Old-established Country PRACTICE £700 to £800 p.a. Easy distance of the coast. Panel 400. House (2 sitting, 4 bedrooms large garden, paddock, garage, etc.). Rent £45 Cottage Hospital. Premium £1,200.

62 N. YORKSHIRE. — Country Practice worth about £500 p.a. in agricultural district. Panel over 200. Modern house (6 bedrooms) for sale. Premium, practice £500.

63 Nr. NEWCASTLE-ON-TYNE.—Old-estab. Town PRACTICE over £800 p.a. Panel 440. Pleasantly situated house (4 bedrooms) to rent. Plenty of scope. Prem. 1½ years' pur.

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2. X-RAY AND ELECTRO-THERAPEUTIC PRACTICE. — In a large Hospital Town, within 80 miles of London, a well-established connection averaging nearly £1,000 p.a. (last year £1,059) is for disposal for reasons which can be satisfactorily explained. Patients—upper and middle-class. Fees 1½ to 15 gns. House situated in pleasant position, with ample professional accommodation, and 4 rooms, dressing room, bathroom, etc. Premium £1,500. Electric plant (which has been valued) £670 extra. Vendor is on staff of Hospital (nearly 300 beds) and successor will be appointed.
3. SOUTH-WEST OF ENGLAND.—INLAND SPA.—PARTNERSHIP.—A half share (with succession to the whole in about 12 months' time) is for disposal in a chiefly upper and middle-class non-panel Practice, held by the Vendor for the past 30 years. Average gross cash receipts for past three years £1,233. There is considerable scope for increase, as owing to ill health much work has been refused. Fees 5/- to 21/-. No midwifery. Suitable house can be obtained. Premium £1,100.
4. SOUTH-EAST OF ENGLAND.—COAST TOWN.—Small but increasing PRACTICE, at present producing about £500 per annum, with good scope. Panel of 420. Suitable house available. Rent £52 p.a. Premium £750, part down, and balance by instalments.
5. LONDON, S.W.—RESIDENTIAL SUBURB.—Small PRACTICE, offering scope for increase. Gross cash receipts for immediate past 12 months £706, including panel of 153. Fees 3/6, 5/- upwards. Midwifery 5 guineas. Small compact house, on main road, with 2 reception, 4 bedrooms, etc. Price £1,150, payable £400 down and balance by yearly instalments of £85. Premium for quick sale £1,000, to include drugs, fittings, fixtures, etc.
6. PARTNERSHIP.—The third share of a very old-established mixed-class Practice, in a pleasant London suburb, is for disposal owing to the retirement (through ill health) of the Junior partner. Held 24 years by remaining. Cash receipts average about £2,700 p.a., including appts. producing £340 and panel of 1,000. Visits 3/6 to 21/-. Good house available, with ample accommodation. Rent £85 on lease. Premium 2 years' purchase. Excellent scope.
7. KENT.—GROWING DISTRICT, within 15 miles of London.—PARTNERSHIP.—A one-half share is for disposal in a very sound chiefly better and middle-class Practice, established many years, and held by the remaining partner over 4 years. Gross cash receipts for the past three years £2,528, including panel of 900. No appointments. Fees from 5/- to 21/-. Midwifery 5 to 30 guineas (about 25 cases yearly). Very suitable modern house, with 2 reception, 4 bedrooms, good bathroom, etc. Consulting room. Electric light. Small garden. Garage. Price for freehold about £2,100, nearly all of which could remain on mortgage. Good sport and schools, and excellent social facilities. Premium 2 years' purchase.
8. NOTTINGHAM.—Good middle-class PRACTICE offering good scope and having small panel which could be largely increased. Gross cash receipts about £400 per annum. Fees 3/6 to 21/-, medicine extra. Very good modern corner house in pleasant residential district. Rent on lease £80 p.a. Premium 1½ years' purchase.
9. ESSEX.—SMALL COUNTRY TOWN.—Well-established and increasing PRACTICE, producing for the past twelve months £768, including panel of 525, and appointments worth over £60 p.a. Advice and medicine chiefly 3/6 to 7/6, visits 3/6 to 21/-, medicine extra. Mids. (discouraged) 2 to 5 guineas. Exceptionally nice house, with lounge hall, 3 reception, 5 bedrooms, rooms garden, and usual offices. Hot water supply, Price with tennis court. Garage for two cars. for freehold £3,100. Premium 1½ years' purchase.
10. LANCASHIRE.—SUBURB OF LARGE TOWN.—Old-established PRACTICE, held by Vendor 30 years. Average income for the past twelve months £1,500, including panel of nearly 1,600. Fees 2/6 to 10/-. Very good house, standing in its own grounds, and containing 3 reception, 4 bedrooms, dressing room, 3 professional rooms. Central heating. Electric light. Garden, with greenhouse. Garage for 3 cars. Price for leasehold £2,100, of which about £1,500 could remain on mortgage. Premium 1½ years' purchase, part by instalments.
11. LONDON, NORTH.—OUTLYING RESIDENTIAL SUBURB.—PARTNERSHIP.—A one-third share (to commence with) is for disposal, owing to the retirement of the senior partner, in sound middle-class Practice, situated in rapidly developing district. Income for the immediate past year £2,124. Consultations 3/6 to 10/6, visits 4/6 to 21/-. Good freehold house, price £1,500; or would be rented on lease at £90 p.a. Low expenses. Premium 2 years' purchase.
12. OUTLYING WESTERN SUBURB.—Old-established mixed general PRACTICE. Income for the immediate past year about £2,300, including panel of between 1,400 and 1,500. Fees 3/6 to 10/6. Midwifery from 3 gns. The district is rapidly developing and there is great scope. Good house, with garden and garage. Price £2,000. Premium £3,500.
13. LONDON, S.E.—Outlying Suburb.—Very well-estab. growing mixed general PRACTICE, situated in pleasant district within easy reach of town. Gross cash receipts for immediate past twelve months nearly £2,650. Panel of 2,120. Appts. worth about £60 and stated to be transferable. Fees 2/6 to 7/6. Midwifery from 3 gns. (about 40 cases yearly. Moderate expenses. Seven-roomed house, with kitchen, 2 waiting rooms, dispensary, and consulting room. Garden. Brick-built garage. Price for freehold £1,500. Premium £4,500.
14. SOUTH OF ENGLAND.—FAVOURITE SEASIDE RESORT.—Mainly better-class PRACTICE, producing for the last twelve months about £700, and rapidly increasing. Panel of 150. One appt. worth about £40 p.a. Fees 3/6 to 7/6. Only a few cases of midwifery, 2 gns. upwards. Good house in excellent repair, with 2 reception, 5 bedrooms, etc. Electric light. Garden. Garage. Price for freehold £2,300. Premium £1,400.
15. MIDLANDS.—UNOPPOSED COUNTRY PRACTICE, situated in good hunting centre. Gross cash receipts for past 12 months about £1,000 p.a., including panel of 600. Advice and medicine from 3/6, visits 5/6 upwards, with medicine extra. Lowest midwifery 2½ gns. Exceptionally attractive house, with oak panelling, etc., 2 reception, 10 bedrooms, and professional rooms. Well-stocked garden of 1½ acres, and 12 acres of grassland. Recently re-decorated throughout. Electric light. Price for freehold £4,500, of which £2,200 could remain on mortgage. Premium 1½ years' purchase.
16. [illegible] general PRACTICE. Present [illegible] ge scope. Advice and medicine [illegible] /- to 15/-. Midwifery refused [illegible] on, 6 bedrooms, etc. Vendor's freehold. Good schools. Price for practice and house £3,000.
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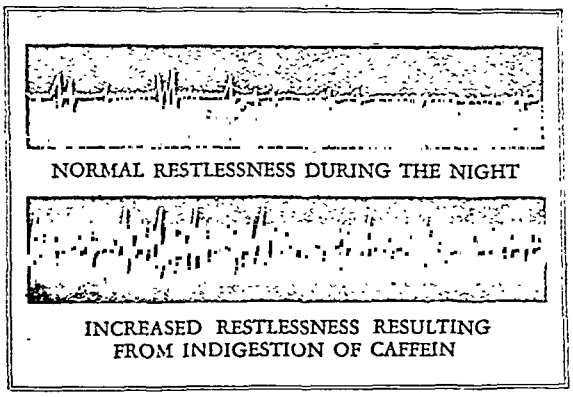

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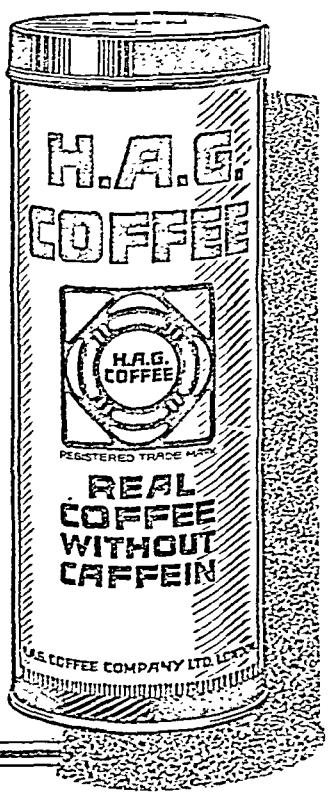

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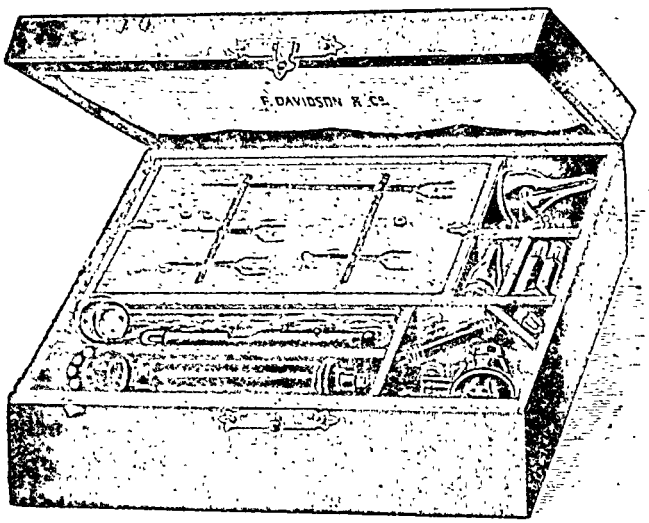

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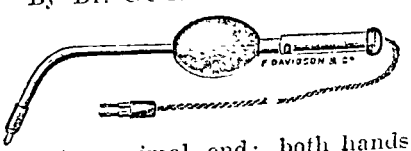

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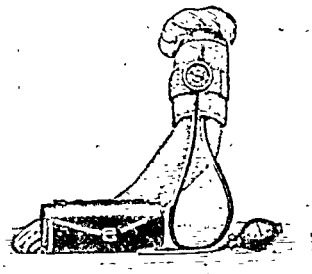

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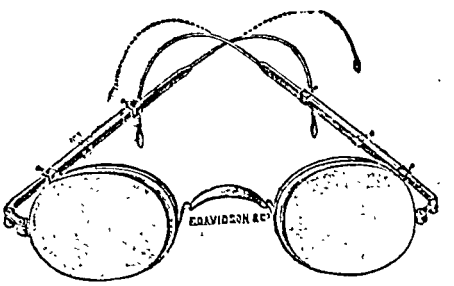

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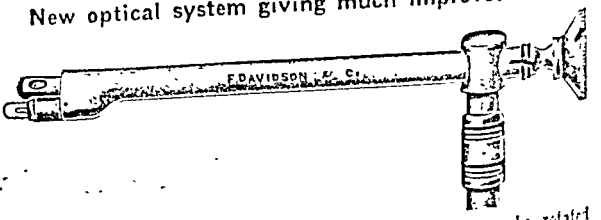

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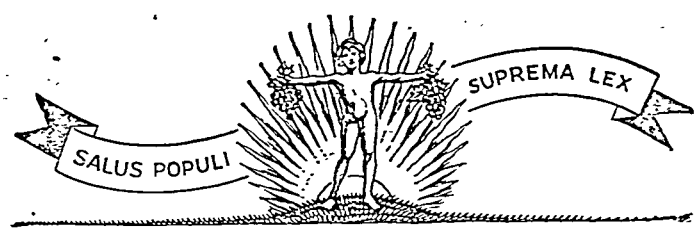

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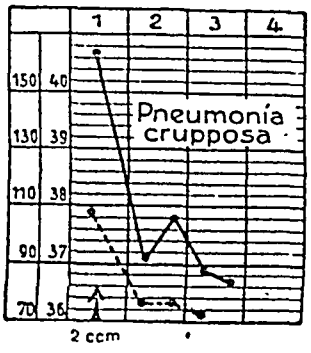
Indicationes: Pneumonia crupposa*)

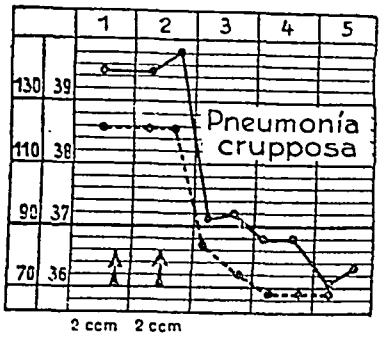


Febris finitur.

2 ccm: 0,5 g Chinin.

Pro dosi et pro die: 2 ccm

Scatulae originales:
Amp. III et XII à 2,2 ccm



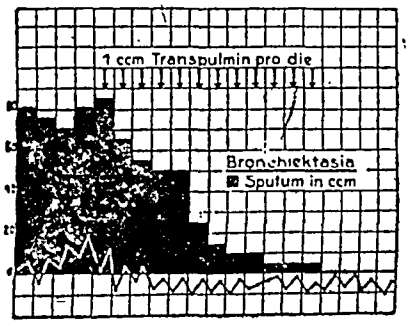
Morbus minuitur.

*) Praeterea: ad accelerandum partum et abortum; ad curandam malariam.

TRANSPULMIN „HOMBURG"

Indicationes:

Bronchitis acut. et chron., Bronchitis putrida, Bronchoblenorrhoea, Bronchiektasia, Bronchopneumonia, Pneumonia postoperat., Abscessus pulmonum, Gangraena pulmonum, Influenza, etc.

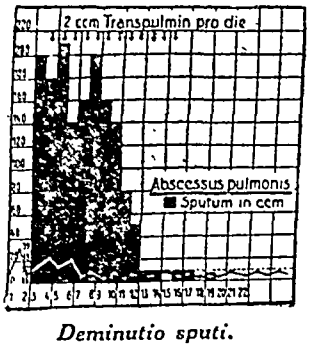


Deminutio sputi.

1 ccm { 0,03 g Chinin.bas.anhydric. / 0,025 g Camphora in ol. aetheros. solut.

Dosis: pro die 1—3 ccm

Lag. orig. à 10 et 25 ccm
Scatulae originales:
Amp. VI et XII à 1,1 ccm
Amp. V et X à 2,2 ccm



Deminutio sputi.

See "MEDICAL WORLD," August 24th, 1928:

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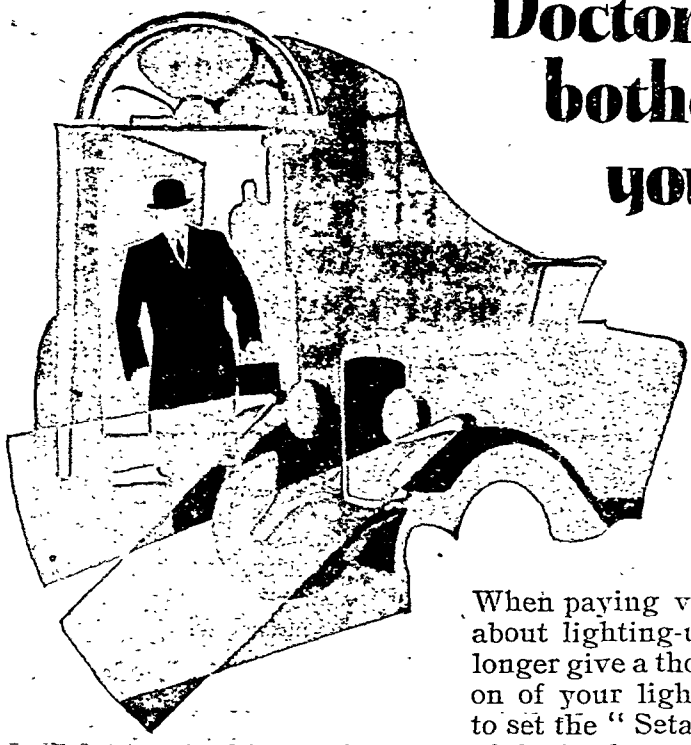

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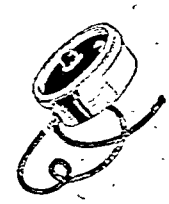

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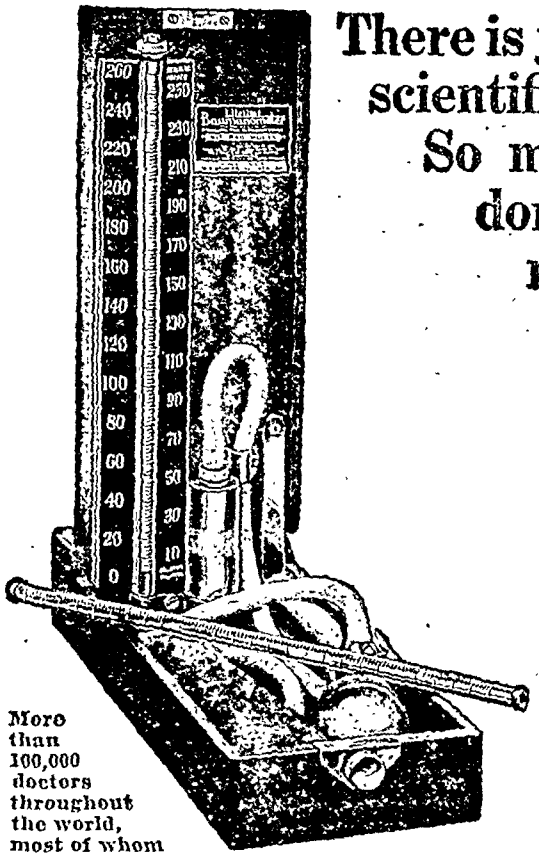

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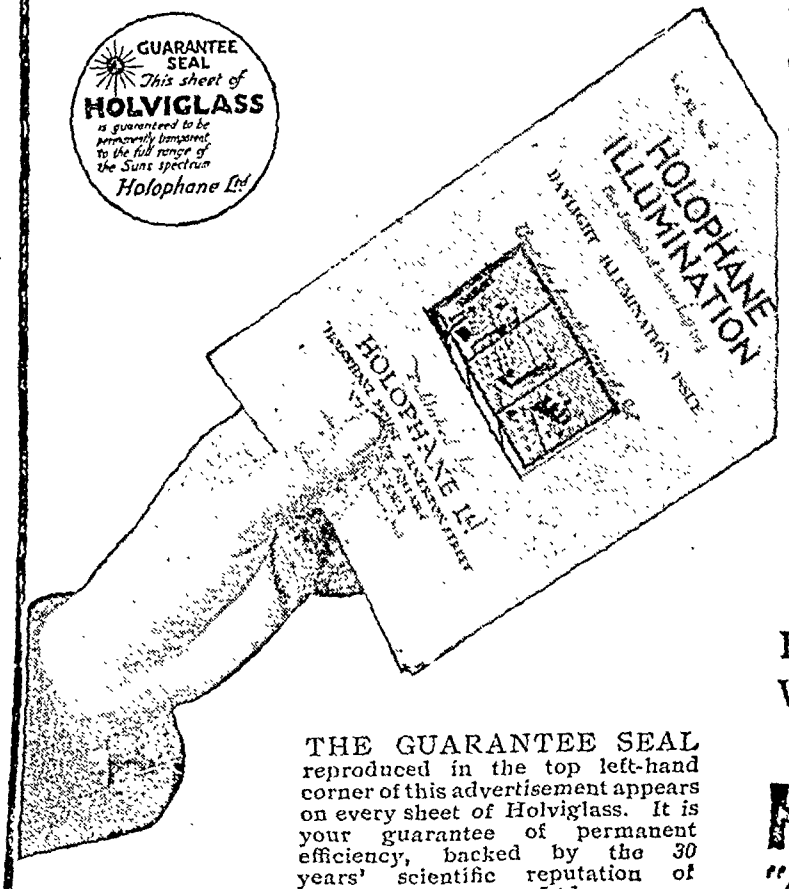

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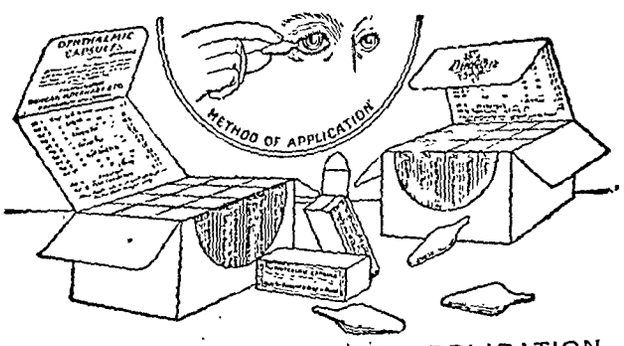

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The Influenza Prophylactic

The importance of taking early measures for the prevention of influenza need not be over-emphasised. In a recent number of this journal (January 12th, page 73) attention was directed to the prevalence of influenza abroad and to the likelihood of an epidemic spreading in this country.

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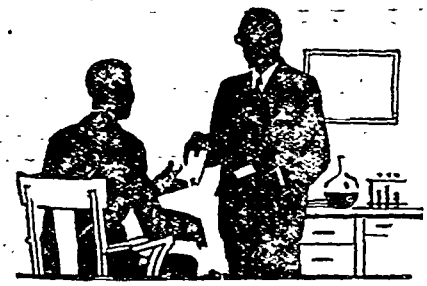

Coated Tongue and Toxemia

Coating on the tongue consists of epithelial cells, molds, yeast, and many bacteria, some highly virulent. Normally the saliva prevents growth of the latter. If the resistance of the blood is lowered, the saliva loses its germ-destroying and inhibiting power. A tongue coating appears.

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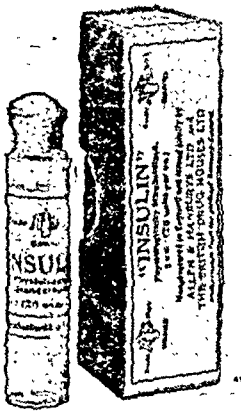

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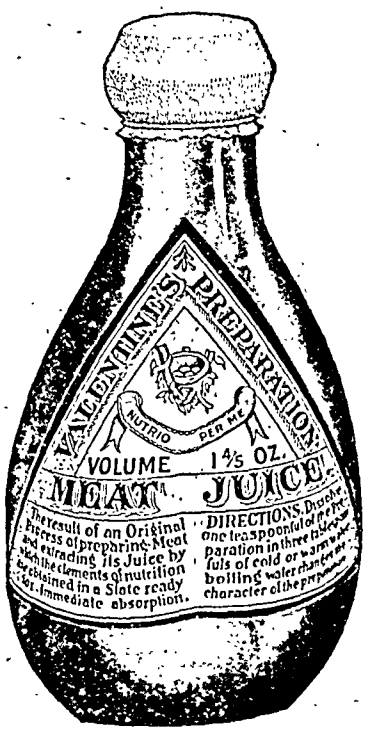

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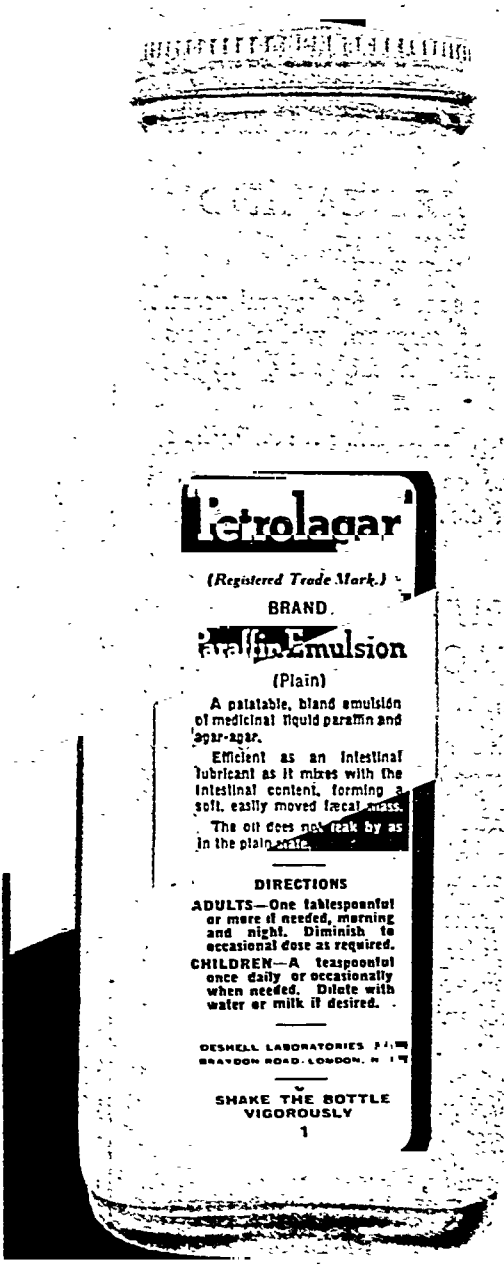

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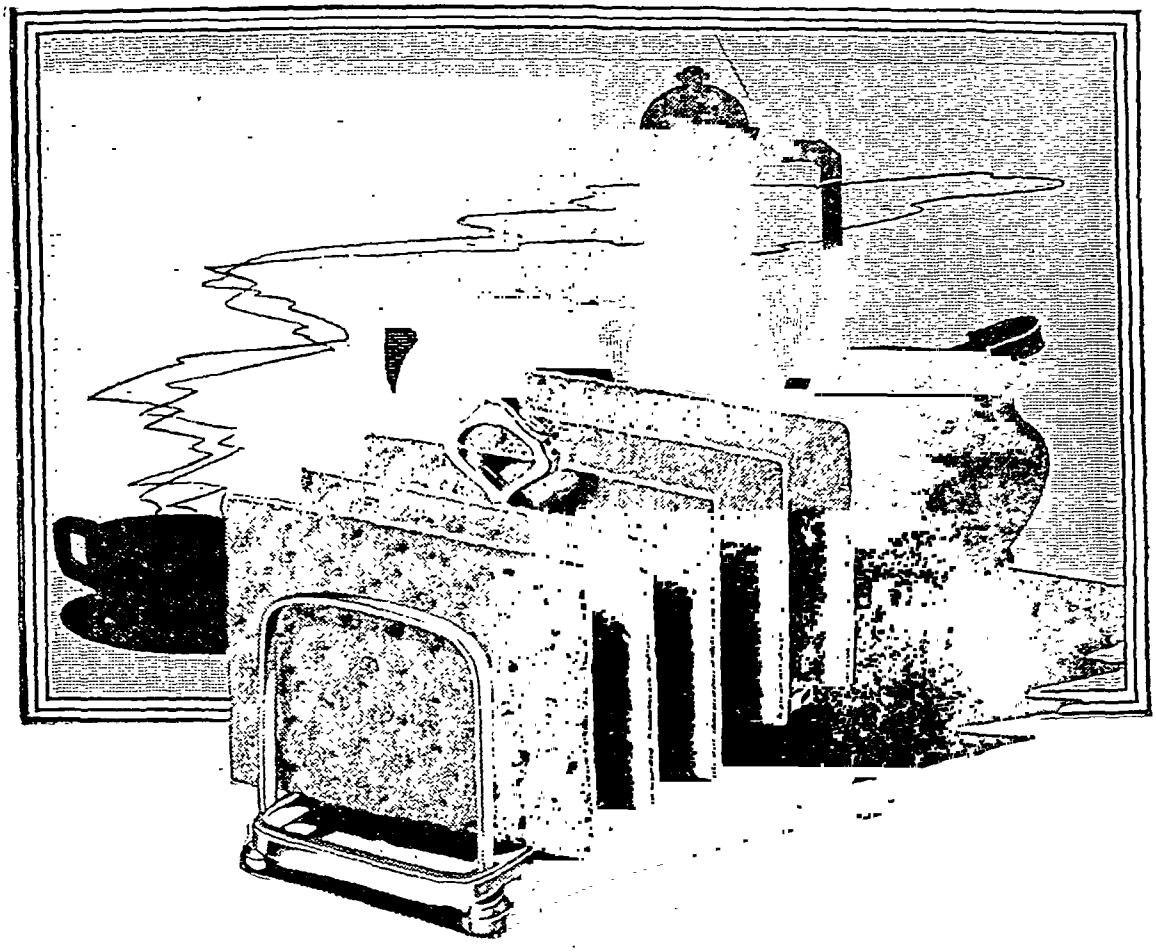

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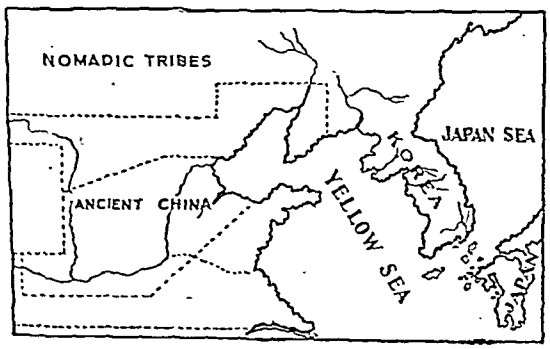
MAP SHOWING THE RELATION OF SIXTH CENTURY B.C. JAPAN TO KOREA AND CHINA THROUGH WHICH CAME THE NORTHERN ASIAN PIONEERS, WHOSE DESCENDANTS CONSTITUTE THE CHIEF ELEMENT AMONG THOSE WHO BUILT UP THE PRESENT EMPIRE OF JAPAN.—According to Japanese legend the great Yomato people worked their way through China and Korea to the Southern extremity of Japan in a succession of migrations lasting several centuries. During the early period their domain hardly passed the narrow limits of the region to which they gave the name Yomato. They waged incessant war against the aborigines, pressing them gradually towards the north and east. Archæology appears to support legend, for the tombs of their great leaders are practically confined to this region The invasions have been attributed roughly to the period c. 1000-500 B.C. Ethnologists agree for the most part that the Yomato came from the regions north of China and that they were partly Caucasic, perhaps Iranian, in origin, with some admixture of Mongolian blood. In course of time the whole country became known as Yomato. This word was changed in A.D. 670 to Nihon or Nippon, the "place of Sunrise." In Chinese this was Jih-pen, which in its turn became, about the fifteenth century, the "Japan" of the West.



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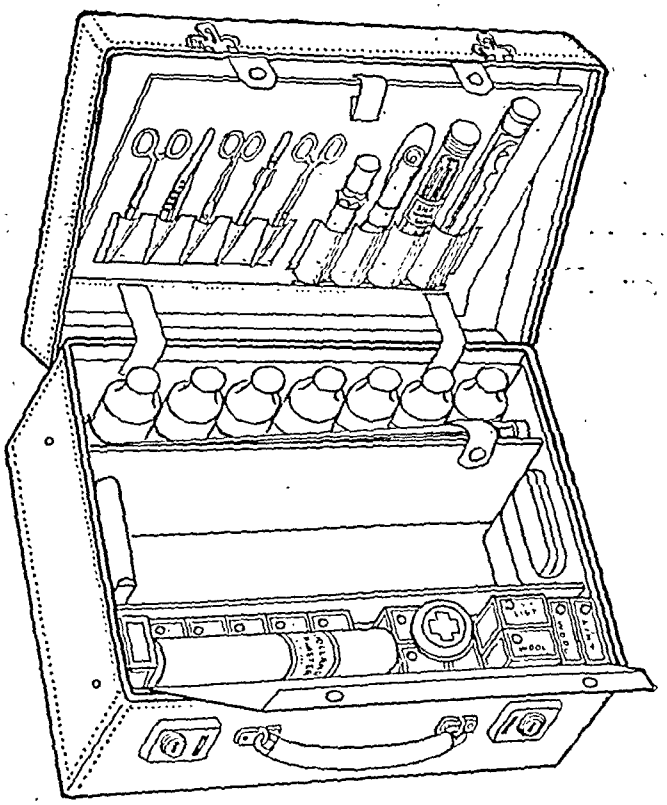

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A British Medical Association Lecture

ON THE

UNDERLYING DISTURBANCES OF METABOLISM OF THE NERVOUS CHILD.

DELIVERED BEFORE THE WEST SUFFOLK DIVISION

BY

HECTOR CHARLES CAMERON, M.D., F.R.C.P.,

PHYSICIAN IN CHARGE OF THE DEPARTMENT FOR DISEASES OF CHILDREN, GUY'S HOSPITAL.

THE metabolic processes of all children, just because they are children, are less stable than they become in later life. It is in this instability that we find the explanation of the greater frequency in childhood of many disorders due to biochemical derangement—as, for example, eczema, tetany, convulsions, urticaria, or asthma. The peculiar liability of the nervous child to these derangements of metabolism, especially to that common condition known as acidosis, is not only a direct result of his undue sensitiveness to emotional excitement or to physical fatigue, but the state of disordered metabolism so produced is of itself provocative of that restlessness, irritability, or nervousness for which our advice is sought. The nervous child is prone to acidosis, but whenever the symptoms of acidosis are recognizable there is apt to be a simultaneous exacerbation of all the symptoms of nervousness.

The Liability of the Nervous Child to Cyclical Disturbances.

We may look on the nervous child from one point of view as a problem in management, quick to respond to all influences for good, but quick also to react violently even to small mistakes in our management of him. Or, again, we may lay stress upon the physical defects which are so often characteristic of him—the faulty posture, the lax and toneless muscles, the drooping, sagging stance, and the neuro-muscular inco-ordination—all of which are the outward and visible signs of the tired, restless, and irritable brain. But from another point of view we must attempt to probe even more deeply into the problem. We must seek to determine the nature of these recurring waves of disturbed metabolism, which account for the peculiar instability both of physical health and of conduct characteristic of the nervous child, and which are manifested in the "bouts" or "attacks" or "turns" of which, in one form or another, complaint is almost always made. The symptoms which together make up the well-recognized and familiar attack are not the same in different children—in one vomiting, in another nervous diarrhoea; in one drowsiness and prostration, in another restlessness and irritability.

What is the underlying cause of this recurring state of collapse, physical and mental, so characteristic of the nervous child? Why does he so often suddenly fall from a state of comparative well-being to a deplorable condition of weakness, accompanied by loss of weight and loss of colour—with circumoral pallor and dark-rimmed eyes; loss of muscular tone and loss of co-ordination—so that at the worst his walk deteriorates to a mere shuffle and the frequency of his falls becomes a common complaint; loss of energy, so that he lags behind on his daily walks abroad, or, at their conclusion, throws himself down with many significant yawnings and sighings; loss of control, so that clamour, opposition, and tears may become unceasing; and loss of concentration, so that his work at school sensibly deteriorates? And with all these distressing backslidings there are often, almost usually, other complaints—rapid, excitable overaction of the heart, which sometimes leads to a diagnosis of dilatation of the heart; a continuous irregularity of the temperature which cannot but rouse fears of latent tuberculosis; transitory aches and pains in the lax and toneless muscles of the limbs after any exertion, apt to cause confusion with the subacute arthritis of rheumatic fever; and recurrent bouts of abdominal pain of short duration and always accompanied by a striking vasomotor pallor, which must arouse the fear of the presence of appendicitis. The tongue is almost always white, the breath, especially in the early morning, is apt to be charged with the faint odour of acetone, while sleep, always disturbed and restless, is often broken by night terrors or sleep-walking. It may be that vomiting is by far the most prominent feature of the attack, as in the classical picture of so-called cyclical vomiting. More often vomiting is only occasional, or it may be altogether absent. Sometimes nausea and dizziness may be complained of, especially in the early morning; sometimes there may be no complaints of gastric symptoms at all. Lastly, it is when the child falls into this state of pallor and prostration that all nervous symptoms tend to undergo an exacerbation. It will often be found that, coincidently with the state described above, the particular disturbance to which any child is prone—masturbation, enuresis, tics and habitual movements of all sorts, squintings, stammerings, and the rest—spring to life again, and proceed with renewed force.

Glycopenia.

Our food is the source of the energy expended in all the activities of life, physical and mental. Our food contains fat, carbohydrate, and protein in suitable proportions. In general it may be said that comparatively little of the protein is utilized as fuel. The protein is too valuable to be employed merely to provide energy for the machine, and is used mainly for structural repair and replacement. The carbohydrate may be said to be the petrol of choice, that on which our machine is run in the first instance. But we have only a meagre store of carbohydrate in our bodies. In an adult male perhaps about 8 ounces may be stored away in the form of glycogen in the liver and in the muscles. These slender reserves of carbohydrate are readily exhausted, especially by physical exertion, by emotional excitement, and by pyrexia. When so exhausted we may, perhaps, speak of a state of glycopenia. The actual percentage of sugar in the blood varies within well-defined limits. After a meal of starch or sugar the blood sugar rises rapidly to 0.18 per cent., to fall within a few hours to the fasting level of 0.07 per cent. We speak, therefore, of a blood sugar curve. Without the frequent administration of carbohydrate the blood sugar remains constantly at the fasting level. Certain diseased states are characterized by a definite hypoglycaemia, a definitely low blood sugar. In Addison's disease, for example, in which the suprarenal glands are destroyed by caseation, there is often hypoglycaemia accompanied by great vasomotor weakness and pallor, a low blood pressure, a rapid pulse, extreme amyotonia and muscular weakness, prostration and loss of energy, and attacks of nausea and vomiting.

We know that the suprarenal glands are exhausted and that their function becomes impaired under the stress of great exertion, of great emotional excitement, or of persistent infection. These are the same conditions which lead to the exhaustion of the carbohydrate reserves and the fall of the blood sugar to the lowest level, and they are the same conditions which in practice we are forced to regard as productive of the "bouts" or "attacks" of pallor, prostration, and vomiting of the nervous child. If speculation is permitted where certainty is not yet, we may surmise that in Addison's disease we are observing the effects of the gross destruction of the suprarenal tissue; in an attack of cyclical vomiting we are encountering the temporary exhaustion and functional impairment of the same gland. The failure to mobilize by means of the suprarenal glands sufficient carbohydrate to achieve the complete metabolism of the absorbed fat is in all probability the explanation of all these "bouts" or "turns," so variable in their individual symptoms. That in most cases the mobilization of the necessary carbohydrate is in the end successfully achieved spontaneously and somewhat suddenly, after an interval in which the child may suffer extreme distress, is in keeping with the hypothesis that the suprarenals have become temporarily exhausted. In many cases of severe cyclical vomiting, without any treatment at all,

the symptoms, which, up to a point, have been progressive and threatening, suddenly subside. There has been delay in the necessary mechanism for carbohydrate *mobilization*.

Ketonaemia.

Without sufficient carbohydrate the metabolism of fat is unable to proceed smoothly. Fat is, as it were, the reserve fuel, of which, unlike carbohydrate, there is plentiful storage. But fat can only serve as a satisfactory fuel, can only be metabolized completely, in the presence of a sufficient amount of carbohydrate. Without sufficient carbohydrate the process of reduction to oxygen and water is not completed, but certain intermediate products of combustion, the so-called ketone bodies, accumulate in the blood and are excreted for the most part by the lungs, but also, especially when present in great amounts, in the urine. The condition, commonly called acidosis, is therefore more strictly a ketosis, because although ketosis is a form of acidosis, yet it is only one of many varieties of acidosis.

The presence of ketone bodies in the blood produces further chemical reactions. When we speak of acidosis we do not by any means imply that the reaction of the blood has definitely moved to the acid side. We mean only that we are able to detect the shifts that the body is put to in its successful effort to prevent any significant alteration in the reaction of the blood. We recognize, in other words, that the reserves have been called into action. Only in states of great danger, in the presence of death itself, when these reserve mechanisms fail or become exhausted, is there an actual shift of the reaction of the blood to the acid side. The acid base balance is preserved by many and complicated devices, but that which plays perhaps the greatest part is the regulating power of the respiratory centre acting under the stimulus of the excess of carbonic acid in the blood. The acid ketone bodies combine with the sodium bicarbonate in the blood, setting free an equivalent amount of carbonic acid, which is then removed from the blood by the stimulation of the respiratory centre and the consequent increase of pulmonary ventilation. Hence in the condition known clinically as acidosis, besides a state of glycopenia with a blood sugar at a low fasting level, or even occasionally a definite hypoglycaemia, and besides a significant ketonaemia, there is found a diminution in the alkaline reserves of the blood, compensated for to some extent by an increased formation of ammonia.

In the need for increased pulmonary ventilation we have the explanation of the common complaint of the mother that the child is constantly yawning, sighing, or taking deep breaths. When the smouldering state of acidosis erupts into a definite bout of cyclical vomiting the onset is usually heralded in this way by much yawning and sighing. If we pursue this attempt to find some explanation of these common symptoms of physical and mental prostration we may perhaps attribute especially to the ketonaemia the extreme muscular relaxation, both of the skeletal muscles which shows in the flat-foot, the winged scapulae, and the lordosis with the too prominent abdomen, and of the vasomotor muscles which results in such striking pallor. The effect of the accumulation in the blood of these imperfectly oxidized fatty acids is in many ways comparable to the effect of chloroform anaesthesia, not only in derangement of the function of the liver, but equally strikingly in the profound muscular relaxation and vasomotor paresis. Through the toneless abdominal muscles of a child suffering severely from acidosis I have seen an intussusception reduced by manipulation with the greatest ease. Muscular relaxation more perfect for the purpose could not have been produced by profound chloroform anaesthesia. The muscular aches and pains, and the tendency to fall too readily, are secondary results of the amyotonia. It is, perhaps, not to be wondered at that the child with a persistent acidosis, with quick, rapid, and uncontrolled movements and toneless musculature, is more liable to suffer from greenstick fractures than are other children, not because the bones are softer or more brittle, but because the muscular support is poor and the child is incapable of making that sudden movement necessary to restore the balance, or at any rate to mitigate the severity of the fall. In "night terrors," in the comatose sleep of enuresis, and in the tendency to nausea and bilious vomiting we have further symptoms which bring to mind the similarity between the effects of chloroform and the effects of the ketone bodies in acidosis. The behaviour of a child struggling under light anaesthesia and of a child with night terrors are strikingly alike.

The Part Played by Infection.

Very often this state of prostration and of pallor is directly caused or greatly increased by some infection, and the removal of some persistent source of infection—as, for example, by tonsillectomy—becomes a necessary part of the treatment, not only of the state of acidosis but of the plentiful crop of nervous symptoms of one sort or another which thrive in this particular soil of acidosis. Infection is a potent and frequent cause of acidosis. Yet it is also true that acidosis, even in its mildest degree or in its incipient stages, powerfully predisposes to infection. The proneness of many of these pallid and lax children to trivial catarrhal infections adds greatly to the difficulties of their management, because, although the infection in itself may be of the slightest, the further disturbance of metabolism to which it gives rise is apt to be severe and persistent. In the total illness a trivial infective component may be altogether submerged in the metabolic component.

Acidosis and Asthma.

Nor is it enough to realize that acidosis predisposes to infection, and that infection produces a great exacerbation in the acidosis. An examination of a large number of children of this type will show many in whom it is clear that the disturbance of metabolism is itself capable of producing irritation and a catarrhal reaction in the mucous membranes lining both the bronchi and the bowel. In certain children mucous diarrhoea takes the place of vomiting as the most prominent symptom of the cyclical disturbance. In others, again, the main symptom is that of recurring attacks of bronchial asthma. We are reminded of a similar association in the so-called uraemic colitis and uraemic asthma. The part played by acidosis in the production of the asthma of childhood, or at least, if production is too strong a word, in the determination of the moment when an attack comes on, has not been sufficiently emphasized. A large number of children with asthma suffer at the same time from cyclical vomiting in greater or lesser degree. That there are other factors concerned in the production of the liability to asthma is clear, but it may well be that the danger point for an attack of asthma is reached, in the child so predisposed, when the blood sugar is at its lowest. Over-exertion, over-excitement, and infection are the main exciting causes in the cycle both of asthma and acetonaemic vomiting. In the part played by glycopenia we have, perhaps, the explanation of the tendency, common to both disorders, to nocturnal exacerbation. Asthma is apt to become worse at night; cyclical vomiting almost always begins at night. Such children stand even the physiological starvation of the night badly, and in the absence of a frequent intake of sugar the nocturnal metabolism is relatively unstable. The frequent combination of asthma with cyclical vomiting, or with some other manifestation of acidosis, is perhaps to be accounted for by the circumstance that both disorders occur almost entirely in excitable eager children who in action mobilize all their reserves of energy and suffer a corresponding exhaustion in reaction. In practice it is often found that successful control of the acidosis brings with it cessation of the asthmatic attacks, or at least a diminution of their number.

In the pale, exhausted, irritable, and nervous child suffering from, or about to suffer from, a "bout" or "attack," with or without vomiting, biochemical examination shows as a rule a blood sugar at a low level, if not a definite hypoglycaemia, ketonaemia, and a diminution of the alkaline reserves of the blood. In some children the attacks are very slight, in some very severe, but a study of the children and of their health from day to day and from month to month can leave no doubt of the essential identity of all the attacks, major and minor. In the same child not all the attacks culminate in vomiting. Many are, as it were, abortive. Nor do I think that there can be

any doubt as to the success of therapy based upon those biochemical findings—a reduction of the intake of fat to within the limits of the tolerance of the individual child, a freer intake of easily absorbed carbohydrate, and the provision of a daily depot of alkali.

Reduction of the Intake of Fat.

The reduction of the intake of fat need not, as a rule, be very drastic. There is, however, a natural tendency on the part of parents, made anxious by the extreme thinness of the child, to endeavour to improve matters by adding very considerably to the intake of fat. Cream or top milk and cod-liver oil are apt to be given freely, with the result that the trouble is increased and perpetuated. This is especially apt to occur when the fear of tuberculosis has been aroused. The propaganda in favour of a diet rich in fat receives support largely from observations upon the children of the poor, who, in general, are fed on much carbohydrate and little fat. The cost of sugar and starch per calorie is low, of fat high. Among the poor the ill effects upon this disorder of a diet too rich in fat are seldom apparent. Among the better-to-do they may be very evident. The omission of cream and cod-liver oil, the removal from a very rich milk of some part of the cream, the restriction of the intake of eggs and butter, perhaps to three eggs and a quarter of a pound of butter a week, may be necessary in households where the provision of milk, cream, butter, and eggs in large amounts has been considered the first essential for health and strength. Chocolate contains a high proportion of a fat which these children appear to tolerate especially badly, and should be omitted, as should all forms of sweets which are rich in fat. Radiostol or ostelin may perhaps usefully be prescribed to children whose intake of fat is restricted for the time being in this way. With improvement in weight and in colour the restrictions may be gradually removed. It is very evident that we have especially to consider the state of the child at the moment when the meal rich in fat is taken. When tired or pale, after exertion or excitement, or in convalescence from infection—when, as we may imagine, there is a state of glycopenia—fat metabolism may be especially unstable. One observant schoolgirl, having fallen prey to one of her attacks of sickness, wrote home to her mother that it was not the rehearsal for the school play which was responsible for her sad state, nor was it the dripping of which she had partaken freely, "it was eating the dripping after the play."

The Provision of Carbohydrate.

For children in the state described the provision of a free intake of easily assimilated carbohydrate is very necessary. Moreover, experience shows that if the nervous child is apt at times and in certain states to have a low tolerance for fat, there is, as a rule, a high tolerance as well as a high need for carbohydrate. Only by constant replenishment of the carbohydrate reserves can we prevent that wasteful and imperfect oxidation of the meagre store of body fat which manifests itself in the bout of acidosis with the sudden and extreme loss of weight. The digestion of carbohydrate is usually well accomplished. If we encounter difficulties they are concerned usually not with digestion, but with the dislike for sweet things. The natural desire for sugar, which is part of healthy childhood, is apt to be absent in these infant intellectuals, who may prefer the savoury to the sweet. On the other hand, many constantly make demands for sugar, demands which some parents, influenced by the propaganda against sugar, sternly repress.

Propaganda on health matters is apt to suffer from the disadvantage that in the process of the simplification necessary for popular understanding most of the truth is apt to disappear. A diagrammatic presentment without light and shade, and with no place for the exceptions to the general rule, is all that can be attempted. The child with an inborn tendency to acidosis is, in this respect, the exception, and an indiscriminate propaganda in favour of a diet with much milk and cream, and with little or no sugar, has worked steadily against him.

Meat, fish, green vegetables, and fruit may be given as usual. On one side we must supervise, and may have to restrict the intake of fat. On the other side we must raise proportionately the intake of sugars and starches. All cereal foods, wholemeal bread, rusks, oatcake, wheatmeal biscuits, sugar, jams, jelly, honey, and golden syrup may be given more freely than usual. Suet pudding consists of so much flour and so little suet that it is permissible. A reasonable amount of barley sugar, maple sugar, sugar candy, or boiled sweets may be given daily at meal-times.

The prescription of glucose in the form of a drink flavoured with fruit juice has been of real service. Glucose has several advantages over cane sugar as a means of replenishing the carbohydrate reserves. It is only about one-half as sweet as cane sugar; it is absorbed very rapidly into the blood stream from the upper alimentary tract, and has not the same tendency to cause a fermentative diarrhoea. Its use, too, seems less likely to be followed by the appearance of urticaria, a troublesome result in some children of the free administration of cane sugar. Given between meals it does not disturb appetite, and has something of the effect of a glass of wine in the resulting improvement in colour and sense of well-being.

In insulin hypoglycaemia, mental states of excitement, apprehension, and confusion, as well as muscular weakness, are controlled with astonishing rapidity by means of a few lumps of sugar. In these nervous children something of the same sort can be achieved, if less strikingly and in less degree.

The daily prescription of a small dose of alkali is often helpful. It is common to advise the intake daily of a teaspoonful of sodium bicarbonate. If, as is often the case, there is constipation, to the morning dose of glucose there may be added a little Vichy water or other laxative saline.

By dietetic regulation along these lines, and by the free administration of glucose and of a small amount of alkali, good results can sometimes be achieved. Often a very rapid increase in weight, and improvement in colour and energy, follow the subsidence of the state of acidosis. Sometimes the whole character of the child seems to alter for the better, so that ceaseless opposition and resistance, or timidity, or tearfulness disappear. There may be unmistakable improvement in such symptoms as night terrors, asthma, enuresis, train sickness, even stammering, as the general health improves and self-confidence returns. Almost always the more direct symptoms of the acidosis, the tendency to bouts or attacks of vomiting or diarrhoea, or pyrexia, are manifestly controlled. When no such fortunate result occurs, but the symptoms continue unabated, the explanation lies sometimes in the presence of some focal infection, and sometimes in a persistent failure of the management. Encouragement, rest, freedom from infection, and a high intake of sugar—these seem the special needs of the nervous child.

DIAGNOSIS OF CANCER OF THE COLON.

BY

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CANCER occurs more commonly in the colon than in any other part of the alimentary tract, with the exception of the stomach. Colonic cancer is, however, of the less virulent type—that is to say, its rate of growth is comparatively slow, invasion of the lymphatic vessels and glands is relatively late, while remote secondary deposits, such as liver metastases, are, save in advanced and exceptional cases, distinctly rare. *A priori*, therefore, we have here a favourable field for surgical intervention, a fact which carries with it a correspondingly serious responsibility. If we are to meet this responsibility fairly all our resources must be thrown into the effort to detect the cancerous lesion at the earliest moment.

THE DEVELOPMENT OF COLONIC CANCER.

It will perhaps make for clearness of description if we regard cancer of the large intestine as exhibiting, from the clinico-pathological aspect, three distinct phases.

1. *The Pre-cancerous Stage.*

In this stage a lesion is present which is capable of developing, and, if untreated, does ultimately develop, into a cancer. Recent work has shown conclusively that a very strong potentiality for malignant change is inherent in the simple intestinal adenoma. Cancer of the colon is invariably an adeno-carcinoma; its mode of origin in a selected area of bowel is described by Dukes as follows: first, the occurrence of small localized areas of epithelial hyperplasia from which arises a crop of adenomata; next, the formation of an adeno-carcinoma from one of these areas or in the neighbouring epithelium; finally, when the definite transition to carcinoma has been effected in one of these little tumours, a tendency to undergo retrogression in the others, which are, consequently, not prominent in the stage of developed cancer. The best instance of this change is seen in those rather rare cases of multiple adenomata (adenomatosis) which show a marked tendency to malignant transformation. Saint, in a study of the intestinal polypi, found that, in the large bowel, the sigmoid was by far the most frequent site of occurrence, and that the adenoma was by far the most common type of polypus encountered. If we compare Saint's figures with those of others showing the relative incidence of carcinoma in various parts of the colon, we find a remarkable correspondence. Saint's figures are: caecum 8, ascending colon 6, transverse colon 3, descending colon 5, sigmoid colon 20. Thus nearly 50 per cent. occur at the sigmoid. Burgess's figures give 55.3 per cent. and Brown's figures give 53.1 per cent. as the proportion of sigmoid cancers in the large bowel. We cannot help feeling that we may have here an explanation of why cancer occurs so much more frequently in the sigmoid than in any other part of the colon. Unfortunately, in the present state of our knowledge the clinical value of these facts is not very great. Apart from the rectum and lower sigmoid, adenomata have been recognized clinically only under two conditions. (*a*) In adenomatosis symptoms occur which are distinguishable from those of ulcerative colitis only by the use of the sigmoidoscope. It is useful to remember that this may be the real pathology underlying cases of ulcerative colitis. (*b*) The single polyp, unless it has undergone ulceration or has attained a considerable size, may first be revealed through the occurrence of an intussusception.

Recently a young woman was admitted to my wards with an intussusception involving the whole sigmoid, the starting point of which was a polypoid adenoma. A more striking case was that of a man, aged 69, who consulted me for recurrence of a rectal polypus which had been removed by another surgeon two years previously. I removed the growth, together with a portion of the bowel wall. The pathological report on the specimen was as follows: "The tumour is a papillary adenoma. The only sign of malignancy consists of mitoses; but as these are present in numbers the condition appears to be one of very early malignancy." This patient comes regularly for proctoscopic examination, so that should the cancer unfortunately continue to develop it will at least be recognized at a very early stage.

The more frequent use of the sigmoidoscope, especially in elderly patients, should, by revealing these adenomata so common in the sigmoid, enable us to lower considerably the incidence of colonic cancer.

2. *The Latent Stage.*

In this stage cancer is definitely present, but betrays either no sign of its existence or signs so vague and inconspicuous as not to attract the attention even of the patient. The pathological condition present in the silent period is either a cauliflower growth which has not yet begun to bleed or to ulcerate, or a constricting growth, the effects of which are being adequately compensated. This silent phase is, of course, an unfortunate characteristic of the early growing stage of internal cancer in any part of the body, but it is particularly unfortunate here in view of the relatively good prognosis which attends competent surgery in clinically recognizable cases. It is truly remarkable to what extent non-obstructing cancers of the colon can grow without producing definite symptoms, and it is not uncommon for the accidental discovery of a lump by the patient or by his medical attendant to be the first sign of disease. It is at this stage that the development of anaemia, which is an almost constant feature of cancer of the proximal colon, whether it occurs in youth or in adult life, is of special significance. Flint records the case of a woman who consulted her doctor on account of shortness of breath, when routine examination revealed a lump in her abdomen, which was subsequently proved to be a cancer of the proximal colon. She had suffered neither pain nor irregular action of the bowels, but was extremely anaemic. A precisely similar case occurred in my own practice. An analogous form of secondary anaemia is found also in cancer of the stomach. This common tendency to anaemia in gastric and caecal cancer gives an added significance to the anatomical description of the caecum as a "second stomach."

3. *The Stage of Observable Clinical Manifestations.*

At the outset it is necessary to realize that cancer of the colon takes two main forms with correspondingly distinctive effects. In one these effects are due to the presence in the lumen of the bowel of an ulcerating mass; in the other to the [illegible]g of the lumen by a constricting proce[illegible] is, of course, not always sharply defined, since an ulcerating growth may cause obstruction and a constricting growth may, and often does, exhibit some degree of ulceration. The broad difference nevertheless remains, and it is of the utmost importance that it should be borne in mind.

What are the effects of ulceration? If we visualize, for a moment, the presence of an ulcerating growth in the bowel wall it is clear that not only is the growth itself an irritant which the bowel seeks to expel, but that, as a direct consequence of its presence, new and deleterious elements are added to the intestinal contents. These are: (*a*) Excess of mucus from the cells of the tumour and from the irritated mucous membrane, a feature of which sometimes leads to the erroneous diagnosis of mucous colitis. According to Ochsenhirt mucus production in large intestine cancer is an indication of differentiation on the part of the growth, and he seeks to establish the postulate that the number of mucus-secreting cells in the carcinoma is inversely proportional to the grade of malignancy. (*b*) Small quantities of blood, due to traumatism of the ulcer face. (*c*) Septic material from the surface of the ulcer, which in such an environment cannot long remain free from secondary infection.

The combined result of the presence of an irritating growth and the local accumulation of irritant material is to cause an increase in the functional activity of the bowel—that is, increased frequency of peristalsis resulting in diarrhoea, which is mainly of the mucous type. Brown found diarrhoea in 36 per cent. of his proximal and distal colon groups, but, whereas in the former it was a true diarrhoea, in the latter it was rather tenesmus, attacks of which alternated with periods of obstinate constipation.

When colonic irritability of this kind sets in and persists in a person who has previously led a regular bowel life, the suspicion of cancer must be strongly aroused. This is especially true in very old people, in whom chronic diarrhoea is very frequently due to cancer. I would here advise caution against the dangerous diagnosis of colitis, which I have seen followed—as who has not?—after a regrettably long interval, by a palliative colostomy. Petrén records a case of a patient who, after treatment of three years' duration for ulcerative colitis, was found to have cancer of the splenic flexure.

There are other less direct but equally characteristic effects of the ulcerative process, and of these the most important is anaemia, which is especially characteristic of cancer in the proximal colon. So characteristic is it that the development of a severe secondary anaemia for which there is no obvious cause should direct attention towards the possibility of caecal cancer. There are two curious facts about this anaemia—one that it can, and does, occur without visible loss of blood, even in the absence of occult blood; the other, that it is not such a menace from the operative standpoint as might be expected, and is, in fact, no insuperable barrier to a successful resection. While

there has been a great deal of speculation as to its cause, there can be little doubt that it is largely due to constantly recurring loss of blood in small quantities from the growth, heightened by absorption of toxic material from the involved bowel. It has been shown that there is a definite relationship between the size of the tumour and the degree of anaemia, and it has been pointed out (by Alvarez) that caecal cancers are bathed in the most highly infective fluid to be found anywhere in the body—a fluid full of organisms, which, when injected into animals, produces severe anaemia. The intensity and constancy of this anaemia in carcinoma of the proximal colon may not unreasonably be correlated with the considerable absorptive powers of this part of the large intestine. Flint suggests, as a possible explanation, that urobilin may be normally absorbed from this region, and is altered in some way when disease starts here, so that it cannot take its proper part in the formation of haemoglobin. Whatever the explanation, the anaemia remains as a striking clinical fact.

In the case of an obstructing lesion the course of events is as follows. The narrowing of the lumen at the site of the growth tends to delay the faecal stream, but for a time compensation is effected by the hypertrophy of the bowel above the lesion. As the constriction advances, hypertrophy increases and the more vigorous peristalsis thereby induced results in colicky pains. These pains are attended by rumblings of flatus or borborygmi, and they are made worse by purgatives. Owing to the fact that they are often set in motion by the taking of food, they are frequently ascribed to dyspepsia. One of my patients had dieted herself to the verge of starvation for three months for an "indigestion" which was really due to cancer of the transverse colon. After a time, to the hypertrophy is added dilatation, which most markedly affects the caecum; and during attacks of pain visible or palpable peristalsis may be noted, which, when present, is pathognomonic of obstruction. If the ileo-caecal valve is incompetent the lower coils of ileum are affected by the hypertrophy and dilatation producing the characteristic "ladder pattern." Curiously enough, the patient can often locate accurately the site of the obstruction. As a result of stagnation in the dilated bowel the stools are usually very offensive, and intermittent attacks of diarrhoea are prone to occur. Sooner or later this obstruction becomes acute, being not infrequently precipitated by a purgative—the actual cause being congestion and oedema at the site of the stricture, the impaction of a hard faecal mass or foreign body in the narrow lumen, or, in the case of the mobile segments—sigmoid or transverse colon—to the occurrence of volvulus or intussusception.

Situation of the Growth.

So far we have considered in a general way the effects produced by the two types of growth which occur in the colon. Let us now see how the clinical picture is affected by the situation of the growth.

In the *proximal* colon the growth is usually of the fungating cauliflower type, and forms a definite mass. This mass is situated most frequently at the caeco-colic junction, and because of its bulk and its accessible situation is palpable at a moderately early stage. Ulceration, with its attendant train of symptoms—irritability and anaemia—soon occurs. Obstruction in this segment of the colon is rare, owing partly to the nature of the growth, partly to the fluidity of the intestinal contents, and in part also to the wider calibre of the tube. Alvarez found the diameter of the colon to vary (in Roentgenograms) from 6.5 cm. in the caecum to 2.5 cm. in the sigmoid. Brown found a palpable swelling in 68 per cent. of his proximal colon cases, and in only four cases did carcinoma of the proximal colon cause symptoms of obstruction, in two of which the obstruction was acute.

In the *distal* colon tumour is not often felt (Brown found it in 24 per cent. of his distal colon cases), and practically never in tumours of the splenic flexure, because of its fixed high position under the ribs. Some degree of obstruction is very frequent, owing to the encircling form of growth, the solid contents, and the diminished colon diameter. When the splenic flexure is involved obstruction occurs in practically 100 per cent. of cases.

In the *transverse* colon the growth may be of either type, but in the left end of the transverse colon the sclerosing form predominates, and in this segment, therefore, obstruction is common. A tumour, when present, is characterized by its extreme mobility. Owing to the juxtaposition of the stomach and great omentum, gastric complications are not unusual and the symptoms may be mainly of the dyspeptic type.

The general principle may therefore be stated, with due allowance for occasional departures from type, that in cancer of the left colon obstruction is the rule; in cancer of the right colon obstruction is the exception. Burgess's figures are 87 per cent. and 13 per cent. respectively. This marked difference in clinical behaviour is all the more noteworthy in view of the embryological distinction between the two segments. The right colon, as far as the splenic flexure, is developed from the primitive midgut in continuity with the small intestine, which it resembles in the fluidity of its contents, the absorptive power of its mucous membrane, and in the presence of a retarding mechanism (caeco-colic sphincter and antiperistalsis). The fluid contents make obstruction difficult even in the presence of large and sclerosing growths, while the characteristic anaemia is no doubt partly dependent upon its absorptive function. The left colon is developed from the primitive hindgut, and as the process of absorption is complete with the final loss of water in the transverse colon, it must be regarded mainly as an excreting organ. In view, therefore, of the fact that these two segments of the colon have different origins and different functions, it is not greatly to be marvelled at that they react differently to the carcinomatous process.

THE DIAGNOSIS OF COLONIC CANCER.

By what methods of examination shall we seek to establish the diagnosis of colonic cancer?

1. A careful anamnesis—with particular attention to the onset and persistence of a definite change in the patient's bowel habits from regular to irregular. According to the nature of the growth and the segment of the colon involved, the clinical picture will develop along the lines of an ulcerative or stenotic lesion. It must be remembered that loss of weight and energy occur only in advanced cases.

2. Physical examination. Among the signs or symptoms noted will be anaemia, visible or palpable peristalsis, local distension of the caecum, and in certain cases a palpable tumour. In experienced hands the ordinary stethoscope will often give information of value by demonstrating the gurgling of gas through a narrow opening. The ability of the patient to localize, in many cases, the site of the obstruction should be remembered. A rectal examination may reveal a recto-sigmoid growth when the patient strains, or ballooning of the rectum in the case of growths situated at a higher level. Bimanual examination, aided, if necessary, by a general anaesthetic, often gives information of value.

3. Examination of the stools for visible and occult blood, pus, mucus, and fragments of tumour tissue. In the case of occult blood repeated examinations should be made, a persistently positive finding being strong presumptive evidence of cancer. Hurst states that he has never seen a growth of the stomach or colon where occult blood was not present. Petrén found a positive Weber reaction in the faeces of 35 out of 44 cases examined, and emphasizes the value of a persistently positive Weber reaction in uncertain cases.

As the result of a complete general clinical examination the diagnosis of the site and nature of the growth may be fairly clear. In many cases, however, this is not so, and we must call upon two additional diagnostic aids—the sigmoidoscope and the Roentgen ray. For growth in the lower half of the sigmoid the sigmoidoscope is, in skilled hands, an instrument of the very greatest value, and no one should consider himself competent to handle those cases properly until he has made himself proficient in its use. It not only demonstrates a cancer when present here, but it enables us to recognize the characteristic lesions of ulcerative colitis, to identify papillomata and adenomata,

and, if necessary, to remove portions of tissue for examination. If we bear in mind the important fact that 50 to 55 per cent. of colonic cancers occur in the sigmoid the value of the sigmoidoscope should be readily appreciated.

For those numerous cases where ordinary clinical methods, even when aided by the sigmoidoscope, still leave us in doubt, we have an invaluable ally in the Roentgen ray, which is now justly considered to be the most valuable method of examination in colon conditions. In recent years the opaque meal as a method of colon examination has been almost completely superseded by the opaque enema. In many cases the meal has failed to show a cancer which operation subsequently revealed; this has resulted in negative findings being regarded as a snare and a delusion, with inevitable reaction upon the harassed radiologist. There was also the real danger of precipitating an attack of complete obstruction in stenotic lesions, through the inability of the bowel to rid itself of the barium. Since this happened in one of my cases I have ceased to order opaque meals for patients with suspected colonic cancer. Nowadays, however, with the more frequent use of the opaque enema, the whole picture has been completely changed, and we have at our disposal an agency which makes possible an accurate diagnosis in almost 90 per cent. of cases.

The examination must, of course, be carefully and skilfully performed if sources of error are to be excluded, and the findings must be checked by a second or even a third examination. If stenosis is marked, the enema may be completely arrested at the site of obstruction, thus affording conclusive evidence of blockage. If the enema passes the obstruction the characteristic filling defect with dilatation of the bowel proximal to the growth will be seen. Local spasm may be almost indistinguishable from organic narrowing, but if Carman's directions be followed—that is, administering the enema at considerable gravity pressure in conjunction with antispasmodics and forcible filling of the spastic segment by manual palpation—it is usually possible to make a differentiation. In a similar manner it is possible, with care and patience, to exclude the pseudo-filling defect caused by gas or extra-colonic lesions. Forty-one of Petrén's cases were radiographed, and in 30 of these the opaque enema gave a correct diagnosis; in 4 the appearances were doubtful, and in 7 they were negative. Of the 7 cases 4 could undergo radical operation. It is obvious, therefore, that a negative result must still be received with a certain amount of scepticism, even on repeated examination. In the best hands there is still a small residue of cases in which the *x* rays fail to reveal a growth which is actually present, but with improvement in technique and increase in the capacity for skilled interpretation these cases are becoming very few, and it may truthfully be stated that the opaque enema holds its place as the most reliable method of locating cancer in the colon. It cannot, however, be too strongly emphasized that radiography is only a part, albeit an important part, of the method of investigation. The findings must never be read alone, but only in conjunction with a careful clinical history and a complete physical and laboratory examination. If this is always done there will be very few cases in which we shall be forced to the crude expedient of the exploratory laparotomy, although this, our last line of defence, is one which we are perfectly justified in employing when, after exhaustion of our methods of clinical diagnosis, a reasonable doubt still remains.

DIAGNOSTIC DIFFICULTIES.

1. The ulcerating type of growth may be confused with inflammatory conditions of the colon which cause bleeding and the discharge of mucus and pus—for example, colitis (mucous and ulcerative), polyposis, etc. It is in these cases that the sigmoidoscope helps by revealing the actual lesion in the pelvic colon. In ulcerative colitis the rigid bowel wall will give the typical *x*-ray appearance of a straight tube devoid of haustration—the "ribbon-like" colon. It must, of course, be remembered that polyposis is rare, while cancer is common, and we should be very slow to make a diagnosis of ulcerative colitis of recent onset in an elderly person.

2. It is often difficult to distinguish between cancer of the pelvic colon and diverticulitis. In the latter, apart from clinical evidence of an inflammatory origin, bleeding practically never occurs, and the radiographic appearances are conclusive; these are: rounded, annular, or crescentic shadows projecting beyond the general line of the lumen of the bowel, and, after evacuation of the enema, parallel rows of opaque spots, due to retention of barium in the diverticula, are seen. Again, it should not be forgotten that cancer and diverticulitis may co-exist.

3. Cases with tumour in the right iliac fossa are to be distinguished from early actinomycosis, hyperplastic tuberculosis, and appendicitis. In actinomycosis there is a loss of weight and anaemia, but it generally runs a febrile course. The palpable mass is less definite in outline, and a radiogram may help to show its extra-colonic nature. In actinomycosis, however, as in hyperplastic tuberculosis, unless the clinical diagnosis is reasonably clear, we cannot expect much help from the Roentgen ray, and it is just in this type of case that we are often compelled to resort to operative exploration. Even at operation we may be unable to exclude cancer as the cause of the mass, and it is just here that the individual judgement of the surgeon, based upon his knowledge of what Moynihan calls the "pathology of the living," is of inestimable value in enabling him to recognize the true nature of the case. In appendicitis the short history and local evidence of inflammation should suffice to make the distinction. Strange though it may appear, the reverse mistake of treating a cancer as appendicitis is more likely to be made, the final post-operative diagnosis becoming painfully obvious as the sinus refuses to close and the mass increases in size—a clinical picture also seen occasionally in cases of actinomycosis.

4. Cancer of the transverse colon may be mistaken for chronic intussusception, owing to the existence of a movable tumour. An opaque enema will settle the diagnosis, the appearance after the evacuation of the enema in a case of intussusception being particularly striking. Here again one should bear in mind that a growth may be the cause of the intussusception.

In this paper I have dealt with the diagnosis of cancer of the colon before the onset of acute obstruction. At this stage it is possible to carry out a planned operation for the removal of the growth with the infected lymphatic area, at a mortality rate of about 10 per cent., and of the cases that recover about 25 per cent. are alive at the end of five years. When obstruction has supervened the operative mortality is about 35 per cent., and in many cases only a palliative operation is possible. Unfortunately the obstruction figures are still painfully high. Burgess in a total of 485 cases found acute obstruction in 173 (36.6 per cent.; Brown in 171 cases found it in 43 (25.7 per cent.); and Petrén in 50 cases found it in 21 (42 per cent.). In Brown's series the mortality was 30 per cent. for palliative operations alone.

The importance of making the diagnosis in the precancerous stage is but too painfully obvious, and the rate of diminution of the acute obstruction figures will be the best evidence of the success of our efforts.

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STATE OF THE ARTERY AND THE CIRCULATION UNDER THE SPHYGMOMANOMETER CUFF DURING COMPRESSION.

BY

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IT is generally assumed that the lumen of the brachial artery is completely obliterated when, in the course of a blood pressure estimation, the pulse at the wrist ceases to be palpable, and on the face of it this assumption appears almost to be self-evident. Moreover, has it not the sanction of physiologists generally? Consult here the figure in Starling's *Physiology* (1926, p. 806), also Howell's textbook (1927), and Gallavardin's figures reproduced in Halls Dally's *High Blood Pressure* (1926, p. 42)—nothing could be more categorical and plain to see. In spite of all this I have been driven to doubt the *fact*, and this doubt has grown in strength with further consideration. May I be allowed to produce my reasons? I must add that this is not an academic question for mere debate; it is a plain matter of fact or not, and it raises a definite practical issue in respect of the interpretation of the manometer readings.

Reaction of the Tissues to Compression.

To begin with, then, as we are dealing with compression and compressibility, it must be asked, Are the so-called soft parts of the arm—Gallavardin's *parties molles*—rightly thus named? They consist of adipose tissue, muscle fibre, and a fibrous framework which embeds and encapsules; further, of a system of vessels, blood- and lymph-containing, which ramify through the whole mass; we can probably omit the consideration of the last-named, the lymphatics, as negligible. Enclosing this tissue-complex is the dense exoskeletal structure of the skin, more or less loosely tied to the deeper parts, and, completing the list of factors which enter into the problem, there is the central core of bone, which presents its rigidity to serve for attachment as well as to supply a surface for counterpressure.

Now there will be no doubt in our minds as to the unyieldingness of the bony core; is there any as to the yieldingness of the "soft parts"? *Fiat experimentum*—thrust the thumb forcibly into the mass of the biceps; does it not sink in, and does this not settle the question? No, for another interpretation offers—namely, that within certain limits these parts are free to move and that the thumb has just thrust them aside; in other words, the experiment has shown displaceability—not compressibility—and it must be repeated, with displaceability ruled out. This can be effected most readily by enlarging the area of compression, and it is secured by the cuff of the sphygmomanometer, which not only covers a large area but envelops the whole circumference of the arm in its grasp. Thus conditioned, when the instrument is put into action do we as a matter of observation see any appreciable displacement of the soft parts either above or below the cuff, or does the cuff sink in, as did the thumb? Again the answer is No; a little puffiness above its upper edge and a similar slight puffiness below the lower edge, together with a moderate general tumefaction and a duskiness of the forearm, is all that is noted (the last-named appearances find their explanation in certain congestive circulatory effects). There is accordingly no evidence of a displacement of the parts from under the cuff, either distally or proximally, nor of a yielding of the soft parts to the pressure of the cuff. Gallavardin's figures have, therefore, no foundation in fact, and the term "soft" parts is a misnomer; all that the thumb and cuff experiments have established is that the tissues are more or less mobile—displaceable, but not compressible within the pressure range of the manometer.

On *a priori* grounds the same conclusion might have been reached, for of the parts in question the adipose tissue consists of a mass of cells filled with fat in the liquid state; while the muscle substance is so heavily hydrated that in the living state it exists as a jelly, more or less fluid; and the blood is a liquid, which, though eminently displaceable, *given the outlet*, not so favoured behaves like other liquids and resists enormous pressure, in comparison with which the 100 to 300 mm. of mercury of the manometer scale are absolutely negligible.*

The position, then, at which we have arrived is that under the conditions secured by the sphygmomanometer the immobilized tissues are incompressible; further, that, regarding their liquid and semi-liquid state, we are justified on physical grounds in assuming that they will behave like other liquids; consequently that any pressure applied to the surface of the imprisoned area under the cuff will be transmitted immediately, uniformly, and without diminution throughout the substance of the cuff segment of the arm, for at each stage of the investigation, as the column of mercury halts in its ascent, the opposing forces are equilibrated, and the problem before us becomes one of hydrostatics, such as is exemplified exactly by the Bramah (hydraulic) press.†

This brings us to the subject proper of this paper—namely, the state of the artery and the behaviour of the blood stream under the rising pressure in the cuff of the instrument. It will make for clearness if we consider these effects in the following order: (1) in the arm below the cuff; (2) in the arm under the cuff; and (3) in the arm above the cuff.

1. *Effects in the Segment of the Arm Distal to the Cuff.*

These will be just those of a ligature round the arm. The ligature is very broad and its constrictive force is developed gradually, but on neither of these counts does its mode of action differ from that of any other ligature, in that it impedes both the entry of blood into the segment in question and still more markedly its escape therefrom; for the thin-walled low-pressured veins, in particular those of the surface, will be the first vessels to feel and yield to the pressure of the cuff at its lower border, and the first squeeze of the ball should suffice to close them. The deeper veins would follow suit quickly, for the cuff pressure effectually prevents any displacement of the tissues of the forearm, and these, becoming at once incompressible, transmit rapidly the surface pressure to the deeper parts. The primary effect therefore is venous obstruction along the line of the lower border of the cuff, with consequent gathering of the blood behind the obstruction, a movement which must work backwards towards the capillary fields and through these to the arterioles, leading ultimately to more or less arterial overfilling—in brief, to a choked state of all the vessels. It will, however, be noted that this general congestion is predominantly venous, and further that the accumulation of blood will again be most marked in the superficial veins, because the loose skin offers less resistance than the deeper parts.

These effects will continue throughout the duration of the experiment, and the surcharged vessels, therefore, will oppose an increasing resistance to the entry of blood from the cuff segment of the arm.

2. *Effect in the Cuff Segment of the Arm.*

In contradistinction to the line of pressure (that of the lower edge of the cuff) which is responsible for the above-described effects, we must now regard the consequences of a broad circular area of pressure which the cuff lays upon the whole of this segment. The skin is now immobilized along with all the other tissues; everything outside the walls of the vessels is, therefore, incompressible, and so the full force of the cuff pressure is brought to bear upon the blood, which, though *per se* incompressible, is not only displaceable, but is in act of displacement along a given line—that of least resistance.

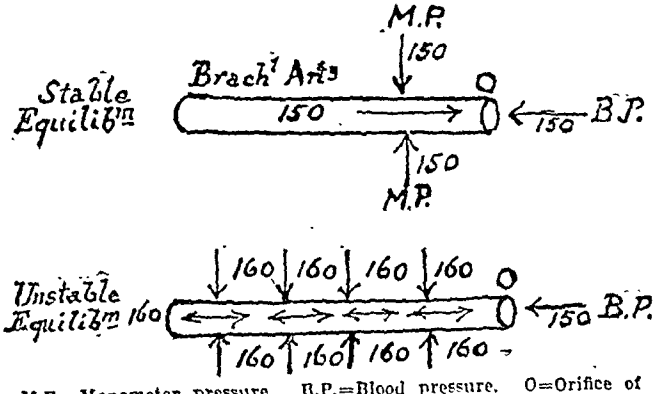
* Professor A. W. Porter of University College informs me that there are no data available as to the compressibility of bodies in the colloid or jelly state, but he holds it as almost certain that they will come close to liquids in their incompressibility.

† Exactly, in so far as the extravascular tissues of the arm are concerned, but through the blood vessels which permeate the tissues a flow of blood is all the while being maintained, and this complicates the physical problem, introducing a dynamic factor. However, this disturbing factor diminishes progressively as the experiment proceeds, and in the end, when the blood pressure is determined, it vanishes wholly with the arrest of the pulse.

Let us apply this to the state of things at the very commencement of the experiment. The blood is in actual movement through the vessels under a pressure which falls progressively from the arteries to the capillaries and from these to the veins, the ultimate destination of which is the right ventricle. Accordingly the internal blood pressure will be at its lowest, in this segment, at the mouths of the veins as they emerge from the upper edge of the cuff. Above this point the fall continues, and it is accentuated where the veins enter the chest by an actual *minus* pressure; there is, therefore, no impediment along this route; indeed, the *minus* intrathoracic pressure *favours actively* the centripetal flow. What, then, must follow when the encircling cuff begins to exert its grasp? The emptying of the veins must be accelerated, and in this process the superficial veins, which first feel the pressure, will take precedence. But very rapidly the surface pressure will be transmitted to the deep veins, and these will suffer a like emptying. An end to this depletion, however, must come as the walls of the veins flatten out and come into contact under the rapidly rising external pressure: thence onwards they are effectively sealed. How far back towards the capillary fields, or perhaps even into them, the emptying proceeds can only be determined by direct observation, for it is impossible to gauge *a priori* at what point the intra-arterial pressure which is striving to fill the veins will counterbalance the opposing pressure on the veins, which after the completion of the *forward* emptying process will now be directed *backwards*. Thus the primary effect of loading the surface of the cuff segment will be an emptying of the veins more or less, probably to a considerable extent —an effect exactly the opposite of that witnessed in the distal segment.

From the moment of the sealing of the veins, at this or that point, the circulation is interrupted up to the point of emergence of the veins from the upper edge of the cuff; but blood is still being squeezed into the arteries of the segment, though under increasing difficulties, so long as the intra-arterial blood pressure exceeds that in the extravascular tissues; the arteries, therefore, at this stage will perforce be all open.

The next step brings us to equality of the two opposing forces—that of the column of mercury in the manometer and that of the intra-arterial blood pressure; let us assume this to be 150 mm. The following diagram will represent the situation.



M.P.=Manometer pressure. B.P.=Blood pressure. O=Orifice of brachial artery at upper level of cuff.

Stasis is now complete, for no blood can enter the artery; *at the same time the artery maintains its patency*, for there is no surplus of force to compress its lumen, and we have before us a given volume of blood imprisoned between the orifice of the artery and the sealed veins. The problem has thus become one of hydrostatics pure and simple, which may be indefinitely prolonged, *ceteris paribus*. We must further note that along with the cessation of all movement of the blood the pressure throughout this fluid *is of necessity* equal in all the vessels remaining patent.

Let us now suppose that the next squeeze of the ball raises the manometer pressure to 160 mm.; what will happen? By an excess of 10 mm. the equilibrium will have become unstable, and this surplus is brought to bear upon the whole volume of blood; what will follow? The imprisoned fluid will seek an outlet, pressing equally in all directions, both peripherally towards the veins and centrally towards the heart *by way of the arteries*. But there is no thoroughfare peripherally, for there the sealed veins are held by the same excess of pressure as that which seeks relief. In like manner, at any given point along the vessels up to the brachial trunk itself, any attempt to shift the blood towards the veins will be countered—thus, up to the orifice O in the diagram, where an excess of 10 mm. finds itself unopposed. What then must follow, theoretically, is that the fluid will begin to dribble out backwards, reversing the normal circulation; there is no help for it.

In actuality a surplus force of 10 mm. in the face of the inertia of the *mass* of blood to be moved, against the surface resistance opposed by the multiple branching channels which contain it, would, without doubt, be imperceptible, certainly negligible; but, even so, we must note that a surplus of 10 mm. Hg (the apparent stasis still persisting) holds open the orifice at O. And actually, if we should push the experiment to a really appreciable extent—say to readings of 300 mm. or more—then an appreciable *expression of the blood* would be inevitable. But again what follows?—the orifice will still be *kept open* by the expulsive force until the last *quantulum* of blood has been driven out. Of course, the patency of the lumen of the vessels will, in that case, be gradually diminished as the volume of the blood to be expressed diminishes.

Within the time limits of a blood estimation, however, in which we should raise the manometer reading to 20 or 30 mm. above the pressure necessary for the extinction of the pulse, there will be no chance for these small surpluses of such short duration to effect any perceptible reduction of the volume of the imprisoned blood—the containing arteries therefore would remain fully patent.

On these grounds I am compelled to conclude that the *theory of an obliteration* of a section of the brachial artery in explanation of the extinction of the pulse is wholly untenable. I would, moreover, point out that any argument which could be brought forward in favour of th obliteration of the brachial artery by the outside pressur on its walls would hold equally for every other artery i the cuff segment of the arm, since its internal bloo pressure could not exceed that in the brachial artery But what force could conceivably shift all this blood, an where could room be found for it? Per contra if this is so if the arteries keep their patency throughout, how do w explain the extinction of the pulse at the wrist at a give moment, which is an indisputable fact?

A reasonable answer to this question is, I think, no far to seek, but it involves certain preliminary considera tions. The first is that the blood flow results from varia tions in blood pressure along the course of the vessels, an that this blood pressure is caused by the elastic stretc of the entire arterial system, but mainly, perhaps, by th elastic stretch of the aorta, which acts as a transforme between the power chamber of the ventricle, where all th energy is generated, and the capillaries. This actio resembles exactly that of the elastic bag of the Spra apparatus, which, interposing between the ball and th nozzle, converts the intermittent grasp of the hand int a continuous efflux from the nozzle.

The elastic stretch of the arterial system—in which how many ventricular systoles are summed up?—absorbs th whole of the cardiac energy, the intermittent generatio of which disappears quite by the time the capillaries are reached, and in the form of the elastic recoil it figures as the blood pressure, which measures the strength of the stretch. This is the sole cause of the blood stream. The fingers on the artery take no cognizance of it except as to the volume of the stream and the intravascular tension.

The pulse, on the other hand, is a manifestation of an entirely different order; it plays no part in forwarding the blood; it is an epiphenomenon, something superadded, and, seemingly, both unproductive and undesirable; for while it carries force in its progress along the arteries, the force is not available for circulatory purposes, yet it subjects the arterial wall to an additional strain, which may and does become a danger in disease. In a certain sense it runs counter to the purpose of the elasticity of the arterial wall, for it makes to reappear an intermittence which the elasticity has been at pains to suppress. In brief, it is

a percussion wave, which, arising at the aortic orifice, *quodam modo*, courses through the arteries at the rate of about 7 metres per second, whereas the blood stream is never faster than 0.5 metre per second.*

It must be obvious that these two velocities cannot be effectively harnessed to the end of one co-operative act. That which the finger on the artery takes note of, then, is the passage of a wave, and the impression gained is that of a lift, which is confirmed by physiologists, who teach that in the act of passing the artery is *expanded and lengthened*. Evidently the wave carries force.

Now let us take the stage of equipoise between the intra-arterial pressure—that is, the pressure caused by the arterial elastic recoil—and the opposing manometer pressure, when stasis supervenes; the pulse wave will, of course, present itself as usual at the mouths of the arteries, which are all open. Will it enter as usual? Why not?—it carries force; what is there to forbid? Well, there is no current to carry it. The answer to this is, it needs no current; it is not conveyed; it rides the blood stream and forces its way. We know that the percussion wave started by the cast of a stone travels as freely along the surface of a standing pool as over the smooth surface of a river, and in all directions, even against the stream. It will, therefore, enter and must reach the wrist, as usual, since the elasticity of the containing walls is not exhausted.

And now let us give another squeeze of the ball; the manometer rises, say, 10–15–20 mm., but the pulse is suddenly gone—why, if the arteries are still patent? For the simple reason that this new rise of extravascular pressure, caused by the squeeze of the ball, will then have sufficed to meet and cancel the expanding force value of the pulse wave; the arterial wall will thus be prevented from yielding and the wave cannot pass, though the channels are all open. This is the reasoned explanation now proffered to show that it is not necessary to invoke obliteration of the artery, to account for the extinction of the pulse at the wrist, in the process of taking the blood pressure; and in the foregoing I have endeavoured to demonstrate that on physical grounds the obliteration hypothesis is untenable. It remains that the reasons advanced should be tested.

Bacon has said: "*Visio oculorum melior est quam progressio animi*," which I suppose may be rendered "the sight of the eyes is better than the mental process"—that is, ratiocination—and one must agree that a simple act of perception would save much excogitation and debate. But in the absence of sight by the external eye (for who has seen the closed artery?) what remains but the mind's eye to probe the validity of a hypothesis which is, as it stands, a pure assumption?

It has been said that the subject is not merely academic in that it raises a definite practical issue—namely, that from the beginning of the use of the sphygmomanometer—on the assumption of arterial obliteration, it has been a moot point what proportion of the pressure readings is to be allotted to the intra-arterial tension, and what to the resistance of the arterial wall itself (this latter a very variable quantity, when in disease the artery becomes thickened and hardened). Persistent patency of the arteries would eliminate this question once for all.

* Compare Starling, op. cit., fourth edition, p. 819; also Wiggers, *Circulation in Health and Disease*, 1923, p. 190.

ILEO-CAECAL VOLVULUS FROM ADHESIONS FORMED BY LEFT-SIDED PELVIC APPENDICITIS.

BY

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THE following case is of interest in regard to diagnosis and development. Moreover, it is a commentary on the dangers of incomplete anchorage or fixation of a viscus that has been hitherto free.

The patient, a spinster aged 33, was admitted to hospital as an acute abdominal emergency. Twelve hours previously she had been seized by violent griping pains in the left lower abdomen, accompanied by vomiting. No flatus had been passed since the onset of the attack, and the bowels had moved on the day before the attack. There had been no menstrual irregularity. There was a history of chronic constipation and occasional attacks of indigestion, confined to the region of the left iliac fossa.

The patient did not look ill. The temperature was normal, and the pulse rate 96 per minute. The tongue was furred. The abdomen was scaphoid and characteristic of the slender congenital visceroptotic type of anatomic structure. It moved freely on respiration, and some distension was present. The patient complained of pain in the left iliac fossa. There was deep-seated discomfort on pressure in this situation, but no tenderness or muscular rigidity. Pelvic examination was negative, as also was the obturator test for pelvic appendicitis. Succussion was present about the umbilicus, a sign of the greatest importance in the early stages of obstruction of the small intestine.

The case was regarded as one of acute intestinal obstruction. The abdomen was opened by a mid-line infra-umbilical incision. Coils of ileum, moderately distended, were packed off. The pelvic colon was empty. The caecum and appendix were not in the right iliac fossa. The ascending colon, longer and much more mobile than the normal, being provided with a mesentery, was traced into the pelvis. The caecum was lying in the true pelvis, distended and completely filling it. Attempts to extract it from the pelvis were resisted until adhesions binding down the appendix to the left side of the true pelvis had been divided. In delivering the incarcerated caecum a volvulus of the ileo-caecal segment of the bowel was discovered. Rotation in a clockwise direction had taken place through more than half a circle, round the axis of the appendix, adherent to the left side of the pelvis. The bowel was quite viable. After correction of the volvulus the appendix was removed and caecal plication performed. The patient made a good recovery.

The caecum and ascending colon were extremely mobile in this case, being provided with a long mesentery. Such a state of affairs is not uncommon in the slender congenital visceroptotic type of individual. The caecum was thin-walled, atonic, and dilated, thus showing commencing failure of compensation, from long-standing difficulty of emptying. The appendix was cicatrized in its terminal portion, and the lumen in the distal half nearly obliterated. Obviously it had been affected by former inflammation. The previous attacks of left-sided abdominal pain supported this finding. Ultimately the appendix became fixed by adhesions to the left side of the pelvis. The hitherto mobile caecum became thereby insecurely tethered, and volvulus of the ileo-caecal segment took place.

Interest in atypical cases of appendicitis is sometimes associated with abnormal positions of the caecum and large intestine due to errors of rotation and fixation. The errors of mal-rotation and non-rotation of the midgut loop are those most likely to undergo volvulus change, and are usually, though not always, met with in the childhood period. In the adult it is the errors of the third stage of rotation, in which the viscera find their ultimate position of fixation to the posterior abdominal wall, that occur. Premature or high fixation of the caecum or failure in elongation of the colon results in an undescended caecum. Appendicitis in such a case may be difficult or impossible to distinguish from cholecystitis. Deficient fixation or abnormal elongation of the colon results in the low pelvic type of caecum. In the present case the attacks of appendicitis were atypical, being pelvic and left-sided. Intussusception in childhood and visceroptosis in the adult are intimately associated with this type of anatomical structure. Ileo-caecal volvulus is also associated with a low pelvic type of mobile caecum. To the incomplete fixation of the caecum produced by the adhesions around the appendix is to be ascribed one of the exciting factors concerned in its production in the present instance.

The case is an interesting example of an anatomical structure varying quite definitely from the normal, but which functioned fairly well until the introduction of another factor led to serious risk to function and to life. Nature's incomplete efforts at "caecopexy" were certainly disastrous in this case. May it not be argued, therefore, that fixation operations are essentially unphysiological in congenital visceroptosis? It seems to me that they are based upon an incomplete understanding of the altered anatomical structure and function of the individual as a whole. General methods of physical education and support would seem to meet the need in the majority of cases.

THE TREATMENT OF TUBERCULOSIS OF THE LUNGS BY SANOCRYSIN.

BY

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IN these notes we do not propose to say anything on the history of sanocrysin since its introduction by Moellgaard in 1923. The story of its discovery, with the early method of its employment and subsequent modification, is readily available in the now extensive literature. Our purpose is to relate our experience of its use in 45 cases during the past two years, with special reference to the most suitable type of case for treatment, the dosage and length of treatment, and to give our conclusions as to its value as a therapeutic agent in pulmonary tuberculosis. As the various complications are now so well recognized they are merely mentioned in passing.

In all cases tubercle bacilli were present in the sputum at the beginning of treatment. This point is stressed since so often various treatments have been apparently successfully employed in tuberculosis in the absence of unequivocal proof of its presence. The value of early treatment in "closed" cases is not disputed, but for scientific records it is essential that there should be no shadow of doubt as to diagnosis.

All the 45 cases were in Stage II or Stage III, mostly the latter, and in all there was a preliminary period of routine (sanatorium) treatment without definite improvement. All the patients were under sanatorium regime during treatment.

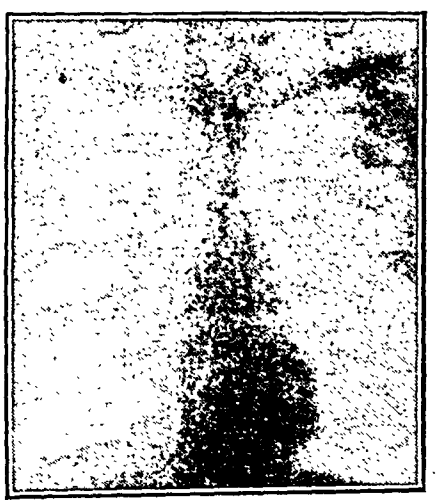

FIG. 1.

FIG. 2.

Selection of Suitable Cases.—It has been abundantly shown that the type of case most likely to benefit by sanocrysin is that showing the "exudative" variety of lesions. This type is recognized on the *x*-ray film by the fluffy, wool-like appearance of the areas of density generally scattered through both lungs. (Fig. 1.) This contrasts with the sharper and more defined areas of density, often unilateral, in the fibroid type of the disease, and frequently accompanied by old cavitation. (Fig. 2.) These differences are easier to determine on the *x*-ray films than in reproductions. Certain cases may show densities of both recent and old-standing disease.

Clinical Signs.—On clinical examination in the first (suitable) type there is only slight impairment of percussion note and weak breath sounds, with medium-sized crepitations; whereas in the second (unsuitable) type are found shrinkage, marked dullness, loud bronchial breath sounds, and consonating rales.

Contraindications.—The following are the chief contraindications. (1) Cases of fibroid phthisis. (2) Cases with gastro-intestinal symptoms. (3) Cases with symptoms of marked toxaemia—for example, fever above 101°, profuse night sweats, rapid emaciation. (4) Renal disease (sanocrysin produced slight evanescent albuminuria in the majority of cases). (5) Any other systemic disease—for example, diabetes.

Sanocrysin must only be given cautiously, if at all, to patients complaining of abdominal pain or loss of appetite. Vomiting, diarrhoea, and loss of weight are common complications of this therapy, and are especially apt to occur in these cases.

Case 1.—Male, aged 20. Appetite poor; steady loss of weight. As the appetite was improving sanocrysin was given. On the day following the first dose the patient complained for the first time of "indigestion." On the day after the third injection (0.125 gram only) the patient had diarrhoea and abdominal pain. Both these symptoms became worse and sanocrysin had to be abandoned. Previous to treatment by sanocrysin the patient was inclined to be constipated.

Indigestion *per se*—that is, epigastric pain after food, flatulence—is not a contraindication. The gastro-intestinal symptoms referred to above in all probability represent a manifestation either of abdominal tuberculosis or come under Group (3).

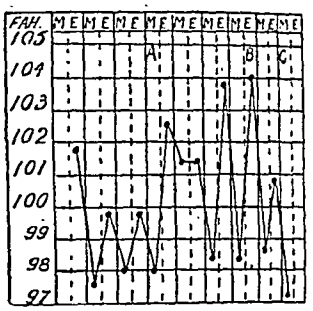

CHART 1.—A, 0.05 gram sanocrysin (fifth injection of same amount). B, Antipyretic treatment. C, Sanocrysin discontinued; no definite increase in focal signs.

Case 2.—A boy, aged 12, with signs of disease in both upper lobes, more extensive on the left side. The temperature before injections were given was 98° to 101° F. After two injections (0.05 gram) there was no change. It was higher after the third and fourth injections of the same amount, and still higher after the fifth injection (see Chart 1). This increase of reaction suggests a cumulative effect of the drug. There was no increase in focal signs, but treatment was abandoned because of the hyperpyrexia. The patient died several months later.

Tuberculous laryngitis is not a contraindication; on the contrary, it tends to improve under sanocrysin therapy. In one of the cases under review there was a granuloma (lupus) of the epiglottis. This condition improved greatly with sanocrysin alone, no local treatment being applied.

Mode of Action.—The apparent action of sanocrysin is especially interesting to anyone familiar with the use of tuberculin. Following the administration of sanocrysin there may be the same rapid rise and fall of temperature as occurs after a diagnostic injection of tuberculin. A focal reaction is also not uncommon, and, as with tuberculin, it is very difficult to say how far its effect is harmful. It has been shown by various writers that there is frequently a rapid breaking down of tissue and cavity formation after the use of sanocrysin. Is it possible that this may be accompanied by the liberation of tuberculin?

Advantage over Tuberculin.—A great advantage of sanocrysin over tuberculin is the possibility of its use in cases of moderate pyrexia where tuberculin would be inadmissible.

Disadvantages.—(1) Expense is a grave disadvantage, an average course in this country costing about £4 5s. for the gold salt alone. (2) Close observation is necessary; this militates against the use of the drug by the general practitioner. (3) Patients weary of the more or less complete confinement to bed for the duration of the treatment, and may, in fact, refuse to continue treatment on this account. As a consequence, for the past six months we have allowed patients whose pulse rate and temperature are within normal limits and who are free of any adverse effect of the drug to get up for from two to seven hours daily. Patients remain in bed, however, on the day of the injection and the day following. As far as we can see, no bad results have been caused through this latitude.

An increase in pulse rate is regarded as of more importance than a rise of temperature, and in our opinion is a valuable factor in the consideration of prognosis. At the Osler Pavilion the practice has been gradually evolved of giving small initial doses, increasing slowly and steadily,

avoiding, as a rule, reactions greater than one degree. Chart 2 illustrates the case of a woman, aged 33, who did extremely well on sanocrysin and who yet always had a rise of temperature of about 2°. How to control these temperature reactions is one of the many problems in sanocrysin (and tuberculin) therapy. Anything severe in the nature of systemic disturbance, such as albuminuria or diarrhoea, should be avoided, and if these or other complications occur further doses should not be given before they have cleared up.

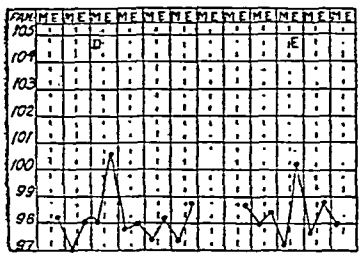

CHART 2.—D, 0.35 gram sanocrysin. E, 0.45 gram sanocrysin.

The dosage of an average course would be somewhat as follows, modified, of course, according to the reaction; the drug is given intravenously at weekly intervals—for example, 0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.75, 0.85, 1 gram, the last dose being repeated two or three times. In female patients, as a general rule, 0.75 gram is the highest dose given, and is repeated once or twice. The average total amount given (exclusive of those cases where the treatment had to be abandoned for various reasons) has been approximately: men, 6.1 grams (10 doses); women, 5.8 grams (13 doses). Frequently reactions become more severe with the larger doses, and renal, gastro-intestinal, or skin complications develop, necessitating cessation of treatment.

Loss of weight quite often occurs, and may be considerable, causing interruption of treatment. As a rule the weight is quickly regained. It is unusual for a course to be completed without some reaction. Malaise and headache are frequently complained of, and drowsiness occasionally. In several cases treatment had to be abandoned because of complications which persisted.

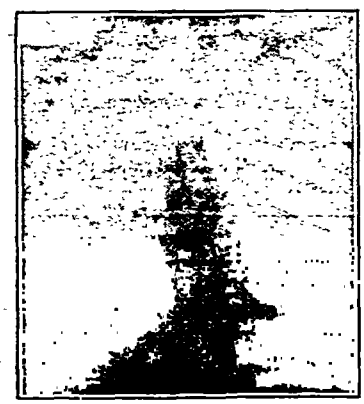

FIG. 3.

In the majority of cases the physical signs appear to have cleared more quickly than in all probability they would have done otherwise, although at first there may have been an apparent increase. This improvement is verifiable by x-ray films (see Figs. 3 and 4). In this particular case these were taken at an interval of less than three months. In these photographs an effort has been made to standardize, as far as possible, the time factor, the distance of the patient from the tube, the strength of the current, and the development of the films. The sputum eventually tends to decrease, although at first it may increase, especially in patients who have had little sputum. Tubercle bacilli disappear in most cases, though unfortunately they frequently, in fact generally, return some weeks after cessation of treatment. On the other hand, the physical signs, and more especially the general condition, appear to improve, and continue to do so after the treatment has ceased, which may be regarded as due to a cumulative effect of the drug.

Results of Treatment (45 Cases).

Definite improvement (physical signs and general condition)	25
Improvement but subsequent relapse...	2
Treatment abandoned (complications and general condition)	10
Treatment not completed (patient left hospital) ...	3
No improvement (worse 3, unaltered 2)	5

It would perhaps be more correct to add the 10 patients in whom treatment was abandoned to the 3 classified as worse.

Illustrative Cases.

In the following notes L represents the extent of the lung lesion, and S the degree of systemic disturbance as evidenced by the temperature range, or even more by the pulse rate. This classification is modified from that of Philip.

Many of the cases admitted to the Osler Pavilion during the past two years have been of the acute bronchopneumonic type, with an illness of short duration, following so-called influenza. How far this conforms to admissions in other areas we are not in a position to say.

Cases Much Improved.

1. A girl, aged 18; admitted December 20th, 1927, with extensive involvement of the left lung and upper right zone; onset June, 1927. The evening temperature was 101° F., pulse 76 to 96; L3, S3. She received in all 3.45 grams of sanocrysin, and was discharged on May 2nd, 1928; L2, S1. She gained weight under treatment. The sputum was always scanty; none on discharge. December, 1928: Condition satisfactory.

2. A youth, aged 19; admitted October 29th, 1927; onset "influenza" and pneumonia, March, 1927. Extensive signs in left lung and right upper zone; the larynx was slightly affected. Evening temperature 99° F., pulse 84 to 100; L3, S2. The disease progressed in spite of routine treatment and tuberculin. The total amount of sanocrysin given was 6.7 grams. He was discharged on September 21st, 1928; the physical signs, x-ray appearances, and larynx had all improved. The sputum was scanty, but still positive. December, 1928: Condition satisfactory.

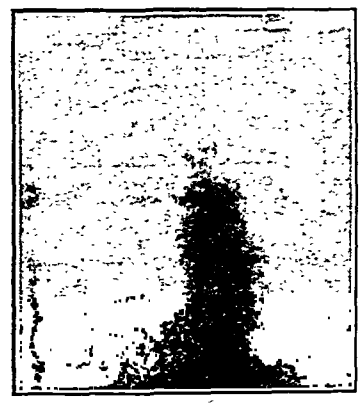

FIG. 4.

3. A man, aged 22; admitted March 12th, 1928; onset, summer, 1927, with lassitude and cough. Extreme lassitude and cough were the chief symptoms. Both upper zones were affected—L3, S3. The evening temperature was 100° F., pulse 95 to 112. He was given 5.8 grams of sanocrysin. On discharge L2, S1; a few bacilli were still present in the sputum. The physical signs and x-ray appearances showed definite improvement; the lassitude had gone. December, 1928: Condition satisfactory.

4. A girl, aged 12; admitted August 9th, 1927; onset "influenza," Christmas, 1926. The evening temperature was about 100° F.; pulse 80 to 100. There were extensive signs in the right upper zone; the chief symptoms were cough, anorexia, and lassitude. In all, 9.575 grams of sanocrysin were administered. The loss of weight towards the end of the course was quickly regained after its completion. On her discharge the sputum was scanty and negative. December, 1928: "Holding her own."

In view of the well-known evil prognosis at this age this case is regarded as satisfactory.

5. A girl, aged 18; admitted November 21st, 1927; onset September, 1927. Both upper zones were affected. The evening temperature was 99° F. L2, S1. She was given 4.3 grams of sanocrysin, and, after an interval of eight weeks, a further 2.95 grams. Sputum, which had always been scanty, was absent on discharge. The physical signs were much improved.

6. A woman, aged 22; admitted January 31st, 1927; onset November, 1926. The left upper zone and right apex were involved; L2, S1. The evening temperature was 99° F. She improved on routine treatment, but subsequently developed an increase of physical signs in one lung, with an evening temperature of 100° to 102°. She received a total of 8.25 grams of sanocrysin. When discharged, on January 23rd, 1928, the physical signs had improved, one or two isolated and broken down bacilli were seen.

7. A man, aged 39, admitted February 2nd, 1928; onset, haemorrhage, January, 1927. There was extensive disease of the left lung, and right upper and middle zones; L3, S1. The evening temperature was subnormal, pulse 76 to 92; sputum 6 oz. Sanocrysin to a total amount of 4.9 grams was administered. He was discharged on July 13th, 1928, with the physical signs much improved, and the sputum scanty and negative.

8. A man, aged 35, admitted February 21st, 1928; onset December, 1927. There was extensive disease of the left lung and slight disease of the right; L3, S3. Temperature swinging to 101° F., pulse 95 to 116; sputum scanty. He was given 5.35 grams

of sanocrysin. He was discharged on August 15th, 1928, with a normal temperature and pulse 72 to 92; there was no sputum. The physical signs and x-ray appearances were much improved.

9. A woman, aged 33; admitted March 3rd, 1928; onset December, 1927, "influenza." Most of the right lung was affected, and the left middle zone; L3, S2. Sputum was scanty. Evening temperature 99° F., pulse 84 to 120. She received a total of 4.5 grams of sanocrysin. When discharged, on June 5th, 1928, there was no sputum and the physical signs were much fewer; the improvement had been very rapid in a short time.

10. A woman, aged 24; admitted October 29th, 1927; onset August, 1924, pleurisy. There was extensive disease on the right with cavitation, and slight disease on the left; L3, S2. Sputum 3 to 4 oz. The evening temperature was 99° F., pulse 88 to 108. She was given in all 6.6 grams of sanocrysin. She was discharged on April 12th, 1928, with the physical signs much improved, sputum 1/2 oz., bacilli fewer but still present. The general improvement was maintained. She was readmitted on October 20th for a second course of sanocrysin (3.6 grams). When discharged, on December 22nd, there was further improvement in the physical signs and the sputum was negative.

Cases in which Patients became worse and where the Disease was probably aggravated by Sanocrysin.

11. A woman, aged 34; admitted June 25th, 1928; onset February, 1926. L3, S3. There was extensive disease of both lungs. The evening temperature was about 100° F., pulse 88 to 108. Small doses of sanocrysin were given after the temperature had been allowed to settle. After the fourth injection the patient had haemoptysis with fever (see Chart 3). There was no previous history of haemoptysis. The physical signs had increased.

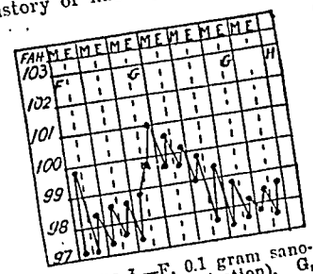

CHART 3.—F, 0.1 gram sanocrysin (fourth injection). G, Haemoptysis. H, Signs of extension of disease.

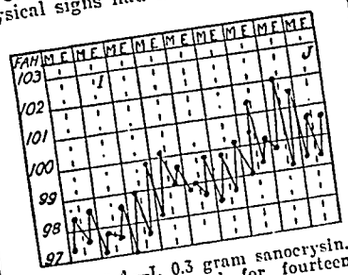

CHART 4.—I, 0.3 gram sanocrysin. J, Fever continued for fourteen days longer.

12. A woman, aged 22; admitted May 3rd, 1928; onset December, 1926. L3, S2. Pulse 96 to 132. The left lung was extensively involved, and the right upper zone was affected. Dermatitis occurred after the second injection, and treatment was stopped for four weeks. Seven doses were then given at weekly intervals. The temperature was rarely above 99° F. After the last injection the temperature began to rise and the patient had a continuous pyrexia with increase of physical signs (see Chart 4).

Conclusions.

We recognize the possible fallacies in attempting to draw conclusions in a disease where the unexpected so often happens, even in the absence of any form of treatment, and especially where more than one form of treatment has been employed. But after mature consideration we feel justified in making the following statements.

Sanocrysin cannot be regarded as a specific in the treatment of pulmonary tuberculosis. In suitable cases it shortens the period of routine treatment—that is to say, a similar degree of improvement may be obtained in considerably less time with sanocrysin than without.

With sanocrysin there is a greater possibility of the improvement following institutional treatment being maintained than there is without its use.

In carefully selected cases it is of value as an adjuvant to other methods of treatment. It is of definite worth in clearing the "better" lung in bilateral disease and allowing the establishment of an artificial pneumothorax on the "bad" side. It may also be employed with advantage in collapse therapy, of any variety, when there is a tendency for the "good" side to break down.

Used with care it is of value in the treatment of the acute exacerbations in chronic fibroid disease.

By ridding the sputum of bacilli even for a short time it must—theoretically, at any rate—limit the spread of the disease.

Sufficient time has not yet elapsed to allow us to dogmatize on the permanency or otherwise of the improvement.

CASES OF DIABETES MELLITUS WITH A LOW RENAL THRESHOLD.

BY

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THE renal threshold, or leak point of the kidney for sugar, is usually about 0.17 to 0.19 per cent. blood sugar, and variations are recognized to occur in diabetes mellitus. Most commonly any change consists in a raising of the threshold above 0.2 or even 0.3 per cent. blood sugar, with the result that urine tests for sugar give little indication of the satisfactory control of the disease, making the patient appear sugar-free when the blood sugar is high. Much more rarely diabetes has been reported to be complicated by a lowered renal threshold. One case each has been reported in the last two years by Voigt,[1] Shapland,[2] and by Curran and Mills,[3] their articles leaving the impression that the combination of diabetes mellitus and a lowered renal threshold is a very rare condition. Consequently the following eight cases seem worth recording, as the condition leads to confusion and difficulty in the practical management of the cases.

Diagnosis of the Condition.

This presents no difficulty when a case of diabetes is being followed by blood, as well as by urine, sugar tests. As the result of treatment it is found that, whereas the blood sugars are becoming normal, the urine does not become correspondingly sugar-free. Positive proof that the renal threshold is abnormally low can be obtained by simultaneous tests of the blood and urine for sugar on one or two occasions. For example, after insulin has been given at 8 a.m. the blood and urine sugar may be tested as follows:

Time:	10 a.m.	11 a.m.	12 noon.	1 p.m.
Blood sugar per cent. ...	0.19	0.12	0.085	0.080
Urine sugar	+++	++	trace	0

This proves that the threshold is below 0.12 per cent., but not so low as 0.08 per cent. The condition can often be proved quite definitely by estimating the blood sugar only once and testing the urine secreted afterwards. In the above example the leak point could be proved to be below 0.12 per cent. by finding sugar in the urine passed at noon after the bladder had been emptied at 11 a.m.

Description of Eight Cases.

An individual description of these eight cases seems unnecessary. All the patients had had typical symptoms of diabetes mellitus and in all an abnormally high blood sugar had been found, either on ordinary diet or after a glucose tolerance test. In three cases diet alone controlled the blood sugars; in five insulin was necessary. Five were males and three females, and their ages varied from 19 to 68. In two cases there was a family history of diabetes.

The son, aged 14, of one of these patients has no symptoms of diabetes, but on two occasions has shown an abnormally high blood sugar curve with slight delay in the return to normal. Unlike his father, this boy has a raised renal threshold and passed no sugar at a blood sugar concentration of 0.225 per cent.

The level of the renal threshold was fairly closely observed in these cases, and was respectively 0.15, 0.14, 0.11, 0.1, 0.09, 0.09, and 0.08 per cent. It is obvious that the last few cases were hardly ever free from traces of sugar in the urine. The amount of glycosuria was in every case related to the level of the blood sugar, and the more the latter exceeded the threshold the more sugar appeared in the urine. This is contrary to what is usually stated to occur in renal glycosuria in non-diabetics, where

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the amount of glycosuria is said to be usually constant and independent of diet and the level of the blood sugar. This has not been true, however, in my experience of non-diabetic renal glycosuria.

In two of these diabetics the lowered threshold has remained constant for five years, and in none, observed over shorter periods, has it been found to vary. There is every reason to think, therefore, that the peculiarity is a permanent one, as renal glycosuria seems to be.

In addition to these eight cases, a lowered threshold appeared temporarily during pregnancy in two diabetic women, but became normal again after labour.

Practical Importance of the Condition.

These cases seem, on the whole, to follow the same course as diabetes with a normal renal threshold. They have not seemed more liable to ketosis than other cases, because they have not lost sufficient sugar in the urine to affect materially the ketogenic-antiketogenic ratio of the diet as fed. But one of the pregnant women, who was losing some 30 grams of sugar a day by the third month of pregnancy owing to the low threshold, excreted more ketone bodies than previously. The fasting blood sugar level might have been expected to be lower than usual from the loss of sugar, but this was not noticeable. However, two of the youngest patients, who had for years after the original discovery of their diabetes paid little attention to their condition, seemed to deteriorate much less rapidly than the usual careless juvenile diabetic. One of these patients gave little heed to diet for seven years, was thirsty, and had a blood sugar of nearly 0.3 per cent. when tested, and yet became rapidly controlled on diet without insulin, and has remained so since. Another, a girl of 12, had diabetes for seven years without any marked progression, and always responded at once to dietetic treatment. It seems possible that the low leak point acted in these cases as a safety valve, which tended, by the loss of sugar in the urine, to lower the blood sugar and relieve the strain on the islet cells. This is my impression in these two cases, but, of course, they may have been exceptionally unprogressive for other reasons.

It would appear that these cases respond to treatment in the usual way, but they certainly present some difficulty in their management. It is impossible to keep the urine sugar-free if the threshold is below 0.1 per cent. The usual urine sugar tests give little or no indication of the patient's real condition, which can be known by blood sugar tests alone, difficult to carry out frequently, and sometimes impossible. It is very disappointing to the patient, and the practitioner, to find sugar almost constantly present in spite of treatment, and the patient, at least, is apt to be depressed. It is best for these patients not to be taught to test their urine or to co-operate as much as usual in their treatment. If the threshold is lowered to only 0.14 per cent. or so, this may be almost an advantage in treatment, as one may then be certain, if the urine is sugar-free, that the blood sugar is normal.

It is difficult to see any etiological connexion between the lowered threshold and diabetes in these cases. It is highly improbable that the diabetes produces in some way a lowering of the threshold, for any change that is known to take place in diabetes is in the direction of a rise in the threshold; nor is there any clear evidence that a pre-existing condition of renal glycosuria may tend to produce or be followed by true diabetes. Indeed, Hjärne[4] has recently published a hereditary study of renal glycosuria which tends to show the absence of any connexion between diabetes mellitus and renal glycosuria.

The most likely explanation of these cases is the fortuitous development of true diabetes in cases of renal glycosuria. It is now well known that a lowered threshold is fairly common in normal individuals, though what percentage of the population are renal glycosuries it is impossible even to guess; but the number of cases of renal glycosuria that are discovered must be very small compared to the number existing. The above eight cases have occurred among some 500 diabetics—an incidence of 1.6 per cent., not a high one, probably no higher than in the non-diabetic population. Quite likely among my 500 diabetic cases others with a lowered threshold have escaped discovery, because it requires close observation and not infrequent blood sugar tests (not possible in every case) to establish the condition. There seems no reason to think that the combination of diabetes mellitus with a lowered renal threshold is not a mere coincidence.

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VOMITING IN INFANCY.

BY

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VOMITING is a very common presenting symptom during the first few months of life, and one about which the mother is not unnaturally anxious, as it signifies to her that her child is not getting sufficient nourishment.

In the act of vomiting the walls of the stomach contract, the diaphragm is pushed downwards in the full expiratory position, while powerful contractions of the abdominal muscles take place; at the same time the cardiac sphincter is relaxed and the gastric contents are expelled, chiefly as the result of the pressure exerted in the abdomen by the diaphragm and the abdominal muscles, aided to some extent by reversed peristalsis. As a general rule the pyloric sphincter is closed, but in some cases it may become relaxed, with the result that bile and intestinal contents are expelled with the vomit. The simplest method of bringing this mechanism into play is to overfill the stomach, especially if this is done rapidly before the walls of the stomach have time to adapt themselves to the sudden increase of gastric contents. Thus it is extremely common for breast-fed babies to vomit a small amount at the end of their feeds. Provided the gain in weight is within normal limits no treatment is required, and the symptoms may be regarded as one of Nature's "safety valves." If, however, it is found that the baby is gaining weight excessively, a little water should be given beforehand and the actual length of time spent over each feed decreased.

Vomiting from Birth.

All cases in which such a history is given should be regarded seriously, as a congenital obstruction of the duodenum is a possible cause. It is also important to realize that the symptoms of congenital pyloric obstruction may date from birth. As a general rule the vomit in the former is bile-stained, and jaundice may occur, but the distinction between the two conditions is really only of academic interest, as surgical intervention is indicated in both.

Various congenital malformations of the oesophagus that produce intractable regurgitation of food dating from birth are occasionally encountered. Some form of fusion of trachea and oesophagus is the most common deformity, and screening with the *x* rays may sometimes show conclusive evidence of obstruction. Treatment is of no avail.

Vomiting with an Acute Onset.

The sudden onset of vomiting, associated with diarrhoea, in an apparently healthy baby suggests immediately the possibility of an infection, of which the most likely site is the gastro-intestinal tract, particularly in artificially fed children. It is important, however, to realize that parenteral infections may produce exactly similar symptoms; the most common of these are pyelitis, bronchitis, and otitis media. Recent work, both in this country and in America, has drawn attention to the great frequency of acute pyelitis in babies, and unless the urine is examined the condition is frequently missed. In severe cases the onset is sudden, with marked fever, vomiting, diarrhoea, and convulsions or rigors: the latter are uncommon in children, and should always suggest an acute kidney infection. Other cases have a more insidious onset, with vomiting and persistent loss of weight as the outstanding features. It is essential in

any suspicious case to obtain a specimen of urine, which may be done most easily by placing the child on a mackintosh sheet and securing the urine that collects at the most dependent part. If the case is one of pyelitis the urine will be definitely turbid, and will show pus cells and motile bacilli under the microscope. The vast majority of such cases are due to infection with *B. coli*, and the essential part of the treatment is to administer large doses of alkali; 10 grains of potassium citrate and of sodium bicarbonate can be given with safety every three hours to a child of 6 months. The best criterion of the progress of the treatment is the reaction of the urine, and it is advisable to provide the mother with litmus paper and instructions to continue giving the medicine at frequent intervals till the urine is alkaline.

Acute infections of the middle ear are very common in children of all ages, and here again the usual presenting symptoms are screaming, vomiting, and sometimes diarrhœa; unless the drums are inspected in any suspicious case the first indication of local trouble will be the presence of a discharge.

Naturally the gastro-intestinal tract will require treatment irrespective as to whether it is the primary site of infection or not. A preliminary dose of castor oil—a drachm for a baby of 6 months—is advisable when the case is seen early, but is actually harmful in the later stages. A period of starvation of about eight to twelve hours' duration should follow, during which saline is given freely. If vomiting is marked a preliminary stomach wash is indicated, and later, food in small quantities. Boiled breast milk is ideal, but in its absence a half-strength dried milk mixture with a low sugar and fat content may be used.

The vomiting of acute intussusception is nearly always characteristic and the clinical picture of the condition distinctive. Emphasis should perhaps be laid on the suddenness of the onset and the periodicity of the pain; thus the mother may describe exactly the time of onset, and the baby itself will usually lie quite quiet between the attacks of pain and screaming. A rectal examination is especially important in diagnosing an early case, as the presence of blood may be detected in this way some time before it becomes visible on the napkin.

Vomiting with a Chronic Onset.

Very frequently the mother will complain that vomiting occurs shortly after each breast feed and is accompanied by prolonged screaming, the latter being especially marked at night. Such a history suggests a diagnosis of underfeeding. In breast-fed babies, whenever the question of the quantity of food is in doubt, test feeds are called for. These can be carried out with great ease in any intelligent household provided fairly accurate scales are available, and the determination of the weights before and after every feed during twenty-four hours climinates the need for calculations. Only on this principle is it possible to treat feeding difficulties with any measure of success; any other way involves guesswork. As a simple working rule it should be remembered that a child requires about 2½ ounces of breast milk per pound body weight per day, and if test feeds are carried out it is a simple matter to adapt the diet accordingly.

Vomiting *per se* may indicate overfeeding or underfeeding; in the former case it is due to the rejection of surplus food by an overfilled stomach, and in the latter to the regurgitation of air swallowed to compensate for the inadequate quantity of milk. The weight chart is naturally of great help in such cases, and test feeds will decide the extent of the discrepancy.

Congenital Pyloric Stenosis.

Vomiting is undoubtedly the predominant symptom of this condition, and in many cases the details provided by the mother make the diagnosis almost a certainty. The symptoms usually start at about the third week of life, and become progressively more severe and more characteristic. The child snatches at the breast or bottle for a few minutes and then vomits very forcibly, so that the food is ejected well beyond the cot. The motions are small and hard, and the child loses weight steadily. In making a diagnosis it is absolutely essential to watch the child being fed, as gastric peristalsis can be seen in an early case only during an attack of vomiting. The detection of the tumour is largely a matter of patience; it is important that the abdominal wall should be well relaxed, and this condition is most easily secured when the child is asleep; in difficu cases the examining fingers should be worked up und the liver margin as the tumour may be quite high up the abdomen.

It is now generally agreed that Rammstedt's operation is the correct treatment for this condition, but before it is actually undertaken attention should be paid to the following points, upon which depends very largely the success or otherwise of the operation.

1. Re-establishment of breast-feeding. Very frequently the persistent vomiting and loss of weight have been taken as indications that breast milk does not "agree" with the baby, and by the time the child is seen weaning may have occurred and perhaps two or three artificial foods tried without success. In many cases it is possible partially to re-establish breast secretion, and this should be done by putting the child to the breast regularly, and by breast massage. It will usually be necessary to give some artificial food in addition, but this should only be done after the baby has been put to the breast. Even small quantities of breast milk are invaluable for the feeds immediately following an operation.

2. Daily stomach washes should be instituted as soon as the diagnosis has been made, and it is surprising how much improvement may be brought about in the clinical condition of the baby in two or three days. A solution of sodium bicarbonate (a teaspoonful to the pint) should be used and the proceduro carried out about two hours after a feed; incidentally the amount of residue is a measure of the degree of stenosis and of the urgency for operation.

3. Subcutaneous saline should always be given immediately before operation, and, if the baby is at all wasted, it should be started as soon as the diagnosis is made and given regularly twice a day for two or three days.

From the above considerations it can be seen that it is advisable in the majority of cases to wait three or four days before undertaking operation so as to improve the general condition of the baby by medical means.

Habitual Vomiting.

From time to time cases are seen in which no dietetic error or organic disease can be found to account for the persistent vomiting that occurs usually just after a meal. There is frequently a neuropathic family history in such cases, and the baby itself is very restless, and cries at the least noise or distraction. It should be noted that some degree of peristalsis may be seen in these patients, although no pyloric tumour is palpable, and the progress of the condition will negative the latter diagnosis. By far the best treatment for such a condition is to thicken the feed with flour or fino oatmeal. In an ordinary case about half an ounce of flour may be added to a pint of milk mixture and the whole brought to the boil and allowed to simmer for ten minutes. The resultant mixture will be a thin gruel that will flow through a large hole in a teat. In pronounced cases that do not respond to this treatment it is necessary to use a thick cereal food that has the consistency of treaclo. Such a food may be made by allowing about 2 ounces of flour to each pint of milk and boiling the mixture gently for at least half an hour. From 2 t 4 ounces may be given at each feed, though naturally will be necessary to supply the requisite amount of flu by giving drinks of water between the feeds.

Some help may be obtained in cases of habitual vomiti by the use of a chin strap applied immediately after a feed, and from the administration of small doses of atropine and bromide. A convenient mixture is:

Solution of atropine sulphate (1 in 1,000)	...	2 minims
Sodium bromido	to	1 grain
Chloroform water	to	1 drachm

This should be given about half an hour before the feeds. As a general rule, however, it will be found that adequate thickening of the feeds is the essential part of the treatment, and the rapid improvement that ensues in the condition of the child is the surest proof of this.

THE OXIDASE REACTION IN THE LABORATORY DIAGNOSIS OF GONORRHOEA.

BY

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THE oxidase reaction is due to the presence of oxidizing ferments in certain organisms, and is characterized by a colour reaction produced when a reagent, such as dimethyl-para-phenylene-diamine hydrochloride, is poured on to the colonies of these organisms. The reaction is not specific for any organism, but is given, amongst others, by *B. anthracis*, *B. pyocyaneus*, *B. subtilis*, *B. choleræ*, and the Neisserian group.

Dietrich and Liebermeister[1] in 1902, whilst studying the detailed structure of the anthrax bacillus, made use of the oxidizing ferments present. In 1910 Schultze published a paper[2] on methods of observing oxidation and reduction in bacteria, and noted the organisms giving rise to this oxidase reaction. Kramer[3] in 1912 confirmed this work. Little further progress was made until 1928, when Gordon and McLeod published a paper[4] confirming most of Schultze's work, but they modified the latter's method so that it could be used as a means of differential diagnosis in mixed cultures and not be limited to pure subcultures. Their method was used throughout the present investigation, and consists in pouring on to the colonies of the organisms either phenylene-diamine hydrochloride or dimethyl-para-phenylene-diamine hydrochloride. Those colonies containing the oxidizing ferments present a colour change, whilst those that do not, remain unaffected.

The objective of the present investigation was to ascertain the value of this method in the routine examination for the presence of the gonococcus in cultures taken from the genital tract of patients who, clinically, had, or were suspected of having, gonorrhoea. The inoculation was made on to a modification of Thomson's medium (*p*H 7.5), as it became evident that the colour change shows up much more readily on this transparent medium than on the opaque brownish-red surface of blood agar. The test was applied after forty-eight hours' incubation at 37° C., the reagent used being a 1 per cent. solution of dimethyl-para-phenylene-diamine hydrochloride (supplied by the British Drug Houses) in distilled water. The solution should not be over seven days old, since with older solutions the colour reaction is less well defined.

The colonies were first examined with a ×6 hand lens, and samples of any having the appearance of being gonococci were picked off, stained by Jensen's modification of Gram's stain, and examined microscopically. If the organisms had the morphological appearances of gonococci this was noted. The surface of the medium was very gently washed with about 0.5 c.cm. of the reagent, thus avoiding contamination of colonies of gonococci by other organisms from other colonies. This is important when pure subcultures are required for vaccines, etc. The cultures were then observed by the naked eye and with a ×6 lens at intervals of 1, 3, 5, 10, 15, 20, and 30 minutes, and any colour change in a colony carefully noted. The results were recorded as positive, "pseudo," and negative reactions.

A positive reaction is shown by the development, almost immediately, of a very faint fine pink, which at this stage is only to be seen with the aid of a ×6 lens. In three minutes this deepens to a cerise shade, and the colonies are easily seen by the naked eye amongst those which are unaffected. Gradually the colour changes to red and then to reddish purple, finally ending, in about thirty minutes, in an intense jet black. This may be regarded as a normal reaction, but variations in the speed of the reaction do occur. They appear to depend on the age of the culture and the reagent; the older these are, the quicker, but less well defined, the reaction, whilst, within limits, the converse holds good.

The term "pseudo-reaction" was applied to a change of colour which was distinguishable from that seen in the truly positive reaction by being brownish pink rather than pure pink, and becoming in the end brownish black instead of jet black. It was afforded by some non-gonococcal colonies. A negative reaction indicates no change in a colony.

Two thousand cultures were examined, the first 250 of which were selected as a "trial run." These contained obvious gonococci colonies, doubtful gonococci colonies, and cultures obviously not containing any gonococci. The following 1,750 were routine cultures sent into the laboratory for examination. Of these 1,750 cultures there were 117 (6.7 per cent.) positive reactions, and all of these were morphologically gonococci. Many of these organisms were cultured and gave the typical glucose fermentation, other sugars, such as maltose, saccharose, levulose, etc., being unaffected. They were also soluble in caustic soda.

Other members of the Neisserian group also gave positive reactions, but the only one likely to confuse the issue in a case of doubtful gonorrhoea is the *M. catarrhalis*, and most authorities[5] are agreed that its presence in the genital tract is rare. The intensity and celerity of the reaction given by a few of the members of this group appear to depend on their ability to ferment the sugars. Thus, *M. catarrhalis* gives an extremely quick and vivid colour reaction, whilst *M. flavus* (Type 1 only tested) gives a slow response. Between these two extremes comes the gonococcus.

The "pseudo"-reactions (2.2 per cent.) were almost invariably given by one of the protean varieties of coliform bacilli. Gordon and McLeod report negative reactions with *B. coli*, whilst Schultze and Kramer found that it gave a definite response. From this investigation it would appear that some varieties of coliform bacilli give an oxidase reaction, but that the great majority remain unaffected. *B. subtilis*, when present, always gave a response, and in two instances this was noted with a variety of streptothrix.

Amongst the mixed cultures which gave negative oxidase reactions (91.1 per cent.) the gonococcus was not encountered, but on four occasions a very small Gram-negative coccus was noted, which it was possible to isolate in a pure culture on only one occasion, and then with great difficulty. It had the following characteristics: (1) Gram-negative, about one-quarter the size of the gonococcus, not arranged in pairs, and giving a negative oxidase reaction; (2) ferments glucose, lactose, maltose, and mannite with the production of acid but no gas; (3) no action on inulin or dulcite; (4) clots milk; (5) very poor growth on agar, but somewhat better on hydrocele agar, producing pin-point colonies, which were dull and sticky and required frequent subculture (every two or three days) in order to keep the strain alive. This organism appears to belong to the Neisserian group in spite of its negative oxidase reaction.

From these results it is evident that this method of diagnosis of the presence of gonococci colonies in a culture tube tends to increase accuracy, particularly in cultures where the colonies of gonococci have grown feebly or have been almost smothered by the growth of such secondary organisms as *B. coli* or staphylococci. A *definite* positive reaction removes the necessity of staining, whilst colonies giving doubtful results can always be stained and subcultured provided this is done prior to the colony assuming a blackish hue. When this occurs it is an indication that the organisms have been killed. Pseudo-reactions practically never give rise to any doubt except in cases where the reagent is not fresh or the cultures have been incubated for more than forty-eight hours. The strepto-pneumococcal colonies, which are so frequently a cause of anxiety owing to the similarity of their appearance to those of the gonococcus, never give a positive reaction, hence this potential error is removed. Finally, where large numbers of cultures are examined by this method there is a great saving of time and labour.

I would like to express my thanks to Dr. T. E. Osmond, pathologist to the venereal disease department, St. Thomas's Hospital, for his kind advice and assistance in the preparation of this paper, and also to Colonel L. W. Harrison, D.S.O., for permission to publish the same.

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Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

EPITHELIOMA OF THE SKIN IN A FEMALE COTTON OPERATIVE.

THE undermentioned case is considered worthy of record in view of the interest manifested in occupational carcinoma.

The patient, aged 66 years, was first seen in February, 1928, complaining of a growth on the right forearm which had been present about twelve months. She was of poor general condition and wasted musculature; general senile changes were present in all systems. A careful examination of the skin as a whole showed a mild xeroderma, but not of more marked degree than is often found in elderly persons of thin build. There was a pronounced diminution of subcutaneous fat, and considerable loss of elasticity. On lifting the skin between the forefinger and thumb there was a "tissue paper" wrinkling, such as is seen in a syphilitic scar—to the touch the skin imparted a sensation of dry parchment. Over the surface of the entire body, and to a far greater extent over the skin of the arms and neck, there were a number of islands of pigmentation, varying in depth of tint from a light brown to black. The size of these areas was equally variable, some patches being as much as half an inch across and others only pin-point. The changes described, however, were almost entirely confined to the lower two-thirds of the arm, the face, and the neck, although similar changes were to be seen in a very mild degree elsewhere on the body. Exposure of the skin, from lack of protection of clothing, appeared to have increased the tendency of the skin to these changes.

In addition to the areas of altered pigmentation there were multiple points of pigmented follicular hyperkeratosis and verrucae. Most of these were elevated above the skin to a conical formation 1/8 to 1/4 inch in depth and diameter. On the right forearm in its middle third a warty squamous-celled carcinoma was present; around this was considerable infiltration, due in part to secondary infection of the central lesion. There was no involvement of lymphatic glands, and excision of the growth and about an inch of surrounding skin gave an uninterrupted recovery. Examined later there was no sign of recurrence. Microscopical examination of the growth confirmed the diagnosis of epithelioma. The woman had been employed throughout the greater part of her working life in a carding-room of a cotton mill, and as such had been exposed to the effect of various mineral oils.

The condition is of interest in the possible association of the lesions with occupation. Similar skin lesions have been found in persons who have never been exposed to irritant oils, and it should perhaps be regarded as *post hoc* rather than *propter hoc*. A baker who develops eczema is not necessarily suffering from "bakers' itch."

A. H. SOUTHAM, M.D., M.Ch., F.R.C.S.
Manchester. P. B. MUMFORD, M.D., M.R.C.P.

IDIOSYNCRASY TO QUININE INJECTIONS.

DR. CRUIKSHANK'S memorandum (January 19th, p. 104) is an almost exact description of an experience of mine.

Mrs. X, aged 58, was referred to me by Dr. Whittington, honorary physician to Hove Hospital, suffering from varicose veins in both legs and with an eczematous spot below the left internal malleolus and a small painful ulcer. I injected 1 c.cm. of Douthwaite' solution into a vein in the left leg, and after mpress assisted her down without any difficulty from the chair on which she was standing. A few minutes later, while seated and putting on her stocking, she suddenly complained of a hot stifling sensation in her throat and a headache, and turned deathly white. I gave her some brandy and put her head down between her knees, but she became cyanosed, quite pulseless, pupils widely dilated, bladder sphincter relaxed, and she had a "rattle" in her throat. She was at once laid on the floor while camphor was administered subcutaneously and oxygen given. In a few minutes she regained consciousness and vomited, but her pulse still remained imperceptible at the wrist and no heart sounds could be heard with the stethoscope and her pupils were still dilated. She was placed on a couch and covered with blankets, given a drink of hot tea, and hot-water bottles were placed near her. She complained of feeling cold, having a splitting headache, and a sense of constriction in her throat. These symptoms gradually wore off, and in a couple of hours she was sufficiently recovered to be taken home by her daughter. Consciousness was only lost for a very short period, and the patient related to me minutely all that we had done from the moment she was laid on the floor. In a few days she was none the worse for her adventure, and her eczema and ulcer had almost disappeared.

I have twice before seen a similar occurrence; the first time was when a woman fell dead on my shoulder in an omnibus (the *post-mortem* examination showed atheroma of the coronary artery), and the second was when a patient of mine had an attack of angina pectoris in my presence and I thought he was dead, but camphor and oxygen were handy and he pulled round.

Mrs. X has a negative Wassermann reaction and a blood pressure of 150 (systolic); heart and lungs normal. On reading Dr. Cruikshank's memorandum I wrote a post-card inviting her to come to the out-patient department, and Dr. Whittington and I performed the dermal test as suggested, using my own forearm as a control. She showed a marked wheal surrounded by a zone of erythema, but only slight redness at the site of the distilled water control. On my own forearm no reaction was obtained to quinine.

This is the only case out of over a hundred treated by me with quinine injections in which alarming symptoms have occurred. However, I shall in future apply this very simple dermal test to all newcomers who cannot assure me of their ability to take quinine without ill effects, and I should advise others to do the same.

Hove. ST. GEORGE B. DELISLE GRAY.

THE TRANSMISSIBILITY OF PYORRHOEA ALVEOLARIS.

PYORRHOEA alveolaris is a complaint so widespread in its incidence and so destructive in its consequences that the investigation of its etiology is called for.

It is commonly stated that the condition originates in an accumulation of decomposing foodstuffs in the interstices of teeth, bacterial invasion and putrefaction of the debris being the starting point of a gingivitis which leads to periodontal inflammation. There is no doubt that inattention to dental hygiene and the consumption of soft foodstuffs, particularly confectionery, are frequently found among patients who bear evidence of this disease.

Observation of its onset among patients met in the ordinary run of general practice leads one to the conclusion that there are other predisposing factors which are equally if not more important; among these may be mentioned the following:

1. *Debilitating conditions.* After an attack of influenza it is common to note that the gums are spongy, while the patient complains that they bleed easily on being brushed. The condition may clear up entirely when the patient is restored to health.

2. *Alteration in the salivary reaction.* This occurs in general diseases, such as Addison's anaemia; in mouth breathers, particularly those who have suffered from long-standing nasal obstruction; and in heavy smokers where an excess of alkaline saliva constantly bathes the teeth.

3. *Direct infection.* This is probably more frequent than has been generally realized. Attention was drawn to the possibility of pyorrhoea being a contagious complaint by the following sequence of events.

A man, aged 35, with well-marked pyorrhoea affecting the lower incisors (the common site of invasion), was married to a young woman whose mouth was perfectly clean and the gums coralline. Two months after marriage the wife came for treatment of headache, and upon routine examination it was found that the gums were of a dull purplish hue and spongy in consistence. In spite of careful hygienic measures the condition spread until the majority of the teeth in the lower jaw became loosened and easily movable. The condition only showed signs of improvement when circumstances led her to visit her mother for a period of six weeks; upon her return to her home the gums were of firmer consistence, pink in colour, and no longer exuded pus on pressure. Since then her husband has had his offending teeth extracted and the wife's cure persists.

Taking heed from this object lesson, many cases have been watched, and in a considerable proportion it has been noted that the onset of pyorrhoea in young persons has dated from their first love affair. It has long been traditional that women lose teeth in every pregnancy, ascribed to the abstraction of calcium salts for the benefit of the uterine parasite. In the country these women are commonly sufferers from pyorrhoea, and it would appear to be reasonable to investigate the condition of their husbands' mouths before embarking upon treatment. It is an axiom that sweeping assertions should not be based upon evidence derived from a few cases in one man's practice, but it would appear that the possibility of transmission of pyorrhoea by direct contact might well be worked out by experts more fully equipped for dental research.

Sherborne. JOHN WHITTINGDALE, M.B., F.R.C.S.

METASTASES IN MAMMARY CARCINOMA.

THE unusual distribution of metastases in the following case seems to make it worthy of record.

A married woman, aged 39, consulted me in February about a nodule she had noticed in the upper and outer quadrant of her right breast. This was about the size of a walnut, apparently freely movable, and without any enlargement of the axillary glands on that side. A simple tumour was diagnosed, and I removed it with a good deal of the surrounding tissue.

Dr. W. H. Grace, pathologist to the Chester Royal Infirmary, reported on the specimen as follows: "This tissue shows the histological characteristics of a scirrhous carcinoma of the breast. There is a good deal of fibrous tissue, and a small amount of inflammatory reaction. The neoplastic process seems to be growing fairly rapidly."

The patient was then sent to the David Lewis Northern Hospital, Liverpool, where a radical operation was performed; from this she made a good recovery. She came to me again in September with what seemed to be an acute septic condition at the nail fold of the left middle finger. The nail was removed and the finger incised. One or two sloughs separated in a few days, but the purulent discharge continued for an unusually long time, and there seemed to be a very excessive amount of granulation tissue. When she returned from a short holiday at the end of October the tip of the finger was so large that a general anaesthetic was administered and the finger-tip reduced to a more normal size by cutting away most of the "*granulations.*"

Dr. Grace's report on these was as follows: "This is undoubtedly a secondary deposit of a carcinoma. The cells are arranged in such a way that it could be a reproduction of a carcinoma of the breast; the cells are taking up a certain amount of alveolar formation."

At this time there was no sign of any recurrence in the breast, axilla, or anywhere else. A few days later, however, she complained of severe headache round about what looked like a suppurating wen in the right parietal region. This turned out to be a hard, solid, and not very vascular mass, moving freely with the scalp, and certainly not a wen. Since then she has had almost continuous headache, with intermittent attacks of vomiting. On ordinary clinical examination neither the thorax nor the abdomen shows any abnormality, and there is no alteration in the reflexes.

Crewe. F. T. INGRAM, M.D.

Reports of Societies.

STARVATION IN TREATMENT.

At a meeting of the Medical Society of London on January 28th, with Dr. J. WALTER CARR, the president, in the chair, a discussion was held on "Starvation in treatment."

Dr. E. I. SPRIGGS opened by remarking that starvation was the common fate of a large number of living organisms; the human race in the course of ages had acquired a marvellous power of meeting this risk by the preparation, storage, and transportation of food. Fifteen years ago one might have been justified in thinking that starvation on a community scale was by way of being banished from human experience; since then there had been seen a gigantic experiment involving the partial starvation of millions of people. Experiments of this kind had been made many times before, but never on such dimensions, and not at all since nutrition had been placed on a scientific basis. In normal times, however, the ordinary man stood in much more danger of overfeeding than of underfeeding; therefore the withdrawal of the whole or part of the food was a rational and useful measure in many diseases. Starvation might be complete or partial: in the former case the predominant symptom was hunger, which was not quite the same thing as appetite. Indeed, probably most persons in an ordinary company had never at any time in their lives felt what hunger was. Discomfort arose in the neighbourhood of the epigastrium, which was insistent but intermittent, beginning, not at the moment when the stomach was empty, but some time afterwards. The modern view was that hunger pain was due to stomach contraction. The physiological data of starvation experiments had been worked out upon a number of people. It must be understood that when food was withheld the body did not starve; it went on feeding as long as it lived, but on its stores instead of on ingested material. The weight diminished rapidly at first, and then settled down to a loss of about one pound a day. If a man living a sedentary life, and expending 2,400 calories a day, cut off his food, his body endeavoured to bring down the expenditure to about 1,800 calories. The body exercised a great power of internal economy when fasting. The end came when mobilization failed, when the body stores were not supplied sufficiently to some important organ, though fat might still remain in the body. During fasting the blood pressure fell steadily as a rule. In some Continental observations on prisoners of war who were hunger-striking it was stated that the blood pressure in one case dropped as low as 55 systolic. The temperature did not drop during fasting, or dropped very little. The mental state in a moderate fast was not, so far as could be ascertained, affected, but if fasting was prolonged curious mental states might develop. The loss of weight, apart from the fat, fell first of all on the glands. The liver, spleen, and pancreas lost more than any parts of the body, the muscles came next, and the heart and brain last. When food was stopped the first call was upon the glycogen of the liver, and after this upon the more mobile stores of protein; next on the so-called deposit protein; and last on the tissue protein. The fat was, of course, the main source of energy during fasting; owing to *the large amount of fat being burned its metabolism* was liable to be incomplete, with the production of acidosis. The benefit which fasting had been found to confer on epileptics was ascribed to the acidosis produced, which combated the alkalosis associated with that condition. The blood sugar remained constant until death was approaching; no doubt the sugar was derived from protein and probably fat. There was a general idea that fasting cleared the blood: in fact the nitrogen content of the blood altered very little, and any change was in the direction of concentration. There was nearly always more *uric acid in the blood of the* fasting person; the calcium was also rather increased. The blood in fasting was like a highway filled with traffic on an emergency mobilization; it was not purified in fasting, but rather the reverse; the organs that were purified were the glandular organs. As regards the secretions, that of hydrochloric acid generally ceased; milk secretion went on for a few days and then stopped. Fasting had no known specific effect on the healthy body except to call into being its whole resistance against the risk of approaching death. Turning again to the war experiment, Dr. Spriggs said that it had confirmed the scientific work of the previous generation as to body needs. The stress on the population in many parts of Germany was very severe; it was said that there was not a poor man in Berlin who weighed more than 8 stone. The restricted diet resulted at first in an improvement of health, but nervous symptoms presently appeared, and afterwards anaemia, myxoedema, and digestive diseases were widely current. Coming to the employment of starvation in disease, the speaker said that complete starvation had been used for local disease of the alimentary canal; in acute diseases such as appendicitis it was a temporary measure. It was not advisable to continue complete starvation for any long time; men might survive it and say they felt better, but it was a feat of endurance and nothing more. Short complete fasts had proved beneficial—no food, but plenty of water or other fluid—*for one, two, or three* days. Growths were benefited, particularly those of the muscles and connective tissue; a great many skin diseases also responded to fasting, and rheumatic conditions were reported as benefited. In acute nephritis and other acute illnesses it was a common thing to cut off food. Dr. Spriggs then related experiences with his own patients in obesity, and recounted consistent results. Diminution of food was the one certain means of treating this condition; those other physical treatments to which patients attached so much importance, such as massage and baths, did nothing to diminish weight. The method he employed was to give a measured mixed diet containing sufficient protein for the bodily needs. He exhibited dietary tables for successive days, each day with four meals and a plentiful variety of food at each, but designed with due regard to the individual case so as to diminish gradually the calorie value by about 100 calories a day. If hunger was felt the patient might be given a portion of cold lean meat and nothing else, or,

better still, a cup of bovril. The object of the method was to enable the patient to continue treatment, with the aid of his doctor, after the course was over, without risk. One-food cures were less desirable, for they could only be borne for a time, the patient then returning to his old habits. The value of reduced diets in plethora and diabetes was described. He concluded with some remarks about the cults of fasting, pointing out that all methods of treatment which did good were liable to abuse. He gave particulars of a trial at Göttingen in which a doctor was indicted for causing the death of a patient by negligence. The patient had been put on a fasting cure, and given only lemon squash and a teaspoonful daily of a vitamin preparation for six weeks. The defence was a curious document, in which death was ascribed, not to lack of food, but to persistence in hot baths against the doctor's advice. The court found the doctor guilty of submitting a healthy, or nearly healthy, man to a dangerous treatment, and fined him 300 gold marks, with the alternative of a month's imprisonment.

Dr. F. PARKES WEBER said that voluntary intermittent fasting was simply a return to the involuntary habits which dominated the lives of our primitive ancestors. Nature still to-day retained her own ascendancy by withdrawing the desire for food in most acute diseases or when, as the result of overfeeding, the digestive mechanism had been upset. An important aspect of therapeutic fasting was the use of intermittent absolute or relative fasts for ailments such as gout, diabetes mellitus, some forms of obesity, and some diseases and disorders of the digestive organs, including appendicitis. In some persons a limited diet had the effect of increasing the resistance against colds in the head or sore throats. He recalled how, as far back as 1909, he treated a case of diabetes mellitus by the temporary limitation of intake to water and olive oil for a short time, and the patient was rendered temporarily free from sugar. One noteworthy non-medical writer on the subject was Mark Twain, whose amusing skit on the "appetite cure" was meant to show how large a part a limitation in diet played in the treatment of ailments for which the fashionable world flocked to the healing springs. Mark Twain said that no cold in the head could survive twenty-four hours' unmodified starvation.

Dr. ANTHONY FEILING described a recent case where a fever terminated dramatically as a result of starvation diet. The man had been feverish, with a temperature of 103° in the evening, for a week before he came into hospital; it appeared to be a case of mild typhoid or paratyphoid infection. After some time he was put on complete starvation (except for water), and this was kept up for three days; then he was put on a diet of sour milk, one pint a day for a week. His temperature went down suddenly, showed no tendency again to rise, and he left the hospital perfectly well.

Dr. GRAHAM LITTLE spoke of the use of starvation in skin diseases, where sometimes the most amazing results were seen. A friend of his, a New York dermatologist, who himself suffered from a severe skin eruption, was able to control it by confining his diet for the time to rice, bread-and-butter, and water; he was able to live on that diet quite comfortably for a week or more without appreciably losing weight. Much more effective was what was known as the Welper method, which the speaker had used in his practice for eight years; this was a combination of fasting and purging. The patient was made to fast for thirty-six hours, having no food except perhaps orange juice, and was given a large dose of some aperient. He mentioned one distressing case of acute lichen planus, for which he prescribed two days' fasting, with a purge on the first day; the whole eruption vanished within a week. For securing a very rapid amelioration of symptoms where the cause could be traced to a bowel accumulation this was a very useful method.

Dr. H. A. DES VOEUX mentioned two kinds of cases in which he had been accustomed to use starvation treatment. One was in illness resulting from overfeeding in children of the well-to-do, and the other was in acute illness like acute pneumonia. He had put his pneumonia cases on water for the last twenty or twenty-five years, and there was nothing for which he received more gratitude from them for excluding that continual fussy "nourishment" at short intervals.

Dr. A. P. CAWADIAS thought it important to distinguish between the therapeutic period in a fast—a period lasting perhaps four or five days—and the subsequent toxic period, where the equilibrium of the individual had become imperfect, and any infection might bring about catastrophe. From the clinical point of view it was very important to terminate the regime before the toxic period began.

Dr. GEORGE GRAHAM suggested that the miserable feeling noted in starvation patients after a certain time was due to insufficient carbohydrates.

Dr. SPRIGGS, in reply, agreed with Dr. des Voeux on the treatment of acute pneumonia, though his own practice had been to give, not water, but fruit juice, a vehicle for the introduction of glucose, which was extremely useful to such people. In his original remarks he had spoken rather slightingly of single-food cures, but occasional days on one food were beneficial, and were used by him. A day on which nothing was taken but six Jaffa oranges, furnishing about 350 calories, might be a very good thing; also a milk day. He agreed with Dr. Graham that in cases of difficulty in starvation it was well to increase the carbohydrates; he had found it useful to give a meal of buttered toast to people complaining of headaches. On the whole subject, he thought it might be said that fasting was of great value in many conditions, but should always be undertaken under medical supervision.

CRIMINAL ABORTION AND THE SALE OF ABORTIFACIENT DRUGS.

A DEBATE on the question of criminal abortion and the measures necessary to restrict the sale of abortifacient drugs took place at a combined meeting of the Medico-Legal Society and the Child Welfare Group of the Society of Medical Officers of Health on January 23rd, with Sir WILLIAM WILLCOX in the chair.

Dr. F. J. MCCANN, in opening, said that abortion was undoubtedly increasing in this country. From so-called natural causes it was not uncommon—some gave the proportion of one in five or six full-time pregnancies—but it was probably not an overestimate to say that of the total number of abortions 25 per cent. were criminal. The figures, however, varied with locality. Another point to bear in mind was that some women aborted very easily, while others could be subjected to great violence, internally and externally, without abortion. Dr. McCann showed some anatomical sketches to illustrate the structures concerned, and indicated how serious might be the consequences of the passage of an instrument—sometimes even in skilled hands. It was remarkable how many kinds of instruments were used in abortion cases—skewers, button-hooks, pieces of twig, hairpins, bodkins, had been passed along the vagina. The question arose whether a woman could successfully procure abortion on herself. The answer was in the affirmative, though some women who said they had done it themselves were hiding the real culprit. The one thing that haunted the abortionist, skilled or unskilled, was shock, which could neither be foretold nor prevented. Some women suffered a great amount of shock when any interference took place, the reason being, he thought, that they went to the abortionist with *their* nerves already strung up to concert pitch, knowing themselves about to take a grave, possibly a fatal, risk. The character of the patient also led to the undoing of many abortionists. The patients as a rule were wilful and disobedient, and refused to stay in bed lest suspicion be aroused, although rest in bed was more necessary after an abortion artificially induced than after abortion from so-called natural causes. Dr. McCann then turned to the question of drugs, and mentioned some of the emmenagogues and ecbolics in common use. Some patients had told him that they had produced abortion with large doses of quinine, the action of quinine being intensified by castor oil. Savine, an irritant poison, was also used. In Vienna phosphorus was said to be largely employed. Diachylon or lead plaster, which had terrible effects, was another article of common

resort. The nefarious traffic in abortifacients was still going on, especially in shops in side streets, where drugs were advertised "to cure irregularities, suppressions, and obstructions." Everybody knew that if a healthy woman's menstrual periods ceased the cause in 999 cases out of 1,000 was pregnancy. These gentlemen had no justification whatever for their advertisements. It seemed to him that no alteration in the law was necessary. The Home Secretary and the police had only to act promptly and with courage and they could stop the whole thing at once. He suggested that the Home Secretary be asked to receive a deputation from the Medico-Legal Society and kindred bodies, and that a committee be formed of representatives of the Royal Colleges of Physicians of London and Edinburgh, the British Medical Association, and the Pharmaceutical Society, to inquire into and report upon all the proprietary drugs before they were exposed for sale, so that the composition of the drugs might be known, and also for what purpose they were intended.

Dr. R. A. LYSTER said that the law at the present time was satisfactory if energetically administered. Indeed, it dealt with abortion-mongering in a fairly drastic manner, the reason being that years ago, when the law was framed, a very serious view was taken of the moral aspect of the case and of the sanctity of the embryo. Later certain other important considerations had emerged—namely, that abortion was a very serious factor in infant mortality and maternal invalidity. A successful abortion very often meant a damaged woman; an unsuccessful abortion a damaged woman and a damaged child also. He imagined that the fatalities from abortions or attempted abortions were tending to decrease, thanks to a more general appreciation of asepsis, antisepsis, and after-care; the question was whether the damage resulting was tending to decrease as well. There was a fashion in abortions, and a recent number of sudden deaths from shock illustrated the fact that the modern fashion was by means of intrauterine injections. Had the public modified its view as to the criminality of abortion? Would the great mass of new women voters cast their influence in this direction? It would be rash to prophesy when so soon one might be discovered entirely wrong, but the position was well worth considering. Could the law be tightened up? Diachylon, or lead plaster, was put in Part I of the Poisons Schedule because its easy purchase was regarded as a public danger, but he doubted whether this had had any appreciable effect upon the general tide of abortion. Although lead was the surest abortifacient known to-day, difficulty in obtaining it simply switched people on to other means. A great deal of nonsense was talked and written about the action of certain things in producing abortion. A healthy normal uterus could only be induced to abort with very great difficulty, and all the alleged ecbolics might be given in vain. If the uterus was not inclined to abort all these drugs were useless. This was taken advantage of by abortion-mongers, who applied their methods as nearly as possible at a menstrual period when the uterus had an inclination to contract. The only certain abortifacient was a general poison, and the common general poison was lead. A woman who had taken lead successfully and produced abortion was a woman suffering from all the signs and symptoms of general lead poisoning, with one other—namely, contraction of the uterus, with expulsion of the embryo, commonly, not always, preceded by the death of the embryo, but invariably by serious damage to it. Abortion was a grave national danger in its effect on the physique of women and children, but a campaign embarked upon too precipitately without due regard to possible changes in public opinion might create more difficulties than it settled.

Sir BERNARD SPILSBURY spoke of the appalling frequency of abortion. A general practitioner, called to a case of miscarriage, could never be quite certain whether it was natural or had been procured. The estimate of 25 per cent. of all abortions as criminal was certainly not too high. Most of the serious cases of drug abortion which caused death had occurred in past years; in recent years the drugs used were not frequently drugs endangering life—many of them were drugs which one would be inclined to regard as comparatively harmless, and for some other purposes very useful. These drugs must often have been taken successfully by women who aborted readily, and thus they got a reputation. When abortion was induced eventually by instrumental means it was found almost invariably that previous unsuccessful resort had been made to drugs. The use of dangerous ecbolics seemed to be more or less restricted to those who had legitimate access to them—namely, doctors and chemists. Quinine just after the war was largely used for abortion; he saw two fatal cases about 1920, in which large doses had been taken. One of the most effective of the ecbolics, pituitary extract, fortunately did not lend itself to administration by the layman. With regard to general poisons, again, the number of cases of poisoning by drugs used to procure abortion had greatly diminished of recent years. He had not seen a fatal case of poisoning of this description since 1918, and now that diachylon was much more difficult to obtain, such cases had still further diminished. Mercury, phosphorus, and arsenic were only rarely used, and he thought they could be regarded as playing an unimportant part in the question. It was a very different story with the heterogeneous group of drugs so widely advertised for "female irregularities." The most important were the drastic purgatives, for which there was, no doubt, a big sale at the present time. Could legislation stop the sale of these drugs without interfering with their legitimate purpose? One feature of all the drug abortions was that the abortion was like a natural one, not liable to be followed by the dangers consequent upon the use of instruments, such as shock, loss of blood, and sepsis. That was why there was so little information as to how far drugs of this kind were used for the purpose. In addition to purgatives there was a whole host of other drugs offered, agents apparently possessing very small value. No drug, of course, could be accounted harmless if it had any reputation at all. Even pennyroyal and many patent medicines had been used, and it was stated that the desired results had followed. But he could not help feeling that with the present schedule of poisons there was such a restriction on the sale of dangerous drugs that the others could be left on one side in the hope that the public would soon be educated with regard to the unlawfulness of attempting to procure abortion by this or that means. There had no doubt been a change of opinion of recent years as to the criminality of abortion, and in the districts where the professional abortionist carried on his work he was exceedingly popular; he got the most dreadful results, but his popularity did not seem to wane. In spite of frequent fatalities and the announcement of them in the press, instrumental means were still being used very widely. On an average recently he made a *post-mortem* examination on a fatal case of abortion about every ten days; in the vast majority of cases these were criminal abortions, and, again in the vast majority, had been brought about by instrumental interference. It was to the education of the public in the wrongfulness and especially the danger of abortion that one must look for an improvement in the situation. The abortionist, skilled or unskilled, was a public menace. He knew that he went about in fear of prosecution, therefore he had to practise his calling with haste and secrecy, which meant that he had to operate under unsatisfactory conditions, and to run considerable risk of sepsis, so that even the skilled abortionist got most dire results.

Mr. BECKWITH WHITEHOUSE said that a great number of the abortifacients sold to-day were, fortunately for the woman, frauds imposed upon the credulity of the public. Again and again practitioners were faced with a request or a demand from a patient for medical treatment after she had been taking some proprietary preparation which had failed of its expected effect. What always amazed him was the moral attitude of the woman who set her mind upon the termination of her pregnancy. No argument or threat would turn her from her path. During the last six months he had been approached by five patients with a request, expressed or implied, to terminate their pregnancies; four of these were married women. Needless to say, there was nothing to justify operative intervention, and he refused. Two of the married women, however, induced another medical man on what he considered medical grounds to perform an operation. One of them developed pelvic

thrombosis, and had been in bed since August. Another induced abortion by injecting hot water into the uterus in the bath. She did herself much injury, and had a stormy convalescence. Among the poisons or noxious things principally used in the obstetrical underworld were lead, savine, aloes, pennyroyal, quinine, and occasionally, in his part of Worcestershire, tansy. Some years ago in Birmingham it was common to take lead, and cases of plumbism were frequent. It was to be hoped there would not be a revival for abortifacient purposes of lead in its colloidal form. As for instruments, a popular one was known as "slippery elm"—a piece of elm wood. The *British Medical Journal* in 1898 (ii, p. 749) mentioned the case of a woman who had introduced a thick knitting-needle into the uterus thirty-five times! An argument against the absolute prohibition of drugs, apart from the fact that some of the drugs used were of value for legitimate therapeutic purposes, was that such action was likely to be followed by a more extensive use of mechanical, and therefore more dangerous, methods, the comparatively safe and innocuous pill giving place to the septic and pointed crotchet-hook. One way of tackling the problem would be to call the attention of women to the risks to their future health and happiness which every operation, criminal or otherwise, involved. Recently he had been paying some attention to the corpus luteum. There was evidence that if pregnancy was suddenly and violently terminated while this structure was in full course of development a deleterious effect upon the corpus luteum was brought about which might be a factor in the production of lutean cyst. Abortion might have a more lasting effect upon the individual than was commonly suspected, and if this were made known it was possible that it would serve as a deterrent to criminal action.

Mr. H. D. ROOME (prosecuting counsel to the Crown) referred to the case of a clerical abortion-monger, the Rev. Francis Bacon (*British Medical Journal*, 1928, i, p. 329), whom he had prosecuted at the Central Criminal Court. This man conducted a mail order business in abortifacients. He had preparations labelled in increasing degrees of potency, and the most potent, consisting of a large quantity of quinine, aloes, and ergot, was recommended by him as an infallible cure for "female irregularities." In order to make a defence in advance he put on the mixture, "This preparation must on no account be taken by pregnant women." Mr. Roome agreed with a previous speaker that the law required no strengthening. The whole law regarding abortion was contained in two short sections of the Offences against the Person Act, 1861. The first of these sections made it a criminal offence for any person to use an instrument or any other means whatsoever, or to administer any poison or noxious thing with intent to procure the miscarriage of any woman, whether she be or be not with child. The penalty was penal servitude for life. The second section prohibited the supply or procuring by any person with a like intent of an instrument or anything whatsoever, or a poison or any noxious thing, and the penalty was five years' penal servitude. A "noxious thing" was regarded by the judges as any preparation administered in sufficient quantities to be likely to produce abortion; therefore a drug like quinine, on the face of it perfectly harmless, would, if administered in such quantities, bring the administrator within the statute. The ecbolics within the schedule of poisons included ergot, savine, arsenic, cantharides, tartar emetic, belladonna, and lead. Many reputed ecbolics and emmenagogues—the latter very often mere subterfuges for ecbolics—were supplied by persons who advertised themselves under women's names, holding themselves out as sympathizing with women in distress. The Rev. Francis Bacon headed his advertisements, "As woman to woman." In all these cases the law was drastic and sufficient. Something might be done by scheduling in the Pharmacy and Poisons Act any other preparation which in medical opinion was sufficiently dangerous to warrant it. The speaker himself believed that there was no infallible ecbolic, though even gamboge, hellebore, pennyroyal, or oil of juniper, if administered at a critical time, was extremely likely to bring about abortion, and something might be done if these were scheduled. The real cure was change of public opinion, and if there was more toleration and charity for the unmarried mother it would go a long way to stop one prolific cause of abortion.

Dr. G. ROCHE LYNCH (senior official analyst to the Home Office) agreed that the first resort of the woman who desired to terminate her pregnancy was to drugs. Many of the drugs sold to her had no abortifacient action whatever; they were simply frauds. He knew of one case where an unfortunate girl spent £40 on drugs which, on analysis, were shown to consist of iron salts, starch, garlic, sage, and clover. Of drugs of the more harmful type, far and away the commonest sent for analysis was the aloes pill, generally combined with iron. Others included quinine and some of the essential oils, such as pennyroyal and tansy, and occasionally savine. Very rarely one came across ergot, and lead had completely disappeared. To put lead itself in the Dangerous Drugs Act would be futile. There were cases on record of abortions induced by people taking a piece of old lead pipe, steeping it in vinegar for a week or two, and drinking the liquid. A great deal of this harmful traffic would be limited by preventing the selling of drugs of this class by anybody not a qualified chemist. As far back as 1914 there were some strong recommendations made about the trade in abortifacients, and it was said that the law was chaotic and had proved inoperative, but the sale of such drugs was in practically the same state to-day.

Miss SUSAN MUSSON (general secretary of the National Council for the Unmarried Mother) spoke of the large number of cases which came the way of her society in which drugs had been taken with a view to producing abortion. Very many of these girls had not the smallest idea that they were doing anything wrong. Among the abortifacients used, quite a common one in the East End was gunpowder taken in gin. Another very popular one was known as "hickery-pickery." (Sir WILLIAM WILLCOX said that this last was hiera-picra, a mixture of aloes and canella alba.)

Lord RIDDELL mentioned what had been done by concerted action on the part of the newspapers to stop advertisements of these drugs. As a result such advertisements were much less common than formerly.

Dr. NORMAN HAIRE said that as a well-known advocate of birth control he received as many applications to perform abortion as any practitioner in London. He always refused them, though he never pretended that he did so on moral grounds; he refused because it was criminal and against the law. But there was a considerable body of opinion amongst cultured people of high ethical standing that while abortion was a crime it was not necessarily a moral offence, and the question was how far that would come to be taken into consideration from the legal point of view. In Russia, under the Soviet, abortion up to three months' pregnancy was legal, and a similar law had been drafted in Czechoslovakia, while in Austria and Germany public opinion, especially medical opinion, was tending in the same direction.

Professor LOUISE MCILROY mentioned the great ethical difficulty created by the large number of cases which came to hospital following an induced abortion. It always seemed to her a pity that no method was available to the medical man or woman, seeing such cases and knowing the facts, of preventing further abortions. What should the attitude of the medical profession be, with due regard to professional secrecy, in such cases?

Sir WILLIAM WILLCOX, in closing the discussion, said that the opinion of a part of the medical profession with regard to this question appeared to have altered of recent years. At a discussion on the subject at the Royal Society of Medicine two years ago (*British Medical Journal*, 1927, i, p. 188) he was astounded at the opinions expressed by some members of the profession with regard to the moral aspect. They seemed to regard it as it was said to be regarded in Russia and Czechoslovakia. References had been made to the scheduling of abortifacient drugs. It was a difficult question, but probably the law relating to the sale of poisons would be completely altered and reformed in the near future. In the report of the Departmental Committee now in the stage of production it was not unlikely that great changes in the scheduling of poisons would be recommended.

VACCINATION IN THE LIGHT OF RECENT EXPERIENCE.

IN the Section of Epidemiology of the Royal Society of Medicine on January 24th, under the chairmanship of Dr. F. E. FREMANTLE, M.P., Professor J. C. G. LEDINGHAM opened a discussion on vaccination in the light of recent experience.

Professor Ledingham said that much of the new knowledge about the vaccination process, perhaps the most important part of it, had emerged from comparatively recent experimental research, not only on vaccinia and small-pox, but on virus diseases generally. The impression which recent work left on his mind was that in the process of accommodation of the small-pox virus to the rabbit or calf some element responsible for producing generalized lesions as distinct from general invasion was lost; this element might conceivably be another virus. There was good evidence that vaccinia afforded better protection against small-pox than small-pox did against vaccinia. What might be called the "attenuated virus" in the Jennerian or Pasteurian sense remained the most efficient immunizing agent. It was possible, however, that variola-vaccine of known recent origin might be still more effective than vaccinia as ordinarily propagated. There was no more pressing problem than that of the standardization of the immunizing powers of viruses, and especially of vaccine strains. Professor Ledingham regretted that the continued prevalence of mild small-pox in this country during the past seven or nine years had induced so few health authorities or physicians to furnish systematic accounts of it in all its bearings. He preferred the designation "alastrim" for this disease, because, so far as he had been able to contrast what records we had of it with those of the South American and South African types, he had failed to note any outstanding differences. While he used the word "alastrim" for convenience of nomenclature, he did not ignore the fact that the disease was a small-pox variant. Was it a fixed and stable variant or a mutant? In all probability it was stable. When it was alleged that case mortality had risen to a significant percentage in a country in which it had previously been well under unity in spite of thousands of cases, he thought it would be found that sufficient consideration had not been given to the possibility that the virulent form of small-pox had been somewhere incident alongside the alastrim, but without definite transitions. His reading of Rajchman's recent analysis of small-pox incidence and case mortality in many countries (*British Medical Journal*, 1928, ii, p. 521) would seem to justify the conclusion to which Rajchman arrived, that two entirely distinct types of small-pox prevailed which apparently bred true. The virulent form had a mortality rate which fluctuated, in long waves of six or seven years' duration, between 10 and 30 per cent. The mild type, on the other hand, had minimal figures ranging from 0.1 to 0.3 per cent. There was no evidence that minimal periods in case mortality of the virulent type were simply transitions towards an alastrim period with its negligible mortality. The result was important, and went at any rate some distance towards the controverting of arguments based on a reputed increase of case mortality rates in countries where alastrim was widely prevalent. The speaker next made a brief reference to post-vaccinal encephalitis. Much had been made of the constancy of the period after vaccination at which nervous symptoms commenced in such cases, but he took the view that the apparent constancy of this period might fit equally well with the theory which presupposed some latent neurotropic virus in the vaccinees to be activated by vaccinia. Fortunately these cases of post-vaccinal encephalitis were rare; practically all of them had been primary vaccinees, and the great bulk children of school age. The reason why a primary vaccination in infancy was apparently a protection against such accidents in later vaccinations might arise simply from the fact that in the allergic or accelerated reactions exhibited by partially immune subjects the virus was precluded from invading the system, and thus from inducing these nervous disturbances to which the subject might perhaps be liable if the vaccination were primary. He thought the extreme rarity of these cases ought not to be allowed to exercise any unwarrantable depreciatory effect on the practice of vaccination, but this new experience should have the effect of furthering infant vaccination and of inculcating perhaps greater circumspection and caution in the primary vaccination of older children and adults. Finally, Professor Ledingham indicated certain lines on which a discussion involving the practice of vaccination might usually run. Was the mild small-pox or alastrim worth preventing by vaccination? It was said that many persons would rather have alastrim than vaccination; nevertheless, a residuum of cases of alastrim were characterized by troublesome symptoms. If it was necessary only to consider the individual victim, who had, indeed, only himself to blame for his neglect, and he and his equally neglectful contacts took all responsibility, including financial, it might be expedient to "let the disease rip" and save the public purse. But the variola tradition would be likely to prevent the public health officer from acquiescing in this view. Variola had always been ranked with plague and cholera as the death-dealing diseases against which a civilized community must protect itself; consequently, though alastrim was practically harmless, all the expensive paraphernalia of small-pox control and hospitalization must be maintained. Vaccination and revaccination could "deliver the goods," and was cheaper. So why not consider vaccination afresh and not as a traditional century-old policy? How were the merits of vaccination to be spread abroad? No serious attempt had ever been made to explain to all and sundry what vaccination was and did. The man in the street could talk about the planetary systems of an atom, but he had little notion of vaccination except that it had something to do with sore arms and possibly a calf. Cheap and authoritative pamphlets were wanted as part of an educational crusade, but not designed after the cold-blooded manner of the income tax form. Further to recommend it, he suggested that in the light of the nervous sequels it might be expedient to reduce the dose to one insertion, especially for primary vaccination at school age, on the chance that there might be some correlation between the dose of vaccine virus and the degree of risk of some latent parasitism being stimulated to activity. The reduction to one insertion would also diminish the risk of septic troubles; but the procedure could only be fully justified if revaccination in similar fashion and at the time of leaving school was made a routine practice. Finally, he suggested that compulsory vaccination—such as it was, or was not, at the present time—might be abandoned for vaccination on a purely optional basis, and be introduced to the people at large with the accompaniment of a sympathetic and informative propaganda. By concentration on the education of the public as to the value of vaccination, and by removing what compulsory elements remained in the Vaccination Acts, he thought it possible that a very much larger total of voluntary vaccinations and revaccinations might be secured throughout the country.

Dr. C. KILLICK MILLARD (M.O.H., Leicester) was glad that Professor Ledingham had spoken so frankly about small-pox and alastrim being two separate entities; it was time this was officially recognized. He preferred to call the two conditions major and minor small-pox; they were closely related, of course, and the latter might be a stable variant or a mutant, but there was a fixed difference. He doubted whether in any outbreak there had ever been a question in the minds of those called upon to deal with it as to whether the major or the minor condition was involved. The present position from the statistical point of view was very unsatisfactory. The two things were lumped together in the same column without discrimination. What possible value would posterity attach to our small-pox statistics? He could not help thinking that the lumping together of these two things as a single entity had been largely under the influence of ulterior considerations. Professor Ledingham had referred to the variola tradition. There was such a thing as a vaccination tradition, in which medical men were, unfortunately, brought up, and which influenced their attitude throughout life. He took exception to the remark that vaccination and revaccination "delivered the goods." It sounded very clear and definite, and if the reference

was to the individual there was no question about its truth, but if the reference was to the community it was doubtful whether the statement could be justified. In what community had vaccination and revaccination effectually prevented small-pox and small-pox deaths? It was quite easy for laboratory epidemiologists to take a piece of paper and say that vaccination performed every five or ten years would immunize the individual, and that it followed that if all the individuals in the community were taken and vaccinated at certain periods the community would be protected. But in practice this could not be done. The attempt to do it in a country like ours had failed, and always would fail. When he first went to Leicester vaccination on wholesale lines was quite out of the question, but the isolation and prevention of contacts was readily available, and there had not been a single death from small-pox in Leicester for many years. Now that major small-pox had left the country, and what one had to deal with was a minor non-fatal small-pox, the whole attitude towards this question was ready for readjustment. What justification was there for attempting to force vaccination upon the community? It was a proposition which would never be accepted by the people of this country unless virulent small-pox came back in a form which could not be controlled.

Sir GEORGE BUCHANAN agreed with Professor Ledingham that the extent to which vaccination could be effectively recommended to the people of this country would depend upon the question of the safety of the procedure. It was true that the risks from vaccination were, relatively to the immense number of vaccinations which took place without the smallest mishap, of a very minor order indeed; but the point was that the small-pox experienced in this country of recent years was of so mild a type that the average parent would only assent to this precautionary measure if he was assured that it involved not the slightest risk. These possible risks should be investigated very fully, and every bit of new knowledge which tended to their removal should be worked out. This was not solely a British problem. The rare cases of post-vaccinal encephalitis had occurred in other countries, notably in Holland. On the Vaccination Commission it had been felt to be very important to ask administrators in various countries to do what they could to ascertain whether any chance cases of post-vaccinal encephalitis were occurring in their areas without their knowledge. Certain countries, especially the Scandinavian, had undertaken to make an extensive search and report the results.

Dr. MONCKTON COPEMAN believed that probably the first occurrence of alastrim in this country was at Cambridge in 1903. About that time he had a talk on the subject with the late Sir Clifford Allbutt, who, in reply to his (Dr. Copeman's) suggestion that he felt certain that this would turn out to be a variant of small-pox, said: "Well, if this is small-pox there is an end of all diagnosis!" At a later period Sir Clifford Allbutt made acknowledgement of Dr. Copeman's truthful prediction. The alastrim which occurred at this period was of a more severe type than in most of the recent outbreaks, the mortality was distinctly higher, and it was interesting to observe a considerable difference in the mortality rate as between the vaccinated and unvaccinated, showing that in alastrim vaccination had a considerable effect. In his mind there was no question that alastrim was a variant of small-pox, and not a separate disease. He thought it unfortunate that originally vaccination should have come under the administration of the Poor Law, which gave it a certain stigma, but in the future, with this service placed alongside other public health services, an improvement in public appreciation might be expected.

Dr. R. P. GARROW said that those in a position to make observations about the disease from personal observation—that is, medical officers of health—did not, as a rule, care to express views which were not quite orthodox. Official medicine liked always to look in the same direction. On the question of variants, he was of opinion that there were two diseases. He had been medical officer of health for eight years in a town (Chesterfield) where the mild disease had never really vanished from the vicinity. It had not been in the town itself, but in the surrounding district of north-east Derbyshire, but vaccination was less prevalent there now than at the beginning. People had come to discover that an attack of this disease, on the whole, was better than submission to vaccination. It involved quite a pleasant three weeks in hospital, and they received their insurance money. He did not think the disease was worth preventing, at all events if it meant detriment to the true cause of vaccination by describing the disease as loathsome and fatal when it was neither. He had seen 2,000 cases, and had never witnessed anything suggestive of haemorrhagic or toxic phenomena. It had been repeatedly said that the disease was increasing in virulence; he had visited parts of the country from which these statements emanated, and had found no evidence in support of any change whatever in the character of this disease. What Dr. Millard had really meant was that vaccination did not protect the community because the community did not avail itself of the protection. There were communities completely protected because completely vaccinated. He asked Dr. Millard to reconsider his position. If he admitted, as he appeared willing to do, that a community vaccinated and revaccinated 100 per cent. was a community in which he could not conceive a case of small-pox occurring, then he should cease to repeat that vaccination, while protecting the individual, did not protect the community.

Sir WILLIAM HAMER asked the Section seriously to consider whether there was really any evidence that this encephalitis in recently vaccinated children was anything more than a purely fortuitous occurrence.

Dr. R. W. JAMESON said that it was all very well to declare that vaccinia might activate some latent neurotropic virus, but nobody could say that these children who died of post-vaccinal encephalitis would have died had they not been vaccinated. That was the point which would affect the general public. It was asserted that in infant vaccination post-vaccinal encephalitis was not forthcoming, but in children under 1 year old who died the cause of death, which might be put down as marasmus and convulsions, was often not really known. There was no justification for saying that post-vaccinal encephalitis was even uncommon after infant vaccination. The vaccination condition in the case of infants ought to be stated on the death certificate. To talk about vaccination and revaccination in non-epidemic times was just about as practicable as to talk about staying in bed to avoid street accidents. As to propaganda among the general public, vaccinists were not ready to conduct it; they did not know the protective value of vaccination, the duration of the protection, or the infectivity of small-pox. All they knew was that vaccination did confer some temporary immunity, very much more lasting in variola major than in variola minor.

Dr. MAJOR GREENWOOD thought Dr. Garrow illogical in his attack on the logic of Dr. Millard. Much nonsense was talked about vaccination having modified the epidemiological history of small-pox. The fact was that in respect of the whole question of herd immunity as against individual immunity we were as yet only at the very beginning.

Dr. J. A. H. BRINCKER (London County Council) gave a brief account of recent experience amongst London school children. During the last two years this mild small-pox had infected children attending forty-six of the council schools, and in these schools vaccination was performed in so far as the parents consented. Something like 6,000 children had been vaccinated in this way, and until a week or two ago there had been no case of post-vaccinal encephalitis, but during the Christmas holidays one case occurred, with a fatal termination.

Dr. S. P. BEDSON hoped that the possibility of finding a better method of prophylactic vaccination would not remain unexplored. He did not think it possible to popularize the present method because of the fatalities that had occurred, however few in number these might be. Professor ARTHUR ELLIS concurred: he had seen four healthy children who within three weeks were dead of post-vaccinal encephalitis. This very serious condition was recognized by the authorities as far back as 1922, and there had been more deaths from post-vaccinal encephalitis than from small-pox. A more efficient type of vaccination was certainly needed, and a lead had been given by the work on the filter-passing

viruses. Dr. KNOWSLEY SIDLEY asked some questions about the necessity for more than one inoculation, and also as to the origin of the lymph, which last he thought a matter of great importance from the public point of view.

Professor LEDINGHAM, in reply, said that he could not see the logic of Dr. Killick Millard's position, but he was not prepared to discuss the subject; Dr. Garrow had dealt with it effectively. A more safe method of vaccination was, of course, greatly to be desired. These methods of immunization were always somewhat of an experiment, but, happily, human volunteers had never been lacking, and they had rendered fine service. Research on a large scale on post-vaccinal encephalitis had not yet been conducted; it was only of recent years that these serious accidents had occurred. Workers on the subject were in the dark as to why they should have happened, but he could not agree with Sir William Hamer that they were fortuitous.

Reviews.

CHRONIC ARTHRITIS.

IN the preface to his book on *Chronic (Non-tuberculous) Arthritis*[1] Mr. A. G. TIMBRELL FISHER points out the large amount of suffering and disability in this country due to so-called "rheumatic" diseases. The chief medical officer to the Ministry of Health has estimated that this group of diseases is costing the country in sick benefit alone some two million pounds a year, and half of this wastage is due to chronic joint disease. Yet after many years of experience we are not in a position to substantiate any theory of *etiology, pathology, or treatment*; and even diagnosis, as far as classification is concerned, is a subject of dispute. Some forms of the disease have existed since prehistoric times, and for generations they have concerned medical authors and spa physicians, yet therapeutic progress has been small. Mr. Fisher, rightly as we think, would have us go back to Hunterian principles and study with the help of all modern means first the physiology of joints and then the pathology of arthritis, before attempting classification or laying down rules for treatment. He has acted on these principles, and the book before us sets forth clearly the results of his labours.

Beginning with a study of the histology of joint-structures and an experimental investigation of their reaction to injury or toxins, Mr. Fisher goes on to discuss the pathological appearances found in various joints in divers stages of disease. The result of this investigation is the demonstration that, to a very large extent, the changes which occur, *especially in cases of osteo-arthritis*, are of a compensatory or curative nature. Those students of this subject who have been bewildered by the elaborate systems of classification adopted by some writers, notably on the Continent, will be relieved to find that, although he recognizes much variety and many differences between individual cases, Mr. Fisher divides all cases into two broad classes—namely, rheumatoid arthritis and osteo-arthritis. The first type is preponderatingly toxic in its etiology, and likely to be found in those with an hereditary predisposition; the other is caused by trauma and defective nutrition of joint cartilage, *from whatever cause these may arise*. Osteo-arthritis may, however, be secondary to rheumatoid arthritis, the latter acting as a cause of malnutrition, and thus indirectly of a lesion of the joint cartilage and the underlying bone.

As regards treatment, Mr. Fisher lays due stress on the importance of orthopaedic measures in the management of the disease in all its stages. He emphasizes the importance of knowing when and in which cases movement should be encouraged, and in which cases ankylosis in the most favourable position should be aimed at. Operative treatment such as arthroplasty, cheilotomy, and excision receives full consideration. Such subjects as gout and neuropathic joint disease are briefly dealt with, but the author has wisely devoted most of his attention to so-called rheumatic arthritis.

This work represents a most painstaking and illuminating attempt to set the physiology, pathology, and treatment of joints and their disorders on a more sound basis than heretofore. Mr. Timbrell Fisher has established the existence of facts hitherto unknown and has made valuable contributions to our knowledge. His book is to be recommended to everyone who is interested in the study and relief of chronic joint disease. The illustrations are many and excellent.

BEDSIDE DIAGNOSIS.

IN choosing the title *Bedside Diagnosis*[2] for the four handsome volumes which have recently appeared under his editorship, Dr. GEORGE BLUMER's object has been to call attention to the importance of observation by the unaided senses, or at least by the senses aided only by such simple instruments as the clinical thermometer and the stethoscope, and by those examinations which any physician can make without extensive laboratory equipment. In many of the more recent publications, both in this country and in America, there has been a wholesome tendency to stress the importance of purely clinical observation and to combat *the dangerous idea, which threatened to win popularity*, that medical diagnosis was becoming mainly instrumental—an affair of test tubes and x-ray photographs. Dr. Blumer, in his preface, very wisely remarks that new methods of a technical nature are continually appearing, and there is a constant tendency to overrate these in spite of the fact that under the test of wider experience many *of them prove to be of little value*. On the other hand, there will never be a time when the use of the senses will cease to be the most important factor in diagnosis. Thus in the work under review, while all modern laboratory tests are mentioned in their appropriate places, the greatest emphasis is laid upon the methods of complete and thorough physical examination of the patient.

The complete work is a symposium in which sixty-four authors have taken a share, each subject being treated by a specialist recognized as such in his own particular sphere. The art of diagnosis alone is discussed; no attempt has been made to present a complete textbook or to deal with therapeutics. That the subject has been very thoroughly treated is shown by the fact that the articles fill three stout volumes. Volume I is devoted to the infections and intoxications, deficiency diseases, metabolic diseases, developmental diseases, diseases due to physical agencies, such as compressed air, fatigue, heat and cold, and the diseases of *the locomotor and digestive systems. Volume II deals with* the liver and gall-bladder, the pancreas, peritoneum, lungs and bronchi, mediastinum, the circulatory system, the blood, lymphatic system and spleen, and the urinary system. In Volume III are described disturbances of the endocrine system, the nervous system, and vasomotor, trophic, and psychiatric conditions. In each section adequate space is devoted to the discussion of differential diagnosis, and very complete lists of references to original papers are given with each chapter. Each volume is furnished with an index to its contents, while the fourth volume of the series consists of a general index for the whole work—a very useful aid in giving speedy access to any particular point the reader may desire to refer to, and of a size easy to handle.

It would be impossible in a work of this magnitude to review every section in detail; we must be content with noting the general high standard of excellence of the articles; they are uniformly just of the right length for the subjects touched upon, and nothing of real value seems to have been omitted. The subject-matter is presented in a straightforward manner and with very few of those peculiarities of literary style which arouse a feeling of irritation in the English reader. We hesitate to single out any one section for praise, but we may perhaps call particular attention to the chapters dealing with disturbances of the endocrine system. This section is of special interest, and has been handled in a very well balanced manner by the author, Dr. Hans Lisser. The photographic reproductions are very numerous, and have been

[1] *Chronic (Non-tuberculous) Arthritis.* By A. G. Timbrell Fisher, *M.C.* London: H. K. Lewis and Co., Ltd. 1929. (Demy 8vo, pp. xii + 222; 133 figures, contained in 93 plates and the text. 25s. net.)

[2] *Bedside Diagnosis.* Edited by George Blumer, M.D. Philadelphia and London: W. B. Saunders Company. 1928. (Roy. 8vo: Vol. I, pp. xvi + 832, 155 figures; Vol. II, pp. ix + 851, 257 figures; Vol. III, pp. viii + 1053, 388 figures; Index, pp. 143. £5 15s. net the set.)

chosen with a due regard to the points it is wished to illustrate. The x-ray pictures of the sella turcica in abnormal conditions of the pituitary body are really fine, of their kind real works of art.

The four volumes are well printed and bound, and should make a handsome addition to the library shelves of any practitioner, be he general or special.

DENTAL MEDICINE.

MR. F. W. BRODERICK believes he has found the constitutional cause both of dental caries and of pyorrhoea, and under the title *Dental Medicine*[3] elaborates his theories. Briefly, he holds that dental caries is dependent upon a condition of acidosis, and that pyorrhoea is the result of a compensation for an alkalosis. Restating his thesis with regard to dental caries, the author says:

"It amounts to this. That in the compensation of a tendency to an acidaemia there is a drain on the available alkali in the body to neutralize the excess of acid, and that under these circumstances lime salts that are usually provided for such purposes as stabilizing the alkalinity of the saliva, and through this of hypercalcification of the teeth, or of providing the necessary salts for bodily repair and replacement, and all the other purposes for which calcium salts are required to keep the organism in health, are no longer available; that under these circumstances, if local conditions are favourable, a very definite breaking down of the tooth tissue may result, which will terminate in that condition that we designate dental caries."

This, after some two hundred pages of argument, is a rather disappointing presentment of the case. Hypercalcification of the teeth is by no means a proven quantity; and how the very definite breaking down of tooth tissue which will terminate in dental caries is brought about by a saliva of slightly acid *p*H value is not made clear by the author. The determining factor in pyorrhoea is, in his view, an attempt to rectify an alkalosis by the deposition of subgingival tartar from over-alkaline saliva; dirt and infection are not germane to true pyorrhoea, which the author endeavours to show is always associated with a salivary *p*H value of over 7. In considering the application of his theory, Mr. Broderick hopes to produce immunity to dental caries by the avoidance of acidosis, primarily by administration of large doses of sodium bicarbonate, and to pyorrhoea by administration of ammonium chloride, but he warns the reader that the value of the salivary *p*H is dependent on many variable factors. In chapters on civilization as a factor in the problem, and on dental sepsis as a factor in disease, he finds it possible to explain and perhaps rectify a large number of varied disorders by application of his theory—and if he is right dental medicine is indeed a subject worthy of attention.

Our general criticism of a book which will provide much food for thought is that there are too many quotations, and it is difficult to see the wood for the trees.

In common with many others, Mr. F. TALBOT, the author of *Actinotherapy for Dental Diseases*,[4] is seeking a means whereby the constitutional factors of dental disease—caries of the teeth and pyorrhoea—may be utilized as a defensive mechanism, and thinks he has found it in actinotherapy. The general tone of his book is tentative; of local mouth irradiation we read "good results have been reported in the treatment of septic tooth socket and pyorrhoea," and the sum of the argument in favour of skin irradiation in dealing with dental caries and pyorrhoea seems to be "it ought to do good seeing its value in other infective conditions." The clinical evidence which the author offers is not very convincing. The most positive evidence quoted comes from America. Three hundred school children were divided into two groups—control and irradiated. "On reassembling after vacation the latter group showed almost complete arrest of caries, while the former group stood in marked contrast in their progressive caries." The clinical results obtained in pyorrhoea seem to have been less convincing, and the author remarks, "In other cases the disease is so chronic and so dependent upon constitutional conditions that little good can be expected from ultra-violet radiations." But Mr. Talbot has no wish to exaggerate his clinical successes; rather he wants to open out a new field, and his remarks on apparatus and technique, and on the danger signs in the patient, are eminently practical and of themselves make this little book a valuable guide to all who intend practising dental actinotherapy. There is a sympathetic preface written by the late Dr. Robert Knox.

PSYCHOBIOLOGY.

PROFESSOR C. v. MONAKOW and Dr. R. MOURGUE, in their *Introduction Biologique à l'Etude de la Neurologie et de la Psychopathologie*,[5] discuss the problems of neural and of psychic activity and disorder from a purely biological standpoint. They approach their subject along much the same lines as those made familiar to us by the writings of Hughlings Jackson, but in contradistinction to what they term his Spencerian mechanism of outlook they expound a system of dynamic psychobiology. To maintain the same terminology in describing phenomena ranging from the lowliest activities to the highest psychic creations would appear to present insuperable difficulties; indeed, the authors point out the inadequacy of many of our current appellations. Such a term as "vision," for example, is commonly applied, as though with equal appropriateness, to a process in invertebrate animals and in man. Such usage, by ignoring evolutionary history, vitiates clear thinking and leads to the identification of widely different activities. If, as the authors maintain, it is desirable to trace the self-same process throughout its evolutionary levels, and describe it always in the same terms, then clearly our current vocabulary is ill suited to the exposition of biological phenomena. For example, such words as "attraction" and "repulsion," suitable for the description of amoeboid behaviour, do not adequately convey higher activities, such as sympathy and antipathy, of which they are yet the basis. The authors suggest the substitution of the works "klisis" and "ekklisis" to cover the whole range of the activities in question. They use the term "protodiakrisis" to designate what in man we are accustomed to call judgement and discrimination. The term "hormé" they use to apply to the mainspring of instinctive action, the primal urge or "élan vital." Since so-called instincts are modified by experience, they have thought it necessary to differentiate between the primitive forms of instincts, which they term "hormétères," and forms elaborated in the course of development, which they term "noohormétères."

Considerable space is devoted to the discussion of what the authors call "syncidesis" or "conscience biologique," the self-regulative principle of the organism whereby the various instincts are unconsciously valuated. This principle, it is pointed out, may be disturbed by suggestion from without, and the authors discuss in this connexion rationalizations made by the subject of post-hypnotic suggestion, and describe other manifestations of what they term "causalité agglutinée."

The work is in two sections, one dealing with integration of function, the other with its disintegration, the conception of instinct in man forming the central point of their study. The authors define "instinct" in purely objective (indeed, in teleological) terms, which, though probably valuable to the biologist, is of little service to the psychologist, who cannot ignore subjective experience. Freud is criticized for his neglect of morphological considerations, and for his undue attachment to the language of associationist psychology. Kraepelin is criticized on much the same grounds.

We are inclined to feel that the time is not yet ripe for a psycho-physiological correlation to the extent which the authors envisage. Their attempt to establish a uniform

[3] *Dental Medicine.* By F. W. Broderick, M.R.C.S., L.R.C.P., L.D.S.Eng. London: W. Heinemann (Medical Books) Ltd. 1928. (Demy 8vo, pp. xv + 365. 21s. net.)

[4] *Actinotherapy for Dental Diseases.* By F. Talbot, L.R.C.P., M.R.C.S., L.D.S.Eng. With a preface by Robert Knox, M.D., M.R.C.P. London: J. Bale, Sons and Danielsson, Ltd. 1928. (Cr. 8vo, pp. x + 84; 6 figures. 5s. net.)

[5] *Introduction Biologique à l'Etude de la Neurologie et de la Psychopathologie.* Par C. v. Monakow et R. Mourgue. Paris: F. Alcan. 1928. (6½ × 10, pp. xi + 416; 33 figures, 2 plates. 60 fr.)

biological conception of both fields of thought is eminently praiseworthy, and although at the outset it may prove somewhat bewildering, there is no doubt that the future will see a great expansion of the territory they have explored.

MILK LEGISLATION.

For some years past Messrs. J. Bibby and Sons, Ltd., Liverpool, the cattle food vendors, have examined samples of their customers' milk in their laboratory, and helped milk producers with their difficulties, legal and otherwise. As a result of the experience so gained, the laboratory manager, Mr. JOHN HANLEY, F.I.C., F.C.S., has, with the aid of other workers on the subject, written Section II of *Bibby's Book on Milk*.[1] The legislation on milk is given fully, together with annotations by accepted authorities and full reports of the most important cases decided. The main theme of the text written by Mr. Hanley is the injustice which he considers has arisen as the result of the Sale of Milk Regulations, 1901, made by the Board of Agriculture. He puts the position very fairly when he says:

"It was, of course, impossible to define minimum chemical limits for the composition of pure milk, but figures were selected distinctly below the average composition of milk, and it was decreed that when milk was found below these figures (3 per cent. fat and 8.5 per cent. for non-fatty solids) a presumption that it was *adulterated or deprived of something arose. This presumption* was really intended to compel the vendor to prove the genuineness of the milk, and is in itself an admission that the analyst cannot tell whether it is genuine or not, but that he suspects it."

He then goes on to assert:

"This presumption and the conceptions underlying it have been so badly misused by some and misunderstood by others that it has become evident that it must be abandoned."

He proposes that—

"The law should be amended so that no seller should be convicted on a charge of selling adulterated milk unless the prosecutor proves that the milk was adulterated and that the seller knew or ought to have known it was adulterated. In cases where the above cannot be proved the whole procedure should be shifted *from the region of criminal law to that of commercial or civil law.* To give effect to this principle there should be an implied contract between milk sellers and local authorities under which the latter could claim a small sum as damages for breach of warranty in any case where milk sold is below a certain standard of quality. . . . The minimum composition stipulated would reasonably coincide with the seasonal variation in milk known to occur in the particular district concerned."

But a large majority of public health workers consider that the present state of the law, as laid down in Hunt *v.* Richardson, is to the prejudice of the public; if the producer can show that the herd concerned gives milk inferior to the standard fixed by the Board of Agriculture he cannot be convicted. The vast bulk of milk produced in this country contains considerably more fat and non-fatty solids than is required by the Regulations, so much so that the advisability of raising the standard rather than the lowering of it might justifiably be considered. It does not seem fair that a producer of so important a foodstuff should be able to place on the market an article which is markedly inferior to that of his competitors and obtain the same price for it. Some large purchasers of milk pay the farmer according to the fat content of the milk: in this book no emphasis is laid on that fact. No one denies that, from time to time, the mixed milk drawn from a herd, and especially the morning milk of a small herd, falls below the standard, but the view generally held is that it then becomes the duty of the milk producer to take such steps as will remove this inferiority. Mr. Hanley points out that any "appeal to the cow" should be made at the next corresponding milking.

NOTES ON BOOKS.

THE third edition of Dr. ELLIOTT P. JOSLIN's book on *The Treatment of Diabetes Mellitus* was reviewed in these columns on February 9th, 1924. At that time insulin therapy was in its infancy, and the author's views on the technique and the indications for its administration would no longer be tenable to-day. The fourth edition,[2] which has been revised, enlarged, and rewritten, brings the account of diabetes therapy up to date. As before, the book opens with a discussion of insulin, but it is a discussion, not of a new agent of unknown potentialities, but of a proved therapeutic technique rapidly approaching stabilization. The author is, however, careful to point out that the treatment of the diabetic has not been simplified by insulin, but has been made more complex. The patient following the course previously in fashion was scarcely affected by small variations in treatment; but the patient taking insulin, to use a metaphor of the author's, is like a rapidly moving machine to which a slight swerve of the wheel will bring disaster. "During the last five years whenever I have read, heard, or seen anything which I felt would be of value in the treatment of my diabetic patients I have recorded it, and later, if on second and third perusal it has seemed worth while, inserted it into this book." This quotation may give some idea of the scope of the book, which deals extensively with the physiology, pathology, diagnosis, and symptomatology of diabetes, the diet of diabetic patients, the surgery of diabetes, and the use of various remedies, such as synthalin, myrtillin, and liver. The chapter on the treatment of diabetes in children is particularly valuable. The great change in the prognosis of diabetes brought about by the introduction of insulin has completely altered the regime of the young diabetic subject; it is now necessary to take long views, to plan a diet and mode of life for many years ahead, in the hope perhaps that, in some cases at any rate, regeneration of the pancreas may occur and the sugar tolerance ultimately become normal.

Professor NELLIS B. FOSTER's book on *The Examination of Patients*,[3] which first came out in 1923, has, after being reprinted three times, been revised, expanded both in matter and by 18 new figures, and slightly increased in price. In this second edition the author has, in response to repeated requests, treated the subject of differential diagnosis in the same concise manner as in his previous description of the methods of examination. The style is attractive, and carries the reader pleasantly along. Thus "Chlorosis has become a rare disease. The substitution of a tennis racquet for a fan has severed kinship between the modern girl and her sister of the eighteenth century novel," and "When there is a suspicion of empyema of the pericardium the question should be decided by puncture. Timidity in tapping the pericardial sac costs many lives." The succinct account of tularaemia bears witness to the revision; on the other hand, in a new footnote on pernicious anaemia, Knud Faber is instanced as prominent among those who consider achylia as the cause of the disease: this is perhaps too definite, for Faber, while admitting that achylia is the most frequent cause, states that it is not the only cause, and insists on a continually recurring intoxication, usually by a protein of intestinal origin, as the essential factor. As a whole the work fully justifies its obvious popularity in America.

With the idea of providing a volume on therapeutics which should be more than a list of suitable drugs, the late Dr. A. MARTINET and Dr. P. DESFOSSES have edited the prescriptions of a general practitioner,[4] using the term "prescriptions" in the widest sense to include everything which the patient must be told. They have the collaboration of thirty authorities, who contribute in all 250 examples. Each of these, under the name of some disease, deals first with the regime as a whole which the patient must adopt, with details as to diet and physiotherapeutic measures. Then follow drugs set out in prescription form, and in certain examples local and systemic treatment are dealt with separately. Indications for special forms of treatment, such as at a spa, follow in some instances. The whole work is well planned, and the introductory example of a general scheme for ordering treatment gives a very clear summary of what a practitioner ought to do.

We have perused *Muter's Short Manual of Analytical Chemistry*[5] and observe that it deals with an extensive field of chemistry within the limits of a comparatively small space. This would appear to be the cause of its chief defect, for while it treats of subjects too numerous for the beginner to deal with, the treatment is not sufficiently precise for the more advanced student. It appears to be intended mainly for students of pharmacy. We think that, useful as the book may be in leading the student to make experiments, he would be well advised not to regard it as the only book he will need, but should rather use with it another work as companion for the sake of obtaining a second view of the chemical facts from another aspect.

[1] *Bibby's Book on Milk*. Section II. Twelfth edition. Liverpool: J. Bibby and Sons, Ltd. 1928. (Med. 8vo, pp. vi + 457; illustrated. 30s.)

[2] *The Treatment of Diabetes Mellitus*. By Elliott P. Joslin, M.D. Harvard. Fourth edition, enlarged, revised, and rewritten. London: H. Kimpton. 1928. (6 × 9½, pp. xxii + 988; 33 figures, 1 plate. 42s. net.)

[3] *The Examination of Patients*. By Nellis B. Foster, M.D. Second edition, revised. Philadelphia and London: W. B. Saunders Company. 1928. (Med. 8vo, pp. 392, 83 figures. 21s. net.)

[4] *Les Ordonnances du Médecin Praticien*. 250 Prescriptions de Thérapeutique Clinique. Paris: Masson et Cie. 1928. (6½ × 9½, pp. 515; 4 figures. 45 fr. sans majoration.)

[5] *Muter's Short Manual of Analytical Chemistry*. Edited by J. Thomas, B.Sc. Lond. Eleventh edition. London: Bailliere, Tindall and Cox. (Roy. 8vo, pp. xiv + 223, 56 figures. 8s. 6d. net.)

A STUDY OF THE MENINGOCOCCUS.

IN a monograph[1] just published Mr. E. G. D. MURRAY of the Department of Pathology, University of Cambridge, gives the results of a close, sustained, and critical scrutiny of the general biology of the meningococcus and of its reactions to its environment. Investigations of the meningococcus conducted during the war generally had a strictly utilitarian purpose; inquiries centred round the problems of the meningococcus as an infective organism, the genesis of the outbreaks of cerebro-spinal fever, and the specific treatment and control of the disease. The detailed bacteriology of the meningococcus and the tolerance and antagonism it meets in the animals it infects; the methods of altering its virulence in artificial media; its cultural requirements; the properties of its endotoxin—these more academic problems, necessarily studied only incidentally in the period 1915–18, have been investigated since the close of the war by Mr. Murray, working under the auspices of the Medical Research Council. A great part of his monograph is occupied with a detailed account of the distribution, morphology, and physiology of the meningococcus, the latter being concerned with its reproduction, cultural characters, and conditions, its fermentation reactions, and its synergic and antagonistic relations with other bacteria. It is interesting to note that the meningococcus seems to be very intolerant of association with other bacteria, both *in vitro* and *in vivo*, a synergic reaction invariably favouring the other organism, and antagonism always being against the meningococcus.

Action of Antiseptics.

Interest in the feeble though varied resistance offered by the meningococcus to antiseptics has been stimulated by the desire to disinfect the nasopharynx of carriers. Weichselbaum has stated that 1 in 22,500 formaldehyde rapidly destroys the meningococcus, and that 1 in 800 phenol hinders its growth. Dopter showed that while a wide range of antiseptics, including mercuric chloride, creosote, lysol, menthol, and formalin, rapidly kills suspensions of meningococcus cultures, others—for example, hydrogen peroxide and wintergreen—are without even inhibitory effect on growth; the most powerful effect he found was produced by eucalyptus. Gordon and his colleagues, in the course of experiments on the disinfecting power of an atmosphere heavily charged with chloramine-T, found that they were able to obtain striking effects both in freeing heavily infected carriers and in reducing the carrier rate in depots where it was high. This method, though producing only a limited fall in the carrier rate, and indeed leaving a considerable residue of carriers after the sprayings have stopped, may have value in keeping down the carrier rate when it is not possible to avoid overcrowding a susceptible population beyond the limit of safety.

Virulence.

The definition of virulence as "the capacity of the bacterium to live and multiply in the living tissues of the host" assumes a potentiality in the bacterium independent of any contributory action on the part of the host. It involves the further assumption that to combat virulence the host must acquire new-formed defence mechanisms; and to explain the varying incidence of the disease a hypothetical "susceptibility" in which individual subjects differ among themselves has to be invoked as well. Such assumptions, in Mr. Murray's view, merely serve to confuse the issue. The defensive forces of the host are primary and secondary. Of the first kind are the adaptations of its physiological processes designed to deal with physical and chemical accidents, and to eliminate unwanted metabolites; other primary agencies are the processes of repair, of excretion, and selection; secondary forces comprise the immunity responses. The defences of the bacterium against the attack of the host involve resistance to phagocytes, rapidity of multiplication, the formation of toxins, and interference with the circulation of the blood and lymph. Failure of the immunity responses of the host may be due to damage to specialized cells by a high concentration of the bacterial forces. In Mr. Murray's view virulence is the resultant of the opposed systems of forces exerted physiologically by both the parasite and its host in the efforts of each to maintain its life and health. Such a definition, besides absorbing the observed facts, has the further merit of delimiting two main lines of investigation—namely, the measurement of the "resultant force" (virulence) and its direction, and the analysis of the contributing "forces" of both parasite and host. Virulence is measured by determining the minimal lethal dose of the living culture by a stated route in a given variety of animal. For the meningococcus it is suggested that the most satisfactory test is the determination of the least amount of viable young culture which, injected intraperitoneally in a single dose, will cause the death of 20 grams of mouse within forty-eight hours.

Determination of Minimal Lethal Dose.

In determining the minimal lethal dose it is necessary to take into account the extent to which the bacterium causes natural disease in the available experimental animal, and the nature, degree, and rapidity of alteration that may occur in the bacterial culture under the conditions imposed by growth on artificial media. Thus in working with the meningococcus the most useful animal is the mouse, in which death takes place within forty hours in response to a dose large enough to be measured with sufficient accuracy. Allowance must be made for attenuation by subculture, and the rapid variability of the fatal dose, by virtue of which animals may resist as much as ten times the mass of cocci which on a previous occasion was lethal. By controlling a variety of conditions—for example, the viability, the purity of culture, the constitution of the media, the phase of growth, and the age and subculture—Mr. Murray has found it possible to establish a minimal lethal dose for the meningococcus which ranges between 8 milligrams and 0.5 miligram for 20 grams of mouse.

Alteration of Virulence by Animal Passage.

In attempting to raise the virulence of the meningococcus by intraperitoneal passage Mr. Murray found great difficulty in recovering the organism from the peritoneal exudate of mice which had succumbed to a large dose of a culture of low virulence. Resort to cultures of higher virulence did not remove this difficulty; nor was it affected by using alternating cultivation and passage, or direct transference from mouse to mouse. Almost invariably, however, Mr. Murray found large numbers of meningococci together with masses of phagocytes in the tightly rolled up omentum of the experimental animal. When a mouse dies as the result of multiple intraperitoneal minimal lethal doses of a moderately virulent strain, very large numbers of healthy-looking meningococci, of which comparatively few are intracellular, are found in the peritoneal exudate. Their presence depends on the animal having received an overwhelming dose, the number of cocci decreasing noticeably as the dose is diminished. The influence of increased doses is to augment the number of cocci, mostly extracellular, in the peritoneal exudate, though the above-mentioned relation to mass of dose can still be made out. The numerical and qualitative relation of phagocytes to cocci has an important bearing on the type of infection. When the total mass of cocci is small the cells for the most part stain normally; when large, only few healthy cells are to be seen. The phagocytosis is shown to depend on the ingestion of cocci, interference with leucocytes which prevents their active participation in the combat not only, resulting in the presence of more free cocci but in less damage to the cells. When mice recover the majority of cocci are intracellular, the presence of free cocci and the degree of cellular damage again depending on the mass of the dose.

Evidently, then, the leucocytes play an important part in combating the infection, and it should be possible to raise the virulence of the meningococcus by intraperitoneal passage. Mr. Murray frequently observed, however, that the virulence of a strain recovered from animals would on one occasion be raised and on another lowered, and that there was great variation in the number of viable

[1] Medical Research Council. Special Report Series, No. 129. Price 1s. 6d. net.

organisms discoverable in animals even when the strain which killed them was highly virulent. He assumed, as a working hypothesis, variation among individual cocci whereby some might be more likely to reproduce robust offspring than others, and that the phagocytes and leukines might exercise a selective action. If only the cocci of considerable parasitic capacity survived, the maximum virulence of a strain could be obtained in a single passage; should, however, the resistance of the host be low it would be possible for cocci of mean virulence to grow and even to gain the majority, and so the virulence of the recovered strain would be unchanged or even lowered. Thus the relation between virulence and animal passage is essentially a matter of chance, and it appears impossible to reproduce at will exactly the conditions required.

Interference with the Defence Mechanism.

Mr. Murray found that a dose of meningococcus which failed to kill the standard mouse, and which on microscopical examination proved to be almost completely phagocyted, invariably proved fatal to mice which had received 5 mg. of carmine, preferred by the leucocytes to meningococci, and that the vast majority of cocci were then extracellular. It is thus possible to make a culture appear more or less virulent by active interference with the defence mechanism of animals of average resistance. There is further some converse evidence that the apparent virulence may be decreased by augmenting the defences of the host, thus leading to the conclusion that virulence is not a property of the parasite alone, but the resultant of the physiological forces exhibited by both parasite and host.

Toxin.

Probably in those animals which die as the result of the injection of meningococci, but in which meningococci cannot be demonstrated, the cause of death is the massive liberation of endotoxin by the rapid lysis of the cocci. The presence of endotoxin is demonstrated by the fact that a specially prepared culture free of viable cocci, injected into the animals, proves fatal in a dose which varies from one preparation to another. The amount constituting a lethal dose of intact killed cocci is invariably larger than that of living virulent cocci, a disparity which is more accentuated the more virulent the strain. Further, the lethal dose of intact killed cocci is much larger than that of lysed killed cocci. In the quantitative studies of meningococcus endotoxin it is important to ensure the breaking up of all the cocci present and the liberation of free unaltered contents. Though these conditions have not yet been realized, Mr. Murray demonstrates the possibility of improving certain known methods with ultimate hope of success.

Relation of Endotoxin to Virulence.

Though endotoxin production varies considerably in different strains, any given one will produce endotoxin of as high a value at the end of years of subculture as it did at the beginning. On the other hand, Mr. Murray suggests that it is impossible to persuade a poor producer of endotoxin to improve its product. The production of endotoxin is apparently independent of the loss of virulence by the strain in culture, and is not increased by greatly increasing the virulence of the strain.

Immunity Reactions.

Bacteriologically, anyone harbouring the meningococcus is infected, and the development of the disease to the point at which the reaction of the host appears as signs and symptoms is merely a matter of degree. From this point of view very few people are immune, and from the high carrier rate discoverable under favourable conditions it is evident that their chances of infection depend on the intensity of their exposure. Probably the main natural defence is phagocytosis, the meningococcus being extraordinarily susceptible to lysis within the phagocyte. If there is sufficient inflammatory exudation probably bacteriolysis by alexine comes into play; since the meningococcus exhibits a low order of virulence these natural defences are usually effective.

Acquired Immunity.

Although immune bodies have been demonstrated in the blood of cases of meningitis by a number of workers, the outstanding feature of their investigations is the irregularity of the results. The development of agglutinating power of the patient's serum may fail altogether, and its presence or absence bears no relation to the prognosis. There seems evidence to show that with the serum of cerebro-spinal fever cases phagocytosis is more marked than with normal serum, but the findings of the opsonic test are unreliable because of the many pitfalls in technique. Various workers have demonstrated a complement fixation reaction, but generally without any indication of the agglutinating type of coccus concerned. It has further been shown that the serum of cerebro-spinal fever patients is more definitely bactericidal than normal human serum. Mr. Murray discusses in detail the identification of the meningococcus by its agglutination reaction and the classification of the various strains into distinct bacterial types.

The Production of Antiserums.

In a review of the methods used for estimating the potency of antimeningococcus serum Mr. Murray concludes that the reactions of greatest importance are: (1) the capacity of the serum to neutralize endotoxin; (2) its ability to promote phagocytosis of virulent cocci in the presence of alexine; and (3) its bacteriolytic power. At present, he says, there appears to be very little attempt to standardize antimeningococcus serum, a neglect which is reflected in the therapeutic inefficiency of many of the serums used.

Infection.

In 95 per cent. of all cases of cerebro-spinal fever infection results from contact with the so-called "healthy" carrier. Overcrowding in sleeping quarters offers the greatest danger by shortening the distance between man and man, thus tending to produce a higher carrier rate in a community and facilitating the transmission of infections of the upper respiratory passages. Mr. Murray classifies carriers as primary and secondary, the former being persons with infection of the nasopharynx, but who have not developed meningitis, the latter those who have recovered from meningitis but still retain a nasopharyngeal infection. Primary carriers are further classified as "contact carriers" and "non-contact carriers," the former denoting persons associated with a case, the latter those found in the general population. The contact carrier rate is usually higher than the non-contact carrier rate, but under conditions favouring epidemics these two rates may approach one another very closely. A rise of the non-contact carrier rate to the order of 20 per cent. is a sure "storm signal" of imminent trouble. Primary carriers are, for the most part, infected only temporarily; within six weeks 90 per cent. are free from infection, the remaining 10 per cent. showing varying degrees of obstinacy, though only about 2 per cent. continue to carry over six months or longer.

ROYAL MEDICAL BENEVOLENT FUND.

As grants are made from the income received from subscriptions and donations, subscribers are asked to forward their contributions during the first quarter of the year rather than later, in order that the amount available for distribution may be known and a possible overdraft at the bank avoided. Subscriptions and donations should be sent to the Honorary Treasurer, Sir Charters Symonds, at 11, Chandos Street, Cavendish Square, London, W.1.

At the last meeting of the Case Committee thirty-five applications were considered, and thirty-two grants were voted, amounting to £951. The following short summary gives three typical cases.

Widow of M.R.C.S. who died in 1925, leaving her with two children—a girl, aged 16, and a boy, aged 13. The widow is now supporting herself in domestic service. The Fund was asked to assist in the education of the two children, £5 being required for the boy and £36 for the girl for her last two terms. Voted £20 to each child; the Fund is arranging with other societies to contribute the balance.

Wife, aged 38, of L.M.S.S.A. who has had a complete mental breakdown and is subject to dementia paralytica. The wife has no private means and has a girl of 7 to educate. Her father-in-law is making an allowance of £39 a year, the Freemasons £25, and other charities £15, making a total of £79. Fund voted £26, and has referred the case to the Guild to arrange for the education of the child.

Daughter, aged 65, of M.R.C.S. Since her father died the applicant has lived on £53 a year, bad eyesight and deafness having prevented her from working. In consequence of her privations her general health has suffered, and owing to her increasing infirmities she will soon require someone to attend to her wants. Her income has recently been increased to £75 a year. Fund voted £26.

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SATURDAY, FEBRUARY 2ND, 1929.

NEUROSIS AND ACIDOSIS.

THE "nervous child" seems to be attracting to itself almost as much attention from paediatricians as it demands in the domestic circle; nor is this to be wondered at, for the vagaries of nervous children are such that the medical attendant is in danger of losing credit at least as much as the harassed parents themselves. We may piously hope that these patients will fare better in an atmosphere of scientific investigation than they do in the limelight of parental solicitude, yet it is painfully evident that the medical aspects of the problem of neuropathic children are interpreted very variously to-day by different authorities.

Dr. H. C. Cameron, who has written so illuminatingly on the problem of the nervous child, now presents, in the lecture published this week at page 185, a study of the metabolic instability to which he thinks these patients are peculiarly prone, and on which he lays great stress from the point of view of the prevention and treatment of many of their troubles. His thesis is that nervous children, because they are nervous, are particularly liable to acidosis, and that this acidosis in its turn exaggerates and precipitates the nervous symptoms and attacks. He regards the nervous child as living upon the verge of acidosis, in a condition, as he calls it, of "smouldering acidosis," which the accidents of its ordinary existence may render a positive factor in the production of active symptoms. With this twofold association of neurosis with acidosis, and of acidosis with neurosis, the vicious circle is complete. Particularly interesting is Dr. Cameron's suggested explanation of why the nervous child is so subject to acidosis. He thinks—though he admits that it is no more than speculation—that the association is attributable to adrenal exhaustion. He surmises that the restless, overactive, overemotional state of the nervous child is responsible for the tendency towards adrenal exhaustion, and that this leads to defective carbohydrate storage and thus to imperfect fat metabolism and acidosis. So close does he regard the etiological association between the nervous diathesis and acidosis that he does not hesitate to speak of "the child with an inborn tendency to acidosis." On the other hand, Dr. Cameron regards the acidosis as producing and exaggerating the nervous symptoms, and the list of troubles which, in his opinion, owe their development or appearance to latent or declared acidosis is indeed a long one. Bouts of vomiting, attacks of mucous diarrhoea, exacerbations of nervous habits, periods of languor and exhaustion, are, perhaps, easily attributable to acidosis, but Dr. Cameron would go further. He suggests that asthma may be closely connected with acidosis, and that the time of its occurrence corresponds with a positive wave of that condition. He is inclined also to attribute to latent acidosis the muscular atony of some nervous children, and thus to include such complaints as flat-foot and greenstick fractures within the syndrome of symptoms. The treatment to be based on this theory of latent acidosis consists in the administration of carbohydrate, most advantageously given in the form of glucose, the regular use of alkaline drinks, and the limitation of the intake of fat. For this line of treatment Dr. Cameron claims considerable success, both in the prevention and the relief of nervous symptoms in children.

Such, then, is Dr. Cameron's conception of the problem of the nervous child. Reduced to its lowest terms it consists of three parts. First, there is presupposed a nervous diathesis; secondly, this induces a latent or positive toxaemia, if this word be used in a sense sufficiently broad to include the set condition of acidosis; thirdly, this in its turn produces further nervous disturbances. Expressed in such terms it must be admitted that Dr. Cameron's theory has the advantage of simplicity. But experience prompts us to wonder whether any simplification, however attractive, will loosen all the knots in the tangle.

Others have written on the question of the nervous child, and for the most part, like Dr. Cameron himself, they have been conscious of two etiological factors—one psychological and the other toxic. In a memorable lecture on the problem of the "solitary child" Dr. Robert Hutchison sketched the psychological effects upon these children of their isolation and the overbearing anxiety of their parents. He was dealing with selected children, but, as we understand his view, he held that the psychological atmosphere of the "solitary child's" home life was too unhealthy for its nervous system, and so originated nervous symptoms. Here the psychological factor is all-important, the diathesis of secondary importance, and the toxic factor absent or at least non-essential. Then at the Bath Conference on Rheumatic Disorders last May Professor C. Vining spoke of the "pre-rheumatic" child, describing once more the type of patient whom Dr. Cameron speaks of as the "nervous child." Here were emphasized the nervous diathesis and rheumatic toxaemia as the two factors at work. Not long ago in our columns Dr. Reginald Miller[1] brought forward what he called the "intestinal child," the child rendered ill by alimentary toxaemia. He, too, wrote of the nervous child, and, indeed, definitely claimed many of the so-called "nervous" children as belonging to this group. Here the toxaemic element is stressed as all-important, the nervous diathesis being a factor, though not an essential factor, in the production of nervous symptoms. Quite recently we published a paper by Dr. A. A. Osman,[2] who takes very much the same line as Dr. Cameron in attributing the symptoms to acidosis, but says that as many as 30 per cent. of hospital children over the age of 2 years suffer from acidosis and cyclical vomiting. Lastly, there are the claims of psycho-analysis to provide an explanation in terms of repression and the "dynamic unconscious."

We see, therefore, that there is considerable disagreement as to whether underlying the nervous instability of children the essential factors are physical or mental. Furthermore, even among those who agree about the etiological significance of toxaemic states there is great diversity of opinion as soon as the actual nature of the toxaemia comes under discussion. It is from considerations such as these that we are constrained to wonder whether Dr. Cameron's simple explanation, with its exclusive reliance on acidosis as the main underlying factor, will be found to cover all the aspects of this complicated problem.

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1 *British Medical Journal*, March 10th, 1923, p. 383.
2 Ibid., January 26th, 1929, p. 150.

PLAGUE AS AN INTERNATIONAL PROBLEM.

THE International Health Office (Paris) regards the international control of plague as one of its main functions. To keep abreast of modern knowledge of the numerous rodents and fleas which play a part in spreading this disease among men and animals it has arranged for the compilation of a series of reports, and has published these in book form.[1] The matter no longer relates only to the rat and its particular flea, *Xenopsylla cheopis*, and this inquiry has enabled the International Committee to prepare a useful directory of the rodents and fleas incriminated in various parts of the world. In the first paper Professor Ricardo Jorge of Portugal sums up the available information. There is an initial difficulty in the nomenclature of the subject, for the term "rodent" is in common use for all the animals which form a reservoir of plague; many species included in the natural order of that name play no part in the dissemination of the disease, and not a few outside it are as culpable as the rat. There is, moreover, little unanimity in the application of generic and specific names to those animals known to suffer plague epizootics and those fleas agreed to be transmitters.

The rodents of importance internationally are *Rattus rattus*, the black rat, and *Rattus norvegicus*, commonly called the brown rat. Jorge uses the generic name *Epimys*, which is unfamiliar in Britain, and he comments on the confusion which arises from the use of the adjectives of colour to indicate species. Sometimes the black and brown rats are called brown and grey respectively, and there are, in fact, "black" rats which are brown, "brown" ones which are black, and grey rats of both species. An interesting note on the history of the replacement in Europe of *rattus* by *norvegicus* disposes of the idea originally held that it was this change which determined the disappearance of devastating plague epidemics in that continent and in England. Plague had ceased to be a public scourge in these places long before the native rat had been driven out by the invading brown rat. Jorge attributes the change in plague prevalence to the natural variations in incidence exhibited by many diseases, and to the general hygienic improvements which have accompanied civilization, but he draws attention to the theory of Hirst (Ceylon) that the altered distribution of plague outbreaks is correlated with a changed geographical distribution of the flea *Xenopsylla cheopis*. Nowadays *norvegicus* predominates in Europe, but *rattus* is numerically superior in Africa and Asia, forming 98 per cent. of the rat population of India. In Egypt *alexandrinus* (a subspecies of *rattus*) occurs with the brown rat, which, by taking advantage of shipping, has made its way up the Nile. Palestine has the black rat, except in the ports, but the brown has achieved supremacy in Algeria, Tunisia, Mauritius, Iraq, and the Straits Settlements, and is in the ascendant at Bombay, Hong-Kong, Japan, and Dakar, while the black is in excess in Ceylon. In Australia *rattus* exceeds *norvegicus* by 40 to 1. There are signs that the black rat is again increasing in some of the areas of Europe where formerly it prevailed.

Spermophiles (small marmots, many species of the genus *Citellus*) form the animal host in the steppes of south-east Russia, and Jorge comments on the curious fact that in this area mice, though abundant, do not act as plague carriers. In southern Russia, however, both field and house mice form the chief source of human plague, though nowhere else have house mice been convicted of playing such a part. Three papers from Russia,[2] published since the report under review, suggest that perhaps some of the conditions described there as plague in man and in animals may have been tularaemia. It has never seemed likely that tularaemia was limited to North America; its occurrence in Japan seems to have been confirmed, and the Russians now describe certain plague-like conditions which may, indeed, be tularaemia. The water-rat, *Arvicola amphibius*, is particularly concerned. South Africa has special problems of its own, with a large number of wild animals naturally infected, among them the gerbille, from which infection is acquired by the multimammate mouse (*Mus coucha*), which in turn, in its visits to human habitations, passes the disease to man. In Manchuria and much of north-eastern Asia the fur-bearing marmot is the animal which keeps plague always alive, while ground squirrels have been shown to suffer from chronic plague in North America.

The reports collected here leave little doubt that chief importance as a transmitting agent has been rightly attached to the rat-flea *Xenopsylla cheopis*, but the vexed question of the part played by *X. astia* still remains unsettled. Hirst's work in Ceylon would seem to acquit *astia* of serious harm, but Graham and Mital, reporting here from India, give data which are difficult to reconcile with innocence of that flea. The report from the United States of America describes the calculation of an index of epidemicity. Some reserve is expressed regarding the reliance which can properly be placed on such numerical representations of the probable behaviour of a disease, but if such indices are to have any importance at all they must be founded on better and more numerous data than some flea-occurrence figures which were recently thought worthy of publication in the official U.S.A. *Public Health Reports*.

Colonel Forster contributes a paper on the forecasting of plague epidemics in India, in which plague occurrence and mortality are studied in relation to weather conditions. Such attempts at prophecy have lately been much in vogue in India, and it is perhaps legitimate to invite publication of these forecasts so that the value of the work may be put to the test. The reports submitted by the countries where plague is still a menace are very full for the most part, and represent a valuable addition to the literature of the subject. Roubaud contributes a chapter giving a systematic description of the main types of fleas of rodents, and the book ends with a useful alphabetical list of the animals—true rodents and others—which are known to be reservoirs of plague virus.

[1] *Les Faunes Régionales des Rongeurs et des Puces dans leurs Rapports avec la Peste.* Résultats de l'enquête du Comité Permanent de l'Office International d'Hygiène Publique, 1924-1927. Rapporteur: M. le Professeur Ricardo Jorge. Étude Systématique Descriptive des Puces des Rongeurs Transmettant la Peste. Par E. Roubaud. Paris: Masson et Cie. 1928. (6½ × 10, pp. 306; 7 figures, 10 plates. 50 fr.)

[2] *Rev. Microbiol. et Epidémiol.*, 1928, v. 7, English and French Summaries, pp. 349-344 (in Russian, pp. 288, 289, 291).

THE TRAFFIC IN DANGEROUS DRUGS.

EVER since the International Opium Convention of 1912 was signed at The Hague attention has been called in these columns to the enormous excess of production of drugs of addiction, such as opium, morphine and its derivatives, and cocaine, over any conceivable medical requirements. The effect of this surplusage in providing for illicit traffic, at huge profits, and the prostitution of these drugs to vicious and criminal purposes, has been reiterated. We welcomed the cessation of the export of Indian opium to China, and questioned the consistency of continuing the

preparation and export of prepared opium (for smoking) to the Far East by the Government of India. We accepted the Dangerous Drugs Acts of 1920 to 1923 as carrying out for this country the legislation implied by the terms of The Hague Opium Convention, and have urged that similar legislation should be introduced and made operative by all other signatory powers. We have suggested that some practicable measures should be devised for controlling *at the source* the production and manufacture of these dangerous drugs, as well as for the control and supervision of traffic therein, whether national or international. We have noted with regret that in China, at a time when opium production for a period appeared to be coming to an end, the outbreak of civil war in that vast territory should have been accompanied by a great recrudescence of the cultivation of the poppy. We have also from time to time called attention to the way in which China has been literally drenched with morphine and cocaine exported from European countries. Singularly complete exemplification and justification of the foregoing contentions have been furnished by the latest disclosures of the Opium Advisory Committee of the League of Nations. It appears that the Dutch Government has unearthed a factory in Holland which imported huge quantities of morphine, heroin, and cocaine from Switzerland, and purveyed them, chiefly through Viennese agents, to the Far East, the bulk being consigned to China. The amounts of the drugs handled by the Dutch firm—now happily suppressed—were stated to be 35,600 ounces of morphine, 113,000 ounces of heroin, and 3,250 ounces of cocaine. Mr. Sato, the Japanese delegate, shrewdly remarked that "it was impossible to deny the justice of the Chinese demand that the flood of morphine and heroin into China should be considered at the same time as the flood of opium out of that country." It is difficult to understand how this huge illicit traffic got through the meshes of the import and export certificate scheme devised by the Opium Advisory Committee. The new permanent Central Control Board, which has at length been set up under the Geneva Convention of 1925, will have its work cut out for it. In view of these new disclosures it is perhaps to be regretted that, as stated by the president of the conference which gave birth to that Convention, "the American principle for a limitation of production to medical and scientific purposes has not been included as a contractual obligation."

GLANDERS AND MELIOIDOSIS.

ALTHOUGH for some years glanders has been absent from this country, and is everywhere receding before the advance of civilization, it is still of sufficient importance in medicine to have formed the subject of a joint discussion between the Tropical and Comparative Medicine Sections of the Royal Society of Medicine on January 23rd. Until recently, of course, the disease was no uncommon one in Britain: less than twenty years ago there were about 1,800 equine cases in London each year, and about four human deaths in the country generally. Its eradication has been due mainly to the intelligent use of mallein, one of the few really reliable diagnostic agents in the service of man. This disappearance of the disease in temperate climates has rendered its bacteriological study more difficult, and modern workers find that there are many deficiencies in our knowledge of glanders and kindred diseases. *Bacillus malleï* is not now regarded as a single well-defined type, but as a member of a group of organisms, some of which, notably *B. whitmori*, the cause of melioidosis, have been differentiated on various grounds from the type. The distribution of the various serological races has still to be worked out, however. True glanders, due to *B. malleï*, is essentially an equine disease; cattle, pigs, rats, and mice appear to be naturally immune. Closely related to glanders, and apparently limited to Burma, the Malay States, Ceylon, and Indo-China, is a peculiar condition called by its discoverers, Drs. Stanton and Fletcher, melioidosis. This is primarily a disease of rodents, and it is always fatal to guinea-pigs, rats, and mice, as well as to carnivores. The horse and the pig, on the other hand, are very resistant, and only suffer from localized infections at the site of inoculation. Small ruminants and monkeys are susceptible, as also are human beings. In man, as Dr. Fletcher explained at the meeting, the result is generally fatal. He estimates that about two hundred human cases occur annually in the Malay States, but these are often wrongly diagnosed owing to the bewildering variety of symptoms produced—it has been mistaken for malaria, cholera, acute mania, plague, enteric, dysentery, tuberculosis, bronchitis, and pneumonia, among other conditions. The essential lesion, as in glanders, is a minute characteristic nodule which may caseate (in the lungs) or suppurate (in the liver). The organism, closely related to *B. malleï*, may be distinguished from it by being actively motile in young cultures, by its profuse growth on ordinary media, and by its characteristic growth on glycerin agar. The other diseases of the horse which clinically may resemble glanders—such as epizootic lymphangitis, ulcerative cellulitis, strangles, and so on—are of little importance to the clinician, and with the exception of the first-named are not transmissible to man. All can be easily distinguished from true glanders by means of mallein. This agent, prepared from the bacillus in a manner analogous to tuberculin, is, rightly used, considered to be 100 per cent. effective, and its continued use by veterinary surgeons will maintain our freedom from one of the most painful and fatal diseases which can affect man. Few human patients recover from it, and fewer still are in a position to describe it accurately, as did Professor Gaiger at the joint meeting mentioned. He contracted the disease in India many years ago, and it was only after eighty-two operations, during one of which an arm was amputated, that he completely recovered. Since then, however, attempts have been made to find a curative serum—vaccines are obviously useless in an acute generalized condition such as this—and recently one such has been prepared in Canada by injecting horses with mallein. It has been used on a few human cases with good results. Fortunately glanders is now very uncommon, and the use of this remedy is seldom required; but a similar serum prepared from *B. whitmori* would not be without interest in the treatment of the relatively much more common melioidosis in the Middle East.

TREATMENT OF RINGWORM OF THE SCALP BY THALLIUM.

THE remarkable property possessed by thallium, even when employed in quite moderate doses, of causing total though temporary alopecia, has long been known, and has proved an insuperable objection to the use of that metal in medicine, notwithstanding its value in the treatment of certain gastric conditions and in controlling the night sweats of phthisis. But Sabouraud, apparently at about the beginning of the century, although he did not publish the results of his tentative efforts until 1910, recognized that through this very property thallium might prove to be effective in the treatment of ringworm of the scalp. By means of thallium he actually cured several cases, but was deterred from its further use by the serious toxic phenomena which occasionally supervened. Subsequently, as we all know, he developed the *x*-ray treatment of ringworm with such success that thallium once more fell into obscurity. Dr. J. G. Urueña,[1] while admitting Sabouraud's priority, claims for Mexico the distinction of being the first nation to *systematize* the use of thallium for the

[1] *Le Traitement des Teignes par l'Acetate de Thallium.* By Dr. J. G. Urueña. 1928. Masson, Paris.

treatment of ringworm of the scalp. In 1918, owing to the shortage of *x*-ray tubes caused by the war, the Mexican authorities, harassed by the prevalence of ringworm and favus among their population, were compelled to seek some other method of treatment, and fell back on thallium acetate, and it appears that Professor R. E. Cicero, then in medical charge of a ringworm school, was the first to employ it as a routine method of treating both ringworm and favus. His preliminary results were communicated to the Academy of Medicine of Mexico on March 5th, 1918. At first he employed a dose of 5 mg. per kilo of body weight; this, however, was found to be too small to obtain a satisfactory epilation with certainty, and subsequently the dose was increased to 8 mg. per kilo, an amount which was found to give good results without risk of serious toxic complications. Since then this method of treating ringworm has been in constant use in Mexico, and has also been introduced into Europe with success. British dermatologists, however, do not seem to think so highly of it as some of their American and Continental colleagues. Perhaps the explanation lies in the fact that, as Dr. Urueña himself states, thallium is not so successful in cases of microsporon ringworm—by far the commonest type in this country—as it is in the various sorts of large-spored ringworm which form the majority of cases elsewhere. In this country, we think, the principal field for the employment of thallium is in children too young to be submitted to *x* rays. In older children there is a greater likelihood of serious toxic effects; in fact, there is a maximal dose for any patient, however heavy, of 0.3 gram of thallium acetate, which is almost invariably sufficient to produce a satisfactory defluvium of the head but not of the body.

THE CAMPAIGN AGAINST RHEUMATISM.

THE January number of *The Cripple*, which has recently appeared, is the second issue to be made since this periodical adopted both a new name and a new editorial policy. An account of these developments and of the main features of this change was given in the *British Medical Journal* of November 10th, 1928 (p. 859), and we commented on the practical advantages which the broader basis and wider outlook would secure. The current issue of *The Cripple* marks another forward step in this respect. Mr. R. H. P. Orde, director of the Central Bureau of Hospital Information, contributes a lucid and stimulating article on the development of the campaign against rheumatism and the part played in it by the British Red Cross Society. He traces the growth of this campaign since the Ministry of Health, in 1922, undertook the investigation of the incidence of rheumatic diseases; this revealed the magnitude of the question for the first time, and led to the successful appeal by the Red Cross Society for £40,000 for the establishment of a central clinic for physical treatment in London; the clinic will, it is expected, be opened in the middle of the current year. This is admittedly only one stage in the campaign, and attention is now being paid to future developments. Mr. Orde remarks that a central clinic cannot work in isolation, but must be associated with numerous other organizations for treatment and research. Moreover, central clinics cannot be multiplied indefinitely; their high cost alone makes this impossible. It is suggested, however, that in many cases one or two visits to a central clinic may be sufficient to ascertain the nature of the complaint and to indicate the necessary treatment; in some instances this may be available only at the central clinic, but in others—possibly a considerable proportion of the whole—effective therapeutic procedures may be made available at smaller clinics, of which already there are sufficient to demonstrate their value. Some are orthopaedic clinics associated with definite orthopaedic schemes, and others are Red Cross clinics undertaking a certain amount of orthopaedic work and treating other conditions largely of a rheumatic character. There are in the London area to-day four clinics of this latter type. Mr. Orde describes the methods of work and constitution of such units, and, in conclusion, outlines his conception of the form which the campaign against rheumatism should take. He proposes that it should be based upon central clinics, which should be situated where advantage may be taken of existing treatment facilities, in association, for example, with spas, voluntary hospitals, or municipal establishments. Where facilities do not exist, and there is a real need, the establishment of *ad hoc* clinics should be the task of the Red Cross Society. Associated with the central clinics there should be auxiliary clinics, developed from existing institutions where possible, or formed for the purpose, carrying out the simpler forms of treatment. Each Red Cross area might constitute an independent unit, thus permitting elasticity in organization, but Mr. Orde thinks that the formation of a central fund to supplement local efforts would be desirable at the beginning. It is thought that such a scheme offers a practicable method of providing for the treatment of rheumatism within the limits of the voluntary system; its efficacy can be determined finally, of course, only by the test of experience. Within the organization proposed it would certainly be possible to utilize the existing machinery to the best advantage. As in so many other similar problems, the main difficulties likely to be met are in connexion with finance; one of these arises from the fact that in many of the areas where the need is greatest industrial depression has made the raising of funds for voluntary effort least easy. Probably in such cases special contributions from the national fund proposed by Mr. Orde would be available. His scheme is certainly worthy of careful consideration. The remainder of the matter in *The Cripple* maintains the high standard of the previous number. Dr. P. C. Varrier-Jones continues his articles on village settlements, based upon his experience at Papworth; Herr Hans Wurtz offers a notable contribution to the education of the cripple, dealing largely with his mental rehabilitation and social adjustment; and the editor, Mr. Frederick Watson, discusses "Education for prevention of disease." A considerable amount of space is devoted to the training of cripples, with a survey of the present position in England, Germany, and Denmark, and notes on particular problems and on the work of various institutions.

THE FUTURE OF LOCAL GOVERNMENT IN LONDON.

THE London Council of Social Service in 1925 appointed a public health and public assistance committee to consider the proposed changes in local government which have now been embodied in the Local Government Bill, 1928, now before Parliament. This committee, which contained a majority of medical members, and had as its chairman Sir Arthur Newsholme, prepared a preliminary report early in 1926, and on the formulation of the Government's scheme last year resumed its consideration of the measures proposed, dividing this work between two subcommittees, dealing with public health and public assistance respectively. The views of the committee, which have now been published in pamphlet form,[1] deserve the attention of all who are concerned with the problems arising in the application of the Local Government Bill to London. This publication, indeed, should prove interesting to many who are not even remotely concerned with affairs in London, for it provides in summary form a suggestive study of the current tendencies in local government in general. The committee's observations on the actual provisions of the bill are of interest, but remembering the progress which the measure has already made in Parliament under a timetable, and that it appears likely to become law without substantial amendment, we may confine ourselves to the

[1] London Council of Social Service, 1, Express Mansions, N.W.3 (price 6d.).

views expressed upon the future development of local government in London. It will be remembered that the bill requires the London County Council—in common with other authorities of equal status—to prepare a scheme of administration providing for the discharge of its new duties. The committee calls for a realistic study of the question, remarking: "It is incumbent upon Londoners to consider according to each man's measure of experience and imagination, not an ideal system of public health and public assistance, but a system as near to that as the confused disorder of local government with its accumulated friction, jealousies, ambitions, and aspirations may allow the County Council to achieve." It is suggested that opportunity should be taken to link the chief branches of local administration—those concerned with health, education, and public assistance—into one organic whole. Space does not permit us to elaborate this thesis, but it is significant to note that the committee favours a high degree of unification in health services. The staffing arrangements of the London Education Committee are held up as a model for all counties, and the view is expressed that those of the new Public Assistance Committee might gain a similar standing if they were widened to include the part-time services of borough medical officers, who until now have held isolated positions in which their spheres of work—especially in relation to school medical services on the one hand and maternity and child welfare on the other—have been cut off from the main stream of public health services in London. It is regarded as anomalous that vaccination should be transferred to the borough councils while the functions of the Metropolitan Asylums Board, "virtually the authority for the treatment of small-pox," should go to the County Council. The committee considers that the public health and public assistance committees should be constituted by the County Council on the lines of the existing Education Committee, with a minority of co-opted members appointed by the Council on the nomination of social workers. Reference is made to the great amount of work done by voluntary associations, often administered by representatives of professional and other organizations of the type of the British Medical Association, and it is suggested that nominations might be received from such bodies. The medical subcommittee which discussed the bill welcomes the provision permitting the unification of health and assistance services under one authority, and regards as essential to the full realization of the reforms the reference by the County Council to its Public Health Committee of all medical functions transferred from the guardians. It is thought, however, that the grants for maternity and child welfare, for tuberculosis, and for venereal diseases should remain on a percentage basis instead of being replaced by the block grant. Great importance is attached to the assimilation under unified but decentralized arrangements of the various health officials now employed, and to the co-ordination of their work with that of the voluntary agencies, while the need for co-operation with the private practitioner is emphasized.

THE JOURNAL OF NUTRITION.

THE birth of new scientific journals, though often necessary, cannot be regarded as an unmixed blessing. Justification for specialized journals, like specialized departments, is found in the growing volume of scientific work; there is, however, the risk that an increase in output may be accompanied by a decline in the standard of work published. It is already difficult enough for those engaged in research work to maintain effective touch with recent developments in even one branch of scientific activity, and the publication of large amounts of indifferent work would make their task impossible. We may none the less welcome the appearance of the *Journal of Nutrition*,[1] a bi-monthly periodical published for the American Institute of Nutrition. Nutritional problems excite even more interest in the United States than they do in Europe, and clearly the journals devoted more generally to biochemical research are in danger of becoming overburdened. These problems, too, require somewhat specialized technique, and some of them are not necessarily of immediate interest to any but a rather limited group of workers. And finally, the names of Professors Lusk, McCallum, Dubois, and Mendel on the editorial board of the new journal should assure us that it will prove a valuable medium for the publication of original research work. On all these counts the *Journal of Nutrition* may be regarded as fulfilling an important need. The first number contains papers by several prominent American workers in the field of dietetics, and is noteworthy for its editorial review.

[1] Annual subscription, price 21s., post free. Sole European agents: Messrs. Baillière, Tindall and Cox.

AN OPHTHALMOLOGICAL SERVICE.

WE publish in the *Supplement* this week at page 29 an article describing the provision of ophthalmic treatment on the clinic system, in accordance with a scheme drawn up jointly by the British Medical Association and the Association of Dispensing Opticians. This scheme is intended to give insured persons, their dependants, and others of a like economic status certain definite advantages not hitherto enjoyed by them. The underlying principle, stated briefly, is to ensure that such persons may have their eyes examined and spectacles supplied at a moderate cost. In this way the British Medical Association is endeavouring to fulfil the undertaking it gave last year to a Departmental Committee to arrange for an adequate ophthalmic service all through the country on terms which people of limited means can afford.

WE regret to announce the death, on January 27th, in his eighty-second year, of Dr. F. de Havilland Hall, consulting physician to the Westminster Hospital; an obituary notice will appear in our next issue. We have also to record the death, on January 28th, at the age of 65, of Mr. Victor G. Plarr, M.A., librarian of the Royal College of Surgeons of England, who was a valued occasional contributor to our columns.

THE KING'S ILLNESS.

WE learn on the best authority that His Majesty during the past few days has continued to make slow but steady progress towards convalescence, and that nothing has intervened to disturb the provisional plans for his removal to Bognor in the near future. Recent bacteriological tests confirm the clinical evidence that the right chest is now free from infection. The temperature has settled down, the pulse remains quiet, sleep is better, and solid food can be taken in larger amounts. Thus the gratifying improvement recorded last week has been maintained, and we may look for further news, from time to time, of advances along the uphill road to recovery. The profession and the nursing profession have every right to feel proud of the success so far achieved by those to whom the care of the King's life and health has been entrusted. Their skill and devotion, under wise leadership, have had full scope throughout, and for this the nation owes a great debt to the Queen, whose courage has been an example to her people. It was fitting that the first public message from the King since he fell ill should have been given by His Majesty at a hospital gathering: "His illness has brought him to appreciate more deeply than ever before the value of medical science and of devoted nursing."

MEDICAL EDUCATION OF WOMEN.

REPORT OF THE UNIVERSITY OF LONDON COMMITTEE.

THE report of the committee appointed by the Senate of the University of London in March last year "to consider the question of the limitations placed upon the medical education of women undergraduates and to report . . . thereon" was presented to the Senate in private last week and published on Saturday. The committee pronounced itself unable to find any valid argument, on the merits of the question, against the provision of co-education in medicine, which was regarded as the main point at issue, but emphasized the view that co-education to succeed must be voluntary. It recommended that copies of the report be forwarded to the schools in the Faculty of Medicine, and that the schools be invited, where they do not now do so, to consider the possibility of admitting a quota of women students. The Senate has given its general approval to the report, which does not bind that body to every word in it, and has accepted the tentative course of action proposed. A secondary point which may be indicated at this stage is that the question at issue relates to facilities for clinical education; the report reviews the nature of the medical curriculum as a whole, and points out that the facilities for pre-clinical instruction of women are ample, adding, however, that the fact that there may be difficulty in finding clinical facilities at a later stage must inevitably affect the number of entrants for pre-clinical courses.

Composition of the Committee.

The committee consisted of persons representing a wide range of interests. The then Vice-Chancellor, Sir William Beveridge, and the Chairman of Convocation, Professor Loney, were members *ex officio*, the remaining members being Dr. Graham Little, M.P., chairman of the Council for External Students, Sir Holburt Waring, F.R.C.S., chairman of the Finance Committee, Dr. Halliday, principal of King's College, Dr. Matthews, dean of King's College, Mr. Walter Spencer, F.R.C.S., vice-president of Westminster Hospital, Miss Strudwick, principal of St. Paul's School for Girls, Sir Andrew Taylor, representing University College, and Miss Tuke, principal of Bedford College. Sir Gregory Foster, principal of University College, and now Vice-Chancellor of the University, was afterwards added. Sir William Beveridge was chairman of the committee throughout its existence. Eleven meetings were held, at some of which representatives of certain medical schools and of other bodies, including the Medical Women's Federation, were interviewed. The chairman of the committee also attended a meeting consisting of representatives of all the medical schools. Much statistical information was supplied by the schools and by bodies such as the General Medical Council and the University Grants Committee.

After outlining the nature of the medical curriculum, as mentioned above, the report surveys the facilities for medical education in London and presents a review of the changing character of the extent to which the various institutions have admitted women students, which may be summarized as follows:

Of the twelve medical schools in London affording clinical instruction, none, before the war, admitted women, except the London School of Medicine for Women (Royal Free Hospital), which was founded for women only, and remains restricted to women. In 1916 St. Mary's Hospital, St. George's Hospital, and Charing Cross Hospital undertook to receive women for clinical studies. In 1917 Westminster Hospital, and in 1918 the London Hospital, King's College Hospital, and University College Hospital resolved to admit women, the last hospital named restricting the number to twelve a year in 1921. In 1919 St. George's Hospital, in 1921 the London Hospital, and in 1923 St. Mary's Hospital decided to admit no more women students. In 1928 Charing Cross, Westminster, and King's College Hospitals announced their intention of discontinuing the admission of women students in the future.

By July, 1918, of the twelve schools, four (the larger institutions) were confined to men, one was confined to women, and seven were open to both sexes. The effect of recent changes of policy is that there are now two schools only which offer clinical facilities to women—the London School of Medicine for Women, and University College Hospital Medical School which admits twelve women a year.

An Earlier Inquiry.

Reference is then made to the proceedings of a subcommittee of the Academic Council which was appointed in December, 1915, to consider whether the then existing facilities for the medical education of women in London were adequate, and, if not adequate, to suggest what means should be adopted to extend them. The members of this subcommittee in their report, formulated after prolonged consideration and discussion with the parties interested, expressed the following opinion on the general question before them:

"We are of opinion that no valid objection can be maintained against the system of co-education for men and women medical students; and that this is the only system by which the general policy of the university can be effectively carried out. In our opinion adequate facilities for the medical education of women would not be provided in any hospital or medical school unless resident medical and surgical appointments were open to men and women on equal terms."

The report was transmitted by the Academic Council to the Senate, and subsequently communicated to the medical schools. As a result a conference with representatives of the schools was held in January, 1917, when a considerable divergence of opinion was disclosed; on receiving the report of this conference the Senate decided to abstain from taking action in the matter. In the meantime, the opening of various schools to women during the war had for the time being relieved the situation. When the question again rose in 1921 on the decision of the London Hospital Medical College to restrict admission to men, another subcommittee of the Academic Council expressed the view that there was no lack of clinical facilities for women, and that no further action was advisable.

The Question of Numbers.

Having thus surveyed the question in its historical aspects, the report proceeds to the examination of the nature of the problem before it. Two aspects are recognized—that of providing clinical facilities adequate for the number of women requiring them, and that of providing such facilities in schools open to both sexes.

"In its first aspect," the report states, "the problem is a comparatively simple one. The great increase during the war in the number of women taking up medical studies has been followed by a striking decrease. On the evidence of Part II of the Second Medical Examination, as marking the passage from pre-clinical to clinical studies, in 1918 the number of women in London substantially exceeded that of the men; in 1919 the numbers were practically equal; from 1920, whereas men have maintained or increased their numbers, the women have fallen to less than a half. In the London School of Medicine for Women the total number of students, from 193 just before the war, rose to 459 in 1920-21 and fell to 293 in 1926-27. Outside London the fall in the numbers of women medical students has been even more marked."

The committee thinks it would be unwise to assume, however, that the figures of women entrants will remain at their present low level.

"There appear to be already indications of a revival," the report continues, "and though the policy of exclusion may for a time result in a number of women seeking admission to medical schools in the provinces and elsewhere, they will not, and in our view they should not, consent to being excluded from participation in medical education in the metropolis."

The committee is of the opinion that, taking all things into consideration, the provision of a hundred clinical places for women, apart from those available at the London

School of Medicine for Women, would be ample for the next few years. It holds, however, that the numerical side of the problem is the least important one. The real issue is as to the maintenance in London on a substantial scale of facilities for medical co-education at the clinical stage. The committee states:

"In all its other large faculties—for example, in Arts, Science, Economics, Laws—the University of London is predominantly co-educational; actually, though it has a few colleges confined to women, it has none in these faculties confined to men. The prepossession of the University of London has on more than one occasion been expressed to be in favour of a measure of co-education also in the great Faculty of Medicine," and asks: "Is there any feature peculiar to medical studies making co-education, which predominates in the rest of the university, undesirable in that one field?"

Objections to Co-education.

The report proceeds:

"We can say at once that we are satisfied that the relationship existing between men and women students of medicine is *not* of itself an objection to co-education, and we are glad to say that none of the representatives of schools who had had actual experience of women students alleged any case of difficulty or the need of disciplinary action arising out of this relation; uniformly the conduct of the women was described as excellent.

"In this respect our own conclusions agree with those arrived at by the inspector appointed by the Senate, the late Dr. J. George Adami, in his report on the medical schools. The report stated: 'The reports of the deans of the co-education schools regarding the work and attitude of the women students were uniformly favourable. The dean of one school bore evidence to the improved tone of the men students since women were admitted. The deans of two schools gave it as their impression that as the result of co-education the women students of their schools were more womanly and more considerate in their dealings with hospital patients than women trained apart from men.'"

The committee examined objections taken to co-education—such as the necessity for providing special accommodation (residential and other) for a mixed staff; the difficulty of teaching mixed classes in some subjects; the tendency of women to crowd to the front at demonstrations; and the difficulty in the way of reproving a person of one sex in the presence of persons of the opposite sex—and concluded:

"We think there must be some force in these objections, but . . . they have not been felt to be insuperable by schools with actual experience of co-education, and in fact they appear to us capable of adjustment with no more difficulty than most co-educational problems.

"Nor," the report continues, "are we impressed by the argument that the medical education of women is to a great extent thrown away by the 'wastage' that occurs, owing to marriage and other reasons which result in women leaving the medical profession after undergoing the expense and difficulty of qualification. As a matter of fact, it would appear from the information before us that the 'wastage' is much less considerable than is sometimes supposed. In so far as it has any weight, the argument tells not against co-education in medicine, but against any medical education of women at all. In London it certainly cannot be used as an argument for curtailing the facilities for women, for, in the aggregate, the number of places vacant is certainly greater than the number of applicants who could fill them.

"On the other hand, we think it is clear that in medicine women certainly gain by being educated side by side with men, and that such an education is a very valuable training for that co-operation which in their subsequent careers becomes necessary between medical men and women. It may be that the advantage is not felt so much by men students, and indeed co-education for some men may not be profitable. On the balance, however, we think that the advantage to the women outweighs any possible loss to the men."

Competition Among Medical Schools.

"We do not suggest, however, that there are no difficulties in the way of medical co-education in London. They are not the difficulties we have already referred to. The real difficulties arise from (*a*) the multiplicity of medical schools and their competition for students, and (*b*) the feeling against co-education entertained by some of the men already in the medical profession, some of the men students, and a section of the public. With few exceptions the authorities of the medical schools appear to be convinced that men, if they have a choice, prefer to go to schools which do not admit women, and that the feeling is strongest among the men, and in some cases the parents of the men, who on general grounds would be most desirable. Since there are now certainly not enough students to fill all the schools, this means, if some schools admit while others exclude women, that co-education is in unstable equilibrium; and that the school which admits any women will have a disappearing number of men.

"This feeling of antipathy may be deplored, but we have no doubt as to its existence, and since the medical schools are dependent to a very considerable extent on the income derived from students' fees, it is only natural that the authorities of the schools should be concerned with the economic problem to which it gives rise. In one of the cases at least in which a genuine attempt was made to provide absolutely fair treatment to women students, it was only the apprehension that the policy of co-education was heading the school for disaster which led to its reversal. How the exclusion of women can in all cases increase the number of men entrants all round is not obvious, for the number of possible entrants is not unlimited; that, however, is a matter on which we need not express an opinion. How long this feeling is likely to endure, and, in particular, whether it would endure indefinitely against the attraction of first-rate teaching and equipment in a co-educational school, are questions which it is difficult to answer."

Conclusions.

In their conclusions the members of the committee state that they are unable to see any valid argument against the provision of co-education in medicine, and that the prepossession of the university is in favour of such co-education.

"The changed public position of women in the past generation," their report proceeds, "is too obvious to need comment. If the field were clear we find it hard to believe that anyone who at the present day was planning afresh medical education in London as a whole would plan it otherwise than on the basis of being, like education in the other faculties, predominantly co-educational. In medicine, as in other fields of study, the services of the schools of the highest prestige and the teachers of the highest distinction should be available to men and women indifferently, and men and women who after their university careers have to work together in so many new relations should learn to do so at the university stage.

"We do not, indeed, wish to suggest that co-education should be universal in the medical schools. Among the consequences which might result from the adoption of such a policy would be that in some schools there would be only a very small number of women—perhaps only one woman. Such a condition of affairs would on various grounds be highly undesirable. There should, in our view, be three types of clinical education: (1) For men only; (2) for women only; and (3) for men and women. This involves the maintenance as men's schools of certain existing schools, the maintenance of at least one women's school, such as the London School of Medicine, and the provision of facilities for co-education."

The report takes cognizance, however, of the fact that the existing medical schools came into existence before the university; it is pointed out that some of them have long traditions to which they are naturally strongly attached, and that, having generally originated in the hospital with which they are associated and not having as a rule a separate legal existence, they are even more independent of the university than other schools. Further, a large proportion of their students are working for examinations other than those of the university. It is stated that at present the sole power which the Senate can exercise is to discontinue the recognition of a school as a school of the university, a power which has never been enforced. Under the new statutes, however, the Treasury grant from the University Grants Committee, at present paid direct to the medical schools, will be paid in a lump sum to the university. The committee does not consider that power over grants could or should be used to compel a medical school to remain or to become co-educational against its will. The report concludes:

"Co-education, if it is to succeed, must be voluntary. Where the war the tradition or policy of the medical schools was opposed to co-education, and its introduction during the war was due to the initiative of the schools, though it was welcomed by the university as being in accordance with its own policy. Its restoration can, we are convinced, only come about by an agreement between the university and the schools, and possibly by an arrangement by which the several schools would agree to a certain quota of women students."

Scotland.

Influenza in Scotland.

REFERENCE was made in this column last week to the recent outbreak of influenza and pneumonia in Scotland. The Registrar-General for Scotland reports that during the week ended January 19th deaths from influenza numbered 179, which was 123 more than in the previous week. Of these 179 deaths 151 occurred in Glasgow. The hospital accommodation in that city was greatly strained in dealing with cases of pneumonia, of which 640 were under treatment in the various hospitals of the city at the close of the week. To relieve to some extent a waiting list of 150 patients suffering from this disease a ward had to be specially set aside. The public services suffered severely, for about 250 tramwaymen were off duty largely from this cause, and the police force was reduced by a sick list of 230. In many schools, also, the proportion of absentees amounted to about one-half of the children. In Edinburgh the number of cases of influenza, though it was generally of a mild type, was very large. As a precautionary measure the staffs of the various hospitals received preventive inoculations. An offer was made by the health department of the city to inoculate the staffs of the tramway and other transport services, and this offer was accepted by a large number of the men, over 100 tramway workers having been inoculated by January 25th. In Aberdeen the outbreak has been milder; during December 42 cases of pneumonia were notified to the public health department, and in the first three weeks of January there were respectively 15, 18, and 29 such notifications. Up to January 25th the epidemic in Aberdeen, though of a mild form, had affected the city constabulary, tramway, bus, and post office staffs, as well as those of private offices, to a very considerable extent.

Edinburgh Royal Infirmary.

The committee appointed by the court of contributors of Edinburgh Royal Infirmary to consider the report of the managers (to which reference was made in the *British Medical Journal* of January 12th, at page 80) has drawn attention to several important points in connexion with the management of this hospital. It is pointed out that nearly 20,000 patients were treated in the wards in the past year, and that the number is steadily increasing. Of the cases admitted, 4,526 were medical and 14,466 surgical, whereas twenty years ago the relative figures were 4,104 medical and 6,828 surgical. At that time the average duration of a patient's stay in the Infirmary was 26.4 days, while last year the figure stood at 16.39 days; for surgical cases the average residence was reduced in this period from 23.4 days to 13.46 days. The number of patients from the country outside Edinburgh shows a marked increase; in 1908 patients admitted from the city numbered 6,259, and others 4,716, while in 1928 those from the city numbered 8,815, and from the country 9,964. Attention is drawn to the fact that, while the total number of hospital beds is 1,006, the waiting list on December 31st, 1928, comprised 2,692 cases. It is hoped that during the next year some relief will be gained by the recent addition of two small wards, and by the opening of the Astley Ainslie Institution, which up to the present time has had only 34 beds for female patients. The fund for extension purposes now stands at approximately £21,000, and within the next few years the neighbouring grounds of George Watson's College are to be taken over by the Infirmary. No definite scheme for utilization of this extra space has yet been prepared, but the question of providing accommodation for maternity cases and of building centralized quarters for the nursing staff is receiving consideration. It was also mentioned that the hospital's radium supply had been increased recently by a purchase amounting to £1,646, and that great developments in the treatment of cases by this curative agency might be anticipated from the managers' recent proposal for the establishment of a radium centre in connexion with the Infirmary. The committee made a special appeal for extended support to commemorate the foundation of the hospital two hundred years ago, and to mark the fact that the present year is also the jubilee of the opening of the buildings now in use. In connexion with the proposal for a radium institute under the management of the Royal Infirmary, which was outlined in the *Journal* of January 5th (p. 36), a sum of £5,000 has been offered to the board of management. It is understood that the gift is from two persons who desire to remain anonymous, and who have been induced to make this offer in memory of the spirit of devotion to the interests of suffering humanity exhibited by the two young doctors in London who recently sacrificed their health by overwork, which ultimately led to their tragic breakdown and suicide.

Edinburgh Medical Missionary Society.

The annual general meeting of the Edinburgh Medical Missionary Society was held on January 24th at 117, George Street, Edinburgh, with Mr. C. W. Catheart, F.R.C.S., in the chair. The financial statement showed that without any abnormal increase of income the year's expenditure had practically been met. Two years ago there was a deficit of £1,422; this was subsequently reduced to £725, and at the end of the year under review the debt to be carried forward was only £67. The usual medical and social work was carried on in the Cowgate district by students and volunteer helpers, and the hospitals of the society abroad had a busy and satisfactory year. The resignation from the post of superintendent and secretary of Dr. Lechmere Taylor was intimated, and Dr. F. O. Lasbrey, superintendent of the Cairo Medical Mission and secretary of the Church Missionary Society in Egypt and the Upper Sudan, was appointed to succeed him. Dr. Taylor, in submitting a survey of his work, said that the society existed for the fundamental object of training men and women for medical missionary service in different parts of the world. He had made an examination of the positions now held by the 79 medical students who had passed through the hands of the society, and he had found that only a very small number of them were not now in active missionary service. A few had fallen out for reasons of health, or of family considerations, but he thought that the great success in training which had been accomplished merited a continued public support of the society's work. The adoption of the report was moved by the Rev. Dr. R. Laws of Livingstonia.

England and Wales.

New Operating Theatres at Leicester Royal Infirmary.

Two new operating theatres, with accessory rooms, equipped on the most modern lines, were opened on January 23rd at Leicester Royal Infirmary by Mr. C. J. Bond, F.R.C.S., consulting surgeon to that institution; his connexion with it has extended over a period of more than fifty years. In the course of the ceremony Mr. Bond briefly reviewed the development of surgical work in the Infirmary. He described a small room in the old central building, with a double door to admit stretchers, a flat skylight in the ceiling, an open fireplace, and candles or gas for light; on one side were some wash-hand basins and, in an adjoining room, a cupboard for instruments, and a row of blood-stained dirty overcoats. It was in this room, he said, that in 1875, when he started as a pupil, and in 1882, when he became house-surgeon, all the more important operations were performed. Mr. Bond recalled the crude apparatus employed in this work and the difficulties which faced the surgeon at that time, and mentioned the introduction of antiseptic surgery and of improvements in inducing anaesthesia. As house-surgeon and the only qualified resident officer he had had charge of both surgical and medical wards, including thirty typhoid beds; he dealt with casualty and emergency cases, and helped with the out-patients; he performed post-mortem examinations, and attended inquests and board meetings; and he operated in emergencies in the absence of the surgeon. The speaker recalled the opening of the modern theatres in the Victoria wing of the Infirmary in 1902, and of the important work since carried on in them, and discussed the value of the most recent addition to the institution's resources. Finally, in speaking of the future of surgery and its relation to other forms of treatment such as

radiology, he remarked that something more was required of a surgeon nowadays than mere manual skill; he must possess surgical insight and be able to appreciate what was going on in the patient's system; he must know when to operate and when to refrain; he must understand the natural and physiological methods of defence and be able to reinforce them when necessary.

Transference of Queen Charlotte's Hospital to a New Site.

The Management Committee of Queen Charlotte's Maternity Hospital has announced that the entire hospital, with the nurses' home and post-graduate and students' college, is to be transferred from the present "cramped, noisy, and unsuitable" site in Marylebone Road to a quieter part of London. Negotiations for a suitable situation are in progress, and plans have been prepared for the erection of a new hospital on the most modern lines. It was felt that in its present position the work of the institution could not be adequately developed, and the policy of removal, which has the approval of the Ministry of Health and of King Edward's Hospital Fund, was accordingly adopted. In the course of an official statement which has been issued mention is made of several features of the proposed scheme. The plans provide for the erection of an isolation block for cases of puerperal fever; this, it is believed, will be the first of its kind in this country in a voluntary hospital. Special provision will also be made for research work on puerperal fever, as part of the campaign against the high maternal mortality from it. It may be recalled that such preventive work was foreshadowed nearly two years ago, when an appeal for £250,000 was made by the governing body of the hospital; some comment on it appeared in our columns on May 7th, 1927 (p. 851). Another block in the new building will be reserved for pre-natal cases, which have hitherto suffered from the almost general lack of provision for their particular needs. It is also proposed to set apart a considerable amount of accommodation in the form of comfortable bedrooms for paying patients of moderate means; this provision will be on as large a scale as possible, and will not be regarded merely as an unimportant adjunct to the charity work of the institution. It is believed that this development will do much to encourage the desirable practice in London of providing such accommodation on an equal scale both for the poorer classes and for people of moderate means. The importance of this rests upon the belief that no single movement will do so much to diminish maternal mortality as the reception in hospitals of maternity cases from all classes of the community, because mortality is equally high among rich and poor. The new hospital will be constructed as a number of units, and it is thought that the first of these, the isolation block, may be completed by the spring of next year. Ample room for future expansion will be available.

Middlesex Hospital New Nurses' Home.

The Queen, on January 24th, laid the foundation stone of the new nurses' home of the Middlesex Hospital, which is being erected in Foley Street, on a site adjoining the hospital. When completed the home will provide sleeping, refectory, and recreation accommodation for 450 sisters, nurses, and maids; its construction has been made possible by the generosity of an anonymous donor, who has given £200,000 to the hospital. In the course of the proceedings a message from the King was conveyed by the Queen to Prince Arthur of Connaught to the effect that His Majesty was very pleased that the Queen was laying the foundation stone of the new nurses' home. His illness, it was added, had brought him to appreciate more deeply than ever before the value of medical service and of devoted nursing. Prince Arthur in his speech referred to the Queen's interest in the welfare of the voluntary hospitals and their staffs. At the close of the ceremony Her Majesty visited a number of the wards of the hospital. The Middlesex Hospital motto is *Miseris succurrere disco*, and a new significance attaches to this Virgilian phrase when it is recalled that the whole sentence, which was part of Queen Dido's address to the afflicted Aeneas and his followers, runs: *Non ignara mali, miseris succurrere disco*; this may be rendered, "Not unacquainted myself with trouble, I learn to aid the afflicted.

Correspondence.

TREATMENT OF NON-SPECIFIC DIARRHOEA IN THE TROPICS.

SIR,—In a short article on November 10th, 1928 (p. 843), Dr. C. V. Thornton divides tropical diarrhoea into two main groups. In the first, when a specific cause is demonstrable, he only mentions (1) the dysenteries (which, I presume, are meant to cover amoebic dysentery, the various forms of bacillary dysentery, and probably hill diarrhoea); (2) sprue; (3) tuberculosis; and (4) syphilis. To these, at the end of his article, he adds cholera and food poisoning; he might have included typhoid and paratyphoid fevers. His second group contains diarrhoea not caused by any of these agents.

After working five years in Assam and two years in the Seychelles Islands I feel safe enough in stating that there are comparatively few cases of diarrhoea in the tropics to which definite causes cannot be assigned.

In Assam the condition that gave us most concern was "choleraic diarrhoea," a form of very acute gastro-enteritis which closely resembles cholera clinically, but which is definitely not cholera; it is considered by us as merely a syndrome or set of symptoms common to several diseases of absolutely different agency. After four years' work among tea-garden coolies in Assam we were eventually able to arrange those cases of choleraic diarrhoea in five main groups: (1) cases of acute bacillary dysentery; (2) cases of algid subtertian malaria; (3) cases of mushroom poisoning; (4) cases of food poisoning; (5) cases to which, in the absence of detailed laboratory investigation, no definite cause could be assigned. Preliminary notes by me on the etiology and diagnosis of choleraic diarrhoea were published in the proceedings of the Assam Branch, British Medical Association, 1926.

But apart from choleraic diarrhoea and diarrhoeas due to the specific causes mentioned by Dr. Thornton, may I suggest (seeing that he does not mention them under specific diarrhoeas) that he may have overlooked diarrhoeas caused by intestinal protozoa other than the *Entamoeba histolytica*, and also diarrhoeas caused by certain helminths. While there may even be other such parasites which I have personally not met with, in my experience the following parasites are often responsible for diarrhoea in the tropics: (1) *Balantidium coli*; (2) *Entamoeba coli*; (3) *Giardia intestinalis*; (4) *Trichomonas hominis*; (5) *Chilomastix mesnili*; (6) *Blastocystis hominis* (a vegetable parasite); (7) *Strongyloides stercoralis*; (8) even ascaris, ankylostoma, and trichiurus, are liable to cause more or less protracted diarrhoeas in children, and in looking for finer causes the presence of these may not be realized. In quite a large number of cases of diarrhoea, varying in degree of severity and in duration, these parasites are invariably found, either singly or associated two or more in the same case.

In the case of protozoal parasites, including *Blastocystis hominis*, stovarsol, in my hands, has proved a specific, and even in the cases of diarrhoea of unknown causation I suggest that stovarsol is worth a trial. Special mention must be made of *Balantidium coli* and *Strongyloides stercoralis* as agents of protracted diarrhoea. Human balantidiosis is much more common than hitherto realized; it may be responsible for diarrhoea lasting for years and eventually proving fatal. From Assam I reported three cases only discovered towards the end of my time there, and here in Seychelles I have in two years had thirty-five cases under my care. These cases I may state are reported for the first time from these islands, so far as I am aware. In all these cases (one actually of about five years' duration) stovarsol has established a definite cure without relapse after an average course of six days' treatment with it.

Strongyloides stercoralis causes very often a protracted form of diarrhoea, the patient sometimes having as many as fifteen stools in twenty-four hours. It is a parasite extremely difficult to expel, requiring repeated treatment with chenopodium and carbon tetrachloride combined. In their eventual removal invariably puts an end to the diarrhoea.

The liver treatment advised by Dr. Thornton is very interesting, but if the help of the microscope is constantly sought and carefully applied to the investigation of diarrhoeic stools, the application of liver therapy must necessarily become very restricted.—I am, etc.,

L. C. D. HERMITTE, M.B., Ch.B., D.T.M. and H.

Mahe, Seychelles Islands, Dec. 28th, 1928.

PYORRHOEA ALVEOLARIS.

SIR,—In the kind notice you bestowed in your leading article on my remarks about pyorrhoea alveolaris (January 19th, p. 115) you appeared to invite discussion on some points of detail which lack of space compelled me to omit or to treat somewhat briefly in my paper. I certainly recognize the wide difference that separates the soft yellow calculus (liable in many mouths to be deposited from the saliva on all hard surfaces, whether teeth or artificial dentures, which are not cleansed by friction), and the harder, darker, subgingival calculus which is, I believe, the causative agent in pyorrhoea; though obviously the former, by encouraging stagnation, will facilitate the deposit of the latter. But I believe that to regard the blood serum as the sole source of subgingival calculus (it is often styled serumal calculus) is going further than our present knowledge warrants. I therefore used the general term "oral secretion" to cover not only saliva, but mucus and serum as well. Saliva contains mucus, and would appear to be sufficiently viscid to stagnate in the interdental spaces. The point is still *sub judice*, and is not, after all, of great importance.

It is annoying to have the two terms tartar and calculus in common use, but as popular and professional custom appears to regard the two as interchangeable, I have not attempted to distinguish between them.—I am, etc.,

H. F. HUMPHREYS.

Birmingham, Jan. 22nd.

SIR,—In his letter (January 26th, p. 176) Mr. Bertwistle, referring to Mr. Humphreys's article on the above subject, states "I fully endorse his opinion that a negative radiogram means nothing, though a positive one is invaluable. Weston Price goes further, and states that it is just those teeth which present no radiographic evidence of disease which are the worst offenders." I venture to suggest that Mr. Bertwistle has misrepresented the opinions of both these authors. Apart from acute lesions, which are producing symptoms and can usually be detected by a clinical examination, I maintain that the negative evidence in those cases where a clinical examination is negative is most valuable, and that it is rare for the radiographic evidence of teeth producing systemic disease to be negative.

Weston Price estimates that about 10 per cent. of teeth which are septic show no change on the radiograph, but several of the radiographic illustrations he uses to demonstrate this point show definite lesions. On the other hand, radiologists find apical abscesses, sometimes of considerable size,[1] every day in patients complaining of symptoms, attributed by their medical advisers to dental sepsis, whose teeth have been very carefully examined by skilful dental surgeons with negative results.

To my mind the important feature is not the relatively rare case of dental sepsis in which changes are absent to the clinical observer, and the lesion is not shown on the radiograph, but the failure of some dental surgeons to appreciate the danger of lesions which are very obviously shown on the radiograph, because no local clinical signs are present. Sometimes teeth, the radiographs of which show definite septic changes at the apices, are subsequently root-filled—a procedure which is both dangerous and unjustifiable. The excuse that the tooth is "useful" in any sense should not be considered. I have recorded[2] the grave results which have followed this procedure.

Similarly, the wholesale extraction of teeth without clinical or radiographic evidence of sepsis is to be condemned, and though of the opinion that all dead teeth are a potential source of danger to the patient, I hold that, even if a tooth has been root-filled, provided the clinical and radiographic evidence, as far as this tooth is concerned, is negative, it is purely empirical to extract this tooth.—I am, etc.,

JAMES F. BRAILSFORD, M.D.

Birmingham, Jan. 27th.

[1] James F. Brailsford: Observations on the Value of Radiography in the Diagnosis of Obscure Dental Sepsis. *British Medical Journal*, June 16th, 1928.

[2] Idem: Radiological Findings and their Significance in Focal Dental Sepsis. *The Dental Surgeon*, October 15th, 1928.

CARDIOSPASM OR ACHALASIA OF THE CARDIA.

SIR,—Though not desiring to enter the lists in the discussion on the pathogenesis of oesophagectasia, I wish to record observations made in operating on three of these cases. Those who perform the operation of digital stretching of the cardiac orifice do not get the opportunity of observing either the relations of the abdominal oesophagus or the state of the musculature.

I have operated on three cases, referred to me by physicians, by the method described by Mr. R. P. Rowlands. (I do not know if he was the originator of the operation.) All three were well-marked cases, and two of them had received treatment for a considerable period with the mercury tube, which had in both cases become a necessity before each meal. The third case had had a shorter period of treatment, and was operated on only a few months ago.

The details of the operation are as follows: After medium laparotomy the cardiac end of the stomach is drawn down and the peritoneum divided round the oesophagus as it emerges from the diaphragm. A piece of rubber tubing is then passed behind the oesophagus and gentle traction employed. In this way it is quite easy to expose two inches or more of oesophagus. An oesophageal bougie is then passed down the gullet into the stomach, and the circular fibres of the terminal inch or so of the oesophagus are carefully divided right down to the cardiac end, both anteriorly and posteriorly. Great care is taken to avoid injury to the mucosa and to the vagi.

The operation is more simple than it sounds, and can be completed in about fifteen minutes. With regard to results: immediate relief of symptoms has followed operation and lasted for a variable time, but sooner or later symptoms have recurred, though less severe in character. This I believe to be often true after digital stretching. I do not know whether the late results of Walton's cases are as good as they were when he published his paper, but it would be of interest to hear.

In my three cases I can definitely state that at operation (1) there was no cardiospasm, a plain bougie passed quite easily—before anaesthesia only a mercury tube would pass; (2) there was no suggestion of sphincter hypertrophy, in fact no distinctive sphincter could be detected; (3) in all three cases, though varying in degree, there was a well-marked tongue of the Spigelian lobe of the liver lying immediately behind the lower end of the oesophagus.

My object in writing is to record these observed facts in three cases operated on. It would be foolish to attempt to draw conclusions from observations on three cases, but facts rather than theory are necessary to elucidate the problem. In the first case operated on the tongue of liver lying behind the gullet was very noticeable, and my attention was called to it by Mr. Douglas Harmer, who was present at the operation. In both the others there was a definite projection of liver substance, but not so marked as in the first case. That this unusual relationship can have any bearing on the cause of the disorder seems unlikely, but the coincidence is odd. It seems probable that during respiration the oesophagus below the crura becomes wedged to some extent into the V-shaped gap in the liver as the liver is squeezed by the piston-like descent of the diaphragm. It is mere conjecture to suggest that this may have some bearing on the disturbance of the vagi. I record the anatomical facts on the off-chance that it may help in the solution of the problem.

The other two observations seem to support the views held by Hurst. Dr. Hurst has been taken to task for his reference to postural tone, which Sherrington defined as "a reflex contraction excited by stretching." It seems to me that, whatever the cause of the degenerate changes in Auerbach's plexus, the clinical syndrome fits in with a disordered neuro-muscular mechanism and a disturbance of postural tone.

Sherrington called attention to the dual activity of muscle: the one concerned with movement, tonic activity, the other with posture; the one *phasic*, the other *tonic* (plastic tone), distinct physiological functions. This dual function will explain the deformity which results in joint disease, and the marked wasting which follows. Space will not permit a discussion on this theme, though there are some interesting points bearing on the subject under debate. If we accept as a universal factor the findings of Mr. G. W. Rake, we can accept not only the disturbance of the postural tone as described by Hurst, but also inhibition of the phasic tone which should give the stimulus to relax.—I am, etc.,

London, W., Jan. 25th. C. GORDON-WATSON.

SIR,—Mr. Greenwood, in his letter published on January 19th (p. 131), brings forward nothing in support of his contention that achalasia of the cardia is really due to spasm, which did not appear in his original article, to which I have already replied. Moreover, I have published the evidence in favour of the achalasia theory so fully in various places that no further answer is called for.

It is, however, necessary to deal with Mr. Greenwood's personal attacks. He suggests that I came to the conclusion that so-called cardiospasm was due to achalasia of the cardia on the strength of the single case I showed at the Royal Society of Medicine in January, 1915. If, however, he had taken the trouble to read my full paper on the subject published later in the same year, in the *Quarterly Journal of Medicine*, he would have seen that I had at that time investigated seven cases, and that I had waited for five years after the idea of achalasia first occurred to me in order to obtain sufficient evidence in its support before I published my observations.

Mr. Greenwood states that it was Sir Humphry Rolleston's conception of the pathology of so-called cardiospasm that suggested to Sir Cooper Perry the alternative nomenclature, and he accuses me of adopting both the explanation and the terminology without acknowledgement. If Mr. Greenwood has, as he states, consulted the extensive literature, he must know that he is making a false accusation. I have always acknowledged the priority of Sir Humphry Rolleston as the originator of the theory of achalasia, since he called my attention to his 1895 paper when I gave my views on the subject for the first time at the Royal Society of Medicine in December, 1914 (vide *Quart. Journ. Med.*, 1914–15, viii, 300; *Medical Essays and Addresses*, 1924, p. 110; *British Medical Journal*, January 24th, 1925; and *Lancet*, March 19th, 1927).

In my original communication on the subject at the Royal Society of Medicine I described how Sir Cooper Perry had coined the word achalasia in response to a request from me for a single word to express "absence of relaxation." In spite of Mr. Greenwood's suggestion of plagiarism on my part he must be aware of this, because Sir Cooper Perry has never written on the subject himself, the only references to his authorship of the word being in the papers I have myself written.

Dr. Beatty (January 26th, p. 179) still objects to the condition under discussion being regarded as a disease of the cardia. But the hypertrophied and dilated oesophagus is an essential part of the picture, and this occurs in achalasia of the cardia and not in spasm of other parts of the oesophagus. One speaks of carcinoma of the cardia and pylorus, although carcinoma occurs in other parts of the oesophagus and stomach; so why not achalasia of the cardia? Oesophagoscopy shows that most cases of spasm of the oesophagus are secondary to some small local lesions; the case of multiple stricture I referred to is the only one I have seen in which no such lesion was discovered.

I think that some of Dr. Beatty's *x*-ray observations may depend upon a fallacy which I only discovered after much investigation, and which is still ignored by most radiologists. The oesophagus is always full of non-opaque material in achalasia, unless the individual has recently vomited. Hence with an opaque meal, which slowly sinks to the bottom, one does not see the whole eight-inch column. The only satisfactory way to *x*-ray these cases is to empty the oesophagus by a Senoran's evacuator and then give a big enough meal—often a pint or a pint and a half—to fill the distended oesophagus afresh.

In referring to the safety valve of a boiler I meant the simple ball valve such as is used in toy steam engines. This closes by falling back when the pressure ceases to be excessive: cannot one picture a similar return to the normal postural tone of the sphincter when it is no longer forced open by excessive pressure? (I have not replied to Mr. Greenwood's references to postural tone because he is apparently ignorant of Sherrington's work on the subject, and thinks "postural tone" is another wicked invention of mine.)—I am, etc.,

ARTHUR F. HURST.

New Lodge Clinic, Windsor Forest, Jan. 28th.

*** Owing to the heavy claims upon our correspondence columns we are unable to find space for further discussion of this subject.

ENLARGEMENT OF THE PROSTATE.

SIR,—I am interested in the article by Mr. C. A. R. Nitch on "Benign enlargement of the prostate" (January 26th, p. 139) because he apparently recommends the combination of two different operations of prostatectomy—namely, Freyer's operation and the operation that I described and have advocated for a number of years.

The essential points of Freyer's operation are enucleation with the finger through a small suprapubic incision while the abdominal wall is forced downwards with the knuckles to reach the prostate that is forced upwards by a finger in the rectum. The essential features of my operation are a long incision that allows the hand to sink between the recti and the finger to reach the prostate easily, thus obviating the use of the rectal finger and the full display of the bladder base by retractors and the Trendelenburg position in order to remove fragments of prostate, tags of capsule, and flaps of mucous membrane, to ensure a large opening between the bladder and prostatic cavity, and to control bleeding by ligature and suture.

At one part of his article Mr. Nitch recommends the Freyer operation, but qualifies this by saying that "if the walls [of the prostatic cavity] are uneven, and contain irregular masses of small adenomata, an open operation should be performed." Now it must have struck every surgeon who practises the method I described that the finger is not a reliable guide to the presence of semi-detached layers of capsule and flat portions of prostate in the wall of the prostatic cavity, and that inspection reveals quite unexpected irregularities. Moreover, these prostatic relics are only one source of post-operative obstruction and sepsis out of many that can be displayed by inspection and cannot be felt by the finger. The guide on which Mr. Nitch depends in deciding whether to convert a Freyer operation into what he calls an open operation is therefore unreliable.

At another part of the article Mr. Nitch would "emphasize the importance of a long incision in the abdominal wall" to allow free access to the prostate and to "dispense with the necessity for a finger in the rectum." This is no part of Freyer's operation, but it is an essential part of my operation, and one which I have reiterated in the medical press for many years. Mr. Nitch cannot have it both ways. He cannot have a finger in the rectum and avoid putting a finger in the rectum. What, then, does he really recommend? I confess that I am unable to decide.

I am gratified, nevertheless, that Mr. Nitch should have adopted, or at least approved of, even part of the technique that I have recommended so long and so often.—I am, etc.,

London, W.1, Jan. 28th. JOHN THOMSON-WALKER.

TONSIL AND ADENOID OPERATIONS.

SIR,—In the execution of an operation which all surgeons practising in this specialty are often called upon to perform there will naturally be variations of technique, and a wise forbearance should be exercised in the criticism of the methods of others. But are our results all that we could wish?

It would appear that amidst the cloud of controversy certain undeniable principles which we would all ad-

are in danger of being lost sight of. They are: (1) An absolutely safe anaesthetic. (2) Removal of the entire tonsil tissue—including the lingual tonsil. (3) Regard to the preservation of the anterior and posterior pillars, and a recognition of the powerful nerve reflex which any roughness to the tonsil would bring into play. (4) A minimum of haemorrhage at the time, and no after-bleeding at all.

In regard to the first point, is it not time that the "myth" of a persistent thymus as a cause of death be decently buried, and every case of death under anaesthetic be frankly investigated with an open mind, and the lesson laid to heart? For the surgeon bears his share of the blame with the anaesthetist.

In regard to the third point, I must join issue with my friend Dr. Horgan, when he says (January 12th, p. 84), "In a surgical operation the safety and efficacy of which is largely dependent upon the celerity with which it can be carried out. . . ." In my judgement neither safety nor efficiency is served by speed, but only convenience.

In regard to the fourth point, surely the danger of haemorrhage is rather under-estimated. Deaths from haemorrhage after this operation are reported in the coroners' courts all too frequently. Each one of these regrettable incidents not only reflects on the surgeon concerned, but affects the attitude of the public towards tonsil operations.

Do children stand loss of blood as well as we suppose? Are we sufficiently critical of the amount of blood our patients lose at the time of operation? If a child has a serious haemorrhage it will take nearly a year to get over its effects.

While we must feel indebted to Dr. Clarke (January 5th, p. 45) for calling attention to the disadvantages of ligaturing large bunches of tissue, I see no reason why the surgery of the tonsil should be denied the advantage of the time-honoured principle of surgical ligature of bleeding vessels. It may be difficult, it may require some skill and practice, but it makes for certainty, safety, and the surgeon's peace of mind. It is clearly the method of choice in the operation for adults.—I am, etc.,

Birmingham, Jan. 21st. MUSGRAVE WOODMAN.

SIR,—I was gratified to read in your issue of January 26th a letter from so able a pen as Dr. Dan McKenzie's expressing views anent the "let it rippers" in tonsil haemorrhage. I am in entire agreement with him, and like him have long since joined the almost maligned army of "haemostats."

In my earlier years I practised the dexterous art of as rapid a tonsillectomy as possible, regardless of coincidental haemorrhage. But a few "humiliating and uncomfortable" experiences, culminating in a chance remark once made by a doctor, woke me up to the realization of the adoption of general surgical principles, *even in tonsil operations*. The doctor whose case I had tonsillectomized, thirty miles away from Manchester, remarked "What shall I do for bleeding?" This set one thinking how uncertain was the technique.

It has always been a mystery to me why there should be this ruthless disregard for haemostasis, for I can recall no other surgical procedure where similar methods are adopted. In the past, the prevalent slogan appeared to be "Quick in, quick out, and quick out of the house," but one is happy in the belief that such is rapidly disappearing. Tonsillectomy after all is *an operation*, though I well remember, after giving a post-graduate lecture on this subject, a member of the audience remarking, "But you are making it a major operation."

Believing as I do that quite 95 per cent. of tonsils in all ages can be completely and expeditiously enucleated with the blunt guillotine, at least let us take time to ensure haemostasis in one tonsil bed before enucleating the second tonsil. This desideratum necessitates a longer anaesthesia than that induced by ethyl chloride or nitrous oxide, though need not, in the majority of cases, take more than five minutes.

Without wishing to reopen the question of anaesthesia in tonsillectomy, I consider that on occasion it may be one of the most difficult duties an anaesthetist undertakes, and calls forth all his skill, co-operation, and experience, which is such a comfort to the surgeon.—I am, etc.,

Manchester, Jan. 26th. F. HOLT DIGGLE.

SIR,—Many readers, especially those who are not laryngologists, must wonder at the conflicting opinions held by your correspondents. Why is it that some laryngologists remove tonsils solely by the dissection method, while others in the great majority of their cases use the guillotine method of enucleation? Why is it that some insist on routine ligaturing of vessels in the tonsil bed, while others say that they never, or shall we say hardly ever, have to tie a vessel? How can we reconcile the results of the ripe experience of Mr. Tilley with the remarkable results of Dr. Horgan?

The modern reverse method of using the guillotine was first advocated in 1910 by Whillis and Pybus of Newcastle. The method was adopted by Sluder in America, and came back to us with enhanced reputation as Sluder's technique. During the war little teaching was done, so it came about that the modern method of removing tonsils is practically a post-war change.

Enucleating tonsils with the guillotine is like hitting a golf ball. It looks quite easy, but is not so easy as it looks. A pedunculated ("tee'd up") tonsil may be quite easy, but to be sure of removing tonsils completely from a "buried lie" requires a great deal of practice—much more practice, in my opinion, than the dissection method. To become really expert one has to remove many hundreds of all types of tonsils, and one has, like golf, to keep in practice or the knack goes. Those whose lot it is to remove fifteen or twenty tonsils a week tend to adopt the guillotine. Those who have one or two tonsil cases sandwiched in their operation list tend to use the dissection method. They have in it a method which has served them well, a method which in good hands will produce the desired result, whereas the guillotine, like the golf club, is fickle, and the more you neglect it the less likely it is to produce a first-class result.

On reading through the letters it is noticeable that the "dissectionists" emphasize the danger of bleeding, and advocate routine tying of vessels. The "guillotinists" state that they rarely get bleeding, and tie vessels only when it is necessary. Does the method explain some of the divergence of opinion?

With the latest tonsil écraseur, described by Mr. T. B. Layton,[1] it is possible to remove tonsils without any bleeding whatever. It requires a more prolonged anaesthesia, of course, than ethyl chloride, as one has to wait the coagulation time of the blood of each tonsil, and its use has not displaced the ordinary guillotine where large numbers have to be dealt with. It occupies no longer time than an ordinary dissection, and it safeguards any damage to the anterior pillars, which is always a possibility with ordinary guillotine operations.—I am, etc.,

Guildford, Jan. 25th. T. B. JOBSON.

SIR,—The source of haemorrhage during and after the operation of enucleation of tonsils appears to be worthy of consideration. It seems to be largely accepted as being arterial in character.

Having performed at least 8,000 complete enucleation cases, under chloroform, I take this opportunity to state that I have rarely seen the smallest spurt from an artery; but, years ago, haemorrhage after operations occasionally caused me considerable anxiety. I found this to be due to the division of a fairly large vein (I have occasionally seen two running parallel). In these cases the vein extends the whole length of the tonsil bed, running vertically from above downwards. Its position is at about the junction of the posterior and middle thirds of the fossa, left after the removal of the tonsil, and is situated in the connective tissue of the capsule. During the operation the greater part of this vein appears to be usually excised, and it may bleed very freely from the extreme upper or lower ends of the wound.

[1] *Lancet*, December 15th, 1923.

I find that Spencer Wells's artery forceps applied to the bleeding point, at the time of operation, and allowed to remain on for five or ten minutes, yield most excellent results.—I am, etc.,

E. MALCOLM STOCKDALE.

Liverpool, Jan. 28th.

SIR,—The subject of the paper by Mr. Sandiford and Dr. Clayton (July 28th, 1928, p. 149) was the guillotine operation in children under ethyl chloride anaesthesia, and it was from this standpoint that my letter (December 15th, p. 1113) was written.

An essential factor in the modern guillotine operation is that manipulation with a blunt instrument arrests haemorrhage by tearing and twisting the outer coat of the vessels and causing the inner to contract and retract, thus attaining much the same result as by the use of a ligature. In operation by dissection, especially if scissors are used, ligation, as a rule, is necessary. The gauze pressure, to which I referred, is an extra precaution to control, not arteries, but capillaries which may have escaped the action of the guillotine.

In answer to Mr. Herbert Tilley's questions I would state that in my experience the anaesthetic and analgesic periods produced by ethyl chloride are sufficiently long to admit the application of efficient pressure and to deal with the exceptional vessel by ligature or stitch; indeed, Mr. Tilley answers his own question when he states in a subsequent part of his letter that "the time required for doing so will often be less than eight or ten seconds." Should the period, however, prove too short it is a simple matter to give a little ether, while keeping up pressure on the tonsil bed.

I would be the last to treat the subject of haemorrhage during any operation in a "light-hearted way," but surely Mr. Tilley misunderstands me. I wrote, and mean, "little." A little capillary bleeding, estimated by StClair Thomson to be about one ounce in the guillotine operation in children—in some cases I think it is less—is, I suggest, beneficial in cleansing what is usually a very septic area. If the bleeding is more than a little then the tonsil bed should be carefully examined, and should a definite bleeding artery be found it should, of course, be secured with a ligature, while if multiple bleeding capillaries are seen the pillars should be stitched. Such cases are, however, in my opinion, rare.

With regard to secondary haemorrhage, in a recent series of over three hundred cases, aged 1 to 14, the proportion was under 1 per cent., and in a former series even lower; in these cases the operation described in my former letter was done, and in none of them was it considered necessary to use ligature or stitch. The type of haemorrhage, fortunately rare in children, to cause real anxiety is the flood-like bleeding from a large number of vessels. This is met with in others than recognized haemophilics, though there is little doubt that the cause is a very low coagulation power of the blood. In such cases ligation is impossible and useless, while stitching of the pillars is not trustworthy, and is very difficult to carry out at once. They are, however, in my experience, invariably controlled by packing the tonsil socket with strips of gauze and exerting pressure and counter-pressure from outside for a minute or two, while 10 c.cm. of normal horse serum and 1/12 to 1/6 of a grain of morphine are injected. On careful removal of the packing the bleeding is found to be arrested and the pillars may now be stitched, though usually this is unnecessary. The bleeding, in a much modified degree, may recur in a few cases, when horse serum may be repeated, in two injections, if required, giving in all up to 30 c.cm.

—I am, etc.,

H. NORMAN BARNETT.

Bath, Jan. 18th.

TREATMENT OF CANCER BY LEAD.

SIR,—In the *British Medical Journal* of January 12th (p. 82) Mr. Hume, referring to my letter published on January 5th (p. 42), says that I made certain statements about the St. Bartholomew's report that are so misleading as to call for correction. Let me then support my statements by facts culled from the original report of the St. Bartholomew's Hospital Cancer Committee on the observations of Mr. Hume and his fellow workers.

Fourteen out of a total number of twenty cases treated received less than 0.25 gram of lead, about half the minimum dosage recommended by us, unless, of course, a satisfactory result is obtained with a smaller dosage. Eight of these fourteen apparently received less than 0.2 gram. Of the six that received more than 0.25 gram, only one seems to have been given as much as 0.4 gram; not a single case was treated to the minimum full extent (see Table II, original report). If, then, my statement that the patients were too ill to receive more than a small quantity of lead was not justified, the only alternative explanation of the unsatisfactory results is that the work was not properly conducted. I shall show, however, that both factors were concerned in producing the bad results.

I complained that a series of only twenty cases was quite inadequate. Mr. Hume asserts that this small number should have been "sufficient to estimate the likelihood of the method being of practical value." Yet in the original report we find the lament that "It is regrettable that so few cases were available for investigation." I would draw attention to the explanation in this report of the paucity of cases treated. "After June" (that is, after only four months' work, a period too short for the satisfactory treatment of any one patient) "there was a very pronounced falling off in the number of cases . . . partly due to a shortage of beds . . . but also to the fact that the staff of the hospital had by that date formed so unfavourable an opinion of the treatment that they were unwilling to submit their patients to it." I cannot believe that any committee of scientific men would regard that period of time and that number of cases as sufficient to enable them to decide a matter so important as that under investigation.

In his conclusions Mr. Hume states that the average duration of life subsequent to treatment was only thirteen weeks, and seeks to throw the blame for this on the treatment. Mr. Hume resists my suggestion that fifteen—it may be that this figure should be eighteen—of his cases were too ill to receive a sufficient quantity of lead; but I reject absolutely, not only on the result of our work, but on that of others, the imputation that lead, properly administered, hastens the final issue. There is, moreover, no evidence in the report that it did so in any of the cases treated at St. Bartholomew's Hospital. In general it may be laid down that only occasionally can patients so near death from cancer as to live only thirteen weeks be treated: we, ourselves, have attempted to treat cases of this kind, and only very occasionally have we been rewarded. To base on a few cases imperfectly treated and observed for such a short time conclusions so sweeping as those expressed by Mr. Hume is to ignore every standard of scientific judgement.

What is the truth about these "physical wrecks" referred to by Mr. Hume? The following are the most relevant statements I can find in the report itself: "The reactions following the injection of lead colloid varied considerably, but they were for the most part transitory, and no fatality occurred which could be attributed directly to lead poisoning. The majority of patients only experienced a little headache and loss of appetite. . . ." The report then goes on to say that the patients who received a preparation *not made by us in Liverpool* "experienced more severe reactions. Severe vomiting occurred in all; two patients had rigors, and one of these became deeply jaundiced for ten days." Yet Mr. Hume hides the fact that the patients treated with our preparation did not suffer unduly, whereas those treated with another preparation did suffer severe reactions, for he says that "Dr. Blair Bell seems to be of the opinion that the treatment was not conducted on proper lines. I would remind him, however, that the preparation used was kindly supplied . . . direct from Liverpool." It seems clear that he has endeavoured to make your readers believe that all the patients became "physical wrecks" following the use of a preparation supplied from Liverpool, and, by inference, has implied that this is the inevitable consequence of the treatment rather than of incompetence.—I am, etc.,

W. BLAIR BELL.

Liverpool.

X-RAY DIAGNOSIS.

SIR,—Towards the end of last year there was a discussion in the *British Medical Journal* on the radiologist's activities from the surgeon's point of view and of the surgeon's shortcomings from the radiologist's point of view. Perhaps, in the circumstances, a general practitioner's point of view of one of the contestants—the radiologist—might not be inopportune.

As a general practitioner I owe the radiologist a debt of gratitude for his assistance and guidance in many obscure cases, but there are times when I find him very trying and not a bit helpful, the reason being that there appears to be no hard-and-fast rule followed by the radiologist in his reports on cases submitted to him for expert opinion. For instance, when I send a case, privately, for *x*-ray examination, and want to know if the patient has an arthritis of his spine or a neoplasm, I am rather annoyed when the radiologist volunteers the opinion that the patient is suffering from indigestion. Again, if I ask whether there is a calculus in the kidney it is irritating when he writes back and says it might be appendicitis or merely lumbago! One radiologist refuses to let me see the *x*-ray photograph, while another, although he does send me the photograph and his interpretation thereof, discusses the negative with the patient in his consulting room before ever he writes to me. These are concrete examples.

I submit, Sir, that when one calls in the aid of the *x*-ray expert one wants to know what his *x*-ray investigation shows or does not show; any opinion he may express should, and must, have reference to radiological findings only, and not to conclusions he may have reached merely as a medical man. If I want the opinion of a physician I go to one; on surgical points I appeal to the surgeon; and so, in the case of the radiologist, he satisfies me better so long as he tells me what his *x*-ray examination reveals, and refrains from general deductions.

As to seeing the *x*-ray photograph itself, I contend that, being the doctor in charge of the case (I am referring to cases *x*-rayed privately, and not in hospital), I have every right to see the plate, whether I am considered capable of interpreting it rightly or not. It is for me to judge.—I am, etc.,

VINCENT NORMAN, M.D., F.R.C.S.Ed.

Bradford, Jan. 19th.

DENTAL CARIES AND VITAMIN D.

SIR,—I do not think that "the thoughtful family doctor or parent" will be likely to follow what appears to be the advice of Dr. A. E. Barnes and "simply stop oatmeal and give cod-liver oil or some form of irradiated ergosterol and watch results." The thoughtful parent will probably be more inclined to try the simple, rational, and effective method of preventing caries, which, based on reliable data, has been so very successful during the last quarter of a century that it is now not only recognized by the dental profession, but also authorized by the Council of the Society of Medical Officers of Health in its leaflet on the "Prevention of Decay of Teeth." It is not only because this method has been so successful that the thoughtful doctor is likely to choose it in preference to the irradiated ergosterol and no oatmeal regime. He perhaps may know that Australia has been a great wheat-growing country, and oatmeal can hardly be considered as an appreciable part of the dietary of the people. Sunshine is specially abundant, and the irradiation of ergosterol in the skin is amply provided for. Nevertheless, in Adelaide and Sydney the percentage of school children with carious teeth amounts to nearly 95 per cent.—that is to say, a higher percentage than in England.

A similar tale may be told of New Zealand, where, as in Australia, sunshine is abundant and the food good in quality from the point of view of general health and nutrition. Eggs, milk, butter, etc., give ample supplies of vitamin D, but here, too, the incidence of caries in the teeth of children is much the same as in Australia. It has been noted, however, that caries was less prevalent in the schools which were far away from confectioners' or tuck shops.

By way of experimental evidence, "the thoughtful family doctor" may consult the research of May Mellanby, C. Lee Pattison, and J. W. Proud recorded in the *British Medical Journal* for August 30th, 1924 (p. 355). Therein it was shown that one group of children on "ordinary hospital diet" with *two to three drachms of cod-liver oil daily* continued to develop new carious cavities at about the rate of two per annum—that is to say, at much the same rate as they would on any ordinary hospital diet without cod-liver oil. The same research showed also that associated with variations in the amount of sugar and fermentable carbohydrates there went a corresponding variation in the amount of caries. The evidence was so clear on this point that *Science Progress*, commenting thereon, said: "This work verifies with some statistical exactness the well-known hypothesis that caries in teeth is due to carbohydrates."—I am, etc.,

J. SIM WALLACE.

London, W.1, Jan. 19th.

THE "CARDIAC SIGN" IN CARCINOMA.

SIR,—I am afraid I cannot agree with Dr. Stacey Wilson (January 19th, p. 131) in that I have never found the cardiac dullness absent in simple cardiac weakness following influenza.—I am, etc.,

W. GORDON.

Exeter, Jan. 27th.

LIPIODOL.

SIR,—For injection of lipiodol into the bronchial tree, why not use, instead of tracheal puncture, the via naturalis—the glottis, the route that the anaesthetist uses for his ether? I have used no other. The direct laryngoscope, urethral catheter, and 20 c.cm. Record syringe are all the apparatus required; time, one to two minutes. Children supine in a sheet, shoulders held by a nurse, head by an assistant, no anaesthetic; adults, local cocainization, sitting posture. Cases of bronchiectasis should be previously emptied of their sputum by inversion.—I am, etc.,

JAMES ADAM.

Glasgow, Jan. 27th.

HENRY HICKMAN MEMORIAL FUND.

SIR,—The committee has decided not to close this fund at the end of January as provisionally stated. From a contributor in Canada we gather that there may be medical men abroad and in the colonies who wish to send a donation to the fund, and who have not yet had time to reply. The number of contributors has so far been disappointing.

Without anaesthesia, the great achievements of present-day surgery would be impossible. We ask for further support, not only to recognize Hickman officially for the first time, but to claim this pioneer work for an Englishman, and, in so doing, to stimulate original work in anaesthesia. The honorary treasurer is V. Warren Low, F.R.C.S., 76, Harley Street, W.1.—I am, etc.,

CECIL HUGHES, M.B., Honorary Secretary, Hickman Memorial Fund.

London, W.1, Jan. 28th.

Medico-Legal.

A CHRISTIAN SCIENTIST'S DEATH.

In issuing a death certificate Dr. John Frankland West of Oxford took the unusual course of adding "Christian Science" to the causes—that is, dysentery and extreme wasting—which, in his view, had led to the death of Mrs. Hilda Gwendoline Davis, a Christian Scientist for twenty years.

The evidence at the inquest showed that Mrs. Davis entered Coston House, a Christian Science nursing home, and that Mrs. Robinson, the superintendent, had informed the relatives that while Mrs. Davis was at a Christian Science home there could not be a medical examination or report. Mrs. Davis was removed to the home of her daughter, but such was her outlook that she refused medical attention and would not admit that anything was wrong with her, although she was in a condition of extreme emaciation. Her son-in-law, Mr. J. R. Baker, a university demonstrator in zoology, was asked by the coroner if he had any complaint against the superintendent of Coston House, and he replied that he thought that anybody seeing a person in so emaciated a state should have taken steps immediately to secure medical attention. Dr. West said that when he first saw Mrs. Davis, upon her leaving the home, she was very ill and wasting, and he considered her condition had been definitely aggravated by the lack of medical treatment. If he had not inserted in the death certificate the words "Christian Science," but merely adhered to the textbooks, no inquest would have been held.

The jury returned a verdict of death from natural causes.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons spent this week in committee on the later clauses of the Local Government Bill, together with its schedules, and proposed new clauses. Several aspects of public health administration were debated. Next week the House will be in committee on the Scottish Local Government Bill, to which the Government hopes to move amendments for co-ordinating hospital services, provided that agreement is secured in preliminary negotiations with the voluntary hospitals and the local authorities.

On January 29th the Parliamentary Medical Committee received a deputation from the Poor Law Medical Officers' Association, headed by Dr. Bruce. The subject discussed was the pension rights of Poor Law officers as affected by the Local Government Bill. Assurances which had previously been received from Mr. Chamberlain by members of the Medical Committee were related, and in part reassured the deputation. On the previous day Mr. Neville Chamberlain, receiving a deputation arranged by the Health and Housing Committee of Conservative Members, said he hoped before long to make the Act of 1922, which provides for contributory pensions schemes, a compulsory one for all local authorities, so that all service under local authorities would count equally for pension. Where local authorities had adopted the Act of 1922 no difficulty would arise under the new bill, and he would endeavour to safeguard the rights of those Poor Law officers who wished to remain under the Act of 1896.

The Parliamentary Medical Committee has arranged to receive at its meeting next week a deputation from the Medical Practitioners' Union, which will discuss dispensing under the National Health Insurance Act.

Local Government Bill.

The House of Commons went into committee on January 23rd and resumed the consideration of the Local Government Bill at Clause 68, which provides for the discontinuance of grants. Mr. GATES proposed to qualify this provision by adding the words "other than grants for maternity and child welfare services." He explained that his amendment would keep the grants for these services, as at present, on the percentage system, instead of bringing them under the block system. Last year the maternity and child welfare grant cost £1,052,000. The service was young, growing, and very important. Ante-natal work was only beginning to be considered, and maternal mortality had hardly been considered at all under the schemes. In the last five years the cost of the service had increased by 36 per cent. Sir George Newman had pointed out in his latest report that 25 per cent. of children entering elementary schools suffered from physical defects which could have been prevented by better treatment before entering school. Hitherto half the expenditure under the Maternity and Child Welfare Act had been borne by the Ministry, but under the bill the local authority would decide how much of a block grant should be spent in maternity and child welfare work. Mr. Gates did not think that Clause 86 of the bill provided the Minister with a reasonable safeguard to induce a laggard authority to expedite the work of maternity and child welfare or to increase its amount in view of growth of population. The block grant had originally been fixed for a term of five years. The Minister now proposed that the first period should be three years, the second four, and the subsequent period five years. Mr. Gates considered this to be a great improvement, but said that within three years there might be an increase in the necessities of the neighbourhood which would have to come out of the rates, to the disadvantage of the maternity and child welfare services. An objection had been raised that the percentage grant system implied considerable official interference with local authorities. Mr. Gates said that during many years in local government work he had never heard anything but praise of the official interference by the officers of the Ministry of Health in such work as maternity and child welfare. The advice of these officials had been a great help to local administrators, and had stimulated many lagging authorities. Much of the work connected with maternity and child welfare was, and would be, done by voluntary associations. These were much discouraged by the provisions of the bill. He hoped the Minister would make the voluntary associations feel that they would have full opportunities for work in the future. Some, but not all, had received grants from their county councils. In every case they had received from the Ministry 50 per cent. of their approved expenditure. Under the bill that passed. Whatever the voluntary associations received they would now have to get through the local authorities, and Mr. Gates presumed the figure would be calculated on 1928–29. The Minister had not enough power to see that these associations were recognized by the local authorities. In Mr. Gates's borough of Kensington maternity and child welfare work was started over twenty-three years ago under a medical officer, who got together enthusiastic voluntary workers, and good work was done. Infant mortality in the borough had fallen from 140 deaths per 1,000 to 70. Mr. Gates added that the National Council of Women and other societies supported his amendment.

Mr. GREENWOOD said that the Labour party supported the amendment. Every social service to-day was developing, that being particularly true of maternity and child welfare, the treatment of tuberculosis, and of mental deficiency and venereal diseases. Not a single health service had been utilized to the extent Parliament permitted. In England and Wales last April 847 ante-natal clinics were struggling to cope with the work. Nobody could say they were sufficient. The real opposition to the development of these health services came from the Treasury, which argued that the percentage grant system involved increasing expenditure, which was uncontrollable, and could not be forecast. He contended that the expenditure could be forecast within narrow limits. The State could rule out expenditure which it did not think should receive assistance from the Exchequer. He did not pretend that the percentage grant was in itself an ideal system, but it would get as near the ideal as possible if modified by density of population, poverty, or other necessary factors. Under the Government's scheme every new development of maternity and child welfare work after the grant had been fixed would be a new burden, without a penny from the Ministry of Health. Sir George Newman, in his last report, had said that adequate ante-natal provision, whether provided by doctors or midwives, with the assistance of the municipal clinic or the maternity hospital, was the only sound foundation upon which an effective scheme for a maternity service could be built. Yet Mr. Chamberlain was making that foundation unsound.

Mr. PERCY HARRIS said that in 1916 there were 650 maternity and child welfare centres; in 1928 there were 2,684. He denied they were chiefly found in the richer areas. In London there was more activity in the poorer areas, and in Bethnal Green, the poorest borough in London, there was probably more activity than in any other part of the country.

Dr. VERNON DAVIES said both sides were anxious that nothing should be done to interfere with the development of this service. They simply differed on the best means of dealing with it. He did not agree with Mr. Gates's amendment, being definitely opposed to the percentage grant and in favour of the block grant. Under the percentage grant money was given simply according to ability to pay. The percentage grant encouraged extravagance, and necessitated very careful Government control. These grants were given in the first place as a stimulus. The essential nature of a stimulant was that it was temporary; if made permanent it tended to become a narcotic. All local authorities had the opportunity for some time of taking advantage of the percentage system for maternity and child welfare, but a large number had not done so, from lack of interest, from fear of increase in the rates, or from poverty. The last was the main cause, and on behalf of the poorer authorities the House should welcome the action of the Minister in bringing in the block grant. The Minister had told them that the average grant per head for maternity and child welfare was in the region of 5d., but that in certain towns the block grant would bring the money up to 200l. and even more. No one could say the services would be starved. The money would be there if the public cared to have it. By Clause 86 the Minister could either initiate these services or see they were carried on efficiently. Public opinion, knowing of the new money which would come into the district by means of the block grant, would begin to insist on local authorities using it for this specific purpose. As a keen supporter of maternity and child welfare work, who had initiated and carried on such a service, he was convinced that the day of the percentage grant for maternity and child welfare services was over. Money was essential for the success of a child welfare centre, but what was needed was an enlightened public authority, and above all a conscientious, well-trained, tactful woman as nurse. If they had a thoroughly trained nurse with an instinctive love for mothers and children, and a medical officer with the same characteristics they would have a successful maternity and child welfare service. People would only attend if they had the fullest confidence in the nurse and doctor, and were received with tact, good will, and sympathy. Personnel was much more important than money. The results of the block grant would be an increased number of centres, particularly in necessitous areas, and an efficient standard in all centres. There would be no Government control of expenditure, and that would stimulate initiative and efficiency. The services would benefit by deliverance from the insidious charm of the stimulating cocktail of percentage grants.

Miss LAWRENCE remarked that Dr. Vernon Davies had said that tact and sympathy were a good substitute for money. She denied that Clause 86 gave the Minister power to insist on maternity work being undertaken. No clause asking for a reasonable standard could turn optional services into compulsory ones. These services, with tuberculosis, venereal disease, and other services, were optional. She quoted evidence given on behalf of the Ministry of Health to the Royal Commission on Local Government to the effect that the Minister had no power to compel local authorities to institute maternity and child welfare clinics

but that the lever of a substantial grant had in practice achieved a fair efficiency. At present the Minister could make proportional grants direct to voluntary societies. Under the bill all they would get was whatever the local authorities gave them by way of a scheme approved by the Ministry. The Labour party stood for a logical extension to mental deficiency, tuberculosis, venereal disease, and care of the blind of the principles which it had advocated on this amendment. Local authorities had to be bribed by a 75 per cent. grant to take up venereal disease work. Would they carry it on when every penny they spent had to be taken out of block grants handed over for other purposes?

Sir DOUGLAS NEWTON said the new system would be better for voluntary organizations interested in maternity homes, which at present had to apply to many boards of guardians for contributions. In future they would apply to major authorities, which were more likely to be sympathetic.

Lady ASTOR said that under Clause 83 the voluntary associations were in a stronger position than ever before. Health services had not grown because of popular demand but in spite of general apathy, because they were inspired by the central authority, working mainly through voluntary associations. Local authorities seldom moved unless they were prodded by the Minister of Health. The problem of the children between 1 and 4 years of age had to be faced. Of 82,000 children under 14 who died during 1928, 25,000 were between 1 and 4 years of age.

Mr. CHAMBERLAIN said the Registrar-General's figures for 1928 showed that the infant mortality rate came down last year to 65 per 1,000, being 4 per 1,000 lower than the previous best record in this country. The maternity and child welfare service had materially contributed to that tremendous improvement. The Treasury was unlikely to impose a change of policy regarding a service in which the Minister of Health took the keenest interest and where it could only gain a few hundred thousand pounds. It had been said that the maternity and child welfare service was not popular. The mental deficiency service was far more unpopular, and therefore if they exempted the former service from the block grant on that score it was difficult to see where they could draw the line. At the Ministry of Health he considered the reports which came in from all localities, and he did not find the present maternity and child welfare system satisfactory. He agreed with Mr. Greenwood that there should be many more ante-natal clinics. To show how the present system worked he cited the grants per child under 5 years which were paid to four poor towns—Gateshead 27d., Dudley 21d., Tynemouth 36d., and Merthyr Tydfil 43d. Manchester received per child 128d., Liverpool 107d., Leeds 140d., and Eastbourne 209d. How could they say that kind of distribution was likely to encourage adequate maternity and child welfare services in poorer districts? As the service was to-day the average cost over the country was 5d. a head. Under the Government scheme many towns and counties were going to gain many times that amount. He had offered a guarantee of a shilling a head, but that was only to the few places which would not gain more under the scheme. It was true that under Clause 86 he could not force local authorities to give adequate maternity and child welfare services, but he would have a powerful lever in being able to take away from the grant which they had already got. Instead of actually using that lever he would only have to whisper into the ear of the local authority "Clause 26." No local authority would resist a reasonable demand for adequate services of this character or risk the loss of the grant. He attached importance to the work done by voluntary associations, and under Clause 83 the Minister himself would see that their interests were looked after. In the case of London the bill provided that the Minister should make a scheme providing how much the London County Council and how much the borough councils were to contribute to any particular voluntary association. In the country the inspections of voluntary work by the officers of the Ministry would go on in a different form, and the Minister's approval had to be obtained to the scheme under which the contributions of the local authorities to the associations were fixed. He was putting a clause down on the paper to give him power, after consultation with the local authority, to revise a scheme during a quinquennium when an association desired to extend its services, or when some body of people desired to form a new association. Again, if Parliament should impose on local authorities a new service which would mean new expenditure by them, then it would be just that Parliament should make an additional contribution towards the cost, and he had put down a new clause declaring this to be the intention of Parliament. Finally, he remarked that the whole system introduced by the bill would have to be reviewed before many years.

Mr. PALIN said that as an economy the money spent on infant and maternity welfare centres was the wisest expenditure a municipality could make.

Mr. JAMES HUDSON represented that Dr. Vernon Davies had said that sympathetic and tactful nurses and voluntary workers could do all that was required. He contended that skilled medical attention was required. Huddersfield had recently been divided into three parts, and in one area, instead of leaving the care of mothers and children to sympathetic persons and nurses, an arrangement was made for a monthly visit before and after birth by a skilled medical man. Medical assistants were specially appointed for the job. In the third of the town where this experiment was tried the death rate was reduced by 10 or 11 per 1,000 during the brief period of the experiment. He regretted that Huddersfield Town Council had not applied the system in the other areas of the town.

Mr. CECIL WILSON said that in Sheffield infant mortality had dropped about 15 per cent. since 1923, but mortality from puerperal fever and other accidents of childbirth had gone up 83 per cent. The number of cases going to the maternity centre had increased by 238 per cent. since 1921.

Dr. FREMANTLE said that, as an old medical officer of health, he had been in close touch with the voluntary associations and in co-operation with them for thirty years. When the bill was first announced he had shared the anxiety at the abolition of the percentage grant, but now he was convinced that the bill, under certain conditions, was a great advance, and they had to make the best of it. Medical officers of health must recognize that the new principle of weighted population which had been introduced for calculating the block grant was an interesting new factor in public health administration. The weighting of the population according to the number of children under 5 years old and the number of the unemployed had got possibilities. A great deal depended on how the local authorities were going to use the powers given them under this bill. Those who had the administration of these services felt again and again that it was impossible to move because of the lethargy of many local authorities. Some, especially in industrial centres, were keen, some indifferent, and some actually hostile. Under the bill there would be opportunity for getting greater interest and for focusing attention upon local government. If they could get a largely increased interest in local government they could trust the local authorities to carry out the block grant system properly, with great advantage compared with the present system.

Mr. LANSBURY said that under the percentage grant system the death rate among children in the poorer districts of London, Leeds, Bradford, and Bristol had been more than halved. The least falling off of money would mean an increase in the death rate among children.

Mr. GATES, in view of the sympathetic speech by Mr. Chamberlain, asked leave to withdraw his amendment. Leave to withdraw was refused, and on a division the amendment was defeated by 130 to 206, a few Conservatives voting for it. Clause 68 and subsequent clauses were then added to the bill, and further progress was made with the bill on the following day, January 24th.

On January 25th the House again went into committee on the bill and discussed Clause 75, authorizing the Minister to prepare with county and district councils schemes as to maternity and child welfare.

Miss SUSAN LAWRENCE asked where the money would come from. The clause, she said, proposed to give the Minister power, wherever in a county any authority had shown willingness in the matter, to force the county to spend as much as might be necessary out of the county apportionment on this service. The organization of this service, if properly carried out, would cost a great deal. Institutional treatment for this class of service was backward. They had only 2,460 local authority beds at maternity hospitals. Only 122 local authorities had institutional treatment for puerperal fever, and only 252 had arranged for special nursing. There were only 93 day nurseries in England and Wales. They ought to spend £1,000,000 extra to deal with this question, and there should be more severe compulsion than was proposed in the bill. The reform proposed in the clause was good in itself, but would in the long run be carried out at the expense of the ratepayers.

Dr. FREMANTLE said he would consider the proposal made by the clause in the light of the practical experience he had as a county medical officer of health. In gingering up local authorities in his area to undertake increased expenditure he had been no exception among medical officers of health. The difficulty hitherto had been that under the Local Government Act, 1888, the power of county councils over district councils had been shadowy. All that could be done was to try to persuade them. As a rule insufficient money was available, and that was why these services had not been developed in the past. In the future more money would be available for every county and county borough, and there was a great possibility of its being expended. The county medical officer of health would be able to go round to the district medical officers of health, and if told that an authority had decided not to introduce these services, he could urge that the question be raised again. Altogether there would be a good case for starting new centres and developing the work. Mr. Palin had assumed that local authorities had not been stirred up in Yorkshire, but Dr. Fremantle said he knew a medical officer in the West Riding who was very active in that way. Dr. Fremantle thought the clause would be a great help to maternity and child welfare.

Dr. VERNON DAVIES said that as he understood the clause the centres established by district councils would be worked independently of the county council, which would have no direct control

over their administration or *medical* service. Such centres were intended to work in a consultative capacity and only to a small extent as treatment centres. The maternity and child welfare centres could not undertake the treatment of cases of tuberculosis, *venereal disease*, or early mental trouble, neither could they treat the serious diseases of women. They would have to distribute the serious cases to the hospitals, and the expense would not amount to very much. The fear that this service would be hampered by the bill was groundless.

Miss WILKINSON said all the House *recognized the amount* of good work done by Dr. Fremantle on such questions, but she suggested that he was wrong in his *interpretation* of Clause 75. It did not say what would happen to the districts which had not a maternity and child welfare committee. Maternity homes in crowded areas, toward the provision of which the Ministry had promised 50 per cent. of the maintenance charges, were being held up pending the passage of this bill.

Mr. RENNIE SMITH said that the nation as a whole lagged behind in pre-natal effort and in the co-ordination of the best scientific treatment round about the actual birth. A considerable allocation of money was needed to get trained medical officers and nurses in the areas where they had not enough, and in many other areas where these services did not exist.

Mr. ARTHUR GREENWOOD said that in many county areas where there were only a few maternity and child welfare schemes in operation the general sense of other local authorities in the counties would be against the expenditure of additional money, and the Minister would be unwilling to apply *much* pressure.

Mr. CHAMBERLAIN said he had listened in weariness of spirit to fallacies and *misstatements*. If these health *services were made* compulsory the Government must lay down precisely what each local *authority had to do*. Maternity and child welfare services in a county were normally the work of the county council, but certain county districts had been given powers under Acts of Parliament to carry on these services in their own areas. They were islands in the county. In the new county apportionment the Government included the grants which had hitherto been given to these separate areas, and the purpose of the clause was to determine the amount of money which was to be taken out of the county *apportionment* and to be handed to the authority which had to carry on this service in its own area. There were only about 250 of these authorities, and there was no case where one of them was doing nothing. He begged the House not to take too gloomy a view of the progress of the maternity and child welfare service. He was doing all he could to improve it, and hoped to have an opportunity of doing more soon. The amount in the Labour party's estimates for maternity and child welfare service was £814,000. This year it was £1,052,000. In 1924–25 there were 639 ante-natal clinics in the country. Now there were 847. The number of beds in maternity homes and hospitals recognized by the department had risen from 2,001 in 1924 to 2,478. They were making substantial progress, and under the Government scheme there would be ample funds for all local authorities which had the power to provide maternity and child welfare services as fast as they would find possible.

Clause 75 was added to the bill by 158 to 78. Discussion followed on clauses *dealing with Exchequer grants*.

The House on January 28th again considered the bill in committee. On Clause 83, which deals with *contributions* by councils to voluntary associations in respect of maternity and child welfare, Sir LESLIE SCOTT *moved an amendment to impose a* statutory obligation on county and county borough councils to consult voluntary associations doing maternity and child welfare work before framing their schemes.

Mr. NEVILLE CHAMBERLAIN said that the amendment was unnecessary, because it was impossible for any council to frame a scheme of that kind without consulting the voluntary *association*. The clause provided that the county councils or county borough councils were to prepare schemes for securing payments by them of annual contributions towards the expenses of voluntary associations. To know what these expenses were the councils must *know* what the associations were doing, were able to do, and proposed to do in future. The Minister of Health also had to approve of the schemes, and if the schemes were submitted without consultation with the voluntary associations it would be open to the associations to represent to the Minister that they had not been consulted. The amendment was withdrawn.

Mr. HURST moved an amendment giving power to the Minister of Health to include in the schemes prepared by county councils provisions whereby contributions towards the *costs* of inmates in a maternity home within its area might be enforced against the council of any other county or borough where an inmate normally resided before entering the home. He said that the amendment would enable the unmarried mother to avoid local scandal by going into a home at a distance.

Mr. CHAMBERLAIN said it would be a mistake to *make it more* difficult for maternity homes to take in unmarried mothers from other localities. In the past direct grants had been given from the Exchequer to the homes, but in future the grant would be given to the local authority in whose district the home was situated. The local authority would not have discretion to spend the *money on* anything else. For seven years it would receive 75 per cent. of the grant previously given, for the next five years the grant would be 50 per cent., and for another five years 25 per cent. The amendment was rejected.

Sir KINGSLEY WOOD moved an amendment giving power to the Minister of Health, after consultation with the local authority concerned, where it was desired to start or further a maternity or child welfare scheme, to alter the scheme so as to provide for such contributions, or increased contributions, as he considered just. He said that with this amendment and the original clause in the bill the Government was giving a very strong position to the voluntary associations carrying out this work.

Dr. FREMANTLE said that his name and that of Major Hills were down to an amendment earlier on this clause, but he purposely did not move it because this amendment covered the same ground. He had tabled his amendment because the clause did not provide for the future expansion of this service. It was put *down on* behalf of the Midwives' Institute and the Queen Victoria Jubilee Institute for Nurses. Those professional bodies, which were largely neglected by public opinion, were at the bottom of the working of these maternity associations, and they would, he believed, be abundantly satisfied by this amendment, which seemed to him to cover the substance of the amendment which he had *put down* and also other points which he had in mind. He hoped that there would be a possibility of covering now, for the first time, the whole of the counties with the work of the county nursing *associations in nursing* and midwifery work, *which had been* extending, but extending slowly. He hoped, speaking on behalf of the midwives, that the clause as amended would be successful.

The amendment was agreed to, and Clause 83 was added to the bill.

On Clause 84, which provides for contributions by councils to voluntary associations in respect of *other health services*, Sir LESLIE SCOTT moved an amendment providing that the Minister should, before the beginning of *each fixed grant period*, make a *scheme* providing for the payment of contributions by councils of counties and county boroughs of such amounts as *might be specified* in the scheme, to voluntary associations which undertook to provide, centrally or locally, services for the *welfare* of defectives, including the ascertainment, assistance, or supervision of defectives whilst not in institutions. As the clause now stood some of them feared it might limit the services for which the grants under the clause might be given. A great deal of the best work for mental defectives was not done by the local authorities, and he wished to make sure that there would be no limitation in future *in grants* for work done as assistance to the local authorities.

Sir T. INSKIP (Attorney-General) said he could give Sir Leslie Scott the assurance he desired, and the amendment was accordingly withdrawn.

Sir WALTER GREAVES-LORD moved an amendment providing that the Minister of Health should, before the beginning of each fixed grant period, make a scheme providing for the payment to county and county borough councils of such amount as might be specified in the scheme to the central council of an approved organization which provided services, in the nature of general publicity and educational propaganda, in furtherance of the prevention and treatment of venereal disease. He could not understand why the Government had thought it necessary in the bill to take a course which would destroy to a large extent the activities of one voluntary association—the British Social Hygiene Council—whose work had been recognized not only by the Government, but by the Royal Commission on Venereal Disease, and had been due to the expressed satisfaction of the Ministry of Health. In health services, such as maternity and child welfare, and the care of mental defectives and of the blind, would be affected if anything was done to diminish the efficiency of the measures taken for the prevention and curative treatment of venereal disease. The amendment would enable the Minister to make an equitable scheme, which would provide for a contribution based upon £ per 1,000 of the population. If, however, the Minister could deal with the matter as he desired in Clause 86 of the bill he would be content.

Sir KINGSLEY WOOD resisted the amendment. He said that Sir Walter Greaves-Lord, following, he supposed, the precedent already established in relation to the maternity and child welfare services, sought to secure that local authorities should be obliged to pay an annual contribution to the British Social Hygiene Council or some corresponding body. The Minister of Health shared with the mover of the amendment his appreciation of the work which that council had achieved, especially in the earlier days, when that kind of work was much more unpopular than at present. Many local authorities were actively engaged in the work of stamping out the disease. During the present year some £7,500 had been spent by them. Many local authorities desired to include venereal disease as one of the subjects in their general scheme of [illegible] propaganda. There was a distinction between the position of voluntary agencies which were carrying out maternity and child welfare work and those undertaking purely propaganda work. The responsibility for the health services rested with [illegible]

authorities, who would strongly resent being obliged to contribute towards the expenses of a service which they might not care to apply. He saw no reason why the work of the British Social Hygiene Council should not continue in conjunction with the work of local authorities, but there was considerable objection to giving this compulsory power to the Minister of Health and compelling them to contribute. That was going to an extreme length. The Government was proposing, in a new clause standing in the name of Mr. Chamberlain, to give power to the Minister to pay a contribution to voluntary associations out of the sums payable out of the general Exchequer grant.

Dr. FREMANTLE supported the amendment. He said that he took up this attitude with the greatest reluctance and after the most sincere and continuous study of the bill. As a matter of conscience, he felt that he was bound to do so. The situation had not been met by the Parliamentary Secretary, nor by anything which he had heard from those connected with the Ministry of Health. There was a strong feeling on this subject.

Mr. CHAMBERLAIN said he admitted at once that the amendment had received very weighty support, and he opposed it with very considerable reluctance, partly because he valued very much the work done by the British Social Hygiene Council, work in which in the past he had taken considerable interest himself, and partly because he admired the devotion with which Sir W. Greaves-Lord had thrown himself into a business which certainly was not of a particularly popular character. The Minister of Health was in quite a new position in regard to all these services. It was only right that the local authorities should perform their duties in an adequate manner, and if they were not doing so because they would not use the services of this particular body, then it was quite clear that he would have a very strong case for asking that they should make their contribution. He asked members to think well before they compelled these responsible bodies to contribute to something of which they might not approve. He, as the responsible Minister, did not desire to see this body disappear, and he should take all the steps he could within the limits of the bill to assist it.

Dr. DRUMMOND SHIELS said that the distinction which the Minister had drawn between making a claim on the local authorities to support the central body and his refusal to compel them did not seem to go very well together. The right hon. gentleman admitted that the national propaganda was essential for the prevention of these diseases, and at the same time he refused to give support to the body which dealt with them.

[At this point the guillotine fell on the debate, and the amendment was defeated by 204 votes to 95. The clause was then agreed to and the debate adjourned.]

*** The conclusion of the debate on the Local Government Bill is unavoidably held over till our next issue.

Radium Requirements and Supplies.—Mr. CHAMBERLAIN stated, on January 24th, that the subject of radium requirements and supplies was still under consideration by a subcommittee of the Committee of Civil Research. On January 28th Sir KINGSLEY WOOD told Mr. R. Morrison that the subcommittee of the Committee of Civil Research would not report to the Ministry of Health on the supply of radium. The Minister of Health had arranged for the inquiries made on the subject in the House of Commons to be brought to the notice of the subcommittee, and he trusted that their report would be available at an early date.

Post-vaccinal Encephalitis.—In the House of Commons, on January 25th, Mr. GROVES called attention to the fact that an inquest into the death of a boy at Castleford in November, 1928, from post-vaccinal encephalitis had returned a verdict of death from natural causes, whereas the verdict on a boy who died in Poplar Hospital from the same cause on January 14th had been death from misadventure. Mr. CHAMBERLAIN said that both deaths had been classified under the heading "vaccinia" for the Registrar-General's mortality statistics.

Special Institutions for Ex-Service Medical Cases.—On January 23rd Colonel STANLEY, answering Mr. Smedley Crooke, said that the two special institutions which the Ministry of Pensions set up in 1923 with the assistance of the Board of Control, and in conjunction with the general medical hospitals, were specifically designed for ex-service medical cases in which the Ministry is advised that a chance of recovery or improvement is offered by occupational training and instruction. Incidentally Colonel Stanley deprecated as inaccurate and needlessly offensive the description of mental hospitals provided under the Lunacy Acts as "pauper lunatic asylums."

Treatment of Enlarged Tonsils.—Mr. ROBERT RICHARDSON asked Lord Eustace Percy, on January 24th, whether, in view of conflicting medical testimony on the advantage of, or necessity for, the extraction of enlarged tonsils, he would recommend local educational authorities to bring to the notice of their medical officers the fact that there was an alternative treatment, and advise them not to prosecute parents who desired to follow such treatment rather than to have recourse to the operation. Lord EUSTACE PERCY did not think the course suggested was necessary. Medical officers of education authorities knew there were alternative methods of treatment for enlarged tonsils. Operative treatment would only be recommended by them when other methods had been tried and failed. In the reports of the Board of Education for 1921 and 1923 the position of the Board was indicated, and it was clearly stated that the Board of Education had consistently advised that operation should not be undertaken except with the full consent of the [illegible] the child. In reply to a similar question [illegible] centres, it was stated that it was not [illegible] centres to advise the removal of tonsils, but to refer children needing treatment to a hospital or private doctor for advice on the appropriate form of treatment.

Idiosyncrasy to Chemical Poisons.—Mr. DUFF COOPER (Financial Secretary to the War Office) told Mr. Will Thorne, on January 24th, that his attention had been drawn to a report of the inquest on a research worker at Woolwich Arsenal, where the coroner recorded a verdict that death was accelerated by the deceased having come in contact with some chemical poison allied to nitroglycerin. Mr. Cooper said he was advised that nitroglycerin poisoning was extremely rare, and might imply a predisposition in the individual which could not be ascertained beforehand. Instructions were being issued that if any worker felt indisposed as a possible result of contact with the material he was using he must at once report the fact to his superior.

Notes in Brief.

A bill to regulate the sale of reconstituted cream, presented in the House of Commons on January 24th, is backed by Dr. Vernon Davies.

Mr. Chamberlain states that available statistics do not allow properly comparable figures to be given for the death rates in the United States, Germany, and France from small-pox and from pulmonary tuberculosis.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a congregation held on January 24th the following medical degrees were conferred:

D.M.—C. J. Fuller.
B.M.—S. B. Davis.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on January 26th the following medical degrees were conferred:

M.D.—A. D. Porter.
M.B., B.CHIR.—W. J. Lloyd.
B.CHIR.—S. D. Isaacs, W. E. Underwood.

UNIVERSITY OF LONDON.

THE Senate has accepted with thanks an offer of the committee of the Bayliss-Starling Memorial Fund of the sum of £2 500 for the establishment at University College of a scholarship for training in physiology and biochemistry to commemorate the connexion with physiology of Professors Sir William Maddock Bayliss and E. H. Starling.

It has been resolved to institute an academic diploma in clinical pathology.

The degree of D.Sc. in Anatomy has been conferred upon Mr. H. A. Harris, an internal student of University College, for a thesis in the form of a series of memoirs dealing with the problems of bone growth, radiology, and teratology, published in various medical and scientific journals.

The degree of D.Sc. in Psychology has been conferred upon Mr. J. C. Flugel, an internal student of University College, for a thesis entitled "Studies in mental oscillation and related functions."

Mr. H. L. Eason, C.B., C.M.G., has been reappointed a member of the General Medical Council.

Professor W. W. Jameson has been appointed to represent the University at the fortieth congress and exhibition of the Royal Sanitary Institute, to be held at Sheffield in July.

The William Julius Mickle Fellowship for 1929, of the value of about £250, has been awarded to Dr. A. Sterling Parkes, in respect of the work he has carried out during the past five years on the physiology and biochemistry of the organs of reproduction.

UNIVERSITY OF MANCHESTER.

DR. J. F. WILKINSON has been appointed director of the laboratory of clinical investigations, in succession to Dr. W. Morrell Roberts. Dr. Jethro Gough has been appointed demonstrator in pathology.

LONDON INTERCOLLEGIATE SCHOLARSHIPS BOARD.

Medical Scholarships.

THE London Intercollegiate Scholarships Board announces that an examination for nine medical scholarships and exhibitions, of an aggregate total value of £1,170, will commence on April 16th. They are tenable at University College and University College Hospital Medical School, King's College and King's College Hospital Medical School, and the London (Royal Free Hospital) School of Medicine for Women. Full particulars and entry-form may be obtained from the Secretary of the Board, Mr. S. C. Ranner, M.A., the Medical School, King's College Hospital, Denmark Hill, S.E.5.

Obituary.

ANDREW LITTLE, M.B., C.M.,

Consulting Surgeon, Royal Eye and Ear Hospital, Bradford.

THE medical profession in the Bradford district learned with deep regret of the death, on January 9th, of Dr. Andrew Little, in his sixty-fifth year; he had been an outstanding figure in their midst for more than thirty years.

Andrew Little received his medical education at Aberdeen and the London Hospital, graduating M.B., C.M.Aberd. in 1889. After holding appointments in London and Liverpool, he settled first in the Burnley district, and later removed to Bradford. Early in his medical career he devoted himself to eye, ear, throat, and nose work, a combination of specialties which was common in the North of England at the time. He became associated with the Royal Eye and Ear Hospital in Bradford as far back as 1892, and was one of the full surgeons there from 1901 to 1918; from 1911 to 1922 he was honorary laryngologist to the Bradford Royal Infirmary. At the end of the war he gave up his active hospital duties, continuing at the Royal Eye and Ear Hospital as honorary consulting surgeon.

Dr. Little was widely recognized as a leading authority in throat, nose, and ear work in the West Riding; he had built up a large consulting practice, from which he retired in 1922 to live in Westmorland. His activities and interests were many and varied, and he was at one time co-editor of the *Caledonian Medical Journal*, but perhaps he was most of all attached to the preventive side of his own particular work. He was invited by the Bradford City Council in 1913 to act as their consulting ophthalmic and aural surgeon, a position which he held for six years; during this time he greatly developed the municipal work along lines satisfactory alike to the council, the public, and the medical profession. His appointment was one of the first of its kind in the country, and by his keenness, shrewdness, and ability to inspire others he laid the foundation of that happier state of co-operation which exists in all branches of the medical profession—hospital, private, and municipal—in Bradford to-day. He threw himself whole-heartedly into the aspects of his work which affected child life, and he recast the principles of the treatment and education of the child with defective vision, the outcome of which was the new Bradford Myope School.

To all who knew him, Andrew Little was a valued friend and a helpful colleague; his passing leaves a sense of deep personal loss. His illness was borne with fortitude and resignation, and his end came as the completion of a life's duty faithfully and fully done. His wife predeceased him by one year. He leaves behind him an adult son and daughter, at whose house he died. J. B.

His many friends in Scotland and England will share our regret in recording the death from pneumonia following influenza of Dr. GEORGE SMITH SOWDEN, which took place at Elgin on January 19th. Dr. Sowden was born of Scottish parentage in Madras forty-six years ago, where he spent his early boyhood, and then came to this country to be educated at Elgin Academy and Edinburgh University, graduating in arts and medicine in 1909. After graduation he spent some years at Newcastle-upon-Tyne and Kirkby Stephen. On the outbreak of war he volunteered for service and served as surgeon-lieutenant on board H.M.S. *Colossus*. After the war he took his degree of M.D. at Edinburgh, with commendation, and settled in practice in Elgin in succession to the late Dr. Dickson. He was a man of many and varied interests and public spirit: a keen antiquarian, he was recently elected a Fellow of the Society of Antiquarians; an authority and frequent lecturer on Jacobite history; an enthusiastic Freemason and Rotarian; a good golfer and president of the Moray Golf Club. To the British Medical Association he gave almost continuous service throughout his professional life, first as member of the executive, vice-chairman and chairman of the Kendal Division, and latterly as secretary of the Banff, Moray, and Nairn Division and member of the Scottish Committee and of the Insurance Acts' Subcommittee. All his work was marked with zeal, thoroughness, and patience. A cultured and courteous man, a loyal friend, and untiring worker for the common good, his loss at so early an age is much to be deplored. He is survived by a widow and one daughter.

Dr. JAMES MUNCE, who died on January 20th after a brief illness, had been in practice at Lisburn, in county Antrim, for many years, and was held in high esteem by his colleagues in that district. He received his medical education at Queen's College, Belfast, and in 1896 obtained the diplomas L.R.C.P., L.R.C.S.Ed., and L.R.F.P.S.Glas. Soon after qualifying he left Saintfield, county Down, for Lisburn, on his appointment as dispensary medical officer for the Drumbeg district. In Lisburn he became associated with the Antrim County Infirmary, and acted as anaesthetist for twenty-five years. Dr. J. W. Peatt sends the following appreciation: It is with a deep sense of loss that those who knew him have heard of the death of Dr. James Muncе. In Lisburn he was looked upon by all classes as a trusty friend, an able practitioner, and a Christian gentleman. His quiet confidence gave assurance and comfort to all, and in moments of sorrow and trouble many instinctively turned to him. Of an unselfish character, he gave his services freely to the poor, without thought of recompense. His passing has caused great regret, equally among his colleagues and the members of the general public.

Dr. JOHN FOLLETT BULLAR, who died from drowning on January 24th, aged 74 years, was born at Bassett, near Southampton, and was educated at the University of Cambridge and at St. Bartholomew's Hospital Medical School. He graduated B.A.Camb. in 1877, and M.A. and M.B. in 1883; in the following year he obtained the diploma of F.R.C.S.Eng. After serving as ophthalmic house-surgeon and assistant demonstrator of anatomy at St. Bartholomew's Hospital he went to practise at Southampton. There he founded the Southampton Free Eye Hospital, to which he became surgeon and afterwards consulting surgeon, and he was also consulting surgeon to the Royal Hants County Hospital, Winchester. He removed to Guernsey some years ago and became very popular on the island. During the war Dr. Bullar served as an ophthalmic specialist with the rank of captain R.A.M.C. He and Mrs. Bullar were returning to Guernsey from a holiday in the South of France, and use was being made of a seaplane to make the journey from Corsica to the mainland when the machine turned turtle in the harbour at Antibes, and both were drowned.

The following well-known foreign medical men have recently died: Dr. EDMUND LASKOWSKY, formerly professor of anatomy at Warsaw, and inventor of a fluid for the preservation of anatomical specimens, aged 87; Professor PAUL KUBINYI, director of the first gynaecological clinic at Budapest, aged 58; and Dr. PIETRO DE AMICIS, an eminent paediatrist of Genoa.

The Services.

HONORARY SURGEON TO THE KING.

SURGEON VICE-ADMIRAL ARTHUR GASKELL, C.B., O.B.E., Medical Director-General of the Navy, has been appointed an Honorary Surgeon to the King.

DEATHS IN THE SERVICES.

Lieut.-Colonel Stafford Mary Adye-Curran, R.A.M.C.(ret.), died at Omagh on December 28th, aged 48. He was born on July 11th, 1880, was educated at the Catholic University, Dublin, and took the L.A.H. in 1900, also subsequently, in 1907, the D.P.H. of the Royal College of Surgeons in Ireland. After qualifying, he went out to South Africa as a civil surgeon, and, after nearly a year's service in that capacity, joined the R.A.M.C. as lieutenant on July 26th, 1901. He attained the rank of lieutenant-colonel on December 26th, 1923, and retired on March 24th, 1925, when he joined the Reserve of Officers. He served in the South African war, taking part in operations in the Transvaal, and received the Queen's medal with five clasps.

Medical News.

THE German Balneological Society (Balneologische Gesellschaft), at its jubilee congress held in Berlin last week, elected Dr. R. Fortescue Fox an honorary member. This honour was conferred in recognition of Dr. Fox's work as chairman of the International Society of Medical Hydrology, and as a personal tribute and expression of the esteem in which he is held by medical hydrologists in Germany.

THE Fellowship of Medicine and Post-Graduate Medical Association announces that on Monday, February 4th, at 5 p.m., Sir Henry Simson will give a lecture on "Some obstetric pitfalls," at the Medical Society, 11, Chandos Street, Cavendish Square, W.1, and on the same day, at 2 p.m., Mr. Mortimer Woolf will give a demonstration in general surgery at the Queen Mary's Hospital, Stratford. A demonstration on "Rheumatism and the cardiac child" will be given at the Royal Waterloo Hospital, at 2 p.m., on Tuesday, February 5th, by Dr. Gerald Slot. On Wednesday, February 6th, Mr. Mortimer Woolf will give a demonstration on "Tumours of the thyroid gland and their treatment," at the Wellcome Museum of Medical Science, 33, Gordon Street, W.C.1, at 4 p.m. Special courses will be given, from February 11th to 22nd, at the Chelsea Hospital, in gynaecology; from February 11th to March 9th, at the St. John's Hospital, in dermatology (pathology demonstrations will also be arranged); from February 25th to March 9th, at the Hospital for Sick Children, in diseases of children; and from February 25th to March 2nd, at the Brompton Hospital, in diseases of the chest. Copies of all syllabuses and information regarding the general course of the Fellowship may be obtained from the secretary, 1, Wimpole Street, W.1.

THE Royal Sanitary Institute has arranged a course of training for army officers and professional men in meat and food inspection and canteen supplies commencing on Monday, February 18th, and another beginning on Friday, February 22nd, for meat and food inspectors. Syllabuses of the lectures and examinations are obtainable from the secretary of the Institute, 90, Buckingham Palace Road, London, S.W.1.

THE Swiney prize for 1929 has been awarded by the adjudicators, the Royal Society of Arts and the Royal College of Physicians, to Dr. Sydney Smith, Regius Professor of Forensic Medicine in the University of Edinburgh, for his work "Forensic Medicine." Dr. Swiney, who died in 1844, left a sum of money to the Royal Society of Arts to provide a prize every fifth year for the best published work on jurisprudence. The prize, which consists of £100 and a silver cup of the same value, was offered this year on the 85th anniversary of the testator's death for a work on medical jurisprudence.

ON the occasion of the recent celebration of the centenary of the foundation of Cairo University and the Congress for Tropical Medicine a tour was made last December by sixty-seven medical practitioners from Germany, Austria, Danzig, Holland, and Poland to Egypt and Palestine, under the direction of Dr. F. Barach of Vienna.

THE Rizzoli Orthopaedic Institute in Bologna announces that a prize of 3,500 lire is offered for research in orthopaedics by medical practitioners in Italy and elsewhere. Further information may be obtained from the president of the Rizzoli Institute.

THE British College of Nurses, which was founded in 1926 with an endowment of £100,000, has issued a circular explaining its objects and indicating the advantages to trained registered nurses of membership. Its purpose is to raise the status of the nursing profession by organizing special courses of instruction and by the institution, in the future, of examinations—of a higher standard than that for State registration—for admission to its membership and fellowship. Meanwhile, it offers the benefit of facilities for education, scholarships, legal defence, pensions, and insurance; and of the use of the reference library and club rooms at its headquarters at 39, Portland Place, London, W.1, whence further information may be obtained.

AT a meeting of the Joint Tuberculosis Council on January 19th Dr. McDougall presented a report on behalf of the Employment Committee; in the discussion which followed Dr. Varrier-Jones emphasized the importance in colony work of attention to the patient's mentality, and of providing opportunities for any who showed exceptional ability to rise to the position of supervisers and teachers. The committee was asked to report
employment schem
residential institutions. Dr. Brand reported that during 1928 14 had attended Sir Henry Gauvain's post-graduate course at Alton, 18 had been present at Dr. Varrier-Jones course, and 30 at the one arranged by Dr. Gloyne at Victoria Park Hospital. During 1929 he proposed to arrange courses in surgical tuberculosis, a course in artificial pneumothorax therapy and the interpretation of radiograms, and a French course at the University of Paris during Easter. After the meeting the council was entertained to lunch at the Hotel Russell by Sir Henry Gauvain.

THE *British Journal of Anaesthesia* announces the award of the £50 prize for the best inhalation research effort made by a citizen of the British Empire in 1928, to Florence Stephen, M.B., Ch.B., M.Sc., of the Manchester Royal Infirmary Research Department. The prize is in memory of the late Dr. S. R. Wilson of Manchester.

THE International Society of Medical Hydrology recently published a report on certain African waters. The information laid before the council proved of so much interest that the officers of the society took advantage of the visit to England of the eminent South African chemist, Professor M. Rindl of Grey University College, Bloemfontein, to hear from him some account of the chemistry of these waters. A small meeting of hydrologists and chemists was accordingly held on January 24th, the High Commissioners for South Africa and New Zealand sending representatives. Professor Rindl stated that he had been drawn to the subject in the search for home supplies of potash, and though his survey of the springs had failed to provide any results in that direction, he had made and published a preliminary survey in the hope of arousing medical and other interest in this important national asset. He found that the analyses of the waters were often incomplete and out of date, that insufficient clinical data were forthcoming, and that bathing facilities were inadequate. Many of the springs had a long history of use, first by the aborigines and then by the farmer-settlers, some still being used only in the most primitive way. Yet the waters themselves were well worthy of study and development. They were principally either sulphurous or chalybeate, no important brine springs being known, in spite of the extent of the surface "salt-pans." Seven of the springs had temperatures exceeding 105° F., the hottest being 158° F. Many were said to be radio-active, and one had a fair proportion of helium.

DR. PERCY COLEMAN, who for 30 years has been connected with the Clacton and District Hospital, has been presented with his portrait in oils by Harold Knight, A.R.A., an album containing the names of the 335 subscribers, and a wallet containing the residue of the fund. The presentation was made at a very largely attended meeting at the Grand Hotel, Clacton, presided over by Brigadier-General K. J. Kincaid-Smith, D.S.O., and attended by the medical practitioners and well-known personalities of the town.

THE following members of the medical profession were called to the Bar on January 28th: Drs. F. W. Kemp and G. Irving (Middle Temple), Dr. P. S. Selwyn-Clarke, *M.C.* (Gray's Inn).

THE advance programme of the twenty-second Voyage d'Études Médicales in the French Alps has been issued, and an outline of the programme may be useful to those whose circumstances necessitate the determination of their holiday arrangements early in the year. This year's tour will take place in the first fortnight of September, and will be organized by Dr. Piery, professor of hydrotherapeutics and climatology in the Faculty of Medicine at Lyons, who will share the scientific direction with Professor Paul Carnot and Professor Maurice Villaret. After visiting the Faculty at Lyons the party will assemble at Vals; from Briançon the members will travel by Alpine autocars through the Briançon district, the Dauphiné, and Savoy, visiting various health resorts and spas en route, to Evian, where the tour will terminate. The complete programme, with details regarding conditions of membership, etc., will be available about Easter. Inquiries should be addressed to Madame Juppé-Blaise, Federation of the Health Resorts of France, 1, Gordon Square, London, W.C.1.

PROFESSOR CLEMENS PIRQUET, director of the University Children's Clinic at Vienna, has been awarded the Aronson prize for his work on hypersensitiveness.

The following appointments have recently been made in the Italian faculties of medicine: Dr. A. Contino of Bari, professor of clinical ophthalmology at Messina; Dr. M. Bolaffio of Cagliari, professor of obstetrics and gynaecology at Modena; Dr. L. Torraca of Sassari, professor of surgical pathology at Padua; Dr. F. Ravenna of Turin, professor of morbid anatomy and histology at Perugia; and Dr. F. Spirito, director of the obstetrical school at Novara, professor of obstetrics and gynaecology at Siena.

DR. J. BORDET has been elected president of the Royal Academy of Medicine of Belgium for 1929, with Dr. M. Herman of Mons and Dr. J. Demoor of Brussels as vice-presidents.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediserra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

HOLIDAY INTERCHANGE FOR DOCTOR'S DAUGHTER.

A FRENCH doctor's daughter, aged 18, and living at St. Palais-sur-mer, Charente Maritime, desires to spend her holidays in England, and would like to effect an exchange with an English doctor's daughter who wishes to visit France. Applications should be addressed to Miss Hilda Fox, International Society of Medical Hydrology, 139, Marylebone Road, W.1.

TREATMENT OF RHEUMATIC HEART DISEASE.

"X. Y. Z." would be glad to have suggestions as to treatment of a boy, aged 14, who has been in bed for ten months with cardiac rheumatism. His present condition is good, and there are no *rheumatic pains; the pulse is regular and the rate is* 100. The heart is hypertrophied and there is a *loud mitral* systolic murmur. The patient has been kept in bed on account of a *persistent temperature of* 98.4° to 99.4° F.; *there is reason to* believe the infection arises from an unhealthy throat. Is tonsillectomy or vaccine treatment to be recommended?

INCOME TAX.

Untaxed Income: Personal Allowances.

"M. E." has retired from practice, having a private income of about £500 per annum. Tax is deducted at the source, except in respect of £20 War Loan interest and as regards the annual value of his freehold house £32. Should he make any "return" of his income.

*** On the facts "M. E." can claim repayment as follows—

On £135—(£20 + £32=) £52; that is, £83 at 4s. =	£16 12 0
And on £225 at 2s. ... ... =	£22 10 0
	£39 2 0

for 1928–29 and previous years. We suggest that he should take *an early opportunity of calling at the office of the local inspector* of taxes to explain the facts and obtain the necessary repayment *claim forms. Seeing that he owes no tax—in fact, the reverse is* the case—we do not see how there can be any "bother" caused by his not having made a return of his untaxed income.

Expense of Rent, Rates, etc.

"R. H. P." inquires as to the proportion allowable as professional expenses; he was allowed two-thirds until recently, when the proportion was reduced to one-half. The total amount of rent and rates is £107, and covers consulting and waiting rooms on the ground floor and partial use of other rooms.

*** We cannot advise an appeal against the allowance of one-half of the £107. That leaves £53 10s. to cover the rent and rates on the private portion of the premises, which does not seem unreasonable. The amount of "R. H. P.'s" non-professional income is not relevant.

LETTERS, NOTES, ETC.

BIOCHEMICAL CHANGES IN ALLERGIC PATIENTS.

DR. J. ANDERSON (Glasgow) writes: With reference to the interesting paper by H. W. Barber and G. H. Oriel on biochemical investigations in allergic conditions on November 17th (p. 880), the following notes of the biochemical changes in an asthmatic woman, aged 28, observed over a prolonged period, may be of interest. In this case twenty-four-hour specimens of urine were examined at frequent intervals. Attacks of asthma occurred generally at the week-end, and were preceded by constipation; she suffered also at menstrual periods. She had premonitory symptoms before the attack commenced, and evidence of an impending attack was shown by a higher specific gravity of the urine, a deposit of urates, a fall in *p*H, and the appearance of indican, with a trace of acetone. In the urine the specific gravity and acidity varied with the severity of the patient's symptoms, corresponding variations occurring throughout the investigation. The *p*H was lowest and the specific gravity highest at the onset of an acute attack. Preceding the attack the *p*H fell and the specific gravity rose; succeeding the attack the *p*H rose and the specific gravity fell. Albumin appeared, [illegible] fall in diastase and associated with a higher fall in *p*H, and increased acetone. When this was associated with a rise in diastase, and its reappearance was associated with a fall in the diastase content. A decrease of indican occurred with a second rise of diastase. The gradual improvement of the patient was associated with a fall of the specific gravity, a change in the deposit, and the disappearance of acetone. These results indicate that metabolic changes are present not only during the actual asthmatic attack, as shown by H. W. Barber and G. H. Oriel, but also for several days or weeks before the onset of the attack. This view has long been held by Dr. James Adam of Glasgow, and the investigation was made as an attempt to substantiate it.

HERNIA AND EVENTRATION OF THE DIAPHRAGM.

MR. A. P. BERTWISTLE (London, W.) writes: In your issue of December 1st, 1928 (p. 985), Dr. J. L. Thomas described an excellent case of diaphragmatic hernia, but under the title is the word evisceration; surely evisceration means disembowelling, a routine procedure in abdominal surgery before we learnt to have respect for the peritoneum. The term meant is eventration, and yet this, too, is wrong. Eventration is said to exist when the diaphragm has an unduly high dome; it may be congenital or due to trauma. The feature which differentiates it from hernia is that the diaphragm moves normally with respiration. Hernia has the same origin as eventration; it occurs almost always at the site of the embryonic pleuro-peritoneal passage and on the left side, pushing the heart over to the right. Its chief characteristic is that while the diaphragm moves downwards in inspiration, the stomach moves upwards, as shown radiographically by its air bubble. Carman aptly terms it "paradoxical respiration." See *Surgical Radiology*, by A. P. Bertwistle (p. 121).

SACRO-ILIAC MANIPULATIONS.

DR. EDGAR CYRIAX (London, W.) writes: In your report of the discussion of sacro-iliac pain by the Medical Society of London (December 22nd, 1928, p. 1137) one speaker is said to have expressed the opinion that complete anæsthesia of the patient is necessary before performing manipulation of the sacro-iliac joint. I have not found general anæsthesia essential in the vast majority of cases. The necessary relaxation can be obtained by preliminary vibrations and certain special passive movements which I have elaborated. I have reduced over 1,500 cases of subluxation of the ilium without the use of general anæsthesia, and at the most have merely caused the most transient and mild sensations—never any real pain. When an iliac subluxation is reduced in children the patients very frequently take no notice whatever of the bone having been moved.

KALA-AZAR IN CHINA.

DR. UPENDRANATH BRAHMACHARI (Calcutta) writes, with reference to a review of his book, *A Treatise on Kala-azar*, which appeared in the *British Medical Journal* of September 29th, 1928 (p. 572), to point out that he gave a full account of the work on the disease in China in the addendum, and that the reviewer's statement that "little is said of the disease in China" therefore requires amendment.

THE HIPPOCRATIC OATH.

WE have received from Mr. John Bensley Thornhill (77, Bedford Gardens, W.8) a blackwood panel, with bevelled edges, on which extracts from the Hippocratic oath, rendered into appropriate English, have been incised in white lettering. The panel rests on a small blackwood stand, and may conveniently be placed on the doctor's table. The price of the panel is 12s. 6d., and of the stand 1s. 6d.

HISTORY OF MANCHESTER.

WE have received from Dr. E. M. Brockbank the following note concerning his interesting article on the history of Manchester published in our issue of January 26th at page 167. "I find in my account of the history of Manchester in the current number of the *Journal* that I have, by an unaccountable slip, put cotton towns into West Cheshire, whereas they are in a curious easterly cur-tailed invasion of S.W. Yorkshire by Cheshire."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals, will be found at pages 48, 49, 50, 51, 54, 55, and 56 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 52 and 53.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 21.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

105. Clinical Sequels of Untreated Syphilis.

S. DAHLSTRÖM (*Norsk Mag. f. Lacgevid.*, October, 1928, p. 16) states that the most common estimate of the frequency with which syphilitic patients develop general paralysis is about 4 per cent. As an old pupil of Professor Caesar Boeck, who taught that the so-called specifics, potassium iodide and mercury, were injurious because they not only failed to eradicate the disease, but also forced it into unnatural channels, provoking general paralysis of the insane and other serious lesions of the central nervous system and the blood vessels, Dahlström has been on the look out for paretics among Boeck's old patients, but has found hardly any. Among the 320 cases of general paralysis treated at the psychiatric department of the Ullevaal Communal Hospital in Oslo, only two were found to have been treated on Boeck's "wait and see" lines. Even in these two cases there was a possibility that mercury had been given elsewhere. It is also noteworthy that tramps and those who evade systematic specific treatment, and the coloured races living under primitive conditions at home, seldom develop general paralysis, whereas it is comparatively common in negroes living in centres of civilization where they are given specific remedies. E. BRUUSGAARD (ibid., December, 1928, p. 1222) has traced and re-examined 230 of the 2,181 patients suffering from primary and secondary syphilis who were under the care of his predecessor in the chair of dermatology in the University of Oslo, Professor Caesar Boeck, from January 1st, 1891, to December 30th, 1910. Added to these survivors were 164 patients, belonging to the same period, the causes of whose deaths were known. In addition to the total of 230 surviving patients whose disease dated back to 1910 or later, there were 79 who belonged to a later period, but who had this in common with the patients of the older group, that they had not received specific treatment. Boeck's reason for withholding mercury and potassium iodide from nearly all his patients was his belief that this treatment merely suppressed the outward manifestations of the infection, encouraging it to assume serious and atypical forms, because they interfered with the natural processes of immunity. He considered that tinkering with mercury and potassium iodide was largely responsible for such diseases as general paralysis and tabes. Brunsgaard's re-examinations of Boeck's old patients were started in 1925 and continued in 1926 and 1927. A thorough examination was made of the heart, and skiagrams were taken in two planes. In addition to a routine neurological examination, the Wassermann test was performed on the blood in almost every case. It was found that 131 patients showed a negative Wassermann reaction and were without any clinical signs of the disease; 70 were also without any clinical signs, but they had a positive Wassermann reaction. There were 67 (some alive and others dead) showing signs of disease of the blood vessels; 13 had developed general paralysis, and 6 tabes. As most patients with general paralysis drift into asylums, and as Brunsgaard has searched the records of the asylums in the area under review, it is probable that the 13 cases of general paralysis were very near the total of the patients who developed this disease out of the 2,181 attending Boeck's clinic. In other words, the incidence of general paralysis in this material was only 0.6 per cent. The problem was somewhat different in the case of the 6 patients with tabes (0.27 per cent. of the total), for many abortive forms of tabes are never diagnosed, only the typical and advanced cases coming to hospital. Brunsgaard comments on the fact that a very considerable proportion of the syphilitics who receive no specific treatment ultimately recover from it by virtue of their own inherent powers of resistance; and he emphasizes the importance of promoting these forces by means of non-specific remedies, such as infection with malaria. He does not, however, attack modern specific treatment.

106. Primary Achlorhydria.

DRAWING a distinction between achlorhydria and the condition of achylia in which there is an absence not only of free hydrochloric acid but also of the gastric ferments, J. P. SCHNEIDER and J. B. CAREY (*Journ. Amer. Med. Assoc.*, December 8th, 1928, p. 1763) divide 93 cases of achlorhydria studied during the past seven years into primary and secondary types. Various causes, such as gastric cancer and syphilis, may produce a secondary achlorhydria, and 42 of the cases fall into this group, while the remaining 51 were apparently primary. Four explanations for this primary condition have been suggested. The authors agree with the one advanced by Hurst, who maintains that true achylias are probably constitutional glandular deficiencies; the achylia of pernicious anaemia is not only constitutional, but actually hereditary and familial. In support of this hypothesis they state that in the series of 51 cases 6 had family histories showing that other members had this condition by the occurrence of pernicious anaemia, and in a series of 112 pernicious anaemia cases 6 positive and 6 suggestive histories were found. Thus a positive history of pernicious anaemia was found in 12 per cent. of the cases of primary achlorhydria and in from 6 to 12 per cent. of the true pernicious anaemia series. Arnoldi and Schlecter have endeavoured to prove that gastric achylia is constitutional, and simply a part of a functional deficiency including the liver, pancreas, and stomach. The authors conclude that there is a primary achlorhydria existing in certain individuals which is probably due to some constitutionally defective factor, and shows a definite hereditary and familial tendency. Demonstrable symptoms may not arise for many years, but several of such persons show certain historical and physical data which indicate that they may develop an idiopathic pernicious anaemia. The condition of achylia exists for many years before other indications of the haemolytic anaemia are evident. The authors add that when a history of recurring glossitis and achlorhydria is found there is every reason to suspect idiopathic pernicious anaemia, regardless of the blood picture.

107. The Argyll Robertson Pupil in Epidemic Encephalitis.

R. J. HARTER (*Thèses de Nancy*, 1927-28, No. 376), who records twelve illustrative cases, maintains that the Argyll Robertson pupil, which has hitherto been regarded as pathognomonic of syphilis, is rather an indication of any kind of involvement of the iridomotor apparatus. The lesions capable of producing it have their seat of predilection in the mesencephalon and ciliary ganglion. There is no special period for the appearance of the sign, which may first develop at the onset or in the early stage of the post-encephalitic syndrome. In most cases in which the Argyll Robertson pupil is present there is no question of encephalitis, but in those in which there is doubt as to whether the condition is one of encephalitis or nervous syphilis, the presence of this sign should now no longer be regarded as conclusive of syphilis.

Surgery.

108. The Psoas in Hip Affections.

J. GOURDON (*Presse Méd.*, January 2nd, 1929, p. 3) emphasizes the importance of muscular contraction or retraction in cases of congenital dislocation of the hip and also inflammatory lesions. According to him the influence of the adductors, sartorius, and tensor fasciae femoris is well realized, but that of the psoas is often overlooked. This influence is particularly marked in congenital dislocation, and more especially when it is bilateral; the lordosis with a large curvature or "high lordosis," consequent on tipping forward of the pelvis by a contracted psoas, so often found in cases recognized late, can easily be distinguished from the lordosis due to backward displacement of the femora, because the latter disappears after reduction, whereas the former does not. The psoas contraction does not hinder reduction, but by maintenance of forward tipping of the pelvis, and a certain degree of flexion and external rotation of the femur, favours recurrence of the dislocation; and even if it is insufficient to give rise to recurrence, it causes persistence of lordosis and a faulty position of the limb in external rotation. Gourdon remarks that in inflammatory affections of the hip lordosis and external rotation of the limb, coming on early with the adduction, are traceable to psoas action, and he attributes to this also the pain, so often experienced by subjects of hip disease, in the lumbo-dorsal region. In young patients where the contraction is moderate, he recommends treatment by strapping to a flat surface for an hour a day, with bands round the thighs, thorax, and the abdomino-pelvic region; in the slighter cases it may be sufficient to extend the lower limbs, at the same time maintaining pressure backwards at the level of the anterior part of the pelvis. The wearing of a retentive corset to maintain the corrected position may be necessary in after-treatment. In older patients tenotomy of the psoas insertion may be necessary, but Gourdon warns operators not to expect to obtain always an immediate

correction of the lordosis, since long-continued psoas contraction provokes periosteal reactions sufficient to cause adhesion of the muscle itself in the region of the ileo-pectineal line; careful orthopaedic after-treatment alone can overcome the residual deformity.

109. Surgery of Malignant Tumours of the Bladder.

ACCORDING to V. C. HUNT (*Journ. Amer. Med. Assoc.*, December 1st, 1928, p. 1704) epithelioma is the predominating malignant lesion of the bladder, and comprises 95 per cent. of such lesions. The degree of malignancy varies, and Broder's classification is recommended as being a guide to treatment and prognosis. According to this classification tumours are divided into grades 1 (the least malignant), 2, 3, and 4; more than half the recorded cases show a high malignancy and are placed in grades 3 and 4. The site of the tumour appears to have a bearing on its malignancy, those of the base being more malignant than those of the lateral walls or dome. Hunt enumerates various palliative surgical measures, but discusses more fully curative operations. Operations for tumours of the lateral and posterior walls and dome and of the base are described; and since the latter necessarily involve displacement of the ureter, the relative merits of ureteral tying and reimplantation are compared. The value of surgical diathermy is discussed, and also prophylactic measures for the prevention of recurrences. The results of surgical procedures depend on the site, extent, and degree of malignancy of the tumour, the magnitude of the operation, and, in lesions of the base of the bladder, on the method of disposing of the ureter. The mortality is lowest following the excision types of operations on the lateral walls and dome, and highest in segmental resections for tumours of the base with reimplantation of the ureter. Division and tying of the ureter has proved the best method when this organ is involved in the lesion or in operations for extensive tumours of the base. Hunt reports that, of 370 patients with epithelioma of the bladder, approximately 65 per cent. of those graded 1 and 2 are living and well three years after operation; equally good results have been obtained in approximately 35 per cent. of the cases graded 3 and 4. He believes that, although all cases cannot be cured, a higher percentage of good results may be obtained by surgical than by any other method.

110. Tuberculosis of the Finger.

M. BENCI and A. MEZZARI (*La Chir. degli Organi di Movimento*, October, 1928, p. 57) discuss tuberculosis affecting the finger, and report 68 cases of its occurrence in a sanatorium. They found that tuberculosis of the finger was present in 4.2 per cent. of the osteo-articular cases, and appeared mainly in early infancy. There was a history of hereditary tuberculosis in as many as 54.4 per cent., and the finger infection was often associated with other tuberculous manifestations (66 per cent.), especially of the lymphatic glands. Trauma in the previous history was exceptional (4 per cent.). Monophalangeal localization was common (52.9 per cent.), followed later by localization in other fingers; the hand was much more often attacked (89 per cent.) than the foot, and the proximal rather than the distal phalanges. Fistula occurred in 75 per cent. The lesion may be osteo-periosteal (more commonly in children) or central, the form more often seen in adults. Cure was obtained in 73.54 per cent. of the cases. The mean duration of the disease was eighteen months, and of the treatment eleven months. Subsequent deformity was noted in 31 per cent. of the cases. Active surgical treatment was confined to removal of sequestra, and rigid immobilization was employed only in cases where the joints were affected.

111. Treatment of Perforated Gastro-duodenal Ulcers.

GUILLEMINET and LATREILLE (*Lyon Chir.*, November-December, 1928, p. 782), giving the results of 44 cases operated on for perforated gastric or duodenal ulcer, call attention to the increasing frequency with which this condition occurs, there having been only 5 cases in 1924, 7 in 1925, 13 in 1926, 11 in 1927, and 8 in the first six months of 1928. In the majority of cases operation was undertaken within five to eight hours after perforation, owing to early diagnosis. In 41 cases the perforation was sutured, a gastro-enterostomy being usually performed, with suprapubic drainage, in many cases. One patient was treated by pylorectomy and two by packing with gauze and a gastro-enterostomy. Out of the 44 cases there was a mortality of 5, or a little more than 11 per cent. Two of these five patients did not come for operation until too late, the delay being in one case twenty-six and in the other thirty-six hours after the perforation. A third patient died on the sixth day of secondary peritonitis, and another in the third week owing to gangrene of the lung. Out of the 39 successful cases, only 2 patients required further surgical treatment; in 18 cases the result was so good that the patients were able to live a normal life without pain or discomfort.

Therapeutics.

112. Insulin Therapy in Non-diabetic Diseases.

R. MIGNOT (*Journ. de Med. et de Chir. Prat.*, December 10th, 1928, p. 859) quotes numerous cases recorded by various writers who claim that remarkable success has followed the administration of insulin in many affections of non-diabetic origin. Its mode of action in these cases is not yet understood, though it is known that insulin acts chiefly on carbohydrate metabolism, improves hydrocarbon combustion, combats acidosis, and also increases the protein metabolism. It has a definite influence on general nutrition, and influences the liver, kidneys, and the thyroid and suprarenal glands. It is recommended in the treatment of acidosis due to intractable vomiting of pregnancy, or to injury or surgical intervention. In a case of pancreatic fistula following duodenal ulcer Lafourcade found that insulin relieved a very serious condition. Infantile malnutrition has been treated successfully in America and France by the daily injection of 15 to 30 c.cm. of glucose serum per kilo of body weight, combined with 10 to 20 insulin units, in two to four injections; usually improvement is seen after a few days, but treatment must be continued for some time. There have been remarkable results also in cases of malnutrition in adults. Insulin administration relieves constipation and appears to increase alkalosis; its tonic action is incontestable, and it is indicated in emaciation associated with visceroptosis, asthenia, acidosis, endocrine disturbances, and tuberculosis. Its contraindications are rare, and include hyperpyrexia, especially when due to tuberculosis, diarrhoea, and haemorrhage. One writer recommends that the treatment should be suspended during menstruation. Some authors insist that patients should remain in bed under close observation during insulin treatment, and hypoglycaemia [illegible] against by giving at least 30 grams of [illegible] every meal. Dosage and method of administration vary considerably, but it appears advisable to commence with a total of 10 units daily during the first week, three doses being injected subcutaneously or intramuscularly fifteen or twenty minutes before the principal meals. This daily dosage is increased gradually during three or four weeks to 60 units or more. Successes have been recorded in cases of dry gangrene of the extremities or of the skin, in Raynaud's disease, and in a refractory case of angina pectoris. Several writers found insulin of great value in endarteritis obliterans and in various forms of severe anaemia, where it has been claimed that this treatment has been as successful as the administration of liver in pernicious anaemia. Insulin has been employed in catarrhal jaundice and other hepatic diseases; it relieves pruritus, and improves the appetite and general health. It is also recommended in certain psychoses—depressive, anxiety, and confusional—in delirium tremens, in menorrhagia of ovarian origin, and in amenorrhoea.

113. Treatment of Anterior Poliomyelitis.

G. R. KAMMAN (*Minnesota Med.*, December, 1928, p. 785) believes that human convalescent poliomyelitic serum is more efficient than Rosenow's antistreptococcal poliomyelitic horse serum. Both serums are highly specific in the treatment of acute infantile paralysis, and will immunize monkeys from the infection, but immunity does not last longer than six months. Early serum treatment gives better results, although recovery occurred in a case when the administration did not begin until two days after the onset of definite paralysis. In the acute stage rest and the routine treatment of all acute infections should be prescribed; repeated spinal draining is most important in relieving cerebro-spinal pressure. Kamman employs Bourne's method of administering the serum, 200 c.cm. of blood being collected in a sterile flask from a patient convalescent for some weeks from the disease, and free from syphilis and malaria; the blood is allowed to clot and the supernatant serum (usually about 75 to 100 c.cm.) is drawn off and kept in a cool place, with the neck of the flask plugged with sterile cotton. A dose of 15 c.cm. is injected intraspinally, and the same quantity is given intravenously on two successive days, spinal drainage being performed before each administration. If human convalescent serum is not available, Rosenow's serum may be injected intramuscularly after repeated spinal drainage. In addition to the serum treatment, massive doses of urotropine have been given; Bourne advises 10 grains every two hours until twenty-four doses have been given. The urine must be tested frequently, and urotropine discontinued if symptoms of renal damage appear. Urotropine may also be given as a prophylactic to children exposed to infection. When paralysis supervenes serum treatment is much less effective. The affected limb should be splinted to prevent malposition and contractures, and it should be wrapped in

wool, heat being applied by hot-water bottles and the therapeutic lamp. Absolute rest should be ensured, and sedatives and analgesics may be required. Gentle massage and passive movements are inadvisable during the acute stage, since too vigorous handling may damage the affected muscles irreparably. When large groups of muscles are involved the risk of weight-bearing should be deferred for a year or eighteen months.

114. Pituitary Extract in Diabetes Insipidus.

To avoid the necessity for repeated hypodermic injections of extract of the pituitary posterior lobe in cases of diabetes insipidus other less painful and more convenient methods have been devised, and J. R. CAMPBELL, jun., and H. L. BLUMGART (*Amer. Journ. Med. Sci.*, December, 1928, p. 769) have demonstrated that intranasal applications are as effective as injections. Eight cases of different etiology are reported in which the polyuria and polydipsia were effectively checked by this measure. Two intranasal methods are mentioned as practicable. In one, from 0.5 to 1 c.cm. of obstetrical pituitrin, which is half the strength of surgical pituitrin, is sprayed at three-, four-, or six-hour intervals into the nose so as to be deposited mostly on the roof of the nasopharynx. The second method, which is adopted by the authors, is application by means of a cotton swab. A pledget of absorbent cotton is soaked in 0.5 to 1 c.cm. of the extract, and is passed up one nostril towards the eyebrow. This is left in place till the next application, when it can be easily removed by blowing the nose. As a rule alternate nostrils are used. Emphasis is laid on the importance of inserting the pledget high in the nasopharynx. Occasionally a burning sensation is produced by the drug, but this usually passes off in a few days. In one case treatment had to be discontinued owing to intense nasopharyngeal irritation. This treatment can be as effectively applied by the patients themselves. The authors believe that the efficacy of the applications must be due to the continuous intranasal absorption of the drug over a long period of time, and that the absorption takes place through the lymphatics and not through the vascular routes.

Laryngology and Otology.

115. Hearing and Altitude.

F. D'ONOFRIO (*Arch. Ital. di Otol., Rinol. e Laryngol.*, October, 1928, p. 603) has made a series of observations of normal subjects and of those suffering from catarrhal deafness—in the first place at sea level, and secondly, at a height of about 5,000 ft. above sea level. He found that the normal person had a definitely greater acuity of hearing at the higher points than at sea level, and that the difference was even more marked in subjects suffering from catarrhal otitis media. The temperature was higher in the subalpine region than at sea level, but was as tolerable, or more so, owing to the dryness of the atmosphere. The humidity of the atmosphere at sea level is a factor which affects the middle ear and Eustachian tube, and reduces acuity. Another factor is the atmospheric pressure, which at 1,500 ft. is reduced to 714 mm. of mercury. The humidity and the pressure of the sodium chloride and the iodine in the air at the sea coast cause a hyperaemia and congestion of the Eustachian tube and middle ear. This congestion prevents the adjustment of balance between the air inside the middle ear and the outside air, and the effect of this on the ossicular chain and the insertion of the stapes into the wall of the middle ear is more marked at the higher pressure of sea level than in the subalpine districts. In the normal subject the hearing distance was increased by from 10 to 30 per cent. at the higher altitudes for the watch and for about the same for the voice. In the catarrhal cases the improvement was from 50 to 100 per cent. over that at sea level, and in these individuals there was a real improvement in the condition after somewhat prolonged sojourn at high altitudes.

116. Etiology and Treatment of Defects of Speech.

E. L. KENYON (*Journ. Amer. Med. Assoc.*, November 3rd, 1928, p. 1341) emphasizes the value of studying the movements of the thyroid cartilage during voice production, in order to obtain knowledge of the action of the extrinsic musculature concerned in speech, and, consequently, of the action of the vocal cords. He defines three independently controllable systems of muscles—namely, those of the chest; the oral and the extrinsic laryngeal muscles; and the intrinsic laryngeal musculature. He believes that abnormalities in sound production by the mouth and laryngeal muscles result chiefly from tension of those of the mouth which are under conscious control, and from the patient having only a crude psychological conception of the sounds to be produced. As the result of investigating cases in this way, Kenyon finds that methods of training of the speech mechanism for the correction of disorders of speech or of the voice may now be based on a more exact and complete psychological and physiological knowledge than has been possible hitherto. Operative procedures should not be contemplated until it has been shown that speech defects are not due to functional disorders. Kenyon describes how the movements of the thyroid cartilage during speech can be studied by finger palpation, and suggests that this should be employed more frequently before attempting to correct vocal abnormalities. He gives details of the anatomical considerations concerned.

117. Sinus Infections Due to Dental Caries.

G. BERRY (*Arch. of Oto-Laryngol.*, December, 1928, p. 698) believes that caries of the teeth is present in 60 to 80 per cent. of cases of maxillary sinus infections; these are more frequent in adult life than earlier, and a dental rather than a developmental etiology seems probable. Although dental abscesses may be revealed by radiography, yet in many cases the infection spreads quickly up to the antrum, arresting the bony resorption, and consequently its manifestation in the photograph. The rhinologist must therefore co-operate with the dentist and radiologist if the full extent of damage in any particular case is to be recognized. Recurring pains in the antrum on the side where a dead, or dying, tooth is situated should awaken suspicion that there is extension of the morbid process; similar importance is to be attached to an occasional seepage of pus from the middle meatus, small polypi in this region, and even a chronic unilateral nasal congestion without obvious explanation. The author believes that many a stubborn nasal and paranasal condition would yield to removal of an adjoining septic focus, such as a buried dental root.

Obstetrics and Gynaecology.

118. Pregnancy associated with Cervical Cancer.

IN cancer of the cervix complicated by pregnancy R. CONDAMIN (*La Gynécol.*, October, 1928, p. 578) thinks the therapeutic indications are clear if the pregnancy is near its commencement and the neoplasm is clearly operable, or, on the other hand, if the infant is viable and term is not far removed. In the first case speedy operation is called for, and the existence of pregnancy may be ignored; in the second case Caesarean section, followed by wide hysterectomy, should be performed if the cancer is operable, otherwise radium therapy is indicated. Another group of cases, however, those in which a pregnancy of three to six months' duration coexists with an operable neoplasm, has caused considerable difference of opinion; some surgeons advocate immediate operation with sacrifice of the foetus, while to others continuance of foetal existence appears more important than the relatively small chance of maternal survival offered by radical hysterectomy in a patient who in nine out of ten cases is aged between 30 and 35. Condamin suggests that in the group of cases where treatment raises this problem a solution is to be found in the use of radium, followed in a majority of cases by Caesarean section towards term; at the same time he denies that the evolution of the pregnancy will be disturbed by adequate radium applications, or that the foetus will be injured. Reference is made to cases of radium treatment from the second to the seventh month of pregnancy; in three a Caesarean operation was done, in four premature birth occurred in the seventh to ninth months, and in four the infant was healthy and survived. That careful watching of the patient is required after the application of radium during pregnancy is shown by one of Condamin's cases, in which the patient, who neglected to return for Caesarean operation, succumbed to cervical tears produced in labour at the seventh month. One of Condamin's patients was in good health twelve months after radium treatment, during the fifth month, of a carcinoma confined to the anterior lip of the cervix; one of Pouey's patients was well three and a half years after similar treatment (at six months) of a more extensive tumour on the posterior lip. As a complement to radium treatment during pregnancy followed by Caesarean section, Condamin is inclined to prefer hysterectomy in cases in which the radiation has been given late (in the sixth or seventh month), and further radium applications are advised in cases in which the initial ones have been early or repeated.

119. Aschelm and Zondek's Test for Pregnancy.

I. ODESCALCHI (*Ann. di Ostet. e Ginecol.*, November 30th, 1928, p. 1347) reports the trial of Aschelm and Zondek's biological test for pregnancy in thirty patients. A negative reaction was found in only two cases of pregnancy; one patient was at term and the other had been delivered six days previously. The authors of the test state that the responsible hormone—that of the anterior lobe of the hypophysis—diminishes in the

urine towards term, and disappears on the eighth day after delivery. According to Aschеim and Zondek, their test gives positive results early in the first month after conception; in 250 cases of pregnancy 2 per cent. of errors occurred, and a like number of non-pregnant patients gave 1.6 per cent. of errors. The essential feature of the test is the detection in the patient's urine of a sufficient amount of the hormone of the anterior lobe of the pituitary body to induce, when injected into infantile white mice weighing 6 to 8 grams, intrafollicular haemorrhages and/or luteinization and formation of corpora atretica in the ovaries. Acid, filtered morning urine is injected subcutaneously in doses of 0.2 to 0.4 c.cm. six times in three days; the ovarian changes characteristic of a positive test can usually be recognized macroscopically after killing the animals. According to Aschеim and Zondek the ovarian hormone (folliculin), which is present in considerable amounts in the urine from the eighth week of pregnancy onwards, is not of importance in the test; besides being less abundant than the hypophyseal hormone, it is increased in the urine at the menstrual epoch and the climacteric. Aschеim and Zondek regard the pituitary hormone as the motor concerned in exciting ovarian activity; they found the pituitary to be the sole organ extracts of which, injected into infantile mice, produced a state of ovarian hyperfunction and oestrus, and they noted that pituitary extract (unlike ovarian extract) injected into castrated female mice was ineffective. None of Odescalchi's test cases was that of a pregnancy in the earliest months.

120. Scopolamine Anaesthesia in Labour.

BERTHA VAN HOOSEN (*Anesthesia and Analgesia*, November-December, 1928, p. 353) discusses scopolamine anaesthesia in the second stage of abnormal labour, refuting the general opinion that its use is contraindicated therein; she also considers the employment of hypodermic injections of scopolamine alone in contradistinction to the more general combination of scopolamine and morphine. The author's previous experience of 2,023 "twilight sleep" deliveries with an infant mortality of 2.3 per cent., a maternal mortality of 0.1 per cent., and analyses of stillbirths, asphyxias, and haemorrhages, are advanced in support of the view that scopolamine anaesthesia is safe in the second stage of normal and abnormal labour. In abnormal labour the advantages claimed for its use are freedom from exhaustion and fatigue for the patient; an economy in time should operative intervention become necessary; avoidance of interference with the natural uterine contractions; lessened trauma and loss of blood; and obviation in great measure of asphyxia of the infant, thus rendering resuscitation easier than when such a condition results from general anaesthesia. Notes of three cases of different types of abnormal labour are given to illustrate the author's contentions.

121. Tubo-uterine Implantation.

H. HEUCK (*Zentralbl. f. Gynäk.*, December 8th, 1928, p. 3145) alludes to five cases from the literature in which birth of a full-time child followed implantation of the divided Fallopian tube into the uterus. He reports a sixth case in a woman, aged 32, who had been married ten years, and was found, after four years' sterility following one childbirth and one abortion, to have tubes which were impervious to insufflation by the Rubin method. Laparotomy showed that both abdominal ostia were patent, but sounds were arrested at the thickened uterine ends. These were excised together with the isthmic portion; the tube walls were split dorsally, and the tubes were implanted in the region of their original attachment. Atresia was demonstrated microscopically in the excised portions. Fifteen months later a healthy child was born after normal labour at term. Heuck mentions also four other cases of conception following tubo-uterine implantation.

Pathology.

122. Therapeutic and Prophylactic Antityphoid Serum.

K. T. GLOUKHOFF (*C. R. Soc. de Biologie*, November 2nd, 1928, p. 1239) immunized rabbits and goats by intravenous injection during a period of four to six weeks of twenty-four-hour cultures containing 8 to 25 thousand million bacilli per cubic centimetre which had been previously submitted to the action of caustic potash and then neutralized by the action of acetic acid. The animals were bled two to three weeks after the last injection. The serum so obtained was tested on the rabbit by subcutaneous or intravenous injections at the same time as a lethal dose of typhoid culture containing 13 thousand million bacilli per kilogram. The dose of serum used varied from 2 to 5 c.cm., according to the weight of the animal. The control animals died in twenty-four hours, while those which had been given the serum survived after having a rise of temperature for two to five days. It was also found that the serum of normal rabbits or those immunized against other infections had no protective power. In immunizing goats their blood was mixed with endotoxin and injected directly into a vein. No anaphylactic shock was observed. The blood cultures of infected rabbits treated by serum remained sterile. Typhoid bacilli were found in the gall-bladder when the animals were killed. The serum, therefore, has an antitoxic action. Goat serum was employed intravenously in rabbits with infected lymphatic glands, the serum being injected from the second to the fifth day, when the temperature became normal for five to seven days, and then showed a slight rise for one to two days. The fall in temperature did not occur in control animals in which inoculation was not followed by injection of serum. Subcutaneous injection, even in very large doses, did not yield obvious results. As a general rule serum treatment after five days did not have any effect on the course of the infection. When the serum was given later the glands increased in size and sometimes became caseous, whereas early serum treatment lowered the temperature and protected the glands from more serious lesions. If the glands were excised before serum treatment, the temperature immediately fell after their removal. Examination for typhoid bacilli in the excised glands remained negative.

123. Embryonic Tissue Cultures.

K. HEIM (*Arch. f. Gynäk.*, June 26th, 1928, p. 250) gives a preliminary report of systematic endeavours, in which the Carrel-Harrison or Kuczynski technique was employed, to grow human embryonic, adult, and neoplastic tissues in a mixture of fowl and human serum to which extracts of human or fowl embryo had been added. Success is reported in the culture of spleen, heart, brain, skin, ovarian, and endometrial tissue, all from the human foetus; the tissue of placental villi could not be cultivated after the fourth month of foetal life, and no proliferation of syncytium was found to occur. Of adult tissues, culture of the peritoneum from pregnant subjects and of endometrium was found possible. Endometrial implants grew equally well whether taken in the menstrual, premenstrual, or intermenstrual phase; fragments from curetted specimens could be cultivated. No success was obtained, however, in cultures from endometrial fragments which did not include a segment of the basal layer. Decidual cultures succeeded up to the fourth month of pregnancy. Little or no evidence of growth was found in cultures from tumours.

124. The Thermostability of Agglutinins.

L. SILBER and NIKOLSKAJA (*Zeit. f. Immunitäts. u. exp. Therapie.*, November, 1928, p. 63) find that the agglutinins in a number of serums against such organisms as those of the typhoid, paratyphoid, dysentery, cholera, and proteus groups are destroyed by heating to 80° C. for one hour; but if the serum protein is prevented from coagulating, then the agglutinins remain to some extent intact. Bayer 205 was found to inhibit the heat-coagulation of proteins. When the serum was diluted to 1/10 in a 5 per cent. solution of this substance and heated, not all the agglutinins were destroyed. The amount remaining varied with different serums; as a rule the titre of the serum was reduced to about a quarter or an eighth of the original. The same protecting influence was manifested by weak acid. When one part of serum was mixed with two parts of N/10 HCl and seven parts of saline, so as to dilute the serum 1/10, the agglutinins were not completely destroyed by heating, except in one instance. Again, the explanation appears to be that weakly acid serum is not coagulated—at any rate completely—by the degree of heat used in these experiments.

125. Serum Changes in Kala-azar.

R. B. LLOYD and S. M. PAUL (*Indian Journ. of Med. Research*, October, 1928, p. 203) report a study of the serum changes in kala-azar before and during treatment, and refer to another article by themselves in the same journal in the previous July. They first examined the reaction which occurs when formalin is added to serum in cases of kala-azar, and concluded that, though the appearance of a white gel is not specific, it affords a very useful clinical test. In this disease an increase was shown to occur in the serum globulin content and of the euglobulin reaction, together with absolute decrease as regards the serum albumin. The authors found, by plotting curves for these changes, that a characteristic form was assumed, and they think that this indicates some deep-seated change during treatment. They believe that on these lines a serological standardization is made available for the control of treatment in kala-azar, comparable with the similar control of syphilis by the Wassermann test. They suggest also that a special euglobulin is present in kala-azar.

Reprinted from "The Practitioner" for January, 1929.

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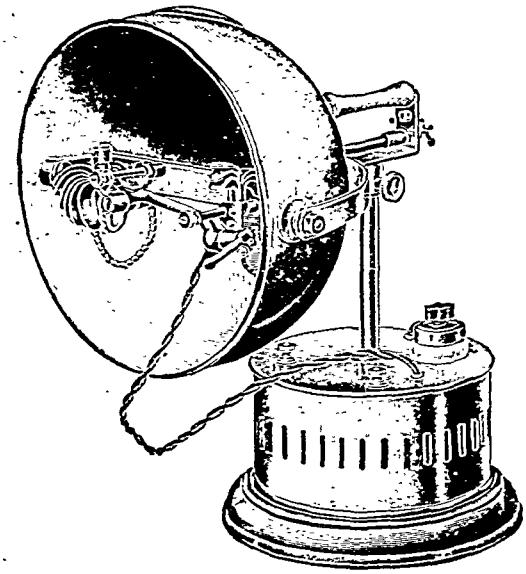

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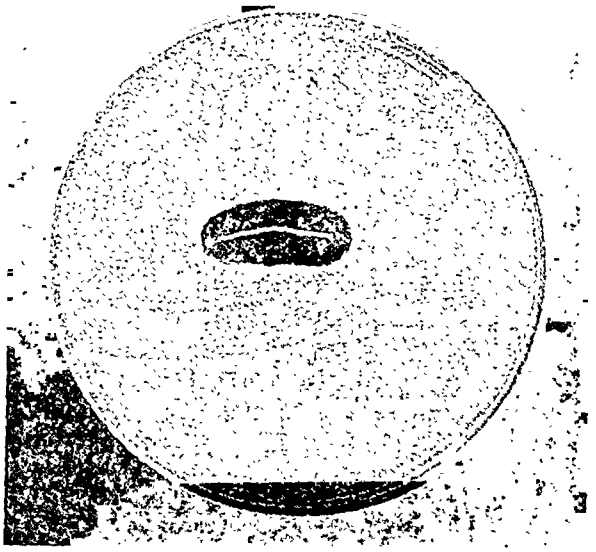

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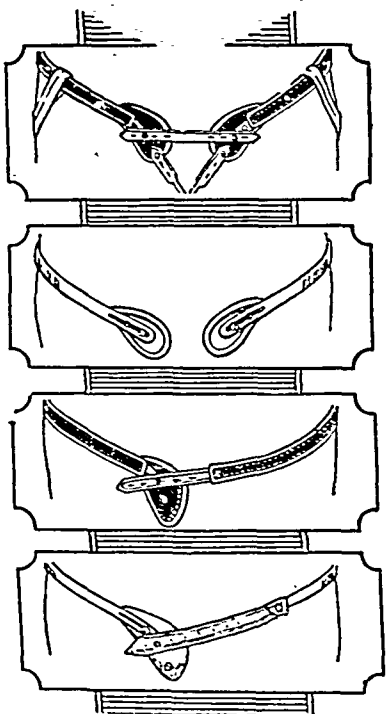

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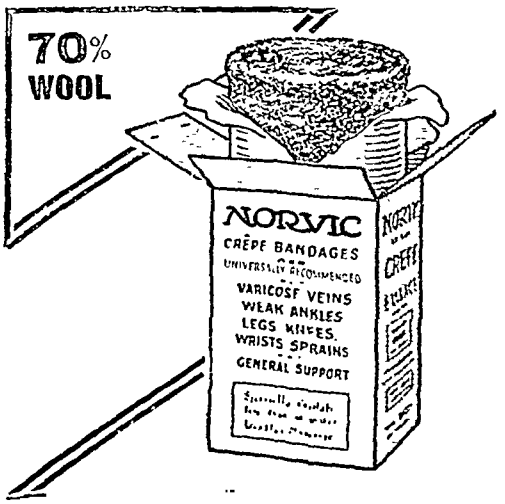

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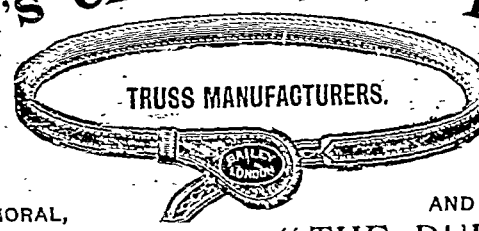

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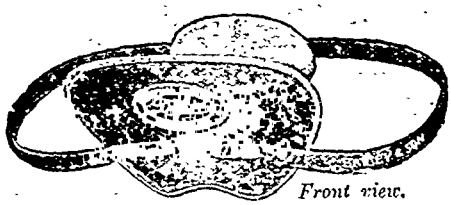

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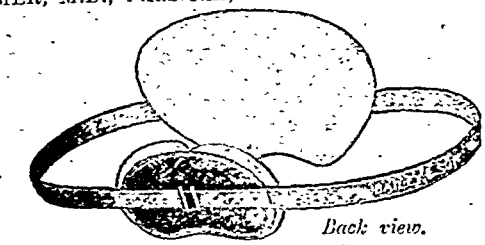

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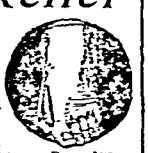
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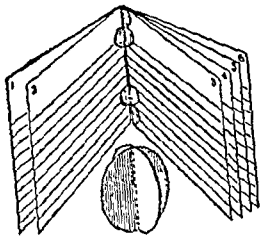

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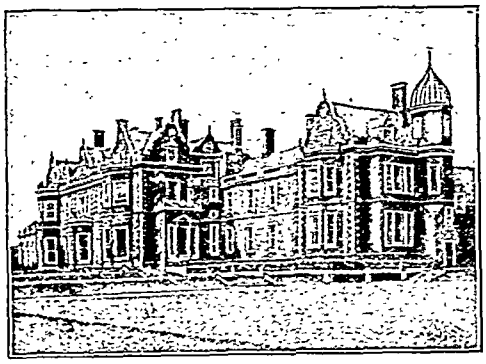

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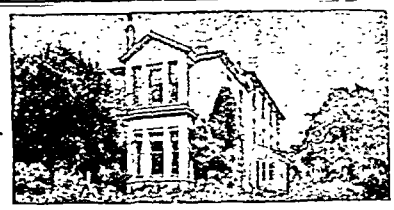

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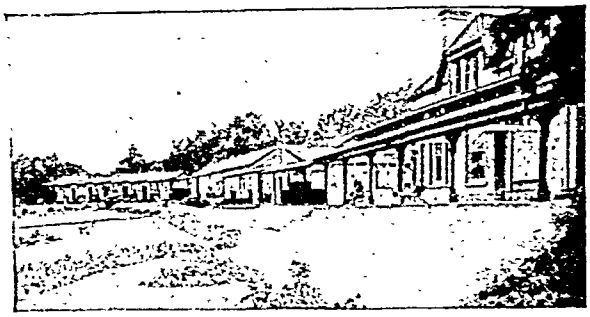

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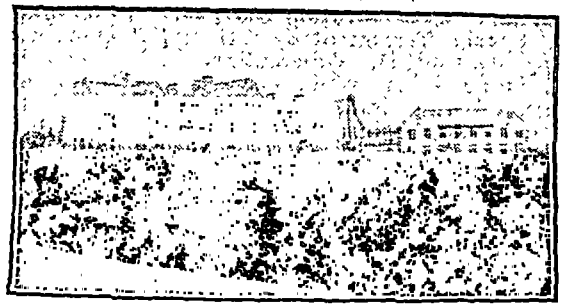

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FIRST EXAMINATION (NEW REGULATIONS).
This Examination will commence on Thursday, April 4th, 1929.

FINAL EXAMINATION.
This Examination will commence on Monday, April 8th, 1929.

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HORACE H. REW,
February 1st, 1929. Secretary.

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Admission free, without ticket

EDWIN DELLER, Academic Registrar.

Society of Apothecaries of LONDON.

MASTERY OF MIDWIFERY.

The next Examination will take place on Monday, May 20th, and following days. For regulations apply to—

FRANK HAYDON, Secretary.

Government of Southern Rhodesia.

PUBLIC HEALTH DEPARTMENT.

Applications are invited for the post of MEDICAL INSPECTOR OF SCHOOLS for the Colony of Southern Rhodesia. The official appointed will be attached to the Public Health Department. The commencing salary will be at the rate of £800 per annum, rising by £50 per annum to £1,000 per annum. Transport allowance for journeys undertaken on duty will be paid according to the Civil Service Regulations, and a commuted subsistence allowance will be paid at the rate of £150 per annum. Private practice will not be allowed.

The duties will include the medical examination of all school children, and, if necessary, all teachers, inspection of school premises, and the advising of the Government on medical and health matters pertaining to schools and school children. The appointment will be for a period of four years, and a contract will have to be entered into for that period. Salary will be payable from the date of reporting for duty in Salisbury, Southern Rhodesia. A passage will be provided to Salisbury, but this will not include the fare of any dependants.

The successful applicant must produce his birth certificate and satisfactory evidence of health, and should be between 30 and 40 years of age. He should have had previous experience in this class of work, and a qualification in Public Health, though not essential, will be considered an advantage.

Applications should be addressed to the Secretary, Office of the High Commissioner for Southern Rhodesia, Crown House, Aldwych, W.C.2, from whom any further particulars required can be obtained, and should reach that official before February 15th.

University of Lucknow.

Applications are invited for the PROFESSORSHIP OF MEDICINE and PHYSICIAN to KING GEORGE'S HOSPITAL, attached to the University. Salary Rs.1,200—50—1,400 per mensem, plus benefits of the University Provident Fund on confirmation (rate: 6 per cent. of salary paid by subscriber and 6 per cent. by the University). Consulting practice allowed. The selected candidate will be on probation for one year and will be required to join the Lucknow University about November 1st, 1929. Applications, stating age, academic qualifications, hospital experience, and research publications, with copies of three testimonials, should reach the Registrar, Lucknow University, Lucknow, on or before March 31st.

NOTE.—For members of the Indian Medical Service the conditions of service will be similar to those of Government servants holding similar appointments.

R. R. KHANNA, Registrar.

Wellington Hospital Board, NEW ZEALAND.

ORTHOPÆDIC SPECIALIST.

Applications from medical practitioners addressed to the undersigned, and endorsed "Orthopædic Specialist," are invited up to noon on March 31st, 1929, for the position of Orthopædic Specialist to the Wellington Hospital, at a commencing salary of £900, rising by two annual increments of £50 per annum to £1,000; non-resident.

The successful applicant will be required to undertake active treatment of fractures, to have practical experience of plaster technique, splint-making, and all branches of Physio-therapy—that is, Baineo-therapy, Electro-therapy (including Ultra-violet) and Massage.

Applicants are requested to state age and qualifications, and to enclose copies of references.

R. BROWN, Secretary.

University of Melbourne, VICTORIA, AUSTRALIA.

CHAIR OF OBSTETRICS.

Applications are invited for the above Chair. Salary £2,000 per annum. For particulars apply to the Agent-General for Victoria, Victoria House, Melbourne Place, Strand, London, W.C.2, with whom applications must be lodged on or before March 31st.

Royal Alexandra Hospital for SICK CHILDREN, BRIGHTON.

(100 Beds.)

HOUSE SURGEON (male) required. Salary at the rate of £100 per annum, with board, lodging, and washing. Good experience, including Sun-Ray Treatment. No canvassing allowed. To commence duty on February 27th.

Applications, in writing, and accompanied by testimonials, should be sent to the Secretary, A. F. GRAVES.

The Hospital for Sick Children, Great Ormond Street, London, W.C.1.

A Whole-time ASTHMA RESEARCH SCHOLAR is required on February 21st, in the Asthma Clinic established at this Hospital, under the Halley Stewart Trust of the Asthma Research Council, for special research work in the causation and treatment of Asthma and kindred complaints in children.

Gentlemen are invited to send in their applications addressed to the Secretary, with copies of not more than three testimonials, written specially for the purpose, before 12 o'clock on Monday, February 18th.

The appointment is non-resident, and is made for one year, but may be held, subject to re-election annually, for a period of four years.

Candidates must possess a legal qualification to practise.

Salary £300 per annum, with luncheon and tea provided by the Hospital when on duty.

All candidates must be in attendance on Wednesday, February 20th, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
January, 1929. Secretary.

The Hospital for Sick Children, Great Ormond Street, London, W.C.1.

A CASUALTY OFFICER is required on February 21st.

Gentlemen must be registered medical practitioners, and are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, February 18th, accompanied by copies of not more than three testimonials, written specially for the purpose.

The appointment is made for one year, but may be held, subject to re-election annually, for a period of three years.

The appointment is non-resident, and whole-time.

Salary £400 per annum, with luncheon and tea provided, and allowance of 24 guineas for substitute for annual holiday of four weeks.

All candidates must appear before the Joint Committee at their meeting on Wednesday, February 20th, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
January, 1929. Secretary.

Borough of Folkestone.

MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified gentlemen for the appointment of Medical Officer of Health of the Borough, subject to the provisions of the Public Health (Officers) Act, 1921, and the Sanitary Officers Order, 1926.

The gentleman appointed will be required to perform all the duties imposed on a Medical Officer of Health, to act as Port Medical Officer of Health; Maternity and Child Welfare Medical Officer and School Medical Officer, and to carry out all such duties as the Council, with the consent (if necessary) of the Minister of Health, may from time to time direct, including the duties of Medical Inspector of Aliens if appointed to this post by the Minister of Health. He must devote all his time to the duties of the office and must not engage in private practice.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The salary to cover all the duties specified above will be £900 per annum inclusive.

Applications, accompanied by copies of not more than three recent testimonials, should reach the undersigned not later than February 16th.

Town Clerk's Office, C. F. NICHOLSON,
Folkestone. Town Clerk.
January 22nd, 1929.

Preston Union.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER.

Salary at the rate of £104 per annum, with board, lodging, etc.

Candidates must be duly qualified and registered under the Medical Acts.

The appointment is for six months commencing on March 1st.

Duties include work in any Wards of the Hospital, in the Institution as required, and also in the Sharoe Green Maternity Home adjoining.

Applications should be made by letter, accompanied by copies of three testimonials of recent date, and should reach me on or before 10 o'clock a.m. on Tuesday, February 5th.

Union Offices, THOMAS H. BENTHAM,
Lancaster Road, Clerk to the Guardians.
Preston. January 16th, 1929.

County Council of Durham.

EDUCATION DEPARTMENT.

ASSISTANT SCHOOL MEDICAL OFFICER.

The County Education Committee invite applications from duly qualified men for the post of Assistant Medical Officer to act under the School Medical Officer in connexion with the Inspection of School Children, and such other duties as may be required by the Education Committee. Commencing salary £600 per annum (provided the candidate has had not less than three years' post-graduate experience), rising by annual increments of £25 to £650 per annum, together with travelling expenses according to the County scale. The successful candidate will be required to devote his whole time to the duties of the office, and reside in or near the district to which he will be attached at a place to be approved by the Education Committee. The appointment will be subject to three calendar months' notice on either side, such notice to date from the last day of any calendar month. Applicants must have had experience in the work of school medical inspection, and preference will be given to candidates who:

(a) Have had experience in the work of School Clinics;
(b) Have been accustomed to make special reports on Mentally Defective, Physically Defective, Epileptic, and other Defective Children.

The possession of a Diploma in Public Health is desirable, though not essential.

Copies of not more than three recent testimonials are required.

Canvassing, directly or indirectly, is prohibited and will disqualify.

A deduction of 5 per cent. will be made from the salary in accordance with the Local Government and Other Officers Superannuation Act, 1922, which has been adopted by the Council, and the appointment will be subject to passing the County Council's medical examination in connexion therewith.

Forms of application, to be returned not later than Saturday, February 9th, may be obtained from the Director of Education, Shire Hall, Durham, on receipt of stamped addressed envelope.

Shire Hall, A. J. DAWSON,
Durham. Director of Education.
January 19th, 1929.

Parish of Willesden.

RESIDENT FIRST ASSISTANT MEDICAL OFFICER.

The Guardians invite applications for the appointment of Resident First Assistant Medical Officer (male) at Park Royal Hospital, Acton Lane, Willesden.

Salary £430, rising to £460 at the expiration of one year, with rations, furnished apartments, and laundry.

Candidates must be registered medical practitioners, and not under 30 years of age.

The officer appointed will be required to devote the whole of his time to the duties of the office, to administer anæsthetics, to give Lectures to the Nursing Staff, and generally to act under the supervision and direction of the Medical Superintendent. He will also be required to pay into the account of the Guardians all fees received by him, including fees for certifying lunatics, etc.

Forms of application may be obtained by sending a stamped addressed foolscap envelope to my office, as below, and must be returned to me not later than the first post on Monday, February 11th.

The appointment will be subject to the provisions of the Poor Law Officers Superannuation Act.

By Order,
J. HUTTON HAYES,
Guardians' Offices, Clerk to the Guardians.
409, High Road,
Bloomsbury, N.W.6.
January, 1929.

Brentry Certified Institution.

APPOINTMENT OF RESIDENT MEDICAL SUPERINTENDENT.

The Board of Management of the Joint Certified Institution for Male Mental Defectives situate at Westbury-on-Trym, near Bristol, invite applications from registered medical practitioners having had special training and experience in the treatment of mental defectives for the post of Resident Medical Superintendent of their Institution, containing 350 beds. The salary is £550 per annum, rising to £600 per annum, with quarters, rations, washing, and coal.

Further particulars and form of application may be obtained from the undersigned.

HOWARD B. ABBOTT,
Hon. Sec.
Brentry Certified Institution,
13, Victoria St.,
Westminster, S.W.1.

States of the Island of Jersey.

COMMITTEE FOR THE JERSEY MENTAL HOSPITAL.

MEDICAL SUPERINTENDENT.

This office being vacant, the States will proceed next month to appoint a Medical Superintendent for the above establishment, who will be required to enter upon his duties about the end of February or beginning of March next.

The appointment is for three years, at a salary of £650 per annum, with house (and garden) in which the person appointed will be required to reside. The Medical Superintendent must devote the whole of his time to the duties of his office. Candidates must be Members or Licentiates of one of the Faculties of Medicine and Surgery of Great Britain or Ireland.

Sealed applications, stating qualifications, with testimonials, to be sent on or before February 9th, addressed to the President of the Committee for the Jersey Mental Hospital, Greffe Office, Jersey.

Greffe Office, Jersey. ERNEST LE SUEUR,
January 18th, 1929. Greffier.

Warwickshire County Council.

ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from qualified and registered medical practitioners for the post of Assistant County Medical Officer of Health. The duties will include Medical Inspection of School Children.

The salary is at the rate of £600 per annum, and is subject to a deduction of 5 per cent. in respect of contributions under the Local Government and Other Officers Superannuation Act, 1922. In addition, motor car allowances in accordance with the Council's scale and reasonable travelling expenses are paid. The appointment is also subject to the production of a medical certificate satisfactory to the County Medical Officer of Health. Preference will be given to one who holds a Diploma in Public Health

Forms of application and statement of the duties and terms of the appointment can be obtained from the undersigned. Applications (marked "Assistant County Medical Officer of Health"), with copies of not more than three recent testimonials, must be received by me not later than Monday, February 11th.

Canvassing, directly or indirectly, will be considered a disqualification.

42, Warwick St., L. EDGAR STEPHENS,
Leamington. Clerk of the County
January 22nd, 1929. Council.

Swansea County Borough.

RESIDENT MEDICAL OFFICER.

INFECTIOUS DISEASES HOSPITAL.

The Council invite applications for the above appointment from duly qualified unmarried medical practitioners. The salary will be at the rate of £350 per annum, together with emoluments. Previous experience in an Infectious Disease Hospital is desirable.

Applications (on special forms with particulars of duties, can be obtained from the Medical Officer of Health, Public Health Offices, Swansea) to be sent in not later than February 13th.

Metropolitan Asylums Board.

The Board invite applications for the appointment of ASSISTANT MEDICAL OFFICER (JUNIOR) at THE DOWNS HOSPITAL FOR CHILDREN, SUTTON, SURREY (360 beds). Salary £500 per annum. Must be a good operator for the removal of tonsils and adenoids, and preferably with some experience of diseases of the ear. The candidate appointed will be required to reside in the Hospital, and to pay for board, lodging, and washing at the rate (at present £130 per annum) fixed from time to time.

Form of application may be obtained by sending stamped addressed foolscap envelope to the Clerk, Metropolitan Asylums Board, Victoria Embankment, London, E.C.4, by whom completed applications must be received not later than 10 a.m. on February 11th.

ALLAN POWELL,
Clerk to the Board.

Tyrone County Hospital, Omagh.

The Committee of Management of above Hospital will, at their meeting on Tuesday, February 19th, appoint a HOUSE SURGEON, with knowledge of Radiology, for a period of six months.

Applications stating age, qualifications, and experience, with copies of not more than three testimonials, to be forwarded to the Registrar on or before Thursday morning, February 14th.

Salary £100 per annum, with board and lodging.

County Borough of Smethwick.

SENIOR ASSISTANT MEDICAL OFFICER OF HEALTH.

The Council invite applications from qualified medical men for the position of Senior Assistant Medical Officer of Health.

Salary £550 per annum, with furnished residence for single man at the Isolation Hospital, Holly Lane, including lighting, heating, board, and laundry. If a married man is appointed the salary will be £700 per annum, without board and residence.

His duties will be to act as Medical Officer at the Isolation Hospital, to work at the Tuberculosis Dispensary and School Clinics on certain days, and to carry out a certain amount of School Medical Inspection.

Applicants must be registered medical practitioners, and should possess the Diploma of Public Health.

The officer appointed will also be required to assist the Medical Officer of Health in his other duties from time to time as directed, and will work under the general supervision of the Medical Officer of Health.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and the selected candidate will be required to pass a medical examination.

Forms of application may be obtained from the undersigned, to whom applications, endorsed "Assistant Medical Officer of Health," and accompanied by copies of three recent testimonials, must be delivered not later than February 14th.

Canvassing, directly or indirectly, will disqualify.

Council House, FRANK CHAPMAN,
Smethwick. Town Clerk.
January 29th, 1929.

County Borough of Ipswich.

ASSISTANT MEDICAL OFFICER OF HEALTH (Woman).

The Corporation of Ipswich invite applications for the appointment of an Assistant Medical Officer of Health and Assistant School Medical Officer.

Applicants must be fully qualified medical practitioners, and must hold a Diploma in Public Health, or an equivalent qualification.

Applicants must be qualified to undertake ante-natal and infant welfare work.

Experience in Mental Deficiency, and in Ultra-violet Ray Treatment, would be regarded as additional qualifications.

Salary £600 per annum.

The successful candidate will be required to contribute to any Superannuation Fund which the Town Council may establish.

The person appointed will be required to devote her whole time to the duties of the office, and to act under the control of the Medical Officer of Health, who is also School Medical Officer.

The duties of the position will be mainly concerned with the School Medical Service, but the Public Health Committee retain the right to utilise the services of the person appointed as may be required by them.

Applications, together with copies of not more than three recent testimonials, to reach the Medical Officer of Health, Elm Street, Ipswich, not later than February 16th.

Town Hall, A. MOFFAT.
Ipswich. Town Clerk.
January 29th, 1929.

West Bromwich Union.

HALLAM HOSPITAL, HALLAM STREET, WEST BROMWICH.

Applications are invited for the appointment of OPHTHALMIC SURGEON at Hallam Hospital, with honorarium of £75 per annum.

The person appointed will have to attend at the Hospital when requested so to do either by Members of the Visiting Staff or the Resident Medical Officers.

Applications, accompanied by copies of two recent testimonials, to be forwarded so as to reach me not later than first post on Tuesday, February 12th.

By Order,
22, Lombard St., A. H. WARD,
West Bromwich. Clerk.
January 21st, 1929.

Ancoats Hospital, Manchester.

HOUSE PHYSICIAN required to commence duty on March 1st next. Appointment for six months, salary at the rate of £100 per annum. Applications, stating age, qualifications, experience, if any, together with copies of three recent testimonials, to be forwarded to the undersigned on or before February 13th.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Royal Westminster Ophthalmic HOSPITAL

(Incorporated by Royal Charter),
Broad Street, Holborn, W.C.2.

JUNIOR HOUSE SURGEON (male) required from March 1st, for six months. Candidates must be duly qualified, registered in this country, and possess a knowledge of Ophthalmology.

Board, residence, etc., provided, with a small salary.

On conclusion of office as Junior House Surgeon, he will be eligible for appointment as Senior House Surgeon for a further period of six months, if recommended.

Applications, with copies of testimonials, should be sent at once to the Secretary, from whom further particulars can be obtained.

West Bromwich and District GENERAL HOSPITAL. (150 Beds.)

Applications are invited for the posts of (1) HOUSE SURGEON, (2) HOUSE PHYSICIAN, and (3) CASUALTY HOUSE SURGEON (males). Candidates must be doubly qualified and unmarried. Salaries at the rate of £200 per annum, with board, residence, and laundry.

The appointments are for six months, and the candidates appointed will be required to take up their duties on March 1st next.

Applications, stating age and qualifications, with copies of recent testimonials, should be sent to the undersigned on or before February 14th.

By Order,
Edward St., FRANK I. HANCOCK,
West Bromwich. Secretary & Supt.

Middlesex Hospital and Medical SCHOOL, W.1.

Applications are invited from registered medical practitioners for the post of RADIUM REGISTRAR, vacant on March 1st. The appointment is for one year, but the holder is eligible to apply for re-appointment annually. Salary £300 per annum, with lunch and tea. Hours 10 a.m. to 5 p.m. Further information may be obtained from the Secretary, to whom applications, with not more than three testimonials, must be sent by noon on Thursday, February 14th.

By Order of the Board,
S. R. C. PLIMSOLL, Secretary.

The Willesden General Hospital,

Harlesden Road, N.W.10.

The Executive Committee are prepared to receive applications for the appointment of an HONORARY OPHTHALMIC SURGEON, who will be expected to take charge of Out-patients.

Candidates must be Fellows of the Royal College of Surgeons of England. They will be required to interview the members of the Medical Committee, whose names and addresses can be obtained on application to the undersigned, and to submit 30 copies of their application and testimonials, which must be received not later than Monday, February 11th, by—

R. J. HEARNE,
January 12th, 1929. Secretary.

Hospital for Consumption and DISEASES OF THE CHEST,

Brompton, S.W.

The Committee of Management invite applications for the post of Whole-time qualified ASSISTANT in the Department of Pathology. Duly qualified women are eligible for appointment. Further particulars may be obtained at the Hospital. Salary £350 per annum. Applications, with testimonials, to be sent in on or before February 23rd. Candidates will be required to attend the meeting of the Medical Committee on Wednesday, February 27th, at 4.30 p.m.

Brompton. FREDERICK WOOD,
January, 1929. Secretary.

The Ilford Emergency Hospital,

ESSEX. (70 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male, unmarried), Medical and Surgical qualifications. Salary £100 per annum, with apartments, board, and laundry. Applications, stating age, qualifications, and experience, with copies of testimonials, should be sent to the Secretary immediately.

Charing Cross Hospital.

There is a vacancy for an HONORARY CLINICAL ASSISTANT in the X-ray Department of Charing Cross Hospital. Candidates should have, by preference, the qualification of D.M.R.E.(Cambridge), and should submit their applications to the undersigned not later than Wednesday, February 20th.

Charing Cross Hospital, PHILIP INMAN,
Strand, W.C.2. House Governor.

WEST AFRICAN MEDICAL STAFF

VACANCIES exist for MEDICAL OFFICERS and MEDICAL OFFICERS OF HEALTH in the BRITISH WEST AFRICAN COLONIES.

SALARIES.

Medical Officers receive salaries at the rate of £660 a year, rising by annual increments of £30 to £720 a year, and then on confirmation £720 a year, rising by annual increments of £40 to £960 a year, together with a seniority allowance (payable only in West Africa) at the rate of £72 a year. After three years' service on £960, the salary may be raised to the scale of £1,000 a year, rising by annual increments of £50 to £1,150 a year, together with a seniority allowance at the rate of £100 a year.

Medical Officers of Health receive salary on the above scale beginning at £800 a year, together with seniority allowance of £72 a year. They also draw staff pay at the rate of £150 a year, half of which is payable during leave.

QUARTERS.

Free furnished quarters are provided or an allowance in lieu.

OUTFIT ALLOWANCE.

An outfit allowance of £60 is granted on first appointment.

PASSAGES.

Free first-class passages are provided on first appointment, and when proceeding on or returning from leave.

PENSIONS.

All appointments are pensionable; a minimum service of seven years is required to qualify for a pension. An officer may retire on reaching the age of 50 and may be called upon to retire at the age of 55. Officers of the West African Medical Staff are permitted to retire if they wish with a gratuity of £1,000 or £1,250 after nine or twelve years' approved service respectively, but in that event they receive no pension.

TOURS OF SERVICE AND LEAVE.

A tour of service in West Africa lasts from twelve to eighteen months at the discretion of the Colonial Government, and is followed by leave at the rate of one week for each completed month of residential service. Leave begins on the date of arrival in England.

PROMOTION.

There are good prospects of promotion in the West African Medical Staff.

COURSE OF INSTRUCTION.

Selected candidates are required to attend courses of instruction in tropical medicine and hygiene at either the London School of Hygiene and Tropical Medicine or the Liverpool School of Tropical Medicine or the University of Edinburgh.

Further information regarding the conditions of service, pensions, etc., may be obtained from the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1, to whom applications should also be addressed.

MALAYAN MEDICAL SERVICE

APPOINTMENTS

VACANCIES exist at present for MEDICAL OFFICERS in the MALAYAN MEDICAL SERVICE. Candidates, who should be British subjects of European parentage and not over 35 years of age, should apply to the PRIVATE SECRETARY (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1, for the necessary form of application. Preference is given to candidates who have held Hospital appointments as House Surgeons and House Physicians. Selected candidates are required to attend one of the Schools of Tropical Medicine, the fees for their tuition being defrayed by Government, and an allowance paid during their instruction.

SALARIES.

2. The initial salary of a Medical Officer is $500 per mensem (£700 per annum), rising by annual increments of $25 per mensem (£35 per annum) to $550 per mensem (£770 per annum). Officers are appointed on probation for a period of three years and then become eligible for confirmation, after which the salary rises by annual increments of $25 per mensem (£35 per annum) to $800 per mensem (£1,120 per annum).

ALLOWANCES.

3. In addition to salary, there is at present a temporary allowance of 10 per cent. of salary to unmarried officers and 20 per cent. to married officers. A non-pensionable allowance of $100 per mensem (£140 per annum) is paid to officers holding the Diploma in Public Health.

CURRENCY.

4. The Straits dollar is equivalent to 2s. 4d. of English currency. The rate is liable to alteration, but has remained unchanged for many years past, and so far as can be foreseen no change is anticipated.

PASSAGES.

5. Free first-class passages are provided on first appointment and on leave.

QUARTERS.

6. Quarters are usually available and are provided at a rental which in no case exceeds 6 per cent. of the officer's salary.

PRIVATE PRACTICE.

7. Private practice is not allowed, but consultation with another practitioner is permitted.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(Address included.)

Sixpence should be added if replies to a box number are to be posted.

All advertisements must be received not later than first post Tuesday previous to date of publication.

ASSISTANCIES.

Wanted. — Indoor Assistant, male, for mixed general practice. Well qualified and experienced. Motorist. Young man preferred, English or Scotch. Salary £300 p.a.—Address, with testimonials and photo (returnable), No. 612, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, outdoor, with view, for large and fashionable South Coast Town. F.R.C.S. preferred. Experienced. — Address, No. 614, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant (male, single, sociable), industrial Practice near Birmingham. Motor cyclist. Initial salary £240, with board and rooms. Usual bond. State age, height, and send photo. (returnable). —No. 620, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistant, with view to Partnership, in growing Country Practice in Midlands. Send essential particulars. — Address, No. 613, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant for 2 or 3 months, or longer; general and panel practice, Devonshire. Experienced. State particulars—age, religion, qualifications, etc. £25 *month, indoor.—Address*, No. 634, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, single, well up in Surgery. Salary £300 per annum, with rooms, light, coal, and attendance.—Apply, A. H. JAMES, M.D., The Park, Blaenavon.

Wanted.—Assistants (male) for General Practices; also PRACTITIONERS for Locum work. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Assistant, male, London Hospital preferred, with some experience of panel practice. — Address, No. 654, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by M.B., B.Ch., N.U.I. (1923), æt. 28½. Experience in panel and private. Steady, energetic. Over 1 year in present post. Free February 9th.—Address, No. 606, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by M.B., Ch.B.(Glas.), 1925. Aged 27, married, abstainer. Four years' G.P. and Cott. Hosp. Good experience midwifery, anæsthetics, surgery. Excellent references. — Address, No. 630, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by M.B., Ch.B. (1923), beginning of March. Single, Scotch. Experienced private, panel, and industrial practices. Good testimonials. Own car.—Address, No. 622, B.M.A. House, Tavistock Square, W.C.1.

Assistant required, Welshman preferred, with experience in midwifery, total abstainer, in Welsh Holiday Resort. Salary £260 per annum, indoor. — For full particulars, apply, "X," c/o R. SUMNER & Co., Ltd., Wholesale Druggists, Liverpool.

Assistancy or other remunerative APPOINTMENT desired as permanency by M.B., Ch.B. Hosp., G.P., and disp. exp.; aged 28; travelled, well received, bilingual temperate; son of Coll. Principal. Tests, and refs' Add., No. 624, B.M.A. House, Tavistock S..., W.C.1.

Male Indoor Assistant required for short term. Five guineas weekly.—Address, No. 605, B.M.A. House, Tavistock Square, W.C.1.

Male Assistant required (indoor) Motor cyclist. Colliery district. Salary £300 per annum. — Address, T. V. BELL THOMAS, Maesteg, Glam.

M.D., semi-retired, would ASSIST Doctor residing in Dorset or Hampshire, near golf course preferred. Active. Owns car. Accustomed to panel work. No salary required. — Address, No. 631, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

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Applications are invited for the post of HON. ASSISTANT PHYSICIAN. Candidates must be on the *Medical Register*, and Graduates of Medicine of a British University or Members of the Royal College of Physicians.
Applications, stating age, and accompanied by copies of testimonials, to be sent in not later than February 10th to—
Consumption Hospital, Hardman St., Manchester. C. W. HUNT, Secretary.

East Ham Memorial Hospital, Shrewsbury Road, E.7.

Applications are invited for the post of HONORARY ASSISTANT PHYSICIAN to this New Hospital containing 100 beds.
Applicants must be a Doctor of Medicine of a University of Great Britain or Ireland, or a Member of the Royal College of Physicians, and must not be engaged in general practice.
Applications, together with copies of three recent testimonials, must be sent to the Secretary (from whom all particulars can be obtained) not later than February 12th.

Hospital of St. John and St. ELIZABETH, 60, Grove End Road, London, N.W.8.

There is a vacancy for the post of ASSISTANT SURGEON at the above Hospital. Candidate must be a Fellow of the Royal College of Surgeons of England. Duties include charge of beds. There is no Out-patient Department. Applications, with copies of three testimonials, must reach the Secretary, from whom further particulars may be obtained, on or before Monday, February 11th.
F. DUDLEY HOBBS, B.A., Secretary.

North Devon Infirmary, BARNSTAPLE. (60 Beds.)

Wanted at once, duly qualified RESIDENT MEDICAL OFFICER, gentleman. Salary £150 per annum, with board, apartments, and laundry. Appointment to be for not less than six months. Applications, stating age, qualifications, with copies of recent testimonials, to be sent forthwith to the Hon. Secretary.

Peace Memorial Hospital, WATFORD, HERTS.

A RESIDENT MEDICAL OFFICER. £150 per annum. Appointment for six months, eligible for re-election. Applications, stating age and qualifications, with at least three recent testimonials, should be received not later than March 1st by the Secretary. Duties to commence April 1st. No canvassing permitted.

Resident Medical Officer required from March 31st next for STOURBRIDGE DISPENSARY (Outside patients only). Salary £250 p.a. (with prospect of further increases), with furnished accommodation. Full details supplied to applicants on request. Applications, stating age, qualifications, and testimonials, to be sent before February 18th to the Secretary, PERCIVAL D. FOLKES, Chartered Accountant, Stourbridge.

Manchester Royal Eye Hospital.

TWO JUNIOR HOUSE SURGEONS required. Salary £120 per annum, with residence, board, etc. Applications (with copies of testimonials), endorsed "House Surgeons," to be addressed to the Chairman of the Board of Management not later than February 8th.
H. R. NORTH, Secretary.

Resident Assistant Medical OFFICER wanted for CHEST HOSPITAL, S. Coast. Applicant must be qualified Christian young man. Opportunity for reading for higher degrees.—Add., partics., remuneration desired, to No. 618, B.M.A. House, Tavistock Sq., W.C.1.

Bootle Borough Hospital. (General. 100 Beds.)
DERBY ROAD, BOOTLE.

Applications are invited for the posts of SENIOR MEDICAL OFFICER (male), and TWO JUNIOR MEDICAL OFFICERS (male), for a period of six months.
Salaries £150 per annum Senior Officer, £125 per annum each Junior Officer, with board, residence, and laundry.
Duties to commence April 1st. Applications, stating age and qualifications, with copies of testimonials, to be sent to the undersigned not later than February 14th.
J. A. BEARDSALL, Secretary-Supt.

The Royal Hospital, WOLVERHAMPTON. (Incorporated under Charter.)

A RESIDENT MEDICAL OFFICER (female) required for the Maternity Hospital.
Candidates must be registered under the Medical Acts. Salary to be arranged.
Duties to commence in the Spring.
Applications, accompanied by not more than three recent testimonials, to be addressed to the House Governor; from whom further particulars may be obtained.
W. H. HARPER,
Jan. 29th, 1929. House Gov. & Secretary.

St. Andrew's Hospital, Dollis Hill, N.W.2.

ASSISTANT SURGEON.

Applications are invited for the post of Assistant Surgeon. Candidates must be Graduates in Medicine of a British University and Fellows of the Royal College of Surgeons of England.
Applications, with copies of recent testimonials, should be sent not later than February 8th to the Administrator, St. Andrew's Hospital, Dollis Hill, London, N.W.2.

Swansea Hospital. (316 Beds.)

HOUSE SURGEON wanted, gentleman, single. Salary £150, with board, residence, and laundry. Preference will be given to candidate with previous Hospital experience. Appointment for 12 months. Duties to commence immediately.
Applications, stating age, nationality, and experience, with copies of three recent testimonials, to be delivered to the undersigned on or before February 4th.
O. C. HOWELLS, Secretary.

The Haywood Hospital, Burslem.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male or female), unmarried. Salary £175 per annum, with board, residence, and laundry.
Applications to be sent to me not later than February 6th, stating qualifications, age, and experience, together with copies of three recent testimonials.
Duties to commence on February 19th.
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Liverpool Maternity Hospital, OXFORD STREET.

HOUSE SURGEON required for six months commencing April 1st next. Salary at the rate of £90 per annum, with board, residence, and laundry. Previous experience as House Surgeon essential. Membership of a Medical Defence Society is a condition of appointment.
Applications, stating age, qualifications, and experience, together with copies of testimonials to be sent to the Hon. Secretary of the Medical Board on or before February 23rd.

Warwick County Mental HOSPITAL, HATTON.

JUNIOR ASSISTANT MEDICAL OFFICER wanted. Salary £350 per annum, with board, residence, laundry, and attendance. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909. Applications, stating age, etc., together with copies of recent testimonials, to be sent to the Medical Superintendent.

The Royal Infirmary, SUNDERLAND. (283 Beds.)

Wanted immediately, HOUSE SURGEON (male). Salary £140 per annum, with board, residence, and laundry.
Applications, stating age, qualifications, and accompanied by copies of testimonials, to be sent to the undersigned.
S. C. FRYERS,
House Governor and Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	BURGH OF MOTHERWELL & WISHAW. *(Resident Medical Officer (female) for Maternity and Child Welfare Department.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	SURREY ADMINISTRATIVE COUNTY. *(County Medical Officer of Health.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	WEST HAM UNION. *(Anæsthetist Posts at Whipps Cross Hospital.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec. Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies' Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1. By Order of the Council of the British Medical Association.
January 30th, 1929. ALFRED COX, Medical Secretary.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of PHYSICIAN, with charge of Out-patients, at the DREADNOUGHT HOSPITAL, GREENWICH. The elected candidate will have beds allotted to him and will be appointed for twelve months, but will be eligible for re-election.

Candidates must be Doctors or Bachelors of Medicine of an University in the United Kingdom, and Fellows or Members of the Royal College of Physicians of London.

Applications to be sent in, on or before February 6th, to the undersigned, from whom further particulars can be obtained.

By Order,
Greenwich, R. E. V. BAX,
January 21st, 1929. Secretary.

County Mental Hospital, STAFFORD.

SECOND ASSISTANT MEDICAL OFFICER, male, single, required. Salary £600, rising by £25 per annum to £700; £50 per annum in addition if or when in possession of Diploma in Psychological Medicine. £130 per annum will be charged for furnished quarters, board, laundry, and attendance.

Candidates with good knowledge and experience of pathology preferred. Every opportunity afforded for study and research, sero-diagnosis, etc., in well-equipped laboratory.

Appointment subject to conditions of Asylums [illegible] Act, 1909.

[illegible] age, qualifications, and [illegible] testimonials, to be [illegible] Superintendent.

Kent County Ophthalmic and AURAL HOSPITAL, MAIDSTONE. (72 Beds.)

Applications are invited for the posts of OPHTHALMIC HOUSE SURGEON and HOUSE SURGEON to the Ear, Nose, and Throat Dept., which will shortly become vacant. Candidates must be duly qualified and registered medical practitioners, male, single, and of British birth and nationality, and should have had experience of the work. Candidates for the Ophthalmic appointment should have some experience in refractions. Each appointment will be for six months, with an option of a further six months. Salary for each appointment at the rate of £200 per annum, with board, residence, and washing.

Applications, together with copies of not more than three testimonials, should be sent to the undersigned not later than February 7th next.

JOHN W. STRICKLAND, Secretary.

The Retreat, York.

(A Mental Hospital under the Management of a Committee of the Society of Friends.)

Wanted, a JUNIOR MEDICAL OFFICER (lady). Applicants should preferably have previous Mental Hospital experience, and should possess, or be prepared to work for, the Diploma in Psychological Medicine. Salary (with rooms and board) according to qualifications; minimum £300.

Applications to be addressed to the Deputy Chairman, ALFRED B. SEARLE, 440, Glossop Road, Sheffield.

Manchester Royal Infirmary.

ANÆSTHETIST.

The Board of Management of the Manchester Royal Infirmary invite applications forthwith for the above appointment.

The successful candidate will be required to give anæsthetics at the CENTRAL BRANCH, Roby Street, Manchester, on Monday and Tuesday mornings.

Applicants must be registered, and hold a Medical and Surgical qualification.

The appointment is for the period ending December 31st, subject to the provisions of the By-laws as to notice.

Salary is at the rate of £50 per annum.

Applicants must state age, and send twelve copies of their application, and of two testimonials, to the undersigned not later than Wednesday, February 13th.

By Order,
FRANK G. HAZELL,
February 2nd, 1929. Gen. Supt. & Sec.

Princess Louise Kensington HOSPITAL FOR CHILDREN, North Kensington. (42 Beds.)

The Board of Management invite applications for the post of HON. ASSISTANT SURGEON to the Nose, Throat, and Ear Department. Candidates must hold the F.R.C.S.(Eng.). Particulars regarding the applications, which must be received by Tuesday, February 12th, must be obtained from the Secretary, Princess Louise Kensington Hospital for Children, Town Hall, Kensington, W.8.

Royal Free Hospital.

EASTMAN DENTAL CLINIC.

APPOINTMENT OF DIRECTOR.

Applications are invited for position of Director, at salary to be agreed upon. Intending candidates must not be more than 50 years of age.

The Directorship is a whole-time appointment, and the Director will not be permitted to engage in private practice.

Candidates must be Graduates of a British College of Medicine and Dentistry, and qualified to practise in Great Britain or Ireland.

Previous experience in Children's Dentistry is essential. Experience in Public Health work will be considered advantageous.

Term of appointment will begin about October 1st. Detailed information with reference to Clinic may be obtained by application to the undersigned.

Intending candidates must state qualifications and details of career, and supply three professional references. Applications must be received before March 1st.

By Order of the Weekly Board,
REGINALD R. GARRATT,
Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Derbyshire Royal Infirmary,

DERBY.

(General Hospital, 338 Beds.)

Applications are invited for the post of ASSISTANT HOUSE SURGEON & CASUALTY OFFICER (male).

Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for six months. Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials, to be sent to the undersigned not later than February 15th.

Duties will commence on March 1st.

WALTER BANKS,
Jan. 17th, 1929. Supt. & Secretary.

Edinburgh Hospital for Women

AND CHILDREN,
WHITEHOUSE LOAN, EDINBURGH.

Applications are invited from qualified women for the following posts at this Hospital:

1. SENIOR HOUSE SURGEON. Residence, board, and laundry provided.
2. HOUSE PHYSIC . . . t.
3. JUNIOR HOUSE . . . ie

Remuneration for . . . p-rate of £25 per annum, lunch provided. pointments are for six months from April 1st.

Applications, with copies of testimonials, should be sent to the Convener of the Medical Committee, at the Hospital, on or before Friday, February 15th

East Suffolk and Ipswich

HOSPITAL.

(260 Beds.—7 Residents.)

Wanted on March 31st, a CASUALTY OFFICER (British, male), who will also be Deputy Resident Medical Officer. Commencing salary £150 per annum, rising to £200, with board, residence, and laundry. Previous experience essential. Also Two HOUSE SURGEONS at a salary at the rate of £120 each per annum, with board, residence, and laundry. Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned on or before February 19th.

A. GRIFFITHS,
The Hospital, Secretary.
Ipswich.
February 2nd, 1929.

Elsie Inglis Memorial Maternity

HOSPITAL, ABBEY HILL, EDINBURGH.

Applications are invited from qualified women for the post of HOUSE SURGEON at this Hospital.

Two appointments will be made, for periods of nine months, from April 1st and July 1st respectively.

Residence, board, and laundry provided.

Applications, with copies of testimonials, should be sent to the Convener of the Medical Committee, at the Hospital, on or before Friday, February 15th.

Gloucester County Mental

HOSPITAL.

Required, JUNIOR ASSISTANT MEDICAL OFFICER (male). Candidates must be registered medical practitioners and unmarried. Salary £350 per annum, with board, apartments, laundry, and attendance. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Apply, with copies of three recent testimonials, to the Medical Superintendent.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

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MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

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29, York St., Baker St., London, W.1.

Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

ST. LUKE'S HOSPITAL.

FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

West London Hospital,

Hammersmith Road, W.6. (226 Beds.)

Applications are invited for the post of HONORARY OBSTETRIC REGISTRAR for a period of one year. The holder of the post is eligible for re-election annually for a total period of not more than three years. The duties include the preparation of the Obstetric Registrar's Report for the year, and the supervision of the records of cases. The candidate appointed must be available as a substitute for the Surgeon and Assistant Surgeon for Diseases of Women, and for emergency operations when required, and be prepared to undertake such teaching for the Post-Graduate College as the Board may approve.

Candidates are required to be registered under the Medical Act; to send applications to reach me not later than Monday, February 18th; to attend the Medical Council Meeting on Friday, February 22nd at 4.30 p.m., and prior to that date to call upon and send copies of application and testimonials to each Member thereof; to abstain from canvassing, but nevertheless to send copies of application and testimonials to each Member of the Board of Management, at whose Meeting on Tuesday, February 26th, at 5 p.m., candidates must be in attendance.

H. A. MADGE, Secretary.

Woolwich and District War

MEMORIAL HOSPITAL,
Shooters' Hill, London, S.E.18.
(General Hospital, 112 Beds.)

The Appointments Committee invite applications, from suitably qualified candidates, for appointment as:

(*a*) HONORARY SENIOR DENTAL SURGEON, who will be selected from those applicants engaged in Dental Practice.

(*b*) HONORARY DENTAL SURGEON. Applications for this appointment are invited from fully qualified local Dentists.

(*c*) ASSISTANT PHYSICIAN TO THE RADIOLOGICAL DEPARTMENT. The Assistant Physician to the Radiological Department will be required to attend at the Hospital one day a week. An honorarium of £50 per annum will be paid in respect of . . .

. . . d by copies of not more than . . . stimonials, should be addressed to Mr. E. RADFORD, J.P., Secretary-Superintendent, to reach him not later than Monday, February 18th.

Bolingbroke Hospital

(120 Beds.)

Wandsworth Common, S.W.11.

HOUSE SURGEON (male) required.

The appointment is for six months, commencing on March 1st next. Salary £120 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered. Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before February 7th.

W. S. RANDOLPH BISS, Secretary-Supt.

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Mediterranean Port. — About £1,100 p.a. Appts. £100. Visits 10/-. No panel. Mostly English. Good flat. Premium £1,000, on easy terms.—No. 8411.

Home Counties. — £4,500 p.a. 1/4 share for sale. No panel. Visits 5/- to 21/-. Mids. 5 gns. up. Scope for surgery. Partner to be F.R.C.S.—No. 8409.

West End.—1/3 share in Electro-therapeutic, Sunlight, and X-ray PRACTICE. About £1,400 p.a., including profit rentals. Cons. from 2 to 3 gns. Treatments about 1 gn. Prem., including share in all furniture and X-ray equip., £550.—No. 8358.

Sunderland.—Death Vacancy.—£1,030 p.a. Visits 3/6 to 10/6. No panel, but scope. Mids. 2 gns. up. Good house available.—No. 8412.

Devonshire.—£1,500 p.a. 1/3 or 2/5 share for sale after preliminary assistancy. Panel over 2,000. Ultimate succession. Good house available.—No. 8405.

Home Counties. — Over £1,250 p.a. Country Practice. Panel and appts. nearly £750 p.a. Mids. 3 to 5 gns. Visits 5/- to 21/-. Good house, 6 bed., etc., and large grounds, to rent.—No. 8404.

London, N.—Lock-up. — About £700 p.a. Panel over 500. Mids 3 gns. Visits 3/6 up. Two rooms, rent 35/- p.w. Premium £900 or offer.—No. 8402.

Nottinghamshire. — Increasing NUCLEUS £600 to £700 p.a. Mids 5 gns. up. Visits 3/6 to 21/-. Small panel. Corner house to rent. Prem. £900.—No. 8397.

Kent Suburb.—Over £2,600 p.a. 1/2 SHARE for sale. Visits 7/6 to 21/-. Panel about £400 p.a. Good house, 4 bed., etc., large garden. Part prem. deferred.—No. 8396.

Lancashire.—About £2,000 p.a. Panel 2,500. Appts. nearly £200 p.a. Visits 3/6 to 5/-. House, 4 bed., etc., to rent —No. 8591.

N. Wales.—Share worth about £700 net. Panel about 2,500. Collery £400 to £500 p.a. Mids. 2 gns. House, 5 beds., and large garden, with tennis court, to rent.—No. 8389.

Lincolnshire.—About £1,370 p.a. Unopposed. Panel and appts. £500 p.a. Mids. 3 gns. Fees 4/- to 6/-. House, 6 bed., etc., good garden, with garage, to rent.—No. 8586.

Kent. — Average £1,250 p.a. Mids. 7½ gns. up. Visits 7/6 to 21/-. Non-panel. House, 5 bed., etc.—No. 8389.

Western County.—£600 to £700 p.a. Unopposed. Clubs and appts. £100 p.a. Fees 3/6 to 12/6 Panel £300 p.a. Good house and garden. Practice and practice, £2,100.—No 8375.

Co. Durham.—About £700 p.a. Visits 3/6. Mids. 2 gns. Panel £ House, 3 bed., etc., to rent.—Apply, No 8

South Wales. — Residential. — £1,600 p.a. Panel 450. Fees 5/- to 21/- Corner house, 6 bed., etc.—Apply, No 8

Within 12 miles London North. —£1,500 p.a. Panel 800. recep., 6 bed. Separate surgery, etc acre garden.—Apply, No. 8344.

London, S. E.—£1,800 p.a. Cash and panel of 1,645. 1/3 Visits 3/6 up. Very little midwifery accommodation over surgery.—Apply,

SPECIAL NOTICE.

FINANCIAL ASSISTANCE to ena purchasers to obtain Practices a Partnerships can be afforded to p proved applicants prepared to pay of purchase money down and ba by instalments over 7 years (co security of a Life and Sickness Po Full particulars on applicati Mr. Percival Turner.

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WEST END.—Electro-Therapeutic PRACTICE, centrally situated. Well-equipped with all modern appliances. Receipts approximately £2,000 [illegible] p.a. Expenses very low.

I[illegible] PRACTICE in middle and working-class locality. Receipts over £530. Panel about 350. Fees 2 6 up. Medium-sized house. Premium for practice £750. House £1 100. Might be rented.

NORTH OF ENGLAND.—DEATH VACANCY.—Well established non-panel G.P. in middle and better working-class locality. Good fees. Receipts average over £1,000 p.a. Scope for physician. House for sale or would be let. Premium for practice 1 year's purchase.

SURREY.—NUCLEUS G.P., within easy distance of London, suitable for semi-retired man. House to rent. Receipts £280. Panel 160. Premium £350.

SOMERSET.—PARTNERSHIP in rural Practice, situated in charming locality. Suitable for young experienced man fond of sport, hunting, etc. Guaranteed share worth £500 p.a. at 2 years' purchase.

SOUTH WALES.—Seaside Resort.—Well-established growing G.P. Medium-sized house. Panel 600. Receipts £700. Price for quick sale £730. Garden, garage, and separate surgery.

SOUTH OF ENGLAND.—ASSISTANTSHIP with view to PARTNERSHIP within one year. Receipts approximately £4,000 p.a. Panel 2,000. One-half or one-third share at 1½ years' purchase. English Varsity man with knowledge of [illegible]

MIDDLESEX.—Close [illegible] growing PRACTICE in rapidly d[illegible] cope for increase. Medium-sized hou[illegible] Fees 3 6 up. Premium 1½ years' purchase.

SOUTH-WEST COAST.—PARTNERSHIP in well-established good-class rural G P. Receipts over £4.000 p.a. Panel approx. 1,000. One appointment. Medium-sized house to rent. Scope for surgery. Suitable for well-qualified man used to country practice. Premium 2 years' purchase.

NOTTS.—NUCLEUS middle-class G.P. with growing panel. Fees 3 6 up. Receipts approx. £700 p.a. Corner semi-detached freehold house. Premium £900 for practice and £1,250 for house, or may be rented.

If the investment you are seeking is not advertised here, let us know your wants, and we will gladly forward details of others suitable to your requirements.

LONDON, E. — Well-established Lock-up SURGERY, situated in main thoroughfare. Receipts over £200 p.a. Panel 116. Premium £300 for Practice and lease, or near offer.

HOME COUNTIES (on borders of Kent and Sussex). Non-dispensing good-class G.P. Receipts over £1 200 p.a. Good-sized house (5 bedrooms) for sale. Scope for surgery. Good fees. Premium £1,900 or near offer for quick sale.

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LONDON, S.W.—NUCLEUS G.P. in thickly populated locality. Panel 115. increasing. Receipts average £260 p.a. Premium, to include furniture, drugs, etc., £300.

DEVON.—PARTNERSHIP in well-estab. middle-class G.P., situated in market town. Suitable house to rent. Panel over 600. Receipts £1,500 p.a. One-third share to commence at 2 years' purchase. Scope for Surgery.

KENT.—Within easy and short distance of London.—PARTNERSHIP in well-established G.P. Good fees. Scope for surgery. Receipts over £2 500 p.a. Panel 1,000. Premium 2 years' purchase for half share. Suitable for youngish man not over 40. Preferably Varsity Graduate with experience.

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2. WORCESTERSHIRE.—Old-established mixed Country PRACTICE. Receipts average £1,400 p.a. Panel about 500. Good house. Ideal hunting district, and all other sports.
3. NOTTS COUNTY.—Panel, Colliery, and Private PRACTICE. Receipts about £440. Panel 340. Good house to rent. Garage.
4. LEICESTERSHIRE (near large Town).—PARTNERSHIP (with short preliminary assistantship and ultimate succession) in residential and working-class Practice. Receipts average £1,135 p.a. Panel over 1,000. Good house.
5. BIRMINGHAM (Suburb). — Middle-class PRACTICE. Established 3 years. Receipts £400 to £500 p.a., and scope for increase. Panel 350. Good house, garage, and garden.
6. SURREY (near Country Town). — Higher middle-class PRACTICE. Established 4 years. Receipts £300 to £400 p.a. Panel 160. Premium £350.
7. DERBYSHIRE.—Better-class Industrial and panel PRACTICE. Receipts about £750. Reasonable premium. House to rent with option to purchase.
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BRITISH MEDICAL BUREAU

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2. SUPERIOR CLASS PRACTICE in bracing residential locality within 40 miles. Annual income about £1,200. Very nice house with all modern conveniences, garden and garage. Price for Freehold and Goodwill £4,000, of which 3/8 can be raised on mortgage.
3. LONDON.—JUNIOR PARTNER required in sound middle-class Practice. Share for sale £1,000 to £1,200 at 1½ years' purchase. Valuable appts. and select panel. House on lease at £52.
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7. NURSING HOME (Surgical, Medical, and Maternity) in a well-known Northern Coast Resort. Gross returns about £1,600, showing profits of £700 to £300 p.a. Price £1,000, to include furniture, apparatus, etc.
8. REQUIRED by F.R.C.S.Eng., 32.—PARTNERSHIP in Hospital Town, S. or S.W. for choice, with scope for surgery. Income £800 to £1,500.
9. REQUIRED shortly by M.B.—PRACTICE in bracing area, preferably within 80 miles of Town. Income from £1,200 to £1,800. Good house and garden.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)

(Founded 1880.)

12, Stratford Place, Oxford Street, W.1.

Telephone: Mayfair {1782 1783

Telc. Address: Triform, Wesdo—London.

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads:—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence. Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

ASSISTANTS AND LOCUMTENENTS.

Assistants and Locumtenents can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out.

RESIDENT PATIENTS.

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Practices and Partnerships for Disposal.

1 LANCASHIRE.—Practice averaging over £3,700 p.a. in first-rate town. Panel 2,600. House (4 bedrooms) to be sold or let. Premium 1½ years' purchase.

2 LONDON, N.W. — Partnership in non-dispensing Practice in outlying residential district. No panel. Suitable house for sale. Share worth about £1,000 p.a. for disposal.

3 HOME COUNTIES. — Practice averaging £1,050 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, practice, £1,500.

4 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first-rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. Premium one-third share 2 years' purchase.

5 LONDON, S.W.—Partnership in Practice nearly £2,500 p.a (including appts. worth over £300). No panel. One-half share at first.

6 LONDON, E.—Rapidly increasing Lock-up PRACTICE in populous district. Receipts 1928, £780. Panel 570. Rent £50. Premium £950.

7 HOME COUNTIES.—Partnership in Practice over £8,000 p.a. in country town. Incoming Partner must be well qualified (preferably University man) and have held Hospital appointments. One-fourth share at 2 years' purchase.

8 HOME COUNTIES. — Non-dispensing PRACTICE about £1,300 in residential district, adjoining first-rate town. Practically no panel. Modern house (5 bedrooms) for sale. Golf, fishing, etc. Premium £1,650.

9 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

10 MIDLANDS.—Country Practice averaging nearly £1,500 p.a. in beautifully situated village easy reach of several good towns. Panel 600. Large modernized house, with electric light, gas, etc., for sale. Sport. Premium £1,900.

11 LONDON, W. — Practice (carried on by Medical Woman) in suburban district. Receipts 1928, £535. Panel 560. House (5 bedrooms, etc.) to be sold or let. Premium £750.

12 EAST COAST.—Practice (suitable for two) in small watering-place. Receipts £2,800 p.a. (including panel worth about £600 p.a.). Very little opposition. Two houses to rent. Premium 1½ years' purchase.

13 SOUTH OF ENGLAND. — X-Ray and Electro-therapeutic PRACTICE in important town. Receipts last year £1,050. Detached house for sale or rent. Premium £1,500.

14 EAR, NOSE, and THROAT PRACTICE in a watering-place. Receipts average over £600 p.a. (one day a week only). Income easily doubled by one resident. Premium £750.

15 DURHAM.—Practice averaging £424 p.a. in small pleasantly situated country town. Panel 70. House (3 rooms) to let. District is growing and there is plenty of scope for increase. Premium £450.

16 DEATH VACANCY. — N.E. COAST. — PRACTICE averaging £1,050 p.a. in large seaport town. No panel. Excellent commodious house in best part to rent.

17 HOME COUNTIES.—Partnership in Practice about £8,000 p.a. in growing residential watering place. House (4 bed and dressing rooms) to rent. Partner must be well qualified (Oxford, Cambridge, or London) Premium one-fifth share 2 years' purchase.

18 SUSSEX.—Partnership in Country Practice nearly £2,800 p.a. in residential district, easy distance of coast. Good house (6 or more bedrooms) to let on lease. Premium one-half share 2 years' purchase.

19 HOME COUNTIES.—Practice about £1,350 p.a. in good residential district within 25 miles of London. Panel £2,000. Large house (9 bedrooms) for sale. Premium, practice, £1,000.

20 N.W. ENGLAND.—Partnership in Practice about £3,500 p.a. in seaport town. Panel about 2,500 Choice of two houses to rent. Premium one-fourth or one-fifth share 2 years' purchase.

21 UNIVERSITY TOWN.—Partner required in Practice about £3,100 p.a. Panel over 2,000. Partner must have held good Hospital resident appointments. Premium, two-fifths share 2 years' purchase.

22 SOUTH MIDLANDS. — Practice about £1,150 p.a. in county town. Panel 485. Good house (7-8 rooms), with garage and garden, for sale. Very good Hospital easily worked Practice nearly £2,000 p.a. in suburban Panel 3,400. No midwifery. Premium one-half share 2 years purchase. (Partner must be English or Scotch).

23 N. LONDON.—Partnership in compact and

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Practices and Partnerships for Disposal (continued).

24 GLOUCESTERSHIRE.—Country Practice averaging £654 p.a. (Elevation 600 feet). Near two good towns. Panel 500. Large house, with garden and paddock, for sale. Scope for increase. Premium £800.

25 KENT.—Partnership in better middle-class Practice about £2,500 p.a. in delightful residential district. Premium one-half share 2 years' purchase. Public School or University man preferred.

26 N. MIDLANDS.—Practice worth between £690 and £700 p.a. in residential district on outskirts of first-rate town. Small panel offering plenty of scope. Excellent modern house to rent. Premium £900.

27 SOUTH AFRICA. — Old-estab. Practice. Receipts last year £1,816. Travelling and midwifery light. Climate ideal—no tropical diseases (altitude nearly 5,000 feet). Delightful residence (5 bedrooms), in perfect order, with 2 acres grounds. Excellent scope. Local Hospital. Premium £1,200, with option to purchase house.

28 MIDLANDS.—Partnership in middle-class Practice averaging £5,450 p.a. in flourishing and growing town. No panel and little midwifery. Applicant should be between 25 and 40 years of age, and preferably, though not essentially, a University Graduate. Premium one-fourth share (ultimately increasing to one-half) 2 years' purchase.

29 S. WALES.—Practice worth over £700 p.a. (chiefly panel and appointments) in small seaside town Small house (5 bedrooms), to rent. Premium £700 cash.

30 S. WALES.—Practice over £1,200 p.a. in small country town, amidst beautiful scenery. Panel about 300. Old-fashioned house, with garage and garden. Cottage hospital. Premium £1,500.

31 OPHTHALMIC PRACTICE doing over £1,200 p.a. Consultations usually £2 2s. Scope for considerable increase.

32 S. MIDLANDS.—Practice over £1,700 p.a. In country town 100 miles from London. No panel, appointments, or midwifery. House (5 bedrooms), with garage and garden, for sale. Premium—Practice 1½ yrs.' purchase.

33 N. WALES COAST. — Partner required in old-established Practice. Receipts over £5,650 p.a. Panel over 2,000. Modern house (8 bedrooms, etc.) to rent. Premium for one-half share £4,000, part cash. Applicants must have held H.P. and H.S. appointments.

34 CHESHIRE. — Partnership in old-estab. Town Practice near Manchester, £3,000 p.a. (not including appointments). Panel over 2,000. Third share at 1¼ yrs.' purchase. Short preliminary assistantship if preferred.

35 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 13 acres of land for sale. Premium, practice, 1½ years' purchase.

36 LONDON, S.E. — Partnership in well-established Practice of £1,900 p.a. in good residential district. Exceptionally well-built detached house (6 bedrooms) to be rented. One-half share at two years' purchase. Good scope.

37 DEVONSHIRE.—Partner required (after preliminary assistantship) in Practice worth £3,000 p.a. in first-rate country town. Panel over 2,100. Well-equipped Hospital. One third share to suitable man at 2 years' purchase.

38 MIDLANDS.—Country Practice of over £1,000 p.a., within 5 miles of good town. Panel 531. Comfortable and convenient house (5 bedrooms, etc.), with electric light, central heating, and acre garden, for sale. Premium, practice, 1½ years' purchase.

39 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. No panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

40 LONDON, E.—Partnership in exceptionally old-established Practice averaging over £3,500 p.a. Good fees and appointments. Two-fifths share for disposal at 1½ years' purchase, or one-third could be purchased at first. Small house may be bought or rented at a moderate figure.

41 SOUTH OF ENGLAND. — Practice about £900 p.a. in first-rate seaport town. No panel or midwifery, but ample scope. Well-situated house to rent. Premium £1,500.

42 NURSING HOME. — CROYDON. — Receipts about £2,000 (profit £650). Large well-situated house. Premium, to include goodwill and freehold, £3,250.

43 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. Partner should be keen worker and a good surgeon. One-third to two-fifths share at 2 years' purchase.

44 MIDLANDS. — Practice about £350 p.a. in manufacturing village. Panel 190. House (4 bedrooms, etc.), and one acre of garden. Premium—Practice and house, £2,000.

45 SUFFOLK.—Country Practice averaging £560 p.a. in beautiful agricultural district. Panel 300. Very attractive residence (6 bedrooms, etc.) in half acre garden, etc., for sale. Premium—Practice £540.

46 N. WALES. — Seaside Practice, approximately £500 p.a. Furnished house (4 bedrooms) to rent, or others to rent or purchase. Premium £500 for quick sale.

47 SOUTH AFRICA (NATAL). — Practice over £1,000 p.a., including appointment (District Surgeon) £200. House (4 bedrooms, bathroom, etc.). 2 acres garden and land. Price for House and Practice £3,000.

48 PEMBROKESHIRE. — Practice about £1,000 p.a. in small town. Panel 361. Well-situated house (7 bedrooms) to rent. Scope for increase. Premium £1,500. Preliminary assistantship if desired.

49 SUSSEX. — Country Practice about £300 near coast. Picturesque house (3 bedrooms), with garden, for sale. Premium—Practice £300.

50 NORTH WALES. — Country Practice averaging £1,230 p.a. in Welsh-speaking district. Panel over 530. Centrally situated house (5 bedrooms). Premium one year's purchase.

51 S. WALES. — Easily worked Panel and Contract PRACTICE over £1,000 p.a. in colliery district. Small house (4 bedrooms) to rent. Premium one year's purchase.

52 N. KENT.—Practice averaging £286 p.a. in industrial district offering enormous scope. Small panel. House to rent. Premium £450.

53 ESSEX. — Practice averaging £1,216 p.a. in outlying district—30 minutes by rail from London. Panel 550. Nice detached house (5 bedrooms) for sale. Premium for practice 1½ years' purchase.

54 N. LONDON.—Practice of between £950 and £1,000 p.a. Small panel. No midwifery. Detached corner house (7/8 bedrooms) for sale. Premium—Practice 1½ years' purchase.

55 MIDLANDS. — Partnership in Practice over £2,000 p.a. in good town. Panel 1,800. Good house (5 bedrooms) available. Partner should be able to undertake major operations. Well-equipped hospital. One-half share for disposal.

56 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. Panel over 1,400. Partner should be good at midwifery. Premium one-third share 2 years' purchase.

57 YORKSHIRE (N.R.).—Partnership (with view to succession) in Practice about £1,000 p.a. in small country town. Panel 420. Good rooms available. One-half share at moderate premium. Scope for minor surgery.

58 LONDON, E.—Rapidly increasing cash and panel PRACTICE. Receipts for year ending September, 1928, £971. Panel 450. Shop-fronted house on lease at a profit rental. Premium, to include drugs, surgery equipment, etc., £1,250.

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6. KENT.—GROWING DISTRICT, within 15 miles of London.—PARTNERSHIP.—A one-half share is for disposal in a very sound chiefly better and middle-class Practice, established many years, and held by the remaining partner over 4 years. Gross cash receipts for the past three years £2,528, including panel of 900. No appointments. Fees from 3/- to 21/-. Midwifery 3 to 30 guineas (about 25 cases yearly). Very suitable modern house, with 2 reception, 4 bedrooms, good bathroom, etc. Consulting room. Electric light. Small garden, Garage. Price for freehold about £2,100, nearly all of which could remain on mortgage. Good sport and schools, and excellent social facilities. Premium 2 years' purchase.
7. NOTTINGHAM.—Good middle-class PRACTICE offering good scope and having small panel which could be largely increased. Gross cash receipts about £400 per annum. Fees 3/6 to 21/-, medicine extra. Very good modern corner house in pleasant residential district. Rent on lease £80 p.a. Premium 1½ years' purchase.
8. ESSEX.—SMALL COUNTRY TOWN.—Well-established and increasing PRACTICE, producing for the past twelve months £768, including panel of 525, and appointments worth over £60 p.a. Advice and medicine chiefly 3/6 to 7/6, visits 3/6 to 21/-, medicine extra. Mids. (discouraged) 2 to 5 guineas. Exceptionally nice house, with lounge hall, 3 reception, 5 bedrooms, and good professional rooms and usual offices. Hot water supply, electric light. Large garden, with tennis court. Garage for two cars. All in perfect order. Price for freehold £3,100. Premium 1½ years' purchase.
9. LANCASHIRE.—SUBURB OF LARGE TOWN.—Old-established PRACTICE, held by Vendor 30 years. Average income for the past twelve months £1,500, including panel of nearly 1,500. Fees 2/6 to 10/-. Very good house, standing in its own grounds, and containing 3 reception, 4 bedrooms, dressing room, 3 professional rooms. Central heating. Electric light. Garden, with greenhouse. Garage for 3 cars. Price for leasehold £2,100, of which about £1,500 could remain on mortgage. Premium 1½ years' purchase, part by instalments.
10. OUTLYING WESTERN SUBURB.—Old-established mixed general PRACTICE. Income for the immediate past year about £2,300, including panel of between 1,400 and 1,500. Fees 3/6 to 10/6. Midwifery from 3 gns. The district is rapidly developing and there is great scope. Good house, with garden and garage. Price £2,000. Premium £3,500.
11. LONDON, S.E. (outlying Suburb).—Very well-established, growing mixed General PRACTICE, situated in pleasant district within easy reach of [illegible]. Gross cash receipts for immediate past twelve months nearly £2,650. Panel of 2,120. Appts. worth about £60 and stated to be transferable. Fees 2/6 to 7/6. Midwifery from 3 gns (about 40 cases yearly). Moderate expenses. Seven roomed house, with kitchen, 2 reception rooms, dispensary, and consulting room. Garden. Brick built garage. Price for freehold £1,500. Premium £4,500.
12. SOUTH OF ENGLAND.—FAVOURITE SEASIDE RESORT.—Mainly better-class PRACTICE, producing for the last twelve months about £700, and rapidly increasing. Panel of 350. One appt. worth about £40 p.a. Fees 3/6 to 7/6. Only a few cases of midwifery, 2 gns. upwards. Good house in excellent repair, with 2 reception, 6 bedrooms, etc. Electric light. Garden. Garage. Price for freehold £2,300. Premium £1,400.
13. MIDLANDS.—UNOPPOSED COUNTRY PRACTICE, situated in good hunting centre. Gross cash receipts for past 12 months about £1,[illegible] p.a., including panel of 600. Advice and medicine from 3/6, visits 3/6 upwards, with medicine extra. Lowest midwifery 2½ gns. Exceptionally attractive house, with oak panelling, etc., 2 reception, 10 bedrooms, and professional rooms. Well-stocked garden of 1½ acres and 12 acres of grassland. Recently re-decorated throughout. Electric light. Price for freehold £4,500, of which £2,200 could remain on mortgage. Premium 1½ years' purchase.
14. CHANNEL ISLANDS.—Old-established general PRACTICE. Present [illegible] £700, but large scope. Advice and medicine [illegible] medicine 5/- to 15/-. Midwifery [illegible] 2 reception, 6 bedrooms, etc. Vendor's [illegible] Price for practice and house £3,000
15. [illegible] ry easily worked unopposed Country PRACTICE. Gross cash receipts for immediate past 12 months £657, including panel of 500. Fees from 2/6 to 12/6. Midwifery 3 to 5 gns. Nice house, with 2 reception, 6 bedrooms, etc., [illegible] rooms. Large garden and paddock. Price for freehold £1,500. Premium 1½ years' purchase.
16. LANCS.—In a rapidly growing good-class suburb of large town (nearly 200,000), a very old estab. PRACTICE, held by Vendor over 30 years, and averaging about £900 p.a., including Clubs (£4[illegible]), with prospect of increase shortly) and panel of nearly 1,000. There is a surgery in centre of town to which bulk of practice and [illegible] work is attached. Private residence contains 2 reception, 5 bedrooms, bathroom, etc., and small garden. Both Vendor's properties [illegible] £1,750, £900 on mortgage, or would be rented. Prem. 1½ yrs' [illegible]
17. SUNDERLAND. — DEATH VACANCY. — Old-established [illegible] PRACTICE, averaging for last three years £1,030 p.a. Fees 3/6 to 10/6. Midwifery 3 to 7 guineas. Good corner house, in main [illegible] with 4 reception and 4 bedrooms, etc. Will be let or sold [illegible] scope for panel if desired. Excellent Locum in charge. Offers invited.
18. WILTSHIRE.—Unopposed old-estab. Country PRACTICE, situated in very pretty district and averaging £700 p.a., including [illegible] appt. £70, and panel producing £480. Nearest opposition [illegible] Railway station 1 mile. House stands in own grounds of 1½ acres with tennis court, garage, etc., and contains surgery, 3 reception, 5 or 6 bedrooms, bathroom (h. & c.). Electric light plant [illegible] Vendor's freehold, price £2,500, all of which could remain on mortgage if wished. Premium £1,050.
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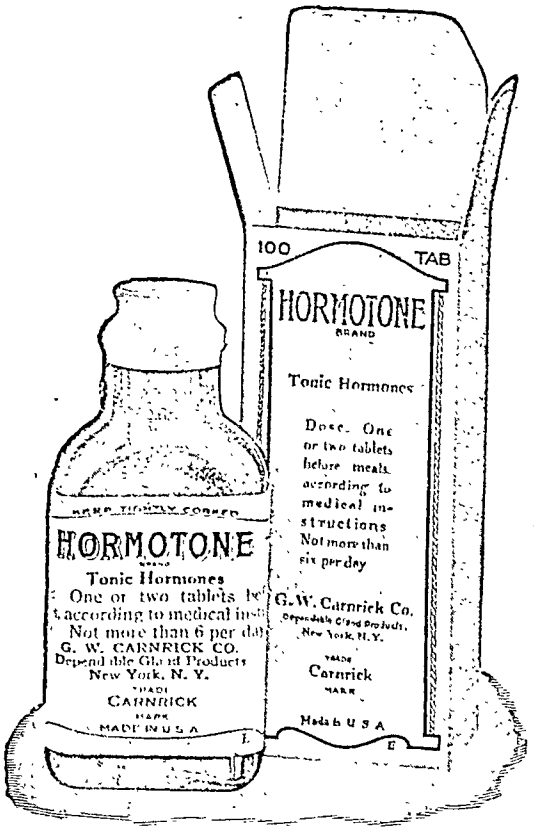

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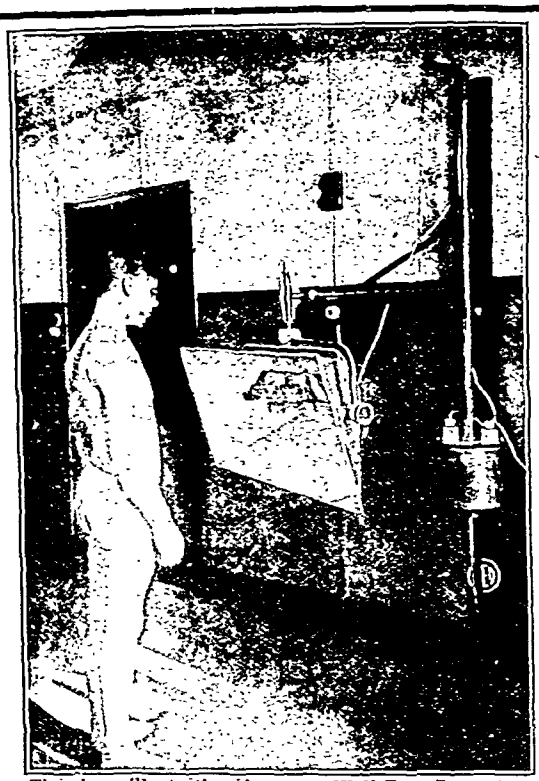

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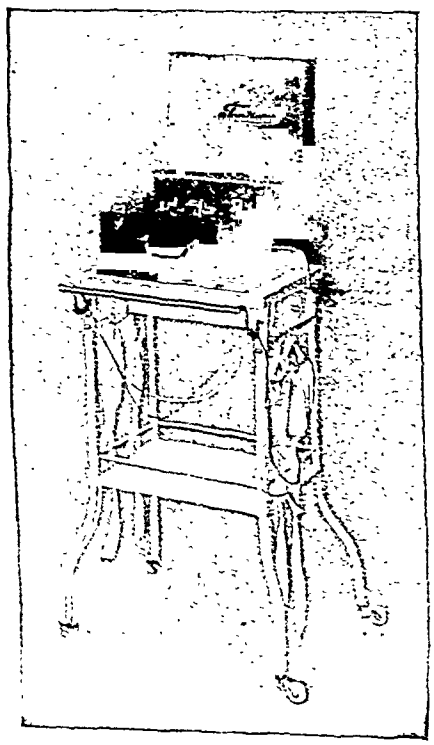

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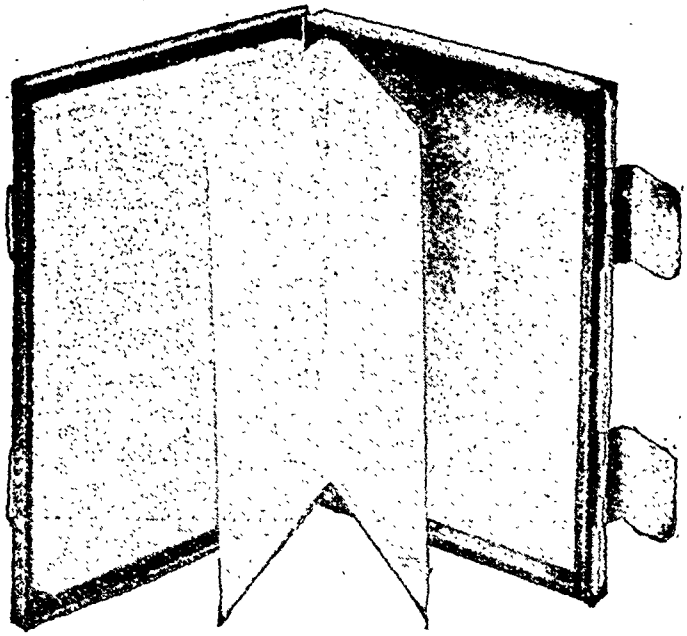

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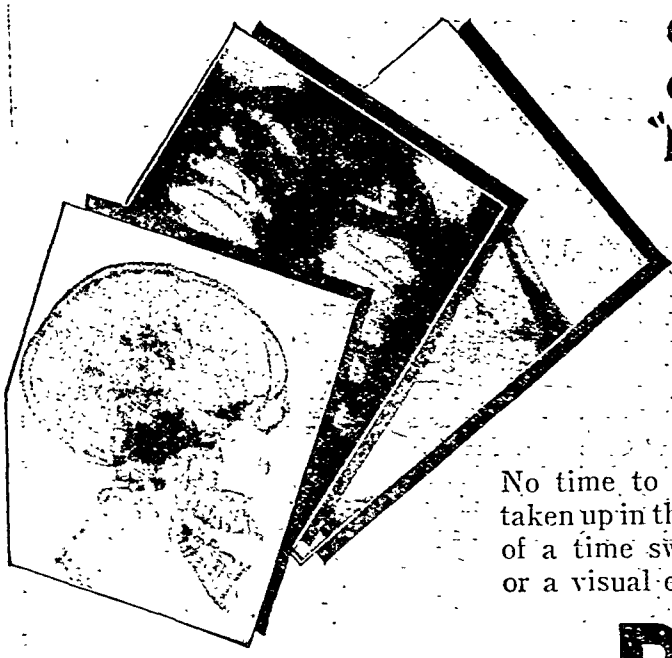

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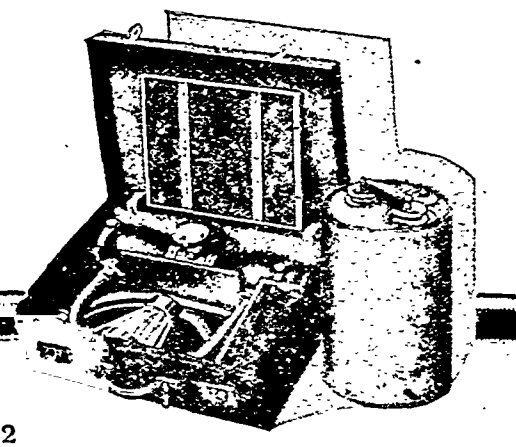

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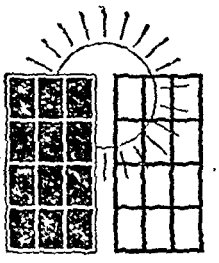

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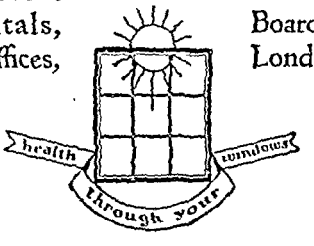

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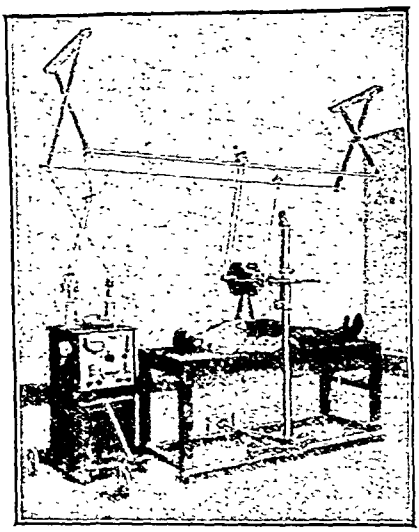

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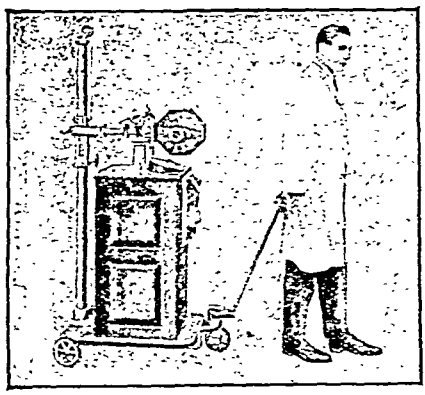

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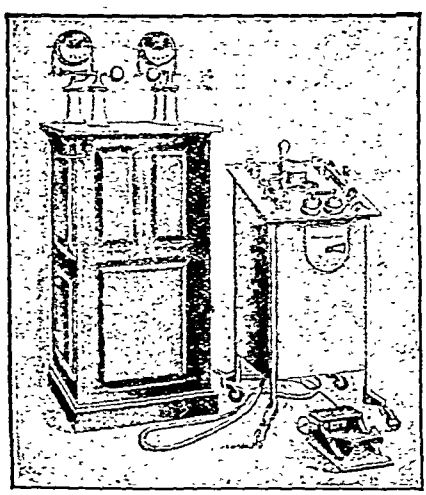

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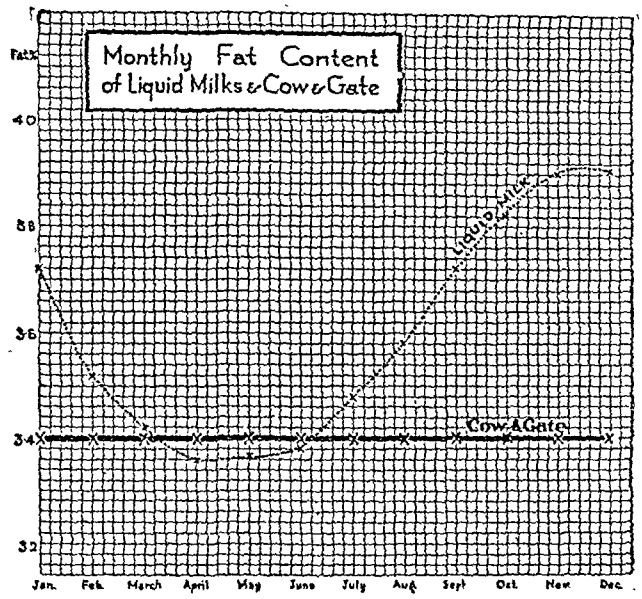

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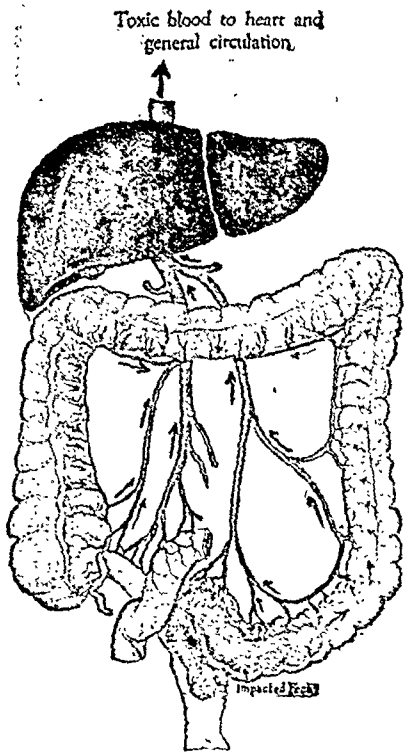

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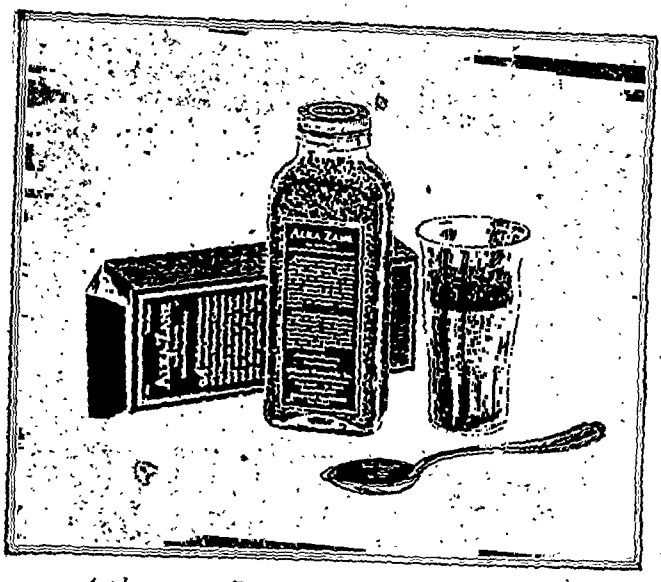

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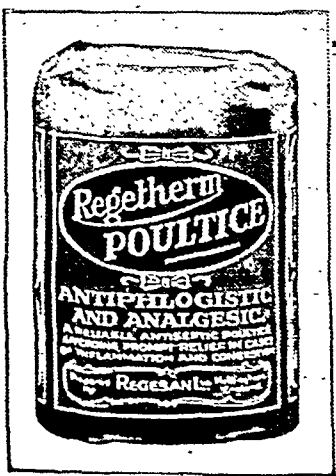

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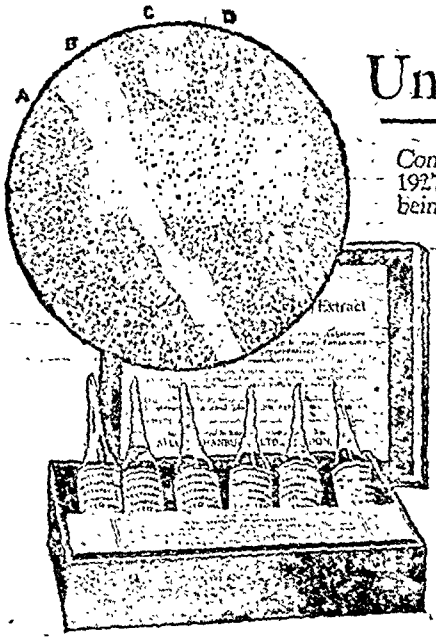

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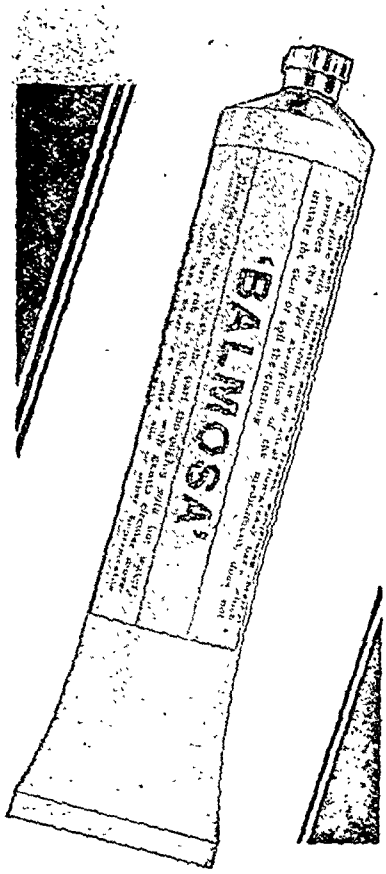

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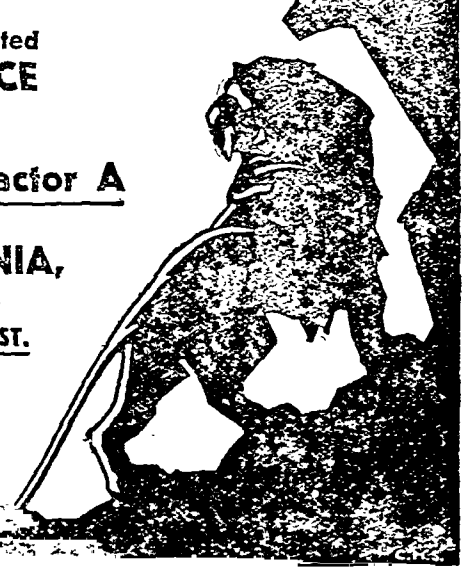

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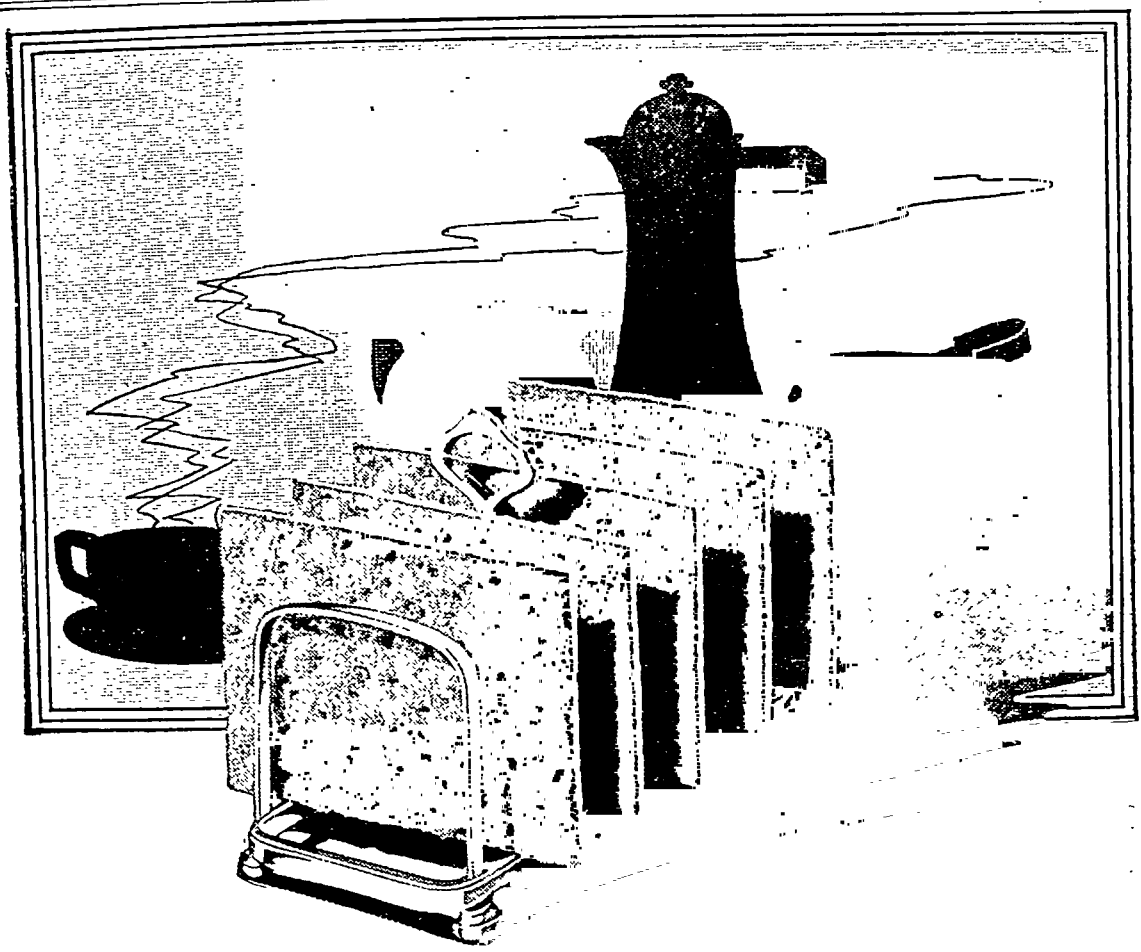

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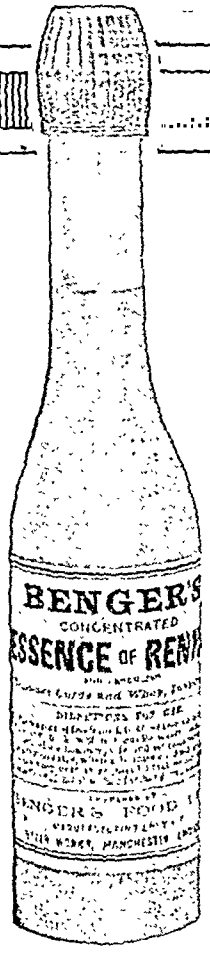

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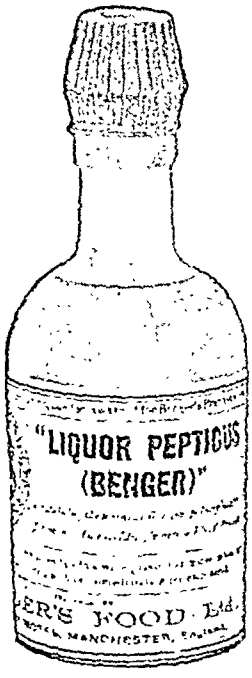

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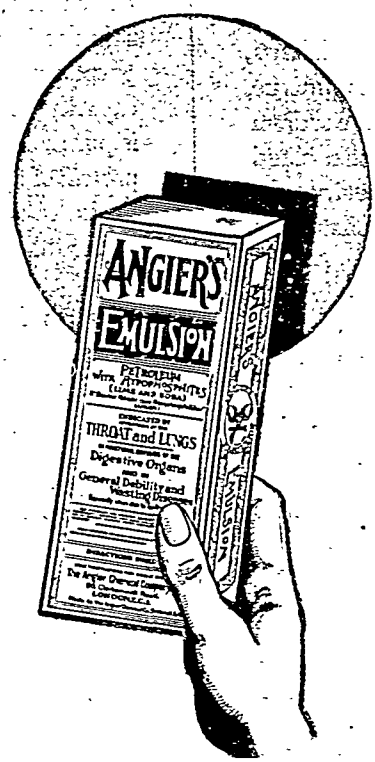

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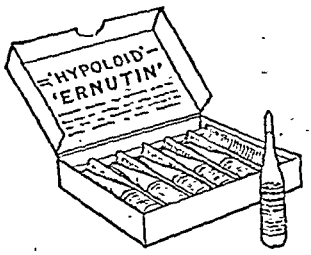

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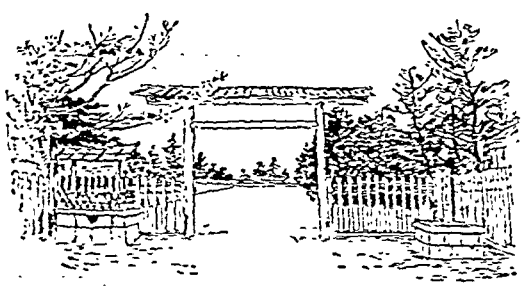
ENTRANCE TO THE TOMB OF JIMMU, THE LEGENDARY FOUNDER OF THE EMPIRE OF JAPAN.—There are no written annals until the early seventh century A.D., but Jimmu's immigration is one of those for which archæologists have fixed c. 1000 to 500 B.C. as a likely era. Jimmu is represented as reminding his kith and kin that 1,792,470 years previously Japan had been given to their Heavenly ancestor. He then adds: "But the remote regions do not yet enjoy the blessings of imperial rule. Every town has always been allowed to have its lord, and every village its chief, who, each one for himself, makes division of territory and practises aggression and conflict. I think that this land will undoubtedly be suitable for the extension of the Heavenly task so that its glory will fill the universe. It is doubtless the centre of the universe. Why should we not proceed thither and make it the capital?" Jimmu became emperor and probably succeeded in some degree in welding the clans together and giving them their earliest idea of unity. The spot approached through the entrance here reproduced, is recognised officially by the Japanese as the tomb of their first Mikado; every year on April 3rd, an imperial envoy visits it and makes offerings of produce from mountain, river and sea.



Date: (Legendary) 660 B.C.

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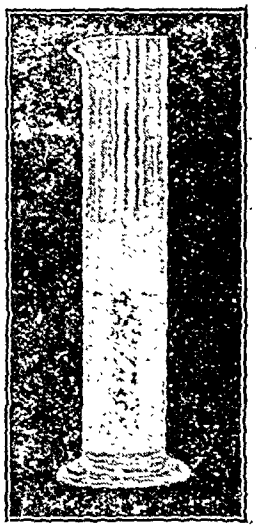

A Showing the heavy curd formed by the action of gastric juice on ordinary cow's milk.

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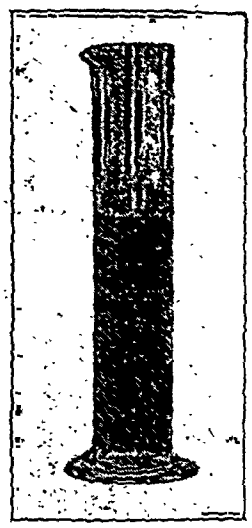

B Showing the finely flocculent curd formed by the action of gastric juice on the 'Allenburys' Diet.

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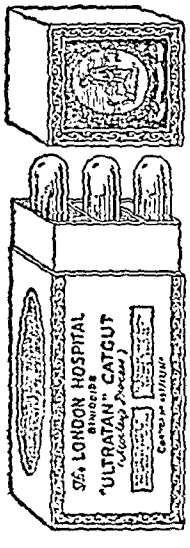

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An Address
ON
UNUSUAL SYMPTOMS DUE TO ENLARGEMENT OF THE PROSTATE.*

BY
G. GREY TURNER, M.S., F.R.C.S.,
PROFESSOR OF SURGERY IN THE UNIVERSITY OF DURHAM.

THIS address is not intended for genito-urinary specialists, or even for operating surgeons, but for those among you who are general practitioners, whose duty it is to see patients at the outset of their troubles and assume responsibility for their diagnosis. Further, what I have to say is entirely from the point of view of the general surgeon, for, though I have always been interested in genito-urinary disease, I have not devoted especial attention to this branch of practice.

I have always been alive to the importance of the problems of disease as they are presented by the "patients' complaints," and my responsibility as a teacher of medical students, who are most of them to become the practitioners of the future, has made me pay particular attention to this aspect of our work. Most of us must have recognized the difficulty of getting clinical knowledge from books, for the descriptions of diseases, as we read them, have been pieced together from many cases. Quite a limited experience of practice of any kind soon teaches how much actual "patients" differ from "cases." Similarly, experience has taught me that a whole variety of symptoms not obviously connected with the urinary system may depend on enlargement of the prostate, and it is to this aspect that I particularly wish to refer.

USUAL SYMPTOMS OF ENLARGED PROSTATE.

As I was putting together my notes it seemed to me that perhaps it would avoid misunderstanding if I enumerated quite briefly the "usual" sort of symptoms which bring patients suffering from enlargement of the prostate under the care of the surgeon. Of course, I fully realize how easy it may be for anyone, like myself, working principally in large hospitals to get ideas on disease which are different from those obtained in general practice. At the same time, practically all the cases are sent into hospital by the practitioners of the district in which I live, so that they represent the problems with which they have to deal.

At the outset I would like to emphasize the truth of the dictum laid down by Sir Henry Thompson, to the effect that enlargement of the prostate of such a degree as to give rise to symptoms demanding treatment does not occur before 50 years of age. It has been quite surprising to me, but it is none the less true, that in an experience of over thirty years I have never yet seen a case of ordinary enlargement of the prostate, that is, non-malignant, except in those over this age.

Now the usual prostatic symptoms can be arranged under one or other of the following heads:

Hesitation in starting and finishing the act of micturition.
Irritability and frequency, with dribbling.
Mostly nocturnal frequency.
Attacks of retention.
A culminating attack of complete retention.
Retention with overflow, and any combination of the above.

I do not doubt that there are other symptoms which will at once stamp the patient as suffering from urinary trouble, probably of prostatic origin, and those whose reputation particularly attracts urinary cases will often be consulted by people complaining of very early symptoms associated with prostatic enlargement, but these are less definite and are not always easy to assign to their proper cause.

UNUSUAL SYMPTOMS OF ENLARGED PROSTATE.

And now I want to draw attention to the unusual symptoms which I have promised to discuss.

Early in my career my attention was attracted to this matter by the case of a man whom I saw in consultation with his family doctor, because he was supposed to be suffering from gastric carcinoma.

This patient, a man aged 67, stated that he had usually been healthy, suffering only from occasional bilious attacks in which he would have vomiting perhaps for a day. Eighteen months before I saw him he had his first real stomach illness when he was laid up for several weeks; it was exactly similar to the attack for which I was consulted. At the same time he was found to be suffering from enlargement of the prostate. His doctor taught him to pass a catheter, but he soon gave that up and had to rise twice every night to micturate. Between that illness and the present one he considered himself perfectly well. About five months before the consultation he began to have pain in the stomach about two hours after every meal. The pain would continue until he was due to take the next meal, but more food always relieved the pain. It was situated about the pit of the stomach and extended upwards towards the chest. When the pain was bad he sometimes brought up a mouthful or more of food, but it was usually watery fluid, and he had only once brought up a little blood. These symptoms continued, and he had lost weight and strength. There had never been any difficulty in swallowing.

When seen the patient was found to be of big, strong build, but obviously not in good health and showing evidence of recent loss of flesh. Occasionally a little gurgling could be made out over the stomach area, but no mass was to be felt, and there was no evidence of gross dilatation nor was there any tender area. There was no fluid in the abdomen, and nothing abnormal could be made out per rectum. An œsophageal bougie easily entered the stomach, the contents showed free hydrochloric acid, and an absence of lactic acid. It was before the days when x rays were regularly used in gastric cases. The prostate was found to be definitely enlarged, and later his doctor drew off about 14 oz. of residual urine.

As a method of preliminary treatment the bladder was emptied by catheter night and morning. Subsequently the prostate was removed, and this accomplishment was followed by the complete disappearance of all the stomach symptoms.

For the purpose of operative treatment this man was admitted as a case of enlarged prostate to a general hospital, and it is interesting to read the notes made by the clerk entirely from the genito-urinary standpoint, for there is not one word about the stomach symptoms which first sent the patient to his doctor!

This experience occurred over twenty years ago, and in the intervening period I have frequently seen similar cases. A recent example is quite typical, and will serve as a further illustration.

One day I was making a brief visit to my wards accompanied only by the sister, a most experienced nurse whose diagnosis is rarely at fault. In passing one of the beds she asked me to look at a man, 62 years of age, who had been admitted as a case of malignant stomach, and whom she thought looked like it. He certainly appeared to be older than his years, and was white, haggard, and neglected. All his complaint was of a bad stomach, and he put his hands over the epigastrium as the seat of his trouble. I found that the following notes had been made by the house-surgeon:

"Patient admitted complaining of vomiting after meals for past twelve months; no pain; appetite good; loss of weight; bowels regular; no blood seen. *Examination:* Patient very wasted and looks ill. Abdomen retracted: no definite irregularity. No mass, but tenderness in epigastrium."

As I saw him the man showed signs of recent loss of weight, but I could find nothing on hastily examining the abdomen, and certainly there was no mass in the stomach region. I remarked to the sister that he looked like a prostatic case, and asked her to get the house-surgeon to investigate the patient with that possibility in view. Sure enough he found a very big prostate and residual urine measuring 23 oz. Subsequently the bladder was opened suprapubically and drained. Palpation of the gland suggested that it was probably malignant. This man got great temporary relief, and all his stomach symptoms at once disappeared.

At this stage I would like to draw attention to the value of bimanual examination as a means of detecting the presence of residual urine, when perhaps it is not convenient to test for the latter in the usual way. Of course, the patient must first pass as much urine as possible under the most comfortable circumstances, and I would remind you that few people can do justice to themselves when lying on their backs in bed. When as much urine as possible has been voided the bladder may not be felt distended either from above or from the rectum, but bimanually it may be felt to be as big as a cricket ball, or larger, indicating that it contains from 4 to, say, 10 oz. of residual urine.

Of course, these cases are for the most part sufficiently obvious when the circumstances have been sifted, but difficulties arise, either because patients disguise from themselves sometimes—and certainly from their medical attendant—the fact that there is any urinary abnormality, or because the interpretation which they themselves put upon their symptoms leads them to believe that any urinary

*Given before the Medical Society at Nottingham, December 5th, 1928.

difficulty is a secondary factor and not the real source of their troubles.

I am sure we have all recognized that the art of diagnosis is allied to the craft of the detective, and I hope you will not be surprised when I tell you that I am accustomed to recommend to my class as guides to diagnosis *The Adventures of Sherlock Holmes*, and a little book called *Aids to Scouting* by Baden-Powell.

Now the next case, whose history I obtained from the patient after he had been operated upon, appears consecutive and reasonable enough, but, as a matter of fact, when this patient consulted his medical man, and subsequently a physician, his mind was made up that the cause of his trouble was associated with some bronchial catarrh due to cold, and, on another occasion, to an increasing dyspepsia, and on neither occasion did he volunteer any information about his urinary difficulty. He was just the type of individual who had always been self-reliant and introspective, and it was he who made the diagnosis which he presented to his various medical attendants. Here is the full history, written by the patient himself, a man of 66, in the month of April.

"As near as I can remember it is about six years since I first noticed the change in regard to the retaining of my urine; sometimes I would have to get up twice during the night; then in the morning, after using the chamber, I had to repeat a similar action when I got downstairs. Of course, the same thing was taking place during the day also. I once consulted a doctor, who informed me that it was caused by the neck of the bladder growing weak, which was a natural consequence with people who were getting somewhat aged. Previous to six years ago I had the power to hold my urine for a very long time, but I have felt it diminishing more and more every year since. Nevertheless, my health was excellent up till last December, although I was put to much trouble and inconvenience by the complaint. From December last I could feel my health getting bad. I was then compelled to get up five and six times a night to pass urine, and this went on increasing week after week till I am sure I was doing it into the teens of times a night and day also. The desire used to spring upon me very suddenly and forcibly in such a manner that when it wakened me I felt quite startled and alarmed. Up to six months ago, although I had to micturate often, I passed the urine somewhat freely. It was only after I felt some substance making itself evident in the rectum that I commenced to dribble. The substance or lump never protruded much beyond the anus, and always on the right side, and the end of it felt somewhat hard, rounded, and smooth, but it always disappeared after the pressure due to straining was removed. During this time the anus was very much relaxed and the part round about it was extremely soft. Numerous times I have gone into the lavatory with the feeling to use the urinal only, but after I have stood a while I had to make great haste to get into a w.c. because I had lost the power to retain the excrement. For a considerable time before the operation I used to pass the excrement before I passed the urine, which I did not do when these parts were working all right. For some time before you removed the cause of my annoyance, if I put my hands into hot or cold water there came a strong and immediate desire to micturate, which I had to attend to at once if I wanted to keep my shirt dry. A short time before I was sent in to you I caught a severe cold—I tried some patent medicines to cure it, but did not receive much benefit; also had two bottles from our doctor. On March 6th I was in Newcastle and thought it was time to consult a physician about my illness. I was asked a number of questions and requested to take off my coats. The physician then sounded me by tapping my back, and he also applied his stethoscope and told me to inhale slowly—my chest was treated in a similar manner, after which I was asked to lie down on a bench on my chest, when my back was subjected to the same ordeal as before; then over on to my back to undergo the like process.

"I informed him about passing my urine frequently, and about something making itself felt in my rectum. I was told to bend forward and press down, which I did as much as I was able. He informed me that there was not much the matter with me; I was suffering from a little bronchial catarrh, and that I would soon be better. I obtained a prescription which I got made up in Newcastle sufficient to serve two weeks. To my great surprise every day my health commenced to grow worse and worse; my appetite for food had almost gone; my breath was growing offensive; I then got a cough which I thought came from my stomach; the saliva was frothy and had a disagreeable metallic taste—I could not keep my mouth clear of it. I was so ill that I had to send for my home doctor. After he had examined me he came to the conclusion that I was suffering from catarrh of the stomach—at this time I had a horribly dirty tongue. After I had taken two and a half bottles of medicine, which had not done my stomach the least degree of good, and had lost all desire for food—in fact, if I thought about it it created a nauseous feeling, consequently I was getting leaner every day and the number of times I passed urine day and night went on increasing. I made a great mistake in not informing the doctor about the urinary trouble from which I was suffering, but when I told him about it he diagnosed my complaint at once, and told me that my stomach could not possibly get better if I did not get this enlarged gland removed; hence he communicated with you, and as soon as he obtained a suitable reply I was sent on to you."

In another case I was asked to see a farmer 63 years of age as a case of abdominal malignant disease.

When I first met the patient he at once told me that his trouble was indigestion, and he gave a history that he had been perfectly healthy until four weeks previously, when he got cold which caused pain in the left side of the back. The pain soon got well, but it was followed by a fiery heat of the stomach for which he drank a tremendous lot of cold water. After this he began to lose his appetite and felt very ill. There was considerable loss of weight, but this he attributed to the fact that he had not been able to take food. I found the patient a very fresh-looking man, but with a dry red tongue and sourish breath. When he presented his abdomen for examination there was an obvious swelling in the lower part which was the over-distended bladder reaching nearly to the umbilicus. Up to this point he had said nothing about his water, and even on interrogation he would not admit to any urinary trouble until the onset of the present illness. He then found that he had to pass urine very frequently and at once, but for this he blamed the large amount of water which he had taken. Latterly there had been frequent desire to micturate with difficulty in getting the urine away. Per rectum the prostate was found to be very large and was pushed down by the distended bladder. The enlargement was dealt with by the suprapubic operation; the patient made a splendid recovery, and is alive and well ten years afterwards.

In another case of the same kind the man, also a farmer, had been in failing health for some time, but having a great dread of doctors, and especially surgeons, he refused to consult his medical man until about a fortnight previously, when he sent for some medicine to relieve vomiting. When my friend called he found the patient in bed, looking very ill and complaining only of his stomach and vomiting. On examination the bladder was greatly distended; the urine contained albumin, and rectal examination revealed an enlarged prostate. In this case the trouble had evidently been going on insidiously for a very long time and the kidneys were already much involved. The man was relieved by suprapubic cystostomy, but he did not live long and was never sufficiently well for the radical operation for removal of the prostate to be performed.

Another man, 62 years of age, who followed the calling of a commercial traveller, was well aware that his urinary apparatus was not in good working order, but it was only when he began to suffer from nausea and a distaste for food that he sought surgical advice, and he did not connect these symptoms in any way with his old urinary trouble. As a matter of fact the whole of the mischief was due to enlarged prostate, for he made a very satisfactory recovery after a two-stage operation, and now, eleven years afterwards, he is in perfect health and able to carry out his duties as well as at any time during his life.

Quite often the presence of a distended bladder has led to difficulty in diagnosis. A very able practitioner of whom I have the warmest recollection, for he acted as a mentor in my earliest days, and had sufficient confidence to entrust me with surgical work at the very outset of my career, was himself misled in dealing with one of his old patients, a man aged 72, who had been complaining for some time of trouble with his bladder; the real reason for concern, however, was the advent of stomach symptoms with some failure in his cardiac apparatus. In writing about the patient my friend mentioned the symptoms and then concluded, "But what I want to know is *what is* this swelling in the middle line which feels so soft and elastic." As a matter of fact it was a big distended bladder containing 36 oz. of residual urine. In this case also the prostate was removed and the patient made a satisfactory recovery.

Among my treasured possessions is a letter which was sent to one of our surgeons by a well-known physician. I merely mention the standing of this gentleman to show you how easy it is for those trained in clinical observation to be occasionally misled when they are confronted with some condition the like of which is not perhaps frequently brought to their notice. In this case the patient was suffering from nothing worse than a distended bladder, but, as you will see, it was mistaken at first for an obscure tumour. The letter reads as follows:

"July 19th, 1902.

"*Dear Mr.* ——,

"This gentleman came to see me to-day for the first time. He complains of vomiting without pain; quantity of vomit not large. I find a solid, movable growth in the abdomen which curiously resembles in general form and site a uterus pregnant about 5½ months. I have sent him to you for you to consider the advisability of exploring the abdomen. There is a soft systolic bruit at the apex; but the second sound at the pulmonary area is not accented, and the heart action is fairly regular.

"The urine is alkaline (probably from taking 'Carlsbad salts') and contains a very distinct trace of albumin; no sugar.

"Yours very truly."

Forgive me if I allude to another case illustrative of this same point, although, as a matter of fact, the urinary obstruction in this particular example was the result of stricture and not an enlarged prostate.

A man, aged 66, was sent to me by a very discerning doctor friend with a note to this effect: "Do you mind seeing this case for me, an abdominal tumour, not a spleen." The patient only complained of the "lump" in the abdomen. He would not admit that he had any overflow, and certainly his clothes were not in the least damp. He stated that his trouble had commenced four years previously with inflammation of the bladder, but that since then he had not had trouble until he noticed the lump which sent him to his doctor for advice. Fifty years before he had suffered from gonorrhoea. A further examination disclosed a very tight stricture in the deep urethra, and the "tumour" was nothing more than the chronically over-distended bladder.

Intestinal symptoms occasionally overshadow those of obvious urinary origin, as in the case of a man who was sent up with a note stating that he had a history of possible intestinal growth, but that nothing could be felt either on abdominal palpation or rectal examination. None the less the presence of an enlarged prostate had been noted. The fact was that the uncomfortable colic from which this man suffered was simply due to the effects of his enlarged prostate with residual urine.

In a case which I have particular reasons for remembering the patient was a rather older man of 70 years, whose symptoms were entirely rectal. Ineffectual straining and tenesmus, with some prolapse of the mucous membrane, difficulty in voiding faeces, and occasional bleeding, certainly suggested that the cause of his trouble would turn out to be a rectal growth. As a matter of fact, he only suffered from an unusual degree of enlargement of the prostate, and he was completely cured of his rectal discomfort by its removal.

Quite recently I was consulted by a retired sea-captain, a bluff old veteran of 77 years, who came complaining of flatulence and discomfort in the abdomen, and the desire to void wind with pressure; also of some frequency of micturition. He complained that he was always thirsty and had a very dry mouth. In writing about this patient his doctor mentioned that he had a large, round swelling in the abdomen which puzzled him; he stated that it was tense, as if containing fluid, and yet the patient passed water fairly well and had no dribbling. This man turned out to have a distended bladder containing 55 oz. of residual urine. The latter was of low specific gravity and the urea was diminished, but as a result of a two-stage operation he made a satisfactory, though rather tedious, recovery.

Rectal symptoms are sometimes present when the prostatic enlargement is not very marked, and only recently I was rather puzzled by a patient, 60 years of age, who complained of a constant desire to empty the bowel with ineffectual evacuation. In this case the prostate was enlarged and nodular, and, although I feared malignancy, the condition improved very much as the result of treatment, but some months later there was a recurrence with the advent of stomach trouble suggestive of growth, as in the cases I quoted to you at the outset.

A very good example of a patient's misinterpretation of his own symptoms recently came under my observation.

The patient was a man of 54, who assisted his wife in the conduct of a beerhouse. For two or three years he had suffered from discomfort in the abdomen. During this time he was accustomed to drink freely, and he was inclined to blame this over-indulgence for his troubles. Finally he consulted his doctor, who, suspecting stomach trouble, looked at the tongue. This was dirty and thickly coated, but also presented a very obvious papilloma. The man was at once told of the potential danger of this growth, and was sent to hospital for advice as to its treatment. While conducting a leisurely examination for teaching purposes, and with the help of a student, we noticed a very urinous odour. This prompted a more general examination, which at once disclosed a distended bladder with overflow from enlargement of the prostate. When questioned the man admitted that he had been disturbed four or five times each night, but again he blamed his addiction to beer. Latterly his urine had run away without control, and this had caused him to become alarmed.

One of the most important pitfalls of which we must be constantly aware is the class of case in which the patient blames some obvious condition like a hernia or hydrocele for a general failure of health which is really dependent on disorders the result of an enlarged prostate. This is a matter to which I have previously referred,[1] and at that time I ventured to suggest an aphorism which has proved so useful that I would like to recommend it to your notice. It is as follows: "The occurrence of unaccustomed symptoms in chronic conditions is suggestive of some new disease." The following is a case in point.

A gentleman, aged 67, whom I had previously seen on account of some thyroid enlargement, came complaining of a swelling in the right inguinal region, which he had noticed for eight or nine months. He said that latterly it had caused him some pain and discomfort in the lower abdomen and especially after supper. On examination I found an ordinary oblique inguinal hernia. Incidentally, during the course of the examination, the patient mentioned that for a year or more he had noticed increasing trouble with his water—frequency in the mornings, dribbling, and some difficulty in getting the urine away. His appetite and general condition appeared to be unaffected. On rectal examination the prostate was found to be big, rounded, and smooth, certainly twice the normal size, and there was residual urine. In this case prostatectomy was carried out with complete relief of the uncomfortable symptoms which the patient had attributed to his hernia.

The etiology of some of these more general symptoms is quite interesting. Probably they are for the most part due to a certain degree of renal insufficiency and are really an evidence of latent uraemia. Their consideration brings us to the question of so-called "back-pressure," which is so commonly spoken of in connexion with obstruction of the lower urinary passages. It is, I think, an unfortunate expression, because it suggests, at least to my mind—and I have heard it mentioned by others—that the secreted urine goes on accumulating at its usual rate and causes such great pressure in the bladder and kidneys as to give rise to the symptoms which we associate with latent uraemia. As a matter of fact, I hold that such a purely mechanical explanation is untenable, and I believe that what really happens presupposes an amount of intelligence, so to speak, on the part of the renal secretory apparatus. When, for instance, the kidneys discern that the urine does not escape in the ordinary way, there is a holding up, so to speak, of the work of the epithelium, secretion diminishes, and in consequence there is an accumulation of noxious products in the blood. Both these matters would seem to me to be within the scope of easy experimental inquiry, and I commend it to someone with leisure to carry out what would prove, I am sure, a most interesting investigation.

Malignant Prostate.

In connexion with malignant prostate there may be a variety of symptoms which may prove very puzzling. Quite usually they are not directly connected with the urinary organs, not only in the first instance, but even until comparatively late in the development of the malignant disease. Some of the special features to which I would particularly draw attention are complaints of "sciatica" or "lumbago" or "oedema" of one or other lower limb or of the lower part of the abdominal wall, or "enlargement of the groin glands." Pain in the perineum is more ordinary and more suggestive of genito-urinary trouble; it may be the only complaint for a long time, and it may be present when urinary symptoms are entirely absent. It is disconcerting to find to what an advanced degree malignant disease of the prostate may attain before it gives rise to any symptoms whatever. The following is a case about which I was greatly distressed.

A distinguished man whom I saw quite recently was, in his 78th year, in such excellent health that he surprised his friends with his superabundant energy. Only six weeks before I saw him he began to have some day and night frequency of micturition. There was no pain, never any blood in the urine, and at the end of that time he looked in his usual robust health. On rectal examination I was shocked to find a large, hard, infiltrating mass arising in the prostate and extending up into the base of the bladder. On bimanual examination it was obvious that there was a good deal of residual urine, and after this was withdrawn the large mass felt per rectum could be determined bimanually, so great was its size.

In another case what was dubbed "sciatica" was the principal symptom.

The patient was 69 years of age, and, on going into his history, he complained that for several months he had been troubled with wind in the bowels and difficulty in getting them open. Closer inquiry showed that the pain which he called sciatica was really down the inner side of the leg, but it was bad enough to prevent sleep. After examination I wrote to his doctor as follows:

"I have just seen your patient and I find him a most interesting case. I have very little doubt that he has a malignant growth of the prostate—not of the rectum as I was inclined to think from his history. In the situation of the prostate you will find a hard, nodular mass spreading out to the pelvic wall on either side and closely adherent to the bone. You will also notice that the pain in the leg is down the inner side in the distribution of the obturator and not in the sciatic region. I do not quite understand why he should have so much trouble with the bowels, but he admits that it is mostly about the region of the sphincter, which may explain his difficulty. I am sorry to say that it is not a case in which removal can be thought of, and we will have to rely on medicine for his relief."

It is interesting to note that this patient died just about a year after the time that I saw him, and it was only for

the last two months of his life that he had to depend upon the catheter. The pain became very severe, he gradually got weaker, and his end was hastened by some form of oesophageal obstruction.

So-called "lumbago" as well as sciatica appears to be very common at the outset of malignant disease of the prostate, and would more than ever indicate the well-known rule that in both these conditions a rectal examination is essential. Of course, in dealing with the industrial class, an injury is often blamed, and in one such case careful *x*-ray examinations of the pelvis had been made *in search of an old fracture*, but an ordinary rectal examination disclosed a large mass of growth originating in the prostatic area.

Oedema, with swelling of one of the lower limbs, has several times directed my attention to the prostate, malignancy being suspected and usually found.

In one such case, in a man of 64, the only complaint was of swelling of the left leg, which he had noticed for about ten weeks before the time of his visit; there had not been much pain. On *inquiry it turned out that a year previously he had called in his* doctor for what was said to be rheumatism in both feet and one hand. After this illness he was left weak in the bladder and had to be quick in getting to a convenience. At this stage in the recital of his history he said that he blamed the water trouble for bringing on *the swelling of the leg, and I have a note in my* book, between brackets, suggesting that a malignant prostate would be found. He certainly looked a seedy individual, prematurely old and with marked loss of flesh. The affected leg was twice the size of its fellow from lymphatic oedema, and there was a considerable amount of oedema about the genitals and in both groins, while enlarged hard glands were felt in the latter situations. There was no evidence of distension of the bladder, *but on rectal examination the prostate was found to be enlarged,* hard, nodular, and fixed, and there could be no doubt as to its malignant nature.

The following is a somewhat similar case.

A man, aged 76, complained of oedema of the left leg, which he attributed to a blow that he had received three months previously. The leg was found to be almost solid below the knee, and the groin glands on both sides were enlarged and hard. On going further into his history he admitted that for two years there had been some frequency of micturition and that it had recently become very bad by day as well as by night. In this case the bladder was almost up to the umbilicus, and the prostate was slightly enlarged, hard, nodular, and fixed.

In the last two cases the enlargement of the groin glands had not been noticed by the patient and had given rise to no trouble, but it was otherwise in the following case.

A man, aged 70, was sent to me one April at the suggestion of a consulting physician with regard to the advisability of the removal of a mass of glands in the right groin. He gave a history that in the previous October he first noticed swelling of the left leg. For that he had rested in bed for a month as the condition was said to be due to a thrombosis of the internal saphenous. At the time of his visit he told me that he had no urinary trouble, though he did admit that he passed water rather slowly, which he attributed to some weakness of the bladder depending on his age. He did not think that he had lost weight, and certainly looked the big, strong, healthy man that we had been accustomed to see about for many years. There was some oedema and slight discoloration in the region of the right groin. The most prominent gland was of walnut size in the vertical set of femoral lymphatics, but there was a less defined enlargement of the horizontal set, and in the pelvis, above Poupart's ligament, a mass could be felt extending along the brim. On rectal examination the prostate was found to be definitely malignant and was invading the region of the right seminal vesicle. At that time there was no sign of more distant dissemination, but the patient eventually died with multiple secondary deposits all over, though growth in the liver was the most prominent feature.

Recently a public man, who was well known for his municipal activities, was sent to consult me by his doctor, who had discovered him to be suffering from a malignant prostate. The history in this case is very interesting as bearing on this question.

This patient, who was 66 years of age, stated that until two years previously the bowels had been absolutely regular. About that time he began to take grape-fruit, and noticed the onset of constipation and that sometimes the act of defaecation hurt the passage. This trouble, although it only came on at intervals, got steadily worse, and sometimes he had very severe pain lasting for an hour or more after evacuation. About three months previously he began to notice a new pain about the rectum, this time quite independent of evacuation. It came on in attacks and disappeared after a rest. If he could void flatus he got some relief, and was also helped by medical treatment. All this time there was no complaint whatever of urinary symptoms, and even on cross-questioning the patient would not admit that there had been the slightest trouble, the most that could be elucidated was that sometimes he had to get up once during the night, but this only if he had taken a good deal of liquid. He looked absolutely fit and well, and there were no external signs whatever, but on examination the prostate was found to be embedded in growth which was excessively hard and surrounded the lower end of the rectum, leaving a rigid channel which just admitted a finger. It was as if the base of the bladder and the rectum had been embedded in plaster-of-Paris.

Sometimes, and I think more usually, these patients do complain of pain and soreness in the perineum, as in the following case.

A big, handsome man, a farmer, who appeared to be in the pink of condition, gave a history that in March he began to have pain and soreness in the perineum, which troubled him when he attempted to get over fences. Later on it made him unable to ride round his farm. Soon afterwards he began to be troubled with frequent micturition and had to get up two or three times every night. The pain was then worse at night, and he had to lie with his legs apart to get some ease. When I saw him in August he looked quite well, but he was not so vigorous as formerly, and he had to rest at times, instead of pursuing his life of strenuous activity. There was no loss of weight, and he took his food well. The general and external examination was quite negative, but rectal examination disclosed a large, hard, nodular prostate with infiltration and fixation of the whole of the pelvic floor. Eventually this patient had such great urinary difficulty that a suprapubic drain had to be inserted.

In a man of 53 the first symptoms of malignant prostate were stabbing pains down the outer side of the thighs. Soon after this he had an illness following a rigor, and this was succeeded by pain in the perineum and a frequent desire to empty the rectum. Evacuation gave him some little relief, but when I saw him some months afterwards there were no urinary symptoms, in spite of the fact that his prostate was most definitely the source of his trouble.

In some few cases even distant dissemination is present before patients have any symptoms to direct attention to the urinary organs, and I have twice seen patients with secondary malignant glands in the left posterior triangle of the neck who were unaware that the urinary organs were the source of their troubles.

MANAGEMENT OF PROSTATIC CASES.

I will now deal with one or two points of considerable interest in connexion with the "management" of the prostatic case. That old word has always appealed to me, and it seems to epitomize our duty with regard to this particular sort of case very well indeed. One of the most difficult problems for us all is to decide when an operation should be advised. Personally I have no hesitation in saying that I much prefer to deal with patients who have the most trouble, for I have usually found that they have done better than others, and further that they have appreciated the benefits of surgical treatment much more than those patients who have not suffered very much before operation was carried out.

At the outset I would like to emphasize very strongly that the success of the operation for removal of the prostate depends entirely on the relation of the symptoms to the enlargement of the gland, and, if I may put it so, only those patients who suffer because they have an enlarged prostate will be cured by its removal! If operation is performed at an early stage there is a risk of removing the prostate when, as a matter of fact, the symptoms may be due to some other commencing disease. I have, I think, indicated sufficiently the difficulties connected with the very early cases, and I want to tell you the remarkable history of a patient whom I was asked to see by a very alert doctor friend at the time when prostatic surgery was looming large as a result of the pioneer work of Freyer.

The patient, who was suffering from his first attack of retention of urine, was a healthy man, in good general condition. The urine was absolutely normal, and the prostate was only slightly enlarged. As it was his first attack I deemed it wiser to see what could be done by the regular use of the catheter. At that time I only knew that the treatment advised had been effective, and that the patient made a satisfactory recovery; but fifteen years later I was asked to see this same man again. He was then 84 years of age, and he told me that after his previous illness he made a complete recovery, and was very active and well until two years before, when he began to be troubled with some urinary frequency at night-time. These symptoms culminated in an attack of retention which could only be relieved by the use of a silver catheter. The patient looked in very good condition for his years, though the prostate was very large. Again

he made a complete recovery as the result of catheterization, but, of course, the nocturnal frequency continued. Nevertheless, he was so comfortable and so active that he would not agree to any operative intervention.

Many difficulties arise at the other end of the scale—that is to say, when the patient is extremely ill as the result of long-continued urinary obstruction, and it becomes a question as to whether the risks and discomforts of an operation should be urged. In this connexion the story of an old man of 77 who came under my observation some time ago is very instructive. This patient stated that for some years he had suffered from nocturnal frequency with inability to empty the bladder and consequent discomfort. This was followed by a general failure of health, with swelling of the legs, and culminated in an attack of retention which demanded the catheter for its relief. It was at this stage that he was sent to me for an opinion with regard to the advisability of operation. I found a very ill-looking old man with an irregular heart, emphysematous lungs, considerable dyspnoea, and oedema of both legs. The distended bladder was like an abdominal tumour and the prostate was enlarged and suspiciously hard. After examination I wrote to his doctor as follows:

"I am very much obliged to you for sending Mr. M. to see me. Obviously this is not a case for radical operation, and in any event the patient has not very long to live. I strongly suspect that the prostate is malignant, although I confess that the physical signs are not sufficiently definite to entitle one to give a decided opinion on this point.

"I have urged him to allow you to pass a catheter. I would suggest that the instrument should be used some time during the evening, and that you should draw off about two-thirds of the urine. Probably this will give him a much better night, but if it does not do so then it is not worth while persevering with this plan. If I am wrong, and he continues to live after a month or so, then I should be willing to put in a suprapubic drain through a trocar and cannula, but I do not urge this plan as it is attended with considerable risk in one so ill, and I do not care to raise false hopes.

"Some day be sure to let me know, first, if drawing off the urine as I suggest does give him a better night, and second, the date and circumstances of his death.

"By the by, he was extremely anxious to have some medicine, and I think that tincture of digitalis in 15-minim doses thrice daily would probably do some good."

You will understand my surprise when I learned that some five months afterwards this man was so much improved that he was able to resume work on his farm, and had been seen by his doctor on top of a haystack. As a matter of fact, he lived in very good health, and was able to work regularly, for three more years, but at the end of this period he began to fail, and died at 81 and 9 months, without any evidence of urinary infection, in spite of the fact that the catheter had been passed for him by his farmer son some thousands of times.

Operative details are outside the scope of this address, but to make my review complete I would just like to say that I have come to believe that, for the majority of these cases, the operation in two stages is by far the best. I would put it this way: that though I have very often had to regret that I essayed the one-stage operation, I have never regretted the adoption of the two-stage plan, although I quite admit that possibly some of the cases dealt with by two operations might have been successfully tided over the ordeal by one. I speak of two-stage "operations" simply because the circumstances in which I work have taught me that it is much better to make a suprapubic cystotomy rather than endeavour to have preliminary catheter drainage carried out. The latter plan is unsatisfactory with overworked wards and constantly changing house-surgeons and assistants, who never have an opportunity of becoming familiar with the difficulties that may be encountered. The first stage may be simply a suprapubic puncture, using the Morson trocar, but there again I feel satisfied that freer drainage is better, and the results superior if a suprapubic opening of the bladder is made. As a rule this first stage is carried out under general anaesthesia, unless, indeed, the patients are extremely ill, or of the thin and wasted type. The time between the stages varies very much, depending upon the progress of the patient. Usually the interval is not less than two weeks, and, *in fact*, on the rare occasions when I have felt it safe to intervene at a lesser interval, then, I think, without a doubt the operation might have been conducted by the one-stage method. Very often three or four weeks are allowed to elapse, but there is no rule as to the time, and the surgeon must attend on Nature, since it is foolish to intervene as long as the patient is improving, and it is unwise not to take the full advantage of this preliminary relief to the kidneys. The decision as to when the patient is sufficiently well for the second stage does not depend on chemical tests alone, but is mainly judged clinically, and I do not intervene until the patient is cheerful, is sleeping well, has a good appetite with a clean tongue, and presents a thoroughly healthy granulating wound. All these features must be satisfactory or the result is likely to be disappointing. It is in cases in which there is some doubt with regard to the clinical evidence that the examination of the blood urea may be so helpful.

MORTALITY OF PROSTATECTOMY.

For quite a long time I have been accustomed to hear uninformed people rail at the mortality of operations for removal of the prostate, and I have frequently been filled with a sense of shame to hear the opinion expressed that the general mortality in hospitals is something approaching 50 per cent. This is a gross misstatement of the true state of affairs, certainly at the present day. In my own series of cases, which includes the period during which I was trying to learn the technique and the management of the operation, my over-all mortality (that is to say, taking the two-stage with the one-stage operations) was 12 per cent.; for the one-stage operations alone the mortality works out at 19 per cent., and for the two-stage operations just 10 per cent. Most of these operations have been performed in our general hospital, but in keeping the figures I make no distinction between private and public hospital work, and the figures which I have given include the total number of cases, wherever the operation has been conducted. The mortality is steadily diminishing, and is now in the neighbourhood of 5 per cent. This approaches the wonderful figures which were obtained by Freyer, who was able to refer to a mortality of only 3 per cent. in one large series of cases, and those of Young, who in 450 cases had a mortality of just 3.75 per cent.

It is probably those who are so sceptical in regard to the mortality of prostatectomy who speak so scathingly about its advantages. Happily I have been in practice sufficiently long to have been a witness to the utter misery of so many of the victims of prostatic hypertrophy in the old days before the radical operation could be successfully employed; I am therefore able to appreciate the enormous advantages of the methods which are now commonly used. Of course, the period for which these patients enjoy the advantages of the operation is a poor way of assessing the benefits conferred, because in elderly men who require operative treatment the normal expectation of life cannot be long. For instance, in one series of my own patients the average age was 65 years, the youngest being 54, and the oldest 84. But the advantages conferred in some of these cases are incalculable. The following is one of the most striking examples with which I am familiar.

The patient was an old man—particularly old for his age—of 68, who for twelve months had been greatly troubled with nocturnal frequency. The number of times he had to get up gradually increased until he was disturbed not less than a dozen times each night. He was also greatly distressed with frequency during the day, and was only able to pass a very little urine at a time, and that without any force. To add to his troubles he had a severe attack of cystitis, and this was little improved by the irrigation of the bladder which was conscientiously carried out by his doctor. He never suffered from retention. Perhaps this was unfortunate, because quite often the attack of retention which precipitates active treatment is really an intervention of providence which demands that relief which might otherwise be unduly delayed. A mere recital of this man's symptoms can give no idea of the misery of the situation. In the twelve months during which he had suffered his condition had deteriorated so much that he had become a miserable, dirty old man, who neglected himself and his surroundings in a painful way. His condition had made him decrepit and bordering on simplicity, and, as he was a bachelor who lived in lodgings, his relatives were seriously embarrassed because it was found so difficult to get him rooms on account of his dirty habits, soiled beds, etc. Without much prospect, therefore, an operation was undertaken in the hope of so far restoring his condition that he would at least be able to look after himself and cease to be an

annoyance to those about him. The operation was carried out in two stages, and after a rather prolonged convalescence he eventually made a very good recovery. His gain in self-respect was extraordinary, and it was a remarkable thing to see this patient some months afterwards, nicely dressed, with white spats and a smart tie, and an *undoubted concern* for female regard. This happy state continued until four years afterwards, when he died of some condition unassociated with his prostatic troubles, but the details of which I have never been able to ascertain.

The after-history of very many cases is similar, and I merely select a few at random, as I know that many of you, from individual experience, will be able to supply many telling examples. The following is a very striking case.

A man of 60, a hard-working, conscientious artisan, whose symptoms had extended over some years, had evidently suffered so much from renal disability that his working capacity was seriously impaired. The operation had to be carried out in two stages, and his convalescence was attended with considerable anxiety because of symptoms of latent uraemia, but he finally made an excellent recovery, and now, thirteen years afterwards, is fit and well, happy that he can continue his laborious toil as a ship's plater, and willing to carry on in spite of his 73 years, as long as he can find employment.

Another man of the same age had suffered for ten years from urinary trouble, which had increased so much as to interfere very seriously with his ordinary avocation as a commercial traveller. He was very ill, and five weeks had to elapse between the primary operation and the removal of the prostate, and even after that his convalescence was long and tedious, and for a time the prognosis appeared doubtful. However, after a few months his health was restored, and now, thirteen years later, at 73 years of age, he writes me that he is as well as he has ever been in his life, and has recently undertaken renewed responsibility on behalf of his firm.

Another patient, whose history I have already detailed, is so vigorous fourteen years later that at the age of 80 he is still able to walk ten miles without undue fatigue, and has travelled over a large part of the Continent since his operation.

The oldest patient on whom I have ever carried out prostatectomy was 84 years of age and had suffered for long from urinary trouble. The operation was in two stages, and he made an excellent recovery. Unhappily his illness proved so severe a tax on his wife that she succumbed to what I believe was simply the undue exertion associated with her devoted attention to the old gentleman. After his own recovery he was able to take long walks every day, and during the war he went back to his business, from which he had previously retired, and put in long days behind a shop counter. Finally, at 93, the lamp went out, having flickered for some few months, but without any definite cause, the end being like the wearing out of the machinery of life's needful little ways.

Numberless other cases could be quoted, and it is quite usual for patients to speak of "a new lease of life," "a complete restoration to health," and so on.

In some few cases the results have been brilliant in spite of the most unpromising outlook, and I am reminded of a poor fellow who lived in lodgings and who was suffering from diabetes, which for a long time deterred me from attempting the relief which prostatectomy alone offered. He was in such misery from his prostatic condition that he was willing to run any risk, and I am glad to be able to say that the operation was followed by an excellent recovery, which he greatly appreciated.

Sometimes, contrary to all canons, we carry out operations which appear to be contraindicated, and I have in mind two such cases. In both, operation was refused by surgeons who have taken a particular interest in genito-urinary disease. In one case the patient had been condemned to a permanent suprapubic drainage, but at the end of eighteen months he was so dissatisfied that he was willing to undergo any risk, and he made a very satisfactory recovery, being alive and well six years later at the age of 80. Another patient who was refused operation had reached the end of his endurance, and here again, although the circumstances appeared to weigh heavily against his recovery, he did excellently, and is alive and well years afterwards, and classed among my most grateful patients.

REFERENCE.

1 The Importance of New Symptoms in Old-standing Disease, *Clinical Journal*, June, 1915.

RADIUM AND ITS ACTION.*

BY

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(From the Pharmacological Laboratory, Cambridge.)

M. BECQUEREL in 1896 noticed that uranium salts affected a photographic plate through an opaque medium, and a few years later similar effects were described for thorium, polonium, and radium. All these metals emit three varieties of rays in different proportions, which are constant for each metal. Radium salts are, however, by far the most radio-active substances known, and have in recent years assumed a great importance in medicine. Indeed, the only practical application of radium at the present time is in medicine, and in this communication radium only will be considered.

Source.

In the early days radium was prepared in Austria from local ores and in France from Portuguese ores; later it was extracted in the United States, and now it is obtained practically entirely from the Belgian Congo. The ores from which it is extracted may be classified as follows:

(1) Pitchblende, an impure uranium oxide found largely in the Belgian Congo. It contains uranium, lead, silica, iron ore, and selenium. The British Radium Corporation deal with pitchblende at Trentwith in Cornwall, but they have extracted probably not more than 10 grams.

(2) Carnotite is a potassium uranyl vanadate, and is obtained from Colorado and Utah.

(3) Autunite or uranite is a calcium uranium phosphate containing lead, and is found mainly in Portugal and Australia.

(4) Betaphite found with mesothorium in Madagascar.

The history of the commercial production of radium is instructive and may be said to have passed through three phases. The first was that of the Austrian monopoly, during which radium was prepared mainly from the pitchblende of Joachimstal in Austria, and to a limited extent from the uranite of Portugal. The price during this phase fluctuated greatly. In 1905 it was marketed at from £5 to £10 per mg.; in 1909–10 at £15 to £27; and in 1912–14 at £36 per mg. The mines in the United States of America were now, however, competing, and as a result of this the price dropped in 1915 to £32 per mg., and in 1916–22 from £24 to £21. At this period the mines in the Belgian Congo were producing and made their presence felt, so that in 1923 the price further dropped to £14, and it now stands at from £10 to £12 per mg. When the mines in the Belgian Congo were in full working the American plant was shut down, perhaps because they could not compete economically with the richer Belgian ores and cheaper labour, though American authorities have stated that the reason was that as much radium had been produced as was needed. Before the Belgians operated, Europe had produced perhaps 60 grams and the United States 160 grams. If we place the total radium in the world at 320 grams we know that America possesses half or more than half of this amount. In 1923 the hospitals in the United States possessed 120 grams.

At the present time the Belgians hold the economic monopoly of radium production. In 1923 their plant produced 4 grams a month, and to the end of 1924 had produced 110 grams. But their sales did not equal their production, since in 1924 they sold only 22 grams of radium, which suggests that either their works were slowing down or they were accumulating stocks. It is necessary to appreciate these conditions in order to be clear that plenty of radium is available to meet all urgent demands provided that the price is forthcoming; it should also be remembered that the radium once produced lasts practically for all time.

The British Government has a Radium Committee now sitting to search for new radium fields in the British Empire, and within the next few years we may confidently anticipate the working of new mines, which, by competition, must inevitably lead to some reduction in price.

* Abstract of a lecture given in Cambridge.

Physical Properties.

The action of radium depends on its physical properties, and these must be referred to briefly. The modern view of the atom is that it is composed of a nucleus carrying a positive charge around which the outer electrons are distributed; these electrons are in a state of constant motion and each carries a negative charge. In a neutral atom the electrons must carry a total charge equal to the charge of the nucleus. The nuclear charge of hydrogen is 1, of helium 2, up to radium with a charge of 88, and uranium with a charge of 92.

The radium atom is remarkable because it breaks up by expelling a single alpha particle, which represents the nucleus of the helium atom, which has a charge of 2; or by shooting off an electron (beta particle). The expulsion of the alpha particle lowers the nuclear charge of the atom of radium by two units, and a substance referred to as emanation is produced which is composed of a gas, niton, allied to argon; further expulsion of alpha and beta particles produces a series of radio-active elements known as radium A, B, C, D, E, and F, until ultimately lead is formed, which is non-radio-active. No protons (hydrogen nuclei) are emitted, but only helium nuclei and electrons. Radium salts are thus being continually transformed into other metals, and it has been estimated that about half the radium will be transformed in 1,700 years. The activity of radium salts is measured by the discharge of a gold-leaf electroscope. When radium is used in mass for treatment of the patient the gamma rays only are employed, the alpha and beta particles being screened off—as, for example, by means of 1 cm. of lead. Emanation collected in capillary tubes has the same effect as radium, but its activity is soon lost and ceases in a few days.

Radium, then, has three known types of radiation: alpha particles of helium, which are readily stopped by paper or the skin; beta particles or electrons, which are stopped by 2 or 3 mm. of aluminium; and gamma rays, a type of *x* ray, but four times harder than anything which can be produced by bulbs; the gamma rays are produced by the energy liberated in the expulsion of the alpha and beta particles. Radium emanation, or radon, is usually collected in capillary tubes and retains its radio-active properties for a few days only. Substances like lead-foil, or even common salt, placed in the neighbourhood of radium become coated and can be similarly used for superficial applications. Sodium chloride so treated is sometimes dissolved in water and used for injection purposes. The only radio-active substance present in the body is potassium, and the gamma rays which it emits are of greater penetrating power than those emitted by radium.

Action.

General Effects.—The rays emitted from radium exert a pronounced action on the animal body, and if the dose is sufficient may cause death. For example, if 50 or 60 mg. of the bromide are placed within 8 or 10 cm. of a mouse-cage for two days the animals die within three weeks. Guinea-pigs and rabbits after a similar exposure also die, though only after several weeks. The symptoms are loss of hair, ulcerations on the skin, especially if the rays have not been screened, nervous symptoms such as paralysis, sexual impotence, and ultimately coma. After death the central nervous system appears inflamed, the whole vascular system is dilated, the capillaries are injected, and the nerve cells in sections show signs of degeneration, though this is not necessarily a primary effect of the rays, but may be the result of capillary haemorrhages. Larger animals do not exhibit these effects in the same degree.

Local Action.—This is of great importance in surgery, because radium is largely used to destroy tissues; for general purposes emanations are to be preferred to the metal, not only on account of convenience, but of economy and safety. The various tissues in the body are not affected equally by radium; the most susceptible is the lymphatic system, including the spleen, the gonads, and, though to a smaller extent, the central nervous system. Thus the testes of small animals atrophy, the epithelium degenerates, and spermatozoa are not formed. The effect on the ovaries is shown by the production of artificial menopause. These results are all associated with inflammatory signs, including marked dilatation of the capillaries. Developing eggs and embryos are very susceptible to the rays; bacteria, on the other hand, are affected only feebly, though the mobile forms are killed more easily than others. One explanation of the selective action of radium on certain tissues is the fact that it decomposes lecithin, and it is just those tissues which are rich in lecithin that are affected most. It has also been suggested with good evidence that the degenerative changes seen after radium are due to the toxic action of this decomposed lecithin. It may almost be accepted on broad lines that the susceptibility of tissues to radium varies with their rate of growth. Tumours are certainly more susceptible than normal tissues, rapidly growing tumours more than sluggish or benign tumours, lymphosarcoma more than carcinoma. Hence it is easy to understand that tubes of emanation buried in cancerous tissue cause degeneration of the cells and reduction in the size of the growth. In the treatment of deep-seated tumours injury to the intervening superficial tissues must be minimized as far as possible by screening off the alpha and beta rays, the alpha rays in particular having the most intense superficial effect. One other point is worth noting: the gamma rays increase the activity of the autolytic ferments, thus facilitating the absorption of dead cells. Many local conditions are now treated successfully with radium—such as rodent ulcer, lupus vulgaris, and naevi.

Systemic Action.—But besides this local action for which the surgeon uses radium, it is sometimes administered internally to produce systemic effects. Minute amounts of a salt of radium taken by the mouth are very rapidly absorbed, permeate the whole body, and are excreted as emanation and radiation by the lungs, and to a smaller extent by the urine. It is more usual, however, if a general effect is required, to take emanation either by the mouth or as an inhalation. No doubt the best method of administration for systemic effects is to use a water charged with emanation. A usual amount is half a pint daily containing 1.5 to 2 millicuries per litre. After the administration of very large amounts of emanation such as may be given as an inhalation to animals, general depression, marked dyspnoea, and death have been observed; the characteristic changes after death are widespread hyperaemia and changes in the nerve cells of the central nervous system. The indications for the employment of radium for its systemic action are still ill defined. The most successful use to which it has been put is to relieve pain in fibrous arthritis, sciatica, and tabes. The explanation of this action is suggested by the frequency with which the use of this kind of treatment is followed by a general "flare-up" of the affected tissue: indeed, the drinking of radium water may start an acute attack in any part subject to chronic inflammation. The known action of radium in producing inflammatory changes even in normal tissues is exaggerated in the case of tissues which already show chronic inflammatory effects. In other words, we are dealing with a kind of shock treatment somewhat analogous to protein-shock therapy. In chronic gout the effect is often of the same nature; in the gouty the employment of radium may initiate an acute attack, though general improvement is said to follow after some weeks. In this instance the treatment is purely palliative, since the uric acid in the blood is not affected.

Radium has met with a small degree of success in certain blood diseases. It certainly influences both the bone marrow and spleen: after the prolonged use of small doses in normal people the red blood corpuscles are said to be increased as well as the leucocytes in the peripheral circulation. Large doses have the opposite effect. There is nothing remarkable in this action; other substances have a like effect. Radium also increases the coagulability of the blood to a decided degree. In the leukaemias the local application of radium over the lymphatic glands and spleen has caused temporary improvement. It is well known that both *x* rays and radium diminish the leucocytes and the size of the spleen in leukaemia, though no permanent improvement in the disease occurs with either. It is interesting to note that the serum obtained from patients recently subjected to *x* rays, when injected into lymphocytic patients, induces a reaction.

Radium has been used also in many other diseases, such as glycosuria, arterio-sclerosis, and high blood pressure, but the beneficial results sometimes accredited to the treatment are altogether unconvincing. So far as the evidence exists, then, the action of radium is due mainly to its effect on blood vessels and perhaps on lecithin. Thus on the skin the capillaries dilate, leucocytes migrate, and later extravasations of fluid occur. The same type of action may occur in any tissue in the body, and the effect is especially marked on chronically inflamed tissues. The changes noted in the central nervous system always begin in the blood vessels, and the ne[illegible] is probably secondary, though it must [illegible] the central nervous system contains a large amount of lecithin.

THE USE OF THE CAUTERY IN OPERATIONS UPON THE STOMACH.

BY

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GASTRIC operations have often to be undertaken in ill-nourished and debilitated individuals for whom the conservation of every drop of blood is a prime consideration; more than this, such operations can only be performed with

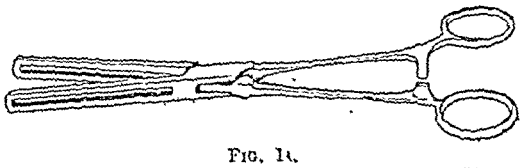

FIG. 1A.

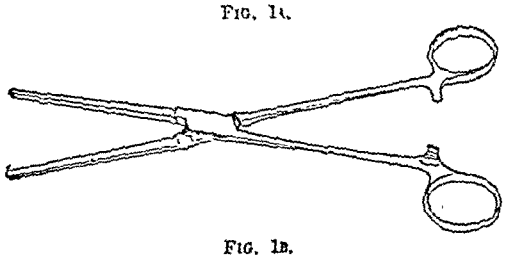

FIG. 1B.

any prospect of success when this primary condition of the preservation of the patient's blood is complied with. The ordinary haemostatic clamps will enable this to be done, but there are many occasions where it is not possible to gain sufficient room to apply the clamps and allow of easy suturing. This is nearly always the case with a high gastrectomy or a duodeno-antrectomy, and in such circumstances a considerable loss of blood is apt to take place from the cut margins of the duodenum, stomach, or jejunum. To avoid this some surgeons have used a Paquelin cautery for section of the viscera, but the method is objectionable because of the rather wide margin of burnt and damaged tissue that is left. This necessitates a considerable in-turn at the anastomotic site, and a mass of scar tissue remains.

There are two essential conditions for making the use of the cautery for this purpose satisfactory: (1) the circulation should be controlled whilst the cautery is being used, because otherwise more heat is necessary owing to the cooling action of the blood stream; (2) the heating effect should be limited to within a very few millimetres of the margin. Both these conditions are fulfilled by the use of the clamps shown in Figs. 1A and 1B. The clamps are light and narrow and yet thick. They control the circulation, and the mass of metal conducts away the heat and distributes it so that the cauterizing effect is not produced beyond the clamp itself. The clamps are used as follows:

Gastro-jejunostomy.—The jejunum and posterior wall of the stomach, having been displayed and held in apposition by two traction sutures, are fixed together by the seroserous stitch (Fig. 2). A small incision into each viscus is then made close to the suture line for the introduction of one blade of the fenestrated clamp. The blades of the clamp are closed and the visceral wall divided with the cautery through the slot. When the clamps are removed the small vessels divided in the edge of the incision will be found to have been sealed. Now and then a single isolated larger vessel will bleed, but this is easily controlled by a ligature, and the subsequent suturing is as easy and unembarrassed by haemorrhage as in the cadaver.

Billroth I.—In performing this operation the stomach just proximal to the pylorus has often been divided between strong clamps to facilitate access to the posterior aspect of the stomach or duodenum. The sites for division of the duodenum and stomach having been selected the viscera are sutured along this line in their posterior walls. Two clamps are then placed upon the stomach and the organ divided with the cautery distal to them, as in Fig. 3. The clamp on the lesser curvature is removed, and this part of the stomach closed with suture. The duodenum, after clamping, is divided in the same way and united to the remaining part of the cut lumen of the stomach. The fenestrated clamp is not necessary for this operation.

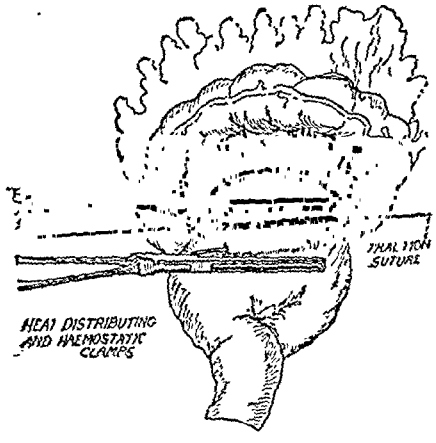

FIG. 2.

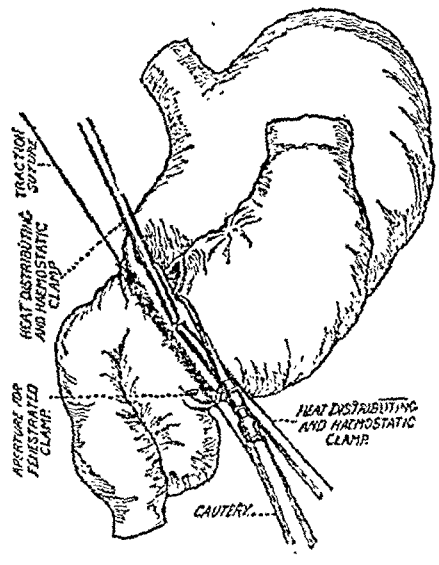

FIG. 3.

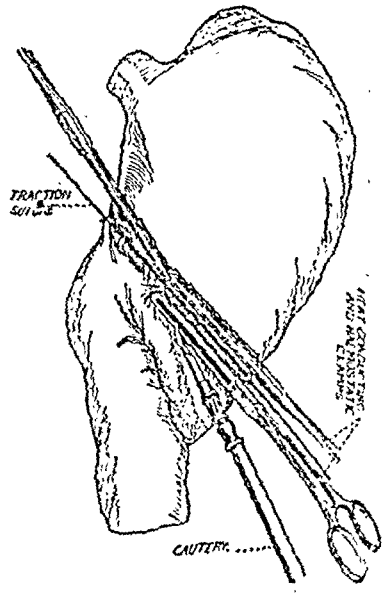

FIG. 4.

The Polya type of operation is performed in a similar way, two simple clamps being used for the stomach and a fenestrated clamp for the jejunum (Figs. 3 and 4).

The cautery technique has enabled me to undertake operations upon patients whom otherwise I should have considered unfit to stand a gastrectomy. It is, I believe, an important factor of safety in this difficult branch of surgery. It not only has this advantage, but the absence of ordinary clamps during the actual suturing makes this part of the operation easier to carry out, and thus leads to a saving of time.

PERICARDITIC PSEUDO-CIRRHOSIS OF THE LIVER, OR PICK'S DISEASE.

BY

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THE association in young people of enlarged liver with recurring ascites and chronic adherent pericardium is not a very common condition. The earliest reported case was probably the one reported by Van Deen in 1846, but a more complete description was given in 1896 by Pick, and the symptom-complex is often described as Pick's disease, or Pick's pericarditic pseudo-cirrhosis of the liver. Most modern textbooks of medicine do no more than merely mention this disease, but many monographs have been written on it, and most of the references in this paper are abstracted from a lengthy monograph by Kelly[1] printed in the *American Journal of the Medical Sciences*.

The disease presents many problems yet unsolved, notably the true cause of the condition and the relationship it bears to two other diseases—namely, Concato's disease on the one hand, and "Zuckergussleber," observed by Budd in 1852, and graphically named "sugar-iced liver" by Curschmann in 1884, on the other.

In Pick's disease chronic adherent pericardium occurs in association with chronic venous congestion of the liver, and while few adhesions are found in the peritoneum, the surface of the liver, though often opaque, does not show the dense layer of fibrous tissue common in sugar-iced liver. Rolleston,[2] in fact, declares that there is a very definite microscopic distinction in these two conditions. The fibrous tissue increase in Pick's disease is deposited under the capsule, whereas in Curschmann's disease the fibrous overgrowth is outside the capsule. The same author also states that "if peritoneal adhesions are advanced, the condition ceases to be Pick's pseudo-cirrhosis of pericarditic origin," and belongs to that of chronic universal perihepatitis associated with adherent pericardium. Kelly also has some difficulty in classifying the three conditions which clinically and pathologically seem to merge into one another, and considers that they are best grouped under the wider term of "polyserositis" or "polyrrhomenitis."

The important factor in all is the occurrence of chronic inflammatory changes in various serous surfaces, associated with a great tendency to ascites; this demands frequent tapping, although the intervals between each paracentesis may be far apart. In a case described by Rumpf the ascites was tapped 301 times, and in Osler's[3] case of a child 121 times. This factor alone is of importance in distinguishing the disease from the true multilobular cirrhosis, which rarely requires tapping more than a few occasions before death ends the disease. In other respects the etiology is different from cirrhosis chiefly in respect of the age incidence—polyserositis tending to attack young people—and in the absence of the usual irritants—for example, alcohol. Pick recognized this difference when he called his disease "pseudo-cirrhosis," but the name is not a bad one, as when the cases are seen first the diagnosis of cirrhosis is often made, especially as the adherent pericardium is sometimes difficult to diagnose during life. When the disease occurs in young people an alternative diagnosis of tuberculous peritonitis is often made, and in this connexion Rolleston and others[4] consider that the tubercle bacillus may play a part in the causation.

The pathological findings in polyserositis are fairly constant and have been reported many times. In fully developed cases changes are found in all the serous surfaces, although the changes in the pericardium and round the liver are the most obvious and most constant. Dense adhesions often calcified, are found in the pericardium, valvular disease is often present, and the heart enlarged. Adhesions occur in both pleural cavities, the right side being usually more advanced than the left. Enlarged spleen with perisplenitis and chronic peritonitis occur. The liver is usually enlarged, and shows the usual nutmeg character of chronic venous congestion. Microscopically, the liver shows irregular areas of fibrosis, but generally the amount of fibrosis is scanty and may be absent in considerable areas (Rolleston).

Most observers have been puzzled, in view of the pathological findings, to explain the recurring ascites, and many theories have been advanced. The frequent occurrence of dense adhesions in the right pleural cavity was believed by Weinberg, in 1887, to cause angulation and distortion of the inferior vena cava and hepatic veins, and Eisenmenger supported this theory in 1900. Neither Kelly nor Rolleston favours this view. Harris (1895) considered that the ascites was the result of a peculiar form of chronic peritonitis, while others believe that the heart condition is responsible. Against this latter view is the usual absence of œdema of the legs, although in some cases a transient œdema occurs at the beginning of the illness. Kelly sums up the three opinions thus: (1) That the ascites is due to changes in the liver, the result of long-standing congestion. (2) That the ascites is due primarily to the chronic peritonitis. (3) That the ascites is due to the combined action of these factors.

The actual exciting cause of the condition is still obscure. In many cases there is no history of antecedent illness. In others there is some indication of an acute onset attacking one serous membrane—for example, the disease may follow a definite attack of pleurisy or an attack of pericarditis. It has occasionally followed certain acute and infectious illnesses, notably rheumatism, syphilis, typhoid fever, and malaria. Both Kelly and Rolleston lay great stress on antecedent rheumatism. Others believe that the tubercle bacillus is an important factor even in the absence of definite evidence of tuberculosis, and some authors actually state that all cases of chronic adhesive pericarditis are tuberculous in nature. Certainly it is a fact that some of these cases ultimately die of tuberculosis. Picchini (1901) distinguished four groups of cases.

1. Cases where the origin of the disease can be determined—that is, the first serous membrane affected.
2. Cases where the origin may be determined, but in which the first examination of the patient reveals some affection already of several serous membranes, although they manifest no clinical signs.
3. Cases where the history reveals that from the beginning several serous membranes have been affected.
4. Cases where it cannot be determined whether the disease began with one or more serous membranes.

Mention has already been made of the prevalence of the disease in youth, and the following figures from Kelly's paper demonstrate this fully. Of 39 cases, 21 occurred in males, 18 in females: 3 were under 10 years of age, 13 were between 11 and 20 years, 3 were between 21 and 30 years, 5 were between 31 and 40 years, 11 were between 41 and 50 years, and 4 were between 51 and 54 years.

The following case exhibits most of the clinical features common to such cases—namely, the early age incidence, the absence of antecedent disease, the gradual onset, the occurrence of ascites and enlarged liver, in association with evidence of cardiac disease, presumably adherent pericardium.

A boy, aged 14½ years, was admitted to the North Staffordshire Royal Infirmary on June 26th, 1928, because of ascites and throbbing of the neck.

History.—In June, 1927, he began to notice an increasing size of the abdomen, which caused him to have some slight shortness of breath on exertion, so that he no longer could challenge boys to run races or play football with vigour. Closer questioning elicited the fact that pulsation in the neck on the right side had been noticed by his parents for the previous two years, but no importance was placed by them on this observation as they looked upon him as a perfectly fit boy who had played football for the school for two seasons. He left school at Christmas, 1927, beginning work as an apprentice engineer in January, 1928, and working steadily until June 5th. On this date various apprentices were referred to the factory surgeon for examination as to fitness, when this boy was rejected and advised to secure medical advice. For the purpose of this examination he cycled a distance of three miles, and on arrival was obviously short of breath. He then consulted Dr. A. Gilchrist of Burslem, who diagnosed "Concato's disease" and referred him to the Royal Infirmary.

Previous Illnesses.—He was born at full time, was bottle-fed, and was not looked upon as a delicate child. When 2 months old he had a slight attack of bronchitis or broncho-pneumonia lasting two weeks, from which he made a full recovery and had no complications. At the age of 7 years he developed measles, and again there were no ill effects. He has suffered from occasional colds in the head and slight rheumatic pains in the wrists in winter, but there is no history of tonsillitis, chorea, or acute rheumatism, and no record of pleurisy. At the age of 12 he slipped off a 4-foot wall to the ground and landed with his knee pressed against his chest. He was at once short of breath, and had pains across the chest which lasted three hours, after which he felt quite well and returned to school the next day. Since measles at the age of 7 he has not missed school attendance.

The family history is not important, the parents being alive and healthy, three brothers alive all healthy, and no deaths in the family have occurred. There is no tuberculous history on either side.

Symptoms on Admission.—Fullness of the abdomen and throbbing of the neck were the obvious symptoms. Occasional pain across the chest and in the left shoulder and slight indigestion were further admitted. No cough was complained of, and no record could be [illegible] of swelling of the legs.

Condition [illegible]—*His height* was 5 ft. 1¼ in., *his* weight 7 [illegible] ot look a robust boy, the complexion being somewhat sallow, but there was no cyanosis and no obvious shortness of breath. Undue venous pulsation was noticed in the neck, especially on the right side. No clubbing of the finger-nails was present and no oedema of the legs. The abdomen was distended by free fluid, the circumference at the umbilicus being 32 inches. The free edge of the liver could be felt three inches below the costal margin, the liver itself feeling smooth but firm. Scanty pubic hair was present, but there was no hair in the axillae. A few small glands were present in the axillae. The teeth were good, the tonsils not enlarged, tongue slightly coated. On July 8th paracentesis was performed, 96 ounces of a clear straw-coloured fluid being withdrawn. Culture was negative, and very few lymphocytes were found on staining. Injection into a guinea-pig had no ill effects on the latter. After withdrawal the lower pole of the spleen was just palpable. No enlarged glands or tuberculous masses could be felt in the abdomen. The chest was hyper-resonant in the upper lobes. The lungs expanded freely. The breath sounds throughout were harsh vesicular in type. No adventitious sounds were heard except a fine friction over the splenic area. The chest was *x*-rayed on June 26th by Dr. J. Bromley of Stoke-on-Trent, who reported as follows:

"Both diaphragms are raised, doubtless due to the amount of free fluid in the abdomen. There is no marked increase in the extent of the hilum shadow and no impaired air entry into the chest." The urine was free from albumin and sugar, and the urea concentration test was normal. Blood urea did not exceed 13.5 mg. per 100 c.cm. The Wassermann reaction of the blood was negative. A fractional test meal revealed no abnormal features. The levulose tolerance test increased the amount of sugar in the blood from 0.12 to 0.22 per cent., and no sugar was passed in the urine. The blood count on June 26th showed red blood cells 3,700,000, white blood cells 11,500, haemoglobin 75 per cent. Differential count: Polymorphs 80 per cent., lymphocytes 18 per cent., eosinophils 1 per cent. No abnormal cells were found.

Condition of the Heart.—A distinct fullness was observed over the precordium. The apex pulsation was scarcely visible, and there was no indrawing of the interspaces. No thrill was felt on palpation, and the positions of the heart borders and of the apex beat itself were difficult to define by percussion, owing to the hyper-resonant note of the lungs. Careful percussion, however, seemed to locate the apex beat in the fifth interspace about half an inch outside the nipple line. There was a definite epigastric pulsation visible. Auscultation revealed a curious high-pitched musical squeak, which was audible at one time and absent at another. The character of this bruit was very peculiar. On certain occasions it was heard all over the precordium and over the left scapula; at other times it was absent behind. Sometimes it was more marked at rest, sometimes only after exercise. It was at times loudest during deep expiration, and occasionally it would disappear altogether for long spells, during which intervals no valvular disease was apparent. The timing of this sound also varied. Usually it coincided with the closure of the aortic valves, at other times it occurred during ventricular systole. It seemed to have its origin outside the heart itself, and probably depended upon some adhesion between the pericardium and neighbouring structures. The systolic blood pressure was consistently low, the average being 112 mm. of mercury. The pulse rate averaged 90 per minute, and the exercise tolerance test was normal. The electrocardiogram taken both before and after paracentesis showed the constant inversion of T-wave in leads ii and iii. No particular ventricular preponderance was present.

Progress.—After paracentesis on July 8th the boy's health seemed to suffer and a progressive slight loss of weight occurred for a week or two afterwards. With iodide of iron internally and iodoform inunction to the abdomen his health began to improve and he gained weight—some of this increase being due no doubt to a slight return of the ascites. The chest was again *x*-rayed by Dr. J. Bromley on August 10th, his report being: "There appeared to be some enlargement of the ventricular shadow to the right, while in the left hilum a distinct bulge is seen, suggesting an enlarged clump of glands. Both diaphragms moved well at this examination." A further blood count was performed on August 22nd, which showed the improvement which had occurred—namely: red blood cells 5,500,000, white blood cells 16,500, haemoglobin 85 per cent. Differential count: Polymorphs 78 per cent., transitionals and mononuclears 4 per cent., lymphocytes 16 per cent., eosinophils 1 per cent., basophils 1 per cent. No abnormal red cells were found.

He was discharged on September 1st in good condition, and when re-examined on November 4th, 1928, he looked plump and well, but ascites had largely accumulated again and a very slight oedema of the legs was found. His weight was 8 st. 3 lb., and there was no apparent shortness of breath or distress on exertion. Further paracentesis will shortly be necessary.

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INOPERABLE CARCINOMA OF THE BREAST TREATED WITH RADIUM.

BY

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In considering the radium treatment of carcinoma of the breast it must be remembered that both external applicators and needles are employed. The apparatus must be screened in such fashion as to cut off the beta rays, which are harmful to the tissues, and permit the gamma radiation to pass; 2 mm. of lead is recommended for external plaques when prolonged exposures are contemplated. A compound known as "Columbia wax" is most useful when treating a large surface area. For slow-growing tumours needles with walls of 0.5 mm. of platinum are recommended; these vary in active length from 1 to 5 cm., and contain 0.5 mg. of radium element to each centimetre. More recently tiny needles known as "seeds" have been found to be useful in some cases. The most convenient seed is one containing 2 millicuries of radon and screened through 0.5 mm. of platinum or gold. In cases of encephaloid character, where the growth is extremely rapid and very vascular, more powerful needles, screened through 1 mm. of silver, are often of great value.

REVIEW OF CASES.

An attempt has been made to ascertain the fate of the 633 patients suffering from breast carcinoma who have been treated at the Radium Institute during the last ten years. A study of these cases has not only made it possible to form an opinion as to the value of radium therapy in hopeless cases, but from the information obtained certain principles can be formulated for the treatment of patients in whom the disease is less advanced. In the series under review, which does not include patients who received prophylactic treatment, it was found that in every case the disease had extended to tissues outside the breast itself.

TABLE I.—*Showing Type of Cases and Site of Metastases.*

	Total No. of Cases.	Primary Inoperable Cases.	Recurrent Cases.	Axillary Glands.	Supraclavicular Glands	Chest Wall.	Ulceration.	Oedema of Arm.
1918	82	16	66	43	44	25	4	11
1919	88	21	67	39	45	21	4	10
1920	81	29	52	31	30	33	10	19
1921	69	16	53	31	29	32	11	12
1922	41	6	35	19	20	15	6	5
1923	44	10	34	23	11	11	12	5
1924	39	12	27	23	16	13	3	10
1925	66	15	51	36	34	25	11	10
1926	58	21	37	24	27	21	8	11
1927	65	18	47	31	34	25	14	12
	633	164	469	300	270	225	85	105

TABLE II.—*Showing Prolongation of Life from Date of First Treatment.*

	No. of Cases.	Alive at 10 Years.	Alive at 5 Years.	Alive at 3 Years.	Total Surviving 3 Years or More.	Improved Markedly.	Not Improved.
1918	82	5	3	10	18	37	16
1919	88	—	13	12	25	31	21
1920	81	—	10	5	15	23	7
1921	69	—	13	7	20	32	9
1922	41	—	3	6	9	18	7
1923	44	—	4	2	6	16	8
1924	39	—	—	5	5	22	10
1925	65	—	—	14	14	19	12
	510	5	46	61	112	198	90

Summary of Results.—Of 510 cases (1918–25), 112 were alive at the end of three years=22 per cent. Of 405 cases (1918–23), 51 were alive at the end of five years=12.6 per cent. Of 82 cases (1918), 5 were alive at the end of ten years=6.1 per cent. All those patients on whom a recent report has not been received have been regarded as having died at the date of the last report.

CONCLUSIONS.

Not only are the results given above very encouraging, but a large number of patients (about 40 per cent.) showed marked temporary benefit, even though they succumbed within three years of treatment. Most of the cases were too advanced to offer any hope of cure, but much was done to relieve suffering and control the progress of the disease. Distressing symptoms were often alleviated, and in many cases life was prolonged for a considerable number of years. Ulcerations were healed or prevented, thereby relieving the patient of a good deal of pain. Cutaneous nodules disappeared, while large swellings became smaller and less fixed, often regressing to such an extent that only a residual thickening could be felt. Relief was often obtained even in cases where there was marked lymphatic obstruction with oedema of the arm, the limb becoming less swollen and more movable.

It must be remembered that the above series represents pioneer work in the radium treatment of breast cancer. A review of cases treated during the past three years promises to show more favourable results. This is due to the fact that patients are being sent for treatment at a less advanced stage, and also to the advances made in technique during the last three years.

SOME GENERAL CONSIDERATIONS IN THE TREATMENT OF CARCINOMA OF THE BREAST.

Cases may be classified into three groups: early operable, late operable, and inoperable.

Early Operable.—Although the logical conclusion is that radium therapy is competent by itself to deal with very early cases of carcinoma of the breast, it has yet to be shown that radium treatment alone can give as good results as operation. When the growth is still confined to the breast, and there are no palpable axillary glands, operation has given good results. Statistics published by the Ministry of Health show that operation will keep 75 per cent. alive for ten years. In this class of case radium treatment must not be regarded as a substitute for operation at present, but much may be accomplished by using radium as an adjunct to surgery. Striking results have been obtained by Mr. Geoffrey Keynes in cases of carcinoma which are technically operable; but at present his cases are too recent to justify any positive deductions, and it remains to be seen whether the ultimate results of the treatment are as good as those of surgery.

Late Operable.—This is a group of cases which requires careful consideration. The disease is no longer confined to the breast itself, but is still considered technically operable by all but the most conservative surgeons. Of the 633 patients treated at the Radium Institute between 1918 and 1923 74 per cent. were recurrent cases following amputation of the breast. Of these cases 290 (46 per cent.) had palpable supraclavicular glands. The fact that a large proportion of these metastases became evident within six months from the date of operation shows that a much more conservative judgement is required in deciding whether a breast cancer is operable. This is a most important point. Of these "late operable" patients few are cured, and some are made worse by operation. An area containing cancer cells is opened up by unsuccessful surgery, and this acts as a stimulus to the growth. When a recurrence appears the axilla soon becomes filled with a fixed mass of disease. There is much scarring and fibrous tissue formation, the blood supply is poor, and there is little or no surrounding healthy tissue. Subsequent radium treatment is undertaken at a great disadvantage, and with less chance of success than if radium had been employed without any previous operation.

Inoperable.—Inoperable and recurrent cases, in which a radical operation is out of the question, have been considered above. This class of case is often greatly benefited by radium treatment. Some surgeons remove as much of the growth as possible, and then pack the wound with radium. Experience has shown that this is frequently a disastrous procedure. Metastases in the supraclavicular region should be treated with radium alone, since the results following excision do not encourage operative intervention.

The Primary Growth.

The treatment should be such as to cause the growth to disappear with little or no tissue necrosis. The amount of radium required, the intensity of the dose, the filtration, and the time of exposure vary to some extent with the nature and extent of the neoplasm. Scirrhous growths require needles of low content heavily screened and left *in situ* for a comparatively long time, about a week. When an ulcer exists the needles should be introduced into the healthy tissue in the immediate vicinity of the growth. Isolated subcutaneous nodules are best treated with platinum or gold seeds containing radon. Retrogression usually occurs much more slowly in schirrous growths than in highly cellular tumours. The reason for this probably lies in the comparative avascularity of schirrous lesions. Large doses of radium, especially if lightly screened, may cause necrosis and sloughing. Encephaloid tumours, apart from being more cellular, are more vascular. Rapidly growing tumours are more susceptible to irradiation, and respond more dramatically than the schirrous growths. They require a large dose for a comparatively short time, three or four days, and the needles need not be so heavily screened. Severe systemic disturbance often occurs in the course of the treatment of such cases, owing probably to the absorption of products of disintegration, and a very remarkable degree of shrinkage is often seen at the end of a fortnight or three weeks after irradiation. The treatment of the primary growth should be supplemented by the application of an external plaque, but it is inadvisable to employ this when the needles are *in situ*.

The Associated Lymphatic Areas.

Just as in the surgical treatment of carcinoma of the breast it is not enough to do a local amputation, so in the radium treatment it is insufficient to treat only the primary growth, even if there are no palpable glands. The treatment should be directed on the same lines, by a thorough irradiation of the chest, concentrating on the associated lymphatic areas, and those areas in which metastases and recurrences are most likely to appear. (See Table I.) Mr. Geoffrey Keynes in his technique irradiates these areas by inserting radium needles of low content in the axilla, above and below the clavicle, and at the sternal ends of the first three or four intercostal spaces. Mr. Sampson Handley treats these areas by burying very powerful needles in similar situations for much shorter periods, and if the case is operable he performs a complete amputation of the breast at the same time. Mr. Handley believes that breast cancer when it comes to operation is already an intrathoracic disease. Although the needles inserted in these areas have prevented metastases occurring in Mr. Keynes's series the rational treatment appears to be to treat the chest more thoroughly. The area to be irradiated must be a wide one, and is best treated by the external application of large quantities of radium over a comparatively long period, concentrating on these particular areas. Apart

from the fact that a more thorough irradiation of the mediastinum is obtained there is no risk of necrosis of cartilage or bone, which may occur even with needles of low content buried in the near vicinity of these tissues. Heavy filtration is necessary—2 mm. of lead or its equivalent should be employed. Large doses must be given at a minimum distance of 15 mm. from the skin surface.

External application of radium has been discouraged as unsuccessful mainly by those who have not had sufficient quantities at their disposal, for inadequate doses of radium have been responsible for many so-called failures. External irradiation, however, has a very definite place in radium therapy, although it must be remembered that the skin is very sensitive and is easily damaged by rays which are insufficiently screened. In this country Mr. Stanford Cade has shown that the skin can be subjected to enormous doses in the "collar treatment" of secondary cervical glands by using heavily screened radium applied to a mould of "Columbia wax." The superficial layers of the skin peel off, but the skin heals rapidly, leaving a soft pigmented scarred surface, but no contraction. This effect on the skin must be caused by the continuous gamma radiation, which has this effect only when employed for long periods.

Pre- and Post-operative Radium Therapy.

This is still a matter for a great deal of investigation. It has been impossible to form any opinion as to its value from the study of cases treated at the Radium Institute, but there are reasons for supposing that many recurrences might be prevented if pre- and post-operative irradiation were more often employed. Statistics have been published to show that in patients who have had pre- and post-operative irradiation the outlook is better than in cases treated by surgical means alone. It has been erroneously stated that pre-operative radium treatment causes delay in healing, and affects the tissues in such a way as to make operation more difficult. Microscopical sections of irradiated tumours tend to show that it is unnecessary to postpone subsequent operation for more than a fortnight.

There is no doubt that recurrences appearing after prophylactic irradiation are very refractory to further irradiation. Similarly it is found that a second treatment of any neoplasm is less effective than the primary treatment. For this reason the first treatment should always be as thorough and vigorous as possible. If a second treatment is necessary the dose must be relatively smaller.

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THE EFFECTS OF ANAESTHESIA, OPERATION, AND CERTAIN OTHER FACTORS ON GLYCAEMIA.

A PRELIMINARY INVESTIGATION.

BY

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THE administration of glucose is an accepted procedure in the treatment of post-operative shock. The value of this treatment is now questioned, since it has been reported that hyperglycaemia occurs after operation. This investigation was undertaken to determine the effect upon the blood sugar of a surgical operation carried out under routine conditions, and to ascertain the factors which influenced any changes observed. The action of the administration of rectal and subcutaneous glucose salines was studied.

Investigation Carried Out.

Observations were made on patients who had been admitted to the wards and who all had the routine preparation, except in those cases admitted as emergencies for immediate operation. The last meal was on the evening before operation, but the patient received a cup of tea early the next morning. Purging of the patient was restricted to a small dose of castor oil on the day previous to, and an enema on, the morning of operation.

In most cases the blood sugar was estimated before operation, and on many occasions after the commencement of the operation. In several cases the blood sugar was estimated again some days after operation under conditions similar to those which obtained on the day of operation, but, of course, without the mental strain which operation entails. In addition to the investigation of the blood sugar, patients have had a record of the pulse rate taken at corresponding intervals of time, and these readings have been graphed along with the blood sugar curve. In all cases we have noted: (1) The history of the illness, attention being especially directed to any points which might be suggestive of sepsis or of diabetes. (2) The general condition of the patient, especially any degree of shock or constitutional disturbance. (3) The nature and duration of the anaesthetic, together with the time and dose of any drugs administered.

Method.

Samples of venous blood were taken from the patients at various times. The estimations of the blood sugar were made by means of the Benedict picric method,[1] which allows of some delay between the obtaining of the sample and the carrying out of the estimation. The estimations which involved the comparison of fine degrees of colour were undertaken by one of us (E. M.) to avoid possible individual variation. Seventy-seven cases have been investigated and have been analysed.

Pre-operative Level of the Blood Sugar.

The average level of the blood sugar in a fasting healthy adult when estimated by this method is 120 mg. per cent.[2] In all our cases we examined the blood sugar before operation to enable us to establish a standard for each patient, and we found that the pre-operative level of the blood sugar varied considerably. The highest level which we have observed has been 227 mg. per cent., while the lowest level in our series was 84 mg. per cent.; the average reading obtained from the 73 cases analysed was found to be 124.3 mg. per cent. According to Pierce and Scott,[3] who used MacLean's method of blood sugar estimation, the normal level of the blood sugar in a healthy adult lies between 95 and 99 mg. per cent. In view of these figures and the figures of Levi[4] and Miss Potter[5] (to which reference will subsequently be made), it seems to be a fair conclusion that there is a phase of hyperglycaemia before operation. An analysis of our cases suggests that the condition from which the patient was suffering had a considerable influence upon the level of the blood sugar.

We made a special analysis of those cases where the pre-operative level of the blood sugar was above the recognized maximum in normal people (160 mg. per cent.).[6] We found that out of the 57 cases operated on under general anaesthesia 13 were above this high level of glycaemia, and averaged 184 mg. per cent. Of these 13 cases 9 were admitted as emergency cases—3 being duodenal perforations and 4 acute appendicitis.

The effect of various conditions is also borne out by Table I. We conclude that three factors are demonstrated to bear influence on the glycaemia: (1) acute infection, (2) surgical shock, (3) peritoneal irritation. Nervousness is a factor in pre-operative hyperglycaemia, since such

TABLE I.—*Pre-operative Blood Sugar in Various Conditions.*

Condition.	Cases.	Average Pre-operative Blood Sugar.
		mg. per cent.
Hernia and hydrocele	9	118.1
Acute appendicitis localized—that is, acute infection	12	137.0
Shock: fractured femur (2), concussion, strangulated hernia	4	140.5
General peritoneal infection: perforated duodenal ulcer (4), appendicitis	5	185.4
Various cases in which there was a well-marked focus of chronic sepsis	7	114.1
Various cases in which no obvious sepsis was noted	17	122.3

operations as those for hernia and hydrocele, which we have found to be unassociated with pre-operative apprehension by the patients, have not a high blood sugar content.

Variation in Blood Sugar during Operation under General Anaesthesia.

Ethyl chloride, chloroform, and ether were the anaesthetics employed during routine operations. In only a few of our cases did the patients have an all-chloroform or all-ether anaesthesia. We have considered all these cases together because the reaction observed does not appear to depend on which of the above drugs was used. Fifty-seven cases were given a general anaesthetic, and had blood sugar curves prepared which show the relationship between the pre- and post-operative levels. Of these, 48 showed a rise in the blood sugar content, while 9 showed a fall. Over the whole of this series of cases the average rise in the blood sugar content as compared with the pre-operative

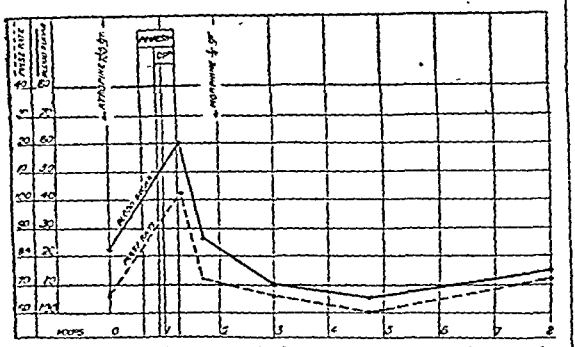

FIG. 1.—Graph illustrating blood sugar curve in patient operated on under general anaesthesia. Note similarity between pulse rate and blood sugar curves.

level was 44.96 mg. per cent., the greatest increase observed being 165 mg. per cent. and the greatest decrease 39 mg. per cent.

The observations showed that in the majority of the cases the reading of the blood sugar at the end of the operation and the administration of the anaesthetic was the highest obtained. The subsequent estimations approximated more closely to the pre-operative level. In no case, however, did we find any evidence of a period of hypoglycaemia, although we made systematic observations up to eight hours after the operation, and in some cases over a longer period—up to thirty-six hours. Investigations after eight hours, however, were considered to be vitiated by the number of complicating factors—for example, food, sedatives, restlessness, etc. Fig. 1 illustrates the type of curve obtained.

Post-operative Glycaemia.

In order to enable us to form an opinion of the post-operative variations of the blood sugar content, we com-

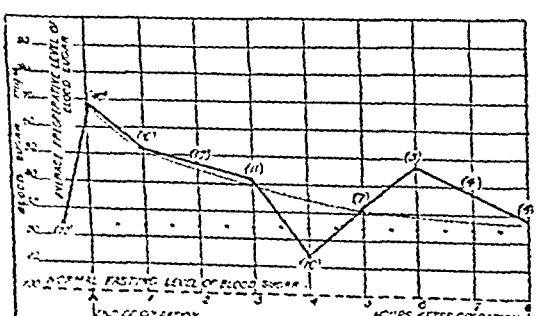

FIG. 2.—Composite graph. Points represent averages of readings taken each hour. Dotted line indicates probable course of blood sugar.—cf. Fig. 1.

puted the accompanying composite graph (Fig. 2), since it is apparent that specimens of blood cannot be withdrawn from patients after surgical operations with the frequency and regularity which strict scientific investigation of this problem requires. The points on the graph represent the average of the readings taken at certain periods after operation. Thus, in 16 cases the average reading of the blood sugar one hour after operation was 28 mg. over the pre-operative level, while in 17 cases the average reading two hours after operation was 23 mg. over this level. For the first three hours of the post-operative period the points gave a regular curve, but thereafter the figures showed some variation. We believe this to be due to (1) the fewer readings on which the graph at these points was based, (2) the increasing number of factors which altered the condition of the patient. We suggest, however, that the dotted curve indicates the course which the blood sugar will follow after an operation under general anaesthesia in the average case.

Relationship between Duration of Anaesthesia and Hyperglycaemia.

We have found evidence that there is a relationship between the absolute rise of the blood sugar and the duration of the anaesthesia. Table II shows the figures

TABLE II.—*Relationship of Duration of Anaesthesia to the Rise of the Blood Sugar Content.*

Duration of Anaesthesia.	Rise in Blood Sugar (mg. %).	No. of Cases.
Up to 30 minutes	27	12
30–45 minutes	41	23
45–60 ,, ...	62	13
60–75 ,, ...	58	10
90 minutes	(38)	(1)
110 ,, ...	(47)	(1)

obtained from a series of 58 of our cases, and suggests that the more prolonged the anaesthesia the greater will be the increase of the post-operative over the pre-operative reading. Twelve cases have been investigated with a view to

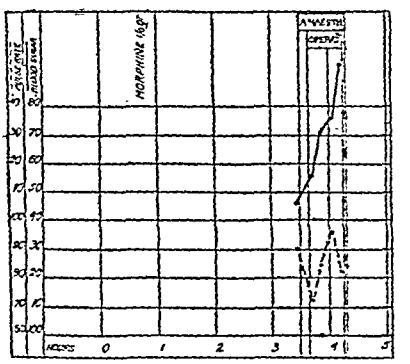

FIG. 3.—Graph illustrating progressive rise in blood sugar during anaesthesia and operation.

ascertaining the changes which occur during the operation, and have nearly all shown a progressive rise in the blood sugar content. It has been noted in one or two cases where the anaesthetic had been administered for some time before the actual operation started that the rise in this period was very similar to the rise in the second period during which the operation was being actually performed. One typical graph to illustrate these points is given (Fig. 3). We did not find that the post-operative duration of the hyperglycaemia depended on the duration of the anaesthesia.

The Duration of the Hyperglycaemia.—The question of the severity of the operation and the duration of the anaesthesia with their relation to the blood sugar curve was brought specially into prominence by the statement of Levi[1] that the duration of the period of hyperglycaemia depends on these factors. We cannot confirm this statement. In our series of cases we found eight cases in which the hyperglycaemia was sustained for a longer period than our composite graph showed to be normal, but we have failed to find any common causal factor. The operations included severe surgical intervention such as amputation

of the breast and gastro-enterostomy, and also simpler operations like appendicectomy and herniotomy. We further investigated the question of the absolute rise in the glycaemia in association with the *severity* of the operation. We were unable to find any difference in the average levels of the hyperglycaemia in the cases of the more severe operations and those less severe, always provided that the operations were of approximately the same average duration.

Hyperglycaemia after Abdominal Operations.—We found that there was a greater rise in the blood sugar content after those operations where the peritoneum had been irritated than in those cases in which the peritoneum had not. Table III shows this fact.

TABLE III.—*Relationship between the Degree of Hyperglycaemia and the Type of Operation.*

Type of Operation.	Average Duration. (minutes).	Rise in Blood Sugar (mg. %).	No. of Cases.
Abdominal...	46	50.3	38
Extra-abdominal	54	39.35	17

Pulse Rate and Glycaemia.—We have been struck by the fact that the blood sugar curve and the pulse rate curve are very similar. This has held true not only for what we have come to regard as normal curves, but even where the curves were atypical. (See Figs. 1 and 4.)

Fall in Blood Sugar During Operation.—In 9 cases (15.8 per cent.) of the 57 cases analysed we observed a fall in the blood sugar content during operation instead of the usual rise. We believe that such a fall is associated in most cases with a high pre-operative level in the blood sugar content. It is to be noted that 6 of the 9 patients showing a fall in the blood sugar after operation are in the group of 13 cases with high pre-operative blood sugar levels (over 160) to which reference has already been made.

Cases Operated on with Spinal Anaesthesia.

Observations were made on 6 cases in which spinal anaesthesia was employed. We found the changes in the blood sugar content were not in conformity with those in which the patient had a general anaesthesia for operations of the same duration of time. The method of producing spinal anaesthesia was as follows: One hour before operation preliminary narcosis in the form of "twilight sleep" was induced by giving 1/4 grain of morphine and 1/100 grain of hyoscine. In one case where there was much excitement a further dose of 1/6 grain of morphine and 1/200 grain of hyoscine was given a quarter of an hour before operation. The spinal injection consisted of tropacocaine 0.075 gram in 3 cases, stovaine 1 c.cm. of 10 per cent. solution in 3 cases.

TABLE IV.—*Blood Sugar Changes in Cases of Spinal Anaesthesia.*

No. of Case and Nature.	Blood Sugar before Narcotic Injection.	Blood Sugar after Narcotic before Injection of Spinal Anaesthetic.	Blood Sugar after Spinal Anaesthetic before Operation.	Blood Sugar after Operation.	Subsequent Blood Sugar Estimation.	Rise of Blood Sugar during Operation only.
						mg.
2. Excision of rectum*	170	120	135	175	—	40
21. Inguinal hernia ...	134	133	129	146	144 1 hr. later	17
46. Hernia†	92	—	87	129	127 2 hrs. later 111 3 hrs. later	40
56. Amputation of leg	85	96	—	80	110 4 hrs. later	−16
58. Diabetic gangrene amputation‡	83	103	—	116	—	13
59. Tuberculous knee; amputation through thigh	100	119	—	108	140 3 hrs. later	−11

* Patient shocked; given subcutaneous salines; was very nervous before operation.

† This patient was given a double dose of narcotics.

‡ Patient received post-operative treatment with glucose and insulin.

The degree of glycaemia was estimated just before the administration of the narcotic and at varying periods thereafter. Table IV shows the results obtained. From the readings it will be observed that there was a rise of the blood sugar during the operation in 4 cases and a fall in 2 cases—the average being a rise of 13.8 mg. per cent. This figure is very considerably lower than the corresponding one for operations performed under general anaesthesia. (Fig. 4.)

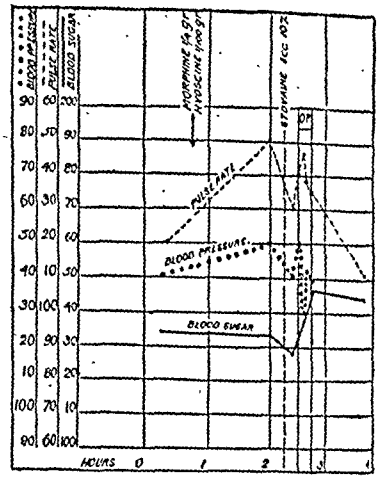

FIG. 4.—Graph illustrating effects of spinal anaesthesia.

Effect of Morphine and Hyoscine given before Operation.

The effect of hyoscine and morphine is also shown in Table IV. In 5 of these cases there was an average rise of 9 mg. per cent. In one case (No. 2) there was a distinct fall in the blood sugar, but we noted in this case that a very considerable degree of nervousness was allayed by the administration of the narcotic. We have also investigated the effect of morphine (1/6 grain) given before a general anaesthetic, and we have found an average rise of 19 mg. per cent. within one and a half hours. We would, however, point out that this small dose of morphine is not sufficient to control the excitement which is initially present and which is increased by the taking of the patient to the theatre, where the second sample has invariably been taken. The action of morphine is twofold; it is generally accepted that it raises the blood sugar, but we believe that in so far as it allays nervousness it may cause a lowering of the blood sugar.

Administration of Glucose after Operation.

In our series of cases we have had 6 patients in whom the post-operative shock was sufficiently severe to call for the administration of a subcutaneous glucose saline, which has been our previous routine treatment, 500 to 900 c.cm. of 6 per cent. glucose being given. We have been interested to note that the blood sugar, just before the administration of this glucose, in 2 cases was over 200 mg. per cent., while the average level was 174 mg. per cent. in the 6 cases. In another case glucose was given subcutaneously during operation, and at the end of the operation the blood sugar stood at 224 mg. per cent., but the patient was so shocked that an immediate blood transfusion was ordered. There is no doubt that glucose administered subcutaneously causes a rise in the blood sugar content; the average blood sugar content rose in our cases within one and a half hours by 68 mg. per cent.

Glucose enemata, which were given both as a routine measure in cases where stomach operations had been carried out and as the treatment for minor degrees of shock, gave much more variable results. We found that in a series of 7 cases the blood sugar level before giving the first rectal glucose was high (average 153 mg. per cent.). The readings after administration of enemata varied: in 3 cases there was a distinct rise, in 4 cases a distinct fall, and in one case little change. The highest increase observed was 33 mg., while the greatest decrease noted was 49 mg.

Levi[4] has reported 10 cases in which he has investigated the blood sugar after operation. In all of these cases there has been noted a rise in the level of the sugar content,

and he has found that the maximum rise occurs in the first reading taken after the operation, after which there is a gradual fall. Some of his samples were taken as long as forty-eight or seventy-two hours after the operation. In this series of cases the average pre-operative level was 133.4 mg. per cent., and the average rise in the reading, in the seven cases investigated, within half an hour of the completion of the operation was 29 mg. per cent.

Levi states that the duration of the rise depended on the duration of the anaesthetic and the severity of the operation. In our opinion there is not sufficient regard paid by this investigator to the effect of post-operative treatment as affecting the figures on which he bases these conclusions, and our own observations do not confirm them.

D. Potter,[5] working in the gynaecological wards in Edinburgh Royal Infirmary on the chemical changes in the blood following on operation, showed that there was a distinct rise in the blood sugar content. The average initial reading which she obtained was 125.3 mg. per cent. (but it should be noted that these cases all received a small dose of morphine before the blood sample was taken), while the average rise in the sugar content was 35.3 mg. per cent. D. Potter comes to the conclusion that the hyperglycaemia is more dependent on the ether administered than on the excitement or asphyxia due to the operation.

Mackay[7] has recently made two communications on this subject. He groups his cases according to whether the anaesthesia was of thirty or sixty minutes' minimum duration. The average figures which he obtained are quoted, since they show close similarity to our own results. In twenty cases with shorter anaesthesia the average pre-operative reading was 106 mg. per cent., and the average rise at the end of the operation 43 mg. per cent. In the group with longer anaesthesia the corresponding figures were 112 mg. and 104 mg. per cent.

Clinical Application.

We desire to draw attention to two indications in the treatment of cases which result from our investigations:

1. In the preparation of a patient for operation nervousness should be allayed. We have not sufficient data on which to found definite rules, but sedatives seem to be indicated.

2. The post-operative phase is accompanied by a raised blood sugar content, and therefore there is no necessity for the administration of glucose.

Conclusions.

1. Four factors at least predispose to a high pre-operative level of the blood sugar—namely, acute infection, peritoneal irritation, shock, and nervousness.

2. Following operations under general anaesthesia there is usually an increase in the blood sugar content, but there is never a hypoglycaemia.

3. The maximum rise is seen immediately after operation, and from this point there is a fall to the pre-operative level, which is approximately reached in eight hours.

4. There is a close relationship between the absolute rise of the blood sugar and the duration of the anaesthesia.

5. In cases of post-operative shock the blood sugar content is high.

6. In spinal anaesthesia there is evidence of only a small rise in the blood sugar content.

7. Absorption from rectal glucose saline does not lead to any constant change in the blood sugar readings.

We have to acknowledge our indebtedness to Professor John Fraser and Mr. George Chene for permission to carry out this investigation of their cases, and to Professor Murray Lyon, in whose laboratory the chemical estimations were made. The expenses for this study were borne by a grant from the Moray Fund.

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PRESSURE NEURITIS OF THE DEEP PALMAR BRANCH OF THE ULNAR NERVE.

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CEREBRAL ANGIOSPASM.

I RECENTLY had under my care an interesting case of fugitive paralysis of the arm, presumably due to spasm of a cerebral arteriole. Since I find very little on the subject in the textbooks, or in contemporary medical literature, I venture to place it on record.

My patient was a medical practitioner, aged 71, of fairly good general health and careful dietetic habits. There was no history of syphilis. The blood pressure before the attack was 170 mm. maximum, 90 mm. minimum. At the termination of a two months' holiday in Europe, during which he may have eaten a little more than his usual restricted dietary, he was gathering figs with the head thrown back at an acute angle. He suddenly became aware that he had lost all movement in the left arm from the shoulder down to the fingers. He said he felt a little "funny" on the right side of his head when this happened, but neither the tongue nor the corresponding leg was affected. Movement began to return in the hand in the course of a quarter of an hour, and the paralysis had quite cleared up an hour or so later, leaving only a large anaesthetic patch over the deltoid muscle. This persisted for ten days or so, when it also cleared up, but an area of dysaesthesia (numbness and tingling) appeared on the left side of the occipital region. Six weeks later no trace remained. The patient mentioned that he had been suffering from precordial pain and, more recently, shortness of breath on effort, especially after eating. For the last six years he had noticed an intermittent limp on both sides, pointing to partial obstruction of the tibial arteries. The heart sounds were normal. There was nothing abnormal in the urine.

For several years past he has from time to time had scotomata in one or other eye. Sometimes the area obliterated was so extensive as to amount to blindness in one eye, but more often it was merely a large black or greyish patch in the field of vision. This lasted from a few minutes to half an hour, and then gradually cleared up; nothing abnormal was seen between whiles with the ophthalmoscope. This occurred mostly when travelling—that is to say, when his digestive organs had not had fair play owing to changes in his habits of life. This ephemeral occurrence was also no doubt due to spasm of a retinal arteriole.

O. K. Williamson[1] has recorded three cases of transient hemiplegia in elderly subjects, which he attributes to arterial spasm not lasting long enough to cause necrosis of

[1] *Journal of the Medical Association of South Africa*, May 25th, 1923.

of the breast and gastro-enterostomy, and also simpler operations like appendicectomy and herniotomy. We further investigated the question of the absolute rise in the glycaemia in association with the *severity* of the operation. We were unable to find any difference in the average levels of the hyperglycaemia in the cases of the more severe operations and those less severe, always provided that the operations were of approximately the same average duration.

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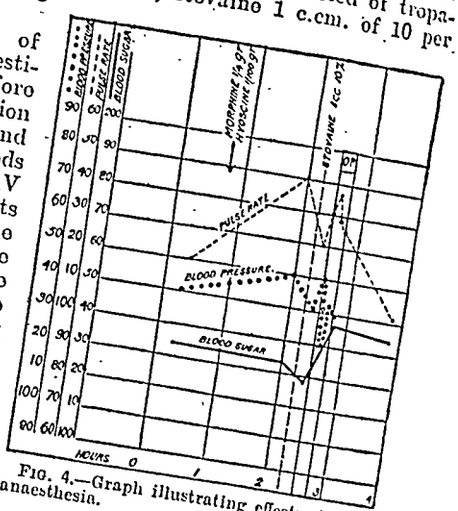

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CEREBRAL ANGIOSPASM.

I RECENTLY had under my care an interesting case of fugitive paralysis of the arm, presumably due to spasm of a cerebral arteriole. Since I find very little on the subject in the textbooks, or in contemporary medical literature, I venture to place it on record.

My patient was a medical practitioner, aged 71, of fairly good general health and careful dietetic habits. There was no history of syphilis. The blood pressure before the attack was 170 mm. maximum, 90 mm. minimum. At the termination of a two months' holiday in Europe, during which he may have eaten a little more than his usual restricted dietary, he was gathering figs with the head thrown back at an acute angle. He suddenly became aware that he had lost all movement in the left arm from the shoulder down to the fingers. He said he felt a little "funny" on the right side of his head when this happened, but neither the tongue nor the corresponding leg was affected. Movement began to return in the hand in the course of a quarter of an hour, and the paralysis had quite cleared up an hour or so later, leaving only a large anaesthetic patch over the deltoid muscle. This persisted for ten days or so, when it also cleared up, but an area of dysaesthesia (numbness and tingling) appeared on the left side of the occipital region. Six weeks later no trace remained. The patient mentioned that he had been suffering from precordial pain and, more recently, shortness of breath on effort, especially after eating. For the last six years he had noticed an intermittent limp on both sides, pointing to partial obstruction of the tibial arteries. The heart sounds were normal. There was nothing abnormal in the urine.

For several years past he has from time to time had scotomata in one or other eye. Sometimes the area obliterated was so extensive as to amount to blindness in one eye, but more often it was merely a large black or greyish patch in the field of vision. This lasted from a few minutes to half an hour, and then gradually cleared up; nothing abnormal was seen between whiles with the ophthalmoscope. This occurred mostly when travelling—that is to say, when his digestive organs had not had fair play owing to changes in his habits of life. This ephemeral occurrence was also no doubt due to spasm of a retinal arteriole.

O. K. Williamson[1] has recorded three cases of transient hemiplegia in elderly subjects, which he attributes to arterial spasm not lasting long enough to cause necrosis of

[1] *Journal of the Medical Association of South Africa*, May 26th, 1923.

the cerebral area involved. In such cases, if cerebral haemorrhage and embolism can be excluded, there remains only arterial spasm to account for the fugitive paralysis. We are familiar with angiospasm in "dead finger" which lasts for half an hour or more, but since it does not entail any permanently injurious consequences it does not attract much attention. A more impressive instance of spasm is ophthalmic migraine, an essentially spasmodic affection in which the patient may develop hemianopsia or even aphasia, which disappears without leaving any trace.

One feature of these cases of arterial spasm is that the symptoms, instead of progressing from bad to worse, are very variable, more or less "undulating," so that it is very difficult to formulate even an approximate prognosis. If the spasm subsides in good time there may be no permanent disability, but prolonged spasm of an arteriole, damaged but capable under ordinary conditions of giving passage to the blood, is apt to set up necrobiosis of brain tissue or brain softening.

Apart from arterial spasm, or possibly with it, there may be perturbations of blood pressure, and I gather that more or less sudden variations of the latter may pave the way to brain softening far more than mere hyperpiesis. A sudden fall of pressure consequent upon free blood-letting may have a very detrimental effect on the cerebral circulation, causing ischaemia of a territory already inadequately irrigated. According to Chavany and Berard-Dellestable[1] the harmful effects of these sudden variations of pressure only obtain in respect of arteries that are the seat of disease, so that one never meets with cerebral symptoms consequent upon the sudden fall of pressure associated with colloidoclasic shock (intravenous injection of metallic colloids). Nevertheless it is presumably advisable to abstain from "shock" treatment in elderly people.

In cases of diabetic coma or threatening ictus one is very prone to resort to free blood-letting, but while this may not be inopportune in presence of cerebral haemorrhage with high blood pressure, it is quite otherwise in cases of spasm or thrombosis in the production of which hyperpiesis plays an insignificant part.

Syphilis is, of course, a frequent—possibly the most frequent—cause of impediment to cerebral circulation, and the possibility of this origin must always be borne in mind.

A. S. GUBB, M.D.,
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IDIOPATHIC HAEMORRHAGE IN THE NEWBORN.

DR. G. H. ROBERTS's interesting memorandum on idiopathic haemorrhage in the *British Medical Journal* of January 12th (p. 68) tempts me to report a similar case of mine, which occurred a few weeks ago.

On December 13th, 1928, a primipara gave birth to an apparently healthy male child. Thirty hours later the child had a severe attack of melaena neonatorum and haematemesis, leaving it very exsanguinated and collapsed. Treatment with horse serum, small doses of adrenaline hydrochloride, and four-hourly subcutaneous and rectal salines, followed later with a mixture containing gelatin and glucose, resulted in recovery.

Four weeks later, the intervening period being uneventful, and the child breast-fed, I was again called in on account of a "swelling of baby's arm." I found the whole of the right arm, from fingers to shoulder, very swollen and suggestive of a cellulitis; there was also a similar swelling of the scrotum. Close inspection revealed no signs of focal infection; the umbilicus was normal and the temperature was 103° F. Breast-feeding was immediately stopped and the child put on glucose and sterile water, together with calomel 1/6 grain four-hourly. Twelve hours later the child was admitted to the Victoria Hospital. During the next three days the oedema, which "pitted" on pressure, slowly spread down the back, commencing over the scapula and later involving the chest. The temperature ranged between 100° and 104° F. On the third day after admission the oedema of the arm and scrotum had abated to a certain extent, but had extended to the head, face, and neck when death supervened. Treatment given in hospital consisted of "glaxo feeds," which were readily taken up to a few hours before the end, castor oil, and hydrarg. cum creta. Local applications of heat in the form of fomentations were applied to the arm. No necropsy was performed.

The most feasible explanation seems to be some inborn error of metabolism, but it would be interesting to hear the opinions of others on the subject.—I am, etc.,

Blackpool. HERBERT GEARY, M.R.C.S., L.R.C.P.Lond.

[1] *Paris Médical*, March 31st, 1928.

Reports of Societies.

THE CONSERVATIVE TREATMENT OF ECLAMPSI

AT a meeting of the Edinburgh Obstetrical Society January 9th, with the president, Dr. HAIG FERGUSON, the chair, Drs. DOUGLAS MILLER, ELSIE CROWE, and H. DAVIDSON contributed jointly a survey of 159 cases eclampsia treated by conservative methods.

Dr. Miller began by referring to the discussion on t prognosis and treatment of eclampsia which formed t principal subject for consideration at the Congress Obstetrics and Gynaecology in Liverpool in 1922. At t meeting the advantages of conservative over more radic methods of treatment were so convincingly emphasized the relatively low mortality in the Dublin group of cas that the Dublin method of treatment, with minor modific tions, had been employed as a routine in the Edinburg Royal Maternity Hospital during the period 1923-27 i clusive. Dr. Miller's contribution presented a survey of 1 cases of eclampsia treated by this method, and comprise an analysis of such symptoms and signs as coma, t number of fits, the degree of oedema, the degree albuminuria, blood pressure, pulse-rate, and temperatur in their relation to prognosis. The findings obtained con firmed in large part what was already believed in regard t the prognostic significance of these phenomena. An impor tant exception, however, was noted in regard to bloo pressure readings; in the series of cases studied th mortality ratio had proved to be in inverse proportion t the height of the blood pressure. When the systolic bloo pressure at the time of admission to hospital was under 150 mm. Hg a mortality of 27 per cent. was recorded; in a second group with blood pressures ranging from 150 mm. to 180 mm. the mortality ratio was 14 per cent; while in cases in which a blood pressure of over 180 mm. was noted the mortality rate was 13 per cent. No satisfactory explanation could be offered for figures so much at variance with what was generally believed in regard to the serious prognostic significance of high blood pressure in eclampsia. It was found that while the absence of oedema had been associated with a mortality of 24 per cent. the presence of this in marked degree had carried with it a death rate of over 30 per cent., a moderate degree of oedema being much less serious than either extreme. Further investigation showed that in each of the four fatal cases in which oedem had been absent death had resulted directly from intens toxaemia, whereas in the twelve fatal cases in which oedema had been extreme, pulmonary complications had contributed largely to the fatal issue in five cases, death in four of these being due directly to pulmonary oedema. It would appear, therefore, that while the absence of oedem was a sign of great danger, possibly because it implie concentration of toxins in vital tissues, extreme oedem carried with it a special risk of pulmonary involvement. The foetal and neo-natal deaths numbered 65, giving a mortality percentage of 39.1. The exclusion of 28 cas in which the child was delivered before the thirty-sixth week of pregnancy, and of 14 cases in which the child was believed to be dead at the time of the patient's admissio to hospital, gave a reduced foetal and neo-natal death rate of 18.5 per cent. There were 28 maternal deaths in th total series, a mortality ratio of 17.6 per cent. This figur compared with a mortality of 25 per cent. during the te year period 1912-21. The causes of death, confirmed i 22 cases by autopsy, were as follows: toxaemia 13 cas pulmonary complications 7 cases, cerebral haemorrha 6 cases, septicaemia and acute heart failure one case eac In conclusion, the speaker said that while in general th intensity of toxaemia could be reliably gauged by the ext and severity of the signs and symptoms specially consid it was necessary to bear in mind the notoriously uncer course which any case of eclampsia might follow, s even when the omens were favourable response to treat might suddenly and apparently without reason fail hopefulness be replaced by grave anxiety. In part it had been found in this series that the occurre cerebral haemorrhage had appeared to bear little r to the severity of the disease. In only one of the six ca

in which death was due to this complication had the toxaemia been so severe as of itself to make the prognosis anxious, nor in any of them had the systolic blood pressure exceeded 160 mm. In a haemorrhagic toxaemia of this nature the occurrence of haemorrhage in the brain, or, on the other hand, in some less vital tissue such as the liver, would appear to be largely a matter of chance, and an accident, accordingly, over which the attendant had little or no control.

Dr. ELSIE CROWE then gave a short summary of the chemical findings in 86 cases of eclampsia. As a result of these investigations she was led to the following conclusions. Almost all cases of eclampsia sustain renal damage, as shown by (1) a diminished power of excretion and of concentration of urea (MacLean's urea concentration test), and (2) a high blood urea content. The concentrating power of the kidney varies at the different stages of the illness, and may greatly improve as the patient's general condition responds to treatment. The normal blood urea in the second half of pregnancy is about 16 mg. per cent., while that of the average eclamptic patient is twice as high (32 mg. per cent.). She considered that the higher the blood urea figure rose the worse was the prognosis in most cases. Tests of hepatic function were of doubtful value; the large majority of cases showed definitely impaired excretory power when tested by Rosenthal's method (intravenous injection of a known quantity of phenol tetrachlorphthalein, and the estimation of the amount of dye removed from the blood stream by the liver in a given amount of time). Almost 50 per cent. of cases of eclampsia had positive van den Bergh and Fouchet reactions. These results had apparently little bearing on the clinical aspects of eclampsia, and were of no great prognostic value.

Dr. H. S. DAVIDSON concluded the joint contribution by referring to the high mortality in cases with low blood pressure; he thought this might be due to a profound affection of the myocardium by the toxaemia, thus lowering the blood pressure. The small number of deaths from heart failure associated with shock and collapse bore out the importance of refraining from interference in the ordinary case of eclampsia. He commented on the number of deaths from pulmonary oedema, and wondered whether oedema was directly traceable to the use of ether as an anaesthetic, or was merely part of the general oedema. It became a question whether, when an anaesthetic was required, chloroform should be given, as suggested by Stroganoff, or whether one should adopt some other form of narcosis, such as gas and oxygen. The Stroganoff treatment was very difficult to conduct in hospital; he could find no good purpose served by venesection which could not be as efficiently served by veratone. Dr. Davidson referred to the treatment of eclampsia by intravenous injection of magnesium sulphate, which he had been trying for the last six months with good results, although up to date only eight cases had been treated. Magnesium sulphate acted as a sedative and anticonvulsive agent, and produced a marked elimination by causing a large increase in the urinary output: this was followed by a marked diminution of oedema, which was probably general and affected the brain as well as other tissues. Dr. Davidson finally considered the treatment of the fulminating type of eclampsia, and mentioned the bad results obtained by any conservative method of treatment in such cases. He thought that by dealing with these cases by Caesarean section the prognosis might be improved.

DIFFERENTIAL DIAGNOSIS OF SPLENOMEGALY.

AT a meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland on January 11th, with the president, Dr. ROWLETTE, in the chair, Dr. J. LAIT read a communication on a case of splenomegaly, and showed the patient.

Dr. Lait said that the chief features of the illness were enlargement of the spleen with increasing anaemia; a low red cell count and a low haemoglobin percentage, with a colour index of about 1; the presence of "latent icterus" with a blood bilirubin of from 2.5 to 4.0 units; and a white cell count, when the patient first came under Dr. Lait's care, of about 15,000 per c.mm. The comparatively high white cell count and the marked splenic tumour were by themselves sufficient to rule out the diagnosis of pernicious anaemia, but earlier in the year the diagnosis of Banti's disease had been suggested. Study of the blood picture made it possible to refute this diagnosis, the blood film showing constantly almost every type of red cell and white cell precursor; moreover, the progress of the disease and its clinical features were unlike those of Banti's disease at any stage. Dr. Lait had no doubt that the case was a myelogenous leukaemia of the type described as a leuk-anaemia. Some authorities had discredited the existence of any such condition as a true intermediate form, but Dr. Lait brought forward cogent arguments in support of the aptness of the term. Dr. Lait's case notes of this patient afforded an interesting study in careful blood histology, as well as demonstrating the influence for good or evil of x-ray treatment on this rare disease. He concluded his communication with a short note on reticulocytes, in which he described the most recent theories of red cell formation, mentioning the place assigned to the reticulocyte in such schemes; the technique of staining was explained, and Dr. Lait insisted that *intra vitam* staining should become a recognized procedure in clinical work, on account of the prognostic importance of the reticulocyte in the liver treatment of pernicious anaemia.

The PRESIDENT, in discussing the paper, emphasized the importance of such careful study of diseases of the blood-forming organs in view of recent advances in therapeutics. Dr. L. ABRAHAMSON mentioned a case of myelogenous leukaemia which bore a close resemblance in its white cell count to that of Dr. Lait's patient.

TRAUMATIC RUPTURE OF THE URETHRA.

AT a meeting of the Section of Urology of the Royal Society of Medicine on January 24th, with Mr. SWIFT JOLY in the chair, a paper was read by Sir WILLIAM DE COURCY WHEELER of Dublin on traumatic rupture of the urethra.

Sir William Wheeler said that this was a rare accident, and so few cases had come under the care of any one surgeon that no settled form of treatment seemed to have evolved. Rupture was far more common in the bulbous portion of the urethra than in any other part. In France the accident was considered to be most frequent in young men, but he did not think that was the case everywhere; in the six cases on which his paper was based the average age was 42. Sometimes in this injury extravasation occurred in the anal region, the ischio-rectal fossae, and the thighs. When the rupture was situated well in front of the triangular ligament there was nearly always a perineal haematoma, and the patient was unable to gratify an intense desire to pass water. There was severe local pain. For the first several hours, fortunately, reflex spasm of the compressor urethrae prevented extravasation of urine, thus reducing the mortality. When the urethra had been only partially severed the bleeding was likely to be more profuse and continuous than when the rupture was complete. Severe traumatic stricture might follow injury without rupture. When associated with fractured pelvis the urethral rupture was more likely to be above the triangular ligament, in the region of the apex of the prostate. A ruptured bladder, being empty, could not be palpated. Usually the extent of the injury found to be present at operation was greater than the signs and symptoms immediately after the accident had led the surgeon to suppose; this fact strengthened the call for prompt operation. When a black patch appeared on the penis it probably meant that the whole corpus spongiosum was infiltrated with urine. Extravasation in recent traumatic cases had a better prognosis than in old cases; as a rule patients in the first instance were in good health when the accident happened. If operation was delayed, then (assuming the patient to be still alive) the parts became riddled with sinuses and urinary fistulae. The speaker urged the desirability of agreeing upon a uniform early treatment in these cases. An operation should not be approached hurriedly, and in this class of case very special precautions should be taken to ensure asepsis. He described in detail his own procedure. The literature showed general agreement as to the need of immediate suprapubic cystotomy in fresh cases of the accident, followed by retrograde catheterization.

Mr. RALPH THOMPSON commented on the very small proportion of urethral stricture cases which were traumatic, the average at two large hospitals being about 3 per cent. of the total urethral strictures. He urged the importance of operating to deal with the urethra as soon after the accident as possible.

Mr. FRANK KIDD mentioned the analysis he made, in 1921, of 57 cases of this accident treated at the London Hospital. That all except one of these patients remained alive indicated that the accident was not a real menace to life. From a careful study of cases he had arrived at the conclusion that the real origin of the stricture was pulping of the tissues. He was a strong advocate of a prompt suprapubic incision, under anaesthesia, followed by retrograde catheterization.

Mr. FOWLER WARD said that these ruptures in children who were brought quickly under care were not usually severe; the serious cases were in heavy men who were not seen for some days after the accident and who had not passed any urine since the accident. He much preferred silver to rubber catheters. Mr. WINSBURY WHITE reported a case of fractured pelvis, with partial rupture of the urethra; the result of treatment had been very satisfactory. Mr. CYRIL NITCH agreed with the opener's contentions, and described cases he had seen. Others who spoke in support of the opening thesis, and quoted cases, were Mr. HUGH LETT and Mr. G. E. NELIGAN; Sir WILLIAM WHEELER briefly replied.

POST-OPERATIVE ACIDOSIS.

AT a meeting of the Anaesthetic Section of the Royal Society of Medicine, on February 1st, Dr. R. D. LAWRENCE opened a discussion on post-operative acidosis.

Dr. Lawrence said he had purposely used the term "post-operative" so that any blame for the occurrence of the condition due to surgical manipulation could be included in the discussion. As he was neither a surgeon nor an anaesthetist he could claim to be impartial in the marshalling of his facts and deductions therefrom. The term "acidosis" was a loosely used one, and covered more than one condition. As applied to post-operative conditions it covered the presence of ketones and acetone bodies in the urine. These could be present without marked diminution of the alkaline reserve. The human body was always alkaline, but all its activities led to the production of carbonic acid equivalent to 300–400 c.cm. of concentrated hydrochloric acid. The alkalis were, however, always in excess. The mechanism of neutralization was interesting. If acid was added to water there was a marked change in the amount of free hydrogen ions. These ions determined the reaction of a fluid. If, however, the acid was added to blood there was no increase of the hydrogen-ion content of the blood, owing to the presence of what were known as "buffer substances." The chief of these was sodium bicarbonate, which formed the alkaline reserve in the blood. This salt was acted on by hydrochloric acid to form common salt, carbon dioxide, and water. The alkaline reserve in the blood varied from 55 to 75 volumes per cent. Ketosis could be present without definitely changing the ratio of the alkaline reserve. Chloroform, ether, and nitrous oxide all definitely reduced the alkaline reserve. The fall was rarely more than 10 volumes per cent. This began very soon after inhalation, and the ratio slowly returned to the normal after the second day. Ketonuria was much less frequent the day after operation, whereas acidosis was almost constantly present. The amount of ketones formed was so slight that it in no way represented the acidosis. Chloroform most frequently produced ketonuria, but spinal and local anaesthetics also produced the condition. Novocain decreased the alkaline reserve by five volumes per cent. in about half the cases investigated, and this occurred mostly in abdominal operations under novocain. Shock and fractures produced acidosis, and the condition was increased in nervous and anxious patients. It was difficult to explain the mechanism of the production of acidosis; the factors were complex and probably multiple. Sleep produced acidosis, and this was due to the insensitiveness of the respiratory centre at night, and its failure to respond to external changes. Under anaesthetics the respiratory centre was more depressed than in sleep. Anoxaemia produced acidosis. The glycogen store of the liver had been definitely depleted by anaesthesia. In normal individuals acidosis was of no importance; it could not be prevented, but it could be minimized. In patients with acidosis and no ketosis—for example, chronic nephritics and those suffering from wasting diseases—operations should be carried out as far as possible under spinal anaesthesia, and large doses of sodium bicarbonate, up to eight drachms a day, should be given for a few days before operation. In patients with ketonuria but no acidosis the position was more serious, since operation would increase the ketosis, especially if there was sepsis, and might lead to vomiting and liver damage. Chloroform was dangerous, as it might cause fatty degeneration. Ketonuria was a danger signal which we could not afford to ignore. The operation should if possible be postponed, and abundance of carbohydrate given by the mouth or intravenously. The ketonuria should then cease in from twenty-four to forty-eight hours. Insulin need not be given unless the ketonuria was very severe. In cases which did not brook delay nitrous oxide and oxygen, with or without ether, might be given, but chloroform never. In the case of diabetics, carbohydrates and insulin should be given, 20 units of insulin with 20 grams of sugar four-hourly. When possible a spinal anaesthetic should be given, but nitrous oxide, oxygen, and ether did not usually cause ill effects.

Dr. P. J. CAMMIDGE, while agreeing in the main with what Dr. Lawrence had said, thought that he had not sufficiently stressed the importance of the body cells. Difficulties ensuing from acidosis were due, not to the acidosis, but to changes in the cells themselves. Clinical changes were produced by alterations in the cells of the body. Variations in the water retention of the tissues brought about acidosis. Thus we found (1) acidosis from anhydraemia; (2) acidosis from over-production of normal acid products—for example, nephritis; (3) acidosis resulting from the removal of the alkaline bases of the cells; and (4) acidosis due to changes in the osmotic pressure between the cells and the plasma. A patient might have alkalosis after operation—for example, intestinal obstruction with vomiting. The chemical test for this condition was the finding of traces of acetone in the urine but an absence of chlorides. In these cases sodium chloride should be given with glucose. A special type of case was met with in children suffering from cyclic vomiting with headache. In this type the condition was inherited and the liver was below standard. Should operation be necessary in such a case it was best to substitute oatmeal for glucose in the preparation of the child for operation.

Professor E. C. DODDS said that in his experience acidosis was extremely rare, the chief causes being diabetes and starvation.

Dr. F. E. SHIPWAY had rarely seen acidosis in serious form. In these cases chloroform was to be avoided unless the patient had received careful preparation.

Mr. ZACHARY COPE cited cases in children in which, after operation under chloroform for appendicitis, vomiting, icterus, pallor, sweet-smelling breath, acetone in urine, delirium, screaming, and eventually death with central nervous irritation had ensued. He now insisted on ether being given in all such cases, and there had since been no fatalities due to acidosis.

VERTIGO.

AT a meeting of the Section of Otology of the Royal Society of Medicine on February 1st, with Mr. SOMERVILLE HASTINGS in the chair, a discussion took place on the nature of vertigo.

Mr. SYDNEY SCOTT, in opening, said that a hundred years ago the subject of vertigo resembled a tropical jungle, and even now there still remained large areas to be cleared. Hughlings Jackson was responsible for the definition of vertigo as a state of consciousness, attributable to incoordination of afferent impulses connected with the vestibular system. Destructive lesions of the labyrinth or of vestibular tracks were either partial or complete. It was in the early stage, where destruction was partial, that the patient suffered from vertigo; when the destruction was complete he suffered from deafness. If both ears were stimulated at the same time and in the same way there

was no vertigo, but if one side was stimulated, say, by irrigation with water at a different temperature from the other, vertigo occurred immediately. The sensitiveness of the labyrinth differed in different individuals, and was a very important factor. The clinical manifestations of vertigo were so widespread that sometimes the general practitioner was prevented from recognizing the possible cause. He had seen patients with attacks associated with vomiting who had had a gastro-jejunostomy done, or an appendix removed, when the real cause of the attacks was vertigo. Some patients complained of scalp pain; in others visual disturbances were an outstanding feature. A rare difficulty was diplopia during the attack. Staggering gait, vasomotor and cardio-vascular symptoms, pallor, flushing, sweating, dyspnœa, fainting, were all associated with vertigo, and he had come across attacks followed by violent diarrhœa. With regard to objective examination, he had found that a number of patients who had vertigo were undoubtedly the victims of some nasal trouble. Vertigo was associated with acute, non-perforative otitis media, with chronic otitis media, with labyrinthine fistula, with otosclerosis, and post-suppurative adhesions, with rhinitis, ethmoiditis, sinusitis, nasal polypi, post-nasal catarrh, and dental infections. Some years ago he had a patient with vertigo with no obvious cause, but it was eventually found that he had a strong Wassermann reaction. One had to bear in mind the possibility of syphilis in many of these cases. The principles of treatment were, first to seek the cause, which, if peripheral, might be removed by operations on the ear, nose, throat, or even by extracting dead teeth; if central, by intracranial surgery, decompression, or by neuropathic medical treatment.

Dr. LOWNDES YATES followed with an epidiascopic demonstration of some graphic records of instability, results of the past-pointing test, illustrative of certain cases which had been referred to by Mr. Scott.

Mr. A. R. TWEEDIE made a reference to the work of Andreas Högyes, and showed some pages of his book which indicated at what an early stage he had anticipated modern otology, although for a long time his work, because it was written in Magyar, remained unappreciated. Mr. Tweedie passed in review the rotation, caloric, and galvanic tests. He criticized the rotation test in certain respects, while affirming his belief that it should be continued in practice. He found the caloric and galvanic tests more valuable, though they, too, presented problems as yet unanswered; for example, neither of them was a definite test for the hysterical case. All cases of vertigo had an otitic factor, but the cases might be divided into two groups, in one of which the otitic factor was predominant (this group including inflammatory lesions and new growths), while in the other the factor was incidental. He brought forward seven cases belonging to the second group, in all of which there was asymmetry of auditory function and of function in the peripheral vestibular organs, and gave the results on these cases of the three tests named.

Mr. E. A. PETERS showed and described a case of a man, aged 74, who, in 1914, suffered from severe giddiness, and was often unable to cross a room. As the symptoms did not yield to treatment the left external semicircular canal was opened and the dura mater in Trautmann's triangle exposed. One end of a fine silkworm-gut suture was passed into the canal and the other between the dura mater and cranium. Relief of giddiness followed the operation. There was still (fifteen years afterwards) no giddiness, and the man could climb about on a scaffold. The drainage had been very effective, and the hearing was relatively better.

Mr. ERIC WATSON-WILLIAMS said that in true vertigo—that is, a condition in which the patient had a sense of rotation—there was something wrong with the ear or its intracranial connexions; if the patient merely had sensations of giddiness these might be due to the ear, no doubt, but they might be due to other things—to anæmia, constipation perhaps, or even atmospheric conditions. Often people were sent with a story of giddiness and sickness, and the inference was drawn that they got giddy because they were sick; but if there was true vertigo these people were sick because they were giddy—that is to say, to start with the ear was wrong. In the nineties Gowers said that after thirty years he had been forced to doubt whether there was true vertigo of gastric origin. Until a year ago he had been able to say that he had cured the last three "cerebral tumours" sent to him by removing wax from the ear. He had one case with facial paralysis and intense vertigo from which he had removed about half an ounce of wax from an enormous cavity, and the man got perfectly well; the case was sent in as meningitis. The most intense and lasting vertigo he had ever seen was in a man who, during his attacks, was unable to lie on the floor; he rolled across the floor unless he could clutch hold of something. Vertiginous cases which had particularly interested him lately included one or two in which he had been misled, and which turned out subsequently to be encephalitis. Encephalitis, apparently, occurred sometimes as a simple vestibular disturbance. In most types of encephalitis the vestibular nucleus was specially susceptible, and one might get auditory disturbance at the same time. He wished he could be told of some really reliable method of discriminating between a lesion of the labyrinth and a lesion of the brain—some method which could be carried out at the bedside without any elaborate test. He could not say that the galvanic test had helped him in this respect.

Mr. G. J. JENKINS congratulated Mr. Scott on establishing, what he had been teaching for years, that middle-ear affections might cause vertigo. The ear might be very seriously diseased with the labyrinthine affection, and yet the vertigo might be due to middle-ear changes, and not so much to the labyrinthine condition itself. The speaker mentioned one or two cases in children where removal of tonsils and adenoids cured the condition of giddiness.

Dr. STACEY WILSON pointed out that vertigo was an important cause of neurasthenia, especially in a lesser degree. As a physician he had found it of considerable interest to distinguish severe degrees of vertigo by the test as to whether the patient felt level in bed or not. If the patient felt the bed untrue it was a severe case.

TREATMENT OF EXOPHTHALMIC GOITRE.

AT a meeting of the Manchester Medical Society on November 7th, 1928, with Dr. R. W. MARSDEN, the president, in the chair, Dr. C. S. D. DON read a paper on the treatment of exophthalmic goitre.

Dr. Don compared the three lines of treatment at present adopted in cases of exophthalmic goitre—namely, iodine therapy, x-ray therapy, and operative procedures. Progress was estimated by comparing the basal metabolic rate, the weight, and the pulse in each case, before and after treatment. It was found that iodine caused a temporary diminution of the basal metabolic rate and the pulse and a gain in weight. The fall in the basal metabolic rate and pulse lasted for about a month, in some cases longer, while the increase in weight in nearly all cases continued for about five months. Iodine by itself could not cure exophthalmic goitre; a second course had less effect than the first one. Dr. Don said that a number of patients who had had x-ray therapy for periods over a year were examined repeatedly at intervals of three months, the basal metabolic rate being determined on each occasion; out of a total of thirty cases improvement or cure had been found to occur in 54 per cent.; in 27 per cent. the basal metabolic rate and pulse rate had returned to within normal limits, and this was regarded as a cure. Operative procedures were then considered, and attention was drawn to the value of iodine in preparing patients for operation. Of twelve cases examined not less than eight months after the date of operation, it was found that a fall in the basal metabolic rate and pulse to normal, accompanied by an increase in weight, had occurred in nine. Eighteen cases were examined before iodine was given, after administration, and two weeks after operation. As judged by the basal metabolic rate and pulse rate, cure had occurred in 85 per cent. Dr. Don advocated x-ray therapy without iodine administration for six months; after this, if the basal metabolic rate and pulse had not diminished considerably the patient should be given iodine, followed by an operation. Cases with basal metabolism of over *plus* 35 per cent. should be treated by preliminary ligaturing, while those in which the basal metabolic rate was below *plus* 35 per cent. should have four-fifths of the goitre removed by thyroidectomy.

GONORRHOEA IN THE FEMALE.

AT a meeting of the London Jewish Hospital Medical Society, held on January 17th, Dr. S. WOLFF opened a discussion on the treatment of gonorrhoea in the female. The speaker remarked that too little attention was given to this subject, considering the many devastating complications gonorrhoea was prone to set up in women. There was no generally accepted line of treatment; each treatment centre had its own routine, a lack of unanimity surprising in a disease so ancient and widespread. The fault was not so much with those in charge of clinics as with the patients themselves. It was very difficult to get a patient to realize the seriousness of the disease and the necessity for prolonged treatment. Many patients underwent no treatment at all, regarding the disease as a "chill" and the discharge as normal. It would help matters considerably if gonorrhoea in the female were treated only by women doctors; a better understanding between the doctor and the patient would be arrived at. No organized campaign against gonorrhoea could be successful if the problem of prostitution was not faced. The prostitute was the main carrier, and the treatment of this type of patient would probably become more effective if it were left to women doctors. At present it was left entirely to the goodwill of the prostitute whether she persevered with treatment, or even underwent any at all. If society could not abolish the prostitute it had to cultivate its sense of self-preservation. In the case of married women much education was required to make them realize that vaginal discharges were not normal concomitants of married life. Too many women were chronic invalids from neglected gonorrhoea.

THE LENS CAPSULE AND ACCOMMODATION.

AT a meeting of the Optical Society on January 17th, Mr. E. F. FINCHAM read a paper on the function of the lens capsule in the accommodation of the eye.

Mr. Fincham said that although abundant evidence was now available in support of the general principle of Helmholtz's theory of accommodation, no definite explanation had been given of the formation of the "lenticonus" discovered by Tscherning, which led him to challenge that theory. In 1925 the speaker had suggested that the varying thickness of the capsule covering the anterior surface of the lens would account for the type of surface which Tscherning had depicted. Mr. Fincham described the determination of the form of the anterior surface of the lenses of freshly dead animals, by photographic records of the image reflected from the surface. The lenses of a number of different species were examined and records were made when the lens was held under tension by its normal suspensions and also when the suspensions were removed. The thickness of the capsule in each case was then measured microscopically. The results showed that in primates the anterior surface of the lens assumed a somewhat conical form with an area of increased curvature in the centre, when the suspensions were severed. The capsule of the primate lens had a zone of increased thickness surrounding a central thin area. Photographs of the profile view of a monkey's lens, which was removed from the eye and suspended in oil, revealed it in the typical accommodated form. A similar view of the lens without its capsule showed a close approach to the unaccommodated form. The anterior lens capsule of animals of an order lower than the primates was found to be approximately uniform in thickness. The "lenticonus" was not found in these cases, and the removal of the capsule did not cause an appreciable change in the form of the lens. From these findings the theory was formulated that accommodation consisted of a relaxation of tension upon the lens by the contraction of the ciliary muscle as stated by Helmholtz. This relaxation allowed the capsule to press upon the lens substance and mould it into the accommodated form. In the unaccommodated state the tension under which the lens was held by its supporting fibres did not permit this compression. The unaccommodated lens substance was therefore in its unrestricted or natural form and not under compression as supposed in the Helmholtz theory.

Reviews.

DISEASES OF CHILDREN.

Diseases of Children,[1] by Garrod, Batten, and Thursfield, has earned for itself a place as a standard textbook, and for this reason the second edition, under the capable editorship of Dr. HUGH THURSFIELD and Dr. DONALD PATERSON, is extremely welcome. Like the first edition, which appeared in 1913, the present book has numerous contributors, thirty-six in all, each one chosen because of his particular knowledge of the subject about which he writes. As all the contributors, with the exception of Dr. Leonard Parsons of Birmingham and Dr. J. C. Spence of Newcastle, are or have been attached to London schools, the book may be taken as representative of London opinion on the subject of paediatrics at the present day. Like its predecessor, also, it is essentially clinical, and this is indeed fortunate. During the past decade research in paediatrics has been exceedingly active, particularly along biochemical lines and in the field of nutritional diseases. A repetition of this work is not, however, needed in such a book as this, since there is already a surfeit of smaller books each claiming to be of value in presenting the newer aspects of the subject to the already overtaxed physician. At the same time much new and valuable work of a clinical nature has been accomplished, and thus the editors were faced with the need for extensive revision. This has been most successfully achieved, the newer work receiving adequate recognition, while nothing of value has been omitted, with the possible exception of prematurity, which might with advantage have been discussed. The new edition follows almost exactly the arrangement of the original volume, with the addition of a short chapter at the end on diseases of the eye. This seems rather sketchy and incomplete, and might well have been omitted. The chapters on organic diseases of the nervous system and diseases of the muscles, by the late Dr. F. E. Batten and revised by Dr. W. G. Wyllie, and the chapter on diseases of bones and joints, by Sir Humphry Rolleston and Mr. H. A. T. Fairbank, are deserving of special attention for their completeness and lucidity; if they stood alone these contributions would establish the value of the book as a work of reference. Diseases of the ductless glands are discussed by Dr. E. A. Cockayne in a short and well-written chapter, which should prove of great interest to medical students and general physicians alike. The chapter on diseases of the newborn, by Dr. Langmead, has for the most part appeared unaltered. This is unfortunate. Certain statements here will not find general acceptance, particularly the remarks about haemorrhage of the newborn. This condition is a definite clinical entity which should not be confused with sepsis. Furthermore, the treatment, which is specific and so satisfactory, is only mentioned casually. The debatable subject of the feeding of infants has been dealt with by Dr. Edmund Cautley and Dr. Donald Paterson, and a huge amount of useful information regarding the preparation and the virtues of the various foods is given. A specific method of feeding infants is outlined which should prove a ready guide for the practitioner. We note that, in the chapter on diseases of nutrition, lactic acid milk receives credit almost to the exclusion of other types of feed—a view which many will find difficult to endorse. On the other hand, the well-recognized and valuable properties of protein milk (*Finkelstein's Eiweissmilch*) are given only scanty recognition. The chapters dealing with diseases of the heart, lungs, alimentary system, metabolism, etc., represent for the most part the usual current opinions, and on the whole are well balanced. The size of the volume has not been increased. It is sufficiently well illustrated, but contains only a meagre bibliography, or, in some chapters, none at all. This detracts perhaps from the value of the discussion of the more controversial subjects.

The book in this new form will carry on the reputation achieved by the first edition. It should appeal to a wide circle of readers, and we can recommend it with confidence to both students and practitioners. It is, in short, a worthy product of the London schools.

[1] *Diseases of Children*. Second edition, edited by Hugh Thursfield, D.M.Oxon., F.R.C.P., and Donald Paterson, M.B.Ed., M.R.C.P. London: E. Arnold and Co. 1929. (6½ × 9¼, pp. xi + 1106; 201 figures. 42s. net.)

DIGESTION AND GASTRIC DISEASE.

It is not surprising that Professor HUGH MACLEAN's volume in his Monograph Series, entitled *Modern Views on Digestion and Gastric Disease*,[1] has rapidly passed into a second edition. In view of the very considerable discussion on gastric and duodenal ulcer during the past year, in which the author has taken a part, especially in his lecture on the efficiency of the intensive alkaline treatment of these ulcers (vide *British Medical Journal*, 1928, i, 619), this fresh edition is appropriate as tending to maintain a balance of opinion and as a counterblast to Sir Berkeley Moynihan's outspoken condemnation of ordinary medical treatment as "highly dangerous" in his Lloyd Roberts Lecture published on December 8th last. Professor MacLean has in no way modified his vigorous opposition to the belief that ulcer is an important etiological factor in gastric carcinoma, which he describes as "really an acute disease" usually arising *de novo*, and not in more than 5 per cent. of patients with previous ulcer or long-continued dyspepsia. Further, the microscopical evidence of malignant change in chronic gastric ulcers—islands and ingrowths of epithelium in fibrous tissue—is, with the support of Sir Bernard Spilsbury and Professor Dible, gravely impugned. The importance of a decision on the reputed etiological sequence of gastric ulcer and carcinoma is obvious; for if it is true, every gastric ulcer should logically be excised.

In the chapter on the physiology of digestion Professor MacLean discusses the occurrence of regurgitation of the duodenal contents into the stomach, described by Drs. C. Bolton and G. W. Goodhart in 1922, and the reduction of hydrochloric acid and the associated increase in neutral chlorides during digestion. The normal occurrence of duodenal regurgitation was accepted in the first edition of this work, but now he concludes that, though duodenal regurgitation may occur, it is an accident and is not in any way part of physiological digestion. This change of opinion is based on examination of the gastric contents and on experimental observations on an isolated Pavlov pouch in the stomachs of dogs; and as a result the deduction is drawn that the stomach has the power of secreting both acid and sodium chloride, but when the secretion of one is copious, that of the other is low, and that the stomach possesses an automatic mechanism for regulating the hydrochloric acid concentration, so that when it reaches about 0.2 per cent. the secretion of acid is reflexly inhibited while that of sodium chloride continues.

The clinical, chemical, and radiological aspects of gastric diseases, the last by Dr. Geoffrey Fildes, are clearly dealt with, and there is much sound practical advice in the sections on diagnosis and treatment. Thus in the differential diagnosis between the dyspeptic pain of gastric ulcer and gall-stones stress is laid on the sudden relief as incompatible with ulcer; and further, whenever a patient over 40 years of age complains for the first time of dyspepsia without apparent cause, cancer should be suspected.

SURGICAL PATHOLOGY.

THE *Précis de Pathologie Chirurgicale*,[2] by a number of French surgeons, now in its fifth edition, is designed for the use of students preparing for examination and for practitioners desirous of keeping their knowledge abreast of the times. As a summary of surgical pathology it must be considered to be tolerably complete, since its six volumes include nearly 5,500 pages. Unlike many works on this subject, it includes the pathology of the female genital organs; on the other hand, while tumours of the orbit are considered at length, the surgical affections of the globe of the eye find no place in the book. The subjects embraced under the term "pathology" are made to include etiology, symptomatology, pathological anatomy, diagnosis, prognosis, and treatment; the book is therefore practically a textbook of surgery, except that the technical details of operations are altogether omitted.

The general arrangement follows the usual plan adopted in such works; the first part deals with lesions generally, the second with lesions of the tissues, and the third with lesions of the various regions of the body. As with many French textbooks, classification is strongly in evidence, and the descriptions, instead of being continuous, are for the most part divided up into sections under headings and subheadings, a feature which certainly facilitates reference and renders a survey of the whole subject more easy. With regard to the classification of tumours, the basis adopted is that almost universally recognized—namely, tissue structure—but the nomenclature differs somewhat from our own in that the term "epithelioma" takes the place of "carcinoma." The authors state that the term "carcinoma" has reference merely to a particular variety of epithelioma in which the connective tissue is arranged in the form of alveoli, the stroma sometimes being abundant, as in scirrhous carcinoma. Such terms, they consider, have now merely a historical interest and should be discarded. It is unfortunate that some common system of classification cannot be adopted in all countries, but of this there seems little prospect at present, and the nomenclature tends rather to become more confused. For example, we now find the term "adamantinoma," which is defined as arising from vestiges of dental structures in the jaw, applied by some authors to growths arising at the base of the brain; "meningioma," to growths of any kind arising in the meninges; "folliculoma," to a peculiar epithelial tumour arising in the follicles of the skin; and "Schwannoma," to the plexiform neuromas occurring in von Recklinghausen's disease, and supposed by some to take origin in the sheath of Schwann. The authors' system of classification breaks down somewhat in placing the multilocular cyst of the jaw and the multilocular and papilliferous cysts of the ovary under the *epitheliomas*; they admit that this is illogical. It may be noted that lymphadenoma is placed among the neoplasms, a position which would probably not be accepted by the majority of pathologists in this country; in structure it seems more allied to the granulomata.

In a work embracing the whole domain of surgical pathology it is interesting to note to what extent the use of radium is recommended in the treatment of malignant tumours. Irradiation, it is stated, has shown some remarkable results in lymphosarcoma of the skin and cervical glands, and in the latter case appears to be preferable to operation. In certain inoperable and recurrent sarcomas of the maxillae, x rays and radium have induced retrocession of the tumours, and in some very malignant forms would seem to be the treatment of choice. But with regard to sarcomata of bone generally radium is said to be of little use, and x rays may increase the tendency to metastasis in the round-celled form; in some hands the spindle-celled form has been found more amenable. Amelioration in the course of sarcomas of the nasopharynx may follow the use of x rays, and irradiation is useful as supplementing operative treatment of malignant tumours of the nasal fossae. In sarcoma of the uterus x rays are stated to give results comparable to those following operation. A large proportion of cases of rodent carcinoma are curable by irradiation, and good results have been obtained in cancer of the lip when irradiation is followed by complete excision of the glands. In cancer of the tongue radium therapy appears to be recognized as a satisfactory alternative to operative treatment, although it is too early yet to judge of the ultimate results. The modus operandi is to perform a bilateral excision of the glands, destroy the tumour by irradiation, and finally apply x rays to the gland zone operated on. In cancer of the larynx, oesophagus, and bladder, irradiation is only mentioned here as supplementing operation or as a palliative. In the case of the bladder, apparent cures are reported from the use of radium, but extremely painful burns may result from the treatment. Similarly with regard to cancer of the vagina, much relief is obtainable, but there is a great tendency to the formation of fistulae and other infirmities. Radium has given good results in cancer of the penis, preferably followed by the application of x rays to the glands; and in cancer of the prostate rapid and marked amelioration is obtainable, equivalent to cure in old people.

[1] Modern Views on *Digestion and Gastric Disease*. By Hugh MacLean, M.D., D.Sc., F.R.C.P. Second edition. Modern Medical Monographs. London: Constable and Co., Ltd. 1928. (Demy 8vo, pp. x + 182; 23 figures. 12s. net.)

[2] *Précis de Pathologie Chirurgicale*. Par P. Lecène, L. Tixier, et M. Patel. Cinquième édition, entièrement refondue. Collection de Précis Médicaux. Tomes i, ii, iii, iv, v, vi. Paris: Masson et Cie. 1928. (Post 8vo; illustrated. Paper cover, 45 fr.; bound, 55 fr. each volume.)

In the hands of expert technicians the employment of irradiation in cases of cancer of the cervix uteri appears to have been more or less systematized; in early operable cases radium and operation appear to be placed on an equal footing; in cases of doubtful operability and in inoperable cases radium in association with *x* rays is indicated. It will thus be seen that while irradiation is recognized by the authors of this work as being a powerful therapeutic agent, there is no very strong recommendation, in the majority of cases, to employ it as the method of choice. In France, as in this country, the indications for its employment will no doubt become clearer when its technique is better understood.

The Précis de Pathologie is written with the usual clearness and conciseness that one expects to find in French literary works. The volumes are handy in size, and contain a sufficient number of good illustrations without being overburdened with figures. As a manual for students and practitioners its popularity is well deserved.

HISTORICAL ASPECTS OF TUBERCULOSIS.

IT is only occasionally that any work appears to which the epithet "monumental" may justly be applied, but *La Tubercolosi*[1] seems fully to merit that description. This work has been prepared and published by the sixth conference of the International Anti-Tuberculosis Union, under the auspices, and with the co-operation, of the Public Health Department of the Italian Ministry of the Interior. It has been planned on generous lines, and consists of four large, well-printed volumes, with considerably over 3,000 pages, so that its scale permits the comprehensive treatment of various aspects of the problem of tuberculosis. Professor Ettore Marchiafava contributes a preface, and the various sections making up the nine parts of this work have been contributed by other Italian authorities, with Dr. Alessandro Messea, *director-general of public health*, as editor. As an example of the method followed the composition of the first part may be indicated; this section of the work, by Professor Guglielmo Bilancioni of Pisa, deals with the historical development of our knowledge of tuberculosis, and comprises a general survey, occupying some 140 pages, followed by a chronological exposition occupying 350 pages. It is interesting to observe how, from the few obscure references—drawn mainly from the literature of archaeology and palaeopathology—relating to the disease in the period 2000–1000 B.C., the stream gathers volume with the development of knowledge in general, the rise of scientific medicine, and the multiplication of written records down to 1850, when a vast literature had been accumulated. Professor Bilancioni has drawn upon a wide field for his citations; between 1300 and 1400 A.D. there are, for example, quotations from Dante and Boccaccio, but in later years the references are, of course, almost exclusively to the writings of medical men. The same author contributes a similar historical review of laryngeal tuberculosis, extending his chronological exposition of this topic down to the beginning of 1928. Other parts deal with various aspects of tuberculosis—bacteriological, etiological, immunological, the relation of the disease in animals to that in man, mortality statistics, hospitalization, therapeutics, and legislation. Each section includes a full index and, where applicable, a chronological survey. In the part devoted to legislation the multitudinous citations are also given in alphabetical order under the 160 states to which they relate. The history of the various national and international movements, and of the conferences and publications associated with them, is also dealt with in detail.

It will be clear from what has been said that this work should prove of considerable value and interest to research workers and others concerned with the problem of tuberculosis, notably in its historical aspects. Its sponsors and contributors deserve every credit for the material support which has made its production possible, and for the patient and laborious work involved in its compilation. The four volumes received for review have been placed in the library of the British Medical Association.

[1] *La Tubercolosi.* Pubblicato per la VI Conferenza dell' Unione Internazionale contro la Tubercolosi. Volumes i., ii., iii., iv. Roma: Provveditorato Generale dello Stato Libreria. 1928. (7½ × 11¼, vol. i., pp. xliv + 720; vol. ii., pp. 522; vol. iii., pp. 643; vol. iv., pp. 1172.)

A SURGICAL TEXTBOOK.

PROFESSOR W. WAYNE BABCOCK'S new *Text-Book of Surgery*[2] takes a distinguished place among the many general textbooks that are available. It is designed both for the student and the practitioner, as the author believes that, with the increase of clinical teaching and the declining importance of systematic lectures, the student must turn more to his reading for his theoretic background. Professor Babcock likes to be dogmatic in stating what he believes to be the truth at the moment of writing. He will still be dogmatic when he has progressed to an opposite standpoint, and the result is clarity of exposition. Except for a few specialties such as ophthalmology, otorhinology, and gynaecology, the whole ground of surgery is covered, including operative technique, and the survey seems to be extremely thorough. The personal note is often sounded in spite of the pervading brevity, and the reader is introduced in many places to Babcock's peculiarities of technique or instruments. This leads occasionally to a slight loss of balance, as when five pages are devoted to "Babcock's operation" for inguinal hernia, whereas the whole subject of the treatment of femoral hernia is dismissed in a few lines. One of the best features of the book is the quality of the very numerous illustrations, which have been carried out "in accord with the best traditions of the Max Brödel School."

SIGNIFICANCE OF THE COLLOIDAL STATE IN HEALTH AND DISEASE.

DR. AUGUSTE LUMIÈRE, who is the author of several smaller works on the same subject, has now brought out a book of more than 500 pages, *La Vie, la Maladie et la Mort: Phénomènes colloïdaux*,[6] giving a lengthy account of his thesis that healthy life depends on the maintenance of a normal colloidal state, and that destruction of this colloidal state is the cause of disease and death. Starting with this hypothesis six years ago, the author has made a large number of experiments which convince him that the problem has now been shown to be scientifically confirmed. When the structure of the colloids in the body is broken down a precipitation or flocculation occurs. In an animal intravascular injection of a fine suspension of an insoluble mineral, such as barium sulphate, produces acute symptoms resembling those of anaphylactic shock, which are explained as due to irritation of the endovascular terminations of the sympathetic. Experiments are also reported to show that traumatic shock is due to precipitation in the blood stream of colloids as a result of admixture of those liberated from the injured tissues with those of the blood plasma. When pathogenic micro-organisms produce precipitation in the blood stream, manifestations such as anaphylaxis, asthma, epilepsy, and acute disease result. Chronic disease is also explained by precipitation from the colloids, the cells of the various organs, and not the blood stream, being the site of the deposit. The various chronic diseases are determined by the organ or organs in which the precipitation chiefly occurs. The author unfortunately allows himself to express rather strongly his soreness that his views have not received more notice and acceptance.

NOTES ON BOOKS.

THE appearance of a second edition of Dr. SANSUM'S *The Normal Diet*[7] testifies to its success. This type of book is more popular in the United States than in this country; it seeks to place before the general reader certain problems commonly dealt with by the physician. While some of the subject-matter can be easily followed without any special knowledge, it remains a matter of opinion whether the lay public (and especially that section of it which is already seeking medical advice) benefits by a discussion of questions that do not yet admit of final or authoritative answer on the part of the medical profession; such matters Dr. Sansum has discussed in the section dealing with acidosis and high blood pressure. On the other hand, a grasp of the more general principles of diet might well save many patients a good deal of avoidable worry and discomfort.

[2] *Text-Book of Surgery.* By W. Wayne Babcock, M.D., F.A.C.S. Philadelphia and London: W. B. Saunders Co. 1928. (6½ × 10, pp. 1041 figures, 9 plates. 45s. net.)

[6] *La Vie, la Maladie et la Mort: Phénomènes colloïdaux.* Par Auguste Lumière. Paris: Masson et Cie. 1928. (Demy 8vo, pp. xiii + 55 illustrations, of which 17 are coloured plates. 25 fr.)

[7] *The Normal Diet.* By W. D. Sansum, M.S., M.D., F.A.C.P. Second edition. London: H. Kimpton. (Post 8vo, pp. 136. 6s. 6d. net.)

Those who wish to obtain a short account of the procedure adopted by a practitioner who uses tuberculin in treatment and diagnosis will find it in Lieut.-Colonel F. E. GUNTER'S *Tuberculin in Practice*.[8] Recognizing the danger of the indiscriminate use of this agent the author advises the novice to begin with the application of tuberculin liniment rather than injections; to confine himself at first to early cases of the disease; and to take every opportunity of attending an institution, such as a dispensary, where tuberculin is given. For diagnosis he suggests the modified von Pirquet procedure, and does not mention the more modern intracutaneous injection of tuberculin. His summary of Koch's investigation at the beginning of the book is too brief to be intelligible. In a postscript there is a portion of a letter received by the author from Professor Calmette, in which it is stated that "the favourable action of tuberculin is entirely due to the presence of phosphatoids and lipoids."

Professor FEER'S well-known book on *The Diagnosis of Children's Diseases*[9] was first translated into English by Dr. C. A. SCHERER in 1925, and a second edition of this translation now appears. The original translation was made from Feer's third edition, and it is not clear which edition has been used for this revised version now issued. It is stated by Dr. Scherer that "the advance of knowledge . . . even in two years has necessitated numerous additions," but whether these additions have been made in Zürich or Minnesota is not revealed. Little need be said here about the contents of the book except to recall that diagnosis alone is dealt with, and that the illustrations are a remarkable feature of a well-produced volume. Disorders of the skin are taken up at considerable length, and this particular section is one of the best in the book.

LERICHE and POLICARD'S book on *The Normal and Pathological Physiology of Bone*,[10] which has already been noticed in our issue of October 9th, 1926 (p. 639), has now been translated from the French by Professors MOORE and KEY of the University of Washington. It contains a new theory of bone formation, the main features of which are as follows. The osteoblasts are not bone producers, but bone destroyers, their function in this respect being feeble, although indirectly important owing to their capability of becoming converted into osteoclasts. Bone is not a tissue *sui generis*, but merely one of the many forms into which embryonic tissue may become transformed under varying conditions—such as areolar tissue, fibrous and tendinous tissue, mucous tissue, hyaline tissue, and cartilage. What the precise conditions are which determine the production of one form rather than another is a matter for further research, but in the case of bone formation an abundance of calcium salts in solution in the fluids of the part appears to be one of the necessary conditions. All bone formation takes place in membrane, endochondral ossification being no exception, since bone is not formed until the cartilage has been replaced by connective tissue. In an area in which bone formation is taking place the first change is a reversion of the connective tissue to the form of fibrillated embryonic connective tissue; next there is a marked proliferation of the fibrillae; this is followed by an exudate in the form of a semi-solid oedema, in which calcareous deposition takes place, the cells of the original tissue becoming imprisoned as passive bone corpuscles. The osteoblasts are regarded as connective tissue cells which have become hypertrophied under the influence of their altered surroundings, the change being regarded as to some extent a defensive action.

Modern X-Ray Technic,[11] by Dr. E. C. JERMAN, is very American in its construction, as well as in the manner in which the subject is dealt with and discussed. Apparently the author has the teaching of a large number of x-ray technicians, and has written mainly for them, and also in the hope that the book may be of use to technicians generally. The second section, which is illustrated, shows page by page a photograph of the part under examination, with the radiographic result; and, in addition, there is a short account of the technique, and a table of exposures in varying circumstances. The book is well presented, and contains a great deal of useful information, set out in a somewhat dramatic manner.

A Text-Book of Biologic Assays,[12] by P. S. PITTENGER, is a second edition of a book that was published as long ago as 1914, but the subject has changed completely since that date, and the present volume is practically a new work. In a work of this character the points of outstanding importance are that the methods mentioned should be described with sufficient detail to enable the reader to perform the tests himself, and that the standard of accuracy should be high. Unfortunately the book does not always fulfil these requirements. Important practical points are omitted in the descriptions of some of the methods, and also some methods that have been proved to be unreliable are included. The book concludes with three pages of references, but there are only three references to work done outside America since 1914.

In a pamphlet entitled *Clinical Surgery*[13] Mr. J. W. DOWDEN of Edinburgh has provided a useful collection of hints for junior students from which may be acquired as much of the wisdom of an experienced and skilful surgeon as can be conveyed by way of precept. How to observe, how to examine patients, and how to record the results of observation and examination (including in this last term anamnesis) may be learned from these few clearly printed pages.

[8] *Tuberculin in Practice*. By F. E. Gunter, D.S.O., M.D., Lieutenant-Colonel R.A.M.C.(Ret.). London: The Gregg Publishing Co., Ltd. 1928. (Demy 8vo, pp. ix + 102. 7s. 6d. net.)

[9] *The Diagnosis of Children's Diseases*. By Professor E. Feer. Translated by Carl Ahrendt Scherer, M.D., F.A.C.P. Second edition, revised. London: J. B. Lippincott Company. 1928. (Med. 8vo, pp. xiii + 551; 266 figures. 35s. net.)

[10] *The Normal and Pathological Physiology of Bone*. By R. Leriche and A. Policard. Authorized English translation by Sherwood Moore, M.D., and J. Albert Key, M.D. London: H. Kimpton. 1928. (6½ × 9½, pp. 256; 33 figures. 21s. net.)

[11] *Modern X-Ray Technic*. By Ed. C. Jerman. Saint Paul, Minneapolis: Bruce Publishing Company. 1928. (7½ × 10½, pp. 269; illustrated. Cloth, 5.50 dollars; leather, 7.50 dollars.)

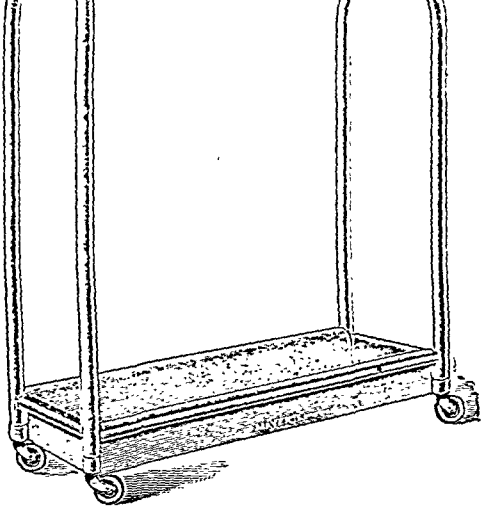
[12] *A Text-Book of Biologic Assays*. By Paul S. Pittenger, Ph.G., Ph.C., Ph.M., Phar.D. Second edition. Philadelphia: P. Blakiston's Son and Co. 1928. (Post 8vo, pp. xxiii + 373; 153 figures. 3 dollars.)

[13] *Clinical Surgery*. By J. W. Dowden, M.B., F.R.C.S.E. Edinburgh and London: Oliver and Boyd. 1928. (Cr. 8vo, pp. 68. 2s. net.)

PREPARATIONS AND APPLIANCES.

ABDOMINAL SWAB STAND.

DR. W. R. MACKENZIE (Belfast) has designed a mobile stand fitted with hooks upon which abdominal swabs may be hung after use, a removable tray catching the drips. The apparatus makes it possible for the surgeon or sister in charge to see and count the swabs, and thus minimizes the danger of one



or more being overlooked. The illustration shows the stand fitted with fourteen hooks, a number found useful for abdominal work, but stands with any number of hooks can be supplied. The apparatus runs very easily on ball-bearing castors, and forms a most useful piece of furniture for the operation theatre. The apparatus is made for the Samaritan Hospital, Belfast, by Messrs. Mayer and Phelps (49, New Cavendish Street, W.1).

ANAESTHETIC ETHER.

We are informed by Messrs. Howards and Sons Ltd. that their standard ether for anaesthesia, which has previously been made from industrial methylated spirit, is now produced entirely from duty-free rectified spirit, and at no stage in its manufacture are deleterious denaturants, such as wood spirit and pyridine, added. The standard ether is supplied at the same price as that formerly charged for ether made from industrial methylated spirit.

AN EMERGENCY DRESSING.

We have received from Mr. H. H. ARNOLD (81, St. George's Road, S.W.1) a small antiseptic dressing, capable of being carried in the pocket, for emergencies. It consists of iodine in a semi-solid form, a small dressing of sterile lint or gauze, and adhesive strapping, and is designed to facilitate the rapid sterilization of wounds. The price of the dressing is stated as 2s.

RADIUM IN THE TREATMENT OF MALIGNANT DISEASE.

LECTURE BY PROFESSOR GASK AT THE ROYAL COLLEGE OF SURGEONS.

A HUNTERIAN LECTURE on the use of radium and its emanations in the treatment of various forms of malignant disease was delivered by Professor G. E. GASK at the Royal College of Surgeons of England on January 30th. The lecture was a survey of the results of this treatment as obtained by the Surgical Unit at St. Bartholomew's Hospital, and was followed by a demonstration in the library of the College of patients who had been treated by radium. Professor Gask explained that he was acting only as the mouthpiece of the Surgical Unit, and was describing work which had been carried out by a team. He was fully conscious of the great amount of excellent work done abroad and in this country; if he did not refer further to it, it was not from want of appreciation, but because he thought his audience would prefer to learn the results of the particular investigation of which he could speak with personal knowledge.

Clinical Results.

In 1921, with some radium loaned to the Surgical Unit by the Medical Research Council, a start was made on the treatment of sarcoma; four patients were treated, of whom only one remained alive. The treatment employed at first was to implant a tube containing a large dose of radium in the middle of the tumour, and leave it there for a short time. In 1922 five patients with sarcoma were treated, of whom again only one remained alive. The treatment of sarcoma was disappointing, and, moreover, no large number of cases was available; therefore an attempt was made on carcinoma of the breast, only cases of recurrence, too advanced for further operative treatment, being taken. These were treated in the same manner, with the buried tube, but again the results were almost uniformly bad. Of three such patients treated in 1922, two in 1923, and two in 1924, not one remained alive.

In 1924 the first case of primary carcinoma was taken. While radium was found to have a very considerable action on the tumour, these cases of advanced growth, where there was metastasis, went on to a fatal issue. It was also clear that radium was not distributed far enough or evenly enough. The technique was changed, therefore, a smaller dose being given for a longer time. The first patient with primary carcinoma, treated in 1924, remained alive and well to-day. In 1925 six such patients were treated, of whom two remained alive, and in 1926 of another six, four remained alive. Of the thirteen treated in 1927 ten remained alive, and all the thirty-nine treated in 1928 had survived so far. The technique, which had been gradually evolved, was to insert a large number of needles —up to thirty-five—placing them underneath the breast, between the breast and the pectoral fascia, so as to make a kind of barrage; the axillae were dealt with in a similar manner. In one such patient in whom the carcinoma of the breast was well marked, the growth disappeared four months after radium treatment. After mentioning other striking cases of the same kind, the lecturer remarked that it was quite clear that a stage had been reached at which the immediate results of radium treatment could be pronounced satisfactory. The tumours shrivelled, fungating ulcers vanished, and the glands cleared up. This had not happened once or twice, but time and time again.

The Nature of the Curative Process.

Professor Gask said it was interesting to speculate what happened when radium was applied to a tumour. Physicists had suggested that the result might be due to an enormous agitation of electrons which caused heating of the cells and killed them by coagulation of the protein, but now there appeared to be some scepticism as to the very existence of the electron. While it could not be stated what was going on in the cell, some interesting experiments had been conducted by Dr. Canti and others. The lecturer exhibited a box of mustard and cress in the middle of which radon seeds had been inserted. In this spot the plant did not grow, and surrounding this area was a fringe of stunted growth. He also showed on the screen a section from a well-marked carcinoma of the breast. This patient, after five months, still had a lump in the breast, and it was uncertain whether the tumour was still alive. A local excision was therefore made, and the carcinoma disappeared, only necrotic tissue being left.

Ultimate Results of Radium Treatment.

As regards the final results of treatment, Professor Gask said that time must elapse before it would be possible to make any definite pronouncement. But as a basis of comparison he had taken a chart from the "follow-up" department at St. Bartholomew's showing the survival rate among women who had had various kinds of operations on the breast for carcinoma. The results were, he thought, appalling. At the end of six months only 85 per cent. were alive; at the end of two years about 60 per cent., after three years 50 per cent., and at the end of six years, which was the full period covered, 20 per cent. Thinking that this might possibly be exceptional, he inquired from Mr. Miles as to the statistics for the Cancer Hospital, and from these it appeared that ten years after operation the survival rate was only 20 per cent.

Technique of Radium Therapy.

Professor Gask then proceeded to speak about the introduction of radon seeds, which had the advantage that they could be used in very small confined spaces. The seeds were placed at the periphery of the tumour in such a manner that the whole tumour was irradiated. The first case in which this method was applied was a fungating epithelioma of the tongue; it cleared up in a remarkable way, the like of which he had never seen, with the exception of the disappearance of some gummas under the influence of iodide treatment. He showed lantern views of several cases of epithelioma of the tongue, with a good result in almost every instance. The problem remained how to deal with the glands, and Professor Gask illustrated the way in which needles, each containing 1, 2, or 3 mg. of radium element, were placed over the area.

With regard to tumours of the brain, it was thought that it might be possible to expose the brain tumour and leave radium in position. A case of commencing acromegaly in a woman presented itself; the pituitary tumour was exposed, and one radon seed inserted. The patient lost her symptoms, including headache; her fields of vision became normal, and she was very grateful. It was arguable, of course, that the manifest benefit was due to decompression, and not to radium treatment; on this he ventured no opinion. He related other dramatic cases in which radon seeds had been inserted in brain tumours, resulting in enormous improvement. One woman with a glioma had had ten radon seeds inserted with remarkable benefit, though here again the good result might be due to decompression. With regard to other internal tumours, attempts had been made to treat these in the same manner, so far without much progress.

In conclusion, Professor Gask said that it might fairly be claimed that Madame Curie and the physicists had placed in the hands of the medical profession a new and very potent weapon, of the extent and power of which they were not yet fully aware; that it was useful he was convinced. He confidently hoped that many of these cases, the like of which had previously been treated by operation, could now be cured by this method. Yet a note of warning must be sounded for those who were about to take up the use of radium, which, like all potent agencies in medicine, might be active for evil as well as for good. Surely Shakespeare might be held to have foreseen this when he bade us beware lest we heal the inveterate cancer of one wound by making many.

After the lecture a demonstration was given by members of the Surgical Unit of a remarkable series of forty-nine patients who were gathered in the library of the College. These patients had been suffering from various forms of malignant disease—of breast, tongue, floor of mouth, larynx, pharynx, and brain—and all had been treated either with radium or radium emanations. In all of them the original tumour from which they had suffered had disappeared, and they remained apparently well. Patients were shown in all stages of duration of treatment, from four years to three weeks.

British Medical Journal.

SATURDAY, FEBRUARY 9TH, 1929.

THE SURGERY OF PROSTATIC ENLARGEMENT.

IN recent numbers of the *British Medical Journal* have appeared various communications on the subject of prostatic enlargement, notably the address by Mr. Cyril Nitch published on January 26th (p. 139), and that by Professor Grey Turner in our present issue at page 233. A careful study of these papers provides a standpoint from which the present position of the surgery of prostatic enlargement may be surveyed. All writers agree that much progress has been made in the treatment of this condition during the last decade. The operative mortality, although still high, is on the decline. Great improvements have been achieved in operative technique, and still more in pre-operative treatment and post-operative care. The introduction of the two-stage operation of prostatectomy in itself has been instrumental in saving many lives. So also has been the spread of the knowledge of tests of renal efficiency. But when we turn to the pathology of enlargement we must confess that our knowledge is little more than that of the old Venetian physician of the sixteenth century, Nicola Massa, in whose writings the first reference to prostatic enlargement is found. The causes and nature of the disease are still unknown. In the last ten years no new facts have been gleaned which will enable us to decide between the rival theories of inflammation, new growth, and degeneration. Each explanation of enlargement has its partisans, but, as Mr. Nitch has stated in his paper, the theories most worthy of consideration would appear to be the neoplastic and the degenerative. At the moment the former is the more fashionable, although it fails to explain why adenomata should appear with such frequency in the prostate at a particular time of life. The theory that the enlargement is due to degenerative changes in the gland furnishes such an explanation, and an additional argument in its favour is supplied by the close resemblance between the histology of prostatic enlargement and that of the female breast at the menopause, a resemblance first noted by Mr. Henry Wade. Indeed, the microscopic appearance of the enlarged prostate is so similar to that of a chronic globular mastitis that it can only be distinguished from the latter by its characteristic corpora amylacea. Moreover, Mr. Kenneth Walker, in his Hunterian Lecture seven years ago, drew attention to the fact that prostatic enlargement is almost invariably associated with signs of degeneration and involution in the whole of the genital tract. These, he suggests, are indicative of a male climacteric, with its accompanying symptoms due to an unstable endocrine balance.

Not only is the cause of prostatic enlargement obscure, but doubt exists as to the structures involved. In the opinion of many Continental writers, notably those of the French school of urology, the condition is due to overgrowth of the various submucous glands situated in the prostatic urethra and around the neck of the bladder. According to this theory the prostate itself takes no share in this new formation beyond becoming compressed and atrophied around it. This diversity of opinion concerning not only the pathology, but the anatomy, of prostatic enlargement is probably due to the fact that we are dealing here with more than one pathological entity. Under the heading of prostatic enlargement have been placed cases of enlargement of the prostate itself, hypertrophy of various groups of submucous glands, inflammatory conditions accompanied by fibrosis, degenerative changes, and cases of true adenoma formation. It is only lately that any attempt has been made to differentiate between these various conditions, and much careful work, both in the laboratory and in the operating theatre, will be required before this can be done with any degree of accuracy.

When we turn to the question of treatment we find, happily, a greater unanimity of opinion. Where differences occur they concern technique rather than first principles. The indications for operation have been defined with some exactitude. These indications rest on the presence of signs of obstruction rather than on the presence of enlargement itself. It is realized that a considerable degree of enlargement may exist without any interference with micturition, and the majority of clinicians are prepared to adopt the expectant policy in such cases. Professor Grey Turner, in the interesting paper published this week, gives concrete examples of patients who have lived comfortably for many years with enlarged prostates. At the same time it must be admitted that certain authorities consider that the risk of such prostates becoming the seat of malignant disease justifies their removal. The fact that this risk can be assessed at a figure in the neighbourhood of 14 per cent., and that the mortality rate of prostatectomy throughout the country cannot be very much below this number, constitutes a serious argument against such a tenet. But, as has already been said, the chief divergence of opinion at the present day is that which concerns operative technique, one school of surgeons inclining towards the old blind method of enucleation, and the other towards the open operation advocated by Sir John Thomson-Walker. On theoretical grounds the latter would appear to be the better procedure, since it brings prostatectomy into line with the majority of modern operations performed under ocular control.

Next to renal failure, the sequelae most to be feared after prostatectomy are haemorrhage, sepsis, embolism, and obstruction. By bringing the field of operation under direct vision much can be done to avoid these unfortunate accidents. Bleeding points can be ligatured, torn fragments removed, and the prostatic bed treated according to general surgical principles. At the same time it must be confessed that the open operation, although it may reduce the risk of haemorrhage, of severe infections, and of post-operative obstruction, provides no certain guarantee that such complications may not occur. Moreover, the additional time required presents a serious disadvantage in certain cases. For this reason it would seem that the solution of the problems lies not in a blind adherence to one or the other method, but in a nicely balanced judgement that shall enable the operator to adopt one method for one type of case and another for another. It is the judgement he shows in the pre-operative and post-operative care, and the suiting of his technique to the requirements of each particular case, that determines the success of the prostatectomist. Manipulative skill can have little effect on his mortality rate if this judgement be lacking. Herein lies the

explanation of the wide divergences that are found in the death rate of prostatectomy performed in different hospitals and by different surgeons. Any operator of average skill can enucleate a prostate, but only those who have acquired judgement and experience in this type of surgery can do so with any degree of safety. It is for this reason that papers contributed by those best fitted to write on this subject are of such especial value.

DEMENTIA PRAECOX.

"CONTINUITY in change and change in continuity." Burke's political aphorism may be fittingly applied to recent developments in psychiatric science, especially in regard to the changing attitudes towards that large group of the psychoses formerly termed dementia praecox and now more generally styled schizophrenia. When, some thirty years ago, Kraepelin introduced the appellation "dementia praecox" into the literature of psychiatry, a sudden clarification was brought about in our ideas of mental disease. In vain had Clouston adumbrated his adolescent insanity, which in many respects foreshadowed the Kraepelinian hypothesis. In vain also had Morel described as "démence précoce" cases illustrative of a profound degeneracy of constitution. Neither of these concepts had caught on. Clouston, indeed, had drawn a picture of certain patients, "unusually stupid-looking, lethargic, very dirty in habits, unobservant, uninteresting, silly, with a blank inexpressive face, a listless dull eye, and a flabby muscular system," as simulating secondary dementia, and, indeed, when they lived long enough, as constituting it; but his "adolescent insanity" failed where two Latin words later succeeded in holding the medical imagination. With Morel the case was different. For long the French school had been intrigued with the idea of a constitutional degeneracy in the sense that future generations became unable to hold their own in the struggle for existence and finally perished; and it was not with the object of demonstrating the dementia into which such cases finally succumbed that Morel drew his clinical picture, but rather with a view to illustrating still further examples of the degeneracy concept. Kahlbaum's description of katatonia was a distinct advance; and this group was incorporated by Kraepelin in his more comprehensive term. Kahlbaum and Hecker's earlier attempt to designate as a separate clinical entity an adolescent psychosis of deterioration, which they termed "hebephrenia," was also not to survive save in the wider Kraepelinian synthesis.

Illuminating as the Kraepelinian nomenclature has been proved to be, it is more than doubtful if the term "dementia praecox" will survive. A recent symposium on schizophrenia,[1] with dementia praecox as its subtitle, contributed by numerous authors to the Association for Research in Nervous and Mental Disease in New York, shows clearly the recent reaction to Kraepelin's terminology and the reasons for this. Dr. C. Macfie Campbell, professor of psychiatry in the Harvard Medical School, referring to the influence of Kraepelin in making the outcome of the psychosis a basis for its classification, considers that the use of this term has done serious injustice to many patients, and "both in physician and nurse it has tended to paralyse therapeutic effort." He expresses his satisfaction that "the conception of dementia praecox is loosening its grasp on the psychiatric world, allowing physicians to come to the complex clinical material with open minds and free from a rigid schema with the subtle suggestion of an impersonal disease process, running its insidious course regardless of the life situation and of the personal problems of the individual." It may here be questioned whether a name can exercise so great a tyranny, whether the mere categorizing of a syndrome, admittedly in fatalistic terms, can have so potent an effect for evil. Therapeutic effort is not withheld in cases of general paralysis of the insane; and it is hardly possible to believe that if the disease had never been called by any other name than dementia paralytica it would necessarily have received neglect.

But it is not solely the fatalistic implications of the term "dementia praecox" that have led to its being supplanted by Bleuler's "schizophrenia"; we would rather say that this latter designation affords a wider survey of the personal problems of the patient, and in particular demonstrates his relationship to, or participation in, the larger category of the schizoid type. By applying Freud's psycho-analytic teaching to the study of dementia praecox Bleuler was enabled, in the first place, to show that one of the chief characteristics of this disease consisted in a splitting of the psychic functions, and, further, to demonstrate in everyone schizoid tendencies. The schizoid type is described as withdrawn, secluded, and not in normal effective *rapport* with the environment. In one of the contributions above referred to Dr. A. A. Brill recounts the case of a schizoid person who suddenly heard that his child had been injured and had died. He apparently showed no "affect" whatever, but about a month later fell into a state of deep depression. Asked by Dr. Brill why he was so calm on hearing of the accident, he answered that he did not like to hurt his wife. This affords an excellent example of the displacement of feeling with the outward indifference so characteristic of these cases. The term "apathy" has long been used to describe the emotional state of the schizophrenic. Many observers have been inclined to correlate the stupidity of countenance with an absence of mental activity. Such is, however, far from being the case. The countenance is a mirror wherein the expression of the emotional state is most easily read, but the countenance of a schizophrenic is often an utter blankness. Dr. H. S. Sullivan, *in his* contribution to the symposium, reaches the conclusion that "apathy and emotional disharmony of the schizophrenic patient are more a matter of impression than a correct evaluation of the inner experience of the patient." He refuses to accept the view that there is any genuine disharmony in the schizophrenic life, but would rather argue that there is disagreement between what the schizophrenic patient actually *thinks* and what he feels called upon to say.

Numerous highly interesting problems call for solution in the study of schizophrenic reactions; and their number and nature are largely the outcome of a new orientation called forth by the work of Bleuler and that of Kretschmer, whose studies of the relationship of personality and psychosis to body type have provided so fertile a field for research. Faced with the manifold perplexities offered by psychiatrical problems, the scientific observer can yet discern in the fluctuations of experimental examination, of clinical description and terminological designation, "continuity in change, change in continuity."

[1] *Schizophrenia [Dementia Praecox]: An Investigation of the Most Recent Advances, as Reported by the Association for Research in Nervous and Mental Disease. A Series of Research Publications.* Volume V. New York: P. B. Hoeber, Inc. (Med. 8vo, xiv + 491; 61 figures. 7.50 dollars.)

DIAGNOSIS OF EARLY PREGNANCY.

ANOTHER reputed test for pregnancy has made its appearance, based on the hypothetical existence of a specific hormone modification. We referred last summer (June 2nd, 1928, p. 952) to A. C. Siddall's report of the discovery in the blood of a pregnant woman of a hormone which caused enlargement of the uterus and breasts. Now, in the *Zentralblatt für Gynäkologie* for January 5th (p. 15), S. Aschheim describes the technique and results of the test which he has devised with B. Zondek. He states that in pregnancy there are to be found in the urine very large amounts of the hormone of the anterior lobe of the pituitary body. To five infantile mice weighing from 6 to 8 grams are given subcutaneous injections of the morning urine of the patient to be tested, the amounts ranging from 1.2 to 2.4 c.cm. An injection of the urine is also made into a castrated mouse in order to test by the Allen-Doisy method the presence of ovarian hormone; this however, appears in the urine in pregnancy later than the pituitary hormone, and is found also in the urine of non-pregnant subjects. After one hundred hours the animals are killed and the ovaries are examined with the naked eye or with a pocket lens, or, in some cases, by serial sections. Aschheim describes threefold changes in the ovaries resulting from the action of this pituitary hormone: (1) the production of large follicles, which may ripen and burst; (2) bleeding into the proliferating follicle; (3) luteinization of the theca and granulosa cells of the follicle, with formation of corpora lutea atretica. The last two of these findings signify a positive result of the test; follicular enlargement, although denoting presence of the hormone, is apparently induced by such quantities as are present in the urine of a small percentage of non-pregnant patients. Before the animals are killed the presence or absence of vaginal swelling, hyperaemia, and discharge such as accompany oestrus is noted; these signs are attributed to ovarian hormone, in the production of which the hormone of the anterior lobe of the hypophysis (in the view of Zondek and Aschheim) acts as a stimulant. The reliability of this test in the detection of early pregnancy appears, in the hands of Aschheim, to have been considerably greater than that of the other biological tests for pregnancy which have been described from time to time. In 318 urines from non-pregnant female patients the test was negative in 315; in 15 from male patients, negative in 14. Among 295 tests in pregnant women there were only 7 negative results; 56 cases of pregnancy of five to six weeks' duration gave 54 positive results, and 68 pregnancies of seven to eight weeks' duration 66 positive results. The earliest diagnosis made was in the case of a patient with thirty-three days' amenorrhoea. About one week after labour the reaction is no longer given by the urine, and after the death of the foetus in the uterus the reaction is said to disappear in about eight days. Twenty-two cases of tubal pregnancy were tested; 16 gave a positive result, and the remainder—in which foetal death had occurred some time previously—a negative result. Two cases of hydatidiform mole gave positive results, and in one a relatively small amount of urine (0.05 c.cm.) sufficed. Aschheim mentions a case of chorion epithelioma following hydatidiform mole in which the Zondek-Aschheim test was positive twenty-one months after hysterectomy, when nephrectomy was performed for metastasis; the hormone persisted in increasing concentration in the urine until death. It may be inferred that not the presence of the living foetus, but that of living chorionic epithelium, is essential for a positive test; it is recommended that after the occurrence of hydatidiform mole the Zondek-Aschheim test should be performed at intervals for some months at least, in order to detect the possible presence of chorion epithelioma. In the same issue of the *Zentralblatt* (p. 22) L. Kraul and J. Rippel report their experience of the Zondek-Aschheim test in thirteen very early pregnancies, including one in which there had been eight days' amenorrhoea only, and eight of which were subsequently shown to be pregnancies of four weeks' duration; all gave positive results. In two cases a positive test led to the correct diagnosis of early pregnancy in myomatous patients in whom amenorrhoea might, it was thought, indicate either pregnancy or approach of the menopause. In ectopic pregnancy the result of the test depended on foetal survival. A positive reaction was given in a case of hydatidiform mole in which no foetus was found. Odescalchi has obtained good results in thirty cases of pregnancy in the later stages (see *Epitome*, February 2nd, para. 119). H. W. Louria and M. Rosenzweig record briefly in the *Journal of the American Medical Association* (December 22nd, 1928, p. 1988) the employment of this procedure in 132 cases. Their percentage of error was about 5, and they are confident that this can be reduced. The practical importance of such a test, if reliable, needs no emphasizing, but experiment on a large scale is necessary to establish its clinical value. We therefore call the attention of our readers to Professor R. W. Johnstone's letter on page 264, in which he explains how general practitioners can co-operate with him and his colleagues in the Animal Breeding Research Department of the University of Edinburgh by sending samples of urine for testing in this way. In view of the diagnostic value of information as to the existence of pregnancy in certain obscure gynaecological cases, the fees proposed for this examination seem very moderate. Professor Johnstone may reasonably expect to receive adequate supplies of material to enable him to reach a definite conclusion as to the clinical utility of the Zondek-Aschheim test.

INFLUENZA.

IT is already evident that the current recrudescence of influenza is more serious than that of last year, but whether the total mortality will attain that of the year 1922, or (as is perhaps more likely) not substantially exceed that of 1927, is a question which cannot be answered with any real plausibility. In 1922 the quotas of weekly deaths increased at first slowly, so that the rate of increase was greatest when the epidemic had been in progress several weeks. In 1927 the rate of increase was greatest early in the course. This year the deaths reported from the great towns of England and Wales have, so far, been increasing at an advancing rate, so that it will not surprise us if this week's figure is considerably larger than that of last week. An interesting feature of the statistics is that the ratio of deaths in one week to notifications of primary pneumonia of the previous week is very much smaller than in 1922, and, on the whole, smaller than in 1927. For instance, last week the deaths in the great towns were 521, the notifications of pneumonia of the previous week 1,864; in the week of 1922 with the nearest number of deaths—namely, 418—the figure for pneumonia was 1,157. Of course, the deaths and notifications do not relate to the same populations, the latter covering a wider area; but, if we postulate a uniform standard of notification, the suggestion is that this prevalence is of a milder type than that of 1922. That, in general, the prevalence is mild seems to be confirmed by clinical reports from all parts of England and Wales. So far, at least, Liverpool and Manchester, although suffering more than London, have been less hard hit than Glasgow. The age distribution of the deaths is of the usual type—that is, showing a predilection for those past middle age. The recrudescence of 1922 was

widespread in Western Europe; thus, in London the deaths increased from 1,024 in 1921 to 2,600 in 1922; in Amsterdam from 25 to 276; in Paris from 145 to 517; in Berlin from 669 to 1,891; and in Copenhagen from 21 to 198. In American cities, which have suffered severely this winter, the upward movement was then less notable; thus, in Chicago there were more deaths assigned to influenza in 1922 than in 1921—namely, 317 against 114; in 1923 there were 428, while in 1920 there were 2,037.

THE COLONIAL VETERINARY SERVICE.

EIGHTEEN months ago Mr. Amery convened a committee, under the chairmanship of Lord Lovat, to consider the reconstruction of the veterinary services in the dependencies which were not self-governing. The report of this committee, which was presented to Parliament at the end of January, draws attention to the important work which can be done in the tropics by an efficient veterinary organization. Not only are there many pressing questions concerning the health and disease of stock and draught animals to be considered, but many equally vital problems of human disease can only be solved by the closest association between medical men and veterinarians. Moreover, increased prosperity in agriculture, the staple industry of our colonies, means increased revenue, which in turn will provide the ways and means of improving human health and hygiene. The committee considers that the veterinarian should concern himself with animals in health even more than in disease, and consequently recommends that the name "Veterinary Department" should be abolished in favour of that of "Department of Animal Health." In order to fulfil the important functions of such an organization it is recognized that more and better men must be attracted into the profession, and to this end it urges the creation of a unified Colonial Veterinary Service, with salaries commencing at £600 per year and reaching a possible maximum of £3,000 in special cases. This unified service would benefit both large and small colonies alike. Young officers would be attached to a large colony to learn the elements of their work, and from this young personnel the single animal health officer required by the smaller colonies would be drawn; in these he would learn to assume responsibilities and to undertake tasks of organization and administration which would be invaluable both to himself and the Colonial Governments when later he was posted to a larger unit. To assist in the recruiting of suitable candidates to the profession a temporary scheme of scholarships is proposed whereby graduates in pure science may obtain veterinary qualifications and veterinarians may take science qualifications. To supply the field workers and administrators with the material wherewith to carry out their duties and to co-ordinate their efforts, several important proposals are put forward. These include the appointment of an adviser in animal health at the Colonial Office with strong advisory committees to assist him; a school of tropical veterinary medicine would be established at home, and a central research institute abroad. The report is the work of statesmen, lay administrators, medical men, and veterinary scientists, and its conclusions are unanimous. Its proposals are far-reaching in their scope, and their effect, if they are put into practice, will be to place the solving of the problems of animal health in the tropics on a thoroughly satisfactory basis. Our readers do not require reminding how intimately these are bound up with problems of human tropical medicine and hygiene. We hope that every effort will be made to develop these proposals, and to establish a service which has been long an urgent demand; such a service could not fail to have the most beneficial effects on the general health and prosperity of the empire.

POPULAR DIETETICS.

IN recent months the Royal Indian Agricultural Commission, in its illuminating report, laid great stress on the importance of nutrition in relation to the progress and happiness of the people of India. Although it is probably correct that the initial problem for many millions in that country is to obtain enough to eat, yet "the simple truths of nutrition and how to make the best use of such foodstuffs as are obtainable" must be taught to those who are sufficiently educated to understand. Nothing, it seems, more impressed the members of the Commission during their tour through India than the evidence of Colonel Robert McCarrison, I.M.S., and the visit they made to the Pasteur Institute, Coonoor, where his elaborate experimental work is carried out. In response to a widespread demand for further information regarding food, received from "missionaries, planters, school teachers, child welfare workers, and others throughout India," Colonel McCarrison has produced a delightful little book on *Food*,[1] dedicated to the "Children of India." In the course of twenty-two lessons the author tells young people what to eat, why they eat it, and explains how the greatest single factor in the promotion of good health is good food; he presents in the simplest possible language the results of twenty years' work. The descriptive analogies of the reactions the organs of the body make to various foodstuffs constitute word pictures which cannot fail to attract the attention of every intelligent child; and education authorities, even in England, will find it difficult to discover a more suitable book for adoption as a school reader. The book is certain, however, to command an even wider interest, for it presents in the most explicit terms all the adult lay reader requires to know about the various components of a diet. Probably the useful tabular statements at the end of the book, giving among other things the vitamin contents of common food articles, were included because the author himself envisaged a larger circle of readers than he originally intended to cater for. Royalties on the sale of this little book are devoted to certain Indian charities.

FLORENCE NIGHTINGALE ON THE STAGE.

As its title implies, *The Lady with a Lamp* is founded on the life of Florence Nightingale, but the author, Captain Reginald Berkeley, has avowedly used "a certain dramatic licence" in depicting her personality and some of the leading features of her career. The programme explains that it is "an imaginative treatment of a psychological theme," and as such this play is drawing large and appreciative audiences to the Garrick Theatre. Joseph once told Miss Nightingale that it had been her fate to become a legend in her own lifetime. Sir Edward Cook in his admirable *Life*, did a good deal to correct the popular romantic notion. He showed that "the real Florence Nightingale was very different from the legendary but also greater." Readers of large two-volume biographies form, however, a small section of the public and it remained for Mr. Lytton Strachey, in *Eminent Victorians*, to correct the notion still more drastically, and perhaps to build up another legend. Captain Berkeley has, we think, tried to steer a middle course in his interpretation of Miss Nightingale's character and ideals. He recognizes that it was as administrator and reformer more than as angel that "Santa Filomena" showed her special gifts, and he understands the significance of her early days in relation to her lifework as a whole. In order to make the point that, with all her clear-headed realism, she was "an intensely human woman with [illegible]

[1] *Food*. By Robert McCarrison, C.I.E., M.D., LL.D., F.R.C.P., Lieutenant-Colonel I.M.S. Calcutta and London: Macmillan & Co., Ltd. 1928. (Cr. 8vo, pp. 115; illustrated. 1s.)

passions and desires common to all vivid personalities," he introduces a love interest into his play, but does this with so much discretion that our sense of probability is not offended. He is fortunate in the actress who takes the leading part. Miss Edith Evans brings great intelligence and sympathy into her interpretation, and the way in which she matures and ages from act to act is a triumph of restrained characterization. Of the other players many deserve praise, but special mention should be made of Miss Muriel Aked as Mrs. Nightingale, Miss Gwen Ffrangcon-Davies as Elizabeth Herbert (afterwards Lady Herbert of Lea), and Mr. Henry Oscar as Dr. John Sutherland. Mr. Eille Norwood as Lord Palmerston is good, but rather unlike our idea of "Pam." The last scene—the bestowal upon Miss Nightingale, aged 87, of the Order of Merit—is an elaboration of Mr. Strachey's closing theme based on the words, "Too kind, too kind!" Altogether this is a very agreeable and thought-provoking play, of peculiar interest to medical men and women. Once again intelligent playgoers are under a debt to the Arts Theatre Club Production.

DOCTORS' HANDWRITING.

THE reproach of illegibility has long attached to the handwriting of doctors: but the guilt, if guilt it be, appears to be shared by many others. In business houses, for example, it is stated that the financial loss from errors due to bad handwriting amounts to a very large sum each year. The fact that elementary school children write more clearly than those attending secondary schools suggests that one reason for bad handwriting is the extension of the school curriculum to include an increasing number of subjects, a factor which would operate with greater effect in secondary than in elementary schools. The cultivation of good handwriting depends a great deal on the amount of time that can be devoted to it. In a leisurely civilization fine penmanship is usually held in high esteem. When life ambles gently in a "green and pleasant land" the person of culture may find time to devote himself to producing a beautiful script. But with the speeding up of life has come a shifting of cultural values; with so much else to do and learn calligraphy has receded in importance. Only in elementary schools, it appears, where the syllabus is not yet overburdened, and the child is not forced to take notes at lightning speed, is there time to build up a legible copy-book script. Is it possible that snobbery may some day compel the cultivation of a vile fist as the distinctive mark of social superiority, much as the droppin' of the final "g" was once imposed in certain huntin' and shootin' circles? With the proved prevalence of bad handwriting, however, it is interesting to consider why popular fancy has chosen for special reprobation the illegible script of the doctor. It may be that the doctor really writes worse than other people. He has, after all, spent five years or more in a course of study which calls for perpetual note-taking—in what other faculty can one find a range of subjects so extensive and so difficult as his? And if as a student who must master all this knowledge he cannot give much thought to mere legibility of script, what of the time when he is burdened with the cares of a busy practice? Life is short, art is long, and he writes his letters and prescriptions as swiftly as possible. The explanation may not, however, be so simple. Perhaps, in fact, the doctor's script is no worse than that of any other professional man, but patients given to the pastime of scrutinizing prescriptions, convinced, moreover, that the doctor's scrawl is designed to keep secret the contents of these documents, are more likely to attribute their failure to decipher what is written to the doctor's illegibility than to their own ignorance of dog Latin and pharmaceutical terminology. It is, after all, a commonplace that in the clearest and most beautiful script unfamiliar words are more difficult to read than those which are familiar, and the average prescription teems with words which, even when spelt out in full, are beyond the range of the average layman's vocabulary.

GIFT FOR MEDICAL EDUCATION.

As a thank-offering for his escape with slight injuries in a motor-car accident last December, Lord Beaverbrook placed at the Prime Minister's disposal the sum of £22,800, expressing a wish that his gift should be distributed widely for the benefit of medical education in this country. It has now been announced from Downing Street that the Royal Society of Medicine will receive £2,600, and each of the following institutions £1,000: the Royal College of Physicians, the Royal College of Surgeons, the Medical Faculties of the Universities of Oxford, Cambridge, London, Durham, Manchester, Birmingham, Liverpool, Leeds, Sheffield, Bristol, St. Andrews, Glasgow, Aberdeen, Edinburgh, and Wales, Epsom College, the Cancer Hospital, and the Queen Charlotte's Hospital National Mother-Saving Campaign. The grant is to be applied in each case for special purposes beyond the capacity of the ordinary income of the institutions—for example, on studentships, research, and contributions to scientific equipment.

WE much regret to announce the death of Sir Alexander Ogston, K.C.V.O., LL.D., M.D., Emeritus Professor of Surgery in the University of Aberdeen, and Extra Surgeon to H.M. the King in Scotland, who presided over the Annual Meeting of the British Medical Association at Aberdeen in 1914. A memoir, with portrait, will appear in our next issue.

THREE lectures, entitled "*Thirty years' experience of* industrial maladies," will be delivered by Sir Thomas M. Legge, M.D., before the Royal Society of Arts, John Street, Adelphi, on February 18th and 25th, and March 4th, at 8 p.m.

THE KING'S ILLNESS.

WHILE convalescence has not yet begun, and cannot be expected to begin for several weeks after removal to the seaside, His Majesty's condition continues to improve little by little. There is a slow but definite increase in strength, and even a slight gain in weight. The King has been able to sit up for a short time on two occasions, with benefit to his health and spirits.

When the decision was first made to employ ray therapy in the treatment of His Majesty the choice of method was determined by two considerations. For clinical reasons the exposures could be made only for short periods of time, and applied only to small areas of the body surface, in order to reduce the degree of disturbance to a minimum. It was accordingly decided to use the mercury vapour lamp, with the object of stimulating parathyroid activity, adjusting calcium metabolism, rectifying the leucocyte count, and raising the bactericidal power of the blood. At the more serious stage of the illness this type of lamp, which emits a rich supply of ultra-violet rays, was therefore judged to be the method of choice. There is reason to think that the progress that occurred during the period of application of such measures was in part due to them. The improvement now attained renders possible treatment by the carbon arc, with its more penetrating luminous rays, whose energy, it may be hoped, will become converted to the use of the body, and thus favour the action of sea air, sunlight, and change of scene.

England and Wales.

The Mayor of Bath.

THE death of Alderman Cedric Chivers, mayor of Bath, which took place on January 30th, will recall to those who attended the Annual Meeting of the British Medical Association at the West of England spa in 1925 one of the most generous civic hosts whom it has been the fortune of the Association in its annual travels over to meet. Alderman Chivers actually took office as mayor that year, for the second time, in view of the visit of the Association, and not only in the exercise of a princely hospitality on the occasion itself, but in much trouble and care over the arrangements long beforehand, he played a very large part in making the meeting memorable. His great reception will not readily fade from the memory of the 2,500 guests who attended. A large reception hall, with annexes, was built in the Abbey churchyard, the banks of the neighbouring Avon were illuminated, and a succession of entertainments quite out of the ordinary were provided. Alderman Chivers was no orator, his speeches were as a rule models of brevity, but they breathed his love for Bath, which was his native town, every stone of which he knew, and the glories and traditions of which he did not a little to maintain. Last year also, when the Conference on Rheumatic Diseases met in Bath, Alderman Chivers again provided generous hospitality, though he was too ill himself to make an appearance. It was the same with all the various conferences visiting Bath. His long mayoralty—six years—in which, being a widower, he persuaded Madame Sarah Grand, the author, to be associated with him as mayoress, will remain a distinctive episode in Bath's great annals. He was at the head of every movement for beautifying the city and removing any reproach in its housing. One other great achievement of his was the establishment of the orthopaedic department of the War Hospital at Combe Park. Needless to say, he was a man of great wealth. His fortune was made in the unusual sphere of bookbinding, an art which he had revolutionized by a new method of stitching and also by a new decorative process for choice books; but he had in addition many generous interests in art and literature.

Maternal Mortality Problems.

Mr. Neville Chamberlain, the Minister of Health, was the principal guest at a luncheon given at Salters' Hall, London, on January 29th, by Lady Howard de Walden, in connexion with the national mother-saving campaign promoted by Queen Charlotte's Maternity Hospital. In the course of his speech Mr. Chamberlain said that the country was spending about £2,000,000 of public money every year on maternity and child welfare services, and a further large sum was being spent out of voluntary resources for the same purpose. The figures of infant mortality showed a remarkable drop since this service was initiated, but maternal mortality for the last twenty years had remained about the same—namely, about four deaths per 1,000 births. In spite of all the advances in medical and surgical science, in spite of all the money spent on ante-natal and post-natal clinics, in spite of all the propaganda that had gone on, and the improvement in the training of midwives and the practical disappearance of "Mrs. Gamp," they had not been able to budge this obstinate figure. Mr. Chamberlain then said that the first thing to be done was to find why they could not get this figure down. It was known that one of the principal causes was puerperal infection, but they did not know how that arose, and they therefore could not prevent it. He then referred to the inquiry recently instituted by the Ministry of Health, saying that he had enlisted the services of the local authorities and the medical profession in an endeavour to secure a report on the circumstances of every maternal death, and had set up a strong committee of experts to examine the information secured. One of the difficulties was that these cases of puerperal infection were scattered so that no one investigator had in his hands sufficient material for a continuous and intensive study of the particulars. He was therefore delighted to learn that Queen Charlotte's Hospital proposed in its new scheme, to which reference was made in our last issue (p. 220), to provide an isolation block solely for such cases. That was a lead given by a voluntary hospital which, he thought, showed the direction in which they must work if they were to obtain substantial and valuable results from research into the cause of puerperal fever. Summing up, he said that they wanted more ante-natal and post-natal clinics, more beds in maternity hospitals and homes for difficult and complicated confinements, more specialists in obstetrics to attend those complicated cases, and more skilled nurses for them when they were confined in their own homes. Lastly, but by no means least, they wanted more education of the people as a whole so that they might realize the need for special care in maternity. In conclusion, Mr. Chamberlain referred to the recent establishment of a committee to investigate the training of midwives, and to the need for raising the standard among them. Mr. J. Gibson Jarvie, a member of the committee of management of Queen Charlotte's Hospital, said that it was intended to provide proper facilities for research.

Radiological Services at London Mental Hospitals.

The London County Council eighteen months ago authorized, as an experiment for one year, the employment as consultant of an expert radiologist in connexion with cases of illness among patients at the mental hospitals, at an inclusive fee of one guinea for each case reported upon by him, subject to an expenditure limit of £210. It is now stated that while the experiment has met the needs of the hospitals, the appointment of one consultant radiologist to act for all the institutions is no longer advisable, in view of arrangements which have been made between several of the mental hospitals and the general hospitals for the services of consultants on the staff of the latter to be available for the mental hospitals. It is therefore proposed, as a further experiment for twelve months, that the medical superintendents shall be authorized to utilize the services of radiographers on the staff of associated general hospitals for advice and assistance in the taking of difficult radiographs, and for assistance in reading radiographs, when necessary, at a fee (if required) not to exceed, as a general rule, one guinea for each case dealt with, and subject to a limit of expenditure for each mental hospital of twenty guineas—that is, £210 for all the hospitals together—for the twelve months.

Scotland.

Glasgow Relics of Lord Lister.

A FINAL meeting of the executive committee of the Glasgow Lister Memorial Fund was held in the City Chambers on January 27th, with the object of winding up the fund and discharging the committee. The Lord Provost, Sir David Mason, presided, and it was stated that the only matter which still required decision was the final destination of the various memorials of Lister and other relics illustrative of the evolution of surgery which the committee had acquired in the early stages of the fund with a view to their being preserved in the old Lister ward of the Royal Infirmary. Sir John Samuel, honorary secretary of the committee, submitted a report of the history of the fund, and said that the committee had been formed in February, 1912, when the movement to provide a memorial of Lister in Glasgow was inaugurated. It had been resolved at that time that the most appropriate monument to Lord Lister would be the formation of a Lister museum in the ward which had been used by him in the Royal Infirmary at the time when the first experiments with antiseptics were made. Negotiations were thereafter opened with the managers of the Royal Infirmary for the preservation of this ward, but it had been finally resolved that the ward should be demolished, and this was done, to the great regret of the memorial committee. The funds in the hands of the committee had thereafter been used for the erection of a statue to Lord Lister in the Kelvingrove Park. In view of the hope held out at the commencement of the committee's work that the Lister ward at the Royal Infirmary would be preserved, Mr. A. E. Maylard and the late Sir Hector Cameron had collected a large number of valuable articles belonging to Lord Lister or associated with his work. These had been deposited meanwhile in the Royal

Infirmary, and with the approval of the managers were placed in the central hall of the Pathological Institute under the care of Professor Teacher. In July, 1926, they had been lent to the Wellcome Historical Medical Museum in London to form part of an exhibition of relics in connexion with the Lister centenary celebrations in 1927. The question now arose as to their final destination. It was resolved that the relics should be presented to the University of Glasgow for permanent custody, but that if the University did not see its way to accepting the gift they should be offered to the Corporation for preservation in the Kelvingrove Museum. A vote of thanks was accorded to Mr. A. E. Maylard, who had acted as convener of the subcommittee that collected the relics, and as editor of the memorial volume on Lister.

University of Edinburgh.

The University Court of the University of Edinburgh, at a meeting on January 28th, with Principal Sir J. Alfred Ewing in the chair, approved an ordinance increasing the matriculation fee from £2 2s. to £2 12s. 6d. It is intended that the additional 10s. 6d. should be set aside for a special fund to be called the Physical Welfare Fund, and to be administered by the court. All payments from it are to be made with the object of promoting, directly or indirectly, the physical welfare of students of the University. The increase in the fee will take effect on October 1st next. At the same meeting Sir Alfred Ewing intimated his intention to retire from the principalship of the University on September 30th next. In his letter of resignation he stated that he had hoped to carry on his duties to the age of 75, the age limit fixed for principals of the Scottish universities, but that reasons of health had persuaded him to retire a year earlier. Before coming to Edinburgh Sir Alfred Ewing had a long experience, both as a teacher and as an administrator. After holding a professorship of engineering at the Imperial University of Tokyo, he was called to the professorship of engineering at University College, Dundee, and afterwards was appointed to the chair of mechanism and applied mechanics at Cambridge in 1890. In 1903 he became director of naval education under the Admiralty, where he remained until 1916, when he succeeded the late Sir William Turner in the principalship of the University of Edinburgh. During the war he acted as the head of an organization which worked on the interception and deciphering of enemy wireless messages. During his tenure of office as principal the University of Edinburgh has passed through a period of considerable development and expansion. Since 1916 thirteen new chairs have been founded, as well as a large number of readerships. The chief addition to the University has been that of the King's Buildings on the south side of the city, where chemical laboratories and, more recently, departments of natural history and animal genetics have been provided. During his period of office, too, negotiations were carried through which resulted in the admission of women to full privileges as students in the faculty of medicine. Two new degrees have been instituted in this period, that of Doctor of Philosophy and that of Bachelor of Commerce, and important affiliations have been concluded with the training college for teachers and the Edinburgh and East of Scotland College of Agriculture. The appointment of a successor is in the hands of the curators of the University, a body consisting of the Lord Provost of Edinburgh with three representatives of the Town Council and three members of the University Court.

Aberdeen Sick Children's Hospital.

The new buildings of the Royal Aberdeen Hospital for Sick Children were opened by Viscountess Cowdray on January 31st. This is the first of the institutions to be completed on the extensive Foresterhill site to the north-west of the city in connexion with the large joint hospitals scheme, in respect of which a sum approaching £400,000 has been collected for buildings and partial endowment. The cost of the hospital itself is over £100,000. In the immediate proximity the new Royal Infirmary buildings, of which the Prince of Wales laid the foundation stone on August 23rd last, are making rapid progress. The new hospital is laid out on 17½ acres of ground, and provides accommodation for 128 cots in nine wards. A large playroom, facing the south-west, fitted with vita-glass, is a new feature of the hospital, and the provision of large verandahs enables cots to be wheeled out into the open air in fine weather, so that convalescent children may enjoy as much fresh air and sunshine as possible. Ample lawn accommodation is also provided as a playground for children in a later stage of progress towards health. The x-ray room is believed to provide the most elaborate apparatus of its kind in the north of Scotland. Separated from the hospital is a substantially built nurses' home, towards the furnishing of which many donors have come forward with handsome gifts. Mr. Harvey Hall, chairman of the hospital directors, presided at the opening ceremony, and was accompanied on the platform by the Marquess and Marchioness of Aberdeen and Temair, and others. The chairman said that over eighteen years had elapsed since the directors issued their first appeal for funds to build a new hospital. With the erection of the new hospital the annual expenditure, which at present exceeded £8,000 per annum, would be largely increased; it would still be necessary to secure an endowment fund, and they trusted that the many subscribers to the building fund would help them to raise that endowment fund also. Lady Cowdray, in performing the opening ceremony, remarked that it was peculiarly fitting that in the reorganization of the whole hospital work of the city the children's part should come first, for theirs should be the longest span of life, and their care was the best insurance which could be had for the conditions and durance of life in coming generations.

Ireland.

Vaccination in the Free State.

DR. E. STEPHENSON, who is the chief medical officer of the Free State Department of Local Government and Public Health, recently stated that in general the vaccination laws were now being administered satisfactorily, and that the number of defaulters was being reduced. The procedure is that unless a child is vaccinated within three months from the date its birth is registered the parents or guardians become defaulters. The vaccination officer then serves notice on each defaulter, and, failing compliance with the law, legal proceedings are instituted. Very few instances have occurred in which the vaccination authorities failed to discharge their statutory duties and institute proceedings, and in those cases the central authority which supervises the administration of this law compelled them to take action. Some of the local authorities were showing great interest in vaccination, and frequent requests for information as to its effects were made to the department. Dr. Stephenson referred to the results obtained by vaccination in infancy in England, recalling the views expressed by the committee on this subject which made its report last year, and in conclusion said that there was ample evidence of a growing belief in the efficacy of vaccination in Ireland.

County Hospitals and their Equipment.

The Irish Medical Secretary of the British Medical Association recently informed the Dublin press—in connexion with a resolution passed at a recent meeting of the council of the Irish Medical Association referring to the deficient equipment of certain county hospitals—that many of the county hospitals were quite unfitted for the performance of important operations, and that the equipment was often not up to date. It was pointed out, however, that a number of the county hospitals were excellent in every respect, and that great credit was due to the health boards who had spent the money to make the hospitals efficient. It was only right, moreover, to say that the Department of Local Government was continually urging the improvement of county hospitals, and that the department had invariably sanctioned the expenditure of local funds for this purpose. The trouble was that the old workhouses were still used as hospitals, and in these the water supply and the sanitation was not always good. There were excellent hospitals, it was added, equipped in

a modern way, at Castlebar, Navan, Wexford, Croom, Limerick, Cork, and elsewhere, and the aim should be to raise the other hospitals to their standard of usefulness. The problem rested largely with the health boards, whose proposals for hospital improvement were always sympathetically and practically considered by the Local Government Department.

Medical Certificates and School Attendance.

At a meeting of the Strabane and Castlederg Regional Education Committee it was stated that the attendance of school children was on the down grade in the six counties. Criticism was expressed of charges being made for medical certificates, especially in the case of children of poor parents. It was, however, explained, on behalf of the Education Committee, that if parents satisfied the school attendance committee with a reasonable excuse there was no prosecution, but that many did not do so, and instead appeared before magistrates with doctors' certificates and secured the dismissal of the cases, which was regarded as unfair. It was decided to inform teachers that medical certificates need not be insisted upon if they were satisfied as to the children's illness.

Display of Medical Films.

A meeting of the Leinster Branch of the British Medical Association was held on January 24th in the hall of the Royal College of Physicians, Dublin, with Dr. M. R. J. Hayes in the chair. An invitation was extended to non-members and medical students to be present at the exhibition of medical films by the Kodak Company. The attendance was very large, and the display of films was followed with the keenest interest for almost three hours.

Correspondence.

DIAGNOSIS OF EARLY PREGNANCY.

SIR,—The occasional great difficulty and importance of making the diagnosis of early pregnancy are so well recognized that any diagnostic test that is said to be reliable calls for serious consideration and examination. The latest such procedure, the Zondek-Aschheim test, promises to prove itself reliable, for the results of those who have tried it extensively indicate only a 2 per cent. incidence of error;[1] it depends on the presence in the urine of the pregnant woman of a hormone, which the original observers believe to come from the anterior lobe of the pituitary body, and any theoretical doubts which may exist in the minds of some as to the identity of the hormone do not affect the validity of the test.

The only practical difficulty in the adoption of the test is the need of a suitable supply of test animals under the care of an expert. This difficulty has been overcome in Edinburgh by my colleague Professor Crew of the Genetics and Animal Breeding Research Department, and in Dr. B. P. Wiesner, Ph.D.Wien, a member of the staff, we have a distinguished expert with the available material.

May I therefore inform the medical profession through your columns that in order both to test thoroughly the reliability of the Zondek-Aschheim reaction, and at the same time to be of help, if possible, in difficult cases, Professor Crew and Dr. Wiesner are prepared and willing to employ the facilities of the department in regard to any specimen sent to it?

The test is said to be valid from fourteen days after the first missed menstrual period. All that is required is to send a few ounces of the patient's urine, with a covering letter containing the clinical data, etc., to the Animal Breeding Research Department, King's Buildings, University of Edinburgh. It is proposed to charge a modest fee of 5s. in each private case to cover the cost of animals and other material, and this fee will enable similar tests to be made for the reduced fee of 1s. 6d. in all hospital cases referred to the department. The result of the test will be notified by post to the sender about a week after the urine is received.

The help which the test has already afforded to me in several cases in the last three months leads me to believe that in throwing their facilities open to the profession in this country Professor Crew and Dr. Wiesner are offering us very great practical assistance, and I hope that many of my colleagues will take advantage of these arrangements.—I am, etc.,

R. W. JOHNSTONE.

Department of Midwifery and Gynaecology, Edinburgh University, Jan. 31st.

[1] *Lancet*, 1928, ii, 834.

TREATMENT OF FRACTURES.

SIR,—In the *Journal* of January 19th (p. 117) you comment on the present position of the treatment of Pott's fracture, and in the same issue appears a letter from Mr. Muirhead Little on fracture clinics, in which Mr. Little says: "The crux of the whole fracture problem is made up of the lack of interest in fractures which is shown by many general surgeons."

In your article you refer to the publication of Mr. Harry Platt, and later on mention that Dr. Frank Dickson, in his recent paper, recommends immediate reduction of the fracture and the application of plaster-of-Paris. It happens that at a recent examination at the College of Surgeons a late house-surgeon of Mr. Platt's was asked by a surgeon in a senior position in one of the London teaching schools how he would treat a Pott's fracture. He replied that he would reduce it and fix it in plaster-of-Paris, and was met by the examiner's comment, "Let me tell you that plaster-of-Paris is not the way to treat a Pott's fracture."

At the present time almost every orthopaedic surgeon in the country uses plaster for this fracture, finding that it is impossible to maintain reduction of the posterior displacement by any other method, and this treatment is not new, but has been in use for a number of years.

How are we to progress in the treatment of fractures when the surgeons who are teaching this treatment and examining upon it in the ordinary pass examinations fail to keep in touch with the present accepted ideas of treatment? Mr. Muirhead Little quotes Professor Hey Groves as suggesting that the solution of the problem of fracture treatment may come by utilization of the municipal hospitals, and adding to their staffs and equipment. This would, no doubt, be an advantage from the patient's point of view, as the segregation of fractures in these hospitals would tend to raise the whole standard of treatment, but it might well prove a disaster from the point of view of undergraduate education. The large teaching hospitals have already lost the whole of the treatment of tuberculous disease. If steps are taken which tend to remove from them the routine treatment of injuries, a section of surgery which is of very great importance to the general practitioner will disappear from the ordinary experience of the medical student.

It is to be hoped that the threat of such a thing happening will induce the staffs of the teaching hospitals to organize their treatment of fractures on more rational lines.—I am, etc.,

R. C. ELMSLIE.

London, W.1, Feb. 4th.

ENLARGEMENT OF THE PROSTATE.

SIR,—Sir John Thomson-Walker, in his letter in your issue of February 2nd (p. 222), criticizing my article on "Some problems connected with benign enlargement of the prostate," takes me to task for not advocating his operation whole-heartedly, is then unable to decide what I do recommend, and finally infers (or so it appears to me) that I claim credit for the long incision in the abdominal wall he has "recommended so long and so often."

In the first place, the article was written with a view to calling attention to some of the problems connected with the etiology and treatment of the enlarged prostate, and not to specify details of technique and operative procedures, otherwise I would not have hesitated to give my

reasons for not seeing eye to eye with Sir John in the operation he advocates. He states that the digital examination of the prostatic cavity I advise is an unreliable guide to the necessity or otherwise for an open operation. To this I do not agree. Given a sufficiently delicate touch it is quite possible to feel long tags of mucous membrane, small adenomatous masses, partially detached layers of capsule, and an unduly prominent vesico-prostatic shelf. The control of haemorrhage by ligature and suture, which is one of the supposed advantages of the open operation, is by no means so satisfactory as it sounds.

Secondly, I was under the impression that the operation I advocated, but did not describe in detail for reasons already given, was perfectly intelligible, but as Sir John is unable to understand let me now make it quite clear.

The "prostate" is enucleated through a long incision in the abdominal wall and a small one in the bladder, the former being to permit of easy access to the gland and to dispense with the necessity for a finger in the rectum. The walls of the prostatic cavity are then carefully palpated; if they are smooth the bladder is drained with a large tube, but if they are uneven and contain irregular masses, etc., the bladder is opened widely and they are removed by "the method described and advocated for a number of years" by Sir John Thomson-Walker. The supposition that I apparently recommend a combination of two different operations is therefore correct. I trust this explanation will relieve Sir John's anxiety that I should not "have it both ways," and that I should not indulge in such feats of prestidigitation as to "have a finger in the rectum and avoid putting a finger in the rectum."

The closing sentence of Sir John's letter expressing his gratification that "Mr. Nitch should have adopted, or at least approved of, even part of the technique that I have recommended so long and so often" naturally gives me the greatest satisfaction, which, however, is tempered by regret that in mentioning the open operation in my paper the name of the originator was inadvertently omitted.—I am, etc.,

London, W.1, Feb. 3rd. CYRIL A. R. NITCH.

SIR,—I was interested to read Mr. Nitch's article on benign prostatic enlargement in a recent issue of the *British Medical Journal* and Sir John Thomson-Walker's letter with reference to it. While thoroughly endorsing Mr. Nitch's approval of the long incision, I am surprised at his advocacy of the gloved finger. The sense of touch is the sole guide in an ordinary prostatic enucleation, and should be helped in every possible way, not dulled by any intervening medium. Mr. Nitch admits that he relies on the sense of touch, and yet handicaps himself by wearing a glove. The careful methods of procedure which are essential to a successful enucleation are much easier with the bare finger, and the "prostatic relics," which are difficult to detect even without a glove, are infinitely more so with one. The introduction of sepsis need not be feared if reasonable precautions are taken as to the hand. As Sir John Thomson-Walker pointed out many years ago in this connexion, gentleness of manipulation is an important factor as regards asepsis; it is decidedly more practicable without a glove than with one. Needless to say, this is no attempt to minimize the advantage of gloves in other operations.—I am, etc.,

London, W.1, Feb. 4th. W. K. IRWIN, M.D., F.R.C.S.

SIR,—Since the forage treatment of the prostate introduced by Dr. Luys of Paris has hardly yet won a place in the current practice of urology it may be helpful for a medical man who has undergone it to record his personal observations. Information of this kind is more precise, and its interpretation more scientific, than that obtainable from a patient without medical knowledge.

I am 58 years old. My urinary trouble commenced some seven years ago; it grew progressively more pronounced, and became almost intolerable during the last two years. *Micturition*, at first slightly frequent, increased until it recurred every two hours; the interval was then reduced to every hour or even less. Thus, in the end, my sleep was incessantly broken by the need to urinate, and I was obliged to rise six times or more during the night. The stream diminished in volume and force; the commencement of micturition was delayed, the act became increasingly difficult, and the end was an uncertain dribble. Eventually it became extremely painful to urinate, and this pain, recurring so very frequently, caused a marked depression in my general state of health.

In August, 1928, I consulted a urologist in London, who diagnosed an enlarged prostate and advised prostatectomy. This clinical and cystoscopic examination was painful to the point of provoking an acute retention of urine, haemorrhage, and some hours of acute suffering. Being already very depressed and anxious about the consequences of an operation, I decided to go to Paris in order to ask Dr. Luys if it would be possible to obtain benefit from his method of "forage de la prostate." At the time when Dr. Luys examined me my residual urine was constant at 75 grams. The pain on micturition was becoming intolerable; the urine was cloudy, and contained *B. coli*, enterococci, and staphylococci. I was subject to attacks of urinary fever rising to 103° F., and my general state of health was much lowered. I had lost weight, and looked and felt ill.

On my entry into Dr. Luys's "Maison de Santé" I was first submitted to preparatory treatment, which consisted of the slow methodical dilatation of the urethra with curved steel sounds (Béniqué's), combined with frequent irrigations of the bladder. When my urethra had become sufficiently "broken in" Dr. Luys was easily able to carry out an endoscopic examination of the prostate with his direct vision cystoscope. He diagnosed a prostatic adenoma localized to the left lobe of the prostate and forming an extremely pronounced projection at the level of the neck of the bladder. This prominence crossed the middle line to such an extent that its convexity pressed on the almost normal right lobe. The prostatic adenoma was not more than 2 cm. long in the antero-posterior direction. Thus my prostate was small in volume, and, in these conditions, forage was clearly indicated. However, before undertaking this operation Dr. Luys deemed it indispensable to treat first my local and general state of infection. On the advice of Dr. Bécart a course of oral vaccination was begun by means of a stock vaccine, a suitable kind being the enteroxin Leclerc, which is a mixed bouillon vaccine containing 50 per cent. *B. coli*, 25 per cent. enterococci, and 25 per cent. staphylococci (method Gaehlinger-Bécart).

The next day my temperature fell to normal and remained there in spite of the different interventions practised. Examination of the faeces showed a very marked microbic flora, and a pure culture of the colon bacillus was isolated by Dr. Bécart, who prepared an auto-vaccine, which I took for forty days each morning on waking. From the beginning of this treatment I had no longer any fever. The forage was performed during a period of immunization which sheltered me from oscillations of temperature, except on one occasion on the third day after the first operation, when there occurred a rise to 102° F., quite transitory, and of no consequence. My general health had undergone a rapid transformation, and the serious features of my case had been cured without any untoward incident.

The first session of electro-coagulation took place on October 12th, 1928, and, although not of great intensity, I was struck by the volume of the sloughs which I eliminated after ten days. I experienced a very marked and rapid improvement in micturition; the frequency diminished, and I emptied the bladder much better, the residual urine now not exceeding 30 grams. The second electro-coagulation treatment was given on November 9th, and seven days later, while passing water naturally, I shed an enormous eschar, which made room for a stream of urine strong and full from beginning to end of the act. Micturition is now effected without delay and without pain, my bladder emptying itself perfectly since that time.

I have thus, by this intervention, obtained the result I desired—that is to say, recovered the normal function of my bladder without incurring the risks of prostatectomy. I therefore consider that whenever the case is indicated—that is, in all prostatic enlargements of small or medium volume—it is extremely advantageous for the patient to have himself treated by the method of forage in preference to prostatectomy.

Forage is a conservative operation, easily borne, and terminating in a cure. It is a delicate and difficult procedure, demanding a high degree of experience and expertness in the use of a very specialized electrical and urological armamentarium, but its lasting success is shown by the re-examination of numerous cases extending over many years.—I am, etc.,

London, W.C., Jan. 3rd. G. A.

ERYTHEMA NODOSUM.

SIR,—If I read the signs aright another spate of correspondence on erythema nodosum is imminent. Might I be allowed to outline a summary of the status of this disease? The supposed association with rheumatic fever dates back to Stephen Mackenzie, whose data and conclusions are to-day regarded as scanty and altogether erroneous. The association has been perpetuated partly by a faithful copying from book to book of Mackenzie's conclusions and partly by a confusion in clinical observation between the genuine joint phenomena in rheumatic fever and the arthritic pains and fascial soreness which are indeed common in erythema nodosum.

Priority for the notion that erythema nodosum may be the rash of an acute specific infectious disease belongs to Dr. Harrison, who was president of the Dermatological Society of London in 1900. But this conception was elaborated with considerable weighty personal clinical experience by Dr. Lendon of Adelaide, who invented the term "nodal fever," and published in 1905 a book with that title. There has been steady observation in support of this term ever since; and I, for one, always read with the greatest possible pleasure and interest the writings of Dr. Odery Symes.

But by far the most important of the clinical relationships of erythema nodosum is its association with tuberculosis. Scores of published cases make this association indisputable. Some people, with good reason, look upon erythema nodosum as a herald of tuberculosis. I believe that the opinion of those who have most experience is that about 20 per cent. of all cases of erythema nodosum are followed by tuberculosis within a few months: but some Continental and Transatlantic clinicians put this figure much higher.—I am, etc.,

The General Infirmary, Leeds, Jan. 28th. G. F. WALKER, Medical Tutor and Registrar.

X-RAY DIAGNOSIS.

SIR,—Dr. Vincent Norman refers, on February 2nd (p. 225), to the correspondence on this subject in the *British Medical Journal* during the closing months of last year. This discussion followed the joint meeting of the Sections of Surgery and Radiology at Cardiff, at which it fell to my lot to reply to certain criticisms made by Mr. Herbert Patterson. I took no part in the subsequent correspondence in your columns, as it seemed to me that no new points were raised.

Now Dr. Norman breaks fresh ground. He talks about "a general practitioner's point of view of one of the contestants." By this he means his own view, which he is perfectly entitled to state, and which is no doubt of great interest. But when he speaks of "the radiologist" he enters the region of concepts. It is possible to have a satisfactory concept of a horse, because all members of the species will, in given circumstances, behave in much the same way. It may even be possible to have some sort of concept of a general practitioner; his evolution has, at any rate, been going on for hundreds of years. But what of "the radiologist"? Are his specific characters fixed? I should say not; zoologically, he must be placed rather in a phylum than in a species or even a genus. In other words, radiologists differ. This is evident even from Dr. Norman's letter, in which the crimes of one are not those of another.

To deal first with what I think are genuine grievances: the general practitioner should certainly have the radiographs of his cases if he wants them. In most instances a careful report with, if necessary, key diagrams, should enable the practitioner to follow the radiological argument. The chief risk in sending films is that some practitioners discover in them all sorts of alarming abnormalities which have no real existence; when the films are handed on to patients the tale of these discoveries is endless. However, the advantages of sending films or prints outweigh the disadvantages, provided it is made quite clear that the radiological opinion is what really counts.

Then Dr. Norman complains that in another case the negative is discussed with the patient before sending it to him. As a general rule this should not be done. The only exception I know is in the case of suspected fracture. Here, when a patient is inclined to grumble at his doctor, the demonstration to him of an unfractured bone, or of a fractured bone in excellent position, may have a good effect in making him believe he has been well treated; or the demonstration of a terrible smash may warn him not to expect miracles from subsequent treatment.

Negatives other than fractures should never be discussed with patients; but is the patient to be told nothing as to the result of the examination? No general answer can be given to this question. The radiologist should not volunteer information. His formula should be: "I will send a report to Dr. So-and-so, and you will hear from him." But not every patient can be put off with this. Some say, frankly, "I am paying for this examination and I want to know." Some concession must be made in such circumstances. If nothing suspicious has been found, I see no objection to telling the patient so, at the same time emphasizing that a negative x-ray finding is not conclusive. If the x-ray evidence is positive and serious, if, for example, it reveals a probable neoplasm, it is my practice to say, if pressed, "Your doctor has been very wise to send you for this examination, which has given information which will be of great value in the future treatment of your case." One can always refuse to be more explicit on the ground that time is needed to study the negatives.

With Dr. Norman's other grievances I have personally no sympathy. He complains that when he sends a patient to be examined for possible neoplasm of the stomach it is irritating to be told that, in the radiologist's opinion, the trouble is merely indigestion. I am sure that in some cases these opinions are, so to speak, purely conversational. To use the words of Pooh-Bah in the *Mikado*, they "give an air of verisimilitude to an otherwise bald and unconvincing narrative." I have known myself volunteer the opinion that a patient was suffering from a sprained ankle simply because it seemed so brusque to say merely that there was no x-ray evidence of injury to bone!

But when these opinions are not merely platitudinous should they be frowned upon? Here we touch a vital point on which agreement is probably impossible. There is the practitioner who wants, as he says, a plain "Yes" or "No" to his question, and, like a cross-examining counsel, is much annoyed if he does not get it. He asks, Has this patient a gastric or duodenal ulcer? He does not want to be told "No, but he has old lung tubercle, probably active, which may account for the indigestion of which he complains." Does he even wish to be told "No, but he has a chronic appendix, or a pelvic caecum with a seventy-two hours' residue"? It is doubtful. Gentlemen who want a plain "Yes" or "No," if they exist in sufficient numbers, will get the kind of photographer-diagnostician they desire. But a full medical training would be wasted in such a case. Any competent x-ray sister at a large hospital could answer these questions.

Adapting the phrase of an eminent surgeon, I like to call myself a "physician practising radiology." It should be remembered that nearly all radiologists of fifteen or more years' standing are men who have had wide experience of general medicine. They were physicians before they were radiologists, and have maintained their interest in medicine as a whole. They cannot be expected to stultify themselves by a deliberate narrowing of outlook which they believe would be to the disadvantage both of patients and practitioners. Such a degrading limitation is not expected in other countries. For instance, in the United States a leading radiologist is—or was—the dean of the faculty of medicine of his university. In a recent address Mr. Sampson Handley suggested to radiologists that they had until now, of necessity, been too much preoccupied with technique, but that it was now time that they concerned themselves more with pathology and other more strictly medical problems.

One piece of practical advice I should like to give to such of my younger colleagues as aspire to work on these lines: remember that radiological reports are handed on from expert to expert, and often seen by the patient. Make them as restrained as possible, and, if you must indulge in hypothesis, let it be clearly indicated as such.

Then, if you have other more general views which you think it might be of advantage for the practitioner to know, embody them in a private letter.

To sum up, the demands made upon the radiologist by practitioners are very varied. Some look upon him as guide, philosopher, and friend; others regard him as a necessary evil, to be looked on with suspicion and rigidly kept in his place. Both will ultimately get the kind of service they deserve.—I am, etc.,

London, W.1, Feb. 2nd. F. HERNAMAN-JOHNSON.

SIR,—Is it not time to end the recent vogue of baiting the radiologist in the medical press? Dr. Vincent Norman's letter does nothing to encourage a spirit of co-operation between the general practitioner and the radiologist, and tends to foster irritation in both. His remarks are obviously based on particular instances in which the radiologist acted outside the scope of his own province. But why argue from the particular to the general?

Few radiologists of any experience give information on points about which their opinion has not been asked. Radiologists should not be asked to give a diagnosis. They should be given all useful information about the case, and *asked to provide further evidence on specified points*. If the term "*x*-ray diagnosis" could be purged from our medical literature and the term "*x*-ray evidence" substituted, there would be less heard about misunderstandings between radiologists and other medical men. If a radiologist refuses to let the general practitioner see the radiogram, or causes offence in any other way, the remedy is obvious and lies with the general practitioner, but it is hardly a matter for ventilation in the press.

There is no doubt that in most cases the radiologist *should not*, and in fact does not, discuss the negative with the patient. Occasionally, however, the patient demands to see the negative, and to have it explained. In these circumstances it is doubtful whether the radiologist has the right to refuse, as presumably the patient is entitled to know the result of an examination for which he is to pay.

It is to be hoped that Dr. Vincent Norman's letter will not provoke radiologists to retaliate by airing their private grievances in public, for no good can come of it. We need more co-operation and less recrimination.—I am, etc.,

London, W.1, Feb. 2nd. PAUL CAVE, M.B., B.S., D.M.R.E.

DIABETES WITH LOW RENAL THRESHOLD.

SIR,—I agree with Dr. Lawrence (February 2nd, p. 196) that a lowered renal threshold for glucose in diabetics is not as uncommon as published cases would appear to suggest; also, that it is a complication which may give rise to difficulties in treatment if the possibility of its occurrence is not borne in mind; but I should like to add that there appears to be a very definite chemical explanation of the condition in the majority of cases.

The detailed chemical analysis of the blood, as well as of the urine and faeces, I have been able to make in over *one thousand* cases of diabetes, has shown that a lowering of the renal threshold is usually associated with a subnormal percentage of calcium in the blood serum, and, as an increase in the calcium to the normal level has been found to be followed by a rise in the threshold, it would seem that a deficiency of calcium is the probable cause of the unusual permeability of the kidneys in the majority of cases. There is *apparently no etiological connexion* between the diabetes and the lowered threshold, as Dr. Lawrence rightly concludes, for I have met with examples where abnormal permeability, and an associated fall in the calcium content of the blood, developed some time after all hyperglycaemia and glycosuria had been fully controlled by diet or insulin. In my records there are, however, a few cases of diabetes with a low threshold in which analysis of the blood showed a normal calcium content, so that abnormal renal permeability for glucose may evidently arise from more than one cause.—I am, etc.,

London, W.1, Feb. 3rd. P. J. CAMMIDGE.

TONSIL AND ADENOID OPERATIONS.

SIR,—I should like to state my experience with the La Force tonsillectome. In common with Mr. Lindley Sewell, who first demonstrated to me the method of use and advantages of this instrument, I have employed it for the last eighteen months, and have practically discarded all other methods in its favour.

As any user of any form of guillotine will acknowledge there are certain tonsils which can only be removed by dissection, but whenever a guillotine can be employed successfully the "La Force" can also be used with the same success. The essentials of a successful tonsillectomy are: (1) complete enucleation; (2) freedom from haemorrhage; (3) absence of trauma and injury to the faucial pillars and soft palate; and (4) freedom, as far as possible, from deformity after the operation area has healed.

I have used the La Force instrument in 329 cases, and in that series have only had one where it was necessary to take any measures to arrest haemorrhage. This was in a woman, aged 27, whose tonsillar artery had to be clamped and ligatured. It is not an easy instrument to use at first, and for that reason my last 150 cases or so have shown much better results than the first; this I attribute to greater familiarity with the instrument and also to having increased the time of compression with the haemostat. The very great majority of cases have been absolutely bloodless, no haemorrhage occurring at the time, and none noticed later by the patient or nurse in attendance. Where post-anaesthetic vomiting has taken place no blood has been present in the vomited material.

Since there is no need to make compression on the tonsillar fossae, a marked feature in cases operated on by this method is the absence of sore throat following removal of the tonsils. For its successful use *two factors are* needed: (1) The services of a skilled anaesthetist; and (2) familiarity with the instrument. It seems to me that any method capable of producing such satisfactory results is worthy of a trial, yet if the views expressed by Mr. Aldington Gibb (January 19th, p. 132) find general acceptance no new methods will ever be tried, and all advances in surgical technique will come to a standstill.—I am, etc.,

Manchester, Jan. 21st. FRANK G. WRIGLEY.

SIR,—The problem of haemorrhage after tonsillectomy is not quite such a simple matter as some of your correspondents would make it appear.

I had a case, within the past fortnight, of a young woman, aged 30, whose tonsils I removed by gauze dissection under the critical eye of her own medical attendant. The tonsils peeled out without difficulty, and were removed quite completely. I packed each tonsil bed with cotton-wool for a minute or two—as I always do nowadays—immediately the tonsil was removed. After removal of the cotton-wool one side still bled smartly, so I picked up the bleeding vessel and tied it off with a ligature; *the other side did not bleed at all when the cotton-wool was removed, so of course* no ligature was applied. The patient's *doctor* and I satisfied ourselves that both tonsil beds were completely dry before the patient left the operating table. In twenty-four hours I was called to the patient because of severe haemorrhage from the side which was not tied; an injection of morphine and the application of hydrogen peroxide on swabs had had no effect, but after a good deal of trouble the haemorrhage was stopped, the blood-clot having been cleared out, cotton-wool soaked in haemoplastin packed in two or three times, and morphine given. (If this had not been effective I would have taken the patient back to the theatre and tied the blood vessel under an anaesthetic.) All went well for a week, when I was called to the patient again because of severe haemorrhage *from the side which had been tied at the operation*. The patient said that the bleeding was quite as severe as it had been from the other side; the injection of 1/4 grain morphine sufficed, however, to control this haemorrhage.

I said to the patient that obviously her blood was *deficient in* coagulating power; but she told me that she had had some teeth out six weeks previously, when her dentist had remarked how quickly the blood coagulated, and she had had no bleeding at all! I found also that her doctor had been giving her a calcium salt for some time before the operation. A blood examination revealed nothing abnormal.

My own opinion is that no patient should be allowed *to leave the operating table until haemorrhage from the* tonsil beds has ceased, whether this has been brought about by the application of gauze or cotton-wool, by an artery forceps, or by a ligature. In spite of the case detailed above I shall continue to ligate a vessel which does not stop bleeding when a cotton-wool swab has been packed in

for a minute or two. I learned to remove tonsils with a guillotine, but I do not think that anyone who has subsequently learned to dissect tonsils after a manner more or less resembling that of Mr. G. E. Waugh and Mr. Tilley would care to go back to the crudities of the guillotine. (The words "propulsion" and "avulsion" so cheerfully used by my friend Mr. Horgan simply make me shudder.) Besides, in the past year I have had regretfully to find septic pieces of tonsils present in two patients who within eighteen months had paid quite large fees to distinguished colleagues of mine to "remove" their tonsils with a guillotine—one of the patients had also had her uvula removed unintentionally. Everyone knows that in a clinic small pieces of tonsil may be left behind when twenty cases or so are being hurried through in an hour or two; but these two cases were private patients and the operators laryngologists of standing whose skill I know and respect, but whose preference for the guillotine I do not understand. The only disadvantage of tonsil dissection is that the surgeon is in the hands of the anaesthetist, who must be experienced in this class of operation.

Since this lengthy correspondence began on the subject of anaesthesia in tonsillectomy, may I say that in some sixteen years' experience I have had one death on the operating table during tonsillectomy, and in that case the anaesthetic was ether and the anaesthetist sufficiently experienced—the anaesthetic registrar at a teaching hospital; death was not due to haemorrhage, but apparently to shock; the *post-mortem* report called it "status lymphaticus."—I am, etc.,

London, W.1, Jan. 25th. R. SCOTT STEVENSON.

SIR,—The correspondence in the *Journal* upon the subject of haemorrhage after tonsil operations is of great interest, if only for the enormous divergence of the opinions expressed. Most of the letters are from surgeons who practise diverse methods and are prepared to draw the pen and defend their own particular procedure to the last drop of ink. Perhaps the experience of a general practitioner who has seen many of the throat surgeons in London at work may be of some interest.

Since the war I have had 221 cases of tonsillectomy in my practice performed by fourteen different surgeons, no two of whom have operated in exactly the same way. There have been only four cases of severe post-operative haemorrhage and eight cases of haemorrhage of a minor nature. In three of the four serious cases the guillotine has been the instrument of removal; the fourth was after dissection by forceps and curved scissors. I have never seen any trouble from ligatures, and fail to understand why bleeding points in the throat should not be arrested in the same common-sense way as in any other part of the body. Indeed, I remember vividly one patient whose throat at the end of the operation was festooned with ends of catgut, but neither undue soreness nor undue subsequent fibrosis occurred.

In children, particularly, it seems to me that too little attention is paid to the coagulation time of the blood, which my experience leads me to believe has wide variations. If my own children had to undergo this operation I would insist on the point being investigated, and, if necessary, the adoption of appropriate treatment prior to surgery.

In conclusion, I feel sure that, as in most other medical and surgical matters, there is no routine method of tonsillectomy that is applicable to all cases, *pace* the enthusiasts, but that each case needs consideration as to the best method of attack.—I am, etc.,

London, S.W.1, Feb. 4th. DESMOND MACMANUS.

SIR,—I have read with much pleasure the correspondence on tonsil operations. It happens that an exceptionally large proportion of my own tonsil cases are adults, since I live in an area where school medical inspection has not been at work, and so the cases are not "caught young," so to speak. I think dissection the operation of choice in adults, for (*a*) a skilled dissector will make a clean sweep in all cases, and (*b*) the guillotine fails frequently unless anaesthesia is pushed to an anxious degree. In my experience haemorrhage may be equally profuse with either method. I think we cannot exaggerate the importance of preventing haemorrhage. Even cases with a comparatively "mild" haemorrhage at operation may suffer from its weakening effects weeks later. Some time ago I saw two cases of lung abscess, one following a nose and the other a tonsil operation. I am inclined to attribute both to not sufficient attention to bleeding during the operations. Incidentally, I would like to ask if this lung complication can really be as rare as the literature, excepting American, suggests. Finally, I feel I can never attain the speed of several writers who apparently dissect in the time allowed by a dose of ethyl chloride—forty to sixty seconds. I think chloroform and ether, about equal parts, ideal, but to be happy in all cases I follow the stages of anaesthesia during operation.—I am, etc.,

Galway, Feb. 5th. CONOR O'MALLEY.

*** This correspondence is now closed.

PYORRHOEA ALVEOLARIS.

SIR,—In your leading article on pyorrhoea (January 19th, p. 115) you say, "Mucus may stagnate, but hardly normal saliva, which, from whatever source, is always fluid." But surely it is the normality of the saliva and not its fluidity which prevents any deposit? Have we not an analogy in the double solution and deposition of calcium in the form of stalactites and stalagmites, the solution depending on weak carbonic acid, so liable to change.

The condition of the saliva readily alters in health and disease, especially in digestive diseases; and in acute diseases mucin and lime salts quickly deposit round the teeth margins. The normal saliva is said to be mildly alkaline; but ordinary salivas seem to have a wide range of reactions. In some patients the reaction is alkaline, in others it is acid or even amphoteric. The tongue and saliva are responsible for the cleanliness of the mouth and will prevent deposits under normal conditions in healthy subjects. In addition, there is Nature's remedy for dental troubles—tooth and gum suction, which is sternly checked in early childhood; but even yet with some people the tongue is most sensitive to the needs of the mouth.

In discussing treatment Mr. Humphreys suggests saline massage, and says "the salt promotes a flow of serum into the pockets"; but it does more than this, as may be tested by dropping 10 to 30 grains of salt on the tongue and insalivating this for a minute before ejecting. There is an immediate increase of saliva, of mucin as well as of fluids, the mucin to counteract the effects of the irritant. Saliva flows freely for some considerable time afterwards and the reactions are modified, varying, of course, with the type of "common" salt used. Dentists have recommended a strong solution of salt as a dentifrice, and old-fashioned "strong salt solution" still holds its place as a throat and mouth wash.—I am, etc.,

Middlesbrough, Jan. 25th. J. M. MACPHAIL.

DENTAL SEPSIS.

SIR,—In your issue of February 2nd (p. 221) Dr. Bailsford states that I have misrepresented Mr. Humphreys's and Dr. Weston Price's views on the value of the radiogram. I do not agree. Mr. Humphreys's statement, "I believe radiographic evidence, taken alone, to be wholly inadequate and often misleading," proves to me that he does not consider *x* rays infallible. Dr. Weston Price states that more than 10 per cent. of septic teeth show no radiographical evidence of disease. That is enough for me; I am not in a position to challenge such an authority. One has only to take the case of a granuloma in line with the root and not projecting below it, to realize the shortcoming of *x* rays for (at least) certain teeth. The granuloma so often found is a protective mechanism; if the virulence of the organisms is such that no granuloma forms there will be no radiographic signs. I have had such a case—a gold-crowned tooth, which showed no *x*-ray or clinical signs of disease, but which, when extracted, revealed a pulp chamber full of pus and a granuloma.

It was removed on account of a slight peculiar pain which developed during an attack of lymphangitis. This pain, which may be felt for perhaps a day or two, is very characteristic and easily recognized by anyone who has had previous experience of it.

I sincerely hope that in his last paragraph Dr. Brailsford did not infer that I am an advocate of wholesale extractions. I hold that many of the cases which were cured by such would have had the same good outcome with removal of a few teeth or possibly a single tooth. He concludes with a surprising inference about root-filled teeth. If the pulp was alive at the time of exposure and was treated aseptically there is little danger, comparatively speaking. Surely, however, a dead tooth which has had no root filling is a far more serious problem than one which has had this treatment, as the majority of the space is filled with gutta-percha, though this undergoes a 15 per cent. shrinkage (Weston Price). To quote from an excellent but badly titled article by Dr. A. C. Gould,[1] Ulrich finds that 83 per cent. of 1,350 cases of dead teeth in ill patients showed evidence of rarefaction, whereas 68 per cent. of those treated by root fillings revealed that change. Black's figures are even more striking; only 9 per cent. of those with good root fillings demonstrated evidence of disease, while 63 per cent. of those with poor ones showed it. In this connexion we must remember that Mr. Sprawson holds that the drugs employed in the root treatment may themselves be responsible for rarefaction.—I am, etc.,

London, W.1, Feb. 2nd. A. P. BERTWISTLE, F.R.C.S.Ed.

DEBILITY IN CHILDREN AND CYCLICAL VOMITING.

SIR,—In the *Journal* of January 26th (p. 150) there appears an interesting and important article on the above subject by Dr. Osman, in which he describes the biochemical findings in the large class of debilitated children attending hospital, and states that they show similar findings—perhaps to a less degree—to the cases of cyclical vomiting supposed to occur chiefly in the offspring of the more highly educated and well-off people with nervous instability—namely, acetonuria—and that these debilitated hospital patients keep free of all the ailments enumerated in the article by the simple means of increasing their sugar intake.

Although Dr. Osman confines his remarks to children, I can, as a result of work along these lines for several years, confirm his findings as regards the important part played by disturbed hepatic chemistry (of which acetonuria is often a frequent finding) in the debility of adults as well. In fact, my conclusions are that this metabolic aspect of disordered health, as a predisposing cause to diseases of varying kinds (including those of epidemic type), is an extremely important one, and probably is the key to the solution and prevention of many such diseases.

But I cannot confirm the satisfactory results which Dr. Osman gets by his giving simply a more liberal ration of sugar. One would think that a glut of sugar, sweets, and carbohydrates would be more likely to be present in such cases. Although the giving of alkalis and glucose is the routine adopted in all such cases, instances occur in children and adults where sweet things are greatly disliked and absolutely refused. One would hardly expect such complete aversion to something which the body economy urgently needs.

Again, although the suggestion made that in those cases there may be an overaction of the adrenals—turning out the glycogen store of the liver would fit in with the need for more sugar—yet this hardly seems to fit in with another aspect of such cases, where a young child belonging to the type of family with a history of the migraine-eczema-cyclical vomiting type gets severe asthma attacks following on the attacks of liver upset with acetonuria. An increased adrenaline content in the blood should prevent such an occurrence.

Dr. Osman mentions the subject of transient strabismus in debilitated children, it is often more lasting, and, according to the mothers, it seems to vary with the state of health of the child. May it not even be a factor in inducing strabismus in children of pre-school age? It certainly is not confined to children, as I have seen several cases in adults, where the sudden onset of diplopia, often accompanied by sickness, may be very misleading, unless one is on the look out for such causes. I saw last week a woman, aged 65, who suddenly developed a complete paresis of the internal rectus of one eye with resulting embarrassing diplopia due to this cause; it lasted two to three days.

With regard to acetonuria and its treatment by sugar, Green's *Encyclopaedia of Medicine*, after recording the various conditions in which it can be found, which include toxic gastro-intestinal disorders, starvation, and indigestion, especially in children, continues:

"Its occurrence in these cases has been ascribed to organismal toxaemia, and auto-intoxication—but the view held by most of those who have paid particular attention to the subject is that in these, as in other cases, defect in the oxidation of carbohydrate is to blame."

Since this seems correct one cannot see that the administration of more sugar alone is the correct treatment of such cases.

A point not mentioned, but which I am certain has an important relation to the onset of attacks of this type of disorder, is changes in atmospheric conditions. At certain times of the year, among one's patients where such troubles tend to recur periodically, if a few show relapses, then one can count on hearing of all the others having relapses also, sometimes almost on the same day. The effect on health of changing meteorological conditions is not confined to this class of case, but is noticeable in many other patients who do not habitually exhibit this type of constitution, but whose systems show similar changes, when so acted on, to those of the cyclical vomiting child. This is what occurs in so many people who get run down, especially prior to epidemics of colds and influenza. I find confirmation of this view of susceptibility to infection in the *Epitome* of January 26th (para. 82), in which it is stated the epidemics occur because the soil is prepared by altered meteorological changes and not perhaps so much because of the increased virulence of organisms. Some seasons appear to be more severe than others in acting adversely on people's health; the last six months have been particularly so, as evidenced by the large number of obscure cases, of which the one common finding was an acetonuria, and this in spite of a glorious summer.

Dr. Osman's reference to the view held by Professor Vining of Leeds as to the pre-rheumatic child being a case of toxic debility, and his suggestion that all that is required to restore such children to health and prevent the onset of acute rheumatism is a more liberal supply of sugar, calls for some comment. That the urinary findings resemble some of Dr. Osman's findings I agree, but that the well-balanced diet suggested by Professor Vining converts itself into just an extra supply of sugar I do not believe. In what way would this liberal supply of sugar clear up the unhealthy offensive stools of those toxic, debilitated children? The acidophilic group of bowel organisms do not so easily get the preponderance over the proteolytic group by simply giving more sugar. When Professor Vining suggested this view some years ago I gave it my hearty support, since it was the first time I had heard any authoritative statement of a view I had come to hold for some years previously.

That the problem is as easy of solution as Dr. Osman states I cannot believe. The subject is one requiring much more detailed biochemical investigation than the finding of acetone bodies in the urine. No reference is made to other chemical findings in the urine of these cases, nor to the findings (microscopical) in a centrifuged deposit. I think the interpretation of the bodies found in this class of case by the microscope would give important clues as to the links in the chain of the disturbed metabolism. The problem, as it appears to me, is one which not only has reference to the intestinal hepatic chemistry, but reaches out to the *p*H of the blood and the calcium content thereof; it also includes the thyroid-parathyroid mechanism

[1] Symptomless Root Canal Filled Teeth. *Journ. Amer. Med. Assoc.*, 1928, i, p. 1552.

of body defence, and its effect on regulating the acid-base content of the blood. It is interesting in this connexion to recall a statement made, I think, by Llewellyn Jones, that many rheumatic cases are subthyroidics.—I am, etc.,

Darlington, Jan. 26th. R. CHALMERS, M.D., F.R.C.S.Ed.

SIR,—In his article published on January 26th (p. 150) Dr. Osman does not explain why acidosis is present in the cyclical vomiting associated with debility in children, otherwise he would have told us how it is that the administration of sugar alleviates the symptoms.

He states that cyclical vomiting is due to depletion of the glycogen reserves of the liver; this cannot cause acidosis. No doubt the glycogen reserves are depleted, and for a very good reason; it is not the cause, however, but is only a phenomenon resulting from imperfect metabolism. It is the acidosis which is responsible for the symptoms, and this, in turn, is due to the imperfect combustion of fats. One has only to remember that the complete combustion of fats cannot occur without the presence of sugar, and the solution is obvious. So many grams of sugar are necessary to burn so many grams of fat, so that when sugar is scanty or fat over-abundant the fats are imperfectly broken down and acidosis is brought about.

I notice in the same issue of the *Journal* (p. 165) an annotation on the dangers of cod-liver oil; after mention of the deaths of two children who were given the oil the question is asked: "Is it possible . . . that contributing to the toxic symptoms was a ketosis produced by excessive fat feeding?" I do not think there is any doubt about it at all. Dr. Osman rightly states that the child subject to cyclical vomiting is especially liable to delayed chloroform poisoning. This is doubtless so, seeing that chloroform is a fat solvent and the blood and tissues are flooded with fat. Glucose, again, should be given here, and would rapidly restore the normal metabolism of the two substances—indeed, it should always be administered before anaesthesia with chloroform or ether.

In an article on "Glycosuria and cancer" appearing in the February issue of the *Practitioner* I have gone more fully into this subject.—I am, etc.,

Upholland, nr. Wigan, Jan. 31st. J. THOMSON SHIRLAW.

AMAUROTIC FAMILY IDIOCY.

SIR,—I must thank Dr. Robert Platt for his replies (January 26th, p. 177) to my queries upon the pedigree of amaurotic family idiocy (January 19th, p. 101). Unfortunately the only known marriage between relatives is that shown in the table—the great-grandparents of the latest case. Any relationship between Rebecca and her husband, if it exists, must have been more than four generations back at the very least, and probably many more, and the same applies to her father and mother. The families concerned came from widely separated places in Eastern Europe, a thousand miles or more apart, at a time when travel facilities and inclination were almost non-existent, particularly in Russia.

If there were originally an equal number of DD and DR types the probable DR's in the next generation are in the proportion of six to nine DD's, and in succeeding generations this figure becomes further reduced both by geometrical progression and by the greater chance of marriage between DD's. The disease, then, should be of declining incidence, and at one time have been so prevalent as to characterize a scourge to a race instructed to multiply exceedingly; it would be surprising if it were so and yet had passed unnoticed until 1881.

It is naturally a delicate matter to probe into the past history of mental deficiency in any family, especially one indirectly concerned, such as that of Jacob's wife (from whom the nature of the trouble is at present being withheld), but I believe that such negative facts as I have been able to elucidate are true in substance; a medical man of their own race might be in a more favourable position to obtain fuller family histories.

It is difficult to dogmatize on a single case, but I think in so rare a disease it establishes its hereditary nature, even if it does not seem easy to reconcile it with the Mendelian law as at present accepted.—I am, etc.,

Hull, Jan. 28th. D. D. STENHOUSE STEWART.

LIPIODOL.

SIR,—We quite agree with Dr. James Adam (February 2nd, p. 225) that the oral route for administering lipiodol is an excellent one. In our book we describe it as the simplest and, in some cases, the most pleasant method, and the method of choice in many cases. The technique that we describe is simpler than that favoured by Dr. Adam. It is far from easy, however, in very young children, and therefore we advocate, with Dr. Leonard Findlay, who has had a large experience with children, the employment, of brief general anaesthesia. We cannot but feel that to hold the child down in any way must be harmful psychologically to the child.—We are, etc.,

F. G. CHANDLER,
W. BURTON WOOD.

London, Feb. 2nd.

ASTHMA.

SIR,—If Sir James Dundas-Grant will honour me by referring to my book published in 1923 he will see that I am fully conversant with the work of Brodie and Dixon and the nasal reflex as a cause of spasm of the bronchial muscle.

A variety of operative procedures on the nose and its accessory sinuses have led to the cure of individual cases of asthma; sometimes the benefit received has been out of all proportion to the triviality of the surgical interference—a touch with the cautery, or the removal of some insignificant spur. On the other hand, there is a type of asthma in which gross lesions in the nose are almost invariably found, and in which the prognosis is as bad as it can possibly be. I refer to the "aspirin sensitive type." No one who sees large numbers of asthmatics can fail to recognize this type sooner or later. Dr. Francis called attention to it some years ago. Apart from many other symptoms which go to make up this clearly defined type of asthma, patients sensitive to aspirin almost invariably suffer from nasal polypi. Can Sir James help us by suggesting why this should be so? Have the rhinologists any theories as to how polypi are formed, because, if they have, the information may give some clue to the cause of the dreadful attacks of asthma from which these people suffer.

We have, then, a great variety of proceedings which may cure asthma and, to mention a few more, I have known relief follow the removal of an appendix, the excision of an infected gall-bladder, and the enucleation of unhealthy tonsils, which brings us back to the starting-point that "there is not any one form of treatment which is effective in all cases of asthma," and to which we may well add "there never will be." In answer to Surgeon Rear-Admiral Jean's letter, I may say that I am not quibbling with these platitudes, but with the method of the press which has given that gratuitously informed the public that there is a cure for asthma.

One has often wondered why I should appear to be overstating my case, the root and [illegible] your readers to the account of the meeting at coming of x rays [illegible] cause, as recorded in your issue of January loma so often fo[illegible] Arthur F. Hurst, chairman of the virulence of the orga[illegible] committee of the Asthma Research there will be no radio[illegible] one thing he felt sure about was case—a gold-crowned to[illegible] there was still no cure for it." clinical signs of disease, [illegible] Hurst's personal experience revealed a pulp chamber full of

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(a) a skilled [illegible] and (b) the guillotine fails [illegible] anaesthesia is pushed to an anxious degree.

as an asthmatic, I do not consider his statement correct, nor a fair estimate of the prognosis of asthma as treated by modern methods.—I am, etc.,

London, W.1, Jan. 28th. FRANK COKE.

SIR,—I was pleased to see a letter from Mr. Frank Coke in your issue of January 19th (p. 133). I fail to see why the public should be expected to subscribe to a fund which states in its propaganda that there is no cure for asthma. The most difficult thing to understand is what exactly is meant by "there is not any one form of treatment which is effective in all cases of asthma." Is there any disease, or symptom of disease, to which this is not applicable? As a matter of fact, every case of asthma which is carefully and thoroughly detoxicated will derive appreciable benefit, independently of such other treatment as may be indicated. I have been studying asthma for the past ten years, and since I have had the opportunity of observing Dr. James Adam's work at first hand I approach my cases with far greater confidence of a cure than I would in treating any other chronic condition.

Have the Asthma Research Council sifted the evidence of the men in this country who claim to be able to cure or even satisfactorily treat asthma? If this were done I am sure it would be seen that asthma is as treatable as any other condition, and that cures are being regularly obtained. The reason this work is not generally known is *that only societies* may raise their voices, whilst the individual spends a good deal of his time in avoiding publicity, with loss to humanity as a whole.

I would humbly suggest that we have a *greater knowledge* of this subject in this country than anywhere on the Continent, or, for that matter, in the world, with the possible exception of America, and that if this knowledge is used and developed and encouraged the conquest of asthma is immediately at hand.—I am, etc.,

F. HARRINGTON, M.R.C.S., L.R.C.P.

Newcastle-upon-Tyne, Jan. 23rd.

SIR,—I am *glad that* Sir James Dundas-Grant has drawn attention to the good results of nasal treatment in relieving asthma. The matter requires emphasis. In those asthmatics who have a deflection of the nasal septum, especially an *upper deflection, submucous* resection of the whole or of the upper part should certainly be undertaken if a reasonable trial of other forms of treatment has failed. The result of the operation is often surprisingly satisfactory. Two recent cases are illustrative. They were both middle-aged, rather frail women, for whom many treatments had been tried without avail. One had *developed into* a constant invalid, the other into a periodic one. The removal of the septum has practically cured the asthma and changed the patients into comparatively strong, active women.—I am, etc.,

Bath, Jan. 27th. H. NORMAN BARNETT.

AN APPEAL BOARD FOR SCIENCE.

SIR,—The most important reform needed in science is the formation of an appeal board to establish facts, particularly those of great importance to the *nation*. It is very doubtful whether anyone would be able to establish the fact of the circulation of the blood at the present time had this not been already done, or whether any young *man* discovering a fact that would lead to the cure of cancer would obtain any recognition in his lifetime. Few are likely to be as fortunate with their discoveries as I was with mine. Having discovered shortly after I was qualified that 50 per cent. of the dangerously colour-blind could get through the wool test, and that *about 50 per cent.* of those rejected by it are practically normal sighted, it only took *me twenty-five years'* persistent effort, with the help of the *British Medical Journal*, and against the strongest opposition of the Royal Society and Cambridge, to establish the fact that one colour-blind *person could* pass the wool test, a fact which could have been proved in a quarter of an hour.—I am, etc.,

London, N.W.2, Jan. 21rd. F. W. EDRIDGE-GREEN.

PROPHYLAXIS AND TREATMENT OF DIPHTHERIA.

A Correction.

SIR,—Professor S. Korshun of the Elias Metchnikov Institute for Infectious Diseases of Moscow has drawn my attention to an error in my paper on this subject in the *Journal* of August 25th, 1928 (p. 337). The Russian town where fatalities were caused through the administration of diphtheria toxin in mistake for anatoxin was not Moscow, as stated by me, but Tashkent. At Moscow, Professor Korshun informs me, more than 25,000 children have been immunized by a neutral toxin-antitoxin prepared according to his method, without any fatalities.—I am, etc.,

London, S.W.6, Feb. 4th. J. D. ROLLESTON.

Obituary.

F. DE HAVILLAND HALL, M.D., F.R.C.P.,

Consulting Physician to the Westminster Hospital.

As announced briefly in our last issue Dr. Francis de Havilland Hall died at his home at Twickenham on January 27th. He was born on April 10th, 1847, the fifth son of William Hall, a successful general practitioner at Tottenham. In childhood he was familiar with the life of a family doctor of the old school, and came into daily touch with the routine of surgery and dispensary, the day-book and the ledger, thus gaining a valuable foundation for the work of a busy hospital physician and consultant. From those early days sprang his practical sympathy with members of the medical *profession, and in after life his* help and advice were constantly sought by colleagues on personal matters of health.

De Havilland Hall entered as a student at St. Bartholomew's Hospital in 1866, where he was clinical clerk to Dr. Farre and Dr. Patrick Black, and dresser to Sir James Paget, his house-surgeon being H. T. Butlin, afterwards Sir Henry Butlin, President of the Royal College of Surgeons and of the British Medical Association. Having obtained the M.R.C.S.Eng. and L.S.A. diplomas in 1868 Hall graduated M.B.Lond., and while house-physician at St. Bartholomew's passed his final M.D. examination in 1872. Two Bart's physicians who deeply impressed themselves upon him were James Andrew and Samuel Gee. In 1875 he was appointed medical registrar to the Westminster Hospital, and began his lifelong attachment to that institution, which he served in succession as assistant physician, physician, consulting physician, vice-president, and member of the house committee. He became a member of the Royal College of Physicians of London in 1875, was elected a Fellow in 1881, acted as examiner in medicine for two periods, was a member of the council from 1901 to 1905, censor in 1908–10, and Lumleian Lecturer in 1913, choosing as his subject "Intrathoracic aneurysm." In 1903–4 he held office as president of the Medical Society of London.

Dr. de Havilland Hall married in 1879 a niece of Sir Thomas Smith, at that time surgeon to St. Bartholomew's, and for the next forty years his home was at 47, Wimpole Street. He is survived by his widow, one son, and three daughters. Both sons served with distinction in the war, and the younger died of wounds received at Salonica.

We are indebted to Mr. WALTER G. SPENCER, consulting surgeon to the Westminster Hospital, for the following appreciation:

De Havilland Hall, after holding residential posts at St. Bartholomew's Hospital, gained an insight into private practice. Appointed medical registrar and tutor at Westminster Hospital, then elected to the staff, he was for nearly twenty years physician to out-patients; in consequence he was led to adopt what became characteristic of his teaching, precise detail as to medical treatment and prescribing, categorical instruction in the manner an examinee must answer questions, and various modifications of hospital practice necessary in private practice. Later, when as full physician he held clinics in the wards, his special experience enabled him, in a manner rarely attained by his junior colleagues in tutorial classes, to consider the needs of students about to embark in general practice.

De Havilland Hall, in a number of publications, proved himself a clinical observer of the first class. He had, in addition, two sidelines—laryngology and life insurance. Until he became full physician he conducted the laryngological department, and with his close friends Butlin and Felix Semon was among the founders of the Laryngological Society. He wrote a popular textbook on *Diseases of the Nose and Throat*, and when a new edition was called for Mr. Herbert Tilley joined him and added much on surgery. As medical officer to the Law Union and Rock Insurance Companies, he continued work after his retirement from Wimpole Street. The loss of de Havilland Hall from the consulting staff of Westminster Hospital, following upon that of Mr. William Wroughton from its house committee, removes the last of the personnel as it existed forty-two years ago. Hall kept up a continuous intimacy with many members of the St. Bartholomew's staff, and I owed much to him for the introduction he gave me on my appointment. Throughout our time together we corresponded, physician with surgeon: Hall was quick in coming to a diagnosis as to whether a case would be benefited by medical treatment. Alternatively he was on very many occasions prompt in giving me opportunity for a surgical operation early. His optimistic temperament was subjected of late years to many trials. Chronic diabetes had to be held in check and abstemiousness, for which he had always had a personal inclination, as regards food as well as drink, was increased. The sudden death of his great friend Frederick Palmer cut off the companion of his weekly walks, and finally he had to suffer much from malum coxae senile. When last we met in the board room about a month ago, he, with two sticks, hardly able to hobble one hundred yards, was just his cheery self, full of reminiscences, and hopeful that the worst of the pains had passed off.

"C. B. G.," a friend of fifty years' standing, writes:

Dr. Hall had a signally gracious and happy style and manner, so transparently sincere, high-minded, and true that friends and patients alike trusted him through and through, and as a result he was rightly rewarded with a fine consulting practice of high order, which his painstaking and always up-to-date scientific knowledge amply merited. Although saturated with the love of his profession, Dr. Hall, like all wise men, had many and great interests outside it. His reading was wide and extensive: all historical and biographical and much theological matter was keenly read, English literature of a hundred or so years ago especially appealing to him. He was a devoted "Johnsonian," and a life member of the Lichfield Society, keen also on the Huguenots Society, which he joined in 1904 and whose meetings he delighted to attend. He was a capital talker, with a large range of general information, and also a good listener and a most acceptable and congenial companion. Epsom College owes him much, and so does the Society for Relief of Widows and Orphans of Medical Men, also the Medical Sickness, Annuity, and Life Assurance Society, of which he was chairman from 1893 to 1911 and president from 1912 to 1920, when the society was changed into a mutual company.

The funeral service, which took place at Holy Trinity Church, Twickenham, on January 30th, was attended by many of Dr. de Havilland Hall's old friends in the profession, as was also a memorial service held on the same day at All Saints' Chapel, Westminster Hospital. The interment was at Teddington Cemetery.

THOMAS DUNCAN GREENLEES, M.D.

Formerly Medical Superintendent, Grahamstown Asylum.

WE regret to announce the death of Dr. T. D. Greenlees, which occurred at his home at St. Leonards-on-Sea on January 22nd. He was among the best-known members of the medical profession in the Hastings district in recent years, and had attained a prominent place in the British Medical Association, having served as a member of the Central Council with only two intervals—each of a year—from 1903 to 1925. In earlier days he was a leading figure in the affairs of the Association in South Africa.

Thomas Duncan Greenlees received his medical education at the Universities of Glasgow and Edinburgh, graduating M.B., C.M.Ed. in 1882, and proceeding M.D. in 1901. He devoted himself largely to psychological medicine, and spent the greater part of his career in work in various mental institutions. He was at one time assistant medical officer at the City of London Asylum at Stone, and afterwards went to South Africa as medical superintendent of the Grahamstown Asylum, in which position he spent a number of years. Later he became resident physician and superintendent of the Fenstanton Asylum at Streatham Hill, and subsequently, six or seven years ago, he went to live at St. Leonards-on-Sea. He was the author of a number of contributions to current literature on questions relating to insanity, and in 1885 was a prizeman of the Medico-Psychological Association. He was also a Fellow of the Royal Society of Edinburgh.

The record of Dr. Greenlees's services to the British Medical Association extends from 1927 back to 1893, when he became, during his stay in South Africa, honorary secretary of the then Grahamstown and Eastern Provinces Branch, in which he later held office successively as honorary treasurer and as a member of the Branch Council for several periods. His connexion with the Central Council began in 1903, when he was elected as representative of the Cape of Good Hope Eastern, Western, and Border Branches, remaining a member until 1918. He again served on the Council in the year 1919-20 and from 1921 to 1925, and during this latter period was particularly associated with the work of the Dominions Committee. At the Annual Meeting of the Association in London in 1910 he was vice-president of the Section of Psychological Medicine and Neurology. Dr. Greenlees had been also chairman of the Norwood Division in 1910-11, and deputy representative in the Representative Body of the Hastings Division in 1927, and had served upon the executive committees of both these units.

Outside his professional affairs he was a member of the Freemasons' organization and a faithful adherent of the Baptist Church, in which he was a deacon. He leaves a widow, a son, and two daughters. A colleague writes: The Hastings Division of the British Medical Association has sustained a severe loss by the sudden death of Duncan Greenlees. He had been in indifferent health for a long time, and his Divisional activities had as a consequence been much curtailed. His zeal for the Association was such that he would often attend meetings when, as everyone knew, he should have been conserving his strength to fight his old enemy, asthma. This serves to illustrate his character. His love for his profession, his brethren, and the Association was very keen. His colleagues will sadly miss his kindly advice and his ready wit.

JOHN OWEN, M.D., F.R.C.P.

Physician, Liverpool Royal Infirmary; Lecturer in Clinical Medicine, University of Liverpool.

WE have to announce with much regret the death, on January 23rd, from acute pneumonia, at the age of 55, of Dr. John Owen, one of the leading figures in medicine in Liverpool, where he held many important offices.

John Owen received his early education at Beaumaris Grammar School, from which he passed to University College, Bangor, proceeding thence to study medicine at University College, Liverpool, and, later, at Guy's Hospital. In 1897 he obtained the diploma L.S.A., and graduated M.B.Lond., proceeding M.D. in 1906, having, a few years before, obtained the D.P.H.Camb. In 1903 he became a Member of the Royal College of Physicians of London, and in 1923 he was elected a Fellow. After first qualifying he held a resident appointment at the Royal Southern Hospital, Liverpool, and then practised for a year or two in partnership at Blaenau-Festiniog. During the South African war of 1899–1902 he served as a civil surgeon to the South African Field Force, and at the conclusion of hostilities returned to London. While acting as casualty officer to the St. Pancras Dispensary he continued his studies at Guy's Hospital, and then began practice as a physician in Liverpool, where his ability was soon recognized. At the time of his death he was honorary phy-

to the Liverpool Royal Infirmary, and lecturer in clinical medicine at the University of Liverpool. He was also honorary consulting physician to the Home for Epileptics, Maghull, the Liverpool Eye and Ear Hospital, the Liverpool Dispensary, the School for the Blind, and the Southport Infirmary. At an earlier period he had been honorary physician to the Liverpool Hospital for Consumption, the Liverpool Northern Hospital, and the Stanley Hospital. He held a commission in the R.A.M.C.(T.F.) for many years, and during the war of 1914–18 served in India and Mesopotamia, retiring with the rank of major and the Territorial Decoration.

Dr. Owen's interest in professional matters was concerned mainly with the scientific side of medicine. His contributions to its literature, in the form of articles written for various periodicals, were largely on neurological subjects. He was a member of the Association of Physicians of Great Britain, and of the Liverpool Medical Institute. At the Annual Meeting of the British Medical Association at Liverpool in 1912 he was honorary secretary of the Section of Medicine. Dr. Owen was unmarried, but is survived by his mother, to whom he was devoted, and for whom deep sympathy is felt by a large circle of friends in Liverpool and elsewhere.

Sir JAMES BARR writes from Cannes:

The death of Dr. John Owen must cast a gloom over the medical profession in Liverpool, since he was universally beloved both by his professional brethren and the public. To me his death came as a great shock, as it is only about two weeks since I had a long letter from him on a subject in which we were mutually interested, and he then gave no indication of any impairment in his usual good health and vigour. John Owen, although very unassuming, knew his work well, and was extremely careful both in diagnosis and treatment. He was a man who inspired confidence—a confidence which was never misplaced. He was thoroughly imbued with the best traditions of the medical profession, and was ever ready to lend a helping hand to those in distress without any ulterior motives. His charitable deeds in the profession and outside will keep his memory green in many a household. On my return to Liverpool I shall sadly miss another old and valued friend.

Colonel A. W. SHEEN writes from Cardiff:

I am minded to write a tribute of warm affection and regard, shared, I know, by all his war comrades, to the life and memory of John Owen. When I commanded the Welsh Hospital in India, of 3,000 beds, "Major John," as we all knew him, was in charge of the Medical Division. His good work, his kindness, and his personal charm endeared him to all. And there were in his character special traits of modesty, humour, and fearlessness. The last was shown by his zeal for "tiger," and by some feeling of sorrow in him that his lot had not been cast in a more active theatre of war. But duty was paramount with him: our change of destination from France to India he accepted with willing cheerfulness, and although, later, the charge of a hospital ship brought him in contact with Mesopotamia, yet the field of battle did not come his way. I only knew of his death from a notice in the *Times* on the day of his funeral, a death which I feel must have been contributed to by devotion to his work, in which he never spared or thought of himself. His loss will be felt by all the many with and for whom he lived and worked in Liverpool, and not least by those who knew his sterling worth and character by friendship and comradeship in the days of war.

C. HUBERT ROBERTS, M.D., F.R.C.P., F.R.C.S.,

Consulting Surgeon to Queen Charlotte's Maternity Hospital and the Samaritan Hospital, London.

WE regret to announce the death of Dr. C. Hubert Roberts, which took place suddenly at sea near Denmark on January 29th, in his sixty-fourth year.

Hubert Roberts, after leaving Bedford School, studied medicine at St. Bartholomew's Hospital, where he was a brilliant student. He gained the junior and senior scholarships in 1885 and 1886, and ultimately won the gold medal in the M.D. of the London University. Soon after qualification he decided to specialize in obstetrics and gynaecology, but was disappointed that his own hospital offered no prospect of a vacancy on the visiting staff. But he was appointed to Queen Charlotte's Hospital and the Samaritan Hospital for Women, where he continued an active member of the honorary staffs until his retirement under the age rule. He was also gynaecologist to the staff of St. Luke's Hostel, and acted as examiner to the English Conjoint Board and other examining bodies.

During the war Roberts, being then well over age for active service, performed useful and arduous work as accoucheur to Lady Howard de Walden's Hospital for officers' wives, and also as a member of the visiting staff of the Epsom War Hospital. He took an active interest in the affairs of the Royal Society of Medicine, and especially the Section of Obstetrics and Gynaecology, of which he was for some time vice-president, after having held the post of secretary and other offices. He was secretary of the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association in Sheffield in 1908. His writings were numerous, and began with a book published in 1901 on gynaecological pathology. Based on his lecture notes, this proved to be a valuable and successful publication.

Roberts's clinical experience was unusually wide, especially in obstetrics. In his earlier years at Queen Charlotte's Hospital he developed a reputation for his manipulative skill in the delivery of difficult cases. There can be very little in the whole range of obstetrics that Roberts had not seen and treated. His views in clinical obstetrics were sound and conservative, and he had no patience with ill-considered opinions and rash methods of treatment. As a gynaecological operator he was not at his best in recent years. While sound in diagnosis his surgical technique was never facile or flexible, and he often gave the impression that operative work was anxious and laborious. But it was as a teacher that Roberts excelled. He enjoyed his weekly round of the wards at Queen Charlotte's probably more than any other part of his work, and there will be many old students and nurses who remember his characteristically jovial style: stories, banter, and reproof all mixed up with the subject of the lecture in a way which compelled attention.

Roberts was a kindly, impulsive man, who made friends freely and who detested a quarrel; indeed, he would go very far to maintain agreement in a threatened dispute. He began life with great promise of a brilliant career, but those who knew him well in later years felt that he suffered a certain amount of disappointment in not having achieved perhaps all he hoped in the ambitious days of his youth.

JOHN ADOLPHUS SHARP, M.R.C.S.,

Consulting Surgeon to the Derbyshire Royal Infirmary, Derby.

WE regret to announce the death of Dr. John A. Sharp, which occurred at his home in Derby on January 26th, in his eighty-second year. He was the doyen of the medical profession in his county, and one of the oldest practising medical men in Great Britain, having continued his regular activities until within two months of his death.

John Adolphus Sharp was born at Maidstone in 1847, and received his medical education at Guy's Hospital, obtaining the diplomas L.R.C.P., M.R.C.S., and L.S.A. in 1868. After holding a resident post at Guy's he became house-surgeon in the old Derbyshire Infirmary, and a few years later set up in practice at Derby. He soon resumed his intimate association with the Infirmary on his appointment as honorary surgeon upon its staff. In this capacity he played an important part in the development of the institution, which was afterwards given the name of the Derbyshire Royal Infirmary. When—some forty years ago—the scheme for its reconstruction was in course of preparation Dr. Sharp made a study of many hospitals on the Continent with the object of ensuring that the plans—in the preparation of which the architects had the benefit of his co-operation—should incorporate the then most recent developments in hospital construction. In 1896 the state of his health compelled him to retire from practice for the

time being, and he went to live in the South of England, taking this enforced leisure as an opportunity to pursue a special course in bacteriology in London. Ten years later, on the death of his successor in practice, he went back to Derby and resumed work there. He renewed his connexion with the Royal Infirmary, in which he was made an honorary consulting surgeon, and until very recently played an active and useful part in its management. He leaves *a widow, one son—a medical practitioner*—and one daughter, whose husband is also a member of this profession.

A colleague writes: Dr. Sharp was not only held in the highest regard by his brother medical men, but also in the greatest esteem and affection by his patients. In spite of his advanced years his activity was extraordinary, and he was an exceptionally sound and painstaking practitioner. Although one of the old school, he nevertheless kept himself well up to date in modern methods of diagnosis and treatment. His striking personality made itself felt by all who were brought into contact with him, and his well-known and venerable figure will be greatly missed in Derby. He was a member of the British Medical Association for over fifty years, and for a period was the local secretary. Great public interest was taken in his funeral, which took place on January 30th, and St. Andrew's Church was filled with sympathizers. Among those present were representatives of the board of management and medical and nursing staffs of the Derbyshire Royal Infirmary, a large number of his professional colleagues, prominent Derby citizens, and city councillors. The Rev. T. S. Jagg, chaplain to the Derbyshire Royal Infirmary, paid a striking tribute to a life which, he said, had been spent in a great work for the town and its people.

VICTOR PLARR, M.A.,

Librarian, Royal College of Surgeons of England.

MR. VICTOR GUSTAVE PLARR, poet, man of letters, student of human foibles, and librarian to the Royal College of Surgeons of England, died on January 28th at his home near Wimbledon, suddenly and unexpectedly, in the sixty-sixth year of his age. He always had the air and stoop of a student, but of late his friends, of whom he had many, both at his College and his club (the Athenaeum), noted that he stooped more, and walked with a slower step, but they took no alarm, for he was a man who smiled on life even when things went awry with him. His Council gave him three months' leave of absence in order that he might regain strength, but in spite of all attention given to him by his medical attendants and devoted wife recovery never came.

The post held by Mr. Plarr was established just over a century ago, and he was the fourth to hold it. His immediate predecessor was Mr. James Blake Bailey, who established a great tradition—the tradition that every visitor to the library was to be welcomed, made comfortable, and helped to the utmost of its resources. On Mr. Bailey's death in 1897 Mr. Plarr, who was then librarian to King's College, Strand, was appointed his successor, and, as the many thousands who have used the library in the past thirty-one years will gladly testify, under him and his able staff of assistants the Bailey tradition has been continued and extended. The card catalogue which was begun by Mr. Bailey was completed; a full list of all the precious manuscripts in possession of the College was compiled and kept up to date. From time to time, with the permission of his Council, he published interesting extracts from the stores at his disposal—letters of the Hunters, of Dr. Matthew Baillie, of the Hunter-Baillie family, letters of Sir Walter Scott, of Joanna Baillie, and of Sir Edward Jenner. He *compiled a complete list of the lectures* which had been given at the College during the nineteenth century, and of the professors and lecturers who had given them. His greatest task was the compilation of a roll of the Fellows of the College; he wrote biographical notices of 2,500 of them. As a biographer it was the personality of a Fellow which appealed to him; the discoveries a man made, the advances which he introduced into his art, were in Victor Plarr's eyes of minor importance compared with the measure of his humanity and the manner in which he dealt with his fellow men. He was a man who looked at life much as Charles Lamb did; the art of "window-dressing" and of "elbowing" was altogether foreign to his nature. He was a spectator who sank himself in his surroundings and watched life go by—sometimes with a wry smile. His measure of a man was not, What has he done? but, How has he lived? Victor Plarr lived to *enjoy life* and to make his companions in life enjoy their share to the full.

Victor Plarr was English to the core, and yet he was born in Alsace under the French flag; his father was a professor in Strasbourg University; his mother, an Englishwoman and poetess, traced her descent from an Aberdeenshire baronet, Sir Alexander Cumming. In 1870, when he was 7 years of age, his parents came to England rather than pass under the German flag. Victor was sent to school, first at St. Andrews and afterwards to Tonbridge, passing to Worcester College, Oxford, in 1882, at the age of 19. He obtained a second class in modern history in 1886, and then sought a livelihood in London. As an undergraduate at Oxford the gift of verse, which he had inherited from his mother, became manifest, and he was received by the young poets of London, who forgathered at the Rhymers' Club, with acclamation. Mr. Morley Roberts knew Victor Plarr then, and has told the writer of the great future which was prophesied for Victor Plarr as a poet—a promise which was never really fulfilled, for *the world judged him finally as a minor poet.* His various books of verse—his *In the Dorian Mood* (1896) and *The Tragedy of Asgard* (1905)—never made their way beyond the narrow circle of professional approval. He was journalist; he edited the fourteenth and fifteenth editions of *Men and Women of the Time*—a publication which was supplanted by the appearance of *Who's Who*. He had not the outfit which is needed to make a success of free-lance journalism. He was pensive and sentimental, and his wares were not such as the public cared to buy. He loved, not the highway of life, but its pleasanter side-paths, where a man may dally and refresh his soul as he passes along. Hence, when the opportunity offered, he gladly sought a career in the shelter of a library, King's College giving him his first post in 1890.

Even when he became a medical librarian, and had charge of one of the finest libraries of its kind in this country, his taste for by-paths still mastered him. To the *British Medical Journal* and to other professional publications he contributed many articles, some signed, most unsigned; but one and all of them deal only with the aspects of medicine which interested him—its folk-lore, its myths, its miracles, its curiosities, and its personalities. In his journalism, as in his verse, he was always an artist; he was self-detached, and looked at things as if they were far off. Like many Oxford men, he covered a sensitive, shy, retiring nature by a pose. In *Who's Who* he has described his *favourite occupations* as "walking," "talking," "sleep," and "pastel drawing." It is true he was an artist with pencil and crayon, and did while away hours of leisure with them; but his real favourite occupation was spent in loyal service to his College and loving devotion to his home.

A. K.

THE LATE DR. WILLIAM T. HAYWARD.

AN obituary notice of Dr. W. T. Hayward, C.M.G., appeared in our issue of January 5th (p. 47). We have since received from a correspondent in North Adelaide ("A. A. L.") the following appreciation:

With the passing of Dr. W. T. Hayward the writer has to lament the loss of a friend and colleague of some forty-five years' standing, and the people of South Australia one who, starting the practice of his profession in their midst just half a century ago, rapidly acquired, and ever maintained, the confidence and esteem of a large circle of patients and friends.

When he had completed with credit four years' course of study at the Liverpool Royal Infirmary, and obtained the necessary certificates, he took a short trip across the Irish Channel in the year 1874, and presented himself before the board of examiners of the Royal College of Physicians. The registrar apparently did not deem it necessary to inquire into age of the student with the long beard, and as a result, still a minor, he became duly licensed to practise, and also

immediately obtained an appointment as surgeon to the Pacific Steam Navigation Company. After a couple of voyages to South America he started work as a hospital intern at Liverpool, becoming M.R.C.S. in 1875. Again he took to the sea, ultimately with the newly formed Orient Company, and he was surgeon of the *Lusitania*, the first vessel of this line to come out to Australia; on board this steamer he met his future wife, the daughter of Mr. F. R. Burden of the *Advertiser* newspaper. In October, 1878, he decided to settle in Australia, and started to practise at Riverton, a country township; in 1882 he removed to Norwood, a suburb of Adelaide, having succeeded to the practice of the late Dr. Baily. Early in his career (1875) he became a member of the British Medical Association, and in 1879 he was instrumental in helping to form in Adelaide the first Branch in Australasia. On the occasion of the accidental death of the then president (Dr. Charles Gosse), in 1885, he was chosen as his successor, and he occupied the chair again in 1910. In 1911, when the various Australian Branches were drawn together by a federal tie, he was chosen as one of the South Australian representatives, and elected the first president of the Federal Committee. Visiting England in that capacity in 1914, he attended the Annual Meeting of the Association at Aberdeen, where he was given the honorary degree of LL.D. of that University, and made a vice-president of the whole Association. His long services to the profession were recognized locally by the presentation to him, in 1920, of his portrait in oils by Mr. Webb; this speaking likeness of him at his best will some day adorn the future Hall of the Association. In 1919 the Gold Medal of the parent Association was presented to him for his distinguished services. In 1885 a vacancy at the Adelaide Hospital allowed of his appointment as honorary physician, and this office he held for many years; he was also an honorary medical officer at the Children's Hospital for a decade. On the retirement of the late Dr. W. L. Cleland he was appointed lecturer in the Medical School on materia medica and therapeutics, resigning this position in 1920. He was for twenty-five years a member of the council of the University, and for a couple of years dean of the faculty. As a clinical teacher he was sound rather than brilliant, and he had the benefit of experience rather than of modern post-graduate teaching. At the Inter-State Congress at Sydney a few years ago he was president of the Section of Medicine.

When the war broke out Dr. Hayward volunteered his services, although over 60 years of age. They were accepted, and he was sent home in August, 1915, to be officer commanding the "nth A.G.H." On arrival in London he was informed that they had never heard of this particular unit, but Sir Neville Howse found him an appropriate billet as the officer in charge of the 1st Australian General Hospital at Harefield. There he spent two years, and was rewarded with the C.M.G. and promotion to full colonel. He returned to Adelaide, but did not resume his suburban practice.

Outside his profession he did not take part in any public work. In private he was charming; a chorister in boyhood, he could play an accompaniment on the piano; as a whist or bridge player he was good, and above all, even-tempered. On a sea voyage as late as four years ago he took an active part in all deck sports; though he never learnt golf he did not disdain a game of bowls. In early life he was a crack rifle shot.

Perhaps Dr. Hayward's greatest professional distinction was the confidence placed in his judgement on all ethical matters; for nearly three decades he was the one always appealed to on these subjects. He was patient, and genial, and understanding; he could recognize the frailties of medical human nature and the allowances to be made for them, but he was the staunch champion of all straightforward dealings. He might perhaps be described as the best type of general practitioner produced by the medical education afforded in the early seventies of last century, a type now well-nigh extinct. While he fully appreciated the distinguished honours that came his way, he wore them with all modesty. He has left a widow and seven children. Three of his sons became doctors: one, Lionel, who died of phthisis in 1926, at the age of 45, earned the remarkable distinction of a hospital at Loxton on the River Murray being named after him in affectionate remembrance.

Dr. SELFE BENNETT, who died, aged 81 years, on January 15th, was the son of Dr. (afterwards Sir) Risdon Bennett of Finsbury Square, physician to St. Thomas's Hospital, and for five years President of the Royal College of Physicians of London. Henry Selfe Bennett went to St. Paul's School, then in its old quarters in St. Paul's Churchyard, and thence proceeded to Trinity Hall, Cambridge. His affection for his old school and college persisted as long as he lived. At St. Paul's he won the English poetry prize, and when the Trinity Hall boat became head of the river he celebrated the occasion in a privately printed poem. He became a student of St. Thomas's Hospital Medical School, M.R.C.S.Eng. in 1874, and M.B.Cantab. in 1875. Curiously enough, he did not obtain the licence of the College over which his father long presided. After holding a house-physicianship at St. Thomas's and a resident post at the City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, Bennett settled in practice in Seymour Street, subsequently moving to Upper Berkeley Street, where he died. He was for many years medical officer to the London office of the Liverpool and *London and Globe Insurance Company*, until infirmity compelled his retirement on a pension. He was an active member of the Life Assurance Medical Officers' Association, to the *Transactions* of which he contributed in 1908 a paper on the statistical method in medicine, and in 1915 one on influenza. On the first-named subject he held strongly sceptical views, holding that the statistical method was unavoidably fallacious, and he believed that subtle sequelae of influenza were long enduring and often overlooked. He was a collector of prints, chiefly with a view to extra-illustration, which was his chief hobby. His extra-illustrated volumes of *The Gold Headed Cane* were much admired. Bennett was at one time a member of the Organon Club, and for many years a constant attendant at the meetings of the Casual Club, of which he was twice president, and where his facility in debate and his tendency to take up the position of Advocatus Diaboli were much appreciated. In 1917, as the result of an accident, he suffered fracture of the upper part of the shaft of the left femur. Various causes combined to make the result an unsatisfactory one, and the consequent crippling and increasing general weakness confined him to his house, and for the last two years to his bed. He bore all his troubles with stoical resignation and cheerfulness, till bronchitis and progressive congestion, probably affecting the base of the brain, released him quietly and calmly from his troubles. His wife survives him, with a son and a daughter.

Dr. FRANK MORT, whose death occurred on January 22nd at the age of 56, had been resident in Middlesbrough for almost thirty years, and was among the best-known members of the medical profession in the Cleveland district. Born in Glasgow, he received his medical education at the university the[illegible] 1895. Five years later he [illegible] he remained until his death [illegible] writes: Cleveland is poorer for the loss of Dr. Frank Mort. From the time of his coming to the district until his retirement from general practice little more than a year ago he accomplished an astonishing amount of work, though labouring all the time under a heavy burden of ill health. In recent years, notwithstanding the claims of a very large practice, he found time for special attention to cardiac diseases, in which he had always been particularly interested. By constant study, by frequent visits to important cardiological centres at home and on the Continent, by the use of the most modern cardiographic and radiological methods of investigation, he had acquired recognition throughout the Cleveland area as an authority on the subject in which, even after giving up active practice, he maintained unflagging interest. A few days before his death he expressed regret that he would be unable to deliver an address he had promised to a neighbouring Division of the British Medical Association, of which he was a loyal and active member. He took a full share in the work of the Cleveland Division and had served on several occasions on the executive committee, but although repeatedly asked to accept the office of chairman, always refused, saying that there were others better fitted for the post. Such self-effacement and modesty were characteristic of him. Always gentle, always courteous—even when the stress was greatest—always with a kindly smile and a word of comfort, always ready to respond without a murmur to an urgent call, there is little cause to wonder that his people loved him, and that to them he was not simply the doctor, but the trusted friend. As with his patients so it was in his relations with his fellows; they were never his opponents or competitors, but always his professional

brethren. He sought and found the best in everyone and in everything. Never thrusting himself forward, but always ready to help, he earned and kept the respect and esteem of his colleagues and the love of those whose privilege it was to know him intimately.

Dr. WILLIAM GRANT STEWART, who died at his home in Montreal last year at the age of 68, had been in practice in that city for forty years. He was a frequent visitor to Great Britain and had many friends among medical men here. The son of a Presbyterian minister, he received his medical education at McGill University, and after graduating M.D. in 1888 he continued his studies in Berlin, London, and Edinburgh. On his return to Canada he settled in Montreal and soon built up an extensive practice. For many years he was physician to the Western Hospital, and he also took a large part in the medical and managerial work of the Montreal Maternity Hospital and the Alexandra Hospital, among other institutions. Dr. Stewart had been a member of the teaching staff of the University of Bishop's College, where he was for some time lecturer in clinical medicine. In 1919 he was elected president of the Montreal Medico-Chirurgical Society. He was for long an enthusiastic member of the British Medical Association, and prided himself on having been present at the opening of the Association's new House in 1925. During his frequent visits to Great Britain he attended many of the Annual Meetings of the Association, including those at Manchester, Oxford, Belfast, Birmingham, Aberdeen, and Bath. Outside his profession his main interests were in music, literature, and travel. About four years ago his many activities began to tell upon him; cardiac weakness developed, and he was compelled to relinquish the greater part of his work. His death caused deep regret among his many friends and colleagues, by whom he was held in the highest esteem.

We have to record with regret the death, on January 12th, at the age of 84, of Dr. ALICE DRYSDALE VICKERY, at her home in Brighton. Dr. Vickery qualified L.R.C.P.I. in 1880, and was a member of the British Medical Association till 1925. Dr. B. Dunlop writes: Alice Drysdale Vickery, who was among the first five women to obtain a medical qualification in the British Isles, was one of the pioneers of women's progressive movements, and especially of that for birth control. In 1877 she bravely stood as a witness for Charles Bradlaugh and Mrs. Annie Besant in their famous trial for republishing Dr. Knowlton's pamphlet on family limitation. She and her husband, the late Charles R. Drysdale, M.D., then helped to found the Malthusian League, and thereafter largely devoted their lives to writing and speaking gratuitously on the birth rate question. Even when over 70 years of age she continued to attend Eugenics Society and other meetings in London at which she advocated the Neo-Malthusian point of view, and returned home on the top of a bus whatever the season. No history of the birth control movement can be written without a reference to the widely revered name of Alice Vickery, and she will also be remembered by many as a devoted wife, mother, and friend.

The following well-known foreign medical men have recently died: Dr. MAURICE LETULLE, professor of morbid anatomy in the Paris faculty of medicine and member of the Académie de Médecine, aged 75; Dr. LOUIS BROCQ, the eminent dermatologist, consulting physician to the Hôpital St. Louis, and Commander of the Legion of Honour; Dr. CHAPOY, honorary professor of the medical school of Besançon; Professor CARL POSNER, editor of the *Berliner Klinische Wochenschrift* from 1889 to 1921, aged 74; Dr. LUIS BARRAQUER ROVIRATTA, a Barcelona neurologist; Dr. CHRISTOS MALANDRINOS, professor of children's diseases at the University of Athens, aged 55; Dr. EUGENE LATREILLE, professor of morbid anatomy at Montreal University; and Dr. ANDREA AMICI, the Pope's physician, of Grenada.

Universities and Colleges.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary meeting of the College was held on January 31st, when the President, Sir John Rose Bradford, was in the chair.

Membership.

The following candidates were admitted to the Membership:

Edi[illegible] Gerald Vincent Francis Doyle, a, L.R.C.P., Alfred Henry Gerrard, [illegible]nd., land, M.B.*Toronto*, [illegible] pted, M.B.*Camb.*, Sc. [illegible]rson *Nsud*, M.B.*Sydney*, Walter Gordon Chisholm Patterson, [illegible], New Zealand, Robert Sturtevant Pilcher, M.B.Lond., Charles Percy [illegible] M.B.Camb. Francis Cro-bie Roles, L.R.C.P., Cyril Dee [illegible], Clive Henry [illegible]ner, Robert Yorke, M.D. [illegible]ane.

Licences.

Licences were granted to the following 149 candidates, who had passed the necessary examinations of the Conjoint Board and conformed to the by-laws and regulations of the College:

H. H. Aitchison, G. G. Allan, *Lucy E. Arthur, M. W. Atkinson*, S. W. Barber, R. C. Bennett, H. Bornstein, G. H. Bradshaw, *Rochelle Churin*, F. Clifton, G. C. Cochrane, C. E. Corrigan, C. F. *Cosin*, *Florence K. Costello, P. J. Cowin*, D. F. L. Croft, R. Cutler, L. E. Daniel, C. J. M. Dawkins, E. M. Dimock, J. Donovan, H. A. *Eason*, A. M. Easton, J. A. *Eddy*, M. A. A. El Gammal, A. C. *Elkin*, G. W. *Elchos*, T. Evans, T. C. J. *Evans*, A. D. Everett, T. D. Finey, W. R. Forrester-Wood, C. H. Forsyth, E. Foster, R. H. Francis, S. L. Garaye, W. S. Ghai, J. M. Gibson, P. J. C. Godard, M. W. *Gouin*, J. Gordon, J. T. C. Gray, D. R. Griffith, C. C. Griffiths, A. J. Groenewald, *Gwendoline E. Grove, R. G. Gwynne, M. K. Gyi, R. W. Haines, A. S. Hall, R. S. Hamlin, J. M. Harker, H. M. Harris, G. F. Harrison, F. F. Helliker, R. T. *Hicks*, *Louisa S. Hobbs, R. C. Holdernes-, F. W. Holdsworth, G. J. Hollis, A. S. Hoseason, R. I. Hyder, C. G. Johbins, *Margaret L. Jones, O. T. Jones, H. W. [illegible] S. E. Knolwes, L. W. A. Lankester, J. F. V. Lart, *Cesia I. [illegible]ssing, A. Levy, K. Lindberg, A. G. *Lloyd*, R. [illegible] M. Lufkin, R. Machrar, J. K. Marshall, A. M[illegible] R. A. Maynard, E. G. Milad, W. B. Millar, M. V. Modi, G. Morgan, G. H. Morley, J. E. *Myers*, T. H. Negus, D. A. Nicoll, G. S. *Nightingale*, W. G. Oakley, R. I. O'Farrell, T. L. *Owen*, L. G. M. Page, A. J. Paver, A. F. Parker, A. R. D. Pattison, I. Preisbel, B. Pavy, S. M. Rahman, A. S. Rajasingham, T. G. Reah, *Dorothy K. Reynolds, A. C. Riley, G. L. Robinson, V. C. Robinson, T. S. Rodgers, E. B. Rogers, B. Rothery, A. S. D. Russell, H. W. Rycroft, N. Sachnovics, H. R. D. Schofield, T. L. Scott, *Mary Scouloudi, D. A. Seaman, J. E. Semple, G. M. A. *Shaikh*, *Mary E. Sharp, J. D. Simpson, A. D. Skyrme, C. E. Soodeen, A. Southgate, B. Stanley, H. Stark, E. T. W. Starkie, G. A. Stevenson, E. C. Sugden, H. Taylor, I. Taylor, V. C. [illegible] S. A. Underwood, *Bertha O. Upton-Jones, V. C. Verbi, [illegible]nman, C. M. E. Warner, R. P. White [illegible]itrow, A. G. Williams, A. R. Willis [illegible] I. Willmott, G. M. Willoughby, W. R. [illegible] R. G. Zaglama, R. Zimbler.

* Under the Medical Act, 1876.

Diplomas in Special Subjects.

Diplomas in the subjects indicated were *granted jointly* with the Royal College of Surgeons:

D.P.H.—G. M. *Addison*, N. T. Advani, C. L. Ahluwalia, J. S. Allan, A. N. Chopra, Marguerite R. Cliff, W. Conroy, K. St. V. Edwards, Eugene Egan, J. Egan, V. Feldman, J. Ferguson, M. T. Fernando, Barbara Finch, A. N. Ghei, *Winafride M. Gibson*, N. G. Hill, Katherine M. Hirst, D. P. Holmes, *Amelia M. Ison*, C. W. W Jeremiah, Ellen F. Kelleher, W. H. Kelleher, I. D. Khatri, F. T. Lloyd, W. S. Martin, M. V. Merchant, P. L. Nirula, *Mary O'Leary*, Helen E. D. E. *Ornstein*, W. G. Patterson, R. F. Pinson, F. W. G Smith, R. B. Subramanyam, R. W. C. Thambiah, D. J. Valentine, E. M. Wright.

PSYCHOLOGICAL MEDICINE.—R. W. Armstrong, *Eileen A. Channell*, A. Craig, H. Hinchco, Phyllis M. Horton, D. L. McCulloch, D. Menzies, J. E. Nicole, Muriel L. M. Northcote, *Eveleen J. O'Brien*, J. C. Ramsay, C. E. Roachsmith.

LARYNGOLOGY AND OTOLOGY.—M. I. Ashmawi, A. Blagoff, N. M. Ezra, M. Husnain, N. H. Mencio, H. V. O'shea, H. M. Petty, S. Roy, E. C. Tamplin, W. L. Thomas.

Appointments.

Dr. C. H. J. Lockyer was elected Councillor in the place of Sir Hugh K. Anderson (deceased), Dr. Gordon Holmes was elected examiner in psychological medicine, and Dr. W. J. Fenton examiner in medicine.

The award of the Swiney prize for 1929 to Professor Sidney Smith was announced (see *British Medical Journal*, February 2, p. 231).

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—J. S. B. Bray, N. N. Datta, A. R. Edwards, C. F. Hurst.

MEDICINE.—G. E. Bent, J. S. B. Bray, A. Weeks.

FORENSIC MEDICINE.—J. S. B. Bray, *J. Freud*, L. P. Gregory, I. Lloyd-Jones, A. Weeks.

MIDWIFERY.—*J. Freud*, H. G. Edmunds, D. F. Michael.

The diploma of the Society has been granted to Messrs. G. E. Bent, J. S. B. Bray, *J. Freud*, and A. Weeks.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

Local Government Bill.

THE House of Commons, on January 29th, again went into committee on the Local Government Bill. On Clause 86, which gives power to the Minister of Health to reduce grants to councils, if he is satisfied that a council has failed to achieve or maintain a reasonable standard of efficiency in the discharge of its functions relating to public health, Sir L. SCOTT moved an amendment to insert the words "and progress" after "efficiency." He said that the amendment would help the Minister of Health to see that a reasonable standard of progress as well as efficiency was maintained by the local authorities. The amendment, which Mr. Chamberlain accepted, was agreed to.

With a view to defining the public health services which a local authority was obliged to maintain at a reasonable standard of efficiency and progress, Mr. CHAMBERLAIN moved an amendment to insert, after the words "public health," the words "including services relating to maternity and child welfare, lunacy and mental deficiency, and the welfare of the blind." Tuberculosis and venereal disease, he explained, were recognized as being covered by the words "public health," and in order to remove any question as to the others he moved their inclusion in the term. The amendment was agreed to.

Sir L. SCOTT moved an amendment to delete from the clause the proviso that the Minister of Health, when dealing with the question of the reduction of grants, must have regard "to the standards maintained in other areas whose financial resources and other relevant circumstances are substantially similar." The words, he said, might be used to tie the hands of the Minister unduly when dealing with backward authorities. Sir KINGSLEY WOOD said that the amendment would untie the hands of the Minister for the time being altogether, and the operation of the clause would be entirely at his discretion. He could imagine a kind of Minister who might have a very different idea of the standards to be observed in putting the clause into operation. The amendment would also make the point still more difficult from the point of view of the local authorities. The amendment was withdrawn.

On a subsequent amendment by Mr. Lumley, Mr. CHAMBERLAIN said he would consider the possibility of introducing words into the clause to give an opportunity to some outside persons to make representations to the Minister as to the failure of a council to achieve or maintain a reasonable standard of efficiency in the discharge of their public health functions. Such words, however, would have to make it quite clear that the Minister was not dependent on receiving that representation before taking action. At 7.30 the guillotine fell, and Mr. Lumley's amendment was negatived. Clause 86 was added to the bill. Clauses 87 to 92 were also agreed to.

On Clause 94, which mitigates the liability of councils for temporary loans, Sir KINGSLEY WOOD moved an amendment providing that, to meet the case of the distressed areas, the rate for the repayment of loans contracted by Poor Law authorities to be transferred under the bill should be 9d. in the pound instead of 1s. The amendment was agreed to and the clause added to the bill.

Clause 99 provides that any person who, on November 12th, 1928 (the date of the introduction of the bill), shall have been an officer of a Poor Law authority, shall, as respects his office, be transferred to the new authority. Mr. HAYDAY moved an amendment to allow officers appointed after the date of the introduction of the bill to be transferred. He said that an obvious injustice to recently appointed officers would be done if the clause remained as at present. In view of the long periods of distress, and the epidemics of disease which had taken place, quite a number of officers might have been appointed since November 12th, 1928. Sir KINGSLEY WOOD said that it would be generally agreed that a man appointed to a Poor Law office after the introduction of the bill, and therefore aware of the provisions affecting his office, was not entitled to compensation for its loss. The amendment was rejected.

Under the guillotine the clause was added to the bill, as were Clauses 100 to 110 inclusive. Of these clauses, 103 provides for compensation to existing officers, and 104 for superannuation of transferred Poor Law officers.

On January 30th Sir KINGSLEY WOOD moved a new clause declaring that:

"Upon application being made to the Minister by the council of any county or county borough requesting that the contributions of the council towards the expenses of any voluntary association having as its object the promotion of public health services (including services relating to maternity and child welfare, lunacy and mental deficiency, and the welfare of the blind) may be paid directly to the association out of the amount payable as the general Exchequer grant of the council, the Minister may pay such contributions accordingly, and any sums so paid shall be deemed to have been paid as part of that grant."

He said this clause was introduced to meet the criticism that a voluntary association covering the whole of the country would be obliged to collect small sums from many counties and county boroughs. This clause empowered the Minister, if the counties and county boroughs concerned made application to him, to make one payment on behalf of the councils to the association concerned, out of the sums payable as the general Exchequer grant. Answering Mr. Kelly, Sir Kingsley added that the phrase "public health services" covered societies particularly concerned with propaganda against venereal disease. There was no doubt the association to which Mr. Kelly had referred would be able to take advantage of this bill.

Mr. LONGBOTTOM said that, because the Blind Persons Act, 1920, was not compulsory, many local authorities were shelving their responsibility and were leaving to voluntary associations a great deal of the welfare work for the blind. Did this clause prevent a council asking the Minister of Health to pay to societies for the welfare of the blind a certain sum per annum, so that the local authority escaped from its obligation? Sir KINGSLEY WOOD said the clause did not deal with that point. He pointed out that the Minister, under Clause 86, had power to see that local authorities maintained a reasonable standard of efficiency and progress. In considering that question he would also consider the work of the voluntary associations and whether by means of both a reasonable efficiency and progress was maintained.

Dr. VERNON DAVIES asked whether it was necessary for the county to make application to the Minister every year, or whether they could do so for a fixed period, or till notice of cancellation. Sir KINGSLEY WOOD said he would consider what was the best arrangement. When the Act came into operation the Minister proposed to address a general communication to local authorities regarding it, and would direct attention to this clause. In the interval the Ministry would consult the local authorities on the most suitable arrangement. Dr. Vernon Davies could rest assured that the Ministry would regard the best interests of the work.

The clause was then added to the bill without opposition.

Sir KINGSLEY WOOD moved another new clause declaring that a person who had become an inmate of a Poor Law institution for medical or surgical treatment should not, while requiring such treatment, be disqualified on that ground from receiving an old age pension. The clause was added to the bill.

The following new clause was also moved by Sir KINGSLEY WOOD:

As from the appointed day the following provisions shall have effect with respect to functions relating to infant life protection and vaccination formerly discharged by Poor Law authorities: (*a*) Functions under Part I of the Children Act, 1908, shall, elsewhere than in the county of London, be discharged by the councils of counties and county boroughs as functions under the Maternity and Child Welfare Act, 1918, except that where the council of a district have established a maternity and child welfare committee the said functions shall, in that district, be discharged by the council of the district and not by the county council; and (*b*) Functions relating to vaccination shall be discharged by the councils of counties and county boroughs as functions relating to public health.

Sir Kingsley Wood said this new clause was to ensure that the functions in regard to infant life protection and vaccination were imposed on the appropriate authorities and exercised by the appropriate committees of those authorities. At present these functions were discharged by boards of guardians under Part I of the Children Act, 1908, and the Vaccination Act. In the absence of special provisions they might be transferred to county and county borough councils on the appointed day, and so the Ministry proposed that the exercise of these functions should in all cases be undertaken by the maternity and child welfare authorities. It would be satisfactory to give the work to the authorities which employed health visitors, the bulk of whose work related to children under 5 years. It was unnecessary to make special provision for London, since the London County Council and the City Corporation were authorities under Part I of the Children Act, and Clause 52 of this Local Government Bill gave power to the London County Council to transfer functions to the metropolitan borough councils, subject to application to the Minister. As regards vaccination, paragraph (*b*) of the new clause would secure that functions relating to vaccination should be discharged by county and county borough councils as public health functions, and that all matters relating thereto were referred to the health committees, instead of to the public assistance committees. Clause 15 (*f*) provided that vaccination work in London should be transferred to the Common Council of the City and to the metropolitan borough councils instead of to the London County Council. This was in accordance with the wishes of those councils. He thought the clause guaranteed the efficiency of the work in future.

Mr. GROVES said he could support the Minister for the first time in his life. Experience had proved that vaccination did not prevent small-pox, and the step of handing over its enforcement to authorities composed of intelligent men and women would conduce to suppress it. So far as his own borough was concerned, he gave an assurance that they would refuse to impose this fallacy upon the people to satisfy the medical profession.

The clause was added to the bill.

When discussion was resumed on January 31st, Sir KINGSLEY WOOD moved to insert a provision that—

(*b*) Any grants paid or payable in respect of the standard year to the King Edward the Seventh Welsh National Memorial Association for the purposes of sanatoriums shall be treated as if they had been included among the amounts paid or payable out of the discontinued grants; and (*c*) The area for which a voluntary association acts shall be determined by the Minister.

He said these grants included grants in respect of certain capital expenditure. The second part of the amendment was to make clear that in appropriate cases a voluntary association should, for the ascertainment of grants, be deemed to be in one area only.

The amendment was accepted without discussion, and the committee stage ended on February 1st.

Compulsory Closing of Hairdressers' and Barbers' Shops.

A standing committee of the House of Commons, on January 31st, considered and ordered for report to the House, with amendments, the bill which provides for the compulsory closing of hairdressers' and barbers' shops on Sunday. Mr. J. STEWART, the promoter, stated that for reasons of health the bill was desirable. Sir V. HENDERSON (Under Secretary for the Home Office) gave benevolent support to the measure. He explained that hairdressers were not subject to the Sunday Observance Act passed in Charles II's reign. By a decision of the court some twenty-nine years ago, it was held that a barber was not a tradesman. The basis of the argument was that in the days when the original Act was passed a barber was not only a barber, but in many cases a surgeon also, and therefore followed a profession. Consequently it was perfectly legal for him to open on Sundays.

A clause permitting Jewish barbers to close on Saturday instead of Sunday was agreed to, as was another permitting a hairdresser or barber at any time to attend any sick person, either at his residence or elsewhere, for the purposes of that business. Captain CROOKSHANK asked if there was any legal definition of the word "sick." It was a very wide word. If it were necessary to have a medical certificate that a man was sick they would get into a mess. Sir V. HENDERSON said there was no legal definition. The word "sick" covered cases of illness where a person either went to a doctor who considered it necessary that he should be shaved, as was sometimes the case, or cases in which a person was old and infirm, or was confined to the house and unable to help himself, either in regard to cutting hair or shaving. It would be difficult to get a legal definition, and in these matters they must allow for common sense, but before the report stage he would examine what the clause was intended to mean and see if it was possible to introduce words which would make it stronger from the legal point of view. Lieut.-Colonel MOORE moved an amendment to include a disabled person; and Sir V. HENDERSON suggested "sick, infirm, or disabled." There was, he said, a definition of "disabled" in connexion with pensions. The clause was accordingly amended to provide that hairdressers and barbers might attend sick, infirm, and disabled persons, and was then agreed to.

Bills.

A Shops (Hours of Employment) Bill to limit the hours of shop workers, which was introduced by Mr. TAYLOR, was read a first time by the House of Commons on January 30th.

The Coroners Bill, which was introduced by Mr. MORRIS on January 30th and read a first time, proposes to amend the law on inquests in cases where a charge of murder or manslaughter against a person is dismissed by the magistrates while the inquest into the same fatality stands adjourned.

In the House of Lords, on January 29th, the Protection of Animals (Amendment) Bill passed through its committee stage.

In the House of Lords, on February 5th, the Protection of Animals (Amendment) Bill was considered on the report stage.

Enlarged Tonsils: Prosecution for Failing to Provide Medical Aid.—On February 4th Lord E. PERCY told Mr. Viant that he had seen a press report of a prosecution recently initiated by the Wolverhampton education authority against Ernest Henry Gwinnett for alleged cruelty to his daughter, aged 6, by failing to provide adequate medical aid in the matter of enlarged tonsils. He understood that it was stated on behalf of the local education authority that it was not their intention to force an operation on the child, and that all they required was that some treatment should be applied which would be as effective as an operation in curing the condition. He had no information as to the expenditure, if any, incurred by the local education authority in connexion with the proceedings.

Silicosis.—In reply to Mr. Kelly, on February 5th, Sir W. JOYNSON-HICKS said that silicosis was not notifiable, and the only figures on cases of disablement from the disease which he could give were those dealt with under the Refractories Industries Scheme. In 1928 these included 27 cases of partial and 5 cases of total disablement, and 4 deaths. In addition, there were 3 deaths of workmen who had previously been in receipt of compensation. Replying to Mr. Rennie Smith, Sir W. Joynson-Hicks said that a report had been published by the Stationery Office of a medical inquiry recently carried out for the Home Office and Mines Department into the occurrence of silicosis in the sandstone industry. The chief areas concerned were the West Riding of Yorkshire, Lancashire, North Derbyshire, and Durham and Northumberland. It was impossible to give accurate figures of the number of workmen affected, but it was estimated that the figure would not be smaller than 11,000.

Asbestosis among Women.—On February 4th Sir W. JOYNSON-HICKS told Mr. W. Thorne that the senior medical inspector of factories had reported that he was aware of cases of so-called asbestosis of the lungs among women. The effects of asbestos dust were already the subject of a comprehensive inquiry by the medical inspectors, which was being pushed forward as rapidly as possible. As soon as the results of this inquiry were available the question of applying the Workmen's Compensation Act would be considered.

Insurance Companies and National Insurance.—Mr. CHURCHILL told Mr. Shinwell, on February 5th, that he had seen in a weekly journal a suggestion that he was considering an arrangement with insurance companies for handing over control of the national health scheme. He had given a denial to it in answering a supplementary question by Mr. Clynes on January 31st. He was glad to have the present opportunity of repeating the denial. The story was quite untrue. No such project had ever been brought before him or considered by him or any of his advisers.

Ailments of Workers in Artificial Silk.—Sir W. JOYNSON-HICKS, replying on February 4th to Mr. Kelly, said the only two specific ailments which had so far been brought to his notice in the artificial silk industry were conjunctivitis of the eyes and sores on the hands, which were sometimes caused by acid. There did not appear to be any sufficient grounds for scheduling conjunctivitis. Compensation was not payable under the Workmen's Compensation Act unless the worker was disabled for at least three days, and he was advised that even the severer cases of this affection did not as a rule disable the workman for more than one or two days. More prolonged disablement had been due to actual splashes of the acid into the eye, which would constitute an accident within the meaning of the Act. The sores on the hands would appear to be scheduled under the Act as dermatitis or ulceration of the skin produced by dust or liquids, but these sores, if treated promptly, should not incapacitate the workman. The number of cases of injury in this industry was not available.

Influenza in Glasgow.—On February 5th Sir JOHN GILMOUR told Mr. Buchanan that he was aware that there was at present an epidemic of influenza in Glasgow, and a regrettably high general death rate. There was an exceptionally high incidence of acute pneumonia, both primary and influenzal. The Department of Health were in continuous touch with the Public Health Department of Glasgow and were aware of the extent and efficiency of the measures taken in co-operation with the Poor Law and voluntary hospitals to provide hospital treatment and nursing and medical care in the home. Notwithstanding the notification of nearly 1,200 new cases of pneumonia in the week ended January 31st, the waiting list had been cleared and the epidemic, it was believed, had passed the peak. Research into the causation of influenza, its spread in epidemic form, its pathology, and its remedy was being pursued by workers in this and in other countries, and the present outbreak was being watched and studied.

Small-pox.—Mr. CHAMBERLAIN told Mr. Groves, on January 31st, that in the twenty-six weeks ended December 29th, 1928, there were 3,765 notifications of small-pox in England and Wales. In the six months ended December 31st, 1928, three deaths were classed as due to small-pox. For the whole of 1928 the corresponding figure was 53, of which 4 were infants of one month or less, and 31 were of ages ranging from 62 to 89. On February 1st Mr. Chamberlain announced that seven death certificates were received during 1927 in which the word vaccination or vaccinia appeared, and twenty-four during 1928. In 1928 ten of the deaths to which these certificates referred were of infants under 1 year. The figures for 1928 were provisional. He had been told of 16 cases in 1927 and 14 in 1928 in which vaccination had been done within a month of death. Earl WINTERTON, on February 4th, stated that according to the weekly returns furnished by the Government of India the number of deaths from small-pox in British India from January 1st to December 15th, 1928, was 36,184.

Supply of Radium.—Mr. CHAMBERLAIN, in an answer on January 31st to Mr. Robert Morrison, said he had no means of obtaining full information as to the quantity of unused radium in the country nor of its owners. Certain supplies of radium were in the hands of voluntary institutions and private persons. Mr. Morrison further asked whether, in view of the difficulties caused by local authorities and hospitals trying to buy radium, Mr. Chamberlain would take action so that these bodies should not compete against each other for it. Mr. CHAMBERLAIN replied that the question was under consideration by a special committee, whose report is expected shortly.

Heroin and Opium Statistics.—Answering Mr. Cecil Wilson, on January 30th, Sir W. JOYNSON-HICKS said that the total quantity of heroin seized and brought to this country to date from [illegible] was 38,549 oz. It was all disposed of to persons licensed under the Acts, as was 734 kilograms seized at Hong-Kong in 1924, to which reference had been made in a document recently presented to the Opium Advisory Committee of the League of Nations at Geneva. Mr. AMERY, in a reply to Mr. Cecil Wilson, on June 5th, gave the following figures for the consumption of Government opium in Hong-Kong per head of the estimated Chinese population: 1923, 0.51 oz.; 1924, 0.47 oz.; 1925, 0.31 oz.; 1926, 0.25 oz.; 1927, 0.39 oz.

Information concerning Birth Control.—On January 23rd Mr. CHAMBERLAIN told Mr. Thurtle that resolutions in favour of the giving of birth control information at maternity and child welfare centres had been received from 37 local authorities and from 74 other organizations.

[The report of the debate on the committee stage of the Local Government (Scotland) Bill will be published next week.]

Medical News.

MR. H. A. T. FAIRBANK, orthopaedic surgeon to King's College Hospital, will deliver the Lady Jones Lecture in orthopaedic surgery, in the Medical Building of the University of Liverpool, on Thursday, February 28th, at 4 p.m. The lecture, which is open to members of the medical profession, will be on congenital dislocation of the hip, with special reference to anatomy.

THE Sections of Psychiatry and Neurology of the Royal Society of Medicine will hold a special discussion on the prognosis and treatment of general paralysis of the insane on Tuesday and Thursday, February 12th and 14th, at 8.30 p.m. The openers will be Dr. W. H. B. Stoddart and Sir James Purves-Stewart.

AT the quarterly meeting of the Royal Medico-Psychological Association, to be held at the British Medical Association House, Tavistock Square, W.C., on Thursday, February 14th, at 2.30 p.m., the discussion on certain points raised in papers on general paralysis read at the annual meeting by Drs. J. Brander and J. F. Smyth will be resumed.

A CONFERENCE on industrial canteen management will be held at the Hotel Victoria, Northumberland Avenue, London, on Thursday and Friday, February 14th and 15th. In the mornings short papers will be read by experts on various aspects of economical working, and in the afternoons visits will be made to canteens of special interest in the London area. Mr. J. R. Clynes, M.P., will be the guest at luncheon on the second day. The conference has been organized by the Industrial Welfare Society, 51, Palace Street, S.W.1, when further particulars and tickets (price 25s., including luncheons) may be obtained.

THE Fellowship of Medicine and Post-Graduate Medical Association announces that on Monday, February 11th, Mr. Andrew Wyllie will lecture on The difficulties experienced in the diagnosis of laryngeal diseases, at 5 p.m., and on the following Thursday, at 4.30 p.m., Dr. Gerald Slot will lecture on calcium therapy; both lectures are free, and both will be given at the Medical Society of London, 11, Chandos Street, W.1. A clinical demonstration in gynaecology will be given by Mr. Aubrey Goodwin, at 2.30 p.m., in the Out-patient Department of the Prince of Wales's General Hospital, Tottenham, on Monday, February 11th. Demonstrations will also be given by Dr. J. E. M. Wigley—at St. John's Hospital for Diseases of the Skin, Leicester Square, at 6 p.m., on Tuesday, February 12th—and by Dr. Daukes (on a consideration of various types of ulceration met with in the stomach and intestines), at the Wellcome Museum of Medical Science, 33, Gordon Street, W.C.1, at 4 p.m., on Wednesday, February 13th. These demonstrations are open to the medical profession without fee. Beginning on February 11th, are a two weeks' course in gynaecology, at the Chelsea Hospital for Women, and a four weeks' clinical course at St. John's Hospital, Leicester Square. There will be an intensive course at the Brompton Hospital, from February 25th to March 2nd, and a comprehensive morning course, limited in numbers, at the Hospital for Sick Children, from February 25th to March 9th. Copies of all syllabuses and information regarding the general course may be obtained from the secretary of the Fellowship, 1, Wimpole Street, W.1.

THE Minister of Health recently discussed with deputations representing the Poor Law officers' organizations and the Poor Law section of the National Union of General and Municipal Workers questions relating to the provisions in the Local Government Bill with regard to compensation and superannuation of transferred officers. A substantial measure of agreement was reached, and the Minister promised further consideration of certain other points which were raised.

THE Joint Advisory Committee on River Pollution appointed by the Minister of Health and the Minister of Agriculture and Fisheries to consider the position with regard to the pollution of rivers and streams, and any legislative, administrative, or other measures which appear to be desirable for reducing such pollution, met on January 30th at the Ministry of Health to consider its programme for the immediate future. The committee agreed to devote its next inquiry to the question of the reception of trade and manufacturing wastes into the sewers of local authorities.

DR. S. J. GILFILLAN, medical superintendent of Colney Hatch Mental Hospital, has submitted his resignation, as from April next, on reaching the age of 60 years. He has completed over thirty-one years' service in the London mental hospitals, during more than seventeen years of which he has held his present position.

IN 1928 the number of student registrations in the various French medical faculties, including Strasbourg and Algiers, was 2,891, as compared with 1,349 in 1922.

THE Oxford University Press announces for early publication *Science and Personality*, by Dr. William Brown, Wilde Reader in Mental Philosophy at Oxford; this work contains the Terry Lectures on "Religion in the light of science and philosophy," delivered at Yale by Dr. Brown.

THE report of the Department of Scientific and Industrial Research for the year 1927-28 has now been published by H.M. Stationery Office at the price of 4s. net., postage extra.

THE last annual report of the Institute for Medical Research, Kuala Lumpur, for 1927, refers to the extension of the laboratories then approaching completion. In surveying the work undertaken during that year mention is made of the plasmochin treatment of malaria, which was found effective, though the drug proved more dangerous to administer than quinine; a combination of these two remedies is being tried in subtertian infections. During 1927 the number of patients applying for antirabic treatment was 123; prophylactic inoculation of dogs proved encouraging.

AT the London South-Western Police Court, on February 2nd, Dr. Daniel Evans Powell, High Street, Tooting, who was charged, on a coroner's warrant, with causing the death of Mrs. Doris Ruth Simmons, a Streatham woman teacher, by the use of some instrument, was committed to the Central Criminal Court. He pleaded "Not guilty," and reserved his defence.

REPORTS from 38 States, the District of Columbia, and 8 Canadian provinces show that for the first six months of 1928 small-pox was not quite as prevalent in the United States as during the corresponding months of 1927. In Canada, on the other hand, there were nearly twice as many cases as during the same months of 1927, and nearly three times as many as in 1926.

THE German Society for Internal Medicine and the German Paediatric Society will hold their annual meetings at Wiesbaden from April 8th to 11th and from April 4th to 8th respectively. A conjoint meeting of the two societies will be held on April 8th to discuss the preventive inoculation and serum treatment for measles, scarlet fever, and diphtheria, introduced by F. Neufeld of Berlin, M. v. Pfaundler of Munich, H. Schottmüller of Hamburg, and U. Friedemann of Berlin. The dynamics of valvular disease of the heart and the treatment of loss of compensation in valvular disease will also be discussed by the Society for Internal Medicine, and the other subjects for discussion by the Paediatric Society will be the pathology and treatment of eczema and non-purulent encephalitis in children.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

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All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863*, and *9864* (internal exchange, four lines).

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

INHALATION THERAPY.

DR. A. A. E. NEWTH (Attleborough) asks if any readers have had experience in the [illegible] and asthma by means of the [illegible] inhalation therapy. The [illegible] especially valuable.

TREATMENT OF ABDOMINAL PAIN IN HEPATIC CIRRHOSIS.

"G. P." asks for advice on the treatment of severe abdominal pain (presumably due to perihepatitis) in alcoholic cirrhosis of the liver. The pain is made much worse by lying down; consequently the patient seldom goes to bed. He is an advanced case, but there is no ascites, and the Wassermann reaction is negative. Apart from the general treatment of his condition, counter-irritants, heat, and numerous analgesics have been tried; the only drugs found to give relief were the opium preparations in large doses, and even this relief was evanescent.

TREATMENT OF MYXOEDEMA.

"W. R." would be grateful for any suggestions for the treatment of a married woman, aged 40, who had hysterectomy performed seventeen years ago, and has had typical myxoedema for at least nine years. This has in the past responded well to thyroid extract, but now even small doses cause anginal pains which persist for some time after it is discontinued. The blood pressure and urine are normal. The heart also, so far as physical examination can determine, is normal.

INCOME TAX.

Travelling Expenses.

"R. R." inquires as to whether he can deduct the expense of travelling from his residence to the institute at which he holds an appointment.

*** "R. R." points out that this expense is similar to that incurred by a medical man in visiting his patients, but unfortunately the emoluments arising from the appointment are assessable under Schedule E and the rules relating to expenses under that schedule are in some respects more stringent than those relating to Schedule D, which deals with general professional earnings. According to the decided cases, the expense of travelling between residence and place of employment are not admissible deductions, inasmuch as they are incurred prior to, and not "in the performance of," the duties of the office.

Purchase of Practice.

"H. M.," who has a private income, purchased a small practice in June, 1928; how should his return be made for 1928–29?

*** The return made before the purchase of the practice is, of course, rendered obsolete by that transaction. "H. M.'s" liability in respect of the practice will be on three-quarters of the net earnings for his first year to June 30th, 1929—or, if he prefers, he can make up his accounts as at March 31st or April 5th, 1929, and reckon the amount so arrived at as the sum liable to tax for 1928–29. The cash basis is not acceptable for such an account, and "H. M." will have to bring into his statement of receipts and expenses the value of the debts due to him and the amount of outstanding unpaid expenses at the end of the period taken. In calculating expenditure on drugs a deduction will have to be made from the total payments to cover drugs purchased but still on hand.

LETTERS, NOTES, ETC.

EXAMINATIONS AND THE GROWING CHILD.

MR. H. C. DENT, B.A. (Chairman, English Section, New Education Fellowship), writes: My attention has been drawn to your leading article of January 19th (p. 11[illegible] reporting upon Sir Michael Sadler's address to the New [illegible] on "Examinations." This address marks [illegible] of an exhaustive inquiry into the subject of examinations by the New Education Fellowship, which will attack the subject in the main from the point of view of modern psychology, and consider the effect of preparation for external examinations upon the physical, mental, and spiritual growth of the child. We feel that the medical profession can supply us with evidence available from no other source, and I therefore crave the indulgence of your columns to broadcast an appeal to members of your profession. Our English representative is Mrs. S. Platt, who will be pleased to receive at the headquarters of the Fellowship (11, Tavistock Square, W.C.1) any information bearing upon the subject. She is due to present a preliminary report in August, but, as much information is already to hand, would prefer to receive any communications before the middle of March.

POST-VACCINAL ENCEPHALITIS: VACCINAL IMMUNITY.

DR. R. W. JAMESON (West Wickham, Kent) writes: In your issue of February 2nd your reporter's condensation of my remarks at the Epidemiological Section of the Royal Society of Medicine somewhat misrepresents my views. I did not suggest that post-vaccinal encephalitis was not even uncommon in infants, but that we have not sufficient evidence to warrant the assertion that it is less common in infants than in older children. Another remark attributed to me should be inverted: vaccinal immunity is more lasting against the trivial variola minor than against the virulent variola major, as one would expect.

ANAESTHESIA FOR TONSILLECTOMY.

DR. HEYMANN LEVIT (Johannesl[illegible] the recent discussions on anaesthesia for [illegible] During the past nine months I have used an apparatus for ether anaesthesia which consists of a 1/6-h.p. motor pumping air into a bottle containing ether. The vaporized ether is conducted from the bottle by means of a tube to a Boyle's bag with valves and face-piece, the latter being used in the same way as for the administration of nitrous oxide gas. I find in the case of children that on an average five minutes' total induction is sufficient for the removal of tonsils and adenoids, whatever may be the method of operation, and that this leaves ample time to attend to haemorrhage. In the case of an adult the anaesthetic may be continued via the nose or a small tube in the corner of the mouth.

THERAPEUTIC VOMITING IN INTESTINAL OBSTRUCTION.

DR. CHARLES J. HILL AITKEN (Kilnhurst, nr. Rotherham) writes: The left inguinal hernia in an aged person became immovable and very tender. Obstruction was complete and vomiting constant. Operation was refused. I encouraged the patient to drink lots of water and to vomit (see "Therapeutic value of vomiting in intestinal obstruction," Sir Charters Symonds, *Practitioner*, March, 1923), controlling the vomiting very occasionally by morphine. For ten days her general condition remained good and then her heart failed and she died on the twelfth day.

CHEMICAL WARFARE.

AT a meeting of the Royal Sanitary Institute, held on February 1st to discuss chemical warfare and anti-gas protection, Lord Halsbury, who presided, spoke of laboratories in ten or eleven countries all engaged in intensive research on the production of more devilish gases, and the possibility of liberating hundreds of tons of gas over London from a fleet of aeroplanes in such a way that the gas would be canalized by the valley of the Thames and waft destruction from the Wandle to Barking Creek. His idea was that it was better to have some degree of panic now, when it might result in organized measures for the public safety, than to have panic on the event, when it would add to the difficulty of the situation and assist the enemy's purpose. Major F. R. Humphreys, late R.A.M.C.(T.), and R.A.F., forecasted the possible nature of the attack and the means of safety. He classified war gases as vesicants (chiefly mustard gas and the American preparation, lewisite); lung irritants, of which phosgene is an example; sensory irritants, or smokes, mostly organic compounds of arsenic-arsines, considered by many to be the most dangerous of war gases, because of the severe injury to the bronchial tubes and lungs brought about by a very small dose; lacrymators, and, finally, direct poisons of the nervous system, of which hydrocyanic acid is the chief example. He considered that mustard gas was the most likely to be employed in an early attack on London. To meet a sudden and unpreventable attack preparations must be in existence and defence ready, and he proceeded to outline such an organization. It would consist of a band of persons physically fit, trained, and equipped with gas masks and special clothing and utensils, and capable of mobilization at the shortest notice. It would work in four sections. The duty of the first section would be to look after the safety of the people in the gassed zone, either by evacuating them, or, in less dangerous parts, supervising the preparation of gastight rooms, distributing printed instructions, and the like. The second section would consist of those who had the very important and dangerous duty of clearing gas from the poisoned area; the third would arrange for the decontamination of those who had been near the gas and were a danger to themselves and their neighbours, while the fourth, which would naturally fall to the voluntary aid societies, would carry out first aid to the gassed and wounded and transport them to hospital. With regard to the sealing up of rooms, Major Humphreys said that if the people in the room kept quiet and if naked lights were not burnt, a space of about 200 cubic feet per person in a room 10 ft. high would maintain life for twelve hours. This would allow time for clearing the streets from gas and for removal of persons to a safe locality. The clearing up of the gassed area would be effected in part by natural forces—wind, rain, and sun—but supplemented by the washing down of the streets and houses, and by covering up with earth or sawdust mixed with effective chemicals, all places where poison-laden liquids had soaked in. He suggested that the education of the public in these and other defensive measures must be the work of the local authorities, who must also provide special protection for vital points, such as water supplies, docks, and food [illegible] as well as hospitals and first-aid shelters. Major W. Richardson Gafwey, R.A.M.C., reminded the audience that in France, in areas soaked with mustard gas, with about three million men engaged, the total mustard gas casualties were 160,000 [illegible] average death rate was only 2 per cent., and the permanent invalidity rate about the same. He added that civilians living in the gassed zone in France who took the ordinary precautions of going into their houses and shutting tightly their doors and windows very largely escaped.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals [illegible] be found at pages 49, 50, 51, 54, 55, and 56 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 52 and 53.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 85.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

126. Infective Endocarditis associated with Congenital Heart Disease.

M. WYBAUW (*Bruxelles-Méd.*, January 6th, 1929, p. 283) demonstrates several important features of congenital heart disease in his description of a patient who died at the age of 28 from infective endocarditis. The patient had been subject to cyanosis on effort since infancy, and first sought advice when 18, on account of increasing symptoms and sickness on exertion. A systolic thrill and murmur were heard over the precordium, their greatest intensity being in the third left intercostal space. The orthodiagram revealed enlargement of the right side of the heart, and a diagnosis of congenital pulmonary stenosis with patent interventricular septum was made. With rest and care the patient's condition improved so that he led a fairly normal life for eight years; he then noticed increasing breathlessness and fatigue, and an examination showed enlargement of the heart and pyrexia, while a blood culture revealed the presence of *Streptococcus viridans*. The only embolic phenomena which occurred before death five months later were splenic and intestinal infarctions. At the necropsy hypertrophy and dilatation of the right auricle and ventricle, with stenosis of the pulmonary orifice, were found. A large communication existed between the ventricles, and all the valves showed vegetations, those of the right heart being most extensive. The author comments upon the tolerance shown by the patient with such severe lesions, and remarks that the case illustrates the liability of congenitally abnormal valves to become the seat of malignant endocarditis. Probably the pulmonary valve was the first to be affected, while infection of those of the left side of the heart was facilitated by the presence of a septal defect. Throughout the illness constitutional effects predominated over those due to the cardiac lesion.

127. Accidental Treponemiasis.

J. D. ALLAN GRAY (*Ann. Trop. Med. and Parasitol.*, November 9th, 1928, p. 273) describes an infection by *Treponema duttoni* acquired accidentally in the laboratory. Four attacks followed an infection which seems to have supervened on contamination of the fingers with infected mouse blood, and it is probable that between the fourth and fifth attacks there was renewed infection by the bite of a diseased mouse. The first attack is thought to have been due to the spirochaetes penetrating the unbroken skin; the second is attributable either to the bite causing infection with spirochaetes already on the skin from contamination with infected blood, or directly to the animal's mouth. The clinical condition which followed was severe: there were eight bouts of pyrexia and two abortive attacks, but at no time was there any enlargement of the liver or spleen. The afebrile intervals were of irregular duration, the longest lasting twenty-seven days and the shortest seven. Spirochaetes were not seen in the blood at any stage of the infection, but inoculation of mice during the fifth attack, and thirty-two days after the last, revealed the infection. Treatment by novarsenobillon was unsatisfactory; 0.6 gram neither cut short the fever nor prevented relapses. No antibodies were found in the blood, and the patient's serum did not protect mice. A considerable bibliography is given.

128. Diphtheria and Quinsy.

G. GAUTHIER (*Thèses de Lyon*, 1927-28, No. 31) states that cases occasionally occur in which diphtheria is accompanied by, or more frequently succeeds, a tonsillar or peritonsillar abscess. Such cases are usually found in adults and should not be confounded with the pseudo-phlegmonous form of diphtheria. This clinical form usually involves a very serious prognosis, as shown by a number of sequels and prolonged attacks. The pathogeny of the condition undoubtedly consists in the association of the diphtheria bacillus with other organisms, especially the streptococcus. It must also be taken into consideration that diphtheria is developing in a soil already weakened by a previous infection. Treatment should consist in large doses of antitoxin, which should be given as soon as possible. Moreover, the utmost care should be taken to prevent diphtheria patients from coming into contact with individuals suffering from quinsy or subject to recurrent attacks of this disease. The thesis contains the histories of seventeen cases, the ages of the patients ranging from 15 to 36.

129. Bimanual Palpation of the Thorax.

A. SAVULESCO (*Bull. et Mém. Soc. Méd. des Hôp. de Bucharest*, November, 1928, p. 336) suggests a new clinical method for the observation of local fremitus. While these vibrations are usually easily palpable in men, they are often difficult to detect in women, children, and those who have soft voices. If one hand is placed on that part of the anterior aspect of the chest which is to be examined, and the other is pressed over the corresponding area posteriorly, vocal fremitus is greatly magnified. By this means vibrations may be felt in patients who show none by other methods. The author illustrates his technique by describing two cases. In the first, a young woman at the onset of pneumonia, no fremitus was felt until the bimanual method was applied, and this revealed diminished vibration over the area in which tubular breathing subsequently developed. The second patient, a boy with a penetrating wound of the thorax, had several rigors ten days after his injury. No vocal fremitus was elicited anywhere over the thorax until bimanual compression was tried, when it was felt at all areas except at the right base. The presence of fluid was thereby indicated, and subsequent exploration revealed an empyema.

130. Recovery from Staphylococcal Meningitis.

F. BEZANÇON, R. WEISMANN-NETTER, and DESTOUCHES (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, No. 35, December 20th, 1928, p. 1764), who record an illustrative case, state that meningitis is a rare localization of staphylococcal infection. Whether early or late it always aggravates the prognosis, and in all previously recorded cases the issue has been rapidly fatal, with the following exceptions: (1) cases of staphylococcal meningitis without septicaemia properly so-called, as in the two cases following otitis reported by Lortat-Jacob and Grivot in 1920; (2) meningeal conditions occurring in staphylococcal infection, as in the case recently recorded by Faroy and Marchal. The present case was that of a woman, aged 30, admitted to hospital with well-marked meningitis and labial herpes. Lumbar puncture gave issue to a turbid fluid, and antimeningococcal serum was injected intrathecally and intramuscularly. No benefit was derived from the treatment, and examination of the blood and cerebro-spinal fluid showed the presence of *Staphylococcus aureus*. Recovery finally ensued after the occurrence of cutaneous complications in the form of non-suppurative nodules and actual abscesses, pyelitis, and spondylitis.

Surgery.

131. Bone Sarcoma.

A. KOLODNY (*Cancer Rev.*, January, 1929, p. 1) remarks that the trauma which is frequently associated with the appearance of bone sarcoma may play an important part in its etiology. Having investigated 800 cases (see *Journal*, 1927, vol. ii. p. 358), he now defines five groups: osteogenic, Ewing's, myeloma, unclassified sarcomas, and giant-cell tumour. An osteogenic sarcoma is a sarcomatous tumour derived from the osteoblasts; thus it is an osteoblastoma somewhat as a carcinoma of the skin is an epithelioma. The most frequent cytological element in this sarcoma is the small spindle cell with a small, hyperchromatic nucleus and indistinguishable borders. The chief difference between this type of sarcoma and other malignant tumours lies in its intercellular substance, of which there are five types: hyaline, osteoid, cartilaginous, myxomatous, and osseous. Extreme vascularity is a characteristic of these neoplasms. Osteogenic sarcoma is primarily a disease of the young, and occurs in most bones, the metaphyses being the seat of predilection. Metastases appear in various organs, but most frequently in the lungs. Pain, usually preceded by tumefaction, is the first symptom. The prognosis is grave, and most cases terminate fatally. Operation has been the method of treatment, though radiation may prove beneficial. Ewing's sarcoma favours the smaller bones of the extremities and skull, and usually occurs in the last half of the first and first half of the second decades of life. The typical cell is small and polyhedral, with a round, oval, or slightly elongated nucleus and scanty, clear cytoplasm. Metastases in the skull are frequent and early, and pulmonary ones are also very common. This sarcoma yields rapidly to radium or x rays, but usually recurs and slowly becomes refractory to further radiation. Operation combined with radiation is probably the best

treatment. Myeloma favours the mid-portion of the long bones and the flat bones, and usually affects men between the ages of 40 and 60. Most myelomas are composed of non-granular mononuclear cells with a basophilic protoplasm. This tumour is readily affected by radiation, and, though there is a tendency to recurrence, the prognosis is much better than in other bone sarcomas. Under unclassified sarcomas are included angio-endothelioma and extraperiosteal sarcoma, both of which are rare. The former springs from the endothelium of the vascular channels, and histologically resembles an adenoma. The latter arises from the fibrous layer of the periosteum, and histologically is a fibrosarcoma. Pulmonary metastases may occur. Surgical removal of these growths should be followed by prophylactic radiation. Giant-cell tumours occur between the ages of 15 and 25, are usually situated in the epiphyses of the long bones, and are generally solitary. This growth consists of the giant cells and a stroma of various-sized blood spaces and thin-walled capillaries in a net of spindle, round, or polygonal cells with large vesicular nuclei. Pain and trauma are frequently to be noted in its history, and the *x*-ray picture is characteristic. Giant-cell tumours are benign, and readily amenable to operative measures as well as to prolonged and systematic radiation; complete cures are the rule.

132. Plastic Surgery of the Head.

F. L. LEDERER (*Arch. of Oto-laryngol.*, November, 1928, p. 531) describes a method of repairing defects in the face and ears of patients who have lost tissue from disease, congenital malformation, or injury. He remarks that those whose deformity is due to syphilis present the most difficult problem because the tissues are devitalized, the circulation is disturbed, and there is a great deal of scarring. The author finds that in many of these cases where several operations have been performed the result is a heavy-looking mass of tissue which does not present a very good likeness to the missing organ. He has developed a method of making artificial organs which are specially designed to match the opposite member or to blend with the general appearance of the patient. A plaster cast of the region to which the artificial organ is to be applied is first prepared, and this serves as a mould for the under surface of the new organ. In the case of the ear a cast of the opposite ear is obtained, and a positive cast is made of this; a wax ear is moulded to replace the missing one, the positive cast being used as a model. When the wax ear is ready a metal mould is made, and from this any number of false ears may be obtained. For the nose a mould is prepared to fit the cast of the malformed region, and great help is derived from photographs of the patient before the deformity occurred. The final ears and noses are made of a mixture of gelatin and glycerin; the coloration is procured by adding white oxide of zinc and carmine-red powder. Water must be rigorously excluded from the mixture. A little salicylic acid added helps to keep the material fresh, and the addition of potassium bichromate renders it possible to wash the organ in warm water. After the model has been made it can be tinted to get a perfect match. The mould is kept and a series of fresh models prepared as required. This is necessary since the models do not last more than two weeks each. The advantage of these models is that they are lifelike, light, and elastic; when once the mould has been made they are very cheap.

133. Treatment of "Mixed" Parotid Tumour.

A. LÁNG (*Zentralbl. f. Chir.*, December 22nd, 1928, p. 3210) comments on the well-known frequency of recurrence of "mixed" parotid tumour after attempted removal and the technical difficulties of the operation. The facial nerve cannot escape injury or division, while the proximity of the internal carotid renders any attempt at complete ablation very dangerous. Láng recommends radium treatment when the patient's general condition is good and the tumour is localized. He reports the case of a man, aged 68, who was admitted to hospital with a swelling of the left cheek; a tumour behind the left ear had been removed seventeen years previously. The swelling had been growing rapidly, and an ulcer developed in front of the left ear a day before admission. In this region there was a soft painless tumour as large as a hen's egg and blending with the parotid gland; section showed that the growth was an adeno-carcinoma. Intensive radium therapy was employed, in the form of superficial irradiation over five fields, in addition to radium needles buried in the tumour. Five days after the commencement of treatment large necrotic masses were removed, the tumour was appreciably smaller, and the ulcer began to heal. In six weeks the tumour had disappeared and the ulcerated surface was covered by normal epithelium, leaving a well-marked scar. Láng records this case to show that a recurrent adeno-carcinoma of the parotid may be cured by radium therapy, with a good cosmetic result.

Therapeutics.

134. Lead Treatment of Cancer.

G. LOEWY and J. LOISELEUR (*Bull. du Cancer*, November, 1928, p. 549) have used glycogen as a vehicle for the colloid lead oxide injected intravenously in their experiments and treatment. This solution of colloid [illegible] said to be stable and can be ke[illegible] dose was first worked out on mice, rats, and dogs, and, finally, during the past two years they have been treating patients with the same compound. In a series of 21 almost hopeless cases which had been given up as inoperable or incurable the results obtained were not very promising. The authors report that the drug, associated with glycogen, is well tolerated; there is little effect on the liver, and usually signs of lead poisoning do not appear until several doses have been given. Anaemia, produced in some cases, was readily controlled and improved by liver treatment. The authors claim no clear case of cure, and observe: (1) The lead had no effect on four cases of breast tumour, but oedema and softening were produced in tumours of soft parts. (2) Two patients with osteogenic sarcomas showed no signs of reduction of the tumours. (3) No result was noticed in one case of disseminated melanotic sarcoma. (4) One patient with cancer of the oesophagus did not lose his dysphagia, but, rather curiously, had no pain. (5) Arrest in the growth of the tumour was noticed in four patients, three of whom had recto-sigmoid carcinoma and the fourth cancer of the stomach; each had previously had a colotomy or gastro-enterostomy operation. These patients were also treated with liver for their anaemia, with results so striking that it was difficult to apportion to the lead its real value in improving the general condition of the patient, but the authors think that it may play a distinct part in the very great general improvement, especially so because in several cases the injection of the lead was followed by local pain, oedema, and congestion, and, in ulcerating tumours, by some haemorrhage. The relative harmlessness of the treatment with lead oxide and glycogen has encouraged the authors to continue their research.

135. Chemotherapy of Pulmonary Tuberculosis.

DISCUSSING chemotherapy in tuberculosis of the lungs, J. TROTOT (*La Vie Méd.*, January 10th, 1929, p. 17) asserts that the tuberculous cell is nourished by osmosis, and by the same means impregnates the normal cells with its toxins. Therefore, in order to be efficacious, a chemical agent must have sufficient stability to be carried, without decomposition or modification, to the perituberculous healthy cells; it must penetrate the giant cell by osmosis and there exert its action. Of the various chemical agents which may be employed, the author deals only with those which restore calcium. Many conditions point to the coincidence of tuberculosis and decalcifying states; among these are the calciuria in cases of this disease, and the presence of chalky tubercles in the aged, pregnancy, enteritis, and gastric hyperacidity. Recalcification is not a new treatment, and is based on two principles: avoidance of the loss of lime by diminishing the causes of digestive acidity; and furnishing the organism with such lime salts as are capable of being fixed in the tissues—a difficult procedure. Some authorities have advocated the use of insoluble salts, as bone phosphate and calcium carbonate, in association with other salts; others advise the indirect calcifiants accompanying lime in the organism, such as phosphoric acid and phosphorized lipoids. Intravenous injections and inhalations of lime salts have also been recommended. Calmette, however, has found that experimental results do not support the[illegible] suggestions; Blum, Dolaville, and Caulaert have reported that lime administration increases acidosis and is in reality a decalcifier. Trotot agrees with [illegible] vomiting of nurslings he has found. [illegible] tion of one or two large spoonfuls of lime water produces the best effects on the nutrition and development, possibly by virtue of its alkalinity; and in both adults and children he employs lime only in this simple and inexpensive form.

136. A Synthetic Substitute for Ephedrine.

THE search for a more easily available source of ephedrine, or a cheap but yet effective substitute, led H. MILLER and G. PINESS (*Journ. Amer. Med. Assoc.*, October 6th, 1928, p. 1053) to an unsuccessful attempt to obtain it from several varieties of the Californian ephedra, and to endeavour to synthesize it. Alles, working in their laboratory, has synthesized a phenyl-ethanolamine, on which he has recently reported. This may be more specifically described as a racemic a-phenyl-b amino-ethanol sulphate. The base is closely related chemically to tyramine, epinephrine, and ephedrine, and has been known for some time, though Alles's method of preparation is new. Alles claims that, as compared with ephedrine, this sulphate

has an initially greater and finally comparable blood pressure effect on rabbits; that these initial changes more resemble those following epinephrine than those following ephedrine; that the duration of blood effect closely resembles that of ephedrine; and that the toxicity for guinea-pigs is one-third as great as that of ephedrine. Clinical studies have been made as to its effect on blood pressure, in mydriasis, bronchial asthma, hay fever, and other nasal conditions. The preparations used were the crystalline form, in a 2 or 5 per cent. solution, to which 0.5 per cent. chlorbutanol was added as a preservative. The authors report that clinical evidence points to the inactivity of this sulphate on oral administration, and to an advantageously weak pressor, but disappointingly weak broncho-dilator, effect on hypodermic injection. The drug is apparently most useful as a topical application in the nose, where its activity is said to be in every way comparable with that of ephedrine.

137. Synergism of Magnesium Sulphate and Morphine.

REPLYING to criticisms of his work and statements concerning the synergism of magnesium sulphate and morphine, J. T. GWATHMEY (*Journ. Amer. Med. Assoc.*, December 8th, 1928, p. 1774) declares that he never stated that smaller doses of morphine could be used with magnesium sulphate to overcome pain, but that the addition of the latter increased the value of the former. The classic case in which the potentiation of morphine was first firmly established, the clinical results in 84 cases in two different hospitals, and the experiments of Gwathmey and Hooper are cited in support of this contention. Gwathmey affirms that the synergism of these two substances has been definitely proved clinically in both obstetrics and surgery, the value of morphine having been increased from 250 to 500 per cent. Experimentally, this synergism is life-saving with animals when ether is used as an anaesthetic; clinically, it is also life-saving, decreasing both morbidity and mortality, and it should be used with all methods of anaesthesia and analgesia. Records of nearly 20,000 cases are said to show that it is far superior to hyoscine. The synergism of magnesium chloride with amido-pyrine, sodium salicylate, and acetyl salicylic acid has been proved by Barbour and Winter. The synergism of magnesium sulphate and ether has been proved for various animals and man, and is of practical importance in relation to the synergism of magnesium sulphate and morphine. The probability is that magnesium sulphate synergizes with almost any drug with which it is compatible, by prolonging its action, deepening its effect, reducing fever, or acting in other ways.

Neurology and Psychology.

138. Early Diagnosis and Treatment of Insanity.

J. V. BLACHFORD (*Bristol Med.-Chir. Journ.*, Winter, 1928, p. 253) discusses various types of mental disorder at different physiological periods, and those connected with poisons, alcohol, and syphilis. The first one considered is the child of the "young criminal" type. The symptoms occur before puberty, take various forms, and the children are of a neurotic temperament. Blachford maintains that these patients should be treated kindly but very firmly, and punishment should be an inevitable consequence of misdoing. Dementia praecox, a mental disorder of puberty and adolescence in which there is said to be always a bad family history of some neurosis, begins between the ages of 15 and 25, and the first sign is aversion from parents and relations. In the early stages treatment should be stimulative, with attention to the bowels and food; when the disease is established detention in a mental hospital is advisable. The prognosis, unfavourable in all cases, is better in females. Epilepsy is a frequent cause of insanity during puberty and adolescence, and in most of these cases a history of some familial neurosis will also be found. That mental trouble is more likely to follow *petit mal* than *grand mal* appears to be a mistake. Regarding treatment, emphasis is laid on the remarkable efficacy of luminal. The symptoms of insanity of pregnancy are those of despondency. Careful nursing and watching is necessary, and, if the patient becomes worse, mental hospitalization must be considered. In puerperal insanity a brisk purge should be given, and if this with appropriate treatment produces no improvement the patient should be certified without delay. Climacteric insanity may arise long after the menopause, and is often complicated by alcoholism. The symptoms are usually those of self-accusatory depression. Beneficial drugs are *dial*, *paraldehyde*, and bromidia, though institutional treatment may become necessary. In delirium tremens all alcohol should not be stopped, though the amount should be considerably reduced; chloral hydrate is almost a specific for this condition. Syphilitic mental disorder may be divided into general paralysis and cerebral syphilis. Early signs of the former are a seizure, first attack of subacute mania between 30 and 50, lapses of memory, exaggeration of natural characteristics, undue energy, inability to concentrate, and rashness in business. Early treatment is most important and should include rest from business. Cerebral syphilis, unlike general paralysis, is amenable to antisyphilitic treatment. There are three clinical types: some cases simulate general paralysis, others resemble hemiplegia with or without loss of speech, while in the third variety there is a rapid onset of amaurosis with dementia. Three typical cases are reported. Generally speaking, in the early stages of mental disorders the treatment should be stimulative. In very acute cases beneficial drugs are hyoscine hydrobromide, paraldehyde, sulphonal, veronal, medinal, and dial ciba. In irritable, restless melancholia tincture of opium with sp. aether. sulph. is safe and valuable. Chloral hydrate is a dangerous drug, especially in cardiac cases. Treatment by psycho-analysis is not approved by Blachford.

139. The Symptomatology of Tumours of the Temporal Lobe.

A. KOLODNY (*Brain*, October, 1928, p. 385) remarks that the possibility of resection of a large portion of the right and even of the left temporal lobe without noticeable functional disturbance makes an early localization of a temporal lobe tumour imperative; he discusses the symptoms noted in 38 cases of tumours confined to this lobe. No attempt is made to formulate a definite temporal lobe syndrome, and the symptoms are merely enumerated in their order of frequency. Headaches, which occur in all the patients, are of no localizing value; local pain or tenderness (noted in 26 per cent.) is of greater importance, and is probably due to local pressure on the branches of the trigeminal nerve. Vomiting, present in half the cases, is merely due to increased intracranial pressure, and has no localizing significance. Definite oedema, seen in the optic discs of 86 per cent., was of assistance in indicating the side affected in only the incipient stages of the papilloedema. In temporal tumours sphincter disturbances are merely a symptom of intracranial pressure; they were present in 20 per cent. of the present series. In frontal growths they are probably due to psychic disorders. Psychic disturbances, if accompanied by other signs, may aid in localizing the tumour. Defects of memory in half the present cases were equally noted in frontal tumours, when only recent events were forgotten, while in temporal tumours both past and recent events are involved. Changes in personality, hyperaemnia, and mental confusion are of little localizing value except in differentiating subtentorial tumours, for in these they rarely occur. That psychic disturbances are due to lesions of the left hemisphere in right-handed persons is not supported by clinical facts. Fits, a relatively early symptom in half the cases, were of localizing value in only 40 per cent., uncinate fits and dreamy states are merely of localizing value, but concomitant visual hallucinations indicate the side affected when occurring in a part only of the visual field. The most constant motor and sensory symptom was a contralateral lower facial weakness. The abdominal reflex was a decisive lateralizing sign in 39 per cent., and the plantar response in 45 per cent. A cerebellar type of gait was noted in only one case, and the existence in the temporal lobe of an organ of balance was not substantiated by the findings. Visual defects of lateralizing importance were found in only 18 per cent. Disturbances of hearing have little localizing and no lateralizing value, but increasing impairment of hearing in both ears is suggestive of a temporal lesion. Disturbances of smell and taste are of no diagnostic significance. Disorders of speech in right-handed persons assist greatly in local diagnosis, though aphasia is not of so much diagnostic importance as is believed. Oculo-pupillary changes (myosis or mydriasis and ptosis) were observed in 55 per cent. These are transitory; they recur from time to time, and finally become permanent. The commonest alteration is in the size of the pupil; changes of shape were noted only four times. Complete oculomotor paralysis was not observed. Involvement of the ipsilateral abducens was present in seven cases; in two of these the paresis was bilateral, but only the ipsilateral nerve was completely paralysed.

140. Treatment of Syringomyelia.

J. VITEK (*Bruxelles-Méd.*, January 13th, 1929, p. 311) describes a new procedure which can replace operation, and which, in combination with radiotherapy, is thought to mark an advance in the treatment of syringomyelia. This method, termed endomyelography, consists in the injection of $\frac{1}{2}$ to 1 c.cm. of lipiodol by a simple dorsal puncture over the medullary segments where the cavity is the most extensive. After the injection the fluid in the syringomyelic cavity can be evacuated, and thus a decompressive puncture of the ependymar liquid is performed. The following is the technique employed. With the patient lying on his right side,

under local anaesthesia, the needle is pushed into the subduramatral space exactly in the middle line; the spinal fluid will then commence to flow. The needle is further advanced till the posterior columns of Goll and Burdach are touched. A momentary pain shows that passage across these columns and entry into the ependymar space has been made, when the syringomyelic liquid always commences to flow. The lipiodol is then introduced and decompression follows. In the three cases reported this operation caused a marked and rapid amelioration of the spasticity in the lower limbs and of the pains in the upper ones, which was probably due to the pressure of the intra-ependymar liquid. This method has been employed with equal success in four cases by Jirásek. Vitek claims that this procedure, which is perfectly tolerated by the patient even though large amounts of lipiodol be used, is more advantageous than laminectomy and intercolumnar incision. It does not forbid or complicate a subsequent operation should such become necessary.

Obstetrics and Gynaecology.

141. Prevention of Foetal Mortality.

A. COUVELAIRE (*Paris Méd.*, December, 1928, p. 567) reports that in a series of 1,000 births 14 foetuses perished during gestation and 19 during labour; 12 infants succumbed within the first three days of life. He believes that the cause of death has been discovered in little more than two-thirds of such cases, and is most commonly syphilis, albuminuria, eclampsia, chronic renal disease, or diabetes. Tuberculosis does not kill the foetus in the uterus. Treatment of the syphilitic mother by arsenic, bismuth, or mercury has considerably reduced the foetal mortality, the results being better in cases where the maternal infection was recent. Couvelaire considers that cases of eclampsia not preceded by albuminuria or a high blood pressure are more frequent than was thought; when the precursory symptoms are detected eclampsia can be successfully avoided and the foetus saved by proper treatment. Nephritis in the mother, accompanied by a high blood pressure, gravely prejudices the unborn child, and syphilis is not uncommonly the primary cause. Such an infection may be difficult to prove, and the author agrees with Bar and Daunay that the value of a negative serological reaction in pregnancy is particularly doubtful where the infection is a long-standing one. Couvelaire adds that the greatest fall in the foetal death rate has occurred in properly treated cases of syphilis and albuminuria; he emphasizes the importance in this respect of ante-natal supervision.

142. Early Diagnosis of Cancer of the Cervix.

E. PREISSECKER (*Zentralbl. f. Gynäk.*, January 5th, 1929, p. 11) states that even in recent times early carcinomata of the cervix are not very infrequently found accidentally in systematic examination by section of cervices which clinically had not been suspect. For this reason, and since improved results in treatment of cancer of the cervix are dependent on the earliest possible diagnosis, careful search should be made for areas of leucoplakia, which in some instances are small, incipient carcinoma. In the II Universitäts-Frauenklinik at Vienna the search for such growths is aided first by the application of iodine, secondly by colposcopic observation, and thirdly by microscopical examination of scrapings from the area which the first two methods of investigation seem possibly to incriminate. After painting with Lugol's iodine solution, carcinomatous areas, as shown by Schiller, do not stain. The non-staining areas are examined, with a magnification of fifteen times or more, by a colposcope which is a modification of Hinselmann's instrument. Leucoplakia thus detected is suspicious, but not conclusive, of malignancy. Preissecker describes three cases giving identical colposcopic appearances, in which microscopic examination revealed carcinoma, condyloma, and late syphilitic leucoplakia respectively.

143. Ovarian Sclerosis and Tuberculosis.

M. LAEMMER (*Bull. Soc. de Thér.*, December 12th, 1928, p. 253) records three illustrative cases, in women aged 18, 24, and 31 suffering from amenorrhoea, which had been unsuccessfully treated by a combination of thyroid and ovarian extract. All the patients showed various manifestations of external tuberculosis, such as cold cervical abscesses, chronic chilblains, and synovial cysts; on vaginal examination small hard ovaries were found associated with low blood pressure. In view of the successful results obtained by diathermy on sclerosis and adhesions in general, Laemmer determined to make use of this method, combined with ovarian opotherapy in the form of folliculine and a general tonic treatment, with the result that all three patients made good recoveries.

Pathology.

144. The Rous Chicken Sarcoma.

H. T. DEELMAN (*Ann. de Méd.*, November, 1928, p. 359) criticizes Carrel's recent work on the Rous sarcoma, and reports the result of his own experiments. Three years ago Carrel announced that he could reproduce tumours in the chicken by means of embryonic chicken pulp and a small quantity of arsenic. The tumours were malign, and were, moreover, inoculable with a filtrate devoid of cells. Deelman has been unable to reproduce these results despite the simplicity of Carrel's technique. The Rous sarcoma is described, and the author agrees with those who contend that it is a true tumour and not an inflammatory product. In his experiments Deelman found that the action of the sarcoma virus increases in contact with embryonic cells, the age of the cells having also an influence on the tumour growth, and that the virus is attracted to the living embryonic cells, the containing liquid becoming devoid of it. Applying this to living animals, Deelman surmises that, when the Rous sarcoma necroses, the virus is liberated and is attracted by the environing normal cells, which in their turn become malignant, and by their frequent division cause an intensive growth of the tumour. In the growths produced by Deelman the ordinary characters of the Rous sarcoma are lost, and the tumour resembles rather a medullary cancer. The explanation advanced for this change is that the embryonic cells themselves have assumed proliferative properties. When inoculations are made with the filtrate freed from cells, the tumour produced possesses the classic structure of a Rous sarcoma. When inoculations are made with the tumour tissue itself, a sarcoma of the atypical type is produced, but after the third or fourth inoculation this reverts to the Rous type. Deelman maintains that these results are a further proof that the Rous sarcoma is more complicated than a simple reaction of an inflammatory granuloma type.

145. Pathogenic Leptospira in Water.

A. BESSEMANS and U. THIRY (*C. R. Soc. de Biologie*, (December 21st, 1928, p. 1881) have found in the municipal tap-water at Ghent a leptospira which is pathogenic for the mouse but not for the guinea-pig. The organism was cultivated directly from the water in Vervoort's medium containing 10 per cent. of fresh rabbit serum; pure cultures were not obtained, even after several generations in the laboratory. Morphologically it is said to be slightly larger and longer than *Leptospira icterohaemorrhagiae*. Rabbits injected with cultures produced agglutinins, complement-fixing bodies, and lysins. The lysins were strictly specific, but the other two antibodies acted on a strain of *L. icterohaemorrhagiae*; moreover, a serum prepared against the *icterohaemorrhagiae* strain reacted as well with the water spirochaete as with its homologous strain. The water spirochaete was non-pathogenic to the guinea-pig, but when injected subcutaneously or intraperitoneally into white mice it not infrequently gave rise to an illness ending fatally about the fourteenth to the twenty-ninth day. Quite soon after inoculation these mice showed leptospirae in the blood, and about the tenth day in the urine. About a fortnight after injection the mice appeared ill, cowering in the cage with shaggy coats and dyspnoea. At necropsy their weight was found to be increased, apparently owing to subcutaneous oedema; the lungs were spotted and very hyperaemic, the bladder was filled with albuminous urine containing leptospirae in pure culture, and leptospirae were found in kidney smears, but not in the other organs. Mice injected with the urine or with a kidney suspension developed the disease.

146. The Leucocyte Count in Mumps.

F. JAHN (*Deut. med. Woch.*, November 19th, 1928, p. 1974), in his review of the literature, shows that previous observations on the leucocyte count in mumps have varied considerably. Thus, while Pick, Citron, and Marcowici found normal leucocyte values, Barach reported a high count throughout the disease, and Curschmann, Türk, and Nägeli observed a high count. Studies of the differential count have also led to very different results; whereas Curschmann and Tellez found a lymphocytosis, Marcowici found an increase of the polymorphonuclears and later post-infective eosinophilia, which was also found by Türk and Nägeli from the onset of the disease without any other changes in the leucocyte count. Jahn's observations were made on seven uncomplicated cases of mumps in the acute stage, his results being as follows: leucopenia was never present and normal values were found in two cases, while the rest showed a moderate leucocytosis, which sank to normal again about the fourth week. In five cases there was a lymphocytosis, and in two patients, aged 2 and 17, showed an eosinophilia of 7 and 10 per cent. respectively.

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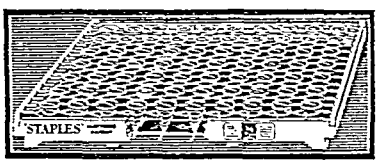

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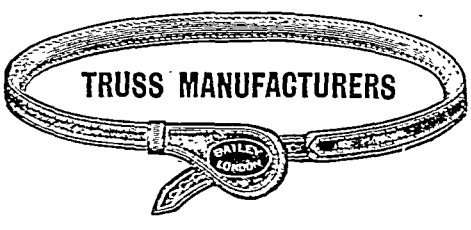

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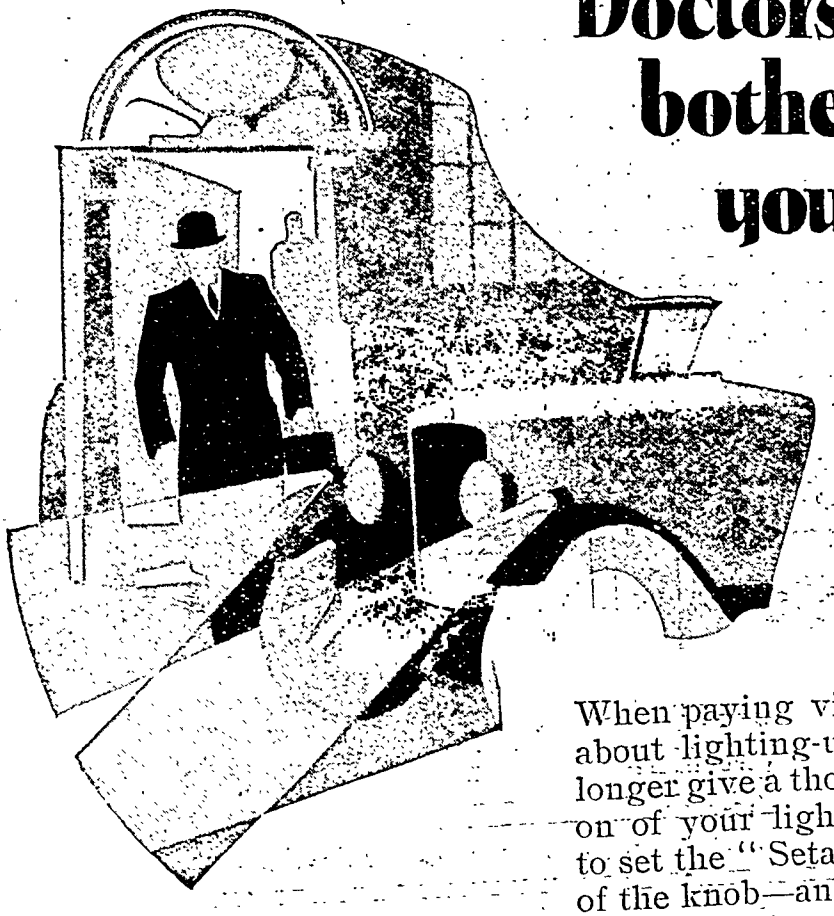

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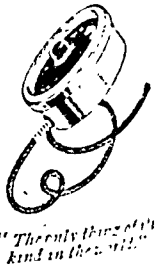

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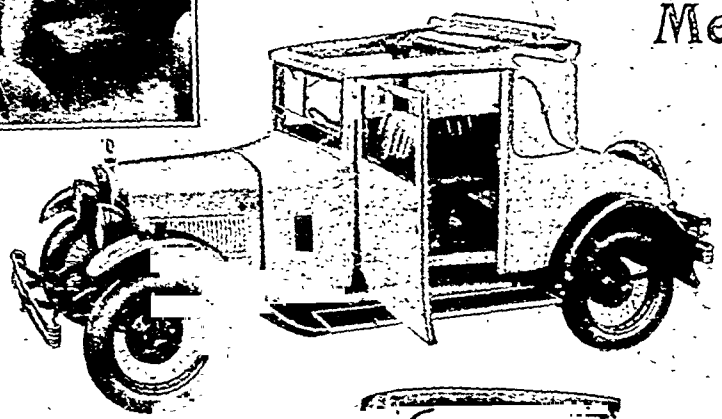

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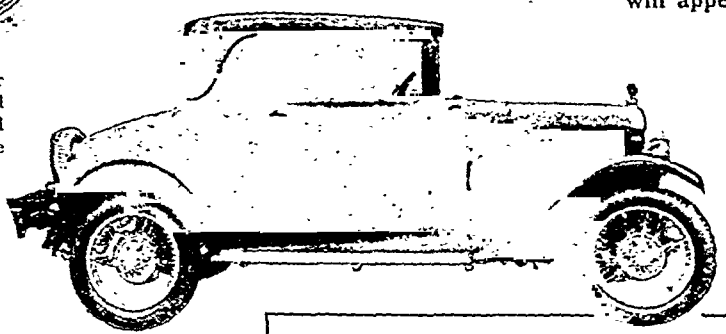

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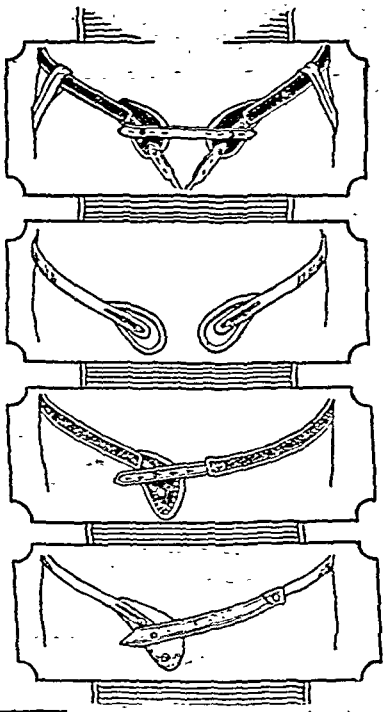

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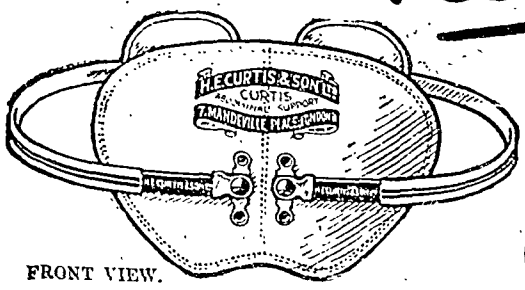

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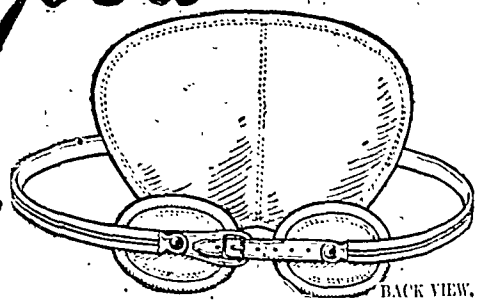
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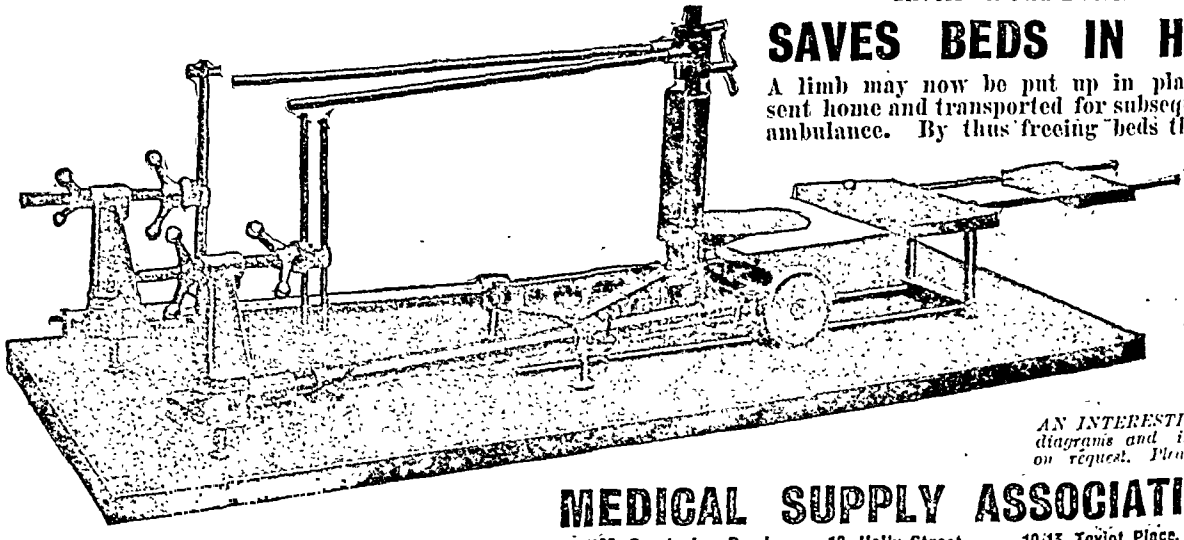

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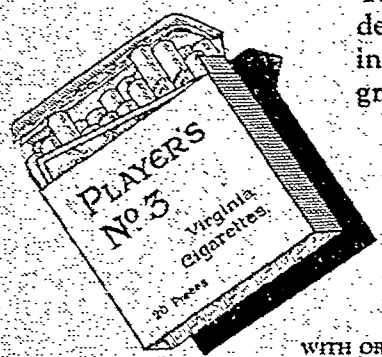

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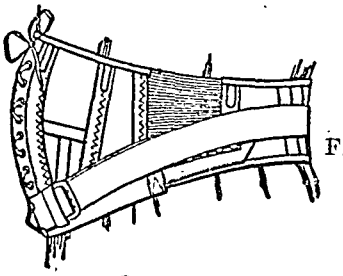

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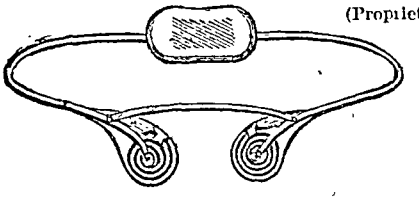

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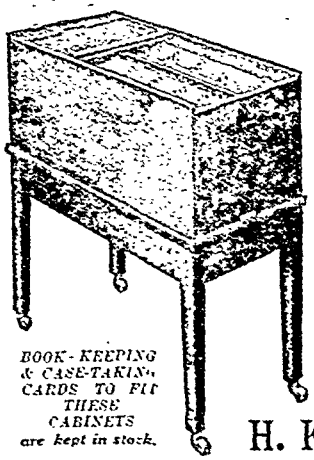

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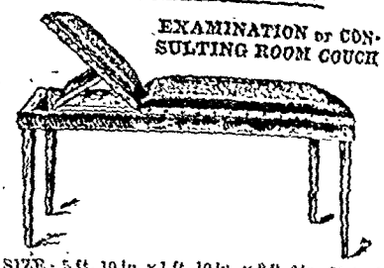
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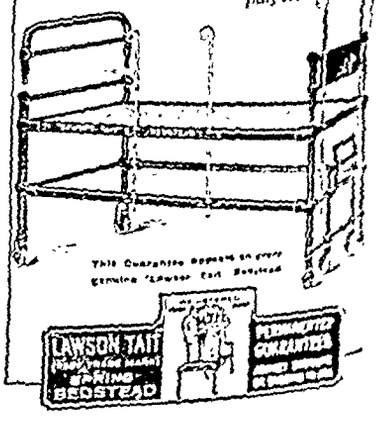

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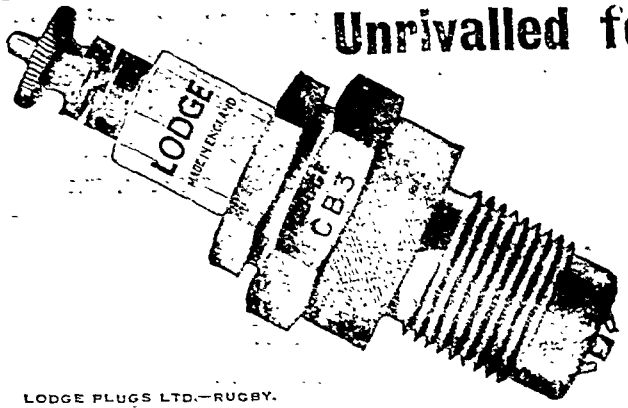

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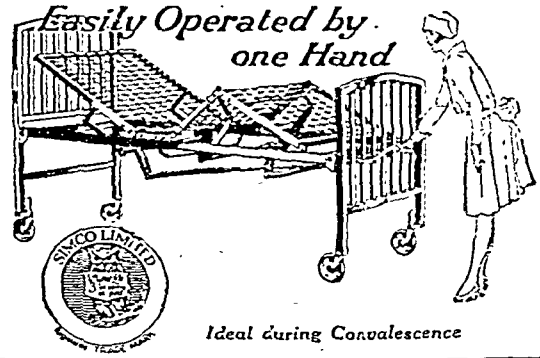

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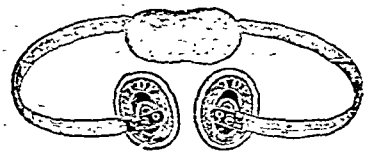

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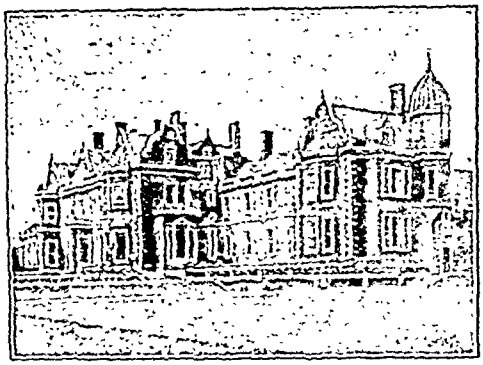

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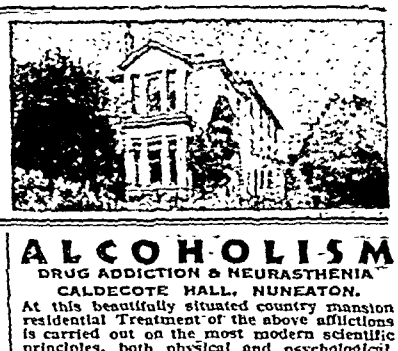

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This Registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from *incipient nervous and mental disorders*, as well as certified patients of *both* sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms *with special nurses, male or female*, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

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MOULTON PARK.

Two *miles from* the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

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The Seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is *trout-fishing in the park*.

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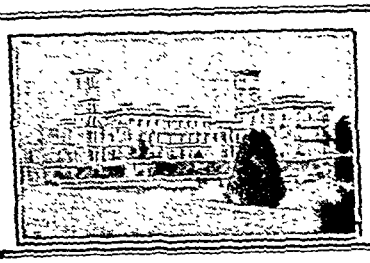

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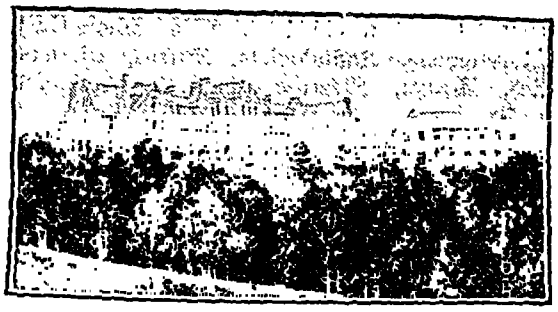

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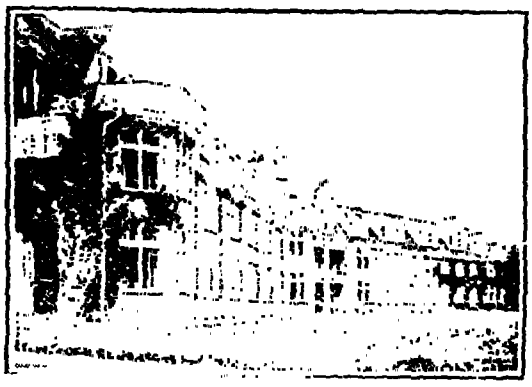

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(1906-28)	*Final*	135
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INDIVIDUAL TUITION in all branches D.P.H. Examination undertaken by qualified medical person. Fees moderate.—Address, No 714, B.M.J. House, Tavistock Square, W.C.1.

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The TUTORIAL CLASS for the next Examination will commence shortly. Correspondence tuition if desired. — For particulars apply FRED. GRAHAM, M.D., F.R.C.S.Ed., Surgeons' Hall, Edinburgh.

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Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims.
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LONDON SCHOOL OF DERMATOLOGY,

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN,
LEICESTER SQUARE, W.C.2.

Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals. Lectures and Demonstrations every Tuesday and Thursday, at 5 p.m., from October to March, and four times weekly during May. Clinics daily at 2 p.m. and 6 p.m., Saturdays, 2 p.m. only. Pathological Laboratory for Instruction or Research Work.

For further particulars, fees, etc., apply to A. C. ROXBURGH, M.D., Dean.

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POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to
The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5,
for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics. For further particulars, fees, etc., apply to the Secretary.

F.R.C.S.(Edin.).

Prep. Classes and Museum Demons. for next Fellowship Exam. will commence shortly. Correspondence course for July and later exams should begin now. Parties., Mr. H. C. ORRIN, F.R.C.S., at Surgeons' Hall, Edinburgh.

University of London.

A Course of Three Lectures on "*Hygiene of the Mercantile Marine*" will be given by Dr. J. HOWARD JONES, M.D., B.Sc. (Medical Officer of Health for the Port Sanitary Authority, Newport, Mon.), at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on FRIDAYS, FEBRUARY 22nd, MARCH 1st and 8th, at 5.30 p.m. At the first Lecture the Chair will be taken by Dr. CHARLES PORTER, M.D., C.M., B.Sc., Medical Officer of Health for St. Marylebone.

Admission free, without ticket.

EDWIN DELLER, Academic Registrar

The University of Liverpool.

By invitation of the Council, Senate, and Faculty of Medicine, Mr H. A. T. FAIRBANK, D.S.O., O.B.E., F.R.C.S. (Orthopædic Surgeon, King's College Hospital, London), will deliver the LADY JONES LECTURE in Orthopædic Surgery, 1929, on "*Congenital Dislocation of the Hip, with Special Reference to the Anatomy*," on THURSDAY, FEBRUARY 28th, at 4 p.m., in the Surgery Theatre, Medical Building, The University.

The Lecture will be open only to members of the medical profession.

EDWARD CAREY, Registrar

University College of South WALES AND MONMOUTHSHIRE.

COLEG PRIFATHROFAOL DEHEUDIR CYMRU A MYNWY.

The Council of the College invite applications for the appointment of Full-time LECTURER AND DEMONSTRATOR IN ANATOMY.

The appointment in the first instance will be for one year.

The salary will be £400.

Further particulars may be obtained from the undersigned, by whom three copies of application must be received on or before February 28th.

University College, Cardiff. February 1st, 1929.

D. J. A. BROWN, Registrar.

Society of Apothecaries of LONDON.

MASTERY OF MIDWIFERY.

The next Examination will take place on Monday, May 20th, and following days. For regulations apply to—

FRANK HAYDON, Secretary.

University of Cape Town.

ASSISTANT IN PATHOLOGICAL CHEMISTRY.

Applications are invited for an Assistant in Pathological Chemistry, who will be required also to undertake research in the Department of Pathology.

The Assistant must have a registrable Medical qualification and special knowledge of Chemical Pathology. The duties will include teaching of Pathological Chemistry and Biochemical work for the Hospital. The Assistant must engage in research work in the Department of Pathology, and time for such work will be available.

Salary.—£800 per annum, but for pension purposes it will be regarded as being on the scale £500–25–650. The Assistant must become a member of the University Teachers' Superannuation Fund. Salary commences from date of assumption of duty.

Transport.—£50 will be allowed for transport expenses, *subject to* a proportionate refund in the event of the Assistant terminating his agreement within 3 years of the assumption of duty.

Candidates must state the earliest date on which they will be able to assume duty.

Applications, together with copies of testimonials (all in quadruplicate) should reach the Secretary, Office of the High Commissioner for the Union of South Africa, South Africa House, Trafalgar Square, W.C.2, from whom forms of application and further particulars may be obtained, not later than February 26th.

University of Lucknow.

Applications are invited for the PROFESSORSHIP OF MEDICINE and PHYSICIAN to KING GEORGE'S HOSPITAL, attached to the University. Salary Rs.1,200—50—1,400 per mensem, plus benefits of the University Provident Fund on confirmation (rate: 8 per cent. of salary paid by subscriber and 8 per cent. by the University). Consulting practice allowed. The selected candidate will be on probation for one year and will be required to join the Lucknow University about November 1st, 1929. Applications, stating age, academic qualifications, hospital experience, and research publications, with copies of three testimonials, should reach the Registrar, Lucknow University, Lucknow, on or before March 31st.

NOTE.—For members of the Indian Medical Service the conditions of service will be similar to those of Government servants holding similar appointments.

R. R. KHANNA, Registrar.

Wellington Hospital Board, NEW ZEALAND.

ORTHOPÆDIC SPECIALIST.

Applications from medical practitioners addressed to the undersigned, and endorsed "Orthopædic Specialist," are invited up to noon on March 31st, 1929, for the position of Orthopædic Specialist to the Wellington Hospital, at a commencing salary of £900, rising by two annual increments of £50 per annum to £1,000; non-resident.

The successful applicant will be required to undertake active treatment of fractures, to have practical experience of plaster technique, splint-making, and all branches of Physio-therapy—that is, Balneotherapy, Electro-therapy (including Ultra-violet) and Massage.

Applicants are requested to state age and qualifications, and to enclose copies of references.

R. BROWN, Secretary.

The Sudan Government.

A MEDICAL OFFICER is required for Public Health duty for the Sudan Medical Service.

The candidate should be single, under 36 years of age, and be must have a D.P.H. degree.

Pay for the post commences at £E.652, rising by degrees to £E.1,200. On confirmation of the appointment, the selected candidate will be eligible for Pension Service.

Applications (in writing only), with copies of recent testimonials, should be sent to Dr. HODSON, 24, Welbeck Street, W.1, from whom further particulars can be obtained.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors Bloomsbury Square, London, W.C.1.

Wanted for the Princess Louise

KENSINGTON HOSPITAL FOR CHILDREN, ST. QUINTIN AVENUE, W.10, a Wholetime Non-resident SECRETARY. Apply, by letter only, to the Secretary, stating age, qualification, and salary required.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A Whole-time ASTHMA RESEARCH SCHOLAR is required on February 21st, in the Asthma Clinic established at this Hospital, under the Halley Stewart Trust of the Asthma Research Council, for special research work in the causation and treatment of Asthma and kindred complaints in children.

Gentlemen are invited to send in their applications addressed to the Secretary, with copies of not more than three testimonials, written specially for the purpose, before 12 o'clock on Monday, February 18th.

The appointment is non-resident, and is made for one year, but may be held, subject to re-election annually, for a period of four years.

Candidates must possess a legal qualification to practise.

Salary £300 per annum, with luncheon and tea provided by the Hospital when on duty.

All candidates must be in attendance on Wednesday, February 20th, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
January, 1929. Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A CASUALTY OFFICER is required on February 21st.

Gentlemen must be registered medical practitioners, and are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, February 18th, accompanied by copies of not more than three testimonials, written specially for the purpose.

The appointment is made for one year, but may be held, subject to re-election annually, for a period of three years.

The appointment is non-resident, and whole-time.

Salary £400 per annum, with luncheon and tea provided, and allowance of 24 guineas for substitute for annual holiday of four weeks.

All candidates must appear before the Joint Committee at their meeting on Wednesday, February 20th, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
January, 1929. Secretary.

County Borough of Ipswich.
ASSISTANT MEDICAL OFFICER OF HEALTH (Woman).

The Corporation of Ipswich invite applications for the appointment of an Assistant Medical Officer of Health and Assistant School Medical Officer.

Applicants must be fully qualified medical practitioners, and must hold a Diploma in Public Health, or an equivalent qualification.

Applicants must be qualified to undertake ante-natal and infant welfare work.

Experience in Mental Deficiency, and in Ultra-violet Ray Treatment, would be regarded as additional qualifications.

Salary £600 per annum.

The successful candidate will be required to contribute to any Superannuation Fund which the Town Council may establish.

The person appointed will be required to devote her whole time to the duties of the office, and to act under the control of the Medical Officer of Health, who is also School Medical Officer.

The duties of the position will be mainly concerned with the School Medical Service, but the Public Health Committee retain the right to utilise the services of the person appointed as may be required by them.

Applications, together with copies of not more than three recent testimonials, to reach the Medical Officer of Health, Elm Street, Ipswich, not later than February 16th.

Town Hall, A. MOFFAT,
Ipswich. Town Clerk.
January 29th, 1929.

City of Bradford.
MUNICIPAL GENERAL HOSPITAL, ST. LUKE'S.

HOUSE PHYSICIANS and HOUSE SURGEONS required. Salary in each case £200 per annum, with board and lodgings.

These appointments are for six months, renewable for a further period of six months.

Application forms may be obtained from the Medical Officer of Health, Town Hall, Bradford, and should be returned to him not later than February 20th.

Town Hall, Bradford. N. L. FLEMING,
February 2nd, 1929. Town Clerk.

County Borough of Gateshead.
GATESHEAD MENTAL HOSPITAL.

APPOINTMENT OF MEDICAL SUPERINTENDENT.

The Asylum Visiting Committee invite applications for the post of Medical Superintendent at the Gateshead Mental Hospital at Stannington, Northumberland.

Candidates must be duly registered medical practitioners possessing experience in Lunacy and of the work of an Asylum; also preference will be given to those who have a Diploma in Psychological Medicine and who have served the office of House Surgeon or House Physician in a General Hospital. The person appointed will be required to devote his whole time to the duties of the office.

Salary £800, with free unfurnished house, fuel, light, rates and taxes, laundry, and garden produce.

The appointment is subject to the provisions of the Asylum Officers Superannuation Act, 1909, and is determinable on three months' notice from either party. No particulars other than those contained in this advertisement are issued. Canvassing a disqualification. The successful candidate will be required satisfactorily to pass a medical examination.

Forms of application can be obtained from, and must be returned to, the undersigned not later than February 23rd.

By Order,
Clerk to the Visiting Committee. W. SWINBURNE, Town Clerk.

Borough of Folkestone.
MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified gentlemen for the appointment of Medical Officer of Health of the Borough, subject to the provisions of the Public Health (Officers) Act, 1921, and the Sanitary Officers Order, 1926.

The gentleman appointed will be required to perform all the duties imposed on a Medical Officer of Health, to act as Port Medical Officer of Health, Maternity and Child Welfare Medical Officer and School Medical Officer, and to carry out all such duties as the Council, with the consent (if necessary) of the Minister of Health, may from time to time direct, including the duties of Medical Inspector of Aliens if appointed to this post by the Minister of Health. He must devote all his time to the duties of the office and must not engage in private practice.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The salary to cover all the duties specified above will be £900 per annum inclusive.

Applications, accompanied by copies of not more than three recent testimonials, should reach the undersigned not later than February 16th.

Town Clerk's Office, C. F. NICHOLSON,
Folkestone. Town Clerk.
January 22nd, 1929.

States of the Island of Jersey.
COMMITTEE FOR THE JERSEY MENTAL HOSPITAL.

MEDICAL SUPERINTENDENT.

This office being vacant, the States will proceed next month to appoint a Medical Superintendent for the above establishment, who will be required to enter upon his duties about the end of February or beginning of March next.

The appointment is for three years, at a salary of £650 per annum, with house (and garden) in which the person appointed will be required to reside. The Medical Superintendent must devote the whole of his time to the duties of his office. Candidates must be Members or Licentiates of one of the Faculties of Medicine and Surgery of Great Britain or Ireland.

Sealed applications, stating qualifications, with testimonials, to be sent on or before February 9th, addressed to the President of the Committee for the Jersey Mental Hospital, Greffe Office, Jersey.

Greffe Office, Jersey. ERNEST LE SUEUR, Greffier.
January 18th, 1929.

British Red Cross Society's
CLINIC FOR TREATMENT OF RHEUMATIC DISEASES.

A Clinic for the treatment of Rheumatic Diseases will be opened in Park Square, Regent's Park, N.W.1, in the Autumn of the present year.

The British Red Cross Society Committee of the above will shortly proceed to appoint SIX MEMBERS OF THE HONORARY VISITING MEDICAL STAFF, each of whom will be required, when the Clinic is in full working order, to attend twice a week. Application, in the first place by letter only, should be addressed, on or before March 1st, 1929, to the Secretary of the Clinic Committee, British Red Cross Society, 19, Berkeley Street, London, W.1.

Administrative County of Surrey
APPOINTMENT OF COUNTY MEDICAL OFFICER OF HEALTH.

The County Council of the Administrative County of Surrey invite applications from duly qualified medical practitioners holding a Diploma of Public Health for the office of County Medical Officer of Health.

The person appointed will be required to act as Head of the County Medical Services and to perform any additional duties relating to Public Health which may be imposed upon the Council by new legislation.

The remuneration will be a net personal salary of £1,800 per annum.

The appointment is designated an established post under the Local Government and Other Officers Superannuation Act, 1922, and will be held subject to the provisions of that Act, to the Orders for the time being of the Minister of Health, and to the Standing Orders of the Council.

Applications on the prescribed form (which, with a general statement of the conditions and duties of the office, may be obtained from me on receipt of a stamped and addressed envelope) accompanied by copies of not more than three recent testimonials, must be sent in a sealed envelope marked "C.M.O.H.," to reach me at the underwritten address not later than Thursday, February 28th.

Canvassing in favour of a candidate will disqualify.

ARTHUR O. DILLEY AUKLAND,
Clerk of the Council.

County Borough of Smethwick.
SENIOR ASSISTANT MEDICAL OFFICER OF HEALTH.

The Council invite applications from qualified medical men for the position of Senior Assistant Medical Officer of Health.

Salary £550 per annum, with furnished residence for single man at the Isolation Hospital, Holly Lane; including lighting, heating, coal, and laundry. If a married man is appointed the salary will be £700 per annum, without board and residence.

His duties will be to act as Medical Officer at the Isolation Hospital, to work at the Tuberculosis Dispensary and School Clinics on certain days, and to carry out a certain amount of School Medical Inspection.

Applicants must be registered medical practitioners, and should possess the Diploma of Public Health.

The officer appointed will also be required to assist the Medical Officer of Health in his other duties from time to time as directed, and will work under the general supervision of the Medical Officer of Health.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and the selected candidate will be required to pass a medical examination.

Forms of application may be obtained from the undersigned, to whom applications, endorsed "Assistant Medical Officer of Health," accompanied by copies of three recent testimonials, must be delivered not later than February 14th.

Canvassing, directly or indirectly, will disqualify.

Council House, Smethwick. FRANK CHAPMAN, Town Clerk.
January 29th, 1929.

The Board of Control (Lunacy AND MENTAL DEFICIENCY) invite applications for the post of MEDICAL OFFICER (male), at RAMPTON STATE INSTITUTION FOR MENTAL DEFECTIVES, near RETFORD. The salary will be £400, rising by annual increments of £20 to £600. Bonus, which varies with the cost of living, is also allowed. For bonus on salary of £400 is £136 10s. The emoluments are free furnished quarters, coal, laundry. Board and service will be provided on payment of the actual cost.

Candidates must be registered medical practitioners, unmarried or widowed, and must be natural-born British subjects and the sons of natural-born British subjects. The appointment will be pensionable under Civil Service Superannuation Acts.

Forms of application, with further particulars, can be obtained from the Secretary, Board of Control, Caxton House, West Tower, Westminster, London, S.W.1, and must be completed and returned to him not later than March 9th.

Asylum Service.—Junior ASSISTANT MEDICAL OFFICER wanted, commencing £275, with board, lodging, and laundry. Every encouragement given for research work. Applications should be addressed to Dr. J. H. MACFARLANE, Superintendent, Hawkhead Asylum, Paisley, Glasgow, S.W.2.

Cardiff Union.

ASSISTANT MEDICAL OFFICER.

The Guardians of the Cardiff Union require a Third Male Assistant Resident Medical Officer for the CITY LODGE INSTITUTION, who must devote the whole of his time to the duties, reside in the Institution, and (subject to the orders of the Guardians) act under the direction of the Medical Officer.

The qualifications, conditions, and duties of the appointment, which will be for six months, but renewable if the Guardians see fit, are prescribed by general orders of the Ministry of Health, and are further defined in rules adopted by the Guardians, a copy of which (and any other information desired) may be obtained from me. One duty will be to give such lectures to the Nurses as may be required.

The salary will be at the rate of £100 a year, with rations, apartments, attendance, and washing, subject to the provisions of the Poor Law Officers Superannuation Act, 1896, for which the present value of emoluments is fixed at £154 10s. a year.

Assistant Medical Officers are liable to be called upon by Justices to examine and certify alleged Lunatics, for which fees are payable.

Applications, on forms to be obtained from me, must reach me by 10 a.m. Thursday, February 21st.

Direct and indirect canvassing is prohibited.

11, Park Place, R. STEPHENSON,
Cardiff. Clerk.

County of London.

The London County Council invite applications for appointment as EIGHTH ASSISTANT MEDICAL OFFICER (male) in the MENTAL HOSPITAL SERVICE. Candidates must be under 35 years of age, and be *registered to practice* both in Medicine and Surgery in England. Salary £300 a year, *rising by annual increments* of £25 to £400 a year, plus fluctuating temporary additions, making the *present total* commencing remuneration approximately £414 a year. No emoluments. Charges made for board, lodging, etc. (at present £2 9s. weekly), if required to be resident. Candidates appointed will be pensionable under the *Asylums Officers Superannuation Act, 1909.* Form of application, on which full particulars are given, can be obtained from the Acting Chief Officer, Mental Hospitals Department, The County Hall, *Westminster Bridge, S.E.1.* Completed applications must be received by Thursday, February 21st. *Canvassing disqualifies.*

MONTAGU H. COX,
Clerk of the London County Council.

City of Leicester.

RESIDENT MEDICAL OFFICER.

Assistant Resident Medical Officer (male) required for the *ISOLATION HOSPITAL and SANATORIUM, Groby Road.* The Institution when full provides accommodation for 140 *Infectious and 200 Tuberculosis* Cases. Salary £350 per annum, with board and residence, subject to a deduction for Superannuation.

Applications, stating qualifications, age, and experience, together with three recent *testimonials*, to be sent to the undersigned by February 20th.

Health Dept., C. KILLICK MILLARD,
Grey Friars, Medical Officer of
Leicester. Health.
February 4th, 1929

Borough of Scarborough.

APPOINTMENT OF SCHOOL DENTIST (Part-time).

Applications are invited for the above appointment from registered Dental Practitioners. The candidate appointed will be required to carry out the Dental examination and treatment of School Children, and to devote *five or six* sessions per week of 2½ hours each to the work. He will be responsible to the School Medical Officer.

Salary at the rate of £250 per annum for five sessions.

Applications, marked "School Dentist," stating age, *qualifications*, and experience, together with three recent testimonials, must be sent to the undersigned not later than February 20th.

Education Offices, R. UNDERWOOD.
Yorkshire Penny Bank Chambers,
Huntriss Row, Scarborough.

James Murray's Royal Asylum, PERTH.

ASSISTANT PHYSICIAN *wanted. Previous* Hospital appointment, and interest in side-room work and elementary bacteriology, *essential.* Starting salary £300 or £350 (with board, etc.), according to experience, plus £50 for D.P.M. Apply, stating age and experience, with copies of testimonials, to Physician-Supt.

Royal Derby and Derbyshire Nursing and Sanitary Association.

APPOINTMENT OF HONORARY OBSTETRIC PHYSICIANS TO THE NIGHTINGALE NURSING HOME.

The Board of Management invite applications to fill vacancies on the staff of Honorary Obstetric Physicians. The duties include attendance and lectures in rotation with colleagues.

Election will be by the Governors at a Special Meeting to be held on Tuesday, February 19th.

Applications, stating qualifications and experience, with not more than three testimonials, should be sent on or before February 16th to the undersigned, from whom all particulars may be obtained.

Canvassing not allowed.

By Order,
Royal Nursing Inst., E. E. POOL,
London Road, Derby. Secretary.
January 29th, 1929

County Borough of Newport.

MENTAL HOSPITAL.

ASSISTANT MEDICAL OFFICER (Male)

Applications are invited for the above post. Candidates must be under 35, unmarried, and preferably with previous experience in Mental Diseases. Commencing salary £300 per annum, with apartments, board, and laundry. Appointment pensionable under Asylum Officers *Superannuation Act, 1909.*

Applications, stating age, qualifications, and previous experience, accompanied by copies of three recent testimonials, must reach the undersigned by Monday, the 25th instant.

Town Hall, O. TREHARNE MORGAN,
Newport, Mon. Town Clerk.
February 4th, 1929.

Swansea County Borough.

RESIDENT MEDICAL OFFICER.

INFECTIOUS DISEASES HOSPITAL.

The Council invite applications for the above appointment from duly qualified unmarried medical practitioners. The salary will be at the rate of £350 per annum, together with emoluments. Previous experience in an Infectious Disease Hospital is desirable.

Applications (on special forms with particulars of duties, can be obtained from the Medical Officer of Health, Public Health Offices, Swansea) to be sent in not later than February 15th.

Ancoats Hospital, Manchester.

HOUSE SURGEON (Orthopædic) *required* to commence March 1st. Salary £100 per annum, with board, residence, laundry, etc.

Applications, stating age, qualifications, experience, etc., to be forwarded to the undersigned on or before February 19th, with copies of three recent testimonials.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Ancoats Hospital, Manchester.

HOUSE PHYSICIAN required to commence duty on March 1st next. Appointment for six months, salary at the rate of £100 per annum. Applications, stating age, qualifications, experience, if any, together with copies of three recent testimonials, to be forwarded to the undersigned on or before February 13th.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Bedford County Hospital.

HOUSE SURGEON, ASSISTANT (male), fully qualified, unmarried, required for a term of not less than six months, commencing February 25th, 1929. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Secretary, Medical Staff Committee.

February 4th, 1929.

Liverpool Stanley Hospital.

Wanted, one MALE HOUSE PHYSICIAN, two MALE HOUSE SURGEONS, and one FEMALE *GYNÆCOLOGICAL HOUSE SURGEON* for April 1st. Salary at the rate of £100 per annum, with board, laundry, etc. Engagement for a period of six months.

Candidates must be on the Medical Register, and applications, with copies of three recent *testimonials, must be lodged* with the undersigned on or before February 15th.

E. W. OSBORN, Secretary.

Royal South Hants and SOUTHAMPTON HOSPITAL, SOUTHAMPTON.

The following posts will fall vacant on March 1st next, and applications are invited:

SENIOR HOUSE SURGEON. Twelve months' engagement. Salary £175 p.a.

HOUSE PHYSICIAN. Twelve months' engagement. Salary £150 p.a.

JUNIOR HOUSE SURGEON. Six months' engagement. Salary £130 p.a.

CASUALTY OFFICER. Six months' engagement. Salary £120 p.a.

All with resms, board, and laundry.

Candidates must be male and unmarried, and should apply, stating age, with copies of testimonials (limited to five), to the undersigned before February 26th.

HY. TRUSSON, Secretary.

Cumberland Infirmary, Carlisle.

Applications are invited for the following posts vacant on April 1st next. Previous experience in each case desirable.

1. HOUSE PHYSICIAN, male. Salary at rate of £155 per annum, board, residence, etc.
2. HOUSE SURGEON to Special Departments, —male, Eyes, Ear, *Nose*, and Throat. Salary at rate of £155 per annum, board, *residence, etc.*

Applications, stating age, with copies of not more than four testimonials, must be received by first post on Wednesday, February 26th, by the undersigned, who will supply further particulars if desired.

Separate applications required for each post.

J. G. HOWITT, Secretary.

Tunbridge Wells and Counties GENERAL HOSPITAL.

Wanted, HOUSE SURGEON. Candidates must be unmarried and duly qualified in Medicine and Surgery. (Two residents). Vacant March 1st.

In patients number over 1,400 yearly. Out-patients 5,000, with 50,000 attendances.

Salary £160 per annum, with board, residence, etc., in the Hospital.

This Hospital is approved by the *University of London* for the purpose of the M.D. and M.S. Examinations.

Applications, stating qualifications, with certificate of registration and copies of testimonials, should be sent to the undersigned on or *before February* 18th next.

F. J. WEBB, Secretary.

The Guest Hospital, Dudley.

APPOINTMENT OF HONORARY PHYSICIAN.

Applications are invited for the *post of* Honorary Physician to the above Hospital. Candidates must be Doctors or Bachelors of Medicine of an University in the United Kingdom and Fellows or Members of the Royal College of Physicians.

Applications, stating age, details of experience and posts held, together with certificate of registration and copies of testimonials, to be sent to the Secretary, Guest Hospital, Dudley, not later than February 21st.

The Guest Hospital, H. RAYMOND HURST,
Dudley, Secretary
February 1st, 1929

The Guest Hospital, Dudley.

Notice is hereby given that a *Meeting* of the Committee of Election will be held in the Board Room, Guest Hospital, Dudley, *on March 1st*, at 12 o'clock noon, for the purpose of electing an HONORARY PHYSICIAN to the Hospital.

By Order of the Committee,
The Guest Hospital, H. RAYMOND HURST,
Dudley, Secretary
February 1st, 1929

York Dispensary.

Wanted, a RESIDENT MEDICAL OFFICER (female) to visit and attend the sick poor at their own homes, to commence duties not later than March 1st next.

Candidates must be duly qualified, registered, and unmarried. Salary £150 per annum, with board, lodging, and *attendance*, and allowance for laundry.

Applications, with *testimonials*, to be sent on or before February 15th to JOHN C. PETERS, *Secretary, 4, New Street, York.*

The Royal Eye and Ear Hospital, BRADFORD.

Wanted, JUNIOR HOUSE SURGEON *(male)*. Salary £120, with board, *residence, and* laundry. Applications, stating qualifications, age, etc., with copies of recent testimonials, to be forwarded to the undersigned on or before February 26th.

F. BRIGGS, Secretary-Supt.

ASSISTANCIES.

Wanted.—Assistant, single, well up in Surgery. Salary £300 per annum, with rooms, light, coal, and attendance.—Apply, A. H. JAMES, M.D., The Park, Blaenavon.

Wanted.—Assistant, with view to Partnership, in growing Country Practice in Midlands. Send essential particulars. — Address, No. 730, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Young Assistant, abstainer, for panel and private practice, Liverpool. Must have experience of general practice. State essential particulars. Salary £350 to £400 indoor. — Address, No. 710, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Lady Assistants for General Practices. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted.—British, male, single, ASSISTANT. Every afternoon free 2—6 p.m. £150, indoors, all found.—Write essential details to Dr. BRIGGS, Edgware, Mx., or 'phone Mill Hill 1652.

Wanted. — Outdoor Assistant (male) for General Practice, East Coast. Salary £500 p.a. Scope for surgery. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, an outdoor Assistant to Three Partners, with large private and small panel practice. Good opportunity and prospects. Send full particulars.—Address, No. 712, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistants (male) for General Practices; also PRACTITIONERS for Locum work. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, in or near London, *outdoor* ASSISTANTSHIP by M.B., ex H.P. (Royal Infirmary, Edinburgh). Experienced. — Address, No. 708, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by a qualified Indian Doctor, medalist, and with Hospital experience.—Address, No. 728, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, in South Lancashire Town, outdoor ASSISTANT, young Scotsman preferred. Salary £250 p.a., with comfortable board and lodging.—Address, with copies of testimonials and photo, to No. 729, B.M.A. House, Tavistock Sq., W.C.1.

Assistant (with view to Partnership) required by Medical Man with large cash and panel practice in an industrial Midland Town (2 surgeries). Applicants must be steady, energetic, tactful, and willing. Scope for increasing private practice with capable man. Strict enquiries required and invited. No agents.—Write, stating age, qualifications, experience, and other essential particulars, to "Y.Z.," Box 511, SELLS, Fleet Street, E.C.4.

Assistants and Locum Tenens.—Doctors immediately available for the foregoing, of good address, experience, and of British birth, are invited to call upon THE MEDICAL AGENCY, Watergate House, 15, York Buildings, Adelphi, W.C.2.

Assistantship wanted by M.B., B.Ch., B.A.O., æt. 28. Experienced G.P. Excellent refs. Moderate capital available.—Address, No. 705, B.M.A. House, Tavistock Square, W.C.1.

Assistantship wanted by M.B., B.Ch. (N.U.I.), aged 28; ex H.S., H.P., experienced (3 years) in G.P. and Midwifery. Good anæsthetist. — Address, No. 722, B.M.A. House, Tavistock Square, W.C.1.

Assistantship wanted by Woman Graduate. Excellent testimonials and experience, Hospital and G.P., in Britain and on Continent.—Address, No. 723, B.M.A. House, Tavistock Square, W.C.1.

Male Assistant required (indoor) Motor cyclist. Colliery district. Salary £300 per annum. — Address, T. V. BELL THOMAS, Maesteg, Glam.

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Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Gerrard 2699, THE DISPENSERS' BUREAU, 145, Shaftesbury Avenue, London, W.C.2.

Dispenser - Secretary (Hall certificate) desires POST with Doctor or Institution. Fourteen years good testimonials; minor dressings, etc.—"E. P.," 4, Percy Road, Broadstairs.

Evening and/or week-end SURGERIES wanted. M.B. Edin. (male). In London, convenient from City or S. Kensington. Ex. H.P., etc., London; exp. G.P.—Address, No. 716, B.M.A. House, Tavistock Square, W.C.1.

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Lady Secretary - Radiographer required for London. *Typing and shorthand essential.* Give full particulars, stating salary required. — Address, No. 735, B.M.A. House, Tavistock Square, W.C.1.

Matron wanted to take Charge of small Medical Home, off Harley St. *One known to West End Physicians preferred.* Send full particulars, stating salary required.—Address, No. 734, B.M.A. House, Tavistock Square, W.C.1.

Medical Missionary (Presbyterian preferred) needed urgently for New Hebrides. Hospital and house ready.—Particulars of A. K. LANGRIDGE, "Aniwa," Colchester.

Pathological and Bacteriological LABORATORY ASSISTANTS ASSOCIATION.—Pathologists and Bacteriologists requiring SKILLED CERTIFICATED LABORATORY ASSISTANTS are invited to communicate with H. GOODING, Hon. Sec., "Moelfre," 10, Holbeck Grove, Victoria Park, Manchester. No fees.

The Committee of the Cancer HOSPITAL (FREE), FULHAM ROAD, LONDON, desire to obtain the services of a DIRECTOR of the Electrical and Radio-Therapeutic Department in succession to the late Dr. ROBERT KNOX. Applications to be made to the undersigned before February 28th.
(Signed) J. COURTNEY BUCHANAN, Sec.

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V.A.D., Gentlewoman, aged 46, requires NURSING ENGAGEMENT, Chronic case, London. £2 per week, all found. References given. — Address, No. 822, B.M.A. House, Tavistock Square, W.C.1.

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Locum wanted by M.R.C.S., L.R.C.P. (Lond.). Englishman, aged 34. Public School. Experienced private practice. Free now.—Address, No. 721, B.M.A. House, Tavistock Square, W.C.1.

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Wanted.—Partnership by M.B., Ch.B, Abdn.; aged 29, single. Six years' hospital experience H.S. and H.P. Some £1,000 upwards. Scope for surgery.—Address, No. 731, B.M.A. House, Tavistock Square, W.C.1.

M.B., Ch.B. (Edin.) M.R.C.P. (Edin.) wishes PARTNERSHIP after prelim. assistancy in non-dispensing practice in hosp. town. Ex-H.P., ex-H.S. Experience G.P., anæsthetics, ophthalmology.—Address, No. 725, B.M.A. House, Tavistock Square W.C.1.

Partner wanted in sound good-class Practice of over £3,000 per annum, in Lancashire Coast Resort. Opening for good Surgeon with practical experience, but must be sound on medical side. Alternatively should be really good Physician. Capital essential. One-third share for first year or so at 2 years' purchase.
Address, No. 704, B.M.A. House, Tavistock Square, W.C.1.

Partnership.—Half Share in old-established Practice, Lancs. Town. Average cash receipts £3,000 p.a. Panel 2,5[illegible]. Excellent house for sale, 5 bedrooms, garden and garage. Price £1,000. Premium 2 years' purchase (to include surgery fittings, etc., and valuable book debts). — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Partner wanted in a good mixed Practice in London Sub. Young married man or one contemplating marriage more suitable; 30 yrs. of age (approx.) pref. Well qualified and exper. in G.P. Share to begin about £1,000 at 2 yrs.' pur. Prelim. assistantship essential. Good living and practice accom.—Address, [illegible] photograph and full particulars, No. 7[illegible], B.M.A. House, Tavistock Square, W.C.1.

Surgeon Partner required in few months' time in large [illegible] practice in West to replace Surgeon retiring to town. Must be married and hold F.R.C.S. and be experienced in major surgery. Share £2,500.—Address, No. 718, B.M.A. House, Tavistock Square, W.C.1.

South of England. — Partner, æt. 36 or under, required by large [illegible] ship to do general practice and [illegible]. Must be F.R.C.S.Eng., and have [illegible] degree. Full share worth £3,000 p.a.—[illegible] No. 707, B.M.A. House, Tavistock Sq., W.C.1.

PRACTICES.

Wanted. — Practice or Partnership in good-class [illegible] Practice—Country town, South of [illegible] preferred, about £1,500 p.a., with some major surgery, midwifery and [illegible] essential—by well qualified Public [illegible] University man. Capital available. [illegible] 5 bed., to rent or purchase.—Address, No. 701, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately, Practice with good panel, London or district. 2½ years' purchase. Ample capital. Reply in confidence.—"MEDICO," 128, Uxbridge Road, W.12.

Wanted.—We have innumerable applicants for sound investments in all districts, incomes from £600 to £4,000, with and without panel. Correspondence invited from prospective Vendors. — THE MEDICAL AGENCY (W. H. Grant), Watergate House, 15, York Buildings, Adelphi, W.C.2.

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Lancs Town.—Middle and working-class PRACTICE on sale. Panel 1,475. Receipts £1,500. Premium 1½ years' purchase. Suitable house on sale or rent.—Address, No. 715, B.M.A. House, Tavistock Square, W.C.1.

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Stockton Rd., West Hartlepool.—VILLA for sale, vacant, containing surgery and waiting room, dining and drawing rooms, kitchen, etc., on ground floor; 9 bedrooms, bath, electric light, large garden. Price £1,675 freehold.—BELL & SON, Surtees Street.

Superior Apartments in professional house offered Consulting Physician or Surgeon. Central Hove (Sussex). Excellent position, every convenience.—Address, No. 720, B.M.A. House, Tavistock Square, W.C.1.

Wimpole Street (best part).—A remarkably fine SUITE OF ROOMS to be Let, suitable for radiologist. Two very large rooms, which can hold complete modern installation for every form of diagnosis and treatment, and dark room. Smaller consulting room and use of waiting room. Rent moderate.—Address, No. 431, B.M.A. House, Tavistock Square, W.C.1.

APPOINTMENTS.—Contd.

Jenny Lind Hospital for CHILDREN, NORWICH.

Appointment of RESIDENT MEDICAL OFFICER (male). Salary £150 per annum, with board, furnished apartments, and laundry. *Candidates must be fully qualified and registered.* Duties to commence at once. Appointment to be for six months and renewable for a similar term at the expiration thereof.

Applications, stating age, nationality, and qualifications, together with copies of not more than four testimonials, should be sent to—

Bank Chambers, 30, London Street, Norwich. Mr. H. HARPER SMITH, Hon. Secretary.

Hospital of St. John and St. ELIZABETH,

60, Grove End Road, London, N.W.8.

There is a vacancy for the post of ASSISTANT SURGEON at the above Hospital. Candidate must be a Fellow of the Royal College of Surgeons of England. Duties include charge of beds. There is no Out-patient Department. Applications, with copies of three testimonials, must reach the Secretary, from whom further particulars may be obtained, on or before Monday, February 11th.

F. DUDLEY HOBBS, B.A., Secretary.

East Ham Memorial Hospital, Shrewsbury Road, E.7.

Applications are invited for the post of HONORARY ASSISTANT PHYSICIAN to this New Hospital containing 100 beds.

Applicants must be a Doctor of Medicine of a University of Great Britain or Ireland, or a Member of the Royal College of Physicians, and must not be engaged in general practice.

Applications, together with copies of three recent testimonials, must be sent to the Secretary (from whom all particulars can be obtained) not later than February 12th.

Victoria Hospital for Sick CHILDREN, HULL.

RESIDENT HOUSE PHYSICIAN (lady) required. Experience in laboratory work desirable. Salary £80 per annum. 105 beds. Applications (with copies of recent testimonials), stating age, qualifications, and other particulars, to be *sent to the Secretary* not later than Thursday, February 14th.

Charing Cross Hospital.

There is a vacancy for an HONORARY CLINICAL ASSISTANT in the X-ray Department of Charing Cross Hospital. Candidates should have, by preference, the qualification of D.M.R.E.(Cambridge), and should submit their applications to the undersigned not later than Wednesday, February 20th.

Charing Cross Hospital, Strand, W.C.2. PHILIP INMAN, House Governor.

Royal Free Hospital.

EASTMAN DENTAL CLINIC.

APPOINTMENT OF DIRECTOR.

Applications are invited for position of Director, at salary to be agreed upon.

Intending candidates must not be more than 50 years of age.

The Directorship is a whole-time appointment and the Director will not be permitted to engage in private practice. Candidates must be Graduates of a British College of Medicine and Dentistry, and qualified to practise in Great Britain or Ireland.

Previous experience in Children's Dentistry is essential. Experience in Public Health work will be considered advantageous. Term of appointment will begin about October 1st. Detailed information with reference to Clinic may be obtained by application to the undersigned.

Intending candidates must state qualifications and details of career, and supply three professional references. Applications must be received before March 1st.

By Order of the Weekly Board,
Royal Free Hospital, Gray's Inn Road, W.C.1. REGINALD R. GARRATT, Secretary.

Woolwich and District War MEMORIAL HOSPITAL,

Shooters' Hill, London, S.E.18.
(General Hospital. 112 Beds.)

The Appointments Committee invite applications, from suitably qualified candidates, for appointment as:

(*a*) HONORARY SENIOR DENTAL SURGEON, who will be selected from those applicants engaged in Dental Practice.

(*b*) HONORARY DENTAL SURGEON. Applications for this appointment are invited from fully qualified local Dentists.

(*c*) ASSISTANT PHYSICIAN TO THE RADIOLOGICAL DEPARTMENT. The Assistant Physician to the Radiological Department will be required to attend at the Hospital one day a week. An honorarium of £50 per annum will be paid in respect of this appointment.

Applications, accompanied by copies of not more than three recent testimonials, should be addressed to Mr. E. RADFORD, J.P., Secretary-Superintendent, to reach him not later than Monday, February 18th.

The Queen's Hospital for CHILDREN, Hackney Rd., London, E.2.

RESIDENT MEDICAL OFFICER required on March 31st.

The appointment is made for twelve months, and may be extended for a further period of twelve months, but cannot be held for more than two years

The Resident Medical Staff consists of the Resident Medical Officer as above, two Casualty Officers, two House Physicians, and one House Surgeon.

Salary (inclusive of panel fees) £200 per annum, with board, residence, and washing. Candidates must have held a responsible Resident appointment at a recognized Hospital, and should apply as soon as possible for forms of application, which must be filled in and returned to the undersigned on or before March 11th.

T. GLENTON-KERR, Secretary.
January 31st, 1929.
Telephone: Clissold 6305 and 2534.

The Queen's Hospital for CHILDREN, Hackney Rd., London, E.2.

President: H.R.H. The Duke of York, K.G., K.T.

ANÆSTHETIST required for attendance on Wednesday and Saturday mornings.

The appointment will be made for one year, and the holder will be eligible for re-appointment. Honorarium £25 a year. Lunch provided when required.

Applications, with testimonials, should be sent on or before March 11th to—

T. GLENTON-KERR, Secretary
'Buses 6 and 6a pass the door

London Jewish Hospital, Stepney Green, E.1.

The Council of Management invite applications for the appointment of HONORARY ASSISTANT PHYSICIAN, who will be required to attend Out-patients on two half-days weekly.

Candidates must possess the degree of M.D. or M.B., obtained by examination at a recognized University, and be Fellows or Members of the Royal College of Physicians of London, or Fellows of the Royal College of Physicians of Edinburgh or Ireland, and shall not be engaged in the practice of Pharmacy or Midwifery.

Candidates must send twenty copies of their application, with copies of three recent testimonials, to the Secretary at the Hospital, on or before Friday, March 1st.

West Bromwich and District GENERAL HOSPITAL. (150 Beds.)

Applications are invited for the posts of (1) HOUSE SURGEON, (2) HOUSE PHYSICIAN, and (3) CASUALTY HOUSE SURGEON (male). Candidates must be doubly qualified and unmarried. Salaries at the rate of £200 per annum, with board, residence, and laundry.

The appointments are for six months, and the candidates appointed will be required to take up their duties on April 1st next.

Applications, stating age and qualifications, with copies of recent testimonials, should be sent to the undersigned on or before February 14th.

By Order,
Edward St., West Bromwich. FRANK I. HANCOCK, Secretary & Supt.

Royal Cripples Hospital, BIRMINGHAM.

Applications are invited for the post of SENIOR HOUSE SURGEON. Salary £250 per annum, with allowance of £150 per annum in lieu of residence. The post is tenable in the first instance for one year, and is renewable on the recommendation of the Medical Board for a period up to, but not exceeding, three years. Candidates must be duly qualified, and must have had previous experience in hospital of both general and orthopædic surgery. Applications, with copies of three testimonials, to be sent to the undersigned.

Royal Cripples Hospital, 80, Broad Street, Birmingham. Miss CHRISTINE COX, General Secretary

Hospital for Consumption and DISEASES OF THE CHEST, Brompton, S.W.

The Committee of Management invite applications for the post of Whole-time qualified ASSISTANT in the Department of Pathology. Duly qualified women are eligible for appointment. Further particulars may be obtained at the Hospital. Salary £350 per annum. Applications, with testimonials, to be sent in on or before February 23rd. Candidates will be required to attend the meeting of the Medical Committee on Wednesday, February 27th, at 4.30 p.m.

Brompton. January, 1929. FREDERICK WOOD, Secretary.

Chesterfield & North Derbyshire ROYAL HOSPITAL.

(190 Surgical and Medical Beds.)

CASUALTY HOUSE SURGEON.

Applications are invited from fully qualified men for the above post

The appointment is for six months. Salary at the rate of £100 per annum, with board, apartments, and laundry.

Applications, stating age, with copies of three recent testimonials, should be sent without delay to the undersigned.

G. SUNNUCK, Supt. & Secretary
February 4th, 1929.

Birmingham and Midland HOSPITAL FOR WOMEN.

The Committee invite applications for the post of ACTING HONORARY SURGEON and REGISTRAR. Candidates must hold the qualification of F.R.C.S.England. Full particulars may be obtained from, and applications, with copies of testimonials, should be sent on or before February 22nd to, HUGH C. ASTON, 45, Newhall Street, Birmingham.

Birmingham and Midland HOSPITAL FOR WOMEN.

HOUSE SURGEON (man or woman) for six months from April 1st. Salary at the rate of £75 per annum. Applications, with copies of testimonials, should be sent not later than February 15th to HUGH C. ASTON, Newhall Street, Birmingham.

David Lewis Northern Hospital

Wanted, a HOUSE SURGEON for Obstetrics and General Surgery. The appointment is for six months from April 1st. Salary £1 per annum, including board and residence.

Applications and copies of testimonials to be addressed to the undersigned by February 15th.

H. LEVEY, Secretary.

St. John's Hospital, Lewisham S.E.13

A Vacancy exists for an HONORARY POSITION in PSYCHOLOGICAL MEDICINE. Particulars may be obtained from the Secretary of the Hospital, by whom applications should be received not later than February 15th.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** (*Contd.*).	**PUBLIC HEALTH** (*continued*).
EBBW VALE, MON. (*Workmen's Medical Society.*)	OAKDALE, MON. (*Medical Officer for Medical Aid Association*)	BURGH OF MOTHERWELL & WISHAW. (*Resident Medical Officer (female) for Maternity and Child Welfare Department.*)
GILFACH GOCH, GLAMORGAN. (*Workmen's Medical Scheme.*)	OGMORE VALLEY, GLAMORGAN. (*Wyndham Colliery Medical Aid Society*) (*Workmen's Medical Scheme.*)	WEST HAM UNION. (*Anæsthetist Posts at Whipps Cross Hospital.*)
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. (*Workmen's Medical Scheme.*)	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. (*Assistant School Medical Officer.*)
MARDY, GLAMORGAN. (*Workmen's Medical Scheme.*)	CORNWALL EDUCATION COMMITTEE. (*Assistant School Medical Officer—Female*)	YORKSHIRE WEST RIDING COUNTY COUNCIL. (*School Medical Inspector.*)
NEATH AND DISTRICT. (*Medical Aid Association.*)	GLASGOW EDUCATION AUTHORITY. (*Male Assistant Medical Officer.*)	

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. (*All Friendly Society Appointments.*)	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. (*All Institute or Medical Dispensaries.*)	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. (*Contract and Lodge Practice*)	Hon. Sec. Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. (*Brisbane Associated Friendly Societies' Institute.*)	Dr. E. S. MEYERS (Hon Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane	WELLINGTON, NEW ZEALAND. (*Contract Practice Appointments.*)	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
February 6th, 1929.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Bootle Borough Hospital.
(General. 100 Beds.)
DERBY ROAD, BOOTLE.

Applications are invited for the posts of SENIOR MEDICAL OFFICER (male), and TWO JUNIOR MEDICAL OFFICERS (male), for a period of six months.

Salaries £150 per annum Senior Officer, £125 per annum each Junior Officer, with board, residence, and laundry.

Duties to commence April 1st. Applications, stating age and qualifications, with copies of testimonials, to be sent to the undersigned not later than February 14th.

J. A. BEARDSALL, Secretary-Supt.

Warwick County Mental Hospital, Hatton.

JUNIOR ASSISTANT MEDICAL OFFICER wanted. Salary £350 per annum, with board, residence, laundry, and attendance. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909. Applications, stating age, etc., together with copies of recent testimonials, to be sent to the Medical Superintendent.

Resident Medical Officer required from March 31st next for STOURBRIDGE DISPENSARY (Outside patients only). Salary £250 p.a. (with prospect of further increases), with furnished accommodation. Full details supplied to applicants on request. Applications, stating age, qualifications, and testimonials, to be sent before February 16th to the Secretary, PERCIVAL D. FOLKES, Chartered Accountant, Stourbridge.

Manchester Hospital for Consumption and Diseases of the Throat and Chest.

Applications are invited for the post of HON. ASSISTANT PHYSICIAN. Candidates must be on the *Medical Register*, and Graduates of Medicine of a British University or Members of the Royal College of Physicians.

Applications, stating age, and accompanied by copies of testimonials, to be sent in not later than February 10th to—

Consumption Hospital, Hardman St., Manchester. C. W. HUNT, Secretary.

Royal Alexandra Hospital for Sick Children, Brighton.
(100 Beds.)

HOUSE SURGEON (male) required. Salary at the rate of £100 per annum, with board, lodging, and washing. Good experience, including Sun-Ray Treatment. No canvassing allowed. To commence duty on February 27th.

Applications, in writing, and accompanied by testimonials, should be sent to the Secretary, A. F. GRAVES.

Peace Memorial Hospital, Watford, Herts.

A RESIDENT MEDICAL OFFICER. £150 per annum for 6 months, eligible . . . stating age and . . three recent testimonials, should be received not later than March 1st by the Secretary. Duties to commence April 1st. No canvassing permitted.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of PHYSICIAN with charge of Out-patients at the DREADNOUGHT HOSPITAL, GREENWICH. The elected candidate will have beds allotted to him and will be appointed for twelve months, but will be eligible for re-election.

Candidates must be Doctors or Bachelors of Medicine of an University in the United Kingdom, and Fellows or Members of the Royal College of Physicians of London.

Applications to be sent in on or before February 12th to the undersigned, from whom further particulars can be obtained.

By Order,
R. E. V. BAX, Secretary.
Greenwich. January 21st, 1929.

Royal Isle of Wight County Hospital, Ryde.

A Vacancy having occurred on the HONORARY MEDICAL STAFF, the Election Committee of the Governors will proceed to fill the appointment. Applications, stating age and registered qualifications, with copies of not more than three professional testimonials, to be sent to the Secretary at the Hospital not later than Thursday, February 21st. Candidates must be engaged in practice in the Isle of Wight, and must present themselves for interview by the Election Committee at 3.15 p.m. on Monday, February 25th.

Canvassing will be a disqualification.

A. S. GORDON, Secretary.

Royal Victoria and West Hants Hospital, Bournemouth.

The Board of Management will, after the expiration of one month, proceed to appoint
An HONORARY [illegible]
An [illegible] SISTANT OPH-
An [illegible] to the Nose,
The [illegible] Department;
An HONORARY MEDICAL OFFICER to the Ultra-Violet Light Department.

Applicants for the appointment of Honorary Physician must be Fellows or Members of a Royal College of [illegible]

Applications, [illegible] age, and experience, should be addressed to the undersigned by March 1st.

Canvassing, personally or otherwise, will disqualify.

By Order of the Board of Management,
GORDON M. SAUL,
January 28th, 1929. Secretary.

Royal Victoria Infirmary, Newcastle-upon-Tyne.

The House Committee of the Royal Victoria Infirmary, Newcastle-upon-Tyne, invite applications for the post of REFRACTION CLERK to the Ophthalmic Department from the beginning of March to December 31st, the appointment being renewable yearly.

Candidates must be registered in Medicine and Surgery, and will be required to attend on three mornings of the week—namely, Monday, Thursday, and Saturday.

The remuneration will be at the rate of £150 per annum.

Applications, stating age and qualifications, together with copies of two testimonials, should be sent to the House Governor and Secretary not later than Saturday, February 16th.

S. DUNSTAN,
House Governor and Secretary.

Derbyshire Royal Infirmary, Derby.

(General Hospital, 338 Beds.)

Applications are invited for the post of ASSISTANT HOUSE SURGEON & CASUALTY OFFICER (male).

Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for six months. Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials, to be sent to the undersigned not later than February 15th.

Duties will commence on March 1st.

WALTER BANKS,
Jan. 17th, 1929. Supt. & Secretary.

The Willesden General Hospital, Harlesden Road, N.W.10.

The Executive Committee are prepared to receive applications for the appointment of an HONORARY OPHTHALMIC SURGEON, who will be expected to take charge of Out-patients.

Candidates must be Fellows of the Royal College of Surgeons of England. They will be required to interview the members of the Medical Committee, whose names and addresses can be obtained on application to the undersigned, and to submit 30 copies of their application and testimonials, which must be received not later than Monday, February 11th, by—

R. J. HEARNE,
January 12th, 1929. Secretary.

Royal Northern Hospital, Holloway, London, N.

Applications are invited for the post of HOUSE SURGEON. The appointment is for nine months (six months House Surgeon and three months Casualty Officer) from March 15th. Salary at the rate of £70 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent by February 16th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER, Secretary.

St. John Ophthalmic Hospital, Jerusalem, Belonging to the Order of St. John of Jerusalem.

The office of SUB-WARDEN will be vacant in June next. Candidates, who must be qualified Surgeons of the male sex, are invited to write for full particulars of the post to the Honorary Secretary, Ophthalmic Hospital, St. John's Gate, Clerkenwell, E.C.1.

Cardiologist.—Applications are

invited for the post of HONORARY CARDIOLOGIST to ST. PAUL'S HOSPITAL, Endell Street, W.C.2. Days of attendance can be arranged by mutual agreement.—Apply, Secretary, St. Paul's Hospital, Endell Street, London, W.C.2.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

NURSES

MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

THE NURSES' ASSOCIATION
(In conjunction with the MALE NURSES' ASSOCIATION),
29, York St., Baker St., London, W.1.
Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

ST. LUKE'S HOSPITAL.

FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

THE

NEW MENTAL NURSES CO-OPERATION,

139, Edgware Road, Marble Arch, W.

Specially trained Nurses for Mental and Nerve cases. (All Nurses are insured under the Employers Liability Act, 1906.) Apply the Supt.

Telegrams: "Psyconurse, Padd., Lond." *Telephone:* No. 6105 Padd.

Seaport Town, North-West

ENGLAND.—PARTNER required in old-established Practice. Receipts about £3,500 per annum. Third share for disposal.

DEATH VACANCY, NORTH-EAST COAST OF ENGLAND.—Well-established. Receipts £1,030 per annum. One year's purchase.

PRACTICE FOR SALE IN YORKSHIRE.—Large Town.—Receipts £1,640. Panel 1,800. Nice house, which can be rented.

For further particulars apply to—

R. SUMNER & Co., Ltd.,
Wholesale Druggists,
40, HANOVER ST., LIVERPOOL.

West London Hospital, Hammersmith Road, W.6. (226 Beds.)

Applications are invited for the post of HONORARY OBSTETRIC REGISTRAR for a period of one year. The holder of the post is eligible for re-election annually for a total period of not more than three years. The duties include the preparation of the Obstetric Registrar's Report for the year, and the supervision of the records of cases. The candidate appointed must be available as a substitute for the Surgeon and Assistant Surgeon for Diseases of Women, and for emergency operations when required, and be prepared to undertake such teaching for the Post-Graduate College as the Board may approve.

Candidates are required to be registered under the Medical Act; to send applications to reach me not later than Monday, February 18th; to attend the Medical Council Meeting on Friday, February 22nd at 4.30 p.m., and prior to that date to call upon and send copies of application and testimonials to each Member thereof; to abstain from canvassing, but nevertheless to send copies of application and testimonials to each Member of the Board of Management, at whose Meeting on Tuesday, February 26th, at 5 p.m., candidates must be in attendance.

H. A. MADGE, Secretary.

Manchester and Salford Hospital for Skin Diseases.

HOUSE SURGEON.

Applications are invited for the post of House Surgeon. Must be registered. The appointment is for twelve months. Salary £100 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned, Quay Street, Manchester, on or before Wednesday, February 20th.

JOHN NALL, Secretary.

THE OLDEST AND LEADING MEDICAL AGENT

PERCIVAL TURNER,

(Established 50 years.) LTD.
4 & 5, ADAM ST., STRAND, W.C.2.
Telegrams: "EPSOMIAN, LONDON."
Telephone: GERRARD 0399.

Terms post free on application.

London, N.W.—Death Vacancy. About £500 p.a. Visits 3/6. No mids. Panel about 550. House, 3 bed., etc., to rent.—No. 8415.

Staffordshire.—Over £1,000 p.a. Very little night work. No panel. Fees 5/6 up. Good house and garage. Seven bed-rooms, etc.—No. 8412.

Mediterranean Port.—About £1,100 p.a. Appts. £100. Visits 10/-. No panel. Mostly English. Good flat. Premium £1,000, on easy terms.—No. 8411.

Home Counties.—£4,500 p.a. 1/4 share for sale. No panel. Visits 5/- to 21/-. Mids. 5 gns. up. Scope for surgery. Partner to be F.R.C.S.—No. 8409.

West End.—1/3 share in Electro-therapeutic, Sunlight, and X-ray PRACTICE. About £1,400 p.a., including profit rentals. Cons. from 2 to 5 gns. Treatments about 1 gn. Prem., including share in all furniture and X-ray equip., £550.—No. 8368.

Co. Durham.—Death Vacancy.—£1,050 p.a. Visits 3/6 to 10/6. No panel, but scope. Mids. 2 gns. up. Good house available.—No. 8414.

Devonshire.—£1,590 p.a. 1/3 or 2/5 share for sale after preliminary assistancy. Panel over 2,000. Ultimate succession. Good house available.—No. 8405.

London, N.—Lock-up.—About £700 p.a. Panel over 500. Mids. 3 gns. Visits 3/6 up. Two rooms, rent 35/- p.w. Premium £900 or offer.—No. 8402.

Nottinghamshire.—Increasing NUCLEUS £600 to £700 p.a. Mids 5 gns. up. Visits 3/6 to 21/-. Small pane Corner house to rent. Prem. £900.—No. 839

Lancashire.—About £2,000 p.a Panel 2,500. Appts. nearly £200 p. Visits 3/6 to 5/-. House, 4 bed., etc., to ren —No 8391.

N. Wales.—Share worth about £700 net. Panel about 2,500. Collier £400 to £500 p.a. Mids. 2 gns. House, 3 beds., and large garden, with tennis court, to rent.—No. 8389.

Lincolnshire.—About £1,370 p.a. Unopposed. Panel and appts. about £500 p.a. Mids. 3 gns. Fees 4/- to 6/- House, 6 bed., etc., good garden, with garage to rent.—No. 8386.

Kent.—Average £1,250 p.a. Mids. 7½ gns. up. Visits 7/6 to 21/- Non-panel. House, 5 bed., etc.—No. 8380.

Western County.—£600 to £700 p.a. Unopposed. Clubs and appts. over £100 p.a. Fees 3/6 to 12/6 Panel about £300 p.a. Good house and garden. Premium, house and practice, £2,100.—No. 8375.

Co. Durham.—About £700 p.a. Visits 3/6. Mids. 2 gns Panel 652 House, 3 bed., etc., to rent.—Apply, No 8351

South Wales.—Residential.—£1,600 p.a. Panel 450. Fees 5/- to 21/ Corner house, 6 bed., etc.—Apply, No. 8318

Within 12 miles London North.—£1,500 p.a. Panel 800. House, 3 recep., 6 bed. Separate surgery, etc. Over one acre garden.—Apply, No. 8344.

London, S. E.—£1,800 p.a. Cash and panel of 1,845. 1/3 share for sale. Visits 3/6 up. Very little midwifery. Flat accommodation over surgery.—Apply, No 8342

SPECIAL NOTICE.

FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants prepared to pay part of purchase money down and balance by instalments over 7 years (on the security of a Life and Sickness Policy). Full particulars on application to Mr. Percival Turner.

THE MEDICAL AGENCY

(ESTABLISHED BY J. A. REASIDE IN 1893)

WATERGATE HOUSE, 15, YORK BUILDINGS, ADELPHI, W.C.2.

Telephones { GERRARD 8954. RIVERSIDE 1254. *(Night Calls.)*

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FOR SALE.

WEST END.—Electro-Therapeutic PRACTICE, centrally situated. Well-equipped with all modern appliances. Receipts approximately £1,000 p.a. [illegible] p.a. Expenses very low. [illegible] or reasonable offer.

LO[illegible] PRACTICE in middle and [illegible] Panel about 350. Fees [illegible] or practice £750. House [illegible] £1,100. Might be rented.

NORTH OF ENGLAND.—DEATH VACANCY.—Well-established non-panel G.P. in middle and better working-class locality. Good fees. Receipts average over £1,000 p.a. Scope for physician. House for sale or would be let. Premium for practice 1 year's purchase.

SURREY.—NUCLEUS G.P., within easy distance of London, suitable for semi-retired man. House to rent. Receipts £280. Panel 160. Premium £350.

SOMERSET.—PARTNERSHIP in rural Practice, situated in charming locality. Suitable for young experienced man fond of sport, hunting, etc. Guaranteed share worth £500 p.a. *at 2 years' purchase.*

SOUTH WALES.—Seaside Resort.—Well-established growing G.P. Medium-sized house. Panel 600. Receipts £700. Price for quick sale £730. Garden, garage, and separate surgery.

SOUTH OF ENGLAND.—ASSISTANTSHIP with view to PARTNERSHIP within one year. [illegible] p. Panel 2,000. One [illegible] lish Varsity man with [illegible]

MIDDL[illegible] growing PRAC-TIC[illegible] scope for increase. Med[illegible] Fees 3 6 up. Premium 1½ years' purchase.

If the investment you are seeking is not advertised here, let us know your wants, and we will gladly forward details of others suitable to your requirements.

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1. S.E. COAST.—Partnership in non-dispensing Practice, over £3,800, in residential town. Good house to rent. Share worth £1,500 at 1½ years' purchase.

2. SOUTH OF ENGLAND.—Partnership in non-dispensing Practice, £4,200 p.a., in attractive watering place. Panel about 1,800. Incoming Partner must be F.R.C.S.Eng. or M.D., F.R.C.S.Ed. One-fourth share at 2 years' purchase (Preliminary assistantship.)

3. SOUTH COAST.—Health Resort.—Practice about £900 p.a. (including appointments about £155). No panel or midwifery. Suitable house or flat. Premium £1,500

4. Nr. NEWCASTLE-ON-TYNE.—Old-estab. Town PRACTICE over £800 p.a. Panel 440. Pleasantly situated house (4 bedrooms) to rent. Plenty of scope. Prem. 1½ years' pur.

5. CO. DURHAM. — Practice of £1,460 in growing suburb of seaport town. Panel 646. House (5 bedrooms) on main road to be sold or let. Premium 1½ years' purchase.

6. S. WALES.—Non-dispensing Practice in large seaport town. Receipts for past 3 years averaged £1,543 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,500.

7. GLOUCESTERSHIRE.—Country Practice averaging £535 p.a. Panel 450. Convenient (small) house, and excellent garden, 1 acre. Garage small car. Premium, house and practice, £3,000.

8 LANCASHIRE.—Practice averaging over £3,700 p.a. in first-rate town. Panel 2,600. House (4 bedrooms) to be sold or let. Premium 1½ years' purchase.

9 LONDON, N.W. — Partnership in non-dispensing Practice in outlying residential district. No panel. Suitable house for sale. Share worth about £1,000 p.a. for disposal. Premium 2 years' purchase.

10 HOME COUNTIES. — Practice averaging £1,050 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, practice, £1,500.

11 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first-rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. Premium one-third share 2 years' purchase.

12 LONDON, E.—Rapidly increasing Lock-up PRACTICE in populous district. Receipts, 1928, £780. Panel 570. Rent £50. Premium £350.

13 HOME COUNTIES.—Partnership in Practice over £8,000 p.a. in country town. Incoming Partner must be well qualified (preferably University man) and have held Hospital appointments. One-fourth share at 2 years' purchase

14 HOME COUNTIES. — Non-dispensing PRACTICE about £1,300 in residential district, adjoining first-rate town. Practically no panel. Modern house (5 bedrooms) for sale. Golf, fishing, etc. Premium £1,650.

15 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. Houses to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

16 MIDLANDS.—Country Practice averaging nearly £1,500 p.a. in beautifully situated village easy reach of several good towns. Panel 600. Large modernized house, with electric light, gas, etc., for sale. Sport. Premium £1,900.

17 LONDON, W. — Practice (carried on by Medical Woman) in suburban district. Receipts 1928, £555. Panel 360. House (5 bedrooms, etc.) to be sold or let. Premium £750.

18 EAST COAST.—Practice (suitable for two) in small watering-place. Receipts £2,800 p.a. (including [illegible] worth about £500 p.a.). Very little opposition. Two houses to rent. Premium 1½ years' purchase.

19. X-RAY and ELECTRO-THERAPEUTIC PRACTICE in important town. Receipts last year £1,450. Detached house for sale or rent. Premium £1,500.

20. S. OF ENGLAND.—Ear, Nose, and Throat PRACTICE in a watering-place. Receipts average over £650 p.a. (one day a week only). Income easily doubled by one [illegible]. Premium £750.

21. NORTHUMBERLAND. — Practice averaging £424 p.a. in small pleasantly situated country town. Panel 70. House (8 rooms) to let. District is growing and there is plenty of scope for increase. Premium £450.

22. DEATH VACANCY.—SUNDERLAND.—PRACTICE averaging £1,050 p.a. in large seaport town. Small panel. Excellent commodious house in best part to rent.

23 HOME COUNTIES.—Partnership in Practice about £8,000 p.a. in growing residential watering-place. House (4 bed and dressing rooms) to rent. Partner must be well qualified (Oxford, Cambridge, or London). Premium one-third share 2 years' purchase.

24 HOME COUNTIES.—Practice about £1,000 p.a. in good residential district within 25 miles of London. Large house (9 bedrooms) for sale. Premium £2,000.

25 N.W. ENGLAND.—Partnership in Practice about £3,500 p.a. in seaport town. Panel [illegible]. Choice of two houses to rent. Premium one-fourth [illegible] share 2 years' purchase.

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Practices and Partnerships for Disposal (continued).

26 UNIVERSITY TOWN.—Partner required in Practice about £5,100 p.a. Panel over 2,000. Partner should have held good Hospital resident appointments. Premium two-fifths share 2 years' purchase.

27 SOUTH MIDLANDS. — Practice about £1,150 p.a. in county town. Panel 485. Good house (7 bedrooms), with garage and garden, for sale. Very good Hospital.

29 GLOUCESTERSHIRE.—Country Practice averaging £654 p.a. (Elevation 600 feet). Near two good towns. Panel 500. Large house, with garden and paddock, for sale. Scope for increase. Premium £800.

30 N. MIDLANDS.—Practice worth between £600 and £700 p.a. in residential district on outskirts of first-rate town. Small panel offering plenty of scope. Excellent modern house to rent. Premium £750.

31 SOUTH AFRICA. — Old-estab. Practice. Receipts last year £1,816. Travelling and midwifery light. Climate ideal—no tropical diseases (altitude nearly 5,000 feet). Delightful residence (5 bedrooms), in perfect order, with 2 acres grounds. Excellent scope. Local Hospital. Premium £1,200, with option to purchase house.

32 MIDLANDS.—Partnership in middle-class Practice averaging £5,450 p.a. in flourishing and growing town. No panel and little midwifery. Applicant should be between 25 and 40 years of age, and preferably, though not essentially, a University Graduate. Premium one-fourth share (ultimately increasing to one-half) 2 years' purchase.

33 S. WALES.—Practice worth over £700 p.a. (chiefly panel and appointments) in small seaside town. Small house (3 bedrooms), to rent. Premium £700 cash.

34 S. WALES.—Practice over £1,200 p.a. in small country town, amidst beautiful scenery. Panel about 500. Old-fashioned house, with garage and garden. Cottage hospital. Premium £1,500.

35. OPHTHALMIC PRACTICE over £1,200 p.a. Consultations usually £2 2s. Scope for considerable increase.

36 S. MIDLANDS.—Practice over £1,700 p.a. in country town 100 miles from London. No panel, appointments, or midwifery. House (5 bedrooms), with garage and garden, for sale. Premium—Practice 1½ yrs.' purchase.

37 N. WALES COAST. — Partner required in old-established Practice. Receipts over £5,650 p.a. Panel over 2,000. Modern house (8 bedrooms, etc.) to rent. Premium for one-half share £4,000, part cash. Applicants must have held H.P. and H.S. appointments.

38 CHESHIRE. — Partnership in old-estab. Town Practice near Manchester. £3,000 p.a. (not including appointments). Panel over 2,000. Third share at 1½ yrs.' purchase. Short preliminary assistantship if preferred.

39 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 15 acres of land for sale. Premium, practice, 1½ years' purchase.

40 LONDON, S.E. — Partnership in well-established Practice of £1,900 p.a. in good residential district. Exceptionally well-built detached house (6 bedrooms) to be rented. One-half share at two years' purchase. Good scope.

41. N. DEVON. — Partner required (after preliminary assistantship) in Practice worth £3,000 p.a. in first-rate country town. Panel over 2,100. Well-equipped Hospital. One-third share to suitable man at 2 years' purchase.

42 MIDLANDS.—Country Practice of over £1,000 p.a., within 5 miles of good town. Panel 551. Comfortable and convenient house (5 bedrooms, etc.), with electric light, central heating, and acre garden, for sale. Premium, practice, 1½ years' purchase.

43 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. No panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

44 LONDON, E.—Partnership in exceptionally old-established Practice averaging over £3,500 p.a. Good fees and appointments. Two-fifths share for disposal at 1½ years' purchase, or one-third could be purchased at first. Small house may be bought or rented at a moderate figure.

45 SOUTH OF ENGLAND. — Practice about £900 p.a. in first-rate seaport town. No panel or midwifery, but ample scope. Well-situated house to rent. Premium £1,500.

46 NURSING HOME. — CROYDON. — Receipts about £2,000 (profit £650). Large well-situated house. Premium, to include goodwill and freehold, £3,250.

47 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. Partner should be keen worker and a good surgeon. One-third to two-fifths share at 2 years' purchase.

48 MIDLANDS. — Practice about £350 p.a. in manufacturing village. Panel 190. House (4 bedrooms, etc.), and one acre of garden. Premium—Practice and house, £2,000.

49 SUFFOLK.—Country Practice averaging £360 p.a. in beautiful agricultural district. Panel 300. Very attractive residence (5 bedrooms, etc.) in half acre garden, etc., for sale. Premium—Practice £540.

50 N. WALES. — Seaside Practice, approximately £500 p.a. Furnished house (4 bedrooms) to rent, or others to rent or purchase. Premium £500 for quick sale.

51 SOUTH AFRICA (NATAL). — Practice over £1,000 p.a., including appointment (District Surgeon) £200. House (4 bedrooms, bathroom, etc.), 2 acres garden and land. Price for House and Practice £3,000.

52 PEMBROKESHIRE. — Practice about £1,000 p.a. in small town. Panel 361. Well-situated house (7 bedrooms) to rent. Scope for increase. Premium £1,500. Preliminary assistantship if desired.

53 SUSSEX. — Country Practice about £300 near coast. Picturesque house (3 bedrooms), with garden, for sale. Premium—Practice £300.

54 NORTH WALES. — Country Practice averaging £1,230 p.a. in Welsh-speaking district. Panel over 530. Centrally situated house (5 bedrooms). Premium one year's purchase.

55 S. WALES. — Easily worked Panel and Contract PRACTICE over £1,000 p.a. in colliery district. Small house (4 bedrooms) to rent. Premium one year's purchase.

56 N. KENT.—Practice averaging £286 p.a. in industrial district offering enormous scope. Small panel. House to rent. Premium £430.

57 ESSEX. — Practice averaging £1,216 p.a. in outlying district—30 minutes by rail from London. Panel 550. Nice detached house (5 bedrooms) for sale. Premium for practice 1½ years' purchase.

58 N. LONDON.—Practice of between £950 and £1,000 p.a. Small panel. No midwifery. Detached corner house (7/8 bedrooms) for sale. Premium—Practice 1½ years' purchase.

59 MIDLANDS. — Partnership in Practice over £2,000 p.a. in good town. Panel 1,800. Good house (5 bedrooms) available. Partner should be able to undertake major operations. Well-equipped hospital. One-half share for disposal.

60 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. Panel over 1,400. Partner should be good at midwifery. Premium one-third share 2 years' purchase.

61 YORKSHIRE (N.R.).—Partnership (with view to succession) in Practice about £1,000 p.a. in small country town. Panel 420. Good rooms available. One-half share at moderate premium. Scope for minor surgery.

62 N. YORKSHIRE. — Country Practice worth about £500 p.a. in agricultural district. Panel over 200. Modern house (6 bedrooms) for sale. Premium, practice £500.

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2. LONDON, S.E. (CROYDON AREA).—Old-established rapidly increasing middle-class PRACTICE. Income for immediate past year over £1,300, including panel of 700. Surgery fees 2/6 to 5/-. Visits 3/6 to 10/6. Thirty midwifery cases yearly from 3 to 10 guineas. Very commodious house on lease, with 11 years to run, rent £70. Premium £2,000.
3. WITHIN ONE MILE OF MARBLE ARCH.—PARTNERSHIP.—A Half Share in an old-established mixed general Practice. Average income for the last three years about £4,000. Panel of 3,250. Fees 2/6 to 7/6, visits 3/6 to 10/6, and a few at 21/-. About 30 midwiferies at from 3 to 10 guineas. Convenient house in good position. Held on lease (with no ground rent) with 25 years to run. Price £1,750. Premium £4,000. Must be Scotch or English.
4. NORTH DEVON.—COUNTRY TOWN.—A one-third share (with increase up to one-half later) in a very old-established and increasing mixed-class PRACTICE, averaging about £3,000 p.a., including panel of over 2,100, and appts. worth nearly £150. Fees 3/6 to 10/6. Midwifery 2 to 7 gns. Choice of houses. Sport of all kinds and schools. Premium 2 years' purchase, part by arrangement if necessary. Preliminary outdoor assistantship offered at a salary of £450 p.a. Scotch Graduate preferred, about 30 years of age.
5. X-RAY AND ELECTRO-THERAPEUTIC PRACTICE. — In a large Hospital Town, within 80 miles of London, a well-established connection averaging nearly £1,000 p.a. (last year £1,059) is for disposal for reasons which can be satisfactorily explained. Patients—upper and middle-class. Fees 1½ to 15 gns. House situated in pleasant position, with ample professional accommodation, and 4 rooms, dressing room, bathroom, etc. Premium £1,500. Electric plant (which has been valued) £670 extra. Vendor is on staff of Hospital (nearly 300 beds) and successor will be appointed.
6. SOUTH-EAST OF ENGLAND.—COAST TOWN.—Small but increasing PRACTICE, at present producing about £500 per annum, with good scope. Panel of 420 Suitable house available. Rent £52 p.a. Premium £500, part down, and balance by instalments.
7. PARTNERHIP.—The Third share of a very old-established mixed-class Practice, in a pleasant London suburb, is for disposal owing to the retirement (through ill health) of the Junior partner. Held 24 years by remaining. Cash receipts average about £2,700 p.a., including appts. producing £340 and panel of 1,000. Visits 3/6 to 21/-. Good house available, with ample accommodation. Rent £85 on lease. Premium 2 years' purchase. Excellent scope.
8. NOTTINGHAM.—Good middle-class PRACTICE offering good scope and having small panel which could be largely increased. Gross cash receipts about £400 per annum. Fees 3/6 to 21/-, medicine extra Very good modern corner house in pleasant residential district. Rent on lease £80 p.a. Premium £500.
9. ESSEX.—SMALL COUNTRY TOWN.—Well-established and increasing PRACTICE, producing for the past twelve months £768, including panel of 525, and appointments worth over £60 p.a. Advice and medicine chiefly 3/6 to 7/6, visits 3/6 to 21/-, medicine extra. Mids. (discouraged) 2 to 5 guineas. Exceptionally nice house, with lounge hall, 3 reception, 5 bedrooms, and good professional rooms and usual offices. Hot water supply, electric light. Large garden, with tennis court. Garage for two cars. All in perfect order. Price for freehold £3,100. Premium 1½ years' purchase.
10. LANCASHIRE.—SUBURB OF LARGE TOWN.—Old-established PRACTICE, held by Vendor 30 years. Average income for the past twelve months £1,500, including panel of nearly 1,500. Fees 2/6 to 10/-. Very good house, standing in its own grounds, and containing 3 reception, 4 bedrooms, dressing room, 3 professional rooms. Central heating. Electric light. Garden, with greenhouse. Garage for 3 cars. Price for leasehold £2,100, of which about £1,500 could remain on mortgage. Premium 1½ years' purchase, part by instalments.
11. OUTLYING WESTERN SUBURB.—Old-established mixed general PRACTICE Income for the immediate past year about £2,500, including panel of between 1,400 and 1,500. Fees 3/6 to 10/6. Midwifery from 3 gns. The district is rapidly developing and there is great scope. Good house, with garden and garage. Price £2,000. Premium £3,500
12. LONDON, S.E.—Outlying Suburb.—Very well-estab. growing mixed general PRACTICE, situated in pleasant district within easy reach of town. Gross cash receipts for immediate past twelve months nearly £2,650. Panel of 2,120. Appts. worth about £60 and stated to be transferable. Fees 2/6 to 7/6. Midwifery from 3 gns. (about 40 cases yearly. Moderate expenses Seven-roomed house, with kitchen, 2 waiting rooms, dispensary, and consulting room. Garden. Brick-built garage. Price for freehold £1,500. Premium £4,500.
13. SOUTH OF ENGLAND.—FAVOURITE SEASIDE RESORT.—Mainly better-class PRACTICE, producing for the last twelve months about £700, and rapidly increasing. Panel of 150. One appt. worth about £40 p.a. Fees 3/6 to 7/6. Only a few cases of midwifery 2 gns. upwards. Good house in excellent repair, with 2 reception 5 bedrooms, etc. Electric light. Garden. Garage. Price for freehold £2,300. Premium £1,400.
14. MIDLANDS.—UNOPPOSED COUNTRY PRACTICE, situated in good hunting centre. Gross cash receipts for past 12 months about £1,000 p.a., including panel of 600. Advice and medicine from 3/6, visits 3/6 upwards, with medicine extra. Lowest midwifery 2½ gns. Exceptionally attractive house, with oak panelling, etc., 2 reception, 10 bedrooms, and professional rooms. Well-stocked garden of 1¼ acres, and 12 acres of grassland. Recently re-decorated throughout. Electric light. Price for freehold £4,500, of which £2,200 could remain on mortgage. Premium 1½ years' purchase.
15. CHANNEL ISLANDS.—Old-established general PRACTICE. Present income approximately £700, but large scope. Advice and medicine 3/6 to 10/6, visits and medicine 5/- to 15/-. Midwifery refused. Commodious house, with 2 reception, 6 bedrooms, etc. Vendor's freehold. Good schools. Price for practice and house £3,000.
16. WEST OF ENGLAND.—Very easily worked unopposed Country PRACTICE. Gross cash receipts for immediate past 12 months £657, including panel of 500. Fees from 2/6 to 12/6. Midwifery 3 to 5 gns. Nice house, with 2 reception, 6 bedrooms, etc., professional rooms. Large garden and paddock. Price for freehold £1,200 Premium 1½ years' purchase.
17. LANCS.—In a rapidly growing good-class suburb of large town (pop. nearly 200,000), a very old-estab. PRACTICE, held by Vendor over 30 years, and averaging about £900 p.a., including Union (£80, with prospect of increase shortly) and panel of nearly 1,000. There is a surgery in centre of town to which bulk of practice and panel work is attached. Private residence contains 2 reception, 3 bedrooms, bathroom, etc., and small garden. Both Vendor's properties. Price £1,750, £900 on mortgage, or would be rented. Prem. 1½ yrs' pur.
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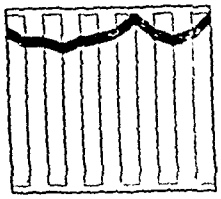

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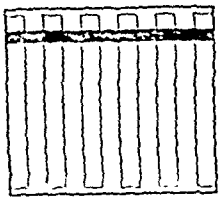

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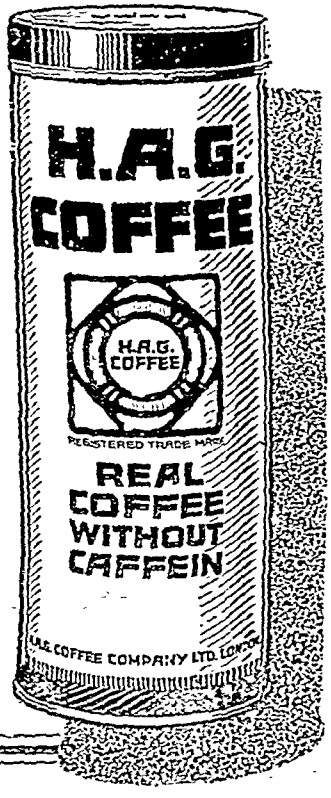

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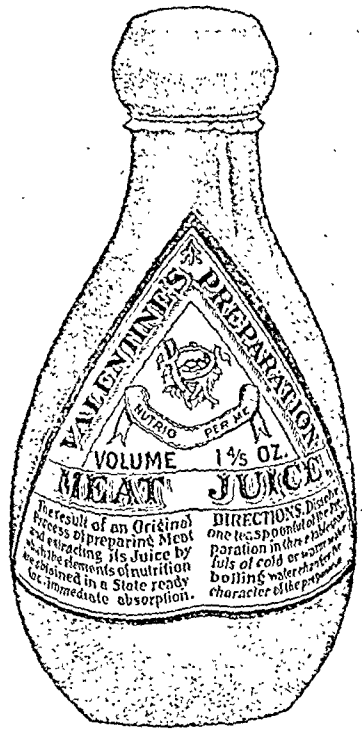

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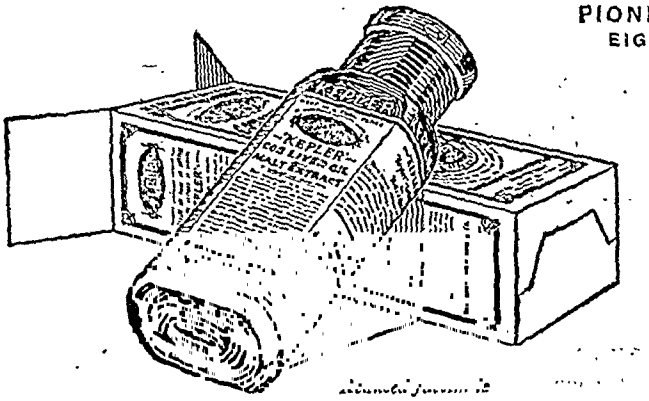

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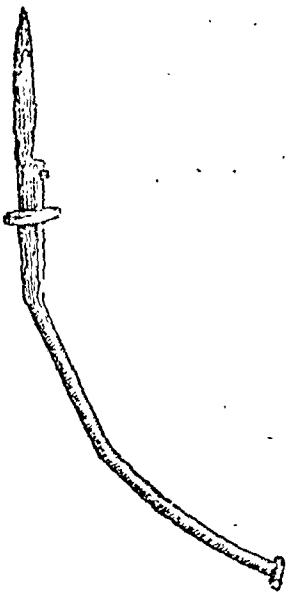

HAND PLOUGH USED BY THE YAMATO PIONEERS, WHO, BY SETTLING DOWN TO AGRICULTURAL PURSUITS, MADE POSSIBLE JAPAN'S FURTHER PROGRESS TOWARDS CIVILISATION.—Desire to possess the alluvial plains of Japan would seem to have been the incentive which drew the conquerors from the mainland of Asia. In stirring up his companions to accompany him upon an invading expedition, Jimmu the legendary founder of the Empire, referred to the islands as "the land of fair rice-ears of the fertile reed-plain." The Yamato set themselves, with great energy, to reclaim land for rice cultivation, and some of their most important laws were directed against crimes which damaged the crops of rice. Rice was then, as now, the staple Japanese food, and the national beverage, saké, has been brewed from it from the earliest times. The cultivation of rice became the chief industry of the country and, since the preparation of the fields is an extremely arduous and complicated undertaking, much co-ordination of labour and rational organisation were involved. An ancient record gives a vivid insight into this activity in the year A.D. 6: "In this year the various provinces were commanded extensively to excavate ponds and channels to the number of eight hundred and more. Much attention was thus paid to husbandry. Therefore, the people enjoyed abundance and the Empire was at peace."

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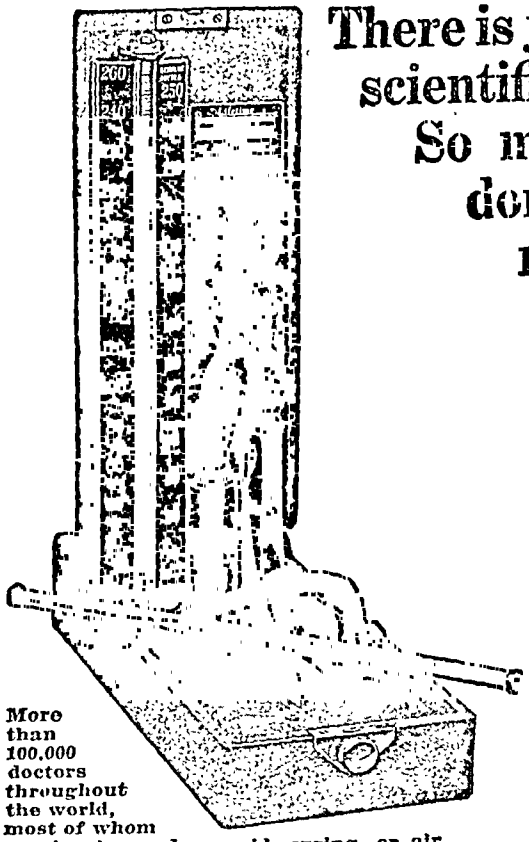

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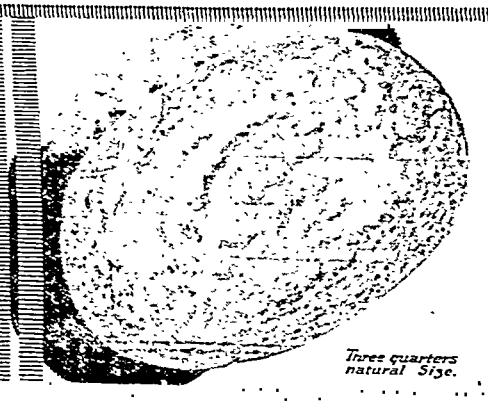

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GAYMER'S WAS FIRST SHOWN AT THE BRITISH MEDICAL ASSOCIATION EXHIBITION OF 1898.

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TRADE MARK SALVITAE BRAND

A FORMULA THAT DEMONSTRATES ITS SCIENTIFIC VALUE

INFLUENZAL "COLDS."

Alkaline therapy in some form has given the best results in all the recent epidemics of influenza and colds. The particular form of alkaline therapy represented by the administration of SALVITAE has always when given a fair trial, proved to be the most dependable resource of all.

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Absorbs Intestinal Toxins

Over thirty-six separate poisons have been found in the intestinal tract in cases of alimentary toxemia. These consist of bile acids and alkaline wastes secreted by the intestinal mucous membrane, in addition to a variety of bacterial ptomaines and toxins.

Nujol is a highly active solvent. If it be shaken with a watery solution of indol, more than half the indol is quickly taken up. Nujol readily dissolves these waste and poisonous substances, many of which are more soluble in liquid petrolatum than in water.

Thus Nujol, which is not absorbable, takes up a very considerable portion of toxins found present in the intestinal tract and prevents their absorption into the body. The brownish colour of Nujol as seen in the stool is due to the substances which it holds in solution.

Laxatives which liquefy the intestinal contents and provoke anti-peristalsis, frequently increase the absorption of intestinal toxins. Nujol not only dissolves and removes intestinal toxins, some of which are highly active poisons even in minute quantities, but also by speeding up the intestinal rate of flow it prevents their formation. Effective in all types of constipation.

Nujol

Registered Trade Mark

Distributors for NUJOL LABORATORIES

ANGLO-AMERICAN OIL CO., LTD.,
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Kaylene-ol

POST-INFLUENZAL DEPRESSION

is partly a direct effect of Influenzal Toxins, but is largely due to Toxæmia arising from the debilitated digestive tract.

KAYLENE-OL prevents Intestinal Toxæmia, and thus shortens convalescence and enables the patient to resist secondary infection.

Literature and supply for Clinical trial obtainable from the Manufacturers:

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"I have now been prescribing Bemax in my practice for well over a year, and I think it only right to let you know that I am very well satisfied with the results obtained. There is no doubt, in my opinion, that the regular addition of Bemax to the diet (even of apparently healthy individuals) leads to a sense of increased fitness and better general health. I have proved this by personal experience as well as observation on and statements from others. As regards pathological cases, I have found it particularly useful in Dyspepsia and Chronic Constipation."

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Bemax is now established as the B vitamin food. Over 25,000 members of the medical profession are taking Bemax themselves or prescribing it for their patients, with excellent results. The diseases for which medical men are prescribing Bemax are Constipation, Intestinal Toxaemia, Debility, Neurasthenia, Rheumatism, Gastric disturbances and all forms of skin disease. In fact, any ailment due to B-vitamin deficiency. If you have not tried Bemax, a free full size tin will be sent you on receipt of your professional card.

THE BEMAX LABORATORIES, VITAMINS (1928) LIMITED
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Influenza and Capillary Tone

Another influenza epidemic finds us still without a specific preventive or a specific remedy. Fortunately, both the incidence and the course of the disease can be favourably modified by the observance of such rules as medical experience teaches.

It is essential to maintain vigorous metabolism and healthy capillary tone, whilst avoiding undue cold and damp. Adequate stimulation of the sensory nerve-fibrils of the skin, also, is of supreme importance in keeping the body's resisting power at its highest, and in increasing its recovery-capacity. For these purposes, THERMOGENE has been found by many medical men and their patients to be convenient, cleanly and effective.

Thermogene is a carefully prepared pure cotton wadding, remarkably soft and fleecy, freed from dust and other impurities, and impregnated with skin-stimulating vegetable essences.

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A full-size box of Thermogene, with an interesting booklet on Surface Therapy, will be sent FREE to any medical man who is unfamiliar with Thermogene and its many uses in practice.
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"A.B." Insulin was the first British Insulin available for use by the Medical Profession and after almost five years retains its reputation as the Insulin which can be relied on to give consistently satisfactory results. The supremacy of "A.B." Insulin is due entirely to the stringently high standards of purity, therapeutic efficiency and stability self-imposed by its manufacturers.

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Full potency and stability in all climates.
Purity and complete sterility.
Absence of reaction-producing proteins with consequent noteworthy freedom from unpleasant by-effects.

The activity of "A.B." Insulin is guaranteed by the most complete physiological tests and standardisation on the basis of the accepted unit. Before issue, each batch is passed under the authority of the Medical Research Council.

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Packed in bottles containing:

5 c.c. (100 units or 10 doses) 2/8 each
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Professor Huynen of the State Veterinary University of Brussels recently discovered that a 1% solution of Lysolats (solid form of lysol) in water arrested the developments of bacterial growth in two seconds.

A 1% solution of Lysolats was tried on the following organisms:—

B. Coli	was killed	in 40	seconds.
B. Bang	„	„	„
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These facts should be of special interest to House Surgeons and Physicians, Hospital Dispensers, Medical Officers of Health, etc. While the cresylic acid content of saponified tarry preparations is of some importance, it will be agreed that germicidal efficiency is the vital factor in the choice of an antiseptic and disinfectant. Lysolats are an antiseptic and disinfectant fulfilling the recognized standards, but with a greater germicidal power than any other known to science.

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PATENT 115667 (LYSOL TABLETS)

Lysolats are packed in handy tins containing 40 and 80 tablets (at 1/3 and 2/- respectively), and also in tins of 1,000 tablets.

The after-effects of Illness are sometimes more serious than the disease itself

Compound Syrup of Hypophosphites

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accelerates Convalescence, restores Energy and Vitality; and for over sixty years has been known as

"THE STANDARD TONIC"

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In **Vomiting** of **Pregnancy**, in the **Exhaustion** following **Hemorrhage** or **Prolonged Labor**, and before and after **Abdominal Operations** the **Ease** of **Assimilation** and **Power** of **Valentine's Meat-Juice** to **Restore** and **Strengthen** has been **Demonstrated** in

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The quickness and power with which **Valentine's Meat-Juice** acts, the manner in which it adapts itself to and quiets the irritable stomach, its agreeable taste, ease of administration and entire assimilation recommend it to physician and patient.

Physicians are invited to send for Clinical Reports.

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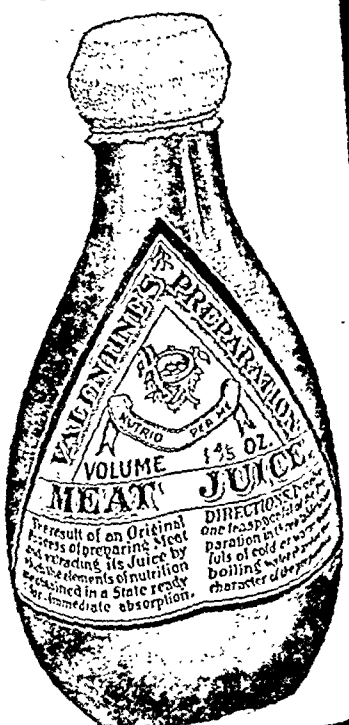

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Successful Treatment of Hyperchlorhydria

"Alocol" is a triumph of colloidal therapy, because it is completely free from the marked disadvantages associated with the usual alkaline medicaments.

Take bicarbonate of soda as an example. When in the stomach it is transformed into sodium chloride—the very product which goes to the formation of hydrochloric acid. To combat hyperacidity by such means is to create a vicious circle.

Note the different action of "Alocol." It absorbs excess of hydrochloric acid and the acid-containing mass is finally evacuated from the lower bowel. This colloido-chemical absorption removes from the system the causative acid radicle (Cl) instead of merely neutralizing it. "Alocol" thus prevents reabsorption, accumulation, and consequent recurrence of the symptoms of the disease.

"Alocol" leaves intact the acid reaction of the gastric juice and its normal digestive and bactericidal functions. It is the remedy *par excellence* for hyperchlorhydria. The absorbent, healing, and sedative properties of "Alocol" also prove of the greatest value in successful treatment of the more serious manifestations, such as gastrectasia, gastrolcosis, pyloric and duodenal ulcers, infective enteritis, etc.

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(DUNCAN.)

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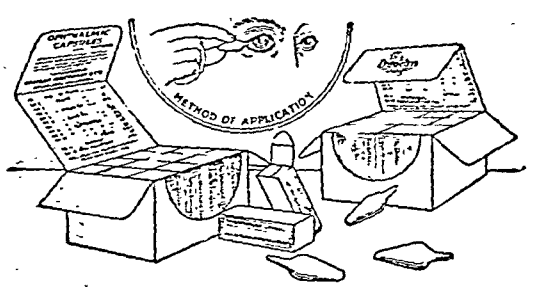

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METHYL-ASPRIODINE

BALM, 2/6 LINIMENT, 2/6 POWDER, 3/- CAPSULES, 2/6

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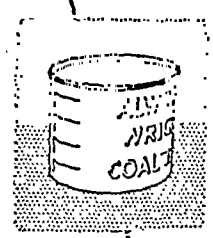
BRITISH MADE :: :: BRITISH OWNED

"LYSOL"—Your patients must always qualify the word.

To ask merely for "Lysol" is dangerous, for they may be given an inferior Lysol that will actually do far more harm than good. Tell them, for their own safety, to insist on Wright's Lysol. It gives sure results—always. It is perfectly pure, non-caustic, and causes no irritation. British owned and made under the strict Rideal-Walker control test by the makers of the world-renowned Wright's Coal Tar Soap—Producers of Disinfectants for over sixty years.

Tell your patients to say "Wright's" before saying "Lysol." That way lies certain safety and protection.



A handy graduated measure is provided with every bottle.

Streets 68

"... All of which made rapid improvement"

MANY letters are received from members of the Medical Profession testifying to the excellent restorative and stimulative properties of "New-Promonta." The following is typical:

19.11.28.

"I have had the opportunity of testing your product out in 3 cases, all of which made rapid improvement:

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"Personally I consider you have produced an excellent nerve tonic and will continue to prescribe it."

(Signed)..... M.B., Ch.B.

The most important feature of "New-Promonta" is the retention, in an absolutely unchanged form, of Lipoids, Phosphatides, and Vitamins in the exact quantities and proportions necessary to induce active cell metabolism. In all of the following, therefore, "New-Promonta" forms an exceedingly effective treatment.

(1) All forms of Neurasthenia. (2) Insomnia. (3) Various types of Anæmia. (4) After effects of Influenza. (5) Conditions of Functional Insufficiency. (6) In Illness and in Convalescence.

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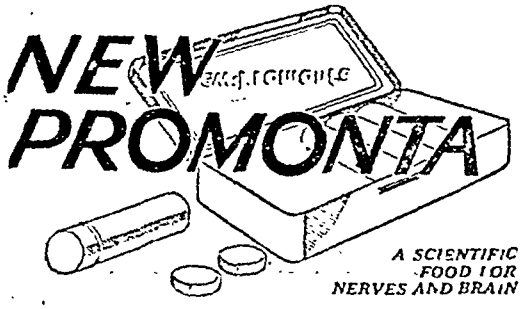
FREE SAMPLES for clinical trials are at the disposal of the Medical Profession.



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Solving a Food Problem

HOVIS

Most nourishing Bread

After all the discussions as to the relative values of white, wholemeal, and various brown breads, it is satisfactory to have conclusive evidence at last.

Following many experiments by various research workers it is shown that no bread contains so large a percentage of Vitamin B as HOVIS, or is such an active agent for healthy growth when forming the basis of the diet.

As is now well known, even a partial deficiency in Vitamin B in the diet, if lasting for any length of time, impairs health, and, with children, prevents perfect development.

HOVIS, even in small quantities, provides sufficient vitamin in a digestive form as no other bread does, and it is liked by all.

Richest in Vitamin B

HOVIS Bread consists of White Flour with the wheat germ incorporated. It is this which gives it its special value, since the germ is the part richest in the Vitamin.

The "brownness" of bread is not a measure of its vitamin content. HOVIS does not contain bran, and is easily digestible.

Note the following figures showing the Vitamin B content of milling products and yeast in 100 g. dried bread:

White Bread	200
Wholemeal Bread	1,450
HOVIS Bread	2,600

The evidence is conclusive. For providing the maximum of nourishment economically no bread equals HOVIS.

HOVIS

(Trade Mark.)

Best Bakers Bake it

HOVIS LTD., LONDON, MACCLESFIELD, BRISTOL, ETC.

UNG. SEDRESOL (Ferris).

A Valuable Sedative Antiseptic and Healing Ointment.

UNG. SEDRESOL is a combination of the products obtained by the destructive distillation of the wood and bark of the ***Betula alba*** in combination with Oxide of Zinc and Antiseptics.

It is specially indicated in Eczema, Psoriasis, Erysipelas, Shingles, Erythema, Seborrhœa, Dermatitis, Pruritus Ani and Vulvæ, and in Inflammations and Eruptions of the Skin and in Burns and Scalds.

UNG. SEDRESOL is supplied to the Medical Profession at the following prices:—
¼-lb. Jars, 1/8 each; ½-lb. Jars 3/- each; 1-lb. Jars, 5/9 each; 2-lb. Jars, 11/- each; 4-lb. Jars, 21/- each. (*Empty Jars allowed for on return.*)

SEDRESOL SOAP (Ferris).

A pure superfatted soap for the skin containing the same medication as Ung. Sedresol.
Price: 10d. per tablet, 9/6 per dozen. 30/- per dozen boxes of 3 tablets.

(The word "Sedresol" is registered under the Trade Marks Act and is the sole property of Ferris & Co., Ltd.)

FERRIS & COMPANY, Ltd.

— BRISTOL —

Wholesale and Export Druggists and Manufacturing Chemists.

Specially indicated in
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ECLAMPSIA—ALBUMINURIA

and allied conditions

Prompt and proper diagnosis of kidney conditions is necessary in cases of Bright's disease and all types of renal disorders. In nine cases out of ten the administration of a specific capable of producing real results in compensating for the loss of kidney function is also necessary.

For more than a quarter of a century Nephritin has been a sheet anchor to physicians in treating such disorders. Nephritin Tablets induce a marked increase in nitrogenous waste elimination. They reactivate the cells of the kidney, increase urinary secretion, and induce a greater output of urea. Given in sufficient dosage these tablets produce marked results, and restoration to normal is quickly stimulated.

They are invaluable also as a prophylactic in renal complications of infectious diseases and during pregna cy.

The tablets are composed of the hormones of the normal kidney as they appear in nature—*absolutely unaltered.*

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TRADE **NEPHRITIN** MARK

BRAND

DIURETIC RE-ZYME TABLETS

Manufactured by

JERSEY CITY REED & CARNRICK NEW JERSEY

Pioneers in Endocrine Therapy

Intestinal Disinfection

ALIMENTARY TOXÆMIA AND ENDOCRINE INSUFFICIENCY

A WRITER in THE LANCET has directed attention to an apparent connection between alimentary toxæmia and endocrine insufficiency, particularly of the thyroid gland. Many cases of "ill-health," neurasthenia and others, were benefited by the administration of thyroid extract.

He goes on to remark that there seems to be a close connection between endocrine insufficiency and poisoning from intestinal absorption, and notes the beneficial results obtained by the use of intestinal antiseptics in addition in these cases.

He seems to be unaware that the best of all intestinal antiseptics is Kerol. In endocrine insufficiency, therefore, use Kerol in addition to other measures.

For intestinal disinfection, use KEROL CAPSULES (keratin-coated); they contain 3 minims of Kerol. One to three capsules may be given three or four times a day after meals.

Please send for Literature and Samples, which will be sent free to any member of the Medical Profession.

KEROL LTD.
100 Ravens Lane
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Kerol Capsules

K8

"STERULES"

Regd.

FOR HYPODERMIC, INTRAMUSCULAR AND INTRAVENOUS USE AND FOR INHALATION

AMYL NITRITE STERULES are used in Angina Pectoris, and threatened fainting and collapse, with success.

The rights in the Trade Mark "Sterules" are rigidly guarded. *Complete List on request.*

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Sold in original sealed cartons containing a—

Mistol
(Registered Trade Mark)

Two-ounce Bottle and Mistol Dropper.

Made by Nujol Laboratories

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Liver Extract (BOOTS)

A highly concentrated extract of FRESH LIVER specially prepared for the treatment of

PERNICIOUS ANÆMIA

Made by a new process tested and found efficient by the Medical Research Council.
(See B.M.J. and LANCET, March 10, 1928.)

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NEW PRICES: Single Vial - 3/- Box of Ten - 30/-
Special discounts to the Medical Profession and to Hospitals.

Obtainable through all branches of Boots

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BOOTS PURE DRUG CO. LTD.,
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The Safest Local Anæsthetic for all Surgical Cases.

Ample supplies of Novocain are available for the use of Surgeons at all the chief Hospitals. Specify "Novocain" for your next operation.
Does not contain Cocaine, and does not come under the Dangerous Drugs Act.

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For the treatment of GLAUCOMA according to Dr. Carl Hamburger (Berlin).

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Specially prepared for hypodermic or intramuscular injection. It is a valuable antiperiodic.
Particularly indicated in Lymphadenoma, Lymphatic Leukæmia, Secondary Anæmia following malaria, and where gastric conditions do not allow oral administration of iron.
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Rich in essential Vitamins A, B, C, & D

VITAMALT is a scientific preparation containing the finest Malt Extract of high diastatic value, with selected ingredients rich in Vitamins. It is a well-balanced food that ensures an adequate supply of Vitamins A, B, C, and D, and corrects all ailments arising from deficiency of these vital factors. This unique combination of Vitamins has been skilfully blended to make a preparation which is easily assimilated and very pleasant to take. The regular use of Vitamalt can be relied upon to provide the necessary Vitamins, A, B, C, and D, which will help to build a healthy body with sound nerves, firm bones, good teeth, and rich blood. Vitamalt is suitable for children and adults of all ages.

PRICE 1/9 and 3/- per jar.

Obtainable from all branches of Boots

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VICHY-CELESTINS

And the other State Springs of Vichy
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¶ This Natural Alkaline Mineral Water may be prescribed with absolute confidence with regard to its purity and natural condition. It is bottled at the Springs under the most careful supervision, and to ensure fresh supplies is imported with regular frequency.

¶ The VICHY WATERS, being almost devoid of Sulphates, are most agreeable to the taste, and are daily relied upon by Physicians the world over in the treatment of Gout and Rheumatism and for Affections of the Liver, Stomach, etc.

NATURAL VICHY SALTS for Drinking and Baths.
VICHY DIGESTIVE PASTILLES prepared with Natural Vichy Salts.

CAUTION.—Each bottle from the STATE SPRINGS bears a neck label with the word "VICHY-ETAT" and the name of the SOLE AGENTS:

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And at LIVERPOOL and BRISTOL.

Samples free to Members of the Medical Profession.

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On and after FEB. 25th, 1929,

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New General Office Address of ARMOUR & COMPANY Ltd.

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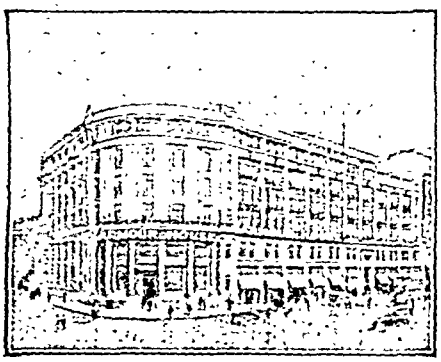

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A cordial invitation is extended to all interested to Personally inspect our Modern Equipped General Offices with up-to-date Facilities for increasing the Efficiency of the Armour Service to our Clientele.

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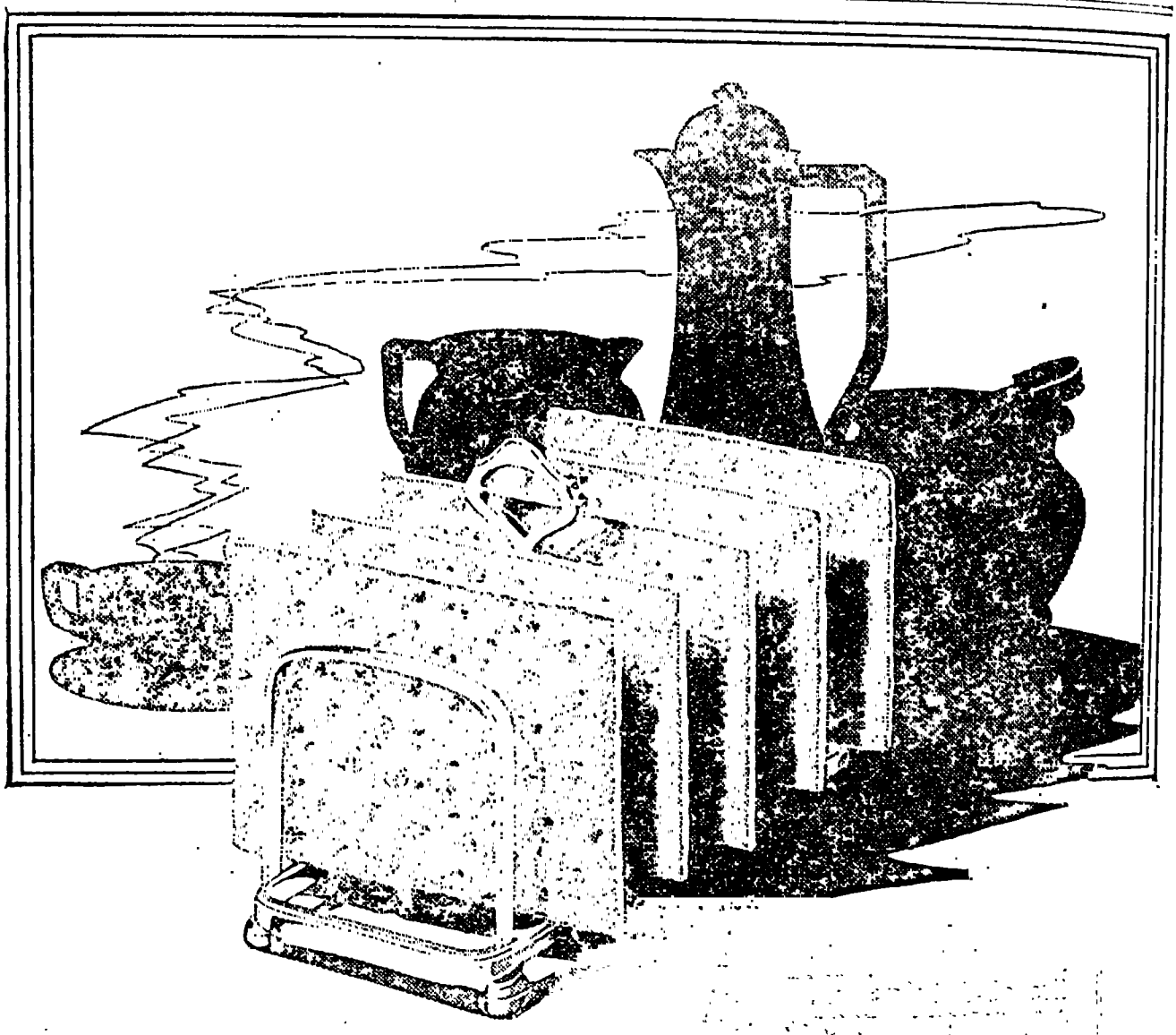

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The Huxley Lecture

ON

THE NATURE OF DISEASE.

DELIVERED AT THE UNIVERSITY OF BIRMINGHAM ON FEBRUARY 12TH,

BY

SIR HUMPHRY ROLLESTON, BART., K.C.B., M.D., HON.D.Sc., D.C.L., LL.D., REGIUS PROFESSOR OF PHYSIC IN THE UNIVERSITY OF CAMBRIDGE.

HEALTH is the state of body and mind resulting from the successful adaptation of the living organism to external and internal factors. Dis-ease (want of ease), which is a departure from this condition of equilibrium or a want of harmony, has been often defined, but the definitions have not given universal satisfaction, and, as Mercier pointed out, it is noteworthy that the fundamental concepts of other callings, such as the law, engineering, finance, and war, are also hard to define, and that this process of specification, so to speak, is not arrived at until late in their history, though their practical efficiency has not been thereby affected. Definitions are a weariness of the flesh, but it may be well to quote one out of many—that formulated by the late J. G. Adami in 1910—as it contrasts with that of health and gives a good indication of the potential variability in the reaction we call disease; it runs as follows, "Disease is a process or succession of disturbances induced by any agent which disturbs the normal activities of the organism as a whole or of its constituent parts." Into another definition—that "disease is a failure of adaptation both to conditions without the organism and within" (W. A. White)—may perhaps be read two additional points: first, that the responsible cause may be inside the body, quite independent of any extraneous factor—for example, some congenital structural defect or a functional aberration, such as "the inborn errors of metabolism" or "chemical malformations" described by Archibald Garrod: and secondly, that in the process of adaptation not only may the normal reserve power of the living body be called upon, but that in comparatively slowly developing morbid changes, such as valvular disease of the heart and narrowing of canals such as the intestine, compensatory or adaptive processes, secondary to, but keeping pace (at any rate for a time) with the morbid change, may bring about such an adjustment that there is absolute freedom from symptoms. Thus destruction of one kidney may be compensated by hypertrophy of the other, and destruction of a portion of the liver by regeneration in the remainder. Symptoms, and disease in the sense to be explained directly, will only occur when these compensatory muscular and glandular hypertrophies fail; the hitherto latent morbid change then gives rise to functional disorder—that is, symptoms. This "margin of safety" or compensatory mechanism must be borne in mind as a difficulty in attaining the desired knowledge from the study, so much insisted upon by the late James Mackenzie, of the earliest departures from health; for by the time symptoms appear the morbid changes may be well established, and the manifestations might then be wrongly regarded as functional changes leading up to, and responsible for, the structural alterations. The mechanisms which compensate or restore damaged tissues or impaired functions, though for a varying time eminently successful, tend eventually to fail and then to become harmful: thus, according to Thoma's histo-mechanical conception of arterio-sclerosis, there is in the first place a local thickening of the inner coat of the artery to obviate a bulging at a spot where it would occur as the result of degeneration of the muscular middle coat; in course of time, however, the thickened area in the intima also degenerates, and what was a compensatory process becomes a morbid lesion. Further, the compensatory and defensive powers of the body may from the outset be ineffective—for example, when inflammation, defined as "the local attempt at repair of actual or referred injury" (Adami, 1896), rapidly produces suppuration; this idea is also expressed with regard to malignant disease in George Newman and J. A. Murray's dictum that "cancer may be considered as an aberration of the process of repair."

WHAT IS A DISEASE?

To consider now in rather more detail the question, What is a disease? Primitive man is superstitious and has always regarded disease and accident as due to the action of an offended or malicious deity, of the dead, or to the machinations of an enemy, and from the last belief was derived the idea of magic and witchcraft. Disease became regarded as a definite invasion of the body, as by demoniac possession or by a more material substance, which must be allowed an exit, as by the trephining in Neolithic times, or expelled, in order to obtain a cure. This notion that the cause of disease was the presence in the body of a foreign spirit or of some concrete substance with an extra-corporeal existence or phase obviously expresses, though in less scientific terms, the more modern knowledge of parasitic and bacterial infection, and so far may be regarded as prophetically rational. To discover the cause of the disease is the aim of diagnosis, and so keen is the appreciation of this important principle that there is still a tendency to regard the cause as synonymous with its results. A not unnatural outcome of the belief that disease was a disorder with an objective reality and due to some harmful substance in the patient's body was the materialization of diseases on the lines of botanical and zoological classifications, and to arrange them in genera and species after the successful plan initiated by Linnæus. For this view Thomas Sydenham (1624–1689)—the British Hippocrates—was in part responsible. The rival *nosologies* of Felix Plater (1650), de Sauvages (1763), Vogel (1772), MacBride (1772), William Cullen (1785), Thomas Young (1813), John Mason Good (1817), and others elaborated this conception. Even now diseases are spoken of, though perhaps not seriously so visualized, as quite definite things: and it may be asked, What practical difference does it make if they are? A partial answer is that this would logically justify a rule-of-thumb practice of treating the disease rather than the sufferer. In this age of mass production and machine-made standardization, when, for example, motor cars are so alike that their disorders are of a stereotyped character, it is particularly important to insist on the obvious—namely, that human beings are made, not from one mould, but individually, differing widely in their make-up and power of response. In illness we all desire to be treated as a special problem, not as one of a crowd of Robots, and accordingly trust our medical attendants not only for their technical knowledge but also for their ability of applying it to our particular needs. Every illness is the reaction of the body and mind of the patient to some factor which in its turn may be simple or complicated; the reactions of living matter are far from constant, and those of man become more complex as he moves from childhood and the simple life of the country to maturity and the whirlpools of modern civilization. Thus a startling or offensive announcement may leave one man untouched because he is deaf; another, phlegmatic or a philosopher, may receive it in silence; whereas in a third an emotional explosion follows. This variation in the response is most dramatically seen in idiosyncrasies, such as asthma and hay fever, as the result of inhalation of horse emanations or of pollens, or of abdominal and cutaneous symptoms, as the result of eating a few specks of parsley—an example of which in four generations of a family has just been brought to my notice. As in other matters, the problem, much discussed more than sixty years ago by Handfield Jones, Wilks, and W. Broadbent, whether to treat the disease by routine methods or the patient, is best solved by a compromise of judicious combination; for to treat the man without any reference to his malady—for example, if he is weak and his strength failing to be content with giving alcoholic or other stimulants—would be to regard one side only of the shield, prone to abuse and therefore very likely to do him definite harm.

But to continue consideration of the question what is meant by a disease. As long ago as 300 B.C. Erasistratus of the Alexandrian School of Medicine regarded it as a perversion of health, of the normal processes, and not a

condition contrary or foreign to biological nature; but this was forgotten. In modern times Claude Bernard (1854) spoke of disease as a physiological reaction in altered circumstances, and Clifford Allbutt, since 1871, followed by C. A. Mercier and F. G. Crookshank, pleaded for clear thinking and the recognition that a disease is not a definite thing, like a plant, but a mental abstraction or concept of the reactions of a living organism in certain circumstances. The groups of reactions form distinct pictures in the mind and are labelled by the name of a disease.

WHAT A DISEASE IS NOT.

Before going further it may clear the ground to consider what a disease is not; although a patient is ordinarily spoken of as, say, a case of cancer of the stomach, the malignant growth is not the disease; for disease is the reaction of the *living* body in the form of functional disorders correlated with a cause, whereas the cancerous stomach persists after death. Disease, like health, is inseparable from life, and its nature and causation would no doubt be differently interpreted by those holding the vitalistic and the mechanistic explanations of life.* Further, gross structural change may exist, and yet, as the result of compensatory changes, not cause any disturbance of function or symptoms of disease; conversely, changes such as can at present be recognized by the naked eye and the microscope may be absent in disease, although it is reasonable to imagine that some alterations occur, just as they must in other forms of vital activity. Symptoms, though the manifestations of the reaction and so part of a disease, do not of themselves constitute a definite disease, for they may be due to several causes rather than to one. In the case of infective diseases the exciting cause is invasion of the body by micro-organisms, the toxins of which set up changes in the body and so the resulting reaction called the disease. But the manifestations of the reaction may be regarded as of two kinds and as possibly due to two mechanisms: (1) as Boycott points out, the general symptoms, such as malaise, fever, and headache, common to most infections, are mainly due to substances liberated from the injured cells of the tissues; (2) the manifestations specially characteristic, and so diagnostic of certain infective agents, may be due more to specific bacterial toxins—for example, tetanus toxin, acting directly on the body tissues; or conceivably, as Sidney Martin argued years ago, the bacteria may produce a ferment which acts on the cells of the body so that they manufacture a specific poisonous substance. *Symptoms* have in the past been regarded as diseases—for example, dropsy—and even in our own day it has become recognized that some conditions, such as epilepsy, are collections of symptoms due to different factors; hence it is more correct to speak of the epilepsies rather than of epilepsy. To collections of symptoms occurring in conjunction sufficiently often to render their correlation recognized, but without any constant single underlying cause, the names "syndrome" and "symptom-complex" have been applied; the distinction between a syndrome and a disease, as the words are usually employed, is to be found in their etiology. A distinction has also been drawn between "syndrome," or a collection of symptoms with a functional or anatomical basis in the body, and the more modern word "symptom-complex,"† which implies a series of clinical signs and symptoms without any consideration of their relationship to a lesion or functional disorder of an organ, or a purely clinical coincidence (Cawadias). The word "symptom-complex," which has not escaped criticism as a barbaric mixture of the two classical languages, was, according to the *Oxford Dictionary*, first used in this country in 1897. As Cawadias points out, diseases were really symptom-complexes from Hippocratic times to the era of the anatomico-clinical school of Paris and of Claude Bernard and Johannes Müller (1801–58), when syndromes formed the basis of nosological classification. The term "clinical entity" is often used as synonymous with syndrome or symptom-complex to describe a definite collection of morbid manifestations which may be due to more than one distinct cause, and so is useful as long as the causation is uncertain. It thus avoids the definite statement that the group of symptoms is specific—namely, due to one factor—in other words, a disease in the proper sense of that word. Objection has been raised, especially by the late Sir Clifford Allbutt, to "clinical entity" as a descriptive title for a morbid condition, because it tends to perpetuate the material conception of something analogous to demoniac possession. But though this interpretation may be literally justified, it is not, rightly or wrongly, the meaning widely attached to the phrase.

To sum up, a disease is not a poison, a parasite, an ulcer, or a tumour, for these are causes; it is not a symptom, such as pain; but it is the mental picture of the manifest reactions of a living organism in response to harmful factors, whether derived from outside the body or arising internally.

TRANSITIONS BETWEEN HEALTH AND DISEASE.

As disease is primarily a physiological reaction to stimulating or depressing factors of a harmful character, and a mental concept or "construct" summarizing the events which then occur, it is clear that the line dividing health and the defensive powers of the body from disease may be very indefinite. Thus if the defensive powers are high the necessary reaction may be so short and slight as to be unaccompanied by any symptoms, and the individual is unconscious of the inward struggle that has taken place; this process is indeed constantly in action, and constitutes the resistance of a healthy individual. Truly we stand in jeopardy every hour. In other instances the reaction is more marked, but so rapidly successful that the disease is aborted; it is in cases in which the reaction is prolonged or eventually fails in its purpose that disease is more decidedly present. The leucocytosis in the early stage of infection may be compared with the reactive leucocytic increase during digestion due to absorption of food. Inflammation is an entirely useful and innocent process in the healing of an aseptic wound; indeed, it comes within the four corners of Frédéric's canon of physiology—namely, that "a living being is adjusted in such manner that each perturbing influence provokes to activity a compensating apparatus which brings about neutralization and repair of the damage." No one would call this a disease, but such an inflammatory reaction may gradually become a disease; thus local peritonitis producing adhesions by shutting off an infective focus is a protective or curative process; but general peritonitis is a reaction which so often fails that the causal infection is fatal. Here it may perhaps be mentioned that somewhat similar transitions are seen in diseases which vary in the number of the symptoms; when, instead of all the symptoms recognized as making up the mental concept, a few only are present, the disease is spoken of as larval or fruste; this may be a question of time, the reaction terminating before the initial manifestations are supplemented by those necessary to complete the recognized clinical picture.

With regard to the nature of the exact vital changes which occur in disease, apart from the comparatively gross alterations revealed by the microscope, there is much to learn. The recent advances of knowledge in connexion with the constitution of the atom and the electron hold out promises of possibilities the extent of which it is difficult to forecast. The application of physical chemistry to medicine is clearly of the greatest importance, but is beset with difficulties that attempts to do so deserve sympathetic encouragement, even though they may not yet carry conviction or be confirmed. Auguste Lumière explains health as due to the maintenance of the normal colloidal state, whereas disease is the result of its disturbance causing precipitation of protein from the colloid. When this occurs in the blood stream symptoms of grave disease follow, whereas chronic disease is due to precipi-

* *Augusta Gaskell, who argues that life is due to the permeation by an immaterial system (derived from protons and electrons) of a material atomic system composed of chemical units, believes that the phenomena of cancer "constitute a striking proof" of her hypothesis.*

† *Mercier in 1917 poured scorn on "the terms syndrome, symptom-complex, and other monstrosities made in Germany" as "on a par with the exploit of the servant girl who calls a brilliant flash of lightning 'chronic' or the alienist who calls primary dementia 'dementia praecox.'" But the word (συνδρομή) was employed by the Empiric School of Alexandria, 300 B.C., to describe a series of symptoms (Crookshank, Cawadias), and was adopted by Galen.*

tion in or about the cells of the tissues and organs, the different forms of chronic disease being determined by the organ or organs forming the site of this precipitation. McDonagh in his speculative essays, which are somewhat difficult to follow, brings in the electron; he describes protein particles in the blood, some of which are charged with electrons (negative), others with protons (positive), a condition of fair equilibrium meaning health. When a poison, bacterial or otherwise, comes on the scene, the protons are reinforced and the electrons are withdrawn from the protein particles; as a result the colloid state is affected and protein particles are deposited in any one or more of the four important viscera in the following order—kidneys, brain, lungs, and liver—thus causing disease.

Evolution of Diseases.

As diseases cannot, strictly speaking, be regarded as definite "things," it might seem illogical to speak of their evolution, and it has recently been stated that a serious attempt has not yet been made to apply the doctrine of evolution to the natural history of disease (Gill). No one, however, can fail to be interested in the changes that diseases have shown in the course of time, and in the forms that appear to be new and produced in certain circumstances; as long ago as 1890 an interesting work on *Evolution and Disease* by Sir John Bland-Sutton appeared. Some sort of an explanation of the existence of disease may perhaps be suggested, as a side issue after reading Professor A. E. Boycott's recent presidential address to the Section of Pathology of the Royal Society of Medicine; in it the capacity of self-repair is emphasized as one of the main characters of living organisms, but it is pointed out that this faculty is not, or only in a very slight degree, possessed by individual unicellular organisms. Now little or nothing, if the problematic nature of bacteriophage be excluded, is known about the diseases of unicellular organisms. Diseases and the power of self-repair have both become recognizable as the scale of animal life is traced upwards, and it is conceivable that they are closely allied forms of reaction to stimuli—the one (self-repair) successful, the other (diseases) more or less ineffective. *Diseases are not rigid types, but the more or less unsuccessful reactions to harmful factors, most commonly environmental;* it follows, therefore, that they show considerable variations in their manifestations, especially as the reaction depends on two variable factors—the characters of (1) the host or the "soil," and (2) the unfavourable environmental factor, the "seed."

Changes Associated with Civilization.

1. In the course of his progress from primitive to civilized life man has undergone many changes, and his bodily reactions to external factors, and therefore his diseases, must, like the forms of his virtues and vices, have altered in a corresponding degree, for consideration of his surroundings would suggest that the further man moves from his savage state the more complex will the character of his disorders become. How much a change of type of disease has occurred it is difficult accurately to estimate, for the slow advances of medical knowledge might easily make it appear that the evolution of disease has been more recent and extensive than is really true. There has in fact sometimes been a tendency to exaggerate the differences between the diseases of primitive savages, about which knowledge is deficient, and those of highly civilized inhabitants of large capitals. The ancient records of disease, often ambiguous about the existence of conditions now fully isolated, might easily convey the impression that diseases, such as small-pox and chicken-pox, scarlet fever and measles, became distinct from each other more recently than was actually the case. The comparatively new study of diseases which can be demonstrated in human and animal remains of ancient times, or palaeopathology, in the hands of Fouquet, M. A. Ruffer, Elliot Smith, and Wood Jones in Egypt, and of R. L. Moodie in America, has thrown much light on the antiquity of disease. Thus many affections of bones, arterio-sclerosis, rheumatoid arthritis (2900 B.C.), gout, dental caries and pyorrhoea, pneumonia, gall-stones and renal calculi, bilharziasis, and other still familiar ills that flesh is heir to, have been found in Egyptian mummies. But as regards acute fevers, which from their nature are prone to vary and are much more difficult to identify, help is wanting.

As both nations and their constituent individuals differ in their "constitution" or make-up, partly from heredity and partly as the result of the long-continued influence of their surroundings, their powers of resistance to disease must vary in a corresponding degree. Under certain conditions, such as those of war, famine, and epidemics—for example, of influenza—the vitality of a nation may be so much impaired that factors ordinarily comparatively harmless are enabled to act at an advantage, so that other diseases become frequent. Thus secondary epidemics or diseases which are not in evidence at other times may become prevalent. This sequence may have suggested to Sydenham his conception of "epidemic constitutions"—that is, that during the period of a dominant epidemic other diseases tend to share the characters of that infection. There are, indeed, close analogies between the factors modifying diseases in the course of time and those which appear to be responsible for the outbreaks of epidemics. The diminished resistance of a nation due to the depressing factors—material and mental—inherent in war, destitution, and unemployment, would probably allow micro-organisms previously of comparatively low pathogenic power to become active, and thus help to explain the increased frequency of streptococcal diseases, especially subacute and chronic bacterial endocarditis, and of pernicious anaemia since the great war.

Hereditary deficiency in resistance of the tissues, or of one particular tissue, of races or of individuals may lead to the incidence of particular diseases or to certain forms of those diseases; so that a nervous system weak from congenital defects will favour the attack of an infection, such as that of influenza, on that part of the body—a problem recently discussed by H. P. Newsholme. Hereditary diatheses or morbid proclivities in certain races of mankind lead to the occurrence of special diseases among them; this is best seen in the Jewish nation, which provides most of the cases of amaurotic family idiocy and thrombo-angiitis obliterans; it is further noteworthy that when these diseases do occur in Gentiles the manifestations are less severe and do not come on so early in life, thus suggesting that the inborn tendency is more powerful in the Hebrew cases. The highly nervous make-up of the Jewish race is a factor in disposing them to diseases of this system.

Influence of Environment.

2. Environment influences disease in many ways. It is so clear that climate is a most potent factor that the effects of heat and cold, humidity, absence of sunlight, need not be laboured: in hot countries the presence of special parasites, particularly protozoa, such as the malarial and amoebic organisms, and their carriers or vectors, such as mosquitos, are responsible for the important group of the tropical diseases. On the other hand, an environment, such as that of isolated races, free from some common infections, such as tuberculosis and measles, leaves the inhabitants a virgin soil; but should the infections be introduced, the incidence and mortality of the diseases tend to be very high. This is not so much due to want of innate racial resistance, as might perhaps be thought, but to the widespread absence of any previous individual infection and acquired immunity, or, as Krause persuasively argues, to concomitant changes in the manner of life, approaching those of the more artificial complexities of civilization which lead to physical degeneration of the pure stock of primitive peoples.

Environmental factors are more obviously powerful than heredity in the production of new forms of disease; this was shown, particularly during the great war, by occupational diseases in which the worker is exposed to some poisonous agent, such as trinitrotoluene or tetrachlorethane, in the manufacture of munitions and the varnishing of aeroplane wings with "dope." The branch of Industrial Medicine, already considerably advanced in America, especially in Boston, though originally suggested in this country by George Baker (1767), Thomas Percival (1796), and C. T. Thackrah (1831), and developed by Greenhow (1857), Thomas Oliver, Thomas Legge, and others, supplies many examples

of trade diseases. Another way in which environment brings about disease is by privation of some essential accessory food factor. Study of the "deficiency diseases" and the discovery of vitamins have opened out the path to the prevention of diseases such as rickets, beri-beri, scurvy, and dental caries; and recently vitamin E has been shown to be essential to fertility, its absence being responsible for sterility.

Among the environmental factors bacteria and protozoa are responsible for the majority of diseases. As they are at the base of the scale of living organisms it may be assumed that they are more prone than the higher animals and man to variation and mutation as the result of influences such as food and temperature; and that, at first purely saprophytic, some of them in course of time become parasitic and pathogenic for man. In its early days bacteriology discountenanced bacterial variation, and worked its way on the basis of fixity of type among the species of bacteria. It is now known that there is an enormous amount of potential variation in bacteria, and that a present-day bacteriologist "has not only to define the species of bacterium with which he is working, but the particular form or variant" (Arkwright). Modern work, recently summarized by Dible, shows the morphological, cultural, and serological differences of variants from the normal species—for example, in the Salmonella group (Andrewes; F. Bruce White)—and the probable influence of bacteriophage in promoting variation. The artificial conditions of laboratory cultivation tend to diminish their virulence, though occasionally a reverse action is observed; whereas the passage of pathogenic microbes through a series of animals of the same species enhances their virulence, thus supporting the view long ago expressed by W. H. Welch that bacteria on their part adapt themselves to their environment, just as the host develops a mechanism of defence against them. Clinically it may be noted that an increase in the severity, and not only in the incidence, of an infectious disease, such as diphtheria, may be noticed when a number of individuals are crowded together, though it is true that lowering of their resistance may play some part in this result.

Differences in the clinical manifestations of enteric (typhoid and paratyphoid) fever, dysentery, cerebro-spinal fever, and to some extent of pneumonia, have been proved by bacteriology to result from infection with different types of the typhoid-paratyphoid group, dysentery bacilli (Shiga and Flexner), meningococci, and pneumococci. This distinction of the type of the infective organism is, of course, of far more than academic interest, for it enables immunological treatment to be scientifically and successfully employed. Further evolution of bacterial variations, such as at some time in the past may have resulted in the formation of paratyphoid from typhoid bacilli, might lead to the production of new forms of disease; at the present time it may well be that there are many such bacterial divisions of disease as yet not separated from each other clinically and so still included under a single nosological label. Aberrant forms of infectious diseases would suggest the existence of variations in the causal agent; but here the possibility that mixed infections play a complicating part must be borne in mind. Just as diseases may die out, such as "the sweating sickness" in England in the fifteenth century, so may new diseases arise; syphilis, it seems safe to assume, did not exist in ancient Rome, as such a careful observer as Galen did not describe it or its nervous manifestations tabes dorsalis and general paralysis of the insane. But it may be noted that there is good evidence of its existence in Europe before the era of Columbus, and therefore that it was not introduced from the New World. Among animals hog cholera, unknown before the seventies of the last century, when it appeared in the United States of North America, is an example in support of the view that micro-organisms can and do undergo evolution from a harmless saprophytic condition to one of pathogenic activity.

In balancing the two factors—the soil and the seed—that determine the reactions known as disease, it is interesting to follow the swing of opinion's pendulum between their relative importance; seventy years ago the individual's constitution, diathesis, and temperament were regarded as the essential factors in the causation of illness. When bacteriology came on the scene and progressively revealed the true exciting causes of one infective disease after another, it seemed probable that every difficulty would be clearly solved, and the doctrine of constitution, the elements of which could not be seen under the microscope, faded away into the background as a misty conception, and for a time into almost complete oblivion. But the discoveries of this early stage of bacteriology naturally led to the careful investigation of the defensive powers of the living body against microbic attack; this study of immunology has brought up again the underlying importance of the constitutional factor in disease, which is now attracting investigators in disorders other than those directly due to infection.

THE SIGNIFICANCE OF DISEASE.

To most minds disease is included in the mystery of evil and considered an unmitigated calamity, and in the past has been regarded as part of a system of rewards and punishments. As the existence of a single unicellular organism normally terminates by division into two similar but rejuvenated individuals, these simple cells have been described as immortal, whereas in the higher grades of living creatures death has been regarded as an acquired character, associated with differentiation of the constituent cells and a resulting highly complex mechanism, and as an adaptation advantageous to the race (Weismann); this last—academic—conclusion has been criticized as probably the most perverse extension ever made of the theory of natural selection (Pearl). Death comes either naturally by a gradual exhaustion of the innate endurance and vigour, or unnaturally from accident or disease, which are therefore short cuts to death. From a biological point of view diseases have been regarded as beneficial inasmuch as they weed out the physical weaklings and so make for the survival of the fittest and the improvement of the race. Thus disease kills off the vicious, and, to take a rather special example, gonorrhoea, by sterilizing the prostitute, prevents the propagation of the degenerate; White, indeed, rather unkindly says, "In fact it is open to question whether, taking all things into consideration, the eugenist could do better." Still, many besides the degenerate fall victims, and disease, which has been at work and on its trial in this respect from or before the dawn of history, is too rough and unorganized a method to bring about the survival of the fittest. There will therefore be general agreement with the late Sir Clifford Allbutt's dictum a quarter of a century ago that public health will effect this object better and more permanently than public death. It is unnecessary to labour the evils brought by disease, but it may be well to glance at the other side of the shield and, though to some this may at first sight seem fanciful, to explore the possibility that disease may have good effects—a contention vigorously supported from a technical standpoint nearly a quarter of a century ago by the late Frederick Treves.

As good may come out of evil, it may be worth while to summarize briefly the conceivable ways in which disease on account of associated conditions and of the opposing forces thus brought into play, may be regarded as exerting a beneficial effect. This problem may be reviewed from two aspects: (1) general and sociological, and (2) that of the individual.

Beneficial Effects of Disease in General.

It is not always easy or indeed possible to draw a hard-and-fast line between the normal or healthy on one hand, and the abnormal, which may tend to produce disease or be in itself morbid, on the other hand. That may, in fact, be innocent as well as malignant abnormalities. There is a borderland between health and disease, Allbutt (1924) spoke of as an oscillation about the axis, and it has been said that they are relative terms and that there are various states of health and of disease (W. A. White).

The racial characteristics which, according to Keith, in part depend on the degree of activity of the

glands, may, when exaggerated, become definitely morbid and cause disability. Thus in this country the condition of Mongolian idiocy, first described in 1866 by Langdon Down, the causation of which, though uncertain, may possibly be due to a disturbance of the endocrine balance (Clark, indeed, ascribes it to foetal exophthalmic goitre), reproduces some of the facial characters of the Mongolian race. Pituitary activity, stated to be most obvious among the modern races of the Caucasian or European type, when greatly in excess causes pathological giantism and acromegaly. The occurrence of variations or, more strictly, of "sports" plays a part in the evolution of the race, and among these departures from the average the line of demarcation may be very thin between those exerting a beneficial influence and those definitely morbid. This is familiar in Dryden's lines:

> "Great wits are sure to madness near allied,
> And thin partitions do their bounds divide,"

and as regards this particular example it has been shown by the late Sir Frederick Mott and others, from a study of many pedigrees, how real this association is, and that environment and factors so obscure that in our ignorance they are called chance determine whether this inborn tendency will land the individual in the seats of the mighty, a prison, or a mental hospital.

The variations that are responsible for the evolution of the race are accompanied by others that facilitate disease, and though the latter cannot of themselves be regarded as useful, their occurrence is so commonly associated with that of those making for improvement that they may be regarded as a necessary accompaniment.

Genius and outstanding ability, though often and easily confused, are distinct; ability is, as Galton showed sixty years ago, largely hereditary, and may be associated with a family history of mental instability or defect. But, as compared with ability, genius is a finer and extreme development of the imagination and power of correlation, and may extend out of the abnormal into the pathological. The association of genius with disease of the mind and body has no doubt been exaggerated by the statement that a genius is hardly ever healthy; there are, however, abundant examples to support the contention of Lombroso and others that genius is often closely related not only with criminality and insanity but with other morbid conditions of the nervous system; this combination may occur in the same person, or the association may be shown by evidence of the neuropathic element in the genius's family tree. In the latter instance the genius or specially gifted individual comes of a neuropathic stock, though not himself necessarily degenerate. Enough has been said to show that genius and mental instability may be regarded as variations from the normal mentality. Their morbid manifestations may occur at different times in the same person, periods of definite insanity supervening and passing off; or insanity when it supervenes may close the career.

Geniuses, being usually highly strung, are certainly not immune to common ailments. While disease damages and eventually may destroy the body of the gifted individual, it must colour the mental attitude during the progress. While the usual effect of poisons is necessarily deleterious, some of them, especially in the highly sensitive and those with an idiosyncrasy, may in the early stages, when their irritant effect is predominant, exert a stimulating effect. Alcohol, opium, and morphine, as shown by not a few examples, have been the means by which a genius has been helped to deliver his inspired message. Similarly it has been thought that the toxins of disease may so act on the brain as to lead to the production of masterpieces instead of the more frequent nightmares and delirium. Many literary giants have naturally been tuberculous, and it is an obvious suggestion that their eminence may, in greater or less degree, have been due to, rather than in spite of, their infection. It has also been thought that syphilitic toxaemia played a part in the increased output of brilliant work shortly before its destructive triumph over men like Guy de Maupassant, Friedrich Nietzsche, Heinrich Heine, C. P. Baudelaire, and Paul Verlaine. The occurrence in Nietzsche's *Ecce Homo* of chapters headed "Why I am so clever" and "Why do I write such good books?" certainly suggests that he was already in the stage of exaltation of general paralysis of the insane.

It has been argued that, like alcohol and morphine, the bacterial poisons are responsible for striking ideas and conceptions by paralysing the mechanism normally blocking the external manifestations of an underlying creative power or personality (Jacobson). It is tempting to speculate on the correlation of various organic diseases with the characters of the literary and artistic products of the sufferers, and how far any special trait or tone of expression can be regarded as related to a particular disease. Did the hopeful spirit—the *spes phthisica*—account for the inspiration of some victims of pulmonary tuberculosis, such as Keats, Laurence Sterne, Emily Brontë, and Elizabeth Barrett Browning? There is some evidence from the *Vailima Letters* that when Robert Louis Stevenson's health improved his literary work deteriorated, and this has been explained by the absence of a toxaemic influence. In other instances, such as Francis Thompson (1859–1907), author of *The Hound of Heaven*, and Thomas De Quincey, tuberculosis of the lungs has been complicated by alcoholism or opium addiction; and then, as Jeannette Marks says, the question arises of "germs and genius" or "drugs and genius." How far did dyspepsia or, as G. M. Gould insisted, eye-strain guide Thomas Carlyle's mordant pen, and to what extent was Ménière's syndrome, from which Jonathan Swift probably suffered, responsible for his savage wit?

In some rather special instances an individual's disease has been the means of greatly benefiting his fellow sufferers, as it has made him monstrous kind in the practical sense of providing for their well-being and care; thus Sir Arthur Pearson's (1866–1921) loss of sight was the salvation of the blind in St. Dunstan's, where they were taught not only to earn their living but to bear their cross courageously and cheerfully. Medical men, themselves stricken, have worked for the relief of those with whom they can so fully sympathize: E. L. Trudeau (1848–1910) utilized his own long fight against tuberculosis to promote the open-air treatment of that disease in North America; and it has been said of him that perhaps nothing in the whole field of medicine in the past fifty years in America has done so much directly or indirectly to relieve suffering and extend the years of usefulness of so many people as the principle which Trudeau laid down at Saranac Lake (J. A. Myers). Another example is Mr. Clifford Beers, who, having suffered for years from a severe psychosis, founded the National Committee for Mental Hygiene in the United States.

In his pathetically charming *Confessio Medici* the late Stéphen Paget (1855–1926), who suffered much and greatly loved his fellow men, wrote, "You cannot be a perfect doctor till you have been a patient; you cannot be a perfect surgeon till you have enjoyed" (and he proceeds to justify the somewhat unexpected verb) "in your own person some surgical experience." Many examples could be given of medical men who, as the result of their own sufferings, have been able to throw light on the nature, prevention, and cure or alleviation of their own particular cross.

Pain, one of the commonest manifestations of disease and useful as a warning of its presence, may, as James Hinton (1822–1875) the mystic argued, have uses that we know not of, possibly an unconscious though effective martyrdom for others. In his *Book of the Sorrowful* Hinton was mainly concerned with mental anguish, but with regard to physical pain it may also be wise to admit that there are more things than are dreamt of in our philosophy. Professor Emery Barnes reminds us that "from St. Paul downwards through the ages some of the greatest Saints of God have believed that their bodily sufferings or their bodily weakness has been of immense value in training the spirit."

Lastly, disease, which usually exerts an evil influence on the history of nations, may protect one of two hostile armies from the other by rendering advance and successful

invasion impracticable, or open the way to occupation of a new land—for example, the "providential" pestilence among the aborigines of Massachusetts Bay (1616–20) which enabled the first Pilgrim Fathers to take possession of the land in safety (Krause).

Beneficial Effects for the Individual.

A disease may do good by limiting its victim's activities in certain directions, such as social success or athletic prowess, and so leading him to concentrate his energy and powers on some specialized branch of intellectual work; thus by way of compensation he makes good, or achieves even greater success than he would have thought of attempting when unrestricted in his choice of a life's work. Invalidism necessarily restricts vicious self-indulgence and excess in satisfying the lusts of the flesh, and so may protect against the risk of oth r diseases to which the vigorous are, as a result of their rude health, more prone to expose themselves. This mode of protection is analogous to that probably responsible for the great longevity of women as compared with men.

There are other ways in which disease is a blessing, though perhaps in disguise; the onset of a trivial ailment or the detection of the early signs of disease without symptoms, such as are discovered at a routine examination for life assurance, may so impress the individual that he amends his manner of life, greatly to his future advantage. This warning mechanism was well expressed in the title of Sir William Osler's paper on "The advantages of a trace of albumin and a few tube casts in the urine of certain men above 50 years of age." Another example is the advantage of a raised blood pressure detected in its initial stages, provided steps are duly taken to prevent a further rise which would in time lead to generalized arterio-sclerosis and perhaps granular (arterio-sclerotic) kidneys. With the progress of medicine to its preventive ideal the logical utility of periodical medical examinations of the adult population will no doubt be recognized, and so lead to the detection of the early warnings and signs of impending disease among those as yet unconscious of anything amiss.

It is not an argument worth labouring, but, as certain conditions or reactions, such as emaciation and obesity, are due to their opposites, such as deficiency and excess, one disease may be the antidote to another, the two being, roughly speaking, incompatible. Thus there is a certain amount of antagonism between tuberculosis and gout, and tuberculosis and obesity. Moreover, as is well recognized, a chronic disease may sometimes appear to provide its own cure in this way; thus exophthalmic goitre may gradually pass into the opposite condition of myxoedema, and acromegaly (hyperpituitarism) may be succeeded by hypo-pituitarism.

An acute disease may cure a chronic affection; thus pneumonia may, for the time being at any rate, abolish the movements of chorea, or remove a skin disease of long standing; whooping-cough has long been thought to be relieved by vaccination, and has been known to be benefited by an attack of urticaria (Bury). The influence of an acute infection on a chronic one is probably analogous to the effect of protein shock therapy, in which the injection of a "foreign" protein into the blood stream sets up an acute reaction which in some way increases the protective mechanism against infection; for example, injection of peptone may be followed by much improvement in chronic arthritis. Just as many acute fevers leave behind them immunity for the rest of life, so a modified form of the disease or an abortive attack, which may escape notice at the time, protects the individual from a recurrence of the disease. This is well shown in vaccination against small-pox, and by the observation that people who have had the present mild form of small-pox, sometimes called alastrim and para-small-pox, do not contract the disease itself. Many forms of treatment act by stimulating or supplying the reaction and defensive powers of the patient necessary to repair damage or overcome infection; this was the rationale of Almroth Wright's vaccine therapy, and empirically the method has been employed for ages. The old practice of inserting a seton in the neck, thus creating a local wound or focus of infection, to cure some chronic condition, the similar production of sterile abscesses —for example, by turpentine—to counteract infections elsewhere, and counter-irritation, such as blistering, to relieve the pain in acute diseases, are examples of the attempt to neutralize the morbid reaction of one infection by another and artificially induced reaction.

THE RELATION OF THE NATURE OF DISEASE TO ITS PREVENTION.

Lastly, with regard to the practical bearing of the nature of disease: the ideal of Medicine is the prevention of disease, curative treatment being really a tacit admission of failure in this respect. For the prevention of disease knowledge of its causation and nature is obviously essential. The two great factors in the causation of disease are heredity and environment. Heredity of actual infective disease occurs in only a few instances; but structural and functional defects, especially in the vital resistance, of the body are common and important. Environmental influences cover a wide field, from the gross factors of deficient food, slum dwellings, and general misery, to the ultramicroscopic viruses of infective disease. The preventive measures and remedies, therefore, are correspondingly various. It is unnecessary to refer to the desirability of correcting the economic factors of poverty resulting in unhygienic surroundings, overcrowding, and deficient and bad food and drink; but a word may be said about the importance of universal health education as a means of preventing disease and so preserving the well-being of the nation. The recognition of the need for intellectual education is a duty recognized much earlier by the Government, for it is only since the war, when the Ministry of Health was established, that health education of the masses has really gone ahead. Preventive medicine is every man's business, for it is the active response to the instinct of self-preservation. The distinction, obvious though it be, may perhaps be emphasized between the practice of preventive medicine, in which each individual should be his or her own guardian, and the universal practice of curative medicine, which is inadvisable on account of the inherent dangers when carried out by laymen. It may well be that want of a clear dividing line between personal hygiene and domestic medicine has in the past made medical men hesitate about the advisability of encouraging general instruction in the laws of physiological righteousness, to use Sir Andrew Clark's phrase.

About the fundamental subject of an accurate knowledge of the causation of disease, on which preventive medicine is based, there is yet much to learn. As Sir George Newman has pointed out, it is extraordinary what contributions to medicine have in the past been made by scientific men who were not members of the medical profession. The debt of medicine to the more exact sciences mounts up much more rapidly and is much more obvious evidence now than ever before, and it is obvious that there should therefore be the closest possible association and correlation between the scientific workers in laboratories where discoveries are made and tested, and the clinicians in the wards of hospitals, where the practical application of new knowledge may lead to fresh advances in the prevention as well as the cure of disease. With the specialization inevitable from the enormous advance of knowledge there is an unfortunate tendency for these two classes of workers to plough their own furrows; guidance from those of pure science is of the greatest value in the discovery of the causes and nature of disease; for physics, chemistry, biochemistry, physiology, and pathology touch, overlap, and interlace with each other, and human biology is a good synonym for medicine. To facilitate this close association much can be done by the plan of having the various science laboratories in the same building or group concentrated together; the physiological, bacteriological, anatomical, and pathological departments close to and communicating with the hospital, just as the physiology department is or should be a near neighbour of the anatomical laboratory. The University should have control of the hospital as well as of the laboratories—a combination perhaps yet widely accepted.

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VOLVULUS OF THE INTESTINE.

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VOLVULUS rotation or twist may affect any of the movable viscera, and this accident is especially likely to happen to those organs or parts which are pendulous or more or less pedunculated, such as the pelvic colon, caecum, spleen, retained testis, ovarian cyst, or subperitoneal fibroid. The weight of a tumour, a distended Meckel's diverticulum, or a mesenteric cyst, or the drag of a peritoneal adhesion may start or complete the twist. I have seen several instances of volvulus of the spleen of the omentum, of the gall-bladder causing sloughing, and one instance of rotation of a loose liver causing jaundice by kinking of the bile ducts. Even the stomach is not immune from volvulus; being fixed as it is at the cardia and pylorus, the dilated or distended intervening portion may twist, especially when it is dragged upon by a large spleen or escapes into a diaphragmatic hernia; serious and acute pyloric obstruction has arisen in these ways, and has been relieved by replacement and removing the cause.

In this article I am chiefly concerned with volvulus of the intestine causing intestinal obstruction. Such a volvulus may be *acute, chronic*, or recurrent; it may be simple, affecting only one loop of bowel, or it may be compound, as when a loop of small intestine twists round a volvulus of the pelvic colon.[1] Any part, or the whole, of the small intestine[2] except the duodenum, and any part, or even the whole, of the large intestine except the rectum, may twist (Finney recorded a volvulus of the whole of the colon between the ileo-caecal valve and the pelvic colon[3]), but the common sites of the volvulus are the pelvic (sigmoid) colon and the caecum. Congenital imperfections, especially elongation of the mesentery, such as a long mesosigmoid with a narrow base, or a pendulous and freely movable caecum and ascending colon, are usually determining factors. Visceroptosis with distension and elongation of the pelvic colon associated with chronic constipation, and repeated prolapse of the rectum, also contribute to the causation of volvulus. Injuries, violent twisting movements, and operations may displace and twist the bowels—for instance, the pelvic colon was raised and displaced to the right during an operation for ruptured left extrauterine foetation, the loop was not replaced, and fatal volvulus resulted. The consequences of volvulus are often grave, for obstruction of the vessels may lead to swelling, haemorrhage or *infarction, inflammation, and necrosis* or gangrene of the twisted loop, thus adding to the dangers of intestinal obstruction. Volvulus of the appendix and of Meckel's diverticulum* often causes severe attacks of *inflammation*, or gangrene of the twisted part, with peritonitis and ileus.

SYMPTOMS OF ACUTE VOLVULUS.

The symptoms and signs of acute volvulus, whether of the large or small intestine, are those of acute intestinal obstruction, such as severe spasmodic abdominal pain, characteristic vomiting, complete constipation and collapse, with slow weak pulse and subnormal temperature. Here it is only necessary to point out the special features of volvulus. The history of previous attacks is very suggestive of volvulus, the more acute the case the more severe the pain, and, above all, the more rapid and extreme the distension of the abdomen the more is volvulus to be suspected. Visible peristalsis, when observed, in very large coils is almost characteristic of volvulus of the large intestine, but it is not by any means constant. Volvulus is commoner in the large than in the small intestine, and is especially common in the pelvic colon. With volvulus of the small intestine the coils are naturally smaller and the distension less phenomenal, but the severity of the symptoms is usually extreme, and the march of events to a fatal issue is more rapid unless relief is brought by early operation.

SYMPTOMS OF CHRONIC AND RECURRENT VOLVULUS.

These are chiefly those of chronic intestinal obstruction —namely, recurrent attacks of colic with distension, indigestion, and chronic constipation perhaps alternating with diarrhoea, but without blood in the stools. Fever is usually absent. Sometimes the bowels do not act without the aid of large doses of violent purgatives or enemata or both. Opaque meals, *and especially a* barium enema, may reveal great dilatation and stagnation in the affected loop. An opaque meal is more valuable with chronic incomplete volvulus of the caecum, for an opaque enema may not reach or enter the obstructed loop as the obstruction is more complete at the distal than at the proximal end of the loop. An opaque enema is usually more valuable in the diagnosis of volvulus of the pelvic colon.

DIAGNOSIS OF ACUTE VOLVULUS.

From other kinds of intestinal obstruction volvulus is to be distinguished chiefly by the very acute onset, rapid progress of the symptoms, and particularly by the unusual amount of tympanitic distension of the abdomen, which develops in a very short time. As already mentioned, visible peristalsis in very large coils of intestine is suggestive of volvulus of the large intestine; the twisted dilated caecum is often to be seen lying in the left iliac fossa, and the twisted and distended pelvic colon in the right hypochondrium. There is often a history of previous attacks of colic without fever; the absence of fever tends to exclude recurrent appendicitis, cholecystitis, and diverticulitis. Volvulus of the large intestine is naturally most likely to be mistaken for the far commoner cause of obstruction of the colon—namely, carcinoma of the colon, which causes considerable, but less rapid, gaseous distension. With carcinoma there may be a history of chronic constipation alternating with diarrhoea, with blood and mucus in the stools. Often the diagnosis is not certain until the abdomen is opened, as it should be without delay.

DIAGNOSIS OF CHRONIC VOLVULUS.

Here there is more time and opportunity for investigation. Chronic and recurrent volvulus is most commonly mistaken for chronic constipation, but careful

characteristic of volvulus. Volvulus of the caecum is apt to be mistaken for recurrent appendicitis or appendical colic, but with it there is no fever during the attacks. The dilatation of the caecum, its free mobility and pendulous appearance, should correct the mistake once the abdomen has been opened. In one of my cases of chronic volvulus of the pelvic colon the dilated loop had pressed the stomach into an hour-glass shape; moreover, the gastric symptoms were so severe that the diagnosis made before the operation was hour-glass contraction with duodenal ulcer.

TREATMENT OF ACUTE VOLVULUS.

1. *Acute Intestinal Obstruction due to Volvulus.*

Here the main objects are (*a*) to save life by relieving the acute intestinal obstruction, and (*b*) if possible to prevent recurrence. The mortality of acute volvulus is about 50 per cent., and is so high chiefly from delay and attempting too much at the emergency operation. A long right paramedian incision is made in the lower abdomen to give a good view and plenty of room to deal with the distended bowel. It is often necessary to deliver the affected loop, but this may be impossible without first letting out gas with a needle, or trocar and cannula; sometimes it is better to incise the loop over a sterilized basin, and to make use of this incision in performing a colostomy or caecostomy. The twist is undone and valvular drainage of the loop established with a soft rubber tube of one-third of an inch internal diameter, which passes through a separate stab wound in the parietes, so that the exploratory wound may heal by primary union. The drainage may so reduce the size of the affected loop of bowel and fix it to the parietes that recurrence of rotation may not take place, and the need of a secondary and perhaps severe operation is thus avoided (Cases I and II). In some cases of volvulus of the pelvic colon it is enough to pass up a rectal tube, guided into the distended loop by a hand in the pelvis. The tube is kept in and sewn to the anus. When the bowel is gangrenous it must be resected, and sometimes the channel can be immediately re-established—for instance, the gangrenous caecum is excised and the ileum, about six inches above the ileo-caecal valve, is joined to the transverse colon. As a rule radical operations have to be deferred until the immediate peril has passed.

2. *Chronic Volvulus of the Intestine.*

This condition may be treated by: (*1*) excision of the twisted loop; (2) short circuit; (3) fixation of the loop, with or without temporary drainage. As a rule excision is the best method because it makes recurrence impossible, and prevents the troublesome accumulation of faeces and gas in the dilated loop; but short circuit is sufficient and less dangerous in selected cases. Examples of these methods are given below (Cases III and IV).

Fixation of the loop of bowel by suture to the parietes is difficult owing to the length and position of the loop. How can the long large loop of pelvic colon with a narrow base or pedicle be fixed without fear of recurrence or the making of pockets, apertures, or bands, for the development of other forms of intestinal obstruction later on? Recurrence took place in two of my cases of volvulus of the pelvic colon.[1] In both of these the loop had been fixed to the abdominal wall. Shortening the mesentery after the method of Senn has been successfully used in some cases. The mesentery is "folded" upon itself in a direction parallel to the bowel, and the apex of the fold is sewn to the root of the mesentery without interfering with the blood supply of the bowel. It is evident that this method is not always applicable to such parts as the abnormal pelvic colon, where the loop is long and the base is short. For volvulus of the ileo-caecal region I believe that either excision or short-circuiting is better than fixation, which may cause future trouble by adhesions or kinking.

The following cases may serve to illustrate some of the difficulties of the diagnosis and treatment of volvulus.

CASE I.—*Volvulus of the Caecum: Acute Intestinal Obstruction: Caecostomy: Recovery.*

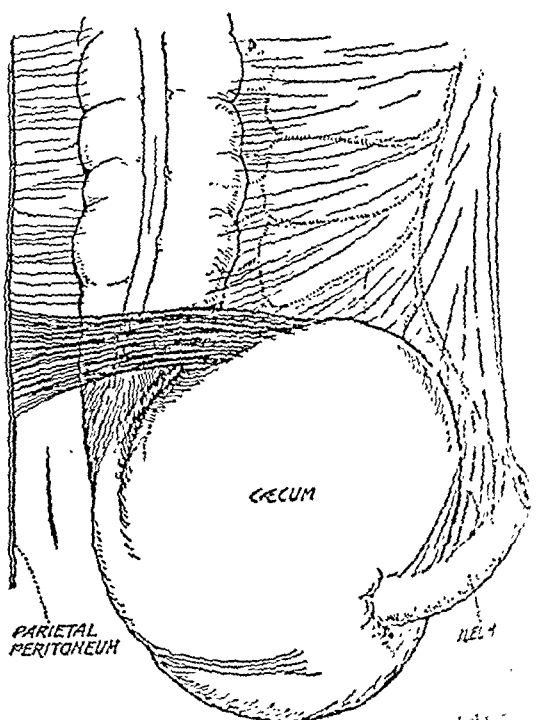
A married woman, aged 45, first came to me in January, 1922. She had suffered from chronic indigestion for years; this had been attributed to visceroptosis, for which she had worn a Curtis belt. She is said also to have suffered from left hydronephrosis. X-ray examination for stone had been negative. She was very anaemic, and was tender over the appendix. In February, 1922, the abdomen was explored through a right paramedian incision. The appendix was very long, kinked, and chronically inflamed, and was removed. There was an old, but still active, ulcer on the anterior wall of the duodenum, stenosing the latter. There were so many adhesions that a local operation was not considered safe, therefore a posterior gastro-jejunostomy was performed. There were no gall-stones; the caecum was dilated. She was well for over five years.

On May 15th, 1927, at 10 p.m., she was seized with very severe abdominal pain, and spent the night walking about the room in great distress. Dr. W. was called in on May 16th. Enemata failed to act, and no flatus was passed. Visible peristalsis was noticed, and an immediate operation advised. This was carried out the same day at 6 p.m. A right low paramedian incision was made, the rectus being displaced outwards, displaying a very large distended coil of large intestine, which was found in the lower half of the abdomen; this was cautiously delivered, and found to be the caecum in volvulus, which was very large, and had made two complete clockwise rotations to the left; this had completely obstructed the ascending colon, but not the end of the ileum. The volvulus was uncoiled, and the contents of the caecum were, with some difficulty, pushed on into the transverse colon, but to prevent paralytic distension, and especially to avoid recurrence of the volvulus, a valvular caecostomy was performed. A long rubber tube, with an internal diameter of one-third of an inch, was passed through the abdominal wall at a stab wound one inch internal of the right anterior superior spine. The end of the tube was open, and a side hole was made close to its extremity, which was introduced into the caecum through the anterior muscular band, after a large pouch of caecum had been emptied and clamped; it was fastened to the sides of the incision in the caecum by a catgut stitch, then the small incision containing the tube was inverted by three purse-string sutures of fine catgut, thus making an ink-bottle or continent caecostomy. The caecum was next drawn into contact with the parietal peritoneum, and the tube was tied to a stitch in the skin. The paramedian incision was then completely closed in layers.

It is interesting that in this case it required two complete rotations to produce obstruction of the ascending colon and caecum; there was no band extending from the right flank to the front of the ascending colon to facilitate obstruction. The patient did well, and was seen in perfect health in September, 1928.

CASE II.—*Chronic Volvulus of the Caecum and Chronic Intestinal Obstruction: Anastomosis of the Caecum to the Transverse Colon.*

Miss X had suffered since childhood from very severe constipation with attacks of abdominal pain without fever. Radiographic examination suggested adhesions in the right iliac region, and



Volvulus of the caecum. The twist is more often clockwise, to the left.

it was thought that she had chronic appendicitis, and [illegible] a laparotomy. The operation was done on April 5th, [illegible] appendix was oedematous and white; there were no [illegible] about it or the intestines, but the caecum was very [illegible] and lying low in the pelvis; it was freely movable and [illegible] with the lower end of the ileum, and clearly caused [illegible] upon the ascending colon, the lower part of which was [illegible] There was a white mark on the ascending colon indicating [illegible] of the former twistings, just below adhesions to the [illegible] The appendix was removed, and an anastomosis was made [illegible] the front of the lower end of the caecum and the [illegible]

of the transverse colon, the anastomosis being about three inches in length. *The patient has done very well since the operation, the constipation and pain being apparently cured.*

CASE III.—*Recurrence of Acute Volvulus of the Pelvic Colon in Spite of Colostomy.*

A lady, aged 61, a patient of Dr. B., in 1906 *was operated upon* for acute intestinal obstruction. After making an incision in the left linea semilunaris, the surgeon accidentally opened a greatly distended colon. It made a noise like a bursting tyre, and discharged a large amount of gas and faeces. He tied in a Paul's tube at once, and the patient gradually recovered. Malignant stricture of the sigmoid was diagnosed, and a bad prognosis was given; but after some weeks the bowels began to operate naturally and there was a good deal of difficulty in keeping the colostomy open. After six months the fistula was allowed to close, and to everybody's surprise the patient made a complete recovery, except for some weakness in the abdominal wall at the site of the colostomy. The bowels acted regularly with the aid of an occasional aperient. She had no more colic, *and she never passed any* blood or mucus. The abdomen, however, has ever since, and for *some time* previously, been somewhat distended. On February 27th, 1912, it became more distended, and the patient had a good deal of pain in the lower part of the abdomen, especially on the left side. Since then the swelling has rapidly increased. All purgatives have failed to act, and enemata have also been *ineffectual*. A rectal tube could not be passed more than six inches. No growth could be felt. An enormously *distended coil* of intestine could be seen extending along the course of the transverse colon, above *the umbilicus* and down to the left flank.

I saw *her* on March 1st, at 8 p.m. In view of the past history and the presence of the greatly distended coil a diagnosis of volvulus of the sigmoid was made, and an operation was performed *the same evening*. A very large coil of bowel was found occupying the pelvis, *the* left flank, and also the middle part of the abdomen, extending almost to the liver. *A band was passed* into the pelvis and a rotation of the sigmoid loop was made out. At the attachment of its mesentery radiating ridges were felt. The incision was enlarged and *the loop* was gradually delivered. The coil was longer and larger than a coat sleeve. The twist could not be completely reduced *owing to the great distension* and extensive adhesions at the site of the colostomy. A trocar was thrust into the middle of the distended bowel, and a very large amount of gas at *once* escaped through the attached rubber tube; a little faeces also came away. The opening was closed with a purse-string suture of thread as the cannula was *withdrawn*. An attempt was made to sever the attached piece of colon from the sac of the hernia. *In doing this*, however, a small opening was made into the bowel. It was therefore *decided* to tie a glass tube *into this opening* for temporary drainage only. *A loop of* bowel above this was placed vertically behind the abdominal incision, which was closed with mass salmon-gut sutures not perforating the peritoneum, so *that the bowel might* get extensively attached to the parietes to prevent further rotation. The tube *was removed* a few days later and the patient made a good recovery, and was well three years later.

It is certain that the volvulus was not reduced at the first operation, but the drainage and shrinkage of *the distended loop* served to re-establish the channel after some weeks. Later on distension increased, and history repeated itself.

CASE IV.—*Chronic Recurrent Volvulus of the Pelvic Colon: Resection: Recovery.*

A boy, aged 14, was in 1918 admitted to Guy's Hospital under my care for repeated attacks of pain in the left loin. In 1915 *he had a definite and severe attack of appendicitis*, with fever, pain, and local tenderness in the right iliac fossa; he was in bed for three weeks, and an operation in the quiet period was advised.

For two and a half years *before admission* the boy had suffered from severe attacks of pain in the left loin, relieved by rest in bed, hot bottles, and a dose of castor oil; there was neither vomiting nor any abnormality of the urine or urination. Left renal or ureteral calculus was suspected, but radiography and urinalysis were negative. *The attacks recurred* more frequently and became more severe during *the latter part of 1919*. In February, 1920, the boy was readmitted for further investigation, but no evidence could be *obtained* of any disease or obstruction of the left kidney. Radiographic examination of the gastro-intestinal tract showed no [illegible] some delay in the transverse colon, which [illegible]ted. The abdomen was explored and a [illegible]ndix was removed. All the large intestine [illegible] the caecum, and transverse and pelvic colons; *the latter* was elongated and hypertrophied, but not obstructed, *therefore it* was not thought wise to resect it without consulting the mother and unless the *attack* recurred.

The attacks, however, *increased in frequency and severity*; therefore, at the end of April, 1920, the abdomen was reopened, and the pendulous and *now twisted* loop of pelvic colon was excised, an end-to-end union being made. The patient made a good recovery and has been *able* to carry on his work as an engineer ever since, but he still gets *pain* in the left loin if he *allows his bowels* to get constipated; this happens when he is rowing and racing upon the Thames.

PROGNOSIS.

The mortality of volvulus is very high. Thus in Corner and Sargent's[5] collection of 57 *cases*, 19 recovered and 21 *died* after operation; the remainder died *without* operation. In the records of Guy's Hospital for the five years 1920–24 Mr. B. L. Laver found 11 cases of volvulus, 6 of *the small* and 5 of the large intestine, with 5 deaths—a mortality of 45 per cent. in 74 cases. Quick and efficient work and drainage of the distended loop and of the intestines above the obstruction, and *not* attempting too much in the critical acute stage, are very important elements in the success of *the operation*.

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THE USE OF ULTRA-VIOLET RAYS IN DISEASES OF THE NOSE AND THROAT.*

BY

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THE biological action of light is primarily due to photochemical reaction. Waves of light are absorbed by living cells and produce photo-biochemical reactions which influence the whole organism. All living cells are sensitive to the ultra-violet rays from 3,100 to 2,500 A.U.; furthermore, the living cells can be made sensitive to the infra-red, visible, and *long* ultra-violet rays by the addition of certain dyes and chemical substances called "light sensitizers." When a normal tissue, such as the skin, is exposed to a source of light emitting numerous waves of light, each group of waves penetrates through the depths of the tissue to varying degrees and has a different biological action. The near infra-red, visible red, and *yellow* rays penetrate beyond the blood vessels in the skin and heat the tissues; as a result vaso-dilatation and hyperaemia are produced. The green, blue, violet, and long ultra-violet rays *penetrate* to a *smaller* extent, and are absorbed by the haemoglobin pigments of the cutaneous blood. The long ultra-violet rays excite a greenish fluorescence of the skin, and are selective in their behaviour to the light sensitizers. The ultra-violet rays from 3,100 to 2,500 A.U. penetrate to the superficial layers of the living epidermal cells. They excite a green *fluorescent light in* the horny layers of the skin, and, having a rapid lethal action on the living cells, produce a characteristic erythema *of the skin* at the site of irradiation.

The erythema dose of light produces a marked local hyperaemia and excites a local white cell infiltration of the epidermal tissues. The endothelial cells are swollen and enlarged, and the transudation of fluids through the walls of the capillaries is altered. The exudation of plasma produces an intradermal oedema of the tissues at the irradiated area. The minimal erythema dose of ultra-violet rays applied to the skin, the peritoneum, abdominal viscera, or subcutaneous tissue increases the bactericidal properties of the shed defibrinated blood tested *in vitro*. The maximum effect is obtained by irradiation of 20 to 30 sq. cm. per kilogram of weight. This bactericidal effect *originates locally* at the site of irradiation, and is *carried* by the blood stream into the general circulation. *These* results support the theory that ultra-*violet* rays have *a* photo-biochemical action on the living cells and produce a substance which has bactericidal *properties*. The local effect of ultra-*violet* rays increases the immunity of the skin. This may explain the beneficial action of the local irradiation of lupus lesions, and *is due to the* increased leucocytic infiltration *and the production of a bactericidal photo-biochemical* substance.

Workers at the Copenhagen Light Institute have developed the use of the short-flame *carbon arc*, and have successfully treated many cases of lupus *vulgaris* of the skin and mucous membranes. The ultra-violet rays emitted *from this source of light* are mostly long rays. In their *technique* the *whole surface of the body* is exposed to light for twenty minutes to two *hours twice or three times* a week. This technique is only suitable for *chronic* types

* Read in the Section of Laryngology, Royal Society of Medicine.

of disease and in non-febrile conditions. Although many excellent clinical results have been obtained by various clinicians, the experimental evidence obtained from the observations of the immunity of the skin following irradiation and the study of the haemobactericidal response to light suggests that overdosage and excessive exposure have been frequent. The application of an erythema dose of rays renders the irradiated area immune to further reaction for three or four days; this is due to the protective screening action of the exudates in the inter-epidermal tissues. During the stages prior to desquamation the skin is still immune to radiation, since the dead epidermal cells screen off the biological active rays. During desquamation the exposed epidermal tissue is hypersensitive to light, and an irregular action results, demonstrating immune and hypersensitive areas. From these observations it seems right that a period of ten to fourteen days should elapse between the exposures of any given areas of skin. In this way the skin can be kept sensitive to ultra-violet rays for a long period, and excessive heating of the body by prolonged exposure is avoided.

The Finsen Light Institute at Copenhagen claims as good results as Rollier obtains with open air and sunlight. The possible errors of the technique with ultra-violet rays with short-flamed arcs are: (1) The area of skin exposed is too big. (2) The skin is rendered immune to ultra-violet rays. (3) The body is overheated by prolonged exposures. (4) It is unsuitable for febrile diseases. (5) It is laborious and expensive.

From these observations I have adopted a special technique of general treatment with lamps emitting ultra-violet rays shorter than 2,970 A.U., which I have called "short ray" therapy.

1. The source of light is a quartz mercury vapour lamp, and at later stages, when pigmentation has developed, metal-cored 30-ampere carbon arcs.
2. The surface area of skin exposed is roughly equal to one-sixth of the surface area of the body.
3. An interval of ten to fourteen days is allowed between irradiation of any given area of skin.
4. Irradiation is conducted two or three times a week.
5. The minimal erythema dose is applied, and the skin is kept in a "light-sensitive" state during the whole period of treatment.

The "general" irradiation of the normal skin improves the health and body resistance. Early cases of lupus of the skin, nasopharynx, palate, and larynx have been healed by these means. The cases in which chronic ulceration and hard scar fibrous tissue are present are more resistant. Many catarrhal and inflammatory conditions of the mucous membrane are due to general failures of health, associated with a secondary anaemia and vasomotor disturbances. Light has often proved a valuable help and has improved these conditions.

The healing of septic wounds and the repair of granulation tissue are accelerated by general irradiation. In cases of subacute disease and acute inflammatory conditions the cautious use of irradiation of the skin can be helpful. In these types of condition the application of the minimal erythema dose and exposure of a small area of skin to light is a safe technique of treatment. General light treatment has been successfully employed as a post-operative measure, and accelerates the healing of septic wounds and young granulation tissue.

The local treatment of a lesion with correct dosage of light accelerates repair. Some early investigators have maintained that a direct bactericidal action was obtained by means of the water-cooled Finsen-Reyn arc lamp or the mercury Kromayer lamp, but this is an erroneous impression, for serum and lymph greatly impede the penetration of the bactericidal rays.

Excessive dosage produces necrosis of the tissues and extensive oedema, which may cause a spreading infiltrating cellulitis. This applies mainly to subacute conditions when the granulation tissue is vascular, but is uncommon with chronic fibrous ulceration such as is seen in old-standing conditions of lupus vulgaris. The careful dosage in local irradiation, producing a mild erythema reaction and avoiding excessive damage to the tissues, will hasten the healing and repair of many types of septic wounds.

The normal mucous membrane is about three times as sensitive to light compared to the normal white skin. Many cases of tuberculous disease of the mouth, throat, or nose can be healed by general light treatment of the skin. As a rule they react more favourably and quicker than the skin, since the granulation tissue is more vascular and ulceration does not contain hard, old fibrous tissue. Strandberg has claimed good results in the treatment of tuberculous disease of the larynx. Local treatment to the mucous membrane accelerates repair and regeneration of granulation tissue. The application of local light through the mouth to the pharynx and larynx necessitates an apparatus by which the effects of radiation are rapidly obtained. Irritability and pain are prominent symptoms, and only a rapid form of treatment is practicable.

The use of quartz rods and applicators to transmit the rays of light to the site of infection are unsatisfactory, as the intensity of radiation is reduced, and the apparatus becomes cumbersome and is impossible to use for a practical therapeutic exposure. The same criticism applies to the use of reflected light from mirrors. The water-cooled throat lamp (made by the British Hanovia Quartz Lamp Company) is based on the same principles as the water-cooled Kromayer mercury lamp, but is sufficiently small to be readily inserted into the mouth, pharynx, and naso-pharynx. The intensity of ultra-violet rays emitted is sufficient to produce an erythema reaction after 60 seconds' exposure of the mucous membrane. A quartz envelope surrounds the burner, and can be easily removed to clean the lamp.

Local anaesthesia with eucaine and cleansing of the irradiated area are necessary before light is applied to the mouth. The reactions of the mucous membrane are similar to those seen when the skin is irradiated; erythema and oedema are evident, and massive exposure produces necrosis and blistering of the mucosa. Since the mucous membrane is more sensitive to light than the skin the regulation of dosage must be made with great care. Excessive dosage can cause a spreading infiltration and acute inflammation which will produce a general reaction of the body, with increased temperature and malaise. In cases of tuberculous disease of the larynx and palate the lungs are often involved, and the irradiation of the local lesion in the mucous membrane may cause reaction of the lung infection. Careful supervision of the lung is imperative. The irritability and pain associated with ulceration of the lesions are rapidly diminished after treatment.

Local treatment is applied every ten to fourteen days. The combination of exposure of areas of the normal skin to irradiation twice or three times a week and local treatment every ten to fourteen days to the lesion has proved successful in resistant cases of lupus and tuberculous disease of the palate, pharynx, and larynx.

Further research on treatment by means of sensitized and ultra-violet radiations emitted by high-frequency current is in progress.

RADIOGRAPHIC FINDINGS IN 347 PAINFUL SHOULDERS.

BY

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For the purpose of this paper I have examined the radiographs of 347 patients who came for *x*-ray examination on account of pain in the region of the shoulder-joint during the past three years.

I have not included any patients attending the casualty department with a history of recent injury to the shoulder. On the other hand, many patients complaining of painful shoulder would not be sent for an *x*-ray examination as the clinical investigation revealing definite signs of pathology would furnish sufficient explanation for the symptom. I have seen several patients whose chief complaint was pain around the left shoulder and arm in acute exacerbation in whom the only lesion to be found was a cholelithiasis.[2(d)] In many instances the pain appeared to be due to toxic absorption, and the

was sent only for a radiographic examination of the teeth, sinuses, etc. Frequently the radiograph of the painful joint showed no bone or joint change, but definite apical abscesses or evidence of sinus infection were detected.[1]

	The Queen's Hospital.	Royal Cripples Hospitals.	St. Chad's Hospital.	Pensions Hospitals.	Total.
Total	149	54	53	91	347
Normal	99	20	19	43	177
Arthritic changes:					
Acromio-clavicular joint	23	8	10	10	51
Shoulder-joint ...	6	3	4	11	24
Loose body...	2	4	4	(?)1	11
Old fracture	11	6	7	(not included)	24
Dislocation (unreduced):					
Acromio-clavicular joint	4	—	4	"	8
Shoulder-joint ...	2	—	2	"	4
Tubercle	4	8	1	15	29
Cyst of humerus	—	1	1	—	2
Carcinoma	2	—	—	—	2
Sarcoma	2	1	1	—	4
Myeloma	2	—	—	—	2
Exostosis	—	2	—	—	2
Osteomyelitis with arthritis	1	1	—	5	7

The table shows that the most frequent site of injury or arthritic changes to appear on the radiograph is the acromio-clavicular joint. Most of the shoulder-joints which had been dislocated showed definite changes. The most common evidence of arthritis in the shoulder-joint shown on the radiograph was pointing and irregularity of the articular margins.

The areas in the head of the humerus described by A. L. Fisher[4] as cavities, which he believes to be due to local necrosis brought about by amoebic infestation, and as being characteristic of the first signs of osteo-arthritis, I have regarded as varieties of the normal cancellous structure of the head of the humerus, because they are found in many patients in whom there is no suggestion of osteo-arthritis. Fisher admits that such areas are found when there is no other radiographic evidence of arthritic changes. Apart from the pensions hospitals, definite marked osteo-arthritic changes, as shown by indications of erosion and eburnation in the shoulder-joint, were seen in only one case.

Loose bodies were seen in only 3 per cent. of the total cases. In all these cases there was a definite history of severe injury. In five a definite history of dislocation was obtained, and in these cases the radiographic appearance suggested detached fragments or calcification of particles of damaged joint structures. The remaining three suggested calcareous deposits in the subcoracoid and subdeltoid bursae.

No case of the condition of osteo-chondromatosis occurred in the series. The loose bodies in this condition usually contain sufficient calcium to permit of their demonstration by x rays. Hagemann[8] recorded a case in which the bodies were shown in the shoulder-joint, in the bursa beneath the coracoid process, and in the synovial sheath of the tendon of the biceps. Albee[1] recorded a case in which sixty-four joint mice were found in the shoulder of a patient, aged 33, who gave a history of trauma thirteen years before. Hugh Jones[6] records a case of osteo-chondromatosis of the shoulder-joint of a girl of 20, in whom the symptoms extended back twelve years. They were removed, but a further radiograph sixteen months later showed that a new collection had developed.

The presence of "rice" bodies in the joint usually cannot be detected on the radiograph, and there was no record of these bodies having been found in the shoulder-joint or bursae in this series. Mumford[10] records a case in which a large number of rice bodies, not shown on the radiographs, were removed from a large subdeltoid bursa, the walls of which microscopically suggested the diagnosis of tubercle.

In my experience recurrent dislocation of the shoulder is not often associated with loose-body production.

Fractures and Dislocations.—The numbers recorded under these headings refer only to those cases in which the fracture or dislocation had not been suspected or diagnosed at the time of the injury, and had been found only when, owing to the persistence of the pain in the shoulder, and sometimes at the demand of the patient, a radiographic examination was made. The majority of the bone injuries so discovered were limited to the greater tuberosity of the humerus.

Lesions in the Soft Tissues.—The radiograph does not give any evidence of inflammatory conditions of the muscles, tendons, or bursae unless they have existed for some time and calcium has been deposited in or upon the damaged structures. I reported two cases of infestation with *Cysticercus cellulosae* to a meeting of the Electro-Therapeutic Section of the Royal Society of Medicine in 1925.[2(c)] These patients complained of "rheumatic" pains, and radiographs showed calcified cysts throughout the musculature of the shoulder. I referred to similar findings by Stieda, Saupe, and Pickler, and to a case of trichinosis reported by Levy Dorn in 1923 in which the radiographs showed numerous minute calcified cysts throughout the musculature.

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ASTHMA IN CHILDREN.

BY

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ASTHMA occurs in young children more frequently than is generally supposed, for in infancy the clinical picture often differs from that seen in adult life: catarrhal features are much more in evidence and tend to obscure the diagnosis.

CLINICAL TYPES.

Above the age of 5 or 6 years the attacks are usually of the adult type, occurring at irregular intervals, and characterized by the sudden onset of dyspnoea, usually in the early hours of the morning. There is often considerable distress, the face is pale or cyanosed, the chest more or less fixed in the position of inspiration, and expiration is difficult, prolonged, and wheezing. Fever is usually absent. Cough is dry and hard at first, but, as the attack passes off, it becomes loose, and is associated with the appearance of bubbling rales in the chest. The duration

of these attacks varies from a few minutes to a few hours. If they are frequent and severe they may occasion considerable impairment of health, but as a rule the patient remains well in the free intervals unless structural changes have been produced in the lungs.

In infancy the manifestations are often different. There is sometimes no spasmodic dyspnoea, and the attacks resemble acute bronchitis. They are characterized, however, by a sudden onset, a moderate or slight degree of fever, a brief duration of only one or two days, and by a rapid subsidence. They recur at irregular intervals in the same way as do those of the adult type. More often the onset is less acute and sudden, and cough, dyspnoea, and wheezing respiration may sometimes persist for several weeks, with exacerbations at night. Sibili are plentiful in the lungs, and after prolonged or repeated attacks there may be evidence of emphysema, which often disappears completely if the asthma can be relieved. Milder forms are often seen, in which a brief cold is followed by cough and wheezing for one or two days.

ETIOLOGY.

Asthmatic attacks are more common in boys than in girls, and may occur at any age, even during the first few weeks of life. John Thomson[1] records that of 100 cases occurring in children under 14, no fewer than 29 arose before the age of 2, and 31 between the ages of 2 and 4—that is to say, 60 per cent. began in the first four years of life. There is often a history of asthma in other members of the family, but this is by no means always the case.

The sudden onset of classical asthmatic attacks with expiratory dyspnoea, distension of the lungs with air, and evidence of catarrh has long suggested that the anatomical basis consists in spasm of the bronchial muscles, associated with swelling and exudation from the mucosa. It is this latter feature which seems to predominate in infancy. As long ago as 1910 it was pointed out how closely these conditions resemble those which are found in young guinea-pigs dying of anaphylactic shock, and it is now generally admitted that asthma is a manifestation of allergy, occurring in patients who have either inherited or acquired a hypersensitiveness to certain protein substances. The rapid improvement which follows the injection of adrenaline affords additional support to this hypothesis. In most cases the offending material is probably inhaled, but it may also be ingested, or absorbed from some septic focus. There are many instances in which this hypersensitiveness is undoubted. For example, there are patients who develop asthma only after contact with some particular material—it may be the dandruff of animals (notably of horses or of cats), the pollen of certain grasses or flowers, or some foodstuff, such as egg. If the offending substance is avoided the attacks cease, only to return after fresh exposure. Often, however, neither history nor cutaneous tests with likely proteins reveal any particular cause, and the precise nature of the allergen remains unknown. However, Professor van Leeuwen and his associates[2] have produced much interesting evidence as to the common sources of such bodies. He divides them into two classes: (*a*) those occurring in the dust of the general atmosphere, and (*b*) those in household dust, to which many asthmatics seem to be particularly susceptible. It is interesting to note that allergens of class (*b*) do not seem to occur in hospitals or similar institutions, and that asthmatics who are susceptible to them remain well, provided that they do not sleep in private houses. By placing patients in specially constructed chambers from which all dust is excluded Professor van Leeuwen has been able to keep them from attacks. This work adds point to the well-known fact that people who suffer from asthma in one locality may be quite free from it in another.

CLINICAL DIAGNOSIS.

It is in the infantile forms that the diagnosis is most difficult, and such cases are often overlooked or mistaken for a simple bronchitis, particularly if prolonged observation is impracticable. The points which attract attention in the bronchitic type are the sudden onset with dyspnoea and wheeziness, the brief duration, and the rapid subsidence, followed by recurrence at irregular intervals. The milder and much more common cases with a brief catarrhal onset are more easily recognized, especially when the succeeding period of wheeziness is short and the attacks recur frequently. Many of the more protracted cases have been diagnosed as mild bronchitis with added bronchial spasm, or have been described as spasmodic bronchitis. There seems little doubt, however, that they are genuinely asthmatic in origin.

Attacks of the adult type are usually quite characteristic. Sometimes, however, other possibilities have to be considered. The sudden onset may arouse the suspicion that a foreign body has lodged in the respiratory tract. The dyspnoea of laryngitis—particularly of diphtheritic laryngitis—may sometimes suggest asthma, but here some evidence of laryngeal obstruction is rarely lacking. The rare condition known as thymic asthma is unfortunately named. Its etiology is, of course, entirely different from that of true asthma, the dyspnoea being caused, it is alleged, by the pressure of a large thymus on the trachea. It is important to remember that in all these conditions the chief difficulty in breathing occurs in inspiration rather than in expiration—the reverse of what obtains in a genuine asthmatic attack.

There are two conditions which, when present, help to confirm the diagnosis of asthma. These are (*a*) urticaria, and (*b*) a definite eosinophilia. There is also a therapeutic test which, although not infallible, is very valuable. This consists in the prompt improvement which so often follows the subcutaneous administration of adrenaline. This response is less definite in long-standing than in recent cases.

TREATMENT OF THE ATTACK.

The patient is put to bed, if not already there. From 5 to 10 minims of a 1 in 1,000 solution of adrenaline are injected subcutaneously. Relief from the bronchial spasm comes quickly, usually well within a quarter of an hour, though it may not last long enough for the attack to be abolished in this way. Next, it is well to cover the chest, front, and back with a mustard poultice until the skin is red; this takes about a quarter of an hour. After removing the poultice, grease the skin. The treatment may be repeated in three or four hours, provided the hyperæmia produced has subsided. A diaphoretic expectorant mixture, such as that recommended by John Thomson, namely:

Vin. ipecac.	ɱv
Sp. æth. nit.	ɱv
Liq. ammon. acet.	ʒss
Aq. cinnamomi	ad ʒj

should be given every four hours. When the acute attack is over, potassium iodide, 1 to 4 grains, in a mixture containing 5 minims of tincture of belladonna and 5 minims of ethereal tincture of lobelia, should be given thrice daily until the chest is clear.

PROPHYLACTIC TREATMENT.

We wish to dwell chiefly in this article on the treatment of the underlying conditions which predispose to asthmatic attacks, for if attacks can be reduced in severity, and the interval between them prolonged, the greatest danger to the child—emphysema and chronic bronchitis—may be averted.

Before considering treatment of the allergic state, it is essential to carry out a thorough examination of the upper air passages. A chronic nasopharyngeal catarrh, probably sustained by infected tonsils and adenoids, or chronically inflamed nasal sinuses, demands adequate treatment.

Asthma is, as we believe, a *symptom* resulting from allergic reaction in the bronchioles; the prevention of these reactions may be considered under two headings.

Avoidance of Contact with the Allergen Responsible.—It is probably true that if contact with the responsible allergen could be avoided for many years, the patient would become spontaneously desensitized. In any case, if it is possible to keep the child away from the offending substance for long periods, the diminished frequency of asthmatic attacks will go far to prevent structural damage to the lungs. Prophylactic treatment in this direction must therefore be given fullest consideration. In

rare cases careful observation of the conditions immediately preceding an attack of asthma may lead to the discovery of the substance responsible; it may be the presence of a cat, or a horse, or a feather pillow, or the ingestion of some food. These cases are very rare, but in them prophylaxis by avoiding contact with the substance to which they are sensitive is not, as a rule, difficult. If there is no such clue to the specific allergen responsible, it is scarcely worth while to attempt its detection by protein skin tests. The results in almost all cases are equivocal: in some cases a reaction is obtained with a large number of substances, in others with none of the substances used. There is, however, good reason to believe that in the great majority of cases the allergen which is causing attacks of asthma is inhaled. In the absence of a specific diagnosis, it is our duty then to investigate the effect of environment of the case. If any locality is found where the child is free, or comparatively free from attacks, let him stay there for as long periods as possible. We know that a large proportion of asthmatics are free from attacks at high mountain altitudes. Many London children are free from attacks in the country.

Attempts at Desensitization.

(*a*) *Specific Desensitization.*—In those rare cases where the offending substance is discovered, and where avoidance of contact with it is difficult, specific desensitization may be tried. Repeated subcutaneous injections with the substance, beginning with minute doses which are very gradually increased, may ultimately so reduce sensitiveness that the patient remains symptom-free. This is a method of treatment not to be lightly undertaken; it should be left to experts. Such patients are often highly sensitive, and it is easy to precipitate severe symptoms resembling anaphylactic shock in animals. Dudgeon[2] has recorded the case of a lady who had suffered from severe horse asthma from childhood. Deciding to attempt specific desensitization, he gave as an initial dose 0.25 c.cm. of serum. Within five minutes of the injection she was comatose, with signs of severe pulmonary oedema and heart failure. A reaction may occur with such alarming suddenness that an injection should never be made without having ready a solution of adrenaline.

(*b*) *Non-specific Desensitization.*—Experience shows that sensitiveness to a particular allergen may be diminished by treatment not only with this allergen, but also with any other substance to which the patient may be sensitive. When skin reactions are obtained with many different proteins, good results may be expected by treatment with any one of them. We may speak of this as non-specific desensitization—though it is *possible* that we are really using the specific allergen which happens to be a common component of many different substances. Professor van Leeuwen found that the majority of asthmatics were sensitive to old tuberculin. Deciding that it was therefore rational to attempt non-specific desensitization by repeated injections of small and gradually increasing quantities of old tuberculin, he proceeded to carry out this treatment in a large number of cases, and has reported striking success. The method has been used to some extent in this country, and a recent report by T. M. Ling[4] shows that results in children are encouraging.

Briefly the method is as follows: a series of decimal dilutions of old tuberculin is needed, conveniently put up in rubber-capped vaccine bottles—namely, 1 in 100, 1,000, 10,000, 100,000, and 1,000,000. The possibility of active *tuberculosis* is excluded as far as possible. A scratch skin test with pure old tuberculin is then performed, and the size of the initial dose is judged by the results. If there is a very *intense reaction*, the first dose should be 0.1 c.cm. of the 1 in 1,000,000 dilution. With a moderate reaction 0.5 c.cm. of this dilution may be given, and with a negative reaction 0.1 c.cm. of 1 in 100,000. Injections are given twice a week, each dose being increased by 0.1 c.cm.; after about four months the interval is increased to one week, and later, for the last four months of treatment, to two weeks. Treatment must be continued for a year or longer. When definite improvement seems to have been achieved, no further increase in the dose is made.

We are able to report on nine cases treated by this method during the last twelve to eighteen months at the East London Hospital for Children, Shadwell. The results have convinced us that in old tuberculin we have a most valuable ally in the treatment of asthma in children. The mothers have brought their children with striking regularity. They are in no sort of doubt that marked improvement has occurred during the course of treatment. An early improvement in the child's general condition is especially noticeable. We may add that a point which seems to throw some doubt on the rationale of this treatment is that we have not seen a positive skin reaction with old tuberculin in any of our cases.

Eight of our cases are boys, one a girl. The most striking successes are Nos. 2, 5, 7, and 8 of our series.

Case 2 is a boy, aged 6 years, who had had attacks of asthma every two to three weeks in the winter months, and at rather longer intervals in the summer, for four years, and who, for a period of about two months shortly before tuberculin treatment was started, was having attacks almost every night. Eighteen months' treatment by the usual methods produced no improvement. He has been treated for one year by injections of tuberculin, and during that time has had only three attacks of asthma.

Case 5 is a boy, aged 8 years, who for about four years had suffered from asthmatic attacks at roughly three weeks' interval. During sixteen months of treatment by the usual methods he had nineteen attacks. During the following twelve months he was treated with tuberculin, and had only five slight attacks.

Case 7, a girl, aged 10 years, had suffered from asthma for about 5 years, attacks occurring at roughly monthly intervals. During 10 months of treatment by the usual methods, and with peptone injections in addition, she had twelve attacks. This was followed by tuberculin treatment, which has been given now for seven months; during this time she has had only three slight attacks.

Case 8 is even more striking, for no attacks whatever have occurred during six months' treatment in a child who was having them at four to six weekly intervals.

Cases 4 and 6 of our series show a slight improvement only—not strikingly different from that obtainable by the usual methods. Cases 1, 3, and 9 are improved, but to an even less degree.

We feel confident in saying that six out of our nine cases have derived considerable benefit from tuberculin injections, and that this is a method which might with advantage be used much more extensively in this country.

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THE USE OF EPHEDRINE IN ASTHMA AND WHOOPING-COUGH.

BY

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THE introduction of ephedrine into the realm of therapeutics has not received the attention in the English literature which it merits. The main facts as at present known of its therapeutic and pharmacological action are as follows:

1. The pharmacological action and chemical structure resemble those of adrenaline.

2. The salts of ephedrine, the hydrochloride and the sulphate, are remarkably stable, and solutions of them can be boiled without any decomposition or loss of activity. They are effective whether given orally, hypodermically, intramuscularly, intravenously, or [illegible]

3. Ephedrine raises the systolic blood pressure. Although it acts more slowly and less completely than adrenaline, yet its action is more prolonged.

4. In animals ephedrine causes contraction of the uterine musculature.[1] It thus differs from adrenaline in this respect.

5. Spasm of the bronchi, not only induced experimentally in animals, but also occurring in asthma, is relieved by ephedrine.

6. Locally the drug acts as a mydriatic[2] and blanches mucous membranes, as those of the nose and pharynx.[3]

7. Given in large doses to animals, its action resembles that of adrenaline in stimulating the release of glycogen from the liver, thus raising the blood sugar.[4] I have found, however, that therapeutic doses of 1/2 grain to 2 grains do not raise the blood sugar level in the normal or diabetic subject.

8. Its clinical application in internal medicine has been extremely wide, but the best results have been obtained in asthma, hay fever, and whooping-cough.

The results reported in this paper have been obtained as a result of treatment of cases of asthma and whooping-cough.

BRONCHIAL ASTHMA.

Nineteen cases of asthma, in patients of various ages, were treated with ephedrine hydrochloride. They may be divided into two groups according to whether they were suffering from (*a*) acute attacks of pure asthma, or (*b*) asthma complicated by bronchitis and emphysema. The majority of these patients had at least one attack per diem, and were in a persistently wheezy condition.

The scale of dosage of ephedrine hydrochloride which was found most satisfactory was: adult, 1/4 to 1 grain; 1 to 5 years, 1/6 grain. The drug was given to adults in tablet form, and to children it was prescribed along with 10 minims of glycerin and chloroform water to the drachm. It is not advisable to give a larger dose than 1 grain, because toxic symptoms are more liable to occur, and, moreover, larger doses do not exert any more beneficial action. Some patients have an idiosyncrasy to the drug, and even 1/2 grain may produce toxic symptoms.

The adult patients of the first group, when seen for the first time in an attack, were given 1/2 grain of ephedrine orally or subcutaneously. When complete relief was obtained it followed oral administration in twenty to forty minutes, and hypodermic injection in ten minutes. Relief is sudden, and occurs simultaneously with the rise in systolic blood pressure, except in those few cases in which the blood pressure is initially high, when it remains unchanged. Oral administration was usually adopted, but in severe cases subcutaneous injection was resorted to occasionally. When the diagnosis and absence of idiosyncrasy were established the patient was instructed to take the drug by the mouth immediately an attack was imminent. In this way attacks were often aborted. In cases of nocturnal attacks the patients received the drug orally just before retiring for the night. They were encouraged to retire after 11 p.m. and forbidden to take any food after 7.30. An undisturbed night usually followed. In those cases in which an attack occurred in spite of the drug a further 1/2-grain dose was taken immediately on waking. This successfully aborted the attack. Eventually it was found that the one dose of 1/2 grain taken on retiring ensured an undisturbed sleep. Unless the nocturnal attacks are frequent it is not advisable to give the drug every night as a prophylactic, but rather to administer it when the attack occurs. In this way any tendency to the development of tolerance is obviated.

Patients in the second group, in whom several attacks occurred during the day, received the drug orally two to four times daily. A very important point in the oral administration of ephedrine is that the drug must be given at least thirty minutes before a meal if an optimum action is to be obtained. In this way one ensures as far as possible that the drug is taken on an empty stomach, and that complete absorption has occurred before food is taken. Thus, if ephedrine is to be given twice a day to an asthmatic or to a child suffering from pertussis, it must be taken at least thirty minutes before breakfast and just before going to bed. The last meal should be taken at least three hours before the patient retires for the night. The results obtained on using this plan were:

GROUP I (10 cases).

Great relief	7
Relief, but toxic symptoms prevented use	1
Failure	2

GROUP II (9 cases).

Number of attacks decreased	4
Period of fewer attacks followed by failure	2
Failure due to toxic symptoms	1
Complete failure	2

The following classification of these cases has been obtained as a result of the study of the history, clinical condition, and severity of the attacks.

GROUP I.	Results of Treatment.
Short history of pure asthmatic attacks, mild or moderately severe	Complete relief.
Long history of pure asthmatic attacks, mild or moderately severe, and with over a week between attacks	Successful.
Severe attacks	Complete failure.

GROUP II.	
Complicated asthma with frequent mild and moderate attacks	Some success.
Complicated asthma with severe attacks	Failure.
Complicated asthma, if tolerance develops	Failure.

One dose of ephedrine gives relief from asthmatic symptoms for three to six hours, but its effect on the systolic blood pressure is shorter. Toxic symptoms occasionally occurred. Palpitation was the commonest, occurring in three cases, headache in two cases, and insomnia in two cases. They were usually slight, but two patients refused to take the drug because of the discomfort. Some degree of tolerance often occurs in cases receiving ephedrine three to four times daily. In two cases the drug failed to give any relief after three weeks' treatment. No cumulative effect of the drug was observed.

PERTUSSIS.

Twenty cases of whooping-cough in the paroxysmal stage were treated with ephedrine hydrochloride. The following points were ascertained before treatment was commenced: (1) the paroxysmal stage had not been present for more than one week; (2) all other drugs were withheld; (3) severe bronchitis was absent.

The success or otherwise of the drug had to be judged by the report of the parents. They were instructed to notice and record (*a*) the number of paroxysms of coughing occurring, particularly at night, and their severity; (*b*) the frequency of vomiting; and (*c*) the number of times the child was heard to whoop. The cases were seen on an average every three days.

The scale of dosage used, according to age, was: Over 5 years, 1/4 to 1/2 grain; 1 to 5 years, 1/6 grain; 6 to 12 months, 1/8 grain; and under 6 months, 1/12 grain. Due regard was paid to the weight of the child. The drug was prescribed with 20 minims of glycerin, and chloroform water to the drachm, and given one to three times a day according to the severity of the case. The same precautions in administration were observed as in the treatment of asthma.

As a result of treatment of these cases it was found that ephedrine gave considerable relief to cases of mild and moderate severity, but in very severe cases it appeared to have no more value than any other remedy given internally. Only in the severe cases, in which ephedrine alone had failed to produce any marked relief, was any other drug administered along with ephedrine. In these cases the following prescription was used:

	According to age
℞ Ephedrine hydrochloride	gr. 5
Tinct. belladonnae	m 5
Vin. ipecac.	m 30
Syr. balsam tolu	ad 1 drachm
Aq. chloroform.	

Belladonna and expectorants, although by themselves practically useless in any case of whooping-cough, if given in conjunction with ephedrine enhance its action. It was found that in these severe cases the mixture gave slightly more relief than ephedrine alone. The beneficial action of the drug is first made evident by the paroxysms of coughing becoming shorter and less severe. Later, with the shortening of the paroxysms, the whoop and vomiting become less frequent. Finally, in successful cases, the child is left with a cough which in no way resembles the violent one of pertussis. It must be stressed, however, that although the violent cough, whoop, and vomiting are relieved, the disease, as shown by malaise, irritability, sweating, etc., continues. No definite toxic symptoms were observed with the dosage used, though sweating was perhaps a little more marked.

CONCLUSIONS.

1. Ephedrine has a definite beneficial effect on moderate attacks of asthma, their number and severity being diminished or even completely aborted.

2. It has no effect on severe attacks of either simple or complicated asthma.

3. Its effect in pertussis is to relieve the violent cough, the whoop, and vomiting, in mild or moderate cases. In severe cases there is no effect at all. The progress of the infection is not influenced, the relief being limited to the mechanical factor.

4. Ephedrine appears to act by relieving the local spasm in the broncho-constrictors. This spasm is produced by the irritant effect of the tough mucus on the mucous membrane, made hypersensitive by the toxins of *B. pertussis*. By relief of this spasm the irritant mucus can be removed without the violent expiratory efforts or coughs which are usually necessary. The paroxysms are thus made shorter and less severe, and hence in favourable cases the whooping and vomiting disappear. Belladonna paralyses the broncho-constrictors, and thus aids the action of ephedrine, which stimulates the broncho-dilators. If belladonna be given with ephedrine it is necessary to antagonize the "drying effect on the secretion" of the former drug by giving an expectorant. In bringing about this effect ephedrine in no way influences the course of the infection, but simply relieves the mechanical difficulty of removing the secretion and hence minimizes the exhausting efforts on the part of the child.

[Since this article was written a further 10 cases of asthma and 15 cases of pertussis have been treated with ephedrine. Similar results were obtained to those described.]

I am indebted to Dr. Jewsbury for permission to publish my results on many of the cases.

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A NOTE ON A SYMPTOMATIC TREATMENT OF ASTHMA.

BY

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A FEW short notes on a symptomatic treatment of asthma which has been in use for over four years, and has given consistently good results, may be of interest and possibly of value to others. Accurate figures of the number of patients treated are quite unobtainable, for the majority have been out-patients, and the records are practically impossible to collect. It is estimated that at least three hundred cases have been treated, and only two have shown so little improvement that admission became necessary.

This "system" is not intended to be employed alone, except in asthma of children; in them it has given good results, and in a fair proportion there have been long intervals of freedom from symptoms. In adults the treatment is usually associated with some form of radiotherapy—either *x*-radiation of thorax or spleen, or ultra-violet radiation of the surface of the trunk; or it has been combined with some form of specific or non-specific protein therapy. As this article is not concerned with the whole treatment of asthma, these associated treatments will not be discussed further. A sufficiently large proportion of the cases have been treated solely by this method to convince me that it is of value.

Before starting treatment various etiological factors are inquired into, and removed when possible. Most attention is given to the contents of the bedroom in cases with nocturnal incidence, and to clothing, occupation, and diet of the cases with variable or diurnal attacks. All are advised to take a light supper or dinner and to attend to the common rules of hygiene. In view of the known clinical and experimental relationship of asthma to lesions of the nasopharynx, this is carefully examined and treated if necessary.

This series contains a number of cases of hay asthma and hay fever; both have responded well. The calcium mixture should be administered for about six weeks before the attack is due. The calcium mixture has been altered many times, in attempts to make it more palatable and stable; we have not been able to better the formula now published. It is the camphor which causes most trouble; many people are susceptible to it and develop nausea or syncopal feelings. The camphor may be omitted in cold weather, but in summer the mixture decomposes in a few days unless camphor is present. The calcium mixture contains:

Albuminate of calcium chloride	15 grains
Simple syrup	15 minims
Water	1 ounce

The dose of albuminate is in terms of calcium chloride.

One ounce is a full dose. To this amount is added one-third of a minim of liquor atropinae (*B.P.*). It is given thrice daily for about two weeks and the result is watched. Then the amount of atropine is increased or diminished to that which gives definite, but slight, dryness of the mouth. It is found that it is necessary to reach the lower level of toxicity to obtain alleviation with atropine. Children are given a slightly smaller dose; it is well known that children stand atropine well.

It is not so easy to dispense this mixture as might be thought; it is very much better to make it in bulk, but the addition of the atropine should be reserved until the mixture is issued. The best method for making the albuminate above mentioned is as follows:

Take the whites of seven fresh eggs, add an equal amount of distilled water and 25 grains of powdered camphor. Shake and let stand for two hours or so. Strain through muslin. Dilute to one pint with distilled water and then add 50 ounces of 1 in 3 aqueous solution of calcium chloride. Filter, and, if necessary, make up the volume to 50 ounces.

The dose is 1/2 to 1 fluid ounce, taken thrice daily, after meals. Many patients find that it is less unpleasant if taken in milk, others do not agree. It certainly is so unpleasant that the patients would not go on with it unless there was some decidedly good result. After some weeks of it most of the patients appear to acquire some tolerance and a few even get to like it. A strong peppermint immediately before drinking the mixture is useful. It should be taken regularly, even if the attacks cease, and it should be continued for at least a month after the last attack.

This mixture is used a good deal locally in other conditions in which calcium medication is necessary. It has been found of use in the related conditions—angio-neurotic oedema, urticaria, eczema, and erythema pernio. In these it should be associated with administration of ostelin and parathyroid extract. For some years Messrs. Ferris and Co. of Bristol have manufactured it for private patients; it is called Mist. calci chlor. (alb.) locally, for ease of prescribing.

The second part of the treatment is the administration of the caffeine mixture. This is given in drachm doses at the onset of symptoms, or before the onset when possible. In the event of regular nocturnal attacks a dose is taken before going to bed, and the bottle is kept at the bedside in order that another dose can be taken as soon as any symptom appears. The irregular cases carry a small flask of it about with them. It is quite safe to give several doses in twenty-four hours. This caffeine mixture is called "caffneine" locally, again for ease of prescribing, and has been manufactured by Messrs. Ferris for some years. It contains:

Caffeine sodium iodide	5 grains
Sodium iodide	5 grains
Dilute hydriodic acid (*B.P.*)	5 minims
Decoction of coffee	50 minims
Water	to 1 drachm

The decoction of coffee is made in the usual way with 3 ounces of fresh coffee powder to one pint of water. This is filtered and the three iodides are added.

Before being issued for use 1/4 to 1/2 grain of ephedrine hydrochloride is added to each dose. This has been done for over a year; but the "caffneine" as issued by Messrs. Ferris at the present time does not contain ephedrine.

After two years of experience of ephedrine it is found that not more than 1½ grains should be administered in a day, otherwise unpleasant gastric and circulatory symptoms will be frequent. Children require a proportionately smaller amount.

Discussion of the Mode of Action.

This basal method is not purely empirical and the selection of the ingredients is not fortuitous. It is admitted freely that an exact explanation of the mode of action will have to wait until our knowledge of pharmacology is bettered. In brief, the actions appear to be as follows. Calcium may make up the deficiency of this element, which is usually found in asthma. The defect may be a part cause of the spasm and irritability of the bronchial muscles. It should act in depressing vagotonia, if this be present. It appears to be rather intimately linked with several pleuro-pulmonary disorders. It should reduce vascular permeability. Atropine is too well known to require discussion. Ephedrine has the same actions as adrenaline, but is effectively absorbed from the alimentary canal. Its effects are usually discernible about thirty minutes after ingestion; at least, this is so in cases of colic, in which it is of use also. It should reduce spasm of the bronchial muscles. It should reduce vagotonia, if present. Caffeine is difficult to account for, although it has enjoyed a reputation in asthma for years. Theoretically it should not be of use, for it acts in the opposite direction to ephedrine and adrenaline;[1 2] the latter stimulate the sympathetic side of the vegetative system, the former paralyses it. Caffeine also causes increase of muscular irritability, and so is opposed to calcium. It is possible that it acts by its respiratory and circulatory stimulation. The iodides probably act as expectorants; but in part they may stimulate the sympathetic side indirectly.

It has been admitted that this explanation is scanty and incomplete, but a full attempt would take up much space and still be indecisive.

I have to thank Mr. A. L. Taylor and the pharmaceutical staff of the Bristol Royal Infirmary for their help in the preparation of these mixtures.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

IMMEDIATE ENUCLEATION FOR THE TREATMENT OF QUINSY.

SINCE 1915 I have performed tonsillectomy in various ways on more than 7,000 patients. As up-to-date journals or instruments were not available, for the first thousand or so I used different methods of enucleation by dissection, and still consider that for speed and sureness of removal finger dissection cannot be beaten. The clinic operator, who guillotines his fifteen or twenty an hour, should always have handy a Collins pile forceps, which is necessary in case, owing to previous operations or rigid muscles in the fauces, the guillotine has failed and the patient is coming round.

While watching the course of cases of quinsy the conviction grew that the disease was in reality a septic cellulitis, which settles down into an abscess only when Nature is winning the battle, and at varying rates of formation of pus. It is an attempt to get rid of an infected foreign body, and we should remove it to hasten cure and prevent future invalidism.

It is like taking off the rotting, useless trapdoor of a cellar which one wishes to empty and disinfect, and happens to be as simple. Acting on this assumption, I have performed over 120 of these operations, and have regretted none. Emboldened by the rapid convalescence, immediate relief from pain and fever, and perfect anatomical results, I have extended the operation, and now usually remove the opposite tonsil as well, and often the post-nasal adenoid tissue when present. I do this only when the clinical picture is one of sepsis being successfully fought and one can trust to the patient's plentiful supply of antibodies to heal the extra raw surfaces.

Usually it is not possible to operate until the third, fourth, or fifth day of the disease. Before the operation one should use heat in every form to aid the defensive forces of the system. Sometimes even then pus has not developed, and only cellular jelly meets the gloved finger. Even this, like pus, makes it easier for one to strip the often buried and adherent fibrous tonsil from its bed, the active inflammation digesting the adhesions to the overlapping anterior pillar and plica triangularis. In order to hasten the period of epithelialization of the raw surface one can leave much of the anterior pillar. But I believe the sole use of the muscle in it is to act as the front handle of the "lemon-squeezer" which is formed by the anterior and posterior pillars of the tonsil bed. The "squeeze" should help to empty the crypts of the tonsil during each act of swallowing, and, by the pain produced by swallowing when the tonsil is congested, prevents us from overeating when chilled or fevered. In sthenic or strumous people, who need much antibody in the system, the anterior pillar overlaps the tonsil very extensively, so that much of the tonsil juice is squeezed into the lymph vessels of the neck, where it can produce further effects in the glands. Hence, when we have removed the tonsil the squeezer muscle is unnecessary, and for a series of about 300 patients I removed the anterior pillars (including my own). The results were good, and the "beds" cleaner and free from the dirty clot which sometimes adheres in deep beds, but owing to the extra time taken during healing I usually spare it now.

The instruments are: (1) thick gloves; (2) tongue clip of towel-clip type; (3) gag (Sydenham's preferably); (4) long straight vulsellum or Lane's tissue forceps (I prefer Mayo's vein-dissecting forceps); (5) long blunt-pointed straight scissors (Mayo); (6) long straight Collins pile forceps, with oval fenestrated ends capable of clamping on to the large juicy tonsil when the upper half is stripped from its bed. One can get nearly all of a "ripe" tonsil free; the final movement with the Collins forceps is one of shoving the tonsil down the throat to peel its lingual tail off. Tags and fringes can be clamped and pulled off with it, and this stops bleeding well.

The position is: head extended, hanging down over the end of the table. The anaesthetic is ethyl chloride sprayed slowly on to a Skinner's mask well wrapped round with Turkish towelling, or, for longer work, atropine and chloroform. I have had some very severe and chronic quinsies to treat.

In one case of five weeks' duration with a history of fifteen previous attacks, a two and a quarter inch styloid process snapped off from the skull and came away attached to the back of the quinsy tonsil. Two cases occurred during pregnancy. One at three months proceeded to full term; another had to be operated upon at full term, and three days later I had to deliver her with forceps for a "deep transverse arrest." She made a perfect recovery.

I have several times operated thus for patients with infectious fevers, including scarlet fever and diphtheria, and for others with otitis media and mastoiditis. In one case there was a large cervical abscess, which, opened first, allowed the patient to breathe through the hole in the neck and the tonsil bed, when allowed to do so. The results were perfect, and no complications occurred. I have seen four patients die from septicaemia without an operation being possible—abscess not attempting to form. After operation two or three cases threatened to develop secondary haemorrhage, but the Collins pile forceps pushed well home over the spot, clamped, and jerked away, caused the elastic recoil and intra-vascular clotting in the coiled-up arteries needed to stop it.

This method never fails in the haemorrhage which sometimes follows the use of a too sharp guillotine, or the bleeding which sometimes comes in an alarming flood a few hours after the use of any of the two-bladed (crushing *plus* cutting) guillotines. In "bleeders" haemoplastic serum can be injected either before (if one has warning) or afterwards when one is caught unaware, *actually under the tonsil bed*. One should begin from above in the palate and travel down in the oedema caused by the serum; this relieves one from the fear of touching one of the vessels in the carotid sheath. This method stops "bleeders" from oozing, practically instantly. For members of the working class, who suffer from quinsy repeatedly, can be induced to have an "interval" operation; and this, when it is performed, seems to me to cause much more pain than an operation undertaken during the quinsy.

Bishop's Stortford. R. A. R. WALLACE, F.R.C.S.

THE GLYCERIN TREATMENT OF PUERPERAL SEPSIS.

DR. REMINGTON HOBBS's method of treating puerperal sepsis by the injection of glycerin into the uterus forms, it is generally agreed, a very valuable addition to our armamentarium in fighting this dreaded disease. It depends on the highly hygroscopic action of the glycerin, which induces an increased flow of serum into the uterus. Two practical difficulties arise; one of these has been, so far as I am aware, overlooked, and the other has been only partially surmounted.

The first difficulty is that glycerin stored in ordinary bottles in a damp climate—Calcutta during the rains affords a good example—absorbs so much moisture from the atmosphere that its hygroscopic action on the uterus must be negligible. This was pointed out to me by Lieut.-Colonel T. C. Boyd, I.M.S., professor of chemistry in the Medical College, Calcutta. I suggest to manufacturers that they should put on the market hermetically sealed glass ampullae, each containing about 20 c.cm. of chemically pure glycerin. I should like to suggest further that the hygroscopic action of the glycerin might be augmented by the addition of anhydrous magnesium sulphate. Three grams of this salt can be added to 20 c.cm. of glycerin without making it too viscid. I have used this preparation recently on two cases of streptococcal infection of the uterus with very gratifying results. The magnesium sulphate is sterilized in a hot air sterilizer at 150° C. for one hour, and added to the glycerin before injection into the uterus.

The second difficulty is the method by which the glycerin is injected into the uterus. If the catheter or tube is passed into the uterus daily, the patient, who is very ill, is subjected to a good deal of disturbance: if the catheter is left in situ, so as not to disturb the patient daily, it is certain to slip out and the glycerin is injected next time merely into the vagina. It is suggested in *The Queen Charlotte's Practice of Obstetrics* that a piece of porous sponge tied to the catheter a little below the eye will keep the catheter in position. I would suggest that the difficulty could be best overcome by a specially made large-sized self-retaining catheter, the outer measurement of the tube being half an inch wide and the flanges on each side being three-fourths of an inch. This would be easily introduced and unlikely to slip out.

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Reports of Societies.

EARACHE.

A MEETING of the Medical Society of London was held on February 11th, when DR. J. WALTER CARR, the president, paid a tribute of respect from the chair to the late Dr. de Havilland Hall, who was a Fellow of the Society for fifty-five years and its president in 1903.

DR. H. MORELAND MCCREA introduced a discussion on earache. He said that earache, being a pain, must be considered under the classification of pains—namely, localized, as in otitis media or furunculosis; referred pain, due to lesion of the same nerve area; and transferred pain, of which one of the most striking examples in his experience was in a patient subject to attacks of angina, which always began with a violent earache, the pain being transferred to the ear by some unknown means, probably through interconnecting branches of the vagus. A case of otitis media might be one of the most serious things a surgeon had to undertake, and no stone should be left unturned in diagnosis until this condition had been definitely excluded. He emphasized strongly the need for prompt treatment of any acute suppurative inflammation of the middle ear, and the danger to the permanent hearing, perhaps even to life itself, if such measures were delayed. In differentiating furunculosis there was one helpful point which might be remembered, that the common organism in it was *Staphylococcus aureus*. Minor local causes of earache might be the presence of cerumen in the meatus, or an increase of atmospheric pressure due to blocking of the Eustachian tube by adenoids. The points in examination were: history; constitutional disturbance; condition of the drum, whether bulging or perforated, and accompanied or otherwise by discharge; temperature; state of the lymphatic glands and the bone; and deafness. If there was no local cause for earache, the next thing to do was to examine the regions from which the pain could be referred or transferred. The salivary glands could cause earache; as a referred pain it might be due to acute tonsillitis, and continue after enucleation of the tonsils; ulceration or erosion of the tongue, again, could bring about constant or intermittent intense pain in the ear. An aching tooth might also be the cause; intense ear pain might be induced by a buried wisdom tooth. Disease of the larynx could give rise to intense earache, which might be purely transferred pain. The possibility of the origin of the pain being an early cancer or tuberculous lesion in this area should not be disregarded.

MR. HERBERT TILLEY said that earache was a very deceptive symptom in that the gravity of the causative lesion might have little proportion to the severity of the pain. A furuncle in the meatus, although not endangering life at all, might render life intolerable for three or four days, while an earache which was scarcely more than a bearable discomfort might be the only subjective symptom of retained sepsis in close proximity to the temporal meninges. Dealing with intrinsic causes, Mr. Tilley first touched on foreign bodies, such as a pea or some vegetable grain, in a child's ear, sometimes possible of expulsion by gentle syringing, otherwise, if impacted, requiring removal with a suitably curved probe or hook under a general anaesthetic. A not infrequent foreign body was a foul pledget of wool which the patient had forgotten to remove. Cerumen pressing against the tympanic membrane might cause earache, but more particularly vertigo. Furunculosis, due to staphylococcal inflammation of a hair follicle or sebaceous gland in the epidermic lining of the cartilaginous portion of the meatus, sometimes resulted in intolerable pain. With regard to the differentiation of this condition from mastoiditis Mr. Tilley suggested three points: the hearing would probably be normal in the case of furuncle, whereas in mastoiditis there was likely to be some damage to the middle-ear structures; the movement of the jaw or auricle would accentuate the pain in meatal inflammation, but hardly that caused by mastoiditis; and direct pressure on the oedematous area would not greatly increase the pain of a furuncle, but would accentuate that due to inflammation in the mastoid antrum or cells. Dealing with acute inflammation of the middle-ear cleft, which furnished the physician with most of his cases of severe earache, if the physician satisfied himself that acute inflammation of the intact tympanum was present he should, in the case of a child, make arrangements for a brief general anaesthesia in order that the tympanic membrane might be incised. In the adult local anaesthesia could be used. It was his firm conviction that once the tympanic membrane was acutely inflamed and uniformly congested paracentesis should be performed. A clean and free incision through the posterior half of the drumhead provided immediate drainage for inflammatory products from the tympanum, thereby saving the delicate mechanism of the middle ear from possibly irreparable damage, and perhaps also hindering a spread of infection to the mastoid antrum, its cells, or to important regions in the vicinity. The milder and fugitive forms of earache in children, Mr. Tilley added, should be taken as a note of warning by the thoughtful physician. They almost invariably implied a mild infection of the Eustachian tube and middle ear, and examination of the nasopharynx would frequently reveal that abnormal degree of lymphoid hypertrophy which was called adenoids. In chronic suppurative otorrhoea earache should be regarded as a symptom of arresting significance, because it meant that septic inflammatory products were retained under tension in the middle ear or on its adnexa. In these circumstances, and without the addition of any other local or general symptoms, one would be justified in adopting surgical measures for the free exposure and drainage of a septic focus. Earache might be complained

of in patients suffering from chronic non-suppurative inflammation of the middle-ear cleft which had given rise to the formation of cicatricial changes in the tympanum or of sclerosis of the mastoid bone. In such instances the earache was usually of a dull boring character, as compared with sharp pain of the more acute inflammatory types. With regard to referred earache, Mr. Tilley contented himself with a reference to earache caused by chronic or suppurative inflammation within the sphenoidal sinus and the regions in its neighbourhood.

Sir JAMES DUNDAS-GRANT said that disease in the tonsil was often the cause of earache, but sometimes, when both ear and tonsil showed signs of inflammation, it was difficult to decide which was the cause. If one could anaesthetize the tonsil and thereby remove the pain in the ear it was a reasonable possibility that the pain was a reflected one from the tonsil. In the examination of the ear of a small child it was useful to tilt the head and pull the floor of the meatus downwards (not upwards as in the adult) and backwards, which gave an astonishingly good view of the tympanic membrane.

Mr. THEODORE JUST referred to the curious prejudice in some quarters against the use by the aural surgeon of an electrical auroscope. He considered it wrong to teach the student to discount the use of electrical weapons in the examination of the ear, and he emphasized the need for the best illumination possible. He considered also as unjustified the prejudice against the opening up of the mastoid on suspicion of mastoiditis. After all, the danger of opening up a doubtful mastoid was no greater than that of opening up a doubtful appendix case, which was undertaken without any question.

Mr. HAMBLIN THOMAS said that sometimes in infants a minute streptococcal infection of the skin behind the ear was found, accompanied by a good deal of pain. Pain was also caused in the ear by the presence of wax which had been there for a long time and had come to exert a certain pressure, and the skin underneath it had become atrophic. Even after the wax was removed pain might continue for some time. In the treatment of the pain carbolic acid drops and glycerin were commonly given. This might relieve the pain for a few days, but after a time the carbolic acid removed the superficial layers of the epithelium, with consequent pain in the ear again. Some people were sensitive to the crystals of boric acid, which was often used in cleaning out ears. Short stabbing pains in the ear occurred in people with arterio-sclerosis and high blood pressure.

Mr. ERIC STEELER agreed with Mr. Tilley as to the importance of performing a paracentesis once the tympanic membrane was acutely inflamed. It was far safer to open the drum than to let it go on to spontaneous rupture.

Mr. TILLEY, replying to a question as to how often he had seen earache as a referred trouble from sphenoidal suppuration, said that he had only seen two cases in thirty years, but they were quite definite and unmistakable.

EARLY DIAGNOSIS IN SPINAL INJURIES.

AT a joint meeting of the War Section and the Section of Surgery of the Royal Society of Medicine on February 6th a discussion took place on the need for early diagnosis in the treatment of spinal injuries. Sir HOLBURT WARING presided.

Group-Captain H. V. WELLS, who spoke from the point of view of fractures due to aeroplane crashes, referred to those less obvious cases in which the body of a vertebra was fractured without any immediate or grave involvement of the spinal cord or spinal nerves. There were "missed" cases in which, weeks or months after the injury, a spinal curvature or a definite neuritis showing involvement of the spinal nerves was discovered. After an aeroplane accident, judged not to have been of a serious nature, the medical officer merely recording a bruising or straining of the muscles of the back, the patient might be rested in bed for a few days, treated by massage, and then sent back to his duty; then, weeks later, he would seek medical advice for shooting pains or inability properly to straighten his back, and a skiagram would disclose an undoubted fracture and damage beyond rectification except by extreme measures. Fractures of the upper part of the spine were brought about by the spine being forcibly bent upon itself, the head being forced forward upon the curved upper spine, when the position about the second or third dorsal vertebra probably received the maximum compression. Fractures of the lower region were brought about by the weight of the head and chest, supported on the lumbar spine at the moment of impact, being reinforced by the rebound transmitted through the lower limbs. The particular type of fracture concerned in that discussion was a compression fracture involving the vertebral body only. The obvious way to settle any doubt was to radiograph the spine in all such cases. But would the skiagram at this early period show anything definite? There was no appreciable displacement, the crushed vertebra had come back into position near to its normal outline, and although the bony outline might be a little suspicious, one was left still in doubt. The only things on which the medical officer could rely were the history of the accident (which gave some indication as to the likely damage); the persistence of pain, not in itself a sure guide; and the skiagram, which could give little help where there was no marked displacement. Many patients who had been involved in flying accidents had subsequently suffered for varying periods with definite pain in the lumbar region, with maximum tenderness located over one or other lumbar vertebrae, but x-ray examination failed to reveal any signs of a bony lesion. All these patients had subsequently recovered without any residual symptoms, and it was suggested that in these cases the lumbar vertebrae suffered from the effects of compression, with severe bruising, without actual fracture. Possibly severe compression might give rise to some lesion of the bone, with or without definite fracture, resulting in subsequent absorption of bony tissue. From the skiagram there appeared to be no guiding factor to enable the medical officer to say whether the lesion was minor or major. The right policy would seem to be that any patient who complained of pain in the back after a serious accident should invariably be treated as a potential case of fracture, but to lay this down as a hard-and-fast rule would involve the loss of a considerable number of man-hours purely as a matter of safeguard.

Sir PERCY SARGENT said that since the war the cases of spinal injury which he had seen had been mostly due to two common causes—namely, colliery accidents and hunting accidents. In the former the injury was usually caused by the fall of a mass of coal or stone on the back while the man was in a stooping posture; in hunting accidents hyperflexion of the spine probably played the chief part. When the force was extreme, fracture resulted. He limited his remarks, however, to those cases in which no conspicuous damage was done, though the patient might suffer considerable disability later on. The great necessity was to make up one's mind at an early date as to the right line of treatment in these cases of apparently minor injury. Diagnosis and prognosis were notoriously difficult in such cases, and it was only wise to impose upon these patients a probationary period, not necessarily of rest, certainly not of rest alone, but of observation and treatment. Systematic neurological examination should always be made and repeated from time to time in case any physical signs turned up at a later period. A good skiagram, lateral as well as antero-posterior, should also be made. The spine which appeared normal radiographically immediately after the accident might, months afterwards, show atrophy and collapse of one or more vertebral bodies. It had been suggested—and was possible—that in these cases some early operative measure might legitimately be employed, but in most the cure of the pain and stiffness and the arrest of the oncoming deformity could be obtained by proper treatment of the muscles. The spine required support from its ligaments and muscles, and by a proper treatment of the muscles he meant such measures as would improve their tone, and perhaps their bulk, but would certainly enable them to deal with the extra strain thrown upon them in consequence of the spinal damage. Such treatment might include massage—though he had no opinion as to that beyond its ability to improve nutrition—and also electrical stimulation, by which he meant the production of rhythmically graduated contractions, not the painful tetanic spasm brought about by the strong faradic current

This was a means of toning up the muscles and improving their supporting power. If the contractions were systematically and rhythmically applied the whole treatment had a very far-reaching effect on the condition of the soft parts, the bones, and everything else. It had to be borne in mind in spinal injury, even of a slight degree, that symptoms of pressure on the cord might occur a long time after an injury. Many victims of aeroplane accidents, who showed no obvious signs of spinal injury at the time, might produce evidence of serious later effects such as collapse of vertebral bodies and secondary spinal cord symptoms. The effects on the spinal column might be prevented by proper treatment of the damaged muscles. Possible late effects upon the spinal cord and nerves could not be foreseen, and must be so rare that in this particular connexion they might be disregarded, but with this exception, that patients who showed slight or even transient signs of cord injury must be very carefully watched, in view of the likely development of serious symptoms at a later date.

Air Vice-Marshal DAVID MUNRO remarked that he had never seen a psychological factor in the cases of spinal injury consequent upon flying crashes. He also mentioned that a senior officer in the Air Force got a serious injury in 1915, but had served ever since then without complaint, yet he was now in the hands of an osteopath, who declared that he had symptoms of spinal damage. What was the pathology of these delayed cases? Why did an injury take so long to develop? The only suggestion he had heard was that there was extravasation into the cancellous tissue of the bone.

Surgeon Vice-Admiral A. GASKELL said that the fractured spine, consequent upon sacks of coal falling upon the back, was not uncommon in the navy. The point was how to assess the injury to the spinal column. It was important always to take skiagrams, and here he mentioned that naval hospitals were very fortunate in their x-ray equipment. An autopsy in all fatal air crashes would be of value in studying injuries to the spinal column.

Major J. M. WEDDELL said that in these missed compression fractures very often the trauma was relatively minor. In the late case the man would come up complaining of pain in the back, which was definite and increased by movement. The man held his back rigid, and there was stiffness with possible deformity. If there was not deformity there was still very often irregularity of the spinous processes. The skiagram in the typical case showed a deformed or wedge-shaped vertebra. He did not know at what period localized hyperaesthesia arose; if early it would be a helpful diagnostic symptom.

Dr. BERTRAM SHIRES commented on the fact that in no case brought forward, after a skiagram in the early stages had shown no fracture, had a fracture been discovered. In the late cases it was quite possible that had the spine been x-rayed immediately after the accident the fracture would have been shown. Radiological evidence of fracture might be very slight, but it was recognizable, provided the lateral view were taken.

Dr. MORTON SMART had been impressed by the importance of the muscle factor in keeping the body erect. When an injury to the spine occurred the muscles, which were the first line of defence, must give way, with the result that in all fractures of the spine there was serious injury to the muscles and possibly to the ligaments. In the mild cases of compression of the vertebral body there was no question that if put to bed for a time and kept at rest they made good progress to recovery, but in a short time after getting up a variety of pains in the back was experienced, some of them being referred to the definite area, and some to other parts of the body, the latter being due to muscle strain in trying to take off the pressure from the directly affected part. The muscles in the course of repair became adherent to neighbouring tissues, and pain in the late case was often due to these adhesions. The successes of the osteopath were hereby explained, for he by violent measures loosened the adhesions, and the patients thereupon lost their pain, though the osteopath claimed that the cause was a bone out of position.

Mr. CECIL WAKELEY referred to cases in which the skiagram taken on one side showed fissuring of the vertebra, but nothing of the kind on the other side. Mr. PATERSON ROSS suggested that the primary factor in producing wasting and atrophy was pain. Painful joints would always result in wasting and atrophy of the surrounding muscles. It might be that the severe pain which resulted from the injury produced a great deal of atrophy, leading eventually, with loss of support, to the wedge-shaped vertebrae. Commander PRISTON spoke on the psychological difference noted as between the victims of hunting and of industrial accidents. The former were persons who were accustomed to exercise their muscles, and were not afraid of a little pain, and so broke down their adhesions. In other cases compensation came in and perhaps to some extent destroyed incentive. Sir HOLBART WARING had seen a number of these injuries which, being due to torn ligaments and adhesions following them, were specially amenable to the so-called bone-setter.

Sir PERCY SARGENT, in reply, said that, as regards the pathology of crushed fractures, the actual condition of the bones, and the reason why they were collapsed, were still unknown. There were two or three post-mortem examinations of crushed fractures at an early stage where nothing had been found but the crumbling of cancellous tissue of the bone with haemorrhage into it. It was not explained why such crumbling appeared so long after the original injury.

THE INJECTION TREATMENT OF VARICOSE VEINS.

AT a meeting of the Liverpool Medical Institution on January 10th a discussion on the injection treatment of varicose veins was opened by Dr. STUART MCAUSLAND.

DR. MCAUSLAND gave an historical review of the Continental and British literature, and cited deficient endocrine stimulation as a primary etiological factor in the formation of varicose veins. From the histological aspect he maintained that the process of vein obliteration by injection was essentially a chemically produced irritation of the endothelium, which caused the formation of a firm clot. This condition, together with the fact, radiographically confirmed, of the downward circulation in varicose veins, and the innumerable clinical successes of Sicard and others without accident, negatived all danger of embolus. Having discussed indications and contraindications he described the technique, and reported results of his own cases, together with after-effects. He concluded that salicylate of soda, and quinine with urethane, were the substances of choice; that patients should rest the limb for twenty minutes after injection; and that the advantages of the method were exactly those of haemorrhoid injections. The treatment was essentially ambulatory, nearly painless, and economically cheap; it was more successful than operative excision, smaller radioles being reached and recurrence being less liable. The treatment, moreover, avoided the risks of general anaesthesia and post-operative embolus.

Mr. H. F. WOOLFENDEN emphasized the apparent safety of the injection treatment as regards the risks of pulmonary embolus due to the firm character of the thrombus formed, the thrombosis being secondary to the chemical endophlebitis and resembling the tough fibrinous thrombus met with in aneurysm. The convenience of the treatment from the patient's point of view was undoubted, and the permanence of the cure seemed to be as good, if not better, than after operation. There were certain disadvantages of the treatment to be considered. The first was pain, which at times occurred; it was sometimes met with at the time of injection when sodium salicylate was used, but for some days afterwards patients complained at times of pain and tenderness in the leg. This might possibly be due to a part of the injection being outside the vein, or to a leak back at the puncture hole in the vein, but it also occurred when the injection was undoubtedly in the vein, and was due to an excessive reaction causing periphlebitis. This excessive reaction had four possible causes: (1) the solution being too strong, (2) stagnation in the vein, (3) thinness of the vein wall, and (4) idiosyncrasy of the vein. There was also the possibility of errors in technique causing slough formation by the injection outside the vein. This should not occur, but unfortunately it did occasionally happen.

The advantages and disadvantages of quinine, sodium salicylate, and sodium chloride were discussed. Quinine and urethane were most suitable for the peripheral injection of small and moderate-sized veins, but sodium salicylate and sodium chloride given by Colt's technique were excellent for large varices involving the long saphenous system, on account of the quickness of the cure. The importance of bandaging the leg after injection was pointed out so that the formation of large bulky clots could be avoided.

Mr. J. B. OLDHAM said that before recommending any new form of treatment it was necessary that it should be safe and efficacious. He was certain that these postulates were fulfilled by the injection treatment of varicose veins. On the question of safety the sceptics advanced as objections the risk of general toxic symptoms, of local complications, and of pulmonary embolism. Several examples of severe quininism, following excessive doses, were mentioned, but the speaker found that all these risks could be obviated by giving a very small initial dose (1/2 to 1 c.cm.) to test the patient's susceptibility; by not giving more than 7 to 8 c.cm. at one sitting; and by keeping the limb at rest for half an hour after injection. Mention was made of Sicard's experimental proof that solutions injected in varices remained there if the limb was kept at rest, but quickly entered the general circulation on active movement; a similar personal observation following injection of methylene blue was related. Local necrosis was almost always the result of the solution entering the subcutaneous tissues—an error in technique—but occasionally, as Mr. Woolfenden had mentioned, necrosis followed what apparently had been a perfect injection. Embolism was an ever-present theoretical possibility, but the practical clinical evidence of many hundreds of thousands of injections without a fatality—no case of fatal embolism following a sodium salicylate or quinine injection has been reported—was more than sufficient to outweigh this hypothetical danger. In spite of the unlikelihood of embolism these precautions were advocated: (1) the patient should not move for half an hour after injection; (2) absolutely aseptic technique; (3) if possible, avoidance of excessive muscular activity for three or four weeks after completion of treatment. The advantages over the operative methods were enumerated, and it was pointed out that one fatal case of embolism happened in every 700 or 800 major operations. The speaker thought that a tourniquet was helpful, and that injections should be given with the patient lying down; he mentioned that quite independently he had come to the same conclusion as Mr. Woolfenden as to the great advantages of supporting the veins with a bandage for a few days after injection. In cases with a positive Trendelenburg sign good results could often be obtained by a single injection made as near the proximal end as possible, the consequent fibrosis being equivalent to the old Trendelenburg operation, and protecting the distal veins from the passive downward reflux of blood.

HAEMORRHAGE AFTER THE MENOPAUSE.

At a meeting of the North of England Obstetrical and Gynaecological Society on January 25th, with the president, Dr. GORDON FITZGERALD (Manchester), in the chair, Dr. S. B. HERD (Liverpool) read a paper on post-menopausal haemorrhage.

Dr. Herd said he had recently been confronted with several cases in which haemorrhage after the menopause had been the only symptom and there had been no gross physical signs. One patient was a single woman with a recent history of slight bleeding considerably after the menopause; no pelvic abnormality could be detected on ordinary examination. Preliminary examination under anaesthesia with diagnostic curetting had been objected to by her private doctor for three reasons: entailment of the risk of two anaesthetizations; the danger of missing an early growth even after careful scraping; and the possibility of disseminating growth, if present, by manipulation. On investigating this case Dr. Herd had found a four-inch uterine cavity and slight irregularity at the fundus; friable material had been removed by the curette, so he had performed total hysterectomy for what had proved to be an early carcinoma of the body of the uterus. On investigating the literature he had found many conflicting views. Dougal had classified these cases in two groups—namely, those with and those without gross physical signs. Muret in 1927 had analysed 312 cases; he had found 25 per cent. to be malignant, the cervix and corpus uteri being equally affected. In the latter cases none had been obvious before curetting. Muret had also noted that 19 per cent. of his cases were due to ulceration associated with prolapse, and that 8 per cent. were due to polypi and senile endometritis. In only three cases had Muret found no positive result after careful examination and curettage. Lahen had described four cases of post-menopausal bleeding where operation had revealed primary ovarian carcinoma and where the endometrium was of the active pre-menopausal type. He had suggested that the malignant growth had in some way revived ovarian function. In two articles in the *British Medical Journal* in 1926 and 1927 Fletcher Shaw had discussed post-menopausal bleeding and had stated that malignant degeneration in fibroids might be overlooked by curettage. Russell Andrews had mentioned a case of post-menopausal bleeding due to rupture of a vein in the capsule of a fibroid. Wallin, in the *Journal of the American Medical Association*, had reported a case due to hypothyroidism.

Dr. Herd said he had analysed 82 cases of uterine haemorrhage occurring after the menopause, and had found the following conditions:

Carcinoma cervicis	40 (43%)
Adenomatous polypi	15 (16%)
Carcinoma corporis uteri	12 (13%)
Fibromyoma uteri	6 (7%)
Pyometra	4
Simple ovarian cyst	3
Cervical erosion	3
Sarcoma corporis uteri	2
Prolapse with pessary	2
Twisted ovarian cyst	1
Primary ovarian carcinoma	1
Secondary ovarian carcinoma	1

In all these cases some local cause had been found on careful examination. In 72 cases there had been obvious physical signs, but in 20 cases the cause had not been so apparent. There was nothing outstanding about the cases of cervical carcinoma except that only three had been inoperable. This high operability rate was in all probability due to the fact that the growth had been of a slow-growing type. Of the 15 cases of adenomatous polypi none had presented difficulty in diagnosis, and in no instance had abdominal section been found necessary. Submucous tumours had been present in all 6 cases of fibromyomata, and in 2 of these cases necrobiotic change had been found. The site of haemorrhage in all had been in the capsule of the tumour. In those cases where haemorrhage had been due to tumours in the vicinity of the uterus a mechanical cause had been suggested by two cases; in the first a cystadenoma with twisted pedicle had been found and its removal had been followed by cessation of bleeding; in the second, after removal of a primary ovarian carcinoma the bleeding ceased and had not since recurred. In conclusion Dr. Herd emphasized the fact that in all cases in which the diagnosis had not been obvious and in which malignancy had been subsequently found, this diagnosis of malignancy had always been established by curetting, and in no malignant case had the diagnosis been missed by the curette.

The PRESIDENT said that personally in such cases he was always particularly careful to exclude carcinoma of the cervix in parous women, and carcinoma of the body of the uterus in nulliparous women. He thought that senile endometritis was very rare; it was a diagnosis he always avoided. He had recently seen a case of haemorrhage six months' duration in a woman, aged 66, twenty-six years after the menopause. No abnormality had been discovered on curetting the cervix and body of the uterus, but, not being satisfied, he had performed laparotomy and had found a small primary carcinoma of the Fallopian tube.

Dr. ARCHIBALD DONALD (Manchester) suggested that more stress might have been laid on the question of polypi as

a cause of post-menopausal haemorrhage. He thought that the proportion of fibromyomata would have been larger if fibroid polypi had been included in this group. Fibromyomata frequently caused bleeding after the menopause owing to atrophy of the capsule and the consequent liability of the vessels to rupture. He had seen very few cases of senile endometritis, and most of these were really cases of senile pyometra. When post-menopausal bleeding was associated with an ovarian cyst and a twisted pedicle he thought the haemorrhage was due to back pressure.

Dr. J. W. BRIDE (Manchester) recalled a case in a woman, aged 60, who had been married six months. Examination had revealed a polypus growing from the cervix and nothing further had been found on curettage. The bleeding continued, and hysterectomy, performed later, revealed carcinoma of the body of the uterus.

Dr. FLETCHER SHAW (Manchester) thought that many medical practitioners were still apt to overlook the seriousness of post-menopausal bleeding. He had seen a case recently where a urethral caruncle had been present; he had thought that this was the cause of the bleeding. However, he had curetted the uterine cavity, as was his custom in such cases, and had found carcinoma in the body of the uterus. He was rather at a loss to understand why the endometrium should suddenly become rejuvenated and produce polypi. He was surprised at the small proportion of fibromyomata in Dr. Herd's figures, as he had seen many cases of post-menopausal haemorrhage following changes in fibroids.

Dr. F. H. LACEY (Manchester) emphasized the necessity for curetting in all these cases. It was dangerous to assume that a caruncle or polypus, if present, was the cause of the haemorrhage. He had known cases where, on this assumption, carcinoma of the body of the uterus had been missed. Dr. LEITH MURRAY (Liverpool) agreed with Dr. Herd in regard to the low proportion of fibromyomata causing post-menopausal bleeding. In his own series he had found that only 3 per cent. of cases were due to uncomplicated fibromyomata. He was strongly of opinion that much could be done to bring the danger of such bleeding to the notice of the public by instruction of midwives. Dr. KING (Sheffield) disagreed with curetting in these cases. He believed in performing vaginal hysterectomy at once. He was also of opinion that post-menopausal polypi were evidence of a pre-malignant condition. Dr. GOUGH (Leeds) did not consider that in the cases due to twisting of the pedicle of an ovarian cyst the cause of the bleeding was mechanical. He had seen haemorrhage in very small ovarian tumours, and thought it was possibly due to a hormone produced in the connective tissue of the ovary, as no lutein tissue was present. Dr. HERD, in reply, said that he also thought there must be some other cause than the mechanical theory in such cases.

Spontaneous Uterine Rupture.

Dr. J. W. BRIDE (Manchester) showed a specimen of spontaneous rupture of the uterus about the fourth month of pregnancy. The patient was a primigravida, married four and a half years, and very anxious to have a child. There was no question of previous operation at any time, or of accident. The specimen consisted of the uterus removed by subtotal hysterectomy and enlarged to the size of a four or five months' pregnancy, and behind and above the left cornu could be seen a large gaping tear, through which protruded placental tissue, the head of the foetus being distinctly seen and felt through the opening. Part of the intact bag of membranes could be seen protruding through the lower pole of the uterus at the level of the internal os. There were some small fibroids in the uterine wall, which measured one-sixteenth to one-eighth of an inch. The symptoms had been those of rupture of an ectopic pregnancy, the patient being critically ill at the time of operation, but making eventually a good recovery. Dr. Bride had come to the conclusion that it was one of those rare cases of pregnancy in an infantile uterus. At the time of operation the uterine walls were uniformly transparent and very thin. There did not appear to be any question of cornual pregnancy or any evidence of hydatidiform disease.

Dr. ARCHIBALD DONALD (Manchester) asked whether the patient had ever been examined bimanually prior to the occurrence of pregnancy, and if so, whether or not the uterus had been found to be of the infantile type. He remembered a case where pregnancy had occurred in an infantile uterus, and where, at the fourth month, the uterine wall, on palpation, had seemed extremely thin. In spite of this the patient had subsequently gone through a normal confinement at full term. Dr. FLETCHER SHAW (Manchester) suggested that the rupture might have been due to a very rare condition—namely, acute sacculation of the uterus during pregnancy. He had had a case of this kind. In Dr. Bride's case there was no history of acute pain at the time when sacculation would have taken place. Dr. LEITH MURRAY (Liverpool) suggested that the presence of leucocytic infiltration of the uterine wall showed that the rupture might have been due to an inflammatory condition. Dr. KING (Sheffield) mentioned a somewhat similar case he had seen in a multipara where spontaneous and fatal rupture had occurred at the sixth month. In the previous confinement the puerperium had been morbid, and on the ninth day, following a secondary post-partum haemorrhage, she had passed what appeared to be a piece of placenta. Microscopic examination had shown it to be a piece of uterine muscle. He suggested that in his case there had been, after the first confinement, haemorrhage into the uterine wall analogous to accidental haemorrhage; this had resulted in a uterine scar, which had ruptured during the next pregnancy.

Dr. BRIDE, in reply, said that his patient had never been examined bimanually before becoming pregnant, so he could not say whether the uterus had been infantile in type. At the time of operation the whole uterine wall was very thin and almost transparent.

WORK OF THE MACKENZIE INSTITUTE.

AT a meeting of the London Association of the Medical Women's Federation, held at the British Medical Association House on January 22nd, with the president, Miss F. HUXLEY, in the chair, a paper was read by Dr. DOROTHY DOUGLAS on the working of the Mackenzie Institute for Clinical Research at St. Andrews.

After briefly outlining the foundation of the Institute, and commenting on the life and work of its great originator, Dr. Douglas went on to explain the aims of the organization. These were principally: (1) to obtain a large series of accurate life-histories of the health of individuals whose circumstances, habits, and, if possible, antecedents were known; and (2) by an intensive and minute study of cases of disease, especially in its early stages, to arrive at a better knowledge of the meaning of symptoms, as opposed to physical signs. Disease states might be divided into two groups: first, those in which there were symptoms only, without physical signs, and therefore only disorder of function; secondly, those in which physical signs could be elicited, and therefore structural change might be postulated. It was always Mackenzie's aim, by an early recognition of the first group, to prevent the occurrence of the second. St. Andrews was chosen as the site for such a research chiefly because it was a very small and somewhat remote town. This made it comparatively easy to follow up patients and to discover facts about their families and circumstances; moreover, it was there possible to keep in touch with individuals over a large number of years, since the population was more or less stationary. For much the same reasons it was decided to staff the Institute entirely from general practitioners of the town, since they would naturally be the first to see the earliest symptoms of disorder. It had since been found practicable to employ, in addition, a full-time pathologist and bacteriologist, a radiologist, and a paediatrist. The services of the general practitioners were entirely voluntary, and the prevalent feeling locally, both among the doctors and the general public, was that the work, besides being part of a most necessary research, acted as a stimulus to thought and discussion, and much increased the interest of the routine of general practice. Many important papers had been published by the Institute since its foundation, and a comprehensive mass of material in the shape of accurate clinical notes of a large number of cases of special interest had been gathered together. This material was available to investigators following out a particular symptom or disease. In conclusion, Dr. Douglas expressed the hope that such unique opportunities for clinical research as were offered at the Institute would be utilized to the full.

Reviews.

VACCINATION WITH LIVING TUBERCLE BACILLI.

PROFESSOR ALBERTO ASCOLI of Milan, in a recent work on vaccination against tuberculosis with living tubercle bacilli,[1] makes an interesting contribution to the problems raised by Calmette and Guérin with their B.C.G. vaccine. Starting with a review of previous work in the immunization of cattle with human tubercle bacilli, in which a tribute is paid to the pioneer work of Angelo Maffucci in this field, and a useful summary is given of the classical experiments of R. Koch, Behring, and others, Ascoli passes on to his own experiments, which are described in considerable detail.

His first experiment was carried out at Stradella in November, 1926, four calves, vaccinated with B.C.G. between April and September, 1925, and three non-vaccinated "controls" each being tested by the intravenous inoculation of 5 mg. of the same virulent culture of bovine tubercle bacilli (Vallée) as had been used by Calmette in his experiments. Unfortunately, septic pneumonia had been prevalent in the stalls in which these calves were accommodated, and several of them had suffered from transitory attacks, though they appeared to have quite recovered at the time of the test inoculation. In the result, all except one vaccinated and one control animal died of septic pneumonia within three weeks of the test dose, a latent pneumonic infection being, as Ascoli believes, reactivated by the shock of the intravenous inoculation. It was found at necropsy that tuberculous lesions coexisted with septic pneumonia in the lungs of the non-vaccinated "controls," whereas the lungs of the vaccinated calves, while pneumonic, were free from tuberculous foci. In the course of bacteriological examinations *B. bovisepticus* was isolated from all these animals. Of the survivors, the control was killed in May, 1927, and the vaccinated calf in January, 1928. Both showed tuberculous lesions, the latter having a subacute tuberculous meningitis.

The Stradella experiment, in fact, was a failure, though it served to emphasize a point to which Ascoli attaches importance—the tendency for inoculations of tubercle bacilli to wake up latent foci of intercurrent bacterial diseases. A more successful attempt was made at Cascinazza in April, 1926, when two vaccinated and two non-vaccinated calves were tested with intravenous inoculations of 5 milligrams of a virulent bovine strain isolated by Ascoli himself. In this experiment both the "controls" went rapidly to the bad, and died early in May, 1926, of generalized tuberculosis. The vaccinated calves, however, remained for many months in good health. The photographs and temperature records illustrating this experiment are striking. In August, 1927, however, one of the vaccinated animals developed cerebral symptoms, was slaughtered, and was found at autopsy to have tuberculous encephalitis, though the lungs were free from visible tubercles. An emulsion of lung tissue, however, inoculated into a guinea-pig led to tuberculosis. The other was still fat and healthy in January, 1928, when it was slaughtered. At autopsy the tracheo-bronchial glands were found enlarged and caseous, and emulsions of their contents, as well as of lung tissue, reproduced tuberculosis in guinea-pigs. The vaccinated animals, then, were not rendered absolutely immune to tuberculosis, but it is clear that they were made "refractory" to a very heavy test infection, and were much more resistant than the controls. Further experiments with calves, in which the test was exposure to close contact with infected cattle, gave results which, in spite of interference through actinomycosis as an intercurrent infection, were, on the whole, in favour of the vaccine. Experiments in goats failed, in one series, through the test dose being too large, and were successful in a further experiment with a smaller test dose, in which, however, only one vaccinated and one control animal were used. In swine good results followed B.C.G. vaccination where the vaccine was given subcutaneously, but experiments with oral administration of the vaccine failed.

On the whole the experiments, though on a small scale, gave results comparable with those obtained in this country and elsewhere. They proved that B.C.G., like other living strains of tubercle bacilli, leads, when given in appropriate doses, to a considerable increase of resistance against subsequent heavy infection with virulent cultures. On the other hand, the experiments suggest that the B.C.G. strain, when grown and used according to the method of Calmette, is innocuous for test animals. Lesions it does produce; and Ascoli gets nearer the truth than Calmette when, instead of asserting that B.C.G. is "non-tuberculigenic," he speaks of it as "tuberculigenic but non-tuberculosigenic." Experiments in the pre-immunization of infants were carried out on a small scale by several medical practitioners working under the general direction of Ascoli himself. The observations, though small in number, are well reported, and it is of interest to note, in several of the *x*-ray photographs reproduced with the text, that vaccinated children, regarded as fairly healthy in other respects, showed definite lung lesions. Out of about 165 children followed up, 18 appear to have died, one admittedly from tuberculosis and many from catarrhal enteritis. Altogether, in spite of the fact that Ascoli regards them as favourable, these tests on infants do not seem to the reviewer to be very convincing. In fact, while the author concludes in favour of B.C.G. vaccine, the impression left on the mind after perusal of his book is that further work is still necessary in several directions before finality can be reached.

The more one works with B.C.G., and the more one reads of the work of others, the more difficult does it appear either to prove or disprove the claims made for this vaccine by Calmette and his supporters. As to the power to evoke increased resistance in animals which B.C.G. possesses, in common with other strains of tubercle bacilli, when correctly used in appropriate doses, this is established beyond doubt—as was, indeed, to be expected. But whether the oral administration of "safe" doses of B.C.G. to infants is of any use as a prophylactic remains to be proved. Greenwood has shown that the French statistics so far produced are unsatisfactory, but this is no proof that B.C.G. is inefficient. It is clear that further and better tests are desirable. As Ascoli suggests, however, the employment of B.C.G. should be confined to infants in close contact with infected parents or other infected persons. Its use for infants *not* known to be exposed to the immediate risk of infection cannot be regarded as advisable at the present time, and is calculated to lead to further confusion in attempts to evaluate the vaccine by statistical methods.

We have received also a copy of the authorized French translation of Professor Ascoli's book. This, like the original work, is published in Milan.[2]

TONSILS AND ADENOIDS.

DR. IRWIN MOORE has embodied in one volume, under the title *The Tonsils and Adenoids and their Diseases*,[3] a number of papers which he has contributed to various medical journals during recent years, dealing with the important subject of enlarged or diseased tonsils and adenoids—their menace to health, the operative technique for their removal, and the control of haemorrhage, during and after removal.

The most important chapter, and perhaps the one that will be read with the greatest interest at the present time, is that dealing with haemorrhage following the surgical removal of the tonsils and its treatment. Ten years ago the author drew the serious attention of the profession to the frequency with which haemorrhage followed the operation, and expressed surprise at the casual way in which operations upon the tonsils were being performed, regardless of heavy loss of blood, and, in the majority of cases,

[1] *La Vaccinazione Antitubercolare con Bacilli Vivi Negli Animali e Nell'Uomo.* Alberto Ascoli. Milano: Istituto Editoriale Cisalpino. 1928. (6½ x 9½, pp. 421; 100 figures. L.50.)

[2] *La Vaccination Antituberculeuse avec les Bacilles Vivants chez les Animaux et chez l'Homme.* Par Alberto Ascoli. Édition française [illegible] (par suppression des protocoles d'expériences, des clichés et des [illegible] détaillés) par le Dr. M. Carrel. Milano: Istituto Editoriale Cisalpino. 1928.

[3] *The Tonsils and Adenoids and their Diseases.* By Irwin Moore, M.D., C.M.Ed. London: W. Heinemann (Medical Books) Ltd. 1928. (9 × 6, pp. ix + 395; 107 figures. 21s. net.)

without any steps being taken to control the bleeding at the time of the operation, with the idea that it would sooner or later cease of its own accord.

When the British Medical Association met at Newcastle-upon-Tyne in July, 1921, the meeting of the Section of Oto-Rhino-Laryngology, under the presidency of the late Dr. William Hill, was largely devoted to papers (*British Medical Journal*, 1921, vol. ii, pp. 431–446), and discussions dealing with "Problems presented by haemorrhage following operations on the tonsils." Dr. Irwin Moore, acknowledging the service those papers have been to him, observes that they give a complete and up-to-date résumé of the subject, and represent an accumulation of information and detail not dealt with in the usual textbooks, and obtained only by much labour in extensive search into the literature. The chapter on haemorrhage occupies one-fifth of the volume, an amount of space not out of proportion to the importance of the subject. A perusal of the chapter at once disposes of the optimistic view held by some that the operations as performed to-day are trivial ones. It having been shown that the operation is not entirely free from alarming and sometimes dangerous results, the question naturally arises for careful consideration what are the "indications for, and result of treatment of, chronic tonsillitis." In 1924 (*British Medical Journal*, 1924, vol. ii, pp. 804–813), at the meeting of the British Medical Association at Bradford, the Section of Laryngology and Otology chose that subject for discussion. Dr. Irwin Moore deals with the question in a separate chapter entitled "The tonsils as a source of focal infection in systemic diseases and the results obtained by tonsillectomy," and acknowledges considerable service derived from the opening paper at that meeting in revising this chapter. The methods for the surgical removal of the tonsils are fully described and illustrated. The treatment of enlarged or diseased tonsils in cases in which surgical procedures are contraindicated is a chapter in itself.

A remarkable feature of the book, and one that must enhance its value as a work of reference, is the mass of references compiled in alphabetical order at the end of each chapter. The author has achieved his purpose to produce in a monograph the accumulation and concentration of the present-day knowledge of the tonsils and the part they play in health and disease.

SURGICAL DIAGNOSIS IN TABULAR OUTLINE.

THE translation by Dr. BORTZ of Philadelphia of the fourth German edition of the work of Dr. CEMACH of Vienna is the first appearance of the book[1] in an English dress, as Dr. JOHN B. DEAVER tells us in an introductory note. In the translator's foreword we are told that Dr. Bortz has had the help of other specialists in its production, and that he has added to the information provided in the last German edition. We think that Dr. Bortz is justified in his statement that "the author has furnished an exceptional amount of useful information in an easily accessible form." The general plan of the book is that a plate representing a number of diseased conditions is followed by a large folding table, on which, in a number of columns and compartments, are set forth the nomenclature and varieties of the conditions dealt with, their history and etiology, symptoms, situation, the results of examinations, and the diagnosis. There are 129 such plates and over one hundred tables, but as most tables are equivalent to two pages, the typed matter is equivalent to some two hundred pages.

Such a method of providing information has its advantages if its use is made only a *preliminary* to a further study of the subject in monographs or textbooks. A reference to these tables may serve to remind the practitioner who consults them of the existence of some condition that might otherwise have escaped him. For information as to treatment he must, of course, look elsewhere.

Despite the size of this book and its wealth of illustrations, there are some lacunae in its scope and some conditions that are barely mentioned, such as Dupuytren's contraction of the palmar fascia. For example, we have failed to find any references to certain not uncommon congenital defects of the skeleton, such as so-called intra-uterine amputation, defect of tibia or radius, etc., although congenital club-foot and congenital dislocation of the hip are represented. Gastric ulcer, Legge's disease of the hip, and cystic bone disease are also unrepresented. We say advisedly "we have failed to find," because the index is singularly meagre for such a work, and although we have spent much time in turning over the pages, we may have missed some small references, such as that devoted to Dupuytren's contraction. The section on injuries of the spine is very superficial and gives little help in the diagnosis, say, of compression fracture of a lumbar vertebra, which is not uncommon and is very important industrially. The illustrations vary in merit. Some of the *x*-ray pictures are obscure, but others are good. We think that it is a mistake to represent diseases such as tumours by cases at these very advanced stages. It is probably for help in the early stages that the practitioner will turn to this book, and he will get little assistance from contemplating pictures of fungating tumours.

The outside cover of this volume bears the words "For desk use." Certainly no one would think of trying to carry it in a pocket, for it weighs four pounds, and its size has already been indicated. It would be unkind to suppose that the practitioner is meant to look up the diagnosis while the patient waits. To the letterpress is appended a copious bibliography of works in German and in English in separate paragraphs.

DISORDERS OF THE SYMPATHETIC-AUTONOMIC SYSTEM.

THE first edition of Dr. Guillaume's *Vagotonies, Sympathicotonies, Neurotonies*[2] was immediately successful, and the second edition is likely to be equally so. It has undergone thorough revision, but has preserved all the characteristic features of its predecessor. Much new matter has been included, and, in particular, there are additional chapters, one of which describes the various changes in the blood found in cases of disorder of the vegetative nervous system, and another the psychical concomitants of vegetative nervous system disturbance. With regard to the latter, Dr. Guillaume points out that signs of such disturbance are rarely found in the major psychoses, though in the psychoneurotic states they are relatively frequent. This work is a study of the dysfunction of the sympathetic-autonomic system, chiefly from a clinical point of view; but etiological and therapeutic considerations are not neglected. The classification adopted by the author is essentially clinical. The three conditions which give the book its title are fully described. Under the heading of neurotonia, Dr. Guillaume discusses the peculiar instability of the tonus of the organs subject to the control of the vegetative nervous system, and, in particular, their excessive and violent response to all manner of stimuli. He describes also, under the heading "neurotonie alternante," the condition of successive phases of vagotonia and sympathicotonia. The passages devoted to the differential diagnosis of the many morbid states of the vegetative system are especially to be commended. Numerous hints are given as to the technique of eliciting the various reflexes (oculo-cardiac, etc.). There are several helpful diagrams, many references throughout the text to the findings of other workers in this field, and a voluminous bibliography.

A NEW HYPOTHESIS OF LIFE.

MRS. AUGUSTA GASKELL, who is introduced by KARL T. COMPTON, professor of physics at Princeton, and RAYMOND PEARL, professor of biology at the Johns Hopkins University, has attacked the great problem *What is Life?*[3] Her first sponsor says that her discussion of modern atomic physics is accurate, well balanced, and worth reading for its own

[1] *Surgical Diagnosis in Tabular Outline.* By Dr. A. J. Cemach, Vienna. Authorized translation with additions and notes by Edward L. Bortz, M.D., with an introduction by John B. Deaver, M.D. Philadelphia: F. A. Davis Company. 1928. (7 × 11; 128 plates; 109 tables. 12 dollars net.)

[2] *Vagotonies, Sympathicotonies, Neurotonies.* Par A. C. Guillaume. Deuxième édition, entièrement refondue. Paris: Masson et Cie. 1928. (8½×8½, pp. xxiv+532; 18 figures. 40 fr. sans majoration.)

[3] *What is Life?* By Augusta Gaskell. Introductions by Karl T. Compton and Raymond Pearl. London: Bailliere, Tindall and Cox. 1928. (Med. 8vo, pp. 324. 16s. net.)

sake," and that her fundamental assumption must be admitted as possible. Professor Pearl somewhat guardedly gives his blessing by saying that her hypothesis has the advantage over others in that it is capable of experimental proof (though this is admittedly not easy to attain); that her book is free from "hedging" and "alibis carefully made ready in advance"; and that her discussion of various biological problems, particularly of evolution, have a refreshing novelty and shrewdness. As the problem is one to daunt the bravest of men and even of women, it is not surprising that the professors of physics and biology, who are quoted in the text, have been called in as accessories. Mrs. Gaskell writes modestly, in good English, and obviously with the advantage of wide access to the literature of the sciences concerned. Her hypothesis, based on atomic physics, is that the protons and electrons, besides forming by their various known combinations the ninety-two kinds of atoms, are able to unite in combinations of a type which are the active or essential ingredients of living matter. These so-called "Z"-elements are immaterial, intra-atomic, and, with the material ("Y") system of protons and electrons, make up the dual system of living matter. Life is regarded as a quantity—not of matter or of undefined or indefinable energy, but of the same constituents which make up matter, combined in a different manner. The soul is identified with life, and death is ascribed to separation between the two constituents of the dual system of living matter. Mrs. Gaskell discusses the origin of species with many quotations from Jacques Loeb, Bateson, and others, and comes to the conclusion that the current doctrine of man's descent is erroneous and that heredity is due to the constitution, the organization, and the pattern of the "Z"-system of the germ cell, and not to the chemical constitution of the matter ("Y"-system) of the germ cell. The final proof of this revolutionary hypothesis of life consists in testing for and measuring at the time of death the "Z"-system—the quantity life—which, according to the hypothesis, then becomes separated from the body—the atomic or the "Y"-system. Raymond Pearl prophesies that this book, unless a miracle happens whereby normal human behaviour is temporarily changed, "will doubtless receive its due measure of the violent opposition which every new idea regularly receives." It contains a very useful glossary of technical terms.

NOTES ON BOOKS.

WE have received a fourth edition of Dr. R. D. LAWRENCE'S *The Diabetic Life*,[7] of which the third edition was reviewed in these columns just over a year ago. Most of the changes are in points of detail, but more attention has been given to the treatment of coma and of intercurrent illnesses, as these are regarded by the author as being by far the most difficult and dangerous problems which the treatment of diabetes presents. Considerable modification has, however, been made in the tables of food values for carbohydrates, in so far as fruits and vegetables are concerned, in the light of research carried on in recent years. Dr. Lawrence's work is now available also in a French translation[8] which has been made from the second English edition.

The manual by Mrs. ANNE M. ROBERTSON entitled *Health and Exercise for Girls*[9] is a book that might usefully be added to a children's library, as it contains nothing which can in any way encourage the study of ill health. The author makes her introductory remarks in the form of an open letter to girls, in which she gives in very simple language the reasons for taking thought in order to be healthy. She says that "those people who, like the Greeks, have striven to improve their personal and individual lives have attained to the greatest wisdom and happiness that we know of." In the first part of the book the purpose and care of the different parts of the body are indicated in allegorical form, by comparing the body to a house. The final chapter on "The beauty of health" will probably appeal to adolescent girls. Part II contains a group of practical exercises for growing girls, arranged by Mr. F. Hornibrook, and a few words are devoted to the discussi of the value of systematic exercise. Eight simple exercise founded on movements of primitive tribes, are then describe with good illustrations.

Dr. CARL FUNCK, in a pamphlet on nutritive allergy, mentions that as early as the year 1914 he recognized t altered condition of the organism which follows the entry alien proteins into the blood stream through the digestive tra —the condition to which von Pirquet has given the nar "allergy." Dr. Funck discusses the whole problem of hype sensibilization of the tissues by alien proteins and their inte mediate products of decomposition, with special reference the part played by intestinal absorption and assimilation ar the influence of this nutritive allergy in the pathogenesis internal disease. His observations go to prove that ev where the sensibilization can be definitely referred to an age acting through the skin or respiratory tract, it often happe that removal of the cause is insufficient in itself to effect a cur unless treatment is directed at the same time to the digestiv tract.

Medical practitioners and medicine have often figured i novels, but few works of fiction give so graphic and symp thetic an exposition of these subjects as *My Brother Jonathan*, by FRANCIS BRETT YOUNG. The author, himself a doctor, h a delicate appreciation of words, a gift for vivid characte drawing, and a true dramatic instinct. His story is of th family of Dakers, living and working in the Midlands. Th two brothers, Jonathan and Harold, have a curious upbringin by their father. Jonathan, plain and dull, is neglected, almo scorned; Harold is full of charm and grace, and on him showered all the family affection. Jonathan develops into man of strong character, full of human sympathy and th instinct of self-sacrifice. Hal goes to Harrow and Cambridge wins his blue for cricket, all at the expense of his elde brother. Jonathan goes to the provincial medical school, where he gradually escapes from the repressions of the hobbledehoy, makes his mark in his hospital, and bids fair to become surgeon of note. But he sacrifices this prospect to save hi brother. He joins a worn-out lion-hearted general practitione in a sordid town in the Black Country, and there follows the tale of his struggle against local medical and social ostracism. He wins his place in the affections of the people by love of work and love of human nature. The effect of the incomin of the Insurance Act is told (but it is odd that the author makes his hero resign his membership of the British Medical Association in defence of one of the cardinal points of the Association's policy—"free choice of doctor"), and the effect of the great war. The book is a romance, and there are the love stories of four people, two men and two women. The latter part of the book is almost too tragic. But it is a great story, finely conceived and finely written.

[7] *The Diabetic Life.* By R. D. Lawrence, M.D., M.R.C.P.Lond. Fourth edition. London: J. and A. Churchill. 1928. (5½ × 8½, pp. viii + 168; 8 figures. 8s. 6d.)

[8] *Comment doit vivre le Diabétique.* Par R. D. Lawrence. Paris: J.-B. Baillière et Fils. 1928. (5 × 7, pp. 216; 6 figures. 16 fr.)

[9] *Health and Exercise for Girls.* By Anne M. Robertson, B.A.Lond. With illustrated supplement of practical exercises designed by F. A. Hornibrook. London: W. Heinemann (Medical Books) Ltd. (5½ × 8½, pp. ix + 62; 8 plates. 5s. net.)

[10] *Nutritive Allergie.* Von Dr. Carl Funck. Berlin: S. Karger. (Sup. roy. 8vo, pp. 66. M.3.)

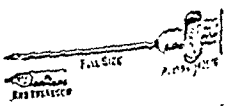
[11] *My Brother Jonathan.* By Francis Brett Young. London: William Heinemann Ltd. 1928.

PREPARATIONS AND APPLIANCES.

NEEDLE FOR INJECTION OF VARICOSE VEINS.

DR. T. H. TREVES BARBER (London, S.W.) writes: The two main essentials for the successful treatment of varicose veins by the injection method are that the solution shall be brought into as close contact with the endothelium as possible and at its highest concentration.

This needle has been designed for the purpose of meeting these desiderata by the direction given to the spray; the tip being laterally placed, enables the solution to be injected at an obtuse angle to the wall of the vein. There is less danger of the solution being injected into the wall of the vein instead of into the lumen, owing to the very short bevel and the distance from it to the eye of the needle. With an ordinary hypodermic needle such an event is liable to happen, especially with a long point and bevel. Owing to the position of the eye there is less likelihood of it being blocked as it penetrates the tissues to enter the vein.



Finally, any direction may be given to the spray by a rotation of the syringe. The lettering "REGD." stamped on the mount should be noted, as it indicates the direction of the eye in relation to the walls of the vein; it is thus possible to make a complete ring around the wall with the solution. This method will be found useful in treating dilated veins. The needles are made by Messrs. Allen and Hanburys Ltd., 48, Wigmore Street, W.1.

ADENOIDS AND ENLARGED TONSILS.

BOARD OF EDUCATION INQUIRY.

HE method of statistical analysis, though appropriate to ie investigation of conditions so widespread as adenoids id enlarged tonsils, presents difficulties which may be vercome only by the exercise of considerable caution. The ccumulation of statistical data must be entrusted to a umber of workers who may differ as to the interpretation f the phrase "enlarged tonsils and adenoids," and may ave varying standards regarding associated conditions—r example, nutrition—included within the scope of nquiry. Complete mathematical accuracy may be unttainable, but the interim report,[1] just published, of an nvestigation conducted by a medical committee of the oard of Education during the period 1924 to 1928 suggests iat at least it is possible to achieve a general indication the truth.

Scope of the Investigation.

The terms of reference of the committee were to inquire to the incidence of, and the physical and environmental nditions associated with, enlarged tonsils and adenoids, id into the method and results of treatment. The first ep, therefore, was to seek information as to the significe of hereditary and familial influences; the influence social and domestic environment, of diet in the early ars of life, and of childhood infections and ailments; the sociation of the conditions with malnutrition, constitunal disease, oral sepsis, and special defects and mptoms; and, finally, the subsequent history as regards neral health and special defects of children who had dergone treatment, as compared with others who had en left untreated. The total number of children subtted to examination was 640, of whom, after a certain ount of preliminary redistribution, 502 were cases—that children found to be suffering from one or both of the nditions in question—and 138 were controls—that is, ldren whose nasopharynx was apparently normal. The rage age at first examination of the cases was 6 years months; of the controls 6 years 9.5 months. In the up of "cases," 382 children, of whom 40 at some time other had already been submitted to operation, were fering from both enlarged tonsils and adenoids; 47 had noids only, and 75 only enlarged or septic tonsils.

Influence of Heredity.

n comparing the families of the control group with se of the group of "cases," enlarged tonsils and noids were found to occur more than twice as often in latter as in the former. Thus a family history of this ect was recorded in respect of 57 per cent. of the up of "cases," and only of 24.6 per cent. of the group ontrols.

Social Conditions and Diet.

stimation of the significance of data concerning hous- dietary, and modes of living is complicated by the that the mere prevalence of a pathological condition were crowded or insanitary dwellings is no proof that environment *per se* has etiological significance; the estic circumstances may do no more than indicate rty or neglect, and these, again, may be associated defects of diet and unhygienic practices. The comee found that though there was no substantial differas regards the extent of accommodation between the groups, the condition of the housing accommodation, as cated by the presence or absence of damp and sanitary cts, was better in the group of controls. The inquiry o diet suggests somewhat less favourable nutritional litions of ante-natal and early post-natal life, and later rer supply of vitamins in the food of children in the p of "cases" than in the controls.

Health During Infancy and Childhood.

ie most striking contrast is afforded by the data coning the health of the two groups during their first of life: 30.7 per cent. of "cases" were said to have been generally in poor health during this period, as compared with only 4.3 per cent. of controls. Nasal or bronchial catarrh and allied conditions, general feebleness and malnutrition, and digestive troubles were met with most frequently. In regard to infectious diseases—for example, whooping-cough, measles, mumps—these are equally prevalent in both groups during the first year of life; but during school life the incidence of infectious diseases is uniformly higher among children with enlarged tonsils and adenoids than among normal children. So frequently, moreover, do parents report the onset of the nasopharyngeal condition after an attack of infectious disease that it may reasonably be assumed that in a considerable proportion of cases there is a direct causal relation. In some cases the febrile attack is probably an exciting cause of hypertrophy of lymphoid tissue in an already predisposed child; in others the infection may be the consequence rather than the cause of the nasopharyngeal condition; and, finally, the possibility must be considered of some fundamental constitutional weakness, which is the common cause of both conditions. Inquiry among parents as to the medical history of the children prior to examination elicited information which points to the presence of a tendency to catarrhal conditions of the nose and throat in the group of "cases" nearly double that in the group of controls; to ear disorders five times, and to diarrhœa eight times that in the controls. Thus 81.5 per cent. of "cases" and 44.2 per cent. of controls were liable to colds; 18.7 per cent. of "cases" and 3.1 per cent. of controls had suffered from otorrhœa, and 12.2 per cent. of "cases" and 1.6 per cent. of controls from diarrhœa. A condition of oral sepsis was found in 17.5 per cent. of the "cases" and in 8 per cent. of the controls. In simple enlargement of tonsils without adenoids oral sepsis was present in 13.1 per cent. and in cases of septic tonsils with or without adenoids in 20.6 per cent. Oral sepsis is thus more than twice as frequent in the group of "cases" as in normal children. But whether the definite association between the two conditions indicated by this fact is one of cause or effect can only be determined by further investigation.

The Age of Onset.

The age at which symptoms first became manifest in the younger group of children was 5.3 years, in the older group 7.3 years. If, as seems reasonable to assume, the condition is usually established before symptoms are noted by the parents, it would appear that adenoids develop in the majority of cases before five years of age, and that it is unusual for them to arise after the age of 7 or 8. Enlargement of tonsils may occur at any time during school life.

General Condition of Cases and Controls.

The relationship of subnormal health to enlarged tonsils and adenoids can only be determined by the continued observation of a large number of children before the onset of symptoms. In only forty-six of those studied in the present inquiry—too small a number to justify any conclusions—did the condition develop in the course of following up; in the remainder the differences in general condition between cases and controls might represent either causes or results. In general appearance, 12 per cent. of "cases" seemed unhealthy, as against only 0.8 per cent. of controls. Under 6 years of age the proportion of unhealthy children was as high as 16.2 per cent. In the group of "cases" the nutrition of 45.2 per cent. was good, of 50.8 per cent. moderate, and of 4 per cent. it was bad. In the controls it was good in 58.5 per cent., moderate in 40.8 per cent., and bad in 0.7 per cent. No significant difference was found in the heights of the two groups, which appeared to approximate closely at all ages, but in regard to both weight and chest measurement, from the age of 6 years the controls were consistently, though not greatly, better than the "cases." It is noteworthy that up to 6 years of age the inferiority of the group of "cases," though obvious on inspection, was not demonstrable by measurement. One must assume that the indications of defective nutrition obtained by observation are as reliable as those obtained by simple measurements, and there seems

[1] Board of Education, Interim Report of the Medical Committee on Adenoids and Enlarged Tonsils. 1929. H.M. Stationery Office, or through any bookseller. Price 6d. net.

no reason to doubt that from birth to the end of school life the cases under consideration show a lower standard of physique and general nutrition than the normal child.

Respiratory and Circulatory Systems.

Children with adenoids are far more susceptible than others to catarrhal affections of the respiratory tract. The lungs were normal in 75.9 per cent. of the "cases," and in 93.2 per cent. of the controls. Bronchial catarrh was present in 18.3 per cent. and defective air entry or poor expansion in 5.7 per cent. of the "cases," as compared with 3.1 per cent. and 3.8 per cent. respectively in the controls. Defects of the heart and circulatory systems were equally prevalent in the two groups, there being 3.2 per cent. among the "cases" and 3.1 per cent. among the controls. So far as cardiac defects are an indication of rheumatism there is very little here to suggest the close association so often alleged between this disease and enlarged tonsils and adenoids. It is significant, however, that though a history of rheumatism was recorded in only 6 out of 627 children examined, all these 6 were in the group of "cases."

Other Pathological Conditions.

The proportion of rachitic children among the "cases" was higher than among the controls, being 7.8 per cent. in the former group and only 3.8 per cent. in the latter. These figures suggest the possibility that deficiency of vitamin D, known to be the essential cause of rickets, may also be an important factor in the production of naso-pharyngeal abnormalities. It seems reasonable to suppose that a large number of children may suffer from vitamin deficiency too slight to cause clinical rickets, but enough to bring about defects whose etiology has hitherto been little understood. Signs of tuberculosis were observed in 2.1 per cent., and syphilis in 0.8 per cent. of "cases"; no signs of either disease were recorded among the controls.

Educational Standard.

Educational retardation is a fairly common result of adenoids, especially in the higher age groups. Of the cases under review 20.5 per cent. were retarded, as compared with 6.7 per cent. in the group of controls. Of the children under 6 years of age the percentage retarded was 9.7, between 6 and 10 years it was 24.7, and over 10 years 40.6. The cause of backwardness in a certain number of cases is defective hearing; in others there is a certain mental lethargy, which may be due to interference with the circulation in the frontal lobes. Whether intelligence as measured by the usual tests is actually lower than the normal does not seem to have been determined, and the committee suggests that this is a point worth investigating, particularly by a series of tests to ascertain whether any improvement in the intelligence quotient follows the removal of the adenoids.

Association of Special Symptoms.

In working out the correlation of special symptoms with the nasopharyngeal condition it was found convenient to classify the cases in three groups: A, cases with involvement of tonsils only; B, with only adenoids; and C, with adenoids and involvement of tonsils. Of 413 cases examined 53 fell into Group A, 40 into B, and 315 into C. Mouth breathing and snoring, pointing to nasal obstruction, were commonest in C (75.0 and 74.3 per cent. respectively), somewhat less in B (52.5 and 67.5), and least in A (31.0 and 34.5). Examination of the nasal passages showed significant differences between the three groups in regard to actual defects in the passages, and a much greater frequency of nasal catarrh in those children with adenoids. In Group C, for example, 15.6 per cent. had hypertrophied turbinals, in Group B 7.5 per cent., and in Group A only 5.2 per cent. Among the controls similarly examined there were only two with hypertrophied turbinals.

Sleep disturbances, which may be associated with nasal obstruction, with irritation of the bronchial passages, or with interference with the cerebral circulation, are more common in children with adenoids than in normal children; 54.2 per cent. of the "cases" were recorded as suffering from disturbed sleep, as compared with 15.7 per cent. of the controls. Correlating disturbed sleep with the three above-named groups, it was found that the condition appeared in 59.0 per cent. of Group C, in 55.0 per cent. of Group B, and in 27.6 per cent. of Group A. Defective hearing was recorded in respect of 27.4 per cent. of "cases," and signs of chronic otitis in 27.8 per cent. Defective hearing was commonest in Group B, least common in Group A. Enlargement of tonsils, though liable to cause deafness in chronic cases, appears, therefore, to be a far less potent cause of this defect than adenoids. Varying degrees of enlargement of the cervical glands were recorded in 69.0 per cent. of "cases." This condition occurred most frequently in Group C, and least in Group A. Speech defects, for the most part attributable to mouth breathing and defective hearing, were most prevalent in Group C (21.6 per cent.), less in Group B (12.5 per cent.), and least of all in Group A (6.9 per cent.). A tendency to febrile attacks was reported in respect of 26.4 per cent. of the cases, as compared with only 1.5 per cent. of the controls. Whatever the causes of these attacks, which probably include a variety of minor infective processes, they are obviously associated with tonsils and adenoids, and particularly with the two conditions combined. Enuresis was somewhat more common in all groups of "cases" than among the controls.

After-History of Enlarged Tonsils and Adenoids.

The committee has records of 63 children in the group of "cases" who, for varying periods (the average being 1 year and 4 months), were untreated; 43 of these had enlarged tonsils and adenoids, 10 had adenoids only, and 10 only enlarged tonsils. During the period in question none of the 10 with only tonsils developed adenoids; in 3 the tonsillar enlargement increased; in 1 it diminished, and in 2 it disappeared. Of the 53 cases with adenoids these growths increased in 6, improved in 6, and in 5 underwent spontaneous cure. Tonsillar enlargement, present originally in 37, developed in 6 others during the follow-up, increased in 8, was unchanged in 18, decreased in 2, and disappeared in 9. It is noteworthy that none of the children whose adenoids or enlarged tonsils spontaneously cleared up was under 6 years of age. Spontaneous improvement appears to have been generally accompanied by amelioration of associated symptoms.

Results of Operations.

During the period of observation 131 children had their adenoids removed, the time between operation and the final re-examination varying from a few weeks to two years. The various associated symptoms were in many instances apparently cured; in some they were improved or unchanged; in a few they became worse. Figures obtained from an investigation of a small group of children re-examined one to six years after operation (the average interval being four years) suggest the possibility that the early improvement after operation is not always maintained. This is particularly noticeable with respect to nutrition, in which an improvement was observed in a majority of cases, but in only 20 per cent. of cases re-examined after some years. Possibly the circumstances of many a child after operation are for a time more favourable than usual, and the operation may be credited with an improvement due in reality to other causes. Otorrhœa seems to have been but little affected by operations for tonsils and adenoids, but the majority of cases of nasal catarrh were cured as the result of operation. Bronchial catarrh does not seem to benefit to the same extent, only 10 cases being cured out of 27. A tendency to sore throat was remedied in 21 out of 26 cases.

Further Investigations.

The committee has decided to undertake the systematic examination of a series of unselected children from birth in order to ascertain the facts in their early history and conditions which are associated with the onset of enlarged tonsils and adenoids. Their examinations will include a detailed inquiry into maternal history during pregnancy, the dietary of the child during early life, as well as a careful record of the dental condition. Further inquiry will relate to the frequency of association of certain abnormalities suggestive of vitamin deficiency with enlarged tonsils and adenoids.

British Medical Journal.

SATURDAY, FEBRUARY 16TH, 1929.

THE SIGNIFICANCE OF IODINE.

To those of our profession who are engaged in practice, in teaching, or in research, or who, perhaps, try to combine at least two of these in their daily tasks, the scientific review is becoming more and more a necessity. It is impossible to be reasonably well informed upon any subject without keeping in touch with current literature; yet, over a narrow range of subjects, it is equally impossible to read, much less to criticize or appreciate, the contents of more than a very few of the specialized journals. We must rely, therefore, upon publications in which scientific work is condensed, analysed, and presented in a critical manner; nor ought we to be slow in acknowledging our indebtedness to those who undertake the laborious task of preparing reports, and to the bodies under whose auspices such reports are published.

The Medical Research Council's Special Report, No. 123, on "Iodine in nutrition," prepared by Drs. J. B. Orr and L. Leitch, certainly does not fall short of the standard set by previous communications published by the same body. A study of the section headings alone gives some idea of the extent of the matter treated and of the thoroughness with which the authors have done their work. The discovery of iodine depended on the chance observation of a French nitrate manufacturer in the early part of the last century. Investigation has since shown it to be ubiquitous; it is present in earth, air, and sea. It stands in a very special relation to biological processes, and neither the animal nor the vegetable world can remain indifferent to its presence or absence. Living cells possess a curious property which enables them to store up iodine obtained from their surroundings, and it is clearly no accident that our chief sources of iodine supply are deposits gathered by living agencies—seaweeds and guano beds. It has been shown that an optimal concentration of iodine increases the yield of crops and the growth of domestic animals. Manures and cattle foods may both be enriched with iodine. Clearly, the study of the iodine content of soils and its availability for living matter is an important subject for the agriculturist. Some soils, it appears, give up their iodine more readily than others, while the common manures vary widely in iodine content.

It is natural for us to think of iodine in connexion with the thyroid gland; indeed, while we reckon the iodine content of soils and water in micrograms (millionths of a gram) per kilogram, in the thyroid it is present in amounts up to 0.04 gram per 100 grams of fresh tissue. The animal body, apparently, has found it necessary to set aside certain tissues in which the power of collecting iodine, common to all cells, is intensified to a very special degree. It is, perhaps, an example of chemical specialization, comparable with the functional specialization familiar to us in muscle, nerve, and the like. Medical interest has, of course, long been focused on goitre. The ancients treated the disease with burnt sponge—an iodine-rich material—and forty-five years before Baumann discovered iodine in the thyroid gland Chatin was endeavouring to treat goitre by the administration of iodine. The early French experiments proved a disastrous failure, chiefly on account of the dangerously high doses administered; it was only later, as the effectiveness of minute doses of iodine came to be appreciated, that such methods proved their real value. In the biochemical study of the thyroid gland the chief landmarks of recent years have been Kenda's isolation and Harington's synthesis of thyroxin. It was recognized before that the iodine of the thyroid was in organic combination, but the isolation of an organic substance, the discovery of its constitution, and the demonstration that its effects are identical with those of the whole thyroid gland, have made possible the quantitative observations so desirable in scientific work.

It is of the greatest interest that, although iodine is physiologically very active, its effects are not the same as those of thyroxin; evidently the body finds the manufactured article more suited to its needs than the raw material. Certain types of simple goitre can be successfully treated by potassium iodide; and, so far as we know, we are here dealing with a straightforward replacement. On the other hand, Graves's disease, the symptoms of which strongly suggest hyperthyroidism, can also be successfully treated by inorganic iodine. Now Hildebrandt found that while injection of thyroxin caused a rise in the basal metabolic rate of rats, injection of inorganic iodine caused a fall. If an injection of thyroxin was later followed by one of inorganic iodine the same phenomena occurred, but the threshold for the inorganic iodine effect was much lowered. Thus, while in the normal rat 0.5 mg. of iodine caused an observable fall in the basal metabolic rate, some time after thyroxin injection the same effect was produced by 0.01 mg. The explanation of this phenomenon has yet to be found, but the analogy between it and the behaviour of iodine in hyperthyroidism is obvious. In a recent paper Kendall[1] has brought forward evidence to show that thyroxin is neither the only nor the most physiologically active inorganic iodine compound in the thyroid. Indeed, from some samples of dried thyroid possessing marked physiological activity he was unable to isolate any thyroxin at all. Suggestive as such observations are, they must, of course, survive the test of further investigation before they can be finally accepted.

Perhaps the strongest impression left on the mind by the report of Orr and Leitch is that iodine possesses some fundamental significance for life which hitherto has eluded us completely. Hardly a cell remains indifferent to it; iodine deficiency affects almost every function and every tissue in the body. Preoccupation with purely pathological matters has perhaps blinded us to the wider significance of our observations; yet it seems that we shall have to extend our horizon considerably before we can grasp the true significance of this element for the processes of life.

TRAFFIC IN DANGEROUS DRUGS.

THE medical profession has a special interest in the suppression of drug addiction, and therefore the efforts of the League of Nations to check the illicit traffic in drugs deserve the sympathetic attention of our readers. The Council of the League receives reports from an advisory committee on traffic in opium and other dangerous drugs, which meets once or twice a year. The problems that confront the committee are of extraordinary complexity, but some idea of a few outstanding facts can be gathered from the report of the eleventh session that was published last summer.[2]

[1] *Journ. Biol. Chem.*, December, 1928, 80, p. 837.
[2] Minutes of the Eleventh Session of the League of Nations Advisory Committee on Traffic in Opium and Other Dangerous Drugs. C.328, M.88, 1928, xi, p. 364.

There are really two problems involved: first, that of opium smoking and opium eating in the Far East, and secondly, that of the abuse of the alkaloids morphine, heroin, cocaine, etc. This latter is a problem that is in no way limited to the Far East, for the abuse of these drugs is a danger that threatens every country in the world. The two problems are linked by the fact that limitation of the production of alkaloids is made much more difficult by any excessive production of the raw materials. While abuse of the alkaloids constitutes practically the entire problem of drug-habit formation among Western nations, these alkaloids are rapidly finding a market also in the East. The evils produced by the older vices of opium smoking and eating are bad enough, but it would probably be agreed that the effects of alkaloid addiction are much worse. Indeed, the aggravation of the evil produced by the change from opium to morphine has been compared to the effect of substituting gin for beer in England in the first half of the eighteenth century. In the report quoted M. Chao (China) went so far as to say: "The effect of this new danger is at present so appalling that many Chinese social leaders have expressed their readiness to reintroduce opium smoking if this would put an end to the use of morphine"; and later he quoted the popular opinion that opium smoking may be regarded as, on the whole, a harmless habit, and easily curable in comparison with the new drug addiction.

Now the smuggling of alkaloids is far easier than the smuggling of opium. The extent of the trade is indicated by the statement that in 1926 3.77 tons of smuggled alkaloids were seized or traced in China. The usual assumption for Western countries is that seizures represent 10 per cent. of the total traffic, but this is probably far too high a figure for a country so disturbed as China. The total legitimate need in the world for these drugs has been estimated to be approximately as follows: morphine 20 tons, heroin 2 tons, cocaine 12 tons. If M. Chao's figures are correct they imply that the amounts of morphine and heroin smuggled into China annually are greater than the total annual legitimate world requirements for these drugs. It is obvious that European civilization has a grave responsibility in this matter, since the greater part of these alkaloids is manufactured in Europe. Europe has a definite duty in regard to the illicit traffic in dangerous drugs, because Article 9 of The Hague Opium Convention of 1912 requires the contracting powers to limit their manufacture to medical and legitimate needs, and by Article 13 they agree to control their exports of these substances.

The illicit trade in morphine and cocaine is, of course, not confined to China. Sir Malcolm Delevingne described the situation in China as being far the most serious, but mentioned that the illicit traffic was still very serious in the United States of America and in Canada, and also in the Eastern Mediterranean. Egypt was stated to be inundated by contraband drugs. The view of the United States Government is that on account of the portability of the drugs and the enormous profits accruing from their illicit traffic it is almost impossible to control this evil by customs, and that the only hope of improvement lies in limiting the world manufacture of drugs of addiction to quantities commensurate with legitimate medicinal needs. Unfortunately the quantity manufactured appears to be actually rising, since it is estimated that the world production of morphine was 60 tons in 1926, as compared with 30 tons in 1921. In this connexion a new difficulty arises in that it is stated that nearly half the morphine manufactured is turned into codeine. Now it is generally admitted that codeine is not so apt to cause addiction as morphine or heroin, but the fact that so large a proportion of morphine disappears from control in this manner greatly increases the difficulty of keeping track of the morphine produced. Moreover, chemists have recently produced two new compounds—eucodal (derived from thebaine) and dicodide (derived from codeine)—and the expert committee of the League of Nations holds that both are habit-forming drugs. Reports from America indicate that they are already well known to the dope vendors in that country. It is believed that there are only about forty factories engaged in the production of habit-producing alkaloids, and figures for the manufacture, export, and import of these drugs for several nations are given in an appendix to the report; but, unfortunately, they fail to explain the origin of the immense quantities well known to be passing through clandestine channels. We referred in our issue of February 2nd (p. 213) to the disclosure, at a meeting of the League advisory committee, of the existence of an enormous traffic in morphine, heroin, and cocaine of Swiss manufacture carried on by a Dutch firm, now suppressed, trading largely through Viennese agencies, with the Far East. Since then Sir Malcolm Delevingne has given further details about the widespread ramifications of this illicit drug traffic, in the course of an address to the League of Nations Parliamentary Committee, at the House of Commons on February 11th.

It appears to be generally agreed that addiction to morphine, heroin, and cocaine has increased very greatly during the past decade, and the members of the advisory committee did not consider last year that the back of the illicit traffic had yet been broken. Apart from the damage done to individuals, this traffic obviously constitutes a serious source of international ill will, since countries that have taken pains to regulate their drug manufacture naturally resent being flooded with poisons from countries that are less careful or less scrupulous.

MINOR INJURIES OF THE VERTEBRAE.

At the joint meeting of the Surgical and War Sections of the Royal Society of Medicine, reported in this issue at page 298, Group-Captain H. V. Wells raised a question to which it is not easy to find an answer. He asked for information and guidance as to the diagnosis and early treatment of what might be called masked spinal injury—that is, a condition in which symptoms appear and radiological examination shows alterations in the shape and density of one or more vertebrae long after recovery from the original shock has apparently occurred. Sir Percy Sargent agreed as to the occurrence of these late symptoms, and asserted categorically that a spine which appeared normal radiographically immediately after the accident might show atrophy and collapse of one or more vertebral bodies many months afterwards. He attributed the symptoms to injury, at the time of the original accident, of muscles supporting the spinal column, and to a subsequent yielding of the vertebral body or bodies deprived of their normal muscular support. Most of those who took part in the discussion accepted the clinical picture drawn by Captain Wells, but were generally unable to offer a satisfactory explanation of its pathology. Dr. Bertram Shine, however, was sceptical about the alleged normal condition of the bone immediately after the injury. He thought that in none of the cases brought forward had a fracture been discovered after the skiagrams in the early stages had proved negative. He strongly recommended that in all cases of violent shock to the spine—such, for example, as

that following aeroplane crashes—very careful radiograms, both from the lateral and from the antero-posterior points of view, should be taken as a routine measure as soon as possible after the accident. If it is true that vertebral bodies shown radiographically to be unchanged immediately after an accident are apt none the less gradually to develop atrophic changes and to alter their shape, it is most desirable to produce in a series of cases a succession of radiograms showing how the various changes develop. Such an investigation might well occupy the attention of the medical officers of the Royal Air Force in the near future. So long as our knowledge of the pathology of minor injuries to the vertebrae is deficient treatment must be largely empirical; without a sure foundation in morbid anatomy we cannot even be certain of preventing the appearance of delayed lesions. Sir Percy Sargent and Dr. Morton Smart referred to the good results following electrical treatment to the muscles, the latter claiming that these results were sometimes due to breaking down adhesions by active muscular contraction. There can be no doubt that the muscles must be taken into account in the treatment of this type of injury no less than in the treatment of injuries to the limbs. Some of us are apt to regard a fracture as affecting the bone alone—an error in which we have perhaps been confirmed by the mere fact that muscles, like other soft parts, are generally not represented on *x*-ray plates. But in a spinal injury severe enough to cause crushing of a vertebral body, ligaments and muscles must suffer as well, and in devising means of treatment this fact should not be forgotten. In a leading article (December 17th, 1927, p. 1152) commenting on a discussion of the Section of Orthopaedics of the Royal Society of Medicine reported in the same issue (p. 1145), we referred to some work of Dr. R. B. Osgood of Boston on the subject of fracture of the spine. Dr. Osgood, basing his conclusions on a survey of 242 cases, maintained that following industrial and motor accidents there frequently occurred undetected compression fractures which, left untreated, might lead to a train of late symptoms similar to those described by Group-Captain Wells. Support for the vertebra by means of a suitable brace (such as that mentioned by Sir Percy Sargent) would prevent development of late symptoms in most, if not in all, cases, and yet permit the wearer to follow even an active occupation. The discussion on Group-Captain Wells's paper may perhaps seem somewhat negative and inconclusive; it should none the less help to direct attention to a gap which requires filling in our pathological knowledge, and, above all, to the paramount necessity of taking efficient radiograms of every case in which, from the nature or violence of the accident, the spinal column may have suffered injury.

THE MAYOS.

THE name of Mayo, so honoured in our profession to-day, has long held a distinguished place in the history of science. John Mayouwe, Mayow, or Mayo, one of the pioneers of physiology in the second half of the seventeenth century, died in 1679 at the age of 35; until the appearance of Priestley and Lavoisier there was no one worthy to take his place in the field of physiological chemistry. His memory is one of the glories of English medicine. He left no offspring, and we do not know whether any of the medical Mayos of the eighteenth and nineteenth centuries could claim to be his kin. It is a remarkable fact that of the fourteen Mayos commemorated in the *Dictionary of National Biography* six were medical men. Four belonged to an old Hertfordshire family, and of these two were physicians and one was a surgeon to the Middlesex Hospital, and the other, Thomas Mayo, was President of the Royal College of Physicians in the period 1857–62. Herbert Mayo, surgeon and physiologist, was a prominent figure a hundred years ago; he is remembered not only for his professional attainments, but for his success in a bitter controversy with Sir Charles Bell on the question of the nerve supply to the muscles of the face. The honoured name of Mayo was carried across the Atlantic by William Worrell Mayo, who, after receiving his medical education in Manchester, went as a pioneer into what was then the wilderness of Minnesota; there, in Rochester, he founded the St. Mary's Hospital, to the direction of which his two distinguished sons succeeded. It is unnecessary to dwell on the wonderful organization which has made the names of the brothers Mayo and their skill famous throughout the world. We learn with great pleasure that both of them, forsaking one of their own precedents, will visit Manchester next July to take part in the Annual Meeting of the British Medical Association. We venture to believe that William and Charles Mayo will receive not only a warm welcome from the Association, but all the honour which Manchester can pay to the celebrated sons of one of her own alumni.

THE EPIDEMIOLOGY OF LEPROSY IN AUSTRALIA.

A REPORT on *The Epidemiology of Leprosy in Australia*,[1] by Dr. Cecil Cook, Wandsworth Research Scholar, 1923–25, of the London School of Tropical Medicine, gives us in some 300 pages a very detailed account of the prevalence of leprosy, with tables of cases, together with much theoretical discussion and a good deal of repetition of the arguments used. The more important facts brought out by a painstaking inquiry include strong evidence that leprosy was probably unknown among the Australian aborigines before the introduction of the disease by coloured immigrants, such as Chinese, especially in the Northern and Western Territories and in Victoria and the southern parts of New South Wales; another route of infection was through the South Sea Islanders, or Kanakas, so largely employed formerly, and to a less extent at the present time, on the Queensland sugar plantations. Owing to the great excess of males these coloured aliens cohabited with and infected the aboriginal tribes of Australia, and they in their turn communicated leprosy to the white population in areas and at times when the white males greatly exceeded in number the females, as indicated by the great bulk of the cases occurring in adult males, especially in agricultural districts. Later the disease spread among the domesticated whites, when females and juveniles formed the majority of the infections, indicating the usual type of household infections, which still persists, especially in Queensland, and, to a less extent, in New South Wales. In the sparsely inhabited Northern Territory the disease died down with the disappearance of the great majority of the aboriginals, and in Victoria the white races have never been infected, because the aboriginal tribes had practically disappeared before the introduction of leprosy by Chinese with the opening up of the goldfields; for there was not sufficient social intercourse between the Chinese and the white races to allow of infection of the latter. At one time the author was inclined to think that the rat might be an intermediate host of leprosy, and that infection might be transmitted by the rat flea, *X. cheopis*, but further experience brought him into agreement with the general view that the disease is slowly contagious through prolonged close personal contact. The incidence of the disease confirms in a striking manner the relationship of high humidity to high leprosy rates, mostly of the infective nodular type in the damp coastal area, and with few nerve cases in the dry and elevated interior. The uninfective nature of many nerve cases is recognized, but apparently they also are segregated. Australia presents an interesting field for the study of the effects of

[1] *The Epidemiology of Leprosy in Australia.* By Cecil Cook, M.B., Ch.M.Syd., D.T.M. and H. Commonwealth of Australia, Department of Health, Service Publication, No. 38. Canberra: H. J. Green. (6 × 9½, pp. 305; illustrated.)

thirty years' stringent legal compulsory notification and segregation. In New South Wales Dr. Cook considers that the disease is now well under control, as no new cases have been found during the last few years, but no figures or diagrams are given in support of this statement. On the other hand, diagrams are included in support of his conclusion that "in Queensland it appears to be gaining ground in spite of an apparently identical prophylactic system" as in New South Wales. Nevertheless he considers that "lazaret isolation is, therefore, the prophylactic measure *par excellence*." The better results in New South Wales are attributed to the disease being more domesticated there, and to the early good work of Ashburton Thompson, while in Queensland some cases are hidden and there is insufficient control of contacts and discharged patients. Moreover, no provision is made for the treatment of early bacteriologically negative cases—just those which respond best. The average duration of the disease on first detection is not recorded, but elsewhere it persists for four or more years, and this accounts for the comparative failure of rigid isolation. The most important of Dr. Cook's recommendations is the adoption of the plan, previously advocated in the work on leprosy of Rogers and Muir, to examine all contacts of known lepers every six months for five years in order to detect and treat the early infections. He thinks also that the treatment in the lazarets requires to be improved.

MONKEYS AND HUMAN DISEASE.

THE position of the monkey and his relations in the evolutionary scheme has always been a subject of speculation and interest to every class of student. His near relationship to man is now generally admitted; how near is that relationship was disclosed at a meeting of the Section of Tropical Diseases and Parasitology of the Royal Society of Medicine held on February 7th, when "Monkeys and human disease" formed the topic for discussion. The anatomical relationship between man, apes, and monkeys was epitomized by Mr. R. I. Pocock, F.R.S., late superintendent of the London Zoological Gardens. He pointed out that one of the most marked differences between true monkeys and apes is seen in their mode of locomotion. On the ground the monkey is a quadruped, the ape a biped, especially when young; in the trees monkeys are good climbers and jumpers, jumping for the top of a branch, while apes are poorish climbers, and jump for the under side of a branch. In fact, there is some evidence to suggest that the ape's arboreal activities are a secondarily acquired character—induced perhaps by pressure from his highest relation. Mr. Pocock considers that the most significant difference between man and other primates lies in the foot, and that man left the simian stem in relatively early evolutionary times. The other speakers considered this relationship from the point of view of disease. Mr. Lovell showed that many of the intestinal conditions of monkeys in captivity were caused by organisms found also in man. As in man, tuberculosis was a very common condition; however, there was a slight difference, in that monkeys were almost equally susceptible to both strains of mammalian bacillus, though deaths from tuberculosis were mainly due to the human variety. Little is known about the virus diseases of monkeys, but, as Dr. E. Hindle said, only in primates was it possible experimentally to develop yellow fever, poliomyelitis, and perhaps measles. Other human virus infections can, of course, be transmitted to them, but in these three diseases the monkey appears to be the only alternative host to man. Among the internal parasites virtually all the protozoa of man are found in apes or monkeys, but it appears to be possible that the malarias of man are biologically distinct from those of apes. The story is a different one with the worms, however. With the exception of the schistosomes practically none of the characteristic human worms occur in other primates. Accidental interchanges do occur, and in parts of Africa monkey forms quite frequently appear in man; but on the whole their faunas are distinct. An interesting evolutionary point was made by Dr. T. W. M. Cameron in connexion with pinworms. The method of spread of these parasites is by personal contact, and this tends to limit the various species of parasite to the same host. Now pinworms occur in monkeys, and all the forms in primates belong to the same genus. The species in monkeys, however, are different from the human, and the more distant the relationships between the hosts the greater are the differences between the parasites. A somewhat similar state of affairs among the lice was pointed out by Dr. V. B. Wigglesworth. The family containing the human lice is limited to the primates; the genus in man is found only in apes, while that in monkeys is a different genus. The crab louse—the third member of the family—is only found on man and the gorilla. The evidence of the part played by apes and monkeys in the spread of human disease was, on the whole, reassuring; they may, however, as has been suggested in these columns (December 29th, 1928, p. 1184), play an important part in the spread of bilharzia disease, and it is just possible that they act as reservoir hosts for yellow fever. Dr. Andrew Balfour drew attention to the fact that in South America epidemics in monkeys of what might have been yellow fever often preceded epidemics in man of what certainly was yellow fever. The evidence, however, is still inconclusive. Certainly here, and in some other conditions, the monkey has been an essential laboratory aid, but to the hygienist his significance is relatively slight. In fact, as Professor Leiper pointed out, such of man's diseases as are common to him and the lower animals result from food habits and contact; and domestication is a much more important factor than blood relationship.

PAUL UNNA.

By the death of Paul Gersen Unna in his seventy-ninth year a noble figure and a great leader has been lost to dermatology. It is no exaggeration to say that Unna has done more than any other single person for the advancement of the specialty to which he devoted his long life, and to which he has been faithful right up to the end. Never has he ceased from work and research. It was only within the last few months that he published his *Histochemie der Haut*, a volume which showed that the flight of time had in no way impaired his scientific ardour or acumen. Unna was born on September 8th, 1850, of a Hamburg family with strong medical traditions extending back some two hundred years. After a general education in his native town he commenced his medical studies in Heidelberg in 1870, but they were interrupted almost at once by the outbreak of the Franco-Prussian war, for which he immediately volunteered, and in which he was dangerously wounded in the leg. Subsequently he studied in Heidelberg, Leipzig, and Strasbourg, where in 1875 he submitted for his doctor's degree a thesis on the development of the skin. This thesis was only accepted after a struggle with von Recklinghausen, who objected to it on the ground that staining reactions, on which [illegible] argument depended, were insufficient evidence for scientific conclusions. With the help, however, of Waldeyer, Unna obtained his degree, and the revolutionary ideas first enunciated in that thesis have formed the basis of a great part of his subsequent researches, even up to the recently published *Histochemie*. Unlike most of the leading figures of German medicine, Unna did not become associated with any university until very late in life. His whole professional life was spent in his native city, where he started as an assistant to his father in general [illegible]

in 1878. From the very first he specialized in dermatology, with such success, indeed, that in 1881 he founded a clinic of his own, which in course of years grew into a very large institution. In 1882 he began the publication of a periodical devoted to dermatology, now widely known as the *Dermatologische Wochenschrift*, and it is in its pages that most of his papers have been published. Already in these early years Unna had made professional pilgrimages to foreign countries, where he became acquainted with other dermatologists. He had considerable social qualities, and the connexions so formed became of importance in after-life. The chief objects of his research during this time were leprosy, which he had seen in Norway with Hansen, and, as always, the staining reactions of the skin as a guide to the understanding of its chemistry and biology. It is a curious thing that Unna's reputation grew much more quickly in foreign countries than in his native land. He was held in particularly high esteem among British dermatologists; after his first appearance at a meeting of the British Medical Association in 1887 he was invited almost every year to take part, and his travels were extended as far as the United States of America. Partly as a consequence of his journeys, he brought out, in conjunction with the late Sir Malcolm Morris and others, the *International Atlas of Rare Diseases*. In 1890 he first described plasma cells, which were then received with great scepticism, especially by Neisser and his pupils, with whom Unna was usually in conflict, but which are now one of the best-known kind of cell in pathology. In 1897 began to appear the famous *Atlas of the Pathological Histology of the Skin*, to be completed in 1910 in nine volumes. About the same period much of Unna's attention was directed to the problem of eczema, which he thought that he had solved by the discovery of a microbe which he designated the morococcus. His work on this subject, however, has not been confirmed by subsequent workers, and we believe that ultimately Unna himself receded from the position he had taken up. These subjects by no means exhaust the tale of his activities; every branch of dermatology was touched by him, and he made particularly important contributions to therapeutics, on which he published a textbook. It will be remembered that he introduced ichthyol to the profession. Meanwhile, the activities of Unna had attracted many students of dermatology to Hamburg, which, although not a university, gradually became a great centre of dermatological education, and the master gathered round him a distinguished corps of assistants. In 1900, when the new University of Hamburg was barely visualized, Unna was already giving a complete course of instruction in his subject. In 1907 he was accorded the title of professor, but it was not until 1919 that the university was actually inaugurated, and Unna, in his sixty-ninth year, became professor of a university in being. Unna was never particularly keen on practice for its own sake. With his reputation as a master in his department he could not help attracting a vast and remunerative clientele, but as the years passed by he relegated it more and more to his capable assistants, among whom his three sons were conspicuous, and devoted his energies increasingly to his favourite subject, the biochemistry and histochemistry of the skin. This semi-retirement was interrupted by the war. It bereft him of all helpers except his daughter-in-law, Dr. Marie Unna, and the veteran Dr. Leistikow, but it found his energies unimpaired. All difficulties of private and hospital practice were overcome, and he even found time to impart to a wearied nation the fruit of forty years of experience, the war aphorisms of a dermatologist. That was ten years ago; since then he has continued to work with all the old industry and application. What that means is shown by the mere list of papers written by him. During his sixty years of active professional life Unna produced over six hundred publications dealing with every aspect of his subject. It is quite impossible to describe their variety. He has died in harness.

PUBLIC ELEMENTARY EDUCATION.

In their announcements of forthcoming publications, and in those statements which sometimes accompany volumes sent for review, publishers may be taken to set forth what they believe to be the value of a book and the aims and intentions of its author. On examination, however, the claims thus made are not always justified. A case in point is the volume entitled *Mass Education in England*,[1] by Dr. J. H. Garrett. The publishers regard this as "a very important book, an informed and trenchant criticism of public elementary education with some startling information and deductions." In this book, they say, the author "sets out to prove the fallacy of proposing an equal education for all children irrespective of their varying individual educability and the nature of their after-employment. He shows the waste in teaching effort and public expense entailed in the present system, and the irrational enthusiasm that proposes further effort and expense by extension on the same lines." It may, however, be fairer to take Dr. Garrett's own statements rather than those of his publishers. At the outset the author makes two main propositions. The first is that "little thought has been directed to the varying mental qualities of the scholars and the difference of treatment required in the case of one and another to accord with the comparative ease and difficulty of learning, or of being taught, which they display, and to the failure as well as the success that is inevitable in school education. The human material to be educated has been treated as if it were all equally teachable." On the contrary, this individual variation of mental power and educational need has been the chief subject to which teachers and administrators, in general, have directed their attention for many years past. The success of different schools and authorities in dealing with the problems has no doubt been unequal, but, on the whole, it has been considerable; and the fundamental proposals of the Consultative Committee to the Board of Education, which Dr. Garrett so roundly condemns, are all directed to making greatly increased provision for these varying individual needs. The author's second proposition is that "for the main part of the populace the young person has no immediate chance of choosing his occupation. By far the greater part of active human labour concerns employments of a mechanical or simple nature, requiring no great mental endowment. These simpler employments actually prevent the application of the knowledge acquired in schools, which is consequently soon forgotten, the whole effect of the school effort being lost and wasted, sometimes entirely, sometimes in part." The school education of the majority of children ought, therefore, to be not extended, but curtailed. Dr. Garrett's argument on these two propositions is as follows. The majority of children are of very limited mental capacity; those whose capacity is definitely superior can soon be picked out, and may properly receive a wider instruction than the others; in all cases the overwhelmingly predominant aim must be to give just so much instruction as will enable the child to earn a livelihood. Thus, any instruction beyond reading, writing, and the simpler operations of arithmetic is sheer waste, as the great majority of pupils will perforce be engaged in very simple occupations. Instruction in manual work, in domestic subjects, or even the more directly occupational teaching in technical schools is also sheer waste, as these things can be picked up better in the course of practical experience outside the school. This being so, in

[1] *Mass Education in England*. By J. H. Garrett, M.D. London and Cheltenham: Ed. J. Burrow and Co., Ltd. 1928. (Cr. 8vo, pp 133. 3s. 6d. net.)

the great majority of cases there is no need for a teacher to have appreciably more knowledge than is needed by the pupil. An ability to impart knowledge is necessary for a teacher, but this ability is inherent and cannot be taught. Therefore all training of teachers, and almost all superior education of teachers, is, again, sheer waste of public money and of individual effort. Such are the ideas evolving from Dr. Garrett's critical examination of the problem of mass education in England. They are very old ideas. Year by year they have been becoming increasingly obsolescent, so that now it is a surprise to have this demonstration that they are not yet quite obsolete. Yet there is one educational problem, becoming rapidly more insistent of solution, which, if it does not emerge from Dr. Garrett's logic, underlies his thought. When, at 11 years of age or so, all those elementary school children who have passed a proper test of fitness for further school education are appropriately dealt with, and when, on the other hand, mentally defective children and those who are very backward have already been catered for, what exactly should be done for the remainder? Among them will certainly be a relatively small number of late developers who at 13 or 14 years of age will be found to be as worthy of further school opportunity as some of those who had been previously selected. But what of the rest? What exactly is the character of the education they should receive so that they may increase in knowledge to the extent of their capacity, and their mental habits and social behaviour may continue to be influenced for good? Neither teachers nor education administrators have, as yet, fully thought out this difficult problem.

A MEDICAL UTOPIA.

IN the February number of the *North American Review* Dr. G. W. Haigh, writing under the heading of "State medicine: boon or bogy?" proposes that the medical and surgical system of the United States Navy should be the model for a State or national service for the whole nation. In his opinion the time has come for serious consideration of the institution of State service, and by State medicine he means "not a service retaining all the deficiencies of the individualistic competitive form of medical practice, such as the panel system of Great Britain or the sickness societies of Germany, but an organization based upon the economic principle of the division of labour and designed to insure co-operation in supplying a public necessity; to wit, a complete, free, in time compulsory health and accident service maintained by each commonwealth." This proposition, he holds, is not more socialistic than is the provision of education for all children; further, whereas education concerns a part of the people for a part only of their lives, health concerns all the people all their lives. Such a public service the medical profession has failed to supply at a reasonable cost, and it therefore behoves the people to supply for themselves the necessary organization. This he admits would entail acceptance of the official medical man, and would do away with choice of doctor. The people, he argues, would benefit, and so would the medical profession, who would form a corps into which all newly qualified men would enter, and be stimulated rather than stultified by so doing. After about five years' work in a position analogous to that of house-officers they would be eligible to choose a specialty. As a rule older medical men would not be obliged to continue to do work which has ceased to interest them, and which they did just as well or better earlier in their career. Medical officers of higher ranks would be relieved also of emergency and night work, so as to be better able to perform their duties of supervision, teaching, and administration. Some glaring evils of competitive medicine would also be eliminated by systematic co-operation; thus overwork and overfatigue, leading to hurry, carelessness, and mistakes, would disappear. Dr. Haigh, in short, looks with favour on the idea of a regimented State medical service. Most of us in this country would prefer to look for other ways of remedying the evils of competitive medicine.

THE WINNIPEG MEETING IN 1930.

As all the business of the Scientific Sections at the Winnipeg meeting of the British Medical Association, which begins on Tuesday, August 26th, 1930, will have to be arranged by correspondence, it is essential that its organization should be set on foot in good time. To this end the Council of the Association has appointed an Arrangements Committee, which will shortly proceed with the nomination of officers for the Sections, in each of which the Canadian Medical Association has nominated two vice-presidents and one secretary, leaving the Council in London to fill the remaining offices, including those of all presidents of Sections. The work of the Arrangements Committee will be materially assisted if it has before it the names of members of the Association who propose to attend the Winnipeg meeting, and the Medical Secretary will be glad to receive this information from those who are interested in the work of the Sections as soon as possible. It is, of course, too early to ask that members should now commit themselves definitely to attendance at the meeting; this request for names has no relation to the provision of transport, but is made solely to facilitate the work of the Arrangements Committee.

ROYAL COLLEGE OF PHYSICIANS.

THE Milroy Lectures before the Royal College of Physicians of London, on "Past and present diphtheria in England and Wales, with special reference to the London metropolis," will be given by Dr. J. Graham Forbes on February 26th and 28th and March 5th. Professor E. B. Verney will deliver the Goulstonian Lectures on "Polyuria" on March 7th, 12th, and 14th. The Lumleian Lectures, entitled "A medical review of the surgery of the chest," will be given by Dr. R. A. Young on March 19th, 21st, and 26th. Dr. F. M. R. Walshe will deliver the Oliver-Sharpey Lectures on "The physiological analysis of some clinically observed disorders of movement" on April 30th and May 2nd, and the Croonian Lectures, on "Some chemical factors in the control of the circulation," will be given by Dr. H. H. Dale, F.R.S., on June 4th, 6th, and 11th. The lectures will all be given at 5 p.m. at the College, Pall Mall East.

INFLUENZA.

As we anticipated last week, there has been a considerable increase in the number of deaths attributed to influenza, and it does not seem likely that the maximum has yet been reached. Last week's statistics again showed a disproportionately large increase in the recorded incidence of primary pneumonia in comparison with the number of deaths assigned to influenza, and there is still a consensus of opinion in clinical reports from the affected areas that the type of the disease is mild. There seems at present to be a concentration upon the north-western districts of England and the southern ports or coast towns. The great industrial centres of Yorkshire and the Midlands are less affected. The age distribution of the deaths is of the normal inter-pandemic type.

No. 125 of the Special Report Series, issued by the Medical Research Council, comprises *A Study of Intracranial Surgery*, by Mr. Hugh Cairns, F.R.C.S. It deals largely with work in Professor Harvey Cushing's clinic at Boston, where the author acted as resident assistant surgeon while holding a Rockefeller Travelling Fellowship. We hope to discuss this report in a later issue.

THE KING.

It was announced on Friday, February 8th, that a radiogram taken that morning confirmed the clinical evidence that the condition of the lungs was now normal, and that, weather permitting, His Majesty would leave Buckingham Palace next day for Craigweil House, near Bognor. The journey through Surrey and Sussex by motor ambulance was borne very well, and, notwithstanding the severe weather of the past few days, further improvement has been noted in the King's condition since his arrival. The change to the sea coast is evidently doing good.

THE KING'S AMBULANCE.

From the point of view of the doctor particular interest attaches to the construction of the motor ambulance chosen for His Majesty's journey from Buckingham Palace to Craigweil House. The body of the ambulance was specially designed by Mann Egerton and Co. Ltd., of Norwich and

Interior of Motor Ambulance.

London, consulting engineers to the Medical Insurance Agency, and built by them on to a 45-h.p. Daimler chassis. The bed, which is placed on the right, is made to slide in and out of the car; should the need arise it can be turned about without disturbing the patient. For those in immediate attendance on the patient there is an armchair on the left at the head of the bed, and at the foot an upholstered seat. A dark green carpet covers the floor; there are three large windows fitted with blinds, and there are two electric lights. By means of a special electric heating apparatus and an electric fan the temperature inside the ambulance can be regulated at will. A mahogany and nickel hand-basin is supplied with water from a tank. A single swing-door, with glazed window, gives access from the back of the car. Exhaustive tests had proved this ambulance to be capable of carrying the patient in comfort while maintaining a high average speed. The accompanying illustration shows the interior as seen from behind. These ambulances are supplied by the Daimler Hire Company, of Knightsbridge, S.W.

MEDICAL TEACHING AND RESEARCH IN SHANGHAI.

The Henry Lester Institute.

A scheme which should have an important bearing on medical research and education in the Far East has recently been launched in Shanghai. An Englishman, Mr. Henry Lester, who had spent the greater part of a long life as an architect and estate agent in Shanghai, died in 1927, and, by a will executed two years prior to his death, bequeathed the bulk of his large fortune to various schemes for the promotion of education, along British lines, amongst the Chinese of the city of his adoption. After the disbursement of certain specified legacies covering various medical and educational institutions in Shanghai, the residue of the estate is placed under the control of "The Lester Trust" in order to give effect to the directions of the testator. The trustees must always be British subjects ordinarily resident in Shanghai.

The clause in the will which will be of most interest to the medical profession is that dealing with "the establishment of an institute or institutes for the study of and instruction in the English language, of medical science, surgery, civil engineering, architecture, and other useful and scientific knowledge." The trustees have decided to separate medical science from the purely technical subjects, and to proceed at once with the erection of a dignified building, equipped on the most modern lines, for research in medicine and surgery. Dr. H. G. Earle, formerly professor of physiology in the University of Hong-Kong, has been appointed as general adviser to the trust.

Directions are given that the institute "be open to all nationalities, but especially Chinese," that not less than Shanghai taels 400,000 (over £50,000) should be expended on the building and equipment, and that it "be known as the 'Henry Lester Institute' and by no other name." The total amount of the residuary estate is still unknown, but, when all the other bequests have been provided for, it is expected that there will be funds amply sufficient to staff and endow a school containing at least six main divisions. These divisions will comprise:

1. Medicine, including Tropical Medicine and Parasitology.
2. Pathology, including Bacteriology and Immunology.
3. Physiology, including Biochemistry, Pharmacology, and Industrial Physiology.
4. Surgery, including Experimental Physiology.
5. Hygiene and Public Health.
6. Field Research and Statistics.

The heads of divisions are at present being recruited from British schools of medicine, and it is hoped that the junior posts will be largely filled by young Chinese who have been trained abroad.

Until the institute is built, equipped, and organized, the activities of the staff will be entirely confined to research; later on, it will be possible to initiate curricula for post-graduate studies in public health, tropical medicine, and surgery, and in the event of the institute becoming affiliated to the University of Hong-Kong, there will be no further necessity for Chinese students to travel thousands of miles in order to take the D.P.H. or D.T.M.

The Lester Chinese Hospital.

Another medical institution which will benefit by Mr. Lester's generosity is the Chinese Hospital, long associated with the London Missionary Society, situated in Shantung Road, at a distance of about a mile from the proposed site of the institute. The bequest of Shanghai taels 1,000,000 (£130,000), together with certain valuable properties, will be sufficient to rebuild and partly endow a hospital with accommodation for about 200 patients. The new building will be known as "The Lester Chinese Hospital," and it will be controlled, not by the Lester Trust, but by its present board of trustees. It would obviously be to the advantage of both institutions if the clinical facilities of the hospital could be utilized by the research staff of the institute, and a beginning has been made by the appointment of Dr. Gordon Thomson, F.R.C.S., head of the division of surgery in the Lester Institute, as honorary visiting surgeon to the Chinese Hospital. The public health authorities of the Shanghai

Municipal Council have also agreed to place facilities for the collection of material at the disposal of the institute.

The Lester benefaction is a sign of the times. Business and professional men who have settled and succeeded in China are not all anxious to gather their fortunes together and return to their native shores. To those who have lived longest among the Chinese the medical, educational, and social needs of the country make a strong appeal, and foreign benefactors are beginning to find that they can "cast their bread upon the waters" with confidence.

MEDICAL MEMBERS OF LOCAL PUBLIC BODIES.

A REQUEST was made in the *British Medical Journal* some months ago for the names of medical practitioners known to be serving as members of local authorities or their subsidiary public bodies in Great Britain with the object of placing this information at the disposal of the profession generally and thus facilitating co-operation among medical men in public affairs. In view of the fact that the Local Government Bills now before Parliament will be followed by extensive changes in public health organization and administration such co-operation is now more desirable than ever. The two lists of names already published—on December 8th (p. 1057) and December 29th, 1928 (p. 1190)—gave details relating to about 125 authorities in all. The following is a supplementary list of names received too late for inclusion in the earlier lists.

ENGLAND AND WALES.

COUNTY COUNCILS.

Derbyshire.—Dr. W. T. Wood, Creswell (Member of the Education, Tuberculosis, Maternity and Child Welfare, Mental Deficiency, and Blind Persons Act Committees).

Montgomeryshire.—Dr. W. H. Lewis, Llansantffraid (Chairman of the Public Health, Maternity and Child Welfare, etc., Committees; Member of the Education and Mental Deficiency Committees).

West Riding of Yorkshire.—Co-opted member of Tuberculosis, etc., Subcommittees: Dr. G. B. Hillman, Wakefield.

West Sussex.—Dr. Sidney Matthews, Crawley (Alderman; Chairman of the Public Health, Midwives, Maternity and Child Welfare, etc., Committees).

COUNTY BOROUGH COUNCILS.

Rochdale.—Dr. Daniel Richmond (Alderman; Member of the Health Committee), Dr. John Rodley (Alderman), Dr. James Melvin (Member of the Health Committee), Dr. H. G. Ramsbottom, and Dr. E. H. S. Scarr.

Wakefield.—Dr. G. B. Hillman (Chairman of the General Purposes Committee; Member of the Health, Maternity and Child Welfare, etc., Committees).

NON-COUNTY BOROUGH COUNCIL.

Hereford.—Dr. J. R. Bulman (Member of the Health, Education, etc., Committees), and Dr. J. A. Pritchard (Member of the Health, etc., Committees).

METROPOLITAN BOROUGH COUNCILS.

Hampstead.—Dr. E. Collingwood Andrews, Heath Drive, N.W.3 (Deputy Mayor), Dr. C. W. Cunnington, West End Lane, N.W.3 (Alderman), Dr. W. S. George, Finchley Road, N.W.3, and Dr. C. J. R. MacFadden, Frognal, N.W.3 (Chairman of the Public Health Committee).

Islington.—Co-opted member of the Maternity and Child Welfare Subcommittee: Dr. Eleanor Pulleine, Hamilton Terrace, N.W.8.

Westminster.—Dr. H. W. J. Steen, Warwick Square, S.W.1 (Member of the Public Health Committee).

URBAN DISTRICT COUNCIL.

Harpenden (Herts).—Dr. A. L. Hine (Vice-Chairman; Chairman, Joint Hospital Committee for St. Albans and Harpenden Urban and Rural Districts).

BOARD OF GUARDIANS.

Hampstead (London).—Dr. Mary B. Douie, Heath Hurst Road, N.W.3.

PARISH COUNCIL.

Elmton-cum-Creswell (Derbyshire).—Dr. W. T. Wood, Creswell.

SCOTLAND.

TOWN COUNCILS.

Edinburgh.—Dr. G. F. Barbour Simpson, Manor Place.

Glasgow.—Dr. James Dunlop, Dennistoun (Bailie), Dr. James Dunlop, Shettleston, Dr. Simon H. Bennett, Windsor Terrace, and Dr. Robert Forgan, Renfield Street.

Union of South Africa.

Notification of Measles in Pretoria.

DR. J. J. BOYD, who is medical officer for Pretoria, recently delivered an interesting address to the Medical Association of South Africa (B.M.A.) on the epidemiology of measles and the local preventive measures which were in force. The address was published in the *Journal of the Medical Association of South Africa* (*B.M.A.*) of December 8th, 1928. This disease is endemic in Pretoria, and for over twenty years has been notifiable in respect of the first case in a household. Dr. Boyd remarked that in most places where notification of measles had been tried it had been given up as not worth while. One of the chief arguments against it was that it was too incomplete to give any useful information as to the occurrence and distribution of the disease; a very large proportion of cases was not seen by any medical practitioner, and the parents did not report cases to any considerable extent. In Pretoria, however, a different state of things had prevailed, at least as regards the European population. Dr. Boyd was satisfied that very few cases escaped notification; measles was more readily recognized by the laity than most other infections, and about one-fifth of the cases were reported by lay persons. Another criticism raised had been that cases were reported so late in the course of the illness—not until the appearance of the rash—that action by the health department was too late to prevent the spread of the disease. While admitting that no course of action, other than serum inoculation, could prevent susceptible children who had already been in contact with the notified cases from developing the disease, Dr. Boyd said that its further extension could undoubtedly be effectually prevented if all the contacts were known and kept apart from susceptibles. Dealing with the objection that in epidemic time the number of cases became so great that the authorities could not cope with them, he said that he believed this referred to disinfection of premises, which he regarded as useless. A considerable amount of work was involved in the discovery and control of contacts, but if success followed the efforts of the health officials severe epidemic prevalence should be rare. This had been so in Pretoria in the last decade. The control of susceptible contacts was the crux of the matter so far as limitation of the spread of the disease was concerned, and the measures in use in Pretoria were chiefly aimed at such control. Dr. Boyd showed that in the twenty years from 1907 to 1927, while there had been comparatively little reduction in the average annual case-rate among children, the death rate had declined substantially; among children under 5 it was 1.38 per 1,000 in the quinquennium 1907–12, 2.25 in 1912–17, 0.29 in 1917–22, and 0.26 in 1922–27. A considerable fall in the death rate from measles among older children had also been recorded. Such a fall might be due to one or more of the following causes: to a lessened incidence of measles in children under 5, to greater care of children suffering from the disease, or to a reduced virulence of the disease. Since the introduction of notification great prominence had been given to the disease, and parents, recognizing the serious view of it taken by the health department, had been much more careful. In other South African towns the figures, in a number of cases, showed no striking decrease, and it appeared, therefore, that some factor other than a simple fall in virulence had probably come into play in the reduction of the death rate from measles and its sequels in Pretoria. Dr. Boyd said that he was the more inclined to attribute a considerable proportion of the fall to the adoption of notification and the control and supervision of cases when he found that similar results had followed the adoption of these procedures in certain other places.

Epizootic Among Rodents.

Plague has for many years been enzootic among the wild rodents of this country. Waves of the disease periodically pass over the country causing a very high mortality among the gerbilles which occur over the greater part of the Union. The area involved is too vast, and the popu-

population generally too sparse, to render efforts for the complete eradication of gerbilles practical. Rodent-free barriers have been thrown in front of epizootic waves at various parts of the country to prevent them reaching thickly populated areas. For some years such a barrier has been successfully maintained some two hundred miles north of Capetown between the coast and a range of mountains which runs parallel to it, mountainous regions being everywhere free of gerbilles. Apart from maintaining such rodent-free belts, the Government Health Department keeps a watchful eye on rodent health throughout the Union. Rodent surveys are continually being conducted by "rodent officers," and any unusual rodent mortality is immediately investigated. Such investigations sometimes reveal the fact that other organisms than *B. pestis* are responsible for extensive rodent mortality. Recently a very fatal epizootic occurred in the De Aar area, a region about five hundred miles inland, in which enzootic plague infection was known to have existed since 1925. Large numbers of gerbilles were reported as moving across the country, and it was at first supposed that they were fleeing before a wave of plague infection advancing from the west. Some of the animals appeared sick, and many were found dead. Departmental investigation showed that lay statements, that a vast army of rats was advancing on the town of De Aar, were exaggerated. Rodents had recently multiplied rapidly over an area extending some five to ten miles west of De Aar, and under the influence of the epizootic were invading the town in considerable numbers from that side. Many recently dead animals were picked up. These carcasses, however, do not remain lying on the veld long. Usually they are promptly picked up by white-breasted crows, which have flocked to the area in great numbers. Carcasses were examined bacterioscopically and inoculation tests made on healthy laboratory animals. Everything seemed to point to the condition from which the gerbilles were dying being plague, but the laboratory tests were inconclusive, and *B. pestis* could not be recovered.

Meanwhile, on a farm in Petrusville, to the north of De Aar, there occurred two fatal cases of plague, one of bubonic type, with terminal pneumonia, the other of pneumonic type. The diagnosis of these cases was confirmed by laboratory examination. The cases were attended, and later the *post-mortem* examinations performed, by Dr. D. M. Maciver, district surgeon of Petrusville. Shortly afterwards he became ill, showing a high temperature, and buboes formed in his right axilla. A provisional diagnosis of plague was made, and later confirmed. In the Government bulletin published on November 24th, 1928, his condition was reported to be improving, and by the beginning of December he was definitely convalescent. Localized mortality in veld rodents continued during December in De Aar and neighbouring districts, such as Victoria West and Kenhardt, but the results of laboratory investigations as to the cause of this mortality remained inconclusive. The deputy director of the South African Institute for Medical Research, who had been conducting the bacteriological examinations in Johannesburg, himself went into the affected areas to investigate the matter in conjunction with the officers of the Union Health Department. He collected material for further examination, and returned to the Institute to complete the investigations. Finally, it was definitely established that, though the human cases which occurred in Petrusville were certainly plague, the epizootic which was causing the heavy mortality in veld rodents in De Aar and neighbouring districts was not plague. An organism has since been isolated repeatedly from the heart blood and organs of dead gerbilles. This organism is Gram-negative, bipolar staining, and conforms morphologically and culturally to the Pasteurella group. It is capable of killing gerbilles, mice, and rabbits by scarification, and the same organism has been recovered from the organs of these dead animals. Moreover, the *post-mortem* appearances and the organism found in smears made from organs of healthy animals killed with this culture present a picture identical with that seen in gerbilles found dead in the De Aar district. It is very similar in its cultural and biological characteristics to *Pasteurella avicida*, the causative organism of fowl cholera. Further investigation is being carried out to establish or refute this. The Pasteurella group of organisms have frequently been responsible for epizootics among rodents in various parts of the world. As this organism is capable of killing gerbilles, rabbits, and mice on scarification, the scarification test, hitherto held to be diagnostic of plague, can now no longer be made on any of these animals. So far it has not been possible to kill guinea-pigs by scarification, but a certain percentage of guinea-pigs have been killed by subcutaneous inoculation and the organism again recovered from the organs. This is a further point in favour of scarification of guinea-pigs as the safer biological test for plague, but it is always advisable to confirm this test by parallel cultural reactions.

Pellagra in Durban Prisons.

In spite of the fact that the staple diet of the large Bantu population of the Union consists of maize or mealies, pellagra, which in other countries has been closely associated with such a diet, has been very rare in this country. This diet has often been productive of scurvy. When the native leaves his territories and commences hard work on the mines, the diet which met his needs in the kraal no longer suffices. His diet has to be supplemented with foods with a high vitamin C content. On most of the mines this is provided by a regular ration of germinated beans, vegetables, and meat. A comparable position with regard to pellagra now appears to have arisen in the prisons of Durban. Native prisoners who on admission to gaol are free from symptoms are liable to develop pellagra under prison conditions, which include a deficient, monotonous diet and hard labour, often on harbour work in the blazing sun. Careful Government and other inquiries over many years have shown the almost entire absence of pellagra from the Union outside Natal. Only five cases have ever been recorded from any of the other provinces. In Natal the history of pellagra has been interesting. During the Zulu rebellion of 1906 some 3,000 prisoners were taken. Dr. L. G. Haydon, who was in medical charge, picked out from among them about 150 typical pellagrins. The bulk of these prisoners had, by force of circumstances, been detained in batches in different parts of the country under more or less unfavourable conditions of food and housing, previous to their concentration at a station under Dr. Haydon's medical charge. During the progress of the rebellion it is probable that the majority of the native rebels in the field had to subsist almost entirely on an inferior quality of mealies. Between this occurrence and 1927 only five cases of pellagra appear to have been diagnosed in Natal. Attention was directed to the disease at the end of 1927, when seven pellagrins were discovered in the three Durban prisons. It then appeared that cases among natives, particularly in Northern Natal (which is still referred to as Zululand) were not uncommon, but the condition had not been recognized.

The outbreak in the prisons continued throughout 1928. Between December, 1927, and March, 1928, there occurred thirty-eight cases, but two of these were suffering from pellagra on admission to gaol. At this stage the Durban gaol diet for short-sentence prisoners, among whom most of the cases were occurring, was supplemented. Five more cases occurred in April, but during the three winter months there were only two new cases. During the following three months fourteen more cases occurred. In December there was only one, and none have occurred during January, 1929. Prison authorities are in a difficult position. On the one hand they are not infrequently accused of pampering the native prisoners, who probably receive in the prison a diet considerably better than they are accustomed to in their kraals; on the other hand the minimal requirements for maintaining health are an economic necessity. The precise dietetic deficiency which produces pellagra has not yet been established, and it is probable that other factors than diet are contributory, such as work in intense sunlight. In these circumstances the prison authorities would appear to be faced by the necessity for providing an almost luxurious prison

diet and less labour. Fortunately for them contributory conditions for the production of pellagra occur only in the one province of Natal; for with the same diet scales throughout the Union only one case has been recorded in a prison outside Natal. It is therefore only in this province that a supplemented diet has become necessary.

The present tailing-off of the outbreak may be associated with the introduction during November of a ration of good white beans for all prisoners. The matter is being investigated by the Union Health Department, and is being considered along with a more general survey of health conditions in the native territories.

Rabies in South Africa.

Plague is not the only disease enzootic among the wild fauna of South Africa. There has long been a strong suspicion that rabies existed among the yellow mongoose in certain areas, and this has at last been confirmed by pathological examination. During the past eight years at least twelve human deaths occurred with symptoms indistinguishable from rabies, following some weeks after bites by mongoose, wild-cat, or dog. These cases occurred over widely scattered areas in the north of the Union and separated by considerable intervals of time. Most of the cases occurred in children on farms in remote localities and, as a rule, the facts were not brought to the knowledge of the Union Health Department until the victim was dead and buried. As soon as the Union Health Department became aware of any such case investigations were instituted, but until last month this invariably occurred too late to secure satisfactory pathological material; putrefactive organisms had taken possession of the brain and the biting animal had long since been buried or thrown into the bush, and its associates were lost sight of. After each occurrence the magistrate and other officials of the area were warned of the danger, but there was no recurrence, each successive case occurring in an area remote from the previous one, where the medical and police authorities were not on the alert, although annual health reports and other broadcast circulars had mentioned the danger and requested immediate notification to the department. However, last November two European boys in the Wolmaransstad district, south of Klerksdorp, were notified as suffering from rabies. One died on November 20th, and the other three days later. Each of these boys was about 12 years old, and had, on October 30th, been bitten on the fingers by a yellow mongoose, locally known as a red meercat (*Cynictis penicillata*), which they had attempted to catch. As in all previous similar experiences no particular notice was taken of the matter at the time. The yellow mongoose is fairly common on the veld and instances of children or adults being bitten by this animal are not unusual. On November 17th both boys developed pains in the affected hands, both showing typical symptoms of rabies, one considerably more rapidly than the other. *Post-mortem* material was rushed up to Johannesburg by motor car, and examinations were made there by the South African Institute for Medical Research, and in Pretoria by the Veterinary Research Laboratory. The immediate microscopic examination of the material at the Medical Research Institute gave negative results, but inoculation tests subsequently performed at the Institute and the Veterinary Research Laboratory proved, however, that the clinical diagnosis was correct. If infection among yellow mongoose is widespread, as all the collected evidence appears to indicate, it is difficult to account for the fact that no epizootic prevalence has occurred among dogs or other animals. The official Government bulletin suggests that the strain of infection may be one of low virulence or diffusibility; this aspect of the matter is being further investigated. The general public has been warned of the danger by bulletins in the daily press, and urged to take no avoidable risk of being bitten by any wild or domestic animal. Instructions as to cauterization and (should there be any suspicion that the biting animal was rabid) vaccine treatment have also been given. Supplies of antirabic vaccine are available at the Government Health Laboratory, Capetown, and at the South African Institute for Medical Research, Johannesburg.

England and Wales.

Rating of Voluntary Hospitals.

MUCH concern has been caused among administrators of voluntary hospitals in England and Wales by the effect of the reassessment of their properties under the Rating and Valuation Act, 1925. The general result has been to increase considerably the assessments, and therefore the rates, of the hospitals, and there has consequently arisen a movement to secure some measure of amelioration. This, it is suggested, might take the form either of the general de-rating of hospitals or of provision for their assessment on a preferential and uniform basis. In order to elucidate the precise effects of the change and to obtain a clear expression of the attitude of the hospitals, an inquiry was initiated some months ago by the Central Bureau of Hospital Information, which addressed, at the end of last November, a questionary to 679 voluntary hospitals in England and Wales. Replies from 221 hospitals, containing 45 per cent. of the total beds, were received by the end of the year, and an analysis of their contents has now been published by the bureau.[1] It is estimated that the effect of the revision will be to raise the average assessment per patient bed from £1.56 to £2.36, involving an increase in the aggregate annual rate burden of the provincial hospitals from £44,000 to £66,000. In a number of cases the hospitals had not, in replying to the bureau's questionary, yet learnt their revised assessments, and so were ignorant of the exact effect of the Act upon their position. Of the 221 hospitals making replies, 51 (mostly influenced by the circumstance mentioned above) did not express any opinion on the subject of joint action, while 3 were definitely opposed to it; of the remainder, who favoured joint action, 107 considered that the object in view should be to secure the de-rating of hospitals, and 60 held that the aim should be to obtain assessment on a preferential and uniform basis. The effect of de-rating would be to relieve the provincial voluntary hospitals of an annual payment of approximately £66,000, but the effect of assessment on a preferential and uniform basis would depend, of course, on the datum line selected; the adoption of this measure might involve an increased assessment in certain cases. The memorandum estimates, however, that an assessment based on the figure of £1 per patient bed would involve increases in 19 per cent. of the provincial hospitals, containing 12 per cent. of the total beds, so that with such a basis a large majority of the hospitals would be either unaffected or favourably affected. Accompanying the memorandum are several interesting summaries of information based upon the replies to the bureau's questionary, in which a most striking feature is the wide variation in the assessments per patient bed, both before and after revision. It is pointed out that in several cases where the new figures are high and have been accepted without appeal, the hospitals receive from the local authorities substantial subscriptions under the Public Health Act, 1925. Examples are given of the scales adopted by various local committees in accordance with the recommendations of the Central Valuation Committee, upon which to base assessments of all hospitals within their areas; they reveal an amazing lack of uniformity in the interpretation of these recommendations, and emphasize the need for a complete review of the system as it affects the hospitals. In one area the basic scale for hospital assessment is 7s. 6d. per patient and staff bed; in another it is £5 per patient and staff bed; in a third it is 25 per cent. of the surveyor's valuation. Several hospitals base the claim to preferential assessment on the ground that their work in a large measure directly relieves the rates, while others argue that they should, like the churches, be given total exemption. In some cases it has been stated that as the hospitals concerned have no beds for paying patients, they cannot expect de-rating in respect of such beds, and therefore favour preferential assessment. Several interesting precedents in support of the special claim of the hospitals are quoted. In Glasgow

[1] Memorandum No. 6: Central Bureau of Hospital Information, 19, Berkeley Street, London, W.1. Twelve copies, 2s. 6d. single copy 4d. post free.

under a local Act, it appears, all voluntary hospitals are exempt from municipal rates, and the corporation is now endeavouring to secure the extension of this privilege to cover education, poor, and lunacy rates. In Edinburgh voluntary hospitals are also free from the burden of municipal rates, while in Halifax the infirmary and other charities are charged 10 per cent. only of the amount chargeable on the full assessments. The memorandum deserves the consideration not only of those directly concerned with voluntary hospital administration, but also of all who, as ratepayers and electors, are ultimately responsible for the attitude of their agents—the local authorities—towards the hospitals.

A Hospital Staff Fund.

An interesting measure was adopted at the annual meeting of the North Walsham (Norfolk) Hospital Saturday and Sunday Fund on January 23rd, when it was decided to offer a grant of £40 to the local cottage hospital to form the nucleus of a staff fund, and thus assist in meeting the out-of-pocket expenses of medical practitioners giving their services to the hospital in an honorary capacity. Dr. C. H. W. Page, who presided at the meeting, explained the object of the grant, saying that the general public was not fully aware of what had happened in connexion with the hospitals. He pointed out that owing to the extension of the class who sought aid at the hospitals and the introduction of complex forms of treatment involving institutional attendance, a great deal of extra work had been put upon the doctors, work which they, on joining the staff, undertook to carry out free. Doctors were extraordinarily proud to give their services to the hospitals; they wished to continue to give that aid, but the public was a little forgetful in allowing additional work to be placed on them at the expense of their private practices. They had four doctors on the staff of the North Walsham Hospital, and several on the consulting staff. Occasionally they had to ask a consultant to attend, and if he did so he was expected to pay his own motoring expenses and to treat the patient free. He was, of course, actually out of pocket. The staff fund would be for the purpose of making some allowance for such expenses, and others as well as doctors who gave their services might be brought within its scope. On his suggestion, therefore, the committee of the fund recommended the members to ask the local hospital to accept £40 as a nucleus for such a staff fund.

Scotland.

Motor Accidents in Scotland.

THE question of hospital cases arising from motor accidents is raised in the annual report of the Aberdeen Royal Infirmary. It is pointed out that these differ from the ordinary cases in that many of the patients have no connexion with the districts served by the hospitals in which they are treated, and that many of them require much greater length of treatment than the ordinary surgical cases for which the hospitals were originally intended. It has been estimated that during the year 1927 approximately 26,000 in-patients and 39,000 out-patients were treated in the provincial voluntary hospitals as the result of motor accidents, and that their cost to the community was approximately £230,000, of which not more than £26,000 was received by the hospitals either from or on behalf of the patients. It is suggested that legislation is necessary to enable hospitals to recover the cost incurred and to bring about compulsory insurance by motorists against third-party risks.

Glasgow Royal Infirmary.

The annual report of the managers of the Glasgow Royal Infirmary shows that during the past year 16,488 patients were treated in the wards, the average daily number of patients in the Infirmary being 783.8, and the average period of residence per patient 17.4 days. Out-patients numbered 97,258, with a total attendance of 327,913. The ordinary revenue for the year was £87,815, and the total ordinary expenditure £122,178. Extraordinary receipts had amounted to £26,746, and as the total extraordinary payments totalled only £2,510 there was a surplus of extraordinary receipts of £24,236. On the year's working there was thus a shortage of £10,127, which has been debited to capital account, and for the first time in many years the Infirmary has required to borrow from the bank in order to enable it to carry on. Through the generosity of Mr. William C. Teacher of Cove, Dumbartonshire, who has given £10,000 for the purpose, a lectureship in bacteriology has been founded at the Infirmary.

Victoria Infirmary, Glasgow.

The annual report of the Victoria Infirmary, Glasgow, shows that during the past year the number of in-patients treated was 6,580. There were, in addition, 4,775 cases of minor surgical ailments treated as out-patients, and 1,277 for diseases of the nose and throat. In the electrical and x-ray departments the total number of attendances was 23,254, a daily average of 75. At the Bellahouston Dispensary, connected with the hospital, the number of attendances was 48,223. The expenditure, including not only that of the Infirmary, but also of the Bellahouston Dispensary and the Convalescent Home at Largs, for the year was £57,595, while the income derived from subscriptions was £27,563. The subscribed income, together with the revenue from investments, fell short of the expenditure by £8,835, which had to be made up from legacies and special donations. As the extraordinary income was insufficient to meet the extraordinary account, the sum of £22,464 was drawn from capital. The endowment fund of the hospital now amounts to £173,719, having been increased during the year by £19,901.

New Falkirk Infirmary.

At a meeting of Falkirk Dean of Guild Court on February 7th plans were approved for a new infirmary at Falkirk. The scheme is to cost £100,000 and is to provide at the outset a hospital of 152 beds, with capacity for extension. Twelve beds will be available for paying patients. In the maternity section twenty-four beds will be provided, and in the isolation block twelve beds. The two latter blocks will be managed in co-operation with the public health authorities of Falkirk, Grangemouth, and Denny burghs, and of the Eastern District Committee of Stirling County Council, by whom the capital outlay involved in their erection will be borne. The hospital has been so designed that the administrative accommodation provided and the arrangements for extension of wards will admit of a large and easy increase of capacity as the occasion demands.

Ireland.

Influenza in Dublin.

AT the suggestion of Dr. M. J. Russell, medical officer of health for the city of Dublin, most of the elementary schools in the metropolis have been closed to help to check the spread of influenza. Arrangements are being made to continue the distribution of free meals to the children. The number of deaths from influenza registered for the week ending February 2nd was thirteen, as compared with four for the preceding week, and one for the week before that. Of these thirteen deaths, five persons were over 70 years of age, one was 60, and the remainder were all adults except one, a child of 2 years. Among the precautionary measures taken is the circularizing by the Public Health Committee of places of entertainment in the city, urging care in carrying out all sanitary regulations and in the provision of adequate ventilation. Dr. Russell has pointed out that it would be a very serious thing for Dublin if influenza occurred in epidemic form, owing to the fact that more than a quarter of the population live in overcrowded one-room tenements, and that it is impossible in such circumstances to take the recognized measures necessary to combat the spread of the disease. He emphasizes the importance, in prevention of the disease, of efficient ventilation and good nourishing food, neither

of which can be secured by a large proportion of the people, in congested areas, who, from unemployment or other causes, are in a state of semi-starvation.

Down Mental Hospital.

In the report of his inspection of Down Mental Hospital, Northern Ireland, Dr. Patrick, of the Ministry of Home Affairs, states that at his inspection on December 5th, 1928, there were on the books of the institution the names of 766 patients. Of the deaths within the year, 50 per cent. were due to cardio-vascular disease, in some cases associated with other conditions; there were seven cases of tuberculous disease, and four of general paralysis. In 50 per cent. of the deaths post-mortem examinations were made. No cases of zymotic disease occurred. Eight serious casualties were recorded, four being fractures of bones, of which two were of the femur; one case was caused by the patient being pushed off a seat by another inmate, and the other by a fall during a struggle in a day-room. Three patients escaped, but were all brought back after a few hours' absence. Ninety-eight patients returned as epileptic and suicidal were kept under special observation. The report states that the appearance of the patients was satisfactory, and that no reasonable complaints were made. Over 57 per cent. of the patients were usefully employed, and there was ample provision for recreation and entertainment. The premises and offices were found to be clean and in good order in all respects; the workshops were satisfactory, and the work performed appeared to be excellent.

Correspondence.

ENLARGEMENT OF THE PROSTATE.

SIR,—I am obliged to Mr. Cyril A. R. Nitch for his kindly response (February 9th, p. 264) to my comment on his article on enlargement of the prostate. He dispels my doubts as to his actual procedure, and I understand now that he avoids the rectal finger in prostatectomy. My difficulty was pardonable, for he recommended Freyer's operation, in which it is essential to use a rectal finger.

For the method of haemostatic suture and ligature in suprapubic prostatectomy I should be the last to claim perfection; but my experience has been—and I do not think I am alone in this—that it is the most efficient method in use.

In regard to the necessity for exposure and inspection of the bladder base and prostatic cavity, it seems a pity to neglect a method so easily applied and so certain when the way for it has already been prepared by a long incision. I do not myself feel safe unless I have had a look, and the more I see of post-prostatectomy cases that are brought to me for reconditioning the less I like touch as opposed to sight in the original operation.

However, Mr. Nitch's experience is so mature that I must refrain from further comment beyond saying I hope that the younger men will not be deterred from trying what I regard as a more reliable method.—I am, etc.,

London, W.1, Feb. 11th. JOHN THOMSON-WALKER.

SIR,—Some years ago I ventured to suggest in your columns (1923, vol. i, p. 259) that Freyer's operation sufficed for the average case of enlarged prostate, and was preferable to the so-called "open" operation; and, further, that, in removal of the gland, "many urologists . . . have become increasingly partial to the two-stage method." For the latter statement I was taken to task by a leader of genito-urinary surgery, who scouted the idea for the simple reason that he "had not heard" of it before.

It was pleasing, therefore, to read in Mr. Cyril Nitch's admirable address on January 26th (p. 139) some confirmation of these views. Quoting the figure of 20 per cent. as roughly the percentage mortality of prostatectomy in London hospitals, Mr. Nitch added "there is no doubt that its gross mortality would be greatly diminished if the two-stage operation were more generally adopted." Few surgeons to-day will be prepared to cavil at his statement; equally few will deny that in the two-stage operation it is undesirable to open up cellular planes and disturb the adhesion of the bladder to the abdominal wall by the free incision and exposure of an "open" operation.

I would submit, then, that prostatectomy after preliminary cystostomy is best and most safely performed bimanually—that is, after the method of Freyer, with the finger in the rectum. Recently objection has been taken to this position of the finger, which undoubtedly facilitates enucleation of the gland. The bogy is sepsis, and a reference typical of many in its warning appears in Ogilvie's *Recent Advances in Surgery*: "the use of a finger in the rectum to guide enucleation has been entirely abandoned owing to risks of sepsis." One must take leave to doubt whether this assertion will attain the importance of a fact.

Of evidence in support of this danger of sepsis there is none, nor is any likely to be forthcoming, for I believe the risk of infection from the rectum is negligible if common-sense precautions are taken. I have always relied upon the protection afforded by a second glove on the hand of which a finger is engaged in the rectum. After enucleation is complete and the finger withdrawn, the outer glove is easily peeled off by a nurse. The protection it affords is adequate for all save the theorist, and the quality of recovery after Freyer's technique I have found to compare favourably with the results of the "open" operation.

By most surgeons, I think, the latter is reserved for cases of "fibrous" prostate, where enucleation is impossible or fraught with danger, and removal under vision obviously indicated. It is by no means a new method. So long ago as 1907 Mr. Rutherford Morison advocated a wide exposure of the bladder base with removal of the prostate under the eye; of recent years the method has been rediscovered and practised both in this country and America.—I am, etc.,

Ashton-under-Lyne, Feb. 9th. GERALD RAWNS.

SIR,—All urologists will be glad to hear of such important first-hand evidence of the value of the treatment of enlarged prostate by diathermy as that experienced by "G. A.," who, in your issue of February 9th (p. 265), writes as both a medical practitioner and a patient. As the doctor himself says, information of this kind is more precise and its interpretation more scientific than that obtainable from a patient without medical knowledge.

In congratulating the patient on the happy result obtained, I would like to add that even in London the line of treatment followed in his case is firmly established as the proper method of dealing with certain cases of prostatic obstruction. On the other hand, it is of equal importance to remember that there is a considerable proportion of cases in which the forage method is unsuitable and is certain to be unsatisfactory. Although the case of "G. A." is not apparently one of these, his letter wrongly gives the impression that the treatment which he received recommended to have in London, but which he received with such benefit in Paris, is not practised by urologists on this side of the Channel. In making it clear that this is not so, I hasten to add that an attempt to deal with the wrong kind of case by coagulation necrosis rather than by prostatectomy may have the most serious consequences for the patient.—I am, etc.,

London, W.1, Feb. 11th. H. P. WINSBURY WHITE.

NOSE-BLOWING AND ACUTE MASTOIDITIS.

SIR,—During the present epidemic of influenza an alarming number of cases of acute mastoid disease is being reported from schools. This complication, with its grave possibilities, is, I feel sure, due to the polite but unnatural habit of the vigorous use of the handkerchief during the catarrhal stage, whereby secretion is forced up the Eustachian tube to the middle ear. The alternative to this procedure requires no description.

As an instance of this mode of spreading infection from the nasopharynx I can recall the history of a small outbreak of acute mastoid disease in a girls' school last year. Investigation definitely traced the outbreak to a nose-blowing competition held as a dormitory amusement.—I am, etc.,

London, W.1, Feb. 10th. BRUCE WILLIAMSON.

SINUSITIS AND ILL HEALTH.

SIR,—One or two articles have recently appeared in your columns relative to sinusitis as a cause of ill health, and they may do much good by bringing this matter into more prominence. In 1925 I published some observations from a series of cases attended at St. Vincent's Hospital, Melbourne, and the rather startling fact was elicited that 25 per cent. of the medical out-patients were suffering from chronic sinusitis—that is, they had a yellow post-nasal discharge accompanied by the usual symptoms of headache, frequent colds, and stuffy nose. It does not matter whether organisms gain entfance from a tonsil, pyorrhoeal pocket, root abscess, or sinus. The organism is the same, and the effects are the same; it is simply another point of entry. These infections are more often than not multiple, so it is useless to clear up the teeth and the throat and to leave the nasal infection.

The idea of a relationship between infections and goitre is gradually gaining ground. In many cases of exophthalmic and toxic goitre, when the tonsils have been removed without improvement, it will be found that the patients have had nasal infection which has been overlooked.—I am, etc.,

Melbourne, Dec. 19th, 1928. SYDNEY PERN.

THE CIRCULATION UNDER THE SPHYGMOMANOMETER CUFF.

SIR,—In your issue of February 2nd (p. 191) Dr. Harrington Sainsbury tries to establish by inference what I thought was long since proved by experiment—namely, that colloids are practically incompressible. It must be well over a quarter of a century since the late Sir Benjamin Ward Richardson submitted brain and muscle tissue to a pressure of over a ton to the square inch in the hydraulic press of Evans, Lescher, and Webb, Liverpool, and found that they were incompressible, but when he added about 20 per cent. of sodium chloride to the muscle an enormous amount of muscle juice was squeezed out, leaving a tough leathery mass behind. Richardson inferred that salts in the blood, such as urea, etc., were necessary for the excretion of urine. His experiments were published in *The Asclepiad*, but writing from abroad I cannot give a reference to the date. However, I think it highly probable that a presentation copy may be found in the Library of the Royal College of Physicians.

Although blood, like other colloids and water, is incompressible, yet being a liquid it will always move from a higher to a lower pressure level, and it always transmits a pressure equal to that by which it is itself compressed. With the armlet it is difficult or impossible to raise the capillary pressure to that of the arteries, therefore the blood in the compressed artery will move on to the distal capillaries.

In the Valsalva experiment one can shut out the blood from entering the thorax, but here one is only dealing with the venous pressure, and an intrathoracic pressure of a little over 100 mm. of mercury is sufficient to do this. Fortunately this experiment cannot be carried out for any lengthy period. It will require something more than Dr. Sainsbury's inference to convince me that the brachial artery remains full when submitted to a pressure sufficient to obliterate the pulse at the wrist.—I am, etc.,

Cannes, Feb. 5th. JAMES BARR.

PRIMARY CARCINOMA OF THE BREAST TREATED WITH RADIUM.

SIR,—Published statements as to the results obtained in treating carcinoma of the breast with radium have hitherto been very few, and Dr. Roy Ward's article in the *British Medical Journal* of February 9th (p. 242) is therefore to be welcomed. I should like, however, to encourage Dr. Ward to make a very much fuller statement as to the work done at the Radium Institute than he has seen fit to give us.

Mr. Ward refers to the pioneer work which has been carried out; but although several methods of treatment are mentioned, I cannot find any direct statement as to what treatment the patients at the Radium Institute actually received. The value of the article is therefore limited, since it does not contribute to the advancement of technique.

The treatment of recurrent carcinoma of the breast by means of buried radium needles was begun by the Surgical Unit at St. Bartholomew's Hospital in July, 1922, and the first primary carcinoma was treated by this method on August 1st, 1924. So far as I know this method had never been systematically used before.

Again, Dr. Ward's statistical summary, although it gives 164 and 469 as the numbers respectively of primary and recurrent carcinomas treated, gives no information as to the results obtained in these two categories *separately*.

The work on this problem, begun at St. Bartholomew's Hospital nearly seven years ago, tried first the effect of radium on recurrent carcinoma only. The local results were excellent, but the patients' lives were scarcely ever prolonged, owing to the fact that the disease had already been disseminated to other parts of the body. The treatment, on the other hand, of primary carcinoma has proved, during the past four and a half years, to be a very different affair, and as time passes a favourable opinion is being formed. It is possible, therefore, that the results obtained in treating primary carcinoma of the breast at the Radium Institute may also have been good.

Many other points in Dr. Ward's article might also be discussed, but I should like to limit this letter to asking him to publish the facts as to the figures and the technique. —I am, etc.,

London, N.W.1, Feb. 8th. GEOFFREY KEYNES.

VACCINATION IN THE LIGHT OF RECENT EXPERIENCE.

SIR,—Referring to the discussion on this subject which took place at the meeting of the Section of Epidemiology of the Royal Society of Medicine on January 25th,[1] I venture to doubt whether "alastrim" has been proved to be such a stable variant of small-pox as some of the speakers supposed. According to Dr. Rajchman it made its appearance in England in 1919. But the late Dr. J. C. McVail pointed out in the Milroy Lectures for that year that two sorts of small-pox had been prevalent in England since about 1902—a severe form in London, and a milder form in the provinces. The fatality of the mild form was 6 or 7 per cent., of the severe, from 12 to 25 per cent. A very notable fall in the provincial fatality occurred in 1921, when it was only 1.4 per cent. Since that year it has dropped still lower. Is the present-day mild small-pox ("alastrim") a direct descendant of Dr. McVail's mild, provincial form, or is it a later imported variant? And if "alastrim" is a stable variant, was Dr. McVail's mild form also a stable variant? I observe that Dr. Monckton Copeman is reported in the account of the discussion given in the *Journal* to have stated that the "alastrim" he saw in 1903, in and about Cambridge, was of a more severe type than in most of the recent outbreaks. It appears, therefore, that during the past twenty-eight years there have been present in this country, at one time or another, two, if not three, varieties of mild small-pox, besides the classical more or less severe form. It is interesting to note that a similar question of identity of disease has arisen during recent years in the cases of typhus and scarlet fever.

Professor Ledingham is reported (in the *Journal*) to have said he thought "that sufficient consideration had not been given to the possibility that the virulent form of small-pox had been somewhere incident alongside the alastrim, but without definite transitions." I quite agree with his opinion. So far as I am aware the two forms have not, in this country, been prevalent together at the same time in the same place. It would be a crucial test

[1] *British Medical Journal*, February 2nd, p. 205.

for those who believe "alastrim" to be quite a different disease from small-pox, to place cases of each disease together in the same ward of a hospital to observe whether patients suffering from the one became infected by the other.

I note that in No. 2, February 15th, 1928, of the *Monthly Epidemiological Reports*, issued by the League of Nations, it is stated that "small-pox of severe type appeared in June, 1927, in Northern Rhodesia, where ordinarily only the mild Kaffir-pox is met with. During the *first twenty weeks of 1927, 140* cases with only four deaths were reported, giving a case mortality rate of 2.9 per cent.; between the twenty-first and the fiftieth week of that year there were 856 cases and 170 deaths, giving a case mortality rate of about 20 per cent." The questions arise, Was Kaffir-pox (amaas) replaced by severe small-pox, or did the former change into the latter, or did the two run side by side? Perhaps the report of this discussion will be the means of eliciting information on this point. According to the latest returns small-pox has become less frequent and less severe again in Northern Rhodesia. With this history before us we should not assume that the present mild form in England may not at any time become more severe or be replaced by a more dangerous form.—I am, etc.,

Hemingford Abbots, Hunts, Feb. 5th. E. W. GOODALL.

TORSION AND STRANGULATION OF A HYDATID OF MORGAGNI.

SIR,—In the *Journal* of January 26th (p. 144) Mr. D. A. Abernethy records a case of torsion and strangulation of a hydatid of Morgagni in a woman, causing symptoms like a mild appendicitis, and asks if any similar cases have been encountered but not recorded. I have met with one such case, which was more severe in its symptoms than that of Mr. Abernethy, and his communication makes me feel that perhaps I have been remiss in not publishing it before this.

The patient was a young married woman, from five to six months pregnant, who was sent into Kirkcaldy Hospital in a state of collapse. The history was that some eight days previously she tripped going up a stair, and the fall was immediately followed by pain in the left lower abdomen, a feeling of faintness, and vomiting. She was put to bed, and gradually recovered after a day or two. The pain and sickness, however, still persisted, and she had once more to take to her bed, where, despite symptomatic treatment, she steadily became worse, and was ultimately sent to hospital by Dr. Ramsay Wight of Leslie, with a provisional diagnosis of concealed accidental haemorrhage. At no time was there any vaginal bleeding. On admission to hospital she was profoundly blanched, felt very sick and faint, and had a pulse rate of 130 per minute. She was in this condition when I saw her an hour later, but the pulse rate had gone up to 140. She was a thin woman and the abdominal wall was not rigid. Slight pain and tenderness were complained of over the left lower quadrant of the abdomen, but otherwise abdominal and pelvic examination revealed nothing abnormal. The pregnancy appeared to be a normal intrauterine one of five and a half months; the shape and consistence of the uterus and the absence of any tenderness over it did not substantiate the diagnosis of accidental haemorrhage, and, moreover, the foetal parts were palpable with an unusual degree of ease. I was, frankly, quite unable to form any positive diagnosis. The patient's condition suggested internal haemorrhage, but there were no physical signs of any collection of blood. I suggested, as a very tentative diagnosis, the possibility that she had perhaps ruptured her uterus, and as the patient had been gradually becoming worse I decided to explore the abdomen. While the necessary preparations were being made, Mr. F. E. Jardine, consulting surgeon to the hospital, happened to arrive, and I asked him to examine the patient, but did not tell him of my "diagnosis." After careful examination Mr. Jardine told me that he could suggest no positive diagnosis, but he thought that possibly she might have ruptured her uterus! We opened the abdomen together and found a normal pregnancy, no sign of any ruptured viscus in any part of the abdomen, nor any bleeding. But below the extremity of the left Fallopian tube there was a hydatid of Morgagni of the size and of the colour of a black-crimson cherry, hanging by a thin and very much twisted stalk. I removed this, after tying a piece of fine catgut round the base of the pedicle, and we closed the abdomen. The patient made a steady and uninterrupted recovery, the pregnancy continued without interruption, and Dr. Ramsay Wight informs me that she was delivered of a healthy child at full time, the placenta showing no sign of any previous disease or separation.

I cannot offer any adequate explanation of the severity of the symptoms, except that possibly the torsion of the hydatid served to set up something akin to a "reflex" hyperemesis gravidarum. But why the patient should have been so alarmingly collapsed and pale I do not know, for the "hyperemesis," if such one may call it, was not of itself sufficient explanation.—I am, etc.,

Edinburgh, Jan. 31st. R. W. JOHNSTONE.

SIR,—Mr. Abernethy will find the record of a case of torsion and strangulation of a hydatid of Morgagni reported by Waters in the *Journal of the American Medical Association*, 1919, vol. 72, p. 1072.

A further case is recorded by Russell Andrews in the *Proceedings* of the Royal Society of Medicine (Obstetric and Gynaecological Section), 1912, vol. 22, p. 220; in this case the patient was pregnant.

In 1923 I presented to the North of England Obstetric and Gynaecological Society a case of strangulation of a small fimbrial cyst measuring a quarter of an inch across. The case is briefly reported in the proceedings of the Society in the *Journal of Obstetrics and Gynaecology of the British Empire*, 1923, vol. 30, p. 313.

My case is not absolutely comparable to the above as there was no visible pedicle and the strangulation lay at the upper margin of the tube. It is of interest, however, that such a small area of strangulation should have produced subacute symptoms of vomiting and fainting. The removal of the small area was followed by an immediately good result. The condition of strangulation was confirmed by microscopical examination.—I am, etc.,

Liverpool, Jan. 31st. H. LEITH MURRAY.

SIR,—Since the publication of my account of a case of strangulated hydatid of Morgagni in the female, in your issue of January 26th (p. 144), I have learned that this lesion has been described previously by Dr. Russell Andrews who published an account of it in the *Clinical Journal* (September 10th, 1913, p. 362).—I am, etc.,

Oxford, Feb. 4th. D. A. ABERNETHY.

PROGNOSIS IN ECLAMPSIA AND ALBUMINURIA OF PREGNANCY.

SIR,—The important paper by Dr. James Young, published on January 19th (p. 91), with conclusions which conflict with ideas which were largely accepted by workers in this field until now, leads me to raise some points which may help in these problems.

1. What positive evidence as yet is there available to us that "kidneys were previously healthy"—to quote Professor Young's exact words in the second argument brought forward in favour of the thesis that the kidney defect is not, at any rate, one of the primary factors. Unfortunately it is most unusual for renal adequacy or inadequacy to be assayed, at any rate on modern lines, before pregnancy, and especially the first pregnancy, even Gibberd[1] in his report was guarded, and classed his cases as "presumably" healthy beforehand.

2. The evidence cited as having been collected by Professor Young by Dr. Jessie Sym is based on the cardiovascular changes, renal concentration tests, and blood pressure indices. Valuable as these are, one would urge caution in considering them conclusive evidence as to renal efficiency or not. Gibberd goes so far as to say that it is in pregnancy itself that we have the most delicate tests of renal efficiency, and suggests that biochemical tests are of comparatively small value. I am not willing to go so far as that yet, but the point should not be overlooked in these obscure and difficult problems; turning to the [illegible] report by Cruickshank and others,[2] we find they [illegible] extreme difficulty in deciding whether an albuminuria of pregnancy is a "simple toxic" or a "nephritic" case, though their biochemical examinations were most extensive.

3. There is in my experience a difference between the course of the subsequent pregnancies which distinguishes the frank renal cases from the purely toxic ones. In the latter the tendency is for there to be a more [illegible] gestation—six to eight months commonly before [illegible] trouble—while in the former the pregnancy is [illegible]

[1] *Proc. Roy. Soc. Med.*, March, 1928, vol. xxi, p. 851.
[2] *Toxaemias of Pregnancy.* Medical Research Council, Special Series, No. 117.

at an increasingly early period as the patient goes downhill, and the kidney fails.

4. Lastly, and lest my criticisms should be all destructive and not helpful, I would point out that the possibility of a (normal?) full-time pregnancy with living child, in cases of *known* extensive renal disease, has been often observed, showing, perhaps, that the renal disease is not necessarily the whole factor in these cases.

I have ventured to encroach on your space so far, as I have just finished collating and analysing a series of over a hundred cases, not yet published, some of which have been watched during a long period, some over thirty years, and part of the results do not appear to support Dr. Young's deductions. I am sure all workers in this difficult field will welcome his paper, and that it will be helpful in many ways, one of which will be the criticisms that it may evoke.—I am, etc.,

Norwich, Feb. 5th. ARTHUR CROOK.

ASTHMA.

SIR,—On first perusing the letter of the Asthma Research Council their statements appeared to be merely platitudes; but on reading the assertions made by some of your correspondents, I am inclined to agree that these apparent axioms are in still further need of emphasis.

I have every reason to know that the claims about curing asthma made by certain chemical pathologists are disappointing. There is a manifest fallacy in the theory that foreign proteins which give a reaction when injected hypodermically, or scratched into the skin, will therefore cause disturbances when swallowed, even if they do so sometimes. I venture to suggest that if some of those who are in the habit of eating beef or mutton were to inject themselves hypodermically with 10 c.cm. of beef or mutton serum, they would have some reason to remember the occasion.

Though I practise the nasal method of treatment myself, I am the first to realize that exaggerated claims have been made for it, based upon statistics containing large numbers of untraced cases. Mr. Herbert Tilley has pointed out in his textbook how often these relapse months or years after an apparent cure.

My own experience is that only those patients who have no gross lesions, and who give a positive tear-reflex test (*Journal*, December 1st, 1928, p. 985) are likely to do really well by nasal treatment. Such patients should, in my opinion, be treated in a very conservative way, efforts being devoted to rendering the hypersensitive mucous membrane insensitive by means of the galvano-cautery or other caustics. This is my experience after reviewing a series of cases from four to six years after treatment. The only operation which has not disappointed me has been removal of tonsils.

But whatever the experience of individuals may be, there can be little doubt that some co-ordination of knowledge and sifting of evidence is essential.—I am, etc.,

London, W.1, Feb. 9th. H. MORTIMER WHARRY.

THE DICK TEST IN SCARLET FEVER.

SIR,—In reply to Dr. Balmain, who asked, on January 26th (p. 175), what was the size of the Dick reaction which I considered positive, I never regarded anything less than 5 centimetres as positive. The nurse to whom he referred was found to be Dick-negative at two examinations, one being two months before and the other three weeks before her attack of scarlet fever.

Until I had read the article by Dr. Burton and Dr. Balmain in the *Lancet* of May 26th, 1928, I was surprised that Dr. Balmain disagreed with me when I asserted in my article that it was impossible, in the present state of our knowledge, to say that a positive Dick test in a patient who had had scarlet fever indicated a failure to develop immunity to this infection. In that article Drs. Balmain and Burton stated as follows: "We would suggest, however, that the Dick-positive reactors in convalescent scarlet fever cases are persons who have failed to develop immunity." I would point out to Dr. Balmain that among the high proportion of Dick-positive reactors in convalescent scarlet fever patients in my series not one developed scarlet fever, and they were all treated in an acute ward. The late Dr. Zingher, in the admirable article referred to by Dr. Balmain and myself, said "Positive Dick reactors are susceptible to scarlet fever as far as not having antitoxin is concerned," and again, "Positive Dick reactors, however, need not necessarily develop scarlet fever when exposed to the disease." I was very pleased to notice that Drs. Balmain and Burton referred to their eighteen cases as true relapses, because it has always seemed to me to be of the greatest importance in investigating any case of a relapse or a second attack of scarlet fever to make certain that the first attack had been genuine.—I am, etc.,

Doune, Feb. 4th. WILLIAM BROWN, M.D.

"DEBILITY" IN CHILDREN AND CYCLICAL VOMITING.

SIR,—Dr. Osman writes an important and interesting article in your issue of January 26th (p. 150) on debility and cyclical vomiting. Dealing with the latter subject only, I am unable to accept unreservedly his sugar deficiency theory, as it does not seem to cover all the facts.

It is not uncommon to see a child who has exhibited all the symptoms of cyclical vomiting quite cured after adequate treatment with santonin for round-worm.

Dr. Osman draws attention to the similarity between cyclical vomiting and recurring appendicitis. Differing from him, I consider that frequently the latter is the starting point of all the symptoms. Time and time again I have seen the attacks finally stopped by removal of an offending appendix; and it does not convince me when I am told that extra sugar in the diet might have produced an equally favourable result.

Having seen, as a practitioner, many cases of cyclical vomiting, the impression I have formed is that it is not an absolute clinical entity, but a symptom group resulting sometimes from one cause and sometimes from another. If Dr. Osman's theory turns out to be even partly correct, we must thank him for providing us with a potent weapon against the malady.

In the excellent description of signs and symptoms given in the article two rather constant signs are missing—namely, a dusky malar flush and the so-called acetone odour in the breath.—I am, etc.,

Lerwick, Feb. 4th. JAMES CAMPBELL, M.B., Ch.B.

SIR,—It would be almost impossible to reply in detail to every one of the many interesting points raised by Mr. R. Chalmers and Dr. J. Thomson Shirlaw on February 9th (p. 269) in their friendly criticisms of my article on the above subject. To do so would occupy a great deal of space, and most of the points have been covered in a further paper on the subject which will appear in due course.

I would like to make it clear, however, that the statements in my article were not based simply on the finding of acetone bodies in the urine of these children, but on a very comprehensive clinical and biochemical study of a large group of cases, carried out over a considerable period. The observations made included estimations of the blood bicarbonate, chloride, inorganic phosphates, calcium, sugar, and total acetone bodies, together with careful chemical investigations of the urines of these cases at the same time. In a number of instances also bilirubin estimations on the blood, fractional test meals, alimentary x-ray examinations, and glucose and levulose tolerance tests were also employed. Further, corresponding observations have been made on a series of "debilitated" adults; the results of these observations will be published in the paper referred to.

I should like to take this opportunity of discussing in a little more detail the position with regard to "acidosis" in relation to "debility." For this purpose the term "acidosis" may be defined as a reduction of the plasma bicarbonate. Such reduction may, or may not, be due to, or associated with, an excess of ketone bodies in the blood; that is to say, a condition of acidosis may be present, and frequently is, without acetonaemia, etc. As a matter of

fact, it has long been known that ketosis may occur in the presence of an alkalosis. Most of the "debilitated" children referred to in my article were suffering from a mild acidosis. Only a small proportion of them had at the same time ketosis, so far as could be ascertained by the tests used. Of the "debilitated" adults referred to in this letter, hardly any had a ketosis associated with the acidosis. Further, in those children in whom both acidosis and ketosis were present the latter was insufficient quantitatively to account entirely for the former.

I cannot therefore agree with the findings of Gamble, Tisdall, and Ross concerning this point. No doubt the ketosis, when present, is due to incomplete combustion of fats, as Dr. Shirlaw remarks, but the acidosis without ketosis is still unexplained. Why it is that the giving of sugar should benefit these non-ketotic cases, as it undoubtedly does, is also at present a mystery. Ketosis is, of course, more commonly met with in children than in adults, because, in the former, owing to their comparatively poorly developed cerebral inhibition, with consequent lack of emotional control, greater and more frequent calls are made on the glycogen stores of the liver. It is for this reason, too, I think, that the symptoms described in my article under the heading of "debility" are more marked in nervous children, but they are certainly not confined to them. Such a conception would explain the comparative failure of sugar in the treatment of the "debility" of adults. The one biochemical finding which is present in all these children is a lowered plasma bicarbonate, though the diminution may only be slight. I would therefore suggest that, until our knowledge of the subject is more complete, the term "the acid child" would be correct and convenient, and would best describe the patient. I agree with Mr. Chalmers that one occasionally comes across a child, and even a whole family, who exhibits an apparently inherited dislike for sugar, but this is exceptional.

With regard to the importance of atmospheric conditions in determining the onset of attacks of cyclical vomiting, I also agree with Mr. Chalmers. During the past few years I have certainly seen several cases of asthma in children in whom the attacks were entirely prevented by giving sugar, and others in whom the frequency and severity of attacks were diminished by the same means. On the evidence available one can only conclude that this was due to the associated improvement in the general health of the child.

With regard to Professor Vining's investigation of the pre-rheumatic health defect in children, I believe that his work constitutes the most important step yet made in the study of the rheumatic child, though I cannot quite agree with his views on the nature of the particular dietetic error concerned.

Finally, I agree with Mr. Chalmers's implication that simply giving extra sugar to children is not the beginning and the end of the whole problem. That such a procedure is very frequently successful in restoring to health many children afflicted with various minor disorders there can be no doubt. It is equally certain that the best results will only be obtained by the prescription of a correctly balanced diet, and this can only be achieved as a result of carefully conducted experiments on children living under varying conditions.—I am, etc.,

Queen Mary's Hospital, E., Feb. 11th. ARTHUR A. OSMAN.

TREATMENT OF EMPYEMA.

SIR,—I hope the able remarks of Dr. F. G. Thomson about empyema in the *Journal* of January 19th (p. 89) have received the attention they deserved from your readers. He shows that under the usual method of treatment the mortality in this disease is heavy, and the result too often crippling in those who survive.

My experience, covering a period of forty-three years in a fairly busy general practice at Rhyl, prompts me to write to you. In that time I have treated many cases of empyema, both in adults and children, the youngest of the latter being 6 months old, and of the total number of cases I cannot recall a death or even permanent impairment, except, perhaps, in one or two tuberculous cases.

The following were the methods I generally adopted. On ascertaining the presence of pus, the affected side was completely aspirated, and later, as pus re-accumulated, an incision was made, with or without rib resection, and a tube introduced of efficient size for drainage. The cavity was irrigated daily with a solution of iodine. Turpentine was employed in nearly all such cases, as it was often markedly beneficial. Administered as follows it is not so unpalatable as generally imagined:

R Ol. terebinth. pur.	3ij-3iij
Pulv. tragacanth. co.	3iss
Sp. amm. arom.	3iij
Aq. chlorof.	ad 3viij

Misce. Cap. 3j 4tis horis.

Aspiration empties the chest without the introduction of air, thus giving the best chance of expanding the compressed lung, of lessening the abscess cavity, and of speedily relieving embarrassed breathing. The patient has a welcome respite, and when the time comes for the next procedure of opening the chest and introduction of the tube, he is exposed to less danger. The presence of air in the cavity does not matter so much then. If there is evidence that the lung has not expanded enough it is better to aspirate again than to open the chest, for a closed pleural cavity offers the only chance of recovery to a compressed lung.—I am, etc.,

Prestatyn, Jan. 28th. W. THOMAS.

ERYTHEMA NODOSUM.

SIR,—Dr. G. F. Walker, in his interesting l
(February 9th, p. 266) outlining a summary of the st
of this disease, says, "Priority for the notion t
erythema nodosum may be the rash of an acute spec
infectious disease belongs to Dr. Harrison, who was pre
dent of the Dermatological Society in 1900." It must
remembered, however, that just thirty years prior to D.
Harrison's presidential address, Trousseau, in his clinica
lecture on this disease (vol. ii, New Sydenham Society's
Transactions, London), said, "Erythema nodosum is a
specific and separate disease, which manifests itself locally
by characters so precise as not to admit of being mis-
taken." I agree with Dr. Walker that clinically it is far
more important to settle the relationship between erythema
nodosum and tuberculosis than to argue the vexed
question as to its specific nature.—I am, etc.,

Clifton, Bristol, Feb. 9th. J. ODERY SYMES.

THE ADRENAL GLAND.

SIR,—The recently published work of Dr. Cramer on le
regulation and the thyroid and adrenal apparatus contai
a description of the resting and active medulla of the supra-
renal gland. He finds that by fixing the gland in th
vapour of osmic acid the granules of adrenaline are rendered
visible. Adrenaline readily reduces osmic acid to the blac
lower oxides, appearing as fine black granules. Any fluid
fixative will dissolve the granules of adrenaline before it
can fix them. He says:

"In the active gland the adrenaline granules in the c
adjacent to blood vessels can often be seen being poured directly
into the blood vessel. The capillary blood spaces, and especially
the big central vein, are filled with these black granules in the
midst of which the red blood corpuscles are lying. Sometimes
the charge is so violent that the endothelial lining separates from
lumen of the small veins from the cells bordering them is free
off and small parts of the cytoplasm are swept into the blood
stream, where they can be seen. Occasionally the vacuoles formed
in a group of cells which constitute an alveolus, coalesce in the
centre so as to form a lumen into which the adrenaline granules
are secreted."

It is a curious fact that in the *British Medical Jo*
of July 4th, 1896 (p. 10), I published an account of the
behaviour of the active body of the medulla of the supra-
renal gland, which corresponds exactly to the above. The
article is illustrated by three photographs, which, in the
Selected Researches in Pathology (1901), came out very
clearly on special paper. The words are:

"After a long and varied series of investigations made on man, horses, oxen, sheep, dogs, rabbits, etc., I arrived at certain definite conclusions respecting the mode of secretion by the epithelial gland cells, the transmission of this secretion to the blood, and certain other interchanges which take place between the secreting cells and the blood. . . . When about to become active the cells of the columns become highly elongated, and their nuclei recede from the blood vessels to the very furthest point, until in this way the nuclei of any two opposite rows meet, forming thus a double row of nuclei. On either side the protoplasm of the columnar cells will be clearly seen stretching to the blood vessels (Fig. 1). . . . The protoplasm of the cells thereupon assumes a finely, but markedly granular character, and the granules become so disposed as to form frequently longitudinal streaks perpendicular to the wall of the blood channel; simultaneously the ends of the cells become flattened against the delicate membrana propria, through which the secretion *streams directly into the blood*. (Fig. 1: Note that in this particular instance the contents of the blood vessel are in the form of a homogeneous coagulum.) . . . It sometimes happens that the secretion breaks down the membrana propria altogether, and the blood and cells come into direct contact. (Fig. 2: The blood is normal in this case.) . . . In like manner we find that sometimes a local secretion occurs among groups of cells, undischarged into the blood, and then we have a mass of secretion lying amongst, and to some extent displacing, the cells (Fig. 3)." [This mass is distinguished from the coagulated contents of vessels by its staining reactions, etc.]

Dr. Cramer's observations were made on mice and rats, but I used large animals, such as the horse and sheep. The resting medulla with its large nuclei described by him, and the small nuclei of the active cells, are seen also in my figures. In my book it is stated that "the foregoing observations were made antecedent to the experimental work which in the hands of Oliver and Schafer and Abclous and Langlois has been fraught with interest and importance." The conclusion is come to that this substance is a powerful reducing agent, and that the toxic body or bodies of Addison's disease are normally destroyed in the gland itself.—I am, etc.,

London, W.1, Feb. 5th. A. GUNN AULD.

CEREBRAL ANGIOSPASM.

SIR,—The case described below may be compared with that of Dr. A. S. Gubb (February 9th, p. 247). More than forty years ago I was asked by a medical friend to see his wife, aged about 75, who had been struck with right hemiplegia. The following features of the case still remain in my memory. The patient rose in the morning feeling somewhat ill, but dressed herself until it came to doing her hair, when she found herself unable to use her right hand. She returned to bed, and within a few minutes the paralysis extended to the whole right side. She was drowsy but able to speak. Her breath was foul, smelling of bile. A little later she vomited a quantity of matter containing bile, and from that time got better, recovering the use of the right side before the end of the day. She lived for about five years afterwards, had no return of paralysis, and died of carcinoma of the liver.—I am, etc.,

Cambridge, Feb. 11th. F. J. ALLEN.

ACTINOTHERAPY AND DEAFNESS.

SIR,—The probable explanation of the case quoted by Dr. T. C. Hunter in his letter (January 19th, p. 133) is that the nurse in question was suffering from functional, not organic, deafness. This was possibly associated with lowered vitality, chiefly indicated in her case by defect in this special sense. Her removal to work under conditions which exposed her to the action of ultra-violet rays improved her general condition, leading to an increase of activity in the sense of hearing. This by no means implies the recognition of ultra-violet rays as a treatment for established organic deafness. Such cases as that reported by Dr. Hunter are occasionally met with, and require careful diagnosis; they have probably some relationship to the better recognized "hysterical" deafness. Chronic progressive deafness should not, however, in my opinion, be considered as a "degenerative disease" in the majority of cases.—I am, etc.,

Bath, Feb. 4th. H. NORMAN BARNETT.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

Local Government (Scotland) Bill.

THE committee stage of the Local Government (Scotland) Bill began in the House of Commons on February 4th. Considerable discussion took place on Clause 1, which provides for the transfer of the functions of parish councils and district boards of control to county councils and town councils of large burghs. Sir A. SINCLAIR moved the deletion of the provision relating to the parish councils. Sir J. GILMOUR replied that the new central authorities to be set up would be the elected representatives of the people, charged with certain duties, but it was clearly indicated that these bodies should submit definite schemes showing in detail how they would carry out their duties. In the case of the Poor Law it was obvious that there must be within those schemes such measure of arrangement as would ensure that immediate relief was given to the necessitous people within the district. The real essence of the bill was that there should be a large amount of elasticity in order that the peculiar problems of particular areas might be dealt with. The Government were abolishing out-of-date machinery and obtaining in its place the best machinery possible. In the course of further discussion, Dr. ELLIOT explained that it would be possible to treat the sick poor under Acts other than the Poor Law. The amendment was defeated by 193 votes to 93.

Sir J. GILMOUR, dealing with the duties to be transferred from parish councils to district councils, said that, with certain exceptions, the duties were the same as the parish councils were performing to-day. The chief exception was that of the Poor Law, but in the matter of dealing with outdoor relief the central body might under their scheme delegate some part of the work to the district councils. The amendments, moved by Sir J. Gilmour, to carry out a previous undertaking, were carried, and the clause was added to the bill.

On Clause 2, which deals with the transfer of certain other functions to the county councils, Dr. SHIELS moved the omission of paragraph (*b*), which transfers the functions of town councils of small burghs within the county as local authorities for the purposes of the statutory provisions set out in Part I of the first schedule. Dr. Shiels said that the proposal did not seem to have any justification, and had no relation to the de-rating proposals. The county councils were upstarts, whereas the small burghs had, for hundreds of years, been places of efficient government. Sir J. GILMOUR replied that different commissions and inquiries had repeatedly urged the setting up of larger areas. It was not the case that the county councils were inefficient. The small burghs, under the Government's scheme, play a very large and important part in the policy and administration with which the new larger authorities would be entrusted. The amendment was rejected, and the clause added to the bill.

On February 5th the whole of the time available for debate was given up to a discussion of an amendment by Sir R. HAMILTON to Clause 3 to omit the subsection providing for the transfer of the functions of the education authorities. Dr. ELLIOT, replying to the debate, said that the education authority of Scotland had been deemed on more than one occasion to be ripe for reform. The method which the Government were bringing forward was not suggested by anyone but by the great civil servants who had to advise the Government. It was deeply worth while to make this great change for the sake of the benefits which they expected to derive from it. At this moment a recasting of local government was taking place in Scotland, and they expected an extension and enlargement of the powers of the central bodies—the county councils and the town councils—to take place which would raise them to a position of prestige and dignity which they had never enjoyed before. By a new grant their hands were being freed to a very large extent from many of the niggling controls which it was necessary to place on them when the system of the percentage grant was introduced. Furthermore, the Government were, in the health clauses, making it possible to alter the health system of Scotland along the lines which the health reformers had been demanding for many years past. When all these great changes were taking place it would be folly, and criminal, to leave out of account the 800,000 school children who were the flower of Scotland, and who were the people on whom they relied for the whole national life of Scotland in the years to come. The time had gone past when it was possible to treat the mind of the child apart from the body of the child. To do that there must be the close and intimate connexion of the great new authority which was responsible, not *ad hoc* for health but *ad omnia*, as health was one of the major functions. If health was not too important a subject to put into the hands of this great new authority, then education was not too important either. If they could entrust this new authority with the terrible and powerful responsibility of the tender years of child life of Scotland from 1 to 5, and with the life of the adults of Scotland from school age to death, and the bodies of Scotsmen and Scotswomen, it would be going back on all that they were bringing forward, and

on the whole theory of health as one of the most important of modern functions, to say that the body was a secondary thing, and that an *ad omnia* authority could take charge of the bodies of the people of Scotland, but that there was something so sacred in this question of book-learning that it had got to be removed entirely from the ambit of that authority and to be put under different control. The Government's theory and conviction was that the body was as sacred as the mind, and if they could make a strong, fit, and burly generation of young Scots then they would have done something to which the making of the mind of the Scotsman and Scotswoman was not a secondary thing. That was their contention, and the contention of the great medical school. Hon. members could call it, if they would, a materialistic ideal, but they did not regard it as such. They said that the formation of the fit citizen could not be carried out unless the supervision of the citizen all the way through was entrusted continuously to one responsible authority.

The amendment was defeated and the clause agreed to.

Clauses 4, 5, and 6 were agreed to under the guillotine, also Clause 7, which provides for the transfer of officers and superannuation funds.

On February 7th Major ELLIOT moved an amendment providing that administrative schemes might be made for the treatment of persons suffering from disease, infectious or otherwise, lunatics and persons mentally deficient, expectant or nursing mothers, young children or blind persons, otherwise than by the Poor Law Acts. He said this had to be taken in conjunction with a new clause, to be moved later, dealing with the wide extension of hospital facilities.

Several Labour members complained that the amendment would leave certain sick persons to be treated under the stigma of the Poor Law.

Sir JOHN GILMOUR said the amendment made a definite change and advance. That it should be mandatory was not practicable. It proposed that the authorities should produce schemes by which sick persons who were not under the Poor Law but in poor circumstances could be treated. The authorities could then recover from them such amounts as were thought desirable.

The amendment was approved by 197 to 107.

Radium.

Mr. CHAMBERLAIN, speaking on February 7th, said he had no funds at his disposal for the purchase of radium, and he did not know whether work was continuing at the mine in Cornwall where radium deposits had been found. The Government would consider the whole question of the purchase of radium when a report had been received from the subcommittee of the Committee of Civil Research, which was looking into the subject. He expected this report within a year.

Mr. A. M. SAMUEL, on February 11th, informed Mr. Benn that "radium compounds" were included in the list of chemicals liable to a duty of 33⅓ per cent. ad valorem issued by the Board of Trade under Part I of the Safeguarding of Industries Act, 1921. These compounds were, however, exempted from duty until June 30th next by a Treasury Order made under the Finance Act of 1926. Radium was not dealt with commercially except in the form of a compound.

On February 11th Sir KINGSLEY WOOD, replying to Mr. R. Morrison, said that the Minister of Health had approved arrangements under which the Edmonton Board of Guardians would obtain a supply of radium for the treatment of forms of cancer at the infirmary of the guardians which was known as the North Middlesex Hospital. One of the terms of the arrangement was that if the radium was not in use for persons chargeable to the guardians it should be used for similar cases from other unions in the adjacent parts of Middlesex. There had been and would be no avoidable delay on the part of the Minister of Health in bringing the arrangements into operation.

Protection of Animals (Amendment) Bill.

Lord BANBURY moved the third reading of the Protection of Animals (Amendment) Bill in the House of Lords on February 7th. The purpose of this bill was to prevent the issue of dog licences to persons convicted of cruelty to dogs. Lord SALISBURY thought the proposal was cumbrous and very ineffective. He could not agree to an amendment inserted at a previous stage to provide that any person applying for a dog licence must sign a declaration that the application was not made directly or indirectly for anyone whose licence had been revoked or suspended. After further debate the bill was rejected by 24 to 18.

Deaths from Cancer in Scotland.—Sir J. GILMOUR, on February 12th, told Mr. R. MORRISON that last year 11 males and 16 females under 15 years of age, and 3,005 males and 3,870 females over 15, died in Scotland from cancer. This made a total of 6,902 deaths of persons of all ages.

Assessment of Voluntary Hospitals.—Mr. CHAMBERLAIN told Sir Arthur Holbrook, on January 31st, that he had received some representations about the increases recently made in the assessments of voluntary hospitals. The exemption of hospitals from rating could not be effected without legislation, and he thought that it could not be considered apart from the similar claims made on behalf of other charitable and public institutions.

Pensions Appeals.—Mr. CHAMBERLAIN told Mr. Tasker, on January 30th, that during the year ended September 30th, 1923, 174 appeals were received by the Ministry of Health from persons whose claims to pensions had been refused by local pensions committees on the ground that the claimants did not appear to fulfil the statutory condition of blindness. Of these claims, 111 were decided in favour of the claimants.

Grants for Maternity and Child Welfare Schemes.—On February 7th Mr. CHAMBERLAIN said that even if schemes for buildings connected with maternity and child welfare work had been approved by the Ministry for a 50 per cent. grant these grants would be wholly discontinued after March 31st, 1930, and absorbed in the new grants to be given under the Local Government Bill.

Discharge of Criminal Lunatics.—Asked how he was guided in deciding on the release or detention of a criminal lunatic, Sir W. JOYNSON-HICKS said that so far as medical considerations were concerned he was guided mainly by the skilled medical authorities at Broadmoor Criminal Lunatic Asylum, or, if the patient were in a local mental hospital, by the views of the superintendent and of his own medical advisers. All criminal lunatics were under medical observation, and reports on each were made to the Home Secretary by the superintendents of the asylums. Discharge did not depend entirely upon any single definite factor, such as entire recovery or complete cure.

Nervous Disorders of Telephonists.—On February 12th Sir W. MITCHELL-THOMSON told Sir R. Thomas that, in 1926, out of 79,712 days of sick leave taken by London telephonists, 4,913 days were attributed to neurasthenia, nervous debility, nervous exhaustion, nervous shock, and neurosis; 385 days to neuritis; and 1,592 days to neuralgia. The total number of telephonists employed was 7,051; but there was no record of the number absent on account of these disorders.

Protection against Attack by Air.—Mr. BALDWIN informed Mr. R. Morrison, on February 12th, that the problem of the protection of the civil population against air attack was being closely studied in all its aspects, including protection from chemical gas. The need for the preliminary training of personnel and for the preparation of full and precise instructions to all concerned was not overlooked.

Sanitary Conditions in Hop-growing Areas.—Mr. CHAMBERLAIN, replying to Sir R. Thomas, on February 12th, said that he was aware that in some areas in Kent the sanitary conditions were during the last hopping season unsatisfactory. He was not, however, aware of any evidence suggesting that an outbreak of infectious disease was attributable to those conditions, and, in fact, the number of cases of notifiable infectious disease reported from the districts in which imported pickers were employed was not abnormal.

Hygienic Conditions of Crew Spaces on British Ships.—Dr. VERNON DAVIES asked the President of the Board of Trade, on February 6th, whether the joint committee recently set up by him and by the Minister of Health would inquire into the hygienic of crew spaces on board ship. Mr. HERBERT WILLIAMS, answering for the President, said a series of special reports on the subject had been placed before the Joint Advisory Committee set up by the Ministry of Health and the Board of Trade. Dr. DAVIES asked if representations had been received from the Society of Medical Officers of Health, the Royal Sanitary Institute, and the Association of Port Sanitary Authorities, stating that the conditions under which British seamen were housed on British ships were, from a hygienic standpoint, unsatisfactory and inferior to those on ships of other nationalities. Mr. HERBERT WILLIAMS said representations had been received from one body, and would be considered in any amendment of the crew space regulations which were now under review. Conditions on some British ships were satisfactory, but it was misleading to suggest that crew spaces on British ships generally were unsatisfactory from the hygienic standpoint and inferior to those on foreign ships. Since 1913 many changes made in the Board of Trade instructions had been in the direction of a higher standard.

Notes in Brief.

The Secretary for Dominion Affairs has no information as to the existence of promising deposits of uranium ores in Australia.

The published information does not permit the Ministry of Health to compare the rates of mortality from puerperal sepsis in Germany, Sweden, and France with those in England and Wales.

Sir J. Gilmour is prepared to undertake that the welfare of blind persons will not be prejudiced by the provisions of the Scottish Local Government Bill.

Mr. AMERY states that there are three European hospitals in Kenya with 46 beds, and twenty-nine non-European hospitals with 153 beds. In 1927 the two classes treated 27,605 in-patients and 176,281 out-patients.

On February 7th Commander KENWORTHY presented a petition signed by 9,829 persons, praying the House of Commons to prohibit vivisection.

Mr. Chamberlain announced, on February 7th, that he hoped to lay on the table at an early date the report of a Ministry of Health medical officer who recently visited the distressed areas in South Wales.

[An account of the debate on the report stage of the Local Government Bill will be published next week.]

Obituary.

SIR ALEXANDER OGSTON, K.C.V.O.,

M.D., C.M., LL.D.,

Extra Surgeon to the King in Scotland; Emeritus Professor of Surgery, University of Aberdeen; Consulting Surgeon to the Aberdeen Royal Infirmary.

WE had to record last week, with much regret, the death, at the age of 84, of Sir Alexander Ogston, Past President of the British Medical Association, which took place on February 1st at his home in Aberdeen.

Alexander Ogston, eldest son of Francis Ogston, professor of medical jurisprudence in the University of Aberdeen, was born in April, 1844. He received his medical training first at Aberdeen, then later abroad, at Prague, Vienna, Berlin, and Paris, graduating M.B., C.M.Aberd. (with honours) in 1865, and proceeding M.D. a year later. After his study tour of the leading medical schools of Europe Alexander Ogston returned to Aberdeen, where he soon built up a large practice, at first general, but later, with his growing reputation as a surgeon and skilful operator, purely consulting. In 1865 he was appointed assistant to his father, a position he held till 1873. From 1868 till 1872 he was joint medical officer of health for Aberdeen, and in 1872 was put in charge of the small-pox isolation hospital that had been specially set up in that city. His connexion with the Royal Infirmary began in 1868, when he was appointed ophthalmic surgeon; two years later he became junior surgeon, being appointed acting surgeon in 1874 and senior surgeon in 1880. This post he held till his resignation in 1898, when he became consulting surgeon. While holding his various posts at the Royal Infirmary he was actively associated with the University of Aberdeen. In 1869 he was appointed university lecturer in practical ophthalmoscopy, and in 1873 he became examiner in medicine, a position he held till 1876. On the retirement of Professor William Pirrie in 1882 he became regius professor of surgery, which office he retained with distinction for twenty-seven years. As a teacher his work was inspired by high ideals, and under his supervision the department of surgery grew in strength and efficiency.

SIR ALEXANDER OGSTON.

Alexander Ogston, himself educated before the days of antisepsis, at a time when hospital wards teemed with erysipelas and septicaemia, was an early convert to Listerian methods, his own research into the cause of acute suppuration resulting in the discovery of the *Staphylococcus pyogenes aureus*. Early in his career he devoted himself to bone surgery, the "Ogston operation" for genu valgum being extensively practised until it was displaced by Macewen's method. The very name "staphylococcus" was originated by him in 1883, when he was struck by the resemblance between clumps of cocci and bunches of grapes.

But it was in military surgery that his deepest interest seemed to lie; "he was," in the words of Sir James Porter, "the first pioneer in dealing with the medical conditions prevailing in the Army and Navy in modern times." Though it was the Franco-Prussian war of 1870–71 which specially directed his attention to this branch of surgery, it was not until the Egyptian war of 1884–85 that he had his great opportunity of mastering its practice. He set out for Egypt in 1885, and, after some service on the hospital ship *Ganges*, joined the First Bearer Company, and soon found himself in the thick of actual fighting. At Hasheen and Suakin in particular he was able to do excellent work among the wounded; for his services and personal bravery he was awarded the Egyptian war medal and the Khedive's bronze star, and at home received the thanks of the British National Society for Aid to the Sick and Wounded in War. His next experience of active service was in South Africa in 1899–1900, and on his return he was appointed a member of a committee of medical experts set up by the Government to consider a scheme for the future organization of the Army Medical Corps, and some of the suggestions he then made have since been carried out. Though at the outbreak of the great European war (1914–18) he was 70 years of age, Sir Alexander Ogston acted as operating surgeon to the Southall Auxiliary Military Hospital during the winter of 1914–15, proceeding subsequently to Belgrade in charge of a hospital detachment from the British naval force on the Danube. In 1916 he accepted an invitation to join the First British Ambulance Unit in Italy as operating surgeon. He remained attached to that unit for about fifteen months, and, acting with the Second Italian Army, had his first opportunity of seeing the realities of modern warfare. The honour of Cavalier of the Order of the Crown of Italy was conferred upon him in July, 1920. In his book entitled *Reminiscences of Three Campaigns*, published in 1919, he paid a glowing tribute to the bravery of our Italian allies

In the course of his long and busy career Sir Alexander Ogston received many honours. He was Surgeon in Ordinary in Scotland successively to Queen Victoria, King Edward VII, and King George V. In 1901 the University of Glasgow, on the occasion of its 450th anniversary celebrations, conferred on him the honorary degree of LL.D., and in 1910 his own university paid him the same honour. In 1902 he was appointed to the Royal Commission on Physical Training in Scottish Schools; he was a member of the Deutsche Gesellschaft für Chirurgie, and a corresponding member of the Société Royale des Sciences Médicales et Naturelles of Brussels. In 1912 his name appeared in the Birthday Honours List as Knight Commander of the Royal Victorian Order.

As far back as 1873 he was secretary of the Section of Surgery at the Annual Meeting of the British Medical Association in London, being its vice-president when it met in Dublin in 1887, and president at Carlisle in 1896; in 1889 he delivered the Address in Surgery when the Association met at Leeds. By the choice of his local colleagues he held office as President of the Association when the Annual Meeting was held at Aberdeen in July, 1914, and since 1922 he had been a Vice-President of the Association. His active work for the Association included membership of the Parliamentary Bills Committee in 1889–1901; presidency of the Aberdeen Branch in 1900, and again from 1915 to 1919; and membership of the Aberdeen Branch Council in 1920.

Between the years 1868 and 1902 Alexander Ogston contributed a large series of original papers to British and Continental medical journals. Among the most noteworthy of these contributions may be mentioned: The Operative Treatment of Genu Valgum (*Edinburgh Medical Journal*, 1876–77); The Growth and Maintenance of the Articular

Ends of Adult Bones (*Journal of Anatomy and Physiology*, 1878); Report upon Micro-organisms in Surgical Diseases (*British Medical Journal*, 1881); Micrococcus Poisoning (*Journal of Anatomy and Physiology*, 1882); Continental Criticism of English Rifle Bullets (*British Medical Journal*, 1899); and A New Principle of Curing Club-foot (*British Medical Journal*, 1902).

Sir Alexander Ogston was twice married, his first wife being Mary Jane, daughter of Mr. James Hargreave, and his second wife Isabella Margaret, daughter of the late Provost James Matthews of Springhill. By his first wife he had two sons and two daughters, and by his second wife four sons and four daughters. He is survived by two sons and five daughters.

We are indebted to Sir JOHN MARNOCH, Regius Professor of Surgery, University of Aberdeen, for the following tribute:

It is almost twenty years since Sir Alexander Ogston resigned the chair of surgery in Aberdeen, and for a number of years prior to that he had ceased to be surgeon to the Infirmary. To the present generation of students, therefore, he is known only by name, but upon those of us who had the privilege of being his pupils when he was at the zenith of his career as a surgeon and teacher he made a profound impression. He was the most outstanding personality in the University.

At the time I am thinking of, in the late eighties, his researches into the cause of suppuration had earned for him a world-wide reputation, and it was therefore with great reverence, not unmingled with awe, an awe that lingered with us even in later years, that we approached him as the great master of the science and art which we had chosen to learn. His great powers of deft and graphic description made his lectures delightful to listen to. They were delivered in a slow, deliberate manner, but as he never used an unnecessary word and never repeated himself, it was only when one commenced to take them down that one realized how rapidly he covered the ground. He was greatly influenced by the German surgery of his time, and many were the German authorities that he quoted. His course of systematic surgery was much in advance of anything found in the standard textbooks of the day.

But it was in the wards and operating theatre that he was at his greatest. To watch the scrupulous care with which he went over a case, to listen to the logical analysis of the symptoms leading to a diagnosis, was a great education. His manner was as gentle and considerate to the poorest patient as to the richest. One of his great tenets was never to hurt a patient unnecessarily, and his gentle handling of a case was a fine object lesson. The operating theatre was a shrine at which we all worshipped. When a major operation was to be performed the benches were crowded—not that we always saw much, for he clung for long to the antiseptic spray, so that before the operation was far advanced the well of the theatre was shrouded in a mist. He believed in many student assistants, largely, I think, from an educative point of view. One assisted the anaesthetist, one held a basin and sponges, one manipulated the spray, and so on, and woe betide the assistant who lapsed in his duty. The short, sharp word of reproof was not likely to be forgotten. As a great pioneer and believer in the antiseptic system, he could not tolerate the slightest deviation from his ideals. His tenacity of purpose and fine results brought him great fame, and soon convinced the profession of the soundness of the system, for even in those days it could not be said that Lister's methods had gained universal acceptance. Operative technique has developed since then, but the great underlying principles are the same, and the work of pioneers like Ogston laid our modern methods on a sure foundation.

Nature had gifted him with a fine brain, but she had also endowed him with an imposing frame. The tall, commanding figure, the sparing sentences deliberately uttered, and an almost old-world courtesy combined to make up a personality not easily forgotten.

Professor T. WARDROP GRIFFITH, C.M.G., Emeritus Professor of Medicine, University of Leeds, sends this personal appreciation:

The death of Sir Alexander Ogston will cause an immense number of graduates of Aberdeen University to recall times of long ago. Many will remember him as the regius professor of surgery; others, like myself, will carry their minds back to a period prior to 1882, when he was appointed as Professor Pirrie's successor, and when his relationship with the students was only through his position as honorary surgeon to the Aberdeen Royal Infirmary. I was his dresser in 1880 and in 1881, but I can remember him long before this, because when I was a lad he operated upon my father for cataract in 1871. At that time he did a good deal of eye work, and I remember hearing my father quote Argyll Robertson, whom he had gone to Edinburgh to consult, as having said, "There is no need to go out of Aberdeen for an operation of this kind when you have a man like young Ogston." Yes, it was by the name of "young" Ogston that I first heard him referred to, and in some sense it seems not altogether absurd, because eleven years after this date I attended the lectures of his father on medical jurisprudence. Alexander Ogston retained his wonderful physique and youthful appearance till late in life. I well remember a visit he paid to Leeds some eighteen years ago; he had come to attend the dinner of the West Riding Aberdeen University Club, and we spent a day at the Leeds Infirmary, of which, and of its surgery, he had such a high opinion. I introduced him to a good many of my colleagues, but I had serious difficulty in making them understand that this was really *the* Ogston—the "genu valgum" man, as they termed it. They thought it must be his son! I had to emphasize that this was veritably *the* Ogston whom they had in their minds, the deviser of the ingenious operation for genu valgum, the ardent and early disciple of Lister, and the first man to demonstrate the invariable presence of micrococci in an acute abscess. I remember that I had a great treat for him during his visit. Many years before Mr Jessop had operated on a young man for double genu valgum, and, as he sometimes did, he performed Ogston's operation on the one side and Macewen's on the other. A good many years afterwards the man died, and I managed to secure enough of the two legs to show the excellent result which was obtained on the two sides and between which there was nothing to choose from the point of success. The specimens, which are now in our museum, I kept unmounted for a good many years in the hope that some day I might have the pleasure of showing them to my dear old master, and not without a hope that they might act as a bait to attract him to Leeds. I well remember the avidity with which he took off his coat, turned his cuffs up, and "sat down to" the two specimens. He used to tell us that he regarded Macewen's operation as the better of the two. "Personally," he used to say, "I get as good results with the one as with the other, but I should certainly recommend Macewen's operation as preferable to my own." I remember hearing Mr. Jessop say that he had been greatly impressed by a statement to this effect which he had heard Ogston make at some big discussion on the subject; his comment was, "There spoke an honest man." Like many surgeons, he had a sort of mild, good-natured contempt for the art of medicine, well illustrated by the following incident, of which, to his great amusement, I reminded him some thirty years after its occurrence. Dr. A. W. Russell—and we talked about it the other day when we met—was his chief dresser, and they were going round together fixing up the operations for the next morning; his attention was called to one lad who was due for operation, but who had "some kind of a rash." When he saw the lad he remarked, "Chicken-pox, Russell," with that slight emphasis on the second word which any of his old students would certainly give to if they were recounting the incident, and by expression to if they were recounting the incident, and by was passing on when Russell said, "What shall I give him, Sir?" After a slight pause Ogston quietly said, "Give him a stick of barley sugar."

Yes, Ogston was a great man, a glutton for work, painstaking, unsparing of himself, and very thoughtful

He was an admirable teacher, and I think the part of his teaching that impressed me most was that which he gave us in the small out-patient department. The work was leisurely and, the number of patients being small, it was very thorough. He used to think out his ingenious orthopaedic operations, and tell us exactly what he was going to do, and there is no doubt that his results were excellent.

The death of Ogston closes a chapter in the history of the University and Infirmary of Aberdeen; it will at the same time cause a great many of his former students not only to call to mind an old teacher with feelings of admiration, respect, and affection, but it will remind them of each other and strengthen that bond of fellowship which should, and which does, exist between those who have been trained at the same school.

Dr. E. A. CHILL (Battle, Sussex) writes:

May I add my tribute of appreciation for the courtesy, humility, kindliness, and loyalty which animated this distinguished surgeon. In 1914 Sir Alexander Ogston was surgeon to H.M. the King in Scotland, and also President of the British Medical Association, and yet on the outbreak of war, and at the age of 69, he consented to leave his well-earned retirement in Aberdeen, and come to London to act as consulting operating surgeon at a small auxiliary military hospital at Southall, Middlesex. His presence soon made itself felt in various directions, and with an up-to-date operating theatre, and assisted by a capable staff of surgeons and nurses infected by his enthusiasm, the hospital was permitted by the military authorities to receive the seriously wounded direct from France or Flanders. While he was with us we received a visit from the late Editor of the *British Medical Journal*, and as a result an account of our work appeared from the pen of Sir Dawson Williams. As organizer and administrator of the hospital I feel it incumbent to place on record Sir Alexander Ogston's work among us. He was a great surgeon and a great gentleman. He was modest even to shyness, but had the gift of winning the esteem and affection of all those with whom he came in contact.

W. E. H. writes:

Not one of his many dressers, clerks, or house-surgeons who to-day mourn the passing of their chief can ever forget Ogston in his operating theatre or in his wards. We recall his methodical and unhurried progress from bed to bed, his intense concentration on the examination of the case, and his kindly consideration for the patient. In the dark ages before *x* rays were available it was a memorable object-lesson to see him conducting the investigation of some obscure hip-joint condition, as in clear and deliberate tones he dictated to his clerk the results of measurements, tests, and range of movements. It was in the days before *x* rays that he worked out the condition coxa vara. A pioneer in orthopaedic surgery, the rare quality of his operative work was the outcome of careful thought expended beforehand on the whole procedure of his operations, for his great manipulative skill went hand-in-hand with a sound and sagacious judgement.

We knew our chief was an Olympian, and so we were not surprised when to his operating theatre came surgeons from many lands. The writer remembers well how, early one Sunday morning, he was summoned to the chief's room, and there was introduced to a famous knight of surgery from Dublin. "Let me introduce you," said Ogston, "to the man who first tied the internal iliac artery. Nevertheless he has a gumboil. Bring me a history." Do we not also recall his quaint, old-world phraseology in his lectures as professor of surgery, and his sly digs at the "armchair theorists"? "More ink than blood has been shed on this point," was how he summed up the alleged terrors of an abnormally distributed artery. In Alexander Ogston a great surgeon and a great man has passed to the other side.

[The photograph of Sir Alexander Ogston reproduced at page 325 is by R. M. Morgan, Ltd., Aberdeen.]

JOHN EDWIN EDDISON, M.D.,

Emeritus Professor of Medicine, University of Leeds; Consulting Physician, Leeds Infirmary.

We have to record with great regret the death of Dr. J. E. Eddison, formerly of Leeds, which occurred on January 27th at Cuckfield, Sussex, where he had gone to live some few years ago. John Edwin Eddison, who belonged to a well-known Leeds family, his father being a member of an old-established firm of solicitors, was born in 1842. He graduated M.D. at Edinburgh, and often said that the selection of Edinburgh as his medical school was a very deliberate choice on the part of his father, who was of opinion that at that time the teaching was better there than could be found elsewhere. He supplemented his Edinburgh training by spending some time at St. Bartholomew's Hospital, and became a Member of the Royal College of Surgeons of England in the same year that he graduated at Edinburgh—namely, in 1864. After spending a year or two in Paris and Vienna he commenced practice in Leeds, and in 1871 a vacancy on the staff of the General Infirmary, caused by the resignation of the late Dr. Chadwick, led to his being appointed physician as junior colleague to Dr. Heaton and Dr. Clifford Allbutt. He served the Infirmary as full physician till 1892, when he became a member of the consulting staff. His work, however, was not confined to this, the greatest of the Leeds hospitals, for he was physician to the Public Dispensary, to the Women and Children's Hospital, and to the Leeds "House of Recovery," or Fever Hospital, where he was associated with the pioneer work of Allbutt. He also took a great interest in the founding of the Leeds Trained Nurses' Institution, which dates from 1875, and acted as its honorary consulting physician.

When Eddison began practice in Leeds great changes, some only of which were apparent to the multitude, were imminent. The old Leeds School of Medicine, instituted by the first William Hey in 1831, was run very much on the lines of a limited liability company, and had for many years been doing excellent work. When the Yorkshire College of Science was started (with, it is often said, three professors and one student) an arrangement was entered into by the school of medicine that the preliminary scientific subjects of medical education should be taught at the new institution. From this small beginning arose the great developments now in progress in connexion with the University of Leeds. The Yorkshire College of Science dropped its qualifying words, becoming simply the Yorkshire College, and instituted chairs of Latin and Greek, widening its outlook in many other respects. In 1884 the old medical school amalgamated with the Yorkshire College, which in this and in other ways attained to university status, and was admitted as the third college of the federal university known as the Victoria University, with its seat in Manchester. The subsequent developments are fresh in the minds of all. Though the old Victoria University was doing great work, the federal system was attended with some disadvantages, and a desire for greater freedom and independence resulted in the formation of the three universities of Manchester, Liverpool, and Leeds in 1903. Dr. Eddison was very closely associated with all these changes, and at the "coming of age" of the University in 1924 he was awarded the honorary degree of doctor of science. Early in his career he became associated with Dr. Allbutt in the joint lectureship in medicine, and he was the first professor of medicine in Leeds after the affiliation of the Yorkshire College with the Victoria University. Both in his work as a lecturer and as a clinician he always showed something original and arresting in his teaching. Frankly, it was not the kind of teaching which was adapted to the requirements of the average student; it was not didactic. He was possessed of a mind so critical, so alert, and so trained to the exposure of fallacies that to many he seemed to take much more pleasure in pointing out what was not the case than in trying to impress on his students the well-established facts upon which their future professional work would have to be based. The writer formed the opinion many years ago that this characteristic of his teaching sprang not only from his critical outlook

on things in general, but from a deliberate conviction that the work of a teacher in a subject like medicine ought to place the mere imparting of information on a plane altogether below that which deals with the stimulation of the minds of his students so that they may be guided to learn for themselves. If the average student, therefore, was somewhat discouraged by his teaching, many will have discovered by now that he taught them a great deal more than they felt at the time; those who acted as his resident officers, and were old enough to attain to some understanding of his outlook, learned a great deal by their association with him in the wards of the Infirmary, and will always cherish the recollection of a kind and considerate master.

Dr. Eddison was for many years a member of the British Medical Association, and served on the Central Council from 1910 to 1912. He was one of the original members of the Leeds and West Riding Medico-Chirurgical Society, founded in 1872, and was president in the session 1882–83; he never lost his interest in its work, but attended the meetings with great regularity until his final retirement from practice in 1907. There must be many who, with the writer of these lines, can recall his ready and fascinating oratory and his shrewd wisdom—at times only too successfully concealed by a whimsical and humorous presentation of his case. Outside his professional life he was a man of very wide interests. He was a great reader, and in this respect his tastes were catholic, and he was for many years a very strong supporter of the Leeds Literary and Philosophical Society. He was president four times, and when he was elected to the council in 1919 it was pointed out that this was the fiftieth successive occasion on which he had been elected to this position. As already mentioned, he retired from his professional work, which for many years had been strictly limited to that of a consulting physician, in 1907. He went to live at Cuckfield in Sussex a few years ago. The interment was in Adel Churchyard, close to where Dr. Eddison had lived for so many years; the service was conducted by the vicar of the parish and by his old friend, Dr. Draper, the Master of the Temple. Among those present at the funeral were representatives of the University of Leeds and the Infirmary, and of other societies with which he was associated, including the Medical Charitable Society for the West Riding of the County of York, for which he did such excellent work, and many of his professional brethren.

T. W. G.

C. G. DRUMMOND MORIER, L.R.C.P. AND S.I.

DR. C. G. DRUMMOND MORIER died on February 2nd. He was born in 1856, and received his medical education at the school of the Royal College of Surgeons in Ireland, Charing Cross Hospital Medical School, and Vienna. In 1880 he became L.M. Rotunda Hospital, Dublin, and L.R.C.P. and S.I. in 1883. He was at one time medical officer of the Nairne and Mount Barker districts, South Australia. He was for many years a member of the British Medical Association, and was the representative of the Adelaide and South Australian Branch on the Central Council from 1898 to 1914, when he was succeeded by the late Dr. W. T. Hayward; he was also an ex-chairman of the Dominions Committee of the Association. Dr. Morier was a Fellow of the Royal Society of Medicine and a member of the Society for the Study of Inebriety.

C. O. H. writes: Charles George Drummond Morier, who died on February 2nd, brought to the practice of medicine an exceptionally virile and effective personality. In mind, as in physique, he was every inch a man, and his readiness and ability to carry responsibilities, associated as this quality was with a particularly shrewd judgement and much kindness of heart, made him for many a help and stay in anxious and difficult hours. His social gifts secured for him many friendships, and to these he held in all loyalty and practical service. Those of us who shared with him many experiences and memories recall gratefully his good comradeship, and regret the loss of one who knew the rules of the game, and ever followed them with unfailing sincerity and courage and goodwill.

A memorial service was held at St. Mark's Chur Hamilton Terrace, N.W., on February 6th, at wh Mr. H. M. Stratford, F.R.C.S.Ed., the honorary secretr of the Kensington Division, represented the Council the Association, and the interment subsequently took pl at Farnham Royal, Bucks.

PIERO GIACOSA, M.D.,

Professor of Pharmacology in the University of Turin.

For the following appreciation of the late Professor Giac of Turin we are indebted to Professor Arturo Castiglic of Trieste.

The death of Piero Giacosa has come as a most painf loss, not only to the medical profession in Italy in which occupied so distinguished a position, but to all who lov in him the scientist, the great teacher, and brilliant write and appreciated the gifts of his character and mind. Bo at Parella, near Ivrea in Piedmont, in 1853, of a fami distinguished for its learning, he was the younger broth of Giuseppe Giacosa, one of the best-known writers a authors of plays of the end of last century in Italy. Pie Giacosa devoted himself to the study of medicine at Turi where he graduated in 1876. Even in his first medic research concerning the physiology of respiration at hig altitudes, Giacosa displayed his powers as an acute observe He continued his studies in Strasbourg at the physiologic institute of Hoppe-Seyler, then at Berne and Erlange where he became the assistant to Lenbe. In 1881 he becam assistant to Angelo Mosso at the physiological school o the University of Turin; he was next appointed lecture in pharmacology and director of the laboratory of experi mental pharmacology. In 1894 he was elected to the chair which he occupied without interruption until 1928. H was the author of a treatise on materia medica, pharmaco logy, and toxicology, which became a standard work by reason of the vast knowledge it contained of chemistry biology, and medicine; it is to Giacosa that we owe the beginnings of the important researches into the oxidation of aromatic hydrocarbons in the organism and into the transformation of nitrates. He was also the author of epoch-making investigations into the history of medicine. His work entitled *Magistri Salernitani nondum cogniti*, in which he brought together a large number of texts of the ancient Masters of the "Studium" of Salerno, cast a new light on the history of that medical school in the Middle Ages. He was in close friendship with the greatest men of science of his time; a mark of the esteem he enjoyed abroad was the degree of Doctor *honoris causa* conferred on him by the University of Cambridge. His vast and many-sided labours, his kindness of heart, and the excellence of his teaching will assure him the grateful and heartfelt remembrance of students beyond the confines of his own country.

THE LATE DR. F. DE HAVILLAND HALL.

SIR FRANCIS CHAMPNEYS, Bt., writes: May I add a few words to the obituary notice of Dr. de Havilland Hall which you have published? I have known him well for half a century, and was intimately associated with him for a good many years during the foundation and early history of St. Luke's Hostel for Clergy. He was one of the kindest and most charitable men that I ever knew. I do not suppose that anyone was more often consulted by members of his own profession for themselves or for their families and he never failed them. I consider that this is one of the best rewards that a medical man can gain. In the work that he undertook he never spared himself, and I never put himself forward. In criticism of others he set an example of charity. I should think that he had few enemies, and that few men can have led so long a life without reproach.

Lieut.-Colonel C. SAMMAN, Master of the Society of Apothecaries of London, writes: I have read the obituary notice of Dr. de Havilland Hall in the *Journal* with great interest, and think your readers may like to know that in addition to his many other activities he was a prominent member of the Court of Assistants of this Society, whose valued opinions and advice, so courteously expressed, were

always listened to with great respect by his fellow members of the court. I, as Master, Mr. Osborn, and Mr. Adams Frost, members of the court, and Dr. Haydon, secretary to the Court of Examiners, were present at the funeral at Twickenham.

We regret to announce the death, at the age of 63, of Dr. LEO FERDINANDO BIANCHI, F.R.C.P.Ed., F.R.C.S.Ed., which occurred at his home in Portobello, Edinburgh, on January 17th. Dr. Bianchi was born at Tunbridge Wells in March, 1865, and was educated at St. Augustine's College, Ramsgate, and then aboard the Thames Nautical Training College, H.M.S. *Worcester*, off Greenhithe, Kent. In 1885 he was appointed a midshipman in the Royal Naval Reserve and served in the Hooghly Bengal Pilot Service. He had the honour of being among the five candidates chosen to receive Her Majesty Queen Victoria's gold medal for the boy likely to make the finest sailor. The Indian climate told on his health, and he was retired from the pilot service with a pension. Some time after returning to Edinburgh he decided to engage in medical studies as a hobby, and he obtained the diplomas L.R.C.P., L.R.C.S.Ed., L.R.F.P.S.Glas. in 1904. In 1905 he became M.R.C.P.Ed., and received the D.P.H. R.C.P.S.Ed., and in 1908 he obtained the F.R.C.S.Ed. For a time he held an appointment as non-resident house-physician at the Royal Infirmary, Edinburgh; he subsequently started private practice in Joppa, and later in Portobello. In 1920 he obtained the Fellowship of the Royal College of Physicians, Edinburgh. He was a member of the British Medical Association from the date of his qualification in 1904, and from 1916 to 1919 was on the executive committee of the Edinburgh Division. Dr. Thomas I. Mills writes: Dr. Bianchi and I have been close friends both as seamen and as members of the medical profession for forty-seven years. He was a man of fine character and a natural leader of men.

Colonel JOHN ARNALLT JONES of Llandaff, Cardiff, who died last December, was born in June, 1852, and received his medical education at the London Hospital. He obtained the diplomas L.S.A. in 1884, L.R.C.P.Lond. in 1885, M.R.C.S.Eng. in 1887, and D.P.H. in 1904; he graduated M.D.Durh. in 1902. For many years he was medical officer of health for the Borough of Aberavon and Swansea (Port Talbot) Sanitary Authority. While at Aberavon he was instrumental in the formation of ambulance classes for the local railwaymen and other workers. He took great interest in the Volunteer movement, and became colonel of the 2nd V.B. Welch Regiment. During the last war Colonel Arnallt Jones served in the Dardanelles as A.D.M.S. to the 53rd Welsh Division, and in 1922 became honorary colonel R.A.M.C., Welsh Division, in succession to the late Sir John Williams. He was an honorary surgeon to the King. He was appointed J.P. for county Glamorgan, and a Justice in Lunacy. Colonel Arnallt Jones was a member and ex-chairman of the Swansea Division of the British Medical Association, and was secretary of the Section of Navy, Army, and Ambulance when the Association held its annual meeting in Swansea in 1903. He was an enthusiastic worker for the Priory for Wales of the Order of the Hospital of St. John of Jerusalem, and for his services the distinction of Knight of Grace of the Order was conferred upon him. He leaves a widow and one daughter.

DR BERTRAM ADDENBROOKE, whose death from acute pleurisy and pulmonary embolism occurred at his home at Kidderminster on January 22nd, had been in practice in that town for about thirty years, having joined his father, the late Dr. Edward Homfray Addenbrooke, there in 1898. Born in 1874, he received his medical education at Mason College, Birmingham, and Newcastle-on-Tyne, and in 1896 he obtained the diplomas M.R.C.S.Eng. and L.R.C.P.Lond., and graduated M.B., B.S.Durh., proceeding M.D. three years later, after having graduated B.Hy. He had held various resident posts in Birmingham previous to joining his father in practice at Kidderminster, where he speedily gained distinction among his fellow practitioners and became very popular. He held a number of public medical appointments, including that of honorary surgeon to the Kidderminster General Hospital; he was also medical officer of health for the Kidderminster Rural District. Dr. Addenbrooke was keenly interested in the Volunteer movement and its successor, the Territorial Army, in which he held a commission in the R.A.M.C. At the outbreak of war he volunteered for active service, and early in 1915 went to France with the 7th Battalion, Worcester Regiment. Six months later he was transferred to the 12th General Hospital at Rouen, where he was for a time surgical specialist. He was demobilized on account of ill health in 1917, and a few years ago he retired from the Territorial Army after having reached the rank of major and having received the Territorial Decoration. He was a Fellow of the Royal Institute of Public Health. A keen member of the British Medical Association, he served on the Council of the Worcester and Hereford Branch from 1910 to 1914 and from 1920 to 1925; in 1923 and 1924 he was successively vice-chairman and chairman of the Worcester Division. The death of Dr. Addenbrooke, after a very short illness, came as a painful shock to his many patients and friends, a very large number of whom, including nearly all the medical practitioners of the district, were present at his funeral on January 25th. He leaves a widow and one daughter.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on February 8th the following medical degrees were conferred:

M.B., B.CHIR.—F. H. Gillett.
B.CHIR.—D. B. Wilson.

Dr. T. S. Hele has been appointed a member of the M.B. Degree Committee, in place of Sir F. G. Hopkins, resigned.

UNIVERSITY OF LONDON.

THE report from the Committee on the Medical Education of Women Undergraduates has been generally approved by the Senate and the recommendations appended thereto have been adopted (an abstract of the report was published in our issue of February 2nd, p. 217).

The regulations for the M.S. Examination, Branch III (Ophthalmology) have been amended by the substitution for the third paragraph on p. 254 of the Red Book, 1928-29, and on p. 241 of the Blue Book, September, 1928, of the following:

Every candidate must forward together with his form of entry the following certificates: (i) A certificate of having spent a total period of at least two years in the study and practice of ophthalmology at a teaching school or schools approved by the University, of which one year at least must have been subsequent to obtaining the M.B. B.S. degrees in this University. (ii) A certificate that, in the course of this period of two years, he has held for at least six months an approved appointment in the ophthalmic department of a general hospital recognized by the University for the purpose, or at an ophthalmic hospital recognized by the University, without ceasing to attend, for the purposes of the study and practice of ophthalmology, a teaching school or schools approved by the University.

The regulations for the M.S. examination, Branch IV (Laryngology, Otology, and Rhinology), Red Book, 1928-29, p. 255, and Blue Book, September, 1928, p. 242, have been similarly amended.

An Academic Diploma in Clinical Pathology is to be instituted, the regulations for which will be obtainable in due course from the Academic Registrar.

Applications for grants from the Thomas Smythe Hughes Medical Research Fund for assisting original medical research must be received not earlier than May 1st and not later than June 15th, 1929. Particulars may be obtained from the Academic Registrar.

A University Studentship in Physiology of the value of £100 for one year will be awarded to a student qualified to undertake research in physiology, if a candidate of sufficient merit shall present himself. Applications must be received by the Principal Officer by May 31st. Full regulations of the award can be obtained on application.

Dr. H. Gainsborough has been recognized as a teacher of the University in Medicine at St. George's Hospital Medical School.

The following have been appointed staff examiners in the subjects of examinations for medical degrees for 1929:

Anatomy.—Professor T. H. Bryce, F.R.S., and Professor Mary F. L. Keene.
Bacteriology.—Major General D. Harvey, C.M.G.
Chemistry.—First Medical: F. D. Chattaway and Miss Sybil T. Widdows. Second Medical: F. D. Chattaway and Professor J. C. Drummond.
Forensic Medicine and Hygiene.—W. B. Anderson and A. S. MacNalty.
General Biology.—F. Drabble and Miss Phil pps C. Esdaile.
Medicine.—Professor A. J. Hall, C. Wall (internal), C. E. Lakin (internal), and Professor H. MacLean. As oc ate Examiners: D. H. de Souza, Professor W. E. Hume, Profe sor A. W. M. Ellis, and J. A. Ryle.
Mental Diseases and Psychology.—E. D. Mc namara and C. W. B. James.
Neurology.—T. M. Hinds Howell and W. J. Adie.
Obstetric Medicine.—Professor M. H. Phillips and J. B. Banister. Associate Examiners: D. W. Boy and I. D. Bar is.
Oto-Rhino-Laryngology.—Sir William M'Ewen and Herbert Tilley.
Pathology.—Professor E. J. Kettle and Professor J. M. Beattie. Associate Examiners: R. Donaldson and J. A. B. Hicks.

Pharmacology.—Professor W. E. Dixon, F.R.S., and V. J. Woolley.
Physic.—G. Stead and Professor J. A. Crowther.
Physiology.—Professor J. B. Leathes, F.R.S., and Professor J. Mellanby.
State Medicine.—R. A. Lyster and G. F. Buchan.
Surgery.—H. S. Souttar, Professor C. A. Pannett (internal), W. Girling Ball (internal), E. C. Hughes, and as fifth examiner if required, C. M. Page, D.S.O. Associate Examiners: G. T. Mullally, P. H. Mitchiner, E. K. Martin, W. H. Hey, and as fifth examiner if required, R. M. Vick.
Tropical Medicine.—J. B. Christopherson.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

Division of Tropical Medicine and Hygiene.

The following passed the examination at the termination of the eighty-fifth session (October, 1928, to February, 1929).

*S. Batchelor (Duncan medal), *T. C. Backhouse, *J. Bryant, *L. S. Chatterji, *R. S. F. Hennessey, *M. Howitson, *W. S. Nealor, *A. J. W. Wilkins, C. M. Africa, K. P. Anklesaria, E. A. Aslett, F. C. K. Austin, D. C. Bell, P. S. B[illegible] Brown, J. A. Carman, I. E. Chandler, A. D. C[illegible] Chopra, J. C. Chukerbuti, A. H. Craig, M. D[illegible] Dodds, A. N. Duggal, A. L. Goddard, J. G. Green, H. E. Hargreaves, E. Haworth, W. Hunter, H. Joomye, N. Kamchorn, C. Libert, L. S. Liu, S. I. McMillen, A. Moorns, G. M. M. Menzies, G. W. Milledge, G. E. G. Nunns, N. M. Rane, S. L. Rikhye, J. S. Robinson, S. F. Russell, I. A. Senanayeke, E. H. Stahly, R. Stanford, E. M. Turner, F. B. Turner, O. R. Unger, A. E. S. Whatron, E. W. Whitcomb, C. D. Williams, D. B. Wilson.

* With distinction.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on February 5th, when the president, Dr. Robert A. Fleming, was in the chair.

Dr. James Davidson Stuart Cameron (Edinburgh) and Dr. Archibald Nathaniel Shirley Carmichael (Edinburgh) were introduced and took their seats as Fellows of the College. Dr. Ella Ferrier Pringle (Edinburgh) and Dr. John Miller Woodburn Morison (Edinburgh), were elected Fellows of the College.

Dr. William Sidney Thayer, Emeritus Professor of Medicine of the Johns Hopkins Medical School, Baltimore, U.S.A., was appointed Gibson Lecturer for the triennial period 1929-31.

The Services.

DEATHS IN THE SERVICES.

Lieut.-Colonel Thomas MacDermott, O.B.E., R.A.M.C.(ret.), died at Cheltenham on January 22nd, aged 63. He was born in Ireland on November 1st, 1865, and was educated in the Catholic University, Dublin, graduating as B.A., M.B., Ch.B., and B.A.O. in the Royal University of Ireland in 1889. Entering the R.A.M.C. as surgeon lieutenant on July 27th, 1892, he attained the rank of lieutenant-colonel on November 27th, 1914, retiring on November 1st, 1920. He served throughout the South African war of 1899-1902, when he took part in the operations in Natal in 1899-1900, including the action at Talana, the defence of Ladysmith, and the action at Laing's Nek; and in the Transvaal in 1900-2, including the actions at Belfast and Lydenbergh; and received the Queen's medal with four clasps and the King's medal with two clasps.

Major Henry Daniel James, R.A.M.C.(ret.), died at St. Leonards on January 22nd, aged 71. He was born at Multan on June 20th, 1857, the only son of the late Rev. H. D. James, M.A., chaplain, Bengal Presidency, and vicar of Hambledon, Oakham, and was educated at King's College, London, where he was resident Warneford scholar. He took the L.S.A. in 1883, the M.R.C.S. in 1884, and the L.R.C.P. Lond. in 1891. Entering the army as surgeon on January 31st, 1885, he became surgeon major after twelve years' service, and retired on January 31st, 1905. He served on the North-West Frontier of India, in the campaigns of 1897-98, taking part in the operations on the Samana Range (medal with two clasps), and through the Tirah campaign, at the actions of Chagru Kotal and Dargai, the capture of the Sampagha and Arhanga Passes, the reconnaissance of Sarau Sar, and the operations in the Bara Valley (clasp); and in the South African war in 1899-1901, in operations in the Transvaal, Orange River Colony, and Cape Colony (Queen's medal with four clasps). He also rejoined for service in the great war, and served in the South of Ireland for two years, 1915-17. Major James was a member of the British Medical Association, and represented the Hastings Division at the Annual Representative Meeting of the Association at Portsmouth in 1923.

Major Alfred Herbert Heslop, D.S.O., O.B.E., R.A.M.C. (ret.), died at the Clergy House, Exeter, on January 30th, aged 48. He was born on March 5th, 1880, the younger son of the late Rev. R. C. Heslop of Wakefield, and was educated at St. Thomas's Hospital and at Durham University, where he graduated M.B. and B.S. in 1903. Subsequently he took the F.R.C.S. in 1921. After filling the posts of house-surgeon at the Salop Infirmary, Shrewsbury, and the Durham County Hospital, and of clinical assistant at All Saints' Hospital for Genito-Urinary Diseases in Vauxhall Bridge Road, London, he entered the R.A.M.C. as lieutenant on July 30th, 1906, became major after twelve years' service, and retired on October 2nd, 1926. After retiring from the army he went into practice at Ryde, Isle of Wight, where he was surgeon to the Royal Isle of Wight County Hospital at Ryde, and consulting surgeon to the King Edward VII Convalescent Home for Officers at Osborne. He served in the recent great war, when he was four times mentioned in dispatches, in the *London Gazette* of January 1st, 1916, June 15th, 1916, December 24th, 1917, and May 25th, 1918, and received the D.S.O. in 1916 and the O.B.E. in 1919. He married Florence Madelaine, daughter of H. W. A. Walker, Esq., and leaves one son and one daughter.

Medical News.

A MEETING of the Royal Microscopical Society will be held at 20, Hanover Square, W.1, on February 20th, at 8 p.m. The effects of certain agencies on cell division *in vitro* will be discussed, Dr. R. G. Canti and Mr. F. G. Spear dealing with radium, Mr. S. F. Cox with *x* rays, and Mr. F. G. Spear with low temperature in this respect. Demonstrations will be given by Mr. S. F. Cox on the effect of a heavy dose of *x* rays on living cells as shown by the dark-ground method, and by Dr. Canti on cell division in the living tissues cultivated *in vitro*. Stained preparations will be exhibited to indicate the effects of radium, *x* rays, and low temperature on cell division.

UNDER the auspices of the National Council for Mental Hygiene Dr. Letitia Fairfield, C.B.E., will deliver a lecture on "Efficiency and deficiency" at the rooms of the Medical Society of London, 11, Chandos Street, W.1, on Wednesday, February 20th, at 5 p.m.

THE annual meeting of the Industrial Health Education Society will be held at 4 p.m. on Tuesday, February 19th, in the board room of the Society of Medical Officers of Health at 1, Upper Montague Street, Russell Square, London, with Sir Humphry Rolleston, the honorary president, in the chair. The speakers will be Lord Melchett, on behalf of employers, and Mr. Ben Tillett, president of the Trade Union Congress, on behalf of the employees. A brief account of the activities of the society was given in the *Journal* on January 26th (p. 183), when it was stated that a public appeal was being made for £5,000 to enable its work to be maintained and expanded to meet the demands made upon it.

THE Fellowship of Medicine and Post-Graduate Medical Association announces that a lecture on "Pitfalls in dermatology" will be given by Dr. A. C. Roxburgh on Monday, February 18th, at 5 p.m., at the Medical Society, 11, Chandos Street, Cavendish Square. On the following day, at 10.30 a.m., at the National Heart Hospital, Dr. B. T. Parsons-Smith will give a clinical demonstration. At the Wellcome Museum of Medical Science, 33, Gordon Street, Dr. C. M. Wenyon will give a demonstration on the part played by animals in the spread of disease; on Wednesday, February 20th, at 4 p.m., and on Thursday, February 21st, at 2 p.m., Mr. Gill-Carey will give a clinical demonstration at the Central London Throat, Nose, and Ear Hospital. There are no fees for the above lectures and demonstrations. From February 25th to March 2nd there will be an all-day course in diseases of the chest at the Brompton Hospital, and from February 25th to March 9th a morning course in diseases of children will be given at the Hospital for Sick Children, Great Ormond Street. From March 11th to 23rd an all-day course, with limited entry, will be held at the Royal National Orthopaedic Hospital, and an afternoon course in ophthalmology at the Royal Eye Hospital. Copies of all syllabuses and details of the general course, consisting of attendance at clinical practice of some forty London general and special hospitals, may be obtained from the Fellowship of Medicine, 1, Wimpole Street, W.1.

THIS year, at Whitsuntide, a party of doctors and others will go on a tour of mediaeval towns and spas in Germany. Among the places to be visited are Hildesheim, Goslar, Bad Harzburg, Schierke, Bad Sachsa, Weimar, Eisenach, Kissingen, Nuremberg, Rotenburg, Wurzburg, Heidelberg, Frankfort, Bad Nauheim, Wiesbaden, Ems, Coblenz, and Cologne. The party is due to leave London on Tuesday, May 14th, and return on June 4th. The cost will be £45 12s., including all travelling expenses, meals, hotel charges, and gratuities. Wives or daughters of medical men joining the tour will be welcomed. Particulars may be had from [illegible], Henry Baerlein (Bath Club, 34, Dover Street, London, W.1), who organized the enjoyable visits to Czechoslovakia and Jugoslavia in 1927 and 1928.

SPEAKING at the Chelsea Town Hall on February 11th, Mr. Samuel Hoare announced that Lord Melchett had purchased 13 acres of land for the erection of new buildings for the

Chelsea Health Society, of which Lady Melchett is president. It is intended to set up a centre in which accommodation will be found for the various health organizations of the borough. Subsequently it was explained that the gift was associated with Lady Melchett's scheme for a children's health centre, and that she intends to build a model infant's welfare centre, babies' nursing home, and day nursery. Offices will also be provided for the Invalid Children's Aid Association, and accommodation for the London County Council school treatment centre.

AT a dinner-party given in the parlour of Apothecaries' Hall, Blackfriars, on February 12th, the guests were received by the Master, Lieut.-Colonel C. T. Samman; the Senior Warden, Dr. H. J. Hott: and Dr. T. Vincent Dickinson, Past-Master, in the absence of the Junior Warden, Sir George Buchanan. This occasion was taken to introduce formally to the Society of Apothecaries four medical men recently awarded the new diploma of Master of Midwifery after special examination in ante-natal care, child welfare, and midwifery. Among the other guests were Lieut.-General Sir Matthew Fell, Director-General A.M.S., Mr. Comyns Berkeley, and the Editor of the *British Medical Journal*.

THE Council of Epsom College will shortly elect a girl to a St. Anne's Home Scholarship of £52 a year. Candidates must be fully 7 years of age and not over 12 years of age on May 1st next, and must be orphan daughters of medical men who have been for not less than five years in independent practice in England or Wales. Application must be made by March 8th on a form to be obtained from the secretary, 49, Bedford Square, W.C.1.

THE Royal Society announces in our advertisement columns that applications for the Government grant for scientific investigation for 1929 must be received at the offices of the Royal Society by March 31st. Printed forms of application can be obtained from the Clerk to the Government Grant Committee, Royal Society, Burlington House, London, W.1.

AS announced in our advertisement pages the governors and trustees of the Tancred Studentships propose to elect, shortly after Whitsuntide, one student in physic at Gonville and Caius College, Cambridge. The annual stipend is £100. Full particulars can be obtained on application to Mr. E. T. Gurdon, 28, Lincoln's Inn Fields, W.C., clerk to the governors and trustees.

THE fifth annual report of the Ella Sachs Plotz Foundation for the Advancement of Scientific Investigation gives details of the twenty-one grants made during 1928. In the five years of its existence the Foundation has contributed seventy-three grants towards researches aiming at the solution of problems in medicine and surgery. Applications for grants to be made during the year 1929-30 should be sent before May 15th to Dr. J. C. Aub, Huntington Memorial Hospital, 635, Huntington Avenue, Boston, Massachusetts.

To the current issue of *Better Health*, a small magazine published monthly at 1d. by the Central Bureau for Health Education of the Society of Medical Officers of Health, Dr. H. B. Brackenbury contributes an article entitled "How to use your family doctor."

WE are informed that *The World's Health*, which has hitherto appeared monthly, will, during 1929, be published quarterly, commencing with the March issue.

IT is announced that Mr. Albert Levy, treasurer of the Royal Free Hospital, has given £50,000 to the fund for rebuilding the hospital's maternity department and for the promotion of research on maternal mortality. The fund was instituted eighteen months ago, when the Queen gave her support to the hospital's centenary appeal; Her Majesty has agreed that the new department should bear her name. Mr. Levy, in making his gift, has been actuated by a sense of the necessity for improving the midwifery service of the country, and of the special importance of training women students in this branch of medical work.

THE Nizam of Hyderabad has made a donation of £1,000 to the Ross Institute and Hospital for Tropical Diseases, Putney Heath.

THE Jubilee Congress of the German Balneological Society, founded in 1879, was held in Berlin from January 24th to the 29th, under the presidency of Professor Dietrich. The programme contained over 50 papers dealing with various aspects of balneology. The next congress will be held at Bad Elster in April, 1930.

UNDER the auspices of the *Revue Medicale Française* there will be a medical congress in Paris, from June 9th to the 14th, under the presidency of Professor Delbet. In addition to various lectures and practical demonstrations, excursions will be arranged to historic sites and therapeutic centres. Further information may be obtained from M. Léon Tixier, 18, Rue de Verneuil, Paris (7e).

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1. on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the *British Medical Association* and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediocra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Barillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

SOUND-PROOF DOORS.

"INQUIRER" asks for suggestions as to means of deadening sounds between the waiting-room and the consulting-room. A thick curtain having proved insufficient, he has thought of adding an extra door specially constructed to prevent the transmission of sounds.

CONSTIPATION AFTER GASTRO-JEJUNOSTOMY.

"R. M. R." asks for suggestions for treating a man, aged 61, who had a gastro-jejunostomy performed more than seven years ago. Constipation is increasing, possibly owing to colonic stasis. Several kinds of paraffin have been tried—also argyrol with phenolphthalein, tablets of aloin and strychnine and belladonna—and a variety of other medicaments, but it is very difficult to overcome the constipation. The patient is very pale and thin, and extremely sensitive to cold.

MOONSHINE?

"C. I." writes: Can any medical man inform me if the statement one hears so often from people returning from the East (hot countries) that the moon has a harmful influence on residents there, more especially if it shines on their faces when they are in bed, is true or all "moonshine"?

TREATMENT OF RHEUMATIC HEART DISEASE.

DR. A. V. RUSSELL (Llanidloes) writes: Possibly "X. Y. Z." may find my experience helpful in treating the patient mentioned on February 2nd (p. 232). Among children in hospital and in private practice who suffered from rheumatism with cardiac complications I have had many with persistent slight pyrexia and some tonsillar sepsis. In one case, at least, vaccine treatment resulted in a complete cure, but, as a rule, the association of a vaccine with a peroxide gargle and a suitable throat paint was needed. Nearly all those patients who did not respond to this treatment recovered after tonsillectomy. I use Parke Davis antirheumatic vaccine in doses graduated according to the reaction observed. My favourite throat paint is the following:

℞ Zinci chloridi ... ... gr. xx
Glycerini ... ... ʒss
Aq. ... ... ad ʒij

Sig. Apply night and morning after using a peroxide gargle.

For the gargle I use one teaspoonful of hydrogen peroxide in a wineglassful of tepid water.

INCOME TAX.

Division of Partnership Assessment.

"H. K. W." inquires as to the proper method to be applied where there has been a change in the personnel of the partnership.

*** Normally—including "H. K. W.'s" case—the change does not affect the gross amount of the assessment, which is fixed by reference to the amount of the profits of the year preceding. For instance, if D succeeds to C and the new firm becomes A B and D as from April, 1928, then that firm is assessed in the same gross amount as A B and C would have been assessed if the change had not taken place, and D has to account for tax on his fractional share of that amount less his own personal allowances.

It is, of course, true that for a time C will continue to draw cash from the partnership account and D's cash receipts will be less than his assessment. But that is the consequence of the principle that earned income is liable to assessment according to the period in which it is earned rather than that in which it is received. The same point would have arisen if D had bought a sole practice from C.

Break in Period of Appointment.

"X. Y. Z." held a hospital appointment during the period April 5th to 30th, 1926, and did not take up other work until the end of May, 1926. He "paid income tax for 1926-27," and was told that *everything was in order*, but is now being pressed to pay a small amount in respect of his earnings in April, 1926.

*** Income tax liability has always to be dealt with as for the Government's financial year—that is, for a year ending April 5th. When "X. Y. Z." dealt with his liability for the year 1926-27, therefore, the declaration which he presumably made would state his total income for the year ended April 5th, 1927. Apparently one of two things happened: either he forgot to *include his April*, 1926, earnings or the *Inspector of* taxes forgot to take them into account. In either of those cases the additional small payment now requested would *legally* be due. It is, however, possible that he was assessed on the assumption that his post-April rate of remuneration applied throughout the year ending April 5th, 1927, in which case he was over-assessed. We suggest that, as "X. Y. Z." *feels* disposed to solve the question, he might reasonably ask the Inspector to supply him with full details, showing how the tax which he paid for 1926-27 was calculated. An answer to that question should enable "X. Y. Z." to see just where he stands.

LETTERS, NOTES, ETC.

Erythema Nodosum.

DR. W. CAMAC WILKINSON (*London*, W.1) writes: With reference to Dr. G. F. Walker's remarks on erythema nodosum (February 9th, p. 266), I think that as a matter of history I pointed out the association of this condition with tuberculosis in 1901, and year by year I accumulated evidence till I came to the conclusion *that erythema nodosum was a tuberculous lesion* and nothing else. *I owe this discovery* to the constant *clinical* use of tuberculin in all doubtful lesions in any part of the body.

Treatment of Pneumonia.

DR. F. M. GARDNER-MEDWIN (St. Asaph) *writes*: Now that influenza is raging in Europe and America and the death rate from pneumonia is consequently increasing, may I once more call attention to the method of precipitating the crisis in pneumonia *by means of intramuscular injections of sodium nucleinate*, together *with neutralization of the subacidosis due to febrile* toxæmia? Details of the method were published in the *British Medical Journal*, 1924, ii, p. 49, and, with Willmore, in the *Lancet*, 1922, i, p. 116. A series of 40 consecutive cases was quoted of fulminating pneumonia so treated, in which the crisis was brought about in forty-eight hours or so, with consequent defervescence and recovery, mostly occurring during the pandemic 1918-19. Since then my series has been uninterrupted, so far as cases of lobar pneumonia in previously healthy persons, without crippling complications, is concerned. I do not claim that the treatment is always successful in the elderly and infirm, or in advanced nephritics, or in the terminal pneumonias of long-standing disease, but I do claim that it is practically always successful in cases of straight pneumonia occurring as the result of the sudden *lowering of resistance by influenza or* sudden chill, and that these cases can be saved the *debilitating strain* of the long wait for the normal crisis which so often kills them. *Let me then formulate my credo.* In influenza leucopenia diminishes *resistance*; saprophytic organisms become pathogenic; sodium nucleinate releases into the blood stream leucocytes latent in the bone narrow, increasing phagocytosis. I believe that in nearly all cases of uncomplicated pneumonia, if sufficient sodium bicarbonate and glucose is given to render the urine alkaline or neutral, and 2 c.cm. of the solution of sodium nucleinate put up by the Clinical Laboratories of Paris is injected intramuscularly *into the thigh*, that in forty-eight hours or so the temperature will fall to normal, convalescence will begin *forthwith, and the patient* will rapidly recover. Would that after six years' *crying in the wilderness* I could persuade all clinicians to give this method a *fair trial* while their patients are still viable and to give up other methods, some of which, *if used* in the very early stages, appear to give somewhat similar *results*, but in the later stages may be dangerous! Nuclein is harmless and uniform in its results; its action is independent of the duration of the disease. I am not alone in my optimism, for in the *Epitome* on April 2nd, 1927 (para. 375), there is a reference to a paper by L. E. Miller in the *South African Medical Record*, who, after using this method on 117 natives, 87 of whom had lobar pneumonia, had a death rate of only 8 per cent. Miller found this *treatment of definite assistance in terminating* lobar pneumonia quickly and successfully. I hope that practitioners who have used this treatment will give me the benefit of their opinion and their results.

Influenza and Nosophobia.

DR. W. A. MACDOWALL (Manchester) writes: It would be of interest to know whether mass suggestion has not a great deal to do with the spread of epidemic disease. It is a matter for debate whether *the present* epidemic of influenza is not as much psychological as it is bacteriological in its spread if not in its origin. The influence of the mind both in the nurture and in the destruction of dentina still remains a *terra incognita*, and there is little doubt that fear is an *important* factor in lowering the bodily resistance and in encouraging the attack upon the tissues. How great a part, then, does fear play in assisting the spread of epidemic disease, and how are its effects to be counteracted? I would suggest that a medical broadcast, either by wireless or by the press, advising the public that the present epidemic was of a mild and generally innocuous nature, and at the same time sounding a note of warning, would be of great service. The function of the medical profession in these scientific times is one of prevention as well as of cure, and much might be gained by the issue of a warning such as I have indicated.

Treatment of Influenza.

"M. M. E." writes: It may be *profitable, in view of* the present influenza epidemic, to draw the attention of readers to the excellent article by Mr. E. B. Turner in the *British Medical Journal* of July 16th, 1927. He recommends keeping the patient in bed and administering 20 grains of salicin (it would appear that sodium salicylate acts similarly) every hour for twelve hours, and then every two hours for the next twelve hours. This treatment, he says, nearly always puts an end to the attack, and also reduces the chance of infecting others. Reference may also be made to the advantage of giving one or two injections of 1 c.cm. of sodium nucleinate in the treatment of influenzal pneumonia. *The effect of nucleinate* is to double the leucocyte count in twenty-four hours, and thus, in many cases, to avert a fatal termination even when the condition might appear almost hopeless.

Coincident Shingles and Varicella.

DR. LEWIS W. REYNOLDS (High Wycombe) writes: In a man, aged 80, an attack of herpes began on December 6th, 1928, involving the distribution of the ascending and descending branches of the superficial cervical plexus of the left side. Two days later a small red papular eruption appeared on the chest and arms, soon becoming vesicular and spreading to other parts of the body. The temperature went up to 102.6° on December 10th, gradually coming down to normal on December 13th. The condition followed the ordinary course for varicella, and by December 24th the last scab came away. The original eruption on the scalp, however, took a very different course. The pain was not so severe as it often is in shingles, but it is still present and causes some distress. There is a numbed feeling of the scalp on that side, also the scabs have only just entirely disappeared, now two months from the commencement.

A Possible Cause of Death in Drowning.

IN the October issue of the *West African Medical Journal* there is a posthumous communication by Dr. W. A. Young on the subject of a possible cause of death in strong swimmers. In this it is stated that in only a few of the numerous *post-mortem* examinations on adult native fishermen and capable swimmers washed up on the shore at Accra, were *the typical signs* of drowning present—namely, water in *the lungs and stomach*. In most instances the lungs were aerated and the stomach contained no water, though it was occasionally distended. Dr. Young refers to the article by W. Russell on "Hypochlorhydria and air swallowing" in the *British Medical Journal* (1919, vol. i, p. 769), and suggests that something similar to air swallowing may occur to a strong swimmer, causing sufficient distension of the stomach to lead to functional angina pectoris. As a result of considerable experience of surf bathing, Dr. Young was led to conclude that, after taking a deep breath and diving, there is a tendency for air to enter the stomach by an act of swallowing while the body is *submerged*, resulting at times in slight nausea and loss of confidence in swimming ability. It is added that this may explain the advice not to bathe on a full stomach, the reason *being that little* or no room is thus afforded for further distension of this organ by air.

Doctors' Handwriting.

"A COUNTRY DOCTOR" writes: *Doctors* should not too readily surrender their ancient privilege of illegible *writing*. I have before me a typewritten prescription *from* a physician on the *full staff of* a big teaching hospital, in which *prescription* there are six mistakes in Latin.

WE are informed that the office address of Messrs. Armour & Co., Ltd., is now Armour House, St. Martin's-le-Grand, E.C.1.

Vacancies.

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals, may be found at pages 46, 47, 48, 49, 52, 53, and 54 of our advertisement columns, and advertisements as to partnerships, assistantships and locumtenencies at pages 50 and 51.

A short summary of *vacant* posts notified in the advertisement columns appears in the *Supplement* at page 47.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

147. Laryngeal Tuberculosis.

E. A. LOOPER and L. V. SCHNEIDER (*Journ. Amer. Med. Assoc.*, October 6th, 1928, p. 1012) have analysed a series of 503 patients with laryngeal tuberculosis treated at the Maryland State Sanatorium from 1923 to 1928. It was found that 15.5 per cent. of the 3,227 cases treated at the sanatorium during that period had laryngeal tuberculosis, and of these 55.6 per cent. were males and 44.4 per cent. females. The onset was most frequent between the ages of 20 and 40. Occupational use of the voice appeared to play no part in the development of the complication. It was generally considered that laryngeal tuberculosis was secondary to a pulmonary infection, and the authors' experience confirmed this view. Lesions of the vocal cords and ventricular bands were most frequent. In the moderately advanced group the sputum contained tubercle bacilli in 92.2 per cent.; in the advanced group 93.4 per cent. had a positive sputum. The authors suggest that prophylaxis should be directed towards ensuring a regular monthly examination of the larynx in all cases of pulmonary tuberculosis. They found that many patients showed well-advanced local lesions without any subjective symptoms. Prophylactic treatment should be adopted towards infected sinuses, diseased teeth, and focal infections in the tonsils. Sanatorium treatment was recommended for patients with laryngeal tuberculosis. If the temperature was above 99.4° the patient was put to bed and complete vocal rest was secured, the patients having to write all requests. The electric cautery (indirect method), applied under local anaesthesia, gave the most favourable results. Of cases so treated 65.5 per cent. with moderate lung involvement improved and healed; 26.5 per cent. with advanced lung involvement improved. There were no bad results, but rather a favourable influence was exercised on the lungs and general condition. Contraindications to the use of the cautery were high temperature, marked asthenia, and high blood pressure.

148. Post-systolic Tension.

A. MOUKHTAR (*Arch. des Mal. du Coeur*, December, 1928, p. 769) has investigated the various forms of arterial hypertension by means of the Uscoff sphygmotonograph. This instrument records the form and amplitude of the arterial pulsations, the systolic and diastolic pressures, and also the post-systolic tension, which is the pressure persisting in the arteries after the conclusion of ventricular systole. If the arteries possess normal elasticity the difference between systolic and post-systolic pressures should not exceed 25 mm. of mercury, while if the arterial walls are unduly rigid the disparity may exceed 60 mm. Other factors influencing post-systolic tension are the output of the heart and the rate of the circulation; it is reduced, for example, when there is incompetence of the aortic valve, but it is increased in cases of arterial hypertension if failure is present. When compensation is re-established by suitable treatment venous return to the heart is facilitated and the post-systolic tension falls. After haemorrhage, or in hypotensive states, this pressure is lowered disproportionately. The author distinguishes two main types of hypertension as revealed by the sphygmotonograph. In the first or nephritic type the vessels are but slightly affected, the post-systolic tension is normal, and the pulse tracing falls away gradually as the pressure is lowered. The second group consists of patients with considerable arterial change but no nephritis; these show excessive amplitude of the arterial pulsations, with a disparity of more than 30 mm. of mercury between systolic and post-systolic tensions. Other varieties described are a mixed renal and arterial type in which the tracings may be difficult to interpret, and a group showing lowered diastolic and post-systolic tensions. The last group consists mainly of patients with diabetes, Graves's disease, and menopausal symptoms.

149. Chronic Cervical Adenopathies.

WHILE chronic cervical adenopathies are easily identified in typical cases, R. NATIVELLE (*Rev. de Med.*, No. 6, 1928, p. 843) remarks that their correct diagnosis is usually a difficult matter, and that they are far too frequently labelled as due to tuberculosis or adenitis, the true condition escaping recognition. They may be confused with such states as lipoma, cyst, fibroma, syphilitic gumma, cold abscess, and actinomycosis, and the various differential points are recorded by Nativelle. He divides adenopathies into primary and secondary forms. The second are the more easily diagnosed, but it is important to ascertain with the greatest care the organ from which the lymphatics run to the affected gland, since the latter may be the only evidence of the initial lesion. Cervical adenitis may be secondary to cancer of the tongue, breast, or stomach; to lingual or pharyngeal tuberculosis; to lingual syphilis; or to a simple dental abscess. The diagnosis of primary adenitis is much more delicate, and the author mentions several types of this condition. These include adenopathies with fistulae and those due to multiple lesions, to tuberculosis, malignancy, actinomycosis, myeloid and lymphoid leukaemia, Hodgkin's disease, and malignant branchioma. Treatment varies essentially with the cause, and Nativelle comments on a few therapeutical indications. In tuberculosis a rigorous hygiene should be instituted, and the administration of arsenic, iodine and iodides, *x* rays, and the methylic antigen of Nègre and Boquet has given good results. Leukaemia and lymphadenoma have been treated with variable success with arsenic, the arsenobenzols, benzol, and thorium, while radiotherapy is the treatment of choice in Hodgkin's disease. Syphilitic adenitis should be treated specifically, and actinomycosis with potassium iodide. In lymphosarcoma and ganglionic cancer only palliative treatment with *x* rays or radium can be instituted.

150. Lumbar Pain due to Uric Acid Tophi.

P. RULLÉ (*Gynecol. et Obstet.*, November, 1928, p. 425) offers some suggestions for the diagnosis and treatment of the lumbar pain which is so frequently a complaint of patients at a gynaecological clinic. He considers that the most frequent direct cause of such pain is the presence of uric acid tophi in the dorsal musculature. Among the cases attending the gynaecological clinic 90 per cent. had tophi only, and 10 per cent. gynaecological lesions only. Tophi were palpated in most of the cases. When present and causing pain they were always palpable. Palpation should be conducted in ventral decubitus. They are hard pellets, often very tender, and situated in the sacral subcutaneous tissue. They are localized at the point of attachment of the dorsal muscles, but sometimes run parallel to the sacro-iliac articulation. The number is indefinite; sometimes they are situated superficially, and sometimes very deep. They are more or less movable, and may be unilateral or bilateral, but the pain is always referred to the side on which they are. All the patients were given treatment for gout, and all lost their pain; only two had previously suffered from recognized gout, but several had undergone gynaecological operations without being relieved of the pain. The medicament employed was lithium bromide, carbonate, or iodide, 0.5 gram, with antipyrine 0.4 gram and extract of belladonna 0.7 gram; this was given twice a day one and a half hours after meals in half a glass of water.

151. The Thyroid Gland and Serum Disease.

A. C. PETITDEMANGE (*Thesis de Nancy*, 1927–28, No. 375) in the first part of his thesis maintains that, as regards the etiology, symptoms, and treatment, serum disease is essentially the same as anaphylaxis; in the second part the various objections to this theory are discussed and refuted. In both conditions the symptoms appear to be due to a vago-sympathetic vasomotor disturbance, and in both there is a presence of foreign albumin in the body fluids which render the system hypersensitive. In the third part of the thesis the author shows that just as the thyroid plays an important part in the phenomena of anaphylaxis, so in serum sickness there is usually a condition of hyperthyroidism, as indicated by an increase in size of the thyroid and characteristic changes in the pulse, blood pressure, and oculo-cardiac reflex.

152. The Incidence of Syphilis in Necropsy Cases.

F. HARBITZ (*Norsk Mag. f. Laegevid.*, October, 1928, p. 18) reviews the findings of the *post-mortem* room during the twenty-eight-year period 1900–27, in which he has been responsible for performing the necropsies at the Rikshospital in Oslo. These numbered 6,529, and among them there were 369, or 5.65 per cent., in which definite syphilitic changes were found. In 303 of these cases, or 4.68 per cent. of the total, syphilis was considered to be the cause of death. Syphilitic changes were detected in the arteries in 202 cases, being the cause of death in 175, and incidental findings in 27 cases. Syphilis of the nervous system was found in 55 cases, being responsible for the deaths of all these patients. It was present in the digestive tract in 28 cases, and was

considered to be responsible for the death of 24; as many as 23 were cases of syphilis of the liver. Syphilis was responsible for the death of 16 of the 18 patients found after death to be suffering from syphilis of the respiratory tract. In all the 24 cases in which syphilis of the skin (scars, gummata, etc.) was found these findings were incidental. There were 13 cases of syphilitic amyloid degeneration, in all of which this condition was the cause of death; there were also 3 fatal cases of severe syphilitic anaemia. Among the 8 cases of syphilis of the bones there was only one in which this disease was the cause of death.

153. Coronary Occlusion in Buerger's Disease.

I. I. LEMANN (*Amer. Journ. Med. Sci.*, December, 1928, p. 807) reports a case of extreme arterio-sclerosis associated with Buerger's disease (thrombo-angiitis obliterans). The patient was aged 59, and Lemann discusses the point whether this condition had any relation to the thrombo-angiitis which had to be treated by successive amputations. He recalls the fact that in two of Buerger's necropsies—on patients aged 21 and 35—there was precocious arterio-sclerosis, and he concludes that in thrombo-angiitis obliterans the pathological process is probably not limited to the vessels of the extremities. In Lemann's case the aorta was found to be very much thickened, with numerous large calcareous elevated plaques. The coronary arteries were much sclerosed, and there was a calcareous patch on one of the cusps of the aortic valve. The opening of the left coronary artery was almost occluded by calcareous deposits, and there was complete occlusion of the branches of the right coronary artery by a similar process of calcification. The cut surfaces of the heart wall showed a very great preponderance of fibrous tissue; the coronary artery, however, was free from the lesion of thrombo-angiitis obliterans. Lemann notes that coronary occlusion has been found in four out of five necropsies on patients with Buerger's disease.

Surgery.

154. Early Diagnosis of Acute Osteomyelitis.

M. NAKATA (*Deut. Zeit. f. Chir.*, December, 1928, p. 132) describes a simple method of demonstrating fat droplets in the blood. From the cubital vein 0.5 to 1 c.cm. of blood is removed and immediately mixed with an equal volume of an alcoholic solution of Sudan III in a small chemically clean Petri dish. When the mixture has stood for a few minutes it is examined microscopically under a low-power lens or with a magnifying glass in the dish. Applying this procedure to the diagnosis of inflammatory bone conditions the following results were obtained. Of 15 cases of acute osteomyelitis 87 per cent. were positive; in chronic osteomyelitis 20 per cent.; immediately after sequestrotomy and scraping of the medullary cavity 100 per cent.; and in experimental osteomyelitis in animals (damaging the bone marrow electrically in rabbits and then injecting a suspension of bacteria into a vein in the ear) fat droplets were demonstrable in almost every case. In control tests carried out by Matsubayashi, in acute and chronic inflammatory conditions of the soft parts (furunculosis, carbuncles, phlegmons, and abscesses), fat droplets were invariably absent from the blood; similarly in acute inflammations of joints and in tuberculosis of bones and joints. Fat droplets were comparatively frequently found in the blood of women during lactation. Nakata remarks that since the fat droplets in acute osteomyelitis are swept into the blood intermittently, and disappear from the circulation again in ten minutes or less, the examination should be repeated several times if necessary. As the pathological condition becomes more chronic the test tends to become negative; also, during early infancy when the bone marrow contains little or no fat, it may not be possible to demonstrate fat droplets in the blood in acute osteomyelitis. With these reservations Nakata considers that though a negative result does not entirely exclude an acute osteomyelitis, a positive droplet test is strong evidence in favour of acute osteomyelitis. On account of its simplicity and accuracy the test should prove a valuable aid in the early diagnosis of this condition.

155. Congenital Pseudarthrosis of the Tibia.

R. B. WADE (*Journ. Coll. Surg. Australasia*, November, 1928, p. 181), from observations on ten patients, discusses the so-called congenital pseudarthrosis of the tibia; this condition is not merely a fracture which fails to unite, but one which is preceded by pathological changes in the bone in the lower middle fourth of the tibia and occasionally in the fibula also. Cases are of the following types: those seen before fracture showing bone changes at the site of subsequent fracture, and those seen after fracture in which either union has occurred of a soft yielding nature for some years, or in which a pseudarthrosis has supervened with no attempt at bone regeneration. The fracture may be present at birth or may occur later. Radiographically there may be found at birth areas of porosis crossed by a few bone trabeculae, causing swelling of the bone and usually some forward bowing. The x-ray appearance is identical with that of osteitis fibrosa cystica occurring at the site of the curve at the anterior edge of the tibia; an area of rarefied bone commences at the periosteum and extends partly or completely through the depth of the tibia, ranging from an inch to an inch and a half in length. Whether a pseudarthrosis or slow union supervenes after fracture, there is always pronounced shortening of the leg and foot, development being slower than on the other side. For some obscure reason there appears to be a deficient osteogenetic power at this part of the tibia. Treatment with a sliding bone-graft from the same side gave the best results but was disappointing, the bone yielding at first; in three cases firm union resulted eventually, though with some bending and deformity. K. INGLIS (ibid., p. 194), from an examination of specimens from three of the above cases and from a study of the literature, discusses the pathology of the condition. It is suggested that complete absence of the tibia or of its lower part, congenital fracture with shortening, pseudarthrosis without shortening, and simple bends may all be due to malformation, representing different grades of one pathological process, the difference being one of degree and not of kind. The author thinks that the tendency to such malformation is transmitted by the germ plasm.

156. A Rare Form of Intestinal Obstruction.

ACCORDING to WODARZ (*Zentralbl. f. Chir.*, December 8th, 1928, p. 3082) intestinal obstruction due to tumour of the genital organs is very unusual. The majority of such cases are caused by the adhesion of coils of intestine to the inflamed surface of tumours, or to kinking or obliteration of the lumen of the bowel. He reports an infrequent type of case in a poorly nourished woman, aged 72, who was admitted suffering from faecal vomiting; she had had acute intestinal obstruction for a week. For ten years she had been conscious of the existence of a tumour as large as an adult head in the left hypogastric region. A band extending from the anterior surface of this tumour to the uterus could be felt; it was tensely elastic, nodular, slightly mobile, and tender on pressure. In the right hypogastric region peristaltic contractions were present. The abdominal wall was not very tense and could be palpated easily. At a laparotomy it was found that there was on the surface of a multilocular intraligamentous ovarian cyst a scarred, thickened, strangulating hernial ring, measuring four-fifths of an inch in diameter. Within the hernial sac which lay inside the cyst was a mass of strangulated small intestine as large as a man's fist. Wodarz concludes that the only possible explanation of this condition is that a daughter cyst had ruptured and that the coil of small intestine had been forced into the cavity thus formed.

157. Pulmonary Gangrene.

BAUMGARTNER (*Bull. Soc. Nat. de Chir.*, December 1st, 1928, p. 1270) reports two cases of massive gangrene of the lung successfully treated by excision of the necrotic focus. The author considers that early operation in these cases is contra-indicated, and that surgery is indicated only after adequate medical treatment has been employed without benefit. To ensure success in these cases it is important to operate in stages, at intervals of a few days. General anaesthesia is said to be unnecessary, and in the later operations the author has dispensed with local anaesthesia and relies on morphine. In the first stage he makes a free opening in the thoracic wall, excising a portion of rib, but does not open the pleura. In the second stage he opens the pleura (guided by radiograms) and removes the necrotic mass. In the second operation the lung is fixed to the parietes by suture, and so far the author has had no trouble with haemorrhage. Baumgartner thinks that in some cases where haemorrhage is especially to be feared it might be useful to perform preliminary phrenicectomy. The best time to operate—always a difficult question to settle—should be decided by consultation between the physician and the surgeon.

158. Adenoma of the Suprarenal Cortex.

J. B. HICKS (*New England Journ. Med.*, December 6th, 1928, p. 1140) reports a case of adenoma of the suprarenal cortex occurring in a woman, aged 48, and discusses the incidence and treatment of this rather rare condition. The most prominent symptoms were irregular menstruation, frequency of urination, dragging pain in the abdomen, a general yellowish-brown pigmentation of the skin, and the development of a tumour; some urinary haemorrhage occurred. At this at first was thought to be vaginal. A diagnosis was made of splenomegaly, but a pyelogram of the left kidney showed displacement of this organ downwards, with compression of the upper calyx, and the presence of a hypernephroma was therefore suspected. The growth was removed and

patient recovered completely. Microscopical examination of the tumour showed that it was a typical cortical adenoma of the suprarenal gland. Discussing this condition, the author comments on the absence of the usual symptom of virilism in this patient. All established instances of such tumours discovered clinically have occurred in children or in adult females; adenomata of the suprarenal cortex have been detected in adult males at necropsies, in spite of the absence of symptoms during life. Hicks adds that a surgical operation should always be performed in the case of a renal tumour without metastasis, since it may prove to be a non-malignant and removable suprarenal adenoma.

159. Cause of Death in High Obstruction.

H. S. F. COOPER (*Arch. of Surg.*, December, 1928, p. 918) discusses the fact that whereas a simple obstruction of the large intestine is compatible with life for a long time, a similar condition affecting the small intestine is rapidly fatal. While offering no complete explanation of this difference, he remarks that in high obstruction two different processes are involved—a profound disturbance in the acid base mechanism resulting in alkalosis and dehydration, and a definite toxaemia. In simple obstruction the former is the more prominent, but in closed loops and strangulation the toxaemia is very marked, owing possibly to a toxin in the lumen of the obstructed gut reaching the blood stream. Cooper suggests that there may be some mysterious connexion between the toxaemia of high obstruction, acute pancreatitis, bilateral suprarenalectomy, and anaphylaxis. The mental condition of the patient is often misleading, since he is usually alert and unaware of the seriousness of his condition. The cheeks are often sunken and the eyes bright; in later stages the patient presents the typical Hippocratic facies. His extremities are cold and clammy, and his lips and nail-beds are often cyanotic; twitchings of the hands and feet, and beads of perspiration, are other symptoms. Usually a deep coma intervenes before death. Vomiting, at first of gastric and duodenal contents and later of a faecal character, is a constant symptom. The temperature is normal or subnormal, the pulse weak and rapid, respiration shallow, and blood pressure low. Patients suffering from uncomplicated obstruction of the small intestine rarely survive more than six or eight days unless early surgical intervention takes place.

160. Surgical Treatment of Gall-stones Complicated by Jaundice.

H. HARTMANN (*Bull. et Mem. Soc. Nat. de Chir.*, December, 1928, p. 1430) emphasizes the risk of an operation for gall-stones when the patient is suffering from jaundice, and suggests that where there is no urgency the symptoms should be relieved by other treatment, such as the insertion of a duodenal tube. Out of a series of 34 cases collected by *Bengolea and Suarez* 21 patients were operated on at a later date and 13 had no operation. In most instances the tube extracted bile from the duodenum, but in seven there was an appreciable quantity of bile. The presence of bile in the duodenum was not constant, and it was necessary to reinsert the tube frequently in order to make sure that the duodenum was completely empty of it. In severe cases, when the jaundice is of long standing, the tube is inserted for twelve hours, while duodenal feeding, consisting of alkalis, the juice of raisins, and a concentrated solution of glucose and milk, is administered. At the same time insulin and biliary disinfectants are given, and in many cases blood transfusion is performed, after which the patient is in a better condition to undergo an operation. In addition to the duodenal drainage, the patient is fed on mashed potatoes, honey, sweets, and fruit. By this means an appreciable improvement in the general condition is obtained and also a gain in weight. In less severe cases the tube is kept in for five hours a day, it being advantageous to stimulate the duodenal secretion by concentrated solutions of magnesium sulphate.

161. Gynaecomastia.

G. MARAÑON (*La Med. Ibera*, December 22nd, 1928, p. 659) states that gynaecomastia, or abnormal development of the breast in the male sex, may be met with under the following conditions. (1) In the newborn there may be a mammary hypertrophy and sometimes an actual mastitis, so that the term "foetal gynaecomastia" is applicable. This is only a transient phenomenon. (2) A certain number of boys also show a transient gynaecomastia at puberty on one or both sides. In rare instances there may be a secretion of serous or milky fluid. The psychical state and sexual instincts in such cases appear to be normal. (3) Gynaecomastia may be a permanent condition and form a symptom of male pseudohermaphroditism. (4) A fair number of cases of late gynaecomastia have been described occurring in youth or maturity in males who had hitherto been normal. In such cases the development of the breast has generally been due to physiological stimulation—namely, repeated suction. In some cases there has been not only an anatomical hypertrophy, but also a permanent secretion of milk sufficient to feed an infant. (5) Mammary hypertrophy may sometimes develop after castration, with other signs of eunuchism. (6) Gynaecomastia may also occur apart from castration in association with other spontaneous endocrine changes, such as Fröhlich's syndrome, acromegaly, or hyperthyroidism.

162. Metacarpo-phalangeal Ganglion.

M. BUFALINI (*La Chir. degli Organi di Movimento*, October, 1928, p. 23) discusses a type of ganglion which appears on the palmar aspect at the junction of the metacarpus and the phalanges. It may arise as a primary or secondary affection, and is commoner in the female than the male. Slight continued traumatism can sometimes be incriminated as a cause, and the author discusses more hypothetical reasons for its appearance. As in the case of other ganglia, there may be a connexion with the synovial membrane or with the tendon sheath. Sometimes this form of ganglion is painful from the start, but at other times causes no symptoms; as a rule it is quite small, and can be fairly easily crushed. When due to tenosynovitis it is useless to deal with the ganglion unless the tenosynovitis is cured. Bufalini adds that study of the anatomical distribution of the fascia round these joints throws some light on the reason why ganglia may occur at this point, for the fascia is relatively weaker at the metacarpo-phalangeal junction.

Therapeutics.

163. Treatment of Functional Heart Disease.

F. J. HIRSCHBOECK (*Journ. Amer. Med. Assoc.*, December 15th, 1928, p. 1852) separates from the group of functional disorders of the heart those non-cardiac diseases which in their early stages produce cardiac symptoms. Among the conditions most commonly causing such symptoms are disturbances of the endocrine organs, anaemia, early hypertension, and diseases of the lungs, kidney, and liver. There are two main groups of functional heart disease: neurocirculatory asthenia, and cardiac neurosis due to psychogenic and emotional causes. In the former psychotherapy and hygienic teaching are of the greatest importance. The patient should be told that although he has a normal cardiac mechanism he has a limited reserve, that the condition is not progressive, and that average capacity can be restored. Efforts should be made to ward off infections which invariably aggravate the symptoms. Graduated recreative exercise such as golf, nine hours' rest at night, and moderation in everything should also be recommended. Bromides are often helpful, and an attempt should be made to improve the general condition of the patient by nutritious diet and physical therapy such as ultra-violet light. The group of psychogenic and emotional cardiac neuroses depend essentially upon psycho-analysis for their successful treatment. Many patients are quickly restored to mental and emotional comfort when their fears of cardiac disease are shown to be groundless, and when the relationship between symptoms and psychic distress is explained. Such patients, like those of the first group, also benefit from adequate rest and mental diversion, but attempts at building up physique and endurance are not so essential. Diet is chiefly of importance in the avoidance of gastro-intestinal disturbances. Physical therapy, exercise, and massage are useful only to patients who can give enthusiastic co-operation.

164. Treatment of Vasomotor Rhinitis with Tuberculin.

N. DE FINE BUNKEFLOD (*Ugeskrift for Laeger*, November 22nd, 1928, p. 1091) was induced by the success following the treatment of bronchial asthma with tuberculin to try this remedy in an allied complaint — vasomotor rhinitis. He records the case of a man, aged 29, who had been subject to violent attacks of vasomotor rhinitis since the age of 10. His mother and aunt suffered from bronchial asthma, and he himself had suffered twice from Besnier's prurigo. The violent attacks of vasomotor rhinitis occurred in the hay fever season, or soon after his bed had been made. They were of almost daily occurrence, and they could be aborted by the taking of 0.5 mg. of atropine by the mouth about 15 minutes before an attack was due. Cutaneous tests with cat's hairs, goose feathers, and certain grasses provoked large vesicles. Pirquet's reaction was positive. A course of ten injections of Koch's old tuberculin, at intervals of a week, was given, the first dose being 1/10,000 c.cm. There was a violent local reaction, and the temperature rose to 102°. The same amount a week later provoked an equally violent reaction. The dosage for the following six injections was therefore reduced to 1/100,000 c.cm., but that of the ninth

and tenth injections was increased to 1/50,000 c.cm., since the previous injections had provoked only a slight rise of temperature (100°). The attacks of vasomotor rhinitis ceased during this treatment, and had not recurred six months later. The patient could now lie in a haystack with impunity and touch without discomfort the mucous membrane of his nose with the same grass to which he had been shown to be sensitive.

165. Treatment of Hay Fever.

M. A. RAMIREZ (*Amer. Journ. Med. Sci.*, December, 1928, p. 856) reports statistically on 425 cases of hay fever due to irritation by pollen from grasses or ragweed. His therapeutical conclusions are as follows. It is important to give a large amount of pollen before the onset of the season, and to continue treatment throughout it. Local desensitization increases the relief, and the combination of autogenous vaccines with pollen treatment before and during the season is helpful. The Kromayer lamp benefited some patients but not others; it seemed to reduce the local irritability of the nasal mucosa and was, as a rule, more helpful in non-specific vasomotor rhinitis than in specific pollen cases. Autogenous vaccine treatment without the use of pollen in specific cases did not result in benefit, and local pollen treatments without pollen injections were also of no value. The greater benefits obtained by the use of several pollens is attributed to the fact that in these cases a much larger dose of total protein was injected. The best results were obtained in the case of patients treated about three months before the expected date of pollination. They received two weeks' intensive treatment, the dose of pollen being rapidly increased, and injections were continued up to the pollen season, reaching as high a dose as possible. Subsequently injections were continued twice a week during the entire season; injections of autogenous vaccines, prepared from the nose, were also given, and local treatment was applied to the nose and eyes. It was found that mild symptoms in fairly well immunized patients could be controlled by ephedrine, particularly if combined with small doses of codeine and atropine; in untreated cases, however, ephedrine was uncertain in its action.

166. Autohaemotherapy in Skin Diseases and Infections.

A. RISI (*Studium*, November 20th, 1928, p. 479) gives an account of his treatment of a series of acute cases by means of autohaemotherapy. With an ordinary syringe 4 to 6 c.cm. of blood is removed from the patient's median basilic or cephalic vein and immediately injected into the gluteal region; the procedure is repeated every two days. The author has had no case of shock, febrile reaction, or pain at the site of injection. He reports 53 cases illustrating the very diverse ailments which he treated in this manner; these include measles, whooping-cough, erysipelas, influenza, typhoid fever, and various acute lung conditions. Between 70 and 80 per cent. cures are claimed. The author gives a detailed account of a patient suffering from a chronic skin disease. Although the eruption conformed largely to the classical description of acanthosis, it was red, and had some of the characteristics of a lichen; Risi therefore named it *Acanthosis ruber lichenizzante*. Cure followed administration to the patient of thirty injections of his own blood, 10 c.cm. being given on alternate days. Three chronic cases of moist eczema were effectively treated in the same way. The author discusses the interpretation of these results. The dosage for children was 1 c.cm. of blood for each year of age, but never less than 6 c.cm. for those under 7 years.

167. A Combined Treatment of Pulmonary Tuberculosis.

G. BRECCIA (*Il Policlinico*, Sez. Prat., December 10th, 1928, p. 2438), reviewing the changes that have occurred during the last twenty years in the treatment of pulmonary tuberculosis, concludes that the pathological condition rather than the exciting cause should be deal with, and attention be devoted to the metabolism, chemiotherapeusis, desensitization, and antitoxin formation. He defines dysplasic, dystrophic, dystonic, and toxic effects, and suggests a line of treatment based on combating these conditions severally and collectively. He employs organic extracts of liver, spleen, and bone medulla, certain lipoids, calcium, camphor, and ether. The various methods of giving these substances and the results to be expected from their administration are considered in detail. For children he uses a solution of 5 c.cm. of ether in 7 c.cm. of olive oil, and gives injections of 1 c.cm. for three days, 1.5 c.cm. for two days, and 2 c.cm. for six days, followed by a pause of three to five days. The series is repeated indefinitely. The solution for adults contains 10 eg. of lecithin and of camphor, and 1/10 c.cm. of pure ether (10 per cent. in volume); 1 mg. of strychnine is added sometimes. From 1 to 4 c.cm. of this solution is given. The difficulty of the treatment is apparently to find a hepato-spleno-medullary extract of reliable action.

Radiology.

163. Synchronization in Accurate Diagnosis of Chest Diseases.

F. M. MCPHEDRAN and C. N. WEYL (*Radiology*, December, 1928, p. 458) explain that synchronization as applied to chest radiography means making exposures at selected phases of the cardiac cycle. The pulse wave is employed as the source of excitation. In the technique the authors use a cannula, applied over the carotid artery, a tambour, a tiny mirror, an intense beam of light, a photo-electric cell, specially designed amplifying vacuum tubes, an *x*-ray switch, and an *x*-ray exposure timer. Pairs of films that are synchronized so as to be exposed in the same phase of the cardiac cycle are truly stereoscopic. By synchronization with late diastole, films may be made at a time when cardiac movement is at a minimum. This is the most satisfactory phase in which to secure good lung detail. That vibration is set up in the lung by the pulse wave is evident from (1) the finer detail shown in films made from the same individual on the same day when the pulse is slow than when it is fast; (2) the greater peripheral detail in exposures made in late diastole than in systole; and (3) the marked pulmonary detail in an emphysematous lung, where elasticity has been lost. The authors claim that synchronization permits of the best obtainable recording of normal structures arborizing from the hilum; renders visible slight differences in general or local prominence of the normal markings; and distinguishes them from the irregularly disposed, asymmetrical, infiltrative processes between the normal structures. The generalized prominence of venous trunks may form a very delicate test of cardiac failure. The exposures were a *twentieth* or a *twenty-fifth* of a second at the distance of fifty inches.

169. Effect of X Rays on the Reticulo-endothelial System.

IT has been suggested that the effect of *x* rays on carcinomata is produced through the reticulo-endothelial cells, and, as Pfeiffer and others have shown that one of the functions of these cells is the storage of electro-negative colloids, H. ZACHERL (*Wein. klin. Woch.*, November 22nd, 1928, p. 1613) has performed a series of preliminary experiments to ascertain the effects of *x* rays on rabbits from this point of view, by estimating the rate of storage of ferrum saccharatum oxydatum injected intravenously six hours after the rabbit had been irradiated. The total iron in the blood was estimated four minutes and one hour after the injection, and the following conclusions were reached. The storage capacity depends on the dose of *x* rays applied. After a large general dose of the rays the storage of ferrum saccharatum was diminished in comparison with the normal control. After a small general dose the iron content of the blood was diminished; this is ascribed to increased storage capacity of the reticulo-endothelial cells due to stimulation by the small doses of *x* rays. It was also observed that a leucopenia occurred in each animal after these small doses, and that no change in the protein content of the serum could be demonstrated which might account for the disappearance of part of the iron from the circulation.

170. The Scope of Heliotherapy.

P. DUHEM (*Journ. de Méd. et de Chir. Prat.*, November 10th, 1928, p. 770) deprecates the injudicious employment of radiotherapeutic treatment by the inexperienced; in children the cell protoplasm is particularly sensitive to the physico-chemical reactions thus produced. Feeble doses stimulate protoplasm, while more powerful doses may be rapidly fatal. The ultra-violet rays produce a rapid increase in the haemoglobin index, which remains above normal for a long period; the differential blood count varies simultaneously, while the calcium and phosphorus percentages are much increased, as is also the alkaline reserve. Blood regeneration is much more rapid under this treatment, which appears to replace vitamins A and D. Ultra-violet rays act energetically on the sympathetic nervous system, especially in relation to the skin and endocrine glands; this probably explains the beneficent action in asthma. The rays affect also the central nervous system, improving muscular tone, either by means of the vago-sympathetic system, or possibly by their effect on phosphorus metabolism. The antirachitic property of irradiated foods is retained even after exposure to air or after boiling, but prolonged ultra-violet irradiation destroys the antirachitic properties of cod-liver oil and of irradiated vegetable oils. Irradiated ergosterol is five hundred times more active than irradiated cholesterol, and is very valuable in tetany and spasmophilia, but direct actinotherapy has a more persistent action, and should always be used in refractory encephalopathic conditions. Some authors have

recorded successes in the treatment of tuberculosis with irradiated ergosterol. Duhem believes that these irradiated substances will largely replace artificial actinotherapy, though they will not supplant it entirely.

Obstetrics and Gynaecology.

171. Prophylaxis and Treatment of Eclampsia.

J. L. WODON (*Bruxelles-Médical*, December, 1928, p. 171) suggests that albuminuria must not be considered the most important or constant sign of approaching eclampsia, since convulsions may occur with no albumin present. He believes that a rise in the blood pressure to about 140 mm. of mercury precedes both eclampsia and albuminuria. When this pressure is present he restricts the diet to milk and water for a week, giving two or three litres in the twenty-four hours; the alimentary tract is cleared by purgation and lavage, and in some cases he prescribes also Vichy water or sodium bicarbonate. According to the improvement shown, the diet may be modified to include vegetables. With this regime Wodon asserts that, although the albuminuria may persist, the blood pressure is lowered and the acidosis disappears in a week. In eclampsia he advocates the treatment of each individual symptom according to its intensity. Isolation, quiet, and a dim light are essential, and, to avoid unnecessary sensory stimulation, the patient should be handled with extreme care. Convulsions are treated by a repeated hourly intramuscular injection of 10 c.cm. of a 50 per cent. solution of magnesium sulphate, and in cases where this may not be tolerated it is well to have in readiness for intravenous injection 10 c.cm. of a 10 per cent. solution of calcium chloride. Morphine may be used as an alternative to magnesium sulphate. For a raised blood pressure he relies on venesection; the acidosis he treats with bicarbonate drinks and lavage; and for anuria he believes in the administration of 300 to 500 c.cm. of hypertonic glucose solution intravenously, following venesection. He adds that delivery should be aided by forceps, with ether anaesthesia; Caesarean section should only be performed when other obstetrical complications are present. During convalescence a diet which throws little strain on the kidneys and liver should be given, the function of the former being tested periodically by the phenolsulphonephthalein method.

172. Biological Disinfection of the Vagina.

A. SMORODINZEW and G. TUMANOW (*Zentralbl. f. Gynäk.*, November 17th, 1928, p. 2978) report a method of treating the vagina with a pure culture of *B. döderleini*, which gave good results. Suspensions of this bacillus are said to have a powerful effect on the vaginal bacterial content; in a sugary medium it forms lactic acid in strong concentration which inhibits other less acid-fast organisms; it acts specially well on monosaccharides. The procedure is as follows. Fresh ox liver is boiled with double the amount of water and 1 per cent. peptone and 0.5 per cent. salt, and filtered. A 2 to 4 per cent. solution of glucose is added to the filtrate, which is then sterilized. Some drops of a polyvalent culture of Döderlein's bacillus are dropped on a tampon soaked in this solution; this is introduced into the vagina, after douching with normal saline, and left for twenty-four to thirty-six hours. The bacterial content of the vagina was examined before, during, and after treatment, and the *p*H estimated. Acidity increased in the first twelve hours and then remained stationary for twenty-four hours; when all signs and symptoms had gone, treatment was discontinued for seven to thirty days; then, if necessary, it was repeated and continued for two to three weeks. The authors have treated twenty-five cases of chronic vaginitis and leucorrhoea, and in thirteen of these there was, in addition, some cervical change, such as erosion, endocervicitis, or metritis colli, pus-forming organisms being present in large numbers. Improvement was seen after two to four applications in the first twelve cases; the discharge lessened, pus-forming organisms were replaced by Döderlein's bacillus, phagocytosis was increased in some, and desquamation followed. A *p*H of 6.1 to 6.8 before treatment is particularly recommended in local inflammatory conditions of the lower genital tract, and also as a prophylactic procedure in midwifery and before operations.

173. Gynaecological Uses of Massage.

V. LIEBERMANN (*Med. Klinik*, November 9th, 1928, p. 1749) remarks that a number of gynaecological disorders involve not only the pelvic organs, but also the pelvic connective tissue and the muscles and nerves of the walls of the pelvis, and that tenderness of the lumbar and gluteal muscles and tendons, especially near their attachments to the sacrum, is generally also present. The various symptoms commonly grouped together as backache often include pains extending from the lowest ribs down into the thighs or round into the lateral parts of the abdomen. It can frequently be demonstrated that pressure at certain points on the inner wall of the pelvis corresponding with the intrapelvic course of the obturator nerve and the branches of the sacral plexus will produce pain with a similar distribution. Likewise, pelvic adhesions and displacements may also cause such pains by exerting pressure on these nerves. These conditions cannot be cured or relieved by treating only the pelvic organs; v. Liebermann has, however, obtained satisfactory results in a number of cases by supplementing the more usual forms of treatment by a type of gynaecological massage originated by Thure Brandt some fifty years ago and since neglected. If there is any evidence of infection, or if there has been a miscarriage within one year previously, this form of treatment must be avoided for fear of lighting up the infective process. The technique for stretching adhesions is as follows. One hand presses down gently but with gradually increasing firmness through the abdominal wall on to the band of adhesions, which is supported by a finger introduced into the vagina and kept practically stationary. The adhesions are gradually stretched, mainly by the manipulations of the abdominal hand; after the treatment has been repeated several times the normal mobility of the pelvic organs is frequently re-stored, and replacement of the displaced organs becomes possible. Considerable improvement has even been produced in cases of prolapse by this means. A similar manœuvre will also often benefit old endometritis and perimetritis by inducing hyperaemia. Massage of the fascia, muscles, and nerves of the pelvic walls, though it may be very painful, has also been found valuable in cases with neuralgic pains. When there is tenderness of the gluteal and sacral regions, vigorous massage here may be required in addition.

174. Menstruation and Pulmonary Tuberculosis.

A. BEEKMAN (*Zeit. f. Tuberk.*, November, 1928, p. 273), who records four illustrative cases in patients aged from 19 to 39, states that he found premenstrual rise of temperature in 76 per cent. of the cases examined in his sanatorium. While a rise up to 99.6° is not a proof of the activity of the disease, a higher temperature in the absence of intercurrent disease indicates that the process in the lung has not yet been checked. A considerable rise of temperature at the end of the premenstrual period should be regarded as a sign of activity. Cases with febrile or well-marked subfebrile temperature do not present a premenstrual rise. This is an unfavourable proguostic sign indicating the presence of a decidedly active and progressive process. Beekman remarks that the course of the fall of temperature after the onset of menstruation is of considerable clinical interest. Delay in the fall indicates that the pulmonary process is still active, and the duration of the delay in the fall of temperature can always be regarded as a measure of the activity of the disease at the time. High intramenstrual or postmenstrual fever only occurs in progressive disease, and is of unfavourable prognosis. Two factors may be regarded as responsible for these various types of temperature, the first being the morbid process itself with its toxic action, and the second the influence of endocrine processes (corpus luteum and thyroid). The occurrence of intramenstrual and postmenstrual fever is explained by changes in the process of immunity which occur during menstruation.

Pathology.

175. Effect of Drugs upon Stomach Movements.

As a sequel to the investigation of the effect of stimuli on the nerves of the stomach with the organ *in situ*, E. D. M'CREA and A. D. MACDONALD (*Quart. Journ. Exper. Physiol.*, December 12th, 1928, p. 161) were led to study under similar conditions the action of drugs upon its movements. After tying the pylorus the endogastric pressure was recorded by means of a catheter through the oesophagus connected to a water manometer. The animal's general condition was controlled by a simultaneous record of blood pressure, thus helping to distinguish between responses due to a direct effect on the stomach and those due to circulatory disturbance. The drugs were given intravenously, and nerve stimulations were interpolated between the injections for comparison. Thirty cats and six dogs under ether or chloralose anaesthesia were employed, and decerebrate and spinal cats were also used in order to eliminate the complicating factor of an anaesthetic. Drugs stimulating or paralyzing autonomic nerves were chiefly examined, but the action of general nerve stimulants such as strychnine, and drugs such as histamine and posterior pituitary lobe extracts, were also investigated. Adrenaline was found

almost invariably to cause a fall of endogastric pressure with diminution or cessation of rhythmical movement, varying in magnitude and duration according to the dose given. Ephedrine in non-toxic doses and nicotine were found to act similarly to adrenaline, as also was ergotamine in doses of not more than 2 mg., but it was noted that within a few minutes the inhibitory action of adrenaline might be diminished or absent, while the pressor effect on the circulation was enhanced. Pilocarpine, physostigmine, and acetylcholine in suitable doses produced a similar effect to that following stimulation of the vagus. Atropine in 0.1 to 0.15 mg. doses was found to reduce endogastric pressure and arrest movements of the stomach musculature, while strychnine had no marked effect either on movements or pressure. Of drugs believed to act directly on plain muscle, histamine brought about a transitory rise of pressure and augmentation of movements, while extracts of the posterior pituitary lobe caused a fall of pressure and cessation of movement. These experiments with drugs confirmed the authors' conclusions from stimulation of the stomach nerves and render untenable the theory of the vagus being excitor and the splanchnic nerve inhibitor, both appearing to be capable of an augmentor or inhibitory action according to the state of "tonus" at the time. A rise of tone is generally associated with increased movements and a fall with cessation, but this is not invariable, and under certain conditions movements and tonus may vary inversely instead of directly.

176. Complement in Health and Disease.

THE attention of L. G. HADJOPOULOS and R. BURBANK (*Journ. Lab. and Clin. Med.*, November, 1928, p. 131) was drawn to the significance of complement by work on immune serums and therapeutic and protective vaccines. It was noted that, in the treatment of chronic infective arthritis, patients with a high complement titre gave a favourable response; that in long-standing debilitating diseases the titre was very low; and that in cases of subacute or chronic septicaemia, when death was approaching, the titre was markedly subnormal, if not entirely absent. The authors report a study of complement in connexion with the determination of the average combined haemolytic titre in healthy subjects under normal circumstances in contrast to some common infectious diseases, and also in regard to the nature and origin of complement. Complement is defined as that particular proteolytic property of active serums which reacts only in the presence of a specific antibody, bacteriolysin, cytolysin, or proteolysin. The average complementary titre in 2,000 apparently normal subjects was found to be represented by 0.04 c.cm. of active serum. During an infectious disease the complement shows considerable variations, which have prognostic significance. With the onset of disease the complement steadily rises. This stage passes rather abruptly into the negative phase, the serological shock period, with an abnormal fall in complement. This fall is probably due to increased complement destruction or absorption from the sudden flooding of the blood with proteolytic by-products of anti-complementary properties. During convalescence and the establishment of recovery the ratio of this production and destruction is reversed, and in the course of a week the titre gradually mounts to normal and remains there. Deviation from this regular course occurs in oncoming complications, relapse or recrudescence, but a gradually mounting complement is a favourable sign. In fatal cases the titre either falls very low or runs a subnormal course. Owing to the close relationship between the metabolic and complement studies in acute infectious diseases, the authors consider complement as a katabolic product of which the system makes an economic use.

177. Effect of Humidity and Temperature on the Resistance to Tuberculosis.

ANNA M. BAETJER and LINDA B. LANGE (*Amer. Journ. Hygiene*, November, 1928, p. 935) have carried out an experimental study on guinea-pigs to determine whether exposure to a hot moist atmosphere diminishes their resistance to experimental tuberculosis. There is evidence that in New England the deaths from tuberculosis are considerably higher among operatives in cotton factories than among those engaged in other industries; as it is in the spinning-rooms that the death rate is highest, the view has been put forward that it is the atmospheric conditions that are chiefly responsible for the increased mortality. Two groups of comparable guinea-pigs were chosen; one group was placed in an atmosphere having a temperature of about 80° F. and a relative humidity of about 79 per cent., the other group was placed in the ordinary animal room, which had a temperature of about 69° F. and a relative humidity of about 45 per cent. After the animals had been kept under these conditions for six weeks they were infected by inhalation with a moderately virulent strain of a human tubercle bacillus. During the following twenty-one weeks 6 of the normal group died out of a total of 36, and 4 of the experimental group. The surviving animals were killed; 11 of the normal group showed tuberculous lesions, and 14 of the experimental group. There was no indication either in the mortality or necropsy findings that there was any difference between the two groups. The experiment was repeated on two batches of 27 guinea-pigs, which this time were infected intraperitoneally, using a dose of 10 million organisms per 100 grams of body weight. All the animals developed tuberculosis. During the eleven weeks following inoculation 14 died in the normal and 15 in the experimental group. The authors conclude that there is no evidence to suggest that the resistance of the guinea-pig to experimental tuberculosis is diminished by exposure to a hot moist atmosphere. They point out, however, that these results are not necessarily applicable to man, because (1) the guinea-pig is originally a tropical animal; (2) the animals took no forced exercise; (3) the animals were not exposed to sudden changes of temperature morning and night.

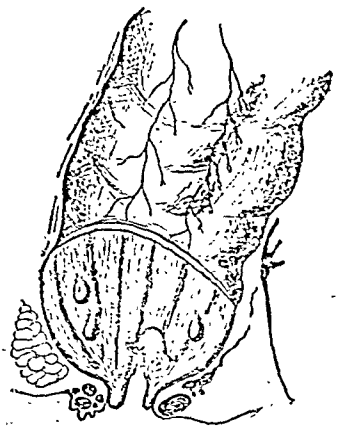
178. The Carbohydrate Metabolism of Certain Pathological Overgrowths.

H. G. CRABTREE (*Biochem. Journ.*, vol. xxii, No. 5, 1928, p. 1289), using Warburg's technique, has studied the carbohydrate metabolism of lesions caused by certain intracellular viruses. According to Warburg the characteristic feature of the cells of malignant tissues is their power of breaking down carbohydrate to lactic acid, even under aerobic conditions. The ratio $\frac{\text{aerobic glycolysis}}{\text{respiration}}$ was found by him to be about 3 for tumour tissue and small or zero for normal tissue. The author cut very small pieces of tissue from the lesions studied, suspended them in Ringer's solution containing $NaHCO_3$ and 0.2 per cent. glucose, and estimated (1) the c.mm. of oxygen used per milligram of tissue per hour; (2) the c.mm. of CO_2 evolved by lactic acid formation in oxygen per milligram of tissue per hour; and (3) the c.mm. of CO_2 evolved by lactic acid formation in nitrogen per milligram of tissue per hour. These estimations afford an indication of the metabolic activity of the tissue, and of the amount of glycolysis occurring under aerobic and anaerobic conditions. The results obtained were as follows. In lesions characterized by epithelial hyperplasia, such as those of fowl-pox in pigeons, vaccinia in young chickens, and human warts, an active metabolism was found corresponding to that in malignant tissues. On the other hand, in lesions characterized by little or no cellular hyperplasia, such as the brain of the rabid guinea-pig, the metabolism was similar to that of normal cells. Great variability was found in the respiratory values of the Rous sarcoma; but evidence was obtained that, after injection of chickens with a cell-free filtrate, the typical Rous cells assumed on their first appearance the high metabolic activity characteristic of the fully grown tumour. The general conclusion drawn by the author is that the magnitude and relationships of the respiratory and glycolytic processes found by Warburg to be characteristic of malignant tissues are not specific for malignant tissues, but are a common feature of pathological overgrowths.

179. Flagellar and Somatic Agglutination.

J. B. NELSON (*Journ. Exper. Med.*, December, 1928, p. 811) has worked with two salmonella strains, both of which were smooth and motile. In conformity with the results of previous workers, he finds these bacilli contain two antigens: (1) an antigen associated with the flagella, which gives rise to agglutinins of the floccular type; (2) an antigen associated with the body of the organism—somatic antigen—which produces agglutinins of the granular type. The flagellar antigen can be removed from suspensions of the bacteria either by shaking, followed by centrifugalization and rejection of the supernatant fluid, or by heating to 100° C. for half an hour. The deflagellated bacteria are incapable of giving rise to floccular agglutinin, but are still able to absorb some of the flocculating agglutinin from a whole serum; this may be the result of non-specific absorption. The presence of soluble precipitable material was demonstrated in small amount in culture filtrates, and in greater concentration in filtrates of heated suspensions. Most of this appeared to be of somatic origin, but a small amount was derived from the flagella. In another paper (ibid., p. 825) the author reports that if ordinary absorption mixtures of bacteria and serum are prepared, the bacteria centrifuged down and washed, and the resulting sensitized bacteria are suspended in 5 per cent. salt solution and heated to 60° C. for one hour, with frequent shaking, a considerable amount of the flagellar agglutinin is detached from the bacteria, but little or no somatic agglutinin. In practice, the extraction with salt solution was repeated two or three times, the mixtures were centrifuged, and the titre of the supernatant fluid was tested against the different antigens. By this means approximately 50 per cent. of the flagellar agglutinin could be removed. This observation adds further support to the view that the somatic and flagellar agglutinins are distinct.

The Haemorrhoidal Circle



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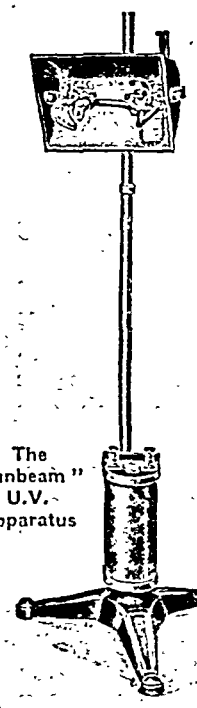

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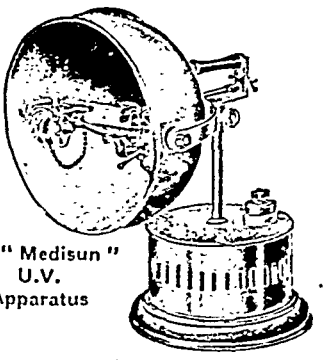

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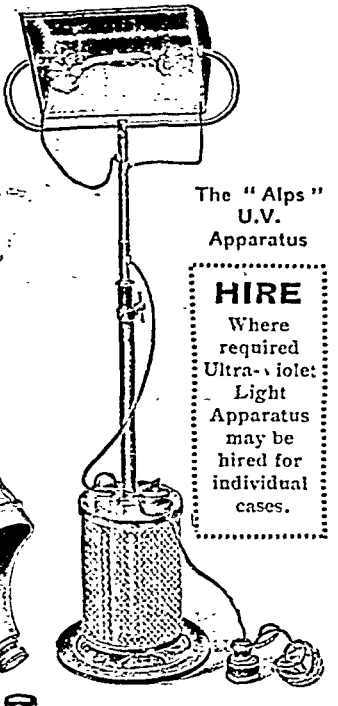

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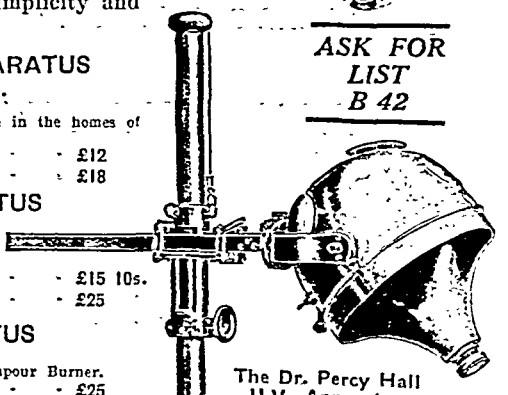

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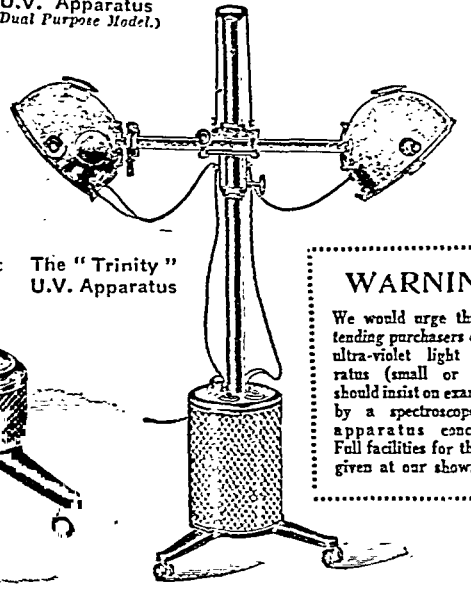

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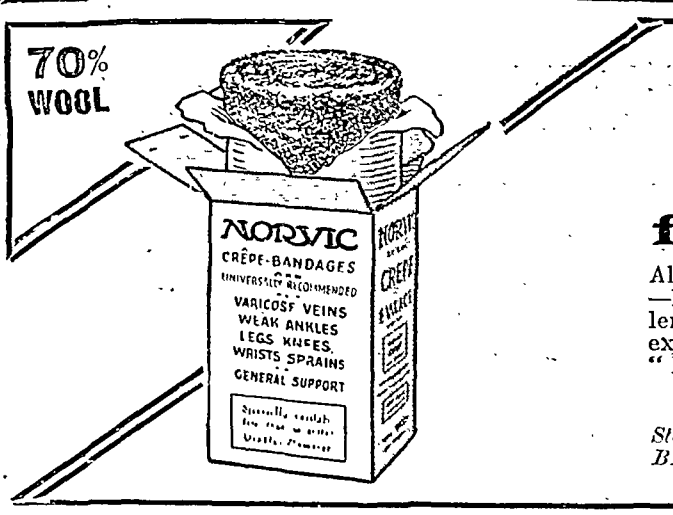

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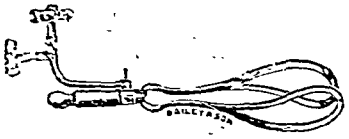

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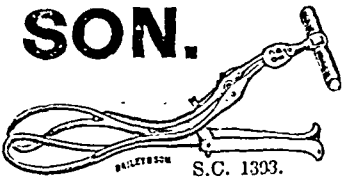

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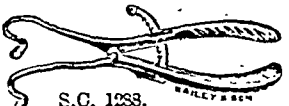

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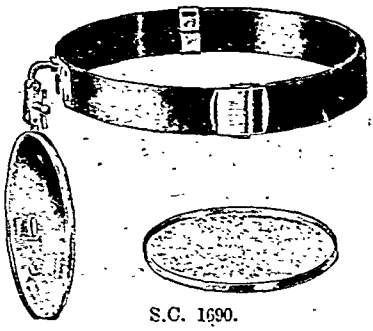

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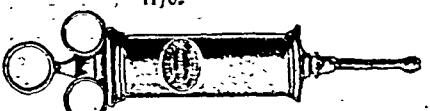

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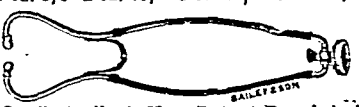

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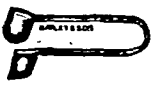

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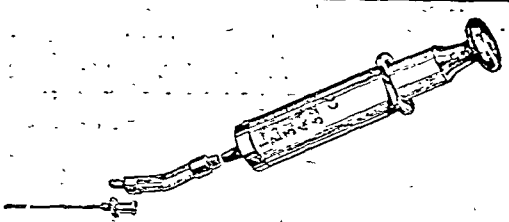

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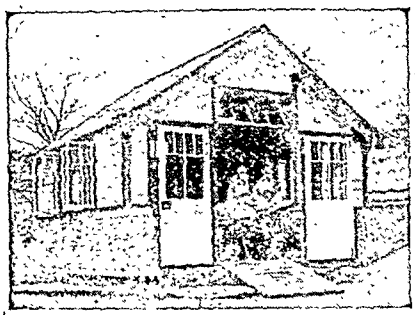

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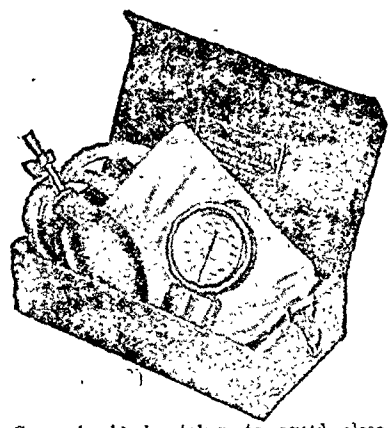

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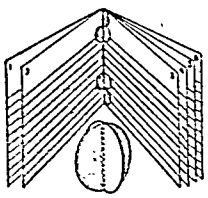

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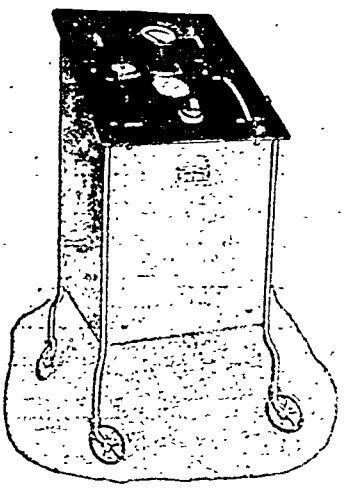

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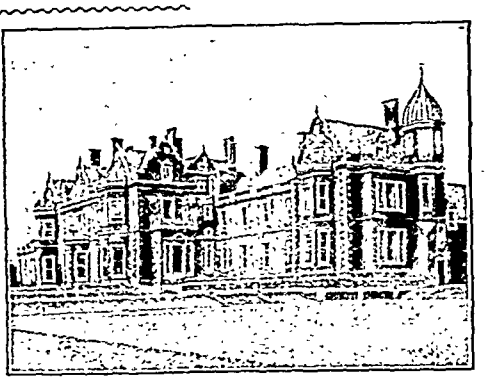

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Private Nursing Home for Neurasthenia and allied Functional Nervous Disorders, for general Convalescent Cases, and those requiring Electrical Treatment.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes. In addition to the methods of general medicine, nt is used extensively in suitable cases. Certifiable cases are not nent, Radiant Heat, X-ray, Ultra-Violet Light, and Massage is oine. Billiards, tennis, etc. Fees from 5 to 12 guineas per week. I to—
Dr. E. M. DOUGLAS-MORRIS, ASTON, DERBY.
Dr Douglas-Morris can be seen by appointment in London.

HAYDOCK LODGE,
NEWTON-LE-WILLOWS, LANCASHIRE.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

PLYMPTON HOUSE,
PLYMPTON, S. DEVON.

This old-established Licensed House offers every advantage that experience can suggest for the care and treatment of mental cases.

For terms, etc., apply to the Resident Physicians: Dr. Alfred Turner, Dr. J. C. Nixon.
Telephone: No. 2 Plympton.

BROOKE HOUSE,
CLAPTON, LONDON, E.5.

Telephone: Clissold 1648.

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of pleasure grounds. Both voluntary and patients under certificates received. For further particulars apply Dr. Gerald Johnston and Dr. Ernest Rollins, Resident Physicians.

CHISWICK HOUSE,
CHISWICK, W.4.

Telephone: Chiswick 0245.

A private mental hospital for the care and treatment of mental and nervous disorders in both sexes. Voluntary patients received for treatment.

The house is 6 miles from Hyde Park Corner, in the midst of beautiful grounds and pleasure gardens extending to 65 acres. In nearly all cases patients have their own bedrooms sitting-room, and private nurse.

Terms are from 10 guineas a week, including all expenses.

Douglas Macaulay, M.D.
(late Dr. C. Molesworth Tuke).

SAINT LUKE'S HOSPITAL
(for Mental Disorders).

Treasurer:
The Rt. Hon. Lord Blanesburgh, G.B.E.

WELDERS HOUSE,
near Gerrards Cross, Bucks,

situated in extensive grounds, amid beautiful country and within easy distance from London, receives a few LADIES requiring treatment for mild Nervous and Mental Disorders.

Apply, Chief Physician, Office of the Hospital, 19, Nottingham Place, London, W.1.
Telephone: Mayfair 6420.

EPILEPSY.

Owing to extensions there are at present a few Vacancies at the

DAVID LEWIS COLONY

for Ladies and Gentlemen who have Epilepsy, but are of good intelligence and sound mind.

Colony life gives to most people who have epilepsy the best chance of happiness and contentment.

Apply to the Medical Superintendent,
The David Lewis Colony, Warford, Alderley Edge

BARNWOOD HOUSE,
GLOUCESTER.

A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For terms, etc., apply to—
M.D., Resident Supt.
7 Barnwood

Preston Deanery Hall,
Northampton.

(3¼ miles from L.M.S. Station.)

This DIETETIC ESTABLISHMENT is equipped for the complete investigation and treatment of patients on rational lines. Own X-ray and Laboratory. Biochemical investigation is made a special feature.

Resident Biochemist, Masseurs and Masseuses. Hydro and Electro therapeutics, Fasting, etc. Scientific Principles. The staff are specially qualified to deal with the errors of Metabolism and provision is made for the treatment of Tropical Diseases.

Further particulars from the Secretary, Preston 6.

RUTHIN CASTLE

(FORMERLY DUFF HOUSE; BANFF.)

The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiograph, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The Climate is mild and the neighbourhood beautiful. Apply: The Secretary,

Telegrams: Castle, Ruthin. Telephone: 65, Ruthin. Ruthin Castle, North Wales.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

BETHLEM ROYAL HOSPITAL, LAMBETH ROAD, S.E.1.

(For the reception and treatment of cases of nervous and mental disease.) Tel.: Reliance 2182.

President: Colonel and Alderman Sir CHARLES CHEERS WAKEFIELD, Bart., C.B.E.
Treasurer: Sir LIONEL FAUDEL-PHILLIPS, Bart.
PHYSICIAN SUPERINTENDENT: J. G. PORTER PHILLIPS, M.D., F.R.C.P. Assisted by Physicians, a Pathologist, and a staff of Visiting Consultants.

Patients of the EDUCATED CLASSES, IN A PRESUMABLY CURABLE CONDITION, are eligible for admission. With a view to the early treatment of eligible cases VOLUNTARY OR UNCERTIFIED patients are admitted. PATIENTS WHO CAN CONTRIBUTE THREE GUINEAS WEEKLY TOWARDS THE COST OF MAINTENANCE MAY BE RECEIVED AS VACANCIES ARISE. Treatment is carried out on the most modern principles. In connection with this Hospital there is a Convalescent Home on the Surrey hills at Witley.
For further particulars apply to the PHYSICIAN SUPERINTENDENT.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: Alleviated, London. Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for the treatment of special and suitable cases adjoin the Institution. There is a seaside branch to which holiday parties are sent during the summer months. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.
Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0389.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "Psycholia, London." Telephone: Rodney 4731—4732.

FOR THE TREATMENT OF MENTAL DISORDERS.

Completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Croquet, Squash Racquets, and all indoor Amusements, including Wireless and other Concerts. Occupational Therapy. Daily services in the Chapel.
Senior Physician: Dr. HUBERT J. NORMAN; assisted by three Medical Officers, also resident. An illustrated Prospectus, giving full particulars and terms, may be obtained upon application to the Secretary.
HOVE VILLA, BRIGHTON. — A CONVALESCENT BRANCH OF THE ABOVE.

SELBRIGG SANATORIUM, HOLT, NORFOLK.

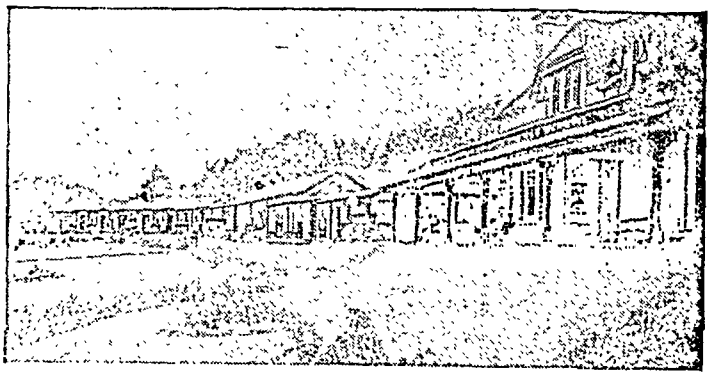
Telephone: HOLT 12.

Adjoining KELLING SANATORIUM

FOR THE TREATMENT OF TUBERCULOSIS.
On Pine-wooded heights above Cromer and Sheringham. Dry, Warm Climate. Maximum Sunshine. Completely Sheltered.

Terms: From 6 guineas weekly.
Further information and illustrated booklet from:
J. I. W. MORRIS, M.R.C.S.(Eng.), L.R.C.P.(Lond.).
Medical Superintendent, Kelling Sanatorium.

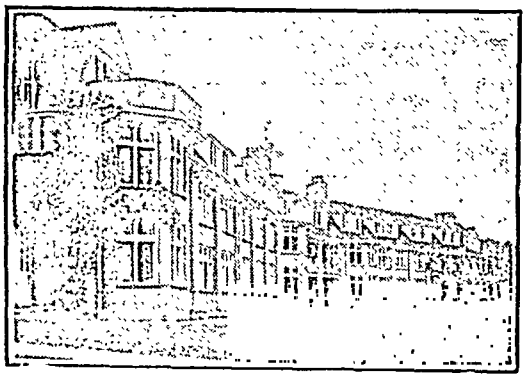
THE COTSWOLD SANATORIUM



Specially built in 1898 on the Cotswold Hills, seven miles from Cheltenham, for the treatment of Pulmonary and all other forms of Tuberculosis on Nordrach lines. Aspect S.S.W., sheltered from North and East, elevation 800 feet. Pure bracing air. Special Treatment by artificial Pneumothorax (X-ray controlled), Tuberculins, and Ultra-Violet Rays is available, when necessary, without extra charge. X-ray plant. Electric light. Radiators, hot and cold basins, and Wireless in all rooms.

Full day and night Nursing Staff.
Resident Physicians: ARTHUR H. HOFFMAN, M.D., and G. A. HOFFMAN, M.B.
Inclusive Terms: From 5 to 7 guineas per week.
Apply: *The Secretary, The Cotswold Sanatorium, Cranham, Gloucester.*
Telephone: 41 WITCOMBE. *Telegrams*: "HOFFMAN, BIRDLIP."

EAST ANGLIAN SANATORIUM.



This Sanatorium was specially built for the treatment of Pulmonary and other forms of Tuberculosis, and is situated on an ideal site facing S.S.E.—very sunny district in the "Constable" Country. Special Treatment by artificial Pneumothorax (X-ray Controlled). Electric lighting throughout, and radiators and wireless in all rooms.

TERMS: From 4 to 8 guineas per week.

On the estate of 330 acres there is ample opportunity for training in General Farming, Poultry Farming, Angora Rabbit Breeding, Gardening, etc., and various Handicrafts.

Med. Supt.: Dr. Jane Walker;
Asst. Med. Supt.: Dr. Eleanor Soltau; and other Medical Officers.

For full particulars, illustrated prospectus, etc., apply to the SECRETARY, East Anglian Sanatorium, Nayland, near Colchester. *Teleph. and Telegrams*: NAYLAND 1.

PENDYFFRYN HALL SANATORIUM
PENMAENMAWR.

Established 1900 for the treatment of Tuberculosis. Miles of carefully graduated walks through pine-clad hills, with sea and mountain views. Modern treatment, including SANOCRYSIN, ARTIFICIAL PNEUMOTHORAX, etc. X-ray plant, electric light, central heating, wireless. Full day and night nursing staff. On L.M.S. Main Line to Holyhead, 4½ hours from London. Resident Physicians: Dennison Pickering, M.D.(Cantab.), F. W. Godbey, M.D., D.P.H.; Matron: Miss N. Rennardson, S.R.N.

For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 20.)

VALE OF CLWYD SANATORIUM.

This Sanatorium is established for the treatment of TUBERCULOSIS of the LUNGS and the PLEURAL CAVITIES. It is situated in the midst of a large area of park-land at a height of 450 feet above sea-level, on the south-west slopes of mountains rising to over 1,800 feet, which protect it from north and east winds and provide many miles of graduated walks with magnificent views. Average rainfall 29.57 per annum. Full day and night nursing staffs. X-ray plant. Every facility for Artificial Pneumothorax, and for operations on the chest. Electric lighting. Central heating. Home farm. Grade A milk from T.T. Herd. For particulars apply to Med. Supt., H. Morriston Davies, M.D., M.Ch.Cantab., F.R.C.S., Llanbedr Hall, Ruthin, N. Wales.

KINGUSSIE, N.B.

THE GRAMPIAN SANATORIUM.

Situated in the upper Speyside district of Inverness-shire. One of the highest inhabited districts in Britain—"The Switzerland of the British Isles." Bracing and dry mountain climate. Well-sheltered Sanatorium specially built for the Open-air Treatment of Tuberculosis. Opened in 1901. Elevation 860 ft. above sea-level. Electric light throughout buildings and in rest shelters. Central heating. Fully equipped X-ray Plant. All forms of treatment available, including Artificial Pneumothorax, and Ultra-Violet Rays for surgical cases of Tuberculosis. MEDICAL SUPT.: FELIX SAVY, M.B., Ch.B *For particulars apply to the Secretary.*

Terms: £4 6s. 8d. to £6 6s. per week inclusive, no extras.

THE VICTORIA SANATORIUM,
AN ENTIRELY BRITISH SANATORIUM,
DAVOS (GRISONS), SWITZERLAND.

Terms - from £5 a week.

Medical Superintendent: Bernard Hudson, M.D.(Cantab.), M.R.C.P., Swiss Federal Diploma.

HERMITAGE SANATORIUM,
Whitwell, Nr. Ventnor.

Unsurpassed situation, 600 ft. above sea level, high sunshine record, own farm. Resident Medical Officer. Male cases only.

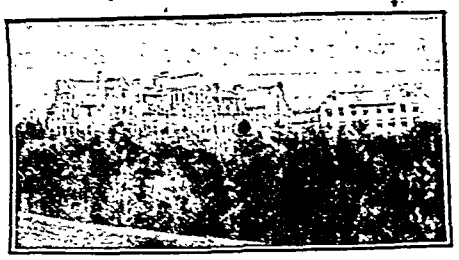
Inclusive weekly terms 60/-.

Special preferential arrangements for a few private cases at 4 guineas.

Artificial Pneumothorax, etc.

TOR-NA-DEE SANATORIUM

MURTLE DEESIDE ABERDEENSHIRE.



Medical Director: David Lawson, M.D., F.R.S.E.

FULLY EQUIPPED WITH EVERY MODERN APPLIANCE FOR THE DIAGNOSIS AND TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.

Physician Superintendent . J. M. JOHNSTON, M.B., D.P.H., etc.

Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.

THE BRITISH SANATORIUM, MONTANA sur/Sierre, SWITZERLAND.

Opened on January 1st, 1929, for the treatment of PULMONARY TUBERCULOSIS. English Nursing Staff. Inclusive terms from 7 guineas a week. *Medical Superintendent*:

Hilary Roche, M.D. (Melb.). M.R.C.P. (Lond.), Tuberculous Diseases Diploma (Wales); Formerly H.P., Brompton Hospital, Medical Supt., Palace Sanatorium, Montana.

LONDON HOSPITAL MEDICAL COLLEGE.

F.R.C.S.

A COURSE OF INSTRUCTION for the Final Fellowship Examination will begin on Friday, March 1st.

Fees: (exclusive of Operative Surgery) 20 guineas. Operative Surgery 5 guineas.

A separate entry can be made for all Classes other than those of a strictly Clinical character (Men students only are eligible for admission.)

End. 81

ROYAL COLLEGE OF PHYSICIANS AND ROYAL COLLEGE OF SURGEONS OF EDINBURGH, AND ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

DIPLOMA IN PUBLIC HEALTH.

The examinations for the Diploma in Public Health will begin in Glasgow on Monday, March 18th, 1929, instead of the date advertised in the syllabus.

Faculty Hall, 242, St. Vincent St., Glasgow, C.2. WALTER HURST, Registrar. Feb. 8th, 1929.

A REALLY GOOD SCHOOL FOR GIRLS. REASONABLE INCLUSIVE FEES

MARLBOROUGH COLLEGE, Tytherington Hall, nr. Macclesfield.

Sound Education. Upper and Lower Schools. Preparation, when desired, for all University Entrance Examinations. Particulars from Sec. *Special Terms to Medical Men.*

NORTH-EAST LONDON POST-GRADUATE COLLEGE,

PRINCE OF WALES'S GENERAL HOSPITAL, N.15.

The Practice of the Hospital is limited to Medical Practitioners. Particulars from T. H. C. BENIANS, F.R.C.S., Dean

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to **The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5,** for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics. For further particulars, fees, etc., apply to the Secretary.

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam will commence shortly. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

M.D. THESIS

(Camb., Edin., Glasg., Durh., &c.)

SKILLED COACHING, GUIDANCE, and ADVICE.

From Specialist Tutors, in conformity with the Regulations of the various Universities. Apply for particulars and free booklet, "Hints on Writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

GUY'S HOSPITAL MEDICAL SCHOOL.

GULL STUDENTSHIP.

Applications are invited for the Gull Studentship in PATHOLOGY AND ALLIED SUBJECTS, which is now vacant.

The Studentship is open to candidates under 35 years of age who have studied in the Medical School of Guy's Hospital, is of the annual value of £250, and is tenable for three years.

Further particulars may be obtained from the Dean, Guy's Hospital Medical School, London Bridge, S.E.1, to whom applications should be addressed not later than Feb. 22nd.

GUY'S HOSPITAL MEDICAL SCHOOL.

FINAL FELLOWSHIP COURSE. FEBRUARY—MAY, 1929.

The next Course of Instruction for the Final Examination for the Fellowship of the Royal College of Surgeons of England will commence on Wednesday, February 27th.

T. B. JOHNSTON, Dean.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.

(University of London.)

Advanced Surgery Course.

A Revision Course in Surgery, suitable for M.S. and F.R.C.S. Examinations, will be held in the Medical School and in the Wards of the Hospital from March 4th to May 3rd, 1929.

A similar Course will be held in September and October, 1929.

An Advanced Medicine Course will commence on May 14th, 1929.

Further particulars and the Syllabus of the Course may be obtained on application to the Dean (H. WILLOUGHBY LYLE, M.D., F.R.C.S.), King's College Hospital Medical School, London, S.E.5.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE. (UNIVERSITY OF LIVERPOOL).

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 7th, and for the Diploma in Tropical Hygiene on January 12th and April 26th. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims. Chemistry, Physics, and Biology Labs. MANCHESTER TUTORIAL COLLEGE, 327, Oxford Road, Manchester.

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(University of London.)

Bacteriology and Immunology.

One year's Course of study for the Diploma in Bacteriology, beginning in October.

Epidemiology and Vital Statistics.

Special three-monthly or longer courses.

Tropical Medicine and Hygiene.

Two Courses yearly, each of 20 weeks, commencing on March 11th and October 1st, 1929.

Enquiries for syllabuses, etc., should be addressed to the Secretary, 23, Endsleigh Gardens, London, W.C.1.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.

PRIVATE WARDS for paying patients.

TAUNTON SCHOOL, TAUNTON.

A PUBLIC SCHOOL FOR BOYS.

Boys are regularly prepared for the First M.B. Examination, University Scholarships in Chemistry, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology.

New Science Buildings, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1925. Prospectus from Head Master.

LONDON SCHOOL OF CLINICAL MEDICINE.

SEAMEN'S HOSPITAL, Greenwich.

A COURSE OF SURGICAL PATHOLOGY, and OPERATIVE SURGERY will be held at the above, commencing on February 19th. Fee 15 guineas. Those wishing to join the class should communicate with the DEAN.

F.R.C.S.(Edin.).

Prep. Classes and Museum Demons. for next Fellowship Exam will commence shortly. Correspondence course for July and later exams. should begin now. Partics., Mr. H. C. ORKIN, F.R.C.S., at Surgeons' Hall, Edinburgh.

Rossall School. — Some twelve Open SCHOLARSHIPS for boys between the ages of 12 and 14, on March 1st next, value from £90 a year downwards, will be awarded by Examination, beginning March 5th, 1929. Boys examined at Rossall and in London.—Apply, THE BURSAR, Rossall School, Fleetwood.

West London Hospital Post-Graduate College.

INTENSIVE COURSE.

A Course in General Medicine and Surgery, including the Special Departments, with special reference to recent advances in these subjects, will be held at the West London Hospital from MARCH 11th to MARCH 23rd. Fee for Course:—SIX GUINEAS.

For further particulars apply to: Sir HENRY SIMSON, K.C.V.O., Dean, West London Hospital, Hammersmith, W.6

Post-Graduate Teaching, West London Hospital.

CONTINUOUS INSTRUCTION. CLINICAL WORK IN ALL DEPARTMENTS. CLINICAL ASSISTANTSHIPS. SPECIAL ANNUAL MEMBERSHIP TERMS FOR GENERAL PRACTITIONERS. ANÆSTHETIC COURSE.

COURSES MAY BE COMMENCED AT ANY TIME.

Prospectus from Sir Henry Simson, K.C.V.O., Dean, West London Hospital, Hammersmith, W.6.

UNIVERSITY EXAMINATION POSTAL INSTITUTION

17, RED LION SQ., LONDON, W.C.1.
(FOUNDED IN 1882.)

Principal: Mr. E. S. WEYMOUTH, M.A.(Lond.). POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS.

SOME SUCCESSES:

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M.S.(Lond.),	1901-28 (including 4 Gold Medallists)	20
M.B.,B.S.(Lond.),	*Final* 1906-28 (Completed Exam.)	237
F.R.C.S.(Eng.), (1906-28)	*Primary*	149
	Final	135
M.R.C.P.(Lond.),	1914-28	152
D.P.H.	(Various) 1906-28 (Completed Exam.)	280
F.R.C.S.(Edin.),	1918-28	39
M.R.C.S., L.R.C.P.	*Final* 1910-28 (Completed Exam.)	402
M.D.(Dur.)	(Practitioners) 1906-28	36
M.D.	Various. By Thesis. Numerous successes	

Preparation for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.

M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.). Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

Medical Prospectus (48 pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral [illegible] the higher Medical for the higher Surgical Diploma Examinations. Refresher Course. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors; etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, *Red Lion Sq.*, London, W.C.1. (Telephone: HOLBORN 6313.)

Tancred Studentships.

Shortly after Whitsuntide next the Governors and Trustees propose to elect ONE STUDENT in PHYSIC at GONVILLE AND CAIUS COLLEGE, CAMBRIDGE.

Candidates must have been born in England, Scotland, or Wales, and be members of the Church of England, unmarried, and within the ages of 17 and 20 years.

The annual stipend is £100.

The last day for sending in Petitions is March 12th.

Application for further particulars should be made to Mr. EDWARD TEMPLE GURDON, 28, Lincoln's Inn Fields, Clerk to the Governors and Trustees.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and, in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

"Pre-eminent [illegible] effective."—"G [illegible]

STAMMERING, CLEFT PALATE SPEECH, LISPING, 3/9 of Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

University of London.

A Course of Three Lectures, with lantern illustrations, on "*The Properties of, and Methods of Estimating, some Therapeutic Agents*," will be given by J. H. BURN, M.A., M.D. (Director of the Pharmacological Laboratories, Pharmaceutical Society of Great Britain), at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on WEDNESDAY, THURSDAY, and FRIDAY, FEBRUARY 27th, 28th, and MARCH 1st, at 5 p.m. At the First Lecture the Chair will be taken by Dr. H. H. DALE, C.B.E., F.R.S. (Head of the Biochemistry and Pharmacology Department under the Medical Research Council).

Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

University of London.

A Course of Three Lectures on "*Hygiene of the Mercantile Marine*" will be given by Dr. J. HOWARD JONES, M.D., B.Sc. (Medical Officer of Health for the Port Sanitary Authority, Newport, Mon.), at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on FRIDAYS, FEBRUARY 22nd, MARCH 1st and 8th, at 5.30 p.m. At the first Lecture the Chair will be taken by Dr. CHARLES PORTER, M.D., C.M., B.Sc., Medical Officer of Health for St. Marylebone.

Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

University of London.

A Course of Three Lectures on "*The Chemistry of Muscle Contraction*" will be given by Mr. P. EGGLETON at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on MONDAYS, FEBRUARY 25th, MARCH 4th and 11th, at 5 p.m.

Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

Royal Society.

GOVERNMENT GRANT FOR SCIENTIFIC INVESTIGATION.

Applications for the year 1929 must be received at the Offices of the Royal Society not later than March 31st next, and must be made on printed forms to be obtained from the Clerk to the Government Grant Committee, Royal Society, Burlington House, London, W.1.

Gordon Hall School of Pharmacy

FOR WOMEN, DRAYTON HOUSE, W.C.1. Students trained for Pharmaceutical and Dispensing Examinations Qualified Dispensers can be supplied without charge. — Apply the Principals. 'Phone: MUSEUM 3930.

David Lewis Northern Hospital.

Wanted, a HOUSE SURGEON for Orthopædic and General Surgery. The appointment is for six months from April 1st. Salary £100 per annum, including board and residence.

Applications and copies of testimonials to be addressed to the undersigned by February 23rd.

H. LEVEY, Secretary-Supt.

The Board of Control (Lunacy AND MENTAL DEFICIENCY) invite applications for the post of MEDICAL OFFICER (male), at RAMPTON STATE INSTITUTION FOR MENTAL DEFECTIVES, near RETFORD. The salary will be £400, rising by annual increments of £20 to £600. Bonus, which varies with the cost of living, is also allowed. Present bonus on salary of £400 is £136 19s. The emoluments are free furnished quarters and laundry. Board and service will be provided on payment of the actual cost.

Candidates must be registered medical practitioners, unmarried or widowed, and natural-born British subjects and the sons of fathers also natural-born British subjects. Posts will be pensionable under Civil Service Superannuation Acts.

Forms of application, with further particulars, can be obtained from the Secretary, Board of Control, Caxton House, West Tothill Street, London, S.W.1, and must be completed and returned to him not later than Saturday, March 9th.

City of Leicester.

RESIDENT MEDICAL OFFICER.

Assistant Resident Medical Officer (male) required for the ISOLATION HOSPITAL and SANATORIUM, Groby Road. The Institution when full provides accommodation for 143 Infectious and 200 Tuberculosis Cases. Salary £350 per annum, with board and residence, subject to a deduction for Superannuation.

Applications, stating qualifications, age, and experience, together with three recent testimonials, to be sent to the undersigned by February 20th.

Health Dept., Grey Friars, Leicester. C. KILLICK MILLARD, Medical Officer of Health.

February 4th, 1929

British Red Cross Society

CLINIC FOR TREATMENT OF RHEUMATIC DISEASES.

A Clinic for the treatment of Rheumatic Diseases will be opened in Park Square, Regent's Park, N.W.1, in the Autumn of the present year.

The British Red Cross Society Committee of the above will shortly proceed to appoint SIX MEMBERS OF THE HONORARY VISITING MEDICAL STAFF, each of whom will be required, when the Clinic is in full working order, to attend twice a week. Applications in the first place by letter only, should be addressed, on or before March 1st, 1929, to the Secretary of the Clinic Committee, British Red Cross Society, 19, Berkeley Street, London, W.1.

City of Bradford.

MUNICIPAL GENERAL HOSPITAL, ST. LUKE'S.

HOUSE PHYSICIANS and HOUSE SURGEONS required. Salary in each case £200 per annum, with board and lodgings.

These appointments are for six months, renewable for a further period of six months.

Application forms may be obtained from the Medical Officer of Health, Town Hall, Bradford, and should be returned to him not later than February 20th.

Town Hall, Bradford. N. L. FLEMING, Town Clerk.

February 2nd, 1929.

The Royal Dental Hospital of LONDON, 32, Leicester Square, W.C.2.

There are two vacancies for HONORARY ASSISTANT ANÆSTHETISTS; one on [illegible] afternoons, and one on Wednesday afternoons from 3 p.m., until the work of the session is finished. Forty copies of applications and testimonials, stating age and experience, to be sent in by February 26th to the Secretary.

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The Secretary,
MEDICAL CORRESPONDENCE COLLEGE,
19, Welbeck Street, Cavendish Square, London, W.1.

Sir,—Please send me your "Guide to Medical Examinations" by return.

Name.....

Address.....

.....

Examination in which interested.....

Administrative County of Surrey

APPOINTMENT OF COUNTY MEDICAL OFFICER OF HEALTH.

The County Council of the Administrative County of Surrey invite applications from duly qualified medical practitioners holding a Diploma of Public Health for the office of County Medical Officer of Health.

The person appointed will be required to act as Head of the County Medical Services and to perform any additional duties relating to Public Health which may be imposed upon the Council by new legislation.

The remuneration will be a net personal salary of £1,800 per annum.

The appointment is designated an established post under the Local Government and Other Officers Superannuation Act, 1922, and will be held subject to the provisions of that Act, to the Orders for the time being of the Minister of Health, and to the Standing Orders of the Council.

Applications on the prescribed form (which, with a general statement of the conditions and duties of the office, may be obtained from me on receipt of a stamped and addressed envelope), accompanied by copies of not more than three recent testimonials, must be sent in a sealed envelope marked "C.M.O.H.," to reach me at the underwritten address not later than Thursday, February 28th.

Canvassing by or in favour of a candidate will disqualify the applicant.

County Hall, Kingston-upon-Thames. February 1st, 1929.
DUDLEY AUCKLAND, Clerk of the Council

Metropolitan Borough of BETHNAL GREEN.

MEDICAL OFFICER OF HEALTH.

The Bethnal Green Borough Council invite applications for the appointment of Medical Officer of Health at a commencing salary of £1,000 per annum, rising by annual increments of £50 on approved service to a maximum salary of £1,200 per annum, inclusive of all services of any kind whatever.

Candidates must not be over 45 years of age, and must possess the qualifications prescribed by the Public Health (London) Act, 1891, and the Sanitary Officers Order, 1926.

The appointment will be subject to the approval of the Ministry of Health, to the candidate satisfactorily passing a medical examination, and to the Superannuation Act, By-laws, and Standing Orders of the Council.

Applications must be on forms obtained from me, and returned so as to reach me at the Town Hall, Bethnal Green, London, E.2, by noon on Tuesday, March 5th.

Canvassing will disqualify a candidate.

DAVID J. KEEP, Town Clerk.

Nottinghamshire.

APPOINTMENT OF COUNTY MEDICAL OFFICER.

Applications are invited for the appointment of MEDICAL OFFICER OF HEALTH for Nottinghamshire from duly qualified persons, and preference will be given to those applicants who have already had experience of the work of a Medical Officer of Health.

The salary will be £1,200, rising by four annual increments of £50 to £1,400 per annum, and offices, staff, stationery, and travelling expenses will also be provided.

A print of the conditions and duties appertaining to the appointment can be obtained on application to me.

Applications, giving particulars of experience, qualifications, and medical degrees, must be forwarded to me, together with copies of not more than three recent testimonials, marked "County Medical Officer of Health," not later than Monday, March 4th.

County House, Nottingham. February, 1929.
K. TWEEDALE MEABY, Clerk of the County Council.

County Borough of Newport.

MENTAL HOSPITAL.

ASSISTANT MEDICAL OFFICER (Male).

Applications are invited for the above post. Candidates must be under 35, unmarried, and preferably with previous experience in Mental Diseases. Commencing salary £300 per annum, with apartments, board, and laundry. Appointment pensionable under Asylum Officers Superannuation Act, 1909.

Applications, stating age, qualifications, and previous experience, accompanied by copies of three recent testimonials, must reach the undersigned by Monday, the 25th instant.

Town Hall, Newport, Mon. February 4th, 1929.
O. TREHARNE MORGAN, Town Clerk.

County of London.

The London County Council invite applications for appointment, as EIGHTH ASSISTANT MEDICAL OFFICER (male) in the MENTAL HOSPITAL SERVICE. Candidates must be under 35 years of age, and be registered to practise both in Medicine and Surgery in England. Salary £300 a year, rising by annual increments of £25 to £400 a year, plus fluctuating temporary additions, making the present total commencing remuneration approximately £414 a year. No emoluments. Charges made for board, lodging, etc. (at present £2 9s. weekly), if required to be resident. Candidates appointed will be pensionable under the Asylums Officers Superannuation Act, 1909. Form of application, on which full particulars are given, can be obtained from the Acting Chief Officer, Mental Hospitals Department, The County Hall, Westminster Bridge, S.E.1. Completed applications must be received by Thursday, February 21st. Canvassing disqualifies.

MONTAGU H. COX, Clerk of the London County Council.

Surrey County Council.

ASSISTANT MEDICAL OFFICER.

Applications are invited for the appointment of a Male Assistant Medical Officer. Candidates must possess a qualification in Public Health, and have had experience in the medical inspection of school children, maternity and child welfare, and the treatment of tuberculosis and venereal diseases. The officer appointed will be required to undertake such other public health duties as may be allocated to him. He will be on the staff of the County Medical Officer of Health, must reside in the County, and devote his whole time to the work. Salary £600 per annum, rising by annual increments of £20 to £700 per annum. Travelling expenses in accordance with the Council's scale will be allowed.

The appointment will be subject to the approval of the Ministry of Health, to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to the Standing Orders of the Council, which provide, inter alia, that appointments may be determined at any time by three months' notice.

Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, should be made on the prescribed form and sent to the County Medical Officer of Health, 5, Grove Crescent, Kingston-upon-Thames, from whom copies of the application form may be obtained, and to whom any enquiries relating to the appointment should be addressed.

Last day for receipt of applications, Thursday, February 28th. Canvassing, directly or indirectly, will disqualify.

County Hall, Kingston-upon-Thames. Feb 12th, 1929.
DUDLEY AUCKLAND, Clerk of the County Council.

Metropolitan Asylums Board.

Applications are invited for the appointment of JUNIOR ASSISTANT MEDICAL OFFICER at GROVE PARK HOSPITAL, LEE, S.E.12 (322 beds) for Adult (male and female) cases of Tuberculosis. Most of the accommodation is for advanced pulmonary cases, but there is a certain number of beds for surgical cases, and some experience in surgery and orthopædics is desirable. There is no accommodation at the Hospital for a married officer. Preference will be given to candidates under 30 years of age. Salary £500 per annum. There are three other medical officers on the staff.

The candidate appointed will be required to reside in the Institution and pay for board, lodging, and washing at the rate fixed from time to time by the Board's Finance Committee. At present the rate is £130 per annum.

Application to be made not later than 10 a.m. on Wednesday, February 27th, on form obtainable from the Clerk, Metropolitan Asylums Board, Victoria Embankment, E.C.4, by forwarding stamped addressed foolscap envelope.

ALLAN POWELL, Clerk to the Board
Feb. 12th, 1929.

Mansfield and District Hospital.

The Board of Management of the above Hospital (130 beds) invite applications for the post of SENIOR HOUSE SURGEON (male).

Salary at the rate of £200 per annum, with residence, board, and laundry. The appointment is for six months and is renewable. Duties to commence on March 1st.

Candidates must have held previous Hospital appointment. There is ample scope for good operative work.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

Dated this 12th day of February, 1929.

ARTHUR H. LIMB, Secretary.

EAST AFRICAN MEDICAL SERVICE

APPOINTMENTS

VACANCIES exist at present for MEDICAL OFFICERS and HEALTH OFFICERS in the EAST AFRICAN MEDICAL SERVICE.

Candidates should be British subjects of European parentage and not over 35 years of age. Preference will be given in the case of Medical Officers to candidates who have held House appointments as House Physicians and House Surgeons. In the case of Health Officers a Diploma in Public Health is essential. Candidates should apply, in writing, to the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, London, S.W.1, for the necessary forms of application.

SALARIES.

MEDICAL OFFICERS £600 per annum, rising by annual increments of £30 to £840 per annum, and thence, subject to an efficiency bar, by increments of £40 to £920 per annum.

HEALTH OFFICERS enter the scale at £660.

QUARTERS.

Free quarters are provided, or an allowance is given in lieu.

PASSAGES.

Free first-class passages are provided, both on first appointment and when proceeding on leave. A married officer will be granted an allowance towards the cost of his family's passage once each way in respect of each tour of service.

University of Lucknow.

Applications are invited for the PROFESSORSHIP OF MEDICINE and PHYSICIAN to KING GEORGE'S HOSPITAL, attached to the University. Salary Rs.1,200—50—1,400 per mensem, plus benefits of the University Provident Fund on confirmation (rate: 8 per cent. of salary paid by subscriber and 8 per cent. by the University). Consulting practice allowed. The selected candidate will be on probation for one year and will be required to join the Lucknow University about November 1st, 1929. Applications, stating age, academic qualifications, hospital experience, and research publications, with copies of three testimonials, should reach the Registrar, Lucknow University, Lucknow, on or before March 31st

NOTE.—For members of the Indian Medical Service the conditions of service will be similar to those of Government servants holding similar appointments.

R. R. KHANNA, Registrar.

Hong-Kong.

The Government of Hong-Kong requires the services of a MEDICAL OFFICER.

Salary.—£600 per annum, rising by annual increments of £30 to £1,020 per annum.

Quarters.—Furnished quarters are provided at a rental of approximately 6 per cent. of salary, or an allowance is given in lieu.

Passages.—Free passages are provided on first appointment and when proceeding on leave.

Qualifications.—Applicants should be under 35 years of age. Preference will be given to candidates who have held House appointments as House Physicians and House Surgeons.

Further particulars and forms of application may be obtained on application, in writing, to the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, S.W.1.

Torbay Hospital, Torquay.
(142 Beds.)

HOUSE PHYSICIAN wanted for about March 14th. Salary £150 per annum, with board, residence, and laundry. Candidates must be fully qualified, registered, and unmarried.

Applications, stating age, nationality, qualifications, and experience, must be received by the undersigned on or before Tuesday, February 25th, with copies of not more than three recent testimonials.

E. L. GRIST,
February 11th, 1929. Secretary.

Northern Rhodesia.

The Government of Northern Rhodesia requires the services of a MEDICAL OFFICER.

Emoluments.—£600 per annum, rising by annual increments of £30 to £840 per annum, then by annual increments of £40 to £920 per annum.

Conditions of Service.—The appointment is pensionable, subject to a probationary period of two years in the first instance.

Passages.—Free passages are provided both on first appointment and when proceeding on leave. An allowance is granted in the case of a married officer towards the cost of his family's passage once each way in respect of each tour of service.

Quarters.—Free quarters are provided, or an allowance in lieu is paid.

Further particulars and forms of application may be obtained from the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, London, S.W.1.

Completed applications must reach the Private Secretary by March 9th.

Dorset Mental Hospital,
DORCHESTER.

SENIOR ASSISTANT MEDICAL OFFICER.

Applications are invited from candidates duly qualified, registered, and unmarried. Commencing salary £400, rising by two yearly increments of £25 to £450, with board, apartments, laundry, and attendance.

Excellent laboratory facilities exist with skilled assistance for research and clinical medicine. (900 Beds.) The appointment is subject to the provisions of the Asylum Officers Superannuation Act, 1909.

Applications, stating age and qualifications, with copies of recent testimonials, should be sent to the Medical Superintendent at once.

February 11th, 1929.

Cardiff Royal Infirmary.

OPHTHALMIC HOUSE SURGEON required immediately. Applicants must have a knowledge of refractions. This post is open to ladies.

Salary at the rate of £75 per annum, with board and lodging. The appointment is for six months.

Applications, with copies of three recent testimonials, should be submitted as soon as possible to the undersigned.

R. ARMSTRONG,
February 9th, 1929. Medical Supt.

Basutoland.

The services of a MEDICAL OFFICER are required in Basutoland.

Emoluments.—£550 per annum, rising by annual increments of £20 to £800 per annum, then after three years to £850 per annum.

Conditions of Appointment.—The appointment is pensionable, subject to a probationary period of six months in the first instance

Passages.—Free passages are provided for the selected officer and his wife and children (not exceeding four).

Quarters.—Free quarters are provided or an allowance in lieu is paid.

Private practice is allowed.

Further particulars and forms of application may be obtained from the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, London, S.W.1. Completed applications must reach the Private Secretary by March 9th, 1929.

The Gloucestershire Royal
INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (145 Beds.)

Applications are invited for the post of SECOND HOUSE SURGEON (male). Salary £100 per annum, with board, residence, and laundry. (Four Resident Medical Officers.)

The appointment is for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be received by the undersigned not later than Wednesday, February 27th. The elected candidate will be required to enter upon his duties on Monday, March 11th.

F. J. SYMONS,
February 9th, 1929 Secretary.

St. John's Hospital for Diseases
OF THE SKIN,
Leicester Square, W.C.2.

Applications for the posts of SENIOR and JUNIOR HONORARY MEDICAL REGISTRAR (male) are invited to be sent to the undersigned on or before Friday, March 1st.

Applicants must be duly qualified and registered medical practitioners.

Particulars of duties can be obtained on application.

GEORGE A. ARNAUDIN,
Secretary-Superintendent.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	BURGH OF MOTHERWELL & WISHAW. *(Resident Medical Officer (female) for Maternity and Child Welfare Department.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	EAST RIDING COUNTY COUNCIL. *(Assistant Tuberculosis Officer.)*	

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec. Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies' Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1. By Order of the Council of the British Medical Association.
February 13th, 1929. ALFRED COX, Medical Secretary.

The Queen's Hospital for CHILDREN, Hackney Rd., London, E.2.

RESIDENT MEDICAL OFFICER required on March 31st.

The appointment is made for six months, and may be extended for further periods of six months, but cannot be held for more than two years.

The Resident Medical Staff consists of the Resident Medical Officer as above, two Casualty Officers, two House Physicians, and one House Surgeon.

Salary (inclusive of panel fees) £200 per annum, with board, residence, and washing. Candidates must have held a responsible Resident appointment at a recognized Hospital, and should apply as soon as possible for forms of application, which must be filled in and returned to the undersigned on or before March 11th.

T. GLENTON-KERR,
January 31st, 1929. Secretary.
Telephone: Clissold 6305 and 2534.

The Queen's Hospital for CHILDREN, Hackney Rd., London, E.2.
President: H.R.H. The Duke of York, K.G., K.T.

ANÆSTHETIST required for attendance on Wednesday and Saturday mornings.

The appointment will be made for one year, and the holder will be eligible for re-appointment. Honorarium £25 a year. Lunch provided when required.

Applications, with testimonials, should be sent on or before March 11th to—

T. GLENTON-KERR, Secretary.

'Buses 6 and 6a pass the door.

Manchester and Salford Hospital FOR SKIN DISEASES.

HOUSE SURGEON.

Applications are invited for the post of House Surgeon. Must be registered. The appointment is for twelve months. Salary £100 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned, Quay Street, Manchester, on or before Wednesday, February 20th.

JOHN NALL, Secretary.

Ancoats Hospital, Manchester.

HOUSE SURGEON (Orthopædic) required, to commence March 1st. Salary £100 per annum, with board, residence, laundry, *etc.*

Applications, stating age, qualifications, experience, etc., to be forwarded to the undersigned on or before February 19th, with copies of three recent testimonials.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

St. John Ophthalmic Hospital, JERUSALEM, Belonging to the Order of St. John of Jerusalem.

The office of SUB-WARDEN will be vacant in June next. Candidates, who must be qualified Surgeons of the male sex, are invited to write for full particulars of the post to the Honorary Secretary, Ophthalmic Hospital, St. John's Gate, Clerkenwell, E.C.1.

Cumberland Infirmary, Carlisle.

Applications are invited for the following posts vacant on April 1st next. Previous experience in each case desirable.

1. HOUSE PHYSICIAN, male. Salary at rate of £155 per annum, board, residence, etc.
2. HOUSE SURGEON to Special Departments, —male, Eyes, Ear, Nose, and Throat. Salary at rate of £155 per annum, board, residence, etc.

Applications, stating age, with copies of not more than four testimonials, must be received by first post on Wednesday, February 20th, by the undersigned, who will supply further particulars if desired.

Separate applications required for each post.

J. G. HOWITT, Secretary.

London Jewish Hospital, Stepney Green, E.1.

The Council of Management invite applications for the appointment of HONORARY ASSISTANT PHYSICIAN, who will be required to attend Out-patients on two half-days weekly.

Candidates must possess the degree of M.D. or M.B., obtained by examination at a recognized University, and be Fellows or Members of the Royal College of Physicians of London, or Fellows of the Royal College of Physicians of Edinburgh or Ireland, and shall not be engaged in the practice of Pharmacy or Midwifery.

Candidates must send twenty copies of their application, with copies of three recent testimonials, to the Secretary at the Hospital, on or before Friday, March 1st.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(Address included.)

Sixpence should be added if replies to a box number are to be posted.

All advertisements must be received not later than first post Tuesday previous to date of publication.

ASSISTANCIES.

Wanted. — Indoor Assistant, immediately, in Practice, North London, private and panel. Single, young. Welsh preferred. English or Scotch qualification. Salary £300 per annum. Write, stating all essential particulars. Interview if possible.—Address, No. 917, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, male, British, Public School, for rapidly increasing Country Practice, Eastern Counties. Good salary and prospects to suitable man. Send photo and full particulars.—Address, No. 905, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, in North of England Practice. Usual bond. Salary commencing £300 and commission. State full particulars.—Address, No. 958, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, to commence March 12th, for working-class Practice in County Durham. Cyclist preferred.—Address, giving usual particulars, to No. 960, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.-Indoor Assistant, male, for colliery and mixed Practice near Newcastle-on-Tyne. Age under 30 years. Salary £275 p.a. Send particulars, testimonials, and photo.—Address, No. 919, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, single, well up in Surgery. Salary £300 per annum, with rooms, light, coal, and attendance.—Apply, A. H. JAMES, M.D., The Park, Blaenavon.

Wanted.—Assistant, with view to Partnership, in growing Country Practice in Midlands. Send essential particulars — Address, No. 916, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, single, young, energetic, for growing mixed Practice in Leicester. Initial salary £330, all found. Extra allowance and garage if car — Address, No. 963, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, single, for private, non-dispensing, and panel practice in Liverpool, with prospects. Salary £350, with rooms and attendance.—Address, No. 929, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant for two to three months, or longer if suitable. Country Practice, East Devon. Salary £20 a month, indoor. State particulars, age, qualifications, etc.—Address, No. 932, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant in large Town near Manchester (Englishman, pref. Lancs. or Yorks. man). Car provided. Little mids and small panel. Salary £250 to £300 according to exper. Energetic and willing good prospects for right man. Full particulars.—No. 937, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Lady Assistant for Village Practice. Cyclist or drive car. Must be recently qualified. Send particulars, testimonials, and photograph.—Address, No. 961, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Lady Assistant, indoor, light work, better industrial Practice, large panel; Birmingham area, experience not essential. Willing to assist light household duties. Enclose photo.—Address, No. 957, B.M.A. House, Tavistock Square, W.C.1.

Wanted for Kent, young indoor ASSISTANT, male, for mixed general Practice. Motorist, anæsthetist. Well qualified and experienced. English or Scotch.—Address, with particulars and testimonials, No. 904, B.M.A. House, Tavistock Square, W.C.1.

Wanted at once.—Indoor ASSISTANT (male) for large mixed Practice. Experience essential, able to drive car. Salary £300. Send photo, mph., full particulars, and references.—Address, No. 954, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — ASSISTANTS AND LOCUM TENENS for General Practices. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross St., Manchester.

Wanted. — Assistantship or LOCUMS by Woman M.B., Ch.B., Scotch, aged 27. Few years' experience General Practice. Excellent testimonials.—Address, No. 902, B.M.A. House, Tavistock Square, W.C.1.

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Dated the 8th day of February, 1929.

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Appointments for six months, with salaries at the rate of £120 p.a., with board, etc.
Candidates must be male and qualified.
Applications, with four copies of three testimonials, to be sent to the undersigned on or before March 9th.

A. G. E. SANCTUARY, Administrator.

Hertford County Hospital.

Applications are invited for the post of RESIDENT SURGICAL OFFICER. Salary £220 per annum, with board, residence, and laundry.
For preference candidates should hold the Fellowship of the Royal College of Surgeons.
The appointment is for six months in the first instance.
Applications, with copies of three recent testimonials, should be sent to the undersigned, not be received not later than Tuesday, Feb. 26th.

PERCY G. BROOKS, Secretary.

Rotherham Hospital.

Wanted, HOUSE PHYSICIAN (male), qualified. Salary £180 p.a., with board, lodging, and laundry. To have charge of Out-patients, and minister anæsthetics, and assist Honorary Physician.
Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

Asylum Service.—Junior Assistant MEDICAL OFFICER wanted [illegible] commencing £275, with board, apartments and laundry. Every encouragement and facilities for research work. Applications and testimonials to be directed to Dr. J. H. MACDONALD, Medical Superintendent, Hawkhead Asylum, Paisley, Glasgow, S.W.2.

Royal Victoria Eye and Ear HOSPITAL, ADELAIDE ROAD, DUBLIN.

HOUSE SURGEON.

A vacancy will occur on April 1st for a House-Surgeon at the above Hospital. Particulars can be obtained from the Registrar.

[AMENDED ADVERTISEMENT]

Rochford Hospital.

MALE ASSISTANT RESIDENT MEDICAL OFFICER.

Applications are invited for the appointment of Male Assistant Resident Medical Officer at the Hospital, Rochford, near Southend-on-Sea. The appointment will, in the first instance, be for twelve months, with salary at the rate of £300 per annum. If the officer is re-appointed after twelve months' service the salary will be increased to £350 per annum. In addition, arrangements will be made for the officer to be provided with apartments, laundry, and maintenance outside of the Hospital to the limit of £200 per annum. The salary and value of emoluments are subject to deductions under the Poor Law Officers Superannuation Act, 1896. Applicants must be fully qualified, and must have had at least two years' resident Hospital experience. He will be required to take charge of the Hospital during the absence of the Resident Medical Officer.

The Rochford Hospital at the present time contains 380 beds, and this number will be increased in a short time. The Hospital is recognised as a complete Training School for Nurses. The Resident Medical Staff will number three. A wide experience of Medical and Surgical work is to be obtained. It is desired that candidates shall have had practical experience of Surgery and Anæsthetics. It may be stated that there are many opportunities in the neighbourhood for golf and other sports.

Application forms, which must be properly filled in, and returned to me not later than March 1st together with further particulars of the appointment, can be obtained from the undersigned on receipt of a stamped addressed foolscap envelope.

By Order,
W. HARDING ROBERTS, Clerk.

27, Victoria Avenue,
Southend-on-Sea.

Royal United Hospital, Bath.

Wanted on March 1st, a HOUSE PHYSICIAN, a HOUSE SURGEON, and an ASSISTANT HOUSE SURGEON. Salaries £120, £120, and £100 respectively.

The appointments will be for not less than six months, and candidates must be males, unmarried and of British nationality.

Applications, with three recent testimonials, to be sent in by February 22nd, addressed to the Secretary—

J. M. SHEPPARD, F.C.I.S.

Bedford County Hospital.

HOUSE SURGEON, ASSISTANT (male), fully qualified, unmarried, required for a term of not less than six months, commencing February 28th, 1929. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Secretary, Medical Staff Committee.

February 4th, 1929.

Royal National Orthopædic Hospital.

COUNTRY BRANCH, STANMORE, MIDDLESEX.

Applications invited for the post of HOUSE SURGEON. Salary £150, with board, laundry, and quarters. Appointment is for six months from April 1st, renewable for a further period of six months on the recommendation of the Medical Board.

Applications, with copies of testimonials, should reach the Secretary, 234, Great Portland St., W.1, not later than Saturday, March 2nd.

Royal National Orthopædic Hospital.

Applications invited for the post of HOUSE SURGEON. Salary £150, with board, laundry, and quarters. Appointment is for six months from April 1st, renewable for a further period of six months on the recommendation of the Medical Board.

Applications, with copies of testimonials, should reach the Secretary, 234, Great Portland St., W.1, not later than Saturday, March 2nd.

Liverpool & Samaritan Hospital for Women.

Wanted a HOUSE SURGEON, for period of six months from April 1st. Salary at the rate of £100 per annum. Applications, with testimonials, to be addressed to the undersigned by March 2nd.

J. St. GEORGE WILSON,
Hon. Sec., Med. Board.

31, Rodney St.,
Liverpool.

Royal London Ophthalmic Hospital

(Moorfields Eye Hospital), City Road, E.C.1.

Applications are invited for the office of SENIOR HOUSE SURGEON.

Candidates must be registered medical practitioners, and must be prepared to begin the duties on April 1st.

Salary at the rate of £150 a year, with board and residence in the Hospital.

In the event of the Second House Surgeon being appointed, other candidates are requested to state whether they would accept the office of Second House Surgeon at the rate of £125 a year, or Third House Surgeon at the rate of £100 a year.

The appointments are for a period of eight months.

Applications, with testimonials, stating age and qualifications, must be received not later than February 28th by—

A. J. M. TARRANT, Secretary.

The Miller General Hospital for SOUTH-EAST LONDON,

Greenwich Road, S.E.10.

Applications are invited for the three following posts

RESIDENT MEDICAL OFFICER (the Senior of five resident posts). Salary £250 p.a.
CASUALTY OFFICER. Salary £150 p.a.
HOUSE PHYSICIAN. Salary £125 p.a.

Candidates (male) must be unmarried. Board, residence, and laundry are provided. Each appointment is for six months from April 1st next.

Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent to the Secretary.

February 11th, 1929.

Royal Albert Hospital and Eye INFIRMARY, DEVONPORT.

There will be a vacancy for an ASSISTANT HOUSE SURGEON (unmarried) on Feb. 26th. Applicants must be fully qualified, registered, and the appointment will be for six months. Salary £50 per annum, with apartments, board, and laundry free.

Applications, stating age, accompanied by copies of not more than three testimonials, should reach the undersigned not later than Friday, February 22nd.

By Order of the Committee,
FRANK ROWE, Secretary.

February 11th, 1929.

The Loughborough and District GENERAL HOSPITAL AND DISPENSARY.

Wanted, to commence duties at the end of March, RESIDENT HOUSE SURGEON (female and unmarried), possessing a Medical and Surgical registered qualification. Practical experience in the administration of anæsthetics is required. Salary £125, with apartments, board, and laundry. All applications, stating age, etc., with copies of testimonials, to be sent to me at once.

FRANK H. TOONE, Secretary.

9, Leicester Road,
Loughborough.
February 12th, 1929.

Gloucester County Mental HOSPITAL.

Required, JUNIOR ASSISTANT MEDICAL OFFICER (male). Candidates must be registered medical practitioners and unmarried. Salary £350 per annum, with board, apartments, laundry, and attendance. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909. Apply, with copies of three recent testimonials, to the Medical Superintendent.

Warwick County Mental HOSPITAL, HATTON.

JUNIOR ASSISTANT MEDICAL OFFICER wanted. Salary £350 per annum, with board, residence, laundry, and attendance. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909. Applications, stating age, etc., together with copies of recent testimonials, to be sent to the Medical Superintendent.

The Royal Eye and Ear Hospital, BRADFORD.

Wanted, JUNIOR HOUSE SURGEON (male). Salary £120, with board, residence, and laundry. Applications, stating qualifications, age, etc., with copies of recent testimonials, to be forwarded to the undersigned on or before February 26th.

F. BRIGGS, Secretary-Supt.

West Herts Hospital, HEMEL HEMPSTEAD.

(24 miles from Euston.)

Applications are invited for the appointment of a SENIOR RESIDENT MEDICAL OFFICER, to commence duties on March 1st next. Salary £150, with rooms, board, and laundry.

Also a JUNIOR RESIDENT MEDICAL OFFICER, to commence duties on or about April 1st next. Salary £100, etc.

Preference will be given to male candidates.

110 beds.

Particulars to be obtained of, and applications, stating essential particulars, and enclosing copies of recent testimonials, to be sent at once to—

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

Leicester Royal Infirmary.

(400 Beds.)

PRELIMINARY NOTICE OF EXPECTED VACANCIES.

Present Staff: Four House Surgeons, one Casualty House Surgeon, two House Physicians.

Vacancies in one or more of the above posts are expected on April 1st next. Salary at the rate of £125 per annum for each post. Fuller particulars next issue. Applications by Monday, March 4th, to the House Governor & Secretary.

A Resident Dressership is also vacant.

February 11th, 1929.

Royal West Sussex Hospital, CHICHESTER.

The Board of Management invite applications for the post of JUNIOR HOUSE SURGEON (male) as from April 1st. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, with three recent testimonials, should reach the undersigned not later than March 7th. Particulars as to duties will be forwarded to candidates on receipt of their applications.

HERBERT S. AYLMORE, Secretary.

The Hospital for Sick Children, NEWCASTLE-UPON-TYNE. (92 Beds.)

Applications are invited for a RESIDENT HOUSE PHYSICIAN (male or female) for a period of six months, as from April 1st.

Salary at the rate of £95 per annum, together with board, residence, and laundry.

Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr. NEIL BRODIE, 16, City Road, Newcastle, on or before March 7th.

The Hospital for Sick Children, NEWCASTLE-UPON-TYNE. (92 Beds.)

Applications are invited for a RESIDENT SENIOR HOUSE SURGEON (male or female) for a period of six months, as from April 1st.

Salary at the rate of £95 per annum, together with board residence, and laundry.

Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr. NEIL BRODIE, 18, City Road, Newcastle, on or before March 7th.

The Hospital for Sick Children, NEWCASTLE-UPON-TYNE. (92 Beds.)

Applications are invited for a JUNIOR HOUSE SURGEON (male or female), non-resident, for a period of six months, as from April 1st.

Salary at the rate of £100 per annum.

Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr. NEIL BRODIE, 18, City Road, Newcastle, on or before March 7th.

Bootham Park, York.

(A Registered Mental Hospital.)

Wanted, JUNIOR ASSISTANT MEDICAL OFFICER, male, single, not over 30. Candidates must be fully qualified and registered. Salary £300 per annum, with board, accommodation, attendance, and laundry.

Apply, with copies of testimonials, to the Medical Superintendent.

King Edward Memorial Hospital EALING.

Applications are invited for the post of SECRETARY-SUPERINTENDENT (male). Commencing salary £400 per annum. Age preferably about 35. Apply, by letter, before February 25rd, stating age, experience, birthplace, and fullest particulars, to the Chairman, marked "Application for Appointment."

Chester Royal Infirmary.
(211 Beds.)

Applications are invited for the appointment of HONORARY ASSISTANT SURGEON, a vacancy having been created by the appointment of Mr. H. L. WARREN WOODROFFE as Honorary Surgeon.

Candidates must submit details of their qualifications and experience.

EXTRACT FROM RULE 61:

Each Honorary Assistant Surgeon shall be attached to a corresponding Honorary Surgeon (according to seniority), and shall help him with his operations on operating days, and perform operations for him when asked to do so, and take on his duties in his absence. They shall attend twice a week each in the Casualty (Out-patient) Department at 11 o'clock in the morning.

Further particulars of duties may be obtained from the undersigned.

Applications, stating age, and with testimonials, should be delivered addressed to the Chairman, Board of Management, Royal Infirmary, Chester, on or before Wednesday, February 27th.

Canvassing is prohibited.

By Order of the Board of Management,
Chester J. ROWSE MITCHELL,
February 5th, 1929. Secretary.

Woolwich and District War
MEMORIAL HOSPITAL,
Shooters' Hill, London, S.E.18.
(General Hospital 112 Beds.)

The Appointments Committee invite applications, from suitably qualified candidates, for appointment as:

(*a*) HONORARY SENIOR DENTAL SURGEON, who will be selected from those applicants engaged in Dental Practice.

(*b*) HONORARY DENTAL SURGEON. Applications for [illegible] are invited from fully

(*c*) ASSISTANT [illegible] RADIOLOGICAL [illegible] Assistant Physician to the Radiological Department will be required to attend at the Hospital one day a week. An honorarium of £50 per annum will be paid in respect of this appointment.

Applications, accompanied by copies of not more than three recent testimonials, should be addressed to Mr. E. RADFORD, J.P., Secretary-Superintendent, to reach him not later than Monday, February 18th.

Royal South Hants and
SOUTHAMPTON HOSPITAL, SOUTHAMPTON.

The following posts will fall vacant on March 1st next, and applications are invited:

HOUSE PHYSICIAN. Twelve months' engagement. Salary £130 p.a.

JUNIOR HOUSE SURGEON. Six months' engagement. Salary £130 p.a.

CASUALTY OFFICER. Six months' engagement. Salary £120 p.a.

All with rooms, board, and laundry.

Candidates must be male and unmarried, and should apply, stating age, with copies of testimonials (limited to five), to the undersigned before February 20th.

HY. TRUSSON, Secretary.

The Royal Infirmary, Sheffield.

A vacancy having occurred in the Honorary Surgical Staff, notice is hereby given that, in accordance with Rule 32, the Election Committee with whom the appointment rests will proceed to fill up the vacancy at a special meeting to be held at the Royal Infirmary on [illegible] 27th, at 11.45 o'clock [illegible] requested to forward applications and testimonials, to the undersigned on or before Monday, February 25th instant.

JNO. W. BARNES, F.C.I.S.,
Board Room, General Superintendent
February 6th, 1929. and Secretary.

N.B.—The present Senior Assistant Surgeon will be an applicant for the post.

Manchester Victoria Memorial
JEWISH HOSPITAL, MANCHESTER.
(Non-sectarian.)

Applications are invited for the post of SENIOR HOUSE SURGEON (male). The appointment is for one year, the holder being eligible for re-election for a further period of one year. Salary at the rate of £200 per annum with board, residence and laundry. The successful applicant must be prepared to commence duties on May 1st.

Applications, stating age, qualifications, and experience, with copies of testimonials, to be forwarded to the undersigned not later than February 25th.

FRANK JENNINGS, Superintendent

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

NURSES
MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

THE NURSES' ASSOCIATION
(In conjunction with the MALE NURSES' ASSOCIATION).
29, York St., Baker St., London, W.1.

Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

ST. LUKE'S HOSPITAL.
FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

Bristol Royal Infirmary.

Applications are invited for the following resident appointments for the five months commencing April 1st:

One HOUSE PHYSICIAN to the Cancer Research Dept.;
Two HOUSE PHYSICIANS;
Four HOUSE SURGEONS;
One HOUSE SURGEON to the Ear, Nose, and Throat Dept.;
One HOUSE SURGEON to the Gynæcological and Ophthalmic Depts.;
One OBSTETRIC HOUSE PHYSICIAN;
One CASUALTY HOUSE SURGEON;
One ASSISTANT HOUSE SURGEON and HOUSE SURGEON to the Dermatological Dept.

Salary in each case at the rate of £80 per annum, with board, apartments, and laundry, unless the candidate appointed has previously held a resident appointment in the Infirmary, when the salary will be at the rate of £100 per annum, with board, apartments, and laundry.

One DENTAL HOUSE SURGEON. If resident, salary at the rate of £80 per annum, but if non-resident, salary at the rate of £116 per annum, with board.

Candidates, who must be duly qualified, to send in their applications, stating age, together with copies of not more than three testimonials, to the undersigned on or before Thursday, February 28th.

ELLIS C. SMITH, F.C.I.S.,
Secretary & House Governor.

West Bromwich and District
GENERAL HOSPITAL. (150 Beds.)

Applications are invited for the posts of (1) HOUSE SURGEON, (2) HOUSE PHYSICIAN, and (3) CASUALTY HOUSE SURGEON (males). Candidates must be doubly qualified and unmarried. Salaries at the rate of £200 per annum, with board, residence, and laundry.

The appointments are for six months, and the candidates appointed will be required to take up *their duties on April 1st next.*

Applications, stating age and qualifications, with copies of recent testimonials, should be sent to the undersigned on or before February *14th.*

By Order,
Edward St., FRANK I. HANCOCK,
West Bromwich. Secretary & Supt.

General Infirmary at Leeds.
ANÆSTHETISTS—TWO VACANCIES.

Applications are invited for the above appointments. Candidates must be registered medical practitioners. An honorarium of £25 *per year is granted.*

Full particulars of the duties may be obtained from the Secretary of the Faculty, to whom applications should be sent on or before Thursday, February 14th.

By Order of the Board.
H. KINGSLEY PEARCE,
February 8th, 1929. General Manager.

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Terms post free on application

Southern County.—Over £16,000 p.a. One-tenth share for sale, increasing to 1/5. Mids. 5 gns. up. Visits 5/- to 5 gns. Panel about 7,000. Must be F.R.C.S.Eng., and hold University degree.—No. 8421.

Kent.—Country Practice.—About £1,050 p.a. Old-estab. Visits 5/- up. Panel nearly 400. Good house, with 5 beds, etc.—No. 8420.

Isle of Man.—About £3,000 p.a. —Half share for sale. Mids. 4 gns. up. Visits 5/6 up. Panel about £750 p.a. Good house to rent, £60. Premium only £2,100 —No. 8419.

S.E. of England Coast Town.—About £[illegible] p.a., scope for increase. Panel 420. Visits 2/6 up. Small house to rent, £52 p.a. Premium only £500; easy terms —No. 8410.

Staffordshire.—Over £1,000 p.a. Very little night work. No panel. Fees 5/6 up. Good house and garage. Seven bedrooms, etc.—No. 8412.

Mediterranean Port. — About £1,100 p.a. Appts. £100: Visits 10/-. No panel. Mostly Eng.ish. Good flat. Premium £1,000, on easy terms.—No. 8411.

Home Counties. — £4,500 p.a. 1/4 share for sale. No panel. Visits 5/- to 21/-. Mids. 5 gns. up. *Scope for* surgery. Partner to be F.R.C.S.—No. 8409.

West End.—1/3 share in Electro-therapeutic, Sunlight, and X-ray PRACTICE. About £1,400 p.a., including front rentals. Cons. from 2 to 3 gns. Treatments about 1 gn. Prem., including share in all furniture and X-ray equip., £550.—No. 8363.

London, N.—Lock-up. — About £700 p.a. Panel over 500. Mids 3 gns. Visits 5/6 up. Two rooms, rent 35/- p.w. Premium £900 or offer.—No. 8402.

Nottinghamshire. — Increasing NUCLEUS £600 to £700 p.a. Mids 5 gns. up. Visits 3/6 to 21/-. Small panel. Corner house to rent. Prem. £900.—No. 8397.

Lancashire.—About £2,000 p.a. Panel 2,500. Appts. nearly £200 p.a. Visits 3/6 to 5/-. House, 4 bed., etc., to rent. —No. 8391.

N. Wales.—Share worth about £700 net. Panel about 2,500. *Colliery* £400 to £500 p.a. Mids. 2 gns. *House*, 5 beds., and large garden, with tennis *court*, to rent.—No. 8389.

Lincolnshire.—About £1,370 p.a. Unopposed. Panel and appts. about £500 p.a. Mids. 3 gns. Fees 4/- to 6/-. House, 6 bed., etc., good garden, with garage, to rent.—No. 8386.

Kent. — Average £1,250 p.a. Mids. 7½ gns. up. *Visits* 7/6 to 21/-. Non-panel. House, 5 bed., etc.—No. 8380.

Western County.—£600 to £700 p.a. Unopposed. Clubs and appts. over £100 p.a. Fees 5/6 to 12/6. Panel about £300 p.a. Good house and garden. *Premium*, house and practice. £2,100.—No. 8375.

Co. Durham.—About £700 p.a. Visits 3/6. Mids. 2 gns. Panel 652. House, 3 bed., etc., to rent.—Apply, No. 8364.

South Wales. — Residential. — £1,600 p.a. Panel 450. Fees 5/- to 21/-. Corner house, 6 bed., *etc.*—Apply, No. 8348.

Within 12 miles London North. —£1,500 p.a. Panel 800. *House*, 3 recep., 6 bed. *Separate surgery, etc.* Over two acre garden.—Apply, No. 8344.

SPECIAL NOTICE.

FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants prepared to pay part of purchase money down and balance by instalments over 7 years (on the security of a Life and Sickness Policy). Full particulars on application to Mr. Percival Turner.

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FOR SALE.

LONDON, E.—DEATH VACANCY.—Old-established middle-class G.P., situated on main thoroughfare. Large house to rent on lease. Receipts nearly £1,900 p.a. Panel 450 excellent scope). Good fees. Premium, 1 year's purchase.

SOUTH OF ENGLAND.—ASSISTANTSHIP with view to PARTNERSHIP [illegible] Panel 2,000. One-half [illegible] arsity Graduate with

ship, some with view, with and without scope for surgery. Suitable only for practitioners of British birth.

NURSING HOMES.—We have instructions to dispose of several Nursing Homes, both Town and Country. Correspondence invited from those generally interested.

EAST MIDLANDS. NUCLEUS G.P. near seaside resort, with excellent scope for all-round improvement. Small panel of approx. 60. Premium for Nucleus and house £950.

SURREY.—NUCLEUS G.P., within easy distance of London, suitable for semi-retired man. House to rent. Receipts £280. Panel 160. Premium £350.

LONDON, W.—Well-established Lady Doctor's PRACTICE in middle and working-class locality. Receipts over £530. Panel about 350. Fees 2 6 up. Medium-sized house. Premium for practice £750. House £1 100. Might be rented.

SOUTH-WEST COAST.—PARTNERSHIP in well-established good-class rural G P. Receipts over £4,000 p.a. Panel approx. 1,000. One appointment. Medium-sized house to rent. Scope for surgery. Suitable for well-qualified man used to country practice. Premium 2 years' purchase.

NOTTS.—NUCLEUS middle-class G.P. with growing panel. Fees 3/6 up. Receipts approx. £700 p.a. Corner semi-detached freehold house. Premium £900 for practice and £1,250 for house, or may be rented.

HOME COUNTIES.—Good-class G.P. situated within easy distance of London. Admirably suited for semi-retired practitioner. Income over £500 p.a. Small but select panel. Excellent house with ample accommodation. Premium £3,500 for house and practice.

WEST END.—Electro-Therapeutic P..ACTICE, centrally situated. Well-equipped with all modern appliances. Receipts approximately £1,000 p.a. (subject to confirmation). Rent £300 p.a. Expenses very low. Premium £2,500 for goodwill and equipment, or reasonable offer.

SOMERSET.—PARTNERSHIP in rural Practice, situated in charming locality. Suitable for young experienced man fond of sport, hunting, etc. Guaranteed share worth £500 p.a. at 2 years' purchase.

HOME COUNTIES (on borders of Kent and Sussex).—Non-dispensing good-class G.P. Receipts over £1,200 p.a. Good-sized house (5 bedrooms) for sale. Scope for surgery. Good fees. Premium £1,900 or near offer for quick sale.

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If the investment you are seeking is not advertised here, let us know your wants, and we will gladly forward details of others suitable to your requirements.

SOUTH OF ENGLAND.—ASSISTANTSHIP with view to PARTNERSHIP within one year. Receipts approximately £4,000 p.a. Panel 2,000. One-half or one-third share of [illegible] purchase. [illegible]-British Varsity man

growing PRAC- scope for increase. Fees 3 6 up.

Premium 14 years' purchase

LONDON, N.W.—DEATH VACANCY.—Well-established G.P. with excellent scope. Average receipts £500 p.a. Panel 333. House on lease. Premium £500.

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This old-established Agency negotiates the Sale of PRACTICES and PARTNERSHIPS on reasonable terms, which can be obtained on application. No charge unless sale be effected. LOCUM TENENS and ASSISTANTS supplied free of charge to principals.

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1. DEATH VACANCY (Channel Isles).—Well-established middle-class PRACTICE returning £600 a year for prompt sale owing to recent decease. Very convenient professional premises available on rent. Very moderate price accepted for early settlement.
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4. LONDON.—JUNIOR PARTNER required in sound middle-class Practice. Share for sale £1,000 to £1,200 at 1½ years' purchase. Valuable appts. and select panel. House on lease at £52.
5. GOOD-CLASS PRACTICE in a flourishing Town (West) averaging £1,600, including panel 450. Non-dispensing. Suitable only for up-to-date man. Excellent corner residence in best position. Premium £2,000.
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8. [illegible]32.—PARTNER- [illegible], S. or S.W. for choice, with scope for surgery. Income £800 to £1,500.
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British Medical Bureau

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(FOUNDED 1880.)

12, Stratford Place, Oxford Street, W.1.

Tele. Address: Triform, Wesdo—London.

Telephone: Mayfair {1782 1783

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads:—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence.

Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

ASSISTANTS AND LOCUMTENENTS.

Assistants and Locumtenents can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out.

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Medical Men wishing to receive Resident Patients should enrol their names on the books of the British Medical Bureau. A large number of Patients are placed yearly through this medium.

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The British Medical Bureau has its own staff of fully qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Books & Accounts, etc.

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1. DEATH VACANCY.—LONDON, S.E.—PRACTICE nearly £1,700 p.a. (panel and appointments nearly £300) in pleasant residential suburb. Excellent house (6 bedrooms) for sale.

2. DEATH VACANCY.—LONDON, S.W.—PRACTICE £2,268 p.a. in open suburb. No panel. Very nice house (6 bedrooms) for sale or rent. Assistant in charge.

3. SOUTH OF ENGLAND.—Surgical Partner required (not over 36) with University degree and F.R.C.S. England, in sound Practice in first-rate town with good Hospital. Share of £1,500 p.a. at 2 years' purchase.

4. MIDLANDS. — Partnership in Practice £3,375 p.a. in attractive town. Panel 1,000. Well-situated house (5 bedrooms) to rent. Partner must be well qualified, preferably a Surgeon who would have chance of Hospital appointment. One-half share at 2 years' purchase.

5. LONDON, S.E. — Lock-up Practice about £400 p.a. in suburban district. Panel 145. Rent 25/- weekly. Premium £350. Considerable scope.

6. MIDLANDS.—Partnership in mixed Practice £3,800 p.a. in county town. House (5/6 bedrooms) to rent. One half or one-third share at 2 years' purchase. Partner should have F.R.C.S. degree.

7. S. WALES. — Practice averaging £1,627 (about £650 p.a. from panel) in good town. Modern house (6 bed and dressing rooms) for sale or rent. Premium one-half year's purchase.

8. NURSING HOME for Nine Patients in select seaside resort on S.E. Coast. Gross cash receipts average £1,750 p.a. Double fronted house, with operating theatre. Premium, freehold, goodwill, furniture, about £5,000.

9 S.E. COAST.—Partnership in non-dispensing Practice, over £3,800 in residential town. Good house to rent. Share worth £1,500 at 1½ years' purchase.

10 SOUTH OF ENGLAND.—Partnership in non-dispensing Practice, £4,200 p.a., in attractive watering place. Panel about 1,600. Incoming Partner must be F.R.C.S.Eng. or M.D., F.R.C.S.Ed. One-fourth share at 2 years' purchase (Preliminary assistantship.)

11 SOUTH COAST.—Health Resort.—Practice about £900 p.a. (including appointments about £155). No panel or midwifery. Suitable House or Flat. Premium £1,500.

12 Nr. NEWCASTLE-ON-TYNE.—Old-estab. Town PRACTICE over £800 p.a. Panel 440. Pleasantly situated House (4 bedrooms) to rent. Plenty of scope. Prem. 1½ years' pur.

13 CO. DURHAM. — Practice of £1,460 in growing suburb of seaport town. Panel 646. House (5 bedrooms) on main road to be sold or let. Premium 1½ years' purchase.

14 S. WALES.—Non-dispensing Practice in large seaport town. Receipts for past 3 years averaged £1,543 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,300.

15 GLOUCESTERSHIRE.—Country Practice averaging £535 p.a. Panel 450. Convenient (small) house, and excellent garden, 1 acre. Garage, small car. Premium, house and practice, £3,000.

16 LANCASHIRE.—Practice averaging over £3,700 p.a. in first-rate town. Panel 2,600. House (4 bedrooms) to be sold or let. Premium 1½ years' purchase.

17 HOME COUNTIES. — Practice averaging £1,050 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, practice, £1,500.

18 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first-rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. Premium one third share 2 years' purchase.

19 LONDON, E.—Rapidly increasing Lock-up PRACTICE in populous district. Receipts 1928, £780. Panel 570. Rent £50. Premium £950.

20 HOME COUNTIES.—Partnership in Practice over £8,000 p.a. in country town. Incoming Partner must be well qualified (preferably University man) and have held Hospital appointments. One-fourth share at 2 years' purchase.

21 HOME COUNTIES. — Non-dispensing PRACTICE about £1,300 in residential district, adjoining first-rate town. Practically no panel. Modern house (5 bedrooms) for sale. Golf, fishing, etc. Premium £1,650.

22 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

23 MIDLANDS.—Country Practice averaging nearly £1,500 p.a. in beautifully situated village easy reach of several good towns. Panel 600. Large modernized house, with electric light, gas, etc., for sale. Sport. Premium £1,900.

24 LONDON, W. — Practice (carried on by Medical Woman) in suburban district. Receipts 1928, £575. Panel 360. House (5 bedrooms, etc.) to be sold or let. Premium £750.

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Practices and Partnerships for Disposal (continued).

25 EAST COAST.—Practice (suitable for two) in small watering-place. Receipts £2,800 p.a. (including panel worth about £600 p.a.). Very little opposition. Two houses to rent. Premium 1½ years' purchase.

26 X-RAY and ELECTRO-THERAPEUTIC PRACTICE in important town. Receipts last year £1,050. Detached house for sale or rent. Premium £1,500.

27 S. OF ENGLAND.—Ear, Nose, and Throat PRACTICE in a watering-place. Receipts average over £600 p.a. (one day a week only). Income easily doubled by one resident. Premium £750.

28 NORTHUMBERLAND. — Practice averaging £424 p.a. in small pleasantly situated country town. Panel 70. House (8 rooms) to let. District is growing and there is plenty of scope for increase. Premium £450.

29 HOME COUNTIES.—Partnership in Practice about £8,000 p.a. in growing residential watering-place. House (4 bed. and dressing rooms) to rent. Partner must be well qualified (Oxford, Cambridge, or London). Premium one-fifth share 2 years' purchase.

30 HOME COUNTIES.—Practice about £1,350 p.a. in good residential district within 25 miles of London. Panel 1,000. Large house (9 bedrooms) for sale. Premium, practice, £2,000.

31 N.W. ENGLAND.—Partnership in Practice about £3,500 p.a. in seaport town. Panel about 2,500. Choice of two houses to rent. Premium one-fourth or one-third share 2 years' purchase.

32 SOUTH MIDLANDS. — Practice about £1,150 p.a. in county town. Panel 485. Good house (7 bedrooms), with garage and garden, for sale. Very good Hospital.

33 GLOUCESTERSHIRE.—Country Practice averaging £654 p.a. (Elevation 600 feet). Near two good towns. Panel 500. Large house, with garden and paddock, for sale. Scope for increase. Premium £800.

34 N. MIDLANDS.—Practice worth between £600 and £700 p.a. in residential district on outskirts of first-rate town. Small panel offering plenty of scope. Excellent modern house to rent. Premium £750.

35 SOUTH AFRICA. — Old-estab. Practice. Receipts last year £1,816. Travelling and midwifery light. Climate ideal—no tropical diseases (altitude nearly 5,000 feet). Delightful residence (5 bedrooms), in perfect order, with 2 acres grounds. Excellent scope. Local Hospital. Premium £1,200, with option to purchase house.

36 MIDLANDS.—Partnership in middle-class Practice averaging £5,450 p.a. in flourishing and growing town. No panel and little midwifery. Applicant should be between 25 and 40 years of age, and preferably, though not essentially, a University Graduate. Premium one-fourth share (ultimately increasing to one-half) 2 years' purchase.

37 S. WALES.—Practice worth over £700 p.a. (chiefly panel and appointments) in small seaside town. Small house (3 bedrooms), to rent. Premium £700 cash.

38 S. WALES.—Practice over £1,200 p.a. in small country town, amidst beautiful scenery. Panel about 300. Old-fashioned house, with garage and garden. Cottage hospital. Premium £1,500.

39 OPHTHALMIC PRACTICE over £1,200 p.a. Consultations usually £2 2s. Scope for considerable increase.

40 S. MIDLANDS.—Practice over £1,700 p.a. In country town 100 miles from London. No panel, appointments, or midwifery. House (5 bedrooms), with garage and garden, for sale. Premium—Practice 1½ yrs.' purchase.

41 N. WALES COAST. — Partner required in old-established Practice. Receipts over £5,650 p.a. Panel over 2,000. Modern house (8 bedrooms, etc.) to rent. Premium for one-half share £4,000, part cash. Applicants must have held H.P. and H.S. appointments.

42 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 13 acres of land for sale. Premium, practice, 1½ years' purchase.

43 LONDON, S.E. — Partnership in well-established Practice of £1,900 p.a. in good residential district. Exceptionally well-built detached house (6 bedrooms) to be rented. One-half share at two years' purchase. Good scope.

44 N. DEVON. — Partner required (after preliminary assistantship) in Practice worth £3,000 p.a. in first-rate country town. Panel over 2,100. Well-equipped Hospital. One-third share to suitable man at 2 years' purchase.

45 MIDLANDS.—Country Practice of over £1,000 p.a., within 5 miles of good town. Panel 531. Comfortable and convenient house (5 bedrooms, etc.), with electric light, central heating, and acre garden, for sale. Premium, practice, 1½ years' purchase.

46 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. No panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

47 LONDON, E.—Partnership in exceptionally old-established Practice averaging over £3,500 p.a. Good fees and appointments. Two-fifths share for disposal at 1½ years' purchase, or one-third could be purchased at first. Small house may be bought or rented at a moderate figure.

48 SOUTH OF ENGLAND. — Practice about £900 p.a. in first-rate seaport town. No panel or midwifery, but ample scope. Well-situated house to rent. Premium £1,500.

49 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. Partner should be keen worker and a good surgeon. One-third to two-fifths share at 2 years' purchase.

50 MIDLANDS. — Practice about £350 p.a. in manufacturing village. Panel 190. House (4 bedrooms, etc.), and one acre of garden. Premium—Practice and house, £2,000.

51 SUFFOLK.—Country Practice averaging £360 p.a. in beautiful agricultural district. Panel 300. Very attractive residence (5 bedrooms, etc.) in half acre garden, etc., for sale. Premium—Practice £540.

52 N. WALES. — Seaside Practice, approximately £500 p.a. Furnished house (4 bedrooms) to rent, or others to rent or purchase. Premium £500 for quick sale.

53 PEMBROKESHIRE. — Practice about £1,000 p.a. in small town. Panel 361. Well-situated house (7 bedrooms) to rent. Scope for increase. Premium £1,500. Preliminary assistantship if desired.

54 NORTH WALES. — Country Practice averaging £1,230 p.a. in Welsh-speaking district. Panel over 530. Centrally situated house (5 bedrooms). Premium one year's purchase.

55 S. WALES. — Easily worked Panel and Contract PRACTICE over £1,000 p.a. in colliery district. Small house (4 bedrooms) to rent. Premium one year's purchase.

56 ESSEX. — Practice averaging £1,216 p.a. in outlying district—30 minutes by rail from London. Panel 650. Nice detached house (5 bedrooms) for sale. Premium for practice 1½ years' purchase.

57 N. LONDON.—Practice of between £950 and £1,000 p.a. Small panel. No midwifery. Detached corner house (7/8 bedrooms) for sale. Premium—Practice 1½ years' purchase.

58 MIDLANDS. — Partnership in Practice over £2,000 p.a. in good town. Panel 1,800. Good house (5 bedrooms) available. Partner should be able to undertake major operations. Well-equipped hospital. One-half share for disposal.

59 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. Panel over 1,400. Partner should be good at midwifery. Premium one-third share 2 years' purchase.

"MEDICAL PARTNERSHIPS, TRANSFERS AND ASSISTANTSHIPS" (BARNARD & STOCKER). *Published by B.M.B., post free 12/6.*

All communications to be addressed to Mr. A. V. STOREY, General Manager.

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10-13, BEDFORD STREET, STRAND, LONDON, W.C.2.

Telegrams: BOVMEDICAL, WESTRAND-LONDON. *Telephone*: GERRARD 3543 (3 Lines)

Under the personal direction of Dr. J. FIELD HALL and Mr. J. C. NEEDES

who have both had many years' experience as Medical Transfer Agents.

The commission chargeable in respect of any practice or partnership in Great Britain placed exclusively in the hands of this Agency has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being fifty pounds (£50).

No charge is made to Principals for the introduction of Locum Tenens or Assistants.
Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges.

1. HAMPSHIRE.—PARTNERSHIP.—Third share of an old-established unopposed Country Practice, in very pretty district within a few miles of a large town, and producing nearly £2,500 p.a., including appointments £130, and panel of 1,520. Visits 5/6 to 21/-. Mids. 2 to 10 gns., 40 to 50 cases yearly. Large house (having eight or nine rooms, with garden, etc), which must be purchased, or ingoing partner could reside in rooms until a smaller one becomes available. Premium 2 years' purchase, half down and balance in 12 or 18 months.
2. KENT.—Old-established Country PRACTICE, situated in very favourite locality within 5 miles of the coast. Income for past 12 months £1,030. Surgery fees 3/6 upwards, visits 5/- to 21/-. Poor Law appt. and panel of about 380. Attractive commodious house, with separate professional rooms. Small garden. Price £1,800. Premium £1,500.
3. NORTH STAFFORDSHIRE.—Old-established mixed general Country PRACTICE, situated in very delightful district, and offering scope. Average income about £1,000, including Poor Law appt. and panel of 660. Fees 3/6 to 10/6. Good house, on lease, rent £84 p.a. Excellent schools within reach. Premium 1½ years' purchase.
4. BUCKS.—GROWING COUNTRY DISTRICT.—Old-established mainly middle and working-class PRACTICE. Income for the last year £550, with ample scope for increase. Fees 2/6 to 7/6 Little midwifery. Good freehold house, price £1,500, part on mortgage. Sport of all kinds. Knowledge of refractions advantageous. Premium £850.
5. LONDON, NORTH.—OUTLYING RESIDENTIAL SUBURB.—PARTNERSHIP.—A one-third share (and up to one-half in two years' time) is offered in an old-established mixed general Practice, averaging about £2,000 p.a., with good scope. Non-panel at present, but ingoing partner should undertake this work. Fees 3/6 to 7/6, a few at 15/-. Little midwifery 3 to 10 gns Suitable house can be bought. Sport of all kinds. Premium 2 years' purchase.
6. LONDON, NORTH.—Old-established centrally situated mixed general PRACTICE. Income for the immediate past year £3,500, including panel list of 2,200 and appointments about £125. Fees, advice, and medicine 2/6 to 5/-. Visits 5/- to 7/6. Under 50 midwifery cases yearly from 4 to 8 guineas. Assistant and motor are required. Good house can be rented on lease, or freehold would be sold. Premium £6,000, part by arrangement. Introduction of six months if required.
7. LONDON, S.E. (CROYDON AREA).—Old-established rapidly increasing middle-class PRACTICE. Income for immediate past year over £1,300, including panel of 700. Surgery fees 2/6 to 5/-. Visits 3/6 to 10/6 Thirty midwifery cases yearly from 3 to 10 guineas. Very commodious house on lease, with 11 years to run, rent £70. Premium £2,000.
8. WITHIN ONE MILE OF MARBLE ARCH.—PARTNERSHIP.—A Half Share in an old-established mixed general Practice. Average income for the last three years about £4,000. Panel of 3,250. Fees 2/6 to 7/6, visits 3/6 to 10/6, and a few at 21/-. About 30 midwiferies at from 3 to 10 guineas. Convenient house in good position. Held on lease (with no ground rent) with 25 years to run. Price £1,750. Premium £4,000. Must be Scotch or English.
9. NORTH DEVON.—COUNTRY TOWN.—A one-third share (with increase up to one half later) in a very old-established and increasing mixed-class PRACTICE, averaging about £3,000 p.a., including panel of over 2,100, and appts. worth nearly £150. Fees 3/6 to 10/6. Midwifery 2 to 7 gns. Choice of houses. Sport of all kinds and schools. Premium 2 years' purchase, part by arrangement if necessary Preliminary outdoor assistantship offered at a salary of £450 p.a. Scotch Graduate preferred, about 30 years of age.
10. X-RAY AND ELECTRO-THERAPEUTIC PRACTICE. — In a large Hospital Town, within 80 miles of London, a well-established connection averaging nearly £1,000 p.a. (last year £1,059) is for disposal for reasons which can be satisfactorily explained. Patients—upper and middle-class. Fees 1½ to 15 gns. House situated in pleasant position, with ample professional accommodation, and 4 rooms, dressing room, bathroom, etc. Premium £1,500. Electric plant (which has been valued) £670 extra. Vendor is on staff of Hospital (nearly 300 beds) and successor will be appointed.
11. SOUTH-EAST OF ENGLAND.—COAST TOWN.—Small but increasing PRACTICE, at present producing about £500 per annum, with good scope. Panel of 420 Suitable house available. Rent £52 p.a. Premium £500, part down, and balance by instalments
12. NOTTINGHAM.—Good middle-class PRACTICE offering good scope and having small panel which could be largely increased. Gross cash receipts about £400 per annum. Fees 3/6 to 21/-, medicine extra Very good modern corner house in pleasant residential district. Rent on lease £80 p.a. Premium £750.
13. ESSEX.—SMALL COUNTRY TOWN.—Well-established and increasing PRACTICE, producing for the past twelve months £768, including panel of 525 and appointments worth over £60 p.a. Advice and medicine clubs 3/6 to 7/6, visits 3/6 to 21/-, medicine extra. Mids (discouraged) 2 to 5 guineas. Exceptionally nice house, with lounge hall, 3 reception, 5 bedrooms, and good professional rooms and usual offices. Hot water supply, electric light. Large garden, with tennis court. Garage for two cars. All in perfect order. Price for freehold £3,100. Premium 1½ years' purchase.
14. [illegible] OF LARGE TOWN.—Old-established PRAC[illegible] years. Average income for the past twelve months £1,000, including panel of nearly 1,500. Fees 2/6 to 10/-. Very good house, standing in its own grounds, and containing 3 reception, 4 bedrooms, dressing room, 3 professional rooms. Central heating. Electric light. Garden, with greenhouse. Garage for 3 cars. Price for leasehold £2,100, of which about £1,500 could remain on mortgage. Premium 1½ years' purchase, part by instalments.
15. OUTLYING WESTERN SUBURB.—Old-established mixed general PRACTICE. Income for the immediate past year about £2,500, including panel of between 1,400 and 1,500. Fees 3/6 to 10/6 Midwifery from 3 gns. The district is rapidly developing and there is great scope. Good house, with garden and garage. Price £2,000. Premium £3,500.
16. LONDON, S.E.—Outlying Suburb.—Very well-estab. growing mixed general PRACTICE, situated in pleasant district within easy reach of town. Gross cash receipts for immediate past twelve months nearly £2,650. Panel of 2,120. Appts. worth about £60 and stated to be transferable. Fees 2/6 to 7/6. Midwifery from 3 gns (about 40 cases yearly. Moderate expenses Seven-roomed house, with kitchen, 2 waiting rooms, dispensary, and consulting room. Garden Brick built garage. Price for freehold £1 500 Premium £4,500
17. SOUTH OF ENGLAND.—FAVOURITE SEASIDE RESORT.—Mainly better-class PRACTICE, producing for the last twelve months about £700, and rapidly increasing. Panel of 150. One appt. worth about £40 p.a. Fees 3/6 to 7/6. Only a few cases of midwifery, 2 gns. upwards. Good house in excellent repair, with 2 reception, 5 bedrooms, etc. Electric light. Garden. Garage. Price for freehold £2,300 Premium £1,400.
18. MIDLANDS.—UNOPPOSED COUNTRY PRACTICE, situated in good hunting centre. Gross cash receipts for past 12 months about £1,000 p.a., including panel of 600. Advice and medicine from 3/6, visits 3/6 upwards, with medicine extra. Lowest midwifery 2½ gns. Exceptionally attractive house, with oak panelling, etc., 2 reception, 10 bedrooms, and professional rooms. Well-stocked garden of 1¼ acres, and 12 acres of grassland. Recently re-decorated throughout Electric light. Price for freehold £4,500, of which £2,200 could remain on mortgage. Premium 1½ years' purchase.
19. CHANNEL ISLANDS.—Old-established general PRACTICE. Present income approximately £700, but large scope. Advice and medicine 3/6 to 10/6, visits and medicine 5/ to 15/-. Midwifery refused Commodious house, with 2 reception, 6 bedrooms, etc. Vendor's freehold. Good schools Price for practice and house £3,000.
20. WEST OF ENGLAND.—Very easily worked unopposed Country PRACTICE. Gross cash receipts for immediate past 12 months £657, including panel of 500. Fees from 2/6 to 12/6. Midwifery 3 to 5 gns. Nice house, with 2 reception, 6 bedrooms, etc., professional rooms. Large garden and paddock. Price for freehold £1,200 Premium 1½ years' purchase.
21. LANCS.—In a rapidly growing good-class suburb of large town (pop. nearly 200,000), a very old-estab. PRACTICE, held by Vendor over 30 years, and averaging about £900 p.a., including Union (£6), with prospect of increase shortly) and panel of nearly 1,000. There is a surgery in centre of town to which bulk of practice and panel work is attached. Private residence contains 2 reception, 3 bedrooms, bathroom, etc., and small garden. Both Vendor's properties Price £1,750, £900 on mortgage, or would be rented Prem 1½ years.
22. WILTSHIRE.—Unopposed old-estab. Country PRACTICE, situated in very pretty district and averaging £700 p.a., including Union appt. £70, and panel producing £450. Nearest opposition 3½ miles. Railway station 1 mile. House stands in own grounds of 1½ acres, with tennis court, garage, etc., and contains surgery, 3 reception, 5 or 6 bedrooms, bathroom (h. & c.). Electric light plant installed Vendor's freehold, price £2,500, all of which could remain on mortgage if wished. Premium £1,050
23. NORTHUMBERLAND.—Small middle-class PRACTICE, offering [illegible] for increase. Income for past three years has averaged over £[illegible] p.a Panel (which has been discouraged) numbers about 70. Fees 2/6 to 21/-. Midwifery from 3 gns. Convenient eight-roomed house in good position, with large garden. Rent £52 p.a. Premium £[illegible]
24. SOUTH COAST.—FAVOURITE HOLIDAY RESORT.—Well-established non-dispensing PRACTICE. Average income about £1,100, [illegible] panel of 1,200. Consultations 2/6 to 10/6. visits 3/6 to 21/-. Practically no midwifery. Very good house, in best position [illegible] front. Price for leasehold (with 20 years to run at a ground rent of £4 p.a., and renewable) £2,250. Premium £1,800

REQUIRED.—Experienced ASSISTANT, with London qualification [illegible] Town Practice in Suffolk. Unmarried, aged 25 to 30. Must have held Hospital appts Good salary, and prospect of partnership [illegible]

REQUIRED.—Indoor ASSISTANT for outdoor by arrangement [illegible] Country Practice in Suffolk. Must be English, and pref. Bart's man Salary £300 p.a. indoor, and equivalent outdoor.

REQUIRED.—Outdoor ASSISTANT for Town Practice in Midland Single. Salary £400 p.a. Suitable rooms available.

Full Schedule of Terms and Conditions will be forwarded on application.

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as well as
Acute and Bacillary Dysentery

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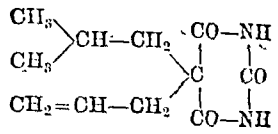

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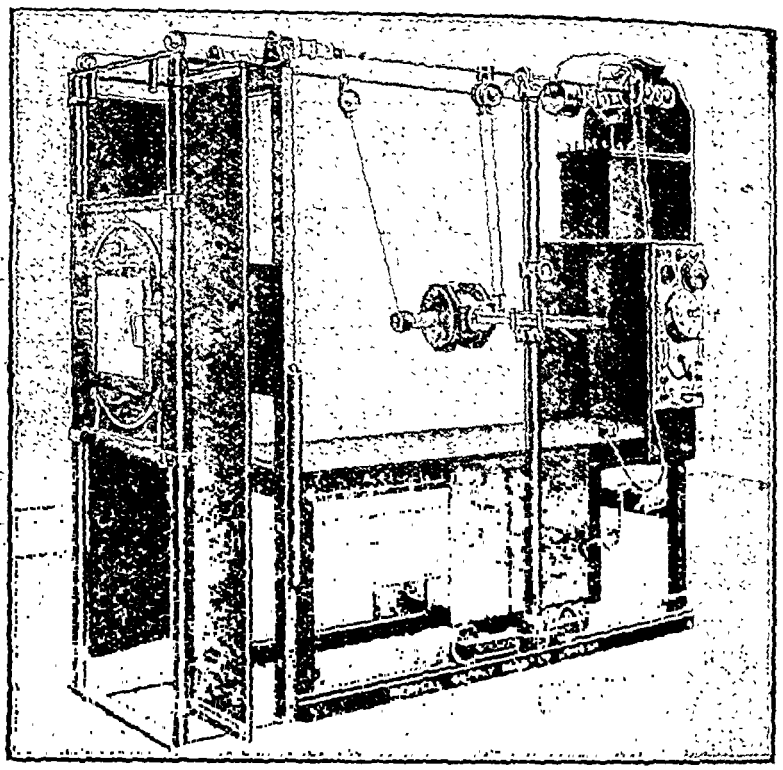

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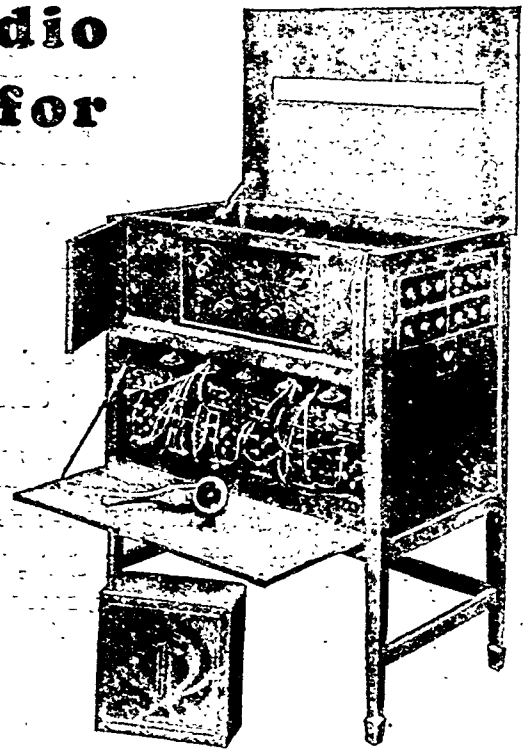

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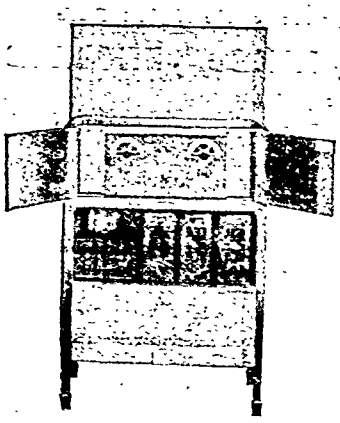

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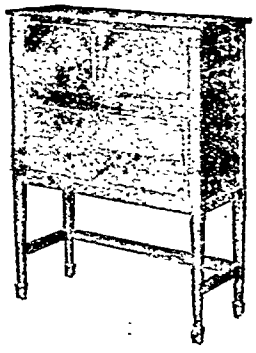

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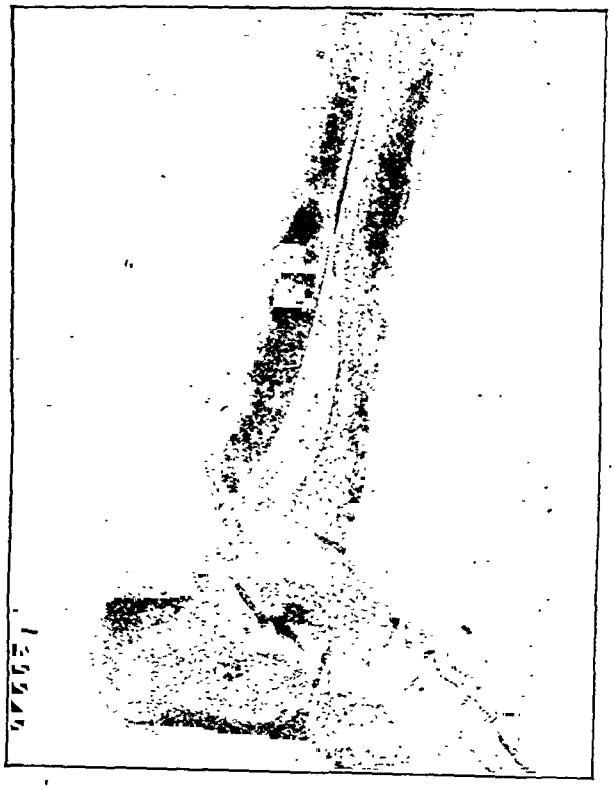

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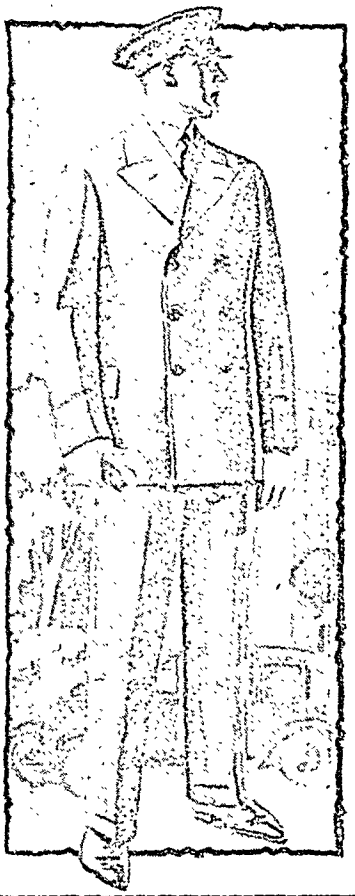

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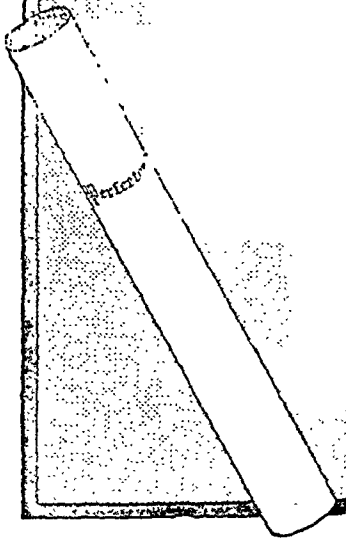

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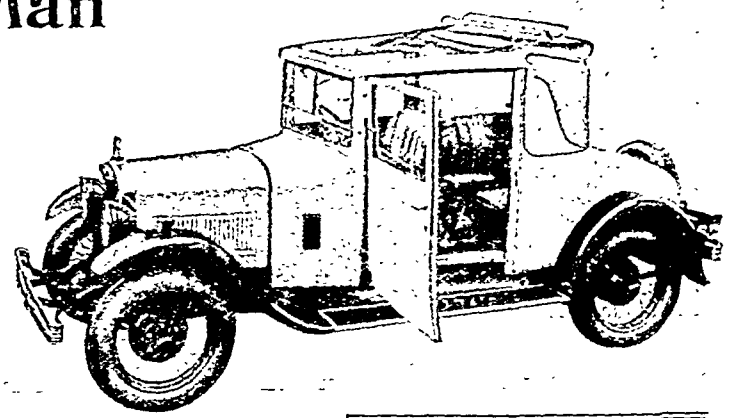

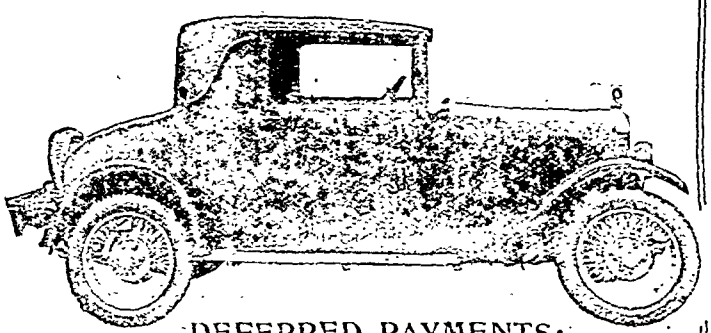

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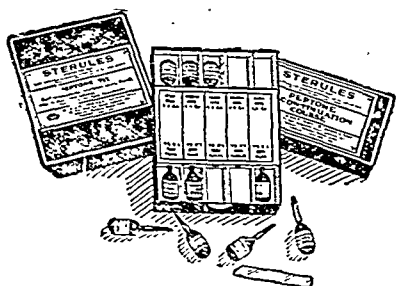

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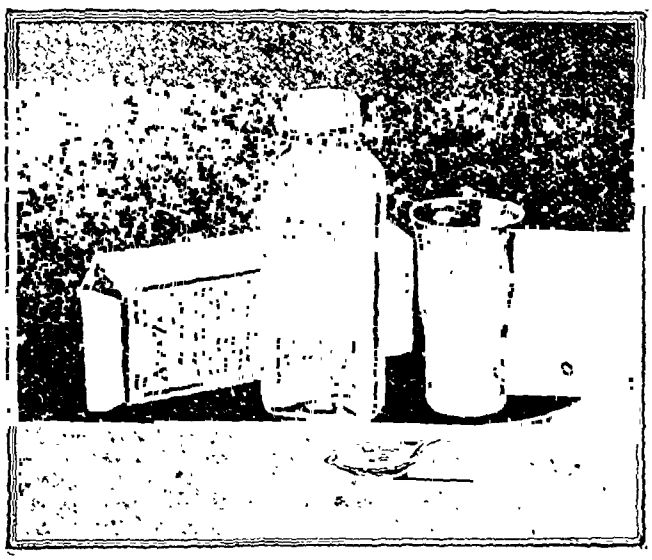

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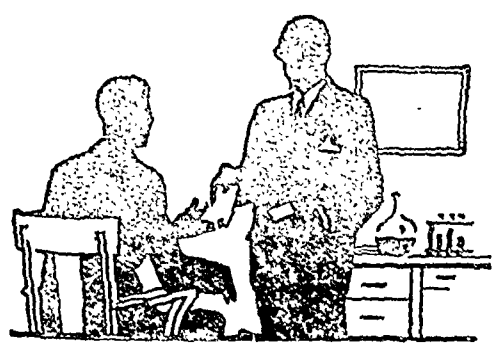

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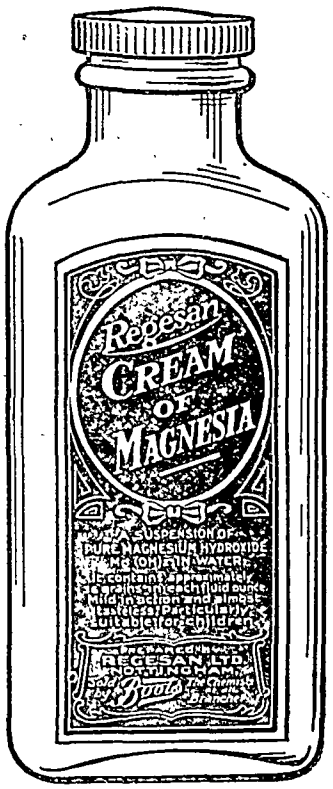

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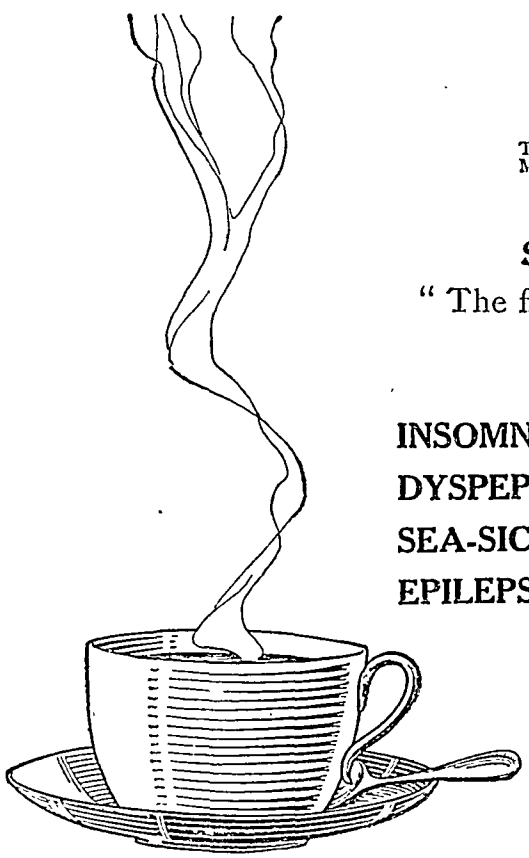

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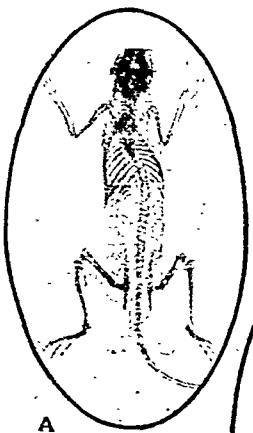

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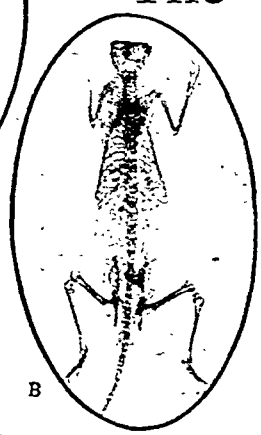

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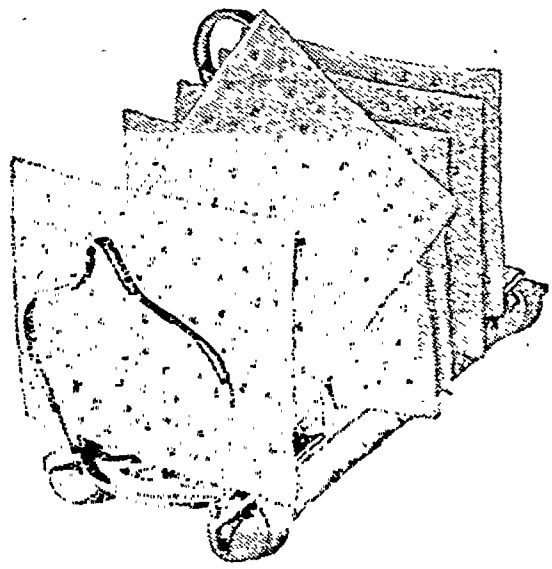

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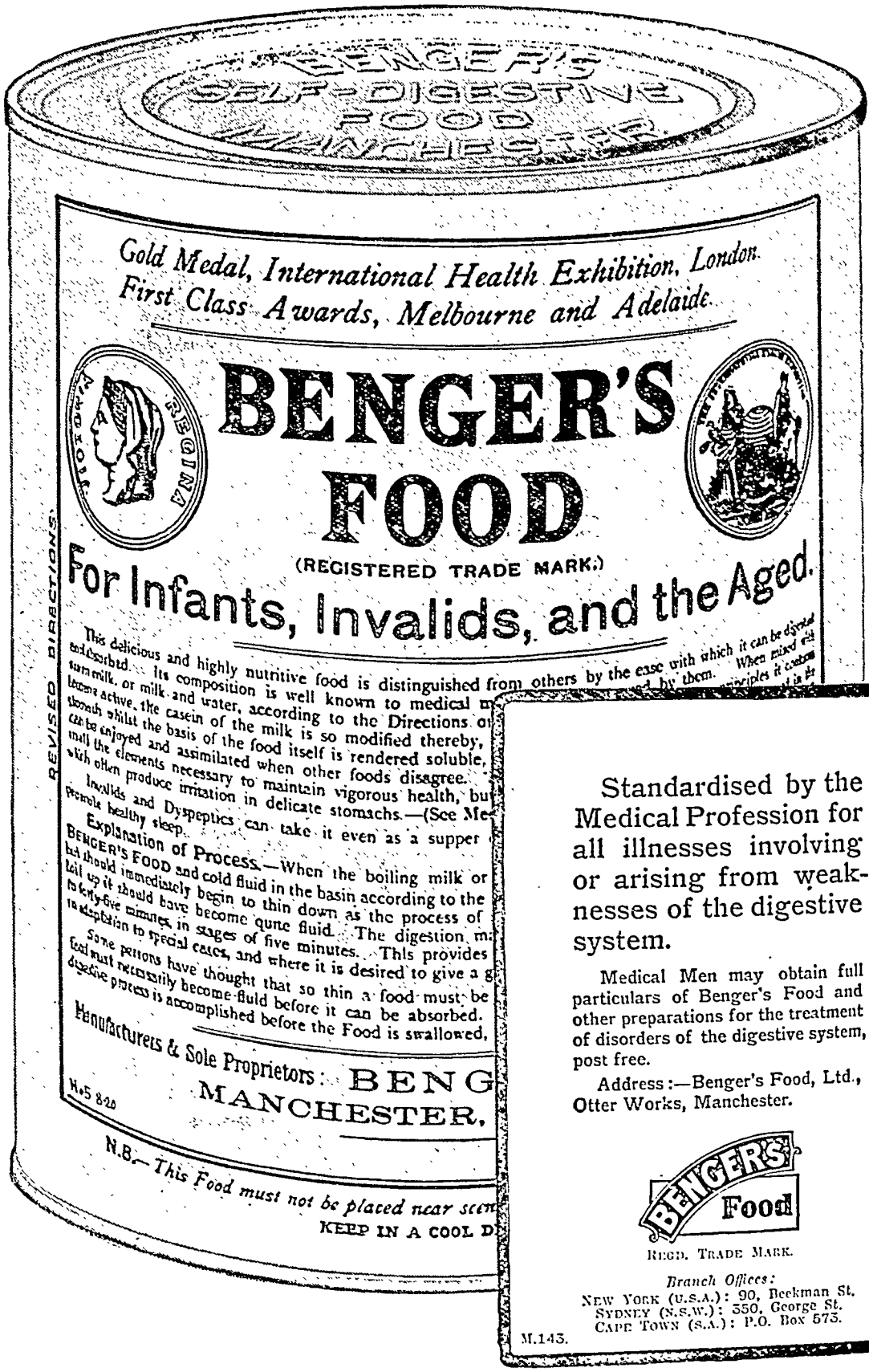
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MONSOL is a practical application of four essential principles, never before combined:—

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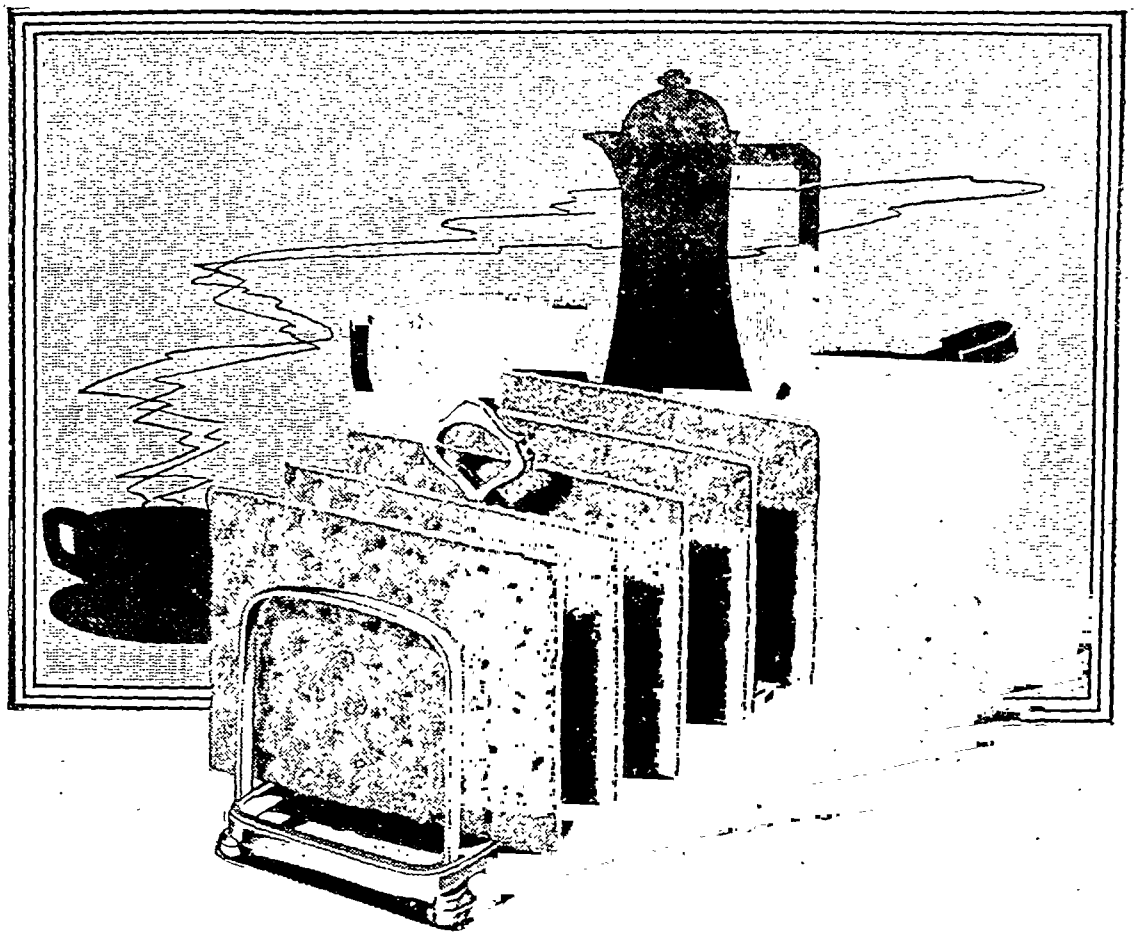

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RYVITA CRISPBREAD — the wonderful daily bread of Sweden—is made of rye and nothing but rye, the only cereal from which the true "crispbread" can be made.

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The enthusiastic welcome and instant adoption of "Ryvita Crispbread" by food experts and the public has led to the astonishing success that has by now firmly established "The Ryvita Crispbread Habit" in our country.

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Sold by all good grocers and stores at 1/6 per (40-50 slice) 1-lb. carton; ½-lb. 10d.

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RADIO = MALT

RADIO-MALT is definitely
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This is a fact of the utmost importance just now when Influenza and the infectious illnesses of early spring are prevalent.

RADIO-MALT possesses valuable prophylactic and therapeutic properties resulting from its content of Vitamin A, Vitamins B_1 and B_2 and Vitamin D, all of which are manufactured under strict scientific control in the B.D.H. laboratories, and are incorporated in Radio-Malt in standardised amounts.

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Physician's sample on request

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EIGHTH PERIOD—circa 750 B.C. to A.D. c. 404

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Ensure regular administration by prescribing

TRADE MARK "TABLOID" BRAND TONICS

The medicament is untasted. An additional advantage is that business patients find the little bottle convenient to carry to the office—it is easily slipped into the pocket or handbag.

"TABLOID" GLYCEROPHOSPHATES COMPOUND

Sugar-coated—bottles of 25 and 100

Equivalent to 1/2 dr. of Syrup, 1/3 and 3/9

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Contains Arsenious Acid, gr. 1/100; Exsiccated Iron Sulphate, gr. 1; Calcium Sulphide, gr. 1/4; and Extract of Gentian, gr. 2

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Equivalent to ½ dr. of Syrup, 10d. and 2/6
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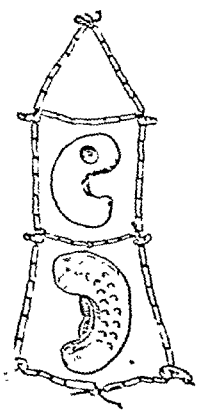

INTERESTING ARCHÆOLOGICAL REMAINS OF THE EARLY PIONEERS OF JAPAN.—From the contents of the tumuli, in which they were buried, some idea can be gained of the culture of the rovers who left the mainland of Asia for the islands of Japan. The most interesting and characteristic among these objects is the *magatama* or "curved jewel." This seems to have been their most common amulet, and article of personal adornment. It was made of the semi-precious stones and was held in the highest esteem; indeed, it now forms, with the sword and mirror, part of the insignia of Japan. The collar, composed of jaspar nephrite, and here reproduced, has the "magatama" in prominent positions; other examples are shown within the collar.

DATE: From about 500 B.C.

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Inventor and Maker of Hoefftcke's Extension Appliance.

The benefits of my Ambulatory Extension Treatment have been described by many eminent medical men in cases of tubercular diseases of hip, knee, and ankle joints, fractures of the long bones, especially neck of femur fractures, and cases of Osteo-Arthritis of the hip and those of Rheumatoid origin of knee and ankle.

The main advantage of the use of the extension appliance for those cases is that the patient is enabled to walk about and lead an active life while extension is maintained between the fragments of the fractures and between the articulating surfaces in diseased joints. By means of active movement the circulation of the parts is not restricted as in the recumbent treatment.

Union of fractures, even in the so-called un-united fractures, has been greatly assisted by active movement, and subsequent improved circulation of the blood.

In those of the arthritic conditions, cases have been described where inflammatory changes in the articulating surfaces have been restored to the normal with complete active movement as a result.

Some of the hospital cases of tubercular joint diseases were treated while the patients lived in the poor districts of London, and still good results were obtained.

In many of the Rheumatoidal cases, especially where knees were contracted, the first part of the treatment had to be carried out in the home of the patient, owing to the impossibility of the patient being moved, due to the pain in the joints.

A great improvement in most of the cases was obtained if the patients were able to convalesce in certain parts of the country. My experience has taught me that sea air, especially on the East Coast, is detrimental to the extension treatment of Rheumatoid Arthritic cases, hilly and mountainous districts always exerting a more beneficial action on the diseased joint.

For about twenty years I have suggested to the surgeons and physicians who have sent me their cases that they should advise their patients in the convalescent stage to spend a certain time in a place called Trefriw, in North Wales. The valley of the Conway enjoys a climate very much the same as that of the south of France, and statistics show that in Trefriw the temperature in winter is much higher and the yearly rainfall much less than in London.

In addition to the beautiful mountain air, the patients are able to derive great benefit from the strong Ferrous Sulphate waters obtainable at Trefriw.

In order that I may carry out my treatment under the supervision of medical men who send me their cases, and, if necessary, of a visiting physician, a number of my friends and I have formed a private limited company—Ambulatory Treatment, Ltd.—which has taken over the Bellvue Hotel at Trefriw. This hotel is now being altered and reconstructed to fulfil the requirements necessary for the ambulatory treatment.

Any inquiries should be addressed to 7, Harley Street, London, W.1.

A British Medical Association Lecture

ON THE

RELATION OF EARLY MISTAKES IN INFANT FEEDING TO THE DYSPEPSIAS OF LATER INFANCY AND CHILDHOOD.*

BY

ERIC PRITCHARD, M.A., M.D., F.R.C.P.,

MEDICAL DIRECTOR, THE INFANTS HOSPITAL, VINCENT SQUARE, WESTMINSTER.

At a recent meeting of the Section for the Study of the Diseases of Children at the Royal Society of Medicine, Dr. Jules Taillens,[1] professor of paediatrics at the University of Lausanne, gave a very interesting address on the same subject as that which I have chosen for this lecture—that is to say, "The dyspepsias of childhood."

Professor Taillens claimed that these dyspepsias often took a misleading form and produced symptoms of general weakness, wasting, pyrexia, and even coughing, which were frequently mistaken for those of tuberculosis. He further stated that gastric hyperchloracidity, or, as we usually call it, hyperchlorhydria, was the most frequent cause of these dyspepsias. Owing to the limitation of time, Professor Taillens did not explain exactly how hyperchlorhydria developed into the above group of symptoms, and although I agree with him that hyperchlorhydria may ultimately produce such results, I am not sure that I should agree with him as regards the explanation. His address, however, created so much interest that I thought that the same subject might well form the basis of this lecture.

If hyperchlorhydria, or the excessive secretion of hydrochloric acid in the stomach, is accompanied by a corresponding supply of pepsin, there must be a great capacity for digesting protein, and, as a matter of fact, there is usually in cases of hyperchlorhydria a considerable appetite or craving for nitrogenous foods. Individuals who are the subjects of such gastric hyperacidity do not, as far as my experience goes, suffer at first from any of the recognized symptoms of dyspepsia. They are usually, at least during the early years of life, individuals with a healthy appetite. They enjoy their food, are impatient for their meals, and appear to be well nourished. They sometimes feel a so-called "sinking of the stomach" if their cravings for food are not immediately satisfied, but these discomforts pass off rapidly after a meal. Such individuals deserve to be regarded as "eupeptics" rather than dyspeptics. None the less, if these individuals, as they grow older, continue with full meals, they begin to have epigastric pain about two hours after food—a premonition of duodenal ulcer. Similarly, infants and quite young children with various degrees of hyperchlorhydria do not suffer from ordinary dyspeptic symptoms, but they do suffer from periodic attacks which, according to my own interpretation, depend on a disturbance of liver function. Among the several functions which the liver performs, one of the chief is the de-aminization of amino-acids, and their conversion into urea or ammonia. There is a limit to the tolerance of all organs with respect to each of their functions, and when these limits of tolerance are overstepped they will show signs of fatigue and cause the development of various symptoms which are the direct result of such breakdowns; the liver is no exception to this rule—with overwork its power to de-aminize amino-acids begins to wane.

Now with hyperchlorhydria there are strong inducements to consume excessive quantities of protein foods, which, if indulged, will impose on the liver the duty of de-aminizing very large quantities of amino-acids. The result is easy to predict. When hepatic function fails and the de-aminizing process is feebly conducted, it follows that the amino-acids in an unchanged condition will gain access to the systemic circulation.

In a very interesting paper[2] contributed by Dr. H. W. Barber and Dr. G. H. Oriel to the Section of Dermatology at the Annual Meeting of the British Medical Association held at Cardiff, the results of such flooding of the blood with amino-acids were described as an asthma-prurigo symptom-complex. The group of symptoms described by these authors is made up of:

1. Cutaneous symptoms of the urticarial type.
2. Subcutaneous symptoms of the nature of angioneurotic oedema.
3. Respiratory symptoms of the asthmatic type.
4. Gastro-intestinal symptoms representing certain forms of vomiting and diarrhoea.
5. Nervous symptoms, including migraine and epilepsy.
6. Articular symptoms, including paroxysmal hydrarthrosis.

All these symptoms are, of course, never found combined in any one person suffering from excess of amino-acids in the blood. In infants and young children the symptoms are of rather a specialized form, but the point which I wish to emphasize is, that there are a large number of symptoms in children which follow as a result of the condition of hyperchlorhydria which cannot properly be classified as dyspeptic symptoms, but rather as those of liver inefficiency, and associated with an increase of amino-acids in the blood. I venture, therefore, once more to suggest that many or most of the results of hyperchlorhydria are due to too active a digestion rather than to a bad one.

Before I leave this subject I would like to say a few words with respect to the etiology of the very common condition of hyperchlorhydria in young children. It arises as a natural result of the modern practice of feeding infants with cow's milk with an excessive content of caseinogen, and it matters very little whether the milk is ordinary dairy milk or dried milk, for in both cases it is almost invariably given in a way which calls for a high degree of gastric acidity, owing to its considerable protein concentration.

Breast milk, or rather its protein content, can be digested by pepsin when comparatively little acid is secreted in the stomach, owing to its low buffering capacity, whereas cow's milk requires the addition of a large amount of acid, owing to the high buffer effect of its proteins and phosphates. Hence it follows that if infants can be fed on cow's milk without the development of vomiting and other gastric symptoms the amount of acid secreted must be very great, much greater than would have been the case if breast milk alone had composed their diet. Now, owing to various resources, such as the addition of sodium citrate to such milk dilutions (which prevents the coagulation of casein in a heavy clot with consequent vomiting), gastric tolerance can usually be acquired by infants, even though the milk is only slightly diluted or not diluted at all. This tolerance, with its natural concomitants hyperchlorhydria and a large appetite for protein foods, leads to overfeeding, overfeeding leads to overproduction of amino-acid bodies, and these in turn to hepatic failure and to a flooding of the system with unaltered amino-acids—hence the appearance of symptoms belonging to the "asthma-prurigo" syndrome.

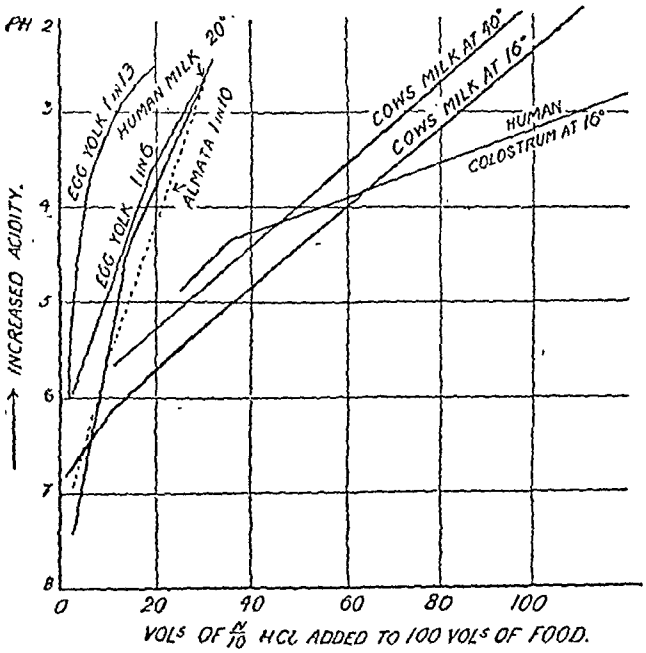
I do not wish to complicate the subject with unnecessary detail, but the accompanying graph, which has been constructed for me from figures supplied by Mr. Leslie J. Harris, D.Sc., working in the Nutritional Laboratory at Cambridge, and confirmed by Dr. Montague Maizels, working in our own laboratory at the Infants Hospital, shows the amount of acid which it is necessary to add to breast milk and cow's milk respectively to bring them up to the degree of acidity at which pepsin will effect the digestion of the protein.

From this graph it will be seen that while about 24 c.cm. of decinormal hydrochloric acid must be added to 100 c.cm. of breast milk to activate the pepsin and make it effective, between 40 c.cm. and 60 c.cm. must be added to cow's milk to obtain the same result. This difference is due to the high buffering effect of the cow's milk. From this it is clear that if an infant is fed on cow's milk instead of breast milk the acid-secreting cells of the gastric mucous membrane will tend to be more highly developed than in the case of breast-feeding, and a state of hyperchlorhydria will result, which will give an appetite for protein foods and cause the condition to "grow worse by what it feeds on."

Mr. Leslie Harris tells me that the buffer value of different foodstuffs may generally be represented with fair accuracy in the ratio of their protein content—that is to

* Delivered before the Cardiff Division, December 20th, 1928.

say, it makes very little difference what be the source of the protein, the actual amount of acid which must be secreted to digest it will be proportional to the actual quantity of protein present in the food. Hence cow's milk, with its high protein content and consequently high buffer value, will necessitate the secretion of large quantities of



In this graph the vertical line is graduated in accordance with its *p*H or degree of acidity: *p*H 7 is neutral point; 6, 5, 4, 3, and 2 represent respectively increasing degrees of acidity. The degree of acidity at which pepsin digestion is at its maximum is about 3 *p*H, although it begins at a lower point—that is, about 4 *p*H. The horizontal line marked 0, 20, 40, 60, 80, 100 indicates the volumes of decinormal (N/10) HCl added to every 100 volumes of food.

acid in the stomach, and will lead ultimately to a condition of hyperchlorhydria.

I hope it will not be assumed that I attach little importance to the dyspepsias which result from a deficient secretion of hydrochloric acid, owing to the fact that I have given special prominence to the condition of hyperchlorhydria.

One of the most important lessons I have learned from certain investigations[3] which we have made at the Infants Hospital is that the *p*H of gastric juice in infants shows an immediate fall with the onset of pyrexial and other constitutional symptoms. With a falling off in efficiency of gastric digestion, followed in all probability by similar falls in the efficiency in pancreatic and intestinal digestion, there results a considerable danger of undigested food entering the large intestine, which gives opportunity there for bacterial decompositions. Under normal conditions neither decompositions nor fermentations occur to any appreciable extent in the small intestine, for although the chyme in this part of the bowel is not absolutely sterile, it is so relatively, owing to the antiseptic influence of the acid gastric juice. Under conditions of hypochlorhydria the stomach does not exercise the same influence, and the chyme when it enters the small intestine is in a less sterile condition, and consequently more liable to fermentative and decomposition changes. Hence a condition of hypo-acidity in the stomach has a tendency to lead later to intestinal toxaemia.

Now although the poisonous products of decompositions and fermentations in the large and small bowel may lead to local disturbances, such as catarrhal enteritis, diarrhoea, colic, or flatulence, the more serious effects are, as in the case of hyperchlorhydria, remote and constitutional. The toxic products of such decompositions are absorbed and carried along the portal channels to the liver, where under normal conditions they are detoxicated and rendered harmless, in a manner comparable to the de-aminization which occurs in the liver in the case of the normal products of protein digestion. In the same way that the liver can fail in its de-aminizing functions from overwork, so also can it fail in its detoxicating functions with respect to the poisonous products which result from bacterial activity in the bowel.

Now when the liver fails in its detoxicating functions the unaltered toxins enter the systemic circulation and exercise their deleterious influences on the body as a whole, and on the cells of the central nervous system in particular. The symptoms of this condition are, therefore, largely nervous, and were it not that the resulting crises are accompanied by anorexia and vomiting, which preclude the further taking of food, the symptoms would be continued indefinitely until death terminated the scene. Thus we see that, both in hyperchlorhydria and hypochlorhydria, the symptoms are remote and not directly concerned with the function of the digestive system proper.

The primary symptoms associated with dyspepsia are vomiting, gastric pains, colic, wind, diarrhoea, and constipation—symptoms which represent disturbances of the motor and not the digestive functions of the alimentary tract. Almost without exception, however, motor symptoms are combined with the deferred constitutional symptoms. In infants it is the motor symptoms which mainly attract attention, whereas in older children and grown-up individuals the main symptoms are of the deferred constitutional type.

Types of Dyspepsia in Infancy and Early Childhood.

In the time at my disposal it would obviously be impossible to give any detailed account of all the common varieties of dyspepsia, nor, indeed, do I feel competent to classify them on any rational or comprehensive basis, but I think if I take certain representative types which in my experience are the most frequently met with in infancy and early childhood, I shall be able to give certain indications for the recognition of the many combinations of them with which we are often perplexed. The three types that I propose to take are as follows:

1. Vomiting, which occurs in infancy, and is due to over-action of the pylorus.
2. The coeliac type of diarrhoea, generally found in children between 1 and 6 years of age.
3. The chronic dyspepsias of early childhood (3 to 7 years), accompanied by periodic attacks of vomiting with acidosis (cyclic vomiting).

Type 1.

A considerable number of the infants under 3 months of age who are brought to the Infants Hospital for so-called *indigestion* have a history of vomiting suggestive of pyloric stenosis, and in quite a large proportion of such cases a diagnosis to this effect has already been made by the practitioner or welfare centre sending up the case. Although the surgical treatment by Ramnstedt's operation is a most satisfactory and rapid means of alleviating the pyloric obstruction, I never refer such cases to the surgeon unless the symptoms refuse to yield to ordinary medical measures. The presence of a palpable tumour with visible peristalsis, even when these symptoms are combined with a history of intractable vomiting, is not, in my opinion, sufficient evidence of pyloric stenosis to justify an operation without further corroboration. I have had many cases with these symptoms in which the *x*-ray examination after a bismuth meal has revealed rapid emptying of the stomach through the pyloric opening. In such cases, however, obstinate constipation is not one of the symptoms, as it is in true pyloric stenosis, and there is usually faecal matter as well as mucus in the motions. A bismuth meal is of the greatest help in distinguishing pyloric stenosis from simple overaction of the motor functions of the stomach, but I have known a bismuth meal pass quite normally through the pylorus and yet ordinary food be retained in the stomach until it is finally evacuated by vomiting. I regard lavage of the stomach some three hours after a feed as giving better evidence of the degree of motor efficiency of the stomach, or at least of the capacity of the stomach to empty itself, than a bismuth meal, although both, taken in combination, give still more reliable evidence. A wash-out of the stomach three hours after a meal will throw light on several points—the character and quantity of the residue, its degree of acidity or alkalinity, and the actual volumetric capacity of the stomach itself.

All these items of evidence pieced together are of great assistance in diagnosing the cause of the vomiting, and

in formulating an opinion as to whether medical or surgical means are indicated in the treatment.

In the vast majority of cases of vomiting in young infants investigated on these lines it is found unnecessary to have resort to surgical intervention. The cause is nearly always spasm and not true stenosis of the pylorus. This spasm almost invariably yields to ordinary medical treatment and appropriate feeding. Now I am sure I am not exaggerating when I say that in 99 per cent. of cases of persistent vomiting in young infants I have found a history of gross errors in feeding during the first few days or weeks of life, which has adequately and satisfactorily accounted for the setting up of pyloric spasm. There is almost invariably a history of overfeeding in cases of breast-fed infants, and of unsuitable feeding in the case of those artificially fed.

Spasm is very easily set up in the sensitive pyloric sphincter, the true function of which is to protect the delicate intestinal tract from unsuitable varieties or quantities of food. Spasm once set up in this sphincter during the early days of life, when it is learning its functions, is very apt to persist and continue even though unsuitable food is no longer to blame. A well-organized pyloric reflex—a reflex which protects the intestines from excessive quantities of semi-digested products, or from the irritation of totally undigested food—is one of the essential conditions of a good intestinal digestion. This pyloric reflex can be so disorganized by early mistakes in feeding that re-education may become difficult or impossible, and symptoms of dyspepsia persist during the whole of life.

Excessive acidity, or hyperchlorhydria, sometimes delays the emptying of the stomach, and when this occurs long-continued contractions of the pyloric muscles may lead to their hypertrophy. On somewhat comparable grounds subacidity of the gastric juice also leads to delayed emptying and long-continued contraction of the pylorus and hypertrophy. Inasmuch as the pH of the stomach is mainly dependent on the nature of the food, as previously explained, we see, too, how to a great extent the establishment of a normal pyloric reflex, and all that this portends, is dependent on a correct adaptation of the food to the physiological requirements.

Now let me state quite briefly how all the troubles which depend on a perverted pyloric reflex can be avoided. In breast-feeding the first secret is to regulate the quantity of milk which enters the stomach during the early days of life by the invariable employment of the "test" feed, a control which is particularly necessary when lactation is first established and when there are great dangers of flooding the stomach with an excess of milk.

In artificial feeding the desideratum is never to allow any variety of food to gain access to the stomach which can provoke any exaggerated or excessive gastric or pyloric reaction. The worst offender of all is cow's milk, no matter what be the degree of dilution. Personally I always use as the basis for the artificial feeding of newborn babies very thoroughly peptonized milk modifications. If this precaution is taken and the proper quantities are given at regular intervals, I guarantee that a case of so-called hypertrophic pyloric stenosis will never be met with; indeed, I will go so far as to assert that there will be no case of persistent vomiting of any kind.

I am often asked what is the ultimate fate of these so-called pyloric cases. As far as my experience goes, their fate depends on the degree of aggravation which has in the first instance brought about the spasm of the sphincter. Cases in which only slight defects in the feeding have produced spasm of the pylorus necessitating operation usually do badly, because a violent reaction to a slight degree of stimulation implies a very sensitive or spasmophilic state of the nervous system. I have noticed in such cases a general tendency in later life to increased sensibility to all forms of injurious agents—a sort of general anaphylaxis. Cases in which very gross liberties have been taken with the feeding during the early days of life, without producing very violent reaction—that is to say, reactions which are easily controlled by simple medical measures without resort to operation—usually do extremely well as soon as the vomiting ceases.

Type 2.

Now with respect to the "coeliac" type of dyspepsia, I will preface my remarks by saying that I do not regard the syndrome to which this name has been applied as a clinical entity or definite disease. I regard it merely as a combination of symptoms resulting from a variety of causes, mainly concerned, however, with an atrophic condition of the intestinal mucosa and atony of the intestinal walls, but sometimes due to an atrophic or undeveloped condition of the pancreas. The liver is certainly small in many of these cases, but this is better explained on the ground that the liver has little work to do owing to restricted absorption, than that it is small owing to innate or congenital causes. Moreover, the fact that this smallness of the liver itself disappears as recovery takes place also militates against the view that there is any congenital defect in the liver itself, or that coeliac disease itself is of congenital origin.

In nearly all cases of "coeliac" disease which have come under my notice there has been a history of good or normal progress up to a certain point, and that then there has been a crisis of some kind with diarrhœa and all the usual symptoms. Moreover, in the majority of these cases there has been a history of bad feeding—generally excess in the total quantity combined with deficiency of vitamins, which will explain all the subsequent events. But in whatever way these cases commence, there can be no doubt that if an atrophic and unhealthy condition of the intestinal mucous membrane exists, it can be perpetuated and aggravated by the treatment to which nearly all "coeliac" cases are subjected. Owing to the peculiar character of the stools, fats are almost universally eliminated from the diet, and consequently there is almost complete starvation as regards fat-soluble vitamins as well as fat itself; secondly, the consumption of fruit is vetoed because of the diarrhœa; and thirdly, vegetables and other [illegible] foods are forbidden because of their [illegible] peristaltic action. So-called "coeliac" disease, or at least a very large proportion of the cases which pass under this name, are associated with, if they are not definitely due to, dilated and atrophied intestines, and these two latter conditions are almost certainly caused by bad feeding, and very probably chiefly by want of vitamins. If this is so, no course of treatment could be worse than the one outlined above. It illustrates the therapeutic principle of "treating a bite with a hair of the dog that bit"—that is to say, a bad dietary is treated by a worse one. I find these cases always improve and generally become cured by acting on the principle that since little food can be absorbed little food must be given; and since the cause of the disease is mainly a want of correct balance in the dietary, the diet must be properly balanced, and contain a good representation of vitamins and mineral elements.

The presence of fat in the stools is no contraindication for the giving of fats. Fats in the form of insoluble soaps furnish, in the case of infants, their only source of roughage, and they serve the same purpose at any time of life. But in order that insoluble soaps may be formed out of the neutral fats consumed as food two conditions must be fulfilled. First, the fats must be "split," and secondly, there must be an adequate supply of calcium or magnesium with which the fatty acids can combine to form the insoluble soaps. Hence the stools of "coeliac" patients should be examined to see whether soaps are present or not. If either fatty acids or soaps are present it proves that the fats consumed are split, or digested, and that lipases are provided by the pancreas or other source. If only, or mainly, neutral fats are present in the stools, pancreatic preparations must be given independently to ensure the splitting of the fat, and in all cases a liberal supply of calcium should be provided to neutralize the fatty acids and so form insoluble soaps. For this purpose either prepared chalk or aromatic chalk powder must be given in full amount. One of the chief essentials in the treatment of these cases is unlimited patience and rigid adherence to the main principles in spite of obvious temptations. The dangerous time is when improvement begins to take place and appetite returns, for then there are strong inducements to relax rules and increase quantities. Since in

these cases little food can be absorbed; such sources of energy as are available must be conserved by keeping the patient thoroughly warm—in bed for preference—and by limiting exercise as far as possible.

The ultimate fate of the majority of "coeliac" cases is recovery, but even after what may be regarded as complete recovery there is always a tendency to recidivism, and some dilatation of the intestines usually persists.

Type 3.

As I have already indicated, the symptoms of certain forms of dyspepsia are so remote and general that they are liable to be attributed to tuberculosis or other constitutional trouble, rather than to actual defects in the digestive processes. The kind of case which I am about to describe is essentially of this character in its most typical form. It occurs in children between 2 and 16 years of age. It is chronic and remittent in character.

Children suffering from this form of dyspepsia are never really well, neither do they look well. They usually do not complain of feeling ill, but they have little energy, are easily tired, and have capricious appetites. There is often a continued temperature, usually under 100° F., sometimes lasting for many months. The complexion is sallow, with dark rims to the eyes, the tongue is dirty, and the breath tainted. There is irritability of temper, restlessness at night, or night terrors. The children often complain of abdominal pain or stitch in the side on running. The urine is usually thick, cloudy, or ammoniacal, and the stools are offensive. One of the most diagnostic and characteristic of the symptoms is the regular manner in which periodic attacks of biliousness supervene. These symptoms make up a clinical picture which must be perfectly familiar to everyone; but since all of them in combination never occur in one case the presence of even a few of them should put the practitioner on his guard.

All these symptoms can be rationally and satisfactorily explained on the assumption that the food consumed is not completely digested, owing either to its quality or total quantity, or to the relatively deficient powers of the digestive functions to cope with the task imposed upon them. Whatever may be the cause bringing about this failure of digestion the result is the same. Food which should have been digested normally by the normal enzymes of the alimentary tract remains undigested, or only partially digested, and becomes the pabulum of bacteria in the large bowel, and, as a consequence, the colon assumes an unhealthy condition, with offensive stools, flatulence, abdominal pains, and stitch in the side. This stitch in the side, so very characteristic of intestinal toxaemia, is, I believe, caused by the dragging of a heavy and sagging colon on its two points of support—its hepatic and splenic flexures—a dragging which is intensified by exercise in the upright position.

The toxic products of intestinal putrefaction are absorbed and carried to the liver, where for a time they may be effectually dealt with and rendered innocuous. Failure, however, is evidenced by offensive breath, dirty tongue, irritability, and other nervous symptoms. After varying periods of endurance the liver breaks down in function, and then the systemic circulation is inundated with a flood of unaltered toxic products, with intensification of the nervous symptoms, which take the form of vomiting, high temperature, migraine, or sick headache.

Under these conditions, and especially owing to the vomiting, the further consumption of food becomes impossible, and the liver obtains a much-needed rest. General recovery then takes place, the appetite returns, and the whole cycle of events is repeated with systematic regularity. The treatment of these bilious attacks, or cyclic crises, is usually by calomel or grey powder. This treatment, which as a rule gives immediately good results, is not really rational or far-seeing, for its efficacy is mainly due to stimulation of the liver, and not to removal of the cause. It acts, in fact, on the principle of "spurring on the tired horse," instead of taking the load off its back. The toxic bodies which directly bring about these breakdowns of liver function are due to the decomposition of nitrogenous foods, such as butcher's meat, fish, eggs, poultry, and milk. Hence it is obvious that the treatment should be concerned with a limitation of the intake of these particular foods. On the other hand, the fermentations which take place in carbohydrate and cereal foods lead to the formation of considerable quantities of acid bodies, such as acetic acid, butyric acid, lactic acid, propionic acid, and so on; these do not seriously tax hepatic function after absorption, but they do seriously drain the bicarbonate reserves of the blood and lead to those true conditions of acidosis which so often complicate the actual hepatic crisis. It should be clearly recognized that conditions of acidosis proper, in which there is a reduction of the alkaline reserves of the blood, should be distinguished from conditions of ketosis in which there is usually acetone in the blood, the breath, and the urine. A true ketosis seems to be one of the results of defective fat metabolism and hepatic insufficiency, and therefore it is scarcely to be wondered at that in these cases of periodic liver attacks due to intestinal toxaemia the condition should be complicated by a ketosis. In fact, I think it may be assumed with some confidence that in cases of intestinal toxaemia due to defective digestive processes there is generally a combination of all these conditions—hepatic crisis, ketosis, and true acidosis. The rational treatment of these cases involves three main principles of therapeusis: First, and mainly, the limitation of nitrogenous foods. Secondly, the limitation of all foods within the bounds of physiological requirements. Thirdly, the prevention as far as possible of intestinal decomposition by sterilization of the intestinal tract. Finally, by the prevention of conditions of true acidosis by the free administration of alkalines.

I hope that the three types which I have chosen to illustrate my thesis will help to show that if the digestive functions are imperfectly performed certain immediate, and, if I may use the term, proximal, symptoms, are liable to be produced which are mainly concerned with disturbances of the neuromuscular mechanisms that control the transit of food through the alimentary tract. These symptoms carry a warning note which, if attended to, should obviate the development of other, more serious and more distal, symptoms connected with the breakdown of liver function and with the poisoning of the system with various toxic substances.

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THE SIGNIFICANCE OF INTRADERMAL TUBERCULIN TESTS.

A PRELIMINARY NOTE ON AN INVESTIGATION IN PROGRESS BY THE MEDICAL STAFF OF THE WELSH NATIONAL MEMORIAL ASSOCIATION.

BY

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THE intradermal method of tuberculin testing was introduced by Mendel[1] and Mantoux[2] in 1908. For quantitative tests it has the advantage over the von Pirquet reaction in that the whole of the tuberculin used does actually enter the tissues. Happ and Casparis[3] consider that 0.01 mg. of tuberculin given intradermally corresponds to the usual von Pirquet test. While the von Pirquet test carried out according to the technique described by me in the *British Medical Journal* of February 2nd, 1924, appears to give results equivalent at least to 0.1 mg. of tuberculin intradermally, there can be no question but that the intradermal method is a much more sensitive test than the cutaneous one, and gives a greater amplitude in the elicitation of latent infection.

As compared with the subcutaneous tuberculin test, the intradermal method aims at a local, not a general, reaction, and it is an interesting fact that doses of tuberculin capable of giving rise to severe focal and constitutional reactions in infected persons can be given intradermally without exciting any appreciable response other than the local one at the site of inoculation. An excellent account of this and other forms of the tuberculin test was given by Burhans[1] in 1927, and should be consulted by all interested in the subject.

At a meeting of the medical staff of the Welsh National Memorial Association in December, 1927, it was decided to test out the intradermal method on various types of tuberculous patients with a view to arriving at a clearer idea of its significance in relation to the disease. As director of research to the association it has fallen to my lot to draw up a scheme of investigation, co-ordinate the work, and analyse the results; but nearly all the actual tests have been carried out by my colleagues of the medical staff of the association, and in particular by Drs. D. W. Fenwick Jones, D. H. Mills, and L. R. Clark; and for all this help I desire to express my gratitude. I also wish to thank Dr. R. A. O'Brien, director of the Wellcome Physiological Research Laboratories, through whose kindness a very reliable sample of old tuberculin (O.T. No. 1154, B. W. and Co.) was made available for use in all the tests now recorded. This tuberculin was put up by me in the following strengths, and supplied, as required, to the medical staff: 1 in 10,000, 1 in 5,000, 1 in 1,000, and 1 in 500. The diluent used was sterile normal salt solution to which 0.5 per cent. of carbolic acid was added. Medical officers were warned that diluted tuberculin is liable to deteriorate, and that the phials should be regarded as unreliable three weeks after the date of issue. The inoculations were given intradermally, a volume of approximately 0.1 c.cm. of the appropriate dilution being injected by means of a whole-glass hypodermic syringe with a very fine accurately fitting needle. It was found that needle No. 214, B. W. and Co., was suitable for the purpose. Special precautions were taken to avoid too deep a puncture. The escape of tuberculin into the subcutaneous areolar tissue vitiates the test and exposes the patient to the risk of a general reaction. The site chosen was usually the outer surface of the arm a few inches below or above the elbow-joint. No injection was considered satisfactory if it did not raise a circumscribed wheal at the point of inoculation. It was decided not to give "control" injections of sterile diluting fluid, though these are advocated by Burhans.

The number of inoculations to which patients will submit is limited, and it is my experience that "reactions" after such control inoculations are so very rare as to be practically negligible. In the majority of cases a positive reaction with any given "dilution" was accepted as a proof that the patient concerned would be positive with the stronger preparations—that is, a patient reacting to 1 in 10,000 was assumed to be positive also to 1 in 5,000, 1 in 1,000, and 1 in 500. That this assumption, which underlies the percentages in the following records, is correct, was proved by the results in those few patients to whom all four strengths were given. In these it was found that the intensity of the reaction increased regularly with each increase in strength of tuberculin.

Comparison of Reaction in Healthy Adults and Tuberculous Patients.

A group of 46 healthy male adults residing in London was tested by me according to the technique above described except that only two dilutions of tuberculin—1 in 5,000 and 1 in 1,000—could be used. To these healthy volunteers, who desire to remain nameless, my sincere thanks are due. The results in this healthy group were compared with the results in 150 tuberculous patients, a miscellaneous group including adults and children, males and females, pulmonary and non-pulmonary, under treatment by the association. The findings are compared in Table I.

TABLE I.—*Tuberculin Reactions in the Healthy and the Tuberculous.*

Tuberculin Dilutions.	Percentages Positive.		Average Size of Reaction in Centimetres.*	
	Healthy.	Tuberculous.	Healthy.	Tuberculous.
1 in 10,000	80	37	1.30	0.5
1 in 5,000		61		1.0
1 in 1,000	93	70	2.07	1.4
1 in 500		74		1.6

* All the reactions in the "healthy" group, but only 37 reactions in the tuberculous group, were measured.

It will be apparent from the above table that, both in the percentages of positives and in the extent of the raised area of reaction, the healthy persons gave results over 20 per cent. higher than the persons actually suffering from tuberculosis. This finding raised the question of the relation, if any, of tuberculin sensitivity to the severity of the disease; and the above miscellaneous group of patients was now analysed according to clinical type.

Comparison of Pulmonary and Non-pulmonary Cases.

Pulmonary tuberculosis is, on the whole, more severe than non-pulmonary tuberculosis; so a comparison was made between 64 pulmonary and 83 non-pulmonary patients, the latter constituted, for the most part, of cases of bone and joint tuberculosis.

TABLE II.—*Tuberculin Reactions in Pulmonary and Non-pulmonary Cases.*

Tuberculin Dilutions	Percentages Positive.		Average Size of Reaction in Centimetres.*	
	Pulmonary.	Non-pulmonary.	Pulmonary	Non-pulmonary.
1 in 10,000	26	45	0.50	0.40
1 in 5,000	54	70	0.80	1.38
1 in 1,000	65	77	1.30	1.24
1 in 500	72	78	1.58	1.60

* Only about 15 patients in each group were "measured" in all dilutions.

Here again the less severe and non-pulmonary group gives higher percentages, in all tuberculin dilutions, than the more severe phthisical group, the average size of the reaction, however, being about the same in both groups. Both groups included children and adults, but the proportion of children in the non-pulmonary group was greater. The groups were therefore reshuffled according to age.

Comparison of Tuberculous Adults and Children.

Some of the records did not show clearly whether the patients were children or not, so the groups are smaller through the exclusion of uncertain cases—33 adults and 91 children.

TABLE III.—*Tuberculin Reactions in Tuberculous Adults and Children.*

Tuberculin Dilutions.	Percentages Positive		Average Size of Reactions in Centimetres.*	
	Adults.	Children	Adults.	Children.
1 in 10,000	24	40	0.33	0.60
1 in 5,000	54	64	0.80	1.10
1 in 1,000	75	70	1.20	1.50
1 in 500	85	72	1.33	1.83

* Only about 15 patients in each group were "measured" in all dilutions.

The above table suggests that with the higher dilutions tuberculous children react better than tuberculous adults; it will be noticed that the average size of the reaction is slightly greater in children with every strength of tuberculin employed. In this connexion a note by Dr. D. W. Fenwick Jones of the North Wales Sanatorium is of interest. "All babies—surgical—under five," he writes, "reacted well to 1 in 10,000 tuberculin," the reaction appearing late, "only on the sixth day." These infants were further tested with 1 in 5,000, when "they all reacted well on the third day."

This high reactivity of tuberculous infants and children is of importance, especially in view of the fact that non-tuberculous children in the lower age groups differ from healthy adults in giving but a low percentage of "positives." In 28 children "under observation," and without any definite evidence of tuberculous disease, only 7, or 25 per cent., reacted to the intradermal tuberculin test.

Analysis of "Classified" Cases of Pulmonary Tuberculosis.

With the idea, above mentioned, of comparing the tuberculin sensitivity in the more severe and the less severe types, an attempt was made to have the pulmonary cases classified on a system described by me[5] in 1924; but unfortunately only a very small number of cases were so classified amongst the tested patients. The results are given for what they are worth, but it is recognized that the numbers are too small to be satisfactory. All the classified cases were in the third stadium of phthisis, that is to say, suffering from advanced disease. Twenty were of the "recrudescent" or "C" type, twelve of the "initial" or "A" type. The results of the tuberculin tests are given in the following table.

TABLE IV.—*Tuberculin Reactions in "A" Initial and "C" Recrudescent Cases.*

Type of Case.	Total No. of Cases.	Percentages Positive in each Dilution.			
		1 in 10,000.	1 in 5,000.	1 in 1,000.	1 in 500.
"A"	12	16	33	50	50
"C"	20	15	45	65	90

Admitting that the numbers are too small for a conclusive comparison, the tendency seems to be in the direction of more marked reactions in the more favourable "recrudescent" group. The classified cases were separated into fresh groups for consideration from another point of view, according to the classification of Inman, who divided tuberculous cases, in terms of their degree of auto-inoculation as indicated by their temperatures, into "resting febrile," "ambulant febrile," and "ambulant afebrile." Of the 32 patients, 20 were "resting febrile" and 12 "ambulant afebrile." It should be noted that, though the numbers are the same, the cases divided up quite differently from the divisions in Table IV, nearly all the "A" cases being in the "resting febrile" group.

TABLE V.—*Tuberculin Reactions in "Resting Febrile" and "Ambulant Afebrile" Cases.*

Type of Case.	Total No. of Cases.	Percentages Positive in each Dilution.			
		1 in 10,000.	1 in 5,000.	1 in 1,000.	1 in 500.
Resting febrile ...	20	14	38	62	81
Ambulant afebrile	12	16	58	83	100

Again it must be recalled that the numbers are very small; but the figures suggest that the patients sufficiently resistant to hold their temperature in control are also the patients with a sharp power of reaction to tuberculin.

Summary and Conclusions.

It would seem from the above observations that tuberculin sensitivity is at its height in healthy but infected adults, and is still high in those tuberculous persons in whom the disease is taking a relatively benign course, and that it tends to diminish with the gradual deterioration of health consequent on advancing tuberculosis. Whether this fall in sensitivity is the result of the production of anti-bodies capable of neutralizing tuberculo-toxin, or whether it is due to a gradual loss of the power of breaking down tuberculin into its toxic derivatives remains uncertain. The fact that long-continued tuberculin therapy may lead to a toleration of tuberculin, with a corresponding clinical improvement, supports the possibility of a "neutralization" factor, at least in favourable cases, while the fall of tuberculin sensitivity in the advanced stages of non-tuberculous diseases, as well as in the terminal stages of tuberculosis, speaks for a gradual deterioration in the power to deal with tuberculin or to react to it. It may be that the loss of tuberculin sensitivity is due not to one but to several factors, and that different factors may be operative in inhibiting the reaction at different stages of the disease. While it appears certain that a very low percentage of "positive" reactions in any given community goes with a marked racial and individual susceptibility to tuberculosis, it would be a mistake to assume that a high percentage necessarily denotes the possession of a good resistance. The fact that tuberculous children tend to react as well as, or better than, tuberculous adults is against this, since children exhibit a greater liability than adults to generalized tuberculous lesions. It should be recalled, in this connexion, that artificially infected guinea-pigs, though doomed to progressive disease and a fatal termination, almost always show a marked tuberculin sensitivity in the third or fourth week after infection.

A good tuberculin reaction, then, is no guarantee that the patient will be able to control his tuberculosis, nor is a high percentage of reactions, even to so small a quantity of tuberculin as 0.1 c.cm. of a 1 in 10,000 dilution, or 0.01 mg., to be interpreted as meaning that the tested group is necessarily resistant to the evolution of the disease.

With regard to the loss of sensitivity during the progress of a tuberculous infection, the findings of Henry Stuart Willis[6] suggest that, in guinea-pigs chronically infected by inoculation with an attenuated strain, sensitivity is gradually lost, but may be rapidly "whipped up" again by a reinfection. This type of fall in sensitivity probably depends on a "locking up" of the tuberculous foci in the course of spontaneous cure, and is to be distinguished from the "wearing out" of sensitivity in the terminal stages of tuberculosis; the latter being of serious prognostic import.

It is to be noted that no concentrations stronger than 1 in 500 tuberculin were used. The steady rise in the percentages of "positives" with the stronger concentrations justifies the belief that, as found by Happ and Casparis,[3] it should be possible to obtain a positive result in every case, no matter how far advanced, if still stronger tuberculin were given intradermally. In such attempts, however, the possibility of dangerous constitutional reactions should not be lost sight of.

The fact that much larger doses of tuberculin can be tolerated without a general reaction by the intradermal than by the subcutaneous route should recommend the Mendel-Mantoux method to those using tuberculin in treatment.

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PHYSIO-THERAPY IN THE TREATMENT OF CHRONIC RHEUMATISM.

BY

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THE term "chronic rheumatism," as used somewhat vaguely to cover a number of conditions affecting the joints, muscles, and other skeletal structures, is unfortunate, because it presupposes that these have a pathology identical with that of acute rheumatic fever, a disease which attacks children most frequently, and whose chief ravages fall on the heart. Certain symptoms characteristic of acute rheumatic fever are indeed present in at least one form of chronic rheumatism, but the facts as a whole do not warrant the assumption of a common origin to all forms of rheumatic disease.

The chief lesson to be drawn from modern investigation of rheumatic conditions is the fact that their causes are multiple, just as their manifestations are various, and that each group of cases must be treated according to its individual requirements. The recognition of the important part played by focal sepsis as an etiological factor was a

considerable advance in knowledge, but it is now realized that rheumatism may result from several kinds of toxaemia other than bacterial. There is, for example, the intestinal type, which responds favourably to a lowered calorie intake of food and to high colon lavage; there is the endocrine type, which benefits by administration of thyroid extract; and there is the gouty type, which can be attacked on chemical lines. In many cases clinical differentiation is difficult or impossible; in others more than one etiological factor is operative.

THE ETIOLOGY OF CHRONIC RHEUMATISM.

The theory to be elaborated in this paper is that chronic rheumatism is an allergic state, the antigens producing it being bacterial toxins, the products of bacterial action, or incompletely metabolized protein derivatives with which bacterial action is in no way concerned. Sensitization to any of these antigens may be progressive or capable of periodic recrudescence over long periods of time. The constriction of the smaller blood vessels which results from this sensitized state leads to devitalization, damage, and finally destruction of tissues which even normally have a poor blood supply—for example, fibrous, ligamentous, and articular structures. Such vaso-constriction has been clearly shown to be an integral part of the rheumatic state, and caused probably by the exhaustion of the endocrine-sympathetic system invariably associated with allergy. In some forms of rheumatic disease substances toxic to the above-named tissues may, in addition, accumulate in them and produce inflammatory changes resulting in disease of the proliferative type—for example, rheumatoid arthritis. When destruction results from lack of nutrition the more slowly progressive or atrophic form of the disease results—for example, osteo-arthritis. The various etiological factors must be considered separately.

Infection.

Infection causing arthritis and other forms of rheumatism may be specific—that is, gonococcal, syphilitic, or tuberculous—and careful examination is necessary to exclude these conditions. In their absence it has been customary to call the case one of ordinary rheumatism, by which a subtle imputation is tacitly made against some form of streptococcus. This organism has never been satisfactorily demonstrated in the joints or other structures of rheumatic patients; its presence has been inferred from the frequent discovery of an obvious infective focus, and the occasional amelioration that has followed its eradication. Furthermore, not only is severe rheumatism often found in persons in whom infection is relatively insignificant or apparently absent, but gross sepsis of long standing may be found in patients completely free from rheumatism. Streptococcal infection is responsible, therefore, for only a certain proportion of cases, and, as one would expect, these conform roughly to a certain clinical type—namely, a proliferative polyarthritis of the smaller joints, which frequently runs an acute febrile course, and results in swelling, deformity, and ankylosis.

Intestinal Toxaemia.

This undoubtedly underlies a definite group of chronic rheumatic cases. Patients in this group usually present a toxic appearance; they are unduly pigmented, their musculature is lax and flabby, they are easily fatigued and habitually constipated. It is impossible to be certain whether the antigen concerned is some abnormal intestinal bacterium, or a normal inhabitant of the gut which has acquired pathogenic characteristics, or some product of protein decomposition. But patients in this group, which includes many suffering from recurrent lumbago, sciatica, perineuritis, and fibrositis, respond most favourably to reduction and adjustment of diet and to high colonic lavage.

The Endocrine Factor.

The clinical resemblance between patients suffering from thyroid disorders and those with certain rheumatic diseases leaves no doubt that the relationship between the two conditions is often a close one.[1] Patients with myxoedema frequently suffer from arthritis, and still more frequently are subject to vague aches and pains of a fibrositic nature. Their skin, like that of chronic rheumatic patients, is cold and dry, but subject to periodic attacks of excessive sweating. Chronic rheumatic subjects in this group benefit by taking thyroid extract. On the other hand, many of the more acute cases of systemic rheumatic disease resemble in some respects Graves's disease, in which the skin is hot and flushed, and sweating is profuse. It would seem as though the capillary constriction or dilatation is brought about by some disturbance of the endocrine-sympathetic system, upon which the antigen has a primary effect. Less marked is the effect of hypo-ovarian secretion in rheumatic disorders—a fact not explained by the mere excess of weight these patients sometimes have to carry. The late results of ovariotomy and even hysterectomy are serious, and should always be considered before such operations are undertaken. A similar, though usually temporary, disturbance is often encountered at the menopause.

Osteo-arthritis.

This condition, as a result of the doubt recently thrown upon the theory that it is infective in origin, has come to be regarded as a disease *sui generis*. It attacks, for the most part, the larger joints of older people, and is more common in males than in females. The immediate pathology would appear to be a simple necrosis of the tissues concerned, following prolonged reduction of local blood supply. The disease often remains stationary, and then, after a latent period, progresses. Allied to it, and often occurring coincidently, is true gout. The close relationship of gout with asthma and allied skin affections, and its paroxysmal nature, support the theory that it is anaphylactic in origin, being due to specific hypersensitiveness to certain nucleo-protein containing foodstuffs.

Some Predisposing Factors.

It is now necessary to consider what are the factors which predispose to the production of the allergic state. Among these climate has an important place. Stimulating and invigorating climates tend to produce in the people that live in them the greatest degree of physical and mental fitness.[2] Chronic ill health, particularly rheumatism, may, however, result from attempts to avoid the various discomforts that are necessarily associated with such climates. Sedentary lives, lack of exercise, badly heated and ventilated rooms, and faulty dietetic habits are the harbingers of constipation and of sepsis. Inadequate and deleterious products accumulate in the tissues the skin, wrapped up in clothing, is denied its natural stimulation by sunlight and fresh air, and fulfils only inadequately its various physiological functions.[3] In such circumstances inclement temperature, humidity, and climate become the masters and not the servants of the chronic rheumatic subject. Individual idiosyncrasies in relation to certain localities are also met with, just as in asthma.

All subjects of chronic rheumatism are easily fatigued, and their condition is invariably aggravated by prolonged mental and physical strain. The underlying factor is probably exhaustion of the endocrine-sympathetic system, and here the analogy with thyroid disorders is again apparent. A structure strained by work or exercise will be the first to show this rheumatic tendency—as, for example, in coal-heaver's shoulder or tennis elbow. A fracture which would heal quickly and completely in a normal person will leave pain and stiffness in the rheumatic subject, and the immobilization necessary for its treatment will further aggravate the condition from which he is suffering. Rheumatism is often found in various forms in different members of a family, and a tendency is transmitted from generation to generation.

TREATMENT.

The treatment of rheumatism resolves itself into two problems: (1) the arrest and cure of the disease; (2) the correction of its results.

In streptococcal cases it is important to remove any obvious sepsis without delay, but with care, especially in subacute cases, to avoid a severe reaction, such as might follow, for instance, the wholesale extraction of teeth in

pyorrhoea. Preliminary protein shock treatment is of advantage in such cases. In many patients removal of obvious sepsis is not followed by amelioration of symptoms—a fact which may be explained on the assumption that the organism is still present in various parts of the body in sufficient numbers to produce recurrent resensitization. In the absence of obvious sepsis, the teeth, tonsils, appendix, gall-bladder, and other possible sources of infection should be allowed to remain *in situ*, and attention directed to increasing the patient's general resistance, and to preventing further immobility of the invaded structures. While valuable time is being wasted in a vague search for some hypothetical source of infection, permanent stiffening, adhesions, and other damage may ensue which could have been prevented if treatment had begun earlier.

It is supremely important, particularly in cases of septic origin, accurately to gauge the acuteness or chronicity of the condition—that is to say, the resistance of the patient and his reaction to treatment. For whereas in acute cases treatment involves not only specific measures and good nursing, but absolute rest, it is yet important to commence active treatment as early as possible with the object of preventing further extension of damage in the tissues concerned. It is often most difficult to decide when active treatment may be initiated, but valuable assistance may be obtained from the blood sedimentation test. This test, though in no way specific, depends upon the increased rate of sedimentation of red blood corpuscles which occurs, especially in inflammatory and exudative conditions. If a high reading is recorded the case may be regarded as acute, and palliative measures adopted accordingly. If the reading is within or only slightly above normal limits the case may be regarded as chronic and demanding immediate active treatment. Readings taken at intervals throughout the course of the disease give an accurate index of progress under treatment and of prognosis.

Physio-therapy and Spa Treatment.

Treatment of rheumatism on purely physical lines is administered at various spas under such dignified names as "hydrology" and "balneology." Sometimes a chemical constituent of the water, such as sulphur or potassium, is claimed as a therapeutic omnibus. Sometimes a radio-active substance is found, though its presence may be demonstrable in quantities to appeal only to the homoeopathist. Again, the water may issue from the ground under pressure, and the bubbles from liberated gases claimed to possess peculiar therapeutic properties. Yet these spas undoubtedly do good, and it is important to decide what are the beneficial therapeutic measures common to them all. Briefly they appear to be as follows: (1) the use of heat generally, with the production of a temporary artificial pyrexia, and, locally, combined with massage, movement, and manipulation; (2) stimulation of the skin; and (3) elimination of waste products.

The baths employed in spa treatment for the purpose of applying heat may consist of hot water at varying temperatures, or of hot and cold water alternated; of water vapour of varying density, humidity, and temperature; and of dry hot air. A condition of hyperthermia quickly follows the immersion of the body in a hot bath because loss of heat by evaporation is prevented. In the much hotter dry air of the Turkish bath the body temperature rises hardly at all, because the amount of evaporation is considerable. Vapour baths occupy an intermediate position, and, on the whole, their use has met with the best results in rheumatic cases. Heat produces a general vascular dilatation with transudation of fluid into the tissue spaces. Possibly, also, at normal or subnormal temperature, deleterious substances enter into chemical combination with the tissues and may be dissociated from them only when pyrexia is induced. Such has been shown to occur with lactic acid,[4] and some rheumatic symptoms, particularly pain, may be due to the excess of acids locally. Deviation of the acid base equilibrium in the acid direction is, however, not constant in rheumatic diseases. In acute rheumatic fever, high temperature, accompanied by profuse sweating, may be regarded as a healthy reaction to the disease and Nature's method of eliminating acids and other harmful products. The subject of chronic rheumatism suffers from subnormal temperature and an inactive skin, in which the functions of elimination and oxidation are in abeyance. The beneficial effects of a vapour bath may be due to the fact that it produces both an artificial pyrexia and increased sweating.

Stimulation of the Skin.

It is a common clinical observation that the skin of the rheumatic subject is deranged. It has, for example, a pungent odour, and the sweat glands do not function properly. Lewis,[5] who in his recent observations throws much light on the subject of the reaction of the skin to various stimuli, describes a triple response comprising local dilatation of minute vessels, widespread arteriolar dilatation, and increased permeability, resulting in transudation of fluid into the tissue spaces. He draws attention to the remarkable similarity of the reactions produced when the skin is stimulated and when it is injected with histamine. This similarity he explains by the liberation from the skin of some histamine-like substance, to which he has given the name H-substance. He shows, further, that when the stimulus is applied to the heated skin this substance is liberated diffusely over a wide area, and all the vessels are involved in its removal.

There is no reason to suppose that this H-substance is different from that liberated in conditions of extensive tissue damage and producing "surgical shock." The general extravasation of plasma into extravascular tissue spaces, symptomatic of this condition, tends to wash away injurious substances, and thus acts essentially as a protective mechanism. The skin of the normal subject, especially when he takes sufficient exercise, receives enough daily stimulation to evoke this mechanism. If, then, we assume that the skin of the rheumatic subject is at fault we have a ready explanation of the good results obtained by spa treatment, and of the fact that it matters little what form of skin stimulation is adopted.

The most satisfactory results are obtained when substances producing skin irritation are added to the hot baths in which rheumatic patients are immersed. Sometimes these materials, which include pine, menthol, turpentine, etc., are so irritant that before immersing the patient it is necessary to cover the sensitive parts with vaseline. When the patient is taken from the bath, the temperature and duration of which are regulated according to his condition, he is covered in hot blankets and allowed to sweat profusely for one or two hours. The treatment is strenuous and should only be carried out after a careful clinical examination of the patient.

Elimination of Waste Products.

Every cell in the animal organism requires water, not only to assist in its constant metabolic changes, but to carry away the waste products of metabolism. This action of water is particularly important in rheumatism, but it is astonishing how little water many rheumatic patients drink. In the group attributable to alimentary toxaemia washing out the large bowel by high-colon lavage often effects excellent results. The treatment should be undertaken only by skilled persons, otherwise the tube will tend to curl up in the rectum and no fluid pass into the pelvi-rectal fold. The process should be repeated until clear water is returned, and an even pressure of about two pounds should be maintained; occasionally antiseptics—potassium permanganate, for example—may be added to the water with advantage.

Local Treatment.

Here again heat is the main essential. The objectives, however, are different and a greater heat intensity is usually required. Inhibition of muscular movement in the affected limb tends to retard the normal blood flow essential for the physiological exchange of oxygen and carbon dioxide and the removal of waste products. Heat helps to produce the required hyperaemia. Furthermore, tissues expand under the influence of heat and become more malleable. There are many conditions in which manipu-

fibres are found to be in a state of spasm, movement of any kind being accompanied by pain. Such is the case in true lumbago. If such muscle fibres happen to be traversed by nerves, as, for instance, in the lower cervical region, these nerves become trapped and neuritis results. In such conditions the tissues when heated become more amenable to the influence of massage and movement. The principle underlying the treatment of all chronic rheumatic conditions is the same—namely, to soften the tissues by heat, and, later, to follow this by massage and movement. Force should not be used in the early stages, and then only gradually applied in accordance with the needs of the particular condition. Nerves are sometimes forcibly stretched under an anaesthetic, but even when immediate relief appears to have been achieved, adhesions resulting from such drastic treatment often reproduce the condition even more severely than before.

Methods of Applying Heat.

Heat is commonly applied by conduction. A water fomentation or a dry pad, electrically or otherwise heated, is employed. The temperature at which the sensation of heat gives place to pain is in the neighbourhood of 115° F., and it is therefore not possible to exceed this temperature at the skin surface. If the part is in any way inflamed even this degree of heat cannot be applied. As, however, heat applied by conduction does not penetrate to any appreciable extent, being carried away by the superficial circulation, its use should be confined to the treatment of inflammatory conditions of the skin and immediately subjacent tissues.

Secondly, heat can be applied by radiation. The rays of the violet end of the visible spectrum are converted into heat directly on the skin surface and have very little penetrative power. As the wave-length increases, the rays, before being converted into heat, are able to penetrate to an increasing extent, the luminous and particularly the red waves being employed when a penetrative heating effect is required.[6] In the infra-red region the heat rays again diminish in penetrative power, and are consequently of less value for this purpose. Radiation, though not a good means of applying heat for the end in view, is better than conduction.

Diathermy is used when it is required to concentrate heat in deeply situated tissues. The modern diathermy apparatus produces oscillations of a very high frequency, varying from 800,000 to 1,000,000 per second. The diathermy current has no ionizing effects in the tissues, and as nerve endings cannot appreciate stimuli repeated with a frequency of more than 10,000 per second, it cannot produce sensations, painful or otherwise. A much stronger current can therefore be used than could otherwise be tolerated. This current, passing rapidly to and fro, generates heat in the tissues themselves. The temperature depends on the grouping of these tissues in relation to the path of the current, and on the relative richness or poverty of their blood supply.[7] All of them will, however, be heated to a certain extent. Various precautions have to be taken so as to eliminate the possibility of burns. The pads must be placed at right angles to each other, the parts treated lying directly between them, so that the current may traverse them directly. Such details as the amount of current, the length and frequency of exposures, and the position and type of electrodes can be gauged only as the result of experience.

The value of electrical currents, other than diathermy, in the local treatment of chronic rheumatic diseases is doubtful. It is unlikely that the redistribution of tissue ions caused by the passage of a direct current has any therapeutic effect. Also it is difficult to ascribe any useful purpose to ionic medication; drugs, such as iodine, thus introduced into the system are carried away by the superficial circulation before they can penetrate to the required depth. Beneficial results are sometimes obtained by the use of alternating currents in very chronic cases, and are due probably to their tonic effect upon the wasted muscles, and not to any action upon the disease itself. Sinusoidal baths are perhaps the most useful for this purpose.

SUMMARY.

An attempt has been made to summarize the various aspects of the treatment of "chronic rheumatism." Such treatment must necessarily follow a complete investigation in all cases, and must proceed along systematic lines. Drugs should be used, but not abused, particularly in the relief of pain. Members of the phenazone and exalgin groups, and salicylates, are the most valuable. Iodides probably owe their reputation to their effect in cases associated with endocrine disturbance, but are not so helpful as thyroid extract. Stock vaccines and other protein injections act by producing protein shock and are useful in certain cases. Autogenous vaccines would not appear to have any special advantages. It is suggested that chronic rheumatism is an allergic state produced by a number of widely different antigens in a susceptible subject. For this susceptibility the habits and necessities of modern civilization, especially inadequate stimulation of the skin, are largely to blame. Physio-therapy owes much of its success to the rectification of these errors.

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THE DISEASE KNOWN AS MINERS' NYSTAGMUS.*

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For close upon a century coal miners have been known to suffer from ocular trouble associated with their work; in 1831 C. Turner Thackrah wrote in reference to colliers:

> "Their eyes, from swelling of the lids, appear small, and are affected with chronic inflammation and intolerance of full light, and many, after a few years' trial, are obliged . . . to leave the mine."

Nystagmus as a definite disease was first described by Decondé in 1861, but little attention was given to the question until about 1875, when reports, though still somewhat isolated, began to appear in British and Continental medical journals, and were followed by a prolonged and heated discussion as to the causation of the oscillation of the eyeballs. This controversy is still unsettled, and will be carefully avoided in this paper, which proposes to deal with "the disease known as miners' nystagmus whether occurring in miners or others, and whether the symptom of oscillation of the eyeballs be present or not," as notified in the schedule of the Workmen's Compensation Act of 1906 on July 30th, 1913. It may be noted that the earlier observers regarded the disease as a local myopathy of the elevator muscles of the eyes or the result of excessive accommodation, whereas the modern tendency is to refer it to a general fatigue of the whole oculomotor system, or a general neurosis with special manifestations in the oculomotor apparatus.

Since 1907, when miners' nystagmus was added to the schedule of industrial diseases in the Workmen's Compensation Act of 1906, the number of notified cases has steadily risen, and when the definition of the disease was altered in 1913 the Home Office statistics showed a sharp rise in the rate of incidence of nystagmus from 0.16 to 0.26 per cent., and the latter rate has been maintained since. These numbers refer to cases of invalidity from the disease, and must not be confused with the rate of prevalence of nystagmus in miners. Oscillation of the eyeballs, it has been estimated, may be found in about 25 per cent.

* Read at a meeting of the Midland Ophthalmological Society, December, 1928.

of working miners, but something like 99 per cent. of them are unaware of the condition. It is obvious, therefore, that oscillation of the eyeballs *per se* need not be a cause of invalidity, and when a miner who has shown oscillations becomes incapacitated for work some new factor is introduced, and this in itself, or in addition to the oscillations, gives rise to working incapacity. There is no doubt that severe oscillations in the primary positions of the eyes, when mere standing up causes giddiness and marked unsteadiness or reeling, would be regarded as a cause for total disability. In many cases, however, when oscillations are difficult or impossible to elicit, subjective symptoms are apparently more distressing than in the cases with severe oscillations.

It would appear that there is no strict relationship between the degree of oscillation and the severity of such subjective symptoms as giddiness, headaches, sleeplessness, photophobia, night-blindness, and mental depression. In fact, these symptoms often appear to increase as the oscillations diminish. During the last few years these "nervous" symptoms have increased enormously in frequency, perhaps in intensity, and at the present time they may be said to dominate the whole picture of miners' nystagmus. From notes of cases of miners' nystagmus referred to me for compensation purposes, I find that during the years 1910–19 about 5 per cent. only presented anxiety neurotic symptoms of any degree, whereas among those examined during the period 1919–24 29 per cent. presented very definite symptoms of the kind. The figures with regard to giddiness and headache are still more striking.

Giddiness complained of:

1910–19	... ...	50 per cent. of cases examined.
1919–24	... ...	78 per cent. ,, ,,

Headache complained of:

1910–19	... ...	30 per cent. of cases examined.
1919–24	... ...	70 per cent. ,, ,,

What is the explanation of this change, which amounts to a definite alteration in type, if not to a new disease? I think there can be little doubt but that the widening of the definition of miners' nystagmus in 1913 is responsible for this change in type, as well as for the extraordinary increase in the number of cases certified. This development is in no sense to be regarded as due to increase of malingering; in fact, deliberate malingering appears, from the same records referred to above, to be less frequent. From 1910 to 1919 it was about 8 per cent.; from 1919 to 1923, about 4 per cent. The development must be regarded as the inevitable result of making it an easy matter (by the Act) for the neurotic to escape from a psychologically intolerable position caused by failure to adapt himself to his environment.

The nervous symptoms referred to are headache, giddiness, photophobia, night-blindness, or rather a fear of going about in the dusk or midlights, sleeplessness, with distressing dreams during the short periods of sleep, amblyopia, perhaps contraction of visual fields, mental depression, and often a change of character, sometimes passing to definite mental illness and even suicidal tendencies. When these symptoms are met with we find tremors of the head and limbs, lid spasm, and endocrino-sympathetic disturbances, such as disordered action of the heart, vaso-secretory disturbances, etc. These symptoms differ in no way from the symptoms of psychoneurosis met with in other spheres and among other members of the community, and it is obvious that a miner might be incapacitated by such a neurosis without showing any oscillations of the eyeballs at all. Hence the justification for the alteration in the terms of the Act in 1913. It is a fair question to ask, What is the relation of the nystagmus to the psychoneurotic symptoms? I am inclined to think that it acts as one of the exciting factors, but an important one. The coal miner, in this country at any rate, seems to be peculiarly predisposed to the development of a psychoneurosis owing to the nature of his work, his environment, and heredity (through inbreeding). A state of oscillation of the eyeballs would probably excite in him the psychopathological feature of fear already present to some extent in consequence of the recognized riskiness of coal mining, and possibly also of its association with scotopic vision—we are all a bit "afraid of going home in the dark." This would be followed by anxiety as to the effects of the oscillation on his sight, and on his general health and his capacity for earning a living and keeping the home together. His condition would be aggravated by the knowledge that many of his fellow workers have been incapacitated from work for prolonged periods through nystagmus. Any inadvertent remark by doctor, solicitor, or friend as to possible loss of sight will inevitably confirm him in his neurotic state. Some slight irritation of the lids, due perhaps to conjunctivitis, to which miners are particularly liable, sets up headache and spasm of the lid and other muscles of the face. These, along with his fear and anxiety, produce loss of sleep, which in itself is an aggravating factor in the complex, and as a means of easy escape from a distressing psychological position he resorts to the avenue of the Workmen's Compensation Act.

If we assume that these symptoms are due to causes which have, perhaps justifiably, been described as the "dungeon complex," are we to regard them as a cause of disability, and if so, whether for pit work or for surface work or for all work? In many cases the giddiness set up by mere stooping—such as in tying a bootlace—or sudden movement is so intense that the patient is unable to stand, and in such cases it is obvious the man is incapable of doing any work, except perhaps in the sitting position. Percival is convinced that the incapacity for working in the pit varies directly as the degree of giddiness on stooping, by which he means "that if a patient shows nystagmus in a dark room, and the other signs such as the characteristic tremors, rapidity of pulse, etc., giddiness sufficient to render him incapable of pit work may be reasonably attributed to miners' nystagmus." But this is taking rather a restricted view of the causes of disability in miners' nystagmus, and it does not enlighten us as to what degree of giddiness is sufficient to render a man incapable of pit work. It must be that a good many miners suffering from giddiness of varying degrees and causation are capable of earning full wages at the coal face, while some who do not complain particularly of giddiness appear to suffer so acutely from pains in the head when they are asked to fix a point of light that it seems hopeless to expect them to do any form of work.

The question has been raised as to whether a miner who has once suffered from incapacitating nystagmus should be allowed to work in the mine again; the argument being that under the conditions of coal mining the disease is bound to recur, even if it is admitted that it may be cured for a time. I am not convinced that we possess any statistics or other form of information which would enable us to give an incontrovertible opinion in the matter. The vast majority of nystagmus patients do return to their old work and continue to earn full wages. An analysis of cases I have reported upon gives the following results. Returns cases (two or three attacks): 1910–19, 9.5 per cent.; 1919–24, 14.2 per cent. The percentages of third attacks were 1.5 and 4.7 for the same periods. There was no indication that the severity or the duration of recurrent attacks was any greater than that of the initial attack; neither did the working periods appear to get increasingly shorter. It must be remembered that relapses, like the original attack, are generally due to factors outside the actual occupation—for example, physical illness or injury, domestic worries, and particularly the economic state of the coal industry and of the labour market generally. Thus there was a tremendous accession of nystagmus cases, primary and otherwise, during the period of the coal stoppage, and there is always the same rush to the certifying surgeon when a mine closes down. It does not appear, therefore, that it is essential for the nystagmic miner to change his occupation in all cases. It is not an easy matter for anyone to change his occupation in middle or later life, and it is particularly difficult in the case of a miner, who has probably never had experience of any occupation other than his own specialized work. I do not think the miner himself is particularly enamoured of the suggested change, and the present state of the labour market does not

encourage it. For the same reasons industrial colonies staffed by disabled miners cannot be regarded as a sound economic proposition.

My main purpose in bringing up the question of miners' nystagmus again is not to discuss its etiology and symptomatology, but to appeal to ophthalmologists to take interest in the matter of its curative treatment. On the preventive side it must be admitted that a vast amount of work has been done and much money spent, though the tangible results so far have not been very great. Improvement in the hygiene and illumination of the mines seems to have had some salutary effect. Probably still better illumination, which would definitely substitute photopic for scotopic vision, would result in a very definite reduction in the incidence of miners' nystagmus. But what are we doing to relieve the patient who is already afflicted with this truly distressing complaint? There are hundreds of cases not receiving any form of treatment, apart from encouragement to get some work to do to avoid the evils of idleness and introspection. I consider this a reflection on the enterprise and public spirit of the ophthalmologists in mining areas. It may be true "that there would appear to be a disease, miners' nystagmus, the nature of which, as far as the eyes are concerned, we, as ophthalmic surgeons, can appreciate, accurately measure, and record; there is another disease, miners' psychoneurosis, of which we, as ophthalmic surgeons, have no special knowledge,"[1] but that is no reason why we should not make good that knowledge, with or without the help of psychological and other experts. The psychologists could deal with the factors of innate nervous instability and the psychic disability, but we could certainly deal with the toxic factor, which is probably present in all cases. The mining engineer will attend to the question of toxicity due to exogenous agents such as gases, but it should be our duty to find out the part played by endogenous toxins in establishing and sustaining the disease, and to adopt methods to counteract their action.

Mr. Frank Thomas of Swansea has obtained some favourable results by dealing with obvious oral and nasal sepsis in these cases, but if we are to attack the problem properly we shall need to go into the whole question of sepsis, and especially of intestinal toxaemia, and its correction. Investigations into these matters involve the institutional treatment of the patients, and obviously the institution must have the staff and equipment necessary to carry out these investigations.

REFERENCE.

[1] Reports of the Miners' Nystagmus Committee of the Medical Research Council, *Brit. Journ. of Ophthalmol.*, vol. viii, 1924, p. 65.

A NEW METHOD OF APPROACH IN GASTRIC SURGERY.

BY

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THE two cases of carcinoma of the stomach which I am about to describe in detail belong to a small group which at first sight might appear to be inoperable. From the point of view of a radical excision of carcinoma of the stomach cases fall into three categories. There are (1) cases in which the growth is confined to the stomach, where the stomach is not fixed, and which are suitable for an immediate partial gastrectomy; (2) cases where there are secondary deposits in the liver or elsewhere, which are obviously inoperable; and (3) cases where there are no secondary deposits, but where on account of the local conditions, the size and fixation of the growth, it is doubtful whether an excision can be done. It is to this last group that these two cases belong. They were both operated on by Sir Berkeley Moynihan, under whose care they were at the General Infirmary, Leeds.

Briefly, the method is to open the abdomen and give a big dose of deep x rays directly on to the tumour. A second operation is done six weeks later, when the growth is found to be considerably shrunken in size, and to be much more freely movable.

CASE I.

A woman, aged 45 years, was admitted with a three years' history of attacks of abdominal pain and nausea. Five months previously she had begun to vomit, and since that time she had been unable to retain any solid food whatever. For the last two months she had been in bed. There was a fixed tumour palpable in the epigastrium. An x-ray examination showed a filling defect in the stomach, involving both curvatures and extending from the pylorus about two-thirds of the way to the oesophageal opening. A fractional test meal showed a complete absence of free hydrochloric acid. She was given two transfusions of blood, and on August 31st, 1925, the abdomen was opened, using hedonal as an anaesthetic. A large mass of growth was found in the stomach; its extent was as shown by the x-ray examination, and the condition was described as a leather-bottle stomach. Glands were present along both curvatures, but there was no sign of any malignant deposit elsewhere. The abdominal wall was retracted, everything except the growth protected by mackintosh clothes and lead plates, and the growth itself was exposed to the direct action of the deep x rays for forty minutes. The abdomen was then closed and the patient sent to a convalescent home.

A second operation was done on October 12th, when the growth was found to have shrunk to roughly half its original size. In addition, it could be moved about quite freely and a partial gastrectomy was done without much difficulty. The patient had an uninterrupted convalescence and left hospital finally on November 3rd. She was still in good health four and a half years after the operation, except for a secondary anaemia. A recent blood count was as follows: Erythrocytes 4,180,000 per c.mm., haemoglobin 36 per cent., colour index 0.42, leucocytes 6,100 per c.mm.—a reading which is very definitely not of the pernicious type.

CASE II.

A man, aged 60, was admitted in July, 1924, with a history of indigestion since the preceding December. He complained of pain coming on three to four hours after a meal, and said that food relieved his pain. His appetite was fair, he had not lost much weight, but looked pale. An x-ray examination showed a filling defect in the middle third of the stomach, and a test meal revealed an absence of free hydrochloric acid. He was given three transfusions of blood, and on August 8th his abdomen was opened under local anaesthesia. There was a growth in the middle third of the stomach, mostly on the anterior surface. It extended into the great omentum and appeared to be dangerously close to the transverse colon. It was adherent posteriorly, so that it was quite impossible to lift the stomach up into the wound. There were no secondary deposits elsewhere. As in the previous case, an application of deep x rays was given directly to the growth for thirty minutes.

The second operation was done on October 1st, when it was found that the growth had shrunk considerably in size, that the posterior fixation had disappeared, and that it was quite possible to get between it and the transverse colon. The stomach was removed, and a note made at the time says that the upper division of the stomach was very close to the edge of the growth. The patient left hospital on November 11th and is still in good health more than three years after the operation.

A pathological examination of the specimen showed it to have been a spheroidal-celled adeno-carcinoma. The interesting point about this case is that in spite of the stomach having been divided closer to the growth than would ordinarily have been considered advisable there has been no recurrence. This is what we might expect, for as well as an action on the main mass of the growth, an effect must be produced on the clinically imperceptible permeation round it.

These two cases illustrate very well the changing of an apparently inoperable into a definitely operable state. At first sight there is no doubt that it would have been absolutely impossible to attempt to excise the stomach, while at the second operation the conditions for its removal could hardly have been more favourable.

An alternative method is, of course, to give a preliminary exposure of deep x rays to every case of carcinoma of the stomach which is to be operated on. To give a dose of the strength which can be applied directly to the growth would be to run the risk of an x-ray burn, and experience shows that one big dose is considerably more efficacious than a number of smaller applications applied to the growth at intervals by the cross-fire method.

Cases of this type belong to a very small group, for the conditions must be as I have described them for this line of treatment to be possible. It is a very high recommendation for the method that these two patients, the only ones to undergo treatment by this method, are alive without any signs of recurrence, in the one case four and a half years, and in the other five and a half years after operation.

ACUTE HAEMORRHAGIC PANCREATITIS WITH TUBERCULOUS DISEASE OF PANCREAS.

BY

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TUBERCULOSIS of the pancreas, appearing either in the miliary form or as a tuberculoma, is an uncommon *post-mortem* finding, and in cases such as the following, where a tuberculous process produced an acute haemorrhagic pancreatitis, a very unusual condition is encountered.

Clinical History.—A male patient, aged 66, was admitted to Dr. Douglas Russell's wards at the Victoria Infirmary, Glasgow, on July 22nd, 1928, deeply cyanosed and collapsed. Until the age of 42 he was stated to have been a normally healthy man, but at that time he had an illness, the nature of which we could not discover, which subsequently left him in indifferent health. Two and a half years ago he had broncho-pneumonia, became still more debilitated, and for five days before admission he had been unable to move through weakness and breathlessness. During the month prior to this he complained of flatulent distension and "stomach" pain, and his colour showed progressive cyanosis.

Condition on Admission.—On admission he was pale and cyanosed, the bluish coloration, of rather a striking character, extending over the whole body. His breathing was very laboured and rapid, and suggested pneumonia; the temperature was 99.4° F., respirations 32. The right side moved more freely; on percussion the left side was hyper-resonant over the front, and respiratory murmur was very harsh, with prolongation of the expiratory phase. The abdomen was distended, but not tense, and there appeared to be no tenderness.

No improvement in the patient's condition occurred, and he died two days after admission.

Post-mortem Examination.

The heart was of normal size, with pale muscle and atheromatous coronary vessels. The valves were healthy and competent.

The left lung was firmly adherent at the apex, and was studded with tuberculous nodules. Surrounded by fibrosed lung tissue and at the apex there was a small cavity of about the size of a walnut. The right lung was free, but similarly invaded, and there was some pneumonic consolidation at the base. The pleurae and pericardium contained some excess of fluid.

The liver, which was adherent to the diaphragm, was bluish-black on the surface, and on section was firm, and suggested cirrhosis. A cholesterin stone was found in the gall-bladder; no calculi were seen in the common bile duct or at the ampulla of Vater.

The spleen was much enlarged, and showed a similar dark pigmentation.

The pancreas was generally congested and firm; the head was much increased in size, rather difficult to remove from its blood-stained surroundings, and a section showed a large area of haemorrhage, approximately 2 inches by 1/2 inch, extending into the body of the organ and with smaller areas of necrosis surrounding it.

The suprarenals were enlarged, the medulla being rather soft and showing some cavitation.

The peritoneum contained some blood-stained fluid, and the omentum was soft and felt greasy, and some definite areas of fat necrosis were noted.

The examination of the other organs revealed nothing of any importance.

Microscopic Examination.—The lungs showed areas of catarrhal pneumonia, caseation, and occasional tuberculous giant cells. The spleen showed some caseous foci with definite tubercles and an extreme degree of congestion. The liver showed generally a fine cirrhosis, with some definite tubercles. Tuberculous invasion of the medulla was noted in the left suprarenal, and lymphocytic areas were common. The pancreas, sectioned at various levels, showed areas of necrosis surrounded by inflammatory cells, and in places extensive haemorrhages. Giant cells were occasionally found on the edge of a caseous area, and the vessels of the organ were generally thickened; sometimes this appeared to be confined to the intima, at others the entire vessel wall was affected.

COMMENT.

The pathology of acute haemorrhagic pancreatitis is not yet satisfactorily explained. The frequency of its association with gall-stones and with stones lodged near the ampulla of Vater suggests that the immediate causation is the entrance of bile into the pancreatic duct. Experimentally this has been proved to cause necrosis of the pancreatic tissue, and the injection of a variety of chemical irritants—zinc chloride, papain, artificial gastric juice—has been followed by lesions very similar to those present in subjects dying of haemorrhagic pancreatitis. In this particular case a gall-stone was present in the gall-bladder, and no other stone was found in the pancreas or the ducts; certainly a minute stone may have been missed, but the definite tuberculous lesion of the pancreas, the thickening of many of the vessels, suggests rather that the cause of the haemorrhage and necrosis could not be referred to the entrance of bile into the duct of Wirsung, but rather to erosion of a vessel or vessels by the tuberculous process.

The early occurrence of death in this disease is likewise not very clear. Some authorities believe that this is due to pressure on the solar plexus, and inflammatory changes in the sympathetic ganglia have been described. Others refer the rapidity of the fatal symptoms to absorption of protein derivatives due to the action of pancreatic juices on its own necrosed tissue. The latter view has some experimental support, and the characteristic cyanosis tends to confirm a biochemical change of some nature. It is more than probable that both factors are of importance.

Our thanks are due to Dr. Douglas Russell for his clinical notes.

CARDIAC DISEASE AMONG SOUTH AFRICAN NON-EUROPEANS.

(PRELIMINARY NOTE.)

BY

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THIS investigation was suggested by the following quotation from *Rheumatic Heart Disease* by Dr. Carey Coombs: "The disease (pancarditis) due to rheumatism is rare among natives of China and India. I have never heard of the disease among the natives of Africa."

I have analysed the notes of the non-European patients of the Johannesburg General Hospital with the able help of my house-physician, Dr. S. C. Heyman, and with the kind permission of my colleagues on the staff. Dr. Strachan of the South African Institute of Medical Research has acted with me, and has checked from *post-mortem* records the accounts of the patients who died. Although the cases are few in number, they serve as a useful guide for future investigation. From these records we have excluded all patients of Asiatic origin as they have no place in the subject under consideration. About one-fifth of the total cases are of mixed stock (Eurafrican). In the Kaffirs, it must be remembered, we are dealing with a people in whom the way of life differs from that of Europeans. The Kaffir, however, has been in direct contact with European civilization for a number of years, and his mode of life has accordingly changed. What effect the change has had in the incidence of cardiac disease among this people it is impossible to say.

In this article we are writing in the main of the native who works in towns. As a rule the latter portion of his life is spent in his kraal, and there he dies, so that we are dealing principally with the Kaffir between the ages of 16 and 50. Such an individual spends half his life working in the towns and half at his kraal or home, where he tills the soil, shepherds his flock, or builds his dwelling. In the town his occupation is domestic, shop, or mine labour; it is never sedentary. In this short survey we have had to neglect the occupational factor, since mine labourers in active occupation are restricted to the mine hospitals and do not come into our hospital; and, for the reason mentioned already, Kaffirs are not often admitted for diseases of old age. On the other hand, our sick are drawn from a wide area, though the majority are of local origin at the time of invalidism.

Our analysis dates from March, 1924, to March, 1928. The cases included are all those of which we were reasonably sure of the diagnosis. Note-taking is difficult in the

native. Histories are generally short, indecisive, and variable from day to day, even with interpretation from the native tongue. In all we took the notes of 153 cases, of which 120 were Kaffirs, 31 were Eurafricans, and 2 were Hottentots. A striking fact is the huge mortality—81, or more than 50 per cent., died in hospital. This is attributable to the extremely late stage of disease in which they were admitted. Application for admission by a native is tardy, for he is afraid of hospital, and he is poor and works to the end.

A general survey of all cases will be taken first, and the etiology and characteristics will be considered; then a few particular aspects will be dealt with.

Etiology of Cardiac Disease in the Native.

One knows that syphilis is rife among the coloured races of South Africa, and one has a rough appreciation that its incidence is variable in different localities and with different tribes. It was with no little surprise, therefore, that we found that the commonest group of heart lesions were those of the rheumatic type. Of this etiology there were in all 64 cases, of which 42 were Kaffirs, 16 Cape people, and one Hottentot. Approximately two-fifths of all the cases in this series were of rheumatic type. Of the 64 cases only about one-sixth gave a rheumatic history, but this is in accordance with what I have already said about note-taking in the native.

The etiology of the others was judged from the clinical findings and from *post-mortem* records. On the clinical findings alone we are open to some criticism, but these findings conformed to those accepted in Europeans and to the necropsies of 16 cases. The sex incidence in these cases was almost equal, and the ages of the patients lay between 8 and 47. There were 18 deaths, 12 among the Kaffirs and 6 among the Eurafricans. The average age at death was round about 30.

Of syphilitic conditions there were 39 cases, of which 31 were Kaffirs, 7 were Eurafricans, and one was a Hottentot. There were 24 males and 15 females, and 16 deaths, 13 among the Kaffirs and 3 among the Cape people. The etiology of many of these conditions was confirmed by *post-mortem* findings; in the other cases the Wassermann reaction was positive and the clinical condition corresponded to the description of syphilitic cardiovascular states in Europeans.

There were 25 patients with degenerative lesions; 18 were Kaffirs, 6 were Cape people, and one was a Hottentot. There were 23 deaths—17 Kaffirs and 6 Cape people—of these the majority came to necropsy and the etiology was confirmed.

There were 14 cases of bacterial endocarditis—12 Kaffirs and 2 Eurafricans; 9 were males and 5 females. All the cases were fatal.

Of pericarditic lesions there were 8; 6 were definitely non-rheumatic and 2 were of doubtful origin. All these patients were Kaffir males, and all died.

Of unclassified patients there were 3, all Kaffir males. One was a man whose heart was the seat of an interstitial myocarditis due to cysticercus—a lesion confined to the heart muscle; the second was a case of aortic regurgitation of doubtful origin, and the third a myocarditis of doubtful etiology.

Rheumatic Conditions of the Valves.

The lesions were of the same type as occurs in the European. In 41 cases the mitral valve alone was involved, there being either stenosis or regurgitation or both; in 10 cases there was aortic regurgitation alone, and in 13 cases both aortic and mitral valves were involved. A very small percentage of these cases gave a rheumatic history. Six had auricular fibrillation, of which 5 were associated with mitral disease, one with aortic disease. The clinical manifestations of failure of compensation were similar to those in white people, and reacted to digitalis and other drugs in a similar manner. Rheumatic nodules are found occasionally, but were not mentioned in the records of this series of cases. In one only of these cases was an attack of tonsillitis noted, and the incidence of tonsillar infections in this type of cardiac case seems to be rare, but this is a point which needs further elucidation. In none of these cases was pulmonary tuberculosis a concomitant disease, although this condition is rife among the native population. The *post-mortem* changes in the heart and other viscera were similar to those found in Europeans. The ages of the patients with auricular fibrillation varied from 18 to 50. None of these cases died in hospital, a fact I attribute to the crippling decompensation from which these patients suffer and their quick reaction to the digitalis group of drugs. I suspect that these patients proceeded to their kraals and died for want of appropriate treatment. Pericarditis occurred in two cases, both fatal and confirmed at necropsy. Acute nephritis occurred in one case and infarction of the lung in one case.

Syphilitic Disease.

The average age of these patients was 47, and ranged from 26 to 70. This agrees with the age in Europeans. It is a curious fact, however, that tabes dorsalis, which occurs most commonly in the Europeans in the fifth decade, is a rare condition among the natives, though occasional cases do occur; primary optic atrophy due to syphilis is far commoner. I mention this as I have pointed out elsewhere that cardio-vascular syphilis and early signs of locomotor ataxia occur together in a certain percentage of white cases. Of the total of 33 cases 10 (8 Kaffir, 1 coloured, 1 Hottentot) exhibited aneurysm of the aortic arch (2 abdominal, 1 descending thoracic aorta, and the remainder aortic arch or descending thoracic aorta), and 4 of these were in women; 10 out of 33 is a far bigger proportion of aneurysmal occurrence than happens in European syphilis, and is probably accounted for by lack of early treatment in these cases. It is also noteworthy that 14 of the total number of cases occurred in women, whereas in Europeans the incidence is only one in ten. I ascribe the increased incidence to the common occurrence of promiscuous intercourse between town-living natives, and also to the ignorance of the native as to the nature of syphilis, so that he does not come for treatment in the primary stages.

The commonest pathological condition was that of aortic regurgitation, which occurred in more than half the cases. Auricular fibrillation was present in one case, and I have seen one case of auricular flutter, which is not included in this series. Syphilitic cardio-vascular degeneration apart from aortic regurgitation was also common, and there was one case of syphilitic cerebral thrombosis. In many of the cases there was enlargement of the heart to the left, in some of which there was no aortic regurgitation (thus conforming to cases described in the European). When failure of compensation occurred the symptoms and signs were similar to those in the European. It is my impression that both auricular fibrillation and angina pectoris are rarer in syphilitic cardio-vascular disease in the native than they are in the white. Enlarged epitrochlear glands are common in these cases, and occasionally one finds tertiary syphilis of the bones or a fibrotic change in the lung, probably of syphilitic nature.

Degenerative Lesions of the Heart and Blood Vessels.

The large death rate in these lesions has already been quoted. The ages ranged from 27 (a case of interstitial nephritis) to 68, the average being 48. Five of these cases were accompanied by nephritis, of which one patient had a subacute exacerbation at the time of death. In one case the blood pressure was 268/165, but unfortunately in many cases the blood pressure was not recorded. In two cases there was enlargement of the right side of the heart only, and in both these cases there was myocardial degeneration—in one accompanied by cirrhosis of the liver. (In the Kaffir the etiology of this type of primary cardiac degeneration without enlargement to the left is obscure; there is no thickening of the blood vessels, nor is there much raising of the blood pressure; it is not a senile change, since one of the two cases was aged 37 years.) In the majority of cases the heart was greatly enlarged. Aortic regurgitation occurred in 3 cases (one with aortic stenosis), one was complicated by hydatid disease of the brain. The majority of the cases died of heart failure. Other causes of death were kidney insufficiency, cerebral thrombosis with lobar pneumonia, peritonitis, and pericarditis. Relative

mitral incompetency occurred, as might be expected. I have not yet seen a case of pure hyperpiesis in the native without arterial thickening, but I have seen two patients, not included in this series, where the systolic blood pressure was over 300 mm. of mercury. They first came to the ophthalmic surgeon (the late Dr. M. Baranov) for failure of vision, which was due to retinitis.

The actual causes of arterial thickening in the native are as obscure as in the white. Most of them do heavy work, some of them are alcoholics, few of them are subjected to great mental stress.

Acute and Subacute Bacterial Endocarditis.

The bacteriology of these cases has not been elicited in this series. In one case the streptococcus and *Bacillus coli* were cultured and in another a pure streptococcus. In two of the fourteen cases the Wassermann reaction was positive, and in one there was an underlying chronic endocarditis of the mitral valve alone. The clinical findings were similar to those in Europeans, and these were confirmed by necropsies. Heart failure, cerebral embolism, or infarctions were responsible for the deaths.

There is great difficulty in the diagnosis of these cases. Acute tuberculosis and typhoid fever are both rife, and with the scanty history the diagnosis is often impossible in early stages. Given the complication of malaria with one of these acute illnesses, the differential diagnosis is still more difficult. In all the cases the heart was enlarged, and in all the disease was fatal within a comparatively short space of time. None of them showed any remissions —that is, they were all of the acute form of the disease.

Unclassified Cases.

Of three unclassified cases one suffered from aortic regurgitation, one from a myocarditis of unknown etiology, and the third from an infection of the myocardium by the cysticercus. A generalized infection with cysticercus is not uncommon among the natives.

Some Uncommon Types of Cardiac Disease.

Auricular flutter due to syphilitic myocarditis is rare, but has been described. One such case occurred in a native female under my care; this has not been included in the series. In this case normal rhythm was induced by digitalis-quinidine therapy, antisyphilitic measures also being carried out.

Syphilitic Pericarditis.—This is seen among natives, but is rare. It appears as an effusion accompanied by failure of compensation; the clinical signs are those of a pericardial effusion. Paracentesis of the fluid shows it to be blood-stained, as I have been told, and this, with vigorous syphilitic measures, is sometimes successful in treatment.

Tuberculous Pericarditis.—The pericardial lesion presents itself with the physical signs of a large effusion with extreme failure of compensation, accompanied occasionally by oedema of the arms as well. Paracentesis gives no fluid. Necropsy reveals that visceral and parietal pericardial sites are occupied by solid plaques of tuberculous material, sometimes half an inch thick. The myocardium is sometimes much weakened by infiltration with tuberculous material. The whole organ appears to be enlarged.

Conclusion.

It does not appear that there is a wide divergence between the etiology, pathology, and clinical signs of heart disease in Europeans and African non-Europeans. In this paper stress has been laid on etiological factors. It has been pointed out that the mortality rate is high in the series; this must mean that the course of cardiac disease is shorter in the non-European, or that the patient is admitted in a later stage of the disease than the European; or both factors may come into play.

Some important etiological factor in the causation of rheumatic fever might be elucidated by comparing the Kaffirs living altogether in the native state with the Kaffirs in the towns. The medical history of the Kaffir before the influence of European civilization affected him is unfortunately not to be ascertained. The climate of South Africa, speaking generally, is one of sunshine, and is hot and dry. It seems that climatic conditions as an etiological factor in the causation of rheumatism must be discountenanced here.

Nasopharyngeal infections or bad teeth cannot be dismissed as factors as they commonly occur in hospital patients. Their evidence in this series has not been determined. The dietary factor is a very variable one in the series; it is difficult to obtain exact knowledge, but the Kaffir, as a rule, takes a diet of greater carbohydrate content and less fat and vitamin constituent than the European.

As regards non-rheumatic cases, little can be added to the facts already quoted. It must be reaffirmed that the mortality among the patients with degenerative types of lesion is extremely high, and that the syphilities have a high aneurysm incidence.

Much work is yet to be done, especially in diseases of rheumatic etiology. It is to be hoped that one day a commission will be instituted to inquire into this—directly to help the native, indirectly to elucidate factors in the causation of acute rheumatism—and so throw light on a very baffling medical question.

REFERENCE.

[1] *British Medical Journal*, January 22nd, 1927, p. 133.

A CASE OF GRADENIGO'S SYNDROME.

BY

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THE association of temporo-parietal pain and paralysis of the sixth cranial nerve in connexion with an acute otitis media on the same side was pointed out by Gradenigo in 1904. The attack of otitis media may be of short duration, and the abducent paralysis may follow in a few days or in one or more months.

Considerable attention has lately been paid to this syndrome, but yet it seems sufficiently rare to make the following case worthy of report. Symonds[1] quotes Sears as having recently collected records of 317 cases since Gradenigo's paper in 1904, but he states that in some of these cases the sixth nerve palsy appeared to be secondary to extradural or cerebral abscess, and therefore should not properly be included in the category of Gradenigo's syndrome. In the case recorded below an interesting feature is the fifth nerve distribution of the pain in addition to the usual temporo-parietal situation.

A married woman, aged 44, was admitted to this hospital under Dr. V. H. Blake on December 17th, 1927, for severe neuralgia of the left side of the head in association with acute otitis media on that side. She had been under Dr. Blake's care since December 4th, when she complained of pain in both ears. The next day her temperature rose to 100° F., and both tympanic membranes were inflamed. Her temperature continued between 99° and 100° F. till December 9th, when it became normal. On December 10th inflammation in the right ear was settling down, but the left tympanic membrane had perforated. Discharge continued for only four days, and when admitted on December 17th her temperature was normal, but the left drum was again bulging. Whilst in hospital her temperature remained normal till December 26th, but the neuralgia was persistent. It was temporo-parietal and facial in distribution at first, but later only temporo-parietal. The pain was so severe that narcotics had to be administered every evening, and even then she passed only indifferent nights.

Diplopia was first noticed on December 23rd, and on the following day Dr. Blake asked me to see the case and carry out any appropriate treatment. The temperature and pulse were then normal. The patient's appearance was that of weariness from continuous pain. There was no oedema or tenderness over the left mastoid, but there was slight meatal tenderness. Rinne's test was negative on both sides, and Weber's test was referred to the left ear. Bone conduction was slightly diminished. The stop-watch could be heard at a distance of 1 inch with the right ear, but not at all with the left. The whispered voice could be heard at rather more than 4 feet on the right side, but on the left it was only audible at 6 inches. The left tympanic membrane was dull and opaque, and there was a marked bulge of Shrapnell's membrane of a dull red colour. On the right side the membrane was retracted. There was complete paralysis of the sixth left cranial nerve. Other movements of that eye and all movements of the other eye were good. The pupils reacted normally to accommodation and light, and there was no nystagmus. There was some hyperaesthesia of the left side of the face as tested with

cotton-wool and a pin, but it was not marked. There was no facial weakness, and no paresis of the ninth, tenth, eleventh, or twelfth left cranial nerve. There was no retropharyngeal swelling. Cerebration was apparently normal. There was no stiffness of cervical muscles, and abdominal reflexes, knee-jerks, plantar reflexes, etc., were all normal. The fundi were examined by Mr. William Wyllys and reported normal.

The further progress of the case was as follows:

December 25th: There was pain during the night, but the patient is easier this morning.

December 26th: Pain was very severe during the latter part of yesterday and all the night in spite of the narcotics. She is now in great pain. Begs for something to be done. Bulging of Shrapnell's membrane has increased and is now bright red. Inflammation is spreading down the posterior segment. Deafness on the left side has increased, and the whispered voice can now only be heard at 3 inches. Meatal tenderness is very marked. There is definite periosteal thickening over the mastoid and slight tenderness. Other signs as before. The temperature is 99.2° F. and above normal for the first time since admission.

Operation.—Paracentesis was first performed. Schwartze's operation revealed a small granulation in the antrum, but no pus was seen. The tegmen antri was then removed. The dura was not under tension, and the surface was finely granular. The cavity was packed with bipped gauze.

December 27th: Patient has had a very good night without any narcotic. She states that aural pain and neuralgia have completely disappeared, but there is slight pain round the left eye. Diplopia as before.

December 28th: The pain round the left eye is rather worse; no return of other pain.

December 29th: First dressing, under nitrous oxide anaesthesia. The gauze wick which had been placed in the meatus was soiled with a little pus. Packing from the wound was fairly clean. She has had two good nights.

December 30th: Patient says she has been easier since the dressing was done yesterday, but still has some pain round the left eye.

December 31st: No pain in the ear or temporo-parietal region, but she has had more pain in the left eye, supraorbital region, and left cheek. Diplopia is still present, but there seems to be slight movement in the left external rectus.

January 3rd: She has had a few shooting pains in the left ear and temporo-parietal region.

January 8th: The pain round the eye has been improving gradually. She now has very little except on waking in the morning. There have been no more temporo-parietal pains. She sleeps well at night and often by day. The cavity is granulating slowly.

January 16th: There has been no pain round eye for several days, but she still wears an eye-shade in the evening as artificial light worries the eye.

January 26th: The mastoid cavity is now filling satisfactorily with healthy granulations. The patient is leaving the ward to-day and will attend daily for dressings. Eye movements are as before.

March 1st: Complete healing of the wound has been very slow, but she ceased attending daily three weeks ago, since when she has been attending Dr. Blake, who states that he first noticed return of movement in the external rectus on February 22nd. There is no diplopia now, and all movements of the left eye are as good as those of the right.

In the treatment of this case two points are especially open to criticism.

1. Paracentesis alone might have been the only operative treatment necessary, and if the pain had not been relieved by this the Schwartze operation could have been performed later. This course was not adopted on account of the excessive pain the patient was then suffering, and had suffered all the previous night. The indications for mastoid operation *per se* were slight, but it seemed unwise to risk another night of such severe pain where there was the slightest doubt as to the condition of the mastoid antrum.

2. No lumbar puncture was performed. Reports seem to agree that not only is there no macroscopic change in the cerebro-spinal fluid in these cases, but there is seldom any change to be found on pathological examination. In addition, as the hospital has no pathological department an examination of the fluid would have been difficult to obtain.

Facial neuralgia was present in the early stages of the illness, and although the operation completely relieved the severe temporo-parietal pain, the patient complained for some time afterwards of pain of lesser intensity round the left eye and in the left cheek. The anatomical explanation of the syndrome would seem to offer an easy solution to this. After piercing the inner layer of the dura mater the sixth nerve lies for a few millimetres with the inferior petrosal sinus in between the two layers of the dura mater at the tip of the petrous bone in what is known as Dorello's canal. This canal is bounded below by the petro-sphenoidal suture, above by the posterior clinoid process and petro-sphenoidal ligament, internally by the dorsum sellae, and externally by the apex of the petrous bone.[1 2] The Gasserian ganglion lies in the trigeminal impression on the antero-superior surface of the petrous bone near its apex.

The syndrome is said to be due to a serous extradural inflammation implicating the sixth nerve in Dorello's canal. Hence from the proximity of the Gasserian ganglion it would be expected that the fifth nerve involvement would not be uncommon. This involvement has been stressed by Rimini,[3] and was marked (with slight photophobia) in the case reported by Hamilton and Kerr.[4]

There was no involvement of any cranial nerve other than the fifth and sixth, and there was no homolateral retropharyngeal swelling, as occasionally occurs and was noted by Leitch.[5]

The notes of this case were submitted to Mr. G. J. Jenkins for his opinion, and I am exceedingly indebted to him for his comments. He considered the case to be a typical Gradenigo's syndrome, and he particularly emphasized the fifth nerve distribution of the pain, which he states is more common than is generally recognized. I have to acknowledge my thanks to Dr. V. H. Blake for permitting me to treat the case, for additional details in the history before admission to hospital, and for valuable criticism in the presentation of these notes.

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3 E. Rimini: *Arch. Internat. de Laryngol.*, July-August, 1926.
4 E. Burt Hamilton and J. A. Kerr: *Journ. of Laryngol. and Otol.*, vol. xliii, p. 43.
5 J. W. Leitch: Ibid., vol. xlii, p. 457.

TREATMENT OF ACTINOMYCOSIS.

BY

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In an article published in the *British Medical Journal* on March 6th, 1926 (p. 418), I gave an account of four consecutive cases of actinomycosis which had been rapidly cured by small doses of tincture of iodine administered in milk. I believed at the time that iodine given in this way was in a colloidal state. When milk is added to tincture of iodine a point is reached at which the mixture becomes colourless and tasteless. This result is more rapidly attained when cream is substituted for milk, and it appears that the iodine unites with the cream to produce an iodized fat.

In this connexion the observations of Dr. Warwick Preston[1] are of great interest. He records two cases of actinomycosis of the lung which improved rapidly after the injection into the trachea, for diagnostic purposes, of lipiodol—an iodized oil. A subsequent course of iodine and milk completed the cure. This suggests that various iodized fats may have a similar specific action upon actinomycosis.

Black mycetoma is a disease produced by an organism similar to the ray-fungus, and I have received from India reports of two cases which were cured by iodine and milk, and of one old-standing case of "Madura foot" which began to improve rapidly as soon as this treatment was instituted.

Since the appearance of my first article four additional cases of actinomycosis have been under my own care, all of which have been cured.

CASE 1.

A man, aged 42, in July, 1925, was operated upon at another hospital for appendicitis. The wound was drained, and one month later he was discharged from hospital with a sinus at the site of operation. In September of the same year he was readmitted, and further abscesses were drained in the abdomen and right loin. He first attended the Bristol Royal Infirmary on February 16th, 1926; he was then extremely emaciated and in constant pain. Hard masses filled the right side of the abdomen and extended across the epigastrium to the splenic region. Several sinuses were present in the right loin and the right side of the abdomen; from them there was a copious discharge of pus containing typical sulphur granules, and an immediate examination confirmed the presence of actinomyces. He was given *tr. iodi sine iodidi*, minim v, thrice daily in milk until March 6th, when he was admitted as an in-patient. By this time all his pain had vanished; he could eat anything, and he had put on nearly a stone in weight. The masses in the abdomen had almost vanished, but there was still some thickening around one abdominal scar. Three sinuses were still present, but there was little discharge from them, nor could actinomyces be identified any longer in the pus. He was discharged on March 17th.

He was readmitted in October, 1926, as three sinuses refused to heal; they all communicated, and were probably due to a deep infected ligature. They eventually closed after being injected with various substances, such as brilliant green and crystal violet.

CASE II.

This patient, also a man aged 42, was admitted to the Bristol Royal Infirmary on September 17th, 1927. Three weeks previously he had had a right lower molar tooth extracted on account of pain and swelling in the jaw. Between this time and his admission he had had numerous anæsthetics for the extraction of other teeth, the exploration of his lower jaw, and the opening of sundry abscesses of the face and neck.

On admission the whole of the right side of the face was greatly swollen; large fluctuating abscesses extended from below the right angle of the jaw to the right temporal region, and he was unable to open his mouth. The abscesses were opened freely, actinomyces was identified microscopically, and he was put on the usual treatment. On October 12th he was discharged healed. Some thickening persisted in the tonsillar region, and it was three months before this had disappeared completely. He has remained well ever since.

CASE III.

A man, aged 25, was admitted as a case of probable actinomycosis on April 4th, 1927. He had a hard swelling over the left side of the jaw, and a history of recurrent abscess formation for seven months previously. The abscess was opened and the pus examined with a negative result. He had been put on the iodine treatment, but in view of this finding, and the fact that the abscess healed rapidly, this was discontinued, and he was discharged.

He returned with another abscess in September, and this time actinomyces was identified. He was put on treatment again, and the lesion slowly healed, leaving a deep depression in the jaw where bone had been destroyed. He has remained well ever since.

CASE IV.

This case, that of a youth aged 17, was very similar to the last. He first attended the Royal Infirmary on October 8th, 1927, with an indurated swelling over the left side of the lower jaw. This soon broke down to form an abscess, the pus from which was found to contain actinomyces.

He was put on the same treatment, and his wound rapidly healed. He was last seen on December 13th of that year, but he writes, in answer to an inquiry, to say that he has had no recurrence of the trouble since that date.

REFERENCE.

[1] *British Medical Journal*, December 29th, 1928, p. 1172.

A CASE OF ULCERATIVE ENDOCARDITIS OF PUERPERAL ORIGIN.

BY

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AND

G. R. MACNAB, B.SC., M.B., CH.B.ED.

THIS fatal case of puerperal sepsis is interesting because of the almost total absence of pelvic symptoms or signs, and because there were no clinical signs suggestive of heart lesions such as were found at necropsy.

Clinical History.

A primipara, aged 23, was confined in an outlying district on July 21st, 1928; the labour was normal except for early rupture of the membranes. No instrument was used, and there was no trauma. Up to about the tenth day, when the patient was reported by her mother to have had a rigor, the puerperium was normal. She got up on the eleventh day, but further rigors were reported to have occurred on the seventeenth and twenty-fourth days. On the twenty-ninth day she came to Barnsley to her mother's house, and on the thirtieth day had another rigor.

One of us (G. R. M.) was called in on the thirty-first day, and found the following conditions: the temperature was 99° F. and the pulse 120; the uterus was fully involuted, retroverted, and free from tenderness, and there was no uterine discharge. The urine was normal, and no other abnormal signs were found. The retroversion was replaced. On the night of the thirty-third day the patient became orthopnoeic, her temperature rose to 102.6° F., and her pulse to 140. On examination a gallop rhythm was found at the heart, but no enlargement or murmurs were detected. The bases of both lungs were dull on percussion, and auscultation revealed moist sounds and friction rub. An injection of atropine, strychnine, and digitaline was administered. On the thirty-fourth day we both saw the patient in consultation. She was obviously suffering from toxic absorption, but no other abnormality was found. The lungs were now resonant and free from abnormal signs. Material was taken for an agglutination test, which proved to be negative. From now on the patient had numerous rigors. On the thirty-seventh day she was admitted to hospital. On examination we found that the heart was not enlarged, and there were no murmurs to be heard. There was a reduplicated first sign at the apex and the left border of the sternum. Occasionally sibilant rales were heard in the lungs. The pelvic organs were apparently normal, except for a slight, non-offensive uterine discharge. The patient was given 25 c.cm. of antistreptococcus (puerperal) serum. She was restless that night, and on the morning of the thirty-eighth day she collapsed. She was orthopnoeic, but with stimulant treatment made a partial recovery; her temperature, however, was 107° F. She remained in a typhoid state until her death on the fortieth day. Towards the end the patient's urine was highly coloured with urates and loaded with albumin. Her temperature varied from 103° to 107° F., her pulse became uncountable, and her respiration rate varied from 45 to 75.

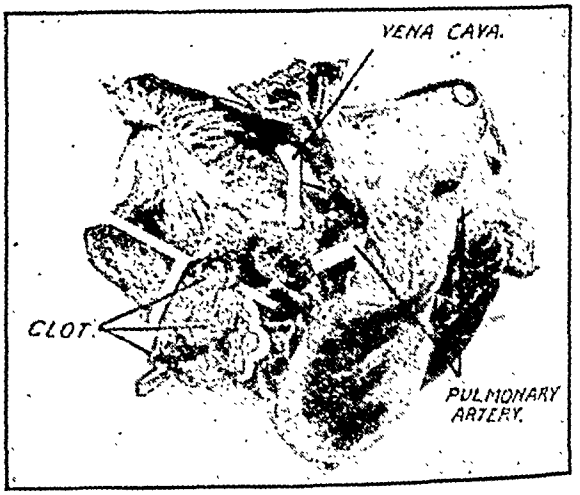
Post-mortem Findings.

On September 1st, 1928, a *post-mortem* examination was made. Apart from tumidity of the abdomen there were no external signs of disease.

Abdomen.—There were no signs of peritonitis, and the bowel, though considerably distended, was not ulcerated. The liver was enlarged, passively congested, and showed signs of cloudy swelling; there were no abscesses. The spleen was enlarged, congested, very friable, and free from abscesses; the Malpighian bodies were not visible. The kidneys were pale, the cells being in a condition of cloudy swelling; there were no signs of abscess formation. The uterus was well involuted, the mucous membrane being soft and friable, and slightly septic. The os was slightly patulous, and a recent blood clot was found in the body of the uterus. There was nothing else abnormal in the pelvis.

Lungs.—These were in a state of hypostatic congestion, and at both bases there were recent pleural adhesions to the diaphragm. There were no signs of infarct or abscess formation.

Heart.—The pericardium contained about 3 oz. of greenish fluid with some shreds of fibrin. On the anterior epicardiac surface



there was a serous patch about the size of a threepenny-piece. The heart weighed 7¾ oz.; its muscles were rather pale and flabby. The left auricle and left ventricle were normal. The mitral valve showed signs of early endocarditis, with the formation of pink nodules on its ventricular surface. The aorta and coronary arteries were healthy, but the aortic valves showed signs of endocarditis. The papillary muscles of the right ventricle were friable and inflamed. There was (as shown in the photograph) a large suppurating blood clot, weighing 126 grains and measuring 6.3 by 2.2 cm., firmly attached to the anterior cusp of the tricuspid valve. The cusps of the tricuspid valve were greatly thickened and in a state of necrotic ulceration. The right auricle and the pulmonary valve were apparently healthy, but attached proximally to the left posterior cusp of the tricuspid valve, and passing through the pulmonary valve into the pulmonary artery was a thin, recent *ante-mortem* clot, 8 cm. long, and bifurcated at the distal end.

COMMENT.

The clot attached to the tricuspid valve was wedged in the valve ring, and we considered that it was probably acting as a ball valve and had been present for two or three weeks. Of special interest were the site of the chief cardiac lesion and, apart from the reduplicated first sound, the absence of abnormal signs. At no time did the patient complain of pelvic or cardiac pain, nor could any previous history of rheumatism or tonsillar or cardiac trouble be elicited.

We are indebted to Dr. T. E. Francis and Dr. D. H. Hubbs for permission to publish this case.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

TRAUMATIC RUPTURE OF THE SPLEEN COMPLICATED BY HAEMATURIA.

THE following instance of rupture of the spleen seems worth recording in view of the masking of the diagnosis by haematuria, and the relatively slow pulse rate.

A man, aged 29, was admitted to hospital one night in a dazed condition. He had been riding a motor cycle round a bend in the road when he had skidded; he could remember nothing of the accident. There was no history of malaria, and the patient had never been abroad.

On admission he complained of pain in the left loin and in the head; the forehead was contused and there was some epistaxis. The pulse rate was 74 and the temperature 96.8° F. There was no pain, tenderness, or rigidity in the abdomen. The next morning the pain in the left loin was more pronounced and was accompanied by a swelling which extended forwards from the left kidney angle, and blood-stained urine was passed. The pulse rate was 82 and the temperature 98.2° F. During the day he began to complain of pain in the epigastrium, thirst, and dryness of the mouth. He vomited occasionally, but the vomit consisted mainly of fluids administered. The pulse rate was taken hourly during the day and ranged from 82 to 86, the volume being well maintained. Four specimens of urine were collected; the colour varied from smoky to definite red. In the evening a little distension of the abdomen was noticed.

On the following day the pulse rate was 88, but the volume remained good. The patient was still vomiting and the abdomen was somewhat more distended. The bowels having been confined since admission, an enema was given, and was followed by considerable relief. At noon the pulse rate remained at 88, but the abdomen was becoming distended again, and some dullness in the flanks was now present for the first time. It was more marked on the left side, though it could be made to shift from either side. After this the dullness and distension steadily increased, although the pulse rate never exceeded 88. The urine passed during the morning had remained blood-stained. At no time had the patient complained of pain in the left shoulder.

It was thought that the kidney had ruptured into the peritoneal cavity, and that *afternoon the abdomen* was opened by a left paramedian incision above the umbilicus. A large quantity of free blood was encountered as soon as the peritoneum was incised; this was rapidly mopped up. Examination of the left kidney area showed some swelling, but no communication with the peritoneal cavity. Blood was found to be issuing from the upper left quadrant of the abdomen, and the *examining hand* encountered a ruptured spleen. An incision across the *left rectus* enabled the spleen to be brought out of the wound. The *upper* pole was pulped and, in addition, there was a transverse wound at the level of the hilum. The pedicle was ligatured and the organ was removed.

Convalescence was uneventful save for the haematuria, which *continued* for twelve days, but gradually abated.

The cardinal signs of *splenic rupture*—namely, *abdominal rigidity*, *local tenderness*, Ballance's sign (shifting dullness in the right flank and constant dullness in the left flank), and Kehr's sign of pain referred to the left *shoulder*—were singularly absent in this patient.

Foucault[1] mentions rupture of the kidney in differential diagnosis from rupture of the spleen, and states that the latter is made apparent by the associated haematuria and lumbar swelling, both of which were present in this instance.

Gordon Watson[2] remarks that in rupture of the spleen the pulse diminishes in volume as it increases in rate until it becomes running and imperceptible. Hamilton Bailey[3] says that "when the diagnosis is uncertain a clearly recorded half-hourly pulse chart is above all things of the greatest diagnostic value."

More helpful in this instance was the dictum of Butler and Carlson,[4] who discuss nine cases of traumatic rupture of the spleen: "In all patients in whom there is a history of trauma to the abdomen, to the flanks, or to the lower chest, even if there is no visible injury or local evidence of injury, we must always be alert and not overlook the slowly developing shock, the slight distension, and the abdominal pain, not too severe, that are the early signs of rupture of the spleen."

Torquay B. VENN DUNN, M.D., F.R.C.S.Ed.

[1] Foucault: *Journ. de Med. de Bordeaux*, 1925, 102, p. 1128.
[2] Gordon Watson: Choyce's *System of Surgery*, 1914, vol. 2, p. 105.
[3] Hamilton Bailey: *Brit. Journ. Surg.*, 1927, xv, 57, p. 41.
[4] Butler and Carlson: *Surg. Clin. of North America*, 1926, vi, 2, p. 517.

THE CAUSE AND CURE OF MORNING SICKNESS.

MANY years ago I was treating a pregnant patient for a vaginal condition, and among other things I used a tampon of glycerin and borax (*B.P.*). When I next called on her I was greatly interested in her statement that since my previous visit she had been quite free from morning sickness. This caused me to investigate the matter, and after eliminating other factors I concluded that the cure was due to the glycerin tampon. Thereafter I made it my constant practice to treat cases of morning sickness with glycerin and borax tampons, and since that time I have never had a failure.

I mentioned this treatment at various times to my assistants, and also to my fellow practitioners, and spoke about it at the Glasgow Gynaecological and Obstetrical Society, without being able to explain why it should be successful. Recently I hit upon what I believe to be the *solution of the problem*. On reading up the subject I find that all the successful cures so far recorded have followed the opening of the cervical canal; one practitioner forced *his finger through the cervical canal*, while another employed a wide, tapered sound. The risk of these procedures was so manifest that their disuse followed. One other practitioner swabbed the cervix with a solution of silver nitrate, causing a marked improvement in the patient's condition.

I have been watching my cases recently and have observed the following facts. The vulva and vagina were turgid, swollen, and discoloured; the cervix was also swollen, and the canal was choked with the increased secretions from the *endocervical* glands. After the use of the tampons the turgidity of the vulva and vagina was greatly diminished, while the colour was much brighter and more healthy looking; the greatest improvement, however, is to be seen *in the cervix, which is greatly diminished in size*, and in the cervical canal, which is practically normal.

How does it come about that the closure or choking of the *cervical canal* should cause morning sickness? Our *surgeons could* understand it by comparing it to choked ducts such as the bile duct, or obstruction as *in strangulated* hernia; one has only to think of what happens when the Eustachian tubes become obstructed.

Technique of Applying Tampon.

A piece of Gamgee tissue 2 by 4 inches is rolled up, and tied with a length of soft crochet thread, two ends of the thread about 8 or 10 inches long are left, so that the patient may remove the pad herself. It is then inserted into the pouch of Douglas, extending at least as far as the vault, and lying in contact with the cervix. This pad can be removed after being in position for two days, and another pad can be inserted. I generally find that two pads are quite sufficient, and I have had to use four pads on only two occasions.

There is no reason why they should not be persevered with in profound cases until the sickness has entirely passed away. My experience has been that in mild cases one tampon gives so much relief that, generally, there is no necessity for a second. The most inveterate cases may require up to four, each one giving increased relief.

To sum up, in simple morning sickness one or two tampons will suffice. In hyperemesis gravidarum, or, as our American friends call it, the profound emesis of pregnancy, four tampons may be required.

Paisley. ANDREW RICHMOND, M.B., C.M.

MYXOEDEMA FOLLOWING MAMMARY HYPERTROPHY IN CHILDHOOD.

THE unusual after-history of the case about to be described is my excuse for submitting it for publication.

The patient was a perfectly healthy girl until the age of 13, when it was noticed that both breasts were rapidly increasing in size. The enlargement became so great that it was necessary to seek treatment, and she was accordingly admitted to the Pendlebury Hospital, Manchester, on April 4th, 1920. The following is a note of the condition made at the time of her admission, and for which I am indebted to the secretary of the hospital.

"There is a very great hypertrophy of both breasts, especially the right. The hypertrophy is general, diffused, and is *not a tumour*; there is no localization and all the breast tissue is involved. The breasts are *quite soft and flabby*, while here and there strands of fibrous tissue can be felt; when *the girl* stands up the right breast hangs well over the abdomen. There is no

pain, no inflammation, no glandular enlargement, and no hypertrophy of tissue elsewhere."

On April 21st, 1900, the right breast was removed and was found to weight 8 lb. 2 oz. Two months after the operation the girl menstruated for the first time. The left breast was amputated in July of the same year and weighed 6 lb. 8 oz. The patient made an excellent recovery from both operations, and for the next twenty years her health was good, except that the periods were irregular, the loss scanty, and a good deal of pain was experienced. She was married in 1917, and in the following year gave birth to a healthy male child.

About the beginning of 1922 she began to grow very stout, complained of weakness, and walking was difficult from stiffness of the knees and ankles. She thought she had "dropsy," and consulted a doctor, who, after examining the urine, assured her that there was nothing wrong with the kidneys. I saw her first in December, 1925, when she presented the typical picture of advanced myxoedema. There was no albuminuria. Treatment by thyroid extract was started at once, at first tentatively, and then pushed gradually to the limit of tolerance. The result was that the condition cleared up rapidly, and one of the most striking effects from the patient's point of view was that she menstruated regularly and painlessly for the first time in her life. She still takes thyroid extract, and three years after the commencement of the treatment remains perfectly well.

The long history of *dysmenorrhoea* suggests that a degree of hypothyroidism existed, at any rate from *puberty*; while it is more than likely that the condition of the breasts occurring at this time may have had its origin in some derangement of the endocrine system.

Umtali, S. Rhodesia. WALTER ALEXANDER, M.D., D.P.H.

Reports of Societies.

GENERAL PARALYSIS OF THE INSANE.

THE Sections of Psychiatry and Neurology of the Royal Society of Medicine combined on February 12th and 14th for a discussion on the prognosis and treatment of general paralysis of the insane. On the first evening Sir MAURICE CRAIG presided, and on the second evening Mr. DONALD ARMOUR.

Dr. W. H. B. STODDART, in opening, remarked that it would be interesting to know in what proportion of cases a remission occurred when the disease was allowed to run its natural course. In the report of the London mental hospitals for 1926 it was stated that during the three years previous to the introduction of malarial therapy only 2.6 per cent. of the 227 cases of general paralysis were improved. During the first decade of the present century the speaker was in the habit of giving hexamine to general paralytics, with the result that remissions occurred in about 25 per cent. of the cases. The drug acted best when the patients were receiving a certain amount of alcohol in the form of brandy at the same time. General paralytics treated with hexamine had no apoplectic or epileptic seizures, and their lives were prolonged. The ordinary antisyphilitic treatment with mercury, iodide of potassium, or salvarsan was of no value, because these drugs could not enter the cerebro-spinal fluid. Some attempts had been made to introduce salvarsanized or mercurialized serum into the cranium, but, on the whole, the clinical amelioration appeared to have been very slight; some such phrase as "no untoward sequels" was the most usual in the reports. With regard to tryparsamide, this was said to have been found of special service in America, but there was a risk with this treatment of producing optic atrophy. On the subject of pyrexial treatment, the question had been raised whether it was better to transfer the malarial blood from one patient to another or to employ the mosquito as intermediate host; so far as he was aware neither method had an advantage. With both methods there were patients who did not contract malaria, or the malaria disappeared after the patient had had six or seven rigors. Contraindications to malarial treatment could all be classed under one heading—namely, a poor general condition of the patient.

Sir JAMES PURVES-STEWART said that the term "general paralysis of the insane" was a clinical label some fifty years old; he suggested the name "progressive syphilitic encephalitis" for common use. Until a few years ago the disease appeared to be resistant to the most assiduous antisyphilitic treatment. The outlook had changed somewhat for the better during the past six or seven years. No true specific therapy was yet available, but a wave of therapeutic activity had appeared, and three lines of medication had been *on trial: pyrexial* treatment, *especially malarial inoculation; tryparsamide; and* salvarsanized *serum*, by itself or following a previous pyrexial course. Evidence that true specific treatment had not yet been attained was afforded by the fact that, despite occasional dramatic improvements, the serological reactions in the blood, and still more in the cerebro-spinal fluid, often remained positive; so long as this was so the disease could not be regarded as at an end. As a matter of clinical experience, benign tertian malaria had proved the most convenient *method of inducing* artificial pyrexia. Now and then a patient was found resistant to malarial inoculation, but an efficient series of pyrexial reactions could usually be produced by other means. The results of pyrexial treatment had been variously appraised. It certainly modified clinical symptoms, but it was not devoid of risk; he had known five patients die of cardiac failure during or shortly after a course of malarial injections. Many observers were content if the outstanding mental symptoms cleared up. In America good results had been obtained by tryparsamide treatment in a number of instances, and salvarsanized serum yielded comparatively favourable results. In order to supplement the clinical improvement achieved by the pyrexial course he had himself followed up malarial treatment with intracisternal injections of salvarsanized serum in the hope of securing serological results. He presented a series of 24 patients so treated, dating from 1922 to 1928, but mostly 1923 to 1925. Ten of these had remained perfectly well, clinically and serologically, for periods of from two to five years; 4 had improved for two or three years and subsequently relapsed; 2 others had slightly improved. He described one case, seen as a certified patient who was grandiose, incoherent, and had dysarthria. Malaria was first given, but the condition of the patient remained exalted and dysarthric. Salvarsanized serum was then tried, and the patient became mentally alert, the dysarthria being doubtful. *In June*, 1926, two years after the date when first seen, he was at home again, released from certificates; in January, 1929, he was still mentally normal, and had complete negative serological reactions in the blood and cerebro-spinal fluid. The speaker insisted that the standard of recovery should not be the mere remission or even the disappearance of clinical symptoms, but should also comprise the disappearance of the characteristic serological reactions.

Dr. J. BRANDER (Bexley) said that in general paralysis it was the diagnosis which was most likely to provoke differences of opinion. While acknowledging freely the great assistance to be derived from the laboratory both in diagnosis and control of treatment, he believed that serological examinations had introduced into the diagnosis of this disease an added source of confusion. There had been for some years a tendency to associate under the term "general paralysis" both the classical forms and the so-called neurological or mixed types, mostly on the basis of the serological findings, which might be very similar in the two groups. In mental hospitals the neurological type used not to be classified as general paralysis, but was called insanity with a gross brain lesion. Such patients responded in varying degrees to treatment, and were considered to have a much less grave prognosis, especially with regard to life, than was the case in general paralysis strictly so called. It was obvious that very different statistical results might be obtained according to the relative proportions of the two groups in a series. It was important from many points of view to discriminate between original general paralysis and the heterogeneous group of *symptoms associated* with it. The suggestion had been put forward that the character of general paralysis was changing, that it was less malign; but he had examined in detail the records of his own and his colleagues' cases for 1910–14 and for 1920–24, and found no difference in the character of the cases as between the two periods, except that the maximum incidence in the later period was in the age group 40–45, whereas in the earlier period it was in the age group 35–40. Instead of assuming a change in type he thought one should guard against any ready change of diagnostic standards. The speaker went on to refer to cases treated at Bexley with malaria. Since

1923 the number of patients with general paralysis so treated was 102; of these, 35 had recovered or very much improved, 16 had improved, 26 remained unimproved, and the remainder had died. Some patients who were apparently in a very advanced stage recovered to a remarkable degree, while some seemingly early cases went steadily downwards. The duration of symptoms prior to treatment, however, varied directly with the prognosis; 9.9 months was the average duration of the total series, compared with 6.4 months in those recovered sufficiently to be discharged. Among the discharged cases, 80 per cent. of those which it had been possible to follow up showed a decreased strength of Wassermann reaction in the cerebro-spinal fluid, 10 per cent. an increased strength, and 10 per cent. no change. Again, 50 per cent. showed a decreased strength of the reaction in the blood, and 45 per cent. no change. It would appear that malaria in itself was able in many cases to initiate the elimination of the virus of general paralysis, but if the disease process had attained a certain degree of severity there might continue to be manifest in the patient symptoms of progressive development not now of an actively syphilitic nature.

Dr. E. D. MACNAMARA (Charing Cross Hospital) held that malarial therapy offered hope for general paralysis, especially if combined with antisyphilitic treatment, always provided that it was only given in those cases in which the general health was such as to make it seem likely that the patient could bear up against the severe illness inflicted upon him. Records of remissions without any particular treatment were common even for such long periods as seven or eleven years. General paralysis might be long drawn out in its march; the longest case of which he had been able to find a record went on for twenty-five years. Therefore one should not be too sanguine about remissions, or lightly attribute them to a particular treatment. Periods of remission, again, might be very brief though apparently complete. The spirochaete had been found in the cortex of patients who had recently undergone malarial treatment. It should also be noted that in cases the earlier stages of which had been well or ill treated according to current practice, mental impairment and abnormal signs had been observed later, together with serum and cell changes. These were stages at which the application of malarial treatment was encouraged, but apparently the phase might last for years, and might disappear under antisyphilitic treatment or other forms of treatment, or the mere lapse of time. The moot point was whether the general assumption was not too embracing, and whether many such cases were not compatible with a meningo-vascular disease which would never, in the nature of things, become general paralysis at all.

Dr. F. H. STEWART (Cheddleton) described a modification of malarial treatment which minimized the suffering and danger to the patient. During the last two years he had treated cases by inoculating the patient in the usual way, and, after one or two rigors, stopping the attack by a thorough course of quinine. The general paralysis was generally affected by this short course of malarial treatment. After the quinine the patient was also treated actively with tryparsamide. In two months the same cycle was repeated, and repeated again until the patient had either recovered or it was clear that no further improvement was to be expected. Of 22 cases treated on this plan, 6 had been cured or greatly improved, 4 improved, in 7 the disease had been arrested, in 2 there had been no improvement, and 3 had died.

Dr. G. DE M. RUDOLF (Cane Hill) declared general paralysis to be a disease in which it was almost impossible to say that the patient had recovered; untreated cases had been known to undergo well-marked remissions. No recovery could be claimed unless the patient had shown a good remission up to at least the average age of death for the sex, and had died of some other complaint. He had seen cases previously treated with malaria become apparently normal clinically, but retain well-marked serological reactions; he had also knowledge of patients who had remained typical general paralytics, but with a normal spinal fluid. One patient after malaria remained euphoric and grandiose, but developed a completely negative cerebro-spinal fluid which later again showed positive findings, the clinical condition remaining unchanged. After referring to the report of a committee of members of the London County Mental Hospitals Service on the value of malaria, published in 1926 (*British Medical Journal*, ii, 1926, p. 603), the speaker gave his own personal statistics. His experience of malaria concerned 191 cases, some of which received arsenic in addition to malaria. Of the total, 31.4 per cent. had been discharged, and of the 83 cases treated with malaria alone 37.1 per cent. had been discharged. The highest discharge rate was among patients under 40, those with less than a seven months' history, and those in good physical health.

Dr. C. C. WORSTER-DROUGHT (West End Hospital for Nervous Diseases) gave an account of treatment by malarial infection followed by a course of novarsenobillon. He dealt only with cases which had been treated in 1923–24. No case was accepted unless, in addition to clinical manifestations, the Wassermann reaction was positive in both the blood and cerebro-spinal fluid. Of the 35 patients treated in the period mentioned, 20 per cent. were still at work and useful members of society; 50 per cent. might be said to have improved in the sense that they remained more or less the same, the progressive deterioration having been arrested; 20 per cent. had been admitted to mental hospitals or had died; and 10 per cent. could not be traced. He agreed with Dr. Rudolf in thinking that though the Wassermann reaction became negative this was not necessarily a criterion of the patient's improvement. With regard to mode of infection, he preferred blood transmission; the rigors developed as a rule more rapidly, appeared less exhausting to the patient, and were more easily controlled.

Dr. A. A. W. PETRIE (Banstead) gave an account of the treatment of general paralysis by relapsing fever, the material being obtained from the blood of mice infected with *Spirochaeta duttoni* and injected into the abdominal muscle. Of the 26 cases so treated, all of them having positive Wassermann reactions in the blood serum, and all but one positive reactions in the cerebro-spinal fluid, the figures prepared within a year of treatment showed 7 discharged improved, 5 with some improvement, 9 unchanged, 2 worse, and 3 dead. Of the cases which showed some improvement, a review after the second year proved that 2 had relapsed and 1 had died, but in the other 2 there was distinct retardation of the progress of the disease; while 3 of the 9 who had shown no change now showed retardation. The infection had not proved dangerous, and in 2 cases where pyrexia seemed likely to persist the giving of novarsenobillon appeared to check the trouble. The speaker also described 11 cases of injection with saprovitan, but the results were disappointing. Between 50 and 100 cases, some of them general paralysis, had been subjected at Banstead to inoculation with milk, 10 c.cm. of milk solution being injected into the buttock muscles. This appeared to turn on the question of sterility. Injection of sterilized samples usually produced no reaction of temperature, but injection of samples which, though brought to the boil or pasteurized, still contained saprophytic bacteria, produced temperatures of 102° and 103°, without, however, abscess formation or other evident sepsis. It seemed probable that the results claimed for this method were mainly due to the reaction to organisms which still remained in the injected fluid, and not to a protein reaction.

Surgeon Rear-Admiral E. T. MEAGHER, R.N., who reopened the debate on the second evening, gave an account of a survey which he had made of the cases treated by malaria in the mental hospitals of the country and those not so treated. Of 97 mental hospitals, 56 had not so far practised the malarial treatment of general paralysis. Taking the years 1923 and 1924, his figures showed that of the patients treated with malaria among the direct admissions for general paralysis during those years, 56.4 per cent. were still alive, whereas of the untreated cases only 13.4 per cent. remained alive. The inference, whatever test was applied, was that the treated had done better than the untreated. Of 438 cases treated to the end of 1924, 134 had been discharged, and 108 of this number remained discharged. He had made personal visits to the discharged patients, and he could affirm that 77 of them were able to follow their usual avocations, 10 were mentally fairly well,

but fit for only little work, 10 were degenerating, and 11 could not be traced. He was impressed in many cases by the attention to dress and appearance which these discharged patients showed; their good memory; and the fact that their grandiose manner had disappeared. He had been convinced that malarial treatment was of value in extending life, in improving the physical and mental state, and in allowing some 20 per cent. of patients to resume a normal existence.

Dr. THOMAS TENNENT gave an account of some experiments in the intravenous injection of tryparsamide; out of 50 patients, 16 showed good remission and 13 others moderate remission. His conclusion was that tryparsamide was a valuable drug, the action of which was assisted by combining it with fever therapy, malaria being the safest form.

Dr. J. G. GREENFIELD (National Hospital for the Paralysed and Epileptic) commented on one or two cases within his observation in which the crisis of malaria had been so severe in patients already weakened by disease that they had succumbed more or less directly to the malaria; the majority who had died had done so as a result of lung complications, occurring mostly in the winter. A striking fact was the rapid disappearance of spirochaetes from the brain in general paralysis after malarial treatment. The changes in the brain included a very great increase in inflammatory reaction occurring almost immediately after malarial treatment had started; it was not surprising that when there was this acute encephalitis with malarial infection there was a tendency for the patient to die from concurrent infection. He emphasized the need for reinforcing malaria with salvarsan. In the early days there was a tendency to think that malaria did the work by itself but the evidence afforded by pathological examination had rather shown that the disease in the brain changed from the type which it was customary to find—the degenerative changes of general paralysis—to the changes associated with acute cerebral syphilis, and, of course, this had to be treated by salvarsan just as in any other case of syphilis.

Dr. D. NABARRO described the treatment given at the Children's Hospital, Great Ormond Street, in cases of congenital syphilis, quite a number of which showed involvement of the central nervous system. The symptoms encountered in children were, of course, different from those in adults suffering from general paralysis; they usually included fits and progressive mental deterioration. Methods had been adopted of treating these patients with the object of rendering the spinal fluid normal—namely, malaria and intracisternal injections of salvarsanized serum. Malaria had been given in 13 cases of congenital neuro-syphilis, only 5 of which were cases of juvenile general paralysis of the insane. No striking improvement had occurred, either clinically or serologically, in most of these cases. He was inclined to think that the benefit of malarial treatment in neuro-syphilis was not great, and that more marked benefit followed intracisternal injections.

Dr. HANS DEUTSCH (St. Louis) gave an account of the technique employed in a clinic in which malaria was always inoculated from patient to patient; if the patient did not react to the ordinary subcutaneous inoculation an intravenous injection was given. Malaria alone had never been given during the last few years, but was followed by the usual course of salvarsan. A remarkable effect was the change in the glia cells, which returned to normal. It was impossible to speak of cures, but merely of remissions, because nervous tissue would never regenerate.

Dr. GLEN DUNCAN (Severalls) reported 41 cases of general paralysis treated by malaria; all were fully investigated by routine diagnostic methods. The mortality was fairly high, 7 out of the 41 dying within two months of inoculation. In 20 the results were good, in the sense that the patient had so far recovered from his mental symptoms that he could no longer be detained under certificate. The average duration of symptoms in the patients with whom a good result was obtained was twelve months, which, curiously enough, was rather longer than the average duration in cases in which good results were not obtained.

Dr. W. D. NICOL (Horton) said that the ideal thing in the selection of cases was to get the patient as early as possible, but advanced cases had shown benefit from treatment; the obese type reacted badly. At Horton patients had now been treated for just over four years, and it had been found extremely useful to give small doses of quinine; this tended to reduce the mortality. At Horton the method of mosquito inoculation had been invariably practised. The results in the first 100 cases showed that 50 per cent. of the manic and grandiose types had remissions; about 35 per cent. of the depressed type did well; but the simple dement type, which was by far the largest group, did badly, only about 12 per cent. remitting.

Dr. KUHN (New York City) thought it justifiable to say that where there was no defect in the intellectual functions the diagnosis could not be made with any certainty on positive serological findings. The cases which showed defective intellectual functions could be divided into two groups—one essentially delirious, and the other non-delirious, but showing progressive deterioration. Delirium, however, was not always an acute florid episode, though it might be this at times, and between this and the slow deteriorating state there were all gradations. He believed that true deterioration was a stage which was reached only as a result of long and slowly progressive cortical damage; but many paretics and many neuro-syphilitics who were not paretics showed one or more delirious episodes. It was not always easy to tell whether one was dealing with a delirious state or with a deterioration. Dr. Kuhn also contributed some remarks on the treatment of the disease with arsenicals.

The two openers briefly replied. Dr. STODDART concluded from the discussion that of all the treatments devised for the disease that of malaria had the best record, but that some reinforcement was necessary, though the means suggested for reinforcement were not as yet, to him, very convincing. He was inclined in the future to follow a suggestion made by Dr. Nicol to use the quartan malaria instead of the tertian. Perhaps some of the erroneous diagnoses were due to over-importance being attached to serological tests. He now saw that treatment by occipito-atlantoid puncture seemed to have justified itself. Sir JAMES PURVES-STEWART reiterated his belief in the efficacy of occipito-atlantoid puncture, and described the method by means of a diagram. He further stated his faith that when an unfortunate victim of this disease had sustained serious damage to his vital cerebral and cell constituents no good purpose was served by efforts to keep him alive.

OSTEO-ARTHRITIS AND CHRONIC RHEUMATISM.

Two Sections of the Royal Society of Medicine last week dealt on successive days with the above general subject, in the one case from the point of view of spa treatment, and in the other from that of electrotherapy. In the Section of Balneology the chair was taken by Dr. KERR PRINGLE, and in that of Electro-Therapeutics by Dr. J. E. A. LYNHAM. One or two speakers contributed similar remarks to both discussions.

Dr. R. G. GORDON (Bath), in opening the first discussion, which was on osteo-arthritis, said that this condition was not a clearly defined clinical entity, for it might appear as a disease *sui generis* or as a terminal phase in other forms of arthritis. Infection did not seem to play a direct part in its pathology, though it might be a contributory cause of its more direct precursors. These seemed to be strain and failure of adequate circulation through the joint. The strain might be sudden in the form of injury, or gradual, owing to postural defects; it was significant that the lower limbs were more affected than the upper. Its correlation with coxa plana in children was striking, especially as the latter often passed unrecognized. Defective circulation caused impaired nutrition and degenerative changes, and when pain by muscular spasm did not stimulate artificial protection and splinting of the joint, the destruction might be very severe. Pain varied considerably in osteo-arthritic joints, and this might be related to the nutrition of sensory nerve-endings. Deformity might be increased by muscles and ligaments finding new and abnormal attachments and exerting unaccustomed traction. Treatment must be directed to preventing strain and improving the nutrition of the joint. For the first, properly fitting splints were most useful; for the second, heat associated with well-

considered massage to the muscles rather than to the joint. Theoretically surgery must have a wide field in treatment, but practically this was not so, since the patients seldom could stand severe operations. Sulphur preparations did some good in view of the interference with sulphur metabolism found in this condition.

Dr. J. A. THOMSON (Harrogate) gave an account of the radiographic appearances of the affected joints, and displayed on the screen a large number of radiographs of various joint conditions, giving his interpretations of them. An incidental point was that the presence of osteophytic growths in women was quite rare, and he had seen two cases only. The radiograph, in Dr. Thomson's opinion, was more an indication of the patient's resistance than of the disease. He considered that the plane which radiography had now attained entitled it to a place in the laboratory study of the origins and course of the processes of disease.

Professor TOM HARE gave an account of the chemical estimation of synovial fluid and blood serum of horses affected with chronic arthritis.

Dr. HENRY COHEN spoke in amplification of the same subject from the clinical side, and went on to take up some of the points raised by Dr. Thomson regarding radiographic changes. In Dr. Cohen's view the radiographic changes were not specific for osteo-arthritis; similar changes were found in the early stages of gouty disease of joints. What struck him as a clinician was that not infrequently the radiographic changes were most marked in the hip of which the patient complained less. Too much reliance must not be placed on radiographic changes; early clinical changes, particularly rigidity of the joints, were an indication of something wrong.

Dr. G. E. VILVANDRE defended the absolute value of radiography in osteo-arthritis. The condition was a definite entity, which by means of radiographs could be shown thoroughly well.

Dr. PHILIP FIGDOR believed that osteo-arthritis was always a traumatic condition, and should be treated as a local condition just as much as a fracture. By "traumatic" he meant that in all these cases there was injury, stress, or strain. He favoured treatment by means of diathermy, as being the only form of electrical current which the administrator could direct.

Dr. J. F. BRAILSFORD suggested that the occurrence of osteo-arthritis in abnormal joints was most likely due to increased and abnormal strain to which the deformity subjected them. It had been stated that when changes were evident in radiographs damage to the articular surface was so severe that little improvement could be seen in subsequent radiographs after treatment; on the other hand, the changes shown on the radiograph were typical of the condition and therefore most valuable in differential diagnosis. One frequently saw patients who were complaining of pain in a joint or joints which may have commenced without definite injury, though as a rule there was a history of excessive and strained movements. The radiographs showed no abnormal change, but the removal of a focus of sepsis caused the condition to clear up in a phenomenal manner, though it had failed to respond to other forms of treatment. Failure to locate and remove the toxic focus resulted in the occurrence of insidious destructive changes in the joints. Patients frequently experienced long periods of comfort between bouts of pain, and probably on this account failed to subject themselves to active treatment. Only when there were limitation of movement and marked osteo-arthritic changes did they first submit themselves to radiographic examination. Generally the pain in the early stage was more severe than in the later, when the most marked feature of the condition was limitation of movement. The radiographic evidence suggested that the lesion was caused by the action of a toxin on damaged or strained cartilage and bone.

Mr. WHITECHURCH HOWELL, as an orthopaedic surgeon, thought that the earliest sign of osteo-arthritis of the hip was trauma, followed as a rule by synovitis of the hip, but this the patient often regarded as trivial, and did not seek advice. If only cases were brought under treatment earlier much more could be done for them. Osteo-arthritis of the shoulder he regarded as very prevalent; it was often overlooked. He illustrated the advantage of fixing the arm well above the patient's head, instead of strapping it to the front of the body; by the former method a free range of movement would eventuate.

Dr. KERR PRINGLE insisted that osteo-arthritis was not a local disease, but a general disease, with local manifestations. He also criticized the quality of the radiographs which patients brought with them; often a fresh set had to be taken, not only to ascertain the extent of the damage, but to prove to the patient that disease was present.

Dr. R. G. GORDON, in reply, could not quite agree with Dr. Cohen that all stiffness of joints was necessarily a sign of osteo-arthritis; there were many stiff joints in which the more grave condition did not exist. While agreeing that diathermy was a valuable adjuvant, he hoped the Section would not be led away into thinking that it was the treatment for osteo-arthritis.

Electrotherapy in Rheumatic Disorders.

Dr. CHARLES W. BUCKLEY (Buxton) opened this subject with some account of spa electrotherapy. Where the waters at spas were only used internally electrotherapy was largely applied, but where a bath technique had been developed upon the results of which the fame of the spa was based, electrotherapy was less popular. Of the various methods he had found ionization of most value; it was the action of the constant current on the tissues, not the nature of the ions used, that produced the most effect. Diathermy had given good results in his hands, especially in spondylitis deformans and arthritis of the sacro-iliac and hip joints, or where deeper penetration was required than could be obtained with certainty by means of ionization. Chronic arthritis associated with much muscular wasting called for faradism or galvanism to the muscles. The static treatment and the older forms of high frequency had proved disappointing in his hands. The high candle-power electric lamp was very effective, especially in fibrositis of the back or shoulders and in sciatica. Rheumatic subjects appeared often to be hypersensitive to sunlight rays, and long exposure to the sun was frequently followed by increase in pain and stiffness. He had seen good results from deep ray therapy in two cases of spondylitis deformans.

Dr. F. D. HOWITT said that chronic rheumatism did not kill, and for that reason it had escaped until recently the medical attention it deserved. No one cause would explain all rheumatic conditions. Among the predisposing factors climate played an important part. Treatment resolved itself into two parts—namely, arrest and cure of the disease, and the correction of the results of the disease. The fact that removal of obvious sepsis in many cases did not give amelioration of symptoms might be explained by the fact that the organism was lodged in various parts of the body in sufficient quantity to produce resensitization. He thought the beneficial results obtained by electrotherapy and actinotherapy were attributable to the application of heat, elimination of waste products, and stimulation of the skin.

Dr. M. B. RAY discussed the question of accessory treatments at spas. There had been an increasing tendency to supplement the natural resources of spas by recourse to methods which at first sight might seem superfluous. He proceeded to justify by an interesting argument based on the theory of disease the combination of spa treatment with physical and electrical methods. He also stressed the function of the skin as the principal adaptive organ of the body. By the judicious use of biochemical measures the adaptive resources of the skin might be stimulated and reinforced.

Dr. AGNES SAVILL gave a description of some cases which she had been able to watch over a long period. One was a young woman who had developed a widespread arthritis, and finally went to Austria, where she was put on diathermy and a diet consisting of sweets, cakes, bread, and water. She was worse on her return, but by a readjusted diet, in which the protein allowance was made adequate, and very cautious administrations of ultra-violet radiation, with diathermy for twenty minutes four times a week, she steadily improved, and had been undoubtedly saved from a serious rheumatoid arthritis.

Dr. E. P. CUMBERBATCH said that it was now established that a number of cases of arthritis in women were due to an infection which arose from a primary focus in the cervix uteri. It was now the custom in his department at St. Bartholomew's to expose the cervix uteri, and if chronic infection was discovered, not necessarily gonococcal, the cervix was subjected to diathermy, and in about 70 or 80 per cent. of the cases the arthritis was brought to an end. He and his colleagues also believed that the arthritis due to disturbance in the ovarian endocrine function was closely related to disturbances of menstrual function, and these cases had been treated by applying diathermy to the ovarics.

Dr. KERR RUSSELL said that recently he had had the privilege of visiting a number of treatment centres abroad, and in no single case did he see ionization treatment administered, but in a well-known clinic in Amsterdam he saw fifteen ultra-violet lamps in constant use. He considered ultra-violet radiation to be a very useful adjunct in the treatment of rheumatic conditions.

Dr. G. B. BATTEN suggested that the static wave current (the Morton current) was the best form of electrical vibration to be obtained. If applied properly, it not only attacked the whole muscle, but all the fibres and cells of the affected parts.

Dr. A. E. BARCLAY asked what had happened to the classification of rheumatism. Were they all treating rheumatism blindly, or had they come to the conclusion that rheumatism was an end-result?

Dr. C. A. ROBINSON, Dr. Cumberbatch's colleague, in reply to a question as to how diathermy was applied in the male in the corresponding condition to that of which Dr. Cumberbatch had spoken, said that they had been led to treat the cases of arthritis associated with amenorrhoea in young women by the results they had obtained in heating the prostate in men. In selected cases striking results were obtained in the arthritis of men by heating the prostate with diathermy.

Dr. ALASTAIR MACGREGOR remarked on the ease with which bruising took place in these subjects when there was infection of the colon.

Dr. BUCKLEY, in replying, said that a great deal of importance must be attached to splinting in the acute forms, but if splinting was adopted rigidly, as it frequently was, the condition might be made worse. With regard to ultra-violet radiation, this might be an advantage in rheumatism, but with a patient seen for a limited time it was a great mistake to subject him to a treatment of doubtful value, particularly when one was surrounded by apparatus which one knew to be efficient.

CALCIUM METABOLISM AND TETANY.

At a meeting of the Aberdeen Medico-Chirurgical Society on February 7th, with the president, Professor ALEXANDER LOW, in the chair, two papers on closely associated topics were read, one on calcium metabolism by Dr. ALEXANDER LYALL, and the other on infantile tetany by Dr. JAMES A. STEPHEN.

Dr. Lyall dealt with the subject mostly from the aspect of the calcium content of the blood and its alterations in experimental and pathological conditions. He described briefly the principle of the method of estimation of the calcium of the blood. The serum from clotted blood was usually taken for this purpose, and the calcium precipitated as the oxalate. This precipitate was dried and converted to the carbonate, and the amount of calcium estimated by dissolving the precipitate in standard phosphoric acid. Dr. Lyall said that the calcium content in health was very constant—about 10 mg. per 100 c.cm. of blood, with from 9 to 11 mg. as its widest limits. The actual formation of the calcium was not known; it probably existed partly as the chloride, phosphate, and the bicarbonate, and partly as a colloidal calcium phosphate stabilized by the blood proteins. About 60 per cent. of the total was present in a diffusible form, while the remainder was bound to protein and non-diffusible; part of the diffusible fraction was ionized. Dr. Lyall discussed the experiments of Percival and Stewart showing the existence of a diffusible fraction by the injection of calcium containing fluid and calcium-free fluid into the peritoneum of the cat. The fluid recovered always contained about 6 mg. calcium per cent. He also demonstrated a sample of fluid from the pleural cavity in a case of polyserositis. The fluid contained 7 mg. of calcium per cent., while the serum content was 9.2 mg. per cent. The speaker then detailed in tabular form the conditions under which alteration in the amount of blood calcium might occur.

A. Calcium decreased.
  1. Experimental:
    (a) Parathyroidectomy.
    (b) Phosphate injection.
    (c) Ovarian extract injection.
  2. Pathological:
    (a) Tetany { Infantile. / Adult ... { Nephritic acidosis. / Alkalosis.
    (b) Rickets.
    (c) Nephritis with oedema.
    (d) Long-standing sepsis.

B. Calcium increased.
  Experimental:
    (a) Administration of calcium { by mouth. / intravenously.
    (b) Administration of parathyroid extract.

C. Changes in the ratio of diffusible fraction.

Dr. Lyall illustrated his remarks by describing the chemical findings in a case of alkalotic tetany due to persistent vomiting, and in two cases of tetany occurring in the uraemic state where the blood calcium had fallen as low as 5 mg. per cent., with a concurrent increase in blood phosphates to 25 mg. per cent. Discussing the recent work on the effect of calcium or parathyroid administration on the production and resolution of effusions, Dr. Lyall said that the experimental findings did not wholly justify their employment clinically, and that therapeutic use of these substances was in danger of advancing ahead of experimental ratification.

Dr. Stephen followed with a short paper on infantile tetany, and dealt chiefly with the symptoms, diagnosis, and treatment. Photographs were exhibited illustrating the carpo-pedal spasms in a case of "manifest" tetany, and showing Trousseau's sign induced in a case of "latent" tetany by pressure on the upper arm. In discussing the etiology and the association of tetany with rickets, he referred to Professor J. J. R. Macleod's work on this subject, where three theories were discussed: (1) the intoxication theory; (2) the calcium deficiency theory; (3) the theory of disturbed acid-base equilibrium. The conclusion was reached that the theory of calcium deficiency was supported by much unequivocal experimental data and the final isolation of the parathyroid hormone (Collip) definitely associated the parathyroids with calcium metabolism. Macleod, however, had summed up by stating that of the three theories no single one was sufficiently comprehensive to explain all forms of tetany, and the tetany syndrome need not necessarily be regarded as an entity. It was a manifestation of neuro-muscular excitability. Dr. Stephen then detailed the treatment of tetany, pointing out that the therapeutic indications were twofold: (1) to remove the constitutional abnormality by regulation of the diet—mainly on antirachitic lines; and (2) while the abnormal excitability lasted, to ward off and relieve the more serious of the nervous attacks. Breast milk was advisable for young children, and the amount of cow's milk, especially its fat content, should be reduced; skimmed lactic milk had been found useful. For older children additions should be made to the diet of foods rich in calcium, such as cabbage, turnip, and oatmeal in the form of vegetable purée. Cod-liver oil should be given in all cases. The chief hygienic measure was to have the child nursed in the open air and sunlight as much as possible; where this was impracticable ultra-violet light could be applied. The medicinal treatment consisted in the administration of acids given as hydrochloric acid, calcium chloride, or ammonium chloride, and for the spasms chloral hydrate by the mouth or the rectum. He also mentioned that Clendening had recommended in severe cases the intravenous injection of calcium salts or Collip's extract of parathyroid gland—5 units per kilo of body weight for each milligram of calcium rise desired, but that he had had no personal experience of this treatment.

Reviews.

TEXTBOOKS ON UROLOGY.

UROLOGY[1] by EDWARD L. KEYES, professor of urology at Cornell University, is the lineal descendant of *A Practical Treatise on the Surgical Diseases of the Genito-Urinary Organs*, published in 1874 by W. H. Van Buren and E. L. Keyes. Like it predecessor it is based almost entirely on clinical knowledge. The author in his preface admits to "a certain impatience with second-hand knowledge," and has drawn almost entirely on a store of personal experience accumulated during many years of urological work. The usual anatomical, embryological, histological, and bacteriological chapters that are found at the beginning of most textbooks of urology have been omitted, and the reader is brought immediately to the subject of the physical examination of the patient. Following this are chapters on genito-urinary instruments, cystoscopy, radiography, and renal function tests. Some may consider that the author is over-dogmatic, but the majority of readers will welcome the precise nature of the instructions contained within the covers of this book. Only those methods of treatment of which the writer has direct personal knowledge are described. This, of course, results in certain omissions; for example, in the chapter devoted to the treatment of strictures no mention is made of the use of the Kollmann in dilatation, or of the radical operation of excision. But in a book of this kind such omissions are inevitable, and the disadvantage of their occurrence is more than outweighed by the advantage of knowing that the methods of treatment that are described are endorsed by the personal experience of such an authority as Dr. Edward L. Keyes. Textbooks are too often constructed out of textbooks, mixed with a small amount of original experience. Statements which appear in one are served up in another without sifting the corn from the chaff. Dr. Keyes has no patience with such methods. Thus, of the trabeculation found in tabetic bladders he writes, "Many cystoscopists have described types of bladder trabeculation as characteristic of the tabetic bladder. None of these descriptions has fulfilled its purpose. The paralysis does cause a trabeculation more marked than one would expect to find as the result of a given retention. But this difference is in no way characteristic. The only cystoscopic evidence of bladder paralysis is the open internal sphincter." What the average surgeon asks for when he consults the work of an authority is for clear instruction as to the right method of treatment. He does not wish to be told that certain methods may be of use or that this or that authority has reported favourably of another. The author of *Urology* tells him in no uncertain voice what he should do. What could be more precise than his advice on operations for injury to the kidney? "The next question that arises is the viability of the kidney. If more than one-third of the kidney appears to have lost its blood supply nephrectomy will be required; if less than one-third the necrotic portion may be excised, or if it is small left undisturbed. There is little value in suturing ragged tears in the kidney substance, a tube drain will be left in the loin." Even in chapters dealing with troubles concerning which our knowledge is inexact and often highly theoretical the same clearness of expression is maintained. The author would probably be the last to lay claim to any special knowledge of psychology. Nevertheless the average reader will obtain more insight into functional derangements of the sex organs from a perusal of chapter xiv than after copious reading in special volumes dedicated to that subject. Every practitioner who deals with sexual disabilities knows how difficult it is to handle these troubles. Each specialist has his own favourite formula for treatment. Their numbers attest their fallibility. "Try," says Dr. Keyes, "to make hygiene and psychology dominate over practice. I never guarantee success from local treatment. I attempt to plumb the patient's sexual ideals, habits, and history before beginning local treatment." The chapter on derangements of the male genital organs contains very few of the technicalities of psychology, but a great deal of common sense. *Urology* is a book based on the principles and practice of a lifetime. Its strongly individualistic note is not the least of its merits.

Another *Text-Book of Urology*[2] from America is by DANIEL N. EISENDRATH, a Chicago urologist, and HARRY C. ROLNICK, associate urologist, Mount Sinai Hospital. The book has been expressly written for the general practitioner and the medical student. The authors state that in the numerous works on this subject in current use there is a tendency towards over-specialization. The surgical side is stressed at the expense of the study of the genital tract and of venereal diseases. They aim at remedying this defect by publishing a book which deals with diseases of the male genitalia in as thorough a manner as possible. If this is the main object of the work it may be at once conceded that the authors have achieved their desire. The chapters on the genitalia and their diseases are undoubtedly the best in the book. Common conditions, such as epididymitis, vesiculitis, enlargement of the prostate, and varicocele—in other words, the complaints most frequently met with in general practice—have been treated with extreme thoroughness and judgement. Chapter xxv, on the vas deferens, spermatic cord, and epididymis, is especially good. One of the authors has previously published original experimental and clinical observations bearing on infections of the epididymis, and as a consequence the pages dealing with this condition have a special value. Contrary to the old teaching he has found that blood-borne infections of this structure are by no means infrequent. The initial site of such infections is in the tail of the epididymis, and is interstitial or peritubular rather than within the lumen of the canal. The authors are of the opinion that in tuberculosis, as well as in non-tuberculous infections of the epididymis, the path of invasion is through the blood stream. In only a few cases do they consider that primary infection lies in the prostate and vesicles. Chapter xxviii, on sexual impotency and sex neuroses, has been contributed by Dr. Irvin S. Koll. If this is to be criticized it is on the score that cases of impotency, in which an organic lesion is discoverable, have been given too large a place and the far commoner condition of psychological impotency scamped. It is this latter type of case that presents such great difficulty to the general practitioner, and we would have liked to see more space allotted to it. The treatment of these patients falls, however, within the province of the psychologist rather than of the genito-urinary expert, and it may be for this reason that Dr. Koll has not gone more fully into the matter. After reading a work such as this, written expressly for the general practitioner and student, many thoughts come into one's mind. Can any practitioner of ordinary mental calibre and attainments be expected to acquire a quarter of the knowledge that is provided for him? Granted that all unnecessary details have been eliminated, enough still remains to stagger even the most courageous of readers. In our opinion Eisendrath and Rolnick's work will be mainly valuable as a work of reference to which practitioners and students may turn. It will also be of service to those general surgeons who wish to revise their knowledge of urology as quickly as possible. In its printing considerable use has been made of heavier type to emphasize statements that the authors consider of primary importance. It is therefore possible to glean the main features of any disease and the salient points in its treatment with a minimum of reading. The fact that such a method of writing must of necessity entail a dogmatic attitude is an advantage rather than a disadvantage. It is unnecessary for the average student or practitioner to know that views opposite to those held by the authors may be in existence. A precise and emphatic mode of exposition is essential in such a work. Full advantage has been taken of illustrations, diagnostic tables, and diagrams as a means of presenting the subject in as brief and comprehensible a form as possible.

[1] *Urology*. By Edward L. Keyes, M.D., Ph.D., F.A.C.S. New York and London: W. Appleton and Co. 1928. (Roy. 8vo, pp. xix + 765; 134 figures, 20 plates. 35s. net.)

[2] *Text-Book of Urology*. By Daniel N. Eisendrath, M.D., and Harry C. Rolnick, M.D. London: J. B. Lippincott Company. 1928. (Med. 8vo, pp. vi + 842; 711 illustrations, 11 in colour. 42s. net.)

HAEMATOLOGY.

Elementary Haematology,[1] by Dr. W. E. COOKE of Wigan, is a concise handbook for students and practitioners on the methods of examining the blood and on the principal diseases of the blood-forming organs. After a useful account of the technique, the embryology and pedigree of the circulating cells in the blood, the normal and pathological forms of the red and the white blood cells are described. To supplement the text, photomicrographs, successful so far as they can be, are introduced, the author explaining that coloured drawings have not been used because it is the first essential that students should recognize structure rather than colours. This, however, is hardly a convincing argument, as stains are necessary, and great help can undoubtedly be given by exact representation of the appearances thus produced. In the chapter on the polynuclear count the Arneth count is described, and the five classes of the polymorphonuclear leucocyte are figured. The value of the Arneth procedure in ascertaining the presence and the severity of an infection is acknowledged, and an indication is given of the assistance it may afford the physician in making a prognosis. Dr. Cooke then summarizes the various forms of anaemia in a thoroughly up-to-date manner from the etiological, clinical, haematological, and therapeutic points of view. Accounts of splenic anaemia, acholuric jaundice, the leukaemias, purpura, Hodgkin's disease, and Gaucher's splenomegaly are on similar lines. Under the heading of splenic anaemia the term "Banti's disease" appears as a synonym, whereas it would be better to reserve the eponymic title for the later stage in which cirrhosis of the liver has supervened. Brief mention is made of "Hodgkin's cirrhosis" of the liver—presumably lymphadenoma with fibrosis of that organ is meant, but this being an unfamiliar phrase deserves some such explanation. Erythraemia and erythro-leukaemia (or the combination of erythraemia and myeloid leukaemia—a pan-myelosis), are also succinctly described. The clearness and brevity of this handbook should make it a useful companion to the student working in the wards, who will probably forgive the absence of references to authorities.

In his monograph on the clinical significance of qualitative changes in white blood corpuscles[2] Dr. WALTHER GLOOR attempts to correlate the changes observed in the nucleus and protoplasm of the polymorphonuclear leucocytes with the severity of infection as reflected by clinical evidence. He contrasts the morphology and staining reactions of the protoplasm, granules, and nuclei of the white blood corpuscles in healthy and in diseased conditions, and finds that the ageing of the nuclei, as determined by the fine reticular structure and the degree of pyknosis, does not necessarily go with the amount of nuclear segmentation. Dr. Gloor regards the five classes of polymorphonuclear leucocytes of Arneth as unnecessary, and gives preference to the method known as "Schilling's haemogram"; but for practical purposes he considers that both these schemes are unreliable and of doubtful diagnostic or prognostic value. He suggests, in agreement with Naegeli, that some of the cells with unsegmented nuclei are not young cells from stimulated bone marrow, but injured forms of mature cells derived from the site of infection. From the results of his clinical and experimental observations Dr. Gloor concludes that the qualitative changes in the leucocytes resulting from an infective process are referable partly to reaction of the bone marrow and partly to activity of the white corpuscles themselves at the site of infection. When the infection is by toxic action, and local inflammation is in abeyance, there is more nuclear and less protoplasmic change; there is stimulation of the bone marrow, and a shift to the left of the nuclear classes. But toxic protoplasmic changes, with the production of "toxic granules," result from a local inflammatory focus. The early and late stages of lobar pneumonia are illustrations of local and general toxic infection. The book is accompanied with twenty-nine figures in the text and four coloured plates. There is also a good bibliography.

[1] *Elementary Haematology: A Handbook for Students and Practitioners.* By W. E. Cooke, M.D.Liverp., F.R.C.P.Ed. London: C. Griffin and Co., Ltd. 1928. (6 × 9, pp. viii + 300; 54 figures. 7s. 6d. net.)

[2] *Die Klinische Bedeutung der qualitativen Veränderungen der Leukozyten.* Von Priv.-Doz. Dr. Walther Gloor. Mit einem Vorwort von Professor Dr. O. Naegeli. Leipzig: G. Thieme. 1929. (9½ × 10, pp. 89; 29 figures, 4 plates. M.12.)

PATHOLOGY OF THE NERVOUS SYSTEM.

WITH the publication by Masson of the twenty-first volume of their *Nouveau Traité de Médecine*,[3] edited by MM. ROGER, WIDAL, and TEISSIER, there has appeared the third of their four volumes devoted to a description of the pathology of the nervous system. This well maintains the high standard set by the two former volumes, and should find a place in every medical library as an authoritative work of reference. Dealing as it does with the peripheral nerves, the sympathetic nervous system, and the neuroses, it has a very wide field to cover, and requires all of its nine hundred large pages to deal adequately with this material.

The affections of the peripheral nerves, including the roots and trunk, are all described by Dr. Tinel in chapters which are unsurpassed in wealth of detail and profuseness of illustration. This section of his work is admirable in every way, and no exception can be taken to his method of treatment. It is a pity that affections of the trigeminal and facial nerves have been reserved for another volume dealing with the cranial nerves as a whole, for it would have been a great advantage to have had here included Dr. Tinel's views upon tic-douloureux and facial palsy, both of which still require much elucidation as far as the ordinary phenomena of their occurrence are concerned, and stand in marked contrast to lesions of other peripheral nerves. None of the other sections of the book enjoy the same unity of authorship, and all fall below its standard. They deal with difficult material of which much more is known clinically than has been established pathologically, and few clearly cut syndromes can be established. Epilepsy as a symptom always secondary to some essential disturbance is treated in a very thorough manner, with full attention to recent work and views on etiology, site of origin, nature of the phenomena, etc., and the chapter on the migraines is almost as exhaustive. In the final chapter Dr. Crouzon has collected together many genealogical records of patients with diseases of the nervous system which appear to have some familial and hereditary incidence. His discussion of these and their bearing upon Mendelian doctrine is of extreme interest.

There is a tendency throughout this volume to discuss the diverse views of the authorities quoted without sufficient critical evaluation of their work and its claim for consideration. This arises, no doubt, from the authors' desire to be as comprehensive and impartial as possible. Further, from its essentially anatomico-physiological point of view the book lacks the living interest which is always inspired by a clinical approach to the phenomena and syndromes of disease. It is, nevertheless, a work which commands respect, and takes unchallenged place as a standard treatise in this field.

SURGERY OF BRAIN TUMOURS.

DR. OLIVECRONA, in his *Surgical Treatment of Tumours of the Brain*,[4] gives a detailed record of 85 cases of cerebral tumour operated on by him. The general results as regards those tumours, the nature of which was verified, were as follows. Of 28 supratentorial gliomata about one-half died from the operation, one-fourth within a few months, and one-fourth showed improvement; in 8 of the cases a partial or total excision was possible, with complete relief of symptoms after from three months to one and a half years from the operation; simple decompression showed much less favourable results, all the patients, except one, dying within nine months. Of the patients with subtentorial gliomata, 5 died as the result of the operation, and 4 lived for one to two years with relief from symptoms. Of 7 patients upon whom complete excision of meningiomas was performed, 4 died as the result of the operation,

[3] *Nouveau Traité de Médecine.* Publié sous la direction de MM. C. H. Roger, Fernand Widal, P. J. Teissier. Fascicule XXI: Système Sympathique, Névroses. Paris: Masson et Cie. (Roy. 8vo, pp. viii + 900; illustrated. 35 fr. sans majoration.)

[4] *Die Chirurgische Behandlung der Gehirntumoren.* Von Dr. Herbert Olivecrona. Unter mitwirkung von Dr. E. Leysholm. Berlin: J. Springer. (Sup. roy. 8vo, pp. iv + 344; 228 figures. R.M.27.)

while 3 were practically cured. Of eighth-nerve growths, 9 enucleations were followed by 2 deaths from the operation, with cure or improvement in 7 cases; one decompression ended fatally, as did one case of cyst drainage and one of partial excision of bilateral growths. Of 2 congenital cystic tumours of the infundibulum, one partial excision ended fatally, while one complete excision showed freedom from symptoms six months after operation. A very large cholesteatoma of the lateral ventrical was completely cured by extirpation. An excision of a tuberculoma ended in death from tuberculous meningitis within two months, and an attempt to extirpate a large angioma of the vermis was relinquished on account of haemorrhage, the patient dying on the day following a second operation.

INFANT FEEDING.

AFTER the production of many volumes by specialists on the feeding of infants it is interesting to read the views and experience of a general practitioner, and for this reason Dr. HOWARD B. GLADSTONE's book *Clinical Observations on Infant Feeding and Nutrition*[7] is welcome. The author states in his preface that he has not had so much time as he would have liked in which to analyse the clinical material that came under his notice, and this may perhaps account for such generalizations as that healthily breast-fed children may "often put on a pound a week and are all the better for it," and also for a certain lack of clearness here and there in the presentation of opinions and procedure. On page 17 there is a heading "Methods of humanizing the milk," but no details are given until a later chapter (p. 32). Certain methods of diluting milk are set out and labelled Diet 1, 2, 3, 4, etc., and attached to each is the statement that the caloric value is, for example, "200," but whether this is per ounce or per feed or per day is not stated. In regard to pyloric stenosis, we note that Dr. Gladstone recommends medical treatment up to a point, with the injunction that a surgeon should be called in if these measures fail; this is not in accordance with modern teaching. Speaking generally, his results in the treatment of ailing babies appear to be remarkably good. Thus from his record of a bad epidemic of infective colitis with which he had to deal, we learn that he treated 103 cases in the homes of the poor with only three deaths.

NOTES ON BOOKS.

IN the second edition of *The Science and Practice of Surgery*,[8] by Mr. W. H. C. ROMANIS and Mr. PHILIP H. MITCHINER, which follows swiftly upon the first edition, reviewed in our columns of November 5th, 1927 (p. 831), the whole work has been revised, notably the chapter concerning injuries of the extremities, and a number of new subjects, among them the injection treatment of varicose veins, periarterial sympathectomy, perimetry, and the radium treatment of malignant disease, have been dealt with. A few new figures have been introduced, and many of the *x*-ray photographs have been replaced by others clearer in outline. A useful innovation has been the inclusion at the end of each volume of an index to the whole work. This second edition, with its new features and improvements, should be assured of an even greater success than the first.

In the preface to the ninth edition of his vade-mecum of special surgery and orthopaedics[9] Dr. ZIEGNER states that almost every chapter has been added to and remodelled, and that here and there he has brought to mind much out of general and border surgery. The book is arranged on a regional basis, each part of the human organism, with its injuries, its diseases, and surgery appropriate to them, being taken into consideration in turn and very briefly discussed. As there are no illustrations no attempt is made to teach the reader diagnosis or methods of treatment, for which he must go to the far more valuable method of clinical experience and larger manuals and textbooks. The practitioner, however, who finds himself confronted with a problem in diagnosis and surgical treatment will find in this book something to help him, if not complete instruction and guidance. The English-speaking reader must not be misled by the title of *Speziellen Chirurgie* into thinking that this book deals with what we call specialties in this country. It may be useful as a kind of index to surgical treatment, full information on which must be sought elsewhere.

Sulphur therapy[10] is a small volume in which various authors deal with different aspects of the subject. Dr. T. GORDONOFF gives an account of the pharmacology of sulphur. He refers to some interesting researches of his own in which he showed that administration of sulphur caused a reduction in the blood sugar and an increase in the liver glycogen in animals. He suggests that there may be some connexion between this fact and Abel's conclusion that insulin was a labile sulphur compound. Professor R. MEYER-BISCH deals with sulphur therapy in general, and discusses the use of sulphur baths and sulphur administration in the treatment of chronic arthritis and hyperpiesis. Dr. PAUL UNNA, jun., discusses the use of sulphur in skin diseases.

Dr. EVEREST's work on *The Higher Coal-tar Hydrocarbons*[11] is a useful addition to the literature of the subject. Substances wholly composed of carbon and hydrogen occupy a field of chemistry all to themselves. Those which are found in coal tar, or may be produced from it, have the peculiar interest that they are the head members of important groups of fine chemicals. These hydrocarbons have received, on the whole, more scanty attention than was their due; research has been less prolific among them than perhaps in any group of equal importance. Everest has collected the scattered literature and presented the facts in a readily accessible form. The treatise deals not only with the characters and properties of the hydrocarbons themselves, but also with the important products they yield. The chief features of these are described, and also the reactions by which related products are obtained from them. References to original publications are incorporated, within brackets, in the body of the text; these helpfully simplify the work of the inquirer. The book will prove valuable as well to those engaged in industrial research as to the academic worker.

No comprehensive book on human microscopical anatomy has appeared since the last edition of Koelliker's treatise, and as great and numerous advances in knowledge have been made since that time, Professor v. MÖLLENDORFF has undertaken the task of editing a work which shall embody our present knowledge in every detail. It is proposed to complete the work in eight volumes, the first two dealing with the tissues and the remainder with the microscopical anatomy of the organs. The first part of volume five[12] deals with the anatomy of the mouth, the salivary glands and pancreas, the tonsils, pharynx, oesophagus, and peritoneum. An examination of this volume, which is written by Professors Hellman, Schumacher, Seifert, and Zimmermann, shows that the work is not merely descriptive, but that the biological aspect has been kept in view, the developmental and physiological features of the subject being duly considered, while the facts of comparative anatomy and pathology are made use of wherever they serve to throw light on details of the normal human anatomy. The most striking feature of the volume is, perhaps, the great increase in the facts relating to cytology.

The production of books of the type of *Aids to Biochemistry*[13] is probably due to the array of examinations which have to be passed by the medical student; and the examination system is certainly the chief justification for their existence. The subject-matter of biochemistry does not lend itself to the tabulation, cross-heading, and compression necessarily adopted in the "Aids" series: furthermore, its relationship to other branches of physiology and medicine needs due consideration. For a student who has completed a course of biochemistry, and who wishes merely to refresh his memory on certain technical points of a more or less practical nature, the volume before us has many advantages. It is clear, concise, and contains a

[7] *Clinical Observations on Infant Feeding and Nutrition.* By Howard B. Gladstone, M.D.Ed. London: W. Heinemann (Medical Books) Ltd. 1928. (Demy 8vo, pp. xii + 118; 11 charts, 1 plate. 7s. 6d. net.)

[8] *The Science and Practice of Surgery.* By W. H. C. Romanis, M.B., B.Ch.Cantab., etc., and Philip H. Mitchiner, M.D., M.S.Lond., etc. Vols. I and II. Second edition. London: J. and A. Churchill. 1928. (Roy. 8vo, vol. I, pp. x + 759, 339 figures, 10 plates; vol. II, pp. x + 837, 258 figures, 1 plate. 18s. each volume.)

[9] *Vademecum der Speziellen Chirurgie und Orthopädie.* Von San.-Rat Dr. Hermann Zuegner. Neunte, neubearbeitete Auflage. Leipzig: F. C. W. Vogel. 1928. (Med. 8vo, pp. viii + 328. M.13.)

[10] *Therapie in Einzeldarstellung.* Herausgegeben von Professor Dr. R. von den Velden und Dr. med. et phil. P. Wolff. Schwefeltherapie. Von Priv.-Doz. Dr. med. T. Gordonoff, Professor Dr. R. Meyer-Bisch, Dr. Paul Unna, jun. Leipzig: G. Thieme. 1928. (5½ × 8½, pp. 96; 2 figures. M.4.50.)

[11] *The Higher Coal-tar Hydrocarbons.* By Arthur Ernest Everest, D.Sc., Ph.D., F.I.C. London: Longmans, Green and Co., Ltd. (Demy 8vo, pp. xiii + 334. 18s. net.)

[12] *Handbuch der Mikroskopischen Anatomie des Menschen.* Herausgegeben von Wilhelm v. Möllendorff. Fünfter Band. *Verdauungsapparat.* Erster Teil. Berlin: J. Springer. (Sup. roy. 8vo, pp. viii + 374; 276 figures. R.M.72.)

[13] *Aids to Biochemistry.* By E. Ashley Cooper, D.Sc.Lond., F.I.C., and S. D. Nicholas, B.A.Oxon., A.I.C. London: Baillière, Tindall and Cox. (Fcap. 8vo, pp. viii + 163; 12 figures. 4s. 6d. net.)

remarkably large amount of information in an accessible form. It would, however, be disastrous if the low price and compactness of such publications should tempt the student to regard them as in any way fit substitutes for lecture notes or text-books.

A book on *Volumetric Glassware*[14] has been prepared by VERNEY STOTT of the National Physical Laboratory. This describes methods of standardization and discusses the errors incidental to volumetric operations. It is a work of particular value to manufacturers of glass apparatus, not only for the sake of the information it gives, but for its authoritative origin.

The A B C of Vitamins,[15] by Mr. JOHN PRYDE, M.Sc., contains an up-to-date and entertaining account of our knowledge of vitamins, and of the methods by which this knowledge has been gained. As may be expected of a book by a biochemist of Mr. Pryde's standing, the information is, on the whole, accurate, though the validity of one or two statements may be questioned. For example, has the pleasant hypothesis that the cod obtains its vitamin D from the plankton ever been verified? Experimental work carried out before the establishment of the distinction between vitamins A and D cannot be said to afford satisfactory evidence. The statement on page 34 that vitamin D usually occurs along with vitamin A is ambiguous. It is true that "D" is usually accompanied by "A," but "A" may appear, as in green leaves, without the accompaniment of "D."

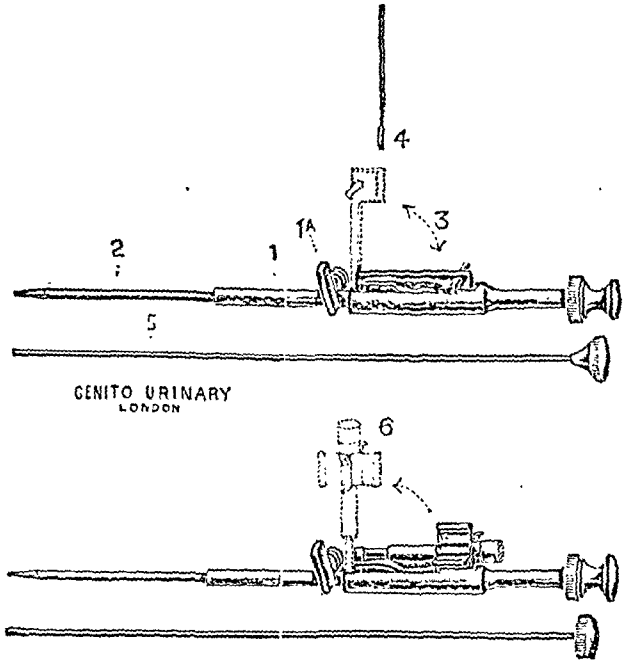
The eleventh edition of *From Cloud to Sunshine*[16] follows close upon the heels of its predecessor. It is a succinct and prettily illustrated guide to the beauties of Algiers and Algeria, and there is a chapter on the medical aspects and applications of its climate, which, even in mid-winter, is mild and sunshiny. Although as much rain falls, possibly, as in Paris or London, it comes down so heavily that the number of rainy days is comparatively small; moreover, two-thirds of it falls at night—a delightful arrangement which one would like to see introduced over here.

[14] *Volumetric Glassware*. By Verney Stott, B.A., F.Inst.P. London: H. F. and G. Witherby. 1928. (Demy 8vo, pp. 232; 40 figures. 20s. net.)
[15] *The A B C of Vitamins*. By John Pryde, M.Sc. London: J. Hamilton, Ltd. 1928. (Fcap. 8vo, pp. vi + 128; 3 figures. 2s. 6d. net.)
[16] *From Cloud to Sunshine*. By A. S. Gubb, M.D. London: Baillière, Tindall and Cox. (3s. 6d.)

PREPARATIONS AND APPLIANCES.

RADON SEED INTRODUCER.

MR. DUNCAN C. L. FITZWILLIAMS, M.Ch., F.R.C.S., writes: The radon seed introducer here illustrated was shown at the International Cancer Conference held in London last summer.



The barrel of this instrument consists of two tubes. The outer tube, marked 1, slides up and down and can be fixed by the thumbscrew 1A. This allows the operator to set the instrument at the exact depth at which it is desired to place the first seed, and all subsequent seeds can then be placed at an equal depth; moreover, second and third time seeds can be placed at different levels. The inner tube, marked 2, is the cannula; through this cannula the trocar is fixed to transfix the tissues. At the butt end of the instrument is a breech, shown closed, into which a magazine in dotted outline, marked 3, fits.

In using the instrument the breech is opened and the magazine (3) is loaded with a seed (4). The depth at which the seed is placed is determined by sliding the outer tube (1) and fixing it by the screw (1A). The instrument is plunged into the tissue till the shoulder of the outer tube stops it. The trocar is withdrawn, the magazine snapped into the breech, and the introducer (5) pushes the seed into place; the introducer is removed, and the magazine is raised and loaded again. The instrument can be inserted again by replacing the trocar, or it can be partly withdrawn and moved in another direction.

For multiple seeds a magazine (6) to hold four can be fitted; this revolves like the magazine of a revolver, so that four seeds can be inserted in different places, all at the same distances from the point of insertion.

It is of value to dip the seeds into antiseptic vaseline before loading the magazine.

The instrument is placed on the market by the Genito-Urinary Manufacturing Company, 28A, Devonshire Street, W.1.

ADVERTISEMENTS OF ABORTIFACIENTS.

A CIRCULAR in the following terms was issued by the Advertising Association (Inc.) to every newspaper in this country, and it has been suggested to the British Medical Association that its publication in these columns would be welcomed by the medical profession.

The Advertising Association has given careful and serious consideration to the advertisement and sale of alleged remedies for complaints peculiar to women which have appeared in certain publications. It cannot be too widely known, or too clearly emphasized, that these advertisements are, in a double sense, a source of grave danger and abuse. In the great majority of cases "irregularity" in a woman is a symptom of pregnancy; in the other cases it is probably a symptom at least of a condition requiring skilled medical treatment, and sometimes of serious disease.

It is desired to make it perfectly clear that the Advertising Association is not concerning itself with the sale or use of contraceptives, nor, indeed, with any question of morals involved in such sale or use. But the procuring of abortion is a serious crime, punishable by a long term of imprisonment for all parties concerned.

The association has consulted the Director of Public Prosecutions in regard to this matter, and he has expressed the firm opinion that these advertisements are a serious source of danger to those whom they reach, and states that they are the object of the close attention of his department. A case was recently heard at the Central Criminal Court before the Recorder of London where the parties charged sold remedies for "irregularities" through the medium of advertisements inserted in certain newspapers. These persons were convicted and sentenced to imprisonment, the Recorder commenting in severe terms upon what he called "this pernicious traffic."

It cannot be too strongly urged that all advertised "remedies" for female ailments are capable of harmful results if taken in large quantities, and the advertising of them is open to such grave abuse that a strong case can be made for the refusal of such advertisements by all journals jealous of their reputation. Even where these advertisements contain, as is frequently the case, warnings that the "remedies" are not to be used by pregnant women, they are equally mischievous, as such warnings amount to inducements in many cases to acquire the "remedies" for abortion purposes.

The evidence given before the Parliamentary Select Committee on Patent Medicines went to show that, in the majority of cases, these advertised remedies are purchased definitely and deliberately where pregnancy is admitted or suspected, in the belief that they will bring about the termination of that condition. The drugs advertised may or may not be efficacious in bringing about the desired result, but there can be no doubt as to the purpose for which they are, in the majority of cases, purchased.

This association, therefore, after deliberate consideration and consultation with those competent to express authoritative medical and legal opinions, has decided, while recognizing that many papers already exclude such advertising, to appeal to the press of the whole country, to advertising agents, and to others concerned, to decline to accept any advertisements of drugs or treatment purporting to be remedies for disorders generally termed irregularities, female ailments, or women's complaints. Such action would undoubtedly win general approval from the great mass of newspaper readers, and would, in the opinion of the Advertising Association, constitute a public service of great value to the community.

British Medical Journal.

SATURDAY, FEBRUARY 23RD, 1929.

CHRONIC RHEUMATIC DISEASES.

THE subject of chronic rheumatism is engaging more and more interest at the present time. Sir George Newman, in his annual report, has again insisted on the importance of the group of rheumatic diseases as a cause of industrial disablement, and the representative character of the conference held under his presidency at Bath last May directed public attention to the urgency of the problem which has to be dealt with. One of the main conclusions which emerged from the meeting was that no single theory could account for the genesis of rheumatic disorders, nor could any one form of treatment bring about their cure. The day has passed when all symptoms can be put down to infection, to metabolic defects, or to any other single factor; indeed, so complex are felt to be the problems presented by diagnosis and treatment that in the United States of America, as well as in many European countries, committees on rheumatism have been set up, and many of these bodies are directly recognized and subsidized by Government departments. In Great Britain there is a marked increase in the amount of research work and scientific clinical investigation at the spas, where at present the material for investigation is found in greatest concentration. Under the aegis of the Red Cross Society, London is establishing a special clinic for rheumatism, and this forward movement may shortly be followed in other large centres. Friendly societies are striving to find the means to extend spa benefit to their insured patients, and the demand for beds in the special rheumatic hospitals is probably greater to-day than it has ever been.

The Ministry of Health has issued a special report on chronic rheumatism by Dr. Alison Glover, and there have been many contributions to the literature of its pathogenesis and treatment. In our present issue (p. 338) Dr. F. D. Howitt calls attention to the theory advocated by Pemberton and others that the various forms of chronic rheumatic diseases are allergic reactions in specially sensitive persons to a variety of infections, and refers to the importance in treatment of elimination, especially by the skin, and to the applications of heat to that end. Heat may also act, however, by inducing redistribution of circulation and relieving local capillary spasms in the muscles and the skin. Thus Schulhof, reviving Quincke's theory, suggests that rheumatic diseases are due to capillary stasis in frigisensitive subjects, a contention which, like others, probably represents one facet of the total presentation, but by no means the whole. It would seem that so far as these diseases are concerned we must adopt a three-dimensional point of view. We have to explain why apparently the same sort of conditions produce different effects in different patients; why the conditions held to be responsible for rheumatic diseases may obtain in many subjects without in fact producing any symptoms of such diseases; and why individuals suffering from apparently closely similar symptom-complexes do not respond in equal measure to the same form of treatment. To achieve such an exposition we must in the first place consider the effects of heredity and bodily constitution; we must go back to the diathesis of our fathers, but not stay there. Endocrine dysfunctions, metabolic disturbances, special sensitivities, and the like, are all of importance, but are not the whole story. We must also consider toxic conditions, but not limit our vision to bacterial toxins only. We must be prepared to consider all varieties of general and focal infections, but we must realize that when such infections cannot be found it may be that they are not there. Further, we must be prepared to find that even when infections are discovered and removed the trouble may persist, simply because these sources of toxaemia were not those causing the symptoms. The responsible toxaemia may be chemical in origin rather than bacterial, or it may be derived from endogenous sources, such as the products of the patient's own metabolism or muscular activity. To all such poisons, as Dr. Howitt points out, the patient may be allergic. Lastly, we have to consider the factor of faulty elimination by any or all of the usual excretory channels of the body. In more than one recent article in the *British Medical Journal* attention has been drawn to the importance of the skin in this respect. Disordered sweat secretion may almost be said to be the specific characteristic of the rheumatic subject, and spa treatment, which has stood the test of more than 2,000 years, acts chiefly by improving elimination through the skin. It must not be forgotten, moreover, that the faults of elimination may be local as well as general, and if a joint or muscle is left overloaded with waste products rheumatic trouble is likely to develop and persist. Obviously, the relative preponderance of all these factors will vary from case to case. Every rheumatic patient must be considered, not only as an isolated individual, but in relation to his environment—climatic, emotional, and social. Special factors must also be taken into account in each of the varieties which these diseases exhibit.

In opening a discussion last week at the Balneological Section of the Royal Society of Medicine on the subject of osteo-arthritis, Dr. R. G. Gordon of Bath emphasized the importance of strain and lack of proper nourishment in the joint involved. He maintained that in the causation of osteo-arthritis infection probably played only a secondary part, while the condition itself might be a terminal stage of all the other forms of rheumatic disease. Dr. J. A. Thomson of Harrogate referred to the peculiarities of the *x*-ray findings in early cases of osteo-arthritis, and no doubt the elucidation of the causes of these and other peculiarities in the radiographic appearances in different types of joint disorders will help to solve the problems which the rheumatic diseases present.

The statistics of the incidence of rheumatic diseases and of the disablement they produce indicate clearly enough that no scheme for the control of rheumatism can be regarded as satisfactory unless it is planned on a large scale and affords facilities for the early diagnosis and treatment of every case. There is need for wide-spread recognition of three facts: that there is no longer any prospect of the discovery of a panacea for rheumatic disorders; that in our knowledge of their etiology and pathology there is still much chaos that has to be reduced to order; and, above all, that the greatest hope of their ultimate eradication lies within the province of preventive medicine. We may perhaps look to a time in the far distant future when faulty diathesis will be eradicated or compensated; when sources of toxaemia will never be allowed to establish themselves; when elimination has become adequate, and the individual adjusted to his environment or the environment to the individual. In such a golden age the reproach of rheumatism will have passed away, and with it a large part of palliative medicine.

THE LOCAL GOVERNMENT BILL.

THE Local Government Bill has now passed through all its stages in the House of Commons. The main principles on which it is based, whether regarded as a measure for the reform of local government administrative machinery or for the readjustment of rating, have suffered no alteration. There have been, however, a good many changes in important details, made with a view to correcting some manifest imperfections, or to conciliating bodies of critics who were, or thought themselves to be, adversely affected by the financial arrangements proposed. The general attitude of the British Medical Association to the bill, and the important points with which the profession is mainly concerned in connexion with its effect upon health administration, were set out in two recent leading articles in the *British Medical Journal*—one on November 10th (p. 854), and the other on December 1st last (p. 996).

Though the bill still remains a very important step towards that unification of health administration which the Association has made its aim for so long, the three main imperfections in this regard to which we drew attention are still unremoved. It was suggested that it should be mandatory upon, and not merely permissive for, the councils of counties and county boroughs to administer the functions transferred to them from the Poor Law authorities as far as possible by virtue of the appropriate Acts relating to public health services instead of through the Poor Law; and to co-opt on to the various committees concerned persons experienced in the work done by such committees, including representatives of the medical profession. It was further suggested that in the case of counties the council should be obliged, instead of being merely permitted, to delegate the exercise of transferred health functions to the councils of such county districts as had already established and efficiently conducted in their areas health services of a similar kind, thus avoiding an absurd overlapping or reduplication of work. These three matters—the distribution of functions, the delegation of functions, the co-optation on committees—still remain permissive only. Certain declarations relating thereto have, however, been made by, or on behalf of, the Minister of Health, and these are encouraging in so far as they indicate that he regards such distribution, delegation, and co-optation as the most advantageous methods of administration in most cases, and as those which, in the course of time, are likely to be generally adopted. Until this is brought about the unification and efficiency of health services, though advanced, will obviously be very imperfect, and we hope that the Minister, in the memorandum which he must necessarily address to local authorities on the passage of the Act, may be able to indicate that he will regard it as desirable that these features should be incorporated in schemes submitted for his approval by the councils of those authorities. In certain other respects of relatively minor importance the bill has been amended to meet points to which we drew attention. In particular the rights of transferred medical officers with regard to superannuation and otherwise have now been fully safeguarded.

There may still be some further amendment of the bill during its passage through the House of Lords, but it seems unlikely that its provisions will undergo any material modification. We are therefore close upon what we have called the "scheme stage" of the reform of local government and the Poor Law. The council of every county and county borough must, within six months after the commencement of the Act, submit a scheme of the administrative arrangements proposed to be made for discharging its transferred functions. On the submission of an administrative scheme a notice must be published that representations thereon may be made to the Minister within a period of four weeks. Schemes sanctioned by the Minister will become operative on April 1st, 1930. There is thus still time for the medical profession, collectively or locally, to advise or press the Ministry of Health, or the local authorities, or both, in order to secure its objects. It is obvious that in each locality such pressure can be exercised more effectually during the preparation of a scheme than after its completion, and it is scarcely too early, even now, for the profession in the area of each county or county borough to inquire what is being done, and to try to induce the local council to embody in its scheme the features indicated above, and such others as will lead to the most effective local health administration. Particular regard may well be paid to the way in which it is proposed to administer and manage hospitals and Poor Law institutions under the scheme. Later it may be necessary to press the Minister not to sanction schemes which appear to be unsatisfactory.

It is desirable to note that, beyond the submission of these administrative schemes, there are no fewer than three very important surveys which the bill imposes upon the councils of counties, as distinguished from those of county boroughs. One of these, which must be completed by April, 1932, at the latest, is to review the whole area of the county as regards its division into districts and parishes, and to report any changes in this respect which it thinks desirable. A second is to survey the hospital accommodation for the treatment of infectious disease provided within the county, and to submit a scheme for making such provision adequate for every part of the area. A third survey is with a view to formulating arrangements for securing a whole-time medical officer of health, not necessarily at once, for every district of the county. It is clear that, as with regard to administrative schemes, so with regard to these surveys, which may exercise great effect upon health services and administration, the medical profession should exercise its due influence, and should at once prepare itself to bring such influence to bear at the appropriate time.

HOSPITAL SERVICES IN NEW ZEALAND.

THE appendix to the annual report of the New Zealand Department of Health dealing with hospitals and charitable aid for the year ended March 31st, 1928, contains much of interest to those concerned with hospital organization and administration in this country. A comprehensive account of the New Zealand hospital system, based upon the appendix to the Health Department's report for the previous year, appeared in the *British Medical Journal* of July 14th last (p. 57). We may recall that the hospitals of New Zealand are maintained by local hospital boards financed mainly by public funds; in the year 1927-28 levies on local authorities amounted to 33.5 per cent. of the revenue, Government contributions to 41.6 per cent., recoveries from patients to 20.5 per cent., voluntary contributions to 1.7 per cent., and income from other sources to 2.7 per cent. The burden on public funds, it may be added, has risen from £505,852 (8s. 10d. per head of population) in 1916-17 to an estimated total of £1,544,753 (21s. 3d. per head) in 1928-29 for hospitals and charitable aid. Commenting on the rise in expenditure, the report observes that its reasonableness may only be judged in relation to whether the benefits received are proportionate

to the increased cost. "The people . . . have demanded and obtained a sufficient and, on the whole, efficient hospital service, and an increasing proportion of the population are using the hospitals. So long, therefore, as those receiving treatment pay as much as they can reasonably be expected to pay, and the relief is administered in an economical manner, the increased cost to public funds is not a sign of waste or extravagance." The situation is contrasted with that prevailing in countries where the voluntary system exists, and it is suggested that a permanent state of affairs in which sufferers should be unable to obtain admission to hospitals owing to the financial difficulties of such institutions "seems somewhat incompatible with the advanced civilization of the twentieth century." In New Zealand, if a hospital is unable to accommodate its patients it may be instructed to increase its size, the cost being shared equally by the Government and the ratepayers. The system as it exists provides 5.5 beds per 1,000 of population; in England and Wales the voluntary hospitals provide less than 1.5 beds per 1,000 of population, and the Poor Law authorities provide under 1 bed per 1,000 of the population in institutions maintained exclusively for the sick (that is, separate infirmaries and sick asylums). It would be unwise to attach too much importance to these figures, for due regard must be given to the fact that sick persons are also received in "general mixed workhouses" and other institutions, while the New Zealand figure apparently relates to all forms of hospital accommodation; but the contrast is nevertheless striking. Account must, moreover, be taken of the fact that the provision of hospital facilities in scattered districts, as in such a country as New Zealand, implies the existence of a much higher proportionate surplus (or reserve) of accommodation than is necessary in the larger institutions found in closely populated areas. Although the system prevailing in the Dominion appears to provide a satisfactory service in many respects, it is by no means without its problems, and, from the "defensive" tone of the report, seems to have been faced with a good deal of criticism. It should be noted that the medical staff remain on an honorary basis, and that while the policy of the New Zealand members of the British Medical Association favours the continuance of such free service in public wards, provided that accommodation is made available for the private treatment of their own patients, the authorities generally are disposed to consider that the medical staff should be stipendiary. There are also divisions of opinion—acute in some cases—on many aspects of the methods of finance and control, and on the attitude of the friendly societies towards the hospitals. The question of giving special consideration to patients able and willing to make payments in excess of those now customary (that is, from 9s. to 12s. per day) is also attracting attention, and the recently issued report of the Pay Beds Committee of the King Edward's Hospital Fund for London is discussed at length. Apparently the wards of the public hospitals in New Zealand are being used increasingly by those well able to pay at least moderate fees for the services rendered, and it is urged that the time is coming when the provision of pay wards should be considered. The main obstacle to discussion of the question on its merits appears to be what the report describes as "the class-distinction bogy," arising from a belief that any division of patients on the basis of ability to pay must involve discriminating treatment. In answering this objection an ingenious comparison with the conditions of railway travel is drawn: "Class distinction is observed in that one can travel first or second class; but both classes arrive at their destination in the same degree of safety at precisely the same time, and both classes derive exactly the same benefit from the highly skilled engineers and operators, enabling them to fulfil their journey in equal safety."

A DESCENDANT OF JOHN HUNTER.

On February 11th there died in the Sisterhood Home, St. Hilda's, Shirland Road, Paddington, where she chose to spend the evening of a life spent in well-doing, Miss Helen Hunter-Baillie, the senior representative of the Hunter family and a woman of exceptional ability. She was 85 years of age, and could read without glasses and retained her freshness of mind to the end. On the death of her sole surviving brother in 1895 she became "laird" of Long Calderwood—the birthplace of William and John Hunter, and also of Dorothea Hunter, who became the mother of Dr. Matthew Baillie, physician, and Joanna Baillie, poetess. The excellent state of preservation of the old farmhouse at Long Calderwood is owing to Miss Hunter-Baillie's care and vigilance, and to the keen and intelligent interest she took in all that pertains to the men who did so much to mould the progress of medicine in this country during the eighteenth century. Her father, Mr. William Hunter-Baillie, was the only surviving son of Dr. Matthew Baillie, and was born in 1797 within the school which Dr. William Hunter built in Great Windmill Street—a building which still serves as an annexe for the Lyric Theatre. He was educated at Westminster School and Balliol College, Oxford, was called to the Bar, and, although he never practised, did act for a time as marshal to his distinguished uncle Lord Denman. He inherited a fortune from his father, devoted himself to literature, society, and good works, and imparted much of his tastes and learning to his daughter, Miss Helen Hunter-Baillie. He lived for the greater part of his life at 96, Harley Street, and died in 1894 at the age of 97, and in his home Miss Hunter-Baillie met the leaders of literature and science of the nineteenth century. She wrote in her retreat a small typewritten volume of valuable reminiscences, a copy of which is preserved in the library of the Royal College of Surgeons of England. From it we learn that "she came out just as crinolines were coming in," and that she "thought the fashion charming." Her home atmosphere was strongly evangelical, but she and her sisters became ardent participators in the Anglo-Catholic movement. She gave herself to social service within the Church, and, if private circumstances had permitted, would have given herself to the order of sisterhood. As it was she became an associate of the order, and laboured in lay missions for forty-six years, first in the East End of London, then at Lisson Grove. From her father she inherited a strong sense of justice—justice, or equality of opportunity, for women—but the means she advocated and pursued were those of reasonableness and patience. Her interests were many and wide, and, fortunately for students of medical history, she had a keen and true sense of what constitutes a "record." At an early date she began to collect all old letters which had come down in the family from the Hunters, Baillies, Jenners, Barons, Denmans, Crofts; and these she arranged and catalogued and bound in seven volumes, and presented this valuable collection of documents to the library of the Royal College of Surgeons. To Miss Hunter-Baillie and to her brother, Captain William Hunter-Baillie, the Royal Colleges are indebted for many valuable portraits and busts of the Hunters, Baillies, and also of Jenner. At the Hunterian Oration, given biennially in the theatre of the Royal College of Surgeons, she was always a welcome guest, and had assigned to her a place of honour, which she well became. Students of the lineaments of John Hunter saw in her face, head, body, deportment, and inquiring mind much which reminded them of those of her grand-uncle. She was keenly interested in the Hunterian Collections preserved in the museum and library of the College. Miss Hunter-Baillie is now represented by the children of her two younger sisters—Henrietta, who married the Rev. J. Maconochy of All

Saints', Norfolk Square, and Agnes, who married the Rev. R. B. Oliver of Whitwell, Isle of Wight. In the Oliver family she had two nephews—the Rev. B. L. Baillie Oliver and the late Matthew William Baillie Oliver, F.R.C.S., whose early death three years ago was a great blow to her. These two nephews have left no descendants. A daughter of Mrs. Maconochy became the wife of Dr. T. Battersby Jobson; of that marriage there are four children. Thus, of the ten children born to John Hunter and his wife Agnes Paul, in the farmhouse of Long Calderwood two centuries ago, there are now only eleven lineal living descendants, representing the fifth and sixth generations. Although these are all that are descended from the Calderwood branch of Hunters, there is another line of Hunters which traces its origin to a senior brother of the John Hunter who became laird of Long Calderwood. The representative of this senior branch is Colonel C. S. Hunter, D.S.O.

NO. 3 CANADIAN GENERAL HOSPITAL.

On the occasion of some Armistice Day celebrations, when flamboyant banners, and inscriptions in keeping, were in strong evidence, a Canadian contingent paraded under a tiny standard bearing in small letters the modest legend, "We were there too." That the Canadians "were there too" the British people are not likely to forget, and not the least of the reasons for their gratitude is the prompt provision of the famous medical unit whose history has now been told by R. C. Fetherstonhaugh.[1] Shortly after the outbreak of war the dean of the Faculty of Medicine of McGill University, Lieut.-Colonel H. S. Birkett, conceived the happy idea that McGill University should offer to the British Army a completely equipped hospital of 520 beds, the officers chosen from the staff of the faculty, other ranks to consist mainly of students, and the sisters selected from the large Montreal hospitals. The scheme was received enthusiastically, and as the head of each department of the proposed hospital Colonel Birkett secured a man outstanding in the professional life of Montreal and Canada. Needless to say, the university's patriotic offer was gratefully accepted, and to McGill belongs the proud distinction of being the first university in the Empire to furnish a medical unit for service overseas. While the hospital was in process of organization Canadian headquarters telephoned asking if the university could double the capacity of its unit, in view of the decision that all general hospitals were to contain 1,040 beds. Without leaving the telephone Colonel Birkett replied that McGill's offer of a general hospital still held good. The history of the hospital—which operated first in Dannes-Camiers and then in Boulogne—is based on official war diaries and similar records, and this accounts for a certain abruptness of style unavoidable in a compilation made up from such sources. The hospital work and events of the daily round are recounted in great detail, with interesting professional notes, and here and there abstracts of reports on special subjects rendered by the staff. If any reader feels that some of the details of ordinary happenings have little general interest, let him think of the future and reflect how highly we to-day should value a similar account of the daily routine in a hospital of, say, the Seven Years' war. The subject-matter of the book does not lend itself to condensation, being itself based on summaries of events, but the fact that from first to last the admissions numbered 143,762, and 11,395 surgical operations were performed by the staff, gives an idea of the magnitude of the work accomplished. One of the staff, Lieut.-Colonel John McCrae, whose untimely death is still deplored, won fame wider and more lasting, perhaps, than any other in the war, except for a few leaders of the first rank. One morning, after the second battle of Ypres, he gave a colleague a torn piece of wrapping paper on which he had pencilled the moving and now famous lines beginning, "In Flanders fields the poppies blow"; and so, like Charles Wolfe, McCrae put on immortality through the medium of a single poem. The volume is well illustrated with photographs, and in appendixes are recorded the names of all who served in this honourable company.

[1] *No. 3 [illegible] General Hospital (McGill), 1914–1919.* Edited and compiled by [illegible]. With a foreword from Field-Marshal H.R.H. [illegible] K.G. Montreal: The Gazette Printing Co. 1928. [illegible] illustrated. Cloth edition, 5 dollars; *de luxe edition, 10 dollars.)*

PRACTICE AND FATIGUE.

In one of the Monograph Supplements of the *British Journal of Psychology*[1] Mr. J. C. Flügel describes in detail the results of an arithmetic test applied to forty-six elementary school children. The subjects were girls, aged 9½ to 13½, and every day for a period of ten weeks (except on Saturdays and a few extra holidays) they performed the test for a period of twenty minutes at the end of their ordinary morning's work. They used Kraepelin's adding sheets, according to which the subject works down series of columns of single-place numbers, adding each number to the number immediately preceding it. In order to encourage the children to do their best, they were given a small regular payment and a bonus on each day that they beat their previous best record. These bonuses were larger and larger in successive weeks, so the incentive was an increasing one. Each subject kept a graph of her own results from day to day, and thereby realized her progress. The most striking result obtained related to the effects of practice. The total score on the last day of the experiment was three and a quarter times as great as that on the first day, and the rate of improvement apparently showed no sign whatever of falling off. It was, in fact, nearly steady from the fourth day onwards right to the end. This result appears at first sight to differ from that observed by other investigators with various mental and manual tests, as they almost invariably found that the rate of improvement gradually diminished, and tended to cease after a time. Probably the discrepancy is due chiefly to the tremendous improvement shown by the children, which the author's method of plotting does nothing to allow for. On an average, the number of additions made by the whole group of children increased at the rate of about a thousand a day, but whereas the total number of additions came to 73,000 on the last (or forty-sixth) working day of the experiment, it was only 30,000 on the fourth day—that is, the *percentage* rate of improvement was nearly two and a half times greater during the fourth and immediately succeeding days than at the end of the experiment. In order to be able to investigate the onset of fatigue during the course of the twenty minutes' session, the children were required to mark their results at five-second intervals, synchronous with the ringing of a bell, and to make a special mark every minute when the experimenter called out "Now." The average rate of work showed a *rapid fall* during the first minute, followed by a small and steady fall during the remaining nineteen minutes. The total fall from beginning to end was 14 per cent. on the additions made in the first minute, but it varied from the extremes of 3 to 38 per cent. in different children. The variations shown by individual children were very considerable, as might be expected. The speed of the quickest girl was nearly three times greater than that of the slowest girl, and during the course of the experiment the quicker girls improved (absolutely) at a more rapid rate than the slower ones; but their percentage improvement was rather less. In addition to being subjected to the test described, the girls were examined in respect of general intelligence and in arithmetical ability by Professor

[1] *Practice, Fatigue, and Oscillation.* By J. C. Flügel, B.A. The British *Journal of Psychology*, Monograph Supplements, XIII. London: Cambridge University Press. 1928. (Sup. roy. 8vo, pp. 82; 30 figures. 6s. (d. net)

Cyril Burt. In these qualities they showed a fair correlation with their speed of performing the experimental test, coefficients of 0.29 to 0.53 being obtained. The author endeavoured to determine whether the individual girls showed any natural rhythmical oscillations in their speed of working, but this portion of the investigation was rather disappointing, as the very distinct rhythm shown was evidently related to the one-minute signals given by the experimenter, and they eclipsed natural rhythms.

THE STORY OF LAURA BRIDGMAN.

BLINDNESS is a tragedy; deafness is almost as bad. To be both blind and deaf is a horror unthinkable to most of us. Yet there have been some mortals so afflicted who have overcome their disabilities when taken in hand by sympathetic and persistent physicians. The cases of Helen Keller and Laura Bridgman are well known. They represent early attempts at the education of defectives, which is nowadays part of the regular work of those who have the oversight of the numerous schools for the physically defective in all civilized countries. The tale of *Laura Bridgman*,[1] as recently retold by Mrs. Richards, gives some idea of the illimitable patience of Dr. S. G. Howe, founder of the Massachusetts School for the Blind in 1832. It is stated in this book: "When Dr. Howe first undertook the charge of the blind, he bandaged his eyes, and went thus about his father's house for many days, that he might guess a little of what it meant to be blind." There was the true experimenter. With such a spirit who can wonder that he was able to achieve marvels? Charles Dickens, when in the United States, paid a visit to Laura Bridgman, and he recorded in his *American Notes* his observations. "The thought occurred to me as I sat down in another room, before a girl blind, deaf, and dumb, destitute of smell, and nearly so of taste; before a fair young creature with every human faculty, and hope, and power of goodness and affection, inclosed within her delicate frame, and but one outward sense—the sense of touch. There she was before me; built up, as it were, in a marble cell. . . ." "From the mournful ruin of such bereavement there had slowly risen up this gentle, tender, guileless, grateful-hearted being." Laura Bridgman was a normal child until the age of 2 years, when she suffered from scarlet fever of a virulent type. Some two years later Asa Tenney—a singular old man regarded by some an eccentric, by some almost a "natural," and by Dr. Howe as a "sort of philosopher with a crack in his skull"—*took the child* in hand, and taught her by contact with woods and fields and streams, until she was aged 8, when she came under the care of Dr. Howe. The story is one that will put heart into the teachers of the physically defective.

THE OXFORD PRESERVATION TRUST.

"THE beauty of Oxford is a national possession, though the preservation of it is mainly a local concern." These words are taken from the second report of the Oxford Preservation Trust, which has been formed "to preserve for the benefit of the public the amenities of the City of Oxford and its surroundings, and for that purpose to acquire land in the vicinity of Oxford." The report opens with the statement that the Trust has had an exciting, busy, and fruitful year, and it is clear from the study of it that much has been done, and has been well done. The beauties of Oxford fall into two groups. In the first group are the lovely views of the city from the surrounding heights. No city, not even Moscow, can excel them. "Match me such marvel, save in Eastern clime." These are especially the delight of those who live in Oxford and learn to love its surroundings—the scholar gipsies of many centuries. Many of the famous sites need protection from modern developments. A former trust acquired the Hinckscy Heights; the present trust has expended its resources wisely and well by the purchase of a portion of Boar's Hill, one of the most beautiful of the viewpoints, and also by a purchase along the banks of the Cherwell near Marston Ferry. These sites are thus saved from the builder. But much still remains to be done. Wytham Woods and Headington Hill must be preserved, and large funds will be required for these and other purposes. In the second group are the buildings and streets of the city and university itself. A casual visitor, spending a few hours in Oxford, can see enough to be impressed by their beauty and to recognize certain incongruities. Two sites are at present exercising those managing the trust. The houses on the south side of Broad Street have to be rebuilt, and St. Aldgate's, between Christ Church and Folly Bridge, is in a period of transition. "The Broad" is the more prominent site, but St. Aldgate's has always been an eyesore to those entering Oxford from the south. Here the trust is on difficult ground; the purchase of streets being clearly impossible, it has to proceed by negotiation and advice. It is pleasant to note the spirit in which the trust has been met by the city authorities, the Oxford Town Planning Committee, the Oxford Chamber of Trade, and private owners of property. The view of Christ Church from Folly Bridge has now been opened up, but it is necessary to provide for permanent improvements. Certain serious blemishes remain in the city; thus, the road into Oxford from the east, the portion between the station and Carfax, needs to be transformed into a dignified and worthy entrance. Much has been done by tact, but it is clear that considerable funds are still required. It need not be feared that the trust is in the hands of cranks. Here and there the traditional spirit of Oxford may be recognized, as in the enthusiastic tone of the report, the accuracy of its grammar, the number of its commas, and the concluding statement of its objects, "to assist the development of rural community life," whatever this may mean. But over all is a spirit of sanity and good sense; the object of the trust is not to grudge new building, but to guide it. The Oxford Preservation Trust is indeed worthy of support; we should all agree with its aims and respond to its appeal: "Oxford does not want to live on doles from outside, but, while discharging its own part of the duty, feels that it may fairly ask all past and present members of the University, former citizens, and the multitude of those who enjoy the beauty and interest of the city, to help Oxford in preserving the unique and essential features of its charm."

INFLUENZA.

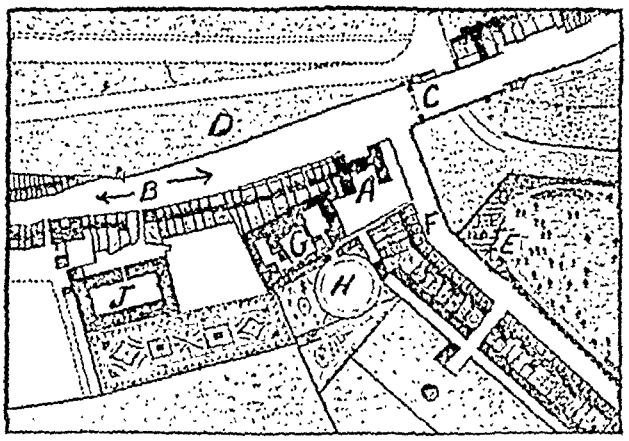
ALTHOUGH last week there was a considerable increase in the number of deaths attributed to influenza, the rate of increase slackened so much as to make it probable that the maximum will soon be reached. Unless the sudden onset of arctic conditions unfavourably affects the rate of mortality—which, since the present type of influenza has been least merciful to those advanced in life, is quite probable—we should expect the mortality of the next two weeks not greatly to surpass 1,200 in each, and that then there would be a decline. It appears that in the Liverpool area the influenza mortality is at or near its maximum. In Yorkshire only Leeds returned a large increase. In the south Portsmouth and Southampton seem to have passed their maxima. Only in London and the north-western area were there very large increases in the numbers of notifications of pneumonia. The course of the recrudescence will be followed with special interest, because this is the first time within the present post-1918 experience that so severe and widespread a period of intense cold has coincided with a considerable prevalence of influenza.

[1] *Laura Bridgman: The Story of an Opened Door.* By Laura E. Richards. New York and London: D. Appleton and Co. 1928. (Cr. 8vo, pp. xx + 155; illustrated. 6s. net.)

Nova et Vetera.

THE GROSVENOR PLACE SCHOOL.

THE private medical schools of London, which were flourishing at the beginning and in the first quarter of the nineteenth century, rendered great services to medical education. At a time when schools attached to the general hospitals were only in their infancy, these undertakings, which were conducted for the profit of their proprietors, gave the best education in medicine and surgery then obtainable in England. They deserved a better fate than befell them. Like the provincial medical schools, they were unable to face the competition of the rising hospital schools of the metropolis, which were favoured by the regulations of the College of Surgeons. The names of William Hunter, Joshua Brookes, Charles Bell, and Samuel Lane, all of whom conducted such undertakings, are household words in the history of British medicine in the late eighteenth and early nineteenth centuries. Among these Lane's name is closely associated with the rise of the medical school of St. George's and the foundation of that of St. Mary's Hospital. In a privately printed brochure[1] Mr. R. R. James, F.R.C.S., has lately given an account of the school conducted by Lane and others in Grosvenor Place, close to St. George's Hospital, together with a large amount of correspondence between Lane and his friends and some of the hospital staff, as well as other documents of importance. The school was established in 1830 by Lane in conjunction with Dr. J. A. Wilson, whose nickname of "Maxilla" represented not only his initials (J. A. W.) but his flow of language, taking over a number of students of the Windmill Street school from Mr. Herbert Mayo, who became lecturer at King's College. Lane's dwelling-house was at No. 1, Grosvenor Place, which is now the address of the Wellington Club, and he built a theatre and dissecting room at the back of it. A reference to Crutchley's map of London dated 1833 shows that although Belgrave Square was already built Grosvenor Crescent did not exist. To the south of the old hospital building, and covering the site of the present medical school and part of that of Grosvenor Crescent, was Tattersall's Yard and Ring, long known as "The Corner," a nickname since transferred to the hospital, and dear to all St. George's men. As Mr. James tells us, Tattersall, who was



A, St. George's Hospital. B, Knightsbridge. C, Hyde Park Turnpike. D, Hyde Park. E, Garden of Buckingham Palace. F, Grosvenor Place. G, Tattersall's Repository. H, The Ring at Tattersall's. J, Foot Guards' Barracks.

"stud groom to the Duke of Kingston, took a 99 years' lease of the site of the famous yard from the Grosvenor estate in 1766. This expiring in 1865, the site reverted to the Duke" (then Marquess) "of Westminster, who let it to St. George's Hospital on a peppercorn rent, so long as the site is used for charitable purposes, and on it were built the new block of wards of the hospital and the buildings of the medical school."

Obviously the site let to the hospital was smaller than that occupied by Tattersall, seeing that part of Grosvenor Crescent was cut out of it.

At the time of the foundation of Lane's school there was a narrow roadway leading into Tattersall's Yard, in which was the entrance to the school. In the accounts of the expenses of the school for 1842 is an item of thirty shillings for a board affixed to the north-east corner of Mr. Lane's house with the words: "To the School of Anatomy and Medicine ☞ 1st door on the left." Tattersall's ring and some of his buildings were also on the south side of this roadway.

The deplorable squabble which arose out of the contested election of an assistant surgeon to St. George's in 1834, at which Sir Benjamin Brodie's assistant, Mr. Cutler, was elected and Lane was rejected by the governors, was followed by years of bickering. The students of Lane's school got their clinical instruction in the wards of the hospital, which relied upon Lane and his colleagues for a supply of residents and dressers, but in 1836 another school was started in Kinnerton Street, Knightsbridge, which claimed to be specially that of St. George's Hospital. This was built on land owned by Sir Benjamin Brodie. Mr. Timothy Holmes, in his life of Brodie,[2] states that the money for the building and installation of the school was found by Brodie, who granted a lease at £276 a year. This school became a rival to Lane's, and at one time students from both met and worked together in the wards. Both schools seem to have suffered financially by this competition, and many attempts at amalgamation were made, but they all failed, until at last Lane was elected surgeon to the recently established St. Mary's Hospital, and his school became practically the anatomical school of that institution. After St. Mary's established a school of its own at Paddington (in 1854), the Grosvenor Place school still carried on under other teachers until 1863. Mr. James quotes from an article by the late Mr. Pickering Pick, which appeared in vol. 6 of the *St. George's Hospital Gazette*, as follows:

> "After Lane's departure the institution fell into very low water, and at the time of which I write there were very few students, although there were some very good teachers connected with it; Sir Spencer Wells, then Mr. Wells, lecturing on surgery, Dr. Lankester on medicine, Mr. Wm. Adams and Dr. Halford on anatomy, and Dr. Richardson on physiology, all well-known men in their day."

There seems no doubt but that Lane's chances at St. George's were spoilt by personal antagonism aroused by his eloquent and argumentative friend Dr. J. A. Wilson, physician to the hospital. Mr. Holmes and Mr. James both think, as we do, that he was badly treated. The loss was mostly St. George's, and St. Mary's gained by his secession. Lane died in his ninetieth year in 1892. His son, James R. Lane, who taught in his school, also became in due course surgeon to St. Mary's, and died in 1891. The extracts from the minute book of Lane's school which Mr. James quotes are chiefly of interest as showing how little profit accrued to the proprietor and lecturers of a private school of medicine in the forties and fifties of the last century. In 1840 the school had nine lecturers besides Lane himself, for whom a certain number of fees were set apart. In December, 1841, £25 12s. was divided among the lecturers, and £42 in the March following. In 1845 the amount divided was £102 16s. 1d. A better year was 1850–51, when the fees received amounted to £712, and a surplus of £352 was declared for division. Possibly the influx of students of the new St. Mary's Hospital affected the receipts. In this, as in other balance sheets, a striking feature was the amount of arrears of fees owing. On this occasion it was £368 8s. The next year was better still, for a balance of £425 was reported for division. It was evidently the school's high-water mark, and at this meeting Lane stated his fears for the future.

This booklet is illustrated with excellent reproductions of engraved portraits of Lane and Wilson, and photographs of certificates and medals granted by the school. It is to be hoped that it may soon be made available to the medical public, for its contents are of great interest to all those who care for the history of medicine, as well as to St. George's men.

MUIRHEAD LITTLE.

[1] *The School of Anatomy and Medicine adjoining St. George's Hospital, 1830–1863.* By R. R. James, F.R.C.S. Privately printed for the author. George Pulman and Sons, Ltd., London, 1928.

[2] *Sir Benjamin Collins Brodie.* By Timothy Holmes, M.A., F.R.C.S. Masters of Medicine Series. London: T. Fisher Unwin. 1898.

CONVALESCENT PROVISION IN GREAT BRITAIN.

NEED FOR A GENERAL SURVEY.

CONVALESCENT care has not yet come to be regarded as an essential part of the work of the general hospitals in Great Britain. In ideal circumstances there would probably be provision for the treatment of each patient at every stage of his illness from the onset till his complete restoration to health; but it would be too much to suggest that the hospitals to-day, burdened with responsibilities which are increasing with the growth of population and with the extension of their services to classes formerly treated privately, should regard provision for convalescence as among their primary duties. To a considerable extent the anxieties of hospital authorities with regard to the after-care of patients have been relieved by the establishment, and indeed the general extension, of convalescent facilities by other agencies of various kinds, some independent, many working in close connexion with the hospitals themselves. Thus, while in general there is a definite shortage of convalescent provision, in certain areas it appears to be reasonably adequate. The following analysis may serve as a measure of the problems which must be faced before convalescent facilities in Great Britain can be regarded as sufficient for its needs.

An initial difficulty is presented by the fact that much of the available information lacks precision. The term "convalescent home," for example, covers a variety of institutions, some owned and managed by hospitals as an integral part of their organization, others controlled by friendly societies, trade bodies, or *ad hoc* associations which may receive patients, not necessarily recovering from illness, but merely needing a change of surroundings, simply because they are members or have been recommended by a subscriber. In view of this and other difficulties of classification, the statement printed below may be regarded as giving no more than a rough quantitative summary of existing convalescent accommodation in Great Britain and its relationship to the extent of hospital accommodation and population.

The following table indicates how far the larger hospitals—by which is meant those in London with 70 beds or more, and those elsewhere with 100 beds or more—have made provision for convalescent care. A number of special hospitals have been excluded.

Convalescent Provision in Large Hospitals.

	England and Wales.		Scotland.
	London.	Elsewhere.	
Hospitals having—			
(a) Convalescent homes attached ...	15	35	11
(b) Specific convalescent funds .	5	18	1
Other hospitals	24	65	8
Total	44	119	20

In the category of convalescent homes attached to hospitals are included some actually owned and controlled by the hospitals, and some related to but not owned by them. A convalescent home, for example, may be the property of an independent body, yet give definite preference to patients from a particular hospital. Such preference may be secured by the constitution of the home, or it may be the result of an agreement or merely a tacit understanding between the respective governing bodies. Such loose relationships are probably far commoner than the figures suggest, for they are not necessarily brought out in the information available. Various hospital Saturday funds maintain convalescent institutions for the benefit of their subscribers, and provide a link between the hospital and the convalescent home which is usually as effective as exists in hospitals having a convalescent department of their own. Indeed, the relations between the hospitals and *ad hoc* convalescent institutions, whether controlled by friendly societies or trade bodies or other associations, are usually amicable, and the very looseness of the relation permits of great elasticity in administration and leaves the hospital authorities free to concentrate upon purely internal affairs.

The mere number of specific funds serves only inadequately to indicate the extent to which money is set aside for the needs of convalescents. Practically every London hospital, for example, has at least one "Samaritan Fund" from which the almoner may help to defray the cost of convalescent treatment. The fact that in a recent year one of the larger London hospitals, through this fund, provided more patients with convalescent treatment than another of similar size with a home of its own shows how futile is the attempt to arrive at a just estimate of the extent of convalescent provision merely by considering the number of hospitals with or without convalescent homes or convalescent beds. In point of fact, as the following table illustrates, by far the greater part of the available convalescent accommodation in Great Britain is in institutions not associated with hospitals.

Relationship between Convalescent Provision, Hospital Provision, and Population.

	England and Wales.	Scotland.
Total hospital beds	55,103	8,411
Population per bed	665	680
Total convalescent beds	12,506	1,851
Population per bed	3,029	2,623
Beds not attached to hospitals	10,089	1,270
Beds attached to hospitals	2,417	591
Percentage of total	19.3	31.7
Convalescent beds per 100 hospital beds ...	22.7	22.2

The above figures, though they are based upon incomplete information, present a fairly accurate picture of the situation to-day. It will be seen that in Scotland the proportion both of hospital beds and of convalescent beds to the population to be served is larger than in England and Wales, while the proportion of convalescent beds actually attached to hospitals is considerably greater. It is necessary to add that a survey based upon smaller geographical units would show that the distribution of convalescent facilities is by no means uniform. Approximately 75 per cent. of the convalescent accommodation in Scotland is situated in the Glasgow area, and of the total number of beds over one-half are contained in six large homes relatively inaccessible from Edinburgh, where the shortage of convalescent accommodation has caused some concern in recent years. Irregularities in the distribution of accommodation will probably be found also in the various areas of England and Wales.

A complete study of the problems of convalescent accommodation would involve the collection of information relating not only to the number of convalescent beds available in each area, but also to the manner in which the accommodation is utilized, notably the extent to which it is available for the reception of hospital patients requiring convalescent treatment. It would be valuable, therefore, to know the kind of work each institution undertakes—that is, to have a classification differentiating, for example, between institutions which provide little more than board and domestic attendance from those which have, and require, a trained nursing staff. With such information available for each locality it would be possible to establish a standard by which the optimum convalescent provision for any area might be estimated. It is already possible, largely as the result of the labours of such organizations as the Central Bureau for Hospital Information and King Edward's Hospital Fund, to arrive at a fairly accurate measure of the hospital accommodation required for an area with a given population; it is desirable that similar standards should be worked out with reference to facilities for convalescent treatment. Considerable interest would also attach to the views of those most intimately concerned

as to whether it is desirable for the general hospitals themselves to provide this treatment. As the figures we have given indicate, the existing accommodation has been provided in Great Britain mainly by other agencies, though probably not as the result of any considered policy. The system—if this word may be applied to such a medley of varying relationships—has been built up as nineteenth century towns were, by the inco-ordinated energies of isolated individuals and groups with very little sense of town-planning. Pressing the analogy a stage further, one may say that until a survey has been made no one can tell how far the efforts of the builders will suffice to meet the needs of the country as a whole.

In the *British Medical Journal* of December 3rd, 1927 (p. 1013), we published an address by Mr. Charles Roberts, F.R.C.S., surgeon to the Manchester Royal Infirmary, dealing with surgical convalescence, and putting forward a plea for greater attention to the after-care of patients. Mr. Roberts suggested that there would always be a large population of patients for whom it would be impossible to find accommodation in convalescent homes, and urged that there should be a convalescent department attached to each hospital. His study of the question led him to advocate the establishment of homes, with specially trained staffs, under the control of the hospitals. It would be interesting to examine the position of the hospitals throughout the country with a view to ascertaining how far they fulfil or fall short of his ideals at the present time. As a preliminary to such a study it would be essential to have a complete account of the existing system compiled from a series of regional surveys and supplemented by the views of medical and administrative authorities.

On a national scale a survey could be made by such a body as the Central Bureau for Hospital Information, though only with diffidence would anyone suggest such an addition to its already heavy labours. Much of the work of collecting and classifying data might, however, be profitably undertaken on a regional basis by local organizations, for in many cases hospitals and the convalescent homes which serve them are situated in sufficiently well-defined geographical areas.

Canada.

[FROM OUR CORRESPONDENT IN MONTREAL.]

State Medicine in the Dominion.

THERE is at present no State health insurance in Canada, but frequent references are made to the subject, more especially in the western provinces. There can be no better way of meeting any schemes which may be put forward by the Government than by having a clear idea of general health conditions throughout the country, especially as regards the cost of medical care and the distribution of practitioners in the country districts. These are pressing problems, and they are being closely investigated in the United States. A proposal has recently been made by Dr. J. G. Fitzgerald of the University of Toronto, in the course of the Gordon Bell Memorial Lecture delivered in Winnipeg, that a committee representative of the Canadian Medical Association, the various provincial associations, and the Federal Government should be formed to study such questions. The subject of sickness insurance should come under investigation, and Dr. Fitzgerald made a substantial contribution to the matter by describing the systems existing in the various European countries. While no attempt has yet been made to enact Dominion-wide legislation with regard to State medicine, it is only to be expected that, as preventive medicine assumes wider and wider activities, Government health departments will undertake more and more of the ordinary practitioner's work. This is especially well shown by the development of the provincial travelling clinics in Saskatchewan, which perform tonsillectomies and carry out diphtheria immunization. They were organized originally to deal only with outlying country districts where medical men were few and far between, or even entirely absent, but complaints have been made that occasionally the clinics have intruded on the province of the local practitioners. It seems probable, however, that before long their work will be handed over to the Council of the College of Physicians and Surgeons, on the understanding that the cost to the public will not be greater than at present.

Surgical Research at McGill University.

A gift of 85,000 dollars has been received from the Rockefeller Foundation by the Faculty of Medicine of McGill University for surgical research, and to further co-operation between the surgeons and various laboratory staffs of the University. These staffs include men whose names are well known in research in various fields: Professor Boris Babkin in physiology, Professor J. B. Collip in biochemistry, Dr. John Beattie in anatomy, and Dr. Wilder Penfield in neurological surgery. Well-equipped research laboratories are available for their work both in the University and in connexion with the Royal Victoria Hospital.

Red-water Disease in Cattle.

An interesting paper was published in the *Vancouver Medical Bulletin* of December last on red-water disease, an obscure and, unfortunately, highly destructive condition in cattle. It occurs on a strip of the Pacific coast, extending inland for about sixty miles, from north of the Fraser River into Northern Oregon. Its fatal nature may be gathered from the fact that in eight years it has practically wiped out a herd of sixty-three valuable Holstein Friesians, despite the greatest precautions. The paper offers observations regarding the early stages of the disease which apparently have not been made before. The most striking fact is that the disease is confined to certain well-defined areas. Animals sold from these areas to other localities did not develop "red water," even when they had shown the early symptoms. The disease, however, always proved fatal to animals kept in the affected area. Since the disease first appeared in 1921, what may be called the "incubation" period has become shorter; thus, while at first it was noted that it took two or three years' residence on the farm for an animal to develop bloody urine, the latest cases were found to develop eighteen months after the animal arrived. The first symptom to appear was a failure in milk, and two or three months after the second calving the cows became unthrifty, and showed a tendency to lose flesh. There was no alteration in temperature. A distinct but transitory jaundice, lasting ten or twelve days, with recurrences from time to time, was observed, and it was found that the animals lived from one to three years after first showing bloody urine. Most of the calves born on this farm died from haemorrhagic septicaemia. The few that lived were small for their breed, and eventually developed bloody urine at about the age of 3 years. The conclusion drawn from this study is that "red water" is a deficiency disease for which continued intensive cultivation is responsible. This view is supported by the fact that the animals lived for shorter and shorter periods as the farm grew in age, and that the disease increased in severity. It was also noticed in the winter of 1924–25, when the feed for the animals was purchased from outside, that no new cases developed and the early cases improved. When a return was made to the feed produced on the farm itself, however, the disease reappeared. The later calves would leave "good" home-grown hay to eat their bedding, which was of straw purchased from another district. Nothing unusual in the appearance of the feed could ever be noted; indeed, it appeared to be of unusually good quality. Mineral mixtures of various kinds were tried, but none had any effect on the disease, while frequent examinations of the blood and urine failed to show anything abnormal, and no bacteria or protozoa could ever be discovered. The problem, then, is still unsolved, but recommendations have been made for an exhaustive inquiry to determine the chemical nature of the soil of the farm and of the water, and to make feeding experiments on various groups of cows, using food from affected areas and comparing it with that from other places. A certain amount of experimental work already performed with guinea-pigs on this farm showed that those brought from other quarters and fed on the produce of the farm (clover and carrots), began to die off in about six months. The chief pathological changes found in these animals were in the liver, in which there occurred extensive vacuolation, and probably fatty changes

Medico-legal Aspects of Huntington's Chorea.

An action was recently brought before the courts in Truro, Nova Scotia, which sought to appoint a guardian to a man suffering from Huntington's chorea. The medical evidence on both sides was unanimous that the man was quite competent to direct his own affairs. The case recalls the fact that there are a number of cases of this disease in a certain section of Nova Scotia. Apparently all the patients have been descendants of a brother and sister who came to Nova Scotia from the border of France and Switzerland to escape the persecutions which followed the revocation of the Edict of Nantes. In each of six generations of descendants of these two refugees there have been several cases of the disease, which has been transmitted only by those who actually suffered from it. A similar instance of a hereditary disease whose source has been traced back to France was recently reported by Dr. H. R. Clouston, *at a meeting of the* Montreal Medico-Chirurgical Society, this being hereditary ectodermal dystrophy, involving the hair, skin, nails, and nervous system; it was shown that, although rare according to the literature, the disease is comparatively common in and about Montreal (in the eastern townships). An analysis of six generations showed that 150 known cases had occurred, all traceable back to one family which emigrated from Normandy, where the condition is known to exist. It follows the Mendelian law of hybrids, and in the absence of intermarriage does not appear to have arisen except among French Canadians. Far from being fatal the condition is associated with longevity, but the more advanced cases present an extremely unattractive appearance. Dr. Clouston is pursuing his investigations in the matter with a view to determining the underlying cause, and he has no lack of material in the Province of Quebec.

Poliomyelitis in Manitoba.

The epidemic of poliomyelitis in Manitoba last year seems to have spent itself in October, and so far there has been no outbreak elsewhere. The total number of cases reported by October were 395, with a total of twenty-eight deaths. Convalescent serum was used extensively, with excellent results when given before the onset of paralytic symptoms. A special medical research committee, which is now preparing a report on the epidemic, was formed to deal with the situation, and under its direction convalescent serum was collected. The Winnipeg Medical Society arranged the preparation of articles for the public press on the diagnosis and treatment of the disease.

England and Wales.

Dinner of the Hunterian Society.

A BANQUET was given by the Hunterian Society at the May Fair Hotel on February 14th, to commemorate the 201st anniversary of the birth of John Hunter. After the royal toast and the toast to the memory of John Hunter had been honoured, Dean Inge proposed the toast of "The Hunterian Society," remarking that first among the able men he had known he would put members of the medical profession. The science of psychology made a connecting link between religion and medicine, and if the one could renounce its unfortunate proclivity for magic and the other its materialistic bias, physicians of the soul and of the body might co-operate to the general advantage. Dr. A. Westerman, president of the society, responding, said that the Hunterian Society, which was founded in 1819 for the promotion of the science of medicine, was each year increasing in influence and prosperity. In 1922 there were 152 Fellows; now there were 350. The society mourned the loss of Miss Hunter-Baillie, a direct descendant of John Hunter and an honorary Fellow of the society, who had recently passed away at the age of 85. Mr. A. R. Mortimer Woolf said that in proposing the toast of "The Lord Mayor" he had the choice of two methods, the personal and the impersonal: the first consisted in relating as many facts from the life of their guest as might assist the press in compiling an obituary notice; the latter in making an historical survey of his high office. After recalling the long association of the Hunterian Society with the Corporation of the City of London, the speaker said that if the link was now less than in the past it was due to the excellent work of their guest, the City's medical officer of health. Sir Kynaston Studd, replying to the toast, referred to the days when the élite of the medical profession lived in Finsbury Square and the adjacent district. He was glad that among the most successful meetings of the society were those held in the Mansion House. Mr. Ivor Back, proposing "The Health of the Guests," said that unlike Dick Whittington, whose successor was with them that evening, John Hunter turned his back on Bow Bells, and, migrating from an institution in Smithfield, which Mr. Back was informed still existed, proceeded to one at Hyde Park Corner of whose existence he had no doubt. To be frivolous at the expense of a Lord Mayor was a misdemeanour comparable with simony or barratry or champerty, for which the punishment might be incarceration in the underground dungeons which the Lord Mayor kept below his drawing room. Judging by the frequency with which the streets of London were blowing up, the period of incarceration might not be a very long one. They also had with them the Dean of St. Paul's, whom he had previously caught dining with the medical profession—a habit which seemed undeniable evidence of an esoterically hilarious temperament. Other guests whose health he would propose were Surgeon Vice-Admiral Gaskell, Dr. Walter Carr, Sir Squire Sprigge, and Dr. Willoughby, medical officer of health for the City, whose office was a sinecure, since no one had ever been known to die in the City precincts. Sir Squire Sprigge, Dr. Walter Carr, and Dr. Willoughby, in brief speeches, replied on behalf of the guests. Dr. Carr said, indeed, that he shuddered every time he heard a postprandial orator threaten to say "only a few words," by which he usually meant that he would not only waste time, but encroach upon eternity. In the course of the evening Mr. Tom Clare contributed a number of musical items, which were much appreciated, and the proceedings terminated with the singing of "Auld Lang Syne."

Moorfields.

The annual dinner of past and present students of the Royal London Ophthalmic (Moorfields) Hospital was held at the Langham Hotel on February 7th, with Mr. C. H. Usher, consulting ophthalmic surgeon to the Royal Infirmary, Aberdeen, in the chair; seventy students and guests were present. The various toasts were given by the chairman, Mr. J. H. Fisher, and Sir John Parsons, and were responded to by Sir John Rose Bradford, P.R.C.P., Mr. Theodore Luling, and Air Vice-Marshal David Munro. Among the other guests were Surgeon Vice-Admiral Arthur Gaskell and Professor G. Elliot Smith. During the evening the dean (Mr. Charles Goulden) gave a report on the progress of the institution in 1928. He said that the admission figure of new students had created a record by reaching 134, the previous highest number having been 121 in 1925. The number of students who attended the practice of the hospital was 182. During the twelve months ending October, 1928, 406 lectures had been given by the members of the staff, with the assistance of Mr. Hume, lecturer in anatomy, and Mr. Brinkworth, lecturer in physics. Two students had obtained the diploma F.R.C.S.Ed., while at the final examination for the Diploma in Ophthalmic Medicine and Surgery of the Conjoint Board, 48 of the 59 candidates, and 31 of the 36 successful candidates, had studied at Moorfields. Great success had attended the arrangement for courses by extra-mural lecturers, including Mr. Traquair, who dealt with perimetry, Professor Elliot Smith with the optic connexions of the brain, Professor Hartridge with the resolving power of the eye, and Dr. Kerr with the education of the partially sighted. During the coming term Mr. Traquair will again lecture on perimetry. Mr. Goulden added that applications were frequently made to the hospital by other institutions for house-surgeons and registrars, and by ophthalmic surgeons who required partners and successors. It had been mentioned last year that the school had outgrown its accommodation. Sir William Lister had provided a small additional lecture room, but further space was still needed. A large lecture

room to seat fifty students was required. The library now held only a part of the books, and a reading room for students, to form, perhaps, part of a new library, was needed; and there was a demand for new pathological and bacteriological laboratories. It was hoped that in the building scheme upon which the hospital was shortly embarking room would be found for these urgent requirements of the school.

Eugenics Society.

The twenty-first anniversary of the foundation of the Eugenics Society was celebrated by a dinner on Saturday, February 16th, at the Hotel Rembrandt, London, S.W., with the new president, Sir Bernard Mallet, in the chair. After dinner the Galton Lecture was given by Major Leonard Darwin, only surviving son of Charles Darwin. Major Darwin's address was in substance a review of the work of the Eugenics Society in the past seventeen years during which he had presided over it. A great change had taken place in public opinion. Twenty years ago there were the strangest misapprehensions about the meaning and importance of eugenics. Since then many books had appeared on the subject, some very wise, some very foolish. Progress had been due to the energy of many members of the society and to the generosity of a few. As to the reforms advocated, these had not changed very materially, being based on the principle that like tended to produce like—qualities good and bad in parents being apt to reappear in their offspring. In conclusion, the lecturer discussed some questions of practical policy, and urged the need for a large point of view which embraced the whole of humanity. It was not practicable to aim solely at breeding a eugenic caste on the one hand, and the elimination of mental defectives on the other. The vote of thanks to Major Darwin was proposed by the Dean of St. Paul's, who said that every successful movement had to go through three stages. First of all it was called ridiculous, then it was said to be contrary to religion, and lastly, people said that there was nothing new in it at all. The vote was seconded by Mrs. Neville Rolfe, for many years honorary secretary of the society, and was carried with acclamation. "The Health of the Visitors" was proposed by Professor MacBride, and replied to by Sir Richard Gregory (editor of *Nature*) and Dr. Tate Regan.

Cumberland Infirmary Extension.

The end of its first century of existence finds Cumberland Infirmary well advanced on an ambitious programme of extension, rendered necessary by the heavy increase in the demands made upon it during recent years. A new out-patient department, which has been erected at a cost of upwards of £33,000, was opened on February 7th by the president of the institution, Mr. W. T. Carr. Two wards, situated above the new department, are nearing completion, and it is expected that they will be ready for use by June. The nurses' home is being enlarged, and several of the rooms are already in occupation. A new lift was installed some time back, and renovation of the old buildings is proceeding. We announced on November 1st, 1928 (p. 1007), that plans had been prepared for a new pathological department; it is hoped that arrangements will be made at an early date for the work of its erection to be undertaken. In the programme for the future is the addition of another operating theatre and the provision of isolation accommodation. The new out-patient department includes a dispensary, a reception room for casualties, where minor operations may be performed, and a large waiting hall which communicates with subdepartments for radiology, electrotherapeutics, massage, heliotherapy, diathermy, and dentistry, and a room for examination of the special senses. In addition to these there is a medical department, comprising a consulting room, three adjoining examination rooms, and a clinical laboratory; and, similarly, a surgical department with a consulting room, examination rooms, and an operating theatre. The administration department secures convenient accommodation for the medical and nursing staff. The heating is by low-pressure steam radiators. This new out-patient department is connected with the older part of the Infirmary by a corridor, which will also give access to the two new wards in the course of erection. Mr. Carr, declaring the building open, expressed his belief that it would compare favourably in respect of its equipment and general arrangements with any similar one elsewhere. For the present scheme of extension it is anticipated that a total outlay of at least £70,000 will be required. Despite the rising annual expenditure, a credit balance of over £2,000 was reported as a result of the previous year's working, and it is confidently hoped that there will be an increase in the financial support.

Central Midwives Board.

At a meeting of the Central Midwives Board for England and Wales on February 7th, with Mr. L. H. West in the chair, the reappointment of the following members was announced:

Miss E. E. Greaves, Miss A. Davies, Dr. F. N. Kay Menzies, and Mr. A. B. Maclachlan—representing the Minister of Health.

Mr. L. H. West, representing the Association of County Councils.

Miss E. Richmond, representing the Queen's Institute for District Nursing.

Dr. J. J. Jervis, representing the Association of Municipal Corporations.

Dr. R. A. Lyster, representing the Society of Medical Officers of Health.

The standing committee had under consideration the case of the Wolverhampton District Nurses' Home: as recorded in the *British Medical Journal* of January 19th (p. 127), the Board recently decided to discontinue approval of training at the home. Representations have since been received from the Royal Hospital, Wolverhampton, and the medical officer of health for that town regarding the position, and it has now been decided—in view of the statement that the work of the home is being transferred to the new maternity hospital and that it will be under the control of a committee in no way connected with the committee of the nurses' home—to postpone action pending further investigation. The Board, in connexion with a letter from the Midwives' Institute, adopted a resolution giving its support to the amendment to Section 10 of the Local Government Bill, 1928, set down on behalf of the Institute by Dr. Fremantle, M.P., and decided to send a copy of the resolution to the Minister of Health. Dr. C. F. Brentnall was appointed examiner at the Manchester and Liverpool Centre, and approval was given to Dr. A. G. Newell as a lecturer.

Scotland.

Royal Medical Society of Edinburgh.

THE annual dinner of the Royal Medical Society of Edinburgh was held in the Hall of the Royal College of Physicians on February 14th. Dr. I. G. W. Hill, president of the society, occupied the chair, and the guest of the evening was Dr. G. A. Sutherland, C.B.E. The toast of "The Imperial Forces" was proposed from the chair and acknowledged by Professor F. A. E. Crew, while Dr. A. S. Paterson, in proposing "The City of Edinburgh," referred to the sexcentenary celebrations which are to take place in the city this year, commemorating the charter granted to the city by Robert the Bruce in 1329. The chairman proposed "The Health of the Guest," and Dr. Sutherland, in the course of his reply, mentioned that when he went as a young Scot to Paddington Green Hospital, London, this had been known as the Scottish Hospital, the reason being that two-thirds of its staff were Scots. The connexion with Scotland had since been maintained, for he found that as against 42 residents from all other parts of the world, 35 had been graduates of Edinburgh University. Proposing the toast of "The Royal Medical Society," he wished for it a future as prosperous as it had now enjoyed for nearly two centuries past. Dr. C. P. Beattie proposed the toast of "The Sister Professions," and the Very Rev. C. L. Warr, Dean of the Thistle, replied for the Church, and Lord Salvesen for the profession of law.

Gift to Glasgow University.

At a meeting of the Glasgow University Court on February 14th Principal Sir Donald MacAlister, who presided, reported that he had received from the Lord Rector, Mr. Stanley Baldwin, a cheque for £1,000, to be devoted to some object within the purview or control of the medical faculty of the University. The gift is a grant from a sum of money which Lord Beaverbrook had placed at the disposal of the Prime Minister in gratitude for the escape of Lord Beaverbrook and his associates in a recent motor accident. Attention was drawn at the same meeting to the large number of applications received for admission to first-year classes in medicine at the University of Glasgow. It was pointed out that normally there was accommodation for 180 students in the first year, and the suggestion was made that the limit of enrolment might be fixed at 200. A great number of applications had been received from overseas, including applications from seventy-nine Americans to commence the study of medicine at Glasgow University.

Physical Welfare of Glasgow Students.

At a meeting of the general council of the University of Glasgow an ordinance was considered which provided for an addition of 10s. 6d. annually to the matriculation fee, so that this sum should be specially earmarked for the physical welfare of students. Principal Sir Donald MacAlister, who presided, mentioned that the initiative in this project came from the students themselves more than two years ago. The three universities of Edinburgh, St. Andrews, and Glasgow had taken up separate ordinances on this matter, and believed that the students were right in holding that the matriculation fee should be increased in order that the common interest in physical welfare might be represented by a common levy. The University Court in Glasgow had already established a university students' fund, which was intended to foster all the activities of the students of this nature. That fund would still be available, and had practically meant that the University Court would pay £1 for every £1 of the students' contribution. The attempt that had been made some years ago to raise a fund for the general welfare of the students had been supported in many quarters and now approached £100,000. By this means they had acquired the athletic grounds, built a pavilion and spectators' stand, and were now engaged in the erection of a students' union. The annual finance had, however, to be provided for, and as these interests were in one aspect or another common to all students, the students themselves were anxious that all alike should share in helping towards their annual maintenance. In laying aside a certain sum for the physical welfare of students, the University Court had designed that the entrance fees should be lowered, and this had been done.

Glasgow Hospital Needs.

A meeting of the Court of Contributors of Glasgow Royal Infirmary was held in the Merchants' House, Glasgow, on February 11th. Lord Provost Sir David Mason presided, and remarked that the Royal Infirmary, during the 134 years of its existence, had occupied an indispensable place in the community of Glasgow. Its requirements were, however, increasing, and there was still need for more widespread generosity in supporting this institution, despite the fact that recently there had been a gratifying increase in the subscriptions and donations from employees. The claims of hospitals must not be forgotten during times of abnormal distress, because the work of the Infirmary was specially great during such times. Mr. James Macfarlane, chairman of the Board of Managers, said that the most important event of the previous year had been the completion of the reconstruction scheme inaugurated in 1897, which had absorbed £271,000 of the Infirmary's free funds. It must be remembered that they had lost the income on this £271,000, and had also incurred additional costs for maintenance, although they were now provided with one of the finest hospitals in the kingdom. The free capital was now entirely exhausted, and the work of the institution depended almost wholly on what was received from year to year. Other institutions connected with the Infirmary, such as a new ophthalmic institution and the convalescent hospital at Canniesburn, were also urgently required. For the annual revenue of the Infirmary an additional sum of £20,000 per annum in subscriptions was needed in order to give the directors confidence to go on as they were doing. This should be a trifling sum if divided over the population of Glasgow, and even if divided over the number of persons already subscribing annually to the Infirmary, it amounted to an extra gift of less than £1 per head per annum.

Central Midwives Board for Scotland.

At the examination of the Central Midwives Board for Scotland, held simultaneously in Edinburgh, Glasgow, and Dundee, there were 106 candidates, of whom 87 passed. Of the successful candidates, 24 were trained at the Royal Maternity Hospital, Edinburgh; 35 at the Royal Maternity Hospital, Glasgow; 9 at the Elsie Inglis Memorial Hospital; 4 at the County Maternity Hospital, Bellshill; 3 at Barshaw Maternity Hospital; 3 at Motherwell Maternity Home; 2 at the Eastern District Hospital; 3 at the Govan Maternity Cottage Hospital; 1 at Dundee Royal Infirmary; 2 at the County and City of Perth Royal Infirmary; 1 at the Edinburgh Lying-in Institution, and the remainder at various recognized institutions.

Nursing Home for Selkirk.

At a meeting of the town council of Selkirk on February 11th, Provost Ballantyne announced that two residents in the district had presented sums of £2,000 and £1,000, with the object of purchasing Viewfield Nursing Home, in the neighbourhood of the town. The purchase price was about £3,500, so that this nursing home had virtually been presented to the town by the generosity of these two donors.

Ireland.

Child Welfare in the Irish Free State.

WITH the object of promoting certain amendments of the Children's Act, 1908, a deputation composed of members of various organizations recently visited the Ministry of Local Government, where it was received by the Secretary in the unavoidable absence of the Minister. The amendments suggested were as follows. (1) That effect should be given to the recommendation of the report of the Poor Law Commission—namely, that the law should be strengthened in the direction of prevention by the introduction of affiliation orders. (2) That homes with attached maternity and probationary departments should be established to accommodate the mother and child for as many months, up to a year, as might be considered necessary; that it should not be lawful for the owner of any private house or nursing home to take a maternity case for profit unless it has first been licensed by the local authority; the premises must be open for inspection and a register be kept of the names and addresses of the mothers of all children born in such home, and the names and addresses of all persons into whose care such children are given when leaving. (3) That any person acting as agent in putting a child under the age of 7 out to be nursed should be equally liable with the person who receives the infant. The person acting as agent must forward to the local authority a receipt stating the amount received for placing the infant, and the person who receives the child may be required to attend before a divisional magistrate or district justice to satisfy the justice whether any fee has been given, and that the transaction was for the benefit of the child. (4) That no child should be sent to any person for maintenance for reward unless and until the local authority for the district gives a certificate that the person who is to have charge of such an infant is a fit and proper person, and that the premises are suitable in every respect. (5) That any offender against the Children's Act may be prosecuted within, say, twelve months after the commital of such offence or continuing offence, notwithstanding the provisions of any Act or Acts to the contrary. There was agreement as to the necessity for additional safeguards, but the discussion revealed

certain difficulties which more stringent regulations or changes in the substance of the law would create. The deputation undertook to give the matter further consideration and to prepare a supplementary memorandum.

Immunization in the Treatment of Diphtheria.

Dr. E. F. Stephenson, chief medical officer of the Department of Local Government and Public Health, in a public statement in connexion with the prevention of diphtheria, has said, although it was thought inadvisable to make too strenuous efforts to persuade parents to have their children immunized, it was felt that, where the disease threatened to become epidemic, the parents should be informed that active immunization provided a safe, practicable, and effective method of prevention. It was recognized that in order to ensure success immunization schemes for the eradication of diphtheria should be conducted on systematic lines, under the supervision and guidance of a county medical officer of health, and consequently the appointment of these officers was especially urged where diphtheria had established a footing. The distribution of the disease, as brought to the notice of the department in the year ended March 31st, 1928, is shown in the following table of reported cases: Carlow 8, Cavan 27, Clare 32, Cork 201, Donegal 26, Dublin 49, Galway 82, Kerry 33, Kildare 16, Kilkenny 12, Queen's County 5, Leitrim 4, Limerick 13, [illegible] 38, Mayo 8, Meath 3, Monaghan 9, [illegible] 14, Sligo 5, Tipperary 14, Waterford 15, Westmeath 7, Wexford 50, Wicklow 10. Out of a total of 698 reported cases, 505 occurred in rural districts and 193 in urban districts, of which 23 per cent. and 43 per cent. respectively were attributed to Cork County rural and urban districts. With the exceptions of Cork County (Kinsale and Passage West), Galway, County Louth (Dundalk), and the county boroughs, the disease, apart from occasional small outbreaks, has been of infrequent prevalence. In the isolated rural areas the sporadic occurrence of diphtheria can probably best be countered by the swabbing of contact cases and the isolation of carriers. Milk is a recognized vehicle of infection of diphtheria. In accordance with the recommendation of the Interdepartmental Committee, the provisions of the Public Health (Pneumonia, etc.) Regulations are being revised, and applied to diphtheria amongst dairy employees.

Correspondence.

THE BEHAVIOUR OF THE CIRCULATION UNDER THE SPHYGMOMANOMETER CUFF.

SIR,—Dr. Harrington Sainsbury has raised the question as to what exactly happens to the artery and the circulation under the sphygmomanometer cuff during compression (*British Medical Journal*, February 2nd, p. 191). It is some years since I pointed out that the effects can be studied under the microscope with the help of the Roy and Graham Brown apparatus. The experiments which I now describe should, I think, be included in any course of practical physiology, so that the medical student may know the principles underlying the measurement of blood pressure in man.

The Roy and Graham Brown apparatus is in principle a sphygmomanometer. It consists of a small cylindrical brass chamber floored with glass and enclosed above by a sheet of areolar tissue, which can conveniently be got from a rabbit. This is transparent, and so easily distensile that very little error arises from the pressure required to distend it. A diameter of 3 mm. suffices for the upper end of the chamber. Into the chamber there is sealed a side tube which connects by a T-piece with (1) a water manometer and (2) a tube for raising the pressure in the chamber. The chamber has attached to it an upright carrying a horizontal arm, which can be raised or lowered by a screw adjustment. To this arm is attached by sealing-wax a small piece of glass (cut from a microscope slide) broad enough just to cover the top of the chamber. There is also attached a sheet of cork on which a frog can be fastened so that part of the web of one foot is spread over the areolar tissue which covers the top of the chamber.

The frog is anaesthetized with urethane. The brain can first be crushed with forceps so that the animal is dead to the law. The urethane is a 25 per cent. solution; 0.3 c.cm. or more, according to size of frog, is injected under the skin of the back. The web is arranged so that its free edge lies over the middle of the top of the chamber. By means of the screw adjustment the glass plate is then lowered down so that it just comes in gentle contact with the web, a film of water being interposed. The apparatus is then put under a microscope, using a 1/2-inch objective, and the circulation observed. There must be no interference with the normal circulation, which appears fast, continuous, unpulsatile. On gently raising the pressure by blowing down the tube, one sees that the flow in many of the capillary loops at the edge of the web ceases, and the blood is expressed from these, while it continues to flow in capillaries where the resistance is less. It generally takes about 5 or 6 cm. of water to effect this. The same pressure usually suffices just to produce a pulsatile effect in the adjacent network of terminal arterioles, and those capillaries and venules through which the flow still continues. The true capillary pressure is then under 5 to 6 cm. of water, for this pressure suffices to stop the flow in many, and so bank up the pressure to that in the arteriole which is supplying them, some of the kinetic energy being changed into static. This same pressure, if momentarily applied, suffices to check momentarily and to reverse the flow in the terminal arterioles. If the pressure be now raised further the flow ceases in more and more capillaries and venules, and finally in all and in the arterioles. As the flow becomes restricted to fewer and fewer capillaries it becomes more and more pulsatile, till finally only a spurt of corpuscles gets through on each systole, and then with a little more pressure this stops, and the arterioles are flattened and emptied, the blood in them being expressed. During the expression and blanching of the web the flow in the arterioles is reversed. On letting down the pressure step by step one reaches the point when the systolic pulse just drives some corpuscles through the arterioles. This pressure, usually about 12 to 15 cm. of water, indicates the systolic pressure in the main arteriole which supplies the terminal arterioles, for banking up results from stopping the flow. The true mean pressure in the terminal arterioles approximates to that in the capillaries, and is given by the pressure which, when applied momentarily, checks the flow, and when maintained just produces a visible sign of pulsation. To shut up one of the main arterioles in the web it may require a pressure of some 20 cm. of water; as banking up occurs this is the systolic pressure in the artery which supplies it. To produce a pulse, or momentarily to check the flow, a pressure is usually required about half this amount. It is to be concluded, then, that about half the systolic pressure in such an artery is spent in maintaining the velocity of flow in the terminal network of vessels. The energy is so used up in overcoming frictional resistance in this network that in the capillaries the mean pressure is not more than 5 to 6 cm. of water.

A sphygmomanometer cuff to fit the frog's thigh can be made out of a piece of a toy balloon (sausage-shaped). This is closed at each end, and has a glass tube inserted and tied into the middle. An outer cover for the rubber bag is afforded by a piece of thin waterproof material, a hole being made in this for the passage of the glass tube. The tube is connected by means of a T-piece to a water manometer and a tube for raising the pressure. The cuff is snugly applied round the thigh, and two pieces of tape gently drawn round and tied over it so as to confine the expansion of the rubber bag effectively, but not so as to interfere with the circulation. Observation of the web under the microscope will show that the circulation remains normal. In place of feeling the pulse at the wrist, or listening to it in the brachial artery below the cuff, as in the case of man, the circulation in the web of the frog is observed under the microscope and pressure noted when the blood flow ceases. It will be seen that as the pressure is raised in the cuff the flow in the terminal network of arterioles, capillaries, and venules becomes pulsatile and slower until the flow ceases in more and more capillaries, and only comes through in pulses; finally it ceases to pulse through the main arteriole.

It takes about 30 to 40 cm. of water to stop the flow in the sciatic artery in the thigh; as banking up occurs this is the systolic pressure in the aorta which supplies the sciatic artery. Similarly in man, the systolic pressure measured by the arm cuff is not that in the brachial artery, but in the axillary artery which supplies it. About half the stopping pressure produces a pulsatile flow in the terminal web, and this may, I think, be taken as near to the true mean pressure in the sciatic artery. In the case of man if the cuff on the arm be connected with a recording tambour, and the pressure raised until pulsation becomes distinct, that pressure will closely approximate to the true pressure. It is not possible to observe in the web the effect

of a momentary check applied to the sciatic artery, because after the flow in the sciatic artery has been stopped the arteries below continue to squeeze blood on through the terminal network. To measure the systolic pressure it is best to raise the pressure till the pulse stops, wait till the flow stops in the web, and then relax the pressure until the pulse just begins to drive some corpuscles through the arterioles in the web. To carry out these observations the large edible frogs which can be obtained from Hungary are the most suitable. In such a frog another cuff can be placed round the tarsus; then the pressure can be measured at the thigh, the tarsus, and the web, and the drop in pressure mapped out. Dr. Gaddum inserted a cannula for me in the sciatic artery of a big frog on one side, and this was connected with a mercury manometer. The systolic pressure so measured corresponded within 1 mm. of mercury with that measured by the cuff on the other thigh.

An experiment of interest is to keep a pressure of, say, 20 cm. of water in the cuff on the thigh, and observe the congestive effect on the web; the arterioles, capillaries, and veins all become wider, the flow is retarded and becomes pulsatile in place of being smooth and continuous. To shut up the terminal arterioles in the web will now require a pressure a little over 20 cm. of water, for the pressure has banked up to that owing to reduction of flow brought about by the compressive action of the cuff.

Be it noted that less than this pressure suffices to empty some of the loops at the edge of the web, for blood can be expelled into capillaries and vennles which are not yet filled to distension. So, too, in man, when the pressure in the cuff on the arm is maintained, say, at 40 mm. of mercury, the pressure rises in the large veins below the cuff to this height, as blood comes from the arterioles through the wider paths, where resistance is least. But it is not the case that all the capillaries in the arm are filled to distension at this pressure. The mere feel of the skin will show that this is not so; moreover, blanching of a small area can be produced by a much less pressure. The blood can be pushed from one part of the terminal network into another which is not yet full to distension. It would take a long time for all the capillary network to open out and fill up, and before this happens the feeling of painful pressure becomes intolerable. Moreover, the frictional resistance is so increased by the 40 mm. of mercury pressure in the cuff that the flow only continues through the wider pathways of least resistance, and ceases in tortuous pathways of higher resistance. All this can be observed in the frog's web when a pressure is maintained in the cuff on the thigh.

Measurements made in the frog's web, tongue, liver, glomeruli of kidney, mesentery, edge of mouse's ear, muscular wall of abdomen of mouse, liver of mouse, bat's wing, and vascular area of 2 to 3-day-old chick embryo show that the capillary pressure is very low, equivalent to a very few millimetres of mercury, and does not suffice for the theories of filtration which for so long have been in vogue. The measurements of capillary pressure made in the skin of man (1) by insertion of a micro-pipette, (2) by finding the pressure which just stops bleeding from a small cut, confirm this statement. The capillary networks are surrounded with tissue cells and the whole is confined within a capsule in the case of a gland, in the case of a limb within aponeurosis and skin. The capillary pressure, small as it is, is then counterbalanced by the tissue fluid pressure. The interchange between tissue cells and blood in the capillaries is brought about, then, through the membrane of the capillary wall, not by filtration, but by the varying state of physico-chemical equilibrium of the tissue cells and the blood. The changes, such as oedema, ascribed to back pressure are not really due to back pressure, but to lessened flow and consequent want of oxygen and disordered metabolism, which leads to the tissue cells pulling fluid out of the capillaries to dilute poisonous products. So, too, in inflammation, the products of injury cause fluid to be pulled out by the tissue cells, just as mucus is secreted to dilute an injurious substance in the mouth. The circulation is designed to bring a flow of blood to the tissue cells with only the thin capillary wall interposed; these cells pull out while the blood pulls in materials until the two come into equilibrium. It is an error to suppose that the heart by its force drives blood, say, to the glomeruli of the kidney or to the ciliary body of the eye, and there filters out fluid. Observation shows that no adequate filtration pressure exists in the glomeruli. A more likely hypothesis is that the cells of the proximal convoluted tubules, by secreting crystalloids into the capsules, pull water out of the capillaries of the glomeruli. How living cells secrete into and absorb from the circumambient medium we do not know.—I am, etc.,

National Institute for Medical Research, Hampstead, N.W., Feb. 12th. LEONARD HILL.

SIR,—I am much disappointed by Sir James Barr's letter respecting my paper under the above heading. I am sure he would be the last to misrepresent the drift of an argument, yet when he says that I try "to establish by inference" what *he* "thought was long since proved by experiment—namely, that colloids are practically incompressible"—and ends his letter by "it will require *something more* [my italics] than Dr. Sainsbury's inference to convince me that the brachial artery remains full when submitted to a pressure sufficient to obliterate the pulse at the wrist"—when he does this, will not the *inference* drawn by the reader of his letter be that the sum and substance of my paper is concerned with a proving of that which is already well established? Certainly it will not encourage him to look into my argument.

Sir, I was guilty of no such futility; indeed, I did not even *infer* the incompressibility of the colloids of the arm; I assumed it, took it for granted, and based my argument upon it. In a paragraph of ten lines, beginning "On *a priori* grounds," I disposed of this physical aspect of the problem, appending a footnote reinforcing my assumption with the authority of the emeritus professor of physics at University College, London, Professor A. W. Porter, F.R.S., respecting the relative incompressibility of liquids and colloids, for which there are no data available.

It will not be necessary for me to look up Sir B. W. Richardson's paper; I have had ample personal experience of the incompressibility of muscle when expressing its juice for patients. Sir James wants "something more than my *inference*" in order to be convinced; well, my paper works out at seven full pages of reprint as against ten lines allotted to my assumption (his inference)—and I am in despair.

The fact is that my argument is not touched upon except in one brief, to me cryptic, sentence: "With the armlet it is difficult or impossible to raise the capillary pressure to that of the arteries, therefore the blood in the compressed artery will move on to the distal capillaries." But when the pressure of the armlet upon the artery becomes equal to the intra-arterial pressure, inasmuch as these two forces are in opposition, will there not be stasis? And if there is stasis, will not the pressure upon the blood in the artery and the blood in the capillaries become equal, since the incompressible *extra* vascular tissues must transmit *equally* throughout their substance the pressure to which they are subjected?—I am, etc.,

London, W.1, Feb. 15th. HARRINGTON SAINSBURY.

ASTHMA.

SIR,—The general practitioner is naturally inclined to be more interested in the clinical aspect of this subject, which may help him to relieve some of the most distressing symptoms of asthma, than in the pathological platitudes of the specialist, and it seems that Dr. Harrington's suggestion (February 9th, p. 271) is distinctly worthy of consideration. We are told that there is no one cure for asthma, because the causes are so varied that it is impossible that one treatment should control them all. But there is one point which seems neglected, and that is, that there is one characteristic common to *all* the causes—namely, their power of causing irritation, whether it be bronchitis, nasal polypi, indigestion, or any other of the numerous irritative influences. A further point is that these influences do not cause asthma—of themselves—but only when a further pathological condition is present—namely, a hypersensitiveness of the bronchial mucous membrane, and it seems to me that the research is

directed to the investigation of these irritative influences somewhat to the neglect of the other condition necessary for the production of asthma—namely, the hypersensitiveness or tendency to spasm of the bronchial tissue.

From this point of view it may be of some interest to note the extremely successful results of the treatment of eleven cases of angina by diathermy in my own experience, and many similar results by other workers (*vide* articles in the *Lancet*, October 10th, 1926, by Dr. John Hay and others). Recognition that one of the most potent results of the diathermy current is its marked antispasmodic effect led me to apply it in several cases of asthma with very satisfactory results.

Some three weeks ago a medical man suggested its trial in the case of his wife, who for two years had suffered from asthma of an extreme type. She had been under a well-known London specialist, and later, for four months, under a provincial specialist; not the slightest impression had been made. Her dyspnœa was practically continuous, and was greatly increased by any walking—even a few yards—a sudden noise, or a bright light, or any other external stimulus caused distressing spasms. Such sleep as she obtained was only possible with nightly inhalations of oxygen by a special inhaler. Her condition seemed practically hopeless.

Diathermy was applied and the distress caused by the effort of undressing subsided in a few moments; at the conclusion she was more "comfortable" than she had been for many months. This "comfort" lasted some four hours. Each application since (three times weekly) has resulted in marked increase of relief, both in amount and duration, until after nine treatments her condition has almost incredibly improved. She can now walk round her garden with no distress and has had no actual spasms for some days. She sleeps soundly—seven to nine hours each night—without any oxygen inhalations, and altogether her condition has entirely changed in every way.

I should like to disarm the obvious criticism that one, or even three or four cases, proves nothing definite, that the improvement may not last, and so on, by pointing out that nothing else hitherto tried in two years has had any effect at all, and that it has yet to be proved that the improvement is not going to last.

I merely wish to suggest that this method of treatment is one which may justify further investigation in view of the following considerations: (1) the extreme severity of the case itself; (2) the failure of any remedy hitherto applied (and their name is legion) to effect any improvement; (3) the practically immediate and continued, rapid, and progressive response to the treatment up to date; (4) the fact that diathermy was not applied empirically, but in view of its well-known powerful antispasmodic effect.—I am, etc.,

J. NEWTON DYSON, M.R.C.S., L.R.C.P.

Southport, Lancs, Feb. 7th.

SIR,—I should like to sound a note of warning with regard to nasal operations in cases of asthma. One might be led to surmise from Sir James Dundas-Grant's letter on January 26th (p. 179) and Dr. Barnett's letter of February 9th (p. 271) that there was great hope for the asthmatic in nasal operations. So long ago as 1899 a discussion on asthma in relation to the upper air passages, in which many of the leading rhinologists took part, showed that the general opinion as regards the prospect of obtaining permanent relief by nasal operations was anything but hopeful.

The late Sir Felix Semon summed up his experience of the nasal treatment of asthma by placing the cases in three classes: (1) lasting success obtained, a very small percentage; (2) temporary benefit, a comparatively large percentage; (3) no success at all, a very large percentage. To these Sir StClair Thomson suggested the addition of a fourth class—namely, cases considerably damaged by intranasal treatment (report of the proceedings of the Laryngological Society of London, May 5th, 1899). Since that time much evidence has accumulated to confirm the above summary.

Mr. Frank Coke pointed out, in his letter on February 9th (p. 270), that relief of asthma might follow any surgical operation, such as the removal of the appendix or gall-bladder, and in the same way a nasal operation might bring temporary relief, especially if there is profuse haemorrhage. To my mind the chief source of error comes from the belief that asthma is due to a bronchial muscular spasm set up reflexly by nasal disease, instead of being, as I am convinced, a vasomotor neurosis, dependent upon the general sympathetic nervous system. In certain cases it is advisable to perform a submucous resection, or other operation, to enable the nasal passages to function properly, but do not let us deceive ourselves that such operations are in themselves going to cure asthma. The one point I would emphatically insist upon is that no extensive operation should be undertaken for the removal of nasal polypi in an asthmatic subject with a low blood pressure. These are the patients, I find, who cannot take aspirin, and the complete removal of polypi in these will almost certainly be followed by most disastrous results so far as the asthma is concerned.—I am, etc.,

London, W.1, Feb. 12th. ALEXANDER FRANCIS.

"THE NATURE OF DISEASE."

SIR,—With reference to Sir Humphry Rolleston's kind notice of my work in his Huxley Lecture (February 16th, p. 283), I would like to take this opportunity to say that he has not quite accurately represented my views, and I should be grateful if you would allow me to give an outline of my thesis.

In my opinion there is only one disease, and this the result of the worsting of the host's protective mechanism by the invader. The host's main protective mechanism is the protein in the plasma, which is in the form of colloid particles all negatively charged. Disease is the result of the altered chemico-physical changes to which these protein particles are subjected by the invader. The action of the invader is the same, be it a physical agent, a chemical agent, or a micro-organism. Hence there is only one invader. The protein particles are constituted much as is a solar system, where there is a protein nucleus corresponding to the sun and various adsorbed constituents such as amino-acids, fat, urea, uric acid, sugar, salts, and electrons corresponding to the planets. In the solar system the planets are kept in relationship to the sun by gravity and in the protein particle by water. The water is continuous with the water in the liquid portion of the plasma, which contains in true solution most of the adsorbed constituents bound to the protein nucleus in a colloid complex in the particle. The higher the concentration of the water in the particle the more complex becomes the colloid combination between the adsorbed constituents and the protein nucleus, and vice versa. The adsorption of the constituents by the protein nucleus varies according to the position in the particle taken up by the constituents—that is to say, the colloid combination between the protein nucleus and urea is greater than that between the protein nucleus and sugar. The various adsorbed constituents, so long as they remain in true solution, can be detected as such, but when they enter into colloid combination with the protein nucleus they lose their identity as simple substances, and the more so the more readily they are adsorbed.

When the protein particles are attacked by the invader they lose some of their water, or undergo dehydration, and in the process the various adsorbed constituents are liberated in the order of the relationship they bear to the protein nucleus: first electrons, then calcium, sugar, urea, and so on. The liberation of the various planets renders them ionic. The liberation of the electrons are concerned there is a change into heat energy which manifests itself as fever. Protein particles being sent into true solution are adsorbed by other particles whose surface tension may have been already lowered by the invader, in which case the particles increase in size, agglutinate, and tend to become precipitated. This change is referred to as hydration because the particles take up more water and more complex colloid combinations are formed between the protein sun and its planets, thereby lowering the percentage of the adsorbed constituents in true solution. It thus comes about that dehydration is the main change in the acute stage of disease and hydration in the chronic stage. As dehydration is due primarily to the loss of electrons, drugs having a conductor action are called for, and this is the rationale of manganese butyrate in boils, "sup 36" in influenza and pneumonia, "sum 468" and mercurochrome in streptococcal infections, arsenic, bismuth, and mercury in syphilis, etc. In chronic dehydration hydrators are required, and this is the action of insulin in diabetes.

But there is just as much sugar in the blood after as before a dose of insulin. Hydrated protein particles are best broken up and dispersed by dehydrators, hence the use of glucose and oxygen injected subcutaneously in shock, contramine in rheumatism, etc.

The more hydrated protein particles become the greater grows their independence, a fact which tends to make them behave as foreign bodies. Indeed, cancer is the result of such a change occurring in cells. If the hydrated protein particles are too large to circulate they collect in the pericapillary lymphatic vessels and capillaries, where, acting as foreign bodies, they subject the protein particles constituting the protoplasm of the cells of the organ, where the precipitation takes place, to the same changes as the host's main resistance underwent by the invader in the first instance. It is in this way that most of the organic manifestations of disease arise. All the changes the protein particles undergo can be verified, and full data are given in my two volumes of *The Nature of Disease*, published in 1924 and 1927 respectively.—I am, etc.,

London, W., Feb. 16th. J. E. R. McDONAGH.

PYORRHOEA ALVEOLARIS.

SIR,—From time to time letters appear in medical periodicals, as in your issue of January 26th, and statements are made at meetings of learned societies imputing to the toothbrush the causation of pyorrhoea. They are always based on theory and unsupported by evidence. The truth is exactly the reverse—lack of friction causes gingivitis; intelligent use of the toothbrush will both prevent and cure it, as can be proved by anyone who cares to make the experiment.

Primitive man lived perforce on food sufficiently hard and tough to exercise a detergent action on his teeth and gums. With the invention of cooking and the advance of civilization his food became softer, probably never so soft as to-day; as a result the mouth is not cleaned by the action of chewing, soft debris collects about the necks of the teeth, and the gum margin becomes infected, inflamed, and puffy. Because the gum is tender and bleeds easily there is a tendency to choose the softest food, and the sufferer purposely avoids touching the sore spot with the toothbrush; so matters go from bad to worse.

The remedy for all this is friction—massage is the fashionable word nowadays—and in no way can it be applied so effectively as with a toothbrush. The finger is too large; it cannot reach between the teeth, and its use fills up rather than cleanses any interdental spaces which may exist.

A well-shaped brush, with bristles fairly long and not too closely set, and with a longer tuft at the end, can be made to reach practically everywhere, inside and outside. If the gums are tender a "soft" brush—bristle, not badger hair—should be used at first, giving place shortly, as the gums get harder, to "medium." I see no advantage in the very hard brushes advised by some. The patient should be instructed to use the brush after meals—that is, at bedtime, after breakfast, and, if possible, after lunch; it should be impressed upon him that it is more important to brush the gums than the teeth, and that bleeding or tenderness is a sign that friction is needed, not an indication for its avoidance. The teeth should be brushed in the direction of their length, as one would brush the teeth of a comb. Beginning on the gum margin, the bristles should be thrust well between each pair of teeth, both from the outside and especially from the inside, and this is where the tuft comes in. Horizontal brushing, confined as it usually is to the buccal surfaces of the teeth, is of little use, and if vigorous may, with the addition of a dentifrice, cause serious abrasion of their surfaces.

Your correspondent says that the toothbrush "is always septic, and frequently filthy." Septic it is certainly, for we live in a septic world, but filthy it need not and should not be; the mouth is a septic cavity, and probably specially resistant to infection. To insist on sterility of the toothbrush would be to bar its use to 99 per cent. of the population.

For at least thirty years I have advocated the thorough use of the toothbrush, with results invariably good and sometimes almost startling in their success. Soreness and bleeding cease, the gum becomes hard and pink, and the incidence of caries is greatly reduced, often to vanishing point. The only objection that can be proved against it is that it occasionally causes some baring of the buccal surfaces of the roots; but, even if extensive, this is of little moment, since the gums remains healthy and the teeth firm. Common salt, either in powder or solution, may be used with advantage on the brush, but friction is the essential thing and the adjuvant matters little. To leave salt on the upturned brush when not in use is the simplest method of obtaining a high standard of cleanliness.

An ounce of practice is worth a ton of theory, and I invite all sceptics to put my statements to the proof. The results will be in exact proportion to the care exercised. Doubtless, Nature never intended the use of a toothbrush, and when mankind adopts a more natural diet it may not be necessary; but meanwhile, rightly used, it remains the most effective weapon we possess against dental disease.—I am, etc.,

London, W.1, Feb. 11th. J. H. BADCOCK.

AMAUROTIC FAMILY IDIOCY.

SIR,—I thank Dr. Stenhouse Stewart for his reply to my letter (February 9th, p. 270) with further data on the pedigree of amaurotic family idiocy. I agree that if there were originally an equal number of DD and DR types the disease would gradually become rarer throughout successive generations, but assuming that the disease has always been a rare one (which seems much more likely), and that in the first place the DD's enormously outnumber the DR's, so that the chances are that the few existing DR's will all marry DD's, the proportion of each remains the same in all succeeding generations.

In other words, if the total number of the population remains constant, each marriage resulting in two children, the DD-DD marriages result in two DD children, and the DD-DR marriages in one of each. Only when the rare chance occurs of a DR-DR union does the disease reappear, and as the affected RR dies in infancy the proportions of various types remaining in the race is negligibly affected thereby.

As to Dr. Stewart's suggestion of repeated in-breeding leading to the development of recessive factors, this is, of course, an interesting possibility which may be a factor in this disease. I merely wish to maintain that there is nothing in the evidence so far supplied which is against a simple Mendelian transmission.—I am, etc.,

Sheffield, Feb. 13th. ROBERT PLAIT, M.D., M.R.C.P.

SIR,—Dr. Stenhouse Stewart's queries about the pedigree of amaurotic family idiocy (January 19th, p. 101) interested me greatly as, since 1923, I have had three cases of this rare disease through my hands.

In April, 1923, I showed before the Children's Section of the Royal Society of Medicine (*Transactions*, Royal Society of Medicine, No. 16) a classical case of Tay-Sachs disease in a non-Jewish child, aged 20 months. Careful search failed to reveal any possibility of any Jewish ancestry in the family for three generations; the parents, however, were first cousins. The second case occurred in a Jewish child with no family history of consanguinity or of mental deficiency for at least two generations. The third case, in a Jewish baby, I showed at the last meeting of the Children's Section on January 25th, and it is still under my care. There is no history in the family of consanguineous marriage or of mental deficiency, but, in view of the recent interest raised, I shall take this opportunity of a more thorough interrogation and investigation.

My own view is that immediate heredity is not an important etiological factor.—I am, etc.,

London, W.1, Feb. 12th. LEOPOLD MANDEL, M.D., M.R.C.P.

TREATMENT OF CANCER BY LEAD.

SIR,—I have read Professor Blair Bell's letter in your issue of February 2nd (p. 224), and cannot enter into further discussion of phrases removed from their context. The report of the St. Bartholomew's Hospital Committee on the lead treatment of cancer is available for those who wish to continue to study the subject. (*St. Bartholomew's Hospital Reports*, 1928, and *Proceedings of the International Cancer Congress*, 1928.) It is for the medical profession to decide whether the continuation of the Liverpool method of treatment is justifiable or not.—I am, etc.,

London, E.C.1, Feb. 17th. J. BASIL HUME.

STANDARDS OF PUERPERAL MORBIDITY.

SIR,—My attention has been drawn to the correspondence which is taking place in your columns concerning the proper standard for estimation of puerperal morbidity. It fell to my lot to bear a considerable part in the establishment of the morbidity index of the British Medical Association, and I shall be obliged if you will permit me to state my recollections of its inception.

At the Annual Meeting of the British Medical Association held at Leicester in the year 1905 I read a paper on puerperal morbidity before the Obstetrical Section, presided over by Dr. Herbert Spencer.[1] In this communication I condemned in no measured terms the then prevalent morbidity index which fixed the limit of health at an arbitrary figure of 100.4° F. This archaic index of morbidity originated in pre-aseptic days, when it was believed that the puerperium must be accompanied by abnormal temperature, because of the greater metabolic processes which were occurring during that time. In practice it produced disastrous results, as patients, because of it, were discharged from hospital as normal with a temperature of 100.3° F., and without any reference to the pulse rate. Instead, I suggested that all temperatures above 99° F. within a certain period, recorded on three consecutive bi-daily readings, and accompanied by a pulse rate of over 90, should be considered morbid.

As a result of this communication the Association appointed a representative committee to study the question and furnish it with a report. The committee assembled at Dr. Herbert Spencer's house in London in the autumn of the same year, and I do not believe that the subject was ever examined by a more representative body. After considerable discussion they rejected the index which at that time was in use in the Rotunda Hospital, and I believe is still employed there. Instead, they unanimously agreed to the following:

"A temperature above 100° F., occurring on any two occasions between the end of the first thirty-six hours and the end of the eighth day, recorded on a half-minute thermometer, which should be placed in the mouth for a period not under three minutes."

All deaths were to be included as morbid, and abortions excluded, for the reason that hospitals operating in densely populated industrial areas had to admit an undue proportion of septic cases of this kind, thus making it impossible to compare their standard with that of other institutions more favourably situated. The reason for omitting the first thirty-six hours was to eliminate the fear of the temperature reaction being considered abnormal. The eighth day was named to permit hospitals which discharged their normal patients on this date to bring their results into line.

The committee attached great importance to details for recording temperature. The neglect of these details would greatly favour the careless attendant who was under loose supervision. The provisions of this standard were slowly read out by the chairman, and recorded by each one of us present at the meeting. It soon afterwards appeared in my annual report of the Rotunda Hospital, and our temperatures have been recorded by this standard ever since. It has been extensively adopted in the maternity hospitals of Great Britain and Ireland, and is largely in use in Canada and the other British dominions. In these circumstances I suggest that a very careful search be made through the files of the *British Medical Journal*, and if this is done I have no doubt that a full summary of the committee's findings will be brought to light. The Association spent a considerable sum in the assembly of this special committee, and it would be quite disastrous if this money had been expended to no purpose.

In conclusion, I feel at a loss to understand how a "continuous temperature" could be recorded for twenty-four hours. Conceivably it could happen in a State-endowed hospital by leaving a domestic thermometer in the rectum for twenty-four hours, watched over by a large staff for whom some sort of work must be found. The absurdity of estimating a "continuous temperature" in district practice need only be mentioned to be appreciated.—I am, etc.,

E. H. TWEEDY, M.D., F.R.C.P.I.,
Former Master of the Rotunda Hospital.

Howth, co. Dublin, Feb. 13th.

[1] *British Medical Journal*, 1905, ii, 704.

*** The full text of the report drawn up by the Association's Committee on Puerperal Morbidity was published in the *Supplement* on May 19th, 1906.

IMMEDIATE ENUCLEATION FOR QUINSY.

SIR,—The memorandum by Mr. Wallace on the above subject, published on February 16th (p. 296), is of more than usual interest to practitioners and surgeons alike. As a general surgeon I have, of course, much less experience in this class of case than the writer, but my experiences may be worth recording.

Since 1926 I have performed all dissections of tonsils under local anaesthesia, following the technique which I learnt at the Mayo Clinic, where many thousands of such operations are conducted annually. In 1927, after perfecting the technique to my own satisfaction, I dealt with more than seventy hospital patients from the waiting list, treating them as out-patients, and operating in a dental chair. Some four cases can be completed in an hour, and returned home within half an hour of operation, after being inspected and given tea. Haemorrhage is far less marked by this method, and only three cases required ligature. All the patients were again inspected in four days' time, and only one reported haemorrhage, which had subsided by the time the doctor had arrived.

Three cases of quinsy have been treated in the same way, and the anaesthesia was quite satisfactory in spite of the inflamed state of the pharynx. The quinsy itself is not incised, but, after the tonsil has been removed, the pus slowly reaches the fossa, and is gently mopped away by gauze swabs. The other tonsil is not touched unless similarly affected.

As compared with the older methods of treatment the following example will show the comparatively easy convalescence from the condition.

In March, 1927, I was summoned to see a university "don" in his rooms with a large left quinsy and a temperature of 102° F.; he was endeavouring to correct examination papers "against the clock." A sedative was given, and two hours later under local anaesthesia the affected tonsil was dissected out, the pain and tension being immediately relieved. He returned at once to bed, and completed his work on the following day; two days later he conducted a viva voce examination as if nothing untoward had happened.

From time to time there may be cases presented to us in which a general anaesthetic is contraindicated. I have used this method with advantage on hospital and sanatorium patients suffering from subacute rheumatism and pulmonary tuberculosis respectively. The technique dates back to before 1915, and is described fully in the *Mayo Clinic Papers*, vol. viii, 1916, pp. 895–897.

As hitherto the necessary instruments have been obtainable only in America, Messrs. Thackray of Leeds have copied them for me, and have them available on application.—I am, etc.,

HUGH WHITELOCKE.

Oxford, Feb. 16th.

PERSONAL HYGIENE AND MEDICAL EDUCATION.

SIR,—Professor W. W. Jameson's paper in the *Journal* of October 27th, 1928, on "The teaching of hygiene," with your leading article thereon (pp. 733 and 759), add to the ever-increasing call for placing health in the foreground of education, both scholastic and professional. The latter *is possible scholastically only when every child knows and* follows the laws of personal health, when every girl learns

mothercraft, when every mother has due ante-natal and maternity treatment, when every baby is properly fed and hygienically cared for, and when all the rising generation enter the battle of life with balanced development—physically, mentally, and morally. True education means "health for the body, truth for the mind, and goodness for the spirit." Professionally the requirements are that all medical students and nurses should be taught to think and act in terms of health rather than of the diagnosis and treatment of disease, to know at least as much about the mens sana and the corpus sanum as of materia medica, and to busy themselves rather with the prevention than the cure of disease.

Scholastically, much has been done in England under wise leaders—among whom Sir George Newman stands out pre-eminent. But how much remains to be done is shown in the calls for reform that are increasingly being made at practically every educational conference. It is something that England now leads the world in these matters, but it is almost as depressing as it is inspiring to find how much of fundamental importance remains to be done. Professionally we are much farther behind even than scholastically. If the professions, ancillary as well as medical, are to be equal to the new requirements, the authorities—from the lowest licensing body to the General Medical Council itself—must readjust their requirements accordingly. It is not enough that a few specially enterprising and capable individuals go out of the beaten track of practice. As Professor Jameson says, "there is no more important person in the ranks of health workers than the general practitioner—he must be given a correct sense of proportion when a medical student." There may be differences of opinion as to how best to revise an at present overloaded curriculum; there can be none as to the necessity for this fundamental reform in attitude and practice.

As lecturer for many years in the Melbourne medical school, I devoted in my textbook (1914) 208 pages to personal, and 119 to public health; as Victorian delegate to the jubilee congress of the Royal Sanitary Institute (1926) I made a special plea for the "health education of the individual," and two explanatory letters were given prominence in the *Times* of July 10th and August 8th of that year. In the *Transactions* of the Australasian Association for the Advancement of Science (Hobart, January, 1928) will be found two further papers—namely, "Health and education" and "A magna charta for the child." Further, I have presented a report to our cabinet and Parliament on "Maternity and child welfare, health, and education," and a circular letter to authorities has recently been issued by the Society for the Health of Women and Children of Victoria, of which I am president.

Are we, the medical profession, not, as Sir George Newman well and eloquently puts it, "at the door of opportunity," and is it not our duty "to lay the foundations for a new epoch"?—I am, etc.,

J. W. SPRINGTHORPE, M.A., M.D.

Melbourne, Dec. 6th, 1928.

"THE RIGHT TO PRACTISE."

SIR,—Registration under the Medical Acts in this country is of such importance that I wish to controvert the assertion of Dr. A. G. Newell (January 19th, p. 134) that: "A duly qualified medical practitioner is not bound to register."

All medical degrees and diplomas are not registrable in this country, but only those which are contained in Schedule A of the Medical Acts, and those who do not "register," whether their degrees or diplomas are registrable or not, are as restricted in practice as the unqualified charlatan. They cannot hold any appointment as a physician, surgeon, or other medical officer either in the military or naval service or in emigrant or other vessels, or in any hospital infirmary, dispensary, or lying-in hospital not supported wholly by voluntary contributions, or in any lunatic asylum, gaol, penitentiary, house of correction, house of industry, parochial or union workhouse or poorhouse, parish union or other public establishment, body, or institution, or to any friendly or other society for affording mutual relief in sickness, infirmity, or old age, or as a medical officer of health (Medical Act, 1858, Section 36).

There is only one exception to this, and that is that any person *not* a *British* subject who has passed the regular examinations entitling him to practise medicine in his own country may act as resident physician or medical officer of any hospital established exclusively for the relief of foreigners in sickness, provided that such person is engaged in no medical practice except as such resident physician or medical officer (Medical Act, 1859, Section 6).

Further, the unregistered person is not recognized in law as a duly qualified medical practitioner. He cannot issue a death certificate; he cannot sue for his fees; he cannot give evidence as an expert medical witness in any court of law in this country, nor issue any medical certificate which will be accepted in such court of law.

Registration is the seal which distinguishes the duly or legally qualified medical practitioner from all others, and an unregistered person is therefore not a legally or duly qualified medical practitioner so far as this country is concerned, and cannot practise as such.—I am, etc.,

Hyde, Jan. 26th. J. GORDON MACQUEEN, M.B.

THE CENTENARY FUNCTIONS AT CAIRO.

SIR,—To your report of some remarks made by me at the recent meeting of the Council relative to the centenary of the Faculty of Medicine of the Egyptian University,[1] will you allow me to add a word or two expressive of the feeling of admiration of the British delegates—for I feel sure the others share my feeling—in respect of the life and vigour of the Faculty of Medicine and of the Kasr-el-Aini Hospital, Cairo? In an atmosphere clearly scientific, the hum of activity was arresting. The impression grew in passing from department to department.

Nor can I close without publicly expressing the high appreciation by the delegates of their extremely kind and thoughtful reception by colleagues on the faculty and hospital. While our gratitude is due to everyone who contributed to the successful celebrations, there can be no invidiousness if I ask you to place on record our special indebtedness to the genial and distinguished dean, Mr. F. C. Madden, O.B.E., M.D., F.R.C.S., and the honoured subdean, Professor Ali Bey Ibrahim, M.B.E., whose admission to the rank of Honorary Fellow of the Royal College of Surgeons of England by the President of the College formed a striking scene in a wonderful setting.—I am, etc.,

University of Edinburgh, Feb. 18th. R. W. PHILIP.

[1] Supplement, Feb. 16th, 1929, p. 37, Proceedings of Council.

Obituary.

SIR BERTRAM WINDLE, M.D., LL.D., F.R.S.,

Professor of Anthropology and Lecturer on Ethnology, Toronto.

DEEP regret will be evoked in all parts of Ireland by the announcement of the death, at the age of 70, of Sir Bertram Windle, professor of anthropology and ethnology at the University of Toronto, which took place in Toronto on February 14th.

Sir Bertram Coghill Alan Windle was born in England on May 8th, 1858, his father being the Rev. S. A. Windle, B.D., vicar of Market Rasen, Lincolnshire, and his mother daughter of Admiral Sir Josiah Coghill, Bt. His parents removed to Ireland, and he was educated at Kingstown and Repton Schools, later proceeding to his professional studies at Dublin University. He acquired many academic distinctions, among them M.A.Dublin (with first-class honours in natural science at B.A.); M.D., B.Ch.Dublin (having taken first place at M.B.); D.Sc.Dublin; M.Sc.Birmingham; LL.D., R.U.I., Birmingham, and Boston; Ph.D. (hon. causa) Rome; D.Sc. (hon.) Marquette University; and F.R.S. He was made a Knight of St. Gregory the Great by Pope Pius X in 1909, and was created knight after the New Year's Honours List in 1912. In 1891 he was appointed dean of the medical faculty of Queen's College, Birmingham; he later became professor of archaeology, and in 1904 president of University College, Cork. During the fifteen years of his presidency Sir Bertram contributed to the development of the College and enjoyed world-wide eminence as a scholar and writer. In October, 1919, he

TREATMENT OF CANCER BY LEAD.

SIR,—I have read Professor Blair Bell's letter in your issue of February 2nd (p. 224), and cannot enter into further discussion of phrases removed from their context. The report of the St. Bartholomew's Hospital Committee on the lead treatment of cancer is available for those who wish to continue to study the subject. (*St. Bartholomew's Hospital Reports*, 1928, and *Proceedings of the International Cancer Congress*, 1928.) It is for the medical profession to decide whether the continuation of the Liverpool method of treatment is justifiable or not.—I am, etc.,

London, E.C.1, Feb. 17th. J. BASIL HUME.

STANDARDS OF PUERPERAL MORBIDITY.

SIR,—My attention has been drawn to the correspondence which is taking place in your columns concerning the proper standard for estimation of puerperal morbidity. It fell to my lot to bear a considerable part in the establishment of the morbidity index of the British Medical Association, and I shall be obliged if you will permit me to state my recollections of its inception.

At the Annual Meeting of the British Medical Association held at Leicester in the year 1905 I read a paper on puerperal morbidity before the Obstetrical Section, presided over by Dr. Herbert Spencer.[1] In this communication I condemned in no measured terms the then prevalent morbidity index which fixed the limit of health at an arbitrary figure of 100.4° F. This archaic index of morbidity originated in pre-aseptic days, when it was believed that the puerperium must be accompanied by abnormal temperature, because of the greater metabolic processes which were occurring during that time. In practice it produced disastrous results, as patients, because of it, were discharged from hospital as normal with a temperature of 100.3° F., and without any reference to the pulse rate. Instead, I suggested that all temperatures above 99° F. within a certain period, recorded on three consecutive bi-daily readings, and accompanied by a pulse rate of over 90, should be considered morbid.

As a result of this communication the Association appointed a representative committee to study the question and furnish it with a report. The committee assembled at Dr. Herbert Spencer's house in London in the autumn of the same year, and I do not believe that the subject was ever examined by a more representative body. After considerable discussion they rejected the index which at that time was in use in the Rotunda Hospital, and I believe is still employed there. Instead, they unanimously agreed to the following:

"A temperature above 100° F., occurring on any two occasions between the end of the first thirty-six hours and the end of the eighth day, recorded on a half-minute thermometer, which should be placed in the mouth for a period not under three minutes."

All deaths were to be included as morbid, and abortions excluded, for the reason that hospitals operating in densely populated industrial areas had to admit an undue proportion of septic cases of this kind, thus making it impossible to compare their standard with that of other institutions more favourably situated. The reason for omitting the first thirty-six hours was to eliminate the fear of the temperature reaction being considered abnormal. The eighth day was named to permit hospitals which discharged their normal patients on this date to bring their results into line.

The committee attached great importance to details for recording temperature. The neglect of these details would greatly favour the careless attendant who was under loose supervision. The provisions of this standard were slowly read out by the chairman, and recorded by each one of us present at the meeting. It soon afterwards appeared in my annual report of the Rotunda Hospital, and our temperatures have been recorded by this standard ever since. It has been extensively adopted in the maternity hospitals of Great Britain and Ireland, and is largely in use in Canada and the other British dominions. In these circumstances I suggest that a very careful search be made through the files of the *British Medical Journal*, and if this is done I have no doubt that a full summary of the committee's findings will be brought to light. The Association spent a considerable sum in the assembly of this special committee, and it would be quite disastrous if this money had been expended to no purpose.

In conclusion, I feel at a loss to understand how a "continuous temperature" could be recorded for twenty-four hours. Conceivably it could happen in a State-endowed hospital by leaving a domestic thermometer in the rectum for twenty-four hours, watched over by a large staff for whom some sort of work must be found. The absurdity of estimating a "continuous temperature" in district practice need only be mentioned to be appreciated.—I am, etc.,

E. H. TWEEDY, M.D., F.R.C.P.I.,
Former Master of the Rotunda Hospital.

Howth, co. Dublin, Feb. 13th.

[1] *British Medical Journal*, 1905, ii, 704.

*** The full text of the report drawn up by the Association's Committee on Puerperal Morbidity was published in the *Supplement* on May 19th, 1906.

IMMEDIATE ENUCLEATION FOR QUINSY.

SIR,—The memorandum by Mr. Wallace on the above subject, published on February 16th (p. 296), is of more than usual interest to practitioners and surgeons alike. As a general surgeon I have, of course, much less experience in this class of case than the writer, but my experiences may be worth recording.

Since 1926 I have performed all dissections of tonsils under local anaesthesia, following the technique which I learnt at the Mayo Clinic, where many thousands of such operations are conducted annually. In 1927, after perfecting the technique to my own satisfaction, I dealt with more than seventy hospital patients from the waiting list, treating them as out-patients, and operating in a dental chair. Some four cases can be completed in an hour, and returned home within half an hour of operation, after being inspected and given tea. Haemorrhage is far less marked by this method, and only three cases required ligature. All the patients were again inspected in four days' time, and only one reported haemorrhage, which had subsided by the time the doctor had arrived.

Three cases of quinsy have been treated in the same way, and the anaesthesia was quite satisfactory in spite of the inflamed state of the pharynx. The quinsy itself is not incised, but, after the tonsil has been removed, the pus slowly reaches the fossa, and is gently mopped away by gauze swabs. The other tonsil is not touched unless similarly affected.

As compared with the older methods of treatment the following example will show the comparatively easy convalescence from the condition.

In March, 1927, I was summoned to see a university "don" in his rooms with a large left quinsy and a temperature of 102° F.; he was endeavouring to correct examination papers "against the clock." A sedative was given, and two hours later under local anaesthesia the affected tonsil was dissected out, the pain and tension being immediately relieved. He returned at once to bed, and completed his work on the following day; two days later he conducted a viva voce examination as if nothing untoward had happened.

From time to time there may be cases presented to us in which a general anaesthetic is contraindicated. I have used this method with advantage on hospital and sanatorium patients suffering from subacute rheumatism and pulmonary tuberculosis respectively. The technique dates back to before 1915, and is described fully in the *Mayo Clinic Papers*, vol. viii, 1916, pp. 895–897.

As hitherto the necessary instruments have been obtainable only in America, Messrs. Thackray of Leeds have copied them for me, and have them available on application.—I am, etc.,

Oxford, Feb. 16th. HUGH WHITELOCKE.

PERSONAL HYGIENE AND MEDICAL EDUCATION.

SIR,—Professor W. W. Jameson's paper in the *Journal* of October 27th, 1928, on "The teaching of hygiene," with your leading article thereon (pp. 733 and 758), add to the ever-increasing call for placing health in the forefront of education, both scholastic and professional. The best is possible scholastically only when every child knows and follows the laws of personal health, when every girl learns

mothercraft, when every mother has due ante-natal and maternity treatment, when every baby is properly fed and hygienically cared for, and when all the rising generation enter the battle of life with balanced development—physically, mentally, and morally. True education means "health for the body, truth for the mind, and goodness for the spirit." Professionally the requirements are that all medical students and nurses should be taught to think and act in terms of health rather than of the diagnosis and treatment of disease, to know at least as much about the mens sana and the corpus sanum as of materia medica, and to busy themselves rather with the prevention than the cure of disease.

Scholastically, much has been done in England under wise leaders—among whom Sir George Newman stands out pre-eminent. But how much remains to be done is shown in the calls for reform that are increasingly being made at practically every educational conference. It is something that England now leads the world in these matters, but it is almost as depressing as it is inspiring to find how much of fundamental importance remains to be done. Professionally we are much farther behind even than scholastically. If the professions, ancillary as well as medical, are to be equal to the new requirements, the authorities—from the lowest licensing body to the General Medical Council itself—must readjust their requirements accordingly. It is not enough that a few specially enterprising and capable individuals go out of the beaten track of practice. As Professor Jameson says, "there is no more important person in the ranks of health workers than the general practitioner—he must be given a correct sense of proportion when a medical student." There may be differences of opinion as to how best to revise an at present overloaded curriculum; there can be none as to the necessity for this fundamental reform in attitude and practice.

As lecturer for many years in the Melbourne medical school, I devoted in my textbook (1914) 208 pages to personal, and 119 to public health; as Victorian delegate to the jubilee congress of the Royal Sanitary Institute (1926) I made a special plea for the "health education of the individual," and two explanatory letters were given prominence in the *Times* of July 10th and August 8th of that year. In the *Transactions* of the Australasian Association for the Advancement of Science (Hobart, January, 1928) will be found two further papers—namely, "Health and education" and "A magna charta for the child." Further, I have presented a report to our cabinet and Parliament on "Maternity and child welfare, health, and education," and a circular letter to authorities has recently been issued by the Society for the Health of Women and Children of Victoria, of which I am president.

Are we, the medical profession, not, as Sir George Newman well and eloquently puts it, "at the door of opportunity," and is it not our duty "to lay the foundations for a new epoch"?—I am, etc.,

J. W. SPRINGTHORPE, M.A., M.D.

Melbourne, Dec. 6th, 1928.

"THE RIGHT TO PRACTISE."

SIR,—Registration under the Medical Acts in this country is of such importance that I wish to controvert the assertion of Dr. A. G. Newell (January 19th, p. 134) that: "A duly qualified medical practitioner is not bound to register."

All medical degrees and diplomas are not registrable in this country, but only those which are contained in Schedule A of the Medical Acts, and those who do not "register," whether their degrees or diplomas are registrable or *not*, are as restricted in practice as the unqualified charlatan. They cannot hold any appointment as a physician, surgeon, or other medical officer either in the military or naval service or in emigrant or other vessels, or in any hospital infirmary, dispensary, or lying-in hospital not supported wholly by voluntary contributions, or in any lunatic asylum, gaol, penitentiary, house of correction, house of industry, parochial or union workhouse or poorhouse, parish union or other public establishment, body, or institution, or to any friendly or other society for affording mutual relief in sickness, infirmity, or old age, or as a medical officer of health (Medical Act, 1858, Section 36).

There is only one exception to this, and that is that any person *not* a *British* subject who has passed the regular examinations entitling him to practise medicine in his own country may act as resident physician or medical officer of any hospital established exclusively for the relief of foreigners in sickness, provided that such person is engaged in no medical practice except as such resident physician or medical officer (Medical Act, 1859, Section 6).

Further, the unregistered person is not recognized in law as a duly qualified medical practitioner. He cannot issue a death certificate; he cannot sue for his fees; he cannot give evidence as an expert medical witness in any court of law in this country, nor issue any medical certificate which will be accepted in such court of law.

Registration is the seal which distinguishes the duly or legally qualified medical practitioner from all others, and an unregistered person is therefore not a legally or duly qualified medical practitioner so far as this country is concerned, and cannot practise as such.—I am, etc.,

Hyde, Jan. 25th. J. GORDON MACQUEEN, M.B.

THE CENTENARY FUNCTIONS AT CAIRO.

SIR,—To your report of some remarks made by me at the recent meeting of the Council relative to the centenary of the Faculty of Medicine of the Egyptian University,[1] will you allow me to add a word or two expressive of the feeling of admiration of the British delegates—for I feel sure the others share my feeling—in respect of the life and vigour of the Faculty of Medicine and of the Kasr-el-Aini Hospital, Cairo? In an atmosphere clearly scientific, the hum of activity was arresting. The impression grew in passing from department to department.

Nor can I close without publicly expressing the high appreciation by the delegates of their extremely kind and thoughtful reception by colleagues on the faculty and hospital. While our gratitude is due to everyone who contributed to the successful celebrations, there can be no invidiousness if I ask you to place on record our special indebtedness to the genial and distinguished dean, Mr. F. C. Madden, O.B.E., M.D., F.R.C.S., and the honoured subdean, Professor Ali Bey Ibrahim, M.B.E., whose admission to the rank of Honorary Fellow of the Royal College of Surgeons of England by the President of the College formed a striking scene in a wonderful setting.—I am, etc.,

University of Edinburgh, Feb. 16th. R. W. PHILIP.

[1] *Supplement*, Feb. 16th, 1929, p. 37, Proceedings of Council.

Obituary.

SIR BERTRAM WINDLE, M.D., LL.D., F.R.S.,

Professor of Anthropology and Lecturer on Ethnology, Toronto.

DEEP regret will be evoked in all parts of Ireland by the announcement of the death, at the age of 70, of Sir Bertram Windle, professor of anthropology and ethnology at the University of Toronto, which took place in Toronto on February 14th.

Sir Bertram Coghill Alan Windle was born in England on May 8th, 1858, his father being the Rev. S. A. Windle, B.D., vicar of Market Rasen, Lincolnshire, and his mother daughter of Admiral Sir Josiah Coghill, Bt. His parents removed to Ireland, and he was educated at Kingstown and Repton Schools, later proceeding to his professional studies at Dublin University. He acquired many academic distinctions, among them M.A.Dublin (with first-class honours in natural science at B.A.); M.D., B.Ch.Dublin (having taken first place at M.B.); D.Sc.Dublin; M.Sc.Birmingham; LL.D., R.U.I., Birmingham, and Boston; Ph.D. (hon. causa) Rome; D.Sc. (hon.) Marquette University; and F.R.S. He was made a *Knight of St. Gregory the Great* by Pope Pius X in 1909, and was created knight after the New Year's Honours List in 1912. In 1891 he was appointed dean of the medical faculty of Queen's College, Birmingham; he later became professor of archaeology, and in 1904 president of University College, Cork. During the fifteen years of his presidency Sir Bertram contributed to the development of the College and enjoyed world-wide eminence as a scholar and writer. In October, 1919, he

accepted an invitation to contribute a course of lectures at the University of Ontario, later being made professor of cosmology and anthropology in St. Michael's College, and special lecturer on ethnology, University of Toronto. During his stay in Canada he became a prominent figure in the intellectual life of the Dominion, where his death will be regarded as a great loss.

In the course of his career Sir Bertram was a member of the General Medical Council (representing the University of Birmingham from 1900 to 1905, and the National University of Ireland from 1914 to 1920), president of the Irish Technical Association, commissioner under the Irish Universities Act of 1908, member of the Consultative Committee of the Board of Education, Commissioner of Intermediate Education, Ireland, member of the Irish Convention, 1917–18, and examiner in anatomy in the Universities of Cambridge, Aberdeen, Glasgow, Durham, and to the Royal College of Physicians, London, and the Royal College of Surgeons, Ireland. In 1920 he was Norton Memorial Lecturer to the American Anthropological Institute. He was considered an unrivalled authority on comparative anatomy and certain branches of archaeology, and his writings in connexion with Catholic philosophy won him a widespread reputation.

Sir Bertram was a member of the British Medical Association, occupying the position of vice-president of the Section of Anatomy and Physiology when the Association held its Annual Meeting in Birmingham in 1890, and that of vice-president of the Section of Anatomy and Histology when it met in London in 1895. Of his publications, which were many, it is possible to mention but a few to indicate the variety of his interests: *A Manual of Surface Anatomy; The Proportions of the Human Body; Life in Early Britain; The Wessex of Thomas Hardy; The Prehistoric Age; Facts and Theories; The Catholic Church and its Reactions with Science;* and many scientific papers and articles.

His first wife was Madeline, daughter of the late Mr. W. Hudson of Birmingham, and in 1901 he married Miss Edith Mary Nazer. The deepest sympathy will be extended to his relatives in their bereavement.

DR. ARTHUR GORDON MCKAY MURDOCH, whose death occurred on February 5th at the age of 25, was a member of the staff of the Glasgow Corporation Bacteriological Laboratory. He received his early education at the High School of Glasgow, and studied medicine at the University there, graduating M.B., Ch.B. in 1925, and obtaining the diploma in public health two years later. For a year he served as a demonstrator in the Public Health Department of the University, and eighteen months ago joined the Corporation bacteriological staff. He was a member of the British Medical Association. A colleague writes: Engaged as Dr. Murdoch was upon a phase of public health work which is unseen for the most part by the public, his thoroughness and efficiency as a bacteriologist were of much importance to the medical practitioners of the city and to the citizens, especially in connexion with diphtheria, enteric fever, and tuberculosis. To the investigation of these diseases he devoted himself unremittingly, giving of his best for the public weal. He was greatly esteemed by his colleagues, who found in him an ever-obliging, conscientious, and reliable fellow worker.

HOWARD VIVIAN ALEXANDER GATCHELL, who died in Salisbury, Southern Rhodesia, on November 25th, 1928, following an operation for duodenal ulcer, was the son of the Rev. J. H. Gatchell, D.D., co. Tyrone, Ireland. Before the war he held a post under the Middlesex County Council. Dr. Gatchell served in France and rose to the rank of major in 1917; on demobilization he was for a time on the medical staff of the Ministry of Pensions, and in 1920 was appointed medical inspector of schools under the Southern Rhodesian Government. He showed great enthusiasm for his work, which took him all over the colony, where, it is no exaggeration to say, he was known to and respected by everyone. His annual reports were always instructive, and many improvements in the health conditions of the younger Rhodesians owe their inception to his recommendations. Only those who have taken part in the development of a young colony can understand how much his influence counted for. In his spare time Dr. Gatchell built up an extensive private practice in ophthalmology. As a man Gatchell was a typical Irishman; his cheery personality rose supreme over all the hard-ships and hazards of his journeys on the veld, and his ready wit made him a companion to be enthusiastically welcomed wherever he went. He was a prominent member of the Mashonaland Branch of the British Medical Association, and was the representative of the Branch at the Annual Meeting in Cardiff last year. His death occurred only a fortnight after his return from leave. Dr. Gatchell is survived by a widow and two sons, for whom much sympathy is felt.

DR. HENRY HERBERT LLOYD PATCH, who died on February 7th, in his fifty-ninth year, had long been in practice as an anaesthetist in Liverpool, where he was held in high esteem by his colleagues. He received his medical education at St. Thomas's Hospital, and in 1893 obtained the diplomas M.R.C.S.Eng., L.R.C.P.Lond., and L.S.A. For a period of about eighteen months afterwards he acted as assistant house-surgeon at the Devon and Exeter Hospital, where his grandfather and great-grandfather had been surgeons. He was subsequently resident medical officer to the Ramsgate General Hospital and Seamen's Infirmary, and visiting surgeon to the Ramsgate and St. Lawrence Royal Dispensary. Dr. Patch commenced general practice at Chudleigh, removing later to London. About eight years ago he settled in Liverpool, where he devoted himself entirely to the administration of anaesthetics, in which he had unusual ability. He was honorary anaesthetist to the Royal Infirmary, the Royal Southern Hospital, the Dental Hospital, and the Liverpool Medical Research Organization, and anaesthetist to the Ministry of Pensions Hospital at Knotty Ash, being also joint lecturer on anaesthetics to the Liverpool University Clinical School. He was a member of the Liverpool Medical Institution. A colleague writes: Dr. Patch's quiet confidence and wonderful disposition were of great advantage to those with whom he worked. His most unselfish character and kindness of heart won for him many friends, and his death will be an irreparable loss to them all. The last three years of his life were harassed by illness, but he carried out his duties with magnificent fortitude, both in the hospitals to which he was attached and in private practice. He is survived by his widow and one son.

We regret to record the death of DR. ROBERT KINNEAR HAY GILLESPIE, at his residence, Headingley, Leeds, on February 13th. Dr. Gillespie had a distinguished career as a student at Glasgow University, gaining many awards of merit, including the John Hunter medal in surgery and graduating in 1915 with the degrees of M.B., Ch.B. After serving as a resident medical officer on the staff of the Royal Infirmary, Glasgow, he joined the Royal Army Medical Corps and was posted to Salonika, where he served until he was invalided home in 1918. Appointed on his return to the East Leeds War Hospital, he was subsequently transferred to the War Hospital at Beckett's Park, Leeds. He joined the staff of the Ministry of Pensions when the latter hospital came under the control of the Ministry in 1920 and remained in that service until 1927. In September of that year he entered into private practice in the Headingley district of Leeds, and rapidly gained the confidence and esteem of a large circle of patients. In the army, and later in the Ministry of Pensions, Dr. Gillespie gave unstintingly of his abounding energy, and many disabled ex-service men will remember him, not only as a skilful and attentive surgeon, but also as a friend and adviser in many matters. His chief hobby was engineering, and his manipulative dexterity was manifest, not only in the operating theatre, but also in the training workshops of the various hospitals to which he was attached. His strong and engaging personality brought him many friends who sincerely regret his death at the early age of 37, a death which was precipitated by disregard of himself in the interests of his work. He married in 1922, and is survived by his widow.

We regret to learn of the death, at the age of 66, of FRANCIS XAVIER DA COSTA, F.R.C.S.Eng., L.R.C.P.Lond., L.M. and S.Bombay, which occurred on December 23rd, 1928, at Bangalore, Southern India. After receiving his early education at St. Xavier's College, Bombay, and graduating in medicine and surgery at Bombay University, he entered Charing Cross Hospital, and obtained the diplomas of the English Conjoint Board in 1888. For some time he served as house-surgeon to Charing Cross Hospital, proceeding to the Fellowship of the Royal College of Surgeons, England, in 1890. Subsequently he held appointments as house-surgeon to the St. Peter's Hospital for Stone, and surgical registrar to Charing Cross Hospital. During this period he earned a high reputation as a coach in medical and surgical subjects. On his departure for India in 1894 he received from his teachers, fellow students, and pupils in England tokens of their appreciation of him as man and colleague. After some years' practice in Goa he proceeded in 1908 to Bangalore, where he soon commanded an extensive practice. In 1915 he was placed in charge of St. Martha's Hospital, where he worked until some five months before his death. He was highly respected for his professional skill, his genial manner, and ready sympathy. The Apostolic delegate in India, the Bishop of Mysore, and other high officials of the Roman Catholic Church have referred to the death of Dr. da Costa as a loss sustained by the whole diocese of Mysore. He leaves a widow, who is also a member of the medical profession, three sons, and three daughters.

The following well-known foreign medical men have recently died: Dr. JEAN SICARD, a prominent neurologist and professor of medical pathology in the Paris faculty of medicine; Inspector-General DELORME, formerly director of the medical school at the *Val-de-Grâce Military Hospital* and president of the Académie de Médecine, aged 82; Dr. JAMES BADAL, formerly professor of clinical ophthalmology at Bordeaux, aged 89; Dr. LÉOPOLD DANDOIS, emeritus professor of clinical surgery at Louvain and formerly president of the Belgian Royal Académie de Médecine; Dr. ERNESTO TRICOMI, professor of clinical surgery at Palermo; Professor HEINRICH WINTERBERG, a Vienna cardiologist; and Dr. PAUL SILEX, extraordinary professor of ophthalmology of Berlin, aged 71.

CORRECTION.

PROFESSOR T. WARDROP GRIFFITH desires to correct a slip in the obituary notice of Dr. J. E. Eddison published in the *Journal* of February 16th (p. 327). In the fourth line of the second paragraph, for "the first William Hey" read "the second William Hey."

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a congregation held on February 16th the degree of Doctor of Medicine (D.M.) was conferred on L. J. Barford.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on February 16th the following medical degrees were conferred:

M.B.—E. G. Recordon.
B.CHIR.—I. C. C. Tchaperoff.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council meeting was held on February 14th, when the President, Sir Berkeley Moynihan, Bt., was in the chair.

The secretary reported the death, on January 28th, of Mr. Victor G. Plarr, M.A., Librarian of the College since 1897. The following vote of condolence was passed:

> The Council hereby express their deep regret at the death of Mr. Victor Gustave Plarr, and their very sincere sympathy with Mrs. and Miss Plarr in their bereavement. The Council do also record their appreciation of Mr. Plarr's services to the College as librarian, a post which he held with faithfulness and unfailing courtesy during the long period of thirty-one years. The Council recognize that the reputation of the library has been worthily maintained during Mr. Plarr's term of office, and that the good order in which it has been kept during large additions and several extensions bears witness to his able direction and to the care and attention which he devoted to the duties of his office.

The Library Committee was requested to consider and report to the Council upon the steps to be taken with the object of filling up the vacant office of librarian, and upon what alterations, if any, it would be desirable to make in Section 27 of the Standing Rules relating to the office.

The Diploma of Fellowship was granted to Russell Claude Brock, who had complied with the regulations.

Diplomas of Membership were granted to 143 candidates, and Diplomas in Public Health were granted jointly with the Royal College of Physicians to 37 candidates. (The names of the recipients of the diplomas were printed in the report of the meeting of the Royal College of Physicians, published in our issue of February 9th, p. 276.)

The President reported that he had appointed Mr. R. P. Rowlands as Bradshaw Lecturer for the ensuing year.

Mr. Ernest W. Hey Groves was appointed Hunterian Orator for the year 1930.

The secretary reported that from information recently received from Canada it appeared probable that there would be a sufficient number of candidates to justify a Primary Examination for the Fellowship being held at Toronto this year, that the dates of the examination had provisionally been fixed for August 6th and 7th for the written examination and August 9th and 10th for the viva voce examination, and that Professors William Wright, Le Gros Clark, Lovatt Evans, and John Mellanby had accepted the nomination to conduct the examination, Professor J. B. Leathes having found it not possible for him to act.

The President reported that he had received a letter from the Prime Minister enclosing a cheque for £1,000 as a grant to this College from the sum of money placed at the Prime Minister's disposal by Lord Beaverbrook in gratitude for his and his associates' escape in a recent motor accident: the sum to be expended either as capital or interest for the furtherance of medical knowledge—for example, research studentships, contributions to scientific equipment or to the library, and not to be used for any purpose of a routine character or one which should be met out of ordinary income. The Council referred this matter to the Museum Committee for their advice.

A letter was read from Sir James Berry resigning his seat in the Council, such resignation to take effect at the end of the College year in June. The resignation of Sir James Berry was accepted with regret.

The President reported that an election of four Fellows into the Council would take place on Thursday, July 4th, at 11 a.m., in the vacancies occasioned by the retirement in rotation of Sir H. J. Waring, Mr. C. H. Fagge, and Mr. W. Sampson Handley, and by the resignation of Sir James Berry; that notice of the election would be given to the Fellows by advertisement and by circular on March 9th; that March 18th would be the last day for the nomination of candidates; and that a voting paper would be sent on April 2nd to every Fellow of the College whose address is registered at the College.

The Services.

DEATHS IN THE SERVICES.

Colonel William George Beyts, C.B.E., Army Medical Service (ret.), died in Queen Alexandra's Military Hospital, Millbank, on February 12th, aged 63. He was born on February 24th, 1865, educated at Guy's, took the M.R.C.S. and L.R.C.P.Lond. in 1889, and entered the army as surgeon lieutenant on January 30th, 1892. He attained the rank of lieutenant-colonel on January 1st, 1914, got a brevet colonelcy on January 1st, 1917, became colonel on December 26th, 1917, and retired in 1924. After retirement he filled the post of medical officer of the Tower of London. He served on the north-west frontier of India in the campaign of 1897–98, with the Kohat and Kurram Valley forces, took part in the action of the Ublan Pass, was mentioned in dispatches in the *London Gazette* of December 21st, 1897, and gained the Frontier medal with two clasps; also in the South African war in 1902, receiving the Queen's medal with three clasps.

Lieut.-Colonel Alexander John Willcocks, Bengal Medical Service (ret.), died of pneumonia at Dehra Dun on January 14th, aged 77. He was born on May 15th, 1851, the son of the late Captain W. Willcocks of the Indian Army, and was educated at Aberdeen, where he graduated as M.B. and C.M. in 1873, and as M.D. in 1883, and at Guy's, also taking the M.R.C.S. in 1873. He entered the I.M.S. as surgeon on September 30th, 1873, passing in first, of the first batch admitted to the service after the abolition of the rank of assistant surgeon, became lieutenant-colonel after twenty years' service, and retired on April 1st, 1901. For two years, 1903–5, he acted as a member of the India Office Medical Board. He rejoined for service in the war of 1914–18, when he served in Egypt, and was mentioned in dispatches in the *London Gazette* of July 6th, 1917. After the war he settled in India. Nearly the whole of his service was spent in civil employ in the North-West Province, now the United Provinces. While serving as civil surgeon of Bulandshahr, a small and unimportant station in that province, he distinguished himself by performing a greater number of surgical operations than had ever been done by any civil surgeon before, especially extractions of cataracts. Others may have met with even greater success in this direction in later years, but it was Willcocks who first

discovered the great field for surgical work, especially on the eye, which an Indian district affords, and originated the great development of surgery in India which started in the early eighties of last century. He was one of four brothers who all achieved considerable success in life, and, indeed, might be compared, on a smaller scale, to the Malcolms and the Lawrences. The eldest brother was a chaplain on the Indian Ecclesiastical Establishment, A. J. Willcocks was the second. Sir William Willcocks, K.C.M.G., the famous Egyptian engineer and head of the Irrigation Department in Egypt, was the third, and the youngest was General Sir James Willcocks, K.C.B., who commanded the Indian troops in France in 1914.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE Local Government Bill was read a third time by the House of Commons on February 18th and sent to the House of Lords, where it was formally read a first time on February 19th. The second reading and committee stages were to follow quickly. Days of the committee stage of the Local Government (Scotland) Bill were set down in the House of Commons on February 20th, 21st, and 22nd.

In the House of Lords, on February 19th, a bill to render void marriages between persons either of whom is under the age of 16 was read a second time.

A meeting of the Parliamentary Medical Committee has been summoned for February 26th.

Local Government Bill.

Report Stage.

The House of Commons, on February 12th, began consideration of the Local Government Bill, as amended in committee, on the report stage.

On Clause 4, which deals with administrative schemes, Mr. WITHERS moved an amendment providing that a county council, in the preparation of any scheme relating to hospitals, should consult with the representatives of the voluntary hospitals in the area, with a view to co-operation in the treatment of the sick and the avoidance of overlapping. He said he desired that there should be consultation between the public assistance committees when formed and the voluntary hospitals, and that provision should be made for the most efficient service for the sick when the scheme came into operation. The voluntary hospitals had a very high standard of efficiency in their technical work, and there was an admirable spirit behind that work. When the county councils took over the local infirmaries it was very important that there should be co-operation between what would be the county council hospitals and the voluntary hospitals, because otherwise there would be overlapping, and trouble would arise. It must be disastrous to the voluntary hospitals if the impression was given that these two classes of hospitals were in competition. It was very important that they should work together in harmony, and that it should be understood that the one was not going to supersede the other. Major GLYN seconded the amendment.

Mr. CHAMBERLAIN said that any county council, in preparing a scheme, must have regard to the voluntary hospital provision already existing in that area. It was obvious that no scheme which proposed to deal with the hospital services of the area could really be adequate unless it took account of the existing accommodation in the voluntary hospitals. He was in full sympathy with the general idea of Mr. Withers—that there should be consultation and co-operation between the two classes of hospitals; but he did not think it would be possible to insert this particular amendment. If they were to provide for consultation with representatives of the voluntary hospitals, logically, they could not stop there. There were other voluntary associations doing work on parallel lines with some of the work which it would be the duty of the county councils to perform, and if they were to consult with the representatives of the voluntary hospitals it would only be logical to say that they must consult also with representatives of those other associations. Another practical difficulty was that neither the voluntary hospitals nor those other bodies were organized. There was no system by which they could, as a body, consult with the county council, and to make that a statutory provision would be a mistake. His view was that consultation and co-operation would take place between the voluntary hospitals and the public authorities, but it would not be acceptable to the local authorities if Parliament were to try to lay down precisely how that consultation and co-operation should be carried out.

Major GLYN said that in rural areas a very large number of workers had long been contributing each week to the voluntary hospitals, and it would be hard upon them if the scheme did not take into account the enormous amount of work which had been done in consequence of their contributions. Those interested in hospital work felt that some organization—even if it had to be created *ad hoc*—ought to be taken into consultation in connexion with this scheme.

Mr. W. BENN, in supporting the amendment, pointed out that under the Safeguarding Provisions the Government taxed drugs for hospitals. Two days ago a document was published saying that the assessments of hospitals were actually being raised. Sir R. SANDERS said that on almost every county council there was someone who represented the voluntary hospitals and looked after their interests. Colonel GRETTON, as one who had a great deal to do with the administration of two local hospitals, urged Mr. Chamberlain to accept the amendment. The large hospitals in the country no less than those in the metropolis ought to be taken into consultation in these matters, because they were schools of medicine; they were the ground where the medical profession received its training, and they would not be superseded by the system which the Minister had set up. Mr. HARRIS said that the London County Council had already considered this problem so far as London was concerned, and their way was comparatively easy. They had the King Edward Hospital Fund in London, and had an immense opportunity of making something like a perfect hospital system for the metropolitan area.

The amendment was negatived without a division and the clause agreed to.

Mr. PETHICK-LAWRENCE moved to omit Clause 15, which deals with the recovery of expenses. He said that the clause was inimical to public health. It compelled local authorities to make a charge on all persons using their health institutions, with certain exceptions, and it fixed the amount which the authorities must charge. He had made inquiries, and he estimated that in London that charge would reach from £2 5s. to £2 10s. a week in the case of maternity homes, and from £4 5s. to £4 10s. a week in the case of cancer hospitals. Further, the clause provided that if a patient could not pay, all the persons on whom the patient was regarded as dependent could be called upon to pay the whole of the charge. That would debar members of the working classes from making use of these hospitals. The Minister of Health had put down an amendment which would enable local authorities to refrain from charging the full bill, not only when they were satisfied that the patient or his relatives could not pay, but when they thought it unreasonable that they should pay. That was a very considerable advance, but there remained a great deal of ground where the clause would still fail to meet criticism.

Sir KINGSLEY WOOD said that no one could describe the clause as detrimental to public health. If the clause were deleted the local authorities to whom the institutions were being transferred from the guardians would be under the obligation to charge a pauper for treatment while they would have no such duty in the case of a person who did not come under the operation of the Poor Law. The clause assimilated the position, so that in all cases, except those of infectious disease, where a person could afford to do so, having regard to his financial circumstances, he should make a reasonable payment to the local authority for the treatment he received.

Dr. VERNON DAVIES said that, as a medical man, he hoped he would live long enough to see the treatment of disease according to need and not according to the financial capacity of the patient, and to see the break-up of the Poor Law. They had been assured by the Minister that at present the time for that was not ripe; that it would be impossible for the bill to function and at the same time to break up the Poor Law. So they had the position that under the Poor Law the destitute poor or their relatives could be charged by the local authority a certain amount for their treatment and maintenance, and that, on the other hand, the people who were not poor who were treated under the Public Health Act could escape free. That was a very alarming position, and was undoubtedly penalizing the pauper. They would all have liked to get rid of the pauper charge if they could, but not being able to do that, and as it was not possible even to put all sickness for the time being on the same level, the Minister was making a charge for everybody according to their means. There was to be no increase of the present charge according to the Poor Law. They were not raising the Poor Law fees, nor altering the Poor Law structure. They were to go on as they had been going on for many years. He had had several years' experience in an industrial practice, and he had known of many instances where patients had to go to voluntary hospitals, and also to the Poor Law hospitals. He could say with confidence that never in the whole of his experience had he come across a case where any complaint had been made by patients or relatives of undue charges for hospital attendance, either in the Poor Law hospitals or the voluntary hospitals. The circumstances of the patient were taken into account, the circumstances of the relatives were taken into account, and his experience had been that the people, when they had come out, had been very grateful for what had been done to them. They were not going to alter that by the bill. They were simply going to put them all on the same level until the happy time arrived when they could remove the Poor Law disqualification for illness. Members of the Labour party were perhaps unduly apprehensive of the dangers of this clause. They seemed to think that people would be afraid to go

to the hospitals on account of the charge. When people were ill money did not count. Treatment came first, and they went to the hospitals and were only too glad to get there. He could not understand why the Labour party should have the idea that the Government, the hospital authorities, and the guardians of the poor were simply out to rob the poor of all they could. (Labour cries of "No.") The suggestion was that the charge they were going to make, legally or illegally, was so high that the people would be terrified to go into hospitals on account of that charge. It had been said that people with cancer, rather than go to these hospitals and pay an enormous price, would sit at home and run the risk of suffering, and would rather die for lack of treatment. That did not happen. He had never heard a case of any patient, pauper or otherwise, suffering from a disease like cancer where the patient did not get the best medical attention and where everything was not done that could be done to give him relief. The bill was altering the law, but it was doing nothing to increase the standard which at present existed under the Poor Law. It had been said that unless a person could pay £3, £4, £5, or £6 they could not go in, but that did not happen. The clause was of great benefit to the bill. The ordinary working folk wished to be treated no better than were the paupers.

The amendment was rejected by 221 votes to 114, and the amendment of the Minister of Health, referred to in Mr. Pethick-Lawrence's speech was inserted. The clause was then agreed to.

On February 13th Mr. CHAMBERLAIN carried an amendment extending to the county of London the clause empowering county councils to act jointly with other local authorities in preparing or adopting town-planning schemes.

Clause 54 authorizes the Minister to make regulations regarding the qualifications of medical officers or health visitors appointed by a local authority under the Maternity and Child Welfare Act, 1918, and the Public Health (Tuberculosis) Act, 1921, or under any regulations for the treatment of venereal disease made under the Public Health Acts. On the motion of Mr. CHAMBERLAIN the House added, after "Public Health Acts," the words "1875 to 1925, and the Public Health (London) Act, 1891."

Clauses 55 on maternity and child welfare services, 56 on notification of births, and 57 on supervision of midwives, were all carried without debate. Clause 58 provides for the survey, by county councils, of the hospital accommodation provided for the treatment of infectious disease, and for the submission to the Minister of schemes for providing adequate hospital accommodation for such disease. Mr. CHAMBERLAIN moved and carried an amendment declaring that in this clause "infectious disease" should not be construed as including tuberculosis or venereal disease. He said these were already separately covered.

Clause 94 empowers the Minister to reduce grants to councils which have failed to achieve or maintain reasonable progress in public health services. On the motion of Sir KINGSLEY WOOD this was amplified to make clear that the Minister could thus act either on representations made to him by any association or body of persons experienced or interested in matters relating to public health, or without such representation. Sir Kingsley Wood said the amendment had been pressed from all quarters of the House.

Clause 120—"power to remove difficulties"—was discussed on February 14th. Mr. PETHICK-LAWRENCE asked if the Minister's power to modify certain provisions would apply to the definitions clause. That clause did not define infectious disease. It might be convenient for the Minister, "for the purpose of removing difficulties," to say that no kind of tuberculosis should be included in the definition of infectious disease.

Sir KINGSLEY WOOD said that if a local authority wished to find out what an infectious disease was it must look elsewhere than in this bill.

On Clause 123, which sets out definitions, Dr. FREMANTLE moved to insert the following definition of infectious disease:

"'Infectious disease' means any of the diseases named in the Infectious Diseases (Notification) Act, 1889, Section 6, and any other diseases added thereto by order of the local authority with the approval or concurrence of the Minister of Health, or any infectious disease made notifiable by Order of the Minister of Health under Section 30 of the Public Health Act, 1875, and the corresponding Section of the Public Health (London) Act, 1891."

Dr. Fremantle said that Clause 15 of the bill contained no definition of infectious disease, though it made an exception concerning the recovery of a contribution towards the cost of treatment from a person suffering from such disease. For administrative purposes a uniform definition of these excepted diseases was necessary. The definition might be "diseases which are notifiable by law." It was absurd to leave infectious disease to be defined by any medical man.

Mr. CHAMBERLAIN said he could not accept the amendment. The definition suggested by Dr. Fremantle would exclude venereal diseases, which were not notifiable. Infectious diseases were not defined in the Public Health Acts, and therefore not in this bill.

The amendment was negatived, and after further debate the report stage closed.

Third Reading.

The Local Government Bill was read a third time by 292 to 113 on February 18th. In moving the third reading Mr. CHAMBERLAIN said the measure was not going to stifle or cripple local services, but would prove a jumping-off ground for a fresh leap forward of the standard of health and welfare throughout the country. He defended the financial basis of the bill.

Mr. ARTHUR GREENWOOD, on behalf of the Labour party, moved the rejection of the bill, one reason adduced in the motion for rejection being that it would degrade the standard of the social services and cripple their development.

Mr. PETHICK-LAWRENCE, seconding, said the bill could not be practical when it gave relief to breweries and none to hospitals.

Mr. ERNEST BROWN condemned the bill for concentrating health services in the hands of county councils and county boroughs, and for dissipating the funds that would make the health services effective. He predicted that the block grant would prove insufficient all over the country. At present there were 350 whole-time medical officers of health and 1,150 part-time officers. He anticipated that in five years those figures would be reversed, that every one of these doctors would want assistants, and that, if they were to do their job, the money provided by the block grant would not suffice. The bill had gone too far in the centralization of health services.

Dr. FREMANTLE desired to sum up the bill's use and value to the public health and local government services. The bill was a definite help to agriculture, and agriculture was of value from the health point of view as the basis of country life. The Poor Law, which the bill sought to change, was the first main provision made by Parliament for protection of the health of the people. Out of its institutional and outdoor relief was developed the system of medical attendance free for every man, woman, and child. He regretted that, as time became ripe for another development of local government, the House, instead of founding health services on the Poor Law, set up another system under urban and district councils. In 1883 Parliament further established the county councils, and as a result public health for forty years had had a multitude of authorities and a tangle of administration, which had meant inefficiency, weakness of resources, and dissipation of attention and energy. Medical officers trying to carry out health measures realized the enormous resources of the Poor Law. The bill's proposals for consolidation were not a final solution, but were going in the right direction by placing Poor Law into the hands of the county councils and by co-ordinating the work of the county councils with local sanitary authorities. He attached importance to the powers given in the bill for the overhauling and systematizing of schemes for infectious diseases, water supply, and sewage disposal. On some points those who were interested in such matters were not entirely satisfied, but they were minor points, and he hoped amendments might be made on them in the House of Lords.

Mr. GATES said he had criticized the bill because he feared maternity and child welfare services would suffer under the block grant system. A great many of the voluntary associations were still not quite easy in their minds, but they were a great deal easier since certain amendments had been inserted in the bill by the Government. The voluntary associations, which had done so much work in connexion with public health services, would have much preferred that the maternity and child welfare services should still have been left on the percentage grant system for the original term of seven years if that had been possible. The voluntary associations could not help being afraid that many councils would prefer to use the block grants for the purpose of reducing their rates rather than for promoting these services. It was an unfounded fear, and the Government's amendments would reduce the grounds for it to a minimum.

Sir KINGSLEY WOOD said that one of the most unfounded criticisms of the bill was that which found a place in the Labour party amendment—namely, that the proposals of the bill would degrade the standard of social service in the country. The discussion on block *versus* percentage grants had amply demonstrated that there was hardly anyone who was prepared to stand up wholly for the present percentage grant system. A most welcome fact had been the considerable change of opinion among people particularly interested in the maternity and child welfare service proposals of the bill. It had been more and more appreciated that the present system benefited the rich areas and handicapped the poor areas, and that there was no effective power vested in the Minister of Health to bring about a better state of things in the case of an authority that was not properly discharging its health duties and functions. The debates on this bill had clearly demonstrated that the new system would at any rate remedy many of those grave defects.

The Labour amendment to reject the bill was defeated by 292 votes to 113, and the bill was then read the third time.

The bill was introduced into the House of Lords on February 19th and read a first time.

The Assessment of Hospitals.

In an answer given on February 13th to Sir Nicholas Grattan-Doyle Sir KINGSLEY WOOD said hospitals could not be exempted from rating without legislation. Mr. Chamberlain was of opinion that such a proposal could not be considered apart from the claims made for other charitable and public institutions. The

same considerations applied to preferential terms of assessment. The Government desired to do what it could for voluntary hospitals, but if they began to give preferential treatment they would be confronted with claims on behalf of blind institutions and other institutions. The Central Valuation Committee had made recommendations with respect to the assessment of hospitals and charitable institutions, and when these recommendations had been adopted there should be no undue hardship.

On February 14th Mr. ROBERT MORRISON put a question asserting that under the Rating and Valuation Act, 1925, the assessment of provincial hospitals in England and Wales had been increased from £1.56 per patient bed to £2.36 per patient bed. Mr. CHAMBERLAIN replied that he had no general information on the effect of the revaluation of hospitals. The subject would probably be discussed many times, but in legislation this Parliament had said its last word. In Sheffield the new assessments of all the voluntary hospitals showed an increase of £11.

Automatic Machines for the Sale of Aspirin.—Sir ROBERT THOMAS asked, on February 13th, whether Mr. Chamberlain was aware of a proposal to install automatic machines for the sale of aspirin, and whether the uncontrolled sale of this drug was in the public interest. Sir KINGSLEY WOOD said the question had been referred to the Inter-Departmental Committee on the Poisons and Pharmacy Acts, whose report Mr. Chamberlain must await. He could not say when that report would be received.

Central Midwives Board and Instruction of Pupil Midwives.—On February 14th Mr. CHAMBERLAIN, answering Mr. P. J. Hannon, said he knew the Central Midwives Board had directed that pupil midwives at the two hospitals of the Birmingham guardians should cease to take their theoretical instruction within these hospitals. In this matter he had no authority to interfere with the discretion of the Central Midwives Board. A departmental committee was considering the powers of the board, and a question like that from Birmingham would come within the terms of reference. Mr. Chamberlain returned a similar answer to Sir Philip Richardson, who called attention to the fact that the Central Midwives Board had instructed the Kingston-on-Thames board of guardians that pupil midwives were not to receive lectures from the medical superintendent of the Kingston and District Hospital.

Notes in Brief.

During the twelve months ended February 1st Mr. Chamberlain confirmed schemes for clearance of insanitary areas in Chelsea, Leeds, Sheffield, Knaresborough, Wednesbury, Brampton, Preston, Rochdale, Exeter, and Liverpool. Nine schemes are at present under his consideration.

During 1928 eighteen airmen were discharged from the R.A.F. suffering from pulmonary tuberculosis. Three of these cases were held to be attributable to service. The number of men discharged from the army for tuberculosis in 1928 is not yet available.

The Home Secretary states that to remove injured persons to hospital the Metropolitan Police make use of the ambulances of sixty different agencies, including the St. John Ambulance Association, forty-two urban district councils, and thirteen borough councils.

It is not the practice for Poor Law inspectors of the Ministry of Health to attend inquests on persons dying in Poor Law institutions.

Under the direction of the First Commissioner of Works a survey of places in London available as shelters from aerial attack is being made.

Medical News.

AT a meeting of the Royal Society on February 28th, at 4.30 p.m., a discussion on ultramicroscopic viruses infecting animals and plants will be opened by Sir Charles Martin, F.R.S.

UNDER the auspices of the National Council for Mental Hygiene Dr. W. A. Potts will deliver a lecture on "The irresistible impulse" at the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Wednesday, February 27th, at 5 p.m.

THE Sections of Urology, Pathology, and Therapeutics of the Royal Society of Medicine will hold a joint discussion on urinary antiseptics on Thursday, March 21st, at 8.30 p.m.

IN connexion with the inauguration of the Jordanburn Nerve Hospital, the chairman and managers of the Royal Edinburgh Hospital for Mental and Nervous Disorders have issued invitations to a dinner in the Hall of the Royal College of Physicians of Edinburgh on Monday, February 25th.

DR. HECTOR CAMERON will lecture for the Fellowship of Medicine on Monday, February 25th, on "Appendicitis and other causes of acute abdominal pain in children" at the Medical Society, Cavendish Square, W.1, at 5 p.m. On Wednesday, February 27th, at 4 p.m., a clinical demonstration will be given by Dr. Knyvett Gordon on "The leukaemias and Hodgkin's disease" at the Wellcome Museum of Medical Science, 33, Gordon Street, W.C.1. On the same day and at the same time Dr. Kenneth Playfair will demonstrate heart cases at the Royal Waterloo Hospital. The lecture and both demonstrations are free to medical practitioners. A week's intensive course begins at the Brompton Hospital for Chest Diseases on February 25th. The Hospital for Sick Children will provide a morning course from February 25th to March 9th; early application is desirable as the class is limited to 20. In March two special courses only will be held, both of these from March 11th to March 23rd. The first is an all-day course at the Royal National Orthopaedic Hospital, the minimum entry being 10. The second is in ophthalmology at the Royal Eye Hospital, and consists of instruction in the afternoons only. Copies of all syllabuses, specimen copies of the *Post-Graduate Medical Journal*, and information relating to the general course, consisting of the clinical practice of the various affiliated hospitals, can be obtained from the secretary of the Fellowship, 1, Wimpole Street, W.1.

DR. R. G. CANTI of London and Dr. Regaud of Paris, who recently delivered addresses at the Berlin Medical Society on the control of cancer, have been elected foreign members of the German central committee for the investigation and control of cancer.

AMONG the various special holiday tours arranged for members of the medical profession one of the most attractive is the annual cruise organized by the *Bruxelles-Médical*. This year the cruise will extend over twenty-four days, from July 13th to August 4th, passengers embarking and leaving the motorship *Brazza* at Zeebrugge. From Zeebrugge the *Brazza* will cross the North Sea to Kopervick, and the following eight days will be spent in cruising round the fiord-broken coast of Norway, with opportunities for visits to places of interest. The voyage will then be continued north into the polar circle to Svartison and the Lofoden Isles, the return journey being broken by calls at the Faroe Isles, the Shetlands, and at Leith. The fares, not including excursions, will range from £20 5s., in the second class, up to £92 5s. 6d., de luxe, per person for doctors and their relatives. Persons not connected with the medical profession but vouched for by their family doctor may be admitted to the cruise at slightly higher rates. Early application for particulars should be addressed to Croisière "Bruxelles-Médical," 29, Boulevard Adolphe Max, Brussels.

THE Ministry of Health has issued a memorandum (No. 139) describing the bacteriological standards for the various classes of graded milk prescribed by the Milk (Special Designations) Order, 1923, the methods of sampling milk, the laboratory technique of bacteriological examination, and the form in which the results of examination should be recorded. The leaflet may be obtained from His Majesty's Stationery Office.

DR. G. B. HILLMAN has been appointed a Justice of the Peace for the county borough of Wakefield.

AN alabaster tablet in memory of the late Professor E. M. Crookshank, M.B., has been placed in East Grinstead parish church.

THE Meteorological Office has issued Section VI of the *Book of Normals* of meteorological elements for the British Isles, containing normals of relative humidity. This publication includes an explanatory chapter containing a note on relative humidity and a description of the methods used in securing the data for the tables and isopleth diagrams which follow. These contain the normals of relative humidity for each hour of the day in each month and in the year for twelve observatories in the British Isles. Copies of the pamphlet may be obtained from H.M. Stationery Office, or through any bookseller, price 9d. net.

A RESIDENTIAL school for children, aged from 4 to 10, and crippled by surgical tuberculosis, infantile paralysis, or rickets, has been established at Bournemouth by the Shaftesbury Society and Ragged School Union. There is a similar institution at Hastings for boys aged 10 to 16, and another at Margate for girls in the same age group. The schools have been approved by the Ministry of Health and the Board of Education as centres to supplement the provision made in hospitals and schools for the physically defective. Further information will be supplied by the secretary of the society, John Kirk House, 32, John Street, W.C.1.

THE Hungarian Minister for Public Welfare and Labour has convened a conference on *x*-ray and high current prophylaxis, under the chairmanship of the State Secretary, Dr. T. de György. A committee of *x*-ray experts and engineers was appointed subsequently to draw up a scheme of prophylactic rules against *x*-ray and high current injuries; to watch the scientific and technical development of radiology; and to keep in touch with foreign committees of this kind. Its first meeting was held in Budapest on February 4th.

WE have received a copy of a little work on Sweden issued as a souvenir of the Swedish section of the International Press Exhibition held last year at Cologne. In addition to miscellaneous information about the country the work contains an interesting and lavishly illustrated account of

the Swedish press from the earliest times until the present day, and an attractive article on Sweden as a country for tourists, from which we learn that a free supply of drinking water changed several times daily is provided in all the railway carriages, an example which might be followed in other countries.

THE National Baby Week Council has awarded the Lady Astor shield to the Kettering Urban District Council Ladies' Voluntary Committee for Infant Welfare for the most effective local Baby Week campaign in a large area in 1928. The Oldbury Infant Welfare Centre secured the second place and will receive a special trophy. Certificates of merit have been gained by the Bilston Urban District Council, Kingston-on-Thames Infant Welfare Centre, and Sunderland County Borough. The William Hardy Shield, which is reserved for smaller areas, was won in 1928 by the Hill and Cakemore (Worcestershire) Infant Welfare Centre, the Halesowen Centre securing second place. Certificates of merit were awarded to Bungay (Suffolk) Nursing Association, East and West Molesey (Surrey) Infant Welfare Centre, Lymington (Hants) Infant Welfare Centre, and Welwyn Garden City (Herts) Health Association.

THE British Engineering Standards Association, which represents all the principal engineering institutions, has issued a British standard specification for the electrical performance of transformers for *x*-ray purposes. It is the first specification of the kind to be issued relating to *x*-ray apparatus, and it applies to the main high-tension transformers, dealing with the subject on lines similar to the corresponding specification for the electrical performance of transformers for power and lighting, but with the necessary modifications to meet the service conditions of *x*-ray work. The definition of the rating of the transformer is given, also the method of testing output, and some notes on rectification. Copies of the specification (No. 326, 1928) can be obtained at 2s. 2d., post free, from the Standards Association, 28, Victoria Street, London, S.W.1.

WE have received the report of the School of Medicine of Shantung Christian University which covers the year ending August 31st, 1928. This University which is under joint British and American control, suffered severely from the recent disturbed conditions in China; the diploma of the medical school was, however, awarded to twenty students last May. It is hoped that during the present year more settled conditions will prevail and enable the University teaching to be extended.

THE most recent issue of the sections of the International Labour Office *Encyclopaedia of Industrial Hygiene* contains Brochures No. 134 and No. 140, dealing with basic slag, basket weaving, bones industry, boot and shoe manufacture, brass, brooms, and building trades respectively. This issue completes the subjects coming under the letter "B," which may therefore now be assembled in their correct order. When the pamphlet edition is complete the entire work will also be issued in volume form.

A LIST of students from other countries who are studying in the universities and university colleges of Great Britain and Ireland in the current session has been published, at the price of 1s., by the Universities Bureau of the British Empire, 50, Russell Square, W.C.1. The list includes 5,170 names—against 4,875 a year ago—arranged according to their countries under each university or college. Each continent and practically every European country—from Turkey to Iceland—is represented; there are over 1,500 names of students from India, and between 500 and 600 in each case from the United States and South Africa. At the other end of the scale Armenia, Manchuria, and the Dutch East Indies are each represented by one student.

WITH a view to disseminating information about the proceedings of Hungarian medical societies and publications, arrangements have been made to publish, at fortnightly intervals in German, a journal of clinical abstracts and medical news entitled *Verhandlungen der Ungarischen Aerztlichen Gesellschaften*. It may be obtained from the editorial office, Vadász-utca 26, Budapest V, the annual subscription being £1.

THE Rumanian Government has conferred the distinctions of Grand Officer of the Crown of Rumania on Professor Marcel Labbé, and of Commander of the Star of Rumania on Professor Rathery, Dr. Laignel-Lavastine, and Dr. Armand-Delille on the occasion of the fifth congress of thalassotherapy.

THE following appointments have recently been made in foreign medical faculties: Dr. Eckert Möbius, professor of oto-rhino-laryngology at Halle, in succession to Professor Denker; Dr. Tarozzi, professor of morbid anatomy; Dr. Centani, professor of general pathology at Bologna; and Dr. Reeb, professor of gynaecology and obstetrics at Strasbourg in succession to the late Professor Schickelé.

A PAN-PACIFIC congress of surgery will be held at Honolulu in April.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863*, and *9864* (internal exchange, four lines).

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

TREATMENT OF NAEVUS IN INFANTS.

"FREE STATE" asks for advice how to treat a child 6 weeks old who has a naevus on the cheek about the size of a threepenny piece. It was not noticed till the child was about ten days old. Ought operation to be postponed till the child is older; and what operation would be best—the electric needle, caustic, ligature, or the knife?

DRY SKIN.

DR. E. MARGARET PHILLIPS (Pekin) writes: In reply to "H. M. C.'s" query on December 15th, 1928 (p. 1120), I would suggest simple lanolin for his patient's skin cracks. The Pekin climate is very dry, and numerous cracks on the finger-tips and sides used to make the winters miserable for me, but since I discarded all creams and lotions at the beginning of this winter and used only Messrs. Burroughs Wellcome and Co.'s toilet lanolin I have not had a single crack. My hospital patients are quite happy with plain vaseline or boric ointment, but I like this lanolin because it does not leave the skin greasy. I apply it two or three times a day, and wash the hands in cold water during the daytime.

SOUND-PROOF DOORS.

DR. F. G. GARDNER (Oxford), in reply to the question on February 16th (p. 331), how to prevent the transmission of sounds between consulting and waiting rooms, writes: "Inquirer" will probably find much to interest him in an article in the *Times* of February 5th, entitled "Quietness in City offices." This article, which deals with the application of [illegible] as a special seaweed from Nova Scotia, [illegible]itten in such convincing style that it noise abatement, in so far as it applies or part thereof, is almost settled.

INCOME TAX.

Replacement of Car.

"A. B." bought an 11.9-h.p. car, two-seater, in 1922 for £490, and has sold it for £30, buying a 15.9-h.p. saloon for £375. What can he deduct for income tax?

*** The principle involved is that no expenditure in respect of improvements can be deducted. Horse-power is an element, but only one among several, in that question. Prima facie, however, the new car is one of a better range or type than the 1922 car, and, if so, the amount allowable is, strictly, the excess of the cost in 1928 of a car similar to the one replaced over the £30 received.

Car Transactions.

"R. S. T." has hitherto adopted the basis of renewals, his last allowance being made in respect of a renewal occurring in 1927. He contemplates retiring in 1930, and inquires whether he should now change the basis of allowance.

*** Yes; otherwise, of course, he will never receive any allowance for the car he is now using. He could *not* have changed for 1928-29 because the 1927 allowance is, in effect, made for that year, inasmuch as he is assessed on the previous year's basis. Consequently, it seems that he will receive an allowance for 1929-30 only.

Expenses while on Colonial Leave.

"S. W. T. L.," a medical officer in the Colonial Service, is home on leave. Can he deduct anything in respect of expenses incurred (*a*) in the purchase and future freight to the colony of a car which is being used for pleasure but will be taken abroad for professional use, and (*b*) in connexion with a post-graduate course he is taking?

*** (*a*) Present expenses are not wholly, exclusively, and necessarily incurred in the performance of the duties of his office and cannot be deducted in the taxation of his leave pay. (*b*) No; such expense is analogous to capital outlay for a future return.

Colonial Gratuities.

"J. C. D." asks if gratuities for services in military and colonial medical services are subject to income tax, whether the recipient is a British resident or not.

*** Gratuities paid in respect of service in connexion with the Great War to members of the military forces of the Crown were specifically exempted by Section 17 of the Finance Act, 1919. If our correspondent's gratuities do not fall within that description, we do not know of any grounds on which they can be claimed to be outside the scope of the tax. Non-residence in the United Kingdom, however, would seem to be sufficient, provided that no remittances are made to this country out of the gratuities.

Cash Basis: Retirement from Practice.

"T. T." retired on April 1st, 1928, his partner taking over the whole of the practice, but not "T. T.'s" share of the book debts. Is "T. T." liable on the subsequent cash receipts.

*** No. So far as our correspondent is concerned, these receipts represent the realization in cash of the results of past earnings. From April, 1928, onwards the remaining partner is liable in respect of the whole of the profits of the practice. If those profits are measured on the basis of the value of bookings after April 1st, 1928, no complication arises; if on the cash receipts basis, then it is clear that the whole of the receipts, including "T. T.'s" share, must be reckoned in the computation, otherwise the "receipts" will not correctly indicate the full practice profits.

LETTERS, NOTES, ETC.

THE MAYOS.

WE wish to correct an error which crept into the annotation published under the above heading in our last issue (p. 309). In column 2 it is stated that William Worrell Mayo received his medical education in Manchester. This is not correct. He was a pupil of John Dalton, the famous chemist, and after he went to New York in 1845 he practised as an analytical chemist. He did not take up a medical career until later, obtaining his medical degree from the University of Missouri in 1854. To quote the *Manchester Guardian* of February 2nd, he became a pioneer, not only in surgery, but in the establishment of civilized life.

TREATMENT OF INFLUENZA.

DR. J. T. MACLACHLAN (Ardrossan) writes: I regard influenza as the most curable of all the acute diseases which a practitioner is called upon to treat. By influenza I mean a disease with a rapid onset, a smart rise of temperature being associated with a severe headache and pains all over the body in the muscles (myositis). The back muscles are very tender, particularly below the right scapula. The drug I have used for over twenty years is sodium salicylate, given in doses of 20 grains every two hours. About 120 grains are all that an adult man will require. All pains should then have gone and the temperature have returned to normal. Profuse sweating is the rule after taking the drug. For women 15-grain doses will suffice. If influenza is not promptly brought to an end with six doses, then we are probably dealing with a case of pneumonia, over the course of which the drug is useless.

THE HEREDITY OF DEMENTIA PRAECOX.

DR. J. E. DHUNJIBHOY (Medical Superintendent, Ranchi Indian Mental Hospital, Bihar and Orissa, India), in the course of a letter on this subject, writes: I entirely disagree with the opinion expressed by Lieut.-Colonel Jagoe Shaw (*British Medical Journal*, September 29th, 1928, p. 566) that "inbreeding" is a very definite cause of the high incidence of dementia praecox among the Parsees of India. The incidence of this disease is high in England, Germany, France, Italy, and America, yet none of these nations is known to practise inbreeding like the Parsees. Parsees are the most Europeanized community of India and they follow Western civilization, especially on its educative side. In my own experience of lunacy work in India I have found that the incidence of dementia praecox is always high among the educated classes; it is high among the educated class of Bengalis, who, like the Parsees, follow Western civilization and education; for similar reasons it is high among the domiciled Anglo-Indians. I am entirely with those who believe that the stresses of present-day civilization and education, though not the sole cause of dementia praecox, at least have something to do with it. I am in no sense a champion of inbreeding, and fully realize its undesirability, but what I am urging is that its relationship to dementia praecox has never been definitely established. The Parsee community has been inbreeding for more than 1,200 years, and its general health is not impaired as compared with that of other communities of India which do not practise inbreeding. Further, as the general consensus of opinion is in favour of greater hereditary predisposition in manic-depressive psychoses than in dementia praecox, inbreeding should produce more manic-depressive psychoses among Parsees than dementia praecox. Yet these psychoses and other organic inherited diseases which inbreeding is bound to influence are not increasing among the Parsees. Finally, figures taken from the annual reports of the various provincial mental hospitals in India should convince Colonel Jagoe Shaw that dementia praecox is not so rare as he imagines amongst other communities in India.

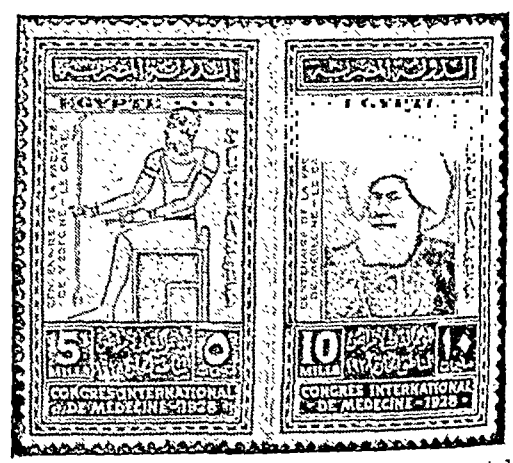
HYDROCEPHALUS WITH BREECH PRESENTATION.

DR. K. R. KINI (Mangalore, India) writes: In view of its rarity the following case of breech presentation deserves recording. A primipara, aged 18, after labour for three days, gave birth to a child as far as the neck, when progress ceased, though the pains continued. A country midwife had tried embryotomy, cutting open the spinal canal and exposing the structures of the neck; a meningocele in the lumbar region had been opened. The diagnosis lay between twins and hydrocephalus. Vaginal examination revealed the face of the child posteriorly, the occiput anteriorly; no other foetal parts could be felt, so I decided it must be a case of hydrocephaly. I tried perforation of the head through the mouth, but could not succeed; next I tried through the exposed spinal column, but failed again; then I rotated the head, bringing the occiput posteriorly, and perforated with success, evacuating four pints of clear straw-coloured fluid. The uterus began to act with great force, and the cranium was delivered without further delay, as was also the placenta. On the second day there was a temperature of 99° in the morning and 101° in the evening, but by the fourth day it was normal, both morning and evening, and the discharge was healthy. By the ninth day the patient was taking normal diet and had recovered from her uterine trouble, but on the tenth day she had an attack of pneumonia and died three days later. I wish to draw attention to the fact that it is not possible in such a case to perforate through the mouth; it is necessary to get the head posteriorly and perforate.

INTERNATIONAL MEDICAL CONGRESS AT CAIRO.

Commemorative Stamps.

DR. JAMIESON B. HURRY (Bournemouth) writes: In honour of the International Medical Congress recently held at Cairo, the Egyptian Government has issued two postage stamps which possess some historical interest. The first stamp (5 millièmes)



depicts Imhotep, the Egyptian Deity of Medicine, seated on his throne, grasping the sceptre of power in his right hand and the "ankh," or symbol of life, in his left. The second stamp (10 millièmes) exhibits a portrait of the Viceroy Mohamed Aly Pasha, to whom the foundation of the Medical School of Cairo one hundred years ago was due. This is probably the first time in the history of medicine that one of its tutelary deities has appeared on a stamp.

ASTHMA IN CHILDREN: A CORRECTION.

WE are asked to make the following correction in the article by Drs. R. H. Simpson and K. Stone published in the *Journal* of February 16th (p. 291), the corrected proof of which was not received until after we had gone to press. The last sentence in the small type paragraph immediately preceding the final paragraph of the article (p. 293) should read: "Cases 1, 3, and 9 are improved, but to a lesser degree than the four cases mentioned above." In the following line (*the fourth from the end*) for "six" read "four."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 47, 48, 49, 52, 53, and 54 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 51.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

180. Calculous Pleurisy with Serous Exudate.

C. GENTZ (*Acta Med. Scand.*, December 28th, 1928, p. 399) agrees with the majority of authors that it is not unusual to find in old pleuritic adhesions patches of calcification, especially in the parietal pleura. These patches consist usually of dense calcified fibrous tissue, often presenting the appearance of bony plaques ("pleural bones"), but actual ossification is rare. One writer states that these calcifications usually follow tuberculous empyema, but they often occur after non-tuberculous pleurisy. Gentz reports the case of a man, aged 48, who had had left pleurisy (? tuberculous) in 1904. Two aspirations yielded 1,350 c.cm. of clear fluid. Three years later he began to suffer from dyspnoea and vertigo without objective signs. One week before admission dyspnoea became worse, especially at night, and there was a feeling of epigastric pressure; his general condition was good. The left hemithorax was very retracted, deformed, and almost immobile, with definite thoracic scoliosis. The heart and aorta were dilated and hypertrophied; the blood pressure was 210/150 mm. Skiagrams showed extensive adhesions and left pleuritic calcification. Aspiration in the eighth interspace in the posterior axillary line met with almost bony resistance. About 50 c.cm. of slightly flocculent greenish-yellow sterile fluid containing 2.5 per cent. of albumin was withdrawn. Six days later a second aspiration yielded a similar result, and the subjective symptoms were relieved. In a second case, a man aged 59, and alcoholic, had acute left pleuro-pneumonia in May, 1909. Since then he had had periodic dry cough and effort-dyspnoea. He was admitted in March, 1928, with a diagnosis of chronic gastritis and calculous pleurisy. The left hemithorax was somewhat flattened and smaller than the right, and there was poor air entry. Exploratory puncture in the anterior axillary line was difficult, as the trocar struck a lamella of ivory hardness in the parietal pleura; this was pierced with difficulty. The heart was normal. Skiagrams showed extensive calcification in the left lateral and basal pulmonary regions as high as the fourth rib posteriorly. The patient had evidently had left pleuro-pneumonia nineteen years earlier, leaving adhesions which became calcified or ossified. Skiagrams after supra-laryngeal injection of lipiodol showed that the opacities were extrapulmonary. Gentz adds that these cases prove that a pleuritic exudate may remain *in situ* unabsorbed for many years, and that calcareous deposits may occur in the pleuritic adhesions.

181. Erythema Nodosum and Tuberculosis.

ACCORDING to J. O. SYMES (*Bristol Med.-Chir. Journ.*, Winter, 1928, p. 233) the view that erythema nodosum is allied to tuberculosis is widely held in Europe, and reports, based on clinical findings, have been published by many authors, including Vetlesen, Hambro, and Massini, in support of this contention. Experimental evidence, consisting largely of results of von Pirquet skin tests, is not convincing; examination of the nodes for tubercle bacilli has usually been negative, and animal inoculation has met with scanty success. On the other hand, Wallgren has reported a school epidemic of erythema nodosum which showed an intimate association with tuberculosis. Pollak has stated that this dermatitis is a special form of subcutaneous tuberculide; and Camac Wilkinson asserts that he has never seen erythema nodosum apart from tuberculosis. By those who maintain the existence of this association erythema nodosum has been defined as a tuberculo-bacillaemia, a tuberculo-toxaemia, or an allergic or anaphylactic reaction caused by temporary hypersensitiveness to tuberculosis toxin. Symes has found that in 19 out of 102 cases erythema nodosum was associated with tuberculosis, and is firmly convinced that there is a connexion between the two; he thinks, however, that erythema nodosum is not to be termed a tuberculous disease or the first allergic sign of tuberculosis. He considers that erythema nodosum must always be regarded as a danger signal and timely warning that tuberculosis exists or may develop. Tuberculosis is more likely to follow erythema nodosum in children and young adults, and especially when there is a family or personal history of tuberculosis. The onset of the latter after the development of the nodal fever is the more acute and grave condition. The danger of tuberculous infection is greatest during the first six months following the appearance of the rash, and no patient is safe till three or four years have elapsed, during which period his powers of resistance must be built up.

182. Orchitis as a Cause of Sterility.

F. P. TWINEM (*New England Journ. Med.*, December 20th, 1928, p. 1262) discusses mumps orchitis with special reference to sterility, and reports two cases in which the occurrence of mumps at puberty resulted in sterility on marriage. In all other respects the patients were physically and sexually normal, but spermatozoa were not present in the semen. Examination of the literature shows that in approximately 3 per cent. of all cases of mumps bilateral orchitis develops, with some risk of subsequent sterility. The author considers that sterility due to testicular atrophy following mumps is less rare than is claimed by some observers, and that the condition is often present without any loss of sexual desire or potency and without any abnormality of secondary sex characters. The results of administering diphtheria antitoxin at the onset of mumps to prevent the incidence of orchitis do not appear to be sufficiently appreciable to justify the risk, but the subcutaneous injection of 20 c.cm. of convalescent serum taken from the fifteenth to the twenty-fifth day in uncomplicated cases, and at the time of general recovery in cases of orchitis, seems to be of value in lessening the severity of the attack and in avoiding orchitis. In a severe attack of orchitis with marked swelling incision of the tunica vaginalis with multiple incisions of the tunica albuginea is advocated in order to prevent or lessen testicular atrophy. Further research is needed as to the absence of spermatozoa and the frequency of sterility in cases of bilateral mumps orchitis, and as to the preventive use of convalescent serum in treatment and the value of incisions and diathermy in preventing diminution of testicular function.

183. Narcolepsy.

E. C. THRASH and J. C. MASSEE (*Journ. Amer. Med. Assoc.*, December 8th, 1928, p. 1802) record a case of narcolepsy (one of the few American cases reported), and state that this disease is a clear-cut syndrome characterized by paroxysmal attacks of sleep and usually associated with cataleptic seizures. The attacks of sleep come on frequently during the day; they are irresistible, and may not be relieved by normal sleep at night. The patient may dream during the attacks, may be aroused as from normal sleep, and may feel refreshed on awakening. The cataplectic seizures are characterized by complete loss of voluntary movement and muscle tonus, usually as the result of great emotional stimulus, particularly laughter. Consciousness, however, is not lost in cataplexy. Reference is made to Wilson's paper on narcolepsy (*Brain*, March, 1928) and to the 43 cases reported therein. The present case is considered interesting since there was a definite suggestion of pituitary dystrophy, and the narcoleptic and cataplectic symptoms seemed to have definitely followed injury to the head, points which have been noted in a large percentage of the cases previously reported. The pathology of narcolepsy has not been satisfactorily determined. Some authorities consider that it is due to pituitary disturbance, others have suggested that the malady is caused by disturbances of the structures in the vicinity of the floor of the third ventricle, but the only basis for this opinion is that the subcortical sleep centres lie in this area.

Surgery.

184. Kidney Resection.

A. J. SCHOLL (*Annals of Surgery*, December, 1928, p. 1045) advocates conservative surgical procedures on the kidney. The first reported case of kidney resection was in 1886, but at that time the surgical technique for nephrectomy was more satisfactory, and for many years it was the operation of choice in malignant, tuberculous, and other infectious conditions of the kidney. In recent years, when more satisfactory methods of approach are being employed, and external incisions, such as the postero-lateral, are made that permit visualization of the entire field of the operation, the trend of renal surgery is towards conservation. It is important that, before the vessels of the diseased part are clamped, an adequate blood supply is assured to the sound stump of kidney left behind. After suture the area of resection is covered by a portion of the fatty capsule. Simultaneous resection of both kidneys or simultaneous nephrectomy and resection give a high mortality, but in non-simultaneous operations on both kidneys the results are good. Resection of a kidney should not be performed when the opposite

kidney is doing all the work, since the remaining segment would probably atrophy, having no stimulus to function, and might become a source of infection for the entire urinary tract. In simple infective cases partial nephrectomy should only be employed if the pathological condition is confined to a localized area of the kidney. In cases where a resection is performed to remove an [illegible], even though the incision is made through [illegible] tissue, a local fibrosis is generally present, and haemorrhage is usually slight. An inner suture of continuous catgut will control internal bleeding and a second one approximates the parenchyma and serves as a haemostatic suture. Several interrupted through-and-through catgut sutures are placed through the renal stump, and the incision should then be covered with a flap made from adjacent fatty tissue. The incision should be made so that a wedge of diseased tissue is removed; this permits a more accurate closure of the remaining segment.

185. Congenital Stenosis of the Oesophagus.

C. C. BEATTY (*Brit. Journ. Child. Dis.*, October–December, 1928, p. 237), who has collected fifty cases from the literature up to the end of 1926, in addition to five cases which have come under his own observation, states that congenital narrowing of the oesophagus, apart from complete atresia, is a rare condition. Two distinct types may occur—namely, a membranous type, in which there is partial occlusion of the lumen by a fold of normal mucous membrane, and a non-membranous type, in which there is a localized reduction in the size of the oesophagus. The commonest sites for the stenosis are the upper and lower ends of the tube. In contrast with acquired stenosis, congenital stenosis shows an absence of pathological changes in the walls of the oesophagus, but there may be hypertrophy and dilatation above the obstruction. There are usually no concurrent congenital abnormalities. The onset of symptoms is usually in infancy, especially at the time of weaning, the most characteristic symptom being regurgitation of food a few minutes after deglutition without pain or nausea. Adult patients may be well developed, but some degree of infantilism is not uncommon in children and adolescents. Radiography and oesophagoscopy are invaluable in diagnosis. The prognosis in the membranous type is good, and complete recovery is usually possible. In the non-membranous variety the outlook is not unfavourable as regards life, but severe restrictions in food are generally necessary. The best treatment in the membranous type is gradual dilatation by bougies controlled by oesophagoscopy until the membrane has been destroyed. In the non-membranous type a radical operation may be necessary.

186. Traumatic Cerebro-spinal Meningitis.

A. LODE and F. SCHMUTTERMAYER (*Wien. klin. Woch.*, January 3rd, 1929, p. 5), who record a personal case, illustrate the rarity of traumatic meningococcal meningitis by the fact that Korbsch in 1923 could find only fourteen cases on record, in one of which pneumococcal was associated with the meningococcal infection. The trauma in the various cases consisted of a kick by a horse, a fall in the street, a blow on the forehead and nose, and a nasal operation. In a few cases the meningitis occurred within twenty-four hours of the injury, but usually there was an interval of some days or weeks. In the majority of cases recovery ensued after an illness of one to four weeks. The authors' case was that of an engineer, aged 29, who sustained a fracture of the base of the skull in a motor cycle accident. Six months later he was able to resume his work, but three months afterwards he developed meningitis and died after a week's illness. The necropsy revealed a meningeal exudate containing meningococci at the site of the non-consolidated fracture.

187. Sarcoma in Osteitis Deformans.

G. C. SEGALE (*Arch. Ital. di Chir.*, November, 1928, p. 482) reports two cases of sarcoma developing in patients suffering from osteitis deformans. Since this is a comparatively rare disease and the number of cases developing sarcoma is high, it is tempting to suggest that the peculiar type of inflammation characteristic of osteitis is a predisposing cause. It has been found experimentally that chronic irritation may induce sarcoma, though not so often as carcinoma. The author's first case was a man, aged 66, who had suffered from Paget's disease for five years, and then developed a sarcoma of the right scapula which killed him in six months. The second case was a man, aged 50, with Paget's disease of six years' duration who presented a sarcoma of the humerus, one of the bones affected with osteitis. Spontaneous fracture occurred and the arm was amputated. The local conditions were satisfactory, but six months later the man died from cerebral haemorrhage which was found to be due to a metastatic growth in the brain. In a subsequent note the author refers to a recent paper by Bird, who collected nine cases of osteitis deformans associated with sarcoma.

Therapeutics.

188. The Use of Scarlet Fever Antitoxins.

J. A. TOOMEY and E. G. DOLCH (*Amer. Journ. Dis. Child.*, December, 1928, p. 1173) record a series of 283 patients, moderately or severely ill, treated with scarlet fever antitoxin, and 60 untreated patients of the same type. They used several types of antitoxin, unconcentrated and concentrated. To 54 patients intravenous injections were given, and the remainder were treated intramuscularly. There was no convincing difference between the intramuscularly treated patients and the untreated ones as regards toxicity, duration of rash, or complications. In 14 patients there was pronounced improvement after the intravenous injection of antitoxin, but the remaining 40 did not show any marked betterment as compared with the control cases, and 3 of the 40 died after showing signs of anaphylaxis. The authors found that serum sickness, which occurred in 199 of the treated cases, was usually more severe than the disease itself. They believe that at the present time the evidence in favour of the use of scarlet fever antitoxins is neither clear-cut nor decisive; they have, however, obtained good results with Dick toxin in active immunization. It is suggested that the two organisms of the Dicks may belong to a group the active toxin of any one of which can immunize a person against the other strains in the same group. However, the antitoxin made from these strains might not protect or cure a patient who contracts scarlet fever from another strain of streptococcus.

189. Cardiac Tonic Effect of Embryonic Extract.

N. P. RASOUMOV and A. B. NICOLSKAJA (*Acta Med. Scand.*, December 28th, 1928, p. 436) claim to have had excellent results in the treatment of myocardial weakness by the subcutaneous injection of 0.5 to 1 c.cm. of aqueous extract of the tissues of immature embryo lamb. These results were obtained when camphor, strychnine, digalen, and strophanthus had failed. The authors describe the effects produced by the injections in five young adults—two women and three men. In all these cases the dilated heart became definitely smaller within fifteen minutes after the injection, and the effect persisted for twenty-four hours. Many other patients have received a course of injections without having to discontinue work for more than a few days. After treatment the patients were able to leave the out-patient department within half an hour or an hour. The authors state that it was observed that in several cases, after the failure of ordinary cardiac tonics, the embryonic extract, in addition to its immediate effect on myocardial tone, showed a remarkable secondary action, in that cardiac tonics were effective when administered subsequently although they had failed previously. The authors compared the effects of subcutaneous injections of adrenaline and pituitrin with those of embryonic extract, and report that the action of the former was more transient. It was found that after one to three injections of embryonic extract cardio-tonic and general tonic treatment could be given successfully. No serious complications followed the injections, but occasionally headache, vertigo, and malaise were observed. One patient had a slight rigor after an injection.

190. Vaccine and Bacteriophage Treatment of Typhoid Fever.

R. DORIA (*Il Policlinico*, Sez. Med., December 1st, 1928, p. 653), as the result of his study of 158 typhoid patients, 90 of whom did not undergo any vaccine treatment, came to the following conclusions. (1) In a small percentage of cases vaccine and bacteriophage treatment succeeds in per[illegible] the febrile period at the onset, the height [illegible] the terminal stage of subfebrile tem[illegible] are frequent in inoculated persons, [illegible] and sometimes recurrent; they are not invariably less severe than in the uninoculated. (3) In the majority of the inoculated the duration of stay in bed is about the same as in the non-inoculated, and the incidence of complications and mortality is almost identical. The average temperature, if the pyrexia due to inoculation is included, is not appreciably lowered. (4) Repeated injections of vaccine are not harmless, since they may sometimes give rise to necrosis of the skin, or loss of the intestinal endothelium. This event is dangerous if the patient is in a serious condition and is already suffering from complications. In a certain number of cases collapse may ensue. It does not therefore appear advisable to substitute vaccine therapy for bath treatment in enteric fever, nor to make vaccine therapy part of the routine treatment of the disease. Some advantage, however, may be derived from a prudent use of vaccines in enteric, the indications for their employment being as follows: (1) during the first week in the hope of cutting short the disease,

but without persisting with the treatment if success is not immediately obtained; and (2) in the prolonged subfebrile condition sometimes following typhoid, which is often the expression of a definite localization of *B. typhosus*.

191. Autohaemotherapy in Herpes Zoster.

C. SCUDERO (*Il Policlinico*, Sez. Prat., December 24th, 1928, p. 2556) during the last two years has treated a dozen cases of herpes zoster by injecting the patient's own blood, and reports three examples, in patients aged 22, 24, and 34 respectively. Intragluteal injections of 2 to 15 c.cm. are given every other day. The method is said to be easy to apply and quite harmless. It causes a rapid cessation of the neuralgic pain and disappearance of the vesicles, and prevents the occurrence of neuritis, which may last for months or even years after an attack of herpes zoster.

Ophthalmology.

192. Concomitant Strabismus and Heterophoria.

QUOTING Hartridge's definitions of heterophoria and strabismus, K. R. SMITH (*Brit. Journ. of Ophthalmol.*, November, 1928, p. 581) remarks that, both in squint and heterophoria, monocular instead of binocular vision is the visual defect, and deviation is associated with it. A new definition is needed, therefore, and Smith suggests the following, which covers both conditions: defect of vision in which binocular vision is absent and there is a deviation in the direction of the eyes, so that the visual axes are not directed to the same object. In heterophoria the conditions described are occasional: in squint they are sufficiently constant to be regarded as permanent, and the association of these two abnormalities is too constant to be omitted. By binocular vision is meant central vision with both eyes of the object looked at, straight lines from the object through the nodal points of each eye falling upon the macula of each eye. When there is deviation these lines do not impinge on the macula of each eye. In convergent squint, when the line from the object passes through the nodal point to the macula of one eye, the line from the object through the nodal point of the other eye does not fall on the macula but on the nasal side of it. In divergent squint the cornea is rotated outwards, the macula inwards, the line through the nodal point impinges on the temporal side of the macula in the divergent eye, and the object is displaced to the opposite side. Diplopia is the natural proof that binocular vision does not exist. The nature of the two clinical facts recorded in the definition is made clear as regards convergent squint by one more clinical fact—the period of its appearance, namely, childhood. The arrest of development of binocular vision in hypermetropic children is the cause of convergent concomitant squint. The three factors which concur in producing temporary artificial squint are previous binocular vision, one-eyed sight, and initial movement in the eye which does not see associated with a change of focus (accommodation) in the eye which does. The successful treatment of heterophoria is training the power to retain vision with both eyes at the same time, and the binometer is useful for this purpose. Deviation is the objective sign of absence of binocular vision, and in children is evidence of arrested development of this vision. The power to retain sight in both eyes at the same time can easily be restored and cultivated in children. Smith advocates the systematic use of the binoscope, which induces binocular vision without difficulty and is a successful curative procedure.

193. Tuberculin Therapy in Ocular Tuberculosis.

O. BERGHAUSEN (*Arch. of Ophthalmol.*, November, 1928, p. 583) believes that tuberculous infections of the eye are amenable to tuberculin therapy, and reports seventeen cases, in ten of which both general and ocular improvement quickly followed subcutaneous injections of tuberculin, and the patients were able to resume their occupations. In one case, which showed no improvement, the conclusion was reached that the condition was not tuberculous. In the eye, the lid or the conjunctiva may be the seat of a primary infection from without, though this is very rare. The condition is generally secondary to a focus elsewhere in the body; the infection gains entrance to the eye through the circulation, and is most frequently a metastatic process. Schick recognized three stages in the disease: a primary, in which a small nodule occurs in the iris with a slight area of resorption; a secondary, which shows diffuse iritis and irido-cyclitis with toxic symptoms; and a tertiary, with torpid iritis and later formation of glass-like nodules and precipitates. In ocular tuberculosis there may be found an acute process with hypersensitiveness and a tendency to destruction, or the disease may be of the proliferative type without acute manifestations and with a tendency to connective tissue formation. In the former variety the patients should be treated by rest and general measures without specific medication; in the latter, the patients are frequently benefited by specific treatment. General symptoms are usually not marked in ocular tuberculosis, and since the specific reactions simulate those of syphilis Wassermann tests should always be made. In the present cases tuberculin B.E. and T.R. and the new preparation tebeprotin were used. Berghausen holds that diagnostic tuberculin tests are of value in establishing the proper diagnosis, particularly when accompanied by mild, general, and local reactions. When the condition is associated with symptoms of tuberculosis in other organs, general measures should first be employed; in long-standing or recurring infections of the eye the possibility of an underlying tuberculous infection should be recognized, and general and special examinations be made.

194. Sarcoma of the Iris.

B. CHANCE (*Amer. Journ. of Ophthalmol.*, November, 1928, p. 859) reports a case of sarcoma of the iris which occurred in a man, aged 42. The tumour, a small yellowish-brown mass, was situated at the lower extremity of the meridian, and filled the angle of the chamber. The patient had noticed its presence for at least twenty-seven years, and could assign no cause for it. The eye had never been injured or inflamed, and no ocular pain or temporal or frontal headaches had ever been complained of. As a first step in treatment the mass was excised; four days later an after-cataract was successfully extracted. The tumour proving microscopically to be a mixed-cell sarcoma, the globe was successfully enucleated under local anaesthesia after a further eighteen days. A thorough search of several sections of the excised globe failed to reveal tumour cells in the uvea or nerve. This operation was performed six years ago and the result has been perfectly satisfactory. The orbital tissues are perfectly healthy and the patient maintains good health. C. A. YOUNG (*ibid.*, p. 864) also reports a case of primary melano-sarcoma of the iris. This condition occurs most frequently between the ages of 40 and 60, and is especially characterized by slow growth and the late appearance of inflammatory symptoms. It must be distinguished from syphilis, tuberculosis, granulation tumour surrounding a foreign body, cystic growth of the iris, and melanoma. The patient, aged 30, who was first seen in 1926, gave a history of eye injury nine years previously; two years later he had noticed the small growth in the region of the limbus. The eye was enucleated under ether anaesthesia, with satisfactory results. Up to the time of reporting there have been no signs of recurrence or metastasis. Young states that the presence of a growing tumour in the iris over a period of years does not exclude sarcoma. Enucleation is the safest procedure in iritic sarcoma, and self-cure by the development of phthisis bulbi is not to be expected.

Obstetrics and Gynaecology.

195. Treatment of Utero-vaginal Prolapse.

E. G. ANDERSON (*New Zealand Med. Journ.*, December, 1928, p. 388) believes that the pubo-cervical musculo-fascia, as described by Bonney, constitutes the major vaginal and uterine support; the levatores ani also play their part. He deprecates, therefore, sling operations from above in cases of genital prolapse, and suggests dealing rather with the pelvic floor defect. For prolapse of the first, second, and occasionally of the third degree, Fothergill's operation of anterior colporrhaphy and colpoperineorraphy is the one of choice, but for those cases of the third degree which show vaginal inversion with ulceration of the cervix he combines vaginal hysterectomy with anterior and posterior vaginal repair. Under spinal anaesthesia an area from behind the urethra in front to the posterior fornix behind, and to the sides of the cervix laterally, is mapped out by forceps. This area is denuded and the bladder is dissected from the cervix; the uterus is mobilized by dividing the cervical muscle from the cervico-pelvic ligaments, and an opening is made into the pouch of Douglas and finally into the utero-vesical pouch. The uterus is delivered through the last opening and the tubes, with the round and broad ligaments, are clamped and divided. The ends of these are tied and the ligatures are left long. The peritoneum is then approximated and the tubes, round ligaments, and cervico-pelvic ligaments are tied together below to form a central pivot. To this the vaginal mucous membrane posterior to the cervix is stitched, the opposing vaginal portion of cervico-pubic fascia is approximated to form a support for the bladder, and, lastly, the edges of the vaginal mucosa in front are brought together. When the vagina is inverted following supravaginal hysterectomy the herniated mass is denuded of mucous membrane and the cervix cored out. After fixing a small tube into the

cavity of the cored out cervix the herniated mass is infolded by invaginating sutures. The levatores ani may then be approximated and the vaginal canal obliterated (except for the tube) by bringing together the mucous membrane from behind forwards. The advantages claimed for this method of treatment are (1) a strong and permanent support; (2) absence of shock; and (3) absence of leucorrhœa.

196. Pregnancy and Tumours.

F. C. VAN TONGEREN (*Nederl. Tijdschr. v. Geneesk.*, October 27th, 1928, p. 5308) states that the tumours complicating pregnancy can be classified in three main groups—namely, (1) fibroids, (2) ovarian tumours, and (3) malignant disease of the uterus and surrounding organs. During the period 1915 to 1926 there were 17,439 confinements in the University Women's Clinic at Amsterdam; 32 cases (0.18 per cent.) were complicated by fibroids, 27 (0.15 per cent.) by ovarian tumours, of which one was a fibroma and the rest cysts, and 8 by malignant tumours. The author's treatment of uterine fibroids is much more conservative than it used to be. Whereas formerly it was the practice to remove the myomatous uterus as soon as pregnancy occurred, this operation is now only performed when there is an obstruction to delivery, or when severe abdominal symptoms arise. In the case of ovarian cysts, 13 were removed during pregnancy—7 during the first three months, 5 between the fourth and sixth months, and one in the last three months. The method of treatment of malignant tumours in pregnancy at the Amsterdam Women's Clinic is as follows. In operable cases up to the sixth month of pregnancy inclusive hysterectomy by Wertheim's method is performed, followed by x-ray treatment, and between the eighth and tenth months Cæsarean section, followed by removal of the uterus. In inoperable cases the same treatment is employed, except that supravaginal amputation is substituted for complete hysterectomy, and is followed by x-ray and radium treatment. During delivery rapid Cæsarean section is performed in order to prevent laceration of the carcinomatous tissue, which might give rise to severe haemorrhage and further dissemination of the growth. When delivery has already occurred spontaneously, hysterectomy should be rapidly performed if the carcinoma is still operable.

197. Etiology of Central Rupture of the Perineum.

A. MANDELSTAMM (*Zentralbl. f. Gynäk.*, December 22nd, 1928, p. 3272) remarks that very little is known about the actual cause of central perineal tears; certain conditions of the soft parts or of the pelvis are considered to share the responsibility, but it is regarded as strange that such different occurrences may have the same result. Three cases of central perineal rupture are discussed; all the patients were primiparæ. In one patient labour was protracted with weak pains; in the other two cases the pains were strong. In no instance was the perineum especially high or stiff, but all the patients had flat pelves with narrow inlets, broad outlets, only slight pelvic obliquity, and the vulva placed far forward. The author believes that this type of pelvis accounts for the central rupture. He agrees with Sachs that the head follows every turn of the pelvis. If the vaginal wall projects posteriorly the head is not directed forwards towards the vulva, but, pushing the vaginal wall before it, it presses against the perineum and thus may cause a central tear. Primiparæ, and especially very young women, are particularly liable to this injury, and the author believes that the insufficient tilting of a flat pelvis is an important factor in the causation. This is difficult to estimate, and he has devised an instrument for measuring it.

198. Sulfarsenol in Puerperal Fever.

SINCE January, 1924, M. RIVIÈRE (*Gaz. Hebd. Sci. Méd.*, January 6th, 1929, p. 2) recommends the use of arsenic salts in the treatment of puerperal fever. Encouraged by good results he has, since 1925, aimed at the prevention of puerperal fever by the same means. Arsenic has been given in all cases in which fever might be expected. Rivière's figures for four years are 3,667 accouchements with only three deaths, giving a mortality of 0.08 per cent.; of this number, 169 were definitely septic, though in varying degree. Among them were women who had had multiple interventions before admission to hospital, frequently without aseptic or even antiseptic precautions. The author has now arrived at a systematic method of treatment: at the first rise of temperature of genital origin, without waiting for absolute clinical confirmation, arsenic is administered; subcutaneous injections of sulfarsenol proved most satisfactory. For treatment 0.12 to 0.18 cg. in severe cases was given; this dose was repeated from one to nine times according to the resistance and the gravity of the infection. For prevention 0.06 to 0.12 cg. was found to be adequate. Out of 53 important operations, treated on such preventive lines, in 7 cases there had been infection, and there had been only one death.

Pathology.

199. "Erythroconten" and Pernicious Anaemia.

E. LAUDA and E. FLAUM (*Wien. klin. Woch.*, December 20th, 1928, p. 1737), discuss the red cell inclusions described by Schilling as "erythroconten," and regarded by him as the cause of pernicious anaemia (morbus Biermer). These inclusions are variously shaped rods 2 to 4 μ long, best stained by combined Giemsa and Nile blue sulphate when they appear as pale blue bodies with a tendency to an azure tint. They may occur in small numbers or may be as numerous as plasmodia in a strong malarial infection. The present authors have observed these bodies in great numbers in eight cases, and could not find them in three other cases; they regard them as being quite distinct from any of the accepted forms of blood parasite. Assuming that they might belong to the Bartonella group, the infected blood was inoculated intravenously into splenectomized animals (rats, guinea-pigs, rabbits, a dog, and a macacus), with entirely negative results after six weeks' observation. The fact that Schilling found these bodies in cases of secondary anaemia, lymphatic leukaemia, diabetes, and gastritis indicates that these inclusions are not specific. The authors have also observed them in cases of lead poisoning; they suggest that they are related to the basophil substance of the young erythrocyte, and are disposed to regard them as protoplasmic thickenings resulting from some mechanical influence.

200. Bact. pneumosintes in Influenza.

O. MOLTKE, S. A. LARSEN, and G. KROGH-LUND (*C. R. Soc. de Biologie*, December 7th, 1928, p. 1759), following the technique of Olitsky and Gates, endeavoured to cultivate *Bact. pneumosintes* from twelve cases of influenza in Copenhagen. In the first six cases, besides planting directly on to Smith-Noguchi medium and blood agar and incubating anaerobically, the filtered and unfiltered nasal washings were inoculated into rabbits. In these animals they never detected a rise in temperature, nor a constant mononuclear leucopenia; neither did they succeed in cultivating *Bact. pneumosintes* from the lungs. Although the lungs presented lesions similar to those described by Olitsky and Gates, the same alterations were found in a control rabbit which had been inoculated intratracheally with Ringer's solution. Direct cultivation of the nasal washings after filtration was likewise without result. The authors conclude that this organism cannot be regarded as the specific etiological agent of influenza.

201. Experimental Immunization against Enteric Fever and Dysentery.

E. FRÄNKEL (*Deut. med. Woch.*, November 9th, 1928, p. 1874) has investigated the possibility of immunizing rabbits which had been rendered typhoid carriers by infection of the gall-bladder; he administered immunoids which contained sodium benzoate and an emulsion of killed typhoid bacilli. It was found that while subcutaneous and peroral administration had no effect, intravenous injection protected five times as many animals from infection as those which had not been so immunized. In subcutaneous infection of a white mouse with *B. paratyphosus* B, the administration of immunoids appeared to cause an increased resistance, and a considerably larger percentage of animals survived than in the case of the controls. Similar results were obtained by infecting the animals with the Breslau variety of paratyphoid bacillus. Administration of immunoids prepared from culture of the Shiga bacillus was followed by a number of animals being protected from subsequent infection, whereas control animals died in two to five days.

202. Relation of Leptospira biflexa to Leptospira icterohaemorrhagiae.

M. SARDJITO and MARGARETE ZUELZER (*Centralbl. f. Bakt.*, January 11th, 1929, p. 180) have investigated the distribution of *Leptospira biflexa* in a number of different water supplies in Sumatra and Java. They find that along the east coast of Sumatra the water is definitely alkaline, and that *L. biflexa* is very abundant. In Java, on the other hand, owing to a different geological conformation, the water is acid and rarely contains this organism. Related to these observations is the fact that cases of Weil's disease are very common in Sumatra, occurring all the year round, whereas in Java they appear comparatively seldom. The authors do not draw any definite conclusions from this relationship, but they emphasize the connexion between the wide distribution of *L. biflexa* in the water supplies of Sumatra and the high incidence of Weil's disease on the one hand, and on the other the practical absence of *L. biflexa* from the water supplies of Java and the correspondingly low incidence of Weil's disease.

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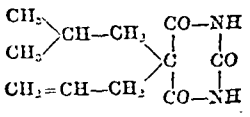

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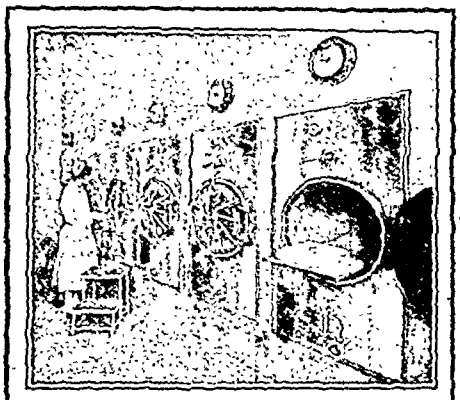

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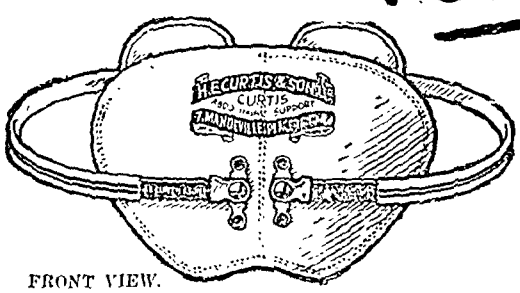

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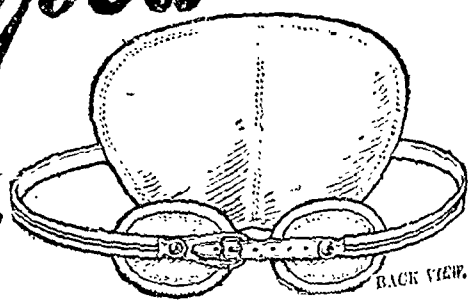

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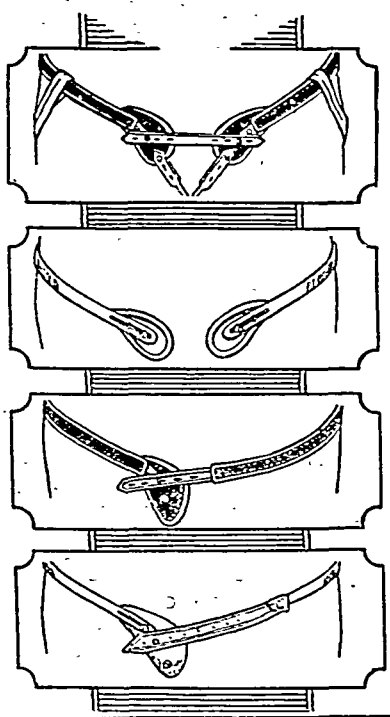

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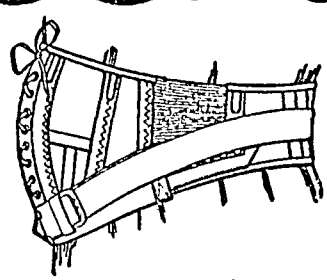

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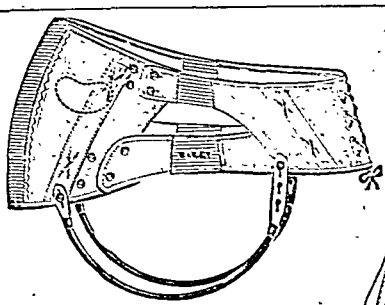

No. 5a BELT (Bailey's Patent) FOR FLOATING KIDNEY.

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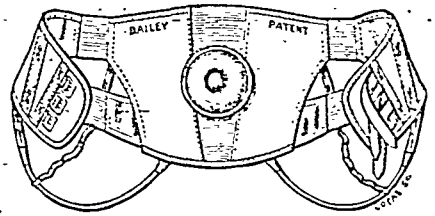


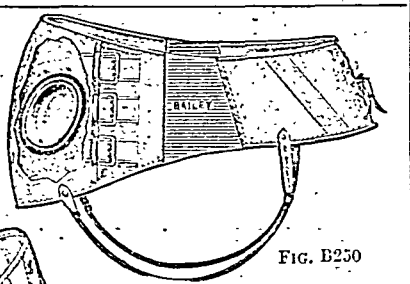
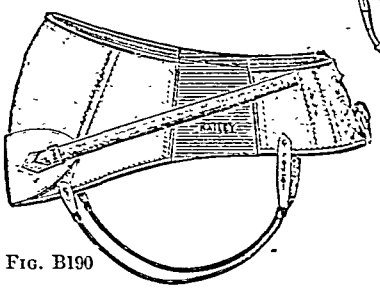


FIG. B250 (Showing Interior of Cup.) SPECIAL BELT FOR AFTER COLOSTOMY.



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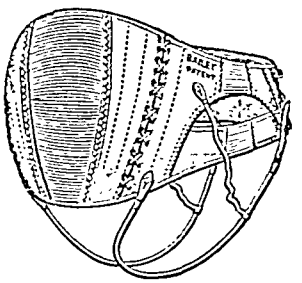

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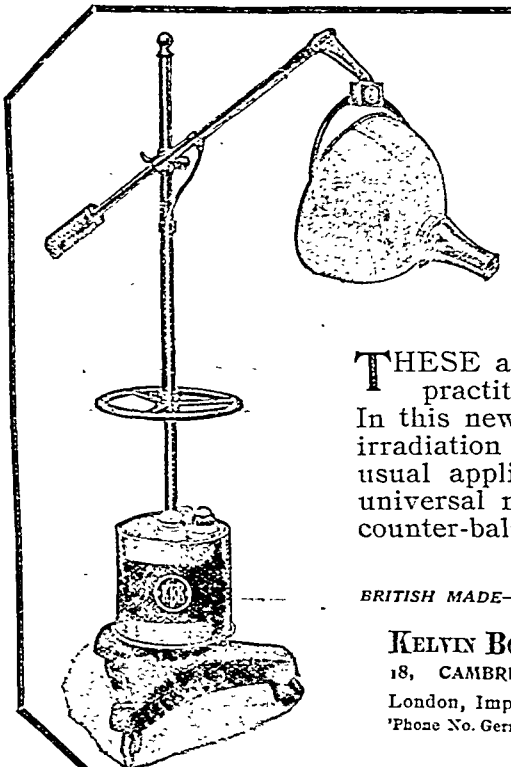

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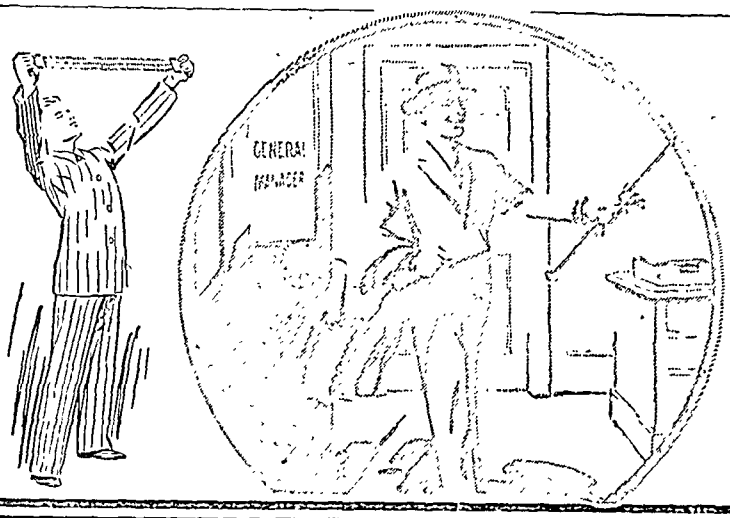

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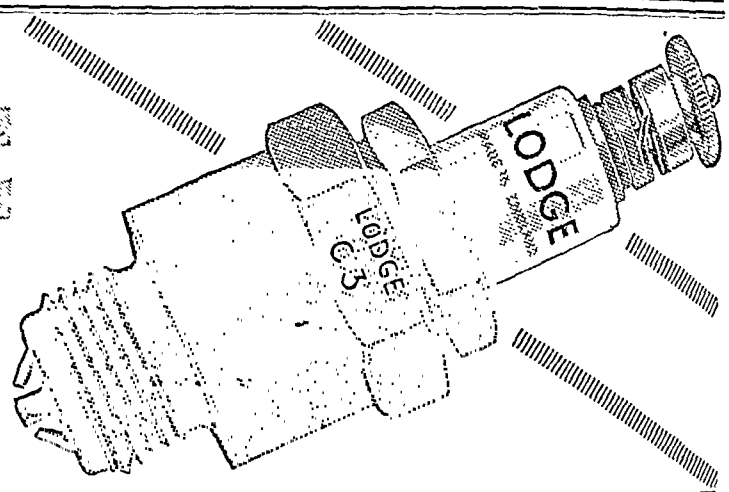

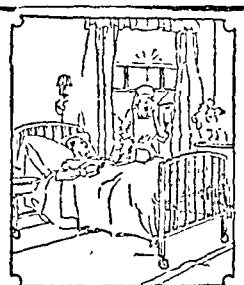

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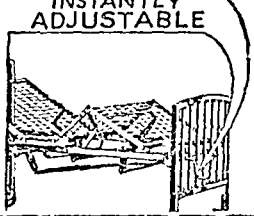

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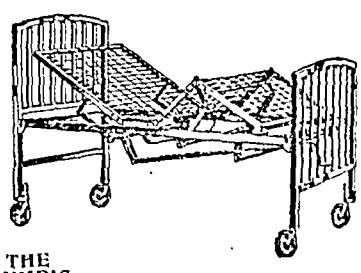

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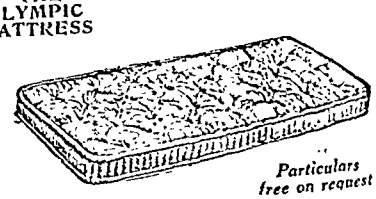

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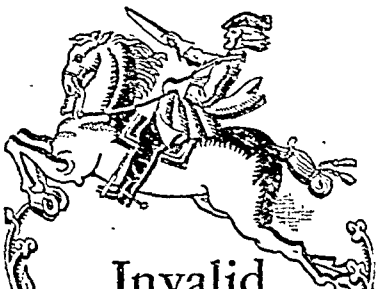

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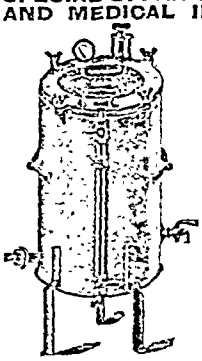

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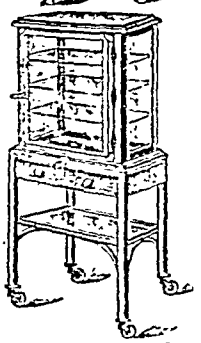

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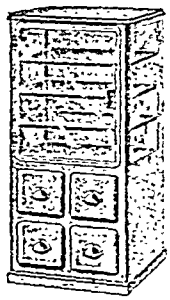

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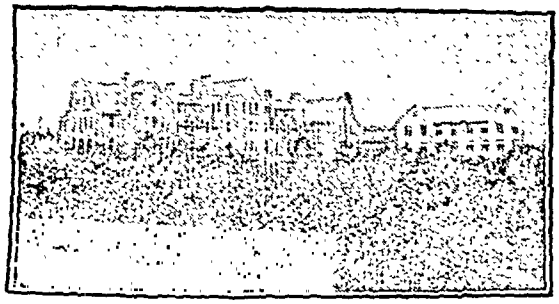

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Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims. Chemistry, Physics, and Biology Labs. MANCHESTER TUTORIAL COLLEGE, 327, Oxford Road, Manchester.

Royal Society.

GOVERNMENT GRANT FOR SCIENTIFIC INVESTIGATION.

Applications for the year 1929 must be received at the Offices of the Royal Society not later than March 31st next, and must be made on printed forms to be obtained from the Clerk to the Government Grant Committee, Royal Society, Burlington House, London, W.1.

University of London.

A Course of Three Lectures, with lantern illustrations, on "*The Properties of, and Methods of Estimating, some Therapeutic Agents,*" will be given by J. H. BURN, M.A., M.D. (Director of the Pharmacological Laboratories, Pharmaceutical Society of Great Britain), at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on WEDNESDAY, THURSDAY, and FRIDAY, FEBRUARY 27th, 28th, and MARCH 1st, at 5 p.m. At the First Lecture the Chair will be taken by Dr. H. H. DALE, C.B.E., F.R.S. (Head of the Biochemistry and Pharmacology Department under the Medical Research Council).

Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

University of London.

A Course of Three Lectures on "*The Eye in General Medicine*" will be given by Dr. A. MAITLAND RAMSAY, M.D., LL.D. (Consulting Ophthalmic Surgeon to the Glasgow Royal Infirmary), at *UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL* (University Street, Gower Street, W.C.1), on MONDAY, WEDNESDAY, and FRIDAY, *MARCH 4th, 6th,* and 8th, at 5.30 p.m. At the first Lecture the Chair will be taken by Sir JOHN PARSONS, C.B.E., F.R.S., Senior Ophthalmic Surgeon, University College Hospital. Lantern illustrations.

Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

University of London.

A Course of Three Lectures on "*The Chemistry of Muscle Contraction*" will be given by Mr. P. EGGLETON at *UNIVERSITY COLLEGE*, LONDON (Gower Street, W.C.1), on MONDAYS, FEBRUARY 25th, MARCH 4th and 11th, at 5 p.m.

Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

UNIVERSITY EXAMINATION POSTAL INSTITUTION

17, RED LION SQ., LONDON, W.C.1.

(FOUNDED IN 1882.)

Principal: Mr. E. S [illegible] M.A. (Cantab.)
POSTAL OR ORAL
MEDICAL

SOME SUCCESSES:

M.D.(Lond.), 1901-28 (9 Gold Medallists during 1913-28) **309**

M.S.(Lond.), 1901-28 (including 4 Gold Medallists) **20**

M.B.,B.S.(Lond.), *Final* 1906-28 (Completed Exam.) **237**

F.R.C.S.(Eng.), *Primary* (1906-28) **149**
Final **135**

M.R.C.P.(Lond.), 1914-28 **152**

D.P.H. (Various) 1906-28 (Completed Exam.) **280**

F.R.C.S.(Edin.), 1918-28 **39**

M.R.C.S., L.R.C.P. *Final* 1910-28 (Completed Exam.) **402**

M.D.(Dur.) (Practitioners) 1906-28 **36**

M.D. Various. *By Thesis Numerous successes*

Preparation for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and *final subjects for the* Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., *D.T.M. & H., D.L.O., L.M.S.S.A.*, etc. Numerous successes.

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M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.). Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

Medical Prospectus (48 pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all* [illegible] al Courses, and Oral [illegible] the higher Medical [illegible] for the higher Surtions for the Special [illegible] resher Course. Open[illegible] writing theses. [illegible] along with *List of* [illegible], etc., on application to the *Principal*, Mr. E. S. WEYMOUTH, M.A., 17, Red *Lion Sq.*, London, W.C.1. (Telephone: HOLBORN 6313.)

M.D. THESIS

(Camb., Edin., Glasg., Durh., &c.)

SKILLED COACHING, GUIDANCE, and ADVICE.

From Specialist Tutors, in conformity with the Regulations of the various Universities

Apply for particulars and free booklet, "Hints on Writing a Thesis for the M.D. Degree," to the SECRETARY, Medical *Correspondence* College, 19, Welbeck Street, London, W.1.

Royal College of Physicians.

Dr. J. GRAHAM FORBES will deliver the MILROY LECTURES on FEBRUARY *26th and* 28th, and MARCH 5th, at 5 p.m., at the COLLEGE, PALL MALL EAST, S.W.1.

Subject: "Past and *Present Diphtheria in England and Wales, with special reference to the London Metropolis.*"

Any Member of the Medical Profession admitted on presentation of card

By Order of the President,
H. M. BARLOW, Bedell & Secretary.

Gordon Hall School of Pharmacy

FOR WOMEN, DRAYTON HOUSE, W.C.1.

Students trained for [illegible] pensing Examinations be supplied without Principals. 'Phone: [illegible]

Rossall School. — Some twelve

Open SCHOLARSHIPS for boys between the ages of 12 and 14, on March 1st next, value from £90 a year downwards, will be awarded by Examination, beginning March 8th, 1929. *Boys examined at Rossall and in London.*—Apply, THE BURSAR, Rossall School, Fleetwood.

University College of South WALES AND MONMOUTHSHIRE.

COLEG PRIFATHROFAOL DEHEUDIR CYMRU A MYNWY.

The Council of the College invite applications for the appointment of Full-time LECTURER AND DEMONSTRATOR IN ANATOMY.

The appointment in the first instance will be for one year.

The salary will be £400.

Further particulars may be obtained from the undersigned, by whom three copies of application must be received on or before February 28th.

University College, Cardiff. D. J. A. BROWN, Registrar.

February 1st, 1929.

Liverpool County Borough.

LOCAL EDUCATION AUTHORITY.

JUNIOR ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited for a Junior Assistant School Medical Officer in the Department of the Medical Officer to the Local Education Authority, at a salary of £600 per annum.

Applicants must be registered medical practitioners with at least three years' experience. It is desirable that they should have had some special experience in school hygiene and in diseases of children.

The officer appointed will be required to devote his whole time to the service of the Education Authority, under the direction of the Medical Officer of Health, who is also the Medical Officer to the Education Authority. He will not be allowed to undertake private practice, and will be required to contribute to the Liverpool Corporation Superannuation Scheme as required by the Standing Orders of the City Council.

Applications, stating age, qualifications, etc., together with copies of not more than *three* recent testimonials, endorsed "Junior Assistant School Medical Officer," must be delivered at the office of the Town Clerk, Municipal Buildings, Liverpool, on or before March 5th

Canvassing of members of the Committee or the City Council is strictly prohibited and will be considered a disqualification.

Municipal Buildings, Liverpool. WALTER MOON, *Town Clerk and Clerk to the* Local Education Authority.

Feb. 20th, 1929.

County of London.

The London County Council invite applications for appointment as ASSISTANT MEDICAL OFFICER at the MAUDSLEY HOSPITAL, DENMARK HILL, S.E.5 (*for treatment of* Incipient Mental Disorder). *Candidates must be under 40 years of age, unless in London County Mental Hospital Service, and must be* registered to practise both in Medicine and Surgery in England. The position is pensionable, under *the Asylums* Officers Superannuation Act, 1909 Salary £300 a year, rising by annual *increments of £25 to £350 a year, plus fluctuating* temporary additions, the total commencing remuneration as from March 1st being about £423 a year. No emoluments. Charges made for board, lodging, etc. (at present £2 9s. weekly) if required to be resident. Full particulars and conditions of appointment on form of application (on which alone application can be *made*), *obtainable* from the Acting Chief Officer, Mental Hospitals Department, The County Hall, *Westminster Bridge*, S.E.1. Canvassing disqualifies. Applications must be received by *Tuesday, March 5th.*

MONTAGU H. COX,
Clerk of the London County Council

The Kensington, Fulham and CHELSEA GENERAL HOSPITAL.

Vacancy occurs on the Honorary Medical Staff for a PHYSICIAN for Diseases of the Skin. Applications are invited from qualified and registered medical gentlemen, engaged solely in the practice of Dermatology. Twenty copies of the applications, each accompanied by copies of three testimonials, should reach the *under*signed not later than March 8th. This Hospital, which is in process of rebuilding, will *shortly* have 112 beds. Present duties will consist of one attendance per week in the Out-patients' Department, which is being kept open during the rebuilding.

SUPERINTENDENT,
194, Finborough Road, S.W.10.

Somerset County Council.

TEMPORARY TUBERCULOSIS OFFICER.

An Assistant Tuberculosis Officer required by *the Somerset County* Council for two to three *months from early in March.* Salary £50 per *month, exclusive of travelling and* out-of-*pocket expenses.* Good clinical experience of *tuberculosis essential.*

Apply, Dr. SAVAGE, County Health Department, Weston-super-Mare.

Parish of Stepney.

The Guardians invite applications from duly qualified registered medical practitioners who are prepared to act as PART-TIME CONSULTANT SPECIALISTS in the following branches of Medicine *and* Surgery, at the Guardians' three hospitals—viz., MILE END HOSPITAL, Bancroft road, London, E.1, ST. PETER'S (WHITECHAPEL) HOSPITAL, Vallance Road, London, E.1, and ST. GEORGE-IN-THE-EAST HOSPITAL, Raine Street, Wapping, London, E.1:

CONSULTANT SURGEON (to attend once a fortnight at each hospital. Remuneration at the rate of £350 per annum).

CONSULTANT PHYSICIAN (to attend once a fortnight at each Hospital. Remuneration at the rate of £200 per annum)

CONSULTANT SURGEON for Ear, Nose, and Throat (to attend once per week at the Mile End Hospital. Remuneration at the rate of £150 per annum).

CONSULTANT OPHTHALMIC SURGEON (to attend two sessions per week at St. Peter's (Whitechapel) Hospital. Remuneration at the rate of £200 per annum).

The Guardians require that the Specialists appointed will attend at definite agreed times during each of the sessions above referred to, and will undertake also to attend at other times, *when specially called upon.*

All candidates must be at present Surgeons (or Assistant Surgeons) or Physicians (or Assistant Physicians) as the case may be, on the staff of a general Hospital in London. The appointments will be for a period of one year only, and the gentlemen appointed will be required to provide Deputies at their own expense in the case of inability to attend and during summer holidays.

Forms of application may be obtained at this *office, and must be returned to me by not later than March 9th.*

By Order,
Administrative Offices, Bancroft Rd., E.1. S. MCCLELLAND, Clerk to the Guardians.
February 14th, 1929.

County Council of Durham.

EDUCATION DEPARTMENT.

ASSISTANT OCULIST.

Applications are invited for the post of Assistant School Oculist to the Education Committee. Candidates must be skilled Refractionists, and must also have occupied the post of House Surgeon in an Eye Hospital or in the Eye Department of a General Hospital for a period of not less than six months. Commencing salary £600 per annum, rising by annual increments of £25 to a maximum of £650 per annum, with travelling expenses in accordance with the County Regulations

The person appointed will hold an established post under the Local Government and Other *Officers Superannuation Act, 1922*, and will be subject to the provisions of the Act. He will be required to devote his whole time to the duties of the office, and to reside at a place to be approved by the Education Committee. The appointment will be subject to three calendar months' notice on either side, expiring on the last day of any calendar month. Canvassing, directly or indirectly, is prohibited and will disqualify. Forms of application to be returned not later than Saturday, March 16th, can be obtained from the Director of Education, Shire Hall, Durham, *on* receipt of a stamped addressed envelope.

Shire Hall, Durham. A. J. DAWSON, Director of Education.
February 18th, 1929.

Metropolitan Asylums Board.

The Board invite applications for the appointment of SENIOR ASSISTANT MEDICAL OFFICER in their Mental Hospitals Service. Commencing salary £650, rising by £32 10s. per annum to £800 per annum. Candidates must be under 40 years of age, and must have had previous Mental Hospital experience.

Preference will be given to those holding the Diploma in Psychological Medicine.

Form of application may be obtained by sending stamped addressed foolscap envelope to the Clerk to the Board, Metropolitan Asylums Board, Victoria Embankment, E.C.4, to whom they should be returned not later than March 11th.

ALLAN POWELL,
Clerk to the Board.

Senior Resident Medical Officer

(lady, unmarried) wanted for the ISLINGTON DISPENSARY, 303, Upper St., N.1. Candidates must be Fellows or *Members of the* Royal College of Surgeons, and qualified to practise Medicine and Surgery. Salary £300 p.a., with apartments (*furnished*). *Applications*, before March 7th, on printed form to be obtained (by post-card) from the Hon. Secretary at the Dispensary. Duties begin at end of *March.*

EAST AFRICAN MEDICAL SERVICE

APPOINTMENTS

VACANCIES exist at present for MEDICAL OFFICERS and HEALTH OFFICERS in the EAST AFRICAN MEDICAL SERVICE.

Candidates should be British subjects of European parentage and not over 35 years of age. Preference will be given in the case of Medical Officers to candidates who have held House appointments as House Physicians and House Surgeons. In the case of Health Officers a Diploma in Public Health is essential. Candidates should apply, in writing, to the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, London, S.W.1, for the necessary forms of application.

SALARIES.

MEDICAL OFFICERS £600 per annum, rising by annual increments of £30 to £840 per annum, and thence, subject to an efficiency bar, by increments of £40 to £920 per annum.

HEALTH OFFICERS enter the scale at £660.

QUARTERS.

Free quarters are provided, or an allowance is given in lieu.

PASSAGES.

Free first-class passages are provided, both on first appointment and when proceeding on leave. A married officer will be granted an allowance towards the cost of his family's passage once each way in respect of each tour of service.

THE SUDAN GOVERNMENT.

A MEDICAL OFFICER is required for Public Health Duty for the Sudan Medical Service.

The candidate should be single, under 36 years of age, and he must have a D.P.H. degree.

Pay for the post commences at £E.852, rising by degrees to £E.1,200. On confirmation of the appointment, the accepted candidate will be eligible for Pension Service.

Applications (in writing only), with copies of recent testimonials, should be sent to Dr. HODSON, 24, Welbeck Street, W.1, from whom further particulars can be obtained.

Administrative County of Surrey

APPOINTMENT OF COUNTY MEDICAL OFFICER OF HEALTH.

The County Council of the Administrative County of Surrey invite applications from duly qualified medical practitioners holding a Diploma of Public Health for the office of County Medical Officer of Health.

The person appointed will be required to act as Head of the County Medical Services and to perform any additional duties relating to Public Health which may be imposed upon the Council by new legislation.

The remuneration will be a net personal salary of £1,600 per annum.

The appointment is designated an established post under the Local Government and Other Officers Superannuation Act, 1922, and will be held subject to the provisions of that Act, to the Orders for the time being of the Minister of Health, and to the Standing Orders of the Council.

Applications on the prescribed form (which, with a general statement of the conditions and duties of the office, may be obtained from me on receipt of a stamped and addressed envelope), accompanied by copies of not more than three recent testimonials, must be sent in a sealed envelope marked "C.M.O.H.," to reach me at the undermentioned address not later than Thursday, February 28th.

Canvassing by or in favour of a candidate will disqualify the applicant.

County Hall, Kingston-upon-Thames. February 1st, 1929. DUDLEY AUKLAND, Clerk of the Council.

Derbyshire Education Committee

ASSISTANT SCHOOL MEDICAL OFFICER (MALE).

The Derbyshire Education Committee require the services of an Assistant School Medical Officer (male) at a salary of £600, rising by annual increments of £25 to £700 per annum.

The candidate must be a registered Medical Practitioner of at least three years' standing. Experience in Refraction, Mental Deficiency, and Anæsthetic Work will be considered additional qualifications.

The officer appointed will not be allowed to engage in private or consulting practice, but will be required to devote his whole time to the duties of the office, and will act under the direction of the School Medical Officer.

Forms of application may be obtained from the undersigned, to whom they should be returned completed, together with copies of not more than three recent testimonials, on or before March 11th, endorsed "Assistant School Medical Officer."

The appointment will be determinable by three months' notice on either side.

New County Offices, St. Mary's Gate, Derby, February 16th, 1929. W. M. ASH, School Medical Officer.

West Derby Union.

RESIDENT ASSISTANT MEDICAL OFFICER (Male).

The Guardians invite applications for the above position at the MILL ROAD INFIRMARY, EVERTON, LIVERPOOL, at a salary after the rate of £200 per annum, together with rations, apartments, etc.

Candidates must be single, fully qualified, and registered.

Other things being equal, preference will be given to local candidates.

The appointment will be subject to the provisions of the Poor Law Officers Superannuation Act, 1896.

Appointment will be for a period of one year in the first instance, subject to one month's notice to terminate on either side at any time, and to extension for a further period of twelve months at the option of the Guardians.

Applications to be sent, stating age, qualifications, etc., with copies of three recent testimonials, to the undersigned not later than first post on Monday, March 4th.

Union Offices, Brougham Terrace, Liverpool. February 18th, 1929. G. O. HOLLOWAY, Clerk to the Guardians.

British Red Cross Society's

CLINIC FOR TREATMENT OF RHEUMATIC DISEASES.

A Clinic for the treatment of Rheumatic Diseases will be opened in Park Square, Regent's Park, N.W.1, in the Autumn of the present year.

The British Red Cross Society Committee of the above will shortly proceed to appoint SIX MEMBERS OF THE HONORARY VISITING MEDICAL STAFF, each of whom will be required, when the Clinic is in full working order, to attend twice a week. Application, in the first place by letter only, should be addressed, on or before March 1st, 1929, to the Secretary of the Clinic Committee, British Red Cross Society, 19, Berkeley Street, London, W.1.

Surrey County Council.

ASSISTANT MEDICAL OFFICER.

Applications are invited for the appointment of a Male Assistant Medical Officer. Candidates must possess a qualification in Public Health, and have had experience in the medical inspection of school children, maternity and child welfare, and the treatment of tuberculous and venereal diseases. The officer appointed will be required to undertake such other public health duties as may be allocated to him. He will be on the staff of the County Medical Officer of Health, must reside in the County, and devote his whole time to the work. Salary £600 per annum, rising by annual increments of £20 to £700 per annum. Travelling expenses in accordance with the Council's scale will be allowed.

The appointment will be subject to the approval of the Ministry of Health, to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to the Standing Orders of the Council, which provide, inter alia, that appointments may be determined at any time by three months' notice.

Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, should be made on the prescribed form and sent to the County Medical Officer of Health, 5, Grove Crescent, Kingston-upon-Thames, from whom copies of the application form may be obtained, and to whom any enquiries relating to the appointment should be addressed.

Last day for receipt of applications, Thursday, February 28th. Canvassing, directly or indirectly, will disqualify.

County Hall, Kingston-upon-Thames. Feb. 12th, 1929. DUDLEY AUKLAND, Clerk of the County Council.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.) (Workmen's Medical Scheme.)*	BURGH OF MOTHERWELL & WISHAW. *(Resident Medical Officer (female) for Maternity and Child Welfare Department.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	EAST RIDING COUNTY COUNCIL. *(Assistant Tuberculosis Officer.)*	

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec. Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies' Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
February 20th, 1929.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

The Queen's Hospital for CHILDREN, Hackney Rd., London, E.2.

RESIDENT MEDICAL OFFICER required on March 31st.

The appointment is made for six months, and may be extended for further periods of six months, but cannot be held for more than two years.

The Resident Medical Staff consists of the Resident Medical Officer as above, two Casualty Officers, two House Physicians, and one House Surgeon.

Salary (inclusive of panel fees) £200 per annum, with board, residence, and washing. Candidates must have held a responsible Resignized Hospital, and ossible for forms of be filled in and reon or before March 11th.

T. GLENTON-KERR,
Secretary.

January 31st, 1929.
Telephone: Clissold 6305 and 2534.

Royal National Orthopædic HOSPITAL.
COUNTRY BRANCH, STANMORE, MIDDLESEX.

Applications invited for the post of HOUSE SURGEON. Salary £150, with board, laundry, and quarters. Appointment is for six months from April 1st, renewable for a further period of six months on the recommendation of the Medical Board.

Applications, with copies of testimonials, should reach the Secretary, 234, Great Portland St., W.1, not later than Saturday, March 2nd.

Hertford County Hospital.

Applications are invited for the post of RESIDENT SURGICAL OFFICER. Salary £250 per annum, with board, residence, and laundry.

For preference candidates should hold the Fellowship of the Royal College of Surgeons.

The appointment is for six months in the first instance.

Applications, with copies of three recent testimonials, should be sent to the undersigned, and be received not later than Tuesday, Feb. 25th

PERCY G. BROOKS, Secretary.

Royal National Orthopædic HOSPITAL.

Applications invited for the post of HOUSE SURGEON. Salary £150, with board, laundry, and quarters. Appointment is for six months from April 1st, renewable for a further period of six months on the recommendation of the Medical Board.

Applications, with copies of testimonials, should reach the Secretary, 234, Great Portland St., W.1, not later than Saturday, March 2nd.

Bootham Park, York.
(A Registered Mental Hospital.)

Wanted, JUNIOR ASSISTANT MEDICAL OFFICER, male, single, not over 30. Candidates must be fully qualified and registered. Salary £300 per annum, with board, accommodation, attendance, and laundry.

Apply, with copies of testimonials, to the Medical Superintendent.

Royal Sussex County Hospital,
BRIGHTON (225 Beds.)

Required, a CASUALTY HOUSE SURGEON (male). Salary £120 per annum with board, residence, and laundry.

Candidates must hold medical and surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should be sent immediately to the undersigned.

L. L. W. LANCASTER-GAYE,
Secretary-Superintendent.

St. John Ophthalmic Hospital,
JERUSALEM, Belonging to the Order of St. John of Jerusalem.

The office of SUB-WARDEN will be vacant in June next. Candidates, who must be qualified Surgeons of the male sex, are invited to write for full particulars of the post to the Honorary Secretary, Ophthalmic Hospital, St. John's Gate, Clerkenwell, E.C.1.

Liverpool & Samaritan Hospital FOR WOMEN.

Wanted a HOUSE SURGEON, for period of six months from April 1st. Salary at the rate of £100 per annum. Applications, with testimonials, to be addressed to the undersigned by March 2nd.

51, Rodney St., Liverpool.

J. St. GEORGE WILSON,
Hon. Sec., Med. Board.

ASSISTANCIES.

Wanted. — Indoor Assistant, immediately, in Practice, North London, private and panel. Single, young, Welsh preferred. English or Scotch ... Salary £300 per annum. Write, particulars. Interview No. 917, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Outdoor Assistant, with view to Partnership, for general Practice in large and fashionable South Coast Town. Knowledge of *major surgery* essential.—No. 1001, B.M.A. House, Tavistock Sq., W.C.1.

Wanted — Outdoor Assistants (Male) for General Practices. Salary £400 p.a., with rooms, fuel, and light. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Assistant, male, single, for private, non-dispensing, and panel practice in Liverpool, with prospects. Salary £350, with rooms and attendance.—Address, No. 929, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, British, single, indoor. Free daily 1 to 6 p.m., and one evening. Suit man reading higher degree. Half-hour West End. £150, all found. —Write essential details, Dr. BRIGGS, Edgware, Mx., or 'phone Mill Hill 1652.

Wanted. — Assistant, Country and Colliery Practice. £350, outdoor. State age, nationality, and particulars.—Dr. WALLACE, Drefach, Llanelly.

Wanted.-Indoor Assistant, male, to take charge of Branch Surgery. Mixed Practice, *County Durham*. Experience in G.P. Energetic. Salary £240, with extras. —Address, No. 1019, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant for London Industrial Practice, male, young, single, Protestant. Salary £350 per annum, all found. —Address, No. 1006, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, male, ex- perienced, indoor, South England Country Practice. Bond.—Address, with photo, testimonials, and stamped envelope, to No. 1004, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Indoor ASSISTANTS AND LOCUM TENENS for General Practices. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Young Indoor ASSISTANT (male) for Branch Surgery, near London. Good salary and prospects to suitable man. Must be keen and energetic worker. — Address, No. 1020, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship or LOCUMS by Lady M.B., D.P.H. Five years' Graduate; ex H.P. Considerable experience in panel and private work. Free very shortly. Interview.—Address, *No. 1016, B.M.A. House, Tavistock Square, W.C.1.*

Assistant, male, indoor, wanted *immediately for General Practice in Yorkshire.* Some exp. G.P. and res. appts. pref. Motorist. English or Scotch. Salary £300 p.a. Photo (returnable) with all essential parties.—No. 1031, B.M.A. House, Tavistock Sq., W.C.1.

Assistant required at once in Southport, Lancashire, *indoor.—Apply*, giving full particulars to "T.," c/o Messrs. R. SUMNER & Co., Ltd., Wholesale Druggists, Liverpool.

Assistant (male), Scotch or English, wanted immediately. Experienced, energetic, able to cycle. Panel and Private Practice, one hour Charing Cross. Long engagement *for suitable man.—Address, No 1022, B.M.A. House, Tavistock Sq., W.C.1.*

Assistants and Locum Tenens.— *Doctors immediately available* for the foregoing, of good address, experience, and of British birth, are invited to call upon THE MEDICAL AGENCY, Watergate House, 15, York Buildings, Adelphi, W.C.2.

Assistantship wanted by experi- enced Woman Graduate; Hospital (surgical) 3½ years; G.P. 1½ years. Free March 15th. — Address, No. 1005, B.M.A. House, Tavistock Square, W.C.1.

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Chartered Masseuse, experienced in Hospital and private work, desires PART-TIME EMPLOYMENT in London. Capable of running ultra-violet light. Qualified medical electricity.—Address, No. 1007, B.M.A. House, Tavistock Square, W.C.1.

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Doctors requiring qualified Dispensers, Nurse-Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Gerrard 2699, THE DISPENSERS' BUREAU, 145, Shaftesbury Avenue, London, W.C.2

Doctor's Widow, middle-aged, seeks POST. Expert knowledge all household managem't, Companion-Housekeeper, Secretary, School Matron. Any position of trust or resp'sib'ty. Typewriting. Ex. personal credentials. —No. 1141, B.M.A. House, Tavistock Sq., W.C.1.

Ex Naval Medical Officer desires POST. Keen and energetic; excellent references; has held hospital appointments. In or near London preferred, but not essential.—Address, No. 1011, B.M.A. House, Tavistock Square, W.C.1.

Gentlewoman, experienced attending DOCTOR'S ACCOUNTS, desires to hear of one or two Doctors desiring such service.—Address, No. 1010, B.M.A. House, *Tavistock Square, W.C.1.*

India.—Fully qualified Physician and Surgeon required as MEDICAL OFFICER in ASSAM. — For particulars apply, stating full qualifications, etc., to Box "B.T.C.," c/o DAVIES & Co., 95, Bishopsgate, London, E.C.2.

Lady Dispenser - Book-keepers supplied *immediately on request; qualified*, and with practical experience in private practice, and public Dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, *Westbourne Park Road, W.2.*

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Lady, 28, registered nurse and fully trained pathologic laboratory assistant with secretarial experience, seeks POST with Doctor. Salary by arrangement.—Address, *No. 1018, B.M.A. House, Tavistock Square, W.C.1.*

Lady Secretary Receptionist required by *West End Physician*. Non-resident. Shorthand and typing essential. State age, experience, and salary required.—Address, No. 1008, B.M.A. House, Tavistock Square, W.C.1.

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Strong, energetic Medical Women, with Post-graduate experience in Midwifery, wanted for Country work in Western Canada under Provincial Government Department of Health.—Apply, in first instance, to Dr. E. M. JOHNSTONE, c/o Fellowship of the Maple Leaf, 13, Victoria Street, London, S.W.1.

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For Sale, approximately one-third share of better-class Industrial PRACTICE at Lancs town. Graduate, under 30, capable of refraction work preferred.—Address, No. 1012, B.M.A. House, Tavistock Square, W.C.1.

M.B., B.S. Conjoint, H.S., H.P., requires PARTNERSHIP with large panel. Preferably N.E. or Midlands. £2,000 p.a. All capital available.—Address, No. 1035, B.M.A. House Tavistock Square, W.C.1.

Partnership, with view to succession, wanted in Ophthalmic Practice, South of England. Advertiser well qualified. Capital available. — Address, No. 1002, B.M.A. House, Tavistock Square, W.C.1.

South of England. — Partner, æt. 36 or under, required by large Partnership to do general practice and surgery. Must be F.R.C.S.Eng., and have University degree. Full share worth £3,000 p.a.—Add., No. 707, B.M.A. House, Tavistock Sq., W.C.1.

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Wanted by M.B., F.R.C.S.Ed., aged 37, thoroughly experienced in general practice and major operative surgery, a good-class old-established PRACTICE or PARTNERSHIP in Southern half of England. Income desired not under £1,200. Capital available. Strict confidence. No agents.—Address, No. 1025, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—General Practice, London suburban, middle-class with good panel. Income £1,000 up. House to let [illegible] considered). Free now. Replies in strict confidence.—Address, No. 1021, B.M.A. House, Tavistock Square, W.C.1.

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Wanted.—Small nice-class PRACTICE, £500–£1,000, with panel. Preferably good town South Coast, *or suburb* of a large town, or London. *Small house and garage.*—Address, No. 1009, B.M.A. House, Tavistock Square, W.C.1.

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Medical Practice, West End, Glasgow.—Good connection, attractive proposition. Good house, very conveniently situated for all purposes. — Particulars from "D.M.," HUTCHISON & DOW, 82, West Regent Street, Glasgow.

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Manchester.—Practice for Sale. Good house, garden, garage, £60. Middle and good working-class patients. Receipts over £1,600. Panel 560, much scope. Transferable appointments £725. Price 1½ years' purchase. —MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Manchester. — Good Nucleus. Cash receipts—April, 1928—about £450. Panel 760. Good house, 5 bedrooms. Rent £46 p.a. Premium, best cash offer.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Medical Practice for Sale.—Good- class Practice for sale in industrial town near Glasgow. Panel 750. Net income from panel and general £750 to £800. Appointments. House and consulting room in main thoroughfare. Suitable for Lady Doctor. —No 1005. B.M.A. House, Tavistock Sq., W.C.1.

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Practice on Sale in S.W. Lancashire; well established. Would suit man and wife, or two ladies. Income £1,525; panel 1,495. Owner retiring. Payment by instalments.—Address, No. 1013, B.M.A. House, Tavistock Square, W.C.1.

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For Sale, by private treaty, with VACANT POSSESSION on March 31st next, the desirable modern freehold dwelling house [illegible] Kirkby Stephen, [illegible] the occupation, containing, on ground floor, [illegible] wing-room, [illegible] pantry, and, [illegible] room, surgery, with a separate entrance, [illegible] and study. On the first floor, 5 bedrooms (of which two have dressing-rooms adjoining, with fixed wardrobes and washbasins), bathroom, w.c., and housemaid's pantry. The garden includes a tennis court. The dwelling house was erected on a plot of land containing 4,816 square yards in 1916 by the late Dr. G. S. SOWDEN for his own use, and there being now a good opening for a Doctor at Kirkby Stephen the sale offers a rare opportunity to members of the Medical profession. The property may be viewed at any time, and further particulars may be obtained from the undersigned, to whom offers in writing must be sent.

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Applications are invited from qualified and registered medical men for the post of CASUALTY HOUSE SURGEON. Salary £125 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and earliest date upon which duties can be commenced, *accompanied by copies* (which will not be returned) of three testimonials, to reach the undersigned not later than the first post Monday, March 11th.

GEORGE H. DAMS,
February 19th, 1929. Secretary.

Manchester Ear Hospital,
GROSVENOR SQUARE, ALL SAINTS.

Non-resident HOUSE SURGEON required. Salary at the rate of £150 per annum, with partial board. Appointment for six months. Applications, with copies of four recent testimonials, to be forwarded not later than March 16th to Mr. REGINALD S. MILFORD (Hon. Sec., Manchester Ear Hospital), c/o Mr. W. J. ELLAM, 33, Brazennose Street, Manchester.

Manchester Ear Hospital,
GROSVENOR SQUARE, ALL SAINTS.

The Board invite applications for the post of HOUSE SURGEON. 24 beds. Salary £120 per annum. Candidates must be duly qualified and registered. Applications, with copies of four recent testimonials, to be forwarded to Mr. REGINALD S. MILFORD (Hon. Secretary, Manchester Ear Hospital), c/o Mr. W. J. ELLAM, 33, Brazennose Street, Manchester, not later than March 16th.

James Murray's Royal Asylum,
PERTH

ASSISTANT PHYSICIAN wanted. Previous Hospital appointment, and interest in side-room work and elementary bacteriology, essential. Starting salary £300 or £350 (with board, etc.), according to experience, plus £50 for D.P.M. Apply, stating age and experience, with copies of testimonials, to Physician-Supt.

The Throat, Nose, and Ear
HOSPITAL, Golden Square, W.1.

HOUSE SURGEON (*male*) *required for* April 1st. Salary £100 per annum, with board and lodging. Applications, stating age, qualifications, and experience, together with copies of three testimonials, *should reach the* undersigned on or before March 4th.

F. P. CARROLL, Secretary-Supt

Rotherham Hospital.

Wanted, HOUSE PHYSICIAN (male), qualified. Salary £180 p.a., with board, lodgings, and laundry. To have charge of Out-patients, administer anæsthetics, and assist Honorary Physician.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

Nottinghamshire.
APPOINTMENT OF COUNTY MEDICAL OFFICER.

Applications are invited for the appointment of MEDICAL OFFICER OF HEALTH for Nottinghamshire from duly qualified persons, and preference will be given to those applicants who have already had experience of the work of a Medical Officer of Health.

The salary will be £1,200, rising by four annual increments of £50 to £1,400 per annum, and offices, staff, stationery, and travelling expenses will also be provided.

A print of the conditions and duties appertaining to the appointment can be obtained on *application to me.*

Applications, giving particulars of experience, qualifications, and medical degrees, must be forwarded to me, together with copies of not more than three recent testimonials, marked "County Medical Officer of Health," not later than Monday, March 4th.

County House, Nottingham. K. TWEEDALE MEABY, Clerk of the County Council.
February, 1929.

Torbay Hospital, Torquay.
(142 Beds.)

HOUSE SURGEON wanted for about March 14th. Salary £175 per annum, with board, residence, and laundry. Candidates must be fully qualified, registered, and unmarried.

Applications, stating age, nationality, qualifications, and experience, must be received by the undersigned on or before Tuesday, March 5th, with copies of not more than three recent testimonials.

E. L. GRIST, Secretary.
February 11th, 1929.

St. Mary's Hospital for Women
AND CHILDREN, Plaistow, E.13.

Applications are invited for the post of CLINICAL ASSISTANT in the Medical Out-patient Department, with access to the Wards. The appointment is for six months. Attendance Monday afternoons at 2 o'clock. Tea provided. Applications, with copies of three recent testimonials, to be sent to the undersigned as soon as possible.

A. ERNEST WILKES, Secretary.

Swansea Hospital.
(316 Beds.)

HOUSE SURGEON wanted immediately, also HOUSE PHYSICIAN for April 1st. Gentlemen, single. Salary of each post £150, with board, residence, and laundry.

Appointments for 12 months.

Applications, stating age, nationality, and experience, with copies of three recent testimonials, to be delivered to the undersigned on or before February 27th.

O. C. HOWELLS, Secretary.

The Kidderminster and District
GENERAL HOSPITAL.

Two HONORARY ASSISTANT SURGEONS.
One HONORARY ASSISTANT PHYSICIAN.

Applications for these appointments should be sent by Saturday, March 2nd, to the undersigned, from whom particulars may be obtained.

South Cliff, Kidderminster. SUSAN SMITH, Assistant Secretary.

The Metropolitan Ear, Nose, and
THROAT HOSPITAL (1838)
(Incorporated), Fitzroy Square, W.1.

HOUSE SURGEON (non-resident). Salary £150 per annum.

Applications are invited for the above appointment, and should be forwarded, with not more than three recent testimonials, to the undersigned, from whom further particulars may be obtained.

L. L. PHILLIPS, Secretary.

Victoria Central Hospital,
WALLASEY.

... invited for the position of ... EON (male). Salary at ... annum, *with board and* ... chosen would be appointed for six months. Duties include Out-patients and some Home Visiting.

Applications, with copies of *recent* testimonials, to be sent to the Secretary not later than March 1st.

The Royal Infirmary,
SUNDERLAND (283 Beds).

Wanted, end of March, HOUSE PHYSICIAN (*male*). Salary £140 per annum, with board, residence, and laundry. State age and qualifications and submit copies of three testimonials by not later than March 1st to

S. C. FRYERS,
House Governor and Secretary.

Queen's Hospital, Birmingham.
(*A General Hospital and a Medical School*)

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Three HOUSE SURGEONS. £70 p.a.
One CASUALTY HOUSE SURGEON. £70 p.a.

All the above appointments are for six months from April 1st, with the exception of the Casualty House Surgeon, which is for three *months.*

Full particulars and official form of application can be obtained from the undersigned, which on completion must be submitted not later than Saturday, March 16th

G. HURFORD,
February 15th, 1929. House Governor.

Senior House Surgeon and Junior
HOUSE SURGEON (males) required for AYR COUNTY HOSPITAL, the former for six months and the latter for twelve months, both commencing on April 1st next. Salaries at the rate of £100 per annum for Senior House Surgeon and £80 per annum (with prospect of increasing after six months to £100) for Junior House Surgeon, both with board and residence. Applications, with two copies of testimonials, to be lodged with the Secretary, 2, Barns Street, Ayr, not later than Saturday, March 2nd.

Kirkcaldy Fever Hospital and
SANATORIUM.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male, unmarried).

Salary £250 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, together with copies of *three recent* testimonials, to be sent on or before *March 1st* to the Medical Officer of Health, Public Health Department, Kirkcaldy.

Harrogate Infirmary.

Applications are invited from British subjects (male) for the posts of SENIOR and JUNIOR HOUSE SURGEONS, vacant on March 31st, on which date successful applicants will be required to take up appointment. Salary is at the rate of £150 and £100 p.a. respectively, with board, lodging, and laundry. *Applications, to be* made on official form to be had from the undersigned, should be sent in not later than March 13th.

GEO. BALLANTYNE, Secretary.

Liverpool Stanley Hospital.

Wanted, One Male HOUSE PHYSICIAN and Two Male HOUSE SURGEONS for April 1st. Salary at the rate of £100 per annum, with board, laundry, etc. Engagement for a period of six months.

Candidates must be on the *Medical Register*, and applications, with copies of three recent testimonials, should be lodged with the undersigned on or before March 4th.

E. W. OSBORN, Secretary.

North Lonsdale Hospital,
BARROW-IN-FURNESS

Applications for a HOUSE SURGEON are invited from fully qualified male practitioners experienced in the administration of anæsthetics. Salary £130 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, and accompanied by copies of three recent testimonials, to be sent to the Secretary so as to reach him not later than March 4th

Westminster Hospital
(Opposite Westminster Abbey)

... invited for the office of ... to this Hospital ... opies), with four copies ... monials, should be sent ... in to the undersigned not later than 10 a.m. on Monday March 4th.

By Order of the House Committee,
CHARLES M. POWER, Secretary.

Royal Hospital, Richmond,
SURREY.

CLINICAL ASSISTANT (male or female) in the Refraction Department required for two sessions per week (Wednesday and Saturday afternoons). The appointment will be for six months in the first instance. Honorarium at the rate of £50 per annum.

Applications, stating experience, and copies of testimonials, to be sent to the undersigned not later than February 27th.

RICHARD ALLEN, Secretary.

[AMENDED ADVERTISEMENT]

Rochford Hospital.

MALE ASSISTANT RESIDENT MEDICAL OFFICER.

Applications are invited for the appointment of Male Assistant Resident Medical Officer at the Hospital, Rochford, near Southend-on-Sea.

The appointment will, in the first instance, be for twelve months, with salary at the rate of £300 per annum. If the officer is re-appointed after twelve months' service the salary will be increased to £350 per annum. In addition, arrangements will be made for the officer to be provided with apartments, laundry, and maintenance outside of the Hospital to the limit of £200 per annum. The salary and value of emoluments are subject to deductions under the Poor Law Officers Superannuation Act, 1896.

Applicants must be fully qualified, and must have had at least two years' resident Hospital experience. He will be required to take charge of the Hospital during the absence of the Resident Medical Officer.

The Rochford Hospital at the present time contains 380 beds, and this number will be increased in a short time. The Hospital is recognised as a complete Training School for Nurses. The Resident Medical Staff will number three. A wide experience of Medical and Surgical work is to be obtained. It is desired that candidates shall have had practical experience of Surgery and Anæsthetics. It may be stated that there are many opportunities in the neighbourhood for golf and other sports.

Application forms, which must be properly filled in, and returned to me not later than March 1st, together with further particulars of the appointment, can be obtained from the undersigned on receipt of a stamped addressed foolscap envelope.

By Order,
W. HARDING ROBERTS,
27, Victoria Avenue, *Clerk.*
Southend-on-Sea.

Bristol General Hospital.

The Committee invite applications for the following appointments, which become vacant on April 1st next:

Two HOUSE PHYSICIANS, Two HOUSE SURGEONS, RESIDENT OBSTETRIC OFFICER, HOUSE SURGEON to the Special Departments, and a CASUALTY HOUSE SURGEON.

The appointments will be *for five months at* salaries at the rate of £80 per annum, with board, residence, etc., provided in the Hospital.

Candidates must be registered under the Medical Acts, and produce testimonials of good personal character and ability, and must have recent experience in the administration of anæsthetics.

Forms of application, etc., to be obtained from the Secretary, must be returned completed, with copies of testimonials, addressed to the undersigned, on or before Monday, March 11*th* next, from whom further particulars may be obtained.

THOMAS W. GREGG, Secretary.

West London Hospital,

Hammersmith Road, W.6. (225 Beds.)

Applications are invited for the post of HONORARY ASSISTANT ANÆSTHETIST. Candidates are required to be registered under the Medical Act, to send applications, with copies of testimonials, so as to reach me not later than Thursday, March 21st; to attend the Medical Council Meeting at 4.30 p.m. on Friday, March 22nd, and prior to that date to call upon and send copies of their applications and testimonials to each member thereof; to abstain from canvassing, but nevertheless to send copies of their applications and testimonials to the Members of the Board of Management, who will elect on Tuesday, March 26th, at 5 p.m., when candidates must be in attendance.

H. A. MADGE, Secretary.

Ancoats Hospital, Manchester.

RESIDENT SURGICAL OFFICER.

Notice is hereby given that this post becomes vacant on June 1st next, and the vacancy will be advertised early in May, when applications will be invited from qualified gentlemen, preference being given to those holding an F.R.C.S. degree.

Ancoats Hospital, Manchester.

HOUSE SURGEON.

Applications are invited for the post of House Surgeon, which becomes vacant on March 31st. Appointment for six months. Salary £100 per annum, with board, apartments, washing. Apply, not later than March 4th, stating age, qualifications, experience (if any), to the General Supt. and Secretary.

St. James' Hospital, Leeds.

Applications are invited for the filling of a vacancy in the staff of HOUSE PHYSICIANS and SURGEONS at the above Hospital. Applicants must be fully qualified and registered. The Hospital is one of 1,126 beds, with special departments for Radiology, Pathology, Midwifery, and Diseases of Children. There are, in addition, 320 beds in separate Mental Wards. The staff consists of a Medical Superintendent, a resident Medical Staff of six, a Pathologist, a Radiologist, and Visiting Physicians and Surgeons.

The successful applicant will be required to act as House Physician and Surgeon under the Medical Superintendent and the Visiting Staff, and to perform such other duties as the Medical Superintendent may direct. The term of appointment is limited to two years.

Salary £200 per annum, with board, apartments, and attendance, subject to deductions under the Poor Law Officers Superannuation Act, 1896.

Applications, stating qualifications, and giving particulars of present and prior occupations, together with copies of three recent testimonials, must be received by me not later than 10 a.m. on Saturday, March 9th, endorsed "House Physician and Surgeon."

Selected candidates will receive due notice to attend.

Poor Law Offices, JAMES H. FORD,
South Parade, Clerk to the Guardians,
Leeds. Township of Leeds.
February 18th, 1929.

Royal Berkshire Hospital.

The Board of Management invite applications for the appointment of HONORARY MEDICAL OFFICER in charge of the Electro-Therapeutic Department. Candidates must be Fellows or Members of the Royal College of Physicians, London, or Medical Graduates of one of the Universities of the British Empire, and must be registered.

The elected candidate will be appointed for the period ending on the third Tuesday in January, 1930, and will be eligible for re-election. Canvassing by or on behalf of a candidate will disqualify him.

Candidates are required to provide eighty copies of their application and testimonials, which must be addressed to the Secretary, and reach him not later than March 7th. No testimonials will be required from candidates who are members of the existing Medical Staff. The election will be held on March 19th.

Reading, HERMAN BURNEY,
February 23rd, 1929. *Secretary.*

St. Peter's Hospital for Stone, *ETC.*,

Henrietta Street, Covent Garden, W.C.2.

Applications for appointment as HOUSE SURGEON are invited from male candidates with previous experience in a similar office at a General Hospital. The salary offered is at the rate of £75 per annum, with board, lodging, and laundry.

At the expiration of his term of office, which is for six months from April 1st, the House Surgeon, subject to the recommendation of the Medical Staff, is appointed Resident Surgical Officer for a similar period of six months.

Applications, accompanied by copies of testimonials, will be received by the undersigned not later than first post on Wednesday, March 6th.

BEECHEY ROGERS, Secretary.

Dorset Mental Hospital,

DORCHESTER.

SENIOR ASSISTANT MEDICAL OFFICER.

Applications are invited from candidates duly qualified, registered, and unmarried. Commencing salary £400, rising by two yearly increments of £25 to £450, with board, apartments, laundry, and attendance.

Excellent laboratory facilities exist with skilled assistance for research and clinical medicine. (900 Beds.) The appointment is subject to the provisions of the Asylum Officers Superannuation Act, 1909.

Applications, stating age and qualifications, with copies of recent testimonials, should be sent to the Medical Superintendent at once.

February 11th, 1929.

Birkenhead & Wirral Children's HOSPITAL,

WOODCHURCH ROAD, BIRKENHEAD.

HON. PHYSICIAN, ASSISTANT HON. PHYSICIAN, HON. ANÆSTHETIST.

The Board invite applications to fill three vacancies on the Medical Board. Applications, together with copies of testimonials, to be sent to the Secretary, at the Hospital, not later than March 1st.

Bristol Royal Infirmary.

Applications are invited for the following resident appointments for the five months commencing April 1st:

One HOUSE PHYSICIAN to the Cancer Research Dept.;
Two HOUSE PHYSICIANS;
Four HOUSE SURGEONS;
One HOUSE SURGEON to the Ear, Nose, and Throat Dept.;
One HOUSE SURGEON to the Gynæcological and Ophthalmic Depts.;
One OBSTETRIC HOUSE PHYSICIAN;
One CASUALTY HOUSE SURGEON;
One ASSISTANT HOUSE SURGEON and HOUSE SURGEON to the Dermatological Dept.

Salary in each case at the rate of £80 per annum, with board, apartments, and laundry, unless the candidate appointed has previously held a resident appointment in the Infirmary, when the salary will be at the rate of £100 per annum, with board, apartments, and laundry.

One DENTAL HOUSE SURGEON. If resident, salary at the rate of £80 per annum, but if non-resident, salary at the rate of £116 per annum, with board.

Candidates, who must be duly qualified, to send in their applications, stating age, together with copies of not more than three testimonials, to the undersigned on or before Thursday, February 28th.

ELLIS C. SMITH, F.C.I.S.,
Secretary & House Governor.

Royal Manchester Children's . . . .

Wanted, for the Out-patients' Department, TWO ASSISTANT MEDICAL OFFICERS, non-resident, salary £150 per annum, who will be *appointed for six months.*

Candidates must be doubly qualified and on the Medical Register. Particulars of the duties can be obtained from the Secretary. The hours of duty are *from 9 a.m. till 1 p.m., or until* the work of the Dispensary is finished. Patients' attendance number 94,000 per annum. Duties to commence April 1st.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than March 6th.

Canvassing, directly or indirectly, may disqualify.

By Order,
W. M. HUMPHRY, Secretary.

Royal Manchester Children's HOSPITAL, PENDLEBURY.

Near MANCHESTER. (190 Beds.)

Wanted, a RESIDENT MEDICAL OFFICER and a RESIDENT SURGICAL OFFICER, salary £125 per annum, who will be appointed for six months.

Candidates must be unmarried, doubly qualified, and duly registered. Previous hospital experience essential.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than March 6th. Duties to commence April 1st.

Canvassing, directly or indirectly, may disqualify.

By Order,
W. M. HUMPHRY, Secretary.

The Gloucestershire Royal INFIRMARY AND EYE INSTITUTION,

GLOUCESTER. (145 Beds.)

Applications are invited for the post of SECOND HOUSE SURGEON (male). Salary £100 per annum, with board, residence, and laundry. (Four Resident Medical Officers.)

The appointment is for six months, *which* may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be received by the undersigned not later than Wednesday, February 27th. The elected candidate will be required to enter upon his duties on Monday, March 11th.

F. J. SYMONS,
February 9th, 1929 *Secretary.*

[AMENDED NOTICE.]

East Ham Memorial Hospital,

Shrewsbury Road, E.7.

Applications are invited for the post of HONORARY ASSISTANT PHYSICIAN to this New Hospital containing 100 beds.

Applicants must be a Doctor of Medicine of a University of Great Britain or Ireland, or a Member of the Royal College of Physicians, and must not be engaged in general practice.

Applications, together with copies of three recent testimonials, must be sent to the Secretary (from whom all particulars can be obtained) not later than February 28th.

Radcliffe Infirmary and County
HOSPITAL, OXFORD.

RESIDENT MEDICAL POSTS.

Applications are invited for the following posts which will become vacant on April 1st:
HOUSE SURGEON.
HOUSE PHYSICIAN.
CASUALTY HOUSE SURGEON (who will have charge of beds).
OBSTETRIC HOUSE PHYSICIAN.
Appointments for six months, with salaries at the rate of £120 p.a., with board, etc.
Candidates must be male and qualified.
Applications, with four copies of three testimonials, to be sent to the undersigned on or *before March 9th*
A. G. E. SANCTUARY, Administrator.

London Temperance Hospital,
Hampstead Road, N.W.1.

Applications are invited for the post of HONORARY ANÆSTHETIST
Candidates, who are expected to call upon the Honorary Medical Staff, must be prepared to attend at least twice weekly (Monday afternoons and Friday mid-day) and when required in cases of emergency.
Ceteris paribus, preference will be given to total abstainers.
Applications, accompanied by not more than three testimonials, must be received by first post on Thursday, March 7th, addressed to the undersigned.
A. C. ADAMS, Secretary.

Northampton General Hospital.

There will be vacancies on April 1st next for Two HOUSE SURGEONS and One ASSISTANT HOUSE SURGEON. British nationality. Salary £150 each per annum, with board, residence, and laundry.
The successful candidates will be appointed for a period of six months and will be eligible for re-election for a further period.
Candidates must be duly qualified and registered.
Applications, stating age, sex, qualifications, etc., with copies of testimonials, to reach the undersigned not later than March 6th.
H. St. JOHN WOOD,
February 18th, 1929. Secretary-Supt.

Whitehaven and West
CUMBERLAND HOSPITAL,
WHITEHAVEN. (90 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male). Salary £100 per annum, including board, residence, and laundry. Twelve months' appointment. After six months as Junior an opportunity is given of becoming Senior for the second six months at a salary of £150.
Applications, stating age, nationality, etc., together with copies of three testimonials, to be sent to the Secretary, endorsed "House Surgeon," not later than March 5th.
R. HIGGINS, Secretary.

Leicester Royal Infirmary.
(400 Beds.)

Vacancies for RESIDENT MEDICAL OFFICERS are expected to arise on April 1st for a HOUSE SURGEON, RESIDENT CASUALTY OFFICER, and HOUSE PHYSICIAN. Salaries at the rate of £125 per annum. Applicants should have held a Resident Hospital post, or had special experience of Hospital work. Election about the middle of March
Applications to the undersigned by first post on Monday, March 4th.
HARRY JOHNSON,
Feb. 18th, 1929. House Gov. & Sec.

Paddington Green Children's
HOSPITAL (Incorporated), London, W.2.

HOUSE PHYSICIAN. HOUSE SURGEON.

These appointments will become vacant on April 1st. Gentlemen (unmarried) are invited to send in their applications, with copies of three testimonials, to the undersigned not later than the first post on Friday, March 15th. Salary of each at the rate of £150 per annum, with board and residence. Candidates who have held a responsible Resident Hospital appointment are preferred. The appointments are for a period of seven months.
JAMES A. HAMLIN, Secretary.

Paddington Green Children's
HOSPITAL (Incorporated), London, W.2.

Applications are invited for the post of HONORARY PHYSICIAN to Out-patients. Candidates must be M.R.C.P. or F.R.C.P.
Applications, stating age and qualifications, *accompanied* by copies of three testimonials, should reach the undersigned not later than the first post on Friday, March 15th.
JAMES A. HAMLIN, Secretary.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

NURSES

MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

THE NURSES' ASSOCIATION
(In conjunction with the MALE NURSES' ASSOCIATION),
29, York St., Baker St., London, W.1.
Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

ST. LUKE'S HOSPITAL.
FOR MENTAL DISORDERS.
Private Nursing Staff Department.
Trained Nurses for Mental and Nervous Cases can be had immediately.
Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.
Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

Seaport Town, North-West
ENGLAND.—PARTNER required in old-established Practice. Receipts about £3,500. One-third share for disposal.
LANCASHIRE.—An old-established middle and working-class PRACTICE for disposal. Turnover £1,750. Panel 1,480. Sole reasons for disposal ill health.
LANCASHIRE MINING TOWN. — Receipts £1,500 per annum. Panel 1,475.
For further particulars apply to—
R. SUMNER & Co., Ltd.,
Wholesale Druggists,
40, HANOVER ST., LIVERPOOL.

West Herts Hospital,
HEMEL HEMPSTEAD.
(24 miles from Euston.)

Applications are invited for the appointment of a SENIOR RESIDENT MEDICAL OFFICER, to commence duties on March 1st next. Salary £150, with rooms, board, and laundry.
Also a JUNIOR RESIDENT MEDICAL OFFICER, to commence duties on or about April 1st next. Salary £100, etc.
Preference will be given to male candidates. 110 beds.
Particulars to be obtained of, and applications, stating essential particulars, and enclosing copies of recent testimonials, to be sent at once to—
ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

Western Ophthalmic Hospital,
Marylebone, N.W.1.

Applications are invited for the posts of SENIOR and JUNIOR NON-RESIDENT HOUSE SURGEONS. The salaries are at the rate of £150 and £100 per annum respectively, and the appointments are for six months. Some previous Ophthalmic experience is required. The selected candidates will be required to take up duty on April 1st. Applications, accompanied by copies of three testimonials, should reach me by March 9th, and candidates should be prepared to attend before the Medical Committee on March 15th, at 5 p.m. Candidates should state in their applications whether they are prepared to accept either post.
H. W. BURLEIGH, Hon. Secretary.

The King Edward VII Welsh
NATIONAL MEMORIAL ASSOCIATION.

Applications are invited for the post of (Lady) ASSISTANT RESIDENT MEDICAL OFFICER at the ADELINA PATTI HOSPITAL, Craig-y-nos, Swansea Valley. Salary £250 per annum, plus maintenance (the appointment being limited to a period of one year).
Applications, and previous experience of three recent ... the undersigned by
Memorial Offices, Westgate Street, Cardiff.
Dr. D. A. POWELL, Principal Medical Officer.

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Lincolnshire. — Death Vacancy, £700 to £900 p.a. Coastal Practice. Panel 215. Appts. £100 p.a. Usual fees. Premium one year's purchase.—No. 8427.

Sheffield. — Death Vacancy. — About £300 p.a., previously more. Visits 5/- up. No panel or night work. Good house, 6 bed., etc. Tennis lawn. Premium, house and practice, £2,500, part deferred.—No. 8425.

Cambridgeshire.-Death Vacancy, £1,200 to £1,500 p.a. General mixed PRACTICE House to rent or buy.—No. 8424

Lincolnshire. — About £1,000 p.a. Appts. over £70 p.a. Fees 3/6 up. Panel 675. Few mids. Good house and large garden. Tennis.—No. 8422.

Southern County.—Over £16,000 p.a. One-tenth share for sale, increasing to 1/5. Mids. 3 gns. up. Visits 5/- to 5 gns. Panel about 7,000. Must be F.R.C.S.Eng., and hold University degree.—No 8421.

Kent.--Country Practice.--About £1,030 p.a. Old-estab. Visits 5/- up. Panel nearly 400. Good house, with 6 bed., etc.—No. 8420.

S. E. of England Coast Town.— About £500 p.a., scope for increase. Panel 420. Visits 2/6 up. Small house to rent, £52 p.a. Premium only £500; easy terms —No. 8410.

Staffordshire.—Over £1,000 p.a. Very little night work. No panel. Fees 3/6 up. Good house and garage. Seven bed rooms, etc.—No. 8412.

Mediterranean Port. — About £1,100 p.a. Appts. £100. Visits 10/-. No panel. Mostly English. Good flat. Premium £1,000, on easy terms.—No. 8411.

Home Counties. — £4,500 p.a. 1/4 share for sale. No panel. Visits 5/- to 21/-. Mids. 5 gns. up. Scope for surgery. Partner to be F.R.C.S.—No. 8409.

London, N.—Lock-up. — About £700 p.a. Panel over 500. Mids 3 gns. Visits 3/6 up. Two rooms, rent 35/- p.w. Premium £900 or offer.—No. 8402.

Nottinghamshire. — Increasing NUCLEUS £600 to £700 p.a. Mids. 5 gns. up. Visits 3/6 to 21/-. Small panel. Corner house to rent. Prem. £750.—No. 8397.

Lancashire.—About £2,000 p.a. Panel 2,500. Appts. nearly £200 p.a. Visits 3/6 to 5/-. House, 4 bed., etc., to rent. —No. 8391.

Lincolnshire.—About £1,370 p.a. Unopposed. Panel and appts. about £500 p.a. Mids. 3 gns. Fees 4/- to 6/-. House, 6 bed., etc., good garden, with garage, to rent.—No. 8386.

Kent. — Average £1,250 p.a. Mids. 7½ gns. up. Visits 7/6 to 21/-. Non-panel. House, 5 bed., etc.—No. 8380.

Western County.—£600 to £700 p.a Unopposed. Clubs and appts. over £100 p.a. Fees 3/6 to 12/6 Panel about £300 p.a. Good house and garden. Premium, house and practice, £2,100.—No 8375.

Co. Durham.—About £700 p.a. Visits 3/6. Mids. 2 gns Panel 652 House, 3 bed., etc., to rent.—Apply, No 8354

South Wales. — Residential. — £1,600 p.a. Panel 450. Fees 5/- to 21/-. Corner house, 6 bed., etc.—Apply, No. 8348.

Within 12 miles London North. —£1,500 p.a. Panel 800. House, 3 recep., 6 bed. Separate surgery, etc. Over ½ acre garden.—Apply, No. 8344.

SPECIAL NOTICE.

FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants prepared to pay part of purchase money down and balance by instalments over 7 years (on the security of a Life and Sickness Policy). Full particulars on application to Mr. Percival Turner.

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FOR SALE.

LONDON, W.11.—Well-established mixed G.P. in residential working-class locality. Shop-fronted consulting-room, accommodation over if desired. [illegible] 160. Receipts over £420. [illegible]

SOUTH COAST.—Seaside Resort.—PARTNERSHIP in well-established rapidly growing G.P. Small select panel. Receipts over £1,200 p.a. Share guaranteed of £500 at 2 years' purchase.

ASSISTANTSHIPS.—We have several Assistantships, some with view, with and without scope for surgery. Suitable only for practitioners of British birth.

NURSING HOMES.—We have instructions to dispose of several Nursing Homes, both Town and Country. Correspondence invited from those energetically interested.

EAST MIDLANDS.—NUCLEUS G.P. near seaside resort with excellent scope for all-round improvement. Small panel of approx. 60. Premium or Nucleus and house £950.

SURREY.—NUCLEUS G.P., within easy distance of London, suitable for semi-retired man. House to rent. Receipts £280. Panel 160. Premium £ 50.

NOTTS.—NUCLEUS middle-class G.P. with growing panel. Fees 3/6 up. Receipts approx. £700 p.a. Corner semi-detached freehold house. Premium £900 for practice and £1,250 for house, or may be rented.

LONDON, E.—DEATH VACANCY.—Old-established middle-class G.P., situated on main thoroughfare. Large house to rent on lease. Receipts nearly £1,900 p.a. Panel 450 excellent scope). Good fees. Premium, 1 year's purchase.

LONDON, N.—Look-up SURGERY in working-class locality with living accommodation if desired. Receipts £750. Increasing panel of 1,100. Premium for quick sale £900, or near offer (cash).

SOMERSET.—PARTNERSHIP in rural Practice, situated in charming locality. Suitable for young experienced man fond of sport, hunting, etc. Guaranteed share worth £500 p.a. at 2 years' purchase.

HOME COUNTIES (on borders of Kent and Sussex).—Non-dispensing good-class G.P. Receipts over £1,200 p.a. Good-sized house (5 bedrooms) for sale. Scope for surgery. Good fees. Premium £1,000 or near offer for quick sale.

If the investment you are seeking is not advertised here, let us know your wants, and we will gladly forward details of others suitable to your requirements.

LONDON W.—Well-established Lady Doctor's PRACTICE in middle and working-class locality. Receipts over £530. Panel about 350. Fees 2/6 up. Medium-sized house. Premium for practice £750. House £1 100. Might be rented.

SOUTH-WEST COAST.—PARTNERSHIP in well-established good-class rural G.P., with Nursing Home attached. Excellent house to rent. Surgery, X-ray, and Electro-therapy.. Receipts over £4,000 p.a. Panel (approx.) 1,000. Suitable for well-qualified man keen on surgery. Premium for half share 2 years' purchase.

WEST END.—Electro-Therapeutic PRACTICE, centrally situated. Well equipped with all modern appliances. Receipts approximately £1,000 p.a. (subject to confirmation). Rent £300 p.a. Expenses very low. Premium £2,500 for goodwill and equipment, or reasonable offer.

MIDDLESEX.—Close proximity [illegible] growing PRACTICE in rapidly developing [illegible] scope for increase. Medium-sized house [illegible] Fees 3/6 up. Premium 1½ years' purchase.

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1. LONDON, W.—DEATH VACANCY (near Edgware Road).—Old-established PRACTICE. Receipts £1,700 a year, panel 2,000. House available. Locum in charge. Moderate premium.
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1. DEATH VACANCY. — East Anglia. — Country PRACTICE between £1,200 and £1,600 p.a. Large panel. Excellent house to be sold or let.

2 S. MIDLANDS.—Practice over £1,700 p.a. in country town 100 miles from London. No panel, appointments, or midwifery. House (6 bedrooms), with garage and garden, for sale. Premium—Practice 1½ yrs.' purchase.

3. HOME COUNTY.—Partnership in Practice about £3,000 p.a. in very desirable residential district within 15 miles of London. Partner should be aged 30 to 32, have held Hospital appointments, and preferably possess a University degree. Three-eighths share at 2 years' purchase.

4. MIDLANDS. — Partnership in mixed Practice between £3,600 and £3,700 p.a. in suburb of Cathedral City. Panel over 2,200. Partner should be aged about 30, with Hospital experience, and able to do Surgery. Premium one-half share 2 years' purchase.

5. LONDON.—Partnership in Practice £3,400 p.a. in Northern suburb. Panel about 3,200. Incoming Partner must have had experience and be either English or Scotch. Premium one-third share 2 years' purchase.

6. SOUTH OF ENGLAND. — Middle and working-class PRACTICE about £2,150 p.a. in seaport town. Panel 1,226. Well situated house (6 bed and dressing rooms) to be sold or let. Premium 1½ years' purchase.

7. LANCASHIRE.—Partnership in Practice over £3,700 p.a. in first-rate town. Panel 2,600. House (4 bedrooms) to rent. Premium one-half share 1½ years' purchase.

8 DEATH VACANCY.—LONDON, S.W. PRACTICE £2,268 p.a. in open suburb. No panel. Very nice house (6 bedrooms) for sale or rent. Assistant in charge.

9 SOUTH OF ENGLAND.—Surgical Partner required (not over 36) with University degree and F.R.C.S. England, in sound Practice in first-rate town with good Hospital. Share of £1,500 p.a. at 2 years' purchase.

10 MIDLANDS. — Partnership in Practice £3,375 p.a. in attractive town. Panel 1,000. Well-situated house (5 bedrooms) to rent. Partner must be well qualified, preferably a Surgeon who would have chance of Hospital appointment. One-half share at 2 years' purchase.

11 LONDON, S.E. — Lock-up Practice about £400 p.a. in suburban district. Panel 145. Rent 25/- weekly. Premium £350. Considerable scope.

12 MIDLANDS.—Partnership in mixed Practice £3,800 p.a. in county town. House (5/6 bedrooms) to rent. One-half or one-third share at 2 years' purchase. Partner should have F.R.C.S. degree.

13 S. WALES. — Practice averaging £1,627 (about £650 p.a. from panel) in good town. Modern house (5 bed and dressing rooms) for sale or rent. Premium one-half year's purchase.

14 NURSING HOME for Nine Patients in select seaside resort on S.E. Coast. Gross cash receipts average £1,750 p.a. Double-fronted house, with operating theatre. Premium, freehold, goodwill, furniture, about £5,000.

15 S.E. COAST.—Partnership in non-dispensing Practice, over £3,800 in residential town. Good house to rent. Share worth £1,500 at 1½ years' purchase.

16 SOUTH OF ENGLAND.—Partnership in non-dispensing Practice, £4,200 p.a., in attractive watering place. Panel about 1,800. Incoming Partner must be F.R.C.S.Eng. or M.D., F.R.C.S.Ed. One-fourth share at 2 years' purchase (Preliminary assistantship.)

17 SOUTH COAST.—Health Resort.—Practice about £900 p.a. (including appointments about £165). No panel or midwifery. Suitable house or flat. Premium £1,500.

18 Nr. NEWCASTLE-ON-TYNE.—Old-estab. Town PRACTICE over £800 p.a. Panel 440. Pleasantly situated house (4 bedrooms) to rent. Plenty of scope. Prem. 1½ years' pur.

19 CO. DURHAM. — Practice of £1,460 in growing suburb of seaport town. Panel 646. House (5 bedrooms) on main road to be sold or let. Premium 1½ years' purchase.

20 S. WALES.—Non-dispensing Practice in large seaport town. Receipts for past 3 years averaged £1,643 p.a. Small panel. Pleasantly situated house (6 bedrooms). Premium £2,300.

21 GLOUCESTERSHIRE.—Country Practice averaging £535 p.a. Panel 450. Convenient (small) house, and excellent garden, 1 acre. Garage small car. Premium, house and practice, £3,000.

22 HOME COUNTIES. — Practice averaging £1,050 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, practice, £1,500.

23 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first-rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. Premium one-third share 2 years' purchase.

24 LONDON, E.—Rapidly increasing Lock-up PRACTICE in populous district. Receipts 1928, £780. Panel 570. Rent £50. Premium £950.

25 HOME COUNTIES.—Partnership in Practice over £8,000 p.a. in country town. Incoming Partner must be well qualified (preferably University man) and have held Hospital appointments. One-fourth share at 2 years' purchase.

26 HOME COUNTIES. — Non-dispensing PRACTICE about £1,300 in residential district, adjoining first-rate town. Practically no panel. Modern house (5 bedrooms) for sale. Golf, fishing, etc. Premium £1,650.

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Practices and Partnerships for Disposal (continued).

27 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

28 MIDLANDS.—Country Practice averaging nearly £1,500 p.a. in beautifully situated village easy reach of several good towns. Panel 600. Large modernized house, with electric light, gas, etc., for sale. Sport. Premium £1,900.

29. LONDON, W. — Practice (carried on by Medical Woman) in suburban district. Receipts 1928, £535. Panel 360. House (3 bedrooms, etc.) to be sold or let. Premium £750.

30 EAST COAST.—Practice (suitable for two) in small watering-place. Receipts £2,800 p.a. (including panel worth about £600 p.a.). Very little opposition. Two houses to rent. Premium 1½ years' purchase.

31 X-RAY and ELECTRO-THERAPEUTIC PRACTICE in important town. Receipts last year £1,050. Detached house for sale or rent. Premium £1,500.

32 S. OF ENGLAND.—Ear, Nose, and Throat PRACTICE in a watering-place. Receipts average over £600 p.a. (one day a week only). Income easily doubled by one resident. Premium £750.

33 NORTHUMBERLAND. — Practice averaging £424 p.a. in small pleasantly situated country town. Panel 70. House (8 rooms) to let. District is growing and there is plenty of scope for increase. Premium £450.

34 HOME COUNTIES.—Partnership in Practice about £8,000 p.a. in growing residential watering-place. House (4 bed and dressing rooms) to rent. Partner must be well qualified (Oxford, Cambridge, or London). Premium one-fifth share 2 years' purchase.

35 HOME COUNTIES.—Practice about £1,350 p.a. in good residential district within 25 miles of London. Panel 1,000. Large house (9 bedrooms) for sale. Premium, practice, £2,000.

36 N.W. ENGLAND.—Partnership in Practice about £3,500 p.a. in seaport town. Panel about 2,500. Choice of two houses to rent. Premium one-fourth or one-third share 2 years' purchase.

37 SOUTH MIDLANDS. — Practice about £1,150 p.a. in county town. Panel 485. Good house (7 bedrooms), with garage and garden, for sale. Very good Hospital.

38 GLOUCESTERSHIRE.—Country Practice averaging £654 p.a. (Elevation 600 feet). Near two good towns. Panel 500. Large house, with garden and paddock, for sale. Scope for increase. Premium £800.

39 N. MIDLANDS.—Practice worth between £600 and £700 p.a. in residential district on outskirts of first-rate town. Small panel offering plenty of scope. Excellent modern house to rent. Premium £750.

40 SOUTH AFRICA. — Old-estab. Practice. Receipts last year £1,816. Travelling and midwifery light. Climate ideal—no tropical diseases (altitude nearly 5,000 feet). Delightful residence (5 bedrooms), in perfect order, with 2 acres grounds. Excellent scope. Local Hospital. Premium £1,200, with option to purchase house.

41 MIDLANDS.—Partnership in middle-class Practice averaging £5,450 p.a. in flourishing and growing town. No panel and little midwifery. Applicant should be between 25 and 40 years of age, and preferably, though not essentially, a University Graduate. Premium one-fourth share (ultimately increasing to one-half) 2 years' purchase.

42 S. WALES.—Practice over £1,200 p.a. in small country town, amidst beautiful scenery. Panel about 300. Old-fashioned house, with garage and garden. Cottage hospital. Premium £1,500.

43 OPHTHALMIC PRACTICE over £1,200 p.a. Consultations usually £2 2s. Scope for considerable increase.

44 N. WALES COAST. — Partner required in old-established Practice. Receipts over £5,650 p.a. Panel over 2,000. Modern house (8 bedrooms, etc.) to rent. Premium for one-half share £4,000, part cash. Applicants must have held H.P. and H.S. appointments.

45 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 13 acres of land for sale. Premium, practice, 1½ years' purchase.

46 LONDON, S.E. — Partnership in well-established Practice of £1,900 p.a. in good residential district. Exceptionally well-built detached house (6 bedrooms) to be rented. One-half share at two years' purchase. Good scope.

47 N. DEVON. — Partner required (after preliminary assistantship) in Practice worth £3,000 p.a. in first-rate country town. Panel over 2,100. Well-equipped Hospital. One-third share to suitable man at 2 years' purchase.

48 MIDLANDS.—Country Practice of over £1,000 p.a., within 5 miles of good town. Panel 531. Comfortable and convenient house (5 bedrooms, etc.), with electric light, central heating, and acre garden, for sale. Premium, practice, 1½ years' purchase.

49 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. No panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

50 LONDON, E.—Partnership in exceptionally old-established Practice averaging over £3,500 p.a. Good fees and appointments. Two-fifths share for disposal at 1½ years' purchase, or one-third could be purchased at first. Small house may be bought or rented at a moderate figure.

51 SOUTH OF ENGLAND. — Practice about £900 p.a. in first-rate seaport town. No panel or midwifery, but ample scope. Well-situated house to rent. Premium £1,500.

52 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. Partner should be keen worker and a good surgeon. One-third to two-fifths share at 2 years' purchase.

53 MIDLANDS. — Practice about £350 p.a. in manufacturing village. Panel 190. House (4 bedrooms, etc.), and one acre of garden. Premium—Practice and house, £2,000.

54 SUFFOLK.—Country Practice averaging £360 p.a. in beautiful agricultural district. Panel 300. Very attractive residence (5 bedrooms, etc.) in half acre garden, etc., for sale. Premium—Practice £540.

55 PEMBROKESHIRE. — Practice about £1,000 p.a. in small town. Panel 361. Well-situated house (7 bedrooms) to rent. Scope for increase. Premium £1,500. Preliminary assistantship if desired.

56 NORTH WALES. — Country Practice averaging £1,230 p.a. in Welsh-speaking district. Panel over 530. Centrally situated house (5 bedrooms). Premium one year's purchase.

57 S. WALES. — Easily worked Panel and Contract PRACTICE over £1,000 p.a. in colliery district. Small house (4 bedrooms) to rent. Premium one year's purchase.

58 ESSEX. — Practice averaging £1,216 p.a. in outlying district—30 minutes by rail from London. Panel 550. Nice detached house (5 bedrooms) for sale. Premium for practice 1½ years' purchase.

59 N. LONDON.—Practice of between £950 and £1,000 p.a. Small panel. No midwifery. Detached corner house (7/8 bedrooms) for sale. Premium—Practice 1½ years' purchase.

60 MIDLANDS. — Partnership in Practice over £2,000 p.a. in good town. Panel 1,800. Good house (5 bedrooms) available. Partner should be able to undertake major operations. Well-equipped hospital. One-half share for disposal.

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2. SURGICAL PRACTICE.—SOUTH-WESTERN COUNTY.—Large Hospital Town.—A purely Surgical Practice, held by Vendor over 20 years, is for disposal owing to ill health and retirement. Income over £4,600. Consultations 10/6 to £2 2s. Operation fees 20 to 30 gns. and over. Detached residence, with large accommodation and modern conveniences. Rent, on lease, £250 p.a. Premium 1½ years' purchase. Six months' introduction, or longer if required. A Nursing Home is run, in connection with the Practice, which shows a profit of £1,000 p.a., and which is also for disposal at a moderate price, with the furniture at a valuation. Premises can be rented on lease.
3. PARTNERSHIP.—Within 3 miles North-West of Charing Cross.—The half share of an old-established middle and working-class Practice, averaging about £2,100 p.a., including panel of 1,300. Visits 2/6 to 10/6. House contains, in addition to professional accommodation, 2 reception, 2 bedrooms, bathroom, kitchen, etc. Small garden. Net rental, on lease, about £60 p.a. Premium 2 years' purchase.
4. HAMPSHIRE.—PARTNERSHIP.—Third share of an old-established unopposed Country Practice, in very pretty district within a few miles of a large town, and producing nearly £2,600 p.a., including appointments £130, and panel of 1,520. Visits 5/6 to 21/-. Mids. 2 to 10 gns. Large house (having eight or nine rooms, with garden, etc.), which must be purchased, or ingoing partner could reside in rooms until a smaller one becomes available. Premium 2 years' purchase, half down and balance in 12 or 18 months.
5. KENT.—Old-established Country PRACTICE, situated in very favourite locality within 5 miles of the coast. Income for past 12 months £1,030. Surgery fees 5/6 upwards, visits 5/- to 21/-. Poor Law appt. and panel of about 380. Attractive commodious house, with separate professional rooms. Small garden. Price £1,800. Premium £1,500.
6. NORTH STAFFORDSHIRE.—Old-established mixed general Country PRACTICE, situated in very delightful district, and offering scope. Average income about £1,000, including Poor Law appt. and panel of 660. Fees 5/6 to 10/6. Good house, on lease, rent £84 p.a. Excellent schools within reach. Premium 1½ years' purchase.
7. BUCKS.—GROWING COUNTRY DISTRICT.—Old-established mainly middle and working-class PRACTICE. Income for the last year £550, with ample scope for increase. Fees 2/6 to 7/6 Little midwifery. Good freehold house, price £1,500, part on mortgage. Sport of all kinds. Knowledge of refractions advantageous. Premium £850.
8. LONDON, NORTH.—OUTLYING RESIDENTIAL SUBURB.—PARTNERSHIP.—A one-third share (and up to one-half in two years' time) is offered in an old-established mixed general Practice, averaging about £2,000 p.a., with good scope. Non-panel at present, but ingoing partner should undertake this work. Fees 5/6 to 7/6, a few at 15/-. Little midwifery 3 to 10 gns Suitable house can be bought. Sport of all kinds. Premium 2 years' purchase.
9. LONDON, NORTH.—Old-established centrally situated mixed general PRACTICE. Income for the immediate past year £3,500, including panel list of 2,200 and appointments about £125. Fees, advice, and medicine 2/6 to 5/-. Visits 5/- to 7/6. Under 50 midwifery cases yearly from 4 to 8 guineas. Assistant and motor are required. Good house can be rented on lease, or freehold would be sold. Premium £6,000, part by arrangement. Long introduction.
10. LONDON, S.E. (CROYDON AREA).—Old-established rapidly increasing middle-class PRACTICE. Income for immediate past year over £1,300, including panel of 700. Surgery fees 2/6 to 5/-. Visits 5/6 to 10/6 Thirty midwifery cases yearly from 3 to 10 guineas. Very commodious house on lease, with 11 years to run, rent £70. Premium £2,000.
11. LONDON, WEST.—PARTNERSHIP.—A half share in an old-established mixed general Practice. Average income for the last three years about £4,000. Panel of 3,250. Fees 2/6 to 7/6, visits 5/6 to 10/6, and a few at 21/-. About 30 midwiferies at from 3 to 10 guineas. Convenient house in good position Held on lease (with no ground rent) with 25 years to run. Price £1,750. Premium £4,000. Must be Scotch or English.
12. NORTH DEVON.—COUNTRY TOWN.—A one-third share (with increase up to one-half later) in a very old-established and increasing mixed-class PRACTICE, averaging about £3,000 p.a., including panel of over 2,100, and appts. worth nearly £150. Fees 5/6 to 10/6. Midwifery 2 to 7 gns. Choice of houses Sport of all kinds and schools. Premium 2 years' purchase, part by arrangement if necessary. Preliminary outdoor assistantship offered at a salary of £450 p.a. Scotch Graduate preferred, about 30 years of age.
13. X-RAY AND ELECTRO-THERAPEUTIC PRACTICE. — In a large Hospital Town, within 80 miles of London, a well-established connection averaging nearly £1,000 p.a. (last year £1,059) is for disposal for reasons which can be satisfactorily explained. Patients—upper and middle-class. Fees 1½ to 15 gns. House situated in pleasant position, with ample professional accommodation, and 4 rooms, dressing room, bathroom, etc. Premium £1,500. Electric plant (which has been valued) £670 extra. Vendor is on staff of Hospital (nearly 300 beds) and successor will be appointed.
14. SOUTH-EAST OF ENGLAND.—COAST TOWN.—Small but increasing PRACTICE, at present producing about £500 per annum, with good scope. Panel of 420. Suitable house available. Rent £52 p.a. Premium £500, part down, and balance by instalments
15. NOTTINGHAM.—Good middle-class PRACTICE offering good scope and having small panel which could be largely increased. Gross cash receipts about £400 per annum. Fees 5/6 to 21/-, medicine extra. Very good modern corner house in pleasant residential district. Rent on lease £80 p.a. Premium £750.
16. ESSEX.—SMALL COUNTRY TOWN.—Well-established and increasing PRACTICE, producing for the past twelve months £768, including panel of 525, and appointments worth over £60 p.a. Advice and medicine chiefly 5/6 to 7/6, visits 5/6 to 21/-, medicine extra. Mids. (discouraged) 2 to 5 guineas. Exceptionally nice house, with lounge hall, 3 reception, 5 bedrooms, and good professional rooms and usual offices. Hot water supply, electric light Large garden, with tennis court. Garage for two cars. All in perfect order. Price for freehold £3,100. Premium 1½ years' purchase.
17. LANCASHIRE.—SUBURB OF LARGE TOWN.—Old-established PRACTICE, held by Vendor 30 years. Average income for the past twelve months £1,500, including panel of nearly 1,500. Fees 2/6 to 10/-. Very good house, standing in its own grounds, and containing 3 reception, 4 bedrooms, dressing room, 3 professional rooms. Central heating. Electric light. Garden, with greenhouse. Garage for 3 cars. Price for leasehold £2,100, of which about £1,500 could remain on mortgage. Premium 1½ years' purchase, part by instalments
18. LONDON, S.E.—Outlying Suburb.—Very well-estab. growing mixed general PRACTICE, situated in pleasant district within easy reach of town. Gross cash receipts for immediate past twelve months nearly £2,650. Panel of 2,120. Appts. worth about £60 and stated to be transferable. Fees 2/6 to 7/6. Midwifery from 3 gns (about 40 cases yearly. Moderate expenses Seven-roomed house, with kitchen, 2 waiting rooms, dispensary, and consulting room. Garden Brick built garage. Price for freehold £1,500 Premium £4,500
19. SOUTH OF ENGLAND.—FAVOURITE SEASIDE RESORT.—Mainly better-class PRACTICE, producing for the last twelve months about £700, and rapidly increasing. Panel of 150. One appt. worth about £40 p.a. Fees 3/6 to 7/6. Only a few cases of midwifery, 2 gns. upwards. Good house in excellent repair, with 2 reception, 5 bedrooms, etc. Electric light. Garden. Garage. Price for freehold £2,300 Premium £1,400.
20. MIDLANDS.—UNOPPOSED COUNTRY PRACTICE, situated in good hunting centre. Gross cash receipts for past 12 months about £1,000 p.a., including panel of 600. Advice and medicine from 3/6, visits 3/6 upwards, with medicine extra. Lowest midwifery 2½ gns. Exceptionally attractive house, with oak panelling, etc., 2 reception, 10 bedrooms, and professional rooms. Well-stocked garden of 1¼ acres, and 12 acres of grassland. Recently re-decorated throughout Electric light. Price for freehold £4,500, of which £2,200 could remain on mortgage. Premium 1½ years' purchase.
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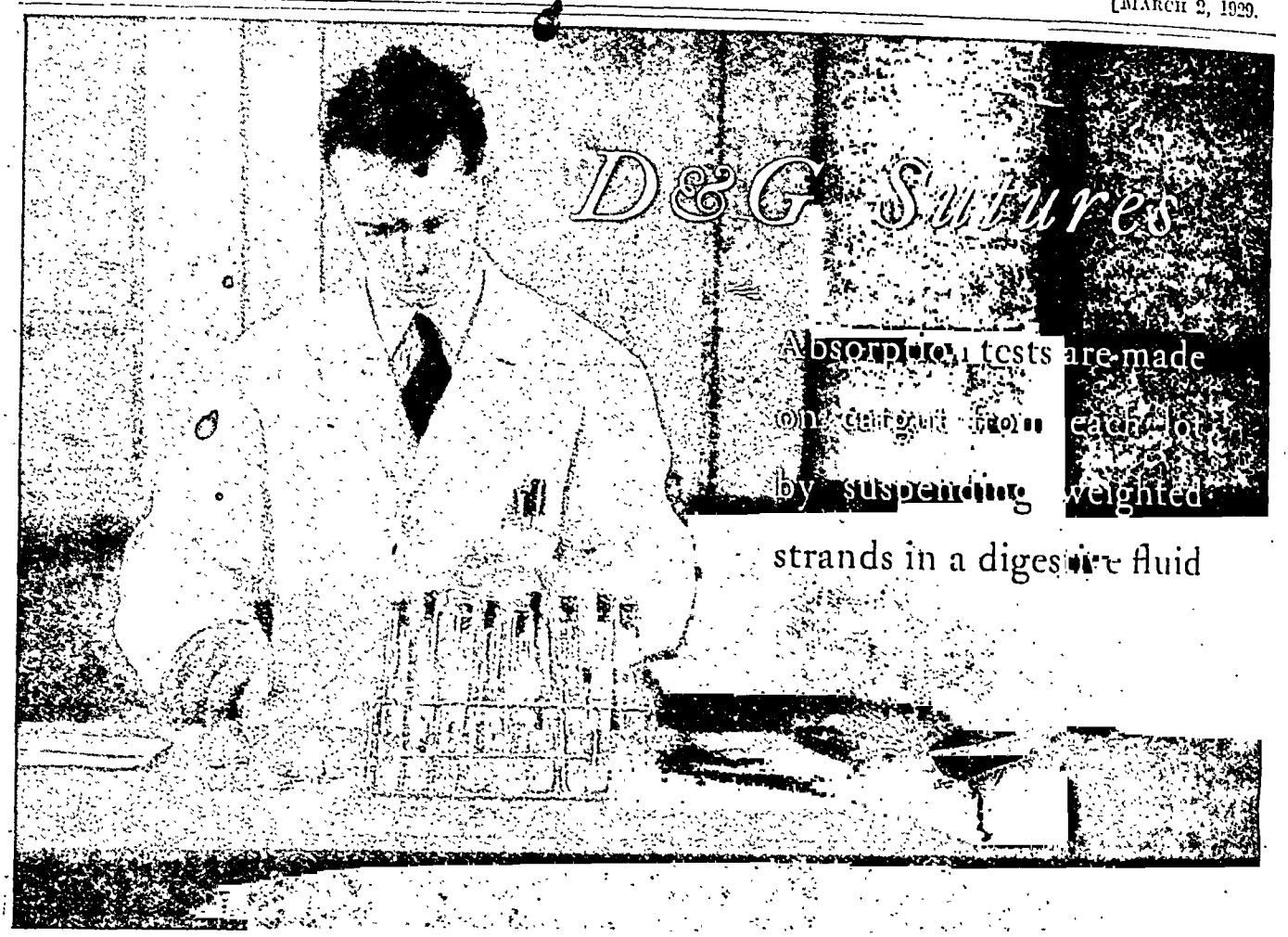

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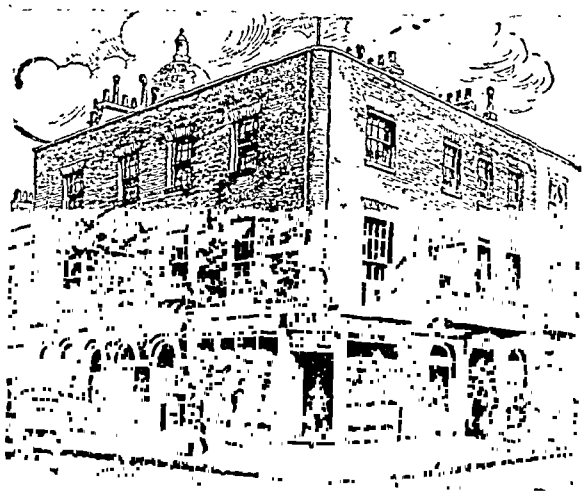

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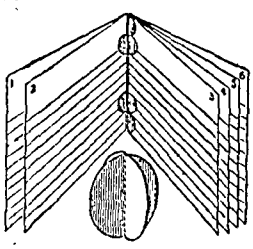

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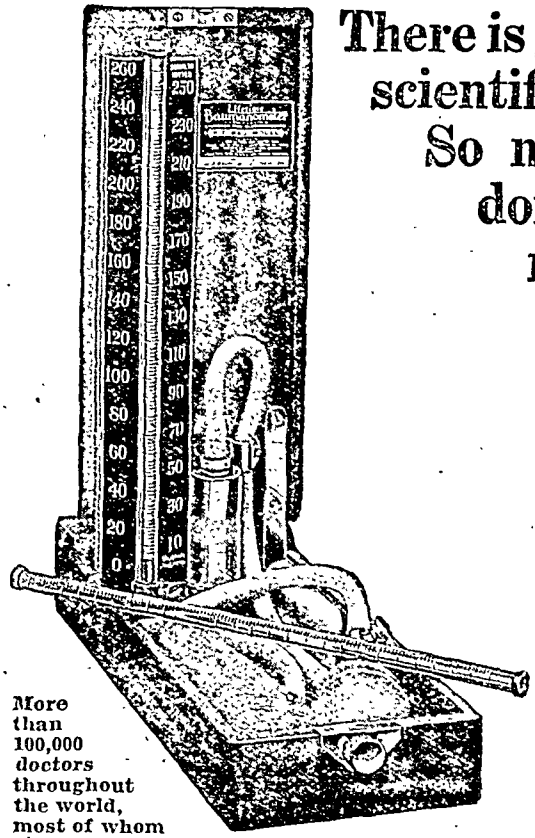

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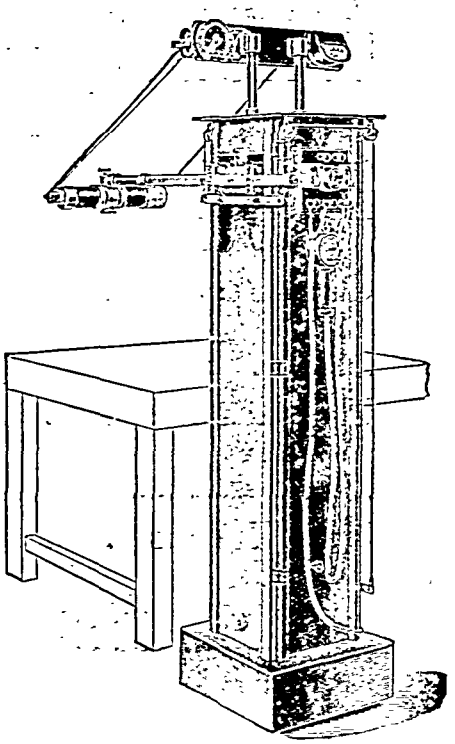

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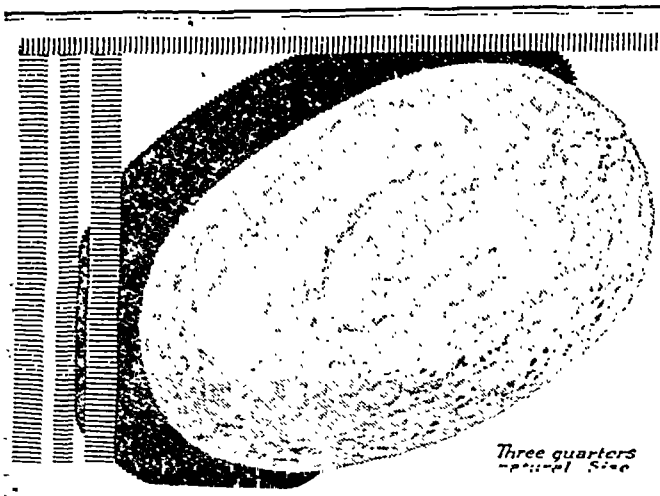

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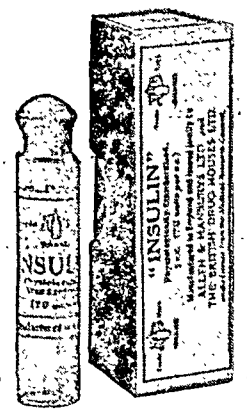

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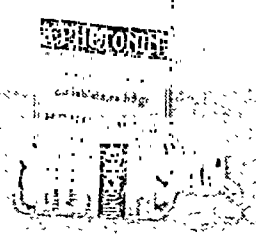

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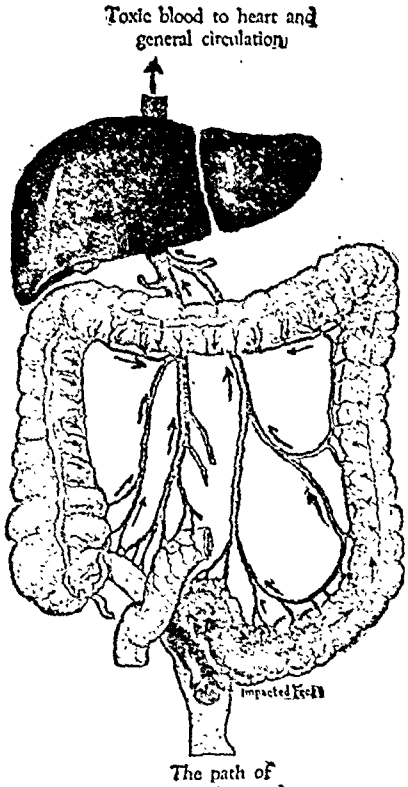

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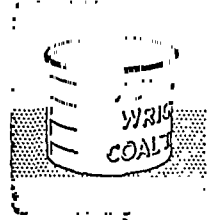

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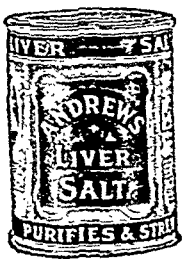

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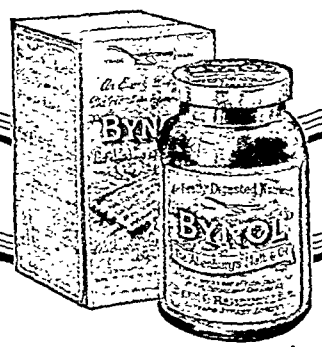

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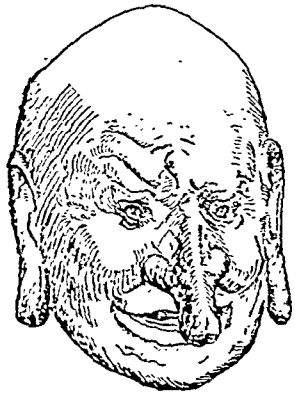

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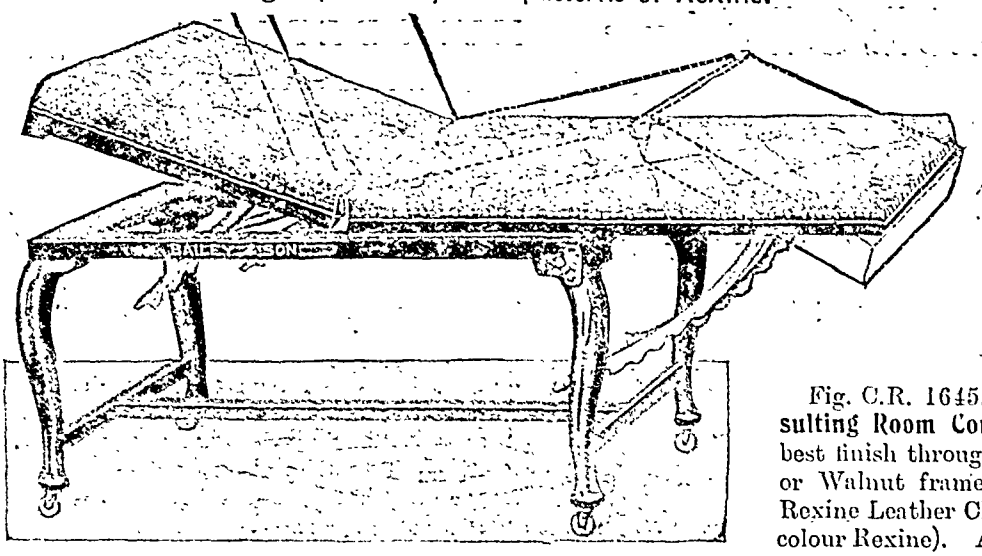

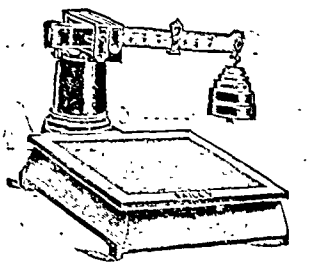

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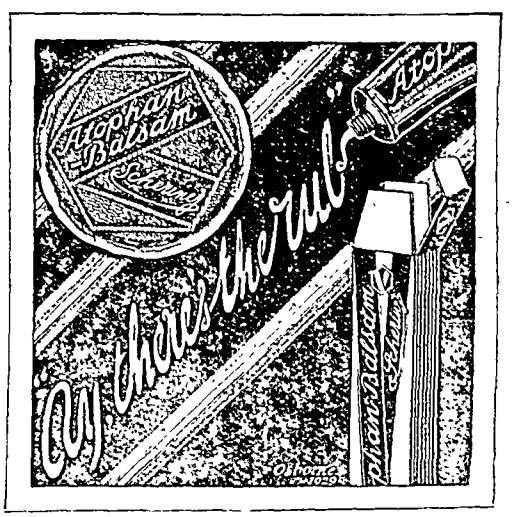

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A British Medical Association Lecture

ON

MINOR ORTHOPAEDICS OF THE FEET IN GENERAL PRACTICE.

DELIVERED TO THE NORTHERN COUNTIES OF SCOTLAND BRANCH, NOVEMBER 2ND, 1928,

BY

JOHN FRASER, M.D., F.R.C.S.ED.,

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THIS address includes the consideration of a number of conditions apparently so simple that some may feel that there is nothing new to be said about them; but I have noticed that minor orthopaedic disabilities are remarkably common, that among the work of a young consultant they form a considerable proportion of his material, and since they come to the institution and the consultant, I infer that they are a source of trouble and anxiety to the man in general practice. When I add that many of these conditions are among the most difficult to treat and to cure, I have justified, I hope, the choice of my subject. I propose *to illustrate what I have to say by short abstracts* from case notes, and, so far as possible, to demonstrate the conditions to which I refer.

INGROWING TOENAIL.

My first patient is a woman, and the reason of her visit is the presence of a painful ulcer on the lateral nail border of the great toe. It seems a small thing, but to my patient, who has been seriously affected by the dancing craze, it is a disaster. With Cowper she would no doubt exclaim:

> "O may I live exempted . . .
> From pangs arthritic that invest the toe
> Of libertine excess."

As a matter of fact, she was suffering from an ingrowing toenail, *one of the most painful and distressing of the* minor maladies of the feet.

So perfect are the provisions which Nature has made to guard against this disaster that the sufferer must have flagrantly destroyed one or more before Nemesis overtook her. If you examine the nail-fold (Fig. 1) you will find that *these provisions are two*—the edge of the nail is curled upon itself so that a convex surface is opposed to the skin surface, and, as though that were insufficient, the skin in contact with the nail-edge is of a more horny texture than that around—the result of the deposit of

FIG. 1.

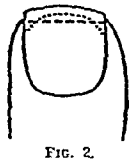

FIG. 2.

FIG. 1.—The toenail on coronal section. Note the infolding of the nail-edge, and the special epithelium with which it makes contact.

FIG. 2.—Cutting a toenail. The nail should be cut at right angles to its long axis—*not* in a curved manner.

a considerable amount of eleidin granules in its cells. These safeguards are present in both foot and hand, but, owing to the relatively greater pressure which the foot-nails have to bear, they are more efficiently developed in the latter situation.

An ingrowing toenail results from one or both of two errors: either the nail is cut convexly so that the protective infolding of its edge is *destroyed, or the special* stratified epithelium is removed, and its safeguard thus eliminated. My patient had been guilty of both errors. She had been cutting her nails convexly, and at the same time, in order to improve the local appearance, she had been using a preparation containing salicylic acid, which she had been brushing over the nail-fold, and so removing the valuable horny layer. Is it any wonder that, as her nail grew, its now sharpened and unfolded edge, coming into contact with a delicate and unprotected epithelium, produced at the point of contact a most painful and intractable ulcer? (Fig. 2.)

Treatment of Ingrowing Toenail.

What was to be done? To remove the toenail is rather a desperate remedy; it is certainly a very painful one. It may involve weeks of crippling, and should only be resorted to when all other measures have failed. Cutting away that portion of the nail which impinges upon the ulcer is the procedure perhaps most frequently adopted, and, if it is accompanied by careful packing of the ulcer surface with an antiseptic gauze or wool, it may ultimately prove successful; but it has the risk that the natural infolding of the nail may not reappear, in which event ulceration is sooner or later bound to recur.

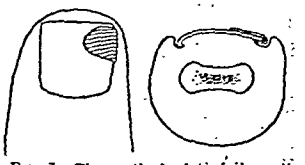

FIG. 3.—The method of tinfoil application in the treatment of ingrowing toenail.

In my experience there are two simple and efficient remedies, neither of which is perhaps sufficiently known. *The nail-fold may be protected by restoring the convex* nail-edge, which is done by wrapping around the offending nail-edge a small oval-shaped piece of soft tinfoil, so arranged that a fraction of it lies on the under surface, the remainder on the nail surface. It is fastened in place by *a drop of sterile glue or strong collodion. A fragment of* Stent wax is sometimes used instead of the tinfoil, but it is brittle and apt to break. While the protection is in place the ulcer is lightly packed with a spirit solution of one of the aniline dyes, this being used because it increases *the cornification of the epithelium and so stimulates the* formation of the protective layer. (Fig. 3.) The second simple remedy is sometimes known as Webb's wire, which acts by maintaining a constant separation between nail-fold and nail-edge, and I can vouch for its efficacy in curing the early stage of this troublesome ailment.

HAMMER-TOE.

My second patient presents herself because of the common and troublesome condition of hammer-toe. It has affected the second toe, as it usually does, because it is the longest of the outer four, and is liable to be displaced and cramped if any lateral displacement occurs in the great toe (Fig. 4). In this patient's case the deformity is well marked; in other words, there is pronounced flexion of the proximal intraphalangeal joint; it is not congenital, and a glance at her shoes shows the cause in the badly shaped and centrally pointed type of sole. It is a hopeless task, I am afraid, to expostulate with women on this score; the majority of them fully realize the risks, but *feel, in the words of the old Scottish* proverb, "As weel be oot of the warld as oot o' the fashion."

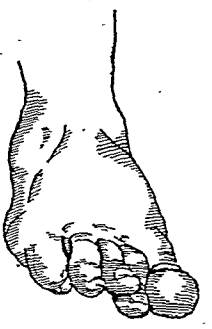

FIG. 4.—A hammer-toe deformity affecting the second toe of the right foot.

Treatment of Hammer-toe.

I suggest to the patient that a simple minor operation will prove the most satisfactory, and in the long run the most rapid method of cure. But operation she will not hear of, and conservative measures must therefore be adopted. What are they to be? and what prospects do *they offer of improvment or cure? Answering the latter* question first, there can be no doubt that, if the case is an early one, and if efficient conservative measures are adopted and persevered in, good results are obtained. What are the efficient conservative measures? My own choice is in favour of what is termed the "cradle method."

It is carried out by means of two narrow strips of sticking-plaster, and is sufficiently illustrated in the diagram. (Fig. 5.) This procedure has great advantages: it is simple and comfortable, but, above all, the improvement which it induces is progressive, for with every step the patient takes there is a stretching of the contracted tissue and an improvement in the position of the parts. By this simple means an operation is often obviated.

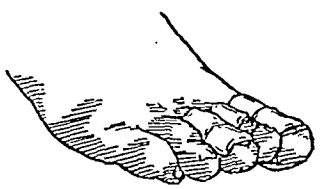

FIG. 5.—A hammer-toe deformity treated by the "cradle" method.

There are other conservative measures, but I do not think they are so good as the "cradle." There is the insole provided with an elastic loop into which the contracted toe is inserted. It is applied inside or outside the stocking, but if the second course is chosen the stocking must be knitted so that the affected toe occupies a single compartment. Another method is the use of a light aluminium splint strapped underneath the toe and extending from its tip to the level of the metatarso-phalangeal joint. Both of these methods, however, are, in my experience, uncomfortable, and by no means so efficient as the cradle method.

If operation is adopted it is simplicity itself—a transverse incision on the dorsum of the flexor joint, excision of a wedge carrying the articular surfaces and reposition of the toe in a straight attitude, the shortened tendon being divided by tenotomy. Thereafter (and this is an important detail which is often neglected) the toe must be splinted so that ankylosis occurs at the point of excision, the splintage being provided by a narrow strip of aluminium strapped to the under surface of the toe.

As the result of the hammer-toe this patient has two troublesome corns. They are at the points of maximum pressure—on the convexity of the interphalangeal flexion deformity and on the tip of the terminal phalanx immediately below the nail. They will in all likelihood disappear when the error in position is corrected, but, in case they do not, they will yield to an application of 10 or 15 per cent. salicylic collodion, or they may be pared and excavated with a sharp knife and a covering of newskin applied. The last detail is important, for attention to it after removal of the corn will often prevent recurrence of the trouble.

HALLUX VALGUS: ITS CAUSE.

My third case is an example of an exceedingly common error. It is the hallux valgus deformity of the first metatarso-phalangeal joint, the great toe being deflected outwards so that it lies over or under the second toe (Fig. 6). The patient is a woman, and after recounting the pain and discomfort from which she is suffering because of the pressure of her shoe upon the inflamed bursa or bunion overlying the prominent head of the first metatarsal bone, she inquires as to the cause of the condition. It has been said that an undue activity of growth in the epiphysis at the base of the first metatarsal bone explains the occurrence of a certain proportion of cases. This may be so, but in the majority the cause is flat-foot, with which a hallux valgus of any degree is almost invariably accompanied. The sequence of events is probably as follows: The foot adopts an attitude of valgus error, and there come into play two influences which lead to the development of the hallux valgus deformity: First, as the valgus error becomes established an attempt is made to restore the balance by bringing into play the short muscles of the sole. Into the fibular side at the base of the proximal phalanx of the great toe three muscles are inserted, the two adductors (oblique and transverse) and half the flexor brevis. Their influence is to pull the toe into a valgus attitude. The abductor might have opposed this influence, but it is already weakened by the flat-foot error, and the result is the gradual development of hallux valgus. The second influence is in relation to the shoe. As the flat-foot develops the inner portion of the shoe—the golosh and the sole waist—stretches and weakens, the foot arch falls, and the valgus error of the foot is more fully established, but the toes are fixed in the anterior part of the sole, and therefore, as the inner side of the foot falls inwards the great toe is deviated outwards, and the hallux valgus is thus more fully established. I have dealt with this question in some detail because it has an important bearing upon the treatment of the condition, and I am anxious to establish the truth of the statement that a hallux valgus does not usually develop without the accompaniment of a flat-foot error.

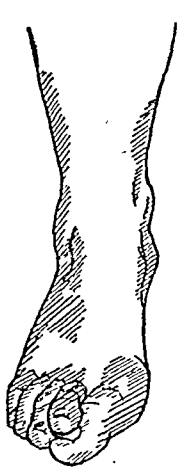

FIG. 6.—A hallux valgus deformity of the great toe.

Treatment of Hallux Valgus.

What can I do to relieve this unfortunate patient? As it happens, the condition is not sufficiently advanced to demand operative intervention, and I accordingly concentrate my attention on conservative measures. I recommend certain alterations in the shoe, and the wearing of a remedial appliance while the patient is resting in bed. The alterations of the shoe are important, for not only do they exert a curative effect upon an early case, but they afford enormous relief to the discomfort and suffering of the individual. Here are the instructions. The shoe must be reasonably straight along its inner side. Where the prominent head of the first metatarsal would naturally impinge upon the boot upper this must be softened or even cut out to allow the insertion of a specially thin piece of material. It is wrong to allow the continuance of pressure upon the tender prominence, as this will only increase the development of the bursa and accentuate the deformity. The golosh must be strengthened by inserting a strip of strong leather from the heel across the boot or shoe waist to behind the head of the first metatarsal bone, and support is given to the longitudinal arch of the foot by inserting and cementing to the sole a rubber instep pad. These details are, of course, designed to improve the flat-foot error. Perhaps the most helpful manœuvre of all, however, from the patient's point of view, is the attachment to the under surface of the sole of a metatarsal bar half an inch broad and a quarter of an inch in depth. It is placed, like the bars of a football boot, across the sole, immediately behind the metatarso-phalangeal joint, and it gives the most wonderful measure of relief, because it takes the body weight off the affected and painful joint.

Many other suggestions of boot alteration have been put forward, but they are not of great practical value. One (the attachment of a stud to the upper surface of the sole so that it projects between the first and second toes) may at first sight appear attractive, but those who have tried to coax the delinquent toe into its stall have realized how tantalizing and wellnigh impossible a task it is; and if they have by any chance achieved the seemingly impossible they have realized how great is the discomfort which results on attempting to walk. If any additional manœuvre is of value, it is the provision of a specially woven stocking made like a mitten, with a special compartment for the great toe. I have heard the late Professor John Chiene recommend this procedure, and it has a certain practical value.

The time to adopt more active corrective measures is when the patient is bootless and resting, and there is upon the market an efficient appliance designed for this purpose. A light firm splint extends along the inner side of the great toe and medial border of the foot. It is secured to the toe by means of a broad elastic webbing loop, and the distal portion is fastened to the metatarsus by a broad strap and buckle. In applying the splint the toe is first inserted into the elastic loop, and the correction is then produced by placing the remainder of the splint in line with the side of the foot and securing it there by its strap and buckle.

With the question of operative intervention, should it become necessary, I do not propose to deal beyond saying that any procedure which may result in shortening the length of the longitudinal arch is bad in so far as it must weaken the foot. For this reason the

head of the metatarsal bone should not be removed. It may be sufficient to remove the prominence from the inner side of the metatarsal head, but, if something further is required to secure correction, it is better that it should concern the base of the first phalanx than the head of the metatarsus.

HALLUX RIGIDUS.

My fourth problem is a peculiarly troublesome one. The patient is a keen walker—in fact, walking is his chief exercise and recreation. You can imagine his distress when he finds that his activities are becoming seriously crippled owing to stiffness and pain in the joint of the great toe of his right foot. He has, in fact, a well-marked hallux rigidus, and it is impossible to secure any degree of dorsiflexion in the metatarso-phalangeal joint of the toe.

It may be asked why such a seemingly simple error should be so crippling in its effects. We find the answer when we analyse the process of walking. As a stride is taken the heel and the outer side of the foot make contact with the ground; the pressure is momentary, for, as the body passes forwards over the centre point of the foot the weight is transferred to the forepart of the foot, and more particularly to the prominent heads of the first and fifth metatarsal bones. As the body continues to move forwards and preparations are made for the next stride, the heel is raised off the ground, the weight is borne by the forepart of the foot immediately behind the toes, while all the toes, but particularly the great toe, flex at the metatarso-phalangeal joints, and the actual impulse which carries the body forward for the succeeding stride is, in part at least, afforded by the flexed great toe levering the body forward against the fulcrum of the ground. It is evident now how disastrous must be the consequence if the metatarso-phalangeal joint of the great toe is painful or in any measure fixed.

Etiology of Hallux Rigidus.

Invariably there comes the question, How has this arisen? Injury can be excluded in this case, though it is evident that there are instances in which a hallux rigidus may follow injury to the joint or the neighbouring bones. There has been a history of rheumatism, and this may play some part in the secondary changes of the part, but the real explanation is to be found in the statics of the foot behind the region of the joint. In the case under discussion there had been a severe influenzal illness some months preceding the development of the foot error. Walking and standing were resumed with limb muscles of a poor tone, and as a result a longitudinal flat-foot of a somewhat acute type developed. At once the line of gravity altered, and instead of passing between the heads of the second and third metatarsals it passed medially towards the line of the first metatarsal head. Excessive weight-bearing was the result, and the joint thereby affected (the first metatarso-phalangeal) suffered. The cartilage became thinned, the approximated bony surfaces were deformed and flattened, there were signs of osteo-arthritis in the shape of lipping of the joint edge, and periarticular fibrosis. The acquisition of a rigid joint was only a matter of time. In certain patients a still more distressing stage may develop, for the pain of the stiffening joint is responded to by contraction of the flexor brevis hallucis, and if this is permitted to continue it will result in a great toe fixed in plantar flexion—a hallux malleus—one of the most painful and crippling of foot errors.

It is to an underlying flat-foot that the majority of cases of hallux rigidus owe their origin, and it obvious how important is an appreciation of this point when the question of treatment comes to be considered.

Treatment of Hallux Rigidus.

What of the treatment? It is none too easy, and, paradoxically enough, in certain cases the most fruitful line of treatment is to secure complete fixation of the affected joint, for with this result pain at least disappears.

Here are some suggestions which may prove helpful. It is evident that correction of any *coincident* or *pre-existing* flat-foot is essential, and the usual steps are accordingly taken: the inside of the boot sole is raised by one-eighth of an inch, an efficient longitudinal arch support is fitted, the golosh is strengthened, the musculature of the foot is improved by exercises and massage, and it may be that the conjunction of these various measures, in so far as they restore the statics of the foot, will relieve the hallux rigidus. Raising the heel of the boot is sometimes helpful; it seems to diminish the pain, and it maintains the toe-joint in such a position of slight dorsiflexion as to increase the comfort of walking, even if fixation should occur.

It has been recommended that the joint should be freely moved under an anaesthetic and fixed in plaster in a dorsiflexed position for a few days, thereafter ensuring a course of free, active movements. My experience with this procedure has been disappointing, for it has seemed that in a certain proportion of cases it resulted in increased discomfort. I am coming to the conclusion that a better conservative measure is to encourage fixation in the toe, a condition secured in some measure by incorporating in the boot sole, immediately underneath the loose inner sole, a strip of thin steel or duralumin extending from the middle of the instep to the interphalangeal joint of the toe. It has been my experience, however, that conservative treatment is unsatisfactory, and that there is little prospect of improvement until operative intervention has been carried out.

Of the various operative procedures the best is that which entails removal of the base of the proximal phalanx and the tacking of a flap of fascia derived from the medial aspect of the toe over the raw surface of the bone. It is certainly unwise to remove the head of the metatarsal bone, for, if this is done to an extent required to correct the joint error, the stability of the longitudinal arch, and therefore of the foot, is seriously interfered with.

"MARCH FRACTURE."

My fifth case is of interest from the point of view of recognition of an injury which is easily overlooked. The patient had been on a walking tour carrying a heavy pack, and on the last day of his tour put in a walk of unusual length over rough ground. While he was on the last mile of his journey he experienced a sudden pain on the inner aspect of the foot immediately behind the heads of the first and second metatarsal bones. He imagined he had sprained the part; walking became a very painful affair, and shortly after the front portion of his foot became considerably swollen.

When he came under my care the signs were those of severe sprain with local tenderness behind the second metatarsal head; but an *x*-ray examination revealed the presence of what is termed a "march fracture"—a fracture of the second metatarsal bone at that narrow portion which lies immediately behind the head (Fig. 7). The second and third metatarsals are the bones most liable to be affected, and it is supposed that the liability is related to the blood supply. Repeated spasmodic contraction of the interosseous muscles interferes with the distal blood supply of the foot, so that there is an atrophy of the second and third metatarsals at their phalangeal extremities. The necks of these bones are naturally slender structures, and the influence upon the blood supply further increases the fragility, so that one or other yields under a strain which in ordinary circumstances would have been harmless.

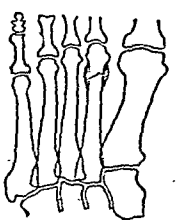

FIG. 7.—A "march fracture" sustained at the neck of the second metatarsal bone.

Once recognized, the treatment was easy. Fixation in plaster for three weeks was the plan adopted, but the importance of the case lies in the recognition of the possibility that in certain circumstances a fracture may occur in the course of such a simple exercise as walking.

"DANCING FRACTURE."

A somewhat similar experience illustrates my next case. The patient was dancing when she experienced on the *outer side* of her right foot a sharp pain, which she attributed to a kick from her partner. As the days went by the pain persisted and swelling appeared. What does

the radiogram reveal? There is a fracture at the base of the fifth metatarsal bone. (Fig. 8.) It is a mere chip off the base, and it has been produced, not by any direct violence, but by a sudden eversion of the foot and the pull of the peroneus brevis muscle. It is an example of what is appropriately called a "dancing fracture."

Here again the treatment consists in fixation of the foot until the fragment has reunited, and the interest is therefore not so much one of treatment as of the recognition of the fact that a fracture could have occurred in this somewhat indirect and oblique fashion.

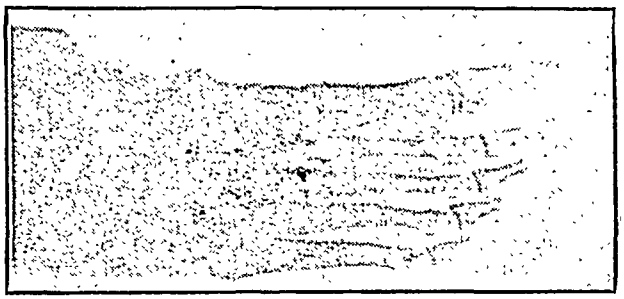

FIG. 8.—"Dancer's fracture" of the base of the fifth metatarsal bone, sustained by sudden eversion of the foot.

KÖHLER'S DISEASE.

Tarsal scaphoiditis, or Köhler's disease, is the subject of the next case. (Fig. 9.) A boy of 7 complains of discomfort on the inner border of the right foot, and there is an evident limp in walking. Examination reveals a swelling, apparently bony in source and occupying the position of the tarsal scaphoid bone. There was an indefinite history of a slight injury some months previously, which may or may not have a bearing upon this later development.

The condition gives rise to anxiety, and in the majority of cases fears are entertained that the condition is tuberculous. We have the comforting reflection that, whether specific treatment is adopted or not, the error passes on to spontaneous cure, leaving no trace of its existence except perhaps a predisposition to the development of flat-foot.

We know very little about Köhler's disease. It is in part a mystery why it should pick out the scaphoid. Three explanations have been put forward: (1) that the scaphoid is the last bone in the foot to ossify; (2) that, being the keystone of the arch, it is concerned with a great deal of weight-bearing; and (3) that it has a double or bilobed nucleus. While these may be predisposing influences in localizing the disease, we are by no means clear as to what constitutes the change. It is on a parallel with apophysitis of the heel bone, the Osgood-Schlatter's disease of the upper epiphysis of the tibia, and an unnamed condition of the crest of the ileum, similar in appearance and behaviour. The view generally held is that the condition proceeds from an obscure but distinctive infection, which, while not inducing pus formation, alters the texture of the bone and produces the irregular calcification distinctive of the condition. In some curious way it appears to pick out an epiphysis to which a tendon is attached.

FIG. 9.—Köhler's disease or tarsal scaphoiditis. The ossification of the scaphoid is reduced to a small central nucleus. The actual size of the bone is not appreciably diminished, but the cortical areas are decalcified.

No special treatment is required. Fixation of the foot may be an advantage, but it is not essential, and I think that the affection improves more readily if events are allowed to take their course.

SESAMOID BONES.

Accessory bones of the foot are sometimes a source of trouble and anxiety. An example of this is afforded by the following case. A man, aged 37, jumped from the top of a bank to the ground, a distance of three to four feet. There was a jar to the joint, and some pain around the ankle ensued. The condition was treated as a sprain, and no x-ray examination was at first carried out. Later, the symptoms proving intractable, an x-ray photograph was taken, but the rule of always x-raying both the affected and the healthy foot was neglected. The radiogram showed a segment of bone lying behind the astragalus, looking as though there had been a fracture of a small fragment from its posterior surface. But another radiogram, on this occasion of both feet, showed that the condition was bilateral. It was, in fact, an example of the os trigonum, a curious accessory bone of the foot which lies immediately posterior to the astragalus, and may easily be mistaken for the fragment of a fracture, particularly if there is a history of a compression injury to the bone. (Fig. 10.)

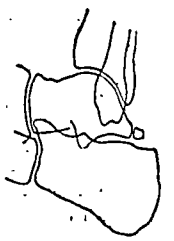

FIG. 10.—The os trigonum situated at the posterior border of the astragalus and giving an appearance liable to be confused with a fracture of the posterior extremity of the bone.

The existence of these accessory bones (sesamoids they actually are) should always be kept in mind. The most important examples are the ones I have just described—the os tibiale externum, and the peroneal sesamoid.

PATHOLOGICAL CONDITIONS OF THE HEEL.

There are certain conditions of the heel which are sometimes sources of difficulty in diagnosis. Let me briefly refer to them with illustrative cases.

Calcaneal Spur.

The first case is that of a man of 42, stout and heavy in build. He is a rheumatic subject, and this point is important in explaining the pathological condition. His complaint is intense pain on the under surface of the heel. It is chiefly noticeable when he puts weight upon the part, and may be agonizing in its intensity. On local examination there is little of importance to be seen, but pressure with a blunt point produces pain at one spot. An x-ray photograph established the condition as one of calcaneus spur or spine. (Fig. 11.)

FIG. 11.—Calcaneus spur developing in a man aged 46, and causing severe pain on the under aspect of the heel.

The origin of the condition is disputed, but it is generally believed to follow a slight tearing of the periosteum on the under surface of the os calcis resulting from a dragging on the attachment of the flexor brevis digitorum muscle. Other factors probably operate—for example, undue friability of the tissue—but the real origin is apparently a local periosteal tear in an individual whose periosteum

is the site of a mild infective process, such as we find in osteo-arthritis.

The problem of treatment is by no means easy. It would seem a minor and satisfactory procedure to remove the spur, but we have no guarantee that it will not re-form, and in a more extensive degree. When we recall that these spurs may disappear spontaneously, we feel that there is room for non-operative treatment. This takes the form of "protection." A thick felt is placed below the situation of the spine, a cup-shaped hollow ensuring freedom from pressure on the offending prominence. I am told that diathermy is of great value in hastening absorption of the deposit, but I cannot speak of this from personal experience.

Irregular Ossification of the Calcaneus.

The next two cases are examples of pain complained of at the back of the heel. The first patient is a 10-year-old schoolboy, in whom the pain first occurred after a long run. Since its onset it appears to have been produced by any undue amount of walking or running. It is described as an ache rather than a sharp pain, and with it there is often a cramp-like contraction of the muscles of the calf.

On examining the part two features are evident: the calcaneus is slightly broadened behind, while pressure over this area produces slight discomfort. An *x*-ray photograph shows that the metaphysis of the heel bone at the junction of the epiphysis and the body of the bone is the site of an intense but somewhat erratic activity. New bone is being formed in isolated clumps rather than in the uniform deposit of a healthy ossification; there is undue congestion, and the epiphysis itself shows the mottling of irregular ossification. (Fig. 12.) The appearances are those of a selective irritative process, probably toxic in character, though why it should exercise so local a selection is a mystery.

FIG. 12.—Apophysitis of the calcaneus in a boy aged 10. The epiphysis shows characteristic irregular ossification.

The condition need cause no alarm; it responds to counter-irritation, raising of the boot heel to relax the tendo Achillis, rest, and the elimination of any undue degree of local pressure.

Calcaneal Bursitis.

The other case in this group illustrates a different explanation of somewhat similar symptoms. The patient complains of pain over the back of the heel, with recurrent cramp of the calf muscles and the appearance from time to time of a tender swelling at the point from which the pain seems to originate. An *x*-ray examination yields negative results. On investigation it is found that there is an area of local tenderness over the upper part of the posterior aspect of the heel, and it may be possible to detect a localized swelling at the point of tenderness. The case is one of inflammation of the calcaneus bursa. The anatomical bursa lies between the tendo Achillis and the posterior surface of the calcaneus, but an adventitious bursa frequently arises in a subcutaneous position and immediately overlying the point of insertion of the tendon. Both bursae, but particularly the latter, are liable to irritation by ill-fitting shoes, and, if the overlying skin becomes blistered or broken, a lymphatic infection of the bursal space ensues.

Attention to the footwear may be all that is required to remedy the error, but, if a definite infection of the bursa is established, it is wiser to remove the sac under local anaesthesia and thereafter to take precautions against recurrence of the irritation.

PLACENTA PRAEVIA AND ITS RESULTING FOETAL MORTALITY.

BY

F. NEON REYNOLDS, F.R.C.S.ED.

IT appears from statistics that placenta praevia is found about once in every 500 cases, and is most common in women who have had many pregnancies, especially if these have occurred in rapid succession. Little is known of the etiology of the condition, but two theories have been put forward:

1. *The ovum may be implanted from the beginning in* the lower uterine segment and the placenta formed, as usual, from the decidua basalis. It is not known why the *ovum becomes attached to the lower segment; it may be due* to a deficiency in the ordinary properties of the chorionic villi or to some condition of the decidua, such as previous inflammatory changes, which render it unsuitable for implantation.

2. The ovum may be implanted in the upper segment in *the usual way, but the villi of the decidua capsularis pro*liferate instead of undergoing atrophy, and invade the decidua vera of the lower segment after contact has been *brought about by growth* of the ovum. Then proliferation of the villi of the decidua capsularis would form part of the placenta in the lower segment.

PATHOLOGY.

The placenta is usually larger, more degenerated, and contains more infarcts than normal. These changes may be accounted for by the fact that it can obtain only a comparatively poor blood supply. The cord often has its insertion at the margin. The lower segment and the cervix are generally thicker than usual and more vascular; they do not dilate as easily, and tear more readily. The haemorrhage, which is the chief symptom, comes from the maternal blood vessels, which are opened by the separation of the placenta when the cervix dilates. There is no foetal haemorrhage unless the placenta is torn by manipulation in treatment.

VARIETIES.

There are two varieties of placenta praevia: (1) Complete, in which the placenta entirely covers the internal os. (2) Incomplete, in which the placenta does not cover the os. Of this variety there are two types: (*a*) in which the placenta partly covers the internal os so that it can be felt by the examining finger through the os; (*b*) in which the placenta is situated in the lower uterine segment but does not come as low as the internal os, and therefore cannot be felt unless examination be made above this level.

The terms "central," "marginal," and "lateral" are also used to denote these three degrees. It must be remembered that a placenta which appears to be central when the os admits one finger may be marginal when the os is further dilated.

SYMPTOMS.

Haemorrhage is the only symptom, and usually takes place during the last four weeks of pregnancy; it may, however, occur at any stage. It is not necessarily accompanied by labour pains, being caused in some cases by painless contractions which open the os. The bleeding may start as small repeated losses or as a severe and alarming haemorrhage, but is always intermittent. There is sometimes a history of trauma or somewhat strenuous exercise, but commonly no apparent cause is present to determine the onset. There is no pain apart from possible labour pains, and on palpation no tenderness of the uterus is noticeable. Foetal parts are felt as usual, and there is no alteration in the normal tension of the uterus.

DIAGNOSIS.

The diagnosis may be considered in two stages: first, before there has been any haemorrhage, and secondly, after the onset of haemorrhage, the latter being the stage at which placenta praevia is usually diagnosed.

Before the Onset of Haemorrhage.

All cases of pregnancy should be examined particularly carefully during the last few weeks, as it is during this period that the abnormalities, such as placenta praevia, can be discovered or suspected. The signs which might excite suspicion of the presence of this condition are:

(1) *On abdominal examination*: (*a*) Abnormal lie of the foetus. There may be a transverse lie, or the head may be felt very high up, perhaps lying in one or the other iliac fossa. (*b*) An unusually loud souffle heard over the pubic region.

(2) *On vaginal examination*: Difficulty in reaching the presenting part or feeling it in one fornix but not in another, or failing to feel any presenting part at all. Inability to push the presenting part into the pelvis in spite of normal pelvic measurements, and the fact that the promontory of the sacrum cannot be felt, or that there have been previous confinements without trouble. The feeling of a soft, boggy mass filling all or part of the fornices. This, once experienced, is not likely to be confounded with a breech presentation or hydatidiform mole, in both of which conditions there are other definite guiding signs.

If the diagnosis can be made at this stage, or the condition be suspected, precautions can be taken and arrangements made to institute prompt treatment in what is one of the most serious complications of pregnancy.

After the Onset of Haemorrhage.

This resolves itself into the differential diagnosis of antepartum haemorrhage; we have to distinguish between placenta praevia and accidental haemorrhage. The only definite sign of a placenta praevia is feeling the placenta through the partially dilated os. In attempting to do this it must be remembered that the edge of an incomplete placenta praevia may be some distance from the os, and no case should be labelled as one of accidental haemorrhage without a thorough examination. In this connexion I would urge the use of an anaesthetic in all but those cases which can be examined without straining, and in which the placenta is felt immediately upon introducing the finger into the os. Under an anaesthetic the examination can be made carefully and completely with less risk of trauma, which would increase the haemorrhage, and less risk of introducing infection—a further consideration of very great importance. Supporting evidence will be found in those signs which have been mentioned under the heading of diagnosis before the onset of haemorrhage.

In accidental haemorrhage the foregoing evidence is lacking except in those rare cases in which placenta praevia and concealed accidental haemorrhage are present together. We must not be misled by the presence of blood clot in the vagina or cervix; this should be carefully cleared out, with the help of a douche if necessary, and further examination made. The bleeding in accidental haemorrhage is steady and continuous. In a case of mixed external and concealed accidental haemorrhage the presence of pain apart from uterine contractions, tenderness on palpation, and increased tension of the uterus, together with the general condition of the patient, are sufficient to distinguish the condition.

To summarize these points:

Placenta Praevia.	*Accidental Haemorrhage.*
No pain.	Pain (concealed variety).
Uterus flaccid except during contractions.	Uterus not relaxed between contractions (concealed).
Uterus not tender to palpation.	Uterus tender to palpation (concealed).
Haemorrhage intermittent.	Haemorrhage continuous.
Presenting part felt only partially or not at all.	Presenting part felt normally.
Placenta felt per vaginam.	No placenta felt per vaginam.
Malpresentations common.	Malpresentations not specially associated.
Not commonly associated with toxaemias.	Commonly associated with toxaemias.

Hydatidiform mole with haemorrhage, and in which the mole can be felt through the os, may be confused with placenta praevia. In this, however, we have to guide us the size of the uterus, which is greater than it should be for the supposed period of pregnancy, and the absence of any foetal parts. Two other conditions which must be borne in mind are bleeding from a cervical polypus or from a carcinoma of the cervix. Both of these are generally easily discovered if careful examination is made.

TREATMENT.

This is by far the most difficult problem presented by placenta praevia. Each case must be carefully examined in all detail, and no hard-and-fast rules can be laid down. Certain lines of treatment are open to us.

1. Leaving alone.
2. Rupturing the membranes.
3. Rupturing the membranes and plugging the vagina.
4. Version and bringing down a leg.
5. Insertion of a de Ribes's bag.
6. Caesarean section.

All these methods have as their object control of the haemorrhage and the safe delivery of the patient. Choice of them can only be made after a careful study of the following points.

Condition, age, and parity of the patient.
Type of placenta praevia to be dealt with.
Period of gestation and condition of the infant.
Stage of labour—that is, degree of dilatation when the diagnosis is made.
Conditions under which treatment has to be carried out.

If the patient is fit and not yet affected by loss of blood any of these methods may be considered; if, however, we have to deal with a shocked, exsanguinated patient, our first consideration must be to stop the haemorrhage and combat the shock by the quickest and most effective method which does not, in its performance, involve any added strain or exhaustion. The method of choice here is to rupture the membranes, plug the vagina, and apply a tight abdominal binder from above downwards. The shock can then be dealt with by the usual means, and later, when the patient has somewhat recovered, other treatment can be decided upon if necessary. In this connexion the value of blood transfusion, which often may be the measure determining recovery, must not be overlooked. The operation can easily be carried out in the patient's home with simple apparatus; a microscope is not necessary for testing the blood of the donor against that of the recipient, and a complete grouping of both need not be done.

Age and parity are important in the case of the elderly primipara, with little chance of further pregnancies, for whom a living child is very essential. Immediate Caesarean section is then indicated, except in the very mild, incomplete type of case requiring no active intervention. In a multipara with several living children, or a young primipara with plenty of time for further chances, the infant is generally disregarded and treatment directed solely in the interests of the mother. In considering the period of gestation and the condition of the child it is obvious that in a very premature labour, or if the child is already dead, the mother is again the only consideration.

The type of placenta praevia is important; in the complete or central type Caesarean section should always be performed, provided the child is alive. The nearer the approach to the lateral type the more effective will be the natural force of labour in controlling the haemorrhage.

The stage of labour—that is, the amount of dilatation of the os when the diagnosis is made—has a direct bearing upon the treatment, since the less the dilatation the more difficult and dangerous to the patient is any form of treatment involving manipulation through the os. Therefore, with a dilatation of less than two fingers, rupturing the membranes and plugging the vagina is generally indicated (subject to the other conditions being satisfied), even if only as a preliminary to other procedures. With a dilatation of two fingers or upwards there is the choice of version and pulling down a leg or the insertion of a de Ribes's bag.

The question of the conditions under which treatment is to be carried out is one upon which there can be very little difference of opinion. Every case of placenta praevia, unless so slight that no treatment, beyond perhaps simple rupture of the membranes, is required, should be treated in hospital or a nursing home unless the patient's home allows facilities equal to those afforded by such institutions. The most difficult and important part of any form

of treatment is the prevention of sepsis; such undertakings as plugging the uterus cannot be carried out efficiently and with a minimum risk of subsequent sepsis unless conditions conform to a standard which is seldom available in patients' homes.

Having considered these factors which guide us in the choice of treatment we can now take the individual methods and see in what type of case each one is indicated. We can leave alone the very slight case with an occasional small haemorrhage, provided that the labour is not prolonged sufficiently for the patient to be affected by the repeated slight losses. Many such cases are diagnosed as accidental haemorrhage, but it is more probable that they are due to a low placenta.

Rupturing the membranes is sufficient in the milder cases of the lateral type in which labour has begun, and also in those cases in which there is no serious loss until the os is more than half dilated. If the membranes are then ruptured the presenting part can be pushed well down and a binder applied with good control of the haemorrhage. It must be remembered that rupturing the membranes is *not a reliable* method of inducing labour, and for that reason should not be used alone in the absence of good uterine contraction.

Rupturing the membranes, plugging the vagina, and applying a tighter binder is indicated in the incomplete type of moderate severity with dilatation of less than two fingers, in cases in which labour has not begun, and in all cases in which the condition of the patient, from shock and loss of blood, is too bad to admit of any more extensive treatment. It must be remembered that, to be effective, the plugging must be carried out very carefully, if possible under an anaesthetic and with the aid of a speculum; it must start well back, and care must be taken that the plugging is placed behind the cervix to start with, and does not merely push the cervix backwards. If not carried out efficiently haemorrhage will continue above the plug. The danger of sepsis following this procedure cannot be too strongly emphasized, and the plug should always be removed as soon as possible. This method should, in fact, be looked upon only as a preliminary to other treatment in the severe cases, or as a means of inducing uterine contractions.

Version and pulling down a leg is a sure and fairly safe method of immediately controlling the haemorrhage in cases of the incomplete type with severe bleeding, or in the central type seen too late for Caesarean section. It almost invariably results in good contractions and subsequent delivery without further intervention. It is always indicated in the case of a small or premature foetus with a vertex presentation and in transverse lies. Breech presentation should be treated by bringing down a leg. Version should always be by the external method where possible; this will give a minimum of trauma and of risk of sepsis. Once the breech is down, a leg can be seized with very little manipulation. It should not be persisted in if found very difficult, and should never be carried out if there is any disparity in size between foetal head and pelvis.

De Ribes's bag can be used instead of the half-breech; it can be introduced with less dilatation than is required for pulling down a leg; it is effective in controlling the haemorrhage, and gives a better chance of a living child. There are, however, very definite disadvantages. It is not such a good stimulus to labour, and it may dilate the os without producing labour pains, especially if traction is used. Thus there is considerable risk of a severe and sudden haemorrhage when the bag is expelled into the vagina. This will necessitate further procedure to get the presenting part down in order to maintain controlling pressure. The presenting part may be displaced by the bag and an oblique lie result; the bag perishes easily, is not always available in an emergency, and is a ready means of introducing sepsis.

One other method of this type must be mentioned—namely, traction from Willet's forceps applied to the foetal scalp. Good results have been obtained, and it causes surprisingly little damage to the child other than a cephalhaematoma.

Caesarean Section.

The use of Caesarean section in placenta praevia is a much-discussed question, and one upon which unanimity of opinion is seldom found. Certain cases, however, definitely require this method of treatment.

1. All cases of the complete, or central, type if the condition of the mother allows it.

2. Cases in which the birth of a living child is of great importance—for example, in elderly primiparae.

3. Cases in which there is any mechanical obstruction to delivery, such as a rigid cervix or disproportion between the size of the child's head and the pelvis, however slight. (It can be understood that the extra difficulty produced by such complications might be just too much for a patient who has undergone a somewhat prolonged labour and is weakened by loss of blood.)

4. Cases complicated by toxaemia or constitutional conditions, such as cardiac disease, which require the labour to be as short and as easy as possible.

5. Cases of twin pregnancy.

In considering this method of treatment the conditions under which it has to be applied are all-important. Carried out in suitable surroundings by one accustomed to the operation it has the advantage of being a fairly safe means of terminating a condition which seriously threatens the life of the mother; also it gives the best chance of a living child, and its performance is not affected by such conditions as an abnormally large child or comparative pelvic contraction, which increase the difficulties of the other methods. The disadvantage lies chiefly in the potential weakness of the uterine scar and its behaviour in subsequent pregnancies. This is a point to which I shall refer *again later*.

Dangers of Placenta Praevia.

There are certain dangers which have to be faced in placenta praevia no matter which particular treatment is used.

1. *Post-partum Haemorrhage from the Lower Uterine Segment.*—This is due to the relatively poor power of contraction possessed by the lower segment, and the consequent failure to occlude the large sinuses opened up by the separation of the placenta. This haemorrhage must be treated by the usual means, such as compression, packing, and drugs. It may be necessary, in cases in which Caesarean section has been performed, to remove the uterus, but this is generally only called for when the whole uterus is soft and flabby, and cannot be made to contract. Treatment of such a case by Caesarean section facilitates control of the haemorrhage, as with the abdomen open direct pressure can be applied and the uterine arteries compressed.

2. *Rupture of the Lower Segment.*—In normal cases the lower segment is much thinner, more friable, and less elastic than the upper, and this is still more marked at the site of implantation of the placenta. For this reason all manipulations must be carried out with the greatest possible care, especially such procedures as version or the application of forceps, which may be necessary after the expulsion of a de Ribes's bag. It is an accident which is very sudden in occurrence, and is almost always fatal.

3. *Sepsis.*—The placental site is close to the vagina, which is never sterile; it is therefore very easily infected during examination or manipulations, or subsequently during the puerperium. In addition, the resistance of the patient is lowered in proportion to the amount of blood which has been lost.

Prognosis.

The outlook for the mother depends very largely upon how soon the diagnosis is made. Many fatalities are due to the occurrence of severe haemorrhage, or to the introduction of sepsis before the true condition is appreciated and efficient treatment instituted. In arriving at a prognosis the presence or absence of uterine contractions must be considered. A well-contracting uterus means a healthy one, not yet weakened by excessive loss of blood, and is

an indication that the patient is still in a fair condition to withstand the severe demands to be made upon her.

The cause of death is haemorrhage, either ante-partum or post-partum, shock from manipulation or instrumental delivery, sepsis, or such tragic accidents as rupture of the lower segment or pulmonary embolism, the last of which is, perhaps, specially liable to occur in this condition. The maternal mortality may be taken as about 5 to 6 per cent. The figure given by Queen Charlotte's Hospital[1] in a series of 308 cases is 5.5 per cent., taking all methods of treatment together. It is interesting to look at the results of the individual methods.

	Cases.	Per cent.
Spontaneous delivery	62	6.4
Vaginal plugging	53	1.9
De Ribes's bag	38	7.9
Version and bringing down a leg ...	101	6.0
Caesarean section	54	5.5

From this it will be seen that the lowest mortality is from vaginal plugging; but it must be remembered that this method is sufficient only in the treatment of the milder cases of the lateral type, especially those in which haemorrhage is controlled with the onset of labour. The next lowest is from Caesarean section, the method used in cases of the central type.

The outlook for the child is uniformly bad; a large number are stillborn, and many die shortly after birth. The causes of death are asphyxia from placenta separation, haemorrhage from laceration of the placenta, pressure on the cord, and prematurity. The figure from the series of Queen Charlotte's Hospital is 59 per cent. Taking the different methods individually we get:

Spontaneous delivery	43.5 per cent.
Vaginal plugging	58.5 "
De Ribes's bag	57.0 "
Version and bringing down a leg	78.0 "
Caesarean section	42.6 "

Version and bringing down a leg, which was decided upon in this series 101 times—nearly twice as often as any other method—gives the appalling foetal mortality of 78 per cent. It appears from this large series of cases, which may be taken as fairly representative of present-day results, that in the commonest type of placenta praevia, under up-to-date treatment, we get a maternal mortality of 6 per cent. and a foetal mortality of 78 per cent.

I have given an outline of what appear to be the generally accepted views upon the treatment of this condition. These views, in spite of occasional sporadic and individual criticisms and many discussions, have been held for many years, and there has been very little improvement in results. The general feeling among obstetricians is one of dissatisfaction. No one should be satisfied with a foetal mortality of nearly 80 per cent. I can think of no other condition in which this figure is even approached. It is true that the mother must always be the first consideration, but equally the child does or should matter. A treatment is required which lowers the foetal mortality and at the same time decreases, or at all events does not increase, the maternal mortality.

I should like to make a plea for the wider use of Caesarean section in those cases of placenta praevia which would otherwise require plugging, version, or a de Ribes's bag. It is certain that, provided the diagnosis be made sufficiently early, this method would considerably diminish the foetal mortality without detriment to the chances of the mother. Many men of repute have put forward the same plea, but without success.

Blair Bell[2] in 1920 said: "I am certain that Caesarean section is the proper treatment in a large majority of cases. . . . I am, indeed, convinced that Caesarean section affords no more danger to the mother than version and delivery per vias naturales. Those who still hold to version as the treatment of election must therefore justify their indifference to the fate of the child."

Herbert Spencer[3] considered that Caesarean section was rarely indicated, and gave as his reasons that after version the mother could have children with safety, which was not the case after Caesarean section, and that the child, owing to its prematurity, would often succumb. This second objection can surely be dismissed at once; no one would advocate this treatment, except on very special grounds, in a case in which the child was so premature as to make its survival a matter of doubt.

Jellett,[4] in 1925, made a vigorous reply to a plea for Caesarean section put forward by Watson and Miller.[5] He cited a low maternal death rate, under 5 per cent., and referred to the fact that treatment had not altered for nearly thirty years, suggesting that this was due to the generally satisfactory results obtained. He completely ignored the child's claim for consideration.

Let us now see what are the disadvantages and dangers of Caesarean section. At the time of operation the condition of the patient must be taken into account, together with the risk of haemorrhage and sepsis, all of which are also serious considerations in any other method. If the diagnosis can be made sufficiently early there is less shock, less risk of haemorrhage or sepsis in Caesarean section than in any other form of treatment. It is, however, to the later effects that Spencer was referring when he said that the mother could not usually have subsequent children in safety. The general mortality of the operation performed under suitable conditions and not in extreme emergency is probably not higher than 2 or 3 per cent., so that from this point of view the maternal mortality would not be increased. The danger of the rupture of the uterine scar in subsequent pregnancies is the most grave objection to be considered. Eardley Holland, who in 1920 made a thorough investigation into this question, gives 4 per cent. as the frequency of rupture of the scar. Other figures are those of Munro Kerr[6] 1.8 per cent., and Couvelaire[7] 2 per cent. We can, however, take the conclusions come to by Eardley Holland[8] upon the largest number of cases ever investigated in this connexion to prove that this risk can be reduced. The cause of ruptured scar is imperfect healing leading to a thin scar, in which muscular union has failed. Factors leading to this imperfect healing are infection of the uterine wound and unsuitable methods and material in suturing the uterine incison. Eardley Holland found that the incidence of rupture was far greater when catgut was used to suture the uterus than when the suture material was silk or silkworm-gut, and he advocates the regular use of the latter material.

The operation is not difficult, but it is too often carried out in an atmosphere of hurry. Remarks to the effect that the whole operation took only twelve minutes should be regarded as inviting criticism rather than congratulation. There is no need for any undue haste, especially after the child has been delivered; very rare indeed are the cases in which an extra few minutes will affect the patient adversely, and the utilization of those few minutes in obtaining good contraction of the uterus and careful, accurate suturing will be amply repaid by the results, both immediate and remote. In the light of modern knowledge, with improved methods and material, and with more regard to the technique of asepsis, the risk of rupture of the uterine scar can surely be very considerably reduced.

Conclusions.

1. The question of foetal mortality in placenta praevia is worthy of serious consideration.

2. Wider use of Caesarean section can reduce this mortality without increasing the risk to the mother.

3. This method has never been tried upon a sufficient number of suitably selected cases for a correct estimate of its value to be made.

4. The usual objections to this method of treatment can be largely discounted when the operation is performed by the modern technique and under suitable conditions.

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AN INVESTIGATION OF THE END-RESULTS OF COLLES'S FRACTURES.

BY

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THE following account is based on the examination of about 50 cases of Colles's fracture sustained at least two years previous to our examination, in an endeavour to ascertain the causes for the imperfect results that obtain from the usual methods of treatment at present adopted. Our investigation was made on different lines from those of Edwards and Clayton, whose interesting analysis of 424 fractures of the lower end of the radius in adults appears in the *British Medical Journal* for January 12th (p. 61), but we feel that this account may be of value, particularly when compared with theirs.

In each case investigated the original *x*-ray plates were obtained when possible and the out-patient card traced. On re-examination the following observations were made: (1) Range of movement compared with the uninjured wrist. (2) Localized areas of tenderness. (3) Symptoms complained of by the patient. (4) Deformity. (5) Functional result—patient's own opinion.

The accompanying table, indicating the results in the first 20 cases, is quite typical.

Table showing the End-results in Twenty Cases of Colles's Fracture Treated by the Usual Methods.

Initials.	Disp. of orig. fract.	Flexion. F.	Flexion. N.	Dorsi-flexion F.	Dorsi-flexion N.	Radial dev.	Ost. arthr. inf. R.U. jt.	Pain.	Result.
J. C.	– N.R.	75	85	70	70	–	(++)	++	Fair.
M. C.	– N.R.	75	80	80	80	+	–	++	Poor.
W. K.	+ R.G.	80	85	70	75	–	–	(+)	Good.
A. H.	++ N.B.	0	80	0	70	+	++	+++	Bad.
M. W.	+ N.B.	60	85	80	80	+	–	–	Good.
M. M.	– N.R.	Full		Full		(+)	–	–	Good.
S. K.	– N.R.	Full		Full		–	–	–	Good.
J. D.	– N.R.	30	80	80	80	–	–	–	Good.
E. S.	+ R.G.	60	80	80	80	–	–	(+)	Good.
M. T.	– N.R.	Full		Full		–	++	++	Fair.
M. W.	+ R.G.	40	80	75	85	–	+	++	Fair.
S. K.	– N.R.	Full		Full		–	–	–	Good.
E. W.	– N.R.	30	75	Full		–	–	–	Good.
H. B.	+ N.B.	30	60	60	60	–	+++	+++	Bad.
S. G.	– N.R.	Full		Full		–	–	–	Good.
L. W.	– N.R.	Full		Full		–	–	–	Good.
A. O.	– N.R.	Full		Full		–	–	–	Good.
S. W.	++ R.G.	0	70	20	70	++	+++	+++	Bad.
A. C.	++ R.G.	50	80	60	70	+	++	+++	Bad.
E. J.	– N.R.	60	70	75	75	–	–	–	Good.

Disp. of orig. fract. = Displacement of original fracture. N.R. = No reduction. R.G. = Reduced with gas. In columns 3 and 4, F. = Fractured, and N. = Uninjured wrist. Ost. arthr. inf. R.U. jt. = Osteo-arthritis in inferior radio-ulnar joint. Radial dev. = Radial deviation.

From this table it is seen that the results were good in 60 per cent. of cases, fair in 15 per cent., poor in 5 per cent., and bad in 20 per cent. The proportion of good results (60 per cent.) would appear quite satisfactory, but it is interesting to compare those fractures in which there was little or no displacement with those in which displacement was a marked feature; thus:

Without displacement	12=60 per cent.
With displacement	8=40 „

It is seen, therefore, that, as would be expected, uniformly good results obtain where no displacement had occurred, but of the remaining cases 50 per cent. are bad, 12½ per cent. poor, and 37½ per cent. fair.

From our investigation it would appear that the results of Colles's fractures with any displacement will in two years be bad in half the cases and unsatisfactory in the remainder. In our series not one result could be described as good, the majority were thoroughly bad.

It is reasonably assumed, where existing displacement of the fragments of a fracture has been reduced and good anatomical apposition restored, that, provided no comminution has occurred, the functional result would be satisfactory, in the same way that a simple fracture without displacement provides a perfect functional result. Our attention was therefore directed to this factor—incomplete or imperfect reduction—as a predisposing cause of bad results.

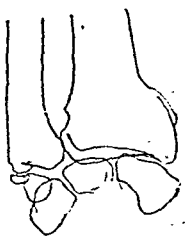

FIG. 1.—Old Colles's fracture with marked radial deviation and displacement. Ununited fracture of the styloid process of the ulna.

In case A. H., the fourth in our series, the apparent displacements of the distal radial fragment are (1) backward rotation, (2) radial deviation and rotation. The effect of these displacements is manifest in the inferior radio-ulnar joint, which becomes the seat of marked osteo-arthritis. It will be observed that the articular surfaces are at an angle as seen in the antero-posterior view (Fig. 1), and are markedly out of alignment in the lateral plane. The case of S. W., the eighteenth in our series, was identical, and showed marked unreduced radial deviation with consequent arthritis. Both of these patients were unable to use their wrists or perform any manual work;

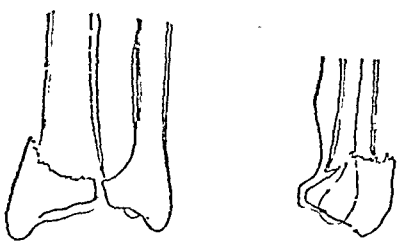

FIG. 2.—Case of S. W. Tracings of *x*-ray photographs taken at time of injury (August 19th, 1924), showing uncorrected radial displacement and backward displacement.

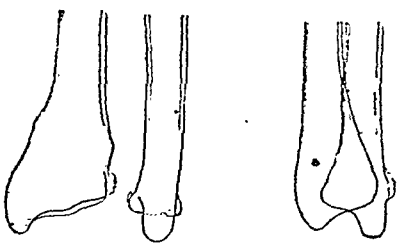

FIG. 3.—Case of S. W. Tracings of *x*-ray photographs taken November 17th, 1926, more than two years later, showing radial displacement and backward rotation of distal radial fragment. Advanced osteo-arthritis in radio-ulnar joint.

they represent the most unsatisfactory result of inadequate treatment and imperfect reduction. In every bad case it was possible to demonstrate osteo-arthritis by *x*-ray examination as in these two cases, and care was taken to exclude those in whom generalized arthritis was present in other joints.

Tracings of the plates of S. W. taken on August 19th, 1924, are reproduced for comparison with those of November 17th, 1926 (Figs. 2 and 3), and it is seen that (1) the radial displacement has not been reduced; (2) the backward rotation has been reduced without previous disimpaction, with the result that the backward displacement persists. It will be seen that the backward rotation is,

however, still present in the x-ray photographs taken on November 17th, 1926, showing that disimpaction must be obtained before any attempt at reduction is made, and that immobilization was not sufficiently prolonged.

The concomitant fracture of the styloid process of the ulna, so frequently seen in association with Colles's fracture, remains ununited in approximately 50 per cent. of cases; but it was found in this investigation that, contrary to the usual teaching, no symptoms or pain arise from this injury in the event of non-union. No case in our series exhibited symptoms that could be definitely attributed to non-union of the ulnar styloid, and we agree with Edwards and Clayton that fracture of this bone makes no difference to the end-result.

From this early review of our results (our investigation is not complete) the causes of imperfect function of the wrist after a Colles's fracture would appear to be (1) backward rotation of the distal radial fragment; (2) radial deviation and displacement of the distal radial fragment. As the most usual complaint was of pain, it was found difficult to decide how much disability could be attributed to weakness of the wrist due to loss of mechanical efficiency of the flexor tendons when the backward tilting of the radial fragment is uncorrected. In most cases the pain from arthritis in the inferior radio-ulnar joint was sufficient to render the wrist useless and "apparently" weak, but in all cases it was possible to demonstrate well-marked arthritis where the fragments had not been restored to perfect anatomical apposition. For this reason, whatever the immediate result of treatment, the most important cause of bad results would appear to be osteo-arthritis ensuing as an ultimate sequel to imperfect anatomical restoration of the fragments, and this necessitates reduction of both the backward displacement and the radial deviation and displacement.

TREATMENT.

In undertaking the treatment of Colles's fractures every effort should be made to restore complete anatomical position of the fragments, which we believe can only be obtained by complete disimpaction of the fragments before manipulation and by immobilization for a longer period than at present advised.

Choice of Anaesthetic.—Although the majority of cases are reduced under gas anaesthesia, complete relaxation is seldom obtained, and when possible a general anaesthetic is very much to be preferred. We feel that many imperfect results follow the rapid, incomplete manipulation necessitated by a short "gas" anaesthetic.

Manipulation.—Complete disimpaction of the fragments is essential before any attempt at manipulation is made. The method advocated by Sir Robert Jones is adopted, and manipulation is continued until free movement is permissible between the fragments. Reduction of the deformity is then obtained, with restoration of the true anatomical apposition. It is at this stage that a general anaesthetic is preferable to gas, as adequate time can then be taken for the application of the splints—a most important part of the treatment. It is possible to obtain an excellent reduction of the fracture with short anaesthesia, but if the patient commences to struggle before the splints have been applied—a frequent occurrence with gas anaesthesia—the deformity may readily be reproduced, or the operator contents himself with a "satisfactory" instead of a "perfect" reduction.

Splints.—The diversity of splints that have appeared for the treatment of this particular fracture testifies to the difficulty in obtaining a really satisfactory splint which will suit every case. Carr's splint is almost universally adopted as the routine splint, but is not suitable for every case. The practice of maintaining the wrist in a fully flexed position for twenty-four hours we believe to be unsatisfactory, and does not fulfil the important function of keeping the fragments in position, as has been claimed for it. The many special splints invented are too expensive and complex for routine treatment. Since commencing this study we have made use of two common splints—the anterior angular splint in conjunction with a straight back splint, both made of wood, simple in construction, and usually readily obtained. This method of splinting Colles's fractures is similar to that described by Scudder, but we prefer an anterior angular splint to the straight splint he uses. It is, of course, too early to be dogmatic about this method of treatment, but our results have been encouraging enough to prompt us to offer the method as a suggestion for others who may adopt it and give it a trial. We claim no originality, as the method is fully described by Scudder; rather we would revive this simple and efficient method, which is as follows:

An anterior angular splint is chosen so that when lightly padded it will extend to the ball of the thumb. The straight posterior splint should be long enough to extend from the elbow to the metacarpo-phalangeal joint. Each splint is padded separately for each case with a single layer of wool, and in the posterior splint a pad of wool is placed so that it will rest immediately below the distal radial fragment. The anterior splint is similarly stuffed with a pad of wool placed so that it will rest opposite the lower end of the proximal radial fragment, and, in addition, is padded so that it will fit the

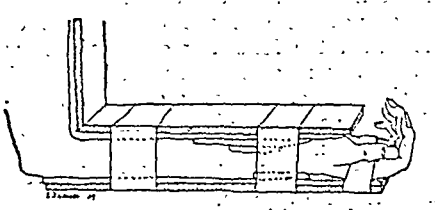

FIG. 4.—Diagram illustrating method of application of splints and strapping in suggested form of treatment for Colles's fracture.

contour of the front of the forearm. It is to be noticed that the back of the forearm is quite straight when the forearm is supinated. The posterior splint is applied first with the forearm supinated, and the anterior splint follows, the fracture being as it were squeezed between the splints. Three strips of strapping are next applied, the first round both splints immediately over the fracture, the second in front of the elbow, also around both splints, and the third across the palm of the hand, fixing the hand to the posterior splint but allowing free movements of the fingers. The strapping should not be applied too tightly on account of the subsequent swelling which invariably occurs, and when applied pressing the splints together should render them slack. The forearm is then fully supinated and the whole firmly bandaged. By this means the fragments are securely immobilized and a good position maintained, and the fingers are free to commence active movements from the first. In addition, the hand may be fixed in adduction to overcome the radial deviation by the third piece of strapping. The arm is supported in a sling. The patient is seen the next day, and if there is any swelling the splints are carefully reapplied, the patient being encouraged to move the fingers as much as possible. The splints are not removed permanently for a week, after which massage and gentle movements are instituted, but this period between the injury and the commencement of massage will vary with individual cases. The advantages of this method are that the splints are comfortable in spite of the position of supination, and the position of the fragments is maintained, also that the method can be applied to every case, including the severely comminuted fracture and T-shaped fractures, both of which seem to do well when immobilized in supination.

CONCLUSIONS.

1. Colles's fractures without displacement yield uniformly good results, as observed two years after the injury.

2. Where displacement was a marked feature of the fracture the results two years after the injury are invariably unsatisfactory.

3. The disability was in each case due to osteo-arthritis in the inferior radio-ulnar joint, resulting from incomplete reduction of the fracture.

4. Non-union of the fractured ulnar styloid process does not affect the functional result.

5. Emphasis is laid upon restoration of anatomical apposition as important in the treatment, and a method of splinting is suggested.

We wish to thank Mr. E. G. Slesinger for permission to make use of the records of the fracture department of Guy's Hospital for this investigation, and for his kindly interest and helpful suggestions.

APHONIA AND HOARSENESS.*

BY

C. A. SCOTT RIDOUT, M.S., F.R.C.S.

I PROPOSE to make some observations on aphonia and hoarseness arising acutely. All of us are familiar with the sudden aphonia in a child or adult who has contracted a common cold associated with laryngitis; or with the croupy hoarseness, sometimes manifested instead, which generally yields to simple remedies. Now and again, however, especially in certain epidemics of so-called influenza, we come across cases not so simple in type which are associated with considerable oedema of the fauces and pharynx. In some of these cases oedema spreads to the arytenoids, which become so swollen as to resemble almost a pair of nasal polypi; the symptoms may become alarming and the aphonia may be associated with definite dyspnoea. The condition may be severe enough to necessitate laryngotomy or tracheotomy, though, as a rule, it yields rapidly to local scarification with a laryngeal knife. Should, however, the patient's condition then be too severe to permit of the necessary manipulation, laryngotomy must be performed at once. It is dangerous to impose on the heart, already toxic from the general infection, the strain of a battle against laryngeal obstruction, once this is producing a rising pulse, recession, and duskiness. At this point, furthermore, one might mention the possibility of an unsuspected diphtherial infection and urge that, however desperate the case may seem, tracheotomy may be performed just in time to save life. A few years ago I was asked by a medical friend to come at once and see a lad who was desperately ill with some respiratory obstruction so extreme that my friend did not think I would suggest doing anything. I found a lad of about 8 years of age, voiceless, livid, gasping, with marked recession of chest and neck, a feeble rapid pulse, and obviously in the last stages of laryngeal obstruction. Immediate tracheotomy at once changed the picture, and on investigation several of his school-mates were found to be carriers of diphtherial infection.

Simple Acute Aphonia.

Simple acute aphonia may persist when other signs and symptoms have passed off. The patient is generally a female aged 15 to 35; her cords are pearly white, perhaps slightly coated with mucus, but they do not approximate well; otherwise the patient is quite fit. I always hesitate to call a condition hysterical or neurotic on one examination, but if the patient, as often happens, can be made to say "E" quite well when the tongue is held out and the laryngeal mirror applied to the palate, or can be made to sing the vowels, the presumption is that the case is one of hysterical aphonia. It is necessary, however, to have repeated examinations until the patient has recovered, though as the patient has literally forgotten how to talk, this may take some time. Encouragement, suggestion, valerian, and faradism generally relieve the symptoms.

The aphonia, however, may not pass off so satisfactorily, and careful re-examination after two or three weeks is then essential. In this type of case the cords remain red or pink, slightly roughened or even granular, or the reddening may be unilateral without definite ulceration or swelling. The diagnosis of such cases presents perplexing problems, as the following will show:

A man of late middle age had what his doctor thought was an influenzal attack followed by hoarseness and loss of voice. On examination I found definite injection of the right vocal cord, with a little on the left; there was no loss of movement and no ulceration. I prescribed rest to the voice and steaming, but when I saw the patient again a week or ten days later the picture had changed. The right cord was now covered with pinkish granulations, the left was practically clear, but movements were still unimpaired. In the absence of chest signs I was still of opinion that the condition was post-influenzal, and probably of streptococcal origin. It was, however, thought expedient to obtain a further opinion, so we sent him to a leading laryngologist, who thought that the condition was either tubercle or early carcinoma, and advised punching out a portion of the cord for pathological examination. This operation the patient refused, and as he has since been perfectly well I believe that the original diagnosis was probably correct.

Streptococcal Laryngitis.

Other cases, however, do not end so happily. There are some with the same sort of history, but on examination a little shallow irregularity is noticed in the posterior half of either cord, perhaps very limited in extent and looking like a mouse nibble. The rest of the larynx may be slightly congested or the epiglottis may be very pale; there may be no arytenoid swelling, and movements may appear good. Alternatively the irregularity may take the form of a small definite ulceration with marked surrounding inflammation. Perhaps in the first variety careful examination of the chest will reveal pulmonary lesions, and a swab from the larynx itself show the presence of tubercle bacilli. In the second variety one may find only streptococci, though again pulmonary crepitations may be present. Even in the absence of tubercle bacilli one cannot say definitely that the case is not one of tuberculosis, though there are undoubtedly cases of streptococcal laryngitis with ulceration and even streptococcal pulmonary lesions, which simulate tubercle, especially among children. In any case treatment should follow a definite course: absolute silence must be enjoined, septic foci, such as carious teeth, septic tonsils and adenoids, removed, infected nasal sinuses cleansed, and if the swab shows chiefly streptococci, a polyvalent anti-streptococcal serum administered.

In a discussion on the question of oral sepsis in relation to lung conditions at the Royal Society of Medicine in January, 1928, I attempted to show by means of a series of cases the great improvement that might be brought about by removal of naso-oral sepsis, especially in children with pulmonary symptoms. One frequently meets cases of repeated attacks of laryngitis in children and adults in which the cause would seem to lie in a tonsil or sinus from which pus flows into the pharnyx and so to the larynx when the patient assumes the recumbent posture at night, and which clear up when the cause is removed. In advanced cases of laryngeal tuberculosis the outlook is desperate, but in one patient in whom the laryngeal condition was much worse than the pulmonary, tracheotomy, by insuring complete vocal rest, effected a cure.

Foreign Body in the Larynx.

So far I have dealt with aphonia and hoarseness apparently arising acutely, and gradually merging into chronic or intermittent forms. Before passing to the really chronic type I would, however, note that in sudden acute aphonia or raucous hoarseness the possibility of a foreign body must not be overlooked.

Many years ago, when I was doing a house appointment, a patient was admitted with a history of aphonia, which followed a violent spasm of coughing, brought on by swallowing a single tooth with a small plate and hook. Examination by indirect laryngoscopy showed the tooth balanced by its hook between the vocal cords, the hook being stuck on the upper surface of the left cord. This was in 1902, and as direct laryngoscopy was then unknown at the hospital an attempt was made to remove the tooth with a pair of laryngeal forceps. As this procedure only caused violent coughing, the patient was sent to the operating theatre for thyrotomy, but administration of the anaesthetic provoked a paroxysm of coughing and expulsion of the tooth.

About four years ago an 11 months infant was brought to me with a history of recurring raucous bronchitis with croupy cough. In the momentary view I was able to obtain by means of indirect laryngoscopy I saw something bright; I suggested a foreign body, and the desirability of administering an anaesthetic. Direct laryngoscopy through Irwin Moore's bronchoscope revealed a safety-pin caught in the right sinus pyriformis alongside the glottis. As the history was of four months' duration there is no doubt that the foreign body had been sucked in, and remained there during that long period.

Excessive Use of Voice.

Excessive use of the voice, common in newspaper boys, badly trained elocutionists, parsons, singers, etc., may manifest itself in permanently thickened congested vocal cords. One is often asked to tide over a difficult period—for example, Easter week—a parson whose voice is failing

* A paper read before the Winchester Division of the British Medical Association, November 21st, 1928

through excessive use or faulty production. It is only fair to warn the patient that further speaking may result in permanent damage to his voice; but if, as generally happens, he decides to carry on, then the best treatment one can suggest is that before speaking the patient should spray the throat with a 1 or 2 per cent. cocaine spray, following this, immediately he has finished, by steaming with menthol or friar's balsam. He may be given a sedative lozenge containing menthol, carbolic, and a little cocaine to suck intermittently, a medicine of strychnine and phosphoric acid to take internally, and advised to swallow a raw egg just before he is to use his voice. When the stress is over one orders complete vocal rest, attends to the condition of the nose, throat, and teeth, and gives advice on the subject of voice production.

The formation of singer's nodules is often accompanied by rapid failure of the patient's voice, or after a while its complete disappearance. These little nodules, whose site is at the junction of the middle and anterior thirds of the vocal cords, are best treated by rest, assisted if possible by cauterization with a pointed electro-cautery—not an easy manœuvre, but in most cases effective. In addition, of course, examination and treatment of conditions in the nose, nasopharynx, and tonsils may be required. These growths tend to disappear spontaneously, and should not be over-treated, though any septic causes should be removed. In adults I have found cauterization a satisfactory procedure.

Papillomata of the Larynx.

Another fairly common cause of aphonia in children and in adults below middle age are papillomata.

A boy of about 6 was brought to me because he could never talk above a low whisper. His condition had several times been diagnosed as laryngitis. On listening to his breathing I heard at every expiration a click, as though something were being driven against the glottis, and this suggested the diagnosis of papilloma. This diagnosis was confirmed by laryngoscopy, which revealed a stalked papilloma attached to the left vocal cord near the anterior commissure.

Only this year a boy aged 3 was sent to me on account of aphonia with some dyspnoea. During examination under an anaesthetic his condition became so bad that tracheotomy had to be performed, and on direct laryngoscopy a broad sessile papilloma was seen covering almost the whole of the glottis and attached to the right vocal cord. This papilloma was picked off piecemeal, the tracheotomy tube being left in for some weeks and then removed. After a few months the growth recurred and the same procedure had to be adopted again, but this time the tube was left in for several months. We are now trying to see what will happen if the tracheotomy wound is allowed to close.

Such cases may take years to get well, but it is quite certain that in children they must not be treated by laryngo-fissure, as this operation may be followed by permanent stricture of the glottis. Intralaryngeal methods and rest by tracheotomy are the treatment. In older patients one may meet a condition of multiple papillomata. In still older patients with recurring papillomata one fears the onset of malignant changes. These occurred in a patient who, after having papillomata removed at intervals of years from the true cords, had to have total laryngectomy performed.

Cancer of the Larynx.

Another variety of aphonia is illustrated in the type of patient, usually middle-aged or older, who complains of increasing hoarseness, probably suffers no pain, and attributes his symptoms to a cold. Examination of the neck reveals no growth or other abnormality, but there is often present advanced oral sepsis. In such cases careful laryngeal examination, if possible after oral sepsis has been treated, is vital, because commonly the cause of the hoarseness is a malignant growth involving a vocal cord or a superior ventricular band or spreading to these structures from the sinus pyriformis. Generally speaking, however, in the latter case there is accompanying pain on swallowing. At the present time I have under my care two cases of the type just described, with symptoms dating back six and nine months respectively. They both present almost inoperable carcinomatous ulceration involving the entire half of the larynx and reaching to the epiglottis.

Intrinsic carcinoma of the larynx, if caught early, is a curable condition.

A retired naval officer was sent to me in 1923 for slight aphonia, of which he had only complained a week or two. Examination showed a growth about the size of a pin's head attached to the under surface of the right vocal cord, the cord itself being freely movable. A portion of the growth punched off for examination proved to be typical carcinoma. I removed the right vocal cord and a small portion of the anterior end of the left cord with their surrounding tissues by window resection of the right ala of the thyroid cartilage, and rapid recovery with formation of scar tissue occurred. After about fifteen months a small pin's head nodule appeared on the middle third of the left cord, and this proved again to be a carcinoma. I performed a similar operation, removing, however, the arytenoid cartilage as well as the whole of the left cord, and uninterrupted recovery occurred. I believe the patient is still perfectly well.

Only early operation prevented this case from running the same course as the two previous ones. I have seen a case of urgent hoarseness with dyspnoea treated for five months as laryngitis, in which the growth had made such rapid strides that the glottis was nearly occluded. One may say that any case of hoarseness or aphonia which does not yield to ordinary measures in a month requires careful laryngeal examination. A cord invaded by a carcinomatous ulcer or growth is not necessarily immobile. If the cord is fixed and immobile we know that the growth is very deep; if it is mobile the growth is early, and operation holds out a prospect of cure. We are on the threshold of further developments in the treatment of this form of cancer. Rose and Harmer have shown many successful cases of intralaryngeal carcinoma treated solely by radium, and I know one patient with extrinsic carcinoma of the larynx who, three or four years ago, seemed doomed to die, but after radium treatment remained alive and well until quite recently.

A patient who consulted me some years ago illustrates a form of chronic hoarseness which may be called parasyphilitic.

He gave a definite history of syphilitic infection, for which he had been treated. His glottis was distorted, and portions of the cords had been destroyed, hypertrophied nodules from the one appearing more or less to fit into the gaps from the other. There was general pharyngeal congestion and hypertrophy of the superior ventricular bands; movements were good. No treatment seemed to be availing, and on account of his occupation the patient could not keep silent. As I regarded the condition as precancerous I took the opinion of a clinical meeting, at which I was advised by some to leave the case alone, and by others to be prepared to operate. I favoured the former view, and have left the case alone. As far as I know the man is still in vigorous health, but I am convinced that he should be kept under observation, as malignant changes are likely to take place.

Another patient with the same symptoms presented himself the other day. There was complete fixation and swelling of the right side of the larynx, though without definite ulceration. The patient's condition was good; there were no enlarged lymphatic glands in the neck, and the Wassermann reaction was positive. The condition is one of syphilitic perichondritis of the thyroid, and the patient is now undergoing anti-syphilitic treatment. At the same time he will be carefully watched, as the combination of malignancy with syphilis is not uncommon.

Laryngeal Paralysis.

Finally, one may consider cases in which laryngeal paralysis results in aphonia or hoarseness. Bilateral paralysis is uncommon, and generally is the result of some severe nervous affection, such as bulbar palsy. Paralysis of one cord, due to intrathoracic growth, aneurysm, or pressure on the recurrent laryngeal nerve from thyroid and oesophageal growths, is often accompanied by no more than weakness of voice. If laryngeal sensation is present the lesion is probably below the larynx. On the other hand, if anaesthesia is present, the possibility of an intracranial lesion or pressure on the vagus nerve must be considered. When a patient suffers from aphonia or weak voice after operation on the thyroid the possibility of trauma must not be overlooked.

ESTIMATION OF HEPATIC EFFICIENCY.

REPORT ON THE EXPERIMENTAL INVESTIGATION OF A NEW TEST BASED ON THE USE OF SODIUM SALICYLATE.

BY

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ROCH AND SCHIFF (Geneva) in 1921 suggested a new test of hepatic function based on the use of sodium salicylate, and H. Thiers in 1927[1] described a modification of their method. A brief account of this test appeared in the *British Medical Journal*,[2] and the present paper records some experiences with the test, the work having been undertaken on the suggestion of Dr. J. R. Marrack, chemical pathologist of the Hale Clinical Laboratory, as such a simple test—if universally accepted as reliable—would be of great value in diagnosis.

Nature of the Test.

H. Thiers "states that a normal adult can assimilate a dose of 0.04 gram (=3/5 grain) of sodium salicylate, no trace of salicylic acid being found subsequently in the urine. If the liver is damaged salicylic acid appears in the urine passed during the second to the seventh hour after the ingestion of the sodium salicylate." In the preliminary experiments described below the method used by Thiers—namely, extraction of the urine in a flask, and then testing the extract for salicylic acid with dilute ferric chloride—was closely followed, and positive results were obtained with a normal adult. During the later experiments the method of extraction was improved (as shown by the tabulated results) by using a glass-stoppered separating funnel, and it was proved that as much salicylic acid was excreted by normal adults as by those with diseased livers.

Preliminary Experiments.

After preparing the three solutions required for the test, a patient with a diseased liver (Case A, Table II) was selected for the first trial, and as the results obtained seemed to confirm the claim made for it, the next test was done with a healthy adult (Case 1, Table I). The same

TABLE I.—*Normal Cases.*

No.	Age.	Date of Test.	Urine specimens.		Test for salicylic acid	Standard to match the colour.	Remarks.
		1928.		c.cm.		c.cm. or mg	
1	55	Jan. 23	1st	54	Neg	—	Special care given to extraction in 1a, the second trial on same adult.
			2nd	206	Pos.	0.5	
1a	"	Jan. 26	1st	43	Pos.	0.25	
			2nd	136	Pos.	0.75	
2	16	Jan. 27	1st	40	Pos.	0.25	
			2nd	135	Pos.	0.75	
3	32	Feb. 11	1st	8	Pos.	0.18	Extraction not complete. See a and Note 1.
			2nd	176	Pos	0.1	
3a	"	—	same specimen		Pos	2.0	10 times more than No. 3.
4	28	Feb. 22	1st	34	Pos.	0.37	Improved yield explained in Note 4.
			2nd	181	Pos.	1.5	

results were obtained as with Case A, and thus were contrary to the statement on which the test is said to be based. It was therefore considered advisable to repeat the test on the same healthy adult. Salicylic acid was again found present in the second specimen of urine and, this time, in the first specimen also (Case 1a, Table I). The result with the second specimen in Case 1 was thus confirmed, and the negative result with the first specimen could be explained as possibly due to inexperience with the method, and to the apparatus used for extraction being to some extent unsuitable.

These results raised a very grave doubt as to the reliability of the statement that normal adults could assimilate sodium salicylate and no trace of salicylic acid would appear in the urine, especially as a reference to the pharmacology of salicylic acid showed that "it appears in the urine very soon after its ingestion [ten to thirty minutes], but the elimination goes on slowly."[3]

Later Work.

These trials were done to remove this doubt, and the test was carried out with three other healthy adults and three more patients with diseased livers. Details with results have been tabulated below, followed by notes on the laboratory work. The cases referred to in Table I were four healthy adults who had never had any illness suggestive of liver disease, and they were therefore chosen as normal adults, all being males, their ages ranging from 16 to 55 years. Table II refers to four cases treated in

TABLE II.—*Cases with Hepatic Disease Present.*

No.	Sex.	Age.	Date of Test.	Diagnosis.	Urine specimens.		Test for salicylic acid	Standard to match the colour.	Remarks.
			1923.			c.cm.		c.cm.	
A	M.	53	Jan. 18	Cirrhosis of liver and tertiary syphilis	1st	22	Neg.	—	No bile in urine.
					2nd	71	Pos.	0.5	
B	F.	65	Feb. 14	Carcinoma of pancreas	1st	35	Pos.	0.1	Bile present. See Note 5.
					2nd	92	Pos.	0.5	
C	M.	25	Mar. 1	Catarrhal jaundice	1st	52	Pos.	0.2	Bile present. See Note 6.
					2nd	2 6	a. Pos.	0.2	
							b. Pos.	0.4	
D	M.	70	Mar. 8	Cirrhosis of liver and ascites	1st	45	Pos.	0.25	Bile present. See Note 7.
					2nd	130	Pos.	2.0	

the hospital, having diseased livers as shown in the "Diagnosis" column of the table. The first specimen of urine was collected one hour after the dose of salicylate was given, and the second specimen four hours later.

Notes on the Laboratory Work.

1. The chief aim was to detect any trace of salicylic acid present in the urine, and not merely follow a procedure which might give a negative result although a trace was in fact present. A comparison between the results of Cases 3 and 3a illustrates how a negative result may occur as a consequence of some incomplete extraction, as, when the second specimen of urine in Case 3 was re-extracted, twenty times more salicylic acid was proved present than was found by the first extraction. The only negative results obtained occurred with the two cases first tried, and one of these at least was proved as probably incorrect by the second trial giving positive results (Case 1a), as already explained.

2. The first specimen of urine in every case ranged from 22 c.cm. to 78 c.cm., and so the entire specimen in each case was used for the extractions.

3. The second specimens ranged from 71 c.cm. to 216 c.cm., and as these were not too inconvenient to extract the entire specimen was again used, except in Case C, where it was halved for the purpose explained below.

4. In the earlier extractions the ether was shaken up with the urine in the 8-oz. wide-mouthed stoppered bottle used for collection, and the separation of the emulsion was performed by transferring successive portions of the mixture to a glass-stoppered burette; but the bottle stoppers did not fit very well, the process was somewhat messy, and the separation was tedious. So after the experience with Case 3—where the salicylic acid (proved present in both specimens) was so much less than in the previous cases—a conical glass-stoppered separating funnel was obtained and used for the re-extraction in Case 3a, and for all the later extractions.

5. In cases B, C, and D bile pigment was present in the urine, and was extracted by the ether along with the salicylic acid. In case B the ethereal layer was not completely evaporated before adding to the ferric chloride, and on mixing the liquids the aqueous layer showed a distinct purple tinge while most of the bile pigment remained in the ethereal layer. In Cases C, 3a, 4, and D the ethereal extract was evaporated to a small bulk, and the bile pigment combined with the violet colour due to the salicylic acid, the resultant colour being a brown.

6. To test whether extraction by rotating vigorously in a beaker with ether could be complete, the urine of Case C was thus treated, and then, after separation of the ether (by use of the separating funnel), the urine was re-extracted by shaking with a fresh lot of ether in the funnel. The extraction of the first

specimen of urine in the beaker proved to be complete, the re-extraction giving no salicylic acid. The second urine specimen was halved, and one half (108 c.cm.) was extracted twice as above, the other half being used as a check by extracting once only by vigorously shaking in the separating funnel. In this instance the beaker method gave no colour indicative of the presence of salicylic acid, whereas the second extraction gave a distinct trace (*a*, Case C). The check half of the urine gave a more distinct trace (*b*, Case C). These results, therefore, indicate that the open beaker method is the less reliable of the two.

7. In Case D the extract gave a more decided colour reaction than any of the others with bile pigment present, and it was interesting to find that the effect of the yellow bile pigment could be exactly imitated in the tubes with the violet standards by mixing with a few drops of the yellow solution of potassium chromate.

Summary.

The foregoing is a report on work done in trying a new test for hepatic efficiency, based on the use of sodium salicylate, as described in the *British Medical Journal*.

The preliminary work consisted in trying the test on a selected patient, and then comparing the result with that obtained with a normal adult. As the results were the same in both cases further investigation was considered necessary, especially as a doubt arose about the reliability of the statement that "normal adults could assimilate a 3/5-grain dose of sodium salicylate, no trace appearing later in the urine."

The later experiments were carried out with three more normal adults and other three cases with damaged livers, all the results being shown in tabular form, followed by a discussion of the tables in the form of notes, explaining how and why the method of extracting the salicylic acid was slightly varied, and pointing out that bile pigment modified the violet colour of the salicylic acid test to a brown, which could be matched in the standard colour tubes by the addition of potassium chromate.

Conclusion.

1. The tables show that salicylic acid appeared in the urine of each of the four healthy adults after the ingestion of a small dose of sodium salicylate, as well as in that of four other cases with damaged livers.

2. Its appearance in the urine of the first hour confirms the statement quoted in reference to the pharmacology of salicylic acid, and does not support Thiers's statement.

3. The tables show that no distinction can be made by means of this test between the four normal adults and the four cases with damaged livers.

From the above results it is concluded that this test, as described in the publication referred to, can be of no use in classifying cases with damaged livers, or in measuring the extent of the damage.

REFERENCES.

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2 *British Medical Journal*, February 11th, 1928, p. 231.
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BRONZED DIABETES IN A WOMAN.

BY

G. M. W. HODGES, M.B., B.S.

I VENTURE to publish these notes on account of the rarity of bronzed diabetes in women, and because this case seems to have run an unusual course. The patient was seen at the maximum of bronzing by three other medical practitioners, who could suggest no other diagnosis; one who had previously seen a case (in a man) thought the bronzing typical.

The clinical details available are as follows.

Family History.—The grandparents all lived to advanced ages; the father died of uraemic coma at the age of 74, and the mother died of the same complaint at the age of 70. There were eight children, of whom the patient was the eldest. She was perhaps mentally the brightest of a not very bright family. The next in age, a male, died of "cancer of the liver," aged 50; he was congenitally blind. The third, also a male, died of epilepsy at the age of 30. The fourth, a female, is living, mentally deficient and congenitally blind. The fifth, a male, is living and is normal. The sixth, also a male, is alive and normal, but mentally he is rather dull. The seventh, a female, is living; she is mentally deficient and congenitally blind. The eighth, a male, is living, and is normal. None of them show any signs of syphilis, and two who have been examined (the fourth and seventh) give negative Wassermann reactions.

Personal History.—This gives nothing of importance. The patient was a very stout woman, but exceedingly active. Her chief ailments have been flatulent dyspepsia and some cardiac insufficiency. She had had no medical attention for five years.

Clinical Details.

On November 11th, 1927, the patient was deeply jaundiced, with anorexia, but no sickness and no diarrhoea. She had become much thinner since the previous May, the loss of flesh coinciding with extreme thirst.

The liver was easily felt two inches below the costal margin, and the spleen about the same. Both were smooth, regular, and soft. The liver was slightly tender. Nothing else abnormal was found. The heart sounds were normal, but muffled, and the lungs were normal. The urine contained much bile pigment, but no albumin; sugar was present in large quantity. At this time there were on the forehead and forearms what appeared to be a few freckles.

The jaundice cleared up under treatment in ten days. The patient was put on a strict non-carbohydrate diet. The urine sugar rapidly diminished, and early in December, 1927, the urine contained only a trace. A blood examination gave 65 per cent. haemoglobin and a normal white cell count.

On December 12th there was a sudden rise in the urinary sugar, and acetone was present. The patient became partially comatose, and had apparently marked pain over the spleen. She remained in this condition, sometimes rousing and sometimes completely unconscious, for a month, the heart gradually getting weaker and dropsy developing; but the sugar had completely disappeared from the urine on December 20th, and was never found again until just before her death.

During this period pigmentation became very apparent, involving the face, neck, forearms, and both groins, with scattered patches on the abdomen, back, and both thighs. The pigmented spots were of all sizes up to a threepenny piece, many coalescing. Her face presented a curious appearance—a mottling of yellow shading up to deep bronze on a skin almost mauve in colour. There was incontinence of urine and faeces, and bedsores developed. By this time the liver and spleen both reached halfway from the costal margins to the umbilicus.

From the middle of January, 1928, she began to improve. The heart regained its tone; her colour became normal except for the bronzing; the bedsores healed; the appetite returned. In July she was downstairs, walking in the garden, and doing needlework. The bronzing was beginning to fade. From now on she was seen and the urine examined at fourteen-day intervals.

On November 9th, 1928, five days after the last visit, she suddenly complained of feeling very ill—"just as I did before." The urine was found to contain a fair amount of sugar. She became comatose on November 10th, and died the following day.

Post-mortem Findings.

Only a partial necropsy was allowed. There appeared to be no pigmentation of the peritoneum. There was little free fluid, and this was clear. No abnormal mass or tumour could be found. The liver was about two and a half times its normal size, and appeared uniformly enlarged. It was smooth, rather soft, and pale; it was densely adherent posteriorly. The gall-bladder and duct were normal. The spleen measured roughly 9 in. by 5 in.; it was smooth, extremely friable, and adherent to the periphery and omentum. Both kidneys were enlarged and soft. The heart was enlarged and infiltrated with fat; the valves showed no disease. There was some staining of the pericardium, but not enough to be definitely called pigmentation.

Pathologist's Report

Portion of Spleen.—There is general slight chronic perisplenitis. The pulp is soft. A few dark points are seen. The Malpighian bodies are not easily distinguished and not much fibrosis can be discerned.

Liver.—There is generalized monolobular cirrhosis with much yellow pigmentation along the prolongation of Glisson's capsule. The liver substance is fatty.

Pancreas.—The glandular tissue is largely replaced by fat. No pigmentation can be distinguished.

Suprarenals.—Soft, but normal.

Kidney.—It is slightly enlarged and soft. The cortex is not clearly diminished; it is pigmented and yellow. The capsule strips leaving a number of arterio-sclerotic depressed patches of various sizes. The pyramids show whitish streaks towards the papillae.

Microscopic Examination.

Spleen.—The pulp is of a loose fibrotic texture; the Malpighian bodies are atrophied. The trabeculae appear normal, but hyaline emboli are present in some of the vessels. There are no gross lesions anywhere to be seen. Many of the cells contain pigment granules, and free granules are also present, but it is not possible to say how much of this is due to *post-mortem* change. The fibrous reaction of the spleen is feeble and consists of occasional blue granules.

Liver.—There is a moderate increase of fibrous tissue along Glisson's capsule. In the liver cells bordering the portal spaces there is a great increase of pigment. Marked cellular exudation is evident in Glisson's capsule. The bile ducts are normal and not increased in number. The cellular inflammatory infiltration consists of a proportion of polymorphs, more marked in the periphery of Glisson's capsule. There is a small amount of haemosiderin in the liver. It is mainly confined to the neighbourhood of the intralobular veins. There is no excess of haemosiderin in the portal spaces.

Pancreas.—There is shrinkage and atrophy of some of the acini, and in others the nuclei are stained more deeply than normal; some catarrh of the duct is present. The islets of Langerhans are present.

Kidney.—There is generalized chronic interstitial nephritis. In many parts of the section the descending loops of Henle are necrotic, probably due to *post-mortem* changes. There is some arterio-sclerosis and degeneration of some of the glomeruli up to complete atrophy. Here and there round-celled infiltration can be seen. There is much catarrh of the collecting tubules, and some of them contain cells full of pigment. The epithelium of the collecting tubules is impregnated with grains of pigment.

It is regrettable that the patient and her family absolutely refused her admission to hospital, where a more thorough clinical examination would have been possible.

My thanks are due to Dr. A. G. Gibson of Oxford for his kind interest in the case, his advice, and his examination and report on the *post-mortem* specimens.

LOCAL ANAESTHESIA IN OPERATIONS FOR HAEMORRHOIDS AND FISSURE OF THE ANUS.

BY

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THE use of a local anaesthetic for the operative treatment of haemorrhoids and fissure of the anus has many advantages over a general narcosis.

1. Any one of the numerous operations advocated for the cure of haemorrhoids can be performed quite painlessly, including the most painful procedure—the most dangerous of all with a general anaesthetic—dilatation of the sphincter ani.
2. Its innocuity, both local and general.
3. Its local action, lasting several hours after the operation, thereby curtailing the duration of after-pains.
4. The ease with which it can be employed.

These are all compensations for the extra time required in making the necessary number of injections and the following of an exact technique such as that to be described.

The use of dilute solutions for local anaesthesia (as here used) was first introduced by Schleich, but to Reclus belongs the merit of their popularization and their use in rectal surgery, more especially in operating on piles. For all practical purposes the method here given is his, with, however, some modifications which have been found to be useful. The solution for these operations which is recommended is composed as follows:

Novocain	0.5 cg.
Adrenaline (1 in 1,000)	24 minims
Physiological saline solution	100 c.cm.

Mix and sterilize.

It will be noted that the amount of adrenaline is small, but in practice it will be found to be ample (a dilution of 1 *in* 1,000,000 will produce a local ischaemia) for rendering the field bloodless, without fear of any subsequent sloughing, notwithstanding the large amount of the solution employed. It is, however, important that the percentage should not be stronger than indicated, and the injections must be well spaced so that a considerable extent of the subcutaneous tissue is infiltrated. When injection is not confined to a localized zone of tissue sloughing never occurs.

The injections are made in the following manner. The patient, having been duly prepared in the usual way, is put in the lithotomy position, the legs resting on some appropriate supports. (1) About six small pledgets of cotton-wool are first prepared, their diameter being that of the little finger and their length one inch. They are tied in the middle with a piece of silk or linen thread, one end of which is left four or five inches long to be used as a tractor for removal. Pour into a sterilized receptacle 15 to 20 c.cm. of the solution, and place the pledgets in it. With the aid of a pair of artery forceps introduce the saturated pledgets one by one into the anus, asking the patient to "bear down" meanwhile; this renders the mucous membrane insensitive and relaxes the sphincter ani, as shown by the gaping of the anal orifice. (2) Swab with iodine the anus and surrounding skin. (3) Take an all-glass 5 c.cm. syringe and fill it with the solution; adjust an ordinary (not too fine) hypodermic platinum or nickel needle, push it into the cellular tissue at the junction of the skin and mucous membrane, and begin the injection. Push the needle along slowly, distending the tissues ahead of the needle-point with the solution; in this manner the fluid is infiltrated without pain. The first needle prick is all the patient need ever feel during the whole course of the operation. When the syringe is empty, withdraw the needle, refill and insert it again just beyond the middle of the swelling made by the previous injection. Repeat these injections *in the same way so as to encircle the anus*, special care being taken to go slowly when crossing the middle line, for the sensibility on the opposite side has not been affected by the injections already given. In all from six to eight injections are necessary—equal to 30 to 40 c.cm. of the solution. (4) Now remove the pledgets by traction on their threads; they will almost fall out by themselves. Fill the syringe and use a long medium-sized platinum or nickel needle. (5) Insert the forefinger of the left hand into the rectum, hook the internal sphincter with it so as to steady it and draw it down. (6) Pierce the tissues perpendicularly to the previous injections and at the same level: push the needle well into the sphincter, injecting meanwhile. It is of the utmost importance to steady the muscle so that it shall not slip away from the needle; this may be quite difficult to do towards the end of the injections, as the sphincter will be felt to "fade away," it having lost tonicity almost completely. Encircle it with six or seven injections—equal to 30 to 35 c.cm. of the solution. The insensibility will now be complete.

Wash the hands again (it is always well to wait about five minutes after the last injection before beginning the operation) and proceed with the preliminary requirement to all rectal operations—namely, stretching of the sphincter ani. In cases of simple fissure this may be all that is necessary to effect a cure; in others, and in fistulae, excision, curetting, and the use of the actual cautery can all be employed painlessly, the patient only experiencing a sensation of touch and the realization that something is being done. If piles are present they are now dealt with by any of the numerous methods, according to the choice of the operator. I prefer Mitchell's technique in general to all other methods for the removal of piles, whether pedunculated or with intervals or sulci; with a pair of Kocher's artery forceps clamp the pile and cut off the upper part. A running suture of catgut is passed under and over the forceps, a tie having been made after the first stitch under the clamp at the distal end of the pile to control more securely its blood supply. Now withdraw the clamp; pull the suture taut and tie it off. This is a very safe method, as the sutures will not slip, thus assuring complete haemostasis. The raw edges are turned in, and are therefore less painful. Any number can be dealt with; the results are excellent. A short piece of large rubber tubing, wrapped round several times with a strip of gauze well smeared with a 1 per cent. antipyrine ointment, is inserted. It relieves pain, and at the same time acts as a compressor against haemorrhage; it permits the free passage of flatus while controlling spasm, and can be removed in twenty-four hours or sooner should it cause discomfort.

I have used this method of local analgesia since 1910, and have never seen a complication of any kind nor a single slough induced by it in the considerable number of operations in which it has been used. The only likely complication is retention of urine, which is encountered also in general anaesthesia; this is due to the way the sphincter has been dilated.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CARDIOSPASM TREATED SUCCESSFULLY BY OPERATION.

I THINK it desirable to record the following details of a case of cardiospasm which was treated with remarkable success by the operation of Mikulicz.

A man, aged 25, had for six years suffered from progressively increasing difficulty in swallowing. He stated that the food appeared to be arrested in the lower part of the chest, and could only be made to pass by drinking water with each mouthful, whereupon the food passed with a jerk. Epigastric pain was frequent, coming on usually three or four hours after food; this was often succeeded by vomiting, which at once relieved the pain.

On examination the patient was found to be thin, but otherwise in good condition. A radiographic examination revealed the typical appearances of cardiospasm, with enormous oesophageal dilatation and a well-defined constriction at the lower end.

After preliminary passage of an oesophageal rubber tube I opened the abdomen by a right paramedian incision above the umbilicus. The anterior wall of the stomach was incised longitudinally, midway between the greater and lesser curvatures, and the whole of the right hand was introduced into the interior of the stomach; the index finger was then inserted into the lower end of the oesophagus. Considerable resistance was at first presented to the passage of the finger, but this was overcome by steady pressure, and the middle finger was inserted alongside the index. Separation of these two fingers resulted in sufficient dilatation of the obstruction to permit the introduction successively of the ring and little fingers. The incision in the stomach was sutured by two layers of catgut, and the abdomen was closed. The patient made an uninterrupted recovery from the operation, and at the end of two weeks was able to swallow normal food without difficulty. There has been no recurrence of any symptoms.

An *x*-ray photograph taken three months after the operation showed that the oesophageal dilatation had almost entirely disappeared, and that there were no signs of the constriction revealed in the pre-operative skiagram.

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SPLENIC ENLARGEMENT AND RAW SPLEEN.

THE following case of atypical leukaemia, and its extremely rapid improvement under treatment, may be of interest.

Mrs. X, aged 48, first came under my notice during the early days of July, 1928. She complained of progressive swelling of the body since the previous February, palpitation and breathlessness on the slightest exertion, and complete inability to tackle any of her usual household duties. I also elicited the information that she had lost several pounds in weight, and that for the previous two years she had had several "floodings" (metrostaxis). On examination I found an extremely enlarged spleen fully occupying the left half of the abdomen, reaching to the pubes below and extending well beyond the middle line. The notches were distinctly felt. No enlarged lymph glands were found anywhere. Fully confident that this was a myelogenous variety, on July 3rd I took a blood smear, a differential count of which gave the following surprising result: Polymorphonuclears 2.25 per cent., small lymphocytes 97 per cent., large hyalines 0.50 per cent., transitionals 0.25 per cent. Nothing abnormal was seen in stained red cells. There was apparently a marked leucocytosis.

On the advice of a consultant the patient was admitted to the Leeds General Infirmary, a provisional diagnosis of atypical lymphatic leukaemia having been made. Here she was placed on the usual benzol and *x*-ray treatment for fourteen days. Two blood counts were taken, one on July 5th and the other on July 10th. That taken on July 5th was as follows: Red cells 3,570,000, leucocytes 35,000, haemoglobin 52 per cent., colour index 0.73. The red cells appeared normal, the lymphocytes were of small type, but much larger than normal. A differential count showed: Polymorph neutrophils 3 per cent., lymphocytes 97 per cent. The result of the blood count taken on July 10th was as follows: Red cells 4,170,000, leucocytes 14,700, haemoglobin 50 per cent., colour index 0.60. The film showed irregular size and staining of red cells with some polychromatophilia. A differential leucocyte count showed: Neutrophil polymorphs 8.5 per cent., lymphocytes 91.5 per cent.

The patient was discharged from the Infirmary on July 19th, with the spleen only slightly decreased in size. She returned on two separate occasions, fourteen and twenty-eight days later, for *x*-ray exposure. After her return home I placed her on large doses of iron, strychnine, and arsenic, and advised her to take regularly raw spleen. Since July 19th she has taken on an average twelve to fourteen raw sheep's spleens per week. Marked improvement in her general condition began to show itself. She has now gained 16 lb. in weight, there is no palpitation, no breathlessness, no lassitude, and no metrostaxis. She feels very fit and can manage all her usual household duties (this she has been able to do since September). Her spleen, though still enlarged, is greatly reduced in size, and on December 7th a further blood count was taken. This showed: Red blood cells 4,850,000, leucocytes 3,870, haemoglobin 68 per cent., colour index 0.7. Differential count: Polymorphs 46 per cent., lymphocytes 46 per cent. (small 42.5 per cent., large 3.5 per cent.), large hyalines 5.5 per cent., cosinophils 2 per cent., basophils 0.5 per cent. Nothing abnormal was found in stained films.

I am given to understand that the improvement in this case is much greater than is usual with *x*-ray and benzol treatment, and it would be interesting to know whether other splenic conditions, notably myelogenous leukaemia, would react in the same way. The accompanying diagrams illustrate the spleen at various stages of the illness.

I am deeply indebted to Mr. D. Chamberlain, honorary surgeon at the Leeds General Infirmary, for permission to use his clinical data, and to Dr. S. Goodman Platts, of the York County Hospital, for his excellent blood counts.

York. H. TAYLOR, M.B., Ch.B.

Reports of Societies.

ACUTE INTESTINAL OBSTRUCTION.

AT the meeting of the *Medical Society of London* on February 25th, Dr. J. WALTER CARR *presiding*, a discussion on the subject of "Acute intestinal obstruction" was opened by Professor A. H. BURGESS of Manchester, President-Elect of the British Medical Association.

Professor Burgess began by saying that the present century had witnessed a great improvement in the surgical treatment of acute abdominal crises (he protested strongly against the inelegant term, which was of London coinage, "the acute abdomen"). So far as Manchester Royal Infirmary was concerned, the mortality from acute appendicitis in 1924 was one-twelfth of what it had been in 1900; the mortality from perforations one-seventh, and the mortality from acute intestinal obstruction one-half. He referred to the statistical compilation of cases of acute intestinal obstruction brought forward by Mr. H. S. Souttar in the Section of Surgery at the Annual Meeting of the British Medical Association in 1925, which was the largest and most authoritative series of statistics available. It covered the period 1920–24, and the returns from seven hospitals, three in London, three in the provinces (including Manchester), and one in Ireland. He hoped that Mr. Souttar would compile a further series for the following five-year period and present it to the Winnipeg Meeting of the Association in 1930. Professor Burgess adopted Mr. Souttar's figures, but modified them by cutting out all cases of strangulated hernia and acute intussusception, for the simple reason that there was no excuse for missing the diagnosis in either of these conditions, and he wanted the statistics to represent those cases of acute intestinal obstruction the diagnosis of which was not readily obvious. This left 1,042 cases, in which there had been 395 deaths, a mortality of 37.9 per cent. It was this mortality which must be reduced. In Manchester some reduction had been effected. Thus the mortality for the ten-year period 1913–22 was 41.07 per cent., for 1920–24 (the period covered by Mr. Souttar's tables) 33.5 per cent., and for 1925–27 only 30.2 per cent. What was the reason for this continuing high mortality? The main reason was delay in the application of surgical treatment. The early signs of acute intestinal obstruction were not sufficiently stressed in the textbooks, at least in those of rather older date. Far too much emphasis, for example, was usually placed upon faecal vomiting. This should never be regarded as a sign of acute intestinal obstruction; it was really an end-result. There was a tendency to wait for the

development of faecal vomiting before diagnosing obstruction; in other words, to wait for a complete and perfect clinical picture. But there was only one hand that ever painted a complete and perfect clinical picture of a pathological condition, and that was the hand of death. The man who waited for faecal vomiting would never make a mistake in diagnosis, but rarely would he save his patient. Acute intestinal obstruction, Professor Burgess continued, might be either primary or secondary. It might come as a "bolt from the blue," or be simply a process engrafted upon a long-standing chronic condition. In distinguishing between a primary and a secondary obstruction there were two clinical features which were important. In secondary obstruction which had been grafted on to a chronic condition one frequently saw the outlines of individual dilated coils and visible peristalsis passing along. Sudden acute obstruction always led to dilatation, with thinning of the wall, but never to visible peristalsis. Whenever the outline of dilated coils was seen, with the peristaltic wave passing along, one might be absolutely certain that it was a case of obstruction which had been in existence for at least several weeks. Sometimes, even when peristalsis was not visible, it was palpable. By keeping the hand over the abdomen the coil underneath could be felt alternately hardening and softening. That condition of palpable peristalsis, again, indicated obstruction of some considerable standing. Primary acute intestinal obstruction varied in acuteness of onset. In general terms, the higher the obstruction—that is, the nearer the stomach—the more acute the symptoms. The early symptoms of acute primary intestinal obstruction were common to those of any other acute abdominal crisis; they were the symptoms which, years ago, were described by Sir Frederick Treves as "peritonism." They were of reflex origin, and had no localizing value whatever. In the case of acute intestinal obstruction, the pain was always referred to the epigastric region. The pain was often paroxysmal at first, becoming continuous as the obstruction became complete. The vomiting, like the pain, was at first of a reflex character; later on it was due to mechanical obstruction. The higher the site of obstruction the earlier the vomiting. It was most marked in the highest type of obstruction, the condition known as acute dilatation of the stomach. When the obstruction was low down, as in growths of the rectum or lower sigmoid, vomiting might be absent. The vomiting was at first gastric, later bilious, and presently assumed a faecal character; its persistence, however, was its most important feature. Distension of the coil above the site of obstruction must, of course, be present, but it was not always visible. If the case was seen early the distension might be localized and furnish a guide to the site. Vomiting and distension varied inversely to each other. In high obstruction, vomiting was marked, and distension not marked; in low obstruction the converse obtained. Distension was the most unfavourable feature; it made the operation much more difficult, and markedly increased the shock. The speaker pleaded for auscultation, which was of great value in diagnosis. Certain sounds, after a little experience, were quite unmistakable. By auscultation one could distinguish between the turbulence of the mechanical obstruction and the death-like silence of the paralytic. Rectal examination was of value also, especially in discovering the ballooning of the rectum which was so frequently made out when there was growth in the sigmoid region. In Mr. Souttar's list, out of 1,019 cases where the site of obstruction was stated, 586 were in the small intestine, and 433 in the large. At Manchester the experience was different; there more cases of obstruction were found in the large intestine than in the small. In one analysis of 280 cases, 90 were in the small, and 190 in the large. The keynote of the position was the condition of the caecum. If the obstruction was in the colon the caecum must be distended; if in the small intestine, it must be collapsed. If obstruction were located definitely to the large intestine the cause was likely to be a malignant growth; 91 per cent. of obstructions in the large intestine (leaving out strangulated hernia and intussusception) were due to this cause. If the obstruction were definitely made out in the small intestine the chances were 300 to 1 against the condition being a malignant growth. As to treatment, this, in definite mechanical obstruction, could only be operation. There were accessory treatments, of which the most valuable was gastric lavage. The nature of the operation would depend on the stage of the disease. In the early case, with little distension, and good general condition, an ordinary exploratory laparotomy might be done to discover where the obstruction was, and either remove it, short circuit it, or make an artificial anus, in that order of preference. In late cases, the less done, provided it was effective, the better. If the obstruction was located definitely to the colon he thought one should content oneself for the time being with a "blind" caecostomy, which would, at any rate, relieve the obstruction. It was true that one was still left ignorant as to the exact site and cause, but this information could be obtained later; with a patient in the throes of acute obstruction all that mattered was to relieve the obstruction by the shortest and least shock-producing method. If, however, one was not sure that the obstruction was in the colon, an exploratory laparotomy must be done. While a "blind" caecostomy was recommended for obstruction in the large intestine, a "blind" enterostomy was by no means to be done in the small, because of the extreme likelihood of leaving behind a strangulated coil, which would inevitably lead to the death of the patient.

Dr. C. H. S. FRANKAU emphasized the necessity of differentiating between the obstruction due to a growth, gradual in onset, and the acute obstruction due to such an occurrence as strangulation by a band. Toxaemia was always present within a few hours of the onset of acute intestinal obstruction, owing, he thought, to the rapid multiplication of anaerobic bacilli in the bowel. His personal opinion was strongly averse from "blind" caecostomy; he had only done one such operation in eighteen years. He had never regretted doing a preliminary exploration, the advantages of which were that one could ascertain the site of the obstruction for the subsequent operation, or could remedy the obstruction there and then if possible. The disadvantage was a certain prolongation of the operation, but this should not be for more than ten or twelve minutes at the most. He performed the old-fashioned muscle-splitting incision, preferring to expose the caecum fairly freely. He disapproved of the method of sewing in a soft rubber tube; it was safer to bring a portion of the caecum out through the abdominal wall, to which it could be securely attached. In the type of obstruction due to strangulation, if any bad distension were present the prognosis was grim. Acute obstruction was apt to be mistaken for food colic, especially if the patient's story of what he had eaten at a recent meal were unduly regarded. The giving of castor oil without result helped to rule out food colic. The speaker added a few words about ileus, where there was no mechanical obstruction. He thought this might be divided into three categories: (1) ileus following injury, which was troublesome, and might be persistent, but was rarely, if ever, fatal; (2) post-operative ileus, where there was no antecedent peritonitis, and none subsequent to operation; here bile given by the rectum might afford relief; (3) ileus as a sequel to peritoneal inflammation, where the main standby was fluid given freely and continuously by the rectum and by the mouth also if circumstances allowed.

Mr. H. W. CARSON said that the higher the obstruction the more definite the symptoms, and the lower the obstruction the more definite the signs. In excluding hernia and intussusception Professor Burgess had done right, but unfortunately he cut off those cases in which the greatest advance had been made, and in which the death rate was much lower than in former years. Why did people die from intestinal obstruction? If a case were followed out to its final stages it would be found that the patient suffered from an extraordinary condition of toxaemia, dying quite suddenly, almost unexpectedly, from what seemed to him poisoning of the heart muscle. He thought there was a good deal to be said for the theory that it was gas gangrene toxaemia, and he himself had had some extraordinary results from the use of anti-gas gangrene serum.

Mr. ZACHARY COPE commended anti-gas gangrene serum, which during the last three years had made a great

difference in his own practice. He described some cases almost moribund which recovered. Undoubtedly in a certain proportion of cases anti-gas gangrene serum was a specific. He was himself an advocate neither of "blind" caecostomy nor of extensive exploration; the procedure must be adapted to the individual case, and to an estimation of what the patient would stand, in which latter respect the determination of systolic and diastolic blood pressure was very useful.

In further discussion, Mr. T. H. BENIANS complained of the loose use of the term "toxaemia" by surgeons. These toxins were practically all of one type; the important thing was the route that they followed. Mr. HOPE CARLTON, in connexion with what had been said about auscultation of the abdomen, mentioned a sign which he had learned abroad, that in primary peritonitis, either pneumococcal or streptococcal, a great increase in the conduction of vocal sounds from the chest through the abdomen was heard over the symphysis pubis. Dr. A. E. ROCHE, in selected cases of post-operative ileus, had seen dramatic results from pituitrin, given intravenously. Mr. DICKSON WRIGHT mentioned the importance of taking steps to overcome the alkalosis.

Professor BURGESS, in reply, said that there was no real antagonism between the view that some of the symptoms were due to anaerobic bacilli and that some were due to absence of bile. Both factors might be at work. The danger of treating with bile, however, as the exponent of the method, Mr. Brockman of Sheffield, had himself shown, was that though the symptoms cleared up the patient might die. The mechanical obstruction remained, and the disappearance of symptoms was apt to be deceptive. With regard to "blind" caecostomy the speaker advocated this at the Annual Meeting of the British Medical Association in 1923, and he had seen no reason to change his views. After the patient had been "tided over" in this manner, one could, at leisure, obtain the necessary information.

PREVENTION OF DENTAL DISEASES IN CHILDREN.

AT the meeting of the Section of Odontology of the Royal Society of Medicine on February 25th, Mr. GEORGE NORTHCROFT presiding, a "casual communication" from Dr. J. KINGSTON BARTON was read on "The prevention of diseases of the teeth in children."

Dr. Kingston Barton stated that when he started in general practice, just fifty years ago, having plenty of spare time, he attended the out-patient departments of several of the children's hospitals in London, and also was fortunate enough gradually to develop a fairly large practice amongst young mothers and children. Impressed by the importance of the teeth, he printed, for free distribution amongst his patients who were mothers, sheets containing particulars of the milk dentition, the order of cutting, and the age at which (between the seventh and the twenty-fourth month) the different teeth were usually cut; then he asked that, in blank spaces provided, the age at which the teeth actually came through should be inserted, and he pointed out that any great delay in cutting should be reported to the medical adviser. The sheet also contained a diagram to enable the mother to distinguish the different teeth, as well as a number of warnings and instructions with a view to preventing the onset of rickets, which was almost invariably the cause of delayed teething, and to ensure that the infant had food of the right kind. A specimen sheet was thrown on the screen. For twenty-five years, said Dr. Barton, he kept careful records of all the mouths which came under his observation. He found that a good state of the teeth and jaws was always associated with breast-feeding; the next best was seen in infants fed on ass's milk, or goat's milk, or fresh cow's milk; and the really bad teeth were found in children who had been hand-fed on various kinds of tinned or preserved milk foods, some of which were much worse than others in their ill effects. He also laid great stress in his practice, a generation ago, on the misuse of starch foods as given to infants. During the past twenty years it had been the fashion to scoff at the views expressed about the ill effects of starch, but in Professor Mellanby's most recent paper he noticed that emphasis was laid upon the ill effects of too early use of various cereals in infant feeding. In the sheet just mentioned Dr. Barton had written: "Too early use of sago, rice, and bread, particularly if not well cooked, will also set up rickets." He had added, "As the germs of the permanent teeth are being formed in the gums whilst the milk teeth are cutting, any disorder of nutrition which affects the one set will also affect the other. Hence delayed teething of the milk set is often the precursor of delicate and decayed permanent teeth; this, again, being one common cause of delicate manhood and womanhood." Dr. Barton said that there was really only one way of preventing early disease of the teeth in children, and that was by the insistence on proper breast-feeding, or, if this was absolutely impossible, on the use of pure fresh cow's milk. He also deprecated the sweets and sticky foodstuffs with which modern children were plied at all times of the day, to the utter corruption of their teeth.

The PRESIDENT of the Section said that he thought it would be the general wish that the dentition diagram shown by Dr. Kingston Barton should be handed to the curator of the odontological museum at the Royal College of Surgeons. It was extremely interesting evidence of what was done by one general practitioner in the early eighties in anticipation of modern odontological science.

THE SIGNIFICANCE OF CHOLESTEROL.

AT a meeting of the Liverpool Medical Institution on January 17th Dr. E. NOBLE CHAMBERLAIN read a paper on the significance of cholesterol in physiology and pathology.

Dr. Chamberlain gave a brief account of the physiology concerned, mentioning as possible channels of excretion the bile, intestinal mucosa, and the skin. He said that the last of these seemed to have been neglected in the literature, but since cholesterol was contained in appreciable amounts in the superficial layers of the skin, desquamation of these would lead to its loss. To make up for this the body probably absorbed cholesterol from the food, but at certain times it required a supplementary supply which was produced by synthesis, the most likely site for which was in the suprarenal glands. This view had been put forward by the French school some years ago, and, though denied by the German school, it had received support from personal observations by Dr. Chamberlain. Further, the vital nature of the suprarenal glands seemed to be intimately related with the abundance of cholesterol present in their cortex. The uses of cholesterol were summarized. It was required for the constant repair of cellular tissues, during the breakdown of which some was undoubtedly lost. The cholesterol was supplied through the medium of the blood, in which it was contained in approximately equal amounts in both corpuscles and plasma. It occurred in a free form and as esters. Esters were principally contained in the plasma. In any individual, the blood cholesterol was constant in amount. This was due to a proper balance between intake and excretion and between synthesis and destruction. It was suggested, on experimental grounds, that a finer mechanism for regulation of blood cholesterol might reside in the spleen. In the growth of the central nervous system an adequate supply of cholesterol was essential, since this system was very rich in cholesterol. Cholesterol had notable antihaemolytic properties, particularly against substances of the saponin group. It played some part in processes of blood coagulation and sedimentation of the red cells. The development of immunity was closely associated with a rise of blood cholesterol, and it had been thought that cholesterol might have an important part in the production of immunity. In fat metabolism, again, cholesterol was constantly associated with the other fatty bodies, and it seemed likely that it took a prominent part in the metabolism of fats. Lastly, the discovery that irradiation of ergosterol led to the formation of the important vitamin D had once more

drawn attention to its close chemical relative, cholesterol, for although ergosterol was probably supplied from plant food in ordinary circumstances, it was possible that cholesterol itself might form an additional source in the body. The relations of cholesterol to certain important pathological problems were next considered. In nephritis, especially of the chronic parenchymatous variety, marked rises in blood cholesterol were common, and the degree of hypercholesterinaemia was usually proportionate to the degree of oedema. In cases where the oedema disappeared but the hypercholesterinaemia remained, the prognosis was generally unfavourable. Acute nephritis showed somewhat similar changes to the chronic parenchymatous form, but chronic interstitial nephritis was not accompanied by hypercholesterinaemia, unless the dominant feature of the case was arterio-sclerosis. Arterio-sclerosis alone was usually associated with a rise of blood cholesterol, and the connexion between the two, though unexplained, was interesting in view of the experimental production of atheroma in rabbits by cholesterol feeding. Unfortunately, however, these experiments had not so far been reproduced in carnivorous animals. The hypercholesterinaemia of diabetes was next considered. A suggestion as to its causation was made, and stress was laid on the fact that it formed a reliable and easily estimated measure of the degree of lipaemia, which was usually, itself, an index of progress in severe cases of diabetes. In diseases of the liver, jaundice of an obstructive nature was usually accompanied by increase of blood cholesterol, due to retention of cholesterol usually excreted through the medium of the bile, while haemolytic forms of jaundice, on the contrary, were generally associated with low blood cholesterol values. The estimation of blood cholesterol might therefore be of value in distinguishing between the two types of jaundice. A brief review of the relation of cholesterol to gall-stones followed. After dealing with current theories, it was suggested that should the liver be shown experimentally to be capable of converting cholesterol into bile salts, a failure of this function might result in increased concentration and deposition of cholesterol in the bile. There seemed little doubt that the formation of stone was due to some disturbance of cholesterol metabolism, but the nature of this disturbance was as yet unknown. Reference was then made to the low blood cholesterol values found in most forms of anaemia, and the effect of splenectomy in cases of acholuric jaundice and splenic anaemia in producing a return of cholesterol to normal values. The common presence of anaemia in malignant disease rendered low values common in this disease, though high values were often recorded in the absence of anaemia. In cancer, also, it had been found that the plasma cholesterol was greater than that for whole blood, the reverse of the state of affairs in normal people or in other diseases.

In bacterial infections of any severity, also, hypocholesterinaemia was generally present, and was usually proportionate to the intensity of the infection. This observation had been extended in cases of prostatic obstruction to determine those cases—namely, with a low blood cholesterol content—which were liable to extension of urinary sepsis. This work needed confirmation. Lastly, brief mention was made of the deposition of cholesterol in various tissues, such as the arterial walls, xanthomatosis, and in the retina or vitreous.

OPERATIONS ON THE GALL-BLADDER.

A MEETING of the Section of Surgery of the Royal Academy of Medicine in Ireland was held in the Royal College of Physicians on February 8th, with Sir WILLIAM DE COURCY WHEELER (in the absence of the president) in the chair.

Mr R. A. STONEY read notes on a case of choledochoduodenostomy, and gave the following clinical details.

A woman, aged 50, was admitted to hospital with a second severe attack of jaundice in the course of four months. She had an irregular temperature, but no rigors; there was at first marked tenderness of the right hypochondrium and epigastrium, which gradually lessened, revealing a hard mass in the middle line, the gall-bladder not being palpable. At the operation the gall-bladder was slightly distended, but no stones were felt in the bladder or ducts. There was a large dark blue swelling in the right border of the gastro-hepatic omentum. The gall-bladder was separated from the liver, and the cystic duct was traced into this swelling. Bile was aspirated. A free incision was made into the swelling, and bile mixed with pus was evacuated in large quantity. A finger was passed down into what felt like the os uteri in the region of the head of the pancreas, which was enlarged and very hard; no enlarged glands were palpable. Anastomosis was secured by a double row of circular sutures between the opening in the common duct and the adjacent second stages of the duodenum. The gall-bladder and cystic duct were cut away, and a drainage tube was introduced through the stumps of the cystic duct into the common hepatic duct. A small tube and strip of gauze were passed down to the line of anastomosis, and the wound was closed round the tubes. There was free drainage of bile for the first twenty-four hours only. The small tube and gauze were removed on the third day, and the tube in the hepatic duct was left out on the tenth day. The wound rapidly healed without leakages; jaundice disappeared, enlargement of the pancreas diminished, and the patient left hospital on the twenty-fourth day after operation.

Attention was drawn by Mr. Stoney to the necessity of determining whether an anastomosis would be necessary before separating the gall-bladder or seriously injuring it, since in most circumstances an anastomosis between the gall-bladder and intestine was easier than between the duct and the intestine. In cases of infection the latter operation might be more suitable, because it allowed direct drainage of the ducts on the surface as well as providing a short circuit.

Sir WILLIAM WHEELER said that in his own experience the operation of anastomosis between the gall-bladder and the stomach was, as a rule, comparatively simple; he had been struck with the fact that there was no post-operative vomiting, and that the convalescence of the patients was unhampered by any unpleasant symptoms. Difficulties arose when there had been previous operations, especially if a biliary fistula was still present. In patients who had been operated upon several times the difficulties in connexion with the surgery of the common bile duct were notorious. He had found, on one occasion, after opening the duodenum, that the introduction of an instrument in retrograde fashion had been a great help in recognizing the duct and in locating the site of a traumatic stricture. He had on three occasions performed end-to-end suture of the common duct without any post-operative trouble. In one case, a doctor who had been operated on several times for biliary obstruction without success, the duodenum was opened, and a small cyst of the common bile duct was found in the region of the ampulla of Vater. By incising the cyst the obstruction was relieved and the patient remained well.

Mr. ARTHUR CHANCE said that he recently had two cases exactly similar to those of Mr. Stoney. There was a hard mass in the head of the pancreas; the common bile duct was dilated to the size of a 10 c.cm. syringe, and had a vivid bluish-green colour. In one case he had performed cholecysto-gastrostomy, and in the other cholecystenterostomy. It was not always easy to obtain a bloodless area in the right half of the transverse mesocolon through which to bring the small intestine, and Mr. Chance thought that cholecysto-gastrostomy was, owing to its easier performance and better after-results, probably the best routine procedure.

Mr. W. DOOLIN referred to three cases in which he had employed cholecystenterostomy, and said that there had been no sign of jaundice when the patients left hospital on the thirty-seventh day after operation. In cases in which cholecystectomy had been performed previously, and in which strictures of the common bile duct were encountered, operation was very difficult. It was, he thought, almost impossible to make a differential diagnosis between cases of chronic pancreatitis and carcinoma of the pancreas.

Mr. A. A. MCCONNELL mentioned a case of congenital cystic dilatation of the common bile duct on which he had operated twelve years previously, draining the cyst satisfactorily. At the time the patient had complained of no symptoms except abdominal swelling, and the cyst had been found to contain pure bile. If he had then been more familiar with the operation of choledocho-duodenostomy, he would have performed it. In some cases which he had operated on since, he had made a primary anastomosis between the cyst of the common duct and the duodenum, and the patients had got well.

Mr. F. J. HENRY mentioned a case of a woman, aged 40, who had been ill for about six weeks with vague abdominal discomfort and jaundice. At the operation the gall-bladder was found to be moderately enlarged and the ducts moderately dilated, but no stones were visible. The duodenal wall was opened and the ampulla excised, the condition being diagnosed microscopically as a primary carcinoma of the ampulla of Vater. The patient was now perfectly well, and, in view of this, Mr. Henry was inclined to doubt whether the case was one of malignancy.

Mr. STONEY, in replying, said that in cases in which he had brought about an anastomosis between the gall-bladder and the stomach he had been impressed by the absence of vomiting after the operation, and by the easy convalescence. The relief afforded by the operation in his cases had been very considerable. He thought that a differential diagnosis between chronic pancreatitis and carcinoma of the pancreas was often impossible even after an operation had been performed. When adhesions were found after a prolonged fistula, the difficulties were so great as to be almost insuperable. He believed that the only thing to do was to try to find the dilated head of the duct, and make an anastomosis between it and the duodenum. It was surprising what good results could be obtained in these cases.

Rectal Narcosis with Tribromethylalcohol.

Mr. F. J. MORRIN read a paper on rectal narcosis with avertin (tribromethylalcohol). He said he had used this in 54 cases—too few, perhaps, for any general deductions. The oldest patient was 69 and the youngest 3 years old. Excluding four cases in children where the anaesthetic was unsatisfactory owing to non-retention of the enema, anaesthesia failed in only one case, an alcoholic subject. It was light in eight cases, but did not hinder the completion of the operation; the results were good from the operative standpoint in the remainder of the cases, though of course of varying depth. Two patients had a marked fall of blood pressure, long post-operative sleep, and a weak and rapid pulse, which was not restored to normal for four days; the symptoms were obviously due to overdosage. Thirty-six of the patients were cases of advanced carcinoma of the tongue and face; they were suffering from cachexia and were extremely bad anaesthetic subjects, being unsuitable for any other form of anaesthesia. The condition was the so-called "inoperable carcinoma" and was treated by diathermic coagulation with a very powerful diathermy apparatus; it necessitated very deep anaesthesia, and the danger of ignition contraindicated ether. Avertin, in addition to securing effective anaesthesia by allowing accessibility to the growth and free intraoral manipulation, rendered the surgical treatment of these conditions very satisfactory. Mr. Morrin said he had been most favourably impressed with the efficacy of the new drug, which he considered the anaesthetic of choice in toxic goitre. A brief experience with avertin amylene hydrate led him to regard it as a more effective anaesthetic agent, giving better abdominal relaxation, more certain anaesthesia; it was not associated with shallow respiration, and was less liable to be attended with a fall of blood pressure. No post-operative bronchitis or pneumonia was observed, despite the fact that many of these aged patients were operated upon for disease of the mouth and pharynx. Mr. Morrin said that care was necessary in preparing the solution accurately, and the dose of 0.1 gram per kilo of body weight was only rarely exceeded. When it was necessary to increase the dose cautious fractional administration was advised. Where the body weight was decreased by the operative removal of a large amount of tissue in a subject of poor vitality, overdosage with avertin might possibly occur, as, for example, in the case of amputation of a limb.

Sir WILLIAM WHEELER thought that Mr. Morrin's enthusiasm for the drug was justifiable. The patient apparently passed into a somnolent state within ten minutes; this contrasted sharply with anaesthesia with oil ether, the great difficulty about which was the varying time it took to act. An operation under this anaesthetic could not be timed within three-quarters of an hour, since some patients went under much quicker than others. There was apparently no antidote for avertin, and there was a greater fall in blood pressure than when oil ether was used. The better administration of avertin was, he thought, a matter of experience. He was interested to note the absence of post-operative symptoms following its use, since after oil ether the patients were sometimes very sick and some developed bronchitis.

Dr. J. BECKETT said that there seemed to him to be a great deal of complicated technique in the giving of avertin. This was not the case with the oil ether method, which was very simple.

Mr. W. DOOLIN congratulated Mr. Morrin on being the first surgeon outside Germany to have had an opportunity of testing the new drug. The intention of the German authorities that avertin should not be available for general use until it had been given an exhaustive trial in competent hands was praiseworthy. Opinions in Germany as to its employment were very divided; it was used either as a basal narcotic, preceded by other narcotic substances, and with additional ether administration, or else as the sole narcotic medium, and it was in the latter group that most accidents had occurred. To judge from published reports the difficulties of administration were rather more serious than Mr. Morrin had stated; it had been repeatedly said that even slight errors of technique might lead to serious effects in patients. The chief dangers were overdosage and overheating. The rapid fall of blood pressure had led to fatal secondary haemorrhages in a few cases, and fatal necrosis of the colon had been reported as the result of overheating the drug before injection. Many observers working with the drug had admitted that the chief disadvantage was the fact that it was impossible to "steer" the anaesthesia so produced. Some had considered that the dosage by body weight was unsatisfactory; it was impossible to state at any time how much of the drug injected had been absorbed into circulation. Its advantages were enormous when the anaesthesia was successfully performed. The abolition of vomiting during and after the operation was beneficial to the patient, particularly so in the case of children. Reports in German literature during the past two years showed a marked falling off of post-operative pulmonary complications. There seemed little doubt that, notwithstanding these dangers, avertin was a great step forward in the technique of anaesthesia.

Dr. P. MACCARVILL, who had assisted Mr. Morrin when he started using avertin, said that a 3 per cent. solution had been used, but it had been found difficult to get the powder to dissolve, and later they had used a 2.8 per cent. solution, which was sufficient to be retained by the rectum. The fluid was heated first to 45°C. and cooled to 40°C. The thirty-six cases in which he had assisted Mr. Morrin had all been malignant, mostly carcinoma of the tongue, and these were very difficult cases for anaesthetics. He personally thought that ether was out of the question in such cases, and gas was reported to be bad. On the first occasion he had given avertin he had felt rather alarmed, as the patient's blood pressure had fallen considerably, and the breathing had become extremely shallow, but the operation had been quite successful. When administered with care he regarded avertin as an invaluable anaesthetic.

Mr. A. A. MCCONNELL referred to the possibility of using diathermy in the mouth when rectal ether was being employed; he had been doing so for many years, and had not, at any time, experienced any difficulty.

Mr. MORRIN, in replying, said that he had obtained the avertin from a clinic in Berlin. He had tried rectal oil ether extensively, and thought that there was no comparison between the two anaesthetics. There were many dangers from oil ether also. There was no great technical difficulty in preparing avertin. The mortality following its use had occurred in the early stages, when too big doses had been given, and when it had been used in hepatic disease and in renal cases, which were quite unsuited to it. He had only had one case in which it had not been possible to complete the operation; that was an alcoholic case, and it was not realized then that such patients were not suited to the drug. In cases where the blood pressure fell very low, he had found that ephedrine controlled the fall. He had never seen a case of secondary haemorrhage occur.

Reviews.

DEFORMITIES.

In his foreword to Dr. M. F. FORRESTER-BROWN'S handbook on the *Diagnosis and Treatment of Deformities in Infancy and Early Childhood*,[1] Sir ROBERT JONES very properly insists on the value of the work and commends it to a large audience. Dr. Forrester-Brown has had a remarkably wide experience of orthopaedic practice in the United States, and in many European countries, where she has used a travelling scholarship to the fullest advantage. In her own preface she defines the book as "a supplement to the larger textbooks of orthopaedics, or more properly as a sort of scout to prepare the way for them." Every orthopaedic surgeon knows how many hospital beds are filled with cases which, properly attended to in their early stages, would never have had to come into hospital at all, or, being there, would have required far less severe or prolonged treatment. Dr. Forrester-Brown's book aims at the education of medical practitioners in the recognition of deforming diseases in their early stages, and in the practical application of the old saw "a stitch in time saves nine."

The subject-matter is arranged on a regional basis, under five headings. The first of these is the neck, back, and thorax, in which subject Dr. Forrester-Brown is thoroughly at home. As a disciple of Goldthwait of Boston, she has done at Bath much good work on postural errors, and has had most gratifying results, some of which are illustrated in this section, in the restoration of muscle tone and the consequent correction of errors of attitude. The remaining four sections deal briefly but clearly with the shoulder and elbow, the forearm and hand, the hip-joint and knees, and the feet. While there is no attempt to describe all the known affections of a part, there are succinct accounts of most of the conditions likely to be encountered, for fuller details the reader being referred to the large works on orthopaedic surgery. In the last forty-three pages the author sets forth the principles of treating deformities of the legs and feet. Here we think she does not give enough credit to the curative action of steel instruments, when these are intelligently designed and properly fitted. The brilliant results of operations, and the increased and more intelligent application of plaster-of-Paris, have led to some neglect of the work of earlier orthopaedic surgeons in the use of "walking instruments," but we must do Dr. Forrester-Brown the justice of noting that she states that in many cases knock-knee of considerable severity can be corrected with calliper splints.

This book is a short one, the descriptions and directions are clear, and the illustrations instructive. The busy practitioner should therefore be able to find the time to read it and to refer to it whenever he is confronted with a case of suspected or obvious deformity. Widespread use of such a work should in time diminish the crowd of cases which have to be treated in hospitals by specialists at the expense of the charitable public and the overburdened ratepayer or taxpayer.

LABORATORY WORK ON TUBERCULOSIS.

THE introduction to Dr. H. S. WILLIS'S book, *Laboratory Diagnosis and Experimental Methods in Tuberculosis*,[2] has been written by ALLEN K. KRAUSE. After such an accolade, the value of which will be appreciated by tuberculosis workers all over the world, the reviewer's task may seem redundant. This book of 330 pages consists of five parts; in the first we find a description, mainly from the clinical aspect, of the secretions, excretions, and constituents of the body in so far as they relate to the diagnosis and treatment of tuberculosis. The second part deals with the various methods of detecting the tubercle bacillus, and with its isolation and cultivation; it is therefore mainly a description of laboratory technique. The third part is devoted to diagnosis by tuberculin, and again the subject is considered mainly from the clinical aspect. Serological diagnosis occupies the short third part; there is a chapter by Dr. J. S. WOOLLEY on complement fixation, and another on the remaining serological tests and their value. This section might, with advantage, be considerably elaborated. Finally, a description is given of the technique of the various methods of studying artificially produced tuberculosis in animals. The material is good, but Dr. Willis's book is either too big or too little. He mentions in his preface that it is intended for "practising physicians, public health officials and laboratory workers in general, and medical students." The practising physician would welcome more information on the clinical application and value of the tests mentioned, and be content with less about the laboratory technique; the laboratory worker would probably prefer the balance shifted in the opposite direction; the medical student would like the whole subject-matter condensed and set out more dogmatically. The person who will most appreciate the book as it stands is the isolated sanatorium physician who has to do his own laboratory work; but even he, realizing the author's wide knowledge of the clinical pathology of tuberculosis, will regret its condensation. In these days of specialization it is unusual to find a book that contains a mixture of clinical and laboratory teaching, without going very deeply into either; its welcome will depend on the personal opinion and wants of its readers. The author's style is clear and pleasant, the illustrations are good, and the type is legible, but printer's errors are rather frequent.

Dr. ANDRÉ BRETON has contributed a very useful addition to the literature of tuberculosis by placing on record a careful clinical study of Vernes's flocculation reaction of serum in the presence of a resorcin solution.[3] In Dr. Breton's hands this test has proved valuable in the diagnosis and prognosis of all forms of tuberculosis, and especially of the pulmonary type. Like other laboratory tests, such as that based on the red cell sedimentation rate, its value in diagnosis is restricted, and is mainly negative, since nearly all acute and many chronic infections give positive reactions. The chief claim made by the author for this reaction is that it provides an accurate index of the activity of the tuberculous infections in 90 per cent. of the cases examined; this is as near accuracy as any serum test can go. Dr. Breton is enthusiastic about the method, but level-headed and fair in the conclusions he draws. His zeal has tempted him to put up a dummy in the shape of the complement fixation reaction, with which he has compared the Vernes reaction in every case, but the complement fixation reaction is not generally considered of any particular value in tuberculosis, either for diagnosis or as an index of activity. Dr. Breton's work on the Vernes reaction is good enough to stand on its own merits, and gains nothing by the comparison. The performance of the test might have been dealt with in greater detail, and especially the technique of the photometric method of reading the results. In describing the method he gives a useful warning that the blood serum must be taken from a patient who has fasted for twenty-four hours and who has had no drugs for seventy-two hours, and that it must be examined before it is twenty-four hours old if the results are to be of any value. Does the Vernes reaction merely confirm the clinical estimation of a case, or does it give premonitory warning of increase or decrease of activity of infection? The author tells us he does not yet feel justified in answering his questions. This is a valuable, well-printed monograph containing a full bibliography of the subject.

[1] *Diagnosis and Treatment of Deformities in Infancy and Early Childhood.* By M. F. Forrester-Brown, M.S., M.D.Lond. With a foreword by Sir Robert Jones, Bt., K.B.E., C.B., F.R.C.S. Oxford Medical Publications. London: Milford, Oxford University Press. 1929. (Demy 8vo, pp. xii + 192; 79 figures. 14s. net.)

[2] *Laboratory Diagnosis and Experimental Methods in Tuberculosis.* By Henry Stuart Willis. With a chapter on Tuberculo-complement Fixation by J. Stanley Woolley. Introduction by Allen K. Krause. London: Baillière, Tindall and Cox. 1928. (6 × 9¼, pp. xxv + 330; 25 figures. 16s. net.)

[3] *Etude de la Réaction de Vernes à la Résorcine dans le Diagnostic et le Pronostic des Tuberculoses.* Par André Breton. Paris: Masson et Cie. 1928. (6½ × 10, pp. 152. 20 fr. sans majoration.)

EPILEPSY.

DR. W. G. LENNOX and DR. STANLEY COBB are to be congratulated on having published as a monograph their review of *Epilepsy*,[4] which recently appeared in *Medicine*. They indicate in a subtitle that the scope of their work is confined to "the standpoint of physiology and treatment," and they rightly recognize that a knowledge of the physiology of convulsions is fundamental to the study and treatment of epilepsy. It is the difficulty of the physiological problems involved which renders progress so slow in this field of neurological research. The authors wisely begin by defining epilepsy as a syndrome rather than as a disease, leaving open the question of the relative importance of general and focal factors in its etiology. A valuable discussion of the possible neurological mechanisms of convulsions follows. A large part of the book is devoted to a consideration of the evidence for and against the existence of abnormalities outside the central nervous system in epileptics. The various systems of the body are serially reviewed, and the large number of recent investigations into the metabolism of epileptics are judicially discussed. Special consideration is given to disturbances of acid-base equilibrium and the reduction of the seizures by induced acidosis. Dr. Lennox and Dr. Cobb conclude that, in spite of the frequent occurrence of organic cerebral abnormalities of various kinds in patients suffering from epilepsy, such lesions are contributory causes only. A knowledge of the functional abnormalities of nervous tissue is essential for further progress. The evidence indicates that in certain epileptics subject to frequent seizures these may be precipitated by oxygen lack and by alkalosis, and prevented by increased oxygen tension in the tissues and by acidosis. Yet these physiological changes are also to be regarded as merely contributory factors. "The important question yet remains, why, under a given stimulus, one person should have a seizure and another not." Hence we are led to postulate some unknown constitutional element. This "convulsive capacity" is presumed to be present in each person with epilepsy, and hence there is justification for the conception of "essential epilepsy" as a name for that underlying explosive tendency to which cerebral lesions and metabolic abnormalities act only as triggers. This constitutional element remains for the present a mystery. This conclusion, derived from the labours represented by some six hundred references, may seem somewhat disheartening. Nevertheless, we may find encouragement in the tendency of recent research to concentrate on factors influencing the reactivity of the nerve cell, for it is in this direction that we must surely look for further light upon the convulsive predisposition.

X-RAY DIAGNOSIS OF ECHINOCOCCUS CYSTS.

As a supplement to *Acta Radiologica* DR. GUNNLAUGUR CLAESSEN publishes in book form a monograph entitled *The Roentgen Diagnosis of Echinococcus Tumors*.[5] The author, as a justification for this work, observes that although there are a good many papers on the subject to be found in various journals they are all very scattered, and his endeavour has been to collect in one place the sundry experiences related by other authors in this branch of radiology, and to add to the subject his own experiences of forty-four cases which he has himself examined with x rays. While the radiological aspect of the subject is the most prominent, other points are by no means overlooked, and chapters are included which deal with the biology and morphology of the echinococcus, with the geography of the disease, with the pathological changes apt to occur in the cysts, etc. The book deals mainly with the disease as it affects the liver, and there are few references to cysts in other parts of the body. The methods of x-ray examination are explained, and the various radiological appearances examined from the points of view of their reasons and their diagnostic value. In summarizing, the author states that out of his forty-four cases, thirty-seven were cysts of the liver, and that twenty-eight were verified by operation; that pathological changes in the cysts due to either senility or to infection are common, and that these affect the x-ray picture. The illustrations consist of four figures in the text and eighty-two radiographs and photographs bunched together at the end. This method of putting all the illustrations together at the end with no descriptions other than those in the text is irritating; if illustrations are to be inserted in this manner there should be a short description attached to each, and not merely a reference number. We may say that these illustrations are very good. There are, in addition, short summaries in German and French, and references to one hundred and thirty-seven papers. The English translation is by Robert Fraser. The whole forms a very complete account, radiologically and otherwise, of a comparatively rare disease, and should be of use to those interested in the subject.

ANNALS OF MEDICAL HISTORY.

WITH the fourth instalment of last year the first series of the *Annals of Medical History*,[6] started in America in 1917, comes to an end. But fortunately for lovers of medical history this beautifully got-up journal, edited with so much devotion by Dr. FRANCIS PACKARD, is to be continued in a second series with a different format (7½ x 11 instead of 8¾ x 12½) but without any reduction in the reading matter, for there will be six instead of four numbers in the year. Although most successful from a literary standpoint the *Annals* do not pay their way. It is to be hoped that the increasing number of medical men who take an interest in the history of their profession will come to the rescue. The present number is so full of attractive matter that space does not allow of even a complete enumeration of the contents. Three articles deal with last year's tercentenary of the publication of the *De Motu Cordis*; the editor gives a running account of the Harvey celebration in London last May; Professor J. J. R. Macleod, now of Aberdeen, publishes his well-illustrated address on Harvey's experiments on the circulation; and the frontispiece of Michael Servetus has a bearing on Sir Humphry Rolleston's admirable Mary Scott Newbold Lecture on the predecessors and contemporaries of Harvey, which appears as the opening paper. The portrait of Benjamin Rush on the cover is accompanied by Dr. W. S. Middleton's account of the doings of this great physician during the yellow fever epidemic of 1793 in Philadelphia. From a study of the notes taken in 1818 at the lectures on the practice of physic, of Nathaniel Chapman, professor of medicine from 1816 to 1850 in Philadelphia, Dr. D. L. Farley sketches the activities of the founder of what afterwards became the *American Journal of the Medical Sciences*. The editorship of a rare anthology entitled *A Full View of all the Diseases Incident to Children* (erroneously ascribed to John Martyn in the eighteenth century) is discussed by Dr. Ernest Caulfield, who also sketches the writers quoted in the volume. Dr. LeRoy Crummer now publishes the manuscript of William Heberden's "Introduction to the Study of Physic," which, like the "Prefatory Essay," brought out in the last number of the *Annals*, is now for the first time printed. In his historical survey of diabetes, which is carried up to the present day, Dr. J. H. Barrach rightly points out that more has been learnt about this disease during the last forty years than in the previous eighteen centuries. In philosophical vein Dr. Stephen D'Irsay discourses on the evolution of the physician's attitude, and rather curiously the article immediately preceding it is Dr. W. E. Aitchison Robertson's well-told story of the famous Mary Tost, who pretended to be the mother of many rabbits. Under the title of "The Evolution of our Table" Dr. Cecil Striker treats of ancient habits of diet. An extremely interesting article, "The Sponge, its Effect on the Martyrdom of James King of William" (the remarkable nature of this reformer's name being duly explained), describes the hurtful

[4] *Epilepsy*. By William G. Lennox and Stanley Cobb. Medicine Monograph, vol. xiv. London: Baillière, Tindall and Cox. 1928. (Med. 8vo, pp. 197; 14 figures. 16s. net.)

[5] *The Roentgen Diagnosis of Echinococcus Tumors*. A study by Gunnlaugur Claessen. *Acta Radiologica*, Supplementum vi. Stockholm: P. A. Norstedt and Söner. 1928. (7¼ × 9¾, pp. 155; 4 figures in the text and 82 figures on 32 plates.)

[6] *Annals of Medical History* (Winter Number, 1928), vol. I, No. 1. Edited by Francis R. Packard, M.D. New York: Paul B. Hoeber, Inc.; London: Baillière, Tindall and Cox. 1928. (8½ × 12¼, pp. 123-511; illustrated. Subscription in Great Britain £2 2s. per volume of four numbers.)

state of San Francisco in the fifties, which King, who "dared to say what others feared to think," strove to correct, and, indeed, by his death accomplished. Dr. Jonathan Wright, an ever-faithful contributor, writes on "The Foundations of Science and Religion in Dante's Debt to Aristotle," Dr. Alfred Brown on John Arderne, and Dr. J. L. Bragman on the "Medical Wisdom of De Quincey."

THE COMMON COLD.

IT is at a very appropriate time that Dr. LEONARD HILL, who has done so much in the way of applying physiological guidance to the maintenance of health, and Mr. MARK CLEMENT have brought out a book on *Common Colds: Causes and Preventive Measures*,[1] so clearly written that the layman can read and benefit from the inward digestion of its contents. After some introductory remarks on the anatomy and physiology bearing on the subject and a chapter on the psychological aspect of catching cold, there follows a discussion of the causes of colds; the factors favouring infection are fully set forth, and, as elsewhere in the volume, the importance of fresh air as a means of avoiding infection is brought out. The most infectious stage of a cold is the earliest, before the second or wet stage has come on. An incidental reference is made to non-contagious colds, not due to infection from other cases, but caused by irritating agents and vapours, of which tobacco has been incriminated as one of the commonest. Vasomotor catarrh and coryza due to hypersensitiveness are briefly touched upon, and in speaking of influenza the suggestion is thrown out that the great plague of Athens in 429 B.C. may have been of this nature. The treatment of this too familiar ill by salicin, as advocated by Mr. E. B. Turner, and by methyl arsenate of sodium (arrhénal), said by Romary to be a specific, is summarized. As already mentioned, much stress is laid on the prevention of colds by fresh air, diet, light, and proper clothing. The discordant opinions as to the value of vaccine therapy are also quoted. With regard to curative treatment it is pointed out that the original dictum "If you are fool enough to stuff a cold, you will produce and have to starve a fever" has in its abbreviated form come to imply almost the exact opposite as regards the treatment of a common cold. The various methods of attempting to cure a cold are noticed, and approval is expressed of the old-fashioned plan of a Dover's powder and hot lemonade to increase sweating, and Epsom salts next morning. Support is not given to much whisky as a remedy.

NOTES ON BOOKS.

MRS. CALLOW'S *Food and Health*[2] is a volume that sets out, in a straightforward and sensible manner, some of the important facts about diet that should be understood and appreciated by the public. There is every reason why persons of average intelligence should learn the simpler facts upon which the science of dietetics is based, to the benefit of both their comfort and their pocket. On the economic side the general reader's attention might be drawn to the section that deals with patent foods.

Dr. J. K. WATSON'S *Handbook for Nurses*[3] is the weightiest book for its size with which we are acquainted. This makes it tiring to read, but is accounted for by the author's attempt to give in one volume all the information that nurses can possibly require. To this end a new chapter on mental disease has been added to the present edition, the eighth, of the book, together with one hundred new illustrations. The issue to date of 95,000 impressions of the work attests the publishers' claim that it is a standard textbook; but if further editions are called for a distribution of weight between two volumes might aid the nurse's comfort. Another book on the same subject, Miss MARGARET S. RIDDELL'S *Lectures to Nurses*,[4] has reached its third edition. To this book also much new matter has been added, including sections on surgical tuberculosis, on the nursing of special operations, and on new growths. A useful additional feature is a glossary of technical terms. This will doubtless be increased and improved in future editions. At present there seems no reason why a nurse should be told the meaning of the popular term "quinsy," and left to imagine what the equally non-technical word "carbuncle" denotes. The introduction, while advocating tactful treatment of doctors, instils proper awe in the presence of a matron.

The comparative anatomy and development of the nervous system is always a most fascinating subject to those who have the knowledge to appreciate it, and it is to those few that ARIËNS KAPPERS'S *Three Lectures on Neurobiotaxis and other Subjects*[11] will appeal. There are three lectures, the first dealing with neurobiotaxis, the second with the phylogenetic and ontogenetic development of the corpus striatum, and the third with the development of the cerebral cortex and the functions of its different layers. These three lectures were delivered at the Universities of Copenhagen, Lund, and Upsala in 1927, and are reprinted from the *Acta Psychiatrica et Neurologica*.

The forty-eighth volume of the *Transactions of the Ophthalmological Society of the United Kingdom*[12] embodies the full text of the various communications read before the society during the session ended April, 1928, together with the reports of the transactions in 1927-28 of the affiliated societies, which include the Midland, North of England, Irish, and South-Western Ophthalmological Societies, and the Scottish Ophthalmic Club, and of the proceedings of the Oxford Ophthalmological Congress, 1928. The volume, which is well printed and illustrated with numerous photographs, line drawings, and coloured plates, is in every way a credit to British ophthalmology.

In publishing *Typical Flies*,[13] of which the third series is now before us, Mr. E. K. PEARCE'S purpose is to present photographs of British diptera so as to assist the student, especially when he is commencing to study these insects. Some of the photographs are helpful, because they give a general impression of the appearance of the insect, but many of them are indifferent; even the venation is out of focus in some, though that is one of the few "characters" which should be easily reproduced in a photograph. Many small points of importance in the systematics of the diptera cannot be adequately shown in a photograph. The short notes beneath the figures add little to the value of the book; there must be a thousand British insects which might be described as "a black fly, pupa dark brown."

INFANT FEEDING: A CORRECTION.

IN our review of Dr. Howard Gladstone's *Clinical Observations on Infant Feeding and Nutrition* (February 23rd, p. 357), we stated in error that the author, in giving the calorie values of diets, had failed to indicate whether these values refer to an ounce, a feed, or a day. In a cross-heading, on page 34, he makes it clear that the reference in each case is to one pint.

[1] *Common Colds: Causes and Preventive Measures.* By Leonard Hill, M.B., F.R.S., and Mark Clement. London: W. Heinemann (Medical Books) Ltd. 1928. (Demy 8vo, pp. viii + 126; 9 figures. 7s. 6d. net.)

[2] *Food and Health.* By A. Barbara Callow. The World's Manuals. London: Milford, Oxford University Press. 1928. (Cr. 8vo, pp. 96; 9 figures. 2s. 6d. net.)

[3] *A Handbook for Nurses.* By J. K. Watson, M.D.Ed. Eighth edition, revised. London: Faber and Gwyer, Ltd., The Scientific Press. 1928. (Cr. 8vo, pp. xii + 888; 239 figures. 8s. 6d. net.)

[4] *Lectures to Nurses.* By Margaret S. Riddell, A.R.R.C., S.R.N. Third edition, enlarged. London: Faber and Gwyer, Ltd., The Scientific Press. 1928. (Cr. 8vo, pp. xii + 518; 61 figures. 6s. net.)

[11] *Three Lectures on Neurobiotaxis and other Subjects.* By C. U. Ariëns Kappers. London: W. Heinemann. 1928. (6½ × 9½, pp. 76; illustrated. 7s. 6d. net.)

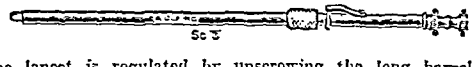
[12] *Transactions of the Ophthalmological Society of the United Kingdom.* Vol. xlviii. Session 1928. London: J. and A. Churchill. 1928. (Demy 8vo, pp. xlviii + 483; illustrated. 30s. net.)

[13] *Typical Flies: A Photographic Atlas of Diptera.* By E. K. Pearce, F.L.S., F.E.S. Series iii. London: Cambridge University Press. 1928. (7½ × 10½, pp. xv + 64; 162 figures. 10s. net.)

PREPARATIONS AND APPLIANCES.

LANCET FOR PERITONSILLAR ABSCESS.

MR. A. A. MILLER, assistant out-patient registrar, Central London Throat, Nose and Ear Hospital, writes that the instrument illustrated—a modification of the well-known blood-letting lancet—has been devised to meet the difficulties so often experienced in opening a peritonsillar abscess; he has found it very reliable. The length



of the lancet is regulated by unscrewing the long barrel into which it is fitted. By pulling the handle the lancet is made to disappear in the barrel, and at the same time a spring is compressed by a special device which keeps the lancet under tension in the desired position; the tension itself can be regulated. On pressing the handle the action of the spring is released and the lancet let loose with considerable force, thus producing a sharp and instantaneous cut. The manipulation of the instrument is very simple. It is made by Messrs. Charles King of Devonshire Street, W.

INTRACRANIAL SURGERY.

A STUDY of Intracranial Surgery, based upon the work of Dr. Harvey Cushing's clinic at the Peter Bent Brigham Hospital, Boston, has been prepared for the Special Report Series[1] of the Medical Research Council by Mr. Hugh Cairns, who was assistant resident surgeon to the clinic during the period 1926–27. Dr. Cushing's clinic is devoted solely to the study of neurological surgery, all its members being trained both in the details of neurological examination, including perimetry and ophthalmoscopy, and in the performance of intracranial operations. During the period under review 463 cases were admitted to the clinic, of which 359 were classified in the "intracranial tumour group." On 284 members of this group major intracranial operations were performed, with the remarkably low operative mortality of 9.8 per cent. The operative mortality in intracranial surgery is, in Dr. Cushing's view, largely what the surgeon wishes to make it; he may achieve a low mortality by the exercise of due caution, a high mortality by attempting radical operations on tumours difficult of access.

Pathology of Tumours.

From a table showing the pathology and situation of all the verified brain tumours which came to operation or necropsy, it is evident that the commonest tumour was the glioma, which was found with equal frequency in the cerebrum and the cerebellum. In the cerebrum the commonest sites were the frontal, temporal, and parietal lobes. Next in order of frequency was the meningioma, whose site of election was the parietal lobe and the juxta-ampullary region. Adenomata and adeno-carcinomata, also occurring in the juxta-ampullary region, are almost as frequent as meningiomata. It is worthy of note that though in discussing the histology of brain tumours, especially of gliomata, the work of Cushing and Bailey is referred to at length, no mention is made of the excellent work of Greenfield in this country.

The Need for Immediate Treatment.

Mr. Cairns, in considering the treatment of intracranial tumours, reaches the conclusion that all brain tumours must be regarded as emergencies, no matter how mild their symptoms may be when they first come under observation. The onset of grave symptoms may be extremely sudden, and it is impossible to predict at what period in the course of a case such symptoms will supervene. Early treatment is required, moreover, in view of the papilloedema and optic atrophy. Loss of vision is apt to be insidious and scarcely noticed until the final stages, when it may occur with astonishing rapidity, even in the course of a few days only. Dr. Cushing maintains that the surgeon must shoulder the responsibility of acting on his own diagnosis, a view which is in accordance with the teachings of Horsley, Macewen, and Sargent in this country.

Methods of Clinical Examination.

It is estimated in the report that fully 40 per cent. of intracranial tumours, chiefly of the pituitary and acoustic nerve, give rise to definite clinical syndromes. The need for thorough systematic examination of each case is made evident by the fact that approximately 4 per cent. of all brain tumours are metastatic, the common sites for the primary focus being the breast, lungs, kidneys, and skin.

The administration of hypertonic salt solution, either intravenously or rectally, is advocated very strongly in those cases which are admitted in a state of coma, on the ground that it causes the brain to shrink in size and thus reduces intracranial tension. In cases suffering from minor degrees of drowsiness it is sufficient to administer magnesium sulphate, by mouth if possible, or, if the patient is liable to vomit or is unable to swallow, by rectum. Within six to twelve hours the patient will have become brighter and more co-operative, though in view of his liability to ture quickly great care will be needed to shepherd him through a complete neurological examination. No harm has ever resulted from the use of this method.

[1] Special Report Series, No. 125. Medical Research Council. His Majesty's Stationery Office. 1929. 3s. net

The Prevention of Blindness.

In every patient admitted a complete examination of the fundus oculi is undertaken. This examination is of paramount importance, as in many cases of intracranial tumour the chief aim of treatment is to preserve vision. In cases of slow-growing tumours, so situated that they may cause pressure effects on the optic nerves or chiasma without producing hydrocephalus, there may be for years few or no symptoms save progressive failure of vision. Of the cases under review 44 were admitted almost totally blind, vision being reduced to 20/100 or less in both eyes, and 27 were blind or almost blind in one eye. Neglect of ophthalmoscopy may result in failure to detect the presence of a tumour until vision is gravely damaged. Investigation of the visual fields is almost as important as the examination of the fundi. In Dr. Cushing's clinic the workers depend almost entirely on perimetry to differentiate between cerebellar tumours and those not infrequent temporal and occipital tumours which give cerebellar signs.

Radiography.

Another very important aid to diagnosis of intracranial tumour is the x-ray examination. The tumours most likely to give positive x-ray findings are adenomata of the pituitary and intracranial meningiomata, the former giving rise to enlargement of the sella turcica, the latter in many cases to erosion and increased vascularity of the bone, or to diffuse thickening and enlargement of the meningeal vessels. Ten per cent. of the gliomata in the clinic showed calcareous deposits. During the year under review 35 per cent. of intracranial tumours were revealed by means of x rays. Ventriculography, or x-ray examination of the ventricular system after the injection of air, was employed in 37 cases, the method being reserved for those cases in which all other means had failed to reveal the situation or presence of a tumour.

Treatment.

Underlying Cushing's surgical procedure are three main principles: (1) to avoid injury to the brain; (2) haemostasis; and (3) asepsis and closure of the wound. Very long operations, far longer than any of the operations of general surgery, are rendered possible by the application of these principles. The average length of an intracranial operation in Cushing's clinic is about three hours, while some operations last as long as six or seven hours. Whenever possible local anaesthesia is used, and the greater part of the operating is done without general anaesthesia. By means of the local anaesthetic used—namely, a 1 per cent. solution of novocain to which a small amount of adrenaline has been added—it is claimed that complete anaesthesia of the scalp can be obtained. Osteoplastic flaps made with the aid of an electrically driven burr or perforator and a Gigli saw are the usual means of opening the skull. The use of the high-frequency current is advocated, not merely for haemostasis, but for the removal of tumours.

Conclusion.

Mr. Cairns's valuable account of intracranial surgery is illustrated by a number of excellent skiagrams and clinical pictures. The list of references in the report is fairly extensive, but we must express regret at the almost complete omission of the names of English neurological surgeons, although these have added considerably to the literature during the past ten years.

The Antiseptic, a monthly journal of medicine and surgery issued from Madras, is about to complete the twenty-fifth year of its publication. In an essay entitled *The Antiseptic through a Quarter of a Century*, which has been prepared by the editor, the Hon. U. Rama Rau, as a supplement to the silver jubilee issue to appear in April, an account is given of the various contributions made by this periodical to the progress of medicine in India. Among these he claims the raising of the status of members of the medical profession, especially of those engaged in the subordinate medical services, the regularization of the practice of lay vaccination, the suppression of quackery, the promotion of public health legislation, and the improvement of medical education in India. He concludes by exhorting members of the medical profession in India and abroad to cast away all racial and geographical prejudices, and to work for the common interest of suffering humanity.

British Medical Journal.

SATURDAY, MARCH 2ND, 1929.

FIRST APPEARANCES IN EUROPE OF EPIDEMIC ENCEPHALITIS.

To appreciate fully the peculiar interest and significance of Professor René Cruchet's latest contribution[1] to the literature of encephalitis lethargica it is necessary to recall the first communication on the subject which this eminent French neurologist, in association with F. Moutier and A. Calmette, published in 1917 (*Bull. et. Mém. Soc. Méd. des Hôp. de Paris*, xli, 614). It was while serving in the French army as a specialist medical officer at Commercy and Verdun from September, 1915, to February, 1916, and afterwards as director of the neurological clinic in the Central Hospital at Bar-le-Duc, that Cruchet and his colleagues began to notice among the troops cases presenting symptoms of encephalo-myelitis, which did not, however, conform with those of any then known disease. A preliminary note which, in addition to a general description of the forty cases as regards onset, evolution, etc., enumerated the several clinical types observed (mental, meningo-encephalitic, convulsive, choreic, hemiplegic, cerebellar and ponto-cerebellar, bulbo-protuberential, medullary, and polyneuritic), was sent to the Société Médicale des Hôpitaux de Paris on April 1st, 1917; the note was published by the society on April 27th of that year, a few days before Professor von Economo's classic paper (Encephalitis Lethargica, *Wien. klin. Woch.*, 1917, xxx, 581) on his thirteen cases appeared in print. "Mais cette communication venait sans doute avant son heure," Professor Cruchet now writes, in his present conclusions, concerning his first effort to establish his claim. Certainly the joint note of the French observers was, at the time, strangely overlooked in favour of Economo's description of a much smaller number of cases. As Professor Achard suggests in his graceful preface to the present work, this was probably due to the fact that, while the French note described a malady with many diverse forms, the Austrian author laid emphasis upon a single, though characteristic, form of the disease, so giving the impression of "une maladie très simple dans ses symptômes." There was probably much also in the name given to the obscure disease, and the comprehensively correct, though somewhat unwieldy, term "encéphalo-myélitie subaiguë" did not strike the imagination like Economo's more arresting and more euphonious title. "L'encéphalite léthargique" (encephalitis lethargica), as Professor Achard remarks, "conquit d'emblée la faveur des cliniciens." In 1920 Professor Cruchet and his colleagues published the after-histories of some of their earlier cases; in the pamphlet under consideration, and in response to general requests, he now publishes full notes of all the cases seen between September, 1915, and July, 1917. It is a document of considerable interest from several points of view. Except for the well-described case of an English nurse, attacked while on duty at Souilly, all the 64 patients were soldiers on active service, and it is interesting to note that they constituted 3.1 per cent. of the total 2,010 cases of mental and nervous cases coming under the author's observation at the time.

It is remarkable that no series of cases comparable with that occurring in the north-west of France was reported from any other military area during the war; Cruchet thinks, however, that the disease was present on other fronts and in other armies, but that it remained undiscovered. In supporting this contention he refers to cases among ex-soldiers reported in the general literature where the primary attack occurred during military service, and also to his own acquaintance with many French war pensioners suffering from Parkinsonism whose original illness was contracted on fronts as wide apart as Morocco and the East. In this connexion we may recall to our readers' memory an article published in these columns six months ago on the possible introduction of the disease from China.[2] Reverting to the clinical narratives in the present document, it can be said that, apart from the first seven cases—concerning the diagnosis of which Professor Cruchet is himself in some doubt—the series of cases, marshalled in their original groups, shows a remarkably correct forecast of the various clinical guises which further experience has often proved the disease can assume. The occurrence of four hemiplegic cases, as reported in England by Buzzard and Greenfield,[3] may be quoted as one instance among many. These original case-histories speak for themselves, and if further evidence is required to show that the majority of patients enumerated did indeed suffer from the infection now known as encephalitis lethargica, it is provided by the summaries which have been added to each case; from these it appears that roughly one-third of the patients were reviewed as late as May, 1928, and were then found to be suffering from Parkinsonism and other forms of chronic encephalitis lethargica.

Reviewing the story as it has now been brought to light, there seems to be no doubt that, while the disease was discovered more or less simultaneously by independent pioneer workers in both France and Austria, the actual priority of reporting upon it should be credited to Professor Cruchet and his colleagues. It would probably be correct to say also that if the malady now known as encephalitis lethargica was—to modify Professor Achard's metaphor—so baptised originally in Austria, it was born in France, where it has been subsequently studied with so much care and distinction.

DE MINIMIS.

"DE minimis non curat lex," but medicine is much more condescending than the law, and its hard-working partner surgery is still less above paying attention to small miseries. "Misery" is hardly too strong a word to use in describing such troublesome conditions as ingrowing toenail, and in his British Medical Association Lecture, delivered before the Northern Counties of Scotland Branch, and published in this issue at page 383, Professor John Fraser of Edinburgh did well to discuss some of these troubles, and to tell the general practitioner how best to deal with them. People whose livelihood depends on their ability to walk and stand comfortably, equally with those whose pastimes are pedestrian, find their lives rendered troublesome, and even their morals debased, by affections of the feet. Indeed, we have known a patient driven to drink by bunions, and restored to sobriety and a subsequent blameless life by suitable operations on her first metatarsal bones. Let no one, therefore, scoff at Professor Fraser's choice of subject.

[1] *L'encéphalite épidémique. Ses origines—Les 64 premières observations connues.* Par René Cruchet. Paris: G. Doin. 1928. (5½ × 8½, pp. 134; 8 figures. 15 fr.)

[2] The Origin of Encephalitis Lethargica, *British Medical Journal*, 1928, ii, 315.

[3] *Brain*, 1919, xlii, 305.

The ten affections he deals with are all well known to orthopaedic surgeons; the conservative methods of treatment best suited to them are in general well established, and, when patients are sensible enough to carry them out perseveringly, successful. Unfortunately the surgeon often has to fight against fashion, a contest in which he is apt to come off second best. It may perhaps confirm the cynic in his pessimism to reflect on the sad backsliding which has occurred in the choice and fashion of shoes in the last hundred years. The working women of 1829 did not attempt to copy the evil habits of the idle rich of that day. To the lady of fashion of the early nineteenth century, who rode in her carriage and seldom walked, three-inch heels and pointed toes may have wrought little harm, and the workers were then content with low heels and wide toecaps, and pattens or clogs for wet weather. To-day, when many women dress in flimsy high-heeled shoes, as though they were not under the necessity of walking in all weathers to omnibus, tram, or train, the wonder is, not that some of them have foot troubles, but that so many seem to escape them.

Experts will probably differ in their estimates of the importance of flat-foot in the causation of some of the deformities described by Professor Fraser, but they will all agree that the extreme degrees of hallux valgus are generally found associated with arthritic cases of over-pronation. The syndrome denoted "march-foot" is an interesting one, and its etiology and pathology were quite obscure until *x* rays revealed the secret. Rare in this country, it was not uncommon in Germany, where, as *Fussgeschwulst*, it was well known as affecting soldiers after long marches in heavy order, or after they had been practised too assiduously in the "goose step" or parade march. At first the condition was attributed to malingering, but the presence of oedema invalidated that diagnosis. Finally, the fact that fracture was the cause of the trouble in the typical case was shown with the help of *x* rays by a French military surgeon. A controversy about which part of the metatarsus normally bears the most weight raged for a time in Prussia, but seems at last to have died of fatigue, leaving both sides unshaken.

Professor Fraser describes also Köhler's disease of the navicular bone, and refers to the Osgood-Schlatter disease and other manifestations of perverted development of small bones. The number of names of observers who have described what are often unimportant lesions or syndromes is very large indeed, and the pages of dictionaries of medical terms are overloaded with them. We are sometimes reminded of a suggestion of the late Sir Jonathan Hutchinson to call new maladies by the names of the patients in whom they were first observed. Then, as Sir Jonathan said, we should have "Mrs. Jones's leg" or "Robinson's instep," and no physician or surgeon would be tempted to seek notoriety, or perhaps immortality, from a pathological specimen or a morbid process.

SLUM PROPERTY AND ITS ABOLITION.

A good deal will be heard, in connexion with the approaching general election and after it, about the problem of the slums and the reconditioning of slum property. An admirable contribution to the practical consideration of the matter will be found in Mr. E. D. Simon's book entitled *How to Abolish the Slums*.[1] Mr. Simon is, of course, an acknowledged authority on the subject of housing, and all that he says about it may be relied upon as sane and practical, in contrast to so much that is written or spoken of a sentimental and rhetorical, or at best visionary, character. The survey offered in his present book is restricted. He does not touch upon the problem in rural areas at all. He just mentions, but does not deal with, the particular difficulties of London. He has no special regard to the circumstances and law of Scotland, beyond noting the fact that "the English worker is prepared to spend a substantially larger amount than the Scotch; he demands by tradition and custom a higher standard of housing, and is prepared to make more sacrifice to obtain it." His book, therefore, has to do almost entirely with urban communities in England and Wales outside London, and he illustrates his statements very largely by the experience of Manchester and, to a less extent, of Birmingham and other great cities. Even so, he will seem to some to have rated too high the permanence of good conditions in many post-war houses, and too low the deteriorating effect of the "slum mind" in many of the dwellers in houses which are themselves structurally decent. His own figures indicate that this may be a debasing factor of the order of from 12 to 25 per cent. in even good housing schemes. It may be held, too, that he goes unnecessarily far in demanding a separate house for each family, and does not envisage what have been called "high tenements" in their due proportion. It appears a little unreasonable that such homes, when called "flats," whether luxury or ordinary, should be more and more attractive to the well-to-do, whereas when somewhat wantonly dubbed "tenements" they should be considered improper for those who are poorer. Even the calculated stabilization of the population at about 48 millions in some twenty years from now, limiting and defining the problem as it undoubtedly does, scarcely justifies the proposition, one house, one family. Outstanding merits of Mr. Simon's book are his careful definition of terms and problems, his putting of "reconditioning" in its proper place and proportion with regard to new building, his establishment of a proper criterion of "overcrowding" as contrasted with the official standard adopted by the Registrar-General, the thoughtful, careful, and moderate statement of his case and the necessities of the situation, and his logical presentation of his general programme and suggestions with regard to rent restriction, rating readjustment, and a children's rent allowance. This book, together with that by Mr. B. S. Townroe, which was the subject of an annotation in the *Journal* of December 1st last (p. 998), should enable candidates for Parliament, and all those who are interested in public health administration and social problems, to obtain a grasp of a problem which is certain in the early future to force itself on their attention.

[1] *How to Abolish the Slums.* By E. D. Simon. London and New York: Longmans, Green and Co. 1929. (Demy 8vo, pp. xii + 146; illustrated. Paper cover, 2s. 6d. net; cloth, 4s. 6d. net.)

BERI-BERI COLUMBARUM ET HOMINUM.

IN 1897 Eijkman first observed a polyneuritis of fowls and pigeons, and demonstrated its causal relationship to decorticated rice. His discovery laid the foundations of our knowledge regarding the etiology of at least one type of disease included in the generic term "beri-beri," and led eventually to recognition of the fact that deficiency of various accessory food factors or vitamins was the primary cause of a large group of pathological conditions in man and beast. Polyneuritis columbarum is a specific form of starvation resulting from the almost complete absence of vitamin B from the food, and it may be prevented by the addition of purified vitamin B hydrochloride in no greater quantity than 2 to 2.5 parts in 1 million parts of washed polished rice. Among other pathological changes in this disease there is atrophy of the heart, in contrast with the hypertrophy of the heart characteristic of beri-beri hominum. This difference was first established by McCarrison (1919); but now, as a result of further researches,[1] he has succeeded in reproducing in pigeons the

[1] *Beri-Beri Columbarum.* By Lieut.-Colonel R. McCarrison, C.I.E., M.D., I.C.S., etc. Indian Research Memoirs, No. 10. Calcutta: Thacker, Spink and Co. 1928. (Cr. 4to, pp. v + 146; 26 figures, 7 plates.)

human type of beri-beri with characteristic hypertrophy of the heart. He holds that the elements of the disease—namely, multiple neuritis, cardiac derangement, and oedema—are all equally important and characteristic, and though there is great variety in their degree and their combination, the presence of all three constitutes the complete clinical picture of true tropical (wet) beri-beri. Current conflict regarding the causation of beri-beri turns on whether the disease is due to the action of a toxin or toxins in rice, perhaps aided by a vitamin deficiency, or whether it is due solely to deficiency of the antineuritic vitamin. McCarrison, working with a number of pigeons sufficient to provide adequate statistical data, has demonstrated that a condition of beri-beri columbarum, with all the pathological characters of human beri-beri, can be produced in pigeons by means of diets similar to those used by human sufferers from the disease, and that it can be prevented by the same means as those which prevent beri-beri hominum. The basal factor in the production of beri-beri columbarum is insufficiency, but not complete lack, of the antineuritic fraction of vitamin B. There is an optimum insufficiency of vitamin B—provided by diets of which the vitamin B value is from 20 to 50 per cent. below the minimum required for the maintenance of normal metabolism—at which beri-beri columbarum is most likely to arise. The ultimate cause of the disease, McCarrison believes, may be traced not to the negative factor of vitamin deficiency, but to the operation of a toxic agent produced in the course of a disordered metabolism determined by too little vitamin B in the food. To the operation of this toxic agent may be attributed in whole or in part the clinical and pathological manifestations of beri-beri. McCarrison believes the beri-beri columbarum which was the subject of his investigation to be equivalent to the variety of beri-beri hominum endemic in parts of the Madras Presidency, and that his experimental results confirm the view that true tropical beri-beri is due, not to toxins produced in rice by bacterial action, but to vitamin B insufficiency. Such a conclusion does not preclude the possibility that other maladies resembling beri-beri, and even given its name, may have a different etiology. McCarrison believes that the chief reason for the prevalence of beri-beri among certain rice-eating races in India lies in the fundamental poverty of the vitamin B in the whole grain of the rice available for their consumption.

BESREDKA ON IMMUNIZATION.

THE current theory of antibacterial immunization postulates as an essential element in the process the production or presence of an antibody. A considerable inroad has, however, been made into the theory of late as a result of the researches of Professor Besredka, whose recent work on immunity[1] gives a very clear account of his views and of the stages by which they were arrived at. The current theory rests on Bordet's work on haemolysins, in which he showed that the introduction of alien red blood corpuscles into the circulation is followed by the production of antibodies. It has been assumed, somewhat arbitrarily as it would seem, that a like reaction follows the introduction of bacteria into the body; but, as Besredka points out, actively proliferating and toxin-producing bacteria differ greatly from blood corpuscles, and might be expected to give rise to a different reaction; the two resemble each other in having a protein basis towards which the organism doubtless reacts in either case by elaborating lysins and coagulants, but there the resemblance ends. Besredka asserts that the production of antibody is not essential, and he has been led to propound a new theory of antibacterial immunization as the result of his experiments, among which those on anthrax infection are perhaps the most striking. The difficulty experienced in immunizing the guinea-pig against anthrax is well known; the animal has been considered to be so extremely sensitive to the virus as to preclude the possibility of immunization, a single bacillus being sufficient to induce a rapidly fatal septicaemia. But Besredka has shown that, if the skin is left out of account, the guinea-pig exhibits a complete natural immunity to the virus; if care is taken to leave the skin intact, a hundred times the lethal dose may be injected into the brain, peritoneum, or other organ and no ill effects follow. Moreover, no appearance of antibodies follows the injection. Further, he has shown that the fatal result which ensues on the injection of the skin is not due to the resulting septicaemia, since the latter is a late, almost agonal phenomenon; death must be attributed to the prior intoxication from the skin lesion. It is clear then that, if it is permissible to generalize from this particular case, the tissues of the body are of two kinds in regard to their reaction to virulent bacteria: one kind is non-receptive and the bacteria behave towards it as saprophytes, the other is receptive and enables the bacteria to proliferate and produce their toxins. Moreover, the receptive cells are not disseminated through the body, but are located in definite organs (in the skin in the case of anthrax). Hence Besredka was led to the conception of local immunization, and he found that it was perfectly feasible to establish complete immunity against anthrax in the guinea-pig by making a large number of injections of vaccine into the skin of different parts of the body or by applying it as a compress over the whole surface of the abdomen. The immunization is local but the immunity is general, because the remaining tissues of the body, other than the skin, possess a natural immunity. Immunization so induced is not associated with the appearance of antibodies, and according to Besredka the mechanism of vaccine therapy has nothing to do with antibodies. During an infection the body furnishes of itself the maximum effort of defence that is possible to it. Vaccine therapy does not cure the diseased cells, it merely protects the healthy ones. In the course of disease already present the effect of vaccines is to saturate the affinity of the receptive cells for the virus and render them incapable of reacting with them. Vaccine therapy thus aims at the prophylaxis of the healthy receptive cells; its object is to circumscribe the focus of infection by rendering the healthy cells unsuitable as a medium for a new infection. As to the cells already infected, the microbes that have invaded them are dealt with by the phagocytes.

[1] *Etudes sur l'Immunité dans les Maladies Infectieuses.* Par A. Besredka. Paris: Masson et Cie. 1928. (Demy 8vo, pp. 414. 30 fr. sans majoration.)

"TOO TOO SOLID FLESH."

"I SEE no objection to stoutness, in moderation," remarked the buxom Fairy Queen in *Iolanthe*, but the usual fate of the fat affords a striking illustration of the futility of half-measures; it indicates the results of adopting a policy which is not founded on a clear comprehension of the underlying causes and on a recognition of the necessity for carefully planned action during the rest of the patient's life. Of half-measures in this field there are plenty. Educational campaigns may show that the expectation of life of the fat is much inferior to that of their lean brethren, and that the former's morbidity rate is relatively high, but such education is only of temporary value. Again, heavier members of both sexes may from time to time undergo "cures" at hydros and similar resorts suited to their fancies and purses, conceivably in the propitiatory spirit in which our mediaeval ancestors punctuated their lapses from virtue with penitential interludes. Until we give up regarding overweight as a mere incident, like a foreign body which has wandered into the eye, and begin to treat it as we would diabetes or any other deep-seated constitutional ailment with which we are familiar, our efforts are

bound to be as futile as they are irrational. This is reasoning which every senior medical student could bring forward, so close is it to the repetition of truisms; but it is quite another matter to produce carefully analysed records wherewith to drive home the argument. It is in this respect that a paper published by Dr. S. A. Holböll in *Ugeskrift for Laeger* for January 10th is of considerable value. He has investigated the subsequent careers of 100 patients treated for overweight between July 1st, 1926, and December 31st, 1927, in a hospital in Copenhagen. They were re-examined in 1928, from four months to a year and three-quarters after discharge. All the patients were women of the working classes, and most of them were admitted to hospital for complications of overweight; indeed, there were only four admitted to hospital for obesity alone. In the case of such complications as heart disease only those patients were included in this study whose cardiac symptoms were considered to be the effect rather than the cause of the overweight. It is interesting to note that by far the most common complication was osteo-arthritis deformans of the knees, found in 47 cases. Heart symptoms were present in 22 cases, flat-foot in 13, varicose veins in 15, lumbo-gluteal myalgia in 17, sciatica in 8, adiposalgia in 35, and neurasthenia in 19. More than half the number of patients were over 50 per cent. above the normal weight. The treatment employed was dietetic, and also included the administration in 85 cases of thyroidin, and in 71 cases the institution of hydrotherapy with massage. The action of the bowels was promoted in cases of constipation. The average duration of residence in hospital was about five weeks, and the average loss of weight was 20 lb. The immediate results on discharge were very satisfactory, and improvement was recorded in all the patients showing heart symptoms, in 57 of the 64 with complications affecting the lower limbs, and in 9 of the 12 cases of adiposalgia. Patients who had been admitted to hospital almost unable to move, puffing and sweating on the slightest exertion, were discharged as comparatively healthy and active human beings. Since they were still above the normal weight, they were urged to continue their dietetic regime at home. The connexion between their symptoms and their overweight was repeatedly explained to them, and they were advised to weigh themselves at regular intervals, and to obtain thyroidin from their doctors if their weight did not decline. In almost every case their doctors were notified of the results of the treatment in hospital, and were told that a further reduction of weight was desirable. In spite of all these precautions it was found that 93 of the 100 patients had gained weight, the average gain being 22 lb. In most cases the improvement achieved with regard to the complications was not maintained. Indeed, there were only 12 patients who were found on re-examination still to enjoy the improvements recorded on discharge, and many of these had only recently been discharged. Only 23 of the 100 patients had even attempted to diet themselves after discharge, and only 9 had subsequently taken thyroidin—a drug which their doctors were often unwilling to give them. Dr. Holböll's remedies for this very disappointing state of affairs include educating the patient and, in some cases, the doctor, both of whom must be taught that overweight is not merely an aesthetic blemish, but, in its advanced forms, and when complicated by circulatory disturbances, a very serious disease. His observation that only a few of his patients possessed their normal capacity for work is but another way of saying that overweight is one of the most costly complaints from which the community suffers. The picture he puts before his colleagues is vivid enough: middle-aged and elderly women of the working classes waddling into hospital under a miscellaneous burden of ailments, and sailing out again almost symptom-free, only to relapse in a few months' time. Only a few of these relapses were inevitable; the women who could not afford to diet themselves, and those who were too stupid to do so, constituted a very small minority. The kernel of Dr. Holböll's advice is to be found in the following sentence: "Efforts should be made to assure in some form or other an effective control of these patients after their discharge." Whether fat people are more self-indulgent than others is not for us to decide, but Falstaff evidently took it for granted that they are when he said to Prince Hal: "Thou seest I have more flesh than another man, and therefore more frailty."

HOSPITALS IN WESTERN AUSTRALIA.

FOR some years past the Public Health and Hospitals Department of Western Australia has undertaken increasing expenditure for medical services; whereas in 1925 the total expenditure was £172,066, in 1926 it was £185,624, and in 1927 it was £197,721. The increase has been due in part to steady extension of the hospitals, and in part to the fact that the operation of the entertainments tax has made more funds available. The system of hospital administration throughout the State is by no means uniform. The older hospitals, established in the days when the Government of the State assumed the responsibility for supplying hospital services, were placed under direct departmental administration, and the bulk of these have remained so administered till to-day. Twenty-seven hospitals are thus controlled by the department, in addition to the King Edward Memorial Hospital at Subiaco and the Wooroloo Sanatorium. The so-called public hospitals, of which there are three—namely, the Perth, the Children's, and the Fremantle—work on a different system from the rest; in them the professional work is mainly done by the honorary medical staffs, and only those persons who cannot reasonably be expected to pay for medical or surgical attention are admitted. Throughout the State, moreover, there are a number of hospitals administered by local committees, and to these and to the hospitals controlled by the department anybody may be admitted, the poor receiving medical services gratis, those of moderate means paying a small fee, and the well-to-do full fees to the doctor attending them. All types of cases are admitted to the same wards, and receive the same hospital services and care. Of recent years, while there has been increasing provision of hospitals in the newer settlements, many medium-sized institutions in the older towns have been neglected. Several of them, though perhaps adequate when they were built, are now hopelessly out of date; some are insanitary, and many are seriously short of accommodation. In general terms, the policy of the department is not to support the erection of hospitals within thirty-five to forty miles of existing hospitals; the aim is to provide settlers with reasonable hospital facilities, having in view the better roads that are and will be available, and the improvements in motor transport.

FORLANINI AND ARTIFICIAL PNEUMOTHORAX.

IN 1920 there was founded in Milan a society having for its object to honour the memory of Carlo Forlanini (1847–1918), and to promote the study of tuberculosis, and more especially tuberculosis of the lungs, in the treatment of which Forlanini did notable pioneer work. That society has now published a volume of Forlanini's collected works,[1] many of which were scattered through various journals, accessible only with difficulty at the present time. The book gives a connected account of Forlanini's researches. The first suggestion that abscess and other lesions of the lungs might advantageously be treated by means of artificial pneumothorax appears to

[1] *Scritti di Carlo Forlanini.* Scelti e Pubblicati a Cura della "Fondazione Carlo Forlanini." Bologna: L. Cappelli. 1928. (8½ roy. 8vo, pp. 1015; illustrated. L. 120.)

have been made by Dr. James Carson in a communication to the Medical Society of Liverpool in 1821. No attempt was made at the time to carry out the suggestion in practice, and it was not until the year 1882 that Forlanini proposed to substitute artificial pneumothorax for the surgical methods then on trial in the treatment of tubercle of the lungs—namely, pneumotomy and ablation. No opportunity of putting the method into practice occurred until 1890, when favourable results were obtained and reported to the International Congress held in Rome in 1894. An interesting account is given of Forlanini's first successful case—a girl of 17 in whom lung trouble had existed for two years; there were signs of a cavity in the upper part of the right lung and abundant bacilli in the sputum; the left lung was normal. The patient appears to have been completely restored to health. Forlanini was followed in 1898 by John B. Murphy, and later by Brauer and Saugmann, and the method is now practised largely throughout Europe and America. The volume is almost entirely concerned with the pathology of the lungs, and more than half of its contents deal with the subject of artificial pneumothorax and its application to tuberculous disease.

A "NATIONAL CAMPAIGN."

OUR attention has been drawn to a commercial organization registered as Oscilectron, Ltd., which heads its advertising circulars with the impressive title "National Campaign Against Rheumatism." In one of its leaflets, sent out on January 17th, 1929, this company invites sufferers from rheumatism in any form to visit with a friend "the Bristol headquarters of the National Campaign Against Rheumatism," and witness a demonstration of a machine called the "oscilectron," by which it claims to obtain "immediate results" in the treatment of "Rheumatism or one of its kindred complaints (Arthritis, Neuritis, Lumbago, Sciatica and Stiff Joints), also Flat-foot, Head Noises, and Catarrhal Deafness." It may be good business for a company, whose sole purpose seems to be the exploitation of a proprietary appliance, to adopt words that suggest some connexion with the National Campaign Against Rheumatic Diseases, of which Sir Thomas Horder is chairman. Needless to say, however, the two organizations have nothing whatever in common. The directors of Oscilectron, Ltd., are stated in the circular as: Sir T. Cato Worsfold, Bt., M.A., LL.D., S. Finklestone (British-Russian origin), and John Vielle (British). We know nothing of the other two directors, but it surprises us that a person of the standing of Sir Cato Worsfold should lend his name to such methods.

BILLROTH CENTENARY.

MEDICAL men and women in all parts of the world will honour next month the memory of the great Austrian surgeon Theodore Billroth, who was born in April, 1829. The Medical Faculty of the University of Vienna, the Vienna Academy of Science, and the Medical Society of Vienna have united to organize special centenary celebrations on April 9th and 10th in the city where Billroth practised and taught from 1867 until his death in 1894, and it is expected that the medical profession and scientific associations of many foreign countries will be represented. The idea of holding centenary celebrations originated in the small circle of those in Vienna who learnt under the pioneer of visceral surgery, but Billroth's disciples and admirers are to be found in the chairs of medicine and surgery of every country, and not only in Austria and Germany. Full particulars of the celebrations can be obtained from the Akademie der Wissenschaften in Wien (Universitaetsplatz 2, Vienna I).

SOUTH AFRICAN MEDICAL CONGRESS.

THE second Annual Meeting of the Medical Association of South Africa (British Medical Association), incorporating the twenty-third South African Medical Congress, is to be held at Port Elizabeth in the week beginning May 13th; it will be opened by His Honour A. J. P. Fourie, Administrator of the Cape Province. An official invitation to appoint delegates to the Congress has been sent to the Council of the British Medical Association, which will be glad to hear of any members who are likely to be in South Africa at the time of the Congress. Any such members are cordially invited to communicate with the Medical Secretary of the Association at the B.M.A. House, Tavistock Square, W.C.1.

INFLUENZA.

OUR conjecture that last week's total of deaths ascribed to influenza in the great towns of England and Wales would be of the order of 1,200 proved correct; the total rose from 967 to 1,241. It seems clear that in London and the north-west the maximum has now been reached, and probable that for the country as a whole the worst has been passed; the total number of notifications of pneumonia decreased from 3,898 to 3,658. There is, however, evidence in Yorkshire and the North that a further increase should be looked for, and probably also in the Midlands. The intense cold does not seem to have affected the incidence of mortality. Clinical reports still speak of the general mildness of the epidemic.

THE Council of the Royal Society, at its meeting on February 21st, recommended fifteen candidates for election into the Society. The new Fellows include Dr. John Mellanby, who holds the University Chair of Physiology at St. Thomas's Hospital, London; Dr. H. S. Raper, Brackenbury Professor of Physiology in the University of Manchester; and Dr. F. W. Twort, superintendent of the Brown Animal Institution (University of London).

THE spring course of demonstrations of specimens in the museum of the Royal College of Surgeons of England will commence on Monday, March 4th, when Mr. C. E. Shattock will demonstrate specimens illustrating diseases of the tongue and lips. On Friday, March 8th, Sir Arthur Keith will demonstrate the anatomy and pathology of diverticulitis. On March 11th and 18th Mr. Shattock will show specimens illustrating diseases of the kidneys and testis. On March 15th Sir Arthur Keith will discuss recent advances in our knowledge of the anatomy and physiology of the gall-bladder, and on March 22nd the nerve supply and movement of the colon. The demonstrations will be given in the theatre of the College in Lincoln's Inn Fields, W.C., at 5 p.m.; they are open to advanced students and medical practitioners.

THE KING.

OUR readers will have noted with pleasure the uniformly favourable tone of the announcements about the King which have appeared in the newspapers since His Majesty travelled to Craigweil House on February 9th. Although the weather has been almost as bleak on the south coast as in London, definite progress is reported, and a most encouraging sign is the increase in weight. Equally significant is the fact that His Majesty is now able to move about his room and to follow with interest the news of the day.

DERMATOLOGY AS A BRANCH OF GENERAL MEDICINE.

LETTSOMIAN LECTURE BY DR. H. W. BARBER.

THE first of three Lettsomian Lectures was delivered before the Medical Society of London on February 18th by Dr. H. W. BARBER, physician in charge of the skin department, Guy's Hospital. His general subject was "Dermatology in relation to other branches of medicine."

The Function of the Skin.

Dr. Barber began by remarking that he was satisfied that dermatology, which was once the Cinderella of medical specialties, had now come into its own; the mere reading of a modern textbook indicated how intricate a subject it had become. He hoped to show in these lectures that Erasmus Wilson was justified in saying that cutaneous medicine was a branch of general medicine of great significance and importance. The lecturer held that the study of the normal skin and the accessible mucous membranes, and the common changes that occurred in them as the result of faulty metabolism or invasion by infective organisms or toxic substances, should serve as the student's introduction to clinical medicine.

He proposed in this first lecture to consider, first, certain physiological functions of the skin which had played an important role in the progress of mankind from a primitive to a civilized state, and secondly, the morbid effects upon the skin and mucous membrane that the unnatural conditions under which the majority of civilized people were compelled to live might entail.

It was almost a truism to say that the skin was a buffer between the body as a whole and its environment. There were, however, certain points in its physiology which were insufficiently realized, and which were of profound importance in general medicine. The skin determined to a great extent the reaction of the organs of the body to external influences, such as heat, cold, and trauma. It was not too much to say that through the medium of the skin the evolution of civilized man had come about. The differentiation of the various species of animals and types of men was in some degree a question of climatic conditions. Presumably civilization dated from the time when a band of primitive men made their way northwards from the tropical zone, and on the approach of winter tried to obtain artificial warmth, first by means of underground shelters and the skins of animals, and later by discovering how to make fire.

Climate in Human Evolution.

Further development and differentiation of races, and their rise and fall, was dependent on several factors, of which climate was perhaps the most important. For work and health the best climate was one in which the mean temperature rarely fell below 38° F. or rose above 64°. Variability of temperature and weather conditions from day to day were factors of great importance. A mean temperature of 50–60° was the optimum for both physical and mental activity, which diminished rapidly when the temperature went above 65°. The localities in which such conditions favouring efficiency obtained were exactly those in which civilization had reached its maximum. Speaking on one of the most inclement nights of a severe winter, Dr. Barber still declared that the British climate was largely responsible for the position held by the Anglo-Saxon race to-day.

The temperate climate, with its frequent and moderate changes from warmth to cold, and vice versa, made for vigour of body and mind. On the other hand, the effect of the constant moist heat of the tropics and the paralysing influence of long periods of intense cold needed no demonstration. Although the invention of clothing and artificial methods of heat production had enabled man to flourish in climates which favoured his activity and progress, yet owing to the misuse of the very comforts and pleasures and labour-saving devices which his ingenuity had created, and the unnatural conditions under which a large proportion of the population lived, the effect upon man's purely animal functions had been disastrous. Dr. Barber instanced the slothful habit and gross appetite of some and the faulty diet and under-feeding of large numbers of others. Truly did a Frenchman say, "Man does not die; he kills himself." Man had created his own pathology.

Diseases of Civilization.

To anyone who surveyed the general trend of medical research and treatment during the last few years it must be obvious that there was a return to beginnings. The Egyptians, Greeks, and Romans were all cognisant of the beneficial action of sunlight and cool air on the skin, yet the value of these had only lately been rediscovered by the moderns. The very factors which enabled man to emerge from his tropical lassitude had for generations militated against his physical development. Clothing and fuel he had abused, covering his unfortunate skin, even in summer, with layer on layer of impermeable material, and he heated his houses, offices, and hotels so as to create an atmosphere more pernicious than that of the torrid zone from which he sprang. The dictates of fashion and the mistaken fear of "catching cold" had robbed the body of one of its great sources of health—namely, the exposure of the skin to light and air.

One could reasonably compare the diseases to which man living an active outdoor life under so-called primitive conditions was subject with those of animals in their wild state, and the diseases of man in so-called civilized existence with those of animals in captivity. The latter included disorders of metabolism and function which were probably unknown to primitive people and which did not occur among wild animals. Some of these appeared to have arisen within the memory of our own generation, so kaleidoscopic were the changes of disease. The more virulent infections had been succeeded by a variety of subacute or chronic conditions due to organisms which were formerly non-pathogenic and normal inhabitants of the human mucous membrane. The skin and the mucous membranes of the mouth, nasopharynx, and intestine had a natural saprophytic flora of their own; in addition to the invasion of foreign organisms leading to the production of specific diseases, their own saprophytes might, under certain conditions, become pathogenic, give rise to local conditions, and by infecting the blood stream cause morbid effects in distant organs or tissues.

The Seborrhoeic State.

The lecturer spoke of three organisms which might almost be considered normal inhabitants of the skin or mucous membrane in civilized man—namely, pityrosporon, the acne bacillus, and *Staphylococcus albus*. A predisposition to the growth of these three organisms was afforded by that morbid state of the skin usually termed seborrhoea, by which was meant an excessive or altered secretion of the sebaceous glands. He did not mean that these organisms occurred only in seborrhoeic skin, but seborrhoea was by far the commonest condition of such growth. Of all diatheses the seborrhoeic one was probably the commonest. It exemplified how a metabolic change resulting from unnatural conditions of life might produce an environment which enabled ordinarily harmless saprophytes to become parasites and produce skin diseases. The skin was not alone involved in the seborrhoeic state; the mucous membrane suffered and became likewise the prey of these particular saprophytes.

After showing photomicrographs and other illustrations of the action of the three organisms mentioned, the lecturer discussed the cutaneous manifestations of the seborrhoeic state, the thickened, gross, dirty skin, the imperfectly formed horny layers, the greasy scalp with adherent dandruff, and the dank and lifeless hair, also changes in the mucous membrane and some other manifestations, including chronic nasopharyngeal catarrh with frequent exacerbations. The seborrhoeic state being an index of faulty metabolism, it was evident that diet was a factor of paramount importance. It was easy to understand how the normal sebaceous secretion might be altered by excessive intake of fat or fat-forming foods. The best treatment, apart from dietary restrictions, was a vigorous outdoor life in a sunny climate. He believed the seborrhoeic state to be worthy of closer study than it had received. It was the basis from which conditions of far greater importance than its cutaneous manifestations arose.

Belgium.

[FROM AN OCCASIONAL CORRESPONDENT.]

A Health Insurance Scheme.

FOLLOWING on her ratification of the International Convention which was drawn up by the International Labour Office at Geneva in 1927, Belgium is now required to introduce a compulsory health insurance bill. Up to the present the practice in this country has been the subsidizing of voluntary effort—that is to say, Government grants are made to private mutual insurance societies. Now that a scheme of compulsory insurance has been rendered necessary by her acceptance of the decisions taken at Geneva in 1927, a commission has been appointed in Belgium to draft legislation for insurance against sickness and disablement.

The proposal thus elaborated may be said to have as its fundamental principle that each insured person shall become eligible for full treatment, comprising the various specialties as well as ordinary medical and surgical benefits. Every workman between the ages of 14 and 65 who receives less than 12,000 francs a year is compulsorily insured. The administration of sickness insurance is entrusted to the recognized insurance societies, the insured person retaining free choice of which society he shall join out of those approved by the Government. Insurance in respect of invalidity is effected on the same lines by federal bodies analogous to the British approved societies, which will similarly receive State approval. All these agencies will have to submit to general control and accept responsibility for providing their members with all the benefits made available by the general insurance legislation. They will be supervised by a higher council of sickness and invalidity insurance, which is to be composed of twenty-seven members appointed by Royal decree as follows: (1) seven nominated by the Government, two representing more particularly the commercial and industrial interests; (2) two actuaries; (3) three medical practitioners and three pharmacists nominated by the recognized national associations of doctors and chemists; (4) twelve delegates from the industrial insurance societies which accept the proposed law, and from the central invalidity board, membership being allocated among these bodies in proportion to the number of their members who are compulsorily insured and come within the scope of the law.

Four essential points advanced by the Belgian medical profession are: (1) there must be an absolutely free choice of doctor, specialist, and residential institution, a minimum charge being fixed in respect of payments to medical staffs as well as for maintenance; (2) arrangements for paying medical staffs shall be left to medical practitioners, who will discuss the principles involved through the agency of their own delegates to a higher committee of insurance institutions or provincial subcommittees; according to the neighbourhood, payment will be made either by contract or on an attendance basis; (3) professional secrecy must be safeguarded absolutely in the interests of the patient as well as of the doctor, but information may be given by the treating doctor to the supervising doctors; (4) the necessary control shall be entrusted to medical practitioners chosen by insurance societies in consultation with professional associations, and any disagreements be dealt with by committees on which each has equal representation.

The main feature of the Belgian scheme is that the worker is insured by his local society, and that one-quarter of the cost of his insurance is paid by him. These two factors favour financial control and enable the insured person to appreciate the value of his own contribution. In fact, since he pays his quota personally to his own society or local union, and its subsequent disposition is not hidden from him, he will be the first to object to misapplication of the funds.

Sequels of Encephalitis Lethargica.

During recent years there have been many cases of encephalitis lethargica, and the serious sequels of this infection have formed the subject of numerous investigations. Dr. Oliviers has contributed to the Belgian Society of Mental Medicine the results of his study of the mental deterioration thus brought about, and his conclusions deserve to be noted. He finds that the mental disturbances of encephalitis lethargica are more common after childhood than is generally realized, affecting some 75 per cent. of adult patients, and occurring most frequently in those predisposed by their heredity or by inherent faults of character. They appear at a considerable interval after the termination of the obvious convalescence period, and possibly after a lapse of three or four years. The mental change is nearly always associated with neurological signs, just as neurological sequels are rarely present without mental impairment. There is, however, no definite relation to be made out between the nature of either of these morbid conditions. All the varieties of mental abnormality may be met with, including depression, the lesser forms of mania, the hebephrenic-catatonic syndrome, and bradyphrenia. The different types are very seldom clearly defined, and the symptoms are remarkably variable. These mental disturbances are to be attributed to the persistence of the encephalitic virus, and the prognosis is grave. With rare exceptions the retention of these patients in a residential institution is necessary under close supervision; rigid precautions have to be taken, including the provision of special accommodation, in view of the perversity, subtlety, and unpleasant behaviour of the victims of this disease.

Prevention of Motor Accidents.

The Royal Academy of Medicine is taking up the serious problem of what can be done to deal with motor drivers who have physical disabilities, but at the moment no solution has been found. Professor Weekers suggests the following line of approach. A list should be prepared of those physical defects which are incompatible with safe motor driving. In some way or other, in conformity with our existing legislation, arrangements would be made to notify accordingly all who apply for driving licences that motor driving by any person afflicted with one of these conditions would constitute a serious offence. If, in spite of this, he continued to drive at his own risk, and an accident happened, he would automatically become liable to a heavy fine and a term of imprisonment. Under such conditions, it may be presumed, insurance companies would need no further stimulation to insist on a medical examination of those applying for accident insurance, in the same way as they do in the case of life insurance. The companies would appoint for this work medical practitioners, who would have access to specialists and would be enabled to keep under observation any candidates whose condition gave rise to doubt. In this way there would be a guarantee that persons unfit to drive were prevented from doing so.

Campaign Against Quackery.

The Belgian Medical Federation has convened a joint committee of representatives of medical practitioners, dentists, and chemists, with a view to seeing if any common action is desirable as regards charlatanism generally. This committee will be empowered to submit proposals for any alteration in the existing laws relating to the practice of the healing art which its joint wisdom indicates as being necessary. It will look out for opportunities of facilitating the growth of a system of medical jurisprudence, and will call the attention of members of the medical profession to the ways in which charlatanism can be suppressed. This committee has already undertaken a strong campaign against those varieties of quackery which inflict injury upon the general population and tend to the public discredit of the medical practitioner.

Scotland.

Voluntary Hospitals in Scotland.

AT a meeting of the Scottish Regional Committee of the British Hospitals Association, held in Glasgow on February 20th, the position of the voluntary hospitals as affected by the proposals of the Local Government (Scotland) Bill was discussed. Colonel John A. Roxburgh, chairman of the governors of the Western Infirmary, Glasgow, presided. He recalled that at the last meeting of the committee in December, 1927, it was agreed to set up local committees in the five regions into which Scotland was divided, in

order to consider the possibility of co-operation between statutory authorities and the voluntary hospitals, and also to approach the Secretary of State for Scotland in regard to his views on the subject of co-operation between hospital authorities. The Secretary of State had appointed a liaison committee for the purpose of keeping his department in touch with voluntary hospital opinion, and assisting the voluntary hospitals in regard to regional difficulties. Colonel D. J. Mackintosh, medical superintendent of the Western Infirmary, Glasgow, who is a member of the liaison committee, stated that this committee consisted of the representatives of voluntary hospitals in different areas, and the committee had been actively engaged in drafting proposals with reference to the Local Government (Scotland) Bill. Under this bill the Poor Law hospitals would be transferred to the town and county councils. A proposed amendment to the bill had been put forward by the Corporation of Glasgow to empower local authorities to remove hospital services entirely from the Poor Law, and to provide hospital treatment for all kinds of sickness, which was exactly the position in England and Wales. The liaison committee, representing voluntary hospitals, could not recognize discrimination in quality of hospital treatment between paupers and non-paupers, and it considered that the only way to avoid this was to remove hospital treatment entirely from the Poor Law by conferring on the Scottish authorities the same general power as would be possessed by the English authorities. It could not contemplate the growth of a general hospital service which would prevent complete co-operation with the voluntary hospitals. The removal of the hospital services from the Poor Law would, however, have to be done under conditions that would provide full safeguards for the voluntary hospitals. Consequently, as the result of meetings between the liaison committee and the Department of Health, a new clause had been drafted with a view to removing the Poor Law stigma from hospital services, and the Scottish voluntary hospitals would secure provisions that substantially safeguarded their future place in the scheme of hospital services. The voluntary hospitals would require to be active and far-seeing, and much would depend upon their machinery, local and central, for ensuring co-operation among themselves and with the public authorities. The department's view was that much of what was proposed could be achieved by administrative action without the necessity for legislation. The position was worthy of the most careful study by the Scottish Regional Committee of the Hospitals Association, and the liaison committee could be effective only if it had behind it an informed body of opinion. The chairman said that the area committees were to make their opinions known to the Department of Health through the members of the liaison committee representing them, and it had to be decided what was the best way of keeping those members of the liaison committee informed of the opinions of their particular areas. He thought that the Regional Committee of the British Hospitals Association was the best body in Scotland to concentrate the opinions of the hospitals, and many questions were bound to arise regarding which the considered opinions of the hospitals in Scotland would be very valuable. In the course of discussion it was pointed out that it would be desirable to have the views of the areas co-ordinated before they went forward to the liaison committee, for it would be unfortunate if different views were put forward from various areas on any particular subject. In order to avoid this, it was suggested that periodic meetings of the Regional Committee should be held to consider the reports of the area committees. It was generally agreed that the proposed amendments to the bill were satisfactory.

Crichton Royal Institution, Dumfries.

The eighty-ninth annual report of the Crichton Royal Institution, Dumfries, for the year 1928 has just been issued. Dr. C. C. Easterbrook, physician-superintendent of the institution, in his report states that the number of patients on the register at the end of the year was 1,043, including 484 men and 559 women. During the year there had been 344 admissions, 216 discharges, and 75 deaths, and the total number of cases under treatment during the year had been 1,334, with an average daily number of 1019. Of the 1,043 patients, 746 were certified, while the voluntary patients at the end of the year numbered 297. The number of voluntary cases under treatment during the year was 459, the highest number hitherto recorded. The number of private patients, certified and voluntary, at the end of the year was 694. With regard to the forms of mental disorder, the chief were, as usual, the constitutional psychoses, such as melancholia (57 cases), confusion (36), dementia (30), paraphrenia (30), mania (28), dipsomania (11), and epileptic psychosis, neurasthenia, hypochondria, hysteria, and choreic psychosis in smaller numbers. There were also 15 cases of congenital psychoses and 10 cases of organic psychoses, including general paralysis 5, encephalitis lethargica 2, cerebral apoplexy 2, and progressive muscular atrophy 1. Of the 216 discharged, 146 were voluntary patients and 70 were certified. Among the voluntary cases the recovery rate was 25.5 per cent. of the number admitted, and among the certified cases 23.5 per cent. The forms of mental disorder from which recovery took place were chiefly melancholia, confusion, mania, and delusion, and the total duration of the illness in recovered cases was less than half a year in 36 per cent., up to two years in 39 per cent., and over two years in 25 per cent. Of the 75 patients who died, 59 were certified and 16 were voluntary cases, the death rate being 7.3 per cent. of the average daily number. The chief causes of death were cardiac disease and arterio-sclerosis in 27 per cent., pulmonary tuberculosis in 13 per cent., pneumonia in 11 per cent., exhaustion in 9 per cent., apoplexy and senility each in 8 per cent., and general paralysis in 6 per cent. The mean age at death was 60 years. A hospice or new reception hospital and infirmary was occupied towards the end of the year. An arts and crafts pavilion had been erected early in the year, and was opened in May, with the object of improving the previous arrangements for occupational therapy. In this department classes of two hours' duration are held for patients who are interested in handicrafts.

Victoria Infirmary, Glasgow.

The forty-first annual meeting of the Court of Contributors of the Victoria Infirmary, Glasgow, was held in the Merchants' House on February 15th. Lord Provost Sir David Mason presided, and said that the governors of the Infirmary had shown great enterprise and wisdom in adding recently a new wing. This additional accommodation had been justified by the fact that the 6,580 patients treated during 1928 showed an increase of 1,161 as compared with those of the previous year. The desire shown by some of the patients to contribute in return for benefits received was indicated by the fact that £1,220 had been given by patients during 1928. It had been necessary to draw a sum of £22,464 from capital account in order to meet the extension schemes, and the revenue had been insufficient to meet the cost of maintenance to the extent of £8,835. He was pleased to observe that contributions from employees, which had amounted to £11,454, showed an increase of nearly £400 over those of the previous year. He thought that an appeal for funds should be made in outside districts served by the institution, in view of the fact that 1,671 of the patients had come from outside the city. Mr. William Gray, chairman of the governors, in seconding the report, mentioned that over £60,000 had been received by the three large infirmaries of the city in the past year from employees in public works. This was obtained under a system by which one penny in the pound was deducted from the wages as a contribution to hospitals, and he thought that this scheme could be advantageously extended to warehouses, offices, and shops. If the citizens could generally see their way to contribute one penny for each pound of income, it would not be necessary to make the urgent appeals which emanated every year from the hospitals. The question was raised as to whether the hospitals could secure repayment in connexion with road accidents, because in such cases less than one-tenth of the amount expended by the voluntary hospitals on such patients was returned to them. The chairman replied that an Act of Parliament would be required to deal with the situation, and it would be impossible to get one through during the life of the present Parliament. Action on this matter was being taken, however, both by the hospitals in Glasgow and by the British Hospitals Association.

Aberdeen Royal Infirmary.

The annual meeting of the Aberdeen Royal Infirmary contributors was held on February 15th, with Sheriff Dallas in the chair, when the 189th annual report was submitted. The total number of patients admitted in the past year had been 31,115, an increase of 2,647 over those admitted in 1927. The year closed with a surplus of £1,600, including £365 derived from work done by patients in the handicraft school of the institution. The chairman remarked that renewed interest was being taken in radium, of which for a number of years past the Infirmary had had a loan of a quantity from the Medical Research Council. The directors had been considering the establishment of a volunteer blood transfusion service, and he hoped that a good response would be made to their appeal for volunteers.

Maternity Home at Stirling.

A maternity home for Stirling district, which adjoins and forms part of the new Royal Infirmary of Stirling, recently opened at Livilands, was formally opened on February 15th by Mr. W. G. Gardiner, vice-president of the Infirmary. The home has accommodation for 20 beds, and is situated immediately to the west of the Infirmary. It includes an operating theatre and a large summer-house for mothers in the convalescent stage. Provision has also been made for carrying out ante-natal clinics in connexion with the hospital. The maternity home has been jointly provided by Stirling Town Council, Stirling County Council, and the directors of the Infirmary.

England and Wales.

Health Conditions in the Welsh Coalfields.

On *a priori* grounds it might be assumed that the depression in the coal-mining industry would be correlated with a deterioration in the physical and mental condition of the mining population; indeed, the view is widely prevalent that such deterioration is actually taking place. Some confirmation of the general impression is provided in a report* of a first-hand investigation conducted by Sir Arthur Lowry and Dr. James Pearse, both of the Ministry of Health, into the conditions of the inhabitants of the coal-mining districts of South Wales and Monmouthshire, though here and there in their report are patches of an unaccountable brightness. For example, the general death rates in the regions under survey showed no variations indicating the prevalence of conditions specially injurious to health. Furthermore, there has been no unusual mortality from epidemic diseases. On the other hand, in the administrative counties of Glamorgan, Monmouth, and Merthyr county boroughs the infantile mortality rate for 1927 is higher than for 1926, and the rates each year since 1920 compare unfavourably in their general tendency with those for the whole of the country. Thus, the rate in England and Wales in 1920 was 80, and in 1926 and 1927 it was 70. In Glamorgan, the rates for the same years were respectively 90, 76, and 86; in Monmouth they were 88, 66, and 87; in Merthyr county borough they were 83, 84, and 105. Complete figures for 1928 are not yet available, but in each of the counties the rates for the first nine months of 1928 are lower than for the corresponding period in 1927. It is interesting to note that no obvious growth in the prevalence of tuberculosis, a disease to which resistance is decreased by insufficient or improper feeding, has impressed itself on the district medical officers of health or on those responsible for tuberculosis administration. The death rates from pulmonary tuberculosis in 1927 are somewhat higher than in 1926 (in Glamorgan, Monmouth, and Merthyr county boroughs the rates for 1926 and 1927 respectively are 777 and 856, 572 and 611, and 682 and 705, the figures representing death rates per million of population). The figures for non-pulmonary tuberculosis, on the other hand, show a marked decline as compared with those of the earlier years. The only deficiency disease which appears to have increased is rickets. As this disease till recently has not been common in South Wales and Monmouth its occurrence as a fresh development is rightly regarded as significant of deficiency in the quality, if not the quantity, of the diet of the child population. No indication was found of obvious and widespread deterioration of physique in the population as a whole, except that in some areas women, especially the mothers of young children, suffered to an unusual extent from languor and anaemia. There is also some evidence of loss of tone and persistence of debility after illness in the older men, and men long unemployed who have not been actually ill find difficulty in the mere physical effort of resuming work. The diet in the households of unemployed men was found to comprise little beyond white bread, butter or margarine, potatoes, sugar, jam, tea, and bacon in limited quantities. Meat was seldom eaten except in very small amounts on Sunday; fresh milk was not seen except when supplied from a welfare clinic; fresh vegetables, other than potatoes, were rare. Though such diet, according to accepted canons, is unsuitable for the maintenance of health over any prolonged period, especially the health of young children and nursing mothers, the investigators have to record that they discovered no widespread manifestation of impaired health which could be attributed to insufficiency of nourishment. Apart from diet another factor which must tend to impair physical condition is insufficiency of proper clothing and footwear. In the houses visited the investigators frequently found the bedclothing and underclothing far from adequate, and the boots not enough for the school children, to say nothing of the adults and infants. These, then, were the material and physical facts of the situation observed by Sir Arthur Lowry and Dr. Pearse. They make some reference, however, to certain of its less tangible features which may, in the long run, be even more significant for evil than the hardship caused by deficiency in the necessaries of life. Above all, they record the demoralization, the depression, and the listlessness produced by long-continued idleness. A large number of the unemployed have not worked in a mine since 1921, while many men have been idle since May, 1926. Work, it appears, is needed rather than food or clothing. "The present position," it is suggested, "arises from the fact that there are many more miners in the area than can ever find work in the mines or in other industries in the locality." It is to the promotion of the transference of the surplus miners as rapidly as possible to work elsewhere that any additional funds for the relief of miners and their families can best be allocated.

* Report on Investigation in the Coalfield of South Wales and Monmouth. (Cmd. 3272.) Presented by the Minister of Health to Parliament, February, 1929. Published by H.M. Stationery Office. Price 3d. net.

Noise and Health.

A Chadwick public lecture was delivered in the University Hall, Gordon Square, W.C., on February 21st, by Dr. Dan McKenzie, who took as his subject "Noise and the public health." Sir William Collins was in the chair. Dr. McKenzie said that modern civilization was attended by various serious drawbacks, among them being ugliness, which was presented to both the eye and ear. Ugliness to the ear was noise; there were other points of view, not necessarily the same as the physicist's, from which noise may be regarded. Any sound that disturbed repose was noise, which startled and exhausted the human nervous system. The great increase of industrial noises in workshops and factories was acknowledged to have a bad effect on those who worked in them; efforts had been made to reduce the hurtful sounds and the exhaustion they produced. Domestic noise was another affliction of modern life largely produced by street and highway traffic, and little had been done to minimize it. The lecturer proceeded to describe the actual effects of industrial and domestic noises on public health, and discussed the question "Has the increase of noise any influence in the increase of mental disorders?" He lamented the dying down of Government interest in the trouble. Cessation of activity had been attributed to difficulty in concocting a definition of noise. A definition was needed, no doubt, to prevent undue interference with industry. Fifty years ago an English Government had contrived to legislate against insanitary dwellings without any definition to speak of, the only description being that

local authorities were empowered to condemn any premises in "such a state" as to be a nuisance or injurious to health; subsequent juridical rulings had shown that it was only necessary for public health purposes to prove interference with "personal comfort." This was what noise did, after all. The lecturer suggested: (1) That "zones of silence" during hours of silence should be demarcated by police or public health authorities. (2) That the streets in front of schools, colleges, hospitals, and nursing homes should be paved with rubber blocks. (3) That the size, weight, and speed of motor lorries should be reduced. (4) That heavy goods should be relegated entirely to the railways for transit. Dr. McKenzie concluded by reading a letter from a patient in a hospital complaining bitterly of the noises, not outside, but inside the hospital; he added that after inquiry he had found the complaints to be true for all hospitals. They were much too noisy, and recovery of the sick within their wards was interfered with by neglect of a primary rule of treatment. He appealed to all hospital authorities to go into this matter with their nursing staffs. They would be astonished and humiliated by the result of their inquiries. Reform was needed in the matter of subjection of invalids to noise, and reform, like charity, should begin at home. Gramophone records were used to illustrate various types of objectionable mechanical sounds and human cries. It is announced that the next Chadwick public lecture will be delivered on March 11th at 8 p.m. in the Lecture Hall of the Royal Society of Arts, John Street, Adelphi, when Mr. Mowlem Burt will show and explain a cinema film of Imperial Chemical House, and will describe the making of a modern building. Future lectures will deal with engineering as applied to health and civilization, and health in West Africa. Further particulars may be obtained from the secretary at the offices of the Chadwick Trust, 204, Abbey House, Westminster, S.W.1.

Courses in Psychiatry at the Maudsley Hospital.

The second part of the twelfth course of lectures and practical demonstrations for the diploma in psychological medicine will be held at the Maudsley Hospital, Denmark Hill, S.E.5, on various afternoons during March, April, and May. Six lectures on the practical aspects of mental deficiency will be given on Tuesdays, at 2.30 p.m., by Dr. F. C. Shrubsall, commencing on March 5th and omitting April 2nd. A series of eight lectures on morbid psychology, by Dr. Edward Mapother, will begin on March 6th, and be continued on the following Wednesdays. Dr. A. A. W. Petrie will deliver three lectures on therapeutics, on Tuesdays, commencing March 26th and omitting April 2nd. Of twelve clinical demonstrations in neurology Dr. F. M. R. Walshe will give six, on Thursdays from March 7th and omitting March 28th, at the National Hospital for Paralysis, Queen Square; Dr. F. Golla will give the remainder on Thursdays, at the Hospital for Paralysis and Epilepsy, Maida Vale, the first being on April 25th. Eight lectures on the psychoneuroses will be delivered on Mondays by Dr. Bernard Hart from April 29th, omitting May 20th. Six lectures on crime and insanity will be given by Dr. W. Norwood East on Tuesdays, from April 23rd, and six demonstrations in clinical psychiatry by Dr. Mapother on Wednesdays, from April 24th. The pathology of mental diseases will be dealt with in four lectures by Dr. F. Golla, followed by four demonstrations in pathology of the central nervous system, by Dr. Charles Geary; these will take place on Fridays, the first being on May 10th. Four lectures on the legal relationships of insanity, and treatment, will be delivered by Dr. C. Hubert Bond on Fridays, from May 10th, and Mr. Fraser Moore will lecture twice on the abnormalities of the fundus oculi—namely, on Mondays, April 15th and 22nd. Two demonstrations in laboratory methods will be given by Mr. S. A. Mann on Tuesdays, May 7th and 14th; these will include the examination of the blood and cerebro-spinal fluid. The fee for the combined course is ten guineas, and inquiries should be addressed to the director of the Central Pathological Laboratory, Maudsley Hospital, Denmark Hill, S.E.5. In addition to the special lectures and demonstrations mentioned there are a limited number of appointments as clinical assistants available at the hospital. Service in this capacity, whether whole-time or part-time, is recognized by the various examining bodies as constituting the clinical experience required by the regulations for the diploma. Inquiries in this respect should be made to the medical superintendent of the hospital.

Sun-ray Treatment at Torquay.

Professor Leonard Hill, on February 20th, opened a "sun-lounge" at Torquay, which has been established by the municipal authorities. The new lounge is ninety-five feet long and faces due south, with a view of Tor Bay; the walls and roof are made of vita-glass. Professor Hill emphasized the importance of infants and children receiving as much sunshine and open air as possible, and commented sternly on the folly of allowing such a high content of dust to exist in most houses, as was shown to be the case when sunbeams illuminated the particles. He recalled the value of ultra-violet light in destroying ordinary bacteria, and reminded his audience that these rays could be collected from the sunshine, as well as from the sun. The necessity for paying attention to ventilation in addition to light was another point stressed by him.

Ireland.

National Health Insurance.

A REPORT on the administration of national health insurance covering the period from April 1st, 1921, to March 31st, 1928, has been issued by the Minister for Local Government and Public Health. The figure of 701,882, representing the total number of insured persons at December 31st, 1922, was made up of 386,251 persons resident in the Saorstat Eireann, 310,094 persons resident in Northern Ireland, and 5,537 persons resident in Great Britain who were "stray" members of societies or branches approved only for operation in Ireland. In the Free State in 1924 there were 435,753 insured men and women; in 1925, 466,339; in 1926, 481,785; and in 1927, 492,594. The figures show a gradual increase in the membership of societies, most likely due to the fact that the number of new entrants and of re-entrants has not been offset by the number of members who have ceased to contribute, and who, but for the operation of the Prolongation of Insurance Act, would have been automatically excised from the membership registers. Since 1923 there has been a steady increase in the amounts paid in benefit. Examination disclosed cases of excessive expenditure. The figures for sickness, disablement, and maternity benefits, taken together for each year, are as follows: 1923, £406,704; 1924, £444,274; 1925, £458,318; 1926, £530,914; 1927, £628,498. Although this increase is partly accounted for by the increase in cash benefits paid by some societies, it is feared that at least some portion of it is attributable to payments made to persons who are not genuinely incapacitated. The amounts issued to societies during the years 1921 to 1927 to pay the costs of benefits and defray the expenses of administration in respect of their members were: 1921, £930,380 (all Ireland); 1922, £593,282 (all Ireland to February 28th, 1922, Free State only for remainder of year); 1923, £479,949 (Free State); 1924, £499,720 (Free State); 1925, £521,117 (Free State); 1926, £605,577 (Free State); 1927, £712,968 (Free State). The comparatively large increases in the years 1926 and 1927 are no doubt partly due to the additional benefits which, as the result of the valuation of approved societies at December 31st, 1923, became available from July, 1926. It is thought that the prolonged period of unemployment, with its consequent effect on the vitality of insured persons, has also contributed to the increase.

Measles in County Fermanagh.

At a recent meeting of the Fermanagh Regional Education Committee, Dr. W. A. Dickson, school medical officer for the county, said he thought the members of that committee and of the subcommittees could help him by circulating a little common-sense knowledge among the people. When an epidemic of measles started many parents were of opinion that if their children caught the infection they would really be better off than if they escaped this dis-

altogether when they were young. The fact was that people were not supposed to get disease at any age, and a child who never had measles was better physically than a child who had. People living in the country knew that when there was an infectious disease in the house it was their duty to warn the proper authorities and to isolate the patient, but as a rule neither of these precautions was taken. Milk should not be sent to the creamery from a house in which there was infection, but from lack of ordinary precautionary measures infectious diseases spread rapidly. There were at present 600 or 700 cases of measles in the county, and he thought the number was increasing.

Immunization Against Diphtheria.

In a report to the Dundalk Health Board on the diphtheria immunization scheme which has been in force in Dundalk for some months, Dr. Musgrave stated that 750 children had been immunized. He referred to a great deal of loose talk which was calculated to undermine the confidence of the people in the effectiveness of the work, and stated that there was now no doubt as to the worth of the protection afforded to nine children out of ten; parents or guardians who were wise would not withhold this *nine to* one chance. The committee decided to start another campaign in August, and to provide free medical treatment for the children of poor parents.

Correspondence.

ENLARGEMENT OF THE PROSTATE.

SIR,—The addresses on enlarged prostate by Mr. Nitch and Mr. Grey Turner, and the criticisms on these now appearing in the *Journal*, have raised several points of great importance to surgeons dealing with this class of case, and I should like to add some remarks on the results of my own experience.

Mr. Turner emphasizes a dictum laid down by Sir Henry Thompson to the effect that enlargement of the prostate of such a degree as to give rise to symptoms demanding treatment does not occur before the age of 50, and quotes his own experience of over thirty years in support of it. May I venture to question the truth of this dictum.

In March, 1915, I saw a man, aged 45, who had had prostatic symptoms for at least a year. He had frequency of micturition, difficulty in starting the act, and diminution of the stream; there were two and a half ounces of residual urine. The muscular wall of the bladder was hypertrophied. A trilobed intravesical prostatic growth weighing three drachms was enucleated with complete relief of his symptoms. In February, 1926, I saw a patient, aged 47, with haematuria and dysuria of two years' duration. I removed an adenomatous prostate, weighing two and a half ounces, which shelled out easily. In January, 1925, in a man aged 47, I removed a portion of the prostate which projected upwards from the floor of the urethra close to its internal opening. The polypoid projection was half an inch long and about one-eighth of an inch thick; on section it showed adenomatous tissue with papillary growth into intracystic spaces. When seen a year and a half later the patient was quite well. In May, 1926, I saw a man, aged 45, with carcinoma of the prostate; an unsuccessful attempt was made elsewhere to remove it. The patient died within a year with large masses of growth in his pelvis Some years ago I saw a patient, aged 47, die from uraemia, the result of prolonged and neglected back pressure from an enlarged prostate. These cases demonstrate that it is unsafe to exclude enlargement of the prostate in a case of urinary symptoms in a man under 50 years of age.

I agree with Mr. Turner that the patient may present himself suffering from symptoms suggestive of gastric trouble. Some months ago I saw a patient with supposed carcinoma of the stomach in which *x* rays showed an hour-glass contraction. On examination I found a greatly distended bladder. Treatment was of no avail, and at his death I obtained permission to examine the stomach and the kidneys. The stomach was perfectly normal, but the ureters were dilated and the kidneys in a state of hydronephrosis from back pressure.

Mr. Nitch has evidently not had much experience of the indwelling catheter when he says that its use "is practically restricted to cases with slight renal deficiency or chronic urinary retention, for it cannot be employed when the bladder or kidneys are infected or when the prostate is bleeding." For cases in which clots are liable to block the lumen the catheter is, of course, useless, but my experience is that practically the only other contra-indication to its use is the discomfort it produces in quite a small proportion of patients. I look upon the indwelling catheter as one of the most life-saving measures at the disposal of the urologist, and every patient under my care is treated by this method of decompression until carefully conducted blood and urinary tests show that it is reasonably safe to operate. During this time the bladder is irrigated daily. I have seen many patients brought back apparently from the brink of the grave by this simple procedure, which any practitioner can carry out.

A man, aged 64, with twelve ounces of residual urine, when admitted to a nursing home for operation looked ill and anaemic, refused food, had a foul tongue, and suffered from nausea. His pulse was irregular and intermittent. A catheter was tied in, but he could not tolerate it, and regular catheterization with irrigation was substituted. His blood urea at this stage was 146 mg. per 100 c.cm. He continued to go downhill and at the end of a few days I urged him to make another attempt to retain the catheter. He consented, and the effect was nothing short of magical. In the short space of a week his tongue cleared, his appetite improved, and his pulse became steady and regular. On the eighth day his blood urea was found to have fallen from 146 to 40 mg. per 100 c.cm. Meanwhile the specific gravity of the urine began to rise and the quantity to diminish. He passed successfully through a prostatectomy and is living and well more than a year later.

In another patient, a man aged 70, with no other treatment than the tied-in catheter and irrigation, the blood urea fell in twelve days from 102 to 47 mg. per 100 c.cm. and prostatectomy was successfully undertaken.

A man, aged 62, was admitted to a nursing home with fifteen ounces of residual urine and a blood urea figure of 353 mg. per 100 c.cm. A thick deposit of pus, settling like bismuth to the bottom of the vessel, was present in his urine. He had hiccup and a tendency to vomit in the morning. A catheter was tied in. The blood urea fell from 353 to 240 in one week and his condition began to improve. In two months, during which time he was treated by the indwelling catheter and daily irrigation, the blood urea fell to 72. This was the best that could be done, and I then suggested suprapubic drainage. He preferred the catheter, and is going about to-day, six months after I first saw him, with an indwelling catheter, to which he has attached a stopcock, and looks the picture of health. Whether he will ever be fit for operation is a question, but he exemplifies the beneficial effects of the indwelling catheter. The catheter was taken out for a few days to try the effect, but the patient's temperature went up and uraemic symptoms developed at once; these ceased entirely on replacing the catheter.

I have in my wards at present a man, aged 58, who was admitted with uraemic symptoms and a septic bladder, the result of enlarged prostate. His blood urea was 253 mg. per 100 c.cm. With the indwelling catheter and irrigation his blood urea fell in the first week to 124 and in the second to 68. He is still under treatment, and I have hopes that he may yet be fit to undergo prostatectomy. I do not deny the benefits resulting from suprapubic drainage, but I am satisfied that in a large proportion of cases it can be replaced by the simple procedure of tying in a catheter.

As to operative technique, there is no question in my mind that Thomson-Walker's operation is an ideal one, and I have often performed it. I am, however, satisfied that a less elaborate procedure will produce good results. The operation takes longer than the old operation of Freyer, and personally I have not had a sufficient improvement in my results to warrant me in performing it as a routine. I am quite willing to admit that this may be due to my faulty technique, but I do think it is a severe measure, at any rate for the class of case I frequently meet with. My policy is to get the patient back to bed as quickly as possible, and I have not had undue trouble with haemorrhage or subsequent obstruction. On three or four occasions, it is true, I have had to deal with a diaphragm which formed between the prostatic cavity and the bladder, but this can be prevented at the time of operating by clamping the posterior lip of the septum and dividing it, a detail which takes about a minute to perform. I always use gloves, and after a trial of enucleation without placing the finger in the rectum, I have gone back to the older procedure because it steadies the prostate and renders the operation easier. Like Mr. Ralphs I use

two gloves on the left hand, one of which is removed at the proper time, and I really cannot see how, with ordinary care, any increased risk of sepsis can result from a finger in the rectum. I cannot endorse Mr. Irwin's objection to the gloved finger in the bladder. I dare say that I have many times failed to unearth minute "prostatic relics," but I wonder if they are so important as his letter seems to suggest.

After any operation for removal of the prostate, however conducted, there must remain the cavity vacated by the prostate with a raw surface bathed with septic material. The risk of absorption from such a surface must remain till it is at least covered by healthy granulations. To reach this cavity and drain it I have suggested and carried out a simple operation, the details of which will shortly appear. A tube introduced from the perineum through the ischio-rectal fossa, and passed through the sheath of the prostate, gives easy access to this cavity, and may render its drainage and cleansing less difficult to accomplish.

In making these few remarks I disclaim any intention of decrying any procedure that has for its object the reduction of the risks of the operation of prostatectomy or the morbidity following it. In all humility I may claim to have had a long and varied experience of different methods, and, having outlined my own views, I am ready and willing to lend a sympathetic ear to any suggestion that may improve my results.—I am, etc.,

Belfast, Feb. 18th. ANDREW FULLERTON.

VACCINATION IN THE LIGHT OF RECENT EXPERIENCE.

SIR,—In view of the suggestion in Dr. Goodall's letter in the *British Medical Journal* of February 16th (p. 319) that "alastrim" may not prove to be so stable a variant of small-pox as some of the speakers at the recent meeting of the Section of Epidemiology of the Royal Society of Medicine supposed, it may be of interest to record the fact that of the various outbreaks of this disease which I have had occasion to investigate officially, the earliest—that which I saw at Cambridge in 1903—was, as Dr. Goodall notes, of a much more severe type than is met with at the present time. Thus, of the 154 recorded cases at Cambridge no fewer than 15 died—a case mortality of 9.76; whereas nowadays deaths from "alastrim" are but rarely met with. Yet in many respects this outbreak differed markedly from the "textbook" types of small-pox, especially as regards the nature, method of appearance, and distribution of the rash.

Personally, as stated in my "Report on the relationship of small-pox and alastrim,"[1] I still think that "in special circumstances, various stages of varioloid disease may originate between that type to which the name of alastrim (or, in South Africa, amaas) has been given, and that which, in this country, is ordinarily regarded as typical small-pox." But definite relationship of these variants to small-pox is demonstrated by the protection afforded by previous vaccination, although the extent of such protection appears to differ somewhat according to the particular variant of small-pox under observation.—I am, etc.,

London, N.W.3, Feb. 16th. S. MONCKTON COPEMAN.

SIR,—Dr. E. W. Goodall's letter in the *Journal* of February 16th (p. 319) illustrates the confusion which results from the present method of presenting small-pox statistics. Under the name small-pox are included two forms of disease—namely, (*a*) variola major, with a case mortality which varies, but is often high and may reach 50 per cent. or more; (*b*) the fixed variant of small-pox known as alastrim (synonyms—mild small-pox, para-small-pox, amaas), the case mortality of which never varies; it is always *nil*. That is to say, the number of persons who die in the course of the disease is about the same per 1,000 cases as the number of deaths per month per 1,000 of the population from which they are segregated.

It is obvious that in any country in which these two forms of disease prevail, whether in the *same or in* different localities during any year, the case mortality for all cases of "small-pox" for that year will depend on (*a*) the case mortality of the major small-pox prevalent, and (*b*) the relative numbers of cases of major small-pox and its fixed variant alastrim. It is also clear that the figure arrived at by this method may be anything from *nil* to 50 per cent. or more. If the present method of collecting and presenting the small-pox statistics of this country had been specially devised with the malicious intention of causing the confusion now generally prevalent in regard to types and mortalities of small-pox, it could not have been more completely successful.

Dr. Goodall suggests that "it would be a crucial test for those who believe 'alastrim' to be quite a different disease from small-pox, to place cases of each disease together in the same ward of a hospital to observe whether patients suffering from the one became infected by the other." Since vaccinia protects against small-pox for a number of years, and against alastrim for a greater number of years on an average, and since small-pox protects against vaccinia for a number of years and alastrim protects against vaccinia for a number of *months*, it is reasonable to suppose that small-pox and alastrim would confer immunity each against the other, small-pox possibly for a longer period against alastrim than alastrim against small-pox. If this is so, Dr. Goodall's "crucial" experiment would give a negative result, but that would not affect the position of alastrim as a fixed or stable variant of small-pox. If the same experiment were carried out with patients suffering from small-pox and vaccinia the result would certainly be negative, but it would be a very serious matter indeed for those who, like myself, are advocates of vaccination, if this result meant that vaccinia is not fixed or stable.—I am, etc.,

Town Hall, Hornsey, N., Feb. 16th. R. P. GARROW.

ORAL ADMINISTRATION OF PITUITARY GLAND.

SIR,—For some time there has been discussion as to the efficacy of whole gland pituitary given by the mouth, it being generally held that during the process of digestion the active substances of the gland are rendered inert, and therefore the administration per os is quite useless. However, during the last five years I have been able to watch a number of cases treated by the oral administration of pituitary whole gland, and feel quite convinced that pituitary does act by this method. I append a few brief details.

Case 1.—Woman, aged 40, who suffered from adiposis dolorosa. She was so weak that she could hardly walk into the consulting room at hospital. Amenorrhoea had been present for nearly two years and also marked depression. Pituitary whole gland was given to her morning and evening. She took in all five grains daily. In a short time her strength came back, she was able to perform all her ordinary duties without feeling tired or being in any way fatigued, and menstruation was normally re-established.

Case 2.—Girl, aged 9 years, who had suffered from chronic constipation of many years' duration. The bowels were open about once in eight days. She looked very ill, and was depressed. X-ray examination showed an atonic descending colon and sigmoid. All medicines failed and she was given pituitary whole gland, ½ grain thrice daily for nine months. The bowels moved at first once every two or three days, but after two months' treatment almost every day. She developed much more vigour, looked well and lost her depression. After nine months the pituitary was discontinued and the bowels have remained practically normal since, and only occasionally she takes pituitary for a day or two at a time. At present she is in splendid health.

Case 3.—A boy, aged 4 years, who suffered from chronic constipation of a similar nature to the above, was treated in the same manner, and Dr. Robertson, who looked after him, told me that the result had been quite successful, the bowels now opening normally, nearly every day.

Case 4.—Girl, aged 12 years, suffering from pituitary adiposity, was given a quarter of a grain of thyroid twice daily, and two grains of pituitary thrice daily, at the Royal Waterloo Hospital. In just over a month she lost nearly a stone in weight and looked well in every way. We noticed, however, the tendency of the systolic blood pressure to mount upwards when larger doses of pituitary whole gland were given, and we ultimately reduced the dose to three grains daily. The greatest amount taken in two or four hours was nine grains. The action on the blood pressure is very useful in treatment of the next case.

Case 5.—A physician, who had always suffered from low blood pressure, the systolic being generally in the neighbourhood of 100 to 106 mm., and rarely above 110 mm., felt distinct

[1] Appendix to the Report of the Chief Medical Officer to the Ministry of Health, 1919-20.

weakness when the pressure fell below 100 mm., and at 90 mm., with a pulse pressure of 20 mm., he felt weak and giddy, experienced some difficulty in breathing, and could hardly stand. He was given pituitary whole gland, two grains night and morning, but this proved too much, as it caused a feeling of fullness and throbbing in the head. The amount was therefore reduced to one grain night and morning, and later on to one grain daily. While he is taking pituitary the blood pressure keeps between 110 and 122 mm. systolic with a diastolic of 78 mm. He has found, however, that if he takes it for a few days the pressure will hold up at about 108 mm. for some months without any more pituitary. Recently he suffered from influenza, his blood pressure being so affected as to be just perceptible and no more, at the radial artery. The pulse rate fell to 58. He felt so weak that he could hardly raise his head. He took one grain of pituitary whole gland and within two hours his pulse rate was 72, the artery was full and almost bounding, and he felt fit to walk.

Reviewing the above cases leaves me convinced that pituitary whole gland does act by the mouth. Not very large doses are required. Further, in certain people in whom the pituitary gland apparently needs stimulation from time to time, re-activation would appear to occur from the rest given to it by pituitary administration for a short period. In one case in which it was tried the posterior pituitary body was evidently the agent of importance. In two of the above cases Dr. Mackenzie Wallis kindly did the glucose tolerance test, which showed pituitary deficiency in both.

I bring this matter before the readers of the *Journal* believing that it will be of interest to many, and it is my intention later on, in collaboration with another, to give detailed information of the effect of orally administered pituitary whole gland on a case of low blood pressure.—I am, etc.,

London, W.1, Feb. 12th. BERNARD MYERS.

TREATMENT OF ACTINOMYCOSIS.

SIR,—The article by Dr. Hubert Chitty in the *British Medical Journal* for February 23rd (p. 347) on the treatment of actinomycosis by tincture of iodine administered in milk leads me to state briefly that during the last twenty years I have used the proprietary article called tiodine in five cases of actinomycosis, with rapid and complete success.

It is probable that iodine in any form is of great value in clearing up the lesions of this disease, but my experience, and that of many of my medical friends and colleagues, leads me to believe that the compound mentioned acts more rapidly and more effectively than ordinary iodides. Tiodine is stated by Martindale to be a chemical combination of thiosinamin and ethyl iodide, and is administered either hypodermically or in the form of pills. My attention was first called to its value some twenty years ago by the late Sir Charles Ball, who related to me the details of a case in which potassium iodide had failed to produce any effect, and in which injections of tiodine had been followed by rapid improvement. I have always employed tiodine hypodermically, and have recommended it to others in this form. In addition to my own series of five cases, I have had reports on various occasions from old students testifying to its efficacy.—I am, etc.,

T. GILLMAN MOORHEAD, M.D., F.R.C.P.I.

Dublin, Feb. 23rd.

PROGNOSIS IN ECLAMPSIA AND ALBUMINURIA OF PREGNANCY.

SIR,—Dr. Arthur Crook, in his valuable letter (February 16th, p. 320), raises some difficult points which must be cleared up before we can even begin to understand the nature of the problem we are studying. Criticizing a statement in my paper (January 19th, p. 91) he asks, "What positive evidence as yet is there available to us that kidneys were previously healthy" in the case of the initial attack of eclampsia or albuminuria in a woman with recurring toxaemia? The evidence is twofold: (1) there is ample *post-mortem* evidence in eclampsia and not inconsiderable evidence of the same kind in albuminuria that the kidney lesion is typically entirely recent and that there has been no pre-existing disease—that is, that the nephritis is secondary to the toxaemia; (2) within a few weeks of the termination of the pregnancy in a woman who recovers there is often no manifestation even to the most delicate test of any renal lesion or deficiency. In the face of such evidence dare we assume that pre-existing kidney disease has anything to do with the cause of eclampsia, etc? And why should the relationship between toxaemia and kidney be different in any subsequent attack? It would, indeed, be a strange phenomenon if in one pregnancy eclampsia or pre-eclampsia should cause nephritis whilst in the next pregnancy nephritis should cause eclampsia or pre-eclampsia! Can this mean anything save that in searching for the cause of the 50 per cent. risk of recurrence in these conditions we must address ourselves to something more fundamental than a defect in the kidney?

In the second paragraph of his letter Dr. Crook seems to urge in favour of his views the "extreme difficulty in deciding whether an albuminuria of pregnancy is a 'simple toxic' or a 'nephritic' one." The difficulty, of course, arises from the fact that, owing to a confusion of the issues, we have in the past been attempting to distinguish between things which are identical. Most of the so-called "nephritic" cases, as I showed in my paper, have really been cases of eclampsia or pre-eclampsia recurring in successive pregnancies, which are common, and not cases of primary nephritis complicating pregnancy but arising independently of pregnancy—for example, from scarlet fever—which are rare. So rare are such cases that, although we have been carefully looking for them, we have seen only two in several years. During that time we have seen many obvious cases of recurrent toxaemia. We are anxious to get records of primary nephritis in pregnancy, and I take this opportunity of saying that we would be grateful if any of your readers would kindly send to me at the Edinburgh Royal Maternity Hospital notes of any such cases under their care, stating (1) the evidence showing that the nephritis had arisen independently of a pregnancy, and (2) its effect on the pregnancies and foetus, if any.—I am, etc.,

Edinburgh, Feb. 23rd. JAMES YOUNG.

TREATMENT OF EMPYEMA.

SIR,—With regard to the treatment of empyema there is a very simple and very effective method of ensuring the expansion of the lung after operation which is not so much recognized as it ought to be, and the hopelessness of the last sentence in Dr. W. Thomas's letter on February 16th (p. 322) prompts me to draw attention to it.

The method is as follows. The patient closes the lower false cords, and by their valve-like action prevents the escape of air up the trachea. He then makes an expiratory effort, and with the outlet through the treachea closed and no counter-pressure on the one side possible (owing to the opening in the chest wall), all the force of this expiratory effort will be spent upon the collapsed lung, which will be blown up just like a football bladder.

If there is much collapse or consolidation, care must be taken not to use too much force, for fear of overstretching the more healthy parts of the lung; frequent gentle efforts are therefore desirable.

When, as not infrequently happens, the patient has no voluntary power of closing the lower false cords, it is sometimes very difficult to teach him. In such a case one can often do so by drawing his attention to the fact that the closure of this valve is an essential part of the act of straining during defaecation.—I am, etc.,

Birmingham, Feb. 18th. T. STACEY WILSON.

VITAMIN D AND THE CALCIFICATION OF BONE IN TUBERCULOSIS.

SIR,—In 1925 certain patients with bone or joint tuberculosis were given milk irradiated by ultra-violet rays, and the results then obtained appeared to justify further investigation in this direction.[1] The facts given below seem to show that this method of treatment is not as valuable as it was hoped to be.

Half a pint of milk previously exposed to ultra-violet radiations was given daily to 17 patients whose bones were partially decalcified by tuberculosis. In 7 of these patients

[1] Pattison: The Effect on Tuberculosis of Bones and Joints of Food Exposed to Ultra-violet Radiations, *British Journal of Radiology*, February, 1926.

recalcification seemed to take place more rapidly than usual; in 10 patients no such improvement was noticed.

Encouraged by the results obtained by other workers on bone calcification, irradiated ergosterol (radiostol) was given to another series of patients, an average daily dose of 2 c.cm. being used. Twenty-four children with tuberculosis of bone or joint were given irradiated ergosterol during an average period of thirty weeks. The skiagrams of 14 of these patients showed no improvement in calcification, nor could the slight clinical improvement of their local lesion be ascribed to the radiostol. In 10 cases marked improvement in calcification was noticed, but only in 5 was it more rapid than usual. As, however, these 5 patients had previously been taking cod-liver oil for several months without any change in the bone calcification, it is possible that the irradiated ergosterol is responsible for the benefit obtained.

The value of any therapeutic agent cannot be gauged adequately by the clinical examination of a series of patients, even aided by skiagrams, as except in rare instances it is impossible to obtain satisfactory controls. But it is reasonable to suppose that the administration of vitamin D will prove beneficial to patients with poorly calcified bones, and when we are able, by more exact methods, to decide the optimum dose and to select our patients more carefully, we may hope to benefit a larger number of cases.—I am, etc.,

C. LEE PATTISON, M.B.,
King Edward VII Hospital, Sheffield.

February 14th.

INOPERABLE CARCINOMA OF THE BREAST TREATED WITH RADIUM.

SIR,—In the *British Medical Journal* of February 16th (p. 319), Mr. Geoffrey Keynes refers to my article on the above subject which appeared in your issue of February 9th (p. 242).

The chief object of dividing the cases treated into "primary inoperable" and "recurrent" was to show that between 1918 and 1928 three out of every four patients presenting themselves for treatment at the Radium Institute were in the "recurrent" category. The results of treatment as regards prolongation of life show little difference in the two categories. I only considered the results of 510 cases treated from 1918 to 1925, as the remaining 123 have lived for periods of less than three years.

Primary Inoperable.—Of 125 cases (1918–25), 26 were alive at the end of three years = 20.8 per cent. Of 98 cases (1918–23), 11 were alive at the end of five years = 11.2 per cent. Of 16 cases (1918), 2 were alive at the end of ten years = 12.5 per cent.

Recurrent.—Of 385 cases (1918–25), 86 were alive at the end of three years = 22.4 per cent. Of 307 cases (1918–23), 40 were alive at the end of five years = 13 per cent. Of 66 cases (1918), 3 were alive at the end of ten years = 4.5 per cent.

I will now outline the treatment these patients received. As a routine, external applicators were applied in such fashion as to procure a "cross-fire" radiation of the breast and a general radiation of the associated lymphatic areas. A usual dose was 7,500 milligram hours; 250 mg. of radium element, screened through 2 mm. of lead, and contained in numerous applicators, were applied at an approximate distance of 1 cm. from the skin surface for six hours a day for five successive days. A second treatment was given in about six weeks, and frequently a third treatment at a further interval of two months. In many cases the treatment of a primary growth, of an ulcerated area, or of a localized recurrence was supplemented by the burying of radium needles. The needles were of high content, each containing 5, 10, or 25 mg. of radium element screened with platinum 0.3 to 0.5 mm., or 1 mm. of silver. These were left in place for periods varying from ten to thirty hours; the number of needles depended on the size of the growth.

I purposely confined my article to a review of cases treated at the Radium Institute, and followed this by some general considerations on the treatment of carcinoma of the breast. I felt sure that the details of the treatment would be of little value as these patients were treated between 1918 and 1925, since when radium therapy has made considerable progress. Since 1911 nearly 1,500 cases of inoperable breast cancer have been treated at the Radium Institute, and it is interesting to note that there is still one patient alive who was first treated in that year. She was a recurrent case who had had three operations previous to treatment.—I am, etc.,

ROY WARD,
Assistant Medical Superintendent.

The Radium Institute, London,
Feb. 22nd.

ASTHMA.

SIR,—I am much indebted to Mr. Frank Coke (*Journal*, February 9th) for referring me to his highly interesting work on asthma. I find him most appreciative of the nasal element in that disease (or symptom) as studied in the light of Dixon, Brodie, and Ransom's experiments. He uses the expression (p. 242) employed by myself in my article in the *Practitioner* in June, 1913, to the effect that a small polypus may, by intermittent contact, "tickle" (p. 11) the sensitive areas of the mucous membrane. I am therefore all the more surprised at the omission of nasal treatment in the list of methods of dealing with spasmodic asthma.

Dr. Francis, in his letter in the *Journal* of February 23rd (p. 372), recalls the discussion which took place so long ago as in 1899 in the Laryngological Society of London. He cites the views of Sir Felix Semon and Sir StClair Thomson as unfavourable to the practice of intranasal surgical treatment. My late respected friend Sir Felix Semon, in his speech at the meeting, stated that:

"cases had been noted by good observers, such as Voltolini, Bernhard Fraenkel, and others, in which the mere removal of nasal polypi, not undertaken with any view to cure co-existing asthma, had been followed by that result, *i.e.*, the asthma attacks—which had formerly been very troublesome, either entirely disappeared, or became less intense after the removal of the polypi—returned or became intensified with the recurrence of the polypi, and improved again after renewed removal. This was a very clear proof that asthma may be positively produced from the nose, and it was clearly a grave fault to altogether deny such a possibility. Nor were nasal polypi, although in the speaker's experience by far the most obvious, the only cause of nasal asthma; other forms of nasal obstruction could produce this effect, such as great tumefaction of the nasal mucous membrane, considerable deviation or excrescences from the septum, etc. In no class of cases, however, was the connexion more clearly established than in cases of nasal polypi. In the speaker's experience, relief might be given by nasal treatment in such cases—occasionally even when the asthma had been in existence for a long time, although the number of cases of the last-named category in which he had obtained satisfactory results was extremely small."

Sir StClair Thomson's reported statement in the old discussion should be read in connexion with his views as set forth in his classical textbook. In this he says (third edition, p. 209):

"The relationship between the nose and attacks of bronchial asthma is emphasized by laboratory as well as clinical experience. By the application of weak electrical currents to the nasal mucous membrane Lazarus was able to register a distinct increase in the intrabronchial pressure. Brodie and Dixon have produced spasm of the muscular walls of the smaller bronchioles by stimuli applied to the nasal septum.

"Every asthmatic patient should have his nose examined and, if necessary, treated. If polypi are present, or if there is polypoid degeneration of the ethmoid, these diseased conditions can be cleared away with good prospect of considerable, or even complete and lasting, relief in a large proportion of cases, particularly in those where the disease did not begin in childhood. Removal of adenoids should always be advised, as their presence increases the discomfort during an attack, and cure has, in some cases, followed operation. Turbinal hypertrophies should only be treated according to the usual indications, as their association with asthma is uncertain. Deviations and spurs can be left alone, unless their removal is required for other reasons."

A careful perusal of the reports of the discussion in the *Proceedings of the Laryngological Society* (vol. vi, pp. 88, etc.) will, I think, result in a modification of the impression "that the general opinion as regards the prospect of obtaining permanent relief by nasal operations was anything but hopeful."

For my own experiences I would refer to my papers in the *Practitioner* (June, 1913, and December, 1927).—I am, etc.,

JAMES DUNDAS-GRANT.

London, Feb. 26th.

CEREBRAL ANGIOSPASM.

SIR,—Dr. Gubb, in your issue dated February 9th (p. 247), and Dr. Allen, February 16th (p. 323), have both described cases of transient palsies of cerebral origin in patients over 70 under the heading of cerebral angiospasm. I feel that this diagnosis should not be allowed to stand without a query.

In the retina, obstruction of the central artery is met with most frequently in elderly patients; microscopical examination has proved that in them it is due to endarteritis with thrombosis. Here it is not uncommon to get a history of previous transient attacks of misty vision or blindness, and the general teaching in ophthalmology is to the effect that these attacks are due to a transient lowering of blood pressure in the diseased vessel, which hinders still further the trickle to the periphery and causes the temporary ischaemia.

In the cases described by Dr. Gubb and Dr. Allen possible causes for a reduction of cerebral blood pressure would appear to have been present; in the former "he was gathering figs with the head thrown back at an acute angle," in the latter "the patient rose in the morning feeling somewhat ill."

It is now generally accepted that though in arteriosclerosis with hyperpiesia the pressure is high in the arteries, it has been damped down and is below the normal in the arterioles. It would seem that an ischaemia would be more likely to result from a further diminution of pressure than from spasm of a diseased vessel wall.

A small number of cases of retinal ischaemia have been recorded in which the diagnosis of arterial spasm would seem to be justified (see *British Journal of Ophthalmology*, 1927, pp. 625-628). Temporary amaurosis from retinal spasm is mentioned in Osler's *Medicine* as having been recorded in a subject of Raynaud's disease.—I am, etc.,

London, W.1, Feb. 22nd. FRANK JULER.

PUBLIC ELEMENTARY EDUCATION.

SIR,—I am aware that when a book is sent by a publisher to a journal for review the author must be content to stand the racket of adverse criticism. However, I venture to think that your notice of my book *Mass Education in England*, in the *Journal* of February 16th (p. 311), under the title as above, misrepresents its contents. What you say might have been written "by special request" of somebody who is hit, and the book, I know, is a rude assault upon official authority, scholastic interest, and public prejudice.

Your method was to prejudice my case by complaint of the wording of a trade advertisement of the publishers, Messrs. E. J. Burrow and Co. You afterwards talk of my want of logic, but where is yours? The accuracy of Messrs. Burrow's description was, however, well borne out by an article upon the book by Mr. Horace Newte in the *Daily Mirror* of yesterday, and about a score of other journals have seen fit to handle the book with great respect and some with evident appreciation, without troubling about its advertisement. I suppose the proverb here applies as to honour in one's own country.

In vindication of myself and my book perhaps you will kindly allow me to state that the two chief points of my theme are not as you have represented them. I will restate them. They are: (1) That the effect of the compulsory entry of the greater part of the populace into those simple mechanical employments which are required to supply the daily wants of the community, as well as the daily bread of the workers, is preventive of the application and maintenance of the ordinary subjects of school learning, and of later mental culture, even where the ability of acquisition exists. (2) That the education of children to a degree beyond that which corresponds to their varying native intelligence and inherent powers of becoming educated is an impossibility. As to argument in proof of these statements, so far as No. 1 is concerned it is capable of practical test, but it can hardly be necessary to suggest to doctors that they need to make inquiries into the effect of school education and the existence of mental culture as to-day exhibited among the dwellers in working-class streets. No. 2 should be self-evident, but, if not, proof of it will be found in the statistical results of official inquiries and reports which find a careful detailed quotation in my book—one of the several facts connected with the book that you omitted to mention.—I am, etc.,

Cheltenham, Feb. 21st. J. H. GARRETT, M.D.

*** When, in connexion with a book sent for review, it is claimed by publisher or author that it contains "startling information and deductions," or that it is "a rude assault upon official authority, scholastic interest, and public prejudice," it is surely permissible to examine how far such claims are justified, and to point out, if such is the reviewer's honest opinion, that the book does not fulfil what is claimed for it. In his letter Dr. Garrett restates his two chief points. In our notice we described them in words quoted from the book itself, and they do not seem to differ essentially from the points as he now puts them.

BRITISH JOURNAL OF UROLOGY.

SIR,—It has long been a source of wonder to foreign observers that there should exist no British journal devoted to urology, which has become a universally recognized specialty, and is being taken up by an increasing number of young men in England to-day; whereas for a long time past journals of urology have appeared in America, France, Germany, Italy, and Spain. Since 1911 there has been an active British section taking part at the congresses of the International Society of Urology. Again, and when the time was ripe, the council of the Royal Society of Medicine thought fit to establish the subject of urology as a separate section, and not as a subsection of surgery, thereby showing that they held that urology was entitled to be separated off as a special subject for study.

We realize fully the generous help given hitherto by your *Journal* in publishing a number of important articles on urology as practised in Great Britain; nevertheless, we feel that there is nowadays such abundance of special work being done that can only find a voice if it can be given the additional outlet of a journal specially devoted to the subject. Such a journal is bound also to enhance the prestige of British urology. We feel sure, therefore, that our publication will in no way be hindering, but on the contrary will be supplementing, your efforts to forward the reputation of British Medicine.

A large editorial committee has been formed representing urologists in all the British-speaking countries of the world, and they intend, under our combined editorship, to bring out quarterly a *British Journal of Urology*, which will circulate not only in this country but in America and abroad.—We are, etc.,

FRANK KIDD,
H. P. WINSBURY WHITE,
London, Feb. 19th. Editors.

BANISTERIN.

SIR,—In the *Evening Standard* for February 21st there appeared a paragraph which stated, on the authority of an International News Service message, that Professors Lewin and Schuster had described to the Berlin Medical Society a new drug called "banisterin," which was considered to be "a cure against paralysis caused by organic brain diseases." A similar paragraph suggesting the use of "banisterin" in the treatment of encephalitis lethargica went the round of the Australian press in 1928.

Professor Lewin has described "banisterin" in two papers (*Archiv für experimentelle Pathologie und Pharmakologie*, April, 1928, vol. 129, p. 133, and *Comptes rendus de l'Académie des Sciences*, February, 1928, vol. 186, p. 469), and the composition and chemical characters of the alkaloid are so like those of harmine, discovered by Fritsch in 1847, as to leave little doubt in the minds of chemists that "banisterin" is harmine. Professor Lewin remarks that this has been suggested to him, but he follows his brief description of the pharmacological action of "banisterin," in the second paper mentioned above, with the remark, "To my knowledge harmine does not produce

similar effects." In the *Archiv* paper he states he is relying on published information regarding the action of harmine.

Harmine is available in England, if not in Germany, and it seems to be essential that a pharmacological comparison of "banisterin" and harmine should be instituted as soon as possible. The point is important because if Professor Lewin's results are confirmed a demand may arise for this drug, and harmine can probably be made much more easily from the usual source, the seeds of *Peganum harmala*, than from the plant utilized by Professor Lewin, *Banisteria caapi*. The latter is one of the suggested sources of the "yage" used by South American Indians as a narcotic. "Yage" has been repeatedly examined, and the two most recent papers on the subject (Elger, *Helvetica Chimica Acta*, 1928, vol. 11, p. 162, and O. Wolfes and K. Rumpf, *Archiv der Pharmazie*, 1928, vol. 266, p. 188) leave no doubt that the alkaloid it contains is harmine, though it was at first mistaken for a new alkaloid and called "*yageine*" by *Villalba*. Moreover, Wolfes and Rumpf state that Professor Lewin obtained his alkaloid from the same plant material as they did. The remarkable properties ascribed to "yage" are reflected in the name "telepathine," which Bayon gave to an alkaloid he obtained from "yage," and which is probably also harmine.—We are, etc.,

London, E.C.1, Feb. 25th. BURROUGHS WELLCOME AND CO.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

IN the House of Lords, on February 26th, the second reading of the Local Government Bill was moved by the LORD CHANCELLOR. Lord PARMOOR moved the rejection of the bill, and the debate was adjourned.

The committee stage of the Local Government (Scotland) Bill was completed in the House of Commons on February 25th.

On February 20th Colonel GRETTON presented a Hospitals (Relief from Rating) Bill "to grant complete or partial relief from rates in the case of certain hereditaments used for the purpose of hospitals, infirmaries, dispensaries, convalescent homes, sanatoriums, and other similar uses, or in connexion therewith."

Dr. Fremantle presided, on February 26th, over a well-attended meeting of the Parliamentary Medical Committee. The Committee considered a communication from the Asthma Research Council concerning a complaint received from a practitioner who alleged that his treatment of asthma had not been duly investigated. The Committee received a deputation from the Medical Practitioners' Union. Speaking for the deputation, Dr. GORDON WARD complained of the limitations on the prescriptions of panel practitioners. His union considered that the provision of drugs should be a separate benefit, but he admitted that there should be restrictions, and suggested modifications of the present procedure. Reference was made to the London list of prohibited drugs, which had been drawn up by the Insurance Committee and passed by the Panel Committee. The Parliamentary Medical Committee undertook to consider the question.

Local Government (Scotland) Bill.

On February 20th the House of Commons was again in committee on the Local Government (Scotland) Bill. Clause 25 provided against failure of the town councils of small burghs with respect to water supply and public health obligations. Dr. ELLIOT, for the Government, moved to modify the clause to enact that where the local authority of any area had failed to discharge its functions with respect to the provision of water supply, or of sewers or drains, or with respect to housing, or had failed to discharge any other functions relating to public health, the department might authorize any other local authority to discharge the functions of the defaulting authority. In moving the clause Dr. Elliot said the Secretary of State for Scotland was precluded from doing so by influenza. Dr. DRUMMOND SHIELS agreed that these powers should only be put into operation after inquiry. By 196 to 86 the clause was amended as proposed by Dr. Elliot.

Clause 26 authorizes the county medical officer of health and sanitary inspector to act for small burghs. Mr. W. ADAMSON moved to leave out "or sanitary inspector." He declared that otherwise these burghs might be deprived of the services of whole-time sanitary inspectors. Sir ROBERT HORNE concurred.

Dr. ELLIOT said that of 179 small burghs in Scotland 26 had appointed the county sanitary officer to look after them, 106 had full-time officers, and 47 had part-time officers. The appointment was becoming more technical and skilled. The Scottish Board of Health had done its utmost to raise the status of the sanitary officer and to make clear that his position was in some ways more important than that of the medical officer of health. A whole-time sanitary officer could not be removed without the consent of the Board of Health, but they had known cases where pressure had been exerted on part-time officers. It was not suggested that a man would have to cover a whole county such as Lanark or Fife. He would work with assistants.

Mr. T. JOHNSTON denied that the administration of public health was inefficient in the small burghs. These burghs had a lower infantile death rate and lower death rates for ages under 25. When the burghs inspected milk and dairies, cows were inspected at least four times a year. Now, under the county councils, the inspection was at most twice a year, and in other parts once a year.

Dr. SHIELS remarked that the supporters of the amendment had not challenged the proposal to centralize under the county medical officers, although many burghs in Scotland would be reluctant to depart from having their own medical officers. He agreed that in some of the smaller burghs the work of the sanitary inspector could be better done by the county officer, but it was ridiculous to say that a burgh like Musselburgh, with a population of 17,500, had not sufficient work to occupy a full-time sanitary officer.

The LORD ADVOCATE (Mr. W. Watson) said the Government would accept the amendment provided it remained free to reinsert the words during the report stage or to make variations.

The House then agreed to the amendment not to make county sanitary inspectors the sanitary inspectors for small burghs.

Sir ROBERT HAMILTON then moved an amendment designed to leave the burghs freedom of choice in the appointment both of medical officer and of sanitary inspector. Under the clause as in the bill, the county medical officer or county sanitary officer would, in the event of a vacancy in the similar post in a burgh, be automatically appointed for the burgh unless the Board of Health agreed otherwise. Sir Robert thought that the town council of the burgh should be left to say if it desired that the county medical officer should be appointed medical officer of the burgh.

Dr. ELLIOT said the case for the appointment of the county medical officer to the smaller burghs was stronger than that for the appointment of the county sanitary officer; such appointments had been made by 100 out of 179 burghs affected. The medical officer had to deal with larger functions of health, which to a considerable extent were being transferred to the reconstituted county authority.

Dr. SHIELS could not support the amendment. The burghs which objected to appointing the county medical officer might not be the most suitable ones to have medical officers of their own. The medical officer of health of the smaller burghs had been a local figure of importance, and had in many cases done magnificent work, but with the advance of medical science, laboratory and scientific equipment, such as the small unit was unable to furnish, was needed to deal properly with public health. He agreed that places such as Rothesay, Oban, St. Andrews, and Dunoon, which had large summer populations, ought to have their own medical officers of health, and the Board of Health in Scotland would take advantage of the reservation in the clause permitting this. In medical matters the department of the Board of Health had always been up to date and progressive.

Dr. ELLIOT said the Board would take advantage of the provisions to deal with exceptional cases such as arose at sea-side resorts. There were cases of small authorities appointing unsuitable men. A local authority in 1919 appointed a medical officer of health who did not possess the statutory qualifications, and the Board had to negotiate over the matter till 1928.

Sir Robert Hamilton's amendment was defeated by 233 to 43, and after minor amendments had been made the clause was added to the bill.

On February 21st Mr. ERNEST BROWN moved an amendment designed to leave out of the block grant the health grants. He said no issue in the bill caused more disquiet in the country than the change of grants for health services from the percentage to the the block system. The amendment proposed to leave out from the operation of the block system the maternity and child welfare grant for Scotland, amounting to £157,000; the grant for tuberculosis treatment, amounting to £347,000; the grant for venereal disease treatment, amounting to £66,000; the grant for the welfare of the blind, £20,000; and the mental deficiency grant, £16,000—in all, £667,000. The block grant system would set up a competition among idealists in which one would want more money for tuberculosis treatment, another more for maternity and child welfare, and another more for the treatment of venereal disease.

Dr. ELLIOT said this was one of the major issues of the bill, and would confront Governments for many years to come. The percentage grants had worked unsatisfactorily in some cases. Large areas had no child welfare schemes at all. Under the bill the Highland counties would receive over £60,000 a year, and the Government would have power to call for the institution of such

services. The Government scheme provided cash and compulsion. Previously the local authorities had developed health services under the Poor Law in Glasgow, Aberdeen, and many of the burghs and counties of Scotland, although those services did not attract one penny of grant. The payment or withholding of a grant had not affected the hospital treatment of measles in Glasgow.

Mr. WILLIAM GRAHAM said that before the Meston Committee the Scottish Board of Health had given evidence supporting the percentage grant system as applied to public health services.

Mr. JAMES STUART said the Board of Health had coaxed Glasgow to increase the hospital treatment of measles and whooping-cough, and gave a grant of £20,000. To-day the average annual expenditure of Glasgow for the treatment of measles and whooping-cough was £21,000, but instead of getting £10,500, which was promised by the Government, the city was now only to receive £4,500. Last year Glasgow spent £116,000 on child welfare, and of that sum received £53,000 from the Government. Glasgow contemplated a development of its child welfare service and the provision of more maternity hospital accommodation, but under the bill it might not get any advantage under the block grant in respect of such developments. Glasgow was spending £220,000 annually on the treatment of tuberculosis, and hoped to open a new hospital this year costing in round figures £400,000, with 440 beds. All the charges for interest and sinking fund would have to be added to the maintenance of cases, and the cost per patient per week, including treatment and administration, would run from 55s. to 60s.

Dr. DRUMMOND SHIELS said no medical authority would have pleaded for a change from the percentage to the block grant system. Public health services were developing fast, and had in many cases doubled or trebled in amount since they were instituted. He hoped that even if all other services came under the block grant system an exception would be made for child welfare and maternity. Ante-natal supervision lessened the maternal death rate, and an adequate ante-natal service in every centre of population was essential. In Edinburgh, Glasgow, and other cities they had a fairly good service, but even in these places the number of centres was insufficient, while the accommodation and comfort were far from what they should be. Edinburgh contemplated a scheme for debilitated children which was to cost £25,000. Whether it would go on was now uncertain, as the past year had been the standard year under the bill, and any expenditure over the amount of that year would for the next three years fall on the ratepayers. The treatment of venereal disease was specially endangered under the block grant. It was an unpopular service, which previously got 75 per cent. from the State. Henceforth the local authorities would have to find 100 per cent., and the service would suffer, especially if the Government carried out its suggestion of dropping all assistance to propaganda. The blind rightly feared that under the new arrangement they would have cursory treatment from some of the local authorities. In the mental deficiency service a great advance was needed, and any grant based on the standard year would be inadequate. There was no place in Scotland where the health services were completely adequate to the needs of the community. Outside Glasgow, Poor Law institutions on the health side were by no means well equipped.

Dr. ELLIOT said the proposed grant was not a stereotyped block grant, but one with frequent periods of revision. Its operation could be watched and any errors corrected. If expenditure was good and commended itself to local authorities they would undertake it even if not immediately sure of recoupment by the central authority. If the local authorities so undertook expanding services the Exchequer contribution would recognize that in its successive revisions. The scheme provided a flexibility which had not hitherto existed in relations between the local authority and the central authority.

Mr. Brown's amendment was defeated by 174 to 102. An amendment by Dr. Shiels to except the percentage grants for maternity and child welfare was defeated without debate by 181 to 106. An amendment by Sir Robert Hamilton to except a grant to Highland counties was withdrawn after Dr. Elliot had explained that the Highlands and Islands medical grant had not been swept away, but would have to be substantially increased.

On February 22nd the House discussed Clause 48, which provides for contributions to voluntary associations in respect of the welfare of the blind and of mental defectives. Dr. DRUMMOND SHIELS moved to add a subsection providing that the central department might, before the beginning of each fixed grant period, make a scheme providing for the payment by county councils and town councils of large boroughs of specified amounts to an approved organization providing general publicity and educative propaganda in furtherance of the prevention and treatment of venereal disease. He said the proposal of the Government, as implied in the omissions from the bill, to drop the grants which had been previously made was unwise. His amendment had the approval of members in all parties. Last year the House had rejected the bill in which the Edinburgh Corporation sought power to compel those who suffered from venereal disease to undergo treatment. The House then decided, under the guidance of the Minister of Health, that the voluntary system was sufficient. Dr. Shiels held that a purely voluntary system would not stamp out these diseases, but it could not succeed unless the public understood and realized the seriousness of these conditions. A similar amendment to that he now moved had been put forward to the English Local Government Bill, and the Minister of Health could not accept it. In the present amendment, however, the word "may" had been substituted for the word "shall." A committee of the British Social Hygiene Council had carried on this propaganda in Scotland since 1921, giving lectures, advertising, and distributing literature, particularly in areas where cases were not coming to the clinics. The Scottish Board of Health had given £1,000 a year towards the work, and the report of the Board for 1927 declared that the work of the Scottish committee had been effective and of high value. Those who were in charge of the treatment of these diseases in Scotland were convinced that if things were left as in the bill the local authorities would not voluntarily contribute to the funds of such an association.

Dr. ELLIOT said propaganda with regard to venereal disease was of vital importance and in many ways better exercised from a central body than from a local body. There were conclusive difficulties against compelling local authorities to contribute to voluntary associations. Under the bill the small grants which had been made from time to time to this or that organization were being swept into a general pool, and that pool would be assigned to local authorities, who, he hoped, would then take upon themselves all and more than all the duties which the central department had previously stimulated them to carry out. Local authorities should feel full responsibility for all health activities in their area, including responsibility for propaganda. He proposed that the present grant from the central authority to the voluntary society should be continued up to May, 1930, and that a substantial additional sum be obtained from the Treasury towards the expenses of that society. He would also call a meeting of the local authorities who were particularly concerned in the matter and discuss the subject with them. He had no doubt they would agree on the health and propaganda work which they desired to carry on. The Government would act as banker for any sums which the local authorities might wish to spend on health propaganda, including that against venereal disease. The local authorities would themselves contribute freely and not under the compulsion of the central department. It might be that in future local authorities would wish to undertake this work themselves, but the position of the society would be safeguarded for a year. The danger that local authorities might not act was guarded against by Clause 50, which provided that the Secretary of State should be satisfied that a council had so carried out its obligations that the health of the inhabitants was unlikely to be endangered. The Department of Health in Scotland had no special appropriation for health propaganda or for preventive publicity work. Propaganda against venereal disease was clearly one of the health duties of local authorities. Care of mental defectives and of the blind was more welfare work than health work.

Mr. JAMES STEWART asked the Government to take power to deal with any local authority which was not continuing the propaganda against venereal disease. Some very considerable local authorities showed no enthusiasm in dealing with the disease.

Mr. ROSSLYN MITCHELL compared the growth of the campaign against venereal disease and the arousing of public interest to the steps taken to eliminate ophthalmia neonatorum in Glasgow. That disease had brought to Glasgow from 150 to 200 blind children every year, but in fifteen months from the introduction of compulsory notification and of public treatment there was no case, even of the loss of one eye.

Dr. SHIELS was glad to hear what Dr. Elliot offered to do, but could not regard it as a satisfactory substitute for the amendment. If Dr. Elliot would reconsider the matter before the report stage, Dr. Shiels would withdraw the amendment.

Dr. ELLIOT promised to bring the debate to the notice of Sir John Gilmour. Health propaganda should not be considered merely in relation to venereal disease, but on a somewhat wider ambit. The Government could not guarantee or suggest that the funds should be spent through certain organizations. Some entirely different method might be found.

Dr. SHIELS then asked leave to withdraw his amendment, and the House granted permission.

Clause 50, giving the Secretary of State power to reduce grants for inefficiency, was amended by adding maternity and child welfare, lunacy and mental deficiency, and the welfare of the blind as services in which efficiency could be demanded. The Lord Advocate desired to make clear that the clause applied to welfare services as well as to health services.

On February 25th Mr. MACROBERT, Solicitor-General for Scotland, moved a new clause to enable local authorities to submit schemes for reorganization with a view to removing the distinctions between Poor Law patients and the public health patients, and to provide for hospital treatment under the public health authorities and not under the Poor Law. He said that in the clause there were safeguards with regard to the voluntary hospitals, and one of the objects of the clause was to secure co-operation between the public authorities, the voluntary hospitals, and the medical schools. The schemes for reorganization had to be submitted to the

Secretary of State for Scotland by the various authorities, either county council or borough council. A wider definition was given of the words "hospital facilities." Power was given to the authorities to spend money in extensions where the present facilities were inadequate. The department would satisfy itself with regard to an appropriate scheme by inquiry, not necessarily by a formal or local inquiry. In the event of a scheme not being approved on terms by the department they might modify or amend it. Statutory powers were given to the authorities in connexion with general hospital services. At present they only had statutory powers in regard to hospitals for infectious diseases. The powers were to be extended to general hospitals. Authorities were granted power to give hospital services for people living in another area.

Mr. STEWART urged that it should be made obligatory on every county council and town council to prepare a scheme for the consideration of the central department.

Lieut.-Colonel MOORE said he represented some of the most progressive seaside towns in Scotland. In the arrangements made for a very large summer population hospital accommodation was very prominent. In certain cases the town councils had established very fine hospitals for fever and other cases, and out of the rates they had practically paid off the entire capital cost incurred in building and equipping the hospitals. Under this new clause these hospitals would be taken over by the new county authorities, and as far as he could see no question of compensation arose.

The CHAIRMAN pointed out that Colonel Moore could not raise that question at that point as it came under Clause 6.

Lieut.-Colonel MOORE said that in that case he would ask the Government to bear in mind that there was a feeling that these towns should be compensated for the capital expenditure which they had incurred in respect of these hospitals.

Dr. SHIELS said that the Labour party agreed with the main principles of the clause, but there were certain features which they would like to see altered. In the larger industrial districts in Scotland and England hospital arrangements were in a more or less chaotic condition. Reorganization in these cases was absolutely essential if the full facilities available in the public and voluntary hospitals were to be utilized. If the clause was to be permissive they would still be left in the same old position with regard to reactionary or lazy authorities. One of the hopeful features of the section dealing with the extension of hospital facilities was that it provided some remedy for the serious condition of the voluntary hospitals as regarded their accommodation. The Mackenzie Commission, which reported in December, 1925, gave the total number of voluntary hospital beds in Scotland as 8,589. There had probably been an increase since that time, but they estimated that 3,600 additional beds were immediately needed in order to provide the necessary accommodation. The Edinburgh Royal Infirmary had a waiting list of over 2,000 people, many of them being cancer cases. The same was true in regard to Glasgow, and indeed the voluntary hospitals of Scotland did not provide except very partially for the needs of the community. In the Poor Law hospitals and sick wards of poorhouses there were 6,100 beds. Of that number 4,285 were grouped in the larger Poor Law hospitals. One effect of this new clause would be that in those cases where the Poor Law beds were not fully occupied they would be available to the local authority to meet the needs of the sick people in the district. It was surely even more necessary that immediate steps should be taken, seeing that there were these facilities, to prepare a scheme, not only for co-ordination, but for making the necessary additions and extensions in areas which quite evidently required it. In regard to the inquiry mentioned by the Solicitor-General, he wished to know whether it was a public inquiry with witnesses, whether it was likely to be expensive, with counsel representing the various conflicting authorities, and whether people with vested interests would be able to object to the necessary extensions and either defeat the object of the local authority or add considerably to its expenses in establishing approval of the proposed scheme.

After further debate the LORD ADVOCATE said that the Government felt that it would be a bit hard and unwise to make the preparation of schemes mandatory in the way which had been suggested. But he would point out that under Clause 50 every local authority was bound to exercise its functions up to a certain standard and to provide adequately for the health of the people in the district. The word "function" was defined as including not only duties but powers, and as a lawyer he said that the power which was conferred on local authorities in this clause was one which they would be bound to exercise, otherwise their grant would be reduced.

The clause was read a second time and added to the bill.

The LORD ADVOCATE moved a new clause dealing with the recovery of expenses in connexion with the treatment of the sick. He said that at present the Poor Law authority had power to recover expenses for the treatment of poor persons from those who were legally liable for the maintenance of those persons, and it was now proposed that all the hospitals under the new sick persons scheme should be put more or less on the same basis. The Poor Law power, of course, would remain with the new body. There was an exception in the case of infectious disease, and the reason for that was obvious. According to the customary practice patients were compulsorily removed for the benefit of the community at large, and that made all the difference. The amount to be recovered was limited to a reasonable amount.

Dr. SHIELS said that he was glad that the Government had now amended this clause in accordance with suggestions made by the Opposition, and to that extent he thought it was a great improvement on the original drafting. The use of the word "reasonable" was a great improvement. But they protested against the distinction still drawn between infectious and other diseases. He would like to say something about the maternity hospitals. A great deal was being done in regard to the reduction of maternity mortality, and one proposal which seemed likely to be fruitful was that, instead of one big maternity hospital, there should be a number of smaller hospitals in different parts of the town or the county where patients could be more readily and quickly attended and where a certain amount of isolation could be secured in cases where there was an infective condition. There was great scope for this development, because they knew that diseases associated with these conditions were responsible not only for many deaths, but for a great deal of chronic ill health. They wanted to encourage the most ample provision for maternity hospitals. Yet in spite of the optional nature of this clause, and in spite of the insertion of the word "reasonable," it was still possible under it that a maternity hospital would have charges so high that women who required the treatment very badly would not be able to take advantage of its facilities. Therefore he urged the Lord Advocate very strongly to concede the exemption of maternity hospitals from the general operation of the clause.

After further debate the clause was read a second time and added to the bill.

An amendment moved by Dr. SHIELS to exempt maternity homes from the clause was rejected by 203 votes to 88.

The committee stage was completed, and the bill as amended was reported to the House.

Assessment of Voluntary Hospitals.

In an answer to Mr. Robert Morrison, on February 20th, Sir KINGSLEY WOOD said the Rating and Valuation Act had not altered the basis of the valuation of hospitals. It was open to assessment authorities now, as heretofore, to adopt a basis which would take full account of the special circumstances of voluntary hospitals dependent on contributions from the public and of the responsibilities, conditions, and restrictions which affected their rateable value. Full rights of objection and appeal were available to any governing authority which was not satisfied that due regard had been paid to these factors and was aggrieved by the assessment proposed. Sir Kingsley repeated the declaration previously made that the de-rating of hospitals could not be considered apart from the de-rating of other charitable institutions, and that legislation to that end could not be introduced in the present Parliament. He added that the British Hospitals Association, at Mr. Chamberlain's suggestion, proposed to submit to the Central Valuation Committee proposals for greater uniformity in the assessment of voluntary hospitals and the adoption of a generally acceptable basis of valuation. This suggestion had been adopted after an interview between the Minister of Health and the representatives of British hospitals.

Dr. VERNON DAVIES asked whether the Parliamentary Secretary was prepared to support the proposals of the British Hospitals Association when these came before the Central Valuation Committee.

Sir KINGSLEY WOOD replied that the Ministry would do all it could to assist, but had no statutory authority to interfere with the policy of the Central Valuation Committee. That committee had made certain suggestions which would promote uniformity and might lead to good results.

Report on Mental Deficiency.—Lord EUSTACE PERCY announced, in an answer to Mr. Robert Morrison on February 21st, that he was arranging for the publication of the first section of the report of the Departmental Committee on Mental Deficiency. This report would include all the committee's findings and recommendations on matters falling within the scope of the Board of Education and of the local authorities, together with the report of a survey of the incidence of mental deficiency in certain typical areas, carried out by one of the medical officers of the Board of Control. Lord Eustace Percy feared these documents would not be available before Easter. He thanked the committee for its valuable report which would greatly assist all interested in the education of mentally deficient children.

Invaliding for Tuberculosis.—Colonel HEADLAM, on February 6th, stated that since the new rules relating to the assessment of attributability of tuberculosis came into operation in the Navy on October 1st last, 70 cases of invaliding for tuberculosis had been considered. In 46 cases disability pensions had been granted, and 10 cases were under consideration. Ten cases dealt with before October 1st had been reconsidered, and, in the absence of fresh medical evidence, the original awards had been maintained. Dr. Shiels was informed, on February 21st, that the Secretary for Scotland could not give the number of tuberculous ex-service men in Scotland apart from those on the registers of the Ministry of Pensions.

Obituary.

G. NEWTON PITT, M.D., F.R.C.P.,

Consulting Physician to Guy's Hospital.

WE much regret to announce the death, on February 22nd, at Walton-on-Thames, after a short illness, of Dr. G. Newton Pitt, for many years physician to Guy's Hospital, and for the past fifteen years intimately associated with the work of the Royal Medical Benevolent Fund.

George Newton Pitt was born in London on October 15th, 1853, the eldest son of George Pitt of Sutton, Surrey. From Christ's College, Finchley, he went to Clare College, Cambridge, with a scholarship, and was placed tenth wrangler in the Mathematical Tripos of 1876. In 1879 he was elected a Fellow of Clare College, and during the tenure of his Fellowship studied medicine at Cambridge and at Guy's, qualifying as M.R.C.S. in 1881. In 1884 he graduated M.D., B.Ch.Cantab., and obtained the M.R.C.P. Lond. diploma. In 1890, the year after his election as a Fellow of the Royal College of Physicians, Dr. Pitt was appointed Goulstonian lecturer. In 1903–7 he served as examiner to the College, was a member of the Council in 1907–9, *Bradshaw lecturer in* 1910, censor in 1914–15, and senior censor in 1918. His Goulstonian Lectures on "Some cerebral lesions" were published in the first volume of the *British Medical Journal* for 1890, and his Bradshaw Lectures on "The results of bronchial obstruction" appeared, with illustrations, in our issue of December 10th, 1910. From 1887 onwards Dr. Newton Pitt was a member of the staff of Guy's Hospital, serving in turn as demonstrator in morbid anatomy, assistant physician, physician and lecturer in medicine, and, finally, as consulting physician. In the early part of his career he was also assistant physician to the East London Hospital for Children at Shadwell, and was for some time an examiner in medicine to the Universities of Cambridge and London. For his war services as major, attached to the 2nd London Territorial General Hospital, he received the O.B.E.

DR. NEWTON PITT.

Dr. Newton Pitt was for many years a member of the British Medical Association; he held office as vice-president of the Section of Pathology at the Annual Meeting of the Association at Manchester in 1902, and as vice-president of the Section of Medicine when the Association held its Annual Meeting at Exeter in 1907. Besides his Goulstonian and Bradshaw Lectures, and contributions to Allbutt's *System of Medicine* and Allchin's *Manual of Medicine*, he was the author of a number of papers in *Guy's Hospital Reports*, and between 1901 and 1908 contributed eight articles to the *British Medical Journal*, mainly on diseases of the heart and of the central nervous system. His presidential oration before the Hunterian Society was entitled "John Hunter as a physician and his relation to the medical societies of the last century." To his invaluable work for the Royal Medical Benevolent Fund, from the time of his appointment as honorary secretary in 1914, a tribute is paid by his former colleagues in the appreciations printed below.

His active years at Guy's were marked by unremitting attention to the patients under his care, and to his duties as a teacher of clinical medicine. His intimate knowledge of morbid anatomy, gained as a demonstrator in this subject over several years, illuminated the bedside teaching, and gave an authority to his instruction of the highest order, while his constant attendance at operations which he had advised gave him a knowledge of living pathology and that form of information so essential to a physician dealing with acute abdominal conditions. His clear logical mind enabled him in his teaching to sift the material, to free it from ambiguities, and present the subject in hand in a manner to be grasped by the student. The teaching was illustrated from a wide and well-garnered experience, was never diffuse, and the essentials were impressed as by the hand of a master. These same qualities were of signal service in the management of the medical school, and on the various committees co-ordinating the relation between the hospital and the school, where his opinion, always given after mature reflection based upon a knowledge of the subject which he had been at pains to acquire, carried great weight.

Sir CHARTERS SYMONDS, consulting surgeon to Guy's Hospital and honorary treasurer of the Royal Medical Benevolent Fund, writes:

As a colleague Dr. Newton Pitt gained the esteem and affection of all the members of the staff, and was beloved by the students, many of whom became his intimate friends. For many years he was consulting physician to the London Orphan School, where his services were frequently called upon. The Royal Medical Benevolent Fund has lost in Dr. Newton Pitt an honorary secretary who for fifteen years gave devoted service to the relief of numbers of the profession and their dependants. It was his special part to investigate all applications, by examination of statements, and often by personal interviews. Over this he spared no trouble, and when the application was placed before the committee his award was almost invariably accepted. Before the present secretary was appointed and the present offices were established the duties demanded daily supervision, a special corner of his study being set apart for the purpose. He had an intimate knowledge of both annuitants and grantees, and, while always sympathetic, was careful to see that charity was wisely distributed, and that overlapping of other bodies was safeguarded. His financial abilities were of no mean order, and his knowledge of accounts always of value. It will be difficult to find another with so original a mind, of so wide an experience, with such a knowledge of the needs of the profession, and one who is able and willing to sacrifice so much of his leisure to fill his place. No one seeing his clear mental grasp of a problem, his untiring energy, his deep interest in the affairs of the Fund, as exhibited at the meeting in the week preceding his death, could but anticipate many years of active work. It is not improbable that the severe attack of influenzal pneumonia last year seriously weakened his powers of resistance.

Dr. JOHN FAWCETT, consulting physician to Guy's Hospital, writes:

Dr. Newton Pitt was one of the three physicians appointed on the staff of Guy's in 1887 to fill the vacancies resulting from the rapid promotion among the junior members which ensued, in the main, as a sequence of the

appalling series of disasters which befel the medical staff from the year 1883 to 1887; I mean the deaths of those famous physicians, Fagge, Moxon, Mahomed, and Carrington. Dr. Leonard Wooldridge and Dr. Cooper Perry, as he then was, were the other two physicians appointed at the same time, and before two years were out Guy's had lost that brilliant genius Wooldridge, to be followed but a few years later by the deaths of Dr. Washbourn and Dr. J. H. Bryant. Dr. Pitt came to Guy's with a great reputation from Cambridge, where he had taken high rank as a wrangler, and later was elected a Fellow of his College, Clare. Throughout his period of service on the active staff of Guy's, which ended in 1913, he entered heart and soul into all the activities of both the hospital and its school.

Perhaps the features which we, as students, remember best were, first, his superabundant energy, the almost meticulous thoroughness with which he investigated the cases under his care, especially those in relation to the central nervous system, in which he was particularly interested, and where he did such good pioneer work. His brain to us seemed teeming with so many facts, with time as the sole brake to the expression of what he could do and say, and where we learned, meanwhile, of many things of which we had not even dreamt before. Fatigue was altogether foreign to his mind and nature, although by no means so to the somewhat exhausted members of his "firm," male and female, who followed in his train, at the end of a long round. Some years later, when no longer a student, I ventured to ask him if he was ever tired, and he replied, "I don't remember it," and I believe he spoke the truth. But some few days ago I met him in the "Tube" on his way to the Alliance Assurance Company, where he had been one of the medical officers for a great number of years, and he looked as well, almost as young, and spoke as robustly as ever. The only complaint he had to make was that someone had advised him recently to have all, or most of his teeth extracted, with the result that he had been uncomfortable ever since, and that was all he had to say in reference to the present state of his health. It seems impossible to realize that he is gone, and that we, and all who knew him so well at Guy's and elsewhere, have lost a very dear friend.

The other chief characteristics to my mind, and, indeed, to that of others also, were his geniality, his good humour, his love for his fellow man, particularly if he came from Guy's, and his wish to do something for him if he could. He was such a gentleman. As students we always spoke of him as "dear old Pitt"; irreverent it was, but the phrase seems to enshrine his memory, and to describe with truth the affectionate regard in which he was held by all the students, by his own house-physicians, and by his colleagues on the staff—and what can man want more! When the war came, though over 60 years of age, Pitt worked devotedly from first to last at the 2nd London General Hospital, where he held the rank of major; and also, if I recollect aright, he acted as physician at another war hospital, King George's, as it was called.

Outside Guy's the work for which he will, and should, ever be remembered is that which he did for the Royal Medical Benevolent Fund. Sir Charters Symonds recalls in the *Times* of to-day (February 26th) how that Pitt became secretary of the Fund in 1914, and that to Pitt fell a large part of the additional work entailed in the collection, the management, and the distribution of the £20,000 collected from the medical profession, with the added £10,000 from the National Relief Fund. The money was to assist financially the medical officers, especially of the Territorial Army, who had suffered loss either themselves, or, it might be, their families, from whom the breadwinner had been taken or who had died. Ever since Pitt became secretary the interests of the Fund were his constant care, and, while anxious to see it develop on a wider and more broadly comprehensive basis, yet he never failed to devote daily consideration to the numerous cases which came for relief. To those who might wish to do something to perpetuate their affection for Dr. Pitt I can imagine nothing which would have more appealed to him than an attempt to render this Fund even more generally recognized in our profession than it is at present, to have it regarded as a liability which every medical man should incur by becoming an annual subscriber. Dr. Pitt was ever grateful for the support accorded to the Fund, increasingly so of recent years, by the members of the British Medical Association.

This brief sketch, written at such short notice, does but meagrely fulfil its aim; but it may perchance serve in part, though inadequately, to express the feelings and thoughts of some who knew Pitt well, and who realize to the full how rich was his life for others, and therefore so happy for himself. He loved his life and his work, and, sad as we are to lose him, yet we recognize that, not only did he play the game hard throughout his long life, but that he put many a good innings to the credit of his side.

[The photograph of Dr. Newton Pitt is by Elliott and Fry, Ltd., London.]

DENIS WALSHE, M.D.,

Past-President, South-Eastern of Ireland Branch, British Medical Association.

WE regret to record the death, at the age of 85, of Dr. Denis Walshe, which took place at his home in county Kilkenny on February 21st. Dr. Walshe received his medical education at the Catholic University, Dublin, and at Edinburgh. In 1869 he obtained the L.R.C.P. and L.R.C.S.Ed. diplomas, and in 1871 the L.R.C.P.I. and L.M. In 1915 the National University of Ireland conferred on him the degree of M.D. (*honoris causa*).

After qualifying Denis Walshe spent several years in England holding appointments as resident medical officer at the Chorlton Hospital, Manchester, and later at the Poplar and Stepney Sick Asylum, London. On returning to Ireland he was appointed to the Tiscoffin Dispensary district, and proceeded to build up an extensive private practice. In 1883 he became medical officer to the [illegible] Dispensary District, and in 1903 coroner [illegible], both of which offices he held until his death. Dr. Walshe was an active and loyal member of the British Medical Association. He was a member of Council nearly continuously from 1900 to the day of his death, and a member of the Irish Committee since 1923. In 1900 he was a member of the South-Eastern of Ireland Branch Council, becoming its president in 1901. He represented the Kilkenny Division of the South-Eastern of Ireland Branch Council in 1916, and the Carlow and Kilkenny Division during the period 1917-29. From 1916 he was a member of the South-Eastern of Ireland Branch Ethical Committee, and since the passing of the Insurance Act he was chairman of the local committee. For nearly sixty years he never missed an Annual Meeting of the British Medical Association; indeed, although his health was so poor last year that he was urged by his medical friends not to undertake the long journey, he attended the Annual Meeting at Cardiff. A few days before his death he received a letter from Dr. Alfred Cox, the Medical Secretary, which he greatly appreciated, and showed with pride to his medical friends when they called to see him, and the Council at its last meeting also asked the Chairman of Council to send its wishes for his recovery and its appreciation of all his good work for the Association. Denis Walshe was a genial and companionable friend and the soul of hospitality. His funeral was attended by a large number of medical colleagues and friends, including Dr. T. Hennessy (Irish Medical Secretary), who travelled from Dublin to be present.

Dr. ALFRED COX writes: The Association has had many loyal and devoted members in Ireland, but none in my time whose personality was so distinctively associated with the lovable and humorous qualities one is inclined to think of as being peculiarly Irish. I never realized what a power he was for good until I met Dr. Walshe on his own ground in his own Branch two years ago. I then saw what a great factor he had been in preventing among the medical profession the growth of any semblance of a division between North and South. During times of great stress and difficulty he kept the B.M.A. flag flying [and thereby] preserved the union of the Irish medical profession, being backed in this by others in both South and North. For this alone he deserves our gratitude and remembrance. But many of us will miss even more the loss of that exceedingly

charming personality without which the Annual Meeting will seem something different and less attractive. He was for many years a member of our Council, and rarely said a word, but there were few more popular or more deservedly respected members of it.

The death occurred on February 20th, at his residence, Old Castle Gate, Banff, of Dr. WILLIAM FERGUSSON, a well-known practitioner in the North of Scotland. Born in 1855, he was a son of the Rev. William Fergusson, Free Church minister at Ellon, and went through the medical course of Aberdeen University. He graduated M.B., C.M. with highest honours in 1877, proceeding M.D. in 1879. His first four years of professional life were spent in practice at Fraserburgh, but he went to Banff in 1880, where he spent forty-nine years, gaining a great reputation both in family practice and as a consulting physician, for which his services were in request over a large area in the North of Scotland. Dr. Fergusson held various official positions, being consulting surgeon to Chalmers's Hospital, surgeon to Banff Prison, parochial medical officer for Boyndie and Alvah, and Admiralty surgeon and agent in Banff. He was associated for a long time with the local Volunteer Force, and held the position of surgeon colonel to the 1st Banff R.G.A. Volunteers, in which his long period of service was recognized by the Volunteer Decoration. He was an active member of the British Medical Association, and had attained the position of president in the Northern Counties of Scotland Branch and in the Aberdeen Branch of the Association. He was also a justice of the peace for Banffshire. From time to time he contributed articles to various medical journals, chiefly upon subjects in the department of gynaecology. Four years ago he retired from private practice, but still maintained his connexion with Banffshire Asylum, where he continued to act as visiting physician. He is survived by a widow and one son.

Dr. J. LOGAN STEWART, consultant tuberculosis officer to the Lancashire County Council, died in Manchester from pneumonia on February 20th, at the age of 49. Dr. Stewart received his medical education in Glasgow, graduating M.B., Ch.B. in 1905; he obtained the diploma D.P.H.Camb. in 1908. He entered the service of the Lancashire County Council as medical inspector of schools in 1909, and in July, 1913, he was appointed consultant tuberculosis officer for the south-east portion of the county, at present containing a population of 370,000 persons, with a chief dispensary at Ashton-under-Lyne and five branch dispensaries in neighbouring towns. Dr. Stewart was the first member of the tuberculosis medical staff of the Lancashire County Council to undertake his own *x*-ray work, and he developed this to the highest degree of efficiency. He contributed several chapters on this subject to the annual report on the tuberculosis work in Lancashire, and an article entitled "The value of *x*-ray work in a tuberculosis dispensary" appeared in *Tubercle* in 1927. He also rendered important pioneer service in regard to the treatment of tuberculosis by artificial light at centres established in tuberculosis dispensaries. After two years' experimental work at the one in Ashton-under-Lyne he proved that this treatment was particularly valuable in the case of lupus and adenitis with abscess formation and skin involvement. In the past twelve months Dr. Stewart had devoted much time to the question of tuberculosis and silicosis, and contributed an article to the *British Journal of Tuberculosis* last January. He was engaged in further research on silicosis at the time of his death. For the following note of appreciation we are indebted to Dr. G. Lissant Cox, central tuberculosis officer to the Lancashire County Council: In the last ten or fifteen years the tuberculosis service in the North of England has had two exceptionally gifted clinical tuberculosis officers—the late Dr. W. C. Rivers, district tuberculosis officer of the West Riding County Council, and John Logan Stewart. Stewart was a typical Lowland Scot. Austere yet kind, bent but not broken by the death of his wife some three years ago, engrossed in his work, possessed of a sure judgement and an entirely unselfish nature: these qualities made him loved and respected by all his colleagues, patients, and the doctors who so frequently consulted him. Visitors from many lands went to Ashton-under-Lyne; all returned impressed with Stewart's work. But this it was which made him stand out above the crowd: woven into every part of his being, and controlling his unceasing work, was a fierce yet sane sympathy with the sufferer from tuberculosis. For such sufferers he lived, and for them he died. A colleague (J. R. K.) writes: The passing of John Logan Stewart will be regretted with particular poignancy by his old classmates of Glasgow University. One remembers the steadfast honesty of his mind and the most lovable gentleness of his manner. Whatever Stewart set his hand to he did with all his might. Many will miss his counsel, as a tuberculosis specialist, as an expert in the radiology of the chest, or in the theory and practice of ultra-violet ray treatment. But all who knew him will cherish the memory of his sterling character and of his full-hearted devotion to the cause of the suffering.

Dr. GEORGE SCARR died on February 11th, at the age of 76, after a life devoted to many kinds of public service and spent mainly at Radcliffe in Lancashire. He received his medical education at Trinity College, Dublin, where he graduated M.B. in 1884, and obtained the diploma L.M. of the Rotunda Hospital; he became L.R.C.S.I. in 1906. More than thirty-two years ago he went to Radcliffe and joined the late Dr. Gill in partnership, but found time in the course of a busy practice for energetic work in connexion with the urban district council and the St. John Ambulance Brigade. For many years he was the chairman of the local health committee; he presided over the district council from 1919 to 1921. He actively associated himself with the establishment of the Bealey Convalescent Home and its use as a maternity home. He represented the Radcliffe district on the Bury and District Joint Hospital Board; after election to the county council he became a member of its public health committee and devoted himself unsparingly to the improvement of health conditions generally, and in particular to forwarding the work of the Sick Nursing Association. In 1901 he was appointed honorary surgeon to the local St. John Ambulance Brigade and Sick Nursing Division and helped them to obtain well-equipped accommodation, which served during the war as a military auxiliary hospital, of which he became superintendent. For these services he was awarded the O.B.E. in 1920. Educational progress in Radcliffe owed much to his personal support; he was one of the strongest advocates of the establishment of the public library, and was chairman of the Library Committee. Dr. Scarr was vicar's warden of St. John's Church for more than twenty years, a lay representative to the National Assembly, and a member of various diocesan and ruri-decanal organizations. In 1917 he was appointed a J.P. for the County of Lancaster. For many years he was a member of the British Medical Association; he served on the Lancashire County Panel Committee, and was chairman of the Insurance Committee. His personal popularity and the grateful recognition of his services drew a large congregation to the funeral service on February 14th in St. John's Church.

Dr. PERCY ASHWORTH, who died at the age of 54, on January 26th, received his medical education at Owens College, Manchester. He obtained the diplomas M.R.C.S., L.R.C.P.Lond. in 1887, graduated M.B., B.S., with honours, in 1888, and proceeded M.D. and F.R.C.S. in the following year. During his distinguished career as a student he won numerous honours, including a gold medal in physiology and various medical and surgical scholarships. He had conducted for many years a large practice in Southport, and held the appointment of assistant surgeon to the Clinical Hospital for Women and Children in Manchester. He was an ex-president of the Southport Medical Society, and for many years had been a member of the British Medical Association. He had contributed articles on surgical subjects to the *British Medical Journal* and to the *Transactions of the Manchester Pathological Society.*

Universities and Colleges.

UNIVERSITY OF OXFORD.

As announced in our advertisement columns, an examination for the Theodore Williams Medical Scholarship will begin on June 4th. It is of the value of £100 a year, and tenable for four or five years. Full particulars can be obtained on application to the Senior Tutor, Pembroke College, Oxford.

UNIVERSITY OF LONDON.

THE Senate has accepted with thanks an offer by the trustees of the late Mr. C. H. Clark of £10,000 for the establishment of a lectureship in the history and progress of preventive medicine and tropical hygiene, and also a grant of £1,000 from the Beaverbrook Fund for Medical Research, forwarded by the Prime Minister. The grant will be applied to the purposes of, and administered under the scheme for, the Thomas Smythe Hughes Medical Research Fund.

Professor W. E. Le Gros Clark has been appointed, as from September 1st, to the University Chair of Anatomy, tenable at St. Thomas's Hospital Medical School.

A degree of Ph.D. has been instituted in non-clinical subjects for both internal and external students in the Faculty of Medicine.

The Geoffrey E. Duveen Travelling Studentship in oto-rhino-laryngology, of the value of £450, has been awarded for 1929 to Mr. Nehemiah Asherson, M.B., B.S., F.R.C.S.

On the recommendation of the School Committee of University College Hospital Medical School, Dr. G. R. Cameron has been appointed to the Graham Scholarship in Pathology for two years, from September 1st, 1928.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—T. A. Barnabas, C. M. Brooks, N. Das, H. W. E. Dickey, R. Frankling, K. E. Gallaher, K. Girgis (Section I).
MEDICINE.—W. A. A. Collington, H. M. Feldman, L. P. Gregory, C. K. McCoan, C. F. C. White.
FORENSIC MEDICINE.—C. W. Ellison.
MIDWIFERY.—R. K. Nandlal, C. Skinner.

The diploma of the Society has been granted to Messrs. T. A. Barnabas, C. M. Brooks, W. A. A. Collington, N. Das, L. P. Gregory, C. K. McCoan, and C. F. C. White.

Medical News.

MR. A. W. SHEEN, F.R.C.S., professor of surgery and director of the surgical unit of the Welsh National School of Medicine, will deliver the Hunterian Oration before the Hunterian Society at the Mansion House, E.C., on Monday, March 4th, at 9 p.m.; the subject is some aspects of the surgery of the spleen, illustrated by lantern slides.

A SPECIAL discussion on industrial dermatoses, their causation, recognition, prevention, and treatment, arranged by the Sections of Dermatology and Epidemiology of the Royal Society of Medicine, will take place at 1, Wimpole Street, W., on Thursday, March 21st, at 4.45 p.m. A selection of cases will be shown at 4 p.m.

UNDER the auspices of the Chadwick Trust a Malcolm Morris Memorial Address will be given by Sir Norman Walker at 5.15 o'clock, on May 16th, at the Royal Society of Arts, with Sir StClair Thomson in the chair.

THE annual general meeting of the Medical Officers of Schools Association will be held at the rooms of the Society of Medical Officers of Health, 1, Upper Montague Street, Russell Square, W.C.1, on Friday, March 15th, at 5 p.m.; tea will be served at 4.30 p.m. Sir Henry Gauvain, medical superintendent, Lord Mayor Treloar Cripples' Hospital and College, will read a paper on the combined education of children suffering from physical defects.

AN intensive post-graduate course in general medicine and surgery, including the special departments, will be held at the West London Hospital from March 11th to March 23rd. The fee for the course is six guineas. Full particulars can be obtained on application to the dean, West London Hospital, Hammersmith, W.6.

AT the East London Hospital for Children, Shadwell, E.1, interesting cases will be demonstrated by the honorary staff on Wednesday, March 6th, at 4 p.m. Tea will be served at 3.45 p.m. Medical practitioners are cordially invited.

A SPECIAL two weeks' course in orthopaedics will be given at the Royal National Orthopaedic Hospital, Great Portland Street, W., from March 11th to 23rd. The fee for the course, which is open to all post-graduates, is three guineas.

THE Fellowship of Medicine announces that on Monday, March 4th, at 5 p.m., at the Medical Society, 11, Chandos Street, Cavendish Square, Mr. Herbert Paterson will deliver a lecture on pitfalls in radiology. A demonstration will be given by Mr. E. T. C. Milligan, on Thursday, March 7th, at 5 p.m., at the St. Mark's Hospital, City Road; and on Wednesday, March 6th, at 4 p.m., Dr. S. A. Henry will give a lecture-demonstration at the Wellcome Museum of Medical Science, 33, Gordon Street, on the industrial cancers and their importance in the investigation of the problem of new growth. There is no fee for attendance at the above lecture and demonstrations. From March 11th to 23rd the Royal National Orthopaedic Hospital will hold an all-day course in orthopaedics if there are not fewer than ten entries; a course in [illegible] will be held during the same period at the Ro[illegible] consisting of clinical demonstrations each afternoon. Courses in April will deal with tropical medicine, electrotherapy, medicine, surgery and gynaecology, neurology, and a practitioner's course in general medicine and surgery lasting for an hour and a half in the late afternoon. Copies of all syllabuses, and details of the general course of work in the London hospitals associated with the Fellowship of Medicine, are obtainable on application to the secretary of the Fellowship, 1, Wimpole Street, W.1.

UNDER the auspices of the National Council for Mental Hygiene Dr. Bernard Hart will deliver a lecture on the minor mental disorders of everyday life, at the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Wednesday, March 6th, at 5 p.m.

THE Royal Sanitary Institute will hold its Institute Dinner on Thursday, March 21st, at the Hotel Metropole, with the president, the Duke of Northumberland, in the chair.

DURING Easter a week's excursion for medical practitioners and their families will be arranged to the Mediterranean coastal resorts, including Cap d'Antibes, Juan-les-Pins, Cannes, Le Cannet, Grasse, Vence, Mentone, Monaco, Monte Carlo, and Beaulieu. Further information may be obtained from the president of the Société Médicale du Littoral Méditerranéen, 24, Rue Verdi, Nice.

THE Water Pollution Research Board of the Department of Scientific and Industrial Research issues periodically in typescript a summary of current literature bearing on water supplies, sewage, trade waste waters, river pollution, and kindred subjects. The issue for January has been placed in the Library of the Association, where it will be available for the use of members.

THE Savill prize (value £15) of the West End Hospital for Nervous Diseases is offered in 1929 for the best thesis on a neurological subject submitted to the examiners not later than October 31st. The prize is open to post-graduates who have attended the practice of this hospital on at least ten occasions, and candidates must submit the subject of their choice for the approval of the examiners not later than April 9th. Full particulars may be obtained on application to the secretary, West End Hospital for Nervous Diseases, 73, Welbeck Street, W.1.

DR. P. MERRIN has been unanimously appointed chairman of the Kingstown Urban District Council. This is the first time a medical man has been appointed to this office in the premier township in the Irish Free State. Dr. Merrin has acted as a chairman of the Public Health Committee for the past nine years.

AT the end of 1928 *Lijecnicki vjesnik* ("The Medical Advertiser"), the monthly journal of the Croatian Medical Society in Zagreb, celebrated its fiftieth anniversary. During its existence this periodical has developed gradually from a modest beginning, and has published 1,554 articles by 695 different authors; the rapidity of its recent growth is indicated by the fact that in 1928 it published 211 articles by 176 different authors.

THE annual congress known as the Journées Médicales de Paris will be held from June 9th to 14th. The subscription is 50 francs. Further information can be obtained from Dr. Léon Tixier, 18, Rue de Verneuil, Paris.

THE Annual Congress of the German Roentgen Society will be held in Vienna from April 20th to 22nd, under the presidency of Professor Hans Meyer of Bremen.

THE two German-Spanish journals named *Revista Medica de Hamburgo* and *La Medicina Germano-Hispano-Americana* have been united into a single organ, entitled *Revista Medica Germano-Ibero-Americana*, under the direction of the two previous editors, Professor Mühlens of Hamburg and Professor J. Schwalbe of Berlin.

DR. LUDWIG ZAMENHOF, the inventor of Esperanto, has recently celebrated his seventieth birthday.

THE following resolution adopted by the Grand Council of the National Citizens' Union has been sent to the Minister of Health: "With a view to the reduction of the numbers of mentally afflicted, unfit, and diseased persons, an inquiry should be held into the best method of dealing with mental deficiency and incurably diseased persons, including a special inquiry into the possibility and advisability of legalizing sterilization, under proper safeguards, and in certain cases"

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (*Advertisements, etc.*), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediocra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

URTICARIA AND MALTED MILK.

DR. EVA MCCALL (London, W.1) asks whether any case has been recorded of an attack of urticaria following the ingestion of malted milk. She writes: A case has recently come to my notice of a cup of malted milk being taken for insomnia about 1 a.m.; ten to fifteen minutes afterwards intense itching of the palms set in, and was followed by an outbreak of "nettle rash" on the arms, wrists, chest, and back. The eyelids were also affected. The patient in question had never taken the preparation before, and had no idiosyncrasy to any other articles of diet. The eruption cleared up in about twenty-four hours, but the patient felt very out of sorts for a day or two afterwards.

TREATMENT OF UNCONTROLLABLE COUGH.

"D. H. A." asks for advice in the treatment of a patient, aged 48, who has suffered for many years from an uncontrollable cough attended with profuse expectoration. When young he had nasal obstruction, due to enlarged turbinals, portions of which were removed; the breathing power was improved. The present condition is abundant anterior and posterior nasal catarrh and laryngeal irritability, making the coughing almost incessant. The bronchial tubes are clear. The patient is of a nervous temperament: the general health is good and there is no asthma. He has had treatment by a specialist, but to no purpose. Unfortunately he is a heavy smoker, but he objects to giving up the habit. There appears to be a vicious circle in the case. The frequency of the cough is not only a distress to himself, but to all his friends. Is this a case for hypnotic suggestion? Can any method of relief be suggested?

EMISSION WITHOUT ORGASM.

"M.B., B.S." writes: A male patient, aged 50, apparently healthy, complains that he suffers from failure of orgasm at emission; otherwise the act is normal, and can be repeated. I should be glad of suggestions for treatment.

DIPHTHERIA CARRIERS.

"H. H." writes: What is the legal position in the following case? A servant in a house has been in contact with a case of diphtheria after ten days' service. At the request of the mistress a swab is taken. Report gives Klebs-Loeffler bacilli present, there being no clinical evidence whatever. Is one bound to report such a case, and can the medical officer remove such case forthwith? From a long experience in general practice I can recall numerous errors due to relying on laboratory diagnosis alone, and I still maintain that clinical evidence should be the main basis before the subjects should lose their liberty.

*** We have referred this question to Dr. J. Graham Forbes, who makes the following comment:

The Infectious Diseases Notification Act (1889) provides the legal means *available* for the compulsory removal and isolation of a case of infectious disease, which are applied unless there are convenient facilities for isolation and treatment in a private house. In the case in question the desirability or necessity to notify a carrier of Klebs-Loeffler bacilli, presenting no clinical signs of diphtheria, must be a matter *for the practitioner personally to* decide on the particular circumstances affecting the person concerned, and in this instance her employer and those of the family with whom there is necessarily contact, particularly if there are children, in view of their greater liability to attack, when infected. Obviously it is impracticable by notification to secure removal to hospital of every diphtheria carrier, and such a course is only advisable in certain cases, on condition that the original bacteriological report has been confirmed by subsequent examination, *and*, most important of all, by the isolation in pure culture of the bacillus for *application of the virulence test.* If found virulent, then decision should be made as to the necessity for notification, and this must depend on the circumstances of the case. The Notification Act does not *legally*, I believe, apply to the carrier unless it can be said that the individual is *suffering from the disease. The notification of diphtheria* carriers is frequently a matter for arrangement with the medical officer of health, and may be dependent on his particular views and wishes. In the case in point, it would seem advisable to refer the matter to the local medical officer of health, *if* there is confirmation of the original report and if the bacilli found are proved to be virulent.

MOONSHINE?

DR. E. GERALD STANLEY (Paris) writes: Can "C. I." seriously doubt but that the moon has a very marked influence, not only on the inhabitants of "hot" countries, but on those of all others? Of course, the moon does not "shine"; she reflects to us the light of the sun and also reflects back to us our own light. Recalling the colossal upheaval of the waters of the earth which we call tides, caused by the moon, the effect of which is more than double that of the sun (7 to 3), imagination suggests terrifying possibilities as to her influence on human actions. The "harmful" action of the moon, especially in perigee, had been suggested three thousand years before Galileo; to the best of *my knowledge the only suggestion of the application to human* ills was made by Rudyard Kipling before the Royal Society of Medicine last year. If "C. I." is really interested in these awful *possibilities, he should address his inquiries to astronomers* and physicists, and, above all, to those few who still have intelligent imagination. As I reflect, a song comes back to me from my *rather younger days, "I'm such a silly when the moon comes* out." The writer of this lyric had imagination; in our pitiful ignorance why not hold speech with such, even though they only write songs for the Gaiety?

SIR JAMES BARR writes: Why does "C. I." (February 16th, p. 331) seek information from "any medical man" about moonshine? Medical men do not possess a monopoly in wisdom or knowledge on any subject. Why does he not himself investigate the truth or otherwise of what he "hears so often"? In an early number of the *Health Journal* there was a very informative article by Professor Baly of Liverpool on the effects of the polarized light of the moon on the growth of seedlings and the maturation of plants. These, of course, are beneficial effects, but, on the other hand, it is well known that polarized light reflected from the snow is seriously damaging to the eyesight of the St. Bernard dogs, so much so that it is feared that that variety of dogs may become extinct. It is not likely that the effect on human species in the East would be so serious, but we should be all pleased to hear of any reliable information which can be gathered on the subject.

DR. WINNIFRED W. BOLAND (Newry, co. Down) writes: I have just returned from a two years' stay in an up-country district in Bengal. I had my bed on a south-east corner of the verandah all the year round, except during the monsoons. The moon shone full on my face as long as it was not directly overhead, which was very rarely. I suffered no ill effects, but a friend who stayed with me for four months always took care that the moon should not shine on her face, as she once got "moonstruck." Her husband woke her up because her face was all drawn on one side and continued so for a few hours after she was roused. I never met anyone else who was "moonstruck," but I did not make any serious inquiries.

"B. H. R." (Glasgow) writes: During three years' residence in Central Africa I found that moonshine gave me a headache. I made it a practice in going out at night to put on a light pith helmet or double felt hat. I connected this harmful influence of the moon with what one reads of in the Psalms, "The sun shall not smite thee by day, nor the moon by night."

"G. A. C. G." writes: From personal experience I can say that the direct rays of the moon on a sleeper can be very disagreeable, if not actually harmful. In the Middle East such exposure caused nightmares and headaches. In the Far East these symptoms were accentuated and accompanied by a morning "thick head." Prevention entailed moving the bed or closing the shutters.

"H. M. S." writes: There is a superstition in Burma that exposure of the face and head to moonlight while in bed has a baneful effect upon one's brain, meaning mental make-up. Perhaps this is evolved from the legend that mental storms in the insane correspond to phases of the moon.

INCOME TAX.

Depreciation of Plant and Machinery.

"A. B. C." has claimed an allowance, based on 15 per cent., in respect of an electro-cardiograph. The inspector is willing to allow the cost of replacement if and when incurred, but not the percentage allowance for depreciation. In his view the electro-cardiograph is an instrument, and not an item of "plant or machinery."

*** In a fairly recent case, Daphne *v.* Shaw, decided in 1926, Mr. Justice Rowlatt said: "It is impossible to define what is meant by 'plant and machinery' . . . it means apparatus, alive or dead, stationary or movable, to achieve the operations which a person wants to achieve in his vocation." In that particular case the judge refused the allowance when claimed in respect of the appellant's professional library, but a perusal of his judgement leaves one convinced that he would have granted it in respect of the apparatus mentioned by "A. B. C." We suggest that he refer the inspector to the case quoted above.

LETTERS, NOTES, ETC.

TREATMENT OF PNEUMONIA.

DR. R. C. WORSLEY (Topsham) writes: Recent letters on the treatment of pneumonia in the *Journal* (January 5th, p. 15, and February 16th, p. 332) prompt me to record a singular case I attended recently. A man, aged 76, had, on November 26th, an attack of localized pneumonia at the right base, which I took to be influenzal, and which ended by crisis on December 2nd. On December 21st he was found to have broncho-pneumonia, involving the left base; this spread over the back of the lower lobe, the temperature ranging between 100° and 102° F. for more than a month. On the ninth day of this attack he was needled over the point of maximum dullness, half an ounce of clear fluid being removed. Three days later he was needled again, without result. A week later still I drew off two ounces of similar fluid, which was found to contain many pus cells, but to be sterile on culture. Colloid manganese injections and creosote were given until January 22nd, when a specimen of sputum was found to contain a few *Staphylococcus albus* and large colonies of streptococcus. Creosote was now pushed twice a day. From that day the temperature fell by lysis, and it has remained practically normal since. The patient was allowed to sit up for short intervals from February 2nd. I do not pin my faith to creosote in pneumonia, but I feel convinced that it exerted a striking influence on the course of the infection in this case, which, considering the age of the patient and the severity of the disease, makes his recovery remarkable. I should be interested to hear if others have seen similar good results in lobular pneumonia.

CARDIOSPASM OR ACHALASIA OF THE CARDIA.

MR. G. W. RAKE (writing from the Johns Hopkins University, Baltimore) says: I wish to correct an error which appeared in my letter to the *British Medical Journal* of December 15th, 1928 (p. 1111), on achalasia, which error was also pointed out by Mr. Beatty in a letter to the *Journal* of January 5th, 1929 (p. 45). Owing to an oversight the first series of figures supposed to be the measurements of the thickness of the oesophageal wall are in reality those of the diameter of the lumen of the specimen. The following figures are those of the thickness of the wall in the first case (the compensated achalasia):

Just below the cricoid	0.2 cm.
Middle of oesophagus	0.8 cm.
Just above the cardia	0.45 cm.

I apologize for the interval of time allowed to elapse before its correction, but unfortunately Mr. Beatty's letter has only just come to my notice.

*** This correction was made, in Mr. Rake's absence abroad, by Dr. A. F. Hurst on January 12th.

MODERN BREAD-MAKING.

DR. A. OGIER WARD (London, E.C.2), in the course of a letter, writes: Can there be any more serious procedure than to eliminate from flour the most valuable part of the grain? The question naturally arises, Why is it removed? The answer requires some lengthy explanation. When we depended on water and windmills for all our flour man could thrive on bread because he got the entire product of the grain minus the bran. Unfortunately, flour so prepared became rancid if kept too long, by reason of the oily products in the phosphatic and nitrogenous elements present, particularly in the germ. And then came the steel miller, who removed the germ and triumphantly offered a fine white flour which would keep almost indefinitely. The demand for whiten ss spread, and instinctively the labouring classes began to demand more meat. No wonder! They no longer got the nitrogenous and pho-phatic elements in their bread. There are scientists who tell us that the white flour now sold contains all essential ingredients for health. Probably it does for prosperous persons who have as much meat and other foods as they want, but growing children and the poorer classes require all the phosphates and nitrogenous foods they can get, and it is wrong t · rob them of these ingredients in their staple diet. From some well-to-do adults and from many of the ignorant poor I hear that they prefer white bread. I have yet to hear of a child who prefers it. I consider it is criminal folly to extract the most valuable part of the grain and then to buy it back, as many do, in the form of a commercial product.

HARVEY AND SCARLATINAL DESQUAMATION.

DR. J. D. ROLLESTON (London, S.W.6) writes: Referring to the statement in my paper on "The history of scarlet fever" (*Journal*, November 24th, 1928, p. 926) that Sennert was the first writer to mention scarlatinal desquamation, my friend Dr. Archibald Malloch, librarian of the New York Academy of Medicine, has drawn my attention to the following passage of Harvey's *Prelectiones Anatomiae Universalis* (p. 12), which was published in 1886, the lectures having been given probably in 1616 for the first time: "Homine porrigine meale avibus volmando scalptu animalibus equo curried the bird att St. James bemealing as a man scarlet." In their introduction to the *Prelectiones* the committee of the Royal College of Physicians interpret this puzzling sentence as a comparison of the desquamation after scarlet fever to the shaking off of the feather scales of a bird in the royal menagerie then kept at St. James.

CEREBRAL ANGIOSPASM.

DR. F. G. GARDNER (Oxford) writes: The case reported by Dr. F. J. Allen in the *Journal* of February 16th (p. 323) reminds me of one I saw some fifteen years ago. I was asked to visit a man, aged about 75, as he had had a "seizure." I found him hemiplegic, aphasic, and much confused. The urine was loaded with albumin. Hemiplegia, or other "plegias," are not uncommon in uraemia—without gross brain lesions. In this instance, with some purgation and complete rest, the paralysis completely disappeared in the course of twenty-four hours, I confess to my surprise, as I had regarded it as probably of an organic nature. I cannot say anything of the patient's after-history, as he went out of my ken. To-day, I suppose, I should call the condition "cerebral angiospasm." It would be interesting to know the condition of the kidneys in Dr. Allen's case, which seems to have been very similar to mine.

HERPES AND VARICELLA.

"R. P." (Lancashire) writes: In previous issues of the *Journal* suggestions of a relationship between herpes and chicken-pox have been made; the following case appears to have some bearing on the matter. A woman contracted herpes ophthalmia on January 10th; her son, aged 10, returned to school on the 19th, and in a few days chicken-pox developed. Her daughter, after a few days at school, also began an attack of chicken-pox; the youngest daughter did not return to school owing to a cold, and on February 4th chicken-pox developed of a more severe type than in the boy and girl at school. There is no other case of chicken-pox in the district. I should be interested to know what conclusions might be drawn from the above.

TREATMENT OF INFLUENZA.

DR. GARRY SIMPSON (London, W.2) writes: In the *Journal* of June 4th, 1921 (p. 835), Sir G. Archdall Reid of Southsea recommended for cases of acute toxaemia, pneumonia, etc., a mixture of aspirin 10 grains, phenacetin 5 grains, and pulv. ipecac. co. 5 grains, once or twice daily. For some years I have treated all cases of influenza in this way, with such satisfactory results that I would strongly advise brother practitioners to give it a trial. The patient goes to sleep and in an hour or so wakes up with a profuse perspiration, so that fresh garments must be ready to change into. The temperature falls, and the patient has intense relief from the pains, headache, etc. The powder should be repeated in six hours' time, if necessary. Most cases of influenza are cut short by this treatment in twenty-four hours.

ERYTHEMA NODOSUM.

DR. R. A. ROBERTS (Flintshire), continuing the discussion on the relation of erythema nodosum and tuberculosis, published on February 9th (p. 266) and 16th (p. 332), writes: I attended recently a family in which the mother and four children had erythema nodosum simultaneously: one child, a boy aged 14, died shortly after of acute pulmonary tuberculosis.

INFANT FEEDING.

MR. LESLIE J. HARRIS, D.Sc., writes to point out that the work described as having been done by him in the Nutritional Laboratory, Cambridge (*British Medical Journal*, February 23rd, p. 333), was actually done elsewhere, *and four years* before the inception of the Nutritional Laboratory.

OSTEOPHYTIC GROWTH IN WOMEN.

DR. J. ALEX. THOMSON (Harrogate) asks us to correct a remark attributed to him in the account of the discussion on osteo-arthritis published in the *Journal* of February 23rd. In the first column of page 353 he is reported as having said that osteophytic growth in women was rare, and that he had seen two cases only. What he did say was that extensive osteophytic growth was uncommon among women, and he then put on the screen radiograms of the two worst cases of the kind which he had been able to find among a large number of radiograms.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 47, 48, 49, 50, 53, 54, and 55 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 51 and 52.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 55.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

203. Primary Tuberculous Pericarditis.

REMARKING that tuberculosis can occur primarily in the pericardium, J. A. CLARKE, jun. (*Amer. Journ. Med. Sci.*, January, 1929, p. 115), reports two cases of this condition and comments on eleven others gathered from the literature. Of these thirteen patients, eleven were males and two females; their ages ranged from 13 to 55. The duration of the disease is long, the shortest case lasting three and the longest twenty-two months after apparent onset. It is not necessarily fatal, and in six of the cases there was a successful arrest of the pericardial condition. Shortness of breath was the most common symptom, though cough and weakness were almost as constant, and fever was prominent in all. Pain was uncommon. Other symptoms were oedema especially marked in the face in three cases), pleural effusion, and ascites. The outstanding features of the disease are cardiac failure with fever and great increase in the cardiac outline. The diagnosis was made in seven cases from *ante-mortem* materials, and in the other six by animal inoculations with the pericardial or pleural fluids. Death occurs from heart failure or miliary tuberculosis, the latter being the more common, and it is much more frequent in this than in other forms of tuberculosis. In most cases fluid is present in the pericardial sac, and Clarke remarks that since this fluid contains viable tubercle bacilli it should be evacuated frequently. When it is impossible to effect this by paracentesis a pericardotomy should be performed. Tuberculosis should be suspected in every case of pericardial effusion, especially if it is purulent or sanguineous; in the absence of fluid, cardiac decompensation with increase in the cardiac measurements and decided fever over a long period should cause suspicion of tuberculosis.

204. Functional Albuminuria.

O. JERVELL (*Norsk Mag. f. Laegevid.*, December 1928, p. 1189), on examination of 3,507 athletes aged from 10 to 39, found albuminuria in 9.9 per cent., transient albuminuria being more frequent than orthostatic. It was very difficult, however, to draw a sharp line between the various forms of functional albuminuria. Examination during training showed that some individuals very readily had albuminuria, while others had none or only after very energetic training. A transient indisposition or chill might be the cause of albuminuria developing after an effort which would not have produced it under normal conditions. Albuminuria was more frequently observed after an effort at the beginning of training than when training had been carried on for some time. It is, therefore, advisable for an individual in whom functional albuminuria is frequently found to practise physical exercises. Examination of 112 medical students before and after a short dip in the sea at 65° F. showed that 83 did not have any albuminuria either before or after their bath, 16 had albuminuria both before and after, and 13 only after. Fractional analysis of the albuminuria and globulin in the urine showed a relatively high globulin content. Jervell states that functional albuminuria is due to the action of lactic acid on the renal tissue. Lactic acid formation is partly due to impaired circulation with resultant defective carbohydrate consumption, and partly to muscular effort. There is a certain parallelism between the excess of lactic acid in the blood and concentration of lactic acid in the urine and albuminuria. When the concentration of lactic acid in the blood exceeded 75 mg. per cent. after effort albuminuria was always found in the urine. In many cases the administration of alkalis by the mouth could prevent the appearance of albuminuria, especially of the orthostatic type. The statistics of Norwegian insurance societies show that of 72 insured persons with orthostatic albuminuria three had died of peritonitis, influenza, and chronic nephritis after six, one, and twenty-two years respectively. Jervell concludes that the presence of functional albuminuria should not exclude the individual from life insurance, military service, or sport.

205. Immunity in Dengue Fever.

G. BLANC and J. CAMIN PETROS (*C. R. Soc. de Biologie*, January 11th, 1929, p. 31) cite experimental evidence that dengue fever leaves behind it an immunity lasting for several months. In their first series of experiments they inoculated a number of persons who were convalescing, or who had recovered from dengue a few weeks previously, with virulent material (probably blood). None of the inoculated subjects developed fever, indicating that they possessed definite immunity. In their second series the authors inoculated about 70 volunteers in February and March, 1928, with virulent material; of these, 25 developed typical experimental dengue fever. In December, 1928, 20 of these successfully inoculated subjects were traced; none of them, it was found, had contracted dengue naturally during the severe epidemic in Athens of August and September. Nine of them were subjected to a second experimental injection of virus, 2 c.cm. of the patient's serum being used. None of the inoculated subjects reacted, though control persons developed experimental dengue. The authors conclude that immunity does develop after dengue fever, and they hope that it will be of a sufficient degree to prevent the occurrence of another epidemic in the summer of 1929.

206. Inoculation against Cerebro-spinal Fever.

DURING his residence at Katanga in the Belgian Congo from October, 1925, to May, 1927, BRÜYNOGHE (*Journ. de Méd. de Paris*, December 13th, 1928, p. 1005) practised vaccination against cerebro-spinal fever among the native males. Three subcutaneous injections were given in doses of 0.5 c.cm., 1 c.cm., and 1 c.cm. respectively. The results were as follows. The percentage incidence of cerebro-spinal fever was higher among the non-vaccinated than among the vaccinated, and the disease was at least ten times less frequent among those who had been vaccinated than among those who had received no injections. Inoculation conferred the greatest amount of protection in those centres where it was applied to all the natives, the incidence of the disease being greatest among those vaccinated workmen who were constantly in contact with the non-vaccinated. The author therefore recommends that the Government should take measures to enforce general inoculation against cerebro-spinal fever in places where the disease is epidemic.

207. Spirochaetosis Icterohaemorrhagica.

V. DE LAVERGNE (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, November 15th, 1928, p. 1493) reports the case of a man, aged 43, who sixteen days after contracting a wound of the scalp, due to falling into a ditch frequented by rats, developed well-marked jaundice and epistaxis, followed by complete anuria of three days' duration. Examination of the patient's serum on the twenty-fifth day showed well-marked agglutination of the *Leptospira icterohaemorrhagiae*. There was no question of the virus having been swallowed, and infection occurred through the wound. Very few other examples of traumatic spirochaetosis icterohaemorrhagica have been recorded, though Fiessinger has reported the case of a guinea-pig which developed spirochaetosis twelve days after having been bitten by a rat.

Surgery.

208. Management of the Colostomy Case.

G. E. BINKLEY (*Annals of Surgery*, January, 1929, p. 71) gives a description of a colostomy irrigator which has been found to be very successful; it is supplied to all patients with a colostomy at the Memorial Hospital, New York, in order that they may easily undertake daily irrigation. The apparatus is composed of bakelite, and consists of a shallow cup with a wide rim; in the centre of the base of this cup is a small circular opening through which a No. 20 French catheter permits the inflow of the irrigating fluid. On one side of the cup is a large opening, a necklike projection or extension which is the outlet for the return fluid, and to this is attached a soft rubber tube which conveys the faecal fluid from the cup to a receptacle. The cup is held in place against the skin by means of four clips which are attached to a canvas belt. For irrigation the inflow catheter is inserted into the colon for three to six inches, and the irrigating can, filled with warm water or a weak solution of potassium permanganate, is placed on a stand a few feet above the colostomy. In bedridden patients the outflow is directed laterally; with ambulatory patients it is directed downwards. The fluid is allowed to flow into the colon until the latter is partly filled. The stimulated peristalsis produced by the distension expels the colonic contents, and this procedure is repeated sufficiently often to ensure the comfort of the patient for twenty-four hours. As a small amount of fluid is retained

in the colon the attachments of the cup are then changed, the inflow catheter being withdrawn and the opening closed by a threaded plug; the outflow tube is removed and replaced by a short bag, the irrigating cup thus forming a colostomy bag. This is worn for half an hour, when it can be replaced by a few layers of sterile gauze over the opening to absorb the small amounts of exuded mucus; the pad is held in place by adhesive straps or a binder. A corpulent patient is fitted with an abdominal support, which prevents any abdominal hernia about the artificial opening.

209. Heterotopic Ossification.

B. FREJKA (*Journ. Bone and Joint Surg.*, January, 1929, p. 157) remarks that under certain pa.holog cal conditions bone may be developed in soft tissues, distant from the skeleton. According to Leriche these new formations depend on two conditions: (1) the presence of embryonic tissue, an undifferentiated tissue with well-develo,ed intercellular substance and tender fibrils, or (2) a local increase in the amount of lime salts. Ossification is rare when the first condition exists by itself. A case of myositis ossificans progressiva is reported which developed in a patient with arthritic predisposition and with a congenital microdactylia of both great toes. The malady began as an attack of acute rheumatism and led to entire ankylosis of the spine and formation of extensive bony layers, which embraced the thorax and connected it by bony ridges to both humeri. After the disappearance of the last acute symptom the condition of the patient remained unchanged. The *x*-ray picture showed a diminished hypophyseal fossa. The sudden onset in this case confirms its inflammatory origin, and the influx of lime salts was aided by inflammatory infiltration of the entire thoracic wall with large absorption of adjacent bones. Many reported cases have developed without any visible causes, such as after infectious diseases, traumata, or transverse lesions of the spinal cord; such cases must be considered as the same malady with the same *dystrophic constitution, which is possibly due to an* altered metabolism caused by endocrine disturbance. The mode of new bone formation is explained in Leriche's theory. The bone is not formed by osteoblasts, the cells being only modified connective tissue cells, which may appear secondarily in any situation. According to Münchmeyer the course has three stages: in the first, embryonic infiltration occurs; in the second, fibrous condensation appears and the tumour becomes harder; in the third, ossification develops. Myositis ossificans circumscripta should be distinguished from the progressive type. It is usually observed in fractures after traumata and inflammations, and is of two distinct forms: in one the new bone develops in contact with bone, in the other it forms away from the skeleton.

210. The Site of the Bleeding Point in Epistaxis.

G. B. MCAULIFFE (*Med. Journ. and Record*, January 2nd, 1929, p. 6) urges the importance of carefully determining the position of the bleeding point in epistaxis before resorting to plugging. In order of frequency the haemorrhage is traceable to: (1) Kiesselbach's (or Mackenzie's) area, an inch behind and above the nasal spine; (2) the upper portion of the nose near the root of the middle turbinate in arteriosclerotic cases; (3) the middle of the septum from the presence of polyps; (4) the convexity of the inferior turbinate or the floor three-quarters back; and (5) from scattered naevi throughout the nose. Compensatory bleeding from the ethmoidal veins or from the inferior turbinate deep in the nose may occur in elderly people with high blood pressure. While plugging may be the only means of arresting haemorrhage from an unknown site, and its adoption necessitated by the need for obtaining immediate results, its potential dangers from secondary sepsis must be borne in mind; when unavoidable a soft dilatable rubber balloon may be used or gauze strips; in the Symes method a string two feet long is tied at its centre to the tip of a soft catheter, which, after being oiled, is passed through the nose, one end of the string being brought out through the mouth. To the middle of this a pledget of gauze is tied and pulled to the back of the nose by the nasal string, which is held tight while the anterior portion of the nose is packed. The author always administers a saturated solution of calcium lactate.

211. Acute Appendicitis simulating Strangulated Hernia.

C. WEBER (*Zentralbl. f. Chir.*, January 5th, 1929, p. 17) describes the case of a male infant, aged 5 weeks, admitted with a diagnosis of "gastric catarrh and orchitis." Three days earlier vomiting commenced, accompanied by redness and swelling of the right half of the scrotum. The child was pale and thin; there was distinct abdominal distension and faecal vomiting. A cord-like swelling extended from the external ring to the scrotum, in which there was definite fluctuation at the lower part; a strangulated right inguinal hernia was [illegible]d. The child's condition was so bad that Weber decided to perform immediate herniotomy with resection of the bowel under ether anaesthesia. On opening the hernial sac it was found to contain the caecum and the gangrenous perforated appendix, from which pus was escaping. The appendix was removed and the apparently healthy bowel was replaced, the operation being completed by Girard's method. The child made a good recovery. Although an inflamed appendix has been found frequently in a hernial sac, Weber has not discovered any previous record of gangrenous appendicitis in so young a child.

212. Pneumococcal Orchitis.

M. MIRAGLIA (*La Pediatria*, January 1st, 1929, p. 40) reports a case of orchitis occurring in a child aged 2 months. Six days previously he had been exposed to infection from a sister who suffered from a pneumococcal infection of the lung. The boy when admitted to hospital had an inflamed testicle which was evidently suppurating; the abscess was opened, and on culture the pneumococcus was recovered. The child showed no other manifestation of pneumococcal infection. Discussing the mode of infection, the author concludes that it came about through the blood. The prognosis as regards testicular function in the future is regarded as uncertain in this case.

Therapeutics.

213. A Mercurial Diuretic.

M. H. BARKER and J. P. O'HARE (*Journ. Amer. Med. Assoc.*, December 29th, 1928, p. 2060) describe the use of a relatively non-irritating mercurial preparation called "salyrgan" as a diuretic in various forms of oedema, ascites, and pleural effusion. This preparation is a 10 per cent. solution of mercury-salicylallylamide-ortho-acetate of sodium. It has been used clinically as an antisyphilitic as well as a diuretic medicament, and the initial dose is stated as 0.5 c.cm. given intravenously; subsequent doses rise quickly to 1.5 or 2 c.cm., injected once or twice a week. According to Bernheim this preparation is no less efficient than merbaphen, and in 1,000 injections he has not observed even slightly toxic effects. The present authors claim that salyrgan is particularly valuable in circulatory failure, and in the ascites due to cirrhosis of the liver and chronic nephrosis; it may also be of great benefit in the ascites of malignant and inflammatory origin. It seems to be more effective in the presence of acid-forming salts, such as ammonium chloride or ammonium nitrate, in doses of 8 to 15 grams a day. The diuresis begins in about one to four hours and is complete in from eight to twelve hours. The drug is therefore best given in the morning, since otherwise the patient may lose much sleep from frequency of micturition. The authors add that salyrgan failed to give a diuresis in only four cases, the first being a moribund patient with mitral stenosis, aortic insufficiency, and marked congestive failure; the second, a case of hypertensive vascular disease and myocardial insufficiency, with marked pitting oedema and moderate ascites; the third was a case of mitral aortic stenosis; and the fourth a case of hypertensive vascular disease, with myocardial insufficiency and marked pitting oedema and ascites.

214. Intravenous Injection of Calcium Chloride in Acute Epididymitis.

ZUNG-DAU ZAU (*Nat. Med. Journ. of China*, December, 1923, p. 368) records 58 cases of acute gonorrhoeal epididymitis treated in the genito-urinary clinic of the Pekin Union Medical College by intravenous injection of calcium chloride. According to Zau the calcium acts (1) by increasing leucocytosis and so favouring absorption of inflammatory products, and (2) by its depressant effect on the central nervous system, and possibly on the peripheral system also, as suggested by the numbness of the arm following accidental extravasation into the tissues. In the cases first treated 5 to 10 c.cm. of a 10 per cent. solution was the dose; later 15 to 25 c.cm. of a 2 per cent. solution was used. One to five injections were given in this series of patients, and relief of pain was noted in two to twenty-four hours in most instances. In only one case was there no benefit from the treatment. In twenty-seven cases subsidence of swelling or diminution of tenderness occurred on the day of the first injection. The interval between injections ranged from two to five days in most cases, but sometimes they were given daily. Zau's series included two cases of prostatitis and three of arthritis. The majority of cases were ambulatory, and supplementary treatment by local applications and suspensory bandages were also employed. It is stated that toxic effects may be avoided if the injection is given slowly, and that the occurrence of superficial gangrene of the skin is an accident only to be found when the technique of injection is faulty.

215. **Serum Therapy in Chronic Ulcerative Colitis.**

J. A. BARGEN (*Arch. Int. Med.*, January, 1929, p. 50) reports a series of cases of chronic ulcerative colitis in which definite improvement in the general condition followed deep muscular injections of a concentrated immunizing serum prepared from the diplo-streptococci which he isolated in 1924. In seven cases of acute fulminating ulcerative colitis two patients completely recovered, and have remained so, while in the other five the pyrexia ceased and the melaena decreased or disappeared, though slight symptoms remained. Two patients died, one after benefiting definitely from serum treatment. Bargen noted a significant increase in the weight of the patients soon after the administration of the serum had begun, and concludes that neutralization of the toxins is brought about; this is also indicated by the fall in the temperature and the improvement of the pulse. Proctoscopic and radiological examinations similarly showed that this serum acted effectively on the mucous membrane of the colon. Bargen adds that further work on the immunization of horses by these diplo-streptococci is being continued at the Mayo Clinic, and it is hoped that the serum will be rendered still more effective.

Disease in Childhood.

216. **Children's Diseases in the Tropics.**

B. NOCHT (*Monats. f. Kinderheilk.*, December, 1928, p. 217) states that infantile mortality is extraordinarily high in the tropics. In certain regions, such as the former German East Africa, it ranges between 30 and 80 per cent. of all children born alive. The causes of the high mortality are, first, the unsuitable feeding of the children during the first years of life; secondly, diseases due to chill; and, thirdly, infectious diseases. Native children are all breast-fed from birth until the fourth or fifth year, but they are also given all sorts of food, such as mashed bananas or potatoes, which has previously been masticated by the mother. Respiratory diseases are particularly common and fatal in mountainous districts, where clouds, rain, and cold are frequent. The children in these parts run about naked or very inadequately clad. The most prevalent infectious diseases are small-pox, whooping-cough, dysentery, measles, and malaria; scarlet fever and diphtheria are almost unknown. That the high infantile mortality is not due to the climate, but to the poverty and ignorance of the native people, is shown by the excellent results obtained by missionaries with welfare work and education. The diseases which principally attack children in the tropics and run a peculiar course when they do attack them are beri-beri, which exclusively affects breast-fed children, trypanosomiasis, yellow fever, which usually runs a mild course in children, Leishmaniasis, intestinal parasites, and bilharziasis.

217. **Diagnosis of Tuberculous Pulmonary Glands.**

F. PÉCHAUD and P. LAMOTHE (*Gaz. Hebd. des Sci. Méd. de Bordeaux*, December 2nd, 1928, p. 773), as the result of observations made at the Xavier-Arnozan Sanatorium, near Bordeaux, discuss the diagnosis of tuberculous pulmonary glands in children between the ages of 2 and 13. They found that in 55 per cent. of their cases one parent was tuberculous. Among childish ailments measles most frequently appeared as the antecedent illness which weakened resistance to tuberculosis. After an epidemic of measles in the sanatorium four cases changed from latent to fulminating tuberculosis. The classical description of a scrofulous child did not invariably apply. Fever was one of the most important diagnostic symptoms. No particular type could be described; it was not the height of the evening temperature which counted, but rather the amplitude of the oscillation. The sputum was almost invariably positive when it was obtained. Physical signs, so clear and so important in adults, were much more protean in children, and therefore difficult to interpret. Palpation in the cervical and substernal regions might reveal any stage of enlargement of the glands. By auscultation it was often difficult to distinguish between the reaction of the peribronchial glands and actual loss of parenchymatous tissue. An *x*-ray examination was made in 100 cases; 17 thoracic images were normal, in 17 the hilum was definitely affected, 11 showed some reaction round the hilum, in 19 the hilum was more marked than normal but apparently not pathological, and in 20 one or more lobes were affected. The skin reaction was regarded as only of secondary importance after early infancy. Acid-fast and alcohol-fast bacilli were frequently found in the stools. In establishing the presence of the tubercle bacillus in the organism, the authors attach primary importance to radioscopy, radiography, and examination of the sputum and stools.

218. **The Preventorium Child.**

I. D. BRONFIN (*Amer. Journ. Dis. Child.*, November, 1928, p. 931) reviews the clinical features of the pre-tuberculous child. The positive tuberculin reaction constitutes the indisputable evidence of infection, but the child may be, and often is, well nourished and apparently free from active disease. In the majority of instances the child is unhampered throughout life by the latent infection; in some cases, however, miliary tuberculosis or tuberculous meningitis develops. The cases under review comprised a group of 300 children from 2½ years to 16 years of age in a preventorium; 57 per cent. were males and 43 per cent. females. Deficiency in weight of 7 per cent. or more was found in 70 per cent. In 45 per cent. definite cervical or submaxillary lymphadenitis was noted. In 30 per cent. fever was a prominent symptom. An appreciable difference was not observed in the symptomatology or physical signs between tonsillectomized and the non-tonsillectomized groups. The greatest incidence of clinical disease and positive physical signs was noted in those with a history of definite exposure. Physical signs were often negative when the history and symptoms pointed to active disease. *X* ray examination was of the greatest aid in diagnosis when correlated with the other symptoms. The difficulty is stressed of diagnosing tracheo-bronchial tuberculosis, which in this series was frequently responsible for active symptoms. The author advocates the provision of preventoriums for the observation of children who have been exposed to infection, and for the treatment of juvenile tuberculosis.

Obstetrics and Gynaecology.

219. **Hysterosalpingography.**

H. NAHMMACHER (*Surg., Gynecol. and Obstet.*, January, 1929, p. 33) reviews the possibilities of hysterosalpingography as a diagnostic and therapeutic measure. The use of a 40 per cent. lukewarm solution of iodipin has been found to cause no inflammatory changes or detrimental results either to the peritoneal cavity or to the mucous membrane of the uterus and tubes; a very clear picture of the actual anatomical relations can be obtained. With the pelvis raised and a 30° angle of inclination of the Roentgen tube highly satisfactory radiograms result; the author advises closing the cervix after injection to prevent the iodipin escaping and to assist its penetration into every angle of the uterus and tubes. Not only has salpingography been found to be an unequalled diagnostic means in the study of sterility, but since the injections may release delicate occlusions of the fimbriated ends of the tubes they may have a decided therapeutic value. Radiograms of the uterine cavity have an additional diagnostic value in cases of uterine tumours when other measures of examination fail to give exact data. In all cases of fresh tubal infections, however, uterine examinations by this method are contraindicated because of the possibility of causing injury which would not result from mere manipulation. The recognition of such limitations to the use of salpingography is not difficult, since other methods of examination indicate clearly these unsuitable cases. Since it was found that filling the uterine cavity with iodipin in the early months of pregnancy did not lead to abortion, hysterograms in selected cases may be of use in the early diagnosis of intrauterine pregnancy; in genital fistulae salpingography is of value in clearly demonstrating anatomical relations, determination of which by using a sound might lead to injury

220. **Chorea Gravidarum.**

ACCORDING to A. M. CAMPBELL (*Amer. Journ. Obstet. and Gynecol.*, December, 1928, p. 881) chorea in its major form is one of the rarer complications of pregnancy; there is ample evidence that it is an infection with a predilection for the basal ganglia of the brain and for the endocardium, more particularly the mitral valves. A neuropathic temperament and hereditary history have been noted in many cases. Streptococcal infections, such as scarlet fever, acute rheumatism, or endocarditis, often precede chorea gravidarum. In one series of 50 necropsies valvular lesions were found in 66 per cent. The disease is more common among young women, especially primiparae. After an extensive review of the literature Campbell concludes that all cases of chorea gravidarum are of infectious origin, as are the endocarditis and arthritis that usually accompany the cerebral lesions. Pathological inflammatory changes are found in the brain, especially in the basal ganglia. Conservative treatment will suffice in the milder cases, but labour must be induced in the extremely severe forms; Caesarean section may be performed when the child is viable. Campbell remarks that all obstetricians should realize the dangers of chorea gravidarum to both mother and child. Pre-natal care, especially

directed to removal of all foci of infection whenever practicable, and also to the management of the neurotic patient in order to secure mental and physical rest, should reduce the incidence and severity of this disease.

221. The Pyramidon Test in Interrupted Ectopic Pregnancy.

According to S. M. KLEIN (*Arch. f. Gynäk.*, November 13th, 1928, p. 255) examination of the blood serum by the pyramidon test is a valuable diagnostic aid in cases in which the clinical history and signs point to the possibility of interrupted ectopic gestation. The test, applied to examination of the blood serum by Autoschina, probably indicates the presence of small amounts of haematin derived from the intraperitoneal haemorrhage. One drop of serum is added to a mixture of 3 c.cm. of a 5 per cent. solution of pyramidon in 96 per cent. alcohol, 8 drops of 50 per cent. acetic acid, and 8 drops of 3 per cent. hydrogen peroxide solution. A positive result is shown by the appearance within twenty minutes of a light blue, deep blue, or violet coloration, and is obtained in 90 per cent. of cases of interrupted tubal pregnancy. A coloration is to be expected when the patient is menstruating, and Klein also obtained a positive result in two cases of ovarian apoplexy. In 36 cases of childbirth, uterine abortion, and adnexal inflammatory tumours a negative reaction was obtained in 30, a doubtful in 4, and a positive in only 2.

222. Tuberculous Salpingitis.

G. VAN S. SMITH (*Amer. Journ. Obstet. and Gynecol.*, November, 1928, p. 701) analyses 63 cases of tuberculous salpingitis, in which the diagnosis was made or confirmed microscopically, and which gave the low incidence of 0.48 per cent. among 13,000 laparotomies, and 2.26 per cent. among laparotomies for tubal inflammation, in one gynaecological clinic. Only three patients were aged less than 20, and only four more than 40. A past history pointing to extragenital tuberculosis, or a family history of tuberculosis, was given by one-fifth of the series. Two-thirds reported pain in the lower part of the abdomen, and one-third backache; menstrual abnormalities appeared to be absent in one-fifth, and acquired dysmenorrhoea was reported in one-half. Premature cessation of the menses was present in two patients only, aged respectively 19 and 32; metrostaxis in nine only. Of 55 married patients, two-thirds had never been pregnant. Signs of probable pulmonary tuberculosis were detected in one-fifth of the series. In one-fourth there was coincident tuberculous disease of the peritoneum, and the ovary and endometrium were each affected by tuberculosis in a like proportion of cases. No definite conclusion is drawn from the results of various operative treatments, but conservative operation on early or moderately severe cases did not give satisfactory results and was never followed by pregnancy.

Pathology.

223. The Bile Acids in Jaundice.

I. KATAYAMA (*Arch. Intern. Med.*, December, 1928, p. 916) reports further studies of bile acids in the blood and urine in a series of 32 cases representing different types of jaundice. In normal controls the icterus index ranged from 4.4 to 7.0, the average being 5.7, and van den Bergh's bilirubinaemia test was negative in all except one, in which the indirect reaction was weakly positive. The bile acids of the blood serum ranged from 5 to 12 mg. per 100 c.cm. estimated as sodium glycocholate, averaging 7 mg. Tests for urobilin excretion and for bile acids in the urine were negative. In patients with cholecystitis, disease of the liver, catarrhal and obstructive jaundice, cardiac decompensation, and duodenitis a marked increase in the bile acids of the blood serum, accompanied by their urinary excretion, was found. Katayama states that the changes in the concentration of bile acids in the blood bear no relation to variations in the bilirubin content of the blood; he found that the bile acids appeared in the urine when their concentration in the blood serum exceeded 20 mg. per 100 c.cm. While acute obstructive or catarrhal jaundice caused the bile acids of the blood to rise rapidly from about five to seven times the normal, in chronic obstructions such increase was only three or four times the normal. This smaller concentration of bile acids in the blood in chronic obstructions may be explained as follows. Since the production of bile acids in the body is limited, and since normally they are excreted into the intestine to be reabsorbed and circulated again, their amount in the body is kept constant; in a long-standing obstructive jaundice, however, there is a continuous excretion of bile acids by the kidney without any reabsorption, thus depleting their store in the body.

224. The Thyroid Function in Graves's Disease.

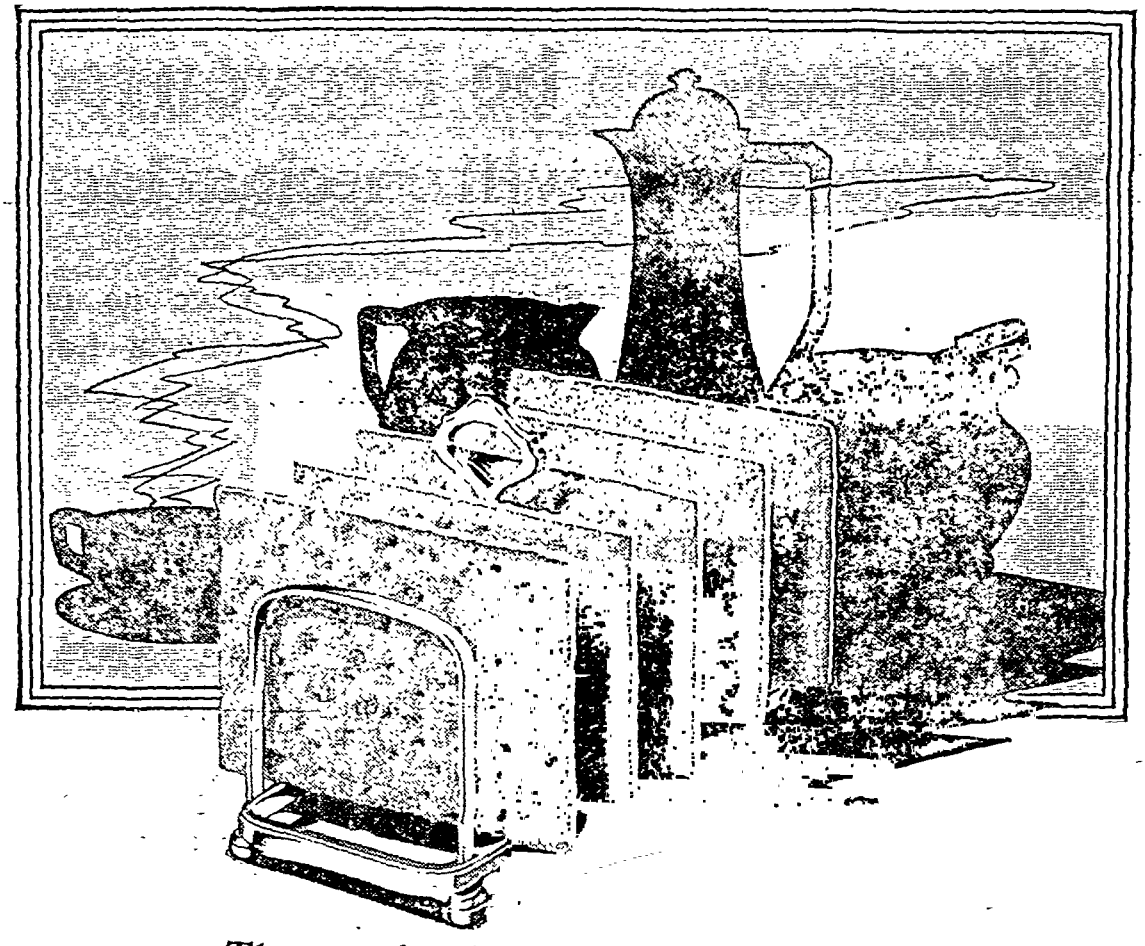
G. S. WILLIAMSON and I. H. PEARSE (*Quart. Journ. Med.*, October, 1928, p. 21) produce evidence, drawn from a study of the therapeutics of Graves's disease, bearing on the two functions in the physiology of the thyroid—the secreting and the iodo-colloid. The report deals only with material taken from cases of Graves's disease treated by partial removal of the thyroid gland: (1) the non-iodized group, consisting of 403 cases, in which iodine treatment was carefully excluded, and (2) the iodized group, containing 104 cases, in which pre-operative iodine treatment was consistently used. Only such cases were considered in which operation was necessary and in which the full clinical syndrome of exophthalmos, tachycardia, tremor, wasting, and smooth goitre was present. The authors state that the secretory activity of the gland may occur in diffuse or circumscribed areas scattered throughout the gland, alongside which there may be abundant iodo-colloid formation. The two functions are not mutually derivative, but their relation to Graves's disease is shown by the following findings. The secretory activity of the gland is directly related to the thyrotoxicosis of the disease, which can be relieved by the removal of the secreting tissue; the iodo-colloid function bears only an indirect relation to the thyrotoxicosis. An absolute loss of a thyroid reserve of iodo-colloid can occur; this happened in 48 per cent. of the cases. The mobilization of colloid depends upon some factor in the secretion, since, when iodine feeding is excluded, excision of pure secreting tissue allows a reserve of active normal iodo-colloid to reappear in the remainder of the gland. Iodine feeding can also re-establish a reserve of normal active iodo-colloid in the gland, though such re-establishment does not abolish the thyrotoxicosis. There is no absolute lack of circulating iodine, but a relative lack may complicate the disease; while such a relative lack is relieved by iodine feeding, the effect on the thyrotoxicosis is not yet certain.

225. The Frequency of B. coli and B. aerogenes in Water and Faeces.

J. E. MINKEWITSCH, N. A. TROFIMUK, and S. A. WEDENJAPIN (*Zeit. f. Hyg. u. Infektionsk.*, December 15th, 1928, p. 348), working at Leningrad, have endeavoured to confirm the work of the Americans on the relative frequency distribution of *B. coli* and *B. aerogenes* in water and in faecal material. According to American workers *B. coli* is pre-eminently a faecal organism, and is not usually found in soil; whereas *B. aerogenes* is pre-eminently a soil organism, and is uncommon in faeces. The two organisms can be separated by their reaction in certain differential tests; thus, while *B. coli* gives a positive methyl red and a negative Voges-Proskauer reaction, and will not grow in a sodium citrate medium, *B. aerogenes* gives a negative methyl red and a positive Voges-Proskauer test, and will grow in a sodium citrate medium. The Russian workers have followed the American technique except in one important particular: instead of isolating their coliform organisms from water on a lactose medium incubated at 37°C., they have incubated their media at 46°C., according to the Eijkman-Bulir technique. Their coliform strains from faeces were isolated on endo and Drigalski media. Altogether they have examined 510 strains from water and 490 strains from human and animal faeces. Of the water strains 95 per cent. formed gas in lactose at 46°C., and of the faecal strains 94.5 per cent.; since *B. aerogenes does not form gas at* this temperature, this means that all the gas-forming strains were *B. coli*. By the American tests 98.2 per cent. of the water strains and 95.9 per cent. of the faecal strains proved to be *B. coli*. These results indicate that the relative distribution of coli and aerogenes in water and faeces is almost identical. They are frankly in disagreement with those of the American workers; but this may be due to the different technique used in isolation. The authors conclude that the Eijkman-Bulir method is perfectly satisfactory in differentiating *B. coli* and *B. aerogenes*, and that there is no advantage in using the more complicated American methods.

226. Movements of the Duodenal Contents.

R. W. A. SALMOND (*Radiology*, December, 1928, p. 453), employing *x*-ray examinations following an opaque meal of barium sulphate suspended in malted milk at body temperature, has observed the following movements in the normal duodenum after the age of infancy: (1) peristalsis and antiperistalsis of the cap, usually called contraction of the cap; (2) peristalsis and antiperistalsis of the second and third parts; (3) segmentation or mixing movements of the second and third parts; and (4) forward movements *en bloc*, due to the downward inspiratory movement of the diaphragm, especially affecting the second part. These have been seen not only in normal cases, but also in various pathological conditions of the stomach, duodenum, appendix, and gall-bladder.



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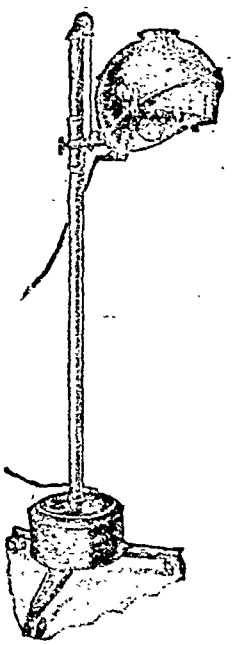

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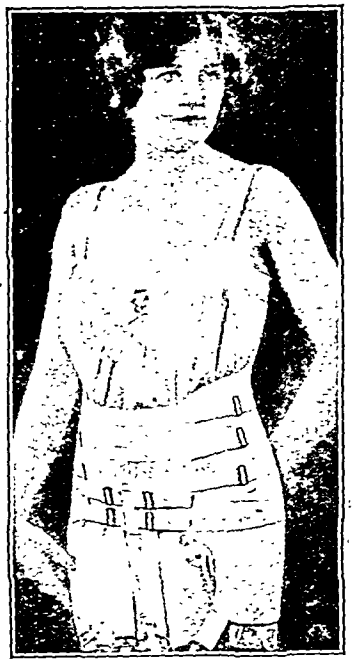

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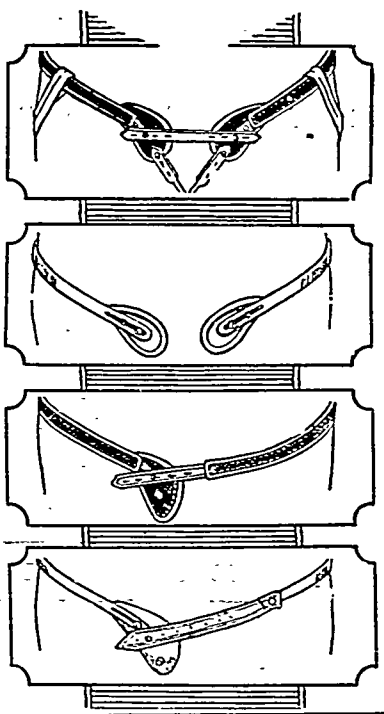

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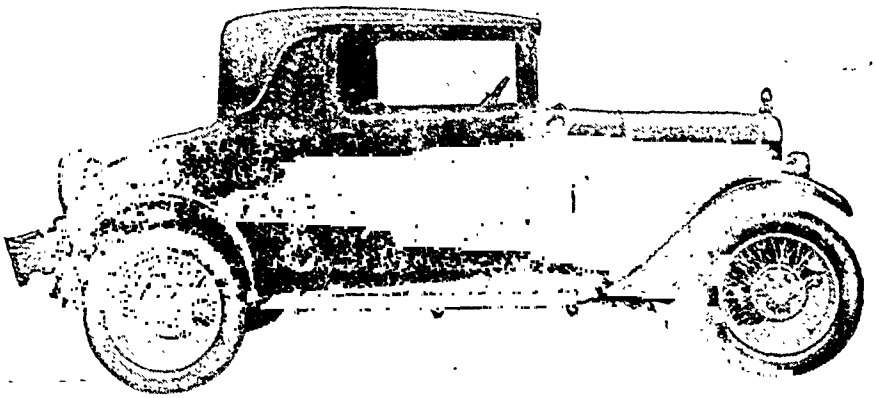

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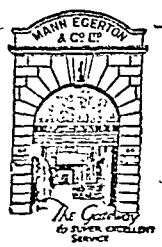

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One Tablet in 1 pint of water is equivalent to 1 in 1,000	
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We can supply smaller quantities at slightly increased rates.

We endeavour to adhere to prices quoted, but as same fluctuate from day to day, they must be considered as subject to change without notice.

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Accommodation is provided for 50 Boys between the ages of 4 and 12 years, and 50 Girls between the ages of 4 and 14 years. In special cases the age limits may be raised to 14 for Boys, and 16 for Girls.

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The Devon Mental Hospital,

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The Committee of the above Hospital have accommodation for the reception of PRIVATE PATIENTS of both sexes, *in special wards, which* are healthily situated, with extensive views of the Exe Valley and surrounding scenery. The Hospital is fully equipped with Operating Theatre and X-ray departments, and has facilities for Ultra-violet Light treatment and modern Hydrotherapy.

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A PRIVATE HOME for the care and treatment of persons with mental and nervous disorders.

TERMS: According to requirements. Certified Patients and Voluntary Boarders received.
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FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This Registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

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This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical baths, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

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Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

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The Seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

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For terms and further particulars apply to the Medical Superintendent (Telephone: No. 56 Northampton), who can be seen in London by appointment.

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A private mental hospital for the care and treatment of mental and nervous disorders in both sexes. Voluntary patients received for treatment.

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(for Mental Disorders).

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Telephone: Mayfair 5420

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway *Stations* at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United *Kingdom*. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
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(3½ miles from L.M.S. Station.)

This DIETETIC ESTABLISHMENT is equipped for the complete investigation and treatment of patients on rational lines. Own X-ray and Laboratory. Biochemical investigation is made a special feature.

Resident Biochemist, Masseurs and Masseuses, Hydro- and Electro-therapeutics, Fasting on Scientific Principles. The staff are specially qualified to deal with the errors of Metabolism, and provision is made for the treatment of Tropical Diseases.

Further particulars from the Secretary, Preston Deanery Hall, Northampton.
Tel.: Hardingstone 6

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Telephone: Clissold 1648.

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of pleasure grounds. Both voluntary and patients under certificates received. For further particulars apply Dr. GERALD JOHNSTONE and Dr. ERNEST ROLLINS, *Resident Physicians*.

THE MOAT HOUSE,
TAMWORTH, STAFFS.

Established 1816 For the TREATMENT of a few *LADIES suffering* from NERVOUS and MENTAL DISORDERS Voluntary patients received. For terms apply to Proprietress
Licensee: Dr. LOWSON. Tel.: 108 Tamworth

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The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiograph, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The Climate is mild and the neighbourhood beautiful. Apply: The Secretary,

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A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

BETHLEM ROYAL HOSPITAL, LAMBETH ROAD, S.E.1.

(For the reception and treatment of cases of nervous and mental disease.) Tel.: Reliance 2182.

President: Colonel and Alderman Sir CHARLES CHEERS WAKEFIELD, Bart., C.B.E.
Treasurer: Sir LIONEL FAUDEL-PHILLIPS, Bart.
PHYSICIAN SUPERINTENDENT: J. G. PORTER PHILLIPS, M.D., F.R.C.P. Assisted by Physicians, a Pathologist, and a staff of Visiting Consultants.

Patients of the EDUCATED CLASSES, IN A PRESUMABLY CURABLE for admission. With a view to the early treatment of eligible cases VOLUNTARY OR UNCERTIFIED patients are TO CAN CONTRIBUTE THREE GUINEAS WEEKLY TOWARDS THE COST OF MAINTENANCE MAY BE RECEIVED Treatment is carried out on the most modern principles. In connection with this Hospital there is a Convalescent Home on the Surrey hills at Witley.
For further particulars apply to the PHYSICIAN SUPERINTENDENT.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: Alleviated, London. Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for the treatment of special and suitable cases adjoin the Institution. There is a seaside branch to which holiday parties are sent during the summer months. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0888.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

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Telegrams: "Psycholia, London." Telephone: Rodney 4731—4732.

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Illustrated Booklet, giving particulars as to terms, etc., can be had on application to the RESIDENT MEDICAL SUPERINTENDENT.

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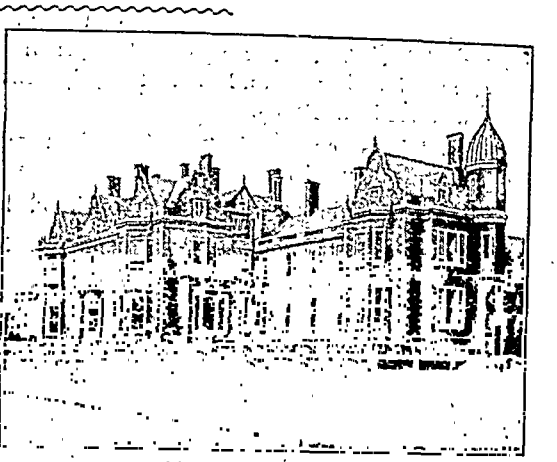

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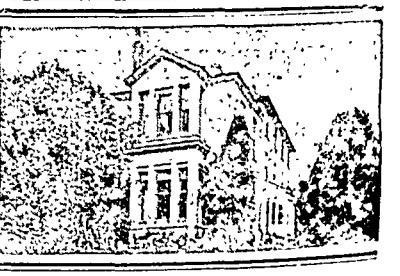

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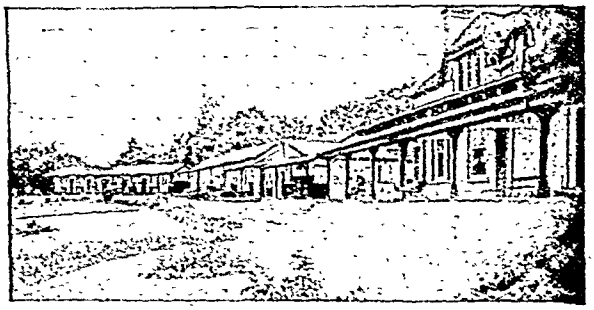

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Full day and night Nursing Staff.
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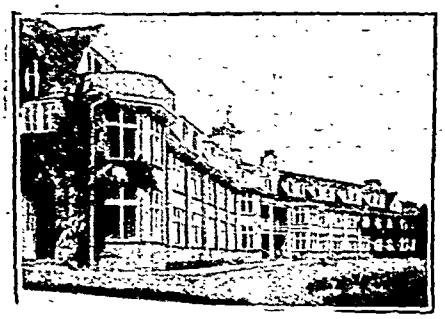

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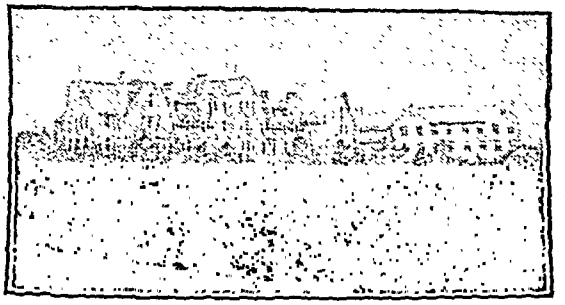

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On Pine-wooded heights above Cromer and Sheringham. Dry, Warm Climate. Maximum Sunshine. Completely Sheltered.
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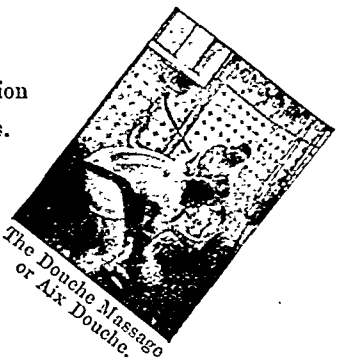

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Royal Society of Medicine.

WILLIAM GIBSON RESEARCH SCHOLARSHIP for Medical Women. This Scholarship of £292 per annum for two years will be awarded in June, 1929, to a qualified medical woman (British subject) selected by the Scholarship Committee. Applications should include schedule of proposed research, two testimonials, and statement of professional training and appointments, and should reach the Secretary, Royal Society of Medicine, 1, Wimpole Street, London, W.1, by June 1st, 1929.

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Further information as to the Courses may be obtained from:

G. STEAD, M.A., Secretary for the Diploma, and Lecturer in Physics as applied to Medical Radiology, Cavendish Laboratory, Cambridge.

A. E. BARCLAY, O.B.E., M.A., M.D., Lecturer in Radiology, Department of Radiology, Medical School, Cambridge.

The Director of the British Institute of Radiology, 32, Welbeck St., London, W.1.

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE.

FACULTY OF MEDICAL SCIENCES.

SPECIA[illegible] [illegible] PRIMARY FELLOWS[illegible] [illegible] ROYAL [illegible]

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Full particulars may be obtained on application to—

C. O. G. DOUIE,
University College, London. Secretary.
(Gower Street, W.C.1.)

Royal College of Physicians of London.

The next ordinary PROFESSIONAL EXAMINATION for the MEMBERSHIP will commence on Friday, April 12th, 1929.

Candidates are required to give twenty-one days' notice in writing to the Registrar of the College, to whom all certificates and testimonials required by the By-laws must be sent at the same time.

[illegible] who propose to submit published [illegible] as now in force should w[illegible] Registrar, *without delay*, af[illegible] as to the procedure fo[illegible] they should follow

Pall Mall East, S.W.1. RAYMOND CRAWFURD, M.D., Registrar.

Royal College of Physicians of London.

Professor E. B. VERNEY, M.D., will deliver the GOULSTONIAN LECTURES on Thursday, March 7th, Tuesday, March 12th, and Thursday, March 14th, at 5 p.m., at the COLLEGE, PALL MALL EAST, S.W.

Subject: "*Polyuria.*"

Any member of the medical profession admitted on presentation of card.

By Order of the President,
H. M. BARLOW, Bedell and Secretary.

UNIVERSITY EXAMINATION POSTAL INSTITUTION

17, RED LION SQ., LONDON, W.C.1.
(FOUNDED IN 1882.)

Principal: Mr. E. S. WEYMOUTH, M.A. (Lond.).
POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS.

SOME SUCCESSES:

M.D.(Lond.),	1921-28 (9 Gold Medallists during 1913-28)	309
M.S.(Lond.),	1901-28 (including 4 Gold Medallists)	20
M.B.,B.S.(Lond.),	*Final* 1906-28 (Completed Exam.)	237
F.R.C.S.(Eng.),	*Primary*	149
(1906-28)	*Final*	135
M.R.C.P.(Lond.),	1914-28	152
D.P.H.	(Various) 1906-28 (Completed Exam.)	280
F.R.C.S.(Edin.),	1918-28	39
M.R.C.S., L.R.C.P.	*Final* 1910-28 (Completed Exam.)	402
M.D.(Dur.)	(Practitioners) 1906-28	36
M.D.	Various. By Thesis. Numerous successes	

Preparation for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.

M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.), Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work Also Private Tuition.

Medical Prospectus (48 pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical [illegible] Suggestions for the higher Surgestions for the Special Refresher Course. Opera[illegible]s for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6310.)

STAMMERING, SPEECH DEFECTS

BEHNKE METHOD. Estab. 1882. Cases, resident, treated at 39, Earl's Court Square, S.W.5, and, in residence, in the Summer half days, at Miss BEHNKE'S house on the Chiltern[illegible] "Pre-eminent success in the education and treatment [illegible] Defects."—The [illegible] of [illegible] Lancet, and [illegible] effective.

STAMMERING, CLEFT PALATE SPEECH, LISPING, by Miss BEHNKE, 39, Earl's Court Sq., S.W.5

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5, for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to the Secretary.

F.R.C.S.(Edin.).

Prep. Classes and Museum Demons for pre Fellowship Exam will commence shortly. Correspondence course for July and later exams should begin now. Particulars, Mr. H. C. [illegible], F.R.C.S., at Surgeons' Hall, Edinburgh

Medical and Dental Students.

Special Classes for Pre Medical and Dental Exams., Matric., and Prelims. Inter. Chemistry, Physics, and Biology. Late MANCHESTER TUTORIAL COLLEGE. 527, Oxford Road, Manchester

F.R.C.S.(Edin.).

CLASSES, with Museum and [illegible] Demonstrations, for next Exam will commence shortly. Particulars from Class Secretary, F.R.C.S., Surgeons' Hall, Edinburgh.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

(University of London.)

Bacteriology and Immunology.

One year's Course of study for the Diploma in Bacteriology, beginning in October.

Epidemiology and Vital Statistics.

Special three-monthly or longer courses.

Tropical Medicine and Hygiene.

Two Courses yearly, each of 20 weeks, commencing on March 11th and October 1st, 1929.

Enquiries for syllabuses, etc., should be addressed to the Secretary, 23, Endsleigh Gardens, London, W.C.1.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.

PRIVATE WARDS [illegible]

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL).

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 7th, and for the Diploma in Tropical Hygiene on January 12th and April 26th. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, [illegible]

TAUNTON SCHOOL, TAUNTON.

A PUBLIC SCHOOL FOR BOYS.

Boys are regularly prepared for the First M.B. Examination, University Scholarships in Chemistry, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology. *New Science Buildings*, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1925. Prospectus from Head Master.

AN IDEAL PREPARATORY SCHOOL FOR BOYS.

KINGWELL HALL, Timsbury, near BATH. Grounds of 240 acres, between Bath and Wells; 600 ft. above sea; the air bracing, very beneficial to delicate boys. Games (cricket, football, hockey, tennis, golf) and physical training. A fine open-air swimming bath. Particular attention given to health, food, and rest. Four Public School Scholarships in last two years. Prospectus on application. — Headmaster: SYDNEY L. ATTAY, M.A. (Oxon.)

Derbyshire Education Committee

ASSISTANT SCHOOL MEDICAL OFFICER (MALE).

The Derbyshire Education Committee require the services of an Assistant School Medical Officer (male) at a salary of £600, rising by annual increments of £25 to £700 per annum.

The candidate must be a registered Medical Practitioner of at least three years' standing. Experience in Refraction, Mental Deficiency, and Anaesthetic Work will be considered additional qualifications.

The officer appointed will not be allowed to engage in private or consulting practice, but will be required to devote his whole time to the duties of the office, and will act under the direction of the School Medical Officer.

Forms of application may be obtained from the undersigned, to whom they should be returned completed, together with copies of not more than three recent testimonials, on or before March 11th, endorsed "Assistant School Medical Officer."

The appointment will be determinable by three months' notice on either side.

New County Offices, W. E. ASH,
St. Mary's Gate, School Medical Officer.
Derby, February 16th, 1929.

University of London

A Course of Three Lectures on "*Some Biological and Epidemiological Aspects of Helminthic Infection*" will be given by Professor F. FULLEBORN (of the Institut für Schiffs und Tropenkrankheiten, Hamburg) at the LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE (25, Gordon Street, W.C.1), on MONDAY, TUESDAY, and WEDNESDAY, MARCH 11th, 12th, and 13th, at 5.30 p.m. At the first Lecture the Chair will be taken by Dr. G. CARMICHAEL LOW, M.D., M.A., C.M., F.R.C.P., Senior Physician, Hospital for Tropical Diseases. The Lectures will be delivered in English and illustrated with Lantern Slides and Films.

Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

University of London.

A Course of Three Lectures on "*The Eye as General Medicine*" will be given by Dr. A. MAITLAND RAMSAY, M.D., LL.D. (Consulting Ophthalmic Surgeon to the Glasgow Royal Infirmary), at UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL (University Street, Gower Street, W.C.1), on MONDAY, WEDNESDAY, and FRIDAY, MARCH 4th, 6th, and 8th, at 5.30 p.m. At the first Lecture the Chair will be taken by Sir JOHN PARSONS, C.B.E., F.R.S., Senior Ophthalmic Surgeon, University College Hospital. Lantern illustrations.

Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

Tancred Studentships.

Shortly after Whitsuntide next the Governors and Trustees propose to elect ONE STUDENT in PHYSIC at GONVILLE AND CAIUS COLLEGE, CAMBRIDGE.

Candidates must have been born in England, Scotland, or Wales, and be members of the Church of England, unmarried, and within the ages of 17 and 20 years.

The annual stipend is £100.

The last day for sending in Petitions is March 12th.

Application for further particulars should be made to Mr. EDWARD TEMPLE GORDON, 28, Lincoln's Inn Fields, Clerk to the Governors and Trustees.

Theodore Williams Medical SCHOLARSHIP.

PEMBROKE COLLEGE, OXFORD.

An examination for the purpose of filling up this Scholarship, which is of the value of £100 a year, and is tenable for four or five years, will begin on June 4th.

For full particulars apply before May 4th to the Senior Tutor, Pembroke College, Oxford.

Derbyshire County Sanatorium, near CHESTERFIELD.

Applications are invited for the post of RESIDENT ASSISTANT MEDICAL OFFICER (male or female) at the Derbyshire County Sanatorium. Candidates with previous Institutional experience of Tuberculosis will be preferred, and practical experience of Artificial Pneumothorax work will be considered an additional qualification. Candidates must be single.

Salary will be at the rate of £350 per annum, together with board, lodging, etc.

Application forms may be obtained from the undersigned to whom they must be returned, together with copies of not more than three recent testimonials, on or before March 18th.

New County Offices, W. M. ASH,
Derby. County Medical Officer.
February 25th, 1929.

Lewisham Union.

APPOINTMENT OF RADIOGRAPHER.

The Guardians of the Poor of the Lewisham Union invite applications for the appointment of a Radiographer at their Hospital, situate in the High Street, Lewisham, S.E.13.

The appointment will be whole-time, and the hours of duty 36 weekly.

Salary £300 per annum, subject to deductions under the Poor Law Officers' Superannuation Act.

Candidates must have had good experience in Radiography, X-ray treatment, development of plates and films, keeping of X-ray films and records, etc.

Forms of application may be obtained by sending a stamped addressed foolscap envelope, which must be returned to me at the undermentioned address by not later than 10 a.m. on Monday, March 11th.

By Order.

Guardians' Offices, 394, High Street, Lewisham, S.E.13. February 19th, 1929.

W. R. OWEN, Clerk to the Guardians.

Shanghai Municipal Council.

PUBLIC HEALTH DEPARTMENT.

ASSISTANT PATHOLOGIST.

An Assistant Pathologist is required in the Public Health Department of the Shanghai Municipal Council.

Candidates, preferably unmarried, should not be more than 30 years of age, and must hold qualifications in Medicine and Surgery of University standard; a D.P.H. and D.T.M. & H., though not essential, are desirable.

Salary, Taels 650 per mensem, under three years' agreement, renewable at a higher salary in the event of satisfactory services. First-class passage is given with half pay during voyage.

Eight months' leave is given on full pay, with first-class passage, after every period of five years' service in Shanghai.

Free medical attendance is provided, and there is participation in the benefits of a Superannuation Fund.

A Tael at the present rate of exchange equals about 2/7. Exchange is, however, subject to fluctuation.

Particulars of the appointment and full details as to the benefits enjoyed by Municipal employees under their terms of service may be obtained from the Council's Agents.

Applications, in candidate's own handwriting, with full information as to the qualifications and experience, etc. accompanied by at least three recent testimonials, and endorsed "Assistant Pathologist" on the cover, should be forwarded to—

JOHN POOK & COMPANY,
63 Fenchurch St., London, E.C.3. Agents for the Municipal Council of Shanghai.
February, 1929.

The Government of Bengal

require a RESIDENT MEDICAL OFFICER for the PRESIDENCY GENERAL HOSPITAL, CALCUTTA. Candidates must be fully qualified medical men and unmarried; preference will be given to those possessing F.R.C.S. or M.R.C.P. Salary Rs.1,000 a month, plus, for a candidate of non-Asiatic domicile, overseas pay of £50 a month. (Total sterling equivalent for candidate of non-Asiatic domicile approximately £1,050 per annum.) Unfurnished quarters. Three years' agreement. First-class passage out and home. Strict medical examination.

Further particulars and forms of application may be obtained upon request by post-card to the Secretary to the High Commissioner for India, General Department, 42, Grosvenor Gardens, London, S.W.1. Last day for receipt of applications March 9th, 1929.

The Government of Burma

require a DIRECTOR for the HAFFKINE BUTLER INSTITUTE OF PUBLIC HEALTH, RANGOON. Candidates must be fully qualified medical men and experienced bacteriologists, and preference will be given to those possessing a Diploma of Public Health. Salary Rs.1,650 a month, rising by annual increments of Rs.50 a month to Rs.1,850 a month. Five years' agreement. First-class passage out and home. Strict medical examination.

Further particulars and forms of application may be obtained upon request by post-card to the Secretary to the High Commissioner for India, General Department, 42, Grosvenor Gardens, London, S.W.1. Last date for receipt of applications March 17th, 1929.

Administrative County of Essex.

APPOINTMENT OF MALE ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

The County Council of the Administrative County of Essex invite applications for the above post from registered medical practitioners specially qualified in the treatment of Tuberculosis, School Medical Inspection, and Maternity and Child Welfare, holding a Diploma of Public Health and not over 45 years of age.

Preference will be given to candidates who have had at least three years' experience in Public Health work subsequent to their medical qualification. The salary attached to the appointment will be £600 per annum and travelling expenses. The person appointed will be required to devote his whole time to the service of the Council, and to perform such duties and to furnish such advice and assistance appertaining to his office as may be required, and to reside in such district of the County as the Council may decide. The appointment will be subject to three months' notice on either side.

Applications, on the prescribed form, obtainable from the undersigned, and accompanied by copies of not more than three testimonials, which will not be returned, should be addressed to me and delivered at the Shire Hall, Chelmsford, not later than Monday, March 11th.

Shire Hall, Chelmsford. JOHN H. GOOLD, Clerk of the County Council.
February 21st, 1929.

Liverpool County Borough.

LOCAL EDUCATION AUTHORITY.

JUNIOR ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited for a Junior Assistant School Medical Officer in the Department of the Medical Officer to the Local Education Authority, at a salary of £600 per annum.

Applicants must be registered medical practitioners with at least three years' experience. It is desirable that they should have had some special experience in school hygiene and in diseases of children.

The officer appointed will be required to devote his whole time to the service of the Education Authority, under the direction of the Medical Officer of Health, who is also the Medical Officer to the Education Authority. He will not be allowed to undertake private practice, and will be required to contribute to the Liverpool Corpor[illegible] uired by the [illegible] l.

Appli[illegible] etc., togethe[illegible] three recent testimonials, endorsed "Junior Assistant School Medical Officer," must be delivered at the office of the Town Clerk, Municipal Buildings, Liverpool, on or before March 5th.

Canvassing of members of the Committee or the City Council is strictly prohibited and will be considered a disqualification.

Municipal Buildings, WALTER MOON,
Liverpool. Town Clerk and Clerk to the
Feb. 20th, 1929. Local Education Authority.

City of Nottingham.

ASSISTANT MEDICAL OFFICER (RESIDENT).

The Guardians of the Poor of the City of Nottingham invite applications from gentlemen for the appointment of Resident Assistant Medical Officer at their BAGTHORPE INSTITUTION AND INFIRMARY, for a period of six months certain, subject to renewal. Applicants must be registered medical practitioners.

The Hospital is a separate modernly designed building, comprising four pavilions and providing accommodation for 700 patients. The staff consists of a Consulting Surgeon, Visiting Medical Officer, and two Resident Assistant Medical Officers. There is opportunity for experience in all departments, including Medical, Surgical, and Midwifery cases, and Bacteriological work. An X-ray apparatus is installed.

Salary at the rate of £300 per annum, with furnished apartments, service, board, laundry, etc.

Applications, giving age and full particulars of experience and qualifications, accompanied by copies of three recent testimonials, to be sent to me on or before March 6th.

Poor Law Offices, J. ALLAN BATTERSBY,
Shakespeare St., Clerk to the
Nottingham. Board.
February 23rd, 1929.

County Borough of Dudley.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER (Male).

Applications are invited for the post of Assistant Medical Officer of Health and Assistant School Medical Officer.

Candidates, who must have been qualified and registered for at least three years, and possess a Diploma or Degree in Public Health, will work under the direction, supervision, and control of the Council's Medical Officer; they should have had special experience in the diagnosis and treatment of Children's Diseases, Ante-natal, Maternity, and Child Welfare work, as well as of the administration of general anæsthetics, including gas for Dental work.

Salary £600 per annum, rising by yearly increments of £25 to £650.

The Officer will be expected to reside in the County Borough, and the appointment will be subject to three calendar months' notice on either side.

Further particulars and forms of application may be had from the undersigned, by whom all applications must be received not later than March 18th.

Municipal Buildings, J. BROCK ALLON,
Priory St., Town Clerk.
Dudley. February 25th, 1929

Merthyr General Hospital,

MERTHYR TYDFIL.

Applications are invited for the post of RESIDENT MEDICAL OFFICER at this Hospital (105 beds, mainly surgical) for a period of six months commencing April 1st. Salary at the rate of £100 per annum, with board, rooms, and laundry. Applicants must have had experience in administration of anæsthetics.

Applications, stating age and qualifications and enclosing copies of not more than three recent testimonials, should be addressed, Hon. Sec., Honorary Medical Staff, not later than March 11th.

City of Liverpool.

BROADGREEN SANATORIUM.

ASSISTANT RESIDENT MEDICAL OFFICER.

The Port Sanitary and Hospitals Committee of the Council of the City of Liverpool invite applications for the above office. Salary £250 per annum, together with board, washing, and lodgings at the Sanatorium.

The appointment is for a term of not exceeding one year, and is not renewable.

Every candidate will be required to possess a registered Medical and Surgical qualification, and should have a knowledge of Bacteriological methods.

The person appointed will not be allowed to engage in private practice, and will be required to devote whole-time service to the duties of the office.

Applications, stating age and qualifications, accompanied by copies of testimonials, to be addressed to the Town Clerk, Municipal Buildings, Liverpool, and delivered not later than Friday, March 8th.

Envelopes to be endorsed "Resident Medical Officer."

Town Clerk's Office, WALTER MOON,
Liverpool. Town Clerk.
February 23rd, 1929.

Birmingham Public Health

DEPARTMENT.

TUBERCULOSIS SECTION.

Applications are invited for the appointment of an ASSISTANT MEDICAL OFFICER from single male medical practitioners. The duties include both Sanatorium and Dispensary work. Special experience in the treatment of Bone Tuberculosis is essential. Applicants should have been qualified for three years, and it would be a recommendation if a resident general Hospital appointment has been held. The candidate appointed will be required to pass a medical examination in connection with the Municipal Superannuation Scheme. Salary at the rate of £450 per annum, with board, residence, and laundry, estimated for superannuation purposes at £150. Applications, with copies of three recent testimonials, stating age, qualifications, and experience, should be received not later than March 9th by the Chief Tuberculosis Officer, 44a, Broad Street, Birmingham.

Oldham Union.

RESIDENT ASSISTANT MEDICAL OFFICER.

The Guardians are about to appoint an additional Resident Assistant Medical Officer (lady) at the POOR LAW INSTITUTION, Rochdale Road, Oldham, and invite applications for the position from duly qualified persons.

Salary (inclusive) £200 per annum, with apartments, rations, laundry, and attendance, valued for the purposes of the Poor Law Officers Superannuation Act, 1896, at £90 per annum. Deductions at the rate of 2 per cent. per annum will be made from the salary and emoluments, in accordance with the provisions of the Act referred to.

The appointment is for the period ending March 31st, 1930, and is subject to termination during such period by one calendar month's notice on either side.

Copies of the duties applicable to the office, and any further particulars, may be obtained from the undersigned, to whom applications, stating age, experience, and qualifications, and accompanied by copies of three testimonials of recent date, must be sent not later than Tuesday, March 12th.

Union Offices, FRED. W FLETCHER,
Rochdale Road, Clerk to the
Oldham. Guardians.
February 21st, 1929.

Coventry and Warwickshire

HOSPITAL, COVENTRY.
(307 Beds.)

[illegible] PHYSICIAN (male) [illegible] per annum, board, provided. Candidates [illegible] and registered. Applications, stating age, and enclosing copies of recent testimonials, should be sent to the undersigned on or before March 15th.

(Miss) R. HOOPER, Secretary.

Liverpool Stanley Hospital.

Wanted, One Male HOUSE PHYSICIAN and Two Male HOUSE SURGEONS for April 1st. Salary at the rate of £100 per annum, with board, laundry, etc. Engagement for a period of six months.

Candidates must be on the Medical Register, and applications, with copies of three recent testimonials, should be lodged with the undersigned on or before March 4th.

E. W. OSBORN, Secretary.

Durham County Council and CHESTER-LE-STREET URBAN DISTRICT COUNCIL.

APPOINTMENT OF DISTRICT TUBERCULOSIS MEDICAL OFFICER AND MEDICAL OFFICER OF HEALTH.

Applications are invited for the above appointments. Candidates must be registered in the Medical Register as holding a Diploma in Sanitary Science, Public Health, or State Medicine, and must have had satisfactory experience in the diagnosis and treatment of Tuberculosis.

The County Council will pay a salary of £500 per annum, rising by annual increments of £25 to a maximum of £550 per annum, for the post of District Tuberculosis Medical Officer, and both appointments will be subject to six months' notice on either side.

Travelling and subsistence expenses according to scale will be paid by the County Council in respect of the duties of the District Tuberculosis Medical Officer.

The Chester-le-Street Urban District Council will be prepared to appoint the person selected by the County Council for appointment as District Tuberculosis Medical Officer as their Medical Officer of Health and to pay a salary at the rate of £200 per annum.

It will be a condition of appointment that if either post is terminated the other appointment will also be automatically vacated.

The appointments will be subject to the approval of the Minister of Health, and will require the whole time of the person appointed, who will not be allowed to engage in private practice.

The person appointed will be required to live in or near Chester-le-Street.

Applications, accompanied by copies of not more than three recent testimonials, must be addressed to the County Medical Officer, Shire Hall, Durham, and must be received by him not later than the first post on March 13th.

Shire Hall, HAROLD JEVONS,
Durham. Clerk of the County Council
February 25th, 1929. Durham.

County Council of Durham.

EDUCATION DEPARTMENT.

ASSISTANT OCULIST.

Applications are invited for the post of Assistant School Oculist to the Education Committee. Candidates must be skilled Refractionists, and must also have occupied the post of House Surgeon in an Eye Hospital or in the Eye Department of a General Hospital for a period of not less than six months Commencing salary £600 per annum, rising by annual increments of £25 to a maximum of £650 per annum, with travelling expenses in accordance with the County Regulations.

The person appointed will hold an established post under the Local Government and Other Officers Superannuation Act, 1922, and will be subject to the provisions of the Act. He will be required to devote his whole time to the duties of the office, and to reside at a place to be approved by the Education Committee. The appointment will be subject to three calendar months' notice on either side, expiring on the last day of any calendar month. Canvassing, directly or indirectly, is prohibited and will disqualify. Forms of application to be returned not later than Saturday, March 16th, can be obtained from the Director of Education, Shire Hall, Durham, on receipt of a stamped addressed envelope.

A. J. DAWSON,
Shire Hall, Director of Education.
Durham.
February 18th, 1929.

Bury Infirmary.

(A General Hospital of 125 Beds.)

Wanted by March 18th, a THIRD HOUSE SURGEON (male), who must have both Medical and Surgical qualifications, and experience in the administration of Anæsthetics. The appointment is for six months, at a salary at the rate of £150 per annum, with board, [illegible] and washing.

Applications, stating age and [illegible] with copies of three recent testimonials and photograph, to be sent in not later than the post of March 9th, addressed to the Hon. Secretary.

H. MOSCROP ROBINSON, L.R.C.P.
4, Manchester Rd., Bury, Lancs

Chester Royal Infirmary.

(211 Beds.)

Wanted, HOUSE PHYSICIAN (male) for six months commencing March 16th. Salary £[illegible] per annum, with board, lodging, and [illegible]

Candidates must be doubly qualified and registered. Applications, stating age, [illegible] panied by copies of testimonials, to be sent to the undersigned not later than March [illegible]

J. ROWSE MITCHELL, Secretary.

WEST AFRICAN MEDICAL STAFF

VACANCIES exist for MEDICAL OFFICERS and MEDICAL OFFICERS OF HEALTH in the BRITISH WEST AFRICAN COLONIES.

SALARIES.

Medical Officers receive salaries at the rate of £660 a year, rising by annual increments of £30 to £720 a year, and then on confirmation £720 a year, rising by annual increments of £40 to £960 a year, together with a seniority allowance (payable only in West Africa) at the rate of £72 a year. After three years' service on £960, the salary may be raised to the scale of £1,000 a year, rising by annual increments of £50 to £1,150 a year, together with a seniority allowance at the rate of £100 a year.

Medical Officers of Health receive salary on the above scale beginning at £800 a year, together with seniority allowance of £72 a year. They also draw staff pay at the rate of £150 a year, half of which is payable during leave.

QUARTERS.

Free furnished quarters are provided or an allowance in lieu.

OUTFIT ALLOWANCE.

An outfit allowance of £60 is granted on first appointment.

PASSAGES.

Free first-class passages are provided on first appointment, and when proceeding on or returning from leave.

PENSIONS.

All appointments are pensionable; a minimum service of seven years is required to qualify for a pension. An officer may retire on reaching the age of 50 and may be called upon to retire at the age of 55. Officers of the West African Medical Staff are permitted to retire if they wish with a gratuity of £1,000 or £1,250 after nine or twelve years' approved service respectively, but in that event they receive no pension.

TOURS OF SERVICE AND LEAVE.

A tour of service in West Africa lasts from twelve to eighteen months at the discretion of the Colonial Government, and is followed by leave at the rate of one week for each completed month of residential service. Leave begins on the date of arrival in England.

PROMOTION.

There are good prospects of promotion in the West African Medical Staff.

COURSE OF INSTRUCTION.

Selected candidates are required to attend courses of instruction in tropical medicine and hygiene at either the London School of Hygiene and Tropical Medicine or the Liverpool School of Tropical Medicine or the University of Edinburgh.

Further information regarding the conditions of service, pensions, etc., may be obtained from the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1, to whom applications should also be addressed.

Royal East Sussex Hospital, HASTINGS.

Applications are invited for the post of PATHOLOGIST to the above Institution (honorarium £200 per annum).

Candidates must be either a Fellow or a Member of the Royal College of Physicians of London, Edinburgh, or Northern Ireland, or be a Graduate in Medicine of one of the Universities of the United Kingdom, and also be duly registered under the Medical Acts.

The successful candidate will be at liberty to practise privately as in the case of the former holder of the post, but must continue to give priority to Hospital and such Public Health Authorities' work as may be arranged for, and the use of the Laboratory for private work is subject to certain conditions.

A trained Laboratory Assistant is provided by the Hospital.

Further details as to the possibilities of the post and practice may be obtained on application.

Applications, accompanied by copies of three recent testimonials, should reach the Secretary not later than 12 noon on Saturday, March 16th.

The post of MEDICAL OFFICER to the V.D. Department under the Public Health V.D. Regulations, 1916, is also vacant, and candidates are eligible to apply for this post, the appointment being subject to the approval of the Ministry of Health and the Local Authorities. This post has been held by the Pathologist, and carries with it a salary of £375 per annum and other emoluments of the minimum value of approximately £50 per annum.

Applications are also invited for the post of [illegible] ANT PHYSICIAN to the [illegible] must be either a Fellow or [illegible] College of Physicians of [illegible] or Northern Ireland, or be a Graduate in Medicine of one of the Universities of the United Kingdom, and also be duly registered under the Medical Acts.

Applications, accompanied by copies of three recent testimonials, should reach the Secretary not later than 12 noon on Saturday, March 16th.

WILFRED G. KEMSLEY, Secretary.

Birkenhead General Hospital. (156 Beds.)

Applications are invited for the post of CASUALTY SURGEON (male). Salary £100, with board and residence; to take up duties about March 25th.

Applications, stating qualifications, experience, and nationality, with three copies of recent testimonials, to be sent to the Secretary-Superintendent by March 12th.

Crofton Recovery Hospital for WOMEN, LIVERPOOL.

VISITING HOUSE SURGEON (Woman).

Applications are invited for the post of Visiting House Surgeon (woman) Salary £2 per week. The appointment is for six months, which may be extended for similar periods by re-election. Applications, stating age, qualifications, and experience, with copies of not less than three recent testimonials, must be in the hands of the Medical Board not later than Thursday, March 7th.

Ear and Throat Hospital, BIRMINGHAM.

SECOND HOUSE SURGEON wanted (non-resident). Must be qualified and with clinical experience. Appointment for six months. Salary at the rate of £150 per annum, with part board. Duties to commence April 1st.

Applications and testimonials to be forwarded on or before March 16th to the undersigned.

S. G. GREW,
Secretary.

February, 1929.

Ear and Throat Hospital, BIRMINGHAM.

THIRD HOUSE SURGEON wanted (non-resident). Must be qualified and with clinical experience. Appointment for six months. Salary at the rate of £150 per annum, with lunch five week-days. Duties to commence May 1st.

Applications and testimonials to be forwarded on or before March 16th to the undersigned.

S. G. GREW,
Secretary.

February, 1929.

General Lying-in Hospital, York Road, Lambeth, S.E.1.

RESIDENT MEDICAL OFFICER required for April 1st next. [illegible] months. £100 per annum. Applications, [illegible], to be sent to the Secretary not later than March 8th.

The Hospital for Sick Children, Great Ormond Street, London, W.C.1.

A [illegible] d a HOUSE PHYSICIAN [illegible] and 14th respectively. to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, March 18th, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment.

The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, March 20th, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY,
Secretary.

February, 1929.

The Hospital for Sick Children, Great Ormond Street, London, W.C.1.

A PART-TIME JUNIOR CASUALTY OFFICER is required on April 8th, to assist in the Casualty Department, from 10 a.m. to 3 p.m. (Saturdays 10 a.m. to 1 p.m.), under the direction of the Casualty Officer.

Candidates must be registered medical practitioners, and have held a responsible Hospital appointment.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, March 8th, accompanied by copies of not more than three testimonials written specially for the purpose.

The appointment is made for six months and is non-resident.

Salary at the rate of £150 per annum, with luncheon.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, March 20th, at 5 p.m. precisely.

Forms of application may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
Secretary.

February, 1929.

Paddington Green Children's HOSPITAL (Incorporated), London, W.2.

HOUSE PHYSICIAN. HOUSE SURGEON.

These appointments will become vacant on April 1st. Gentlemen (unmarried) are invited to send in their [illegible] pies of three testimonials, [illegible] later than the first po[illegible] 15th. Salary of each at the rate of £150 per annum, with board and residence. Candidates who have held a responsible Resident Hospital appointment are preferred. The appointments are for a period of seven months.

JAMES A. HAMLIN, Secretary.

Paddington Green Children's HOSPITAL (Incorporated), London, W.2.

Applications are invited for the post of HONORARY PHYSICIAN to Out-patients. Candidates must be M.R.C.P. or F.R.C.P.

Applications, stating age and qualifications, accompanied by copies of three testimonials, should reach the undersigned not later than the first post on Friday, March 15th.

JAMES A. HAMLIN, Secretary.

Royal Free Hospital, Gray's Inn Road, W.C.1.

Applications are invited from duly qualified medical men for the post of CASUALTY OFFICER. Previous experience as Hospital Resident essential. Salary £150 per annum. Intending candidates should submit applications, stating age, and accompanied by copies of three recent testimonials, to the undersigned before March 28th. The appointment is tenable for six months from May 1st.

REGINALD R GARRATT, Secretary.

Royal Free Hospital, Gray's Inn Road, W.C.1.

Applications are invited for the appointment of RESIDENT ANÆSTHETIST. Candidates must be duly qualified medical practitioners. The post is tenable for one year from May 1st. Preference will be given to former Students of the London (R.F.H.) School of Medicine for Women. Intending candidates should submit applications, stating [illegible] accompanied by copies of three recen[illegible] dersigned on or before [illegible]

REGINALD R. GARRATT, Secretary.

The Hostel of St. Luke (Clergy Nursing Home), 14, Fitzroy Square, London, W.1.

The Committee of Management invite applications for the post of RESIDENT MEDICAL OFFICER (male) to the above Hostel.

Candidates must have had previous experience as House Surgeon at a general Hospital. The appointment is for one year at least. Salary at the rate of £200 per annum, with board, residence, and laundry. A fortnight's holiday will be allowed every six months, and the Locum will be paid by the Committee of the Hostel.

Applications and enquiries should be addressed to the Secretary of the Hostel, at 14, Fitzroy Square, W.1, and reach him before March 13th. The successful applicant will be required to take up his duties on March 25th.

Walsall General Hospital.

The Committee invite applications for the posts of:

SENIOR HOUSE SURGEON. Salary £200 p.a.
HOUSE SURGEON. Salary £125 p.a.
JUNIOR HOUSE SURGEON. Salary £100 p.a.

Candidates, who must be registered under the Medical Acts, must have had experience in the administration of Anæsthetics and produce three recent testimonials. The appointments will be for six months.

The Hospital contains 100 beds and is equipped in all Special Departments.

Applications must be received by the undersigned not later than the first post Monday, March 11th.

WALTER FRANCOMBE,
Secretary.

February 23rd, 1929.

Willesden General Hospital, Harlesden Road, N.W.10.

MEDICAL OUT-PATIENT DEPARTMENT.

APPOINTMENT OF CLINICAL ASSISTANT.

Applications are invited for the above appointment, the tenure of which is six months from April 1st.

The gentleman appointed will be expected to attend the session (Tuesday at 1.30 p.m.) regularly, and to take charge of the Department when the Medical Officer is away.

Applications should be addressed to the undersigned not later than Saturday, March 9th.

R. J. HEARNE,
Secretary.

February 19th, 1929.

West Herts Hospital, HEMEL HEMPSTEAD (110 Beds. 24 miles from Euston.)

Applications are invited for the appointment of a JUNIOR RESIDENT MEDICAL OFFICER, to commence duties on or about April 1st next. Salary £100, with rooms, board, and laundry.

Preference given to male candidates.

Particulars to be obtained of, and applications, stating essential particulars, and enclosing copies of recent testimonials, to be sent at once to—

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

Whitehaven and West CUMBERLAND HOSPITAL, WHITEHAVEN. (90 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male). Salary £100 per annum, including board, residence, and laundry. Twelve months' appointment. After six months as Junior an opportunity is given of becoming Senior for the second six months at a salary of £150.

Applications, stating age, nationality, etc., together with copies of three testimonials, to be sent to the Secretary, endorsed "House Surgeon," not later than March 5th.

R. HIGGINS [illegible]

Manchester Ear Hospital, GROSVENOR SQUARE, ALL SAINTS.

The Board invite applications for the post of HOUSE SURGEON. 24 beds. Salary £[illegible] per annum. Candidates must be duly qualified and registered. Applications, with copies of four recent testimonials, to be forwarded to [illegible] Milford (Hon. Secretary, [illegible] ital), c/o Mr. W. [illegible] Street, Manchester, not later than March [illegible]

Manchester Ear Hospital, GROSVENOR SQUARE, ALL SAINTS.

Non-resident HOUSE SURGEON [illegible] Salary at the rate of £150 per annum, [illegible] partial board. Appointment for six [illegible] Applications, with copies of four recent testimonials, to be forwarded not later than March 16th to Mr. REGINALD S. MILFORD (Hon. Secretary, Manchester Ear Hospital), c/o Mr. W. [illegible] ELLAM, 35, Brazennose Street, Manchester.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	BURGH OF MOTHERWELL & WISHAW. *(Resident Medical Officer (female) for Maternity and Child Welfare Department.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE *(Assistant School Medical Officer—Female.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	EAST RIDING COUNTY COUNCIL. *(Assistant Tuberculosis Officer.)*	

(b) Colonial Medical Service.— WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec. Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies' Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 166, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1. By Order of the Council of the British Medical Association.
February 27th, 1929. ALFRED COX, Medical Secretary.

St. Peter's Hospital for Stone, ETC.,
Henrietta Street, Covent Garden, W.C.2.

Applications for appointment as HOUSE SURGEON are invited from male candidates with previous experience in a similar office at a General Hospital. The salary offered is at the rate of £75 per annum, with board, lodging, and laundry.

At the expiration of his term of office, which is for six months from April 1st, the House Surgeon, subject to the recommendation of the Medical Staff, is appointed Resident Surgical Officer for a similar period of six months.

Applications, accompanied by copies of testimonials, will be received by the undersigned not later than first post on Wednesday, March 6th.

BEECHEY ROGERS, Secretary.

Royal Manchester Children's HOSPITAL, PENDLEBURY,
Near MANCHESTER. (190 Beds.)

Wanted, a RESIDENT MEDICAL OFFICER and a RESIDENT SURGICAL OFFICER, salary £125 per annum, who will be appointed for six months.

Candidates must be unmarried, doubly qualified, and duly registered. Previous hospital experience essential.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than March 6th. Duties to commence April 1st.

Canvassing, directly or indirectly, may disqualify.

By Order,
W. M. HUMPHRY, Secretary.

Royal Manchester Children's HOSPITAL, OUT-PATIENTS' DEPARTMENT, GARTSIDE STREET, MANCHESTER.

Wanted, for the Out-patients' Department, TWO ASSISTANT MEDICAL OFFICERS, non-resident, salary £150 per annum, who will be appointed for six months.

Candidates must be doubly qualified and on the Medical Register. Particulars of the duties can be obtained from the Secretary. The hours of duty are from 9 a.m. till 1 p.m., or until the work of the Dispensary is finished. Patients' attendance number 94,000 per annum. Duties to commence April 1st.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than March 6th.

Canvassing, directly or indirectly, may disqualify.

By Order,
W. M. HUMPHRY, Secretary.

Leicester Royal Infirmary.
(400 Beds.)

Vacancies for RESIDENT MEDICAL OFFICERS are expected to arise on April 1st for a HOUSE SURGEON, RESIDENT CASUALTY OFFICER, and HOUSE PHYSICIAN. Salaries at the rate of £125 per annum. Applicants should have held a Resident Hospital post, or had special experience of Hospital work. Election about the middle of March.

Applications to the undersigned by first post on Monday, March 4th.

HARRY JOHNSON,
Feb. 18th, 1929. House Gov. & Sec.

West London Hospital,
Hammersmith Road, W.6 (225 Beds.)

Applications are invited for the post of HONORARY ASSISTANT ANÆSTHETIST. Candidates are required to be registered under the Medical Act, to send applications, with copies of testimonials, so as to reach me not later than Thursday, March 21st; to attend the Medical Council Meeting at 4.30 p.m. on Friday, March 22nd, and prior to that date to call upon and send copies of their applications and testimonials to each member thereof; to abstain from canvassing, but nevertheless to send copies of their applications and testimonials to the Members of the Board of Management, who will elect on Tuesday, March 26th, at 5 p.m., when selected candidates must be in attendance.

H. A. MADGE, Secretary.

The Kensington, Fulham and CHELSEA GENERAL HOSPITAL.

Vacancy occurs on the Honorary Medical Staff for a PHYSICIAN for Diseases of the Skin. Applications are invited from qualified and registered medical gentlemen, engaged solely in the practice of Dermatology. The ... of three ... of the appointment ... signed not ... which is ... have 112 ... one attendance per week in the Out-patients' Department, which is being kept open during the rebuilding.

SUPERINTENDENT,
194, Finborough Road, S.W.10.

ASSISTANCIES.

Wanted, April 1st, Assistant, male, outdoor, to take charge of Branch Surgery, Colliery Practice, Co. Durham. Salary £240 per annum plus half midwifery fees, plus board and lodgings. Belfast Graduate preferred. Experience in panel practice essential.—Add., No. 1274, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, male, outdoor. *Scotch Practice, non-dispensing,* panel and private; town and country. Some experience general practice preferred. Salary £360 per annum.—Address, *stating particulars and giving refs., to No. 1216, B.M.A. House,* Tavistock Square, W.C.1.

Wanted. — Assistant, single, male, for private and panel Practice, Lancs. Town. Salary £450 to £500, outdoor. With view to Partnership preferred, but not essential. — Address, No. 1225, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant (outdoor), male, single, with some previous experience, for private, panel, and indus. Practice (Yorkshire). Commencing *salary £250 a year and all found.* Usual bond.—Interview.—Add., No. 1202, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, outdoor, single, male, young, with some experience mixed general practice.—Address, stating age, personal and professional references, and other *essential particulars,* No. 1237, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, Welsh-speaking preferred. Salary £350, rooms, etc. Motor cyclist. References, age, experience, etc. — Address, No. 1238, B.M.A. House, Tavistock Square, W.C.1.

Wanted.-Indoor Assistant, male, for colliery and *mixed Practice near Newcastle-on-Tyne.* Age under 30 years. Salary £275 p.a. *Send particulars, testi*monials, and photo.—Address, No. 1206, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—In or Outdoor AssistANT, must be well qualified, keen, and *energetic, for old-established mixed Practice in* large Lancashire Town. — Address, No. 1215, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant at once for general Practice. Must have held House appointments, and be capable of Major Surgery. Commencing salary £500, with prospects.—Address, No. 1220, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Single, male, British ASSISTANT, for panel practice, London. Keen, energetic. Please give essential details. £20 month, all found. — Address, No. 1276, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Temporary outdoor ASSISTANT for period of *three months. Salary £400 p.a. Private and panel practice,* within 15 miles of London.—Address, No. 1214, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — *Assistantship or* LOCUMS by Woman M.B., B.Ch., D.P.H., ex H.P., Post-graduate work. Very *experienced* in panel and private work. Testimonials Interview. Disengaged very shortly.—Address, No. 1222, B.M.A House, Tavistock Square, W.C.1.

Wanted immediately, Assistant, outdoor (male), for panel and private Practice. Salary £400, with usual bond. Send particulars, testimonials, and photo.—Address, No. 1270, B.M.A. House, Tavistock Sq., W.C.1.

Assistants.—*Outdoor and Indoor* (male); also LOCUM TENENS wanted immediately. Good salaries offered. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Assistant (male), Scotch or English, wanted at once for general Practice in Eastern County, outdoor.—Address, with photo and testimonials, to No. 1230, B.M.A. House, Tavistock Square, W.C.1.

Assistant, male, indoor, wanted immediately for general Practice in Leeds. —Apply, No. 29, c/o REYNOLDS & BRANSON, LTD., Wholesale Chemists, Leeds.

Assistancy (with view to Partnership) desired by Woman M.B., Ch.B., 4 years' post-graduate experience home and abroad; wishes *later specialize children's diseases.* — Address, No. 1227, B.M.A. House, Tavistock Square, W.C.1.

Experienced Medical Man, free now, abstainer, 35, married, well recvd., excel. tests., own car, seeks ASSISTANTSHIP, view PARTNERSHIP, in S. of England Country Town, or near, where most of prom. would be accepted out of *receipts. Reason given at interview.*—Address, No. 1233, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Chartered Masseuse, experienced in Hospital and private work, desires PART-TIME EMPLOYMENT in London. Capable of running ultra-violet light. Qualified *medical electricity.*—Address, No. 1213, B.M.A. House, Tavistock Square, W.C.1.

Dispensers supplied to Doctors *at short notice,* without fee. Qualified *and exper. in priv. and panel prac.* Perm. and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 87, Holborn Viaduct House, 12, Holb. Viad., E.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary *Dispensers or Chauffeuse Dispensers, are invited* to write, wire, or 'phone Gerrard 2699, THE DISPENSERS' BUREAU, 145, Shaftesbury Avenue, London, W.C.2.

Doctor recommends his [illegible] AFTERNOON POST. Receptionist [illegible] nce (two social, five present post).—Address, No. 1229, B.M.A. House, Tavistock Square, W.C.1.

Lady Dispenser - Book-keepers supplied *immediately* on request; qualified, and with practical experience in private practice, ar[illegible], also trained in [illegible] of the LONDON C[illegible] FOR LADIES. Pre[illegible]-Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Nurse-Dispenser (Hall), experienced Medical Book-keeper, requires non-residential POST in March, with Doctor or in Institution.—Address, No. 1208, B.M.A. House, *Tavistock Square,* W.C.1.

Post-graduate, aged 28, English, [illegible] qualification, desires [illegible] EMPLOYMENT *in* [illegible]ate experience in [illegible] No. 1212, B.M.A. [illegible] W.C.1.

Typewriting undertaken by Expert. — Medical Theses, Testimonials, etc. Five minutes from Swiss Cottage Station. Numerous letters of appreciation from satisfied Doctors. — BEATRICE RADFORD, 27, Buckland Cres., Swiss Cottage. Phone: Primrose Hill 0803.

PARTNERSHIPS.

Wanted.—Partnership in non-panel medical practice with preliminary assistantship, by M.R.C.S., L.R.C.P. English, married. Kensington, Victoria, or W.1. —Address, No. 1221, B.M.A. House, Tavistock *Square,* W.C.1.

Coast Town. — Partnership in excellent Practice. Cash receipts 1928, £3,130. Good corner house, 7 bedrooms, garage, and garden. Rent £60 p.a. Incoming partner must have practical knowledge of Surgery. Premium — half share — *£2,100.* — BRITISH MEDICAL BUREAU, 33, Cross St., Manchester.

London, N.W.—Partnership.— Half Share of a very old-established Cash and Panel Practice for disposal. Receipts about £1,700 per annum, including panel of nearly 1,800. Nice house available, rent £150. Premium moderate, part might be deferred.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

M.B., B.S. Conjoint, H.S., H.P., requires PARTNERSHIP with *large panel. Preferably* N.E. or Midlands. £2,000 p.a. All capital available. — Address, No. 1035, B.M.A. House, Tavistock Square, W.C.1.

Partnership desired in Ophthalmic Practice, preferably in S. or S.W. *England. Advertiser* is well qualified and has long experience, also a little capital.—Add., No. 1207, B.M.A. House, Tavistock Sq., W.C.1.

South Wales. — *Half Share.* — Industrial Practice. Total income £3,500. Convenient house, rent £65. Premium £2,000 on easy terms. District unaffected by industrial depression.—Apply, PEACOCK & HADLEY, LTD., 19, Craven Street, Strand, W.C.2.

LOCUMS.

FOR LOCUM TENENS APPLY TO
Mr. PERCIVAL TURNER, Ltd.
The oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals.
4, ADAM ST., Strand, London, W.C.2.
Teleg.: "Epsomian, Lond." 'Phone: Gerrard 0393

Rhodes Scholar, M.B., Ch.B., ex H.S. *and H.P., registered,* at present working for F.R.C.S. in Oxford, is prepared to act as LOCUM TENENS during University vacation, April 1st - 31st.—*Address, No. 1210, B.M.A.* House, Tavistock Square, W.C.1.

LOCUM TENENS.
FOR A RELIABLE SUBSTITUTE CONSULT
THE MEDICAL AGENCY.
(WILLIAM H. GRANT.)
WATERGATE HOUSE, 15, YORK BUILDINGS, ADELPHI, W.C.2. *Tel.* { GERRARD 8954 / RIVERSIDE 1254 (*Night Calls*).
Telegrams:
"REASIDE, TUBERCLE, WESTRAND, LONDON"

PRACTICES.

Wanted, Practice doing £700—£800 p.a., and capable of increase. Pleasant country district and preferably Home Counties. Must have nice moderate sized house with garden. Capital available.—Address, No. 1228, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Good-class [illegible]
W[illegible]
n[illegible]
B[illegible]

W[illegible] M[illegible]
B.A.O. Belfast), ex-H.S. and assistant R.M.O., Public School, Catholic, over two years' experience panel and private, desires *PRACTICE* or SHARE in Practice.—Address, *No.* 1226, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—We have innumerable *applicants for sound investments* in all districts, incomes from £600 to *£4,000, with* and without panel. Correspondence invited from prospective Vendors. — THE *MEDICAL AGENCY (W. H. Grant), Watergate House,* 15, York Buildings, Adelphi, W.C.2

Death Vacancy, Tunstall, Stoke-on-Trent. — Old-established PRACTICE. Panel. Income £1,500 per annum. Excellent house, best position. Locum *in charge.*—Apply, HUGH W. ADAMS & ELLIS, Solicitors, Tunstall, Staffs; or COTTON & SONS, Piccadilly, Tunstall, Stoke-on-Trent.

Death Vacancy.—Lancs. Town. —Good house, *excellent* situation. Receipts over £600, much scope. Panel about £300.—MANCHESTER *MEDICAL & SCHOLASTIC ASSOCIATION,* 6, Brown Street.

Excellent opportunity for a young *Welshman* without capital to secure an old-established Country PRACTICE of £1,200, with scope. Panel and appts. £700. —Address, *No. 1209,* B.M.A. House, Tavistock Square, W.C.1.

England, S.—High-class [illegible] SURGICAL PRACTICE for sale. Long established. Type of practice unopposed. Large net income. *Splendid house* to rent. This is a [illegible] —Address, No. 1230, B.M.A. [illegible] W.C.1.

For Sale, owing to death, small PRACTICE, St. Helier's, Jersey. [illegible] address, No. 1234, B.M.A. [illegible] W.C.1.

For Sale.—Practice nearly £1,200 p.a. London, S.E. Modern [illegible] increasing panel about 400. Good premises [illegible] built. Long lease. Price £1,650 or near offer.—Address, No. 1224, B.M.A. House, Tavistock Square, W.C.1.

For Sale. — An estab. Medical PRACTICE, gross income £1,400, [illegible] 1,070, plus Public appointments. 11 years' [illegible] chase. Commodious house with grounds [illegible] available. Fullest investigations [illegible] Audited accounts are available for inspection. [illegible] No. 1032, B.M.A. House, Tavistock Sq., W.C.1.

For Sale.—Practice in one of the best centres in North Wales. Excellent opportunity, plenty of scope. Delightful [illegible] roundings. House near station and [illegible] ceptionally easy terms. — Address, No. [illegible] B.M.A. House, Tavistock Square, W.C.1.

For immediate Disposal.—Long established PRACTICE in S. Wales Colliery Village. Panel 949. Income averaging £1,040. House, 4 bedrooms, leased at £45. Expenses small. Good prospects of increase. Premium £1,200.—Address, No. 1204, B.M.A. House, Tavistock Square, W.C.1.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2.

Kent Nucleus.—First year, £350; second, £660. Panel 1,450. Greatest opportunity in England.—Address, No. 1232, B.M.A. House, Tavistock Square, W.C.1.

Liverpool (in Central Area).—Old-established Cash PRACTICE. Failing health decreased average profits to £350 per annum last few years. Death vacancy. Prem. for quick sale £1,500, including good Doctor's house. Suitable for large panel. Terms arranged Executrix. — Address, No. 1014, B.M.A. House, Tavistock Square, W.C.1.

London, S.E. — Cash and Panel PRACTICE. Receipts at the rate of over £1,500 a year. Surgery and living accommodation 17/6 per week. Premium £1,250. Good opportunity for energetic doctor.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2

Manchester. — Old-estab. PRACTICE. Average cash receipts £2,523. Panel 1,021. Prominent house, 6 bedrooms, garden, and garage. Premium—Practice 1½ years' purchase. A preliminary Partnership might be arranged.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester.—Old-estab. mixed PRACTICE. Average cash receipts £1,480. Panel 1,422. Good corner house to rent on lease, 6 bedrooms, garage. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33 Cross Street, Manchester.

Manchester. — Old-established PRACTICE. Nice house, garage, etc., £110 on lease, or for sale. Receipts nearly £1,500. Panel 1,422. Much scope. Price 1½ years' purchase, good part deferred.—MANCHESTER MED. & SCHOL. ASSOC., 6, Brown St.

Manchester. — Excellent PRACTICE Cash receipts 1928, £1,650, including transferable appointments value £750 p.a. Panel 360. Good house, 3 bedrooms, garage, small garden. Rent £60 p.a. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Medical Practice for Sale.—Good-class Practice for sale in industrial town near Glasgow. Panel 750. Net income from panel and general £750 to £800. Appointments. House and consulting room in main thoroughfare. Suitable for Lady Doctor. —No. 1003, B.M.A. House, Tavistock Sq., W.C.1.

Manchester. — Good Practice (non-panel). Average cash receipts £1,518. Much scope. Excellently situated house, 6 bedrooms, garden, and garage. Premium—Practice and house—£2,000. Vendor retiring.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Medical.—Attractive City PRACTICE, private and panel, with suitable house for sale; life vacancy.—Apply, CRAWFORD, HERRON & CAMERON, Writers, 257, West George Street, Glasgow.

North Wales Coast. — Cash receipts 1928, £1,749. Panel 713. Excellent modern house, 4 bedrooms, lawn; also well-fitted surgery and garage to rent. Good scope. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Near Manchester. — Old-estab. Detached house, large garden, garage, £70, or would sell. Receipts £2,000. Excellent scope. Panel 1,164. Opposition weak. Price 1½ years' purchase, good part deferred.—MANCHESTER MED. & SCHOL. ASSOC., 6, Brown St.

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North Wales. — General and Consultant PRACTICE for disposal. Excellent scope for a senior surgical qualification or degree.—Address, No. 1272, B.M.A. House, Tavistock Square, W.C.1.

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S. Midlands.—Small country [illegible] £240. 8 bed-Price, [illegible] £236.

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Bromley, Kent. — Imposing Corner RESIDENCE. Ideal position for Doctor. Extensive building developments all round. Six bedrooms, bathroom, 3 reception rooms. Garage. Good garden. Freehold £2,250 only.—Apply for key and particulars, CARTER, LAW & LEECH, Auctioneers, Bromley.

Bognor, very best part.—For immediate sale; suitable for NURSING HOME; close to sea; sheltered; pre-war built. 3 recep., 8 bed., cloak room, bath, 2 lav., 2 staircases, large hot water cupboards. Electric light, company's water coke and electric heating, gas cookers. 90 feet frontage. Freehold 3,000 guineas.—OWNER, Anglebay, Bognor.

Close to Piccadilly Circus.—Excellent SUITE OF ROOMS to let mornings and evenings. Well furnished and equipped. Low rental. Suitable for Dentist or Actino-the apist.—BM/LCPV.

Consulting Rooms required in London suburb on one or two days a week.—Address, No. 1235, B.M.A. House, Tavistock Square, W.C.1.

For Sale. — Detached House, freehold, Middlesex, 7 miles from Paddington; good suburb (Nucleus Practice gratis). Two reception, surgery, 5 bedrooms, dressing room, boxroom, kitchen, scullery, bath, lavatories, brick garage, dark-room, tool-shed, chicken-house and run, garden (front and back, well stocked fruit, flowers), fruit cupboard, tennis lawn. Electricity, gas, and telephone. Price £2,750. — Address, No. 1201, B.M.A. House, Tavistock Square, W.C.1.

Kirkby Stephen, Westmorland. —Desirable RESIDENCE, "Rowgate," suitable for Doctor, with good opening, FOR SALE. — Apply, GRIGGS & YOUNG, Solicitors, Elgin.

Piccadilly.—Consulting Rooms in Dental Surgeon's office, furnished and fitted for Ophthalmic work, £15 per month, incl. Receptionist, tel., light, etc. Bergonié couch and ultra-violet lamp avail. at mod. price. No. 1271, B.M.A. House, Tavistock Sq., W.C.1.

Small prominent Corner House for sale in a rapidly growing middle-class suburb, with Nucleus of Practice £150 p.a. Great scope. Vendor leaving for private reasons. —Address, No. 1217, B.M.A. House, Tavistock Square, W.C.1.

To Let.—Consulting Room in Professional House in Kensington. Attendance and heating. Fitted ready for Radiologist. No opposition. Or suit first-class Medical Man. — Apply: 'Phone, Kensington 2492.

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are the BEST LOCAL AGENTS for HOUSES and CONSULTING ROOMS in the Harley, Wimpole, Queen Anne, and other Streets in the Cavendish Square district. Valuations for all purposes.

Telephone: 3204 MAYFAIR.

I, William Mulhall-Corbet, of 64, Finsbury Pavement, London, M.B., B.Ch., N.U.I., heretofore called and known by the name of William Corbet, HEREBY GIVE NOTICE that on the 5th day of November, 1928, I renounced and abandoned the use of my said surname of Corbet and assumed in lieu thereof the surname of Mulhall-Corbet; and, further, that such change of name is evidenced by a Deed dated the 5th day of November, 1928, duly executed by me and attested and enrolled in the Central Office of the Supreme Court of Judicature on the 24th day of January, 1929.

Dated the 20th day of February, 1929.

Bedfordshire County Council.

ASSISTANT MEDICAL OFFICER (Woman).

Applications are invited for the above appointment. The officer appointed will be required to assist chiefly in the School Medical and Maternity and Child Welfare Services of the Council. The officer, who will be under the direction of the County Medical Officer of Health, will be required to perform such other duties as the Council may direct.

Applicants must be registered medical practitioners, possess a Diploma in Public Health, and have had experience in the branches of Public Health referred to. The person appointed will be required to devote the whole of her time to the duties assigned to her, and not to engage in private practice.

Salary £600 per annum, together with a travelling allowance of £170 per annum, the appointment to be subject to three months' notice to be given by either side at any date.

Cc ... Shire Hall, Bedford. age, qualifications, and previous experience, accompanied by copies of three recent testimonials, and endorsed "Assistant Medical Officer (Woman)," should be sent to the undersigned not later than Monday, March 18th.

J. B. GRAHAM,
Clerk of the County Council.

Shire Hall,
Bedford.
February 25th, 1929.

Bedfordshire County Council.

ASSISTANT COUNTY DENTIST.

Applications are invited from Dental Practitioners holding a registered Diploma or Degree in Dental Surgery for the post of Assistant County Dentist.

The officer appointed will be under the direction of the County Medical Officer of Health. His chief duties will be in connection with the dental inspection and treatment of school children; he will also be required to perform certain services in connection with the Maternity and Child Welfare and the Tuberculosis Departments of the Council.

The officer appointed will be required to devote the whole of his time to the duties of the office, and not to engage in private practice.

Salary £450 per annum, together with a travelling allowance of £150 per annum.

Further particulars can be obtained from the County Medical Officer, Shire Hall, Bedford.

Applications, stating age, qualifications, and previous experience, accompanied by copies of three recent testimonials, and endorsed "Assistant County Dentist," should be sent to the undersigned not later than Monday, March 18th.

J. B. GRAHAM,
Clerk of the County Council.

Shire Hall,
Bedford.
February 25th, 1929.

British Red Cross Society and ORDER OF ST. JOHN OF JERUSALEM.

EAST LANCS. TUBERCULOSIS COLONY, BARROWMORE HALL, GREAT BARROW, near CHESTER.

ASSISTANT MEDICAL OFFICER (male) required. Commencing salary £250 per annum, with residence, board, and laundry. The appointment will be terminable by one month's notice. Preference will be given to candidates with experience in Tuberculosis.

Applications, with copies of three recent testimonials, to be sent to the Medical Superintendent at above address before March 12th.

National Hospital for Diseases of THE HEART,

Westmoreland Street, London, W.1.

RESIDENT MEDICAL OFFICER.

Applications are invited for the post of Resident Medical Officer (Male).

The appointment is for a period of six months from April 1st, but may be renewed for a further period not exceeding six months. Salary at the rate of £150 per annum, with board, residence, and washing.

Candidates, who must be duly registered medical practitioners, will not be expected to call on the Hon. Medical Staff, but should send their applications, with copies of three recent testimonials, to the undersigned at the Hospital not later than Thursday, March 14th.

ROBERT G. E. WHITNEY, Secretary.

The Royal Hospital, WOLVERHAMPTON

(Incorporated under Charter).

Two CASUALTY OFFICERS and ANÆSTHETISTS (male) required. The Hospital contains 210 beds, and includes the usual special departments, and is recognized by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical Practice.

Candidates must be registered under the Medical Acts, and unmarried.

The appointments are for six months, with eligibility for further appointment for six months as House Surgeon to In-patients.

Salary at the rate of £125 per annum. Board, furnished rooms, and laundry provided.

Duties to commence March 16th.

Applications, with copies of testimonials, to be forwarded to the undersigned.

W. H. HARPER,
House Governor &
Secretary.

Cleveland Road,
Wolverhampton.
February 26th, 1929.

Royal Hospital, Richmond, SURREY.

Applications are invited for the following posts:

SENIOR HOUSE SURGEON (male). Salary £150 per annum.

JUNIOR HOUSE SURGEON (male). Salary £100 per annum.

Board, residence, and laundry provided.

Both appointments will be for six months, commencing April 1st next. Candidates must be fully qualified, registered, and single.

Applications, with copies of testimonials, should be forwarded to the undersigned by March 12th.

RICHARD ALLEN, Secretary.

Northampton General Hospital.

There will be vacancies on April 1st next for Two HOUSE SURGEONS and One ASSISTANT HOUSE SURGEON. British nationality. Salary £150 each per annum, with board, residence, and laundry.

The successful candidates will be appointed for a period of six months and will be eligible for re-election for a further period.

Candidates must be duly qualified and registered.

Applications, stating age, sex, qualifications, etc., with copies of testimonials, to reach the undersigned not later than March 6th.

H. St. JOHN WOOD,
Secretary-Supt.

February 18th, 1929.

London Temperance Hospital,

Hampstead Road, N.W.1.

Applications are invited for the post of HONORARY ANÆSTHETIST.

Candidates, who are expected to call upon the Honorary Medical Staff, must be prepared to attend at least twice weekly (Monday afternoons and Friday mid-day) and when required in cases of emergency.

Ceteris paribus, preference will be given to total abstainers.

Applications, accompanied by not more than three testimonials, must be received by first post on Thursday, March 7th, addressed to the undersigned.

A. C. ADAMS, Secretary.

City of Salford.

INFECTIOUS DISEASES HOSPITAL.

Applications are invited for the post of ASSISTANT RESIDENT MEDICAL OFFICER at the LADYWELL SANATORIUM. Applicants should have had experience in the treatment of Infectious Diseases. Commencing salary £350 per annum, plus board, residence, and laundry, subject to deductions for superannuation purposes. Forms of application may be obtained from the Medical Officer of Health, 145, Regent Road, Salford, to whom they should be returned, accompanied by copies of not more than three recent testimonials, not later than March 16th.

L. C. EVANS, Town Clerk.

Kettering and District General HOSPITAL.

(80 Beds, including Maternity Ward of 7 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male, unmarried). Salary at the rate of £200 p.a., with residence, board, and laundry.

The successful candidate will be appointed for a period of six months commencing on April 1st, and will be eligible for re-appointment for a further period.

Candidates must be duly qualified and registered. Applications, stating age, qualifications, etc., with copies of testimonials, to be sent to the undersigned not later than March 7th.

H. J. LANCASTER, Secretary-Supt.

North Ormesby Hospital, MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £115 per annum, with board, residence, and laundry. There are three residents, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned at once.

GEORGE WATTS, Secretary-Supt.

The Hospital for Women, Soho Square, W.1.

A vacancy being about to occur in the office of RESIDENT MEDICAL OFFICER, applications are invited from fully qualified men and women. The salary is £100 per annum, with board, residence, and washing. The appointment is for six months from April 1st next. Applications and testimonials must be in the hands of the undersigned by Saturday, March 9th (from whom further information can be obtained).

P. L. W. POWELL, Secretary.

Bootle Borough Hospital

(General, 100 Beds),
DERBY ROAD, BOOTLE.

Applications are invited from medical men for the post of JUNIOR MEDICAL OFFICER for a period of six months. Salary at the rate of £125 per annum, with board, residence, and laundry. Duties to commence April 1st.

Applications, stating age and qualifications, with copies of testimonials, to be sent to the undersigned not later than March 8th.

J. A. BEARDSALL, Secretary-Supt.

Royal West Sussex Hospital, CHICHESTER.

The Board of Management invite applications for the post of JUNIOR HOUSE SURGEON (male), as from April 1st. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, with three testimonials, should reach the undersigned not later than March 7th. Particulars as to duties will be forwarded to candidates on receipt of their application.

HERBERT S. AYLMORE, Secretary.

St. John Ophthalmic Hospital, JERUSALEM, Belonging to the Order of St. John of Jerusalem.

The office of SUB-WARDEN will be vacant in June next. Candidates, who must be qualified Surgeons of the male sex, are invited to write for full particulars of the post to the Honorary Secretary, Ophthalmic Hospital, St. John's Gate, Clerkenwell, E.C.1.

Swansea Hospital.

(316 Beds.)

HOUSE SURGEON wanted, gentleman, single. Salary £150, with board, residence, and laundry. Duties to commence April 1st.

Applications, stating age, nationality, and experience, with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS, Secretary.

KING'S COLLEGE HOSPITAL.

The Committee of Management invite applications for the post of HONORARY ANÆSTHETIST. Applications, with copies of three testimonials, should be sent before March 16th to the House Governor, King's College Hospital, Denmark Hill, S.E.5, from whom further particulars may be obtained.

Applications are invited for the post of ASSISTANT SURGEON in the Orthopædic Department, ST. THOMAS'S HOSPITAL.

Candidates must be Fellows of the Royal College of Surgeons, England.

Applications, accompanied by testimonials, are to be sent to the Dean's office at the Hospital not later than March 16th.

A. P. B. IRWIN, Secretary.

Bristol General Hospital.

The Committee invite applications for the following appointments, which become vacant on April 1st next:

Two HOUSE PHYSICIANS, Two HOUSE SURGEONS, RESIDENT OBSTETRIC OFFICER, HOUSE SURGEON to the Special Departments, and a CASUALTY HOUSE SURGEON.

The appointments will be for five months at salaries at the rate of £80 per annum, with board, residence, etc., provided in the Hospital.

Candidates must be registered under the Medical Acts, and produce testimonials of good personal character and ability, and must have recent experience in the administration of anæsthetics.

Forms of application, etc., to be obtained from the Secretary, must be returned completed, with copies of testimonials, addressed to the undersigned, on or before Monday, March 11th next, from whom further particulars may be obtained.

THOMAS W. GREGG, Secretary.

Queen's Hospital, Birmingham.

(A General Hospital and a Medical School.)

Applications are invited for the following Resident appointments at the salaries stated, together in each case with board, apartments, and laundry:

ANÆSTHETIST. £70 to £100 p.a. according to experience and previous Hospital appointments.

Four HOUSE PHYSICIANS (one for duty at the Nerve Hospital). £70 p.a.

Three HOUSE SURGEONS. £70 p.a.

One CASUALTY HOUSE SURGEON. £70 p.a.

All the above appointments are for six months from April 1st, with the exception of the Casualty House Surgeon, which is for three months.

Full particulars and official from of application can be obtained from the undersigned, which on completion must be submitted not later than Saturday, March 16th

G. HURFORD,
February 15th, 1929. House Governor.

Salford Royal Hospital.

(263 Beds.)

Applications are invited for the following vacancies, which will occur in the Resident Medical Staff (male) on March 31st next:

HOUSE SURGEON (attached to the Orthopædic Department). Salary at the rate of £125 per annum.

HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

Forms of application, which may be obtained from the undersigned, must be delivered without delay.

By Order of the Board,
GEORGE RUDDLE,
Salford Royal Hospital, Gen. Supt. &
Manchester. Secretary.
February 25th, 1929.

Royal London Ophthalmic HOSPITAL

(MOORFIELDS EYE HOSPITAL),
City Road, E.C.1.

EAR, NOSE, AND THROAT SURGEON.

Applications are invited for the office of Ear, Nose, and Throat Surgeon to the above Hospital.

Candidates must be Fellows of the Royal College of Surgeons of England.

Canvassing is not permitted. Candidates are requested to send copies of their application and testimonials to the members of the Committee of Management and the Honorary Medical and Surgical Staff, whose names and addresses can be obtained on application to the Secretary.

Applications, stating age, with copies of testimonials, must be received not later than March 20th by—

A. J. M. TARRANT, Secretary.

Tunbridge Wells and Counties GENERAL HOSPITAL.

Wanted, HOUSE SURGEON. Candidates must be unmarried, male, and duly qualified in Medicine and Surgery. (Two Residents.) Appointment to be entered upon immediately.

In-patients number over 1,400 yearly. Out-patients 6,000, with 50,000 attendances.

Salary £160 per annum, with board, residence, etc., in the Hospital.

This Hospital is approved by the University of London for the purpose of the M.D. and M.S. Examinations.

Applications, stating qualifications, with certificate of registration and copies of testimonials, should be sent to the undersigned on or before first post March 5th next.

J. J. WEBB, Secretary.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

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MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

THE NURSES' ASSOCIATION
(In conjunction with the MALE NURSES' ASSOCIATION),
29, York St., Baker St., London, W.1.
Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary*

ST. LUKE'S HOSPITAL.

FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

Locum Tenens and Assistants wanted, preferably those living within easy distance of Liverpool.

PRACTICE for disposal, old-established, large town in Lancashire. Receipts £1,730, panel 1,480. Reason for disposal ill health.

For further particulars apply to—

R. SUMNER & Co., Ltd.,
Wholesale Druggists,
40, HANOVER ST., LIVERPOOL.

St. James' Hospital, Leeds.

Applications are invited for the filling of a vacancy in the staff of HOUSE PHYSICIANS and SURGEONS at the above Hospital. Applicants must be fully qualified and registered. The Hospital is one of 1,126 beds, with special departments for Radiology, Pathology, Midwifery, and Diseases of Children. There are, *in addition*, 320 beds *in separate Mental Wards*. The staff consists of a Medical Superintendent, a resident Medical Staff of six, a Pathologist, a Radiologist, and Visiting Physicians and Surgeons.

The successful applicant will be required to act as House Physician and Surgeon under the Medical Superintendent and the Visiting Staff, and to perform such other duties as the Medical Superintendent may direct. The term of appointment is limited to two years.

Salary £200 per annum, with board, apartments, and attendance, subject to deductions under the Poor Law Officers Superannuation Act, 1896.

Applications, stating qualifications, and giving particulars of present and prior occupations, together with copies of three recent testimonials, must be received by me not later than 10 a.m on Saturday, March 9th, endorsed "House Physician and Surgeon."

Selected candidates will receive due notice to attend.

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February 18th, 1929.

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15 MIDLANDS. — Partnership in mixed Practice between £3,600 and £3,700 p.a. in suburb of Cathedral City. Panel over 2,200. Partner should be aged about 30, with Hospital experience, and able to do Surgery. *Premium one-half* share 2 years' purchase.

16 LONDON.—Partnership in Practice £3,400 p.a. in Northern suburb. Panel about 3,200. *Incoming Partner must have had experience and be either English or Scotch.* Premium one-third share 2 years' purchase.

17 S.W. OF ENGLAND. — Middle and working-class PRACTICE about £2,150 p.a. in seaport town. Panel 1,226. Well situated house (6 bed and dressing rooms) to be sold or let. Premium 1½ years' purchase.

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19 SOUTH OF ENGLAND.—Surgical PARTNER required (not over 36) with University degree and F.R.C.S. England, in sound Practice in first-rate town with good Hospital. Share of £1,500 p.a. at 2 years' purchase.

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23 S. WALES. — Practice averaging £1,627 (about £650 p.a. from panel) in good town. Modern house (6 bed and dressing rooms) for sale or rent. Premium one-half year's purchase.

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26 SOUTH COAST.—Health Resort.—Practice about £900 p.a. (including appointments about £155). No panel or midwifery. Suitable house or flat. Premium £1,500.

27 Nr. NEWCASTLE-ON-TYNE.—Old-estab. Town PRACTICE over £800 p.a. Panel 440. Pleasantly situated house (4 bedrooms) to rent. Plenty of scope. Prem. 1½ years' pur.

28 CO. DURHAM. — Practice of £1,460 in growing suburb of seaport town. Panel 646. House (5 bedrooms) on main road to be sold or let. Premium 1½ years' purchase.

29 S. WALES.—Non-dispensing Practice in large seaport town. Receipts for past 3 years averaged £1,543 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,500.

30 GLOUCESTERSHIRE.—Country Practice averaging £535 p.a. Panel 450. Convenient (small) house, and excellent garden, 1 acre. Garage small car. Premium, house and practice, £3,000.

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32 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first-rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. Premium one-third share 2 years' purchase.

33 LONDON, E.—Rapidly increasing Lock-up PRACTICE in populous district. Receipts 1928, £780. Panel 570. Rent £50. Premium £950.

34 HOME COUNTIES. — Non-dispensing PRACTICE about £1,500 in residential district, adjoining first-rate town. Practically no panel. Modern house (5 bedrooms) for sale. Golf, fishing, etc. Premium £1,650.

35 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

36 MIDLANDS.—Country Practice averaging nearly £1,500 p.a. in beautifully situated village easy reach of several good towns. Panel 600. Large modernized house, with electric light, gas, etc., for sale Sport. Premium £1,900.

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42 NOTTS. — Practice worth between £600 and £700 p.a. in residential district on outskirts of first-rate town. Small panel offering plenty of scope. Excellent modern house to rent. Premium £750.

43 MIDLANDS.—Partnership in middle-class Practice averaging £5,450 p.a. in flourishing and growing town. No panel and little midwifery. Applicant should be between 25 and 40 years of age, and preferably, though not essentially, a University Graduate. Premium one-fourth share (ultimately increasing to one-half) 2 years' purchase.

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47 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 13 acres of land for sale. Premium, practice, 1½ years' purchase.

48 LONDON, S.E. — Partnership in well-established Practice of £1,900 p.a. in good residential district. Exceptionally well-built detached house (6 bedrooms) to be rented. One-half share at two years' purchase. Good scope.

49 N. DEVON. — Partner required (after preliminary assistantship) in Practice worth £3,000 p.a. in first-rate country town. Panel over 2,100. Well-equipped Hospital. One-third share to suitable man at 2 years' purchase.

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52 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. Partner should be keen worker and a good surgeon. One-third to two-fifths share at 2 years' purchase.

53 MIDLANDS. — Practice about £350 p.a. in manufacturing village. Panel 190. House (4 bedrooms, etc.), and one acre of garden. Premium—Practice and house, £2,000.

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9. NORTH [illegible]ed general Country PRACTIC[illegible] and offering scope. Average [illegible] Law appt. and panel of 660. Fees 5/6 to 10/6. Good house, on lease, rent £84 p.a. Excellent schools within reach. Premium 1½ years' purchase.
10. HOME [illegible]T.—Old-established mainly [illegible]e for the last year £550, [illegible] 7/6. Little midwifery [illegible] mortgage. Sport of all k[illegible] Premium £850.
11. LONDON, NORTH.—OUTLYING RESIDENTIAL SUBURB.—PARTNERSHIP.—A one-third share (and up to one-half in two years' time) is offered in an old-established mixed general Practice, averaging about £2,000 p.a., with good scope. Non-panel at present, but ingoing partner should undertake this work. Fees 5/6 to 7/6, a few at 15/-. Little midwifery 3 to 10 gns. Suitable house can be bought. Sport of all kinds. Premium 2 years' purchase.
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14. NORTH [illegible]N.—A one-third share (with increase up [illegible]ery old-established and increasing mixed-clas[illegible] about £3,000 p.a., including panel of over 2,100, and appts. worth nearly £150. Fees 3/6 to 10/6. Midwifery 2 to 7 gns. Choice of houses. Sport of all kinds and schools. Premium 2 years' purchase, part by arrangement if necessary. Preliminary outdoor assistantship offered at a salary of £450 p.a. Scotch Graduate preferred, about 30 years of age.
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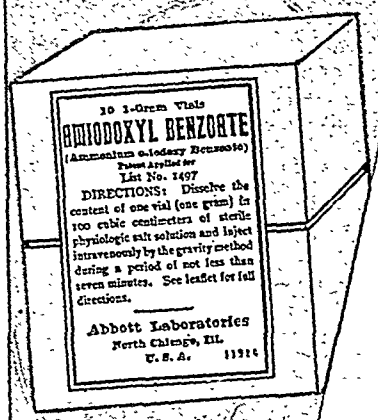

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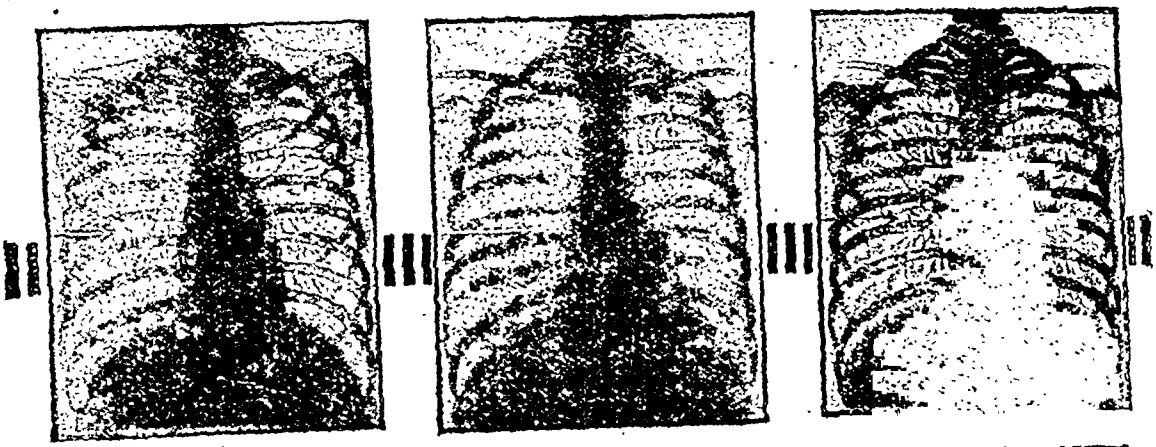

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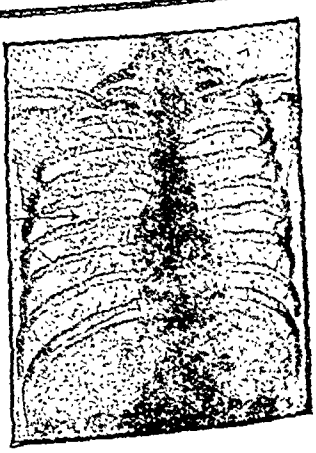

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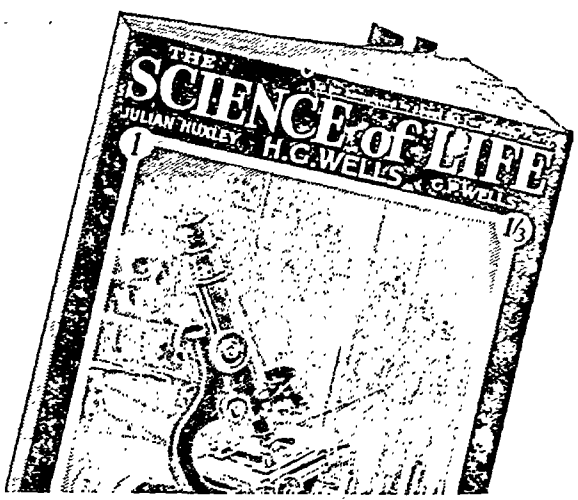

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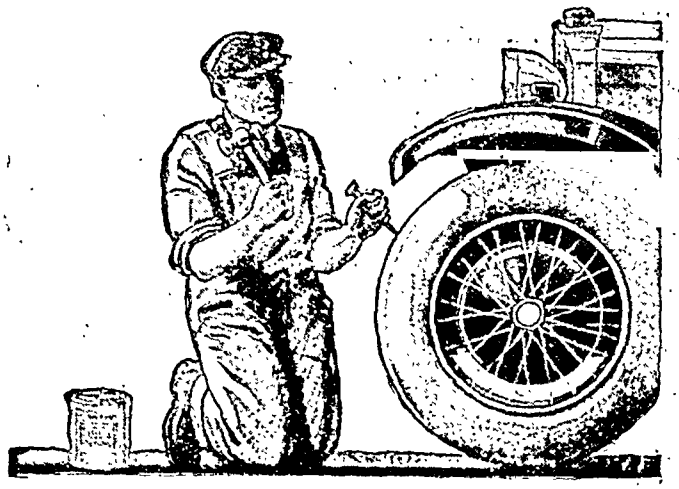

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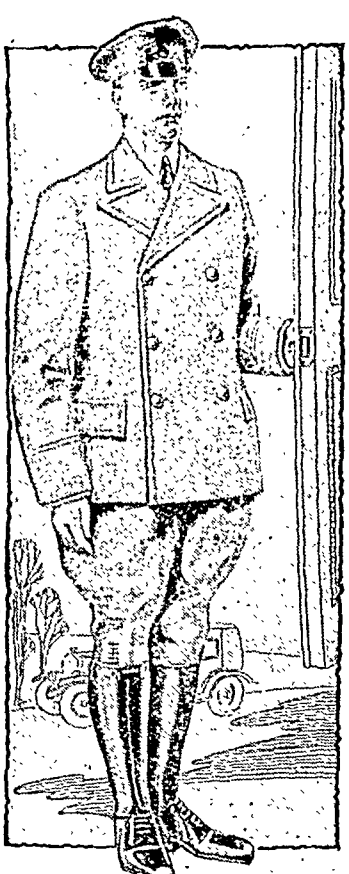

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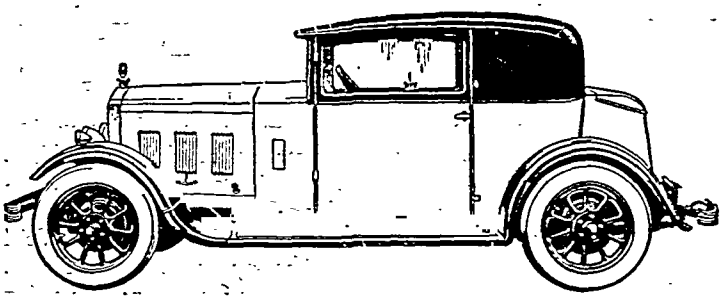

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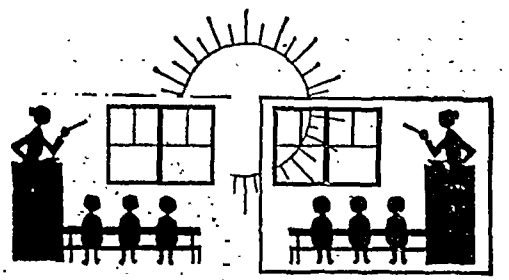

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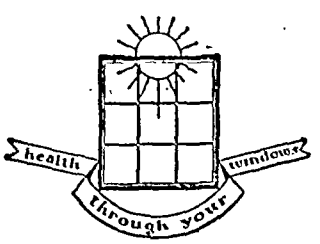

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WHICH EXISTS TO PROTECT YOUR INTERESTS AND SAVE YOUR MONEY.

ULTRA-VIOLET IRRADIATION—

by

The 'SCHEIDT' PROCESS

in which COLD QUARTZ TUBES with remarkable U.V. spectra give an easily controlled and positive activation, and leave the products

UNCHANGED in TASTE or ODOUR

THE ONLY PROCESS OF EFFECTIVELY IRRADIATING MILK WITHOUT TAINT OF OZONE AND CARBON DIOXIDE.

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This difficulty has now been definitely overcome!

THE 'Scheidt' Apparatus for cold tube activation is now installed, and in process of installation, at many of England's leading Clean Milk Farms and Dairies. These Farmers understand Milk and how it should taste where Infant Nurture is in question.

They have adopted the 'SCHEIDT' PROCESS!

Clinical, X-ray, and Blood Tests, carried out by eminent medical men using *only the Scheidt Cold Tube apparatus* (as against Quartz Lamp), are available, and have been quoted in the literature of Foreign Competitors, who appear to have thus paid an unconscious tribute to the value of the 'Scheidt' process.

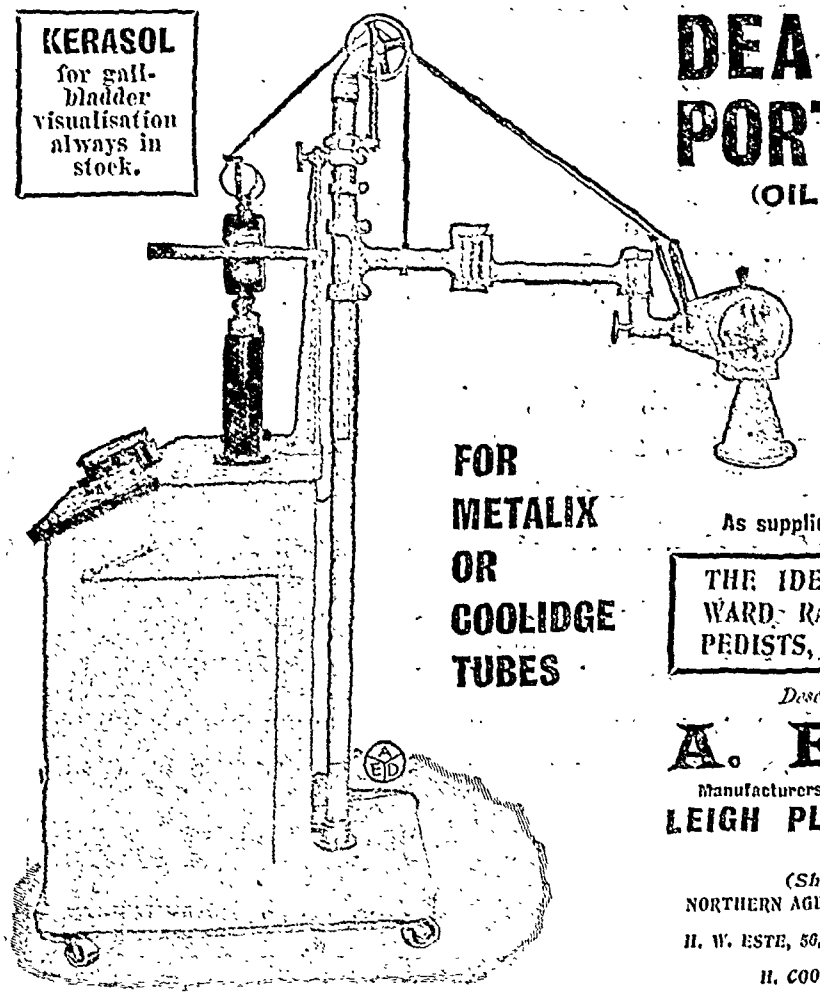
MEMBERS OF THE MEDICAL PROFESSION ARE INVITED TO A DEMONSTRATION AT

The FOODSTUFFS IRRADIATION Co., Ltd.,

15, CAROLINE STREET, BEDFORD SQUARE,

'Phone: MUSEUM 0162. LONDON, W.C.1.

KERASOL for gall-bladder visualisation always in stock.



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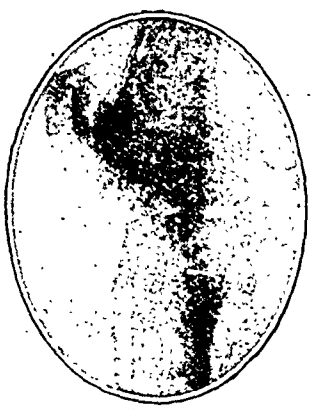
A Powerful Fibrolytic Agent

Strikingly Successful in Chronic Arthropathies



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Ready Solubility in water. Well tolerated.
Absence of local reaction on injection

'Iodolysin' is supplied in ampoules for hypodermic injection; in capsules for oral administration, or as an ointment or paint for local application.

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NATURAL MINERAL WATER—For Home Treatment.

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For Chronic Bronchitis and Catarrh.

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The danger of so-called Lysols sold at ridiculous prices cannot be over-emphasized. Always prescribe "Wright's Lysol; there is certain protection in that name.

British owned and British made by the makers of the world famed *Wright's Coal Tar Soap.*

Preferred by leading Hospitals.

BRITISH MADE - - BRITISH OWNED

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For Diabetes

Appleby's Starch-Reduced and Starch-Free Flours

1-oz. of FLOUR (30 grams) contains:—

	Carbohydrate.	Protein.	Calories.
No. 1. WHITE	16.5 grams.	6.9 grams.	93
No. 2. BROWN	15.0 ,,	6.3 ,,	83
No. 3. WHITE	11.1 ,,	9.6 ,,	87
STARCH-FREE	Nil.	18.9 ,,	76

Doctors are invited to write for samples and further particulars of these flours to

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British and Best.

VITALIA MEAT JUICE

8% Hæmoglobin

Sample free to medical practitioners on request to Vitalia Ltd., 17, Boniface St., London, S.E.1.

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"For example: A gentleman who had suffered for many "years from chronic diarrhœa received six Dimol Colonic "Lavages combined with Faradism over the colon.

"Result—complete cure.

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TO the problem of the "underweight" child Horlick's Malted Milk provides a convenient solution.

For many years it has been successfully used by the medical and nursing professions for fast-growing children, for invalids, for expectant and nursing mothers — in all cases where it is particularly important to sustain strength and replenish natural energy quickly.

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Horlick's Malted Milk (both forms) is obtainable everywhere in sealed glass bottles, at 2/-, 3/6, 8/6 and 15/-. Also in tablets.

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Ung. Renaglandin and Ung. Renaglandin Anaesthetic . . Invaluable in Hæmorrhoids—Styptic.

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The value of Kalzana tablets lies in their combination of calcium lactate and sodium lactate. In the body the sodium lactate becomes converted into sodium carbonate and imparts the requisite alkalescence to the blood which is necessary to ensure calcium retention. The reports of eminent physicians show that Kalzana possesses all the advantages which one may expect from a calcium preparation.

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"Kalzana acts efficiently in promoting the growth of strong bones and healthy teeth, in protecting the expectant and nursing mother against a dangerous loss of calcium . . . . particularly because Kalzana promotes calcium retention."

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calcium sodium-lactate

(Made by A. WULFING & CO., Amsterdam, Holland.)

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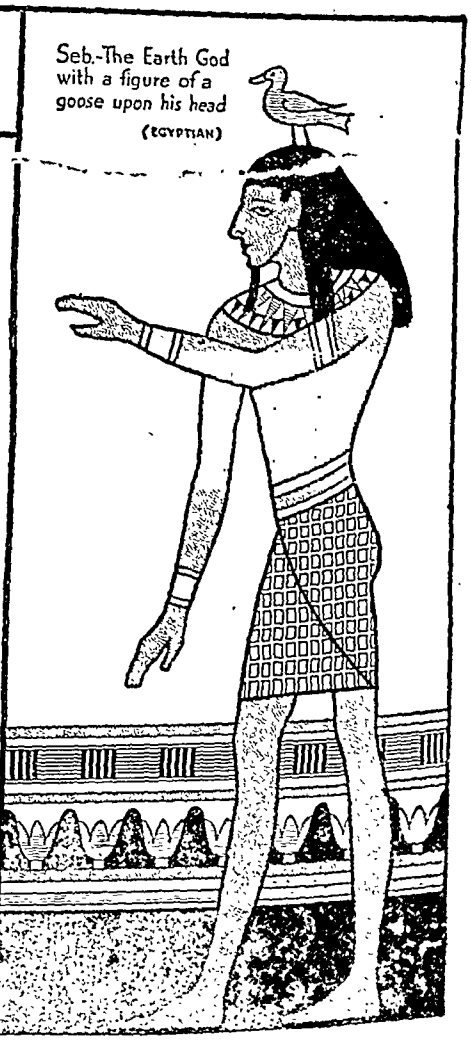
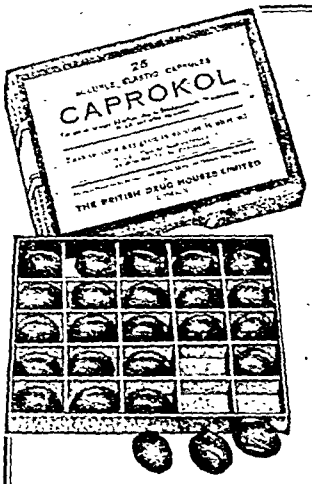


Seb-The Earth God with a figure of a goose upon his head (EGYPTIAN)



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Caprokol gives immediate symptomatic relief in infections of the urinary tract; this is appreciated by physician and patient alike.

Caprokol treatment ensures hours of continuous sleep (unbroken by the necessity for frequent micturition), cessation of pain, and subsidence of fever. The patient's appetite increases, and, as the suffering decreases, the general health rapidly improves.

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Wright's Coal Tar Soap.
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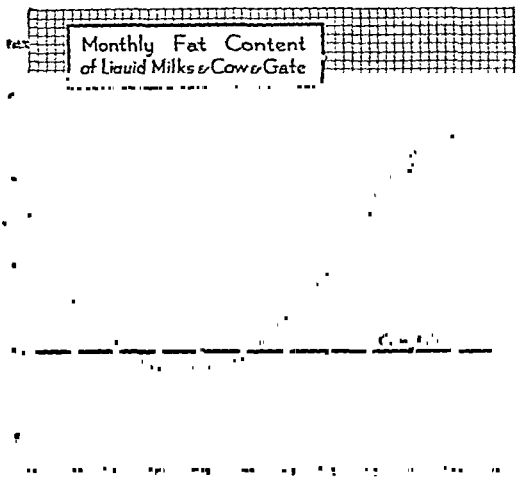

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PEPTONES
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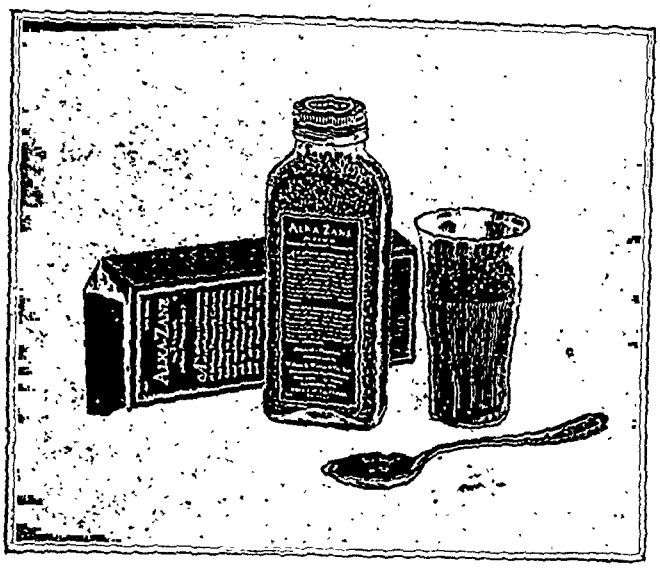

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Nujol is a highly active solvent. If it be shaken with a watery solution of indol, more than half the indol is quickly taken up. *Nujol readily dissolves these waste and* poisonous substances, many of which are more soluble in liquid petrolatum than in water.

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An Extract of the Posterior Lobe of the Pituitary Gland standardised so that 1 c.c. contains 10 International units. In addition to the uses described above, its value in the practice of Midwifery is indisputable. It is available in 1 c.c. and 0.5 c.c. ampoules.

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Plasmona contains the **FOUR** most essential Vitamins, A, B, D & E in **natural** form and in **correct** proportion, combined with protein of milk, the anti-anaemic principle of liver, the lipoids of the central nerve system, phosphates, calcium, magnesium, iron-salts.

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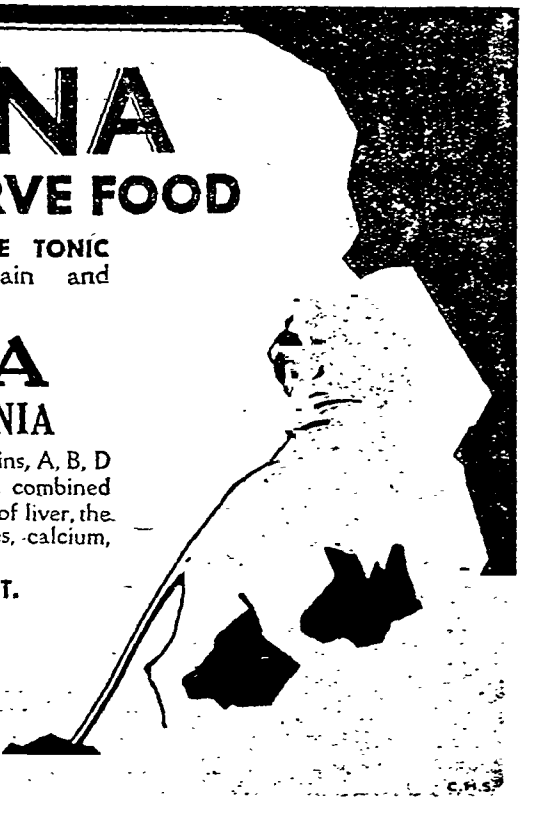

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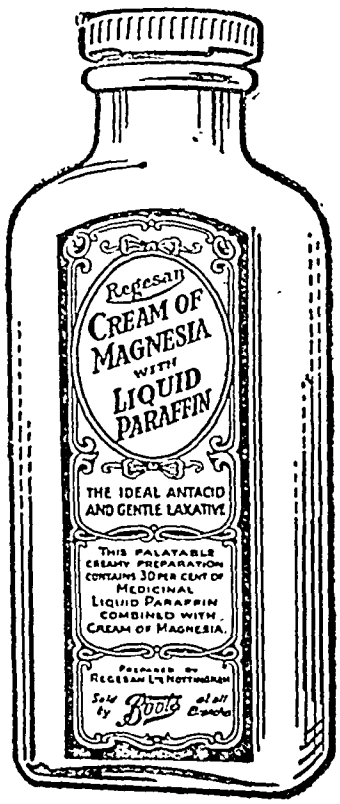

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CREAM OF MAGNESIA WITH LIQUID PARAFFIN

(Contains 30% of Regelax Liquid Paraffin)

An excellent combination of two proven remedies—exhibiting the advantages of both and minimising the tendency of Liquid Paraffin to leak. It is an emulsion, free from oily taste, in which the Liquid Paraffin is held in a very finely divided state, and as such is suitable for the treatment of Constipation, with which digestive troubles are associated.
Regesan Cream of Magnesia with Liquid Paraffin forms a soft, easily evacuated faecal mass, and is particularly useful in the treatment of Hæmorrhoids.

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Full size trial sample free on application by postcard to BOOTS THE CHEMISTS, Station St., Nottingham.

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Pure Boots Drug Co Ltd

OVER 800 BRANCHES IN GREAT BRITAIN

BOOTS PURE DRUG CO. LTD., NOTTINGHAM

For Head Colds Prescribe "Mistol"

MISTOL and the Mistol Dropper are a real advance in nose and throat therapy. Menthol, eucalyptol, and camphor are combined in a specially prepared petroleum base, which keeps these soothing and healing ingredients in direct contact with the mucous membrane for a considerable length of time.

Unlike douches, Mistol avoids any possibility of sinus trouble. With head tilted back, the patient should let Mistol drop into each nostril until it is felt to be running into the back of the throat. It is manifestly superior to salves which do not reach all parts of the mucous membrane.

Especially efficacious in coughs and colds, simple, congestive, and catarrhal rhinitis, hoarseness, bronchitis, and laryngitis.

Sold in original sealed cartons containing a—

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Two-ounce Bottle and Mistol Dropper.

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The Original Preparation
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Typical Case.

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Diagnosis: Right maxillary sinusitis.

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—Extract from PRACTICAL LOCAL ANÆSTHESIA (Farr).

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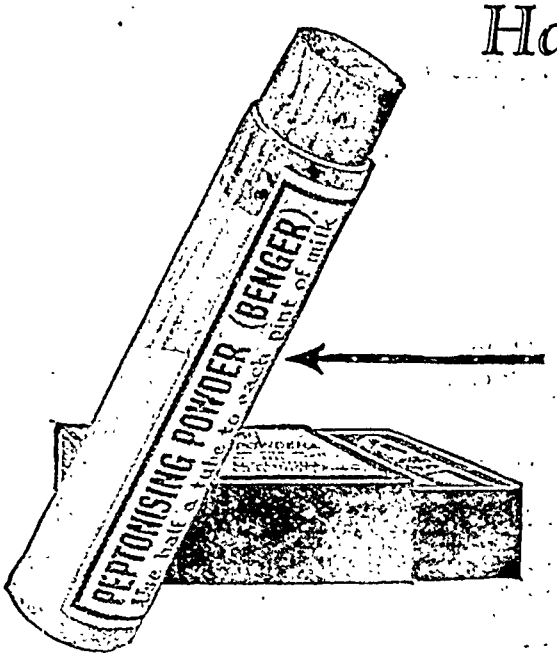

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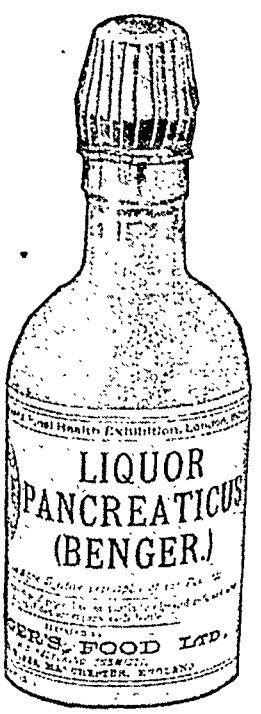

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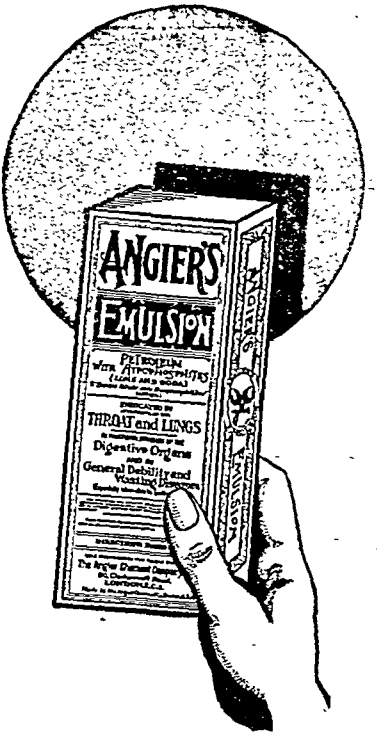

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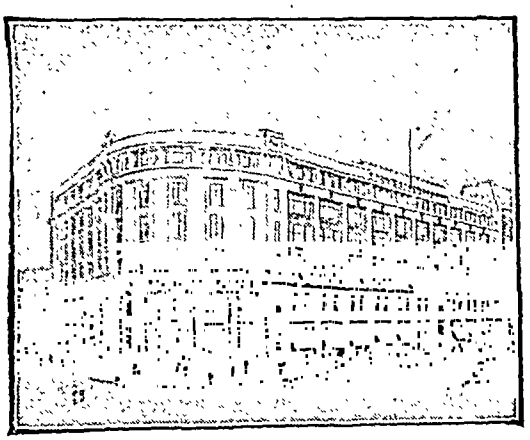

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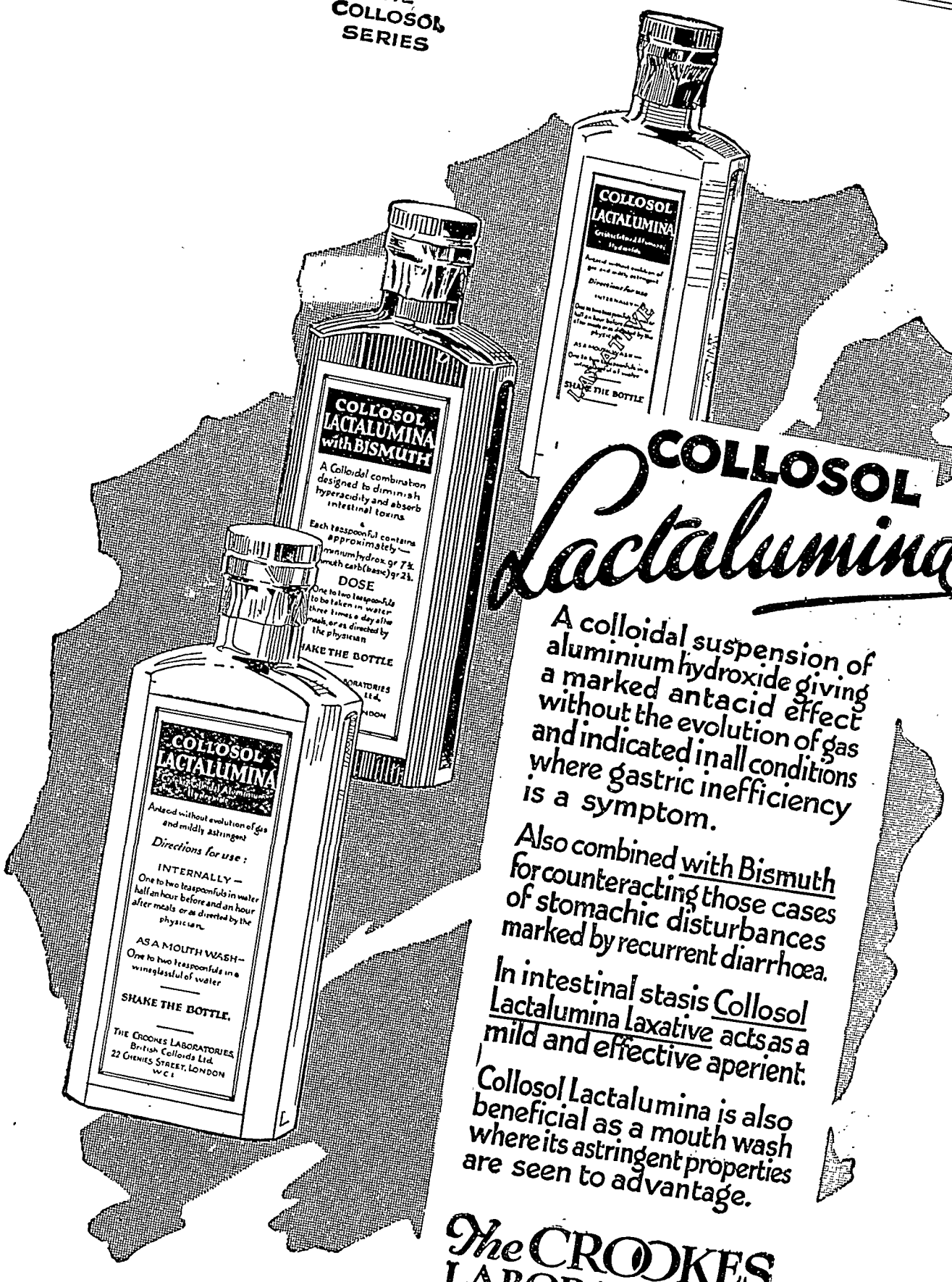

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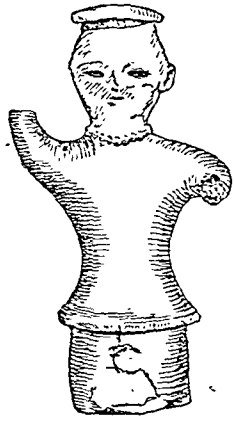

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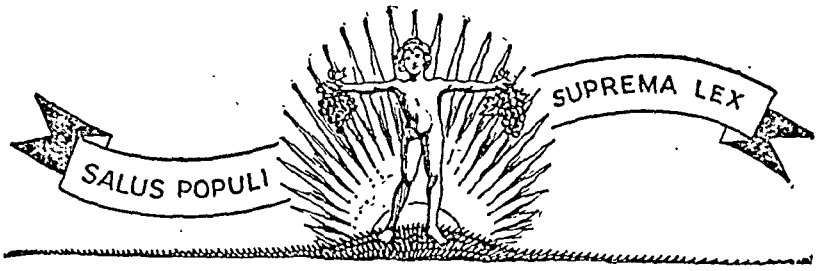

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THE PRESENT POSITION OF LEAD THERAPY IN MALIGNANT DISEASE.*

BY

W. BLAIR BELL, B.S., M.D.LOND., HON. F.A.C.S.,

PROFESSOR OF GYNAECOLOGY AND OBSTETRICS IN THE UNIVERSITY OF LIVERPOOL; GYNAECOLOGICAL AND OBSTETRICAL SURGEON, ROYAL INFIRMARY, LIVERPOOL; DIRECTOR, LIVERPOOL MEDICAL RESEARCH ORGANIZATION.

INTRODUCTION.

At the outset it is advisable once more to express the conviction that by prevention only shall we stay the onward march of cancer. Elsewhere[5] we have dealt with this aspect of the problem, and have indicated that success in this sphere can be accomplished only if we take into account the numerous sources of, and factors concerned in, the irritation of the human tissues that may result in the precancerous state. On the other hand, the alleviation and cure of cancer, once the disease has developed, appears *not to be related to the etiology as such, but rather to the* nature of the cancerous process to be arrested by all the remedial measures at our disposal. Until recently these measures have consisted almost entirely of surgical and radiological procedures, and no impression seems to have been made on the rate of increase in the mortality rate. Clearly, the mortality figures must have been reduced in direct proportion to the number of cases saved, but these have been too few in number to counterbalance the increased incidence rate of the disease, which appears in a great measure to be due to the prolongation of life in civilized communities.

In our opinion the saving of more patients stricken with the disease—often men and women in the heyday of their mental attainments and of their value to mankind—will ultimately come through chemotherapeutical or biochemotherapeutical methods. In regard to the latter, immunifacient and cytotoxic effects by means of specific biological substances were first attempted by us twenty years ago, and are still under consideration. The local treatment of malignant affections has almost, if not quite, reached standardization.

CHEMOTHERAPY IN CANCER.

Successful chemotherapy is particularly difficult even in connexion with the destruction of parasitic organisms that have gained entrance to the body, but in this direction great advances have been made during recent years. When, however, we attempt the elimination by synthetic products of certain cells developed from, and dependent on, ordinary somatic tissues—"organochemotherapy," as it is called—we are faced by many grave difficulties, and we shall probably be held up in our search for substances with a high organochemotherapeutical index until further investigations have been made concerning the functions of the reticulo-endothelial system, and in regard to the physicochemical conditions in which drugs exert their actions on living tissues. Research work along these lines is in its infancy, but nevertheless must be properly appreciated without delay.

The reasons why we adopted the metal lead as our primary constituent for the chemotherapeutical treatment of cancer have so often been stated that no further explanation is necessary.† A point of importance associated with our work is that the encouragement received from the use of crude products has been sufficient to urge us forward to seek improvements especially in the direction of organic complexes containing lead, and, in a general way, hope of ultimate success in the treatment of malignant disease by chemotherapeutical measures has been kindled in others. It is our earnest desire to foster this hope in order that many more labourers may enter this promising field. Interest can best be promoted if we recall a few only of the encouraging developments we have witnessed during our work, and attempt to discover why we have been rewarded with a certain measure of success in the cases now described, some of which have been recorded on previous occasions.

COMBINED TREATMENT OF CANCER.

We have mentioned the utilization of all the remedial agents at our disposal in the treatment of cancer, and it is certain that no doctor, no one with humanitarian instincts, would do otherwise than place the safety and cure of his patients foremost in his mind. It will be seen, then, that not all of our patients have been treated by lead alone. Whenever practicable, we have felt it desirable to assist this treatment by the removal of as much of the growth as possible, the subsequent treatment with lead being commenced immediately. In many cases, too, we have utilized our knowledge of the augmented effect of x rays and radium acting in conjunction with lead, and of the fact that this combination may enable us to obtain satisfactory results with smaller doses of each than would be effective if either were employed alone. This, no doubt, may be open to the criticism that in those cases in which combined treatment has been practised it is impossible to say which agent has produced the beneficial result, when this has been obtained. But, even though we do regard the dictates of humanity, surely we have ample evidence in favour of the use of lead, for in a number of cases in which some preparation of this metal has alone been used recovery has followed. So, too, we now have the knowledge, not only as the result of our own observations, but also of those of Carter Wood,[10] Mottram,[7] and others,[6 8] that while x rays, radium, and lead may each produce a beneficial effect when used separately, an aggregate effect is secured when lead and x rays or lead and radium are applied within a short time of one another.

It will be found, therefore, that some of our cases were treated by lead alone, others by operation followed by lead, and again others by lead and x rays or radium.

INDICATIONS AND CONTRAINDICATIONS FOR TREATMENT WITH LEAD.

We have emphasized the fact that in respect of our present practice the general condition of the patient is of paramount importance. With increased experience we have come to regard the situation of the malignant neoplasm as of lesser importance, and to-day we certainly should neither exclude cancer of the lung nor malignant disease of the central nervous system.

The question of malignant disease of the liver and of a kidney is, however, more difficult, for in the general examination of the patient we lay considerable stress on the integrity of the functions of these organs. It will readily be appreciated that if either be already affected with malignant disease, or be otherwise previously damaged, there is a greatly increased risk of adding to their functional distress by the administration of lead. At any rate in such circumstances great caution is required.

It may be interesting to recall one case (248) in which there was carcinoma of the left kidney. Careful examination revealed the fact that the right kidney was absent. To have treated a patient with lead in these circumstances would have been to court disaster.

Apart from lesions in these two organs, we must also take into consideration the state of the heart and blood. Severe myocardial insufficiency necessitates the most cautious use of lead, and serious anaemia with a low red-cell count precludes the use of this substance until considerable improvement by blood transfusion or other measures has been effected. In the last place, we must also take into careful account the general condition of the patient in regard to acidosis with ketonuria and other constitutional states.

In malignant disease the progress to a fatal issue varies in different patients in a remarkable manner. In some—usually the young—the course is so rapid that the general condition of the patient appears to be little affected until the very end. In others—for the most part the aged—the disease progresses very slowly and appears to produce

* A post-graduate lecture, with lantern illustrations, delivered under the auspices of the British Empire Cancer Campaign and the Leeds and West Riding Medico-Chirurgical Society, in the Medical School, Leeds, on January 9th, 1929. This investigation was undertaken on behalf of the Liverpool Medical Research Organization.

† The chief matters of interest in this connexion were demonstrated.

no serious constitutional disturbance for a very long time. In most patients, however, the malignant process advances at a steady rate, undermining the constitution of the patient, however strong he may previously have been, and sapping his vitality, until what we describe as a condition of profound cachexia supervenes. Now it is in the presence of a state of definite cachexia that we must hold our hand. So long as the patient is in good condition, with a prospect of about six months of life, if other things are equal, treatment may be contemplated. In this matter considerable judgement and prognostic acumen are necessary.

METHODS OF TREATMENT WITH LEAD.

Dosage.—In a general way it may be said that we have tended gradually to decrease the individual doses, while aiming steadfastly at the administration of a high total quantity of lead—that is, 0.5 gram to 0.8 gram or a little more. In a number of cases we have been successful with a smaller total quantity than 0.5 gram of lead, which we believe to be the minimum amount desirable in ordinary circumstances. On the other hand, we have given nearly 1 gram of lead before obtaining a satisfactory final result. Empiricism in this matter is quite impossible; the greatest consideration and care are required if safety to the patient is to be ensured, and a successful result obtained.

Material.—For almost the entire part we have employed a suspension of metallic lead prepared by Professor Lewis and his associates, and the colloidal preparation of lead phosphate made by Professor Heilbron and those working with him. For a time we used a suspension of lead selenide, but this appeared to be almost too stable to give good results, although it is not inert; it is, however, singularly atoxic. Lead-selenium has, however, been successfully employed by Dr. Todd of Bristol,* who was the first to make and use this preparation of lead.

Administration.—Injection of the material into a vein in the arm has been by far the most common method of administration. We have, however, in a few cases, injected the preparation into an artery. Two cases of malignant disease in limbs will be mentioned in which this procedure has been practised, apparently, and so far, with promising results. We look forward to the obvious advantages and possibilities of this route in the treatment of malignant disease of the limbs, mouth, and other regions with a readily available and convenient arterial supply. In a few of our earlier cases intramuscular injections were employed. Ionization with lead of malignant ulcers is, too, a mode of attack which we have practised. We have already referred to the beneficial results that may be obtained by the application of x rays or radium at an interval of four days following the administration of lead.

Mobilization.—We apply this term to the process of bringing the lead that is stored in the body again into the circulation, from which it may be taken up by the growth, if this still be present, or excreted. Some years ago we were faced with the difficulty that in certain patients, who had received what we considered the maximum quantity of lead that could be given with safety, the neoplasm was still in existence or had recurred. It occurred to us to mobilize the lead still remaining in the body by the administration of acids or other chemical substances; and we found this possible. Sometimes stippled erythrocytes reappeared in the blood, and excretion by the urine and faeces was increased. We have, however, no direct evidence that the growth takes up the lead in these circumstances. We are at present inclined to think that the metal already attached to the tumour may be released; and in some cases (for example, patient 185 quoted below) the growth which has not entirely disappeared but is arrested may thereby be released from control and start afresh to develop. Consequently, we now hold the view that so long as any growth remains mobilization must not be practised. Indeed, this procedure should be reserved for those cases in which there has been no sign of neoplastic development for several years, and in which it is desirable that the liver and kidney functions should be normal, as in patient 77 recorded below.

There is no doubt that lead tends to be eliminated from the body in the course of time, and this itself may be a source of anxiety in respect of the possibility of recurrence. It appears most profitable to maintain a supply of lead in the tissues until all danger of recurrence is long past, for we have observed that in such circumstances the placenta in pregnancy several years subsequently (see patients 77 and R. I. 39 described below), and therefore probably a neoplasm, is capable of taking to itself lead from that stored as the result of previous treatment.

GENERAL CHARACTER OF RESULTS.

One of the difficulties that have arisen in the general appraisement of results has been due to the different methods of tabulation adopted by various authors. Those unable to appreciate evidential values have taken the definite stand of "all or nothing"—that is, absolute cures or failures alone, in their view, are worth recording. Moreover, the primary condition attaching to all forms of scientific treatment—namely, that the method adopted shall be properly applied—has not infrequently been ignored. In this connexion it will be found that where a series of failures has been recorded the patients have been so ill that treatment could not be completed, or that the treatment was so conducted that the patients died as the result of it. Such groups of cases should be excluded from any estimation of the effect of treatment—they have no evidential value at all.

Again, it cannot be too forcefully reiterated that in the early application of any new method, however important an absolutely curative effect may be, *arrest and alleviation of the disease must equally be taken into account*, for such phenomena afford a valuable indication of the correctness of the principle of the treatment adopted, and give promise of the fruits of complete victory if the pursuit be pressed.

There is another phenomenon of great interest that has been observed by ourselves and others, concerning which we shall have more to say directly. We refer to the complete arrest or even disappearance of the growth with reappearance after a short or a considerable length of time. From this we may provisionally conclude that it is advisable to continue in a modified form the treatment over a longer period of time than previously considered necessary.

Finally, it may be suggested that in all cases in which a beneficial effect is obtained, the restoration of the natural vital processes plays a part in the result.

CERTAIN CASES TREATED WITH LEAD.*

The number of cases described under this heading are arbitrarily limited by space only, and they are merely representative of the results that may be expected if the work be properly conducted. In two or three cases we have had to accept the statement of the surgeon concerned as to the nature of the primary neoplasm; consequently we think that the interests of truth will best be served if we record the names of those connected with all the cases presented.

(A) *Cases in which the Primary Growth was Treated with Lead alone.*

In this group are included some cases in which the abdomen was opened to secure specimens of growth for histological examination, or the immediate relief of symptoms and physical states, such as intestinal obstruction.

1.—Female, aged 36; married; 3-para.
Diagnosis.—Carcinoma of left breast (section +) with glands in axilla. Pronounced inoperable by Professor R. E. Kelly and Mr. Frank Jeans.
Treatment.—Intravenous injections of partly colloidal lead iodide commenced on November 9th, 1920. Total quantity administered approximately 0.3 gram Pb. Severe reaction.
Subsequent History.—Now alive and well more than eight years later. Two more children; both suckled at previously diseased breast.

77.—Female, aged 27; married; 5-para.
Diagnosis.—Sarcoma small intestine (section +).
Treatment.—Intestinal anastomosis for obstruction by Professor Kelly. Growth irremovable. Intravenous injections of partly colloidal lead iodide commenced February 26th, 1923. Total quantity administered 0.45 gram Pb. Very slight reaction.

* In our forthcoming work on *Some Aspects of the Cancer Problem*, to be published by Messrs. Baillière, Tindall and Cox in the spring or early summer, the cases, here recorded very briefly, are given in more detail and are illustrated. Moreover, *in this book* there will be additional case records and tables, now omitted owing to exigencies of space.

Subsequent History.—Growth disappeared and, so far as original disease was concerned, patient remained well for over five years. Unfortunately she died of toxaemia of pregnancy in May, 1928.

112.—Female, aged 59; married; 2-para.
Diagnosis.—Carcinoma of liver and peritoneum (section +).
Treatment.—Paracentesis twice under the care of Professor John Hay. Exploratory laparotomy. Intravenous injections of partly colloidal lead iodide commenced August 3rd, 1923. Total quantity administered 0.345 gram Pb. No reaction.
Subsequent History.—The patient now alive and well five and a half years later.

185.—Female, aged 27; unmarried; medical student.
Diagnosis.—Retroperitoneal sarcoma (section +).
Treatment.—Exploratory laparotomy. Intravenous injections of colloidal lead commenced April 15th, 1925. Slight reaction, quick recovery. Total quantity administered 0.75 gram. No scholastic examination missed during treatment.
Subsequent History.—Now alive and well nearly four years later, though some evidence of a small arrested growth to be made out on palpation. At present holding resident hospital appointment.

R. I. 9.—Female, aged 45; unmarried.
Diagnosis.—Sarcoma of third lumbar vertebra, which was destroyed (*x* ray +).
Treatment.—Intravenous injections of colloidal lead commenced July 27th, 1925. Total quantity administered 0.55 gram Pb. Steady improvement. Slight reaction.
Subsequent History.—Now alive and well three and a half years later, except for occasional pain in region of deformity.

352.—Female, aged 66; unmarried.
Diagnosis.—Squamous carcinoma of larynx—left arytenoid (section +).
Treatment.—Intravenous injections of colloidal lead phosphate commenced March 8th, 1928. Total quantity administered approximately 0.5 gram Pb. Slight reaction. Gradual diminution of tumour.
Subsequent History.—Patient is alive and doing well. Last report from laryngologist—Mr. H. V. Forster—(December 10th, 1928): "The left arytenoid from which I removed a piece [previously] . . . is now pale in appearance, and in colour is similar to the right one."

R. I. 39.—Female, aged 37; married; 9-para.
Diagnosis.—Carcinoma of rectum with glands, associated with pregnancy. (No section.)
Treatment.—Exploratory laparotomy and colostomy by Mr. Kennon. Intravenous injections of colloidal lead commenced July 3rd, 1926. Total quantity administered 0.465 gram Pb. Slight reaction. Normal pregnancy and confinement.
Subsequent History.—Premature delivery April, 1928. Patient alive and well two and a half years later. No evidence of disease.

R. I. 102.—Male, aged 60.
Diagnosis.—Squamous carcinoma of floor of mouth (section +). Glands in the neck.
Treatment.—Radium (80 mg.) applied by Mr. Frank Jeans to floor of the mouth for twenty-four hours (August 18th, 1927). Intravenous injections of colloidal lead selenide commenced September 1st, 1927. Total amount administered 0.45 gram Pb. No reaction. Glands in neck gradually disappeared under treatment, and the ulcerated area in floor of mouth healed and thickening disappeared.
Subsequent History.—Patient now alive and well one and a half years later.
Comment.—Improvement and disappearance of primary growth and glands could hardly have been caused by single dose of radium.

N. H. 22.—Male, aged 69.
Diagnosis.—Carcinoma of [illegible] bladder. (No section.)
Treatment.—Exploratory laparotomy by Mr. J. H. Rawlinson. Intravenous injections of colloidal lead commenced August 19th, 1925. Total quantity administered 0.44 gram Pb. Occasional vomiting during treatment.
Subsequent History.—Now alive and well three and a half years later. Some thickening in neighbourhood of scar.

N. H. 53.—Male, aged 59.
Diagnosis.—Carcinoma of splenic flexure of colon. (No section.)
Treatment.—Operation for obstruction by Mr. Oldham, June, 23rd, 1927. Fixed tumour size of orange; numerous glands. Anastomosis. Intravenous injections of colloidal lead commenced August 10th, 1927. Total amount administered 0.55 gram Pb. No reaction noted.
Subsequent History.—Now alive and well one and a half years later. Increased in weight 2 st. No tumour palpable.

N. H. 25.—Male, aged 42.
Diagnosis.—Carcinoma of ampulla of Vater. (No section.)
Treatment.—Gastro-enterostomy by Mr. G. C. Simpson. Intravenous injections of colloidal lead commenced June 8th, 1925. Total quantity administered 0.6 gram Pb. No reaction.
Subsequent History.—Now alive and well three and a half years later. No evidence of disease.

(B) *Treatment of the Primary Growth by Incomplete Operation and the Subsequent Administration of Lead.*

The following cases, in which the growth was primary, are illustrative of partial—that is, *definitely incomplete*—operative procedures, as determined at operation by the recognition of malignant tissue left, or by histological examinations of pieces excised from the edge of the growth removed or from the irremovable part of the growth remaining *in situ*.

192.—Female, aged 60; married; 1-para.
Diagnosis.—Squamous carcinoma of cervix, invasion of parametrium (sections +).
Treatment.—Partial removal by abdominal route on July 18th, 1925. Intravenous injections of colloidal lead commenced August 4th, 1925. Total quantity administered 0.61 gram Pb. Malignant mass left in pelvis observed gradually to disappear. Very slight reaction.
Subsequent History.—Now alive and well three and a half years later.

221.—Female, aged 55; married; 0-para.
Diagnosis.—Carcinoma of body of uterus with three vaginal metastases (sections +).
Treatment.—Hysterectomy by Dr. R. A. Hendry, December 15th, 1924. Intravenous injections of colloidal lead commenced December 31st, 1924. Total quantity administered 0.63 gram Pb. Nodules in vagina observed gradually to disappear. Slight reaction.
Subsequent History.—Patient well for one and a half years, then evidence of regenesis in vagina. Diathermy; mobilization. Patient now well after a further lapse of one and a half years. No evidence of disease.

64.—*Female, aged 47; married; 5-para.*
Diagnosis.—Spheroidal carcinoma of breast, with invasion of muscle and large axillary glands (sections +).
Treatment.—Excision, December 24th, 1922. Intravenous injections of partly colloidal lead iodide commenced January 2nd, 1923. Total quantity administered 0.43 gram Pb. Mobilization. No reaction.
Subsequent History.—Now alive and well six years later.
Comment.—Operation incomplete on examination of specimen (Professor Bloodgood).

N. H. 18.—Female, aged 34; married; 0-para.
Diagnosis.—Columnar carcinoma rectum (section +).
Treatment.—Excision of rectum by Mr. G. C. Simpson, November 17th, 1924. Several adherent glands left on sacrum. Intravenous injections of colloidal lead commenced January 2nd, 1925. Total quantity administered 0.455 gram Pb. No reaction.
Subsequent History.—There has been a recto-vaginal fistula since the operation. Patient now alive and free from disease four years later.

R. I. 4.—Female, aged 52; married; 3-para.
Diagnosis.—Extensive squamous carcinoma cervix (section +).
Treatment.—Vaginal hysterectomy, September 25th, 1924. Disease left in the broad ligaments and to edge of specimen (sections +). Intravenous injections of colloidal lead commenced December 16th, 1924. Total quantity administered approximately 0.5 gram Pb. *No serious reaction.*
Subsequent History.—Now alive and well four years later.

R. I. 70.—Male, aged 51.
[illegible] carcinoma of glands of neck (section +).
[illegible] by Mr. Woolfenden April 27th, 1926, ar[illegible] growth was almost certainly left behind at the second operation. Intravenous injections of colloidal lead selenide commenced February 17th, 1927. Total amount administered 0.465 gram Pb. Slight reaction.
Subsequent History.—Now, nearly two years later, general condition good and there is no evidence of growth.
Comment.—It is hardly possible that the patient was cured by the operations, especially as *the primary growth was never identified*, but was probably in the mouth, which was in an unhealthy condition with papillary stomatitis.

N. H. 27.—Female, aged 37; married; 0-para.
Diagnosis.—Carcinoma of stomach (section +).
Treatment.—Operation by Mr. G. C. Simpson, November 13th, 1925—partial gastrectomy. Glands very much enlarged and hard; not removed. Intravenous injections of colloidal lead commenced December 3rd, 1925. Total quantity administered 0.45 gram Pb. Some reaction.
Subsequent History.—Patient now alive and well and free of symptoms, with gain in weight, 3 years later. No evidence of disease.
Comment.—This case obviously could not have been cured by operation alone as the involved glands were left.

(C) *Cases in which Recurrence occurred after Removal of the Primary Neoplasm, and which were Subsequently Treated with Lead.*

A large proportion of all cases received by us for treatment has included those in which there has been recurrence at some period after operation performed elsewhere. As we have indicated, we prefer to treat the primary growth ourselves in order that treatment may be commenced immediately after operation, rather than to treat patients in whom there is a definite recurrence. In the latter circumstances the patient is usually in poor condition, and the disease is often much more widespread than can

be recognized. These patients are difficult to cure; still we have had a number of apparent successes, a few of which are recorded below. In those cases in which a primary operation performed by others had been followed by recurrence obviously the operation cannot be taken into account as an accessory factor in the ultimate recovery of the patient.

110.—Female, aged 57; married; 5-para.
Diagnosis.—Recurrence after operation for spheroidal carcinoma of right breast (section +).
Treatment.—Excision by Mr. Battle, March, 1922; second operation by Mr. Maynard Smith, May 21st, 1923, for lump above clavicle. Further evidence of recurrence. Intravenous injections of partly colloidal lead iodide and colloidal lead commenced July 27th, 1923. Total quantity administered 0.2065 gram Pb. No reaction.
Subsequent History.—Alive and well five and a half years later.

201.—Female, aged 50; unmarried.
Diagnosis.—Scirrhous carcinoma of left breast with extensive local recurrence on chest wall, glands (section +), and left lung (*x* ray and aspiration).
Treatment.—Intravenous injections of colloidal lead commenced December 16th, 1925. Total quantity administered 0.7 gram Pb. Slight reaction.
Subsequent History.—The extensive disease was considerably reduced, and after two and a half years the general condition of the patient was much improved. Unfortunately she died of acute pneumonia following a chill in August, 1928.

216.—Female, aged 62; unmarried.
Diagnosis.—Recurrent spheroidal carcinoma of left breast involving rib (section +).
Treatment.—Intravenous injections of colloidal lead commenced January 13th, 1926. After 0.3 gram administered, suspension for four months. Scar tissue showed "very atypical regressing almost unrecognizable spheroidal-celled carcinoma." Further injections, making total quantity 0.575 gram Pb. Slight reaction. Later mobilization. Small recurrence removed December 6th, 1928. Radium, followed six days later by an injection, making total quantity 0.6 gram Pb. received.
Subsequent History.—Quite well at the present time.

161.—Female, aged 60; married; 1-para.
Diagnosis.—Scirrhous carcinoma of left breast (section +). Recurrence local and at root left lung (*x* ray, Dr. Finzi).
Treatment.—"Radical" excision by Sir Lenthal Cheatle of left breast, May 12th, 1924. Intravenous injections of colloidal lead commenced August 8th, 1924. Total quantity administered 0.595 gram Pb. Severe delayed reaction after completion—vomiting for fourteen days; then complete recovery.
Subsequent History.—Believed to be now alive and well four and a half years later. Last letter received November, 1926.

169.—Female, aged 47; married; 0-para.
Diagnosis.—Scirrhous carcinoma left breast (section +). Recurrence in supraclavicular and axillary glands, and local.
Treatment.—"Radical" excision by Sir Lenthal Cheatle, January, 1923. *X*-ray applications by the late Dr. A. Reid. Sir Lenthal Cheatle discovered recurrence in August, 1924. Intravenous injections of colloidal lead commenced September 17th, 1924. Some reaction occasionally. Total quantity administered 0.6 gram Pb.
Subsequent History.—Now alive and well four and a half years later.

R. I. 51.—Male, aged 67.
Diagnosis.—Squamous carcinoma of lip (section +) with glands in the neck.
Treatment.—Excision of primary growth by Mr. Woolfenden, May 25th, 1926, and excision of glands by Mr. Nuttall, July 9th, 1926. Definite recurrence two months later: a large hard fixed mass in neck. Intravenous injections of colloidal lead commenced September 11th, 1926. Total amount administered 0.4 gram Pb. No reaction.
Subsequent History.—Now alive and well, no evidence of disease nearly two and a half years later.

(D) *Treatment of the Primary Growth by Operation and the Subsequent Administration of Lead.*

The next group we shall consider is that in which operation for the primary growth was performed in Liverpool, with three exceptions, and the patients treated immediately. This method has, of course, been largely employed, and the successful results are many; consequently we naturally prefer to treat cases of malignant disease ourselves from the time the diagnosis is first made. It must, of course, be admitted that in some of the patients the disease may have been entirely removed at operation. An attempt will be made to indicate the chances of this occurrence in regard to the cases described; in many it will be obvious that the prognosis subsequently to operation alone would have been very bad. Moreover, the character of the operation must be taken into account—for example, vaginal hysterectomy for cancer of the cervix, of which the first four are examples.

30.—Female, aged 31; widow; 3-para.
Diagnosis.—Squamous carcinoma of cervix (section +).
Treatment.—Amputation of cervix, October 9th, 1921. Intravenous injections of partly colloidal lead iodide commenced November 1st, 1921. Total quantity administered 0.768 gram Pb. No reaction. Subsequently vaginal hysterectomy—safety measure—December 4th, 1922; no evidence of cancer found (sections −).
Subsequent History.—Now alive and well more than seven years later.
Comment.—Operation alone might have cured this patient, but her youth made prognosis unfavourable.

139.—Female, aged 49; widow; 1-para.
Diagnosis.—Squamous carcinoma of cervix (section +).
Treatment.—Vaginal hysterectomy, February 24th, 1924. Intravenous injections of colloidal lead and partly colloidal lead iodide commenced March 7th, 1924. Total quantity administered approximately 0.3 gram Pb. No reaction.
Subsequent History.—Now alive and well nearly five years later.
Comment.—Prognosis after operation alone was unfavourable owing to the advanced stage of the disease.

155.—Female, aged 42; married; 6-para.
Diagnosis.—Squamous carcinoma of cervix (section +).
Treatment.—Vaginal hysterectomy, June 17th, 1924. Involvement of the parametrium probable. Intravenous injections of colloidal lead commenced July 9th, 1924. Total quantity administered 0.21 gram Pb. No reaction.
Subsequent History.—Now alive and well four and a half years later.
Comment.—Prognosis after operation alone would have been unfavourable. The small quantity of lead administered was due to the fact that the patient suffered with old renal damage before treatment commenced.

R. I. 82.—Female, aged 58; married; 6-para.
Diagnosis.—Extensive squamous carcinoma of cervix (section +). Mitral stenosis; hyperpiesis. Wassermann reaction ++.
Treatment.—Vaginal hysterectomy, May 16th, 1927. Intravenous injections of colloidal lead selenide commenced May 26th, 1927. Total quantity administered 0.37 gram Pb. Slight reaction. Blood pressure raised.
Subsequent History.—Alive; no evidence of pelvic disease more than one and a half years later.

In view of the great malignancy of sarcoma uteri, apart from the spindle-celled variety arising in fibromyoma, the following cases are of interest.

88.—Female, aged 61; unmarried; nursing sister.
Diagnosis.—Mixed-cell sarcoma of uterus (section +) and carcinoma of right ovary (section +).
Treatment.—Abdominal panhysterectomy with removal of appendages, April 28th, 1923. Intravenous injections of partly colloidal lead iodide commenced May 8th, 1923. Total quantity administered 0.2 gram Pb. No reaction.
Subsequent History.—Now alive and well over five and a half years later.
Comment.—The small quantity of lead administered was due to the diminutive size of the patient and her frailty.

C. I. 1.—Female, aged 59; unmarried.
Diagnosis.—Large round and multinucleated celled sarcoma of the uterus (section +).
Treatment.—Panhysterectomy with right salpingo-oöphorectomy, January 22nd, 1927. Intravenous injections of colloidal lead commenced February 12th, 1927. Total quantity administered 0.4 gram Pb. No reaction.
Subsequent History.—Now alive and well two years later, a period of time sufficient to state that the patient is "clinically cured" of this form of malignant disease.

The following cases of advanced carcinoma mammae with involvement of the axillary glands, in which the prognosis after operation alone would have been extremely grave, seem to be worth placing on record.

57.—Female, aged 38; married, 4-para.
Diagnosis.—Spheroidal-celled carcinoma of left breast and axillary glands (sections +).
Treatment.—"Radical" operation, November 13th, 1922. Intravenous injections of colloidal lead commenced November 21st, 1922. Total amount administered 0.578 gram Pb. No reaction. Mobilization.
Subsequent History.—Right breast excised October 27th, 1924; "chronic mastitis" (section −). Patient now alive and well six years later.
Comment.—Prognosis after operation alone very grave.

221.—Female, aged 59; widow; 0-para.
Diagnosis.—Spheroidal-celled carcinoma of left breast and axillary glands (sections +).
Treatment.—"Radical" operation, December 29th, 1925. Intravenous injections of colloidal lead commenced January 5th, 1926. Total quantity administered 0.6 gram Pb. No reaction.
Subsequent History.—Now alive and well three years later.
Comment.—Prognosis after operation alone most unfavourable.

240.—Female, aged 52; married; 2-para.
Diagnosis.—Spheroidal-celled carcinoma of right breast and axillary glands (sections +).
Treatment.—"Radical" operation, February 26th, 1926. Intravenous injections of colloidal lead commenced March 2nd, 1926.

Total quantity administered 0.685 gram Pb. Rather severe vomiting in earlier part of treatment.
Subsequent History.—Now alive and well nearly three years later.
Comment.—Prognosis after operation alone bad.

244.—Female, aged 72; unmarried.
Diagnosis.—Spheroidal-celled carcinoma of right breast and axillary glands (sections +).
Treatment.—"Radical" operation, March 15th, 1926. Intravenous injections of colloidal lead commenced March 26th, 1926. Total quantity administered 0.575 gram Pb. Some gastro-intestinal disturbance after the earlier injections, from which patient quickly recovered.
Subsequent History.—Now alive and well nearly three years later.
Comment.—Prognosis after operation alone grave.

237.—Female, aged 54; widow; 6-para.
Diagnosis.—Spheroidal-celled carcinoma of breast and axillary glands (sections +).
Treatment.—"Radical" operation, November 25th, 1926. Intravenous injections of colloidal lead and lead selenide commenced December 1st, 1926. Last dose of colloidal lead phosphate. Total quantity administered 0.555 gram Pb. No reaction.
Subsequent History.—Now alive and well over two years later.
Comment.—A very bad case. Prognosis after operation alone very bad.

The following cases, which may also be briefly recorded, are of some interest. In most the wide extent of the growth is well shown in photographs taken before treatment. They are all alive and well at the present time.

82.—Male, aged 51.
Diagnosis.—Squamous carcinoma of tongue, fauces, soft palate, glands of neck (sections +).
Treatment.—"Radical" operation, March 14th, 1923. Intravenous injections of partly colloidal lead iodide commenced March 22nd, 1923. Total quantity administered 0.56 gram Pb. No reaction. Mobilization later.
Subsequent History.—Now alive and well six years later.
Comment.—Extent, nature, and situation of disease made prognosis after operation alone extremely grave.

333.—Male, aged 68.
Diagnosis.—Squamous carcinoma of face (section +).
Treatment.—Excision with diathermy, June 26th, 1927. Intravenous injections of colloidal lead, lead selenide, and lead phosphate commenced July 3rd, 1927. Total quantity administered 0.55 gram Pb. No reaction.
Subsequent History.—Now alive and well more than one and a half years later. All spots are fast disappearing.
Comment.—Might have been cured by operation so far as the growth was concerned.

327.—Male, aged 64.
Diagnosis.—Basal-celled carcinoma of face (section +).
Treatment.—Diathermy excision May 18th, 1927. Intravenous injections of colloidal lead and lead phosphate commenced May 28th, 1927. Total quantity administered 0.33 gram Pb. No reaction.
Subsequent History.—The diathermy cautery was used on several subsequent occasions. Now alive and well, with much contracture of face, nearly two years later.
Comment.—Unlikely that operation alone would have proved successful.

R. I. 32.—Male, aged 62; medical practitioner.
Diagnosis.—Carcinoma of sigmoid (section +) with involvement of glands.
Treatment.—Excision of sigmoid and portion of adherent small bowel with some glands by Mr. Woolfenden, January 22nd, 1926. Temporary colostomy. Intravenous injections of colloidal lead commenced February 3rd, 1926. Total quantity administered 0.35 gram Pb. Never any serious reaction.
Subsequent History.—Now alive and well three years later; has gained weight; no evidence of disease.
Comment.—At the operation it was considered extremely unlikely that all the numerous glands were removed.

R. I. 17.—Female, aged 23; unmarried.
Diagnosis.—Carcinoma of vulva (section +).
Treatment.—"Radical" operation, January 21st, 1926. Intravenous injections of colloidal lead commenced February 3rd, 1926. Total quantity administered 0.525 gram Pb. Never any serious reaction.
Subsequent History.—Now alive and well three years later.
Comment.—The extreme youth of the patient in connexion with cancer of the vulva must be almost unique. Prognosis would, therefore, seem to have been bad subsequent to operation only.

R. I. 21.—Female, aged 64; married; 5-para.
Diagnosis.—Epithelioma of the thigh (section +).
Treatment.—Ulcerated growth excised by Mr. Jeans, February 12th, 1926; muscle involved. Intravenous injections of colloidal lead commenced March 16th, 1926. Total amount administered 0.3 gram Pb. No reaction.
Subsequent History.—Now alive and well three years later.
Comment.—This patient may have been cured by operation alone.

R. I. 29.—Female; aged 70; unmarried.
Diagnosis.—Carcinoma of body of uterus with fibromyomata (section +).
Treatment.—Operation April 22nd, 1926; panhysterectomy with removal of appendages. Intravenous injections of colloidal lead commenced May 25th, 1926. Total quantity administered 0.425 gram Pb. Very slight reaction.
Subsequent History. Now alive and well nearly three years later.
Comment.—This patient would in all probability have been cured by operation alone.

R. I. 100.—Male, aged 72.
Diagnosis.—Epithelioma of soft palate (section +).
Treatment.—Ulcer excised by Mr. Frank Jeans with diathermy August 19th, 1927. Intravenous injections of colloidal lead selenide commenced August 27th, 1927. Total amount administered 0.3 gram Pb. Some reaction after some injections, with oedema of ankles and cramps in legs.
Subsequent History.—Patient now alive and well one and a half years later.
Comment.—It is possible that this case was cured by operation, but the situation of the growth makes it unlikely that he was cured by such simple procedure.

R. I. 54.—Female, aged 59; married; 1-para.
Diagnosis.—Epithelioma of vulva (section +).
Treatment.—"Radical" excision of the whole of vulva including orifice of urethra, September 16th, 1926. Intravenous injections of colloidal lead commenced October 2nd, 1926. Total amount administered 0.45 gram Pb. Very slight reaction.
Subsequent History.—Now alive and well, no recurrence, nearly two and a half years later.
Comment.—The disease was so extensive that cure by operation was extremely unlikely.

N. H. 11.—Female, aged 39; married; 1-para.
Diagnosis.—Carcinoma of stomach (section +).
Treatment.—Operation by Mr. G. C. Simpson, September 26th, 1924. Growth hard, adherent to pancreas. Partial gastrectomy; gastro-enterostomy. Intravenous injections of colloidal lead commenced October 17th, 1924. Total quantity administered 0.46 gram Pb. No reaction.
Subsequent History.—Now alive and well nearly four and a half years later.
Comment.—This patient was not regarded as being curable or cured by operation alone.

N. H. 44.—Male, aged 50.
Diagnosis.—Sarcoma of cheek (section +).
Treatment.—Operation by Mr. Oldham, August 2nd, 1926 (*see Lancet*, 1928, i, 28). Intravenous injections of colloidal lead commenced October 25th, 1926. Total amount administered 0.55 gram Pb. Slight reaction.
Subsequent History.—Patient now alive and well over two years later.

N. H. 38.—Male, aged 40.
Diagnosis.—Carcinoma of colon (section +).
Treatment.—Operation by Mr. Rawlinson, May 29th, 1926. Large growth in the descending colon with abscess formation. Excision. Temporary colostomy. Later anastomosis. Intravenous injections of colloidal lead commenced June 8th, 1926. Total amount administered 0.225 gram Pb. No reaction.
Subsequent History.—Patient now alive and well two and a half years later. No sign of disease.
Comment.—It is unlikely that such an advanced case of cancer of the bowel would have been cured by operation alone.

N. H. 40.—Male, aged 61.
Diagnosis.—Carcinoma of colon (section +).
Treatment.—Operation by Mr. Monsarrat, August 3rd, 1926. Large growth in pelvic colon. No enlarged glands. Resection. Intravenous injections of colloidal lead commenced August 20th, 1926. Total amount administered 0.575 gram Pb. No reaction.
Subsequent History.—Now alive and well two and a half years later. No evidence of recurrence.

The next three cases, which are very briefly recorded, were all subjected to operation elsewhere, and were referred to us subsequently for treatment, in view of the fact that they were cases in which recurrence was expected owing to the extreme malignancy of neoplasms of these types. Histological examination was made in each case.

219.—Male, aged 47.
Diagnosis.—Melanoma of left eye (section +).
Treatment.—Operation, December 11th, 1925. Removal of eye by Sir William Lister. Intravenous injections of colloidal lead commenced January 18th, 1926. Total quantity administered 0.5 gram Pb. Slight reaction.
Subsequent History.—Patient is alive and well more than three years later.

223.—Male, aged 36.
Diagnosis.—Carcinoma of right testicle (section +).
Treatment.—Operation by Dr. Roughton, January 4th, 1926. Excision of testicle. Intravenous injections of colloidal lead commenced January 26th, 1926. Total quantity administered 0.625 gram Pb. Mobilization a year later. Slight reaction; nausea.
Subsequent History.—Now alive and well three years later.

337.—Male, aged 26.
Diagnosis.—Periosteal sarcoma of right tibia (section +).
Treatment.—Operation by Mr. Page, London, June 20th, 1927. Amputation through middle of thigh. Intravenous injections of

colloidal lead, colloidal lead selenide, and colloidal lead phosphate commenced September 2nd, 1927. Total quantity administered 0.543 gram Pb. Very slight reaction.

Subsequent History.—Now alive and well nearly one and a half years later.

(E) *Treatment of Primary Neoplasm with Lead and X Rays.*

Of the cases treated in this way the first two are of special interest in that regenesis of the growth occurred whenever treatment with lead was suspended, and in these circumstances the *x* rays appeared to be ineffective until further administration of lead was practised. This is not shown in the abbreviated notes below.

133.—Male, aged 8.

Diagnosis.—Sarcoma of the scapula (section +). Involvement of axillary glands.

Treatment.—Intravenous injections of colloidal lead commenced January 29th, 1924. *X*-ray treatment commenced April 29th, 1924. In July an *x*-ray picture showed considerable improvement in the scapula. Reossification. Improvement maintained in report dated January 23rd, 1925. Treatment suspended. April 27th, 1925, regenesis of tumour. Further treatment. Total quantity administered 0.2475 gram Pb. Slight reaction.

Subsequent History.—Death of patient reported June 26th, 1925.

Comment.—It now appears that the treatment of lead should not have been suspended when so small a quantity as 0.1725 gram had been administered. The age of the patient, and the size of the child, made it difficult to decide, in view of improvement.

114.—Male, aged 18.

Diagnosis.—Round-celled sarcoma of the scapula (section +).

Treatment.—Intravenous injections of colloidal lead commenced August 10th, 1923. Rapid increase in size of tumour in next three weeks. X-ray treatment commenced. On November 16th, 1923, marked clinical improvement; maintained till end of year. Treatment suspended. March 28th, 1924, recurrence below glenoid noted. Further treatment with lead and *x* rays. July 3rd, 1924, improvement with reossification. Treatment again suspended. August 5th, 1924, destructive bone changes again taking place. Further treatment till December 2nd, 1924. Total quantity of lead administered 0.415 gram. Slight reaction. November 20th, 1924, report: "This patient now undoubtedly doing well. Supraclavicular and axillary swellings disappeared; the size of the scapula is almost normal."

Subsequent History.—Patient disappeared. Was reported dead, of recurrence in the spine, September 18th, 1925.

R. I. 121.—Male, aged 14.

Diagnosis.—Periosteal sarcoma of femur (no section; *x*-ray and clinical evidence).

Treatment.—Intravenous and intra-arterial injections of colloidal lead phosphate commenced June 11th, 1928. Total amount administered up to last injection, October 25th, 1928, 0.412 gram Pb. No reaction. Three injections (0.16 gram Pb) were given directly into femoral artery. X-ray application four days after the last three injections.

Subsequent History.—The condition of the patient is good. The tumour has decreased in size, but it is too early to state ultimate fate. So long ago as June, 1928, Professor Kelly considered the case quite hopeless, and that the duration of life could not be many weeks.

R. I. 125.—Male, aged 33.

Diagnosis.—Fixed mass carcinoma of femoral glands (section +), secondary to carcinoma of foot.

Treatment.—Intravenous and intra-arterial (femoral) injections of colloidal lead and lead aspartate commenced August 29th, 1928. Total quantity at present administered 0.46 gram Pb. Slight reaction. *X* rays applied four days after each of the injections of lead.

Subsequent History. Too soon for prognosis. Tumour in groin smaller, soft, and movable.

Comment.—Of interest because of arterial route employed.

N. H. 2.—Male, aged 28.

Diagnosis.—Recurrence of carcinoma of testicle (section +). Mass in groin.

Treatment.—Excision of left testicle by Mr. G. C. Simpson two years previously, followed by *x*-ray applications. Recurrence. Intravenous injections of colloidal lead commenced August 12th, 1924. Total quantity administered 0.265 gram Pb. No reaction.

Subsequent History.—Now alive and well four and a half years later. No evidence of disease.

140.—Male, aged 34.

Diagnosis.—Mixed-cell sarcoma of the scapula and axillary glands (section +).

Treatment.—Intravenous injections of colloidal lead commenced March 7th, 1924. After seven doses *x*-ray treatment begun. Eighteen *x*-ray applications in all in conjunction with further intravenous injections of lead. Total quantity administered 0.2 gram Pb. No reaction.

Subsequent History.—Patient is alive and well five years later.

331.—Female, aged 72; unmarried.

Diagnosis.—Lymphosarcoma of left groin.

Treatment.—Tumour excised June 24th, 1927. Intravenous injections of colloidal lead selenide and colloidal lead commenced June 28th, 1927. Recurrence noted January, 1928. Patient not seen for four months. June 12th, 1928, recurrence adherent to the femoral artery and vein; removed with difficulty. Further course of lead phosphate injections administered together with *x*-ray therapy. Total quantity of lead administered approximately 0.6 gram, and five *x*-ray applications. No reaction to injections.

Subsequent History.—Patient has put on weight, and at the present time there is no evidence of recurrence.

R. I. 75.—Male, aged 52.

Diagnosis.—Lymphosarcoma of pharynx, roof of mouth, and cheek (section +).

Treatment.—Intravenous injections of colloidal lead commenced March 18th, 1927. Total amount administered approximately 0.6 gram Pb. No reaction. Last injection February 15th, 1928. Eight doses of *x* rays applied to right side of the face, and three doses applied to neck on the right side.

Subsequent History.—Now alive and well nearly two years later.

STATISTICS AND RESULTS.

In any assessment of the results of the treatment of human disease, and especially of malignant disease, we are confronted with so many variable factors—site of neoplasm, type of growth, stage of the disease, whether it be primary or secondary, the constitutional condition of the patient, the psychology and experience of the medical attendant, and the rest—that no statistical survey of grouped or general results which takes into consideration a less number than several millions of cases can be more than suggestive. So it is clear that when a practitioner, inexperienced in the method employed, fails in 25 or 50, or even 100 cases, to secure a single completely satisfactory result, as very easily may happen with a new method of treatment, it must be remembered that negative evidence of that sort can never be weighed in the balance against that which is positive.

It has seemed to us, then, that at the present time the clear enunciation of many positives in a variety of circumstances may set in motion philosophical reflection in minds trained to apprehend.

In the following table details of general interest are presented in a simple manner in order that no confusion may be created as to the results recorded, or objections raised on the score of incompleteness of information, as has happened without justification in the past,[8] in spite of the fact that we have on several occasions[1 2 3 4] published full statements of our methods and results, with illustrative cases.

Table of Results.

November 9th, 1920–November 9th, 1928.

1. Total number of cases treated		566*
2. Died of the disease before treatment could be completed		359
(*a*) Received less than 0.25 gram Pb ...	198	
(*b*) Received more than 0.25 gram Pb, but less than 0.5 gram	161	
3. Died of the disease after treatment concluded ...		77
4. Died of intercurrent affections, while under treatment		7
5. Died as result of extensive destruction of disease...		5
6. Complete treatment refused		22
7. Too recent for results to be estimated		31
8. Believed cured, but died of other affections (1 from apoplexy, 4½ years' interval; 1 from toxæmia of pregnancy, nearly 5½ years' interval)		2+
9. Disease completely arrested		12+
10. Believed cured and treatment stopped		51+

* At the conference in London in July, 1928, speaking from memory, I stated that about 1,000 patients had come under our care in Liverpool. This number is a little in excess of the exact figure. Many cases additional to those given above, however, and recorded in previous tables as "died before treatment could be commenced," and a further number rejected after consultation and examination, help to bring the total of cases seen nearer to the number stated.

In any estimate of results the serious type of case for the most part treated must be clearly remembered; it may be described as consisting largely of that in which the condition was considered hopeless. Ignoring, however, any consideration of temporary benefit—amelioration of symptoms and prolongation of life, or fatal destruction of the neoplasm—it appears that we have 303 cases to consider (items 2 (*b*), 3, 8, 9, and 10), cases which received more than one-half of the minimum treatment advised. Seventy-seven (77) died after full treatment; consequently it might be argued that there were 65 successes as opposed to 77 failures. Moreover, we have reason to believe that at least 40 per cent. of the "*too-recent*" cases will terminate favourably. Nevertheless, to put our statistics in the worst possible light, we can state that there were 65 successes out of 303 cases treated—that is, 21.5 per cent. of successful results.

CONCLUSION.

In conclusion we may urge two points, the recognition of which seems to us to be of paramount importance in the consideration of the treatment of malignant disease with lead at the present time.

First, no one in his senses would care to suggest that the possession of a knife and a few instruments is all that is required for the surgical cure of cancer of the stomach. Yet some seem to think that for lead therapy in this disease all that is required is that lead shall be pumped into the veins of the sufferer. We now realize that it was not the fault of radium that it was of so little clinical use twenty years ago.

Second, the scientifically minded inquirer will not demand that a new method of treatment for cancer operating on the worst and most advanced types of cases shall give far *better initial statistical results* than those obtainable with other long-established and standardized forms of treatment acting on early and selected cases; but, if it should do so, those capable of appraising evidential values will appreciate the vast possibilities that await full and proper development of the method tested.

I have to thank my colleagues Dr. Leslie Cunningham, Mr. J. B. Oldham, Dr. S. B. Herd, and Dr. M. Datnow, not only for the careful way in which they have conducted the laborious task of analysing the case records and tracing the fate of the patients, but also for co-operation in the clinical work, much of which has been conducted *entirely on their own initiative and responsibility.*

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CHOLECYSTOGRAPHY.

AN ANALYSIS OF 137 CASES SHOWING THE RELIABILITY OF THE ORAL METHOD.

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(With Special Plate.)

I HAVE been stimulated to write this paper by the repeated inquiries of my colleagues and other members of the profession as to how much one may expect from the *x*-ray examination of the gall-bladder, and with special reference to what is termed the "Graham-Cole test." Up to a few years ago the radiographic examination of the gall-bladder had been most unsatisfactory, and results were so uncertain that little reliance could be placed upon them. No routine examination of the gall-bladder was carried out in hospitals, and one was rarely asked to attempt such an investigation in private practice. To the late Drs. Carman of Rochester and Robert Knox of London, Case, George, and others in America and on the Continent, is due the credit for valuable pioneer work done in connexion with the radiography of the gall-bladder by direct methods. The detection of gall-stones could be made with more certainty in those large hospitals or clinics which were heavily endowed with funds than in the smaller and less favoured institutions. Where it was possible to take a large number of films under varying conditions of tube penetration, exposure, etc., the chances of obtaining positive evidence of pathological conditions involving the gall-bladder were proportionately greater. But even in the most favourable circumstances the direct method of examination yielded only 37 per cent. of correct diagnoses. The normal gall-bladder casts no shadow in even the most technically perfect films. It was maintained, therefore, that if a shadow of the gall-bladder was shown upon a film it was an indication of pathology; that the walls were abnormally thickened, the contents of unusual density, or that multiple calculi were present. This was probably true, and when positive shadows were obtained they were of definite diagnostic value. It was exceptional, however, to see such shadows in even the best films, and the absence of a shadow did not exclude disease, hence such a finding was of little value. The detection of gall-stones before the days of cholecystography depended upon the composition of the stones. If they contained sufficient calcium they produced well-defined shadows. Some were annular in form, depending upon the denser periphery of the stone, others cast a laminated shadow or concentric rings of dense and less dense material. Others, again, were more homogeneous and faceted. If the gall-bladder was filled with stones even of low density a faint, mottled shadow was sometimes shown. From time to time such radiographs were obtained, but were of rather rare occurrence, and were therefore looked upon more or less as curiosities.

In 1914 Cole called attention to the secondary manifestations of cholecystitis as revealed by the opaque meal, and these findings were further elaborated by George and others. Information so obtained, together with the direct visualization of stones, as already described, formed the basis for *x*-ray diagnosis of gall-bladder disease up to the year 1924. In February, 1924, Graham, Cole, and Copher of St. Louis announced the success of their work in demonstrating the gall-bladder radiographically after the intravenous injection of tetrabromphenolphthalein. In a further communication[2] in 1925 these authors discuss the theory and application of this new method of examination:

"This procedure is based upon the theory that if any substance containing a metal or atoms of bromine, or iodine, can be introduced into the gall-bladder in sufficient concentration, then this organ would be made opaque to *x* rays. The substance must be one which can be given either by the alimentary canal or by injection. It would have to be a substance which would be excreted by the liver and carried to the gall-bladder in the bile. Moreover, the ability of the gall-bladder to concentrate its contained bile would indicate that a sufficient time must elapse before a shadow of maximal density would occur. Reasoning *from these premisses, the conclusion would have to be* drawn that the shadows of sharpest contrast would be obtained in normal individuals. Similarly also no shadow would be expected to appear if the liver were unable to excrete the substance in sufficient amount, if the cystic duct were occluded or if the function of the gall-bladder were sufficiently impaired to prevent the concentration of the material."

Such is the theory of cholecystography as briefly outlined by Graham, Cole, and Copher. As the object of this paper is to demonstrate by practical statistics the reliability of cholecystography by the oral method in particular I do not wish to lengthen my communication unduly by recounting in detail the history of its development or the chemistry of the drugs used. No paper on this subject would, however, be complete without describing the Graham-Cole technique as first practised. In January, 1925, Graham used the tetraiodo-phenolphthalein sodium salt, and claimed superiority for this over the bromine salt in that it cast a denser shadow, a smaller dose was sufficient, and the toxicity was lessened in virtue of the reduced dose.

Technique of Intravenous Method.—In 30 c.cm. of freshly distilled water 3.5 *grams of the salt are dissolved.* The solution after filtration is sterilized in a boiling water bath for 15 minutes. It is given intravenously in two doses, half an hour apart, in the morning before breakfast, between 7.30 and 9 o'clock. Care should be taken not to allow extravasation outside the vein, as sloughing of tissue may occur. Certain orders are given to the patient and are essential:

1. Breakfast and lunch should be omitted.
2. Protein should be omitted from the evening meal.
3. Water is allowed *ad libitum*.
4. Stomach contents should be made alkaline by frequent doses of sodium bicarbonate.

The rationale of the latter procedure is explained in an article by Cole, who found experimentally on dogs that the flow of bile into the intestines through relaxation of the sphincter of Oddi is prevented by keeping the contents of the stomach alkaline. This probably tends to promote the concentration of bile in the gall-bladder. Films are taken at four, eight, twenty-four, and thirty-two hours after injection. A normal gall-bladder will begin to cast a shadow in four hours. This will be faint, but should reveal the

contour of the normally shaped organ. From sixteen to twenty-four hours the shadow becomes denser but the gall-bladder smaller in size. From that time onwards the shadow diminishes in density until the forty-eighth hour, when no dye should remain.

Interpretation.—If no shadow is obtained any of the following conditions may be present.

1. Serious disturbance of hepatic function resulting in insufficient secretion of the dye to cast a definite shadow. The gall-bladder may not be appreciably altered.
2. Obstructed ducts: (*a*) hepatic, (*b*) cystic, (*c*) common. In the case of the last the absence of shadow is said to be due to excessive diffusion of the dye in a large accumulation of bile.
3. A failure to concentrate bile as a result of inflammatory obliteration of the lymphatic vessels in the walls of the gall-bladder.
4. Multiple stones. If the gall-bladder is filled with stones the amount of dye which enters it may be insufficient to cast a shadow.

If the shadow is faint at the period when it should show a maximal density, or if the shadow is late in appearing, or persists for an abnormally long time, cholecystitis is said to be the cause. In my opinion, however, based upon my own experience, any of the conditions which have already been enumerated may be present, and I do not think it is possible to make a differential diagnosis. Stones which cannot be detected by ordinary radiography owing to their low density and extreme translucency may be by this method clearly demonstrated. I do not say that all can be visualized, but a proportion of them can be shown which would otherwise be missed.

The detection of stones depends upon: (1) their density in relation to the dye-stained bile; (2) the number of stones in the gall-bladder; (3) the situation of the stones—that is, whether in ducts or gall-bladder. If the stones are of very low density, and are not tightly packed, they will appear as discrete clear areas in the dye-filled gall-bladder. If in great numbers and the bladder is completely filled the entry of the dye will be prevented and no shadow will be seen. Stones showing as clear areas in the dye-filled gall-bladder are spoken of as "negative" shadows. If the stones possess calcium in their composition they may appear as discrete opacities in the gall-bladder, and are referred to as "positive" shadows. A proportion of stones will cast definite "ring" shadows with clear centres. If a stone is impacted in the cystic duct it may be visualized by the deposition of dye-stained bile upon it, while the absence of any gall-bladder shadow indicates the obstruction caused by the stone. Stones in hepatic and common ducts may be revealed in a similar way.

It is conceivable that a proportion of stones may be of such a density that they occupy an intermediate position between the extremely translucent and the moderately opaque. Such stones may be present in a dye-filled gall-bladder without casting either negative or positive shadows, and these will therefore be missed by any method of examination. It is probable that they are not of frequent occurrence, but they are bound to cause disappointment in some cases, even when the most careful technique has been observed.

The interpretation of cholecystographic findings just given is equally applicable to the intravenous and oral methods of examination. Using the intravenous method, Graham, Cole, and Copher, in a series of 80 patients upon whom operations had been performed, found the *x*-ray diagnosis to be correct in 96.25 per cent. of the cases. Although the results were so good, there were certain objections to this particular method. In some patients toxic reactions occurred, varying from nausea or slight dizziness to a condition of temporary collapse with a rapid fall in blood pressure. By using the tetraiodo-phenolphthalein instead of the bromine salt these unpleasant reactions have been almost eliminated. Nevertheless, the possibility of such reactions and the fact that the intravenous method required a certain amount of surgical skill, as well as the usual aseptic precautions, to some extent acted as a deterrent to the general use of cholecystography. In collaboration with my colleagues in Mercer's and Richmond Hospitals a small number of cases were examined by the intravenous method during the year 1925, but the results were not very satisfactory, and were not proved to be reliable by operation. I do not wish, however, on this account to condemn the method. First attempts are usually unsuccessful, and I have no doubt that our failures were due to faulty technique or defective drugs. In January, 1925, Whitaker and Milliken of Boston described their results in the oral administration of tetraiodo-phenolphthalein. This was followed from time to time by communications from other workers in America and elsewhere, testifying to the good results obtained by this method, and to-day it has become a routine procedure, and I think I am correct in saying that in this country, at all events, it has replaced the intravenous method.

It was some time before a satisfactory and stable drug could be produced. It acted as a severe gastric irritant, and for this reason it was necessary to enclose the drug in a pill, or capsule, which would pass through the stomach without dissolving. Chemists had many difficulties to overcome, but it is not my purpose to refer to them in this paper. Suffice it to say that many firms are now making keratin-coated capsules which are giving very satisfactory results. Each capsule contains 5 grains of the iodine salt, and the total quantity given varies from 35 to 50 grains, according to body weight. Even this method is not entirely free from unpleasant reactions, but at the worst these only take the form of nausea, with occasional vomiting and diarrhoea, and usually pass off in the course of a few hours. If this difficulty has not already been solved, I believe it will very soon be overcome by using a suspension of the tetraiodo-phenolphthalein in a finely divided condition, as described by Levyn and Aaron.[4] Upon the addition of fruit juice a freshly precipitated acid is formed which is easily converted into a soluble salt by the alkaline duodenal contents. It is claimed that this method causes none of the unpleasant reactions associated with the taking of capsules.

The precise technique adopted varies with different workers, but I have found the procedure recommended by Stewart and Ryan[3] to be very successful, and all my cases since January, 1926, have been examined according to this method.

Oral Technique.

An aperient should be given twenty-four hours before the ingestion of the capsules. On the morning following, a preliminary examination of the gall-bladder should be made. (This part of the Stewart technique I have usually omitted in order to save time, but when possible it is the ideal to be followed.) The usual lunch is allowed. At 6.30 p.m. the following meal is advised: thick soup, creamed chicken, bread-and-butter, and a glass of milk. The abundance of fat in this food will partially or completely empty the gall-bladder in from one to two hours. It is then in [illegible] for the opaque bile. At 9.15 p.m. half a [illegible] bicarbonate in half a glass of water is given. Commencing at 9.30 p.m., two kerasol capsules are given with half a glass of water every fifteen minutes until the complete number has been taken. The patients are instructed not to bite the capsules, but to swallow them whole. Two or three glasses of water may be taken gradually after the ingestion of the capsules. No aperient is allowed until the examination is completed, and no food is allowed until after the second radiographic examination has been made. The patients come for examination at 9.30 the following morning, and again at 1.30 or 2 p.m. Ordinary food is then allowed, and, if desired, another film may be taken an hour later. This I generally omit. A final observation is made at 9.30 the following morning—that is, thirty-six hours after ingestion of the capsules. Radiographs are taken with the patient lying prone on the Potter-Bucky diaphragm, and exposures should be short enough to allow the patient to hold the breath with ease. This is very essential, as the slightest respiratory movement may be sufficient to prevent the proper visualization of the gall-bladder, and if stones are present there will be little chance of demonstrating them. In normal cases the shadow should appear at the twelfth hour, should be smaller and slightly denser at the sixteenth hour, and should be gone in thirty-six hours, or only very faintly seen. The success of the method depends upon the most careful attention to details. For this reason I have printed instructions which are kept by the ward sisters in my hospitals. In my private practice, whenever possible, I like to interview the patient personally the day before examination, so that I can elicit the co-operation and explain the instructions. The points to stress are, "no food and no aperient until permission is given." Failure to observe these instructions has in several cases produced a "no shadow" result, which could not therefore be accepted as reliable, and necessitated a complete repetition of

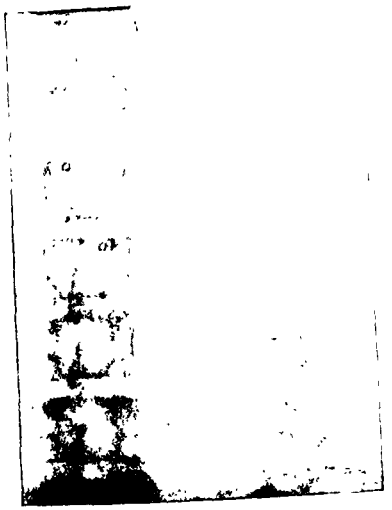

FIG. 1.

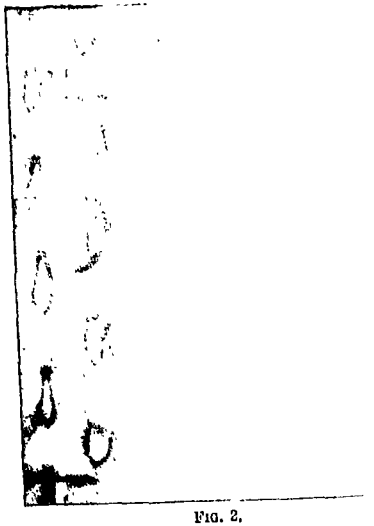

FIG. 2.

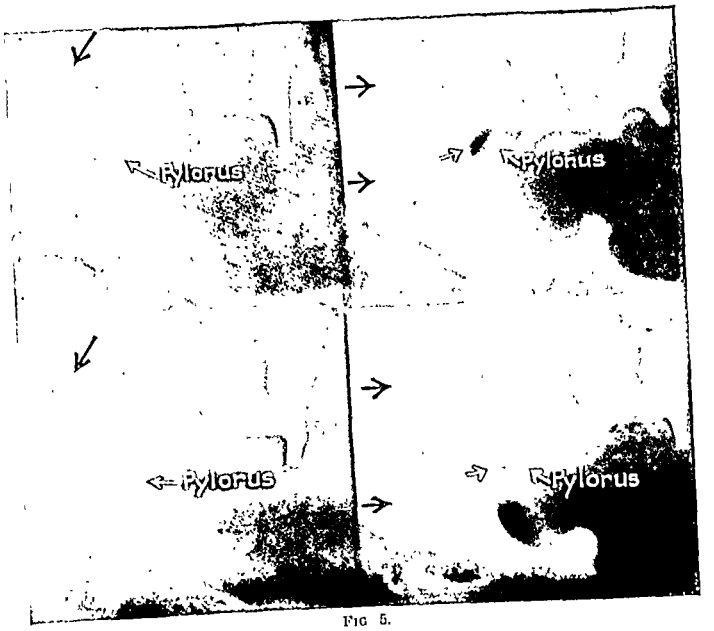

FIG. 5.

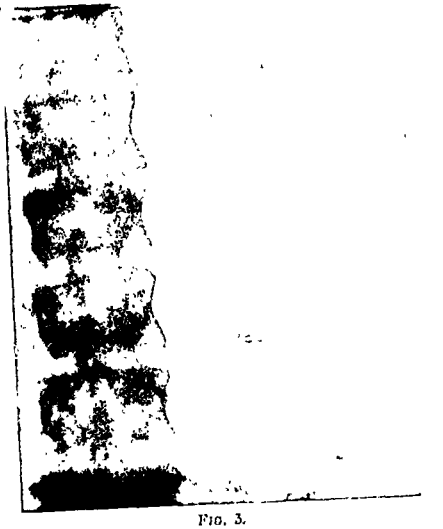

FIG. 3.

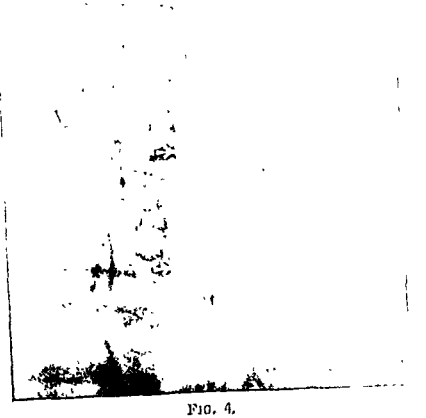

FIG. 4.

DESCRIPTION OF FIGURES.

FIG. 1.—Showing the outline of the normal gall-bladder, filled with the dye, at the lateral margin of the psoas muscle, beneath the shadow of the twelfth rib.

FIG. 2.—Shadow of dye-filled gall-bladder mottled by clear areas, signifying the outlines of stones in the opaque bile.

FIG. 3.—No dye has reached the gall-bladder; the outline of a stone can be clearly *seen* below the shadow of the transverse process of the third lumbar vertebra; this stone was in the common *duct*. A shadow is also to be seen above the upper border of the twelfth rib; it was cast by a stone recovered from the hepatic duct.

FIG. 4.—Multiple stones in the gall-bladder.

FIG. 5.—Same case as Fig. 4. Serial radiograms show a filling defect in the duodenal bulb, caused by pressure of the dye-filled gall-bladder, whose shadow is seen in the left upper angle of each film.

G. P. CROWDEN AND H. A. HARRIS: EFFECT OF OBSTRUCTED RESPIRATION ON HEART AND LUNGS.

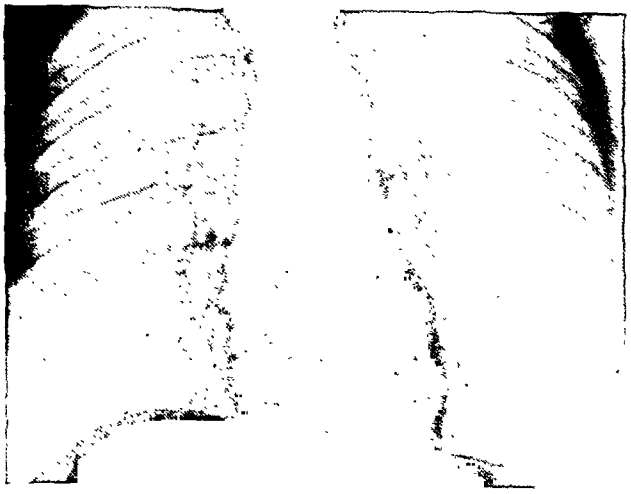

FIG. 1.—CHEST AT END OF NORMAL INSPIRATION. Breath held, but no effort made to force expiration.

FIG. 4.—CHEST AT END OF NORMAL EXPIRATION. Breath held, but no effort made to inspire.

FIG. 2.—CHEST AT END OF NORMAL INSPIRATION (Valsalva's Experiment). Breath held, and extreme effort made to force expiration against obstruction. Pulse could not be detected at wrist, but, when screened, the heart was seen to be making slight movements. Positive intrapleural pressure=75 mm.

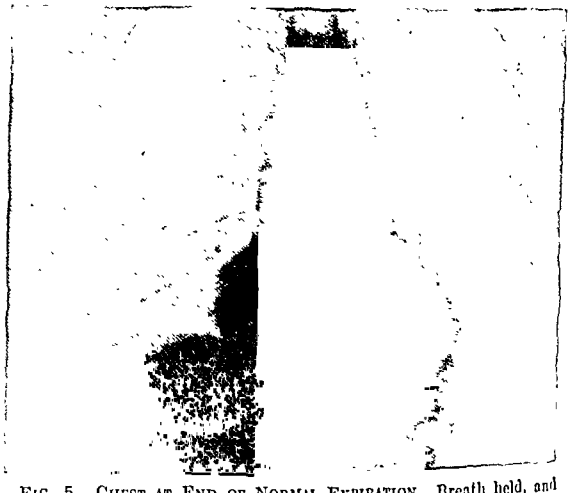

FIG. 5.—CHEST AT END OF NORMAL EXPIRATION. Breath held, and extreme effort made to force expiration against obstruction. Pulse could barely be detected at wrist.

FIG. 3.—CHEST AT END OF NORMAL INSPIRATION. Breath held, and extreme effort made to inspire against obstruction.

FIG. 6.—CHEST AT END OF NORMAL EXPIRATION (Müller's Experiment). Breath held, and extreme effort made to inspire against obstruction. Pulse easily detected at wrist. Heart seen to be beating forcibly when screened. Negative intrapleural pressure=60 mm.

the whole procedure. Fallacious findings will usually be found to be due to faulty technique, or to failure on the part of the patient to follow the instructions. Fallacies due to defective drugs are now practically unknown, but to avoid such a possibility capsules should be bought only from reliable manufacturers. The patient may vomit immediately after taking the capsules; should this occur it is important to inquire whether any of the capsules have been ejected. If pyloric obstruction is present the capsules will dissolve in the stomach no matter how they are coated. The test is said to be contra-indicated in elderly people with low arterial tension and myocarditis, and also in subjects of extensive arterio-sclerosis. While these precautions may be necessary for the intravenous test, the danger of severe reaction from the oral method is practically *nil*.

The following tables have been prepared to show on a percentage basis the confirmation of the *x*-ray findings by operation, and also an analysis of the surgical findings. The cases to which they refer were examined between January, 1926, and October, 1928. There were 47 males and 90 females. The ages were as follows:

Under 20 years	3
20–30 years	13
30–40 years	36
40–50 years	30
50–60 years	40
60–70 years	12
70–80 years	3
Total	137

TABLE I.

Description	No.	Operated.	Correct.	Per Cent.
Normally visualized	48	12	9	75
Faint shadow	19	10	10	100
Late appearance	11	5	5	100
No shadow	40	25	24	96
Stones	19	12	12	100
Total	137	64	60	93
Total cases reported pathological with or without stones	89	62	51	93

TABLE II.—*Analysis of Surgical Findings in Cases Reported Pathological.*

Stones	39
Chronic cholecystitis	8
Adhesions between gall-bladder and colon	1
Adhesions between gall-bladder and duodenum	2
Cirrhosis of liver and chronic cholecystitis	1
Normal gall-bladder	1
Total	52

TABLE III.—*Faint Shadow—10 Cases. Surgical Findings.*

Multiple stones in gall-bladder	5
Stones impacted in cystic duct	1
Adhesions between gall-bladder and colon	1
Adhesions between gall-bladder and duodenum	1
Reported pathological	2
Total	10

TABLE IV.—*Late Appearance—5 Cases. Surgical Findings.*

Adhesion between gall-bladder and duodenum	1
Multiple stones in gall-bladder	3
Cirrhosis of liver, small adherent gall-bladder	1
Total	5

TABLE V.—*No Shadow—25 Cases. Surgical Findings.*

Single large stone in gall-bladder	1
Multiple stones in gall-bladder	13
Multiple stones in gall-bladder and ducts	2
Single stone in common bile duct	1
Chronic cholecystitis	7
Normal gall-bladder	1
Total	25

Of the twelve gall-bladders normally visualized (Table I) upon which operations were performed it will be noted that the *x*-ray findings were incorrect in three cases. One had a malignant liver, and presumably the disease was not so advanced as to prevent the secretion of the bile-stained dye and the filling of the gall-bladder. The gall-bladder itself was not directly involved. In the other two cases single stones were found in the gall-bladder. These were probably stones of intermediate density (to which type I have already referred), not translucent enough to cast a negative shadow and not sufficiently opaque to cast a positive shadow. Of the twenty-five "no shadow" cases which came to operation, in only one were the *x*-ray findings not verified. I cannot explain the cause of this failure. The patient was a hospital case, and may have taken food before the first radiograph. It is of interest also to note that in all those cases presenting faint shadows, or in which the shadow was late in appearing, which were submitted to operation, the *x*-ray findings were verified. This was contrary to what I had expected. In the past my reports upon these cases were made with very great caution, but the result of this study has considerably increased my confidence in the value of these signs. In all operated cases in which stones were visualized, stones were found, but in Table II it will be seen that of all cases reported pathological stones were found in 39, while in only 12 of these were stones demonstrated radiologically. That is to say, 69.3 per cent. of the stones did not cast definite shadows, either negative or positive, which could be recognized as stones.

Conclusions.

1. The oral method of carrying out the Graham-Cole test is reliable and is capable of giving a correct indication as to whether the gall-bladder is normal or pathological in 93 per cent. of cases.

2. Except in the case of visualized stones it is not possible by means of this test to give a precise diagnosis. Different surgical conditions will produce similar *x*-ray appearances, and therefore in the "no shadow, faint shadow, and late appearance cases" one is only justified in saying that the gall-bladder is pathological.

3. The success of the method depends upon the most careful attention to details in preparation and to correct radiographic technique.

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THE EFFECT OF OBSTRUCTED RESPIRATION ON HEART AND LUNGS:

ITS CLINICAL IMPORTANCE IN RADIOGRAPHY.

BY

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(*With Special Plate.*)

DURING normal systole the heart changes its shape, size, and position, and pumps an average charge of 75 c.cm. of blood from each of the ventricles into the aorta and pulmonary artery. The discharge of blood into the pulmonary artery disturbs the size, shape, and position of the pulmonary vascular tree, and the pulmonary arteries are straightened in systole and relatively curved in diastole. Since the pulse wave in the pulmonary arteries is estimated to travel at three to six metres a second, it reaches the periphery of the lung in an interval of time which is probably not greater than one-sixtieth of a second. This indicates that the ideal radiogram of the chest requires an exposure of about one-hundredth to one-sixtieth of a second, so as to eliminate the effect of the propagation of the pulse wave along the arteries. The possibility of obtaining radiograms from such a brief exposure is entirely outside the range of most hospital *x*-ray equipments. In the majority of cases, with the existing apparatus, an exposure of less than half a second cannot be employed with any measure of success.

Apart from the movements in the lung vessels due to each cardiac cycle, the slower rhythm of inspiration and expiration also leads to a change in size, shape, and position of the bronchial and vascular tree. In inspiration the trachea, bronchi, and bronchioles become lengthened and revert to their original length in expiration. The movements of the respiratory apparatus in the subject who is being screened can be voluntarily controlled to some extent, but the involuntary cardiac movements cannot be controlled except to a slight extent by the voluntary control of respiration or by the voluntary assumption of the extreme erect attitude of attention. It is essential that all routine radiograms of the chest should be taken under strictly defined standard conditions in a particular phase of inspiration or expiration, and, if possible, in a particular phase of the cardiac cycle. So far one of the most successful attempts in this direction has been made by MacPhedran and Weyl[1] of the Henry Phipps Institute, Philadelphia. They have applied a tambour to the area of carotid pulsation on the neck of the patient, and the excursions of the tambour are employed to deflect a beam of powerful light on to a photo-electric cell of the vacuum type. This in turn is connected by way of an amplifier to a relay which operates the switch of the x-ray tube. In this manner a radiogram can be taken not only in a given phase of respiration but also in a given phase of the cardiac cycle with an exposure of one-twentieth of a second, and a minimum lag of one-twenty-fifth of a second between cardiac systole and the actual commencement of the exposure.

Both in the routine teaching of the normal radiographic appearance of the chest to students of anatomy and physiology, and in observing the varied symptoms of patients who have been screened or radiographed in the erect attitude, it has been noted that the subject may exhibit symptoms of distress ranging from dizziness to fainting. It was evident that in certain cases the respiratory mechanism was influencing the circulation of the blood to an inordinate extent. On viewing two radiograms of the chest of a certain subject it was observed that there was considerable variation in the appearance of the root shadows, and it was thought that this might be due to some alteration in the amount of blood present in the heart and lungs at the moment the photographs were taken. It was therefore determined to vary the amount of blood reaching the heart and lungs by repeating the classical experiments of Valsalva (1740) and Johannes Müller (1838) and to take radiographic records of the chest under the varying conditions obtainable. In Valsalva's experiment, after a deep inspiration is taken, the glottis is immediately closed and a strenuous and prolonged expiratory effort is made, but without allowing the air to escape. Such pressure is exerted on the heart and intrathoracic vessels that the movements and flow of blood are almost entirely arrested. "Pronounced swelling of the veins, visible principally in those of the neck and face, evacuation of the vessels in the pulmonary system, and surcharge of the systemic circulation, cessation of cardiac sounds, and disappearance of the arterial pulse can all be witnessed" according to Luciani.[2] In Müller's experiment the glottis is closed at the end of expiration and an attempt is made forcibly to inspire. "The heart and all the intrathoracic vessels fill to such an extent that the arterial pulsations cease owing to the surcharge of the lesser, and comparative evacuation of the greater circulation" (Luciani). These experiments are not devoid of risk in old age and in patients suffering from cardio-vascular disease.

Standard radiograms of the chest of a healthy male, aged 33, of hypersthenic build, were taken under the varied conditions of intrapleural pressure which are produced in the experiments of Valsalva and Müller. The pressure of the air in the lungs was recorded by means of a mercury manometer connected to a tube in the mouth of the subject, care being taken to keep the glottis open, the nose being clipped, during the reading of the pressure. The standard conditions for the radiograms were a tube distance of two metres to minimize distortion, Coolidge tube of universal type, and an exposure of half a second at 110 kilo-volts, the patient standing erect with the screen immediately in front of him. Such a series of radiograms demonstrates the effect of changes of pressure in the pleural cavity on the volume of blood reaching the heart, and the variations in the size of the cardiac shadow within the physiological limits of respiration.

Fig. 1 shows the chest at the end of normal inspiration. The pressure of the air in the lungs is in equilibrium with that of the atmosphere. Assuming that the pressure due to the elasticity of the lung substance is 15 mm., the intrapleural pressure is 745 mm., so that there is a virtual negative pressure in the pleural cavity of (760−745)=15 mm.

Fig. 2 shows the chest at the end of normal inspiration, when an extreme effort is made to force expiration against obstruction, as in Valsalva's classical experiment. The radial pulse could not be detected, though the heart could be seen beating feebly on the fluoroscopic screen. The pressure of the air in the lungs rises to 850 mm. Allowing 15 mm. for the elasticity of the lung substance, the intrapleural pressure is 835 mm., or a positive pressure of (835−760)=75 mm. This increase of the intrapleural pressure prevents the return of venous blood to the heart from the great veins of the neck and abdomen. The result is clearly indicated by the marked decrease in the size of the cardiac shadow and the extent of uncovering of the lung roots. On ceasing the effort at forced expiration the face of the subject was suffused with blood, and a sudden sensation of dizziness developed. It must be repeated that this experiment of Valsalva is not without its dangers in the unfit.

Fig. 3 shows the chest at the end of normal inspiration, when the subject attempts to inspire still further against obstruction. The pressure of air in the lungs is reduced to 680 mm. Allowing 15 mm. for the elasticity of the lung substance, the intrapleural pressure is 665 mm., or a negative pressure of (760−665)=95 mm. The flow of blood into the heart is suddenly increased, as shown by the size of the cardiac shadow, which is greater than that shown in Fig. 1, and still greater than that in Fig. 2. The increased density at the lung root in this experiment is marked, and may easily lead to errors in radiographic reports in relation to conditions at the hilum. The increased density of the shadow is due to marked engorgement of the pulmonary vessels.

In addition to three experiments with radiographic records (Figs. 1–3) at the end of inspiration, three corresponding experiments were performed at the end of expiration. Fig. 4 shows the chest at the end of normal expiration. The pressure of the air in the lungs is 760 mm. The pressure exerted on the contained air by virtue of the elasticity of the uninflated lung is approximately 5 mm., so that the pressure within the pleural cavity is 755 mm., or a negative pressure of (760−755)=5 mm. Fig. 5 shows the chest at the end of normal expiration when the subject forces expiration still further against obstruction, as in "bearing down" or "straining at stool." The radial pulse could barely be detected at the wrist. The pressure of the air in the lungs was 835 mm., the pressure within the pleural cavity, allowing 5 mm. for the elasticity of the lung substance, was 830 mm. This yields a positive pressure of (830−760)=70 mm. The diminution in the volume of blood reaching the heart, as evidenced by the reduced size of the cardiac shadow, is most marked. The decrease in the size of the cardiac shadow is not so marked as in Valsalva's experiment (Fig. 2). The differences between Figs. 4 and 5 are of the same kind, but not of the same degree, as those between Figs. 1 and 2.

Fig. 6 was taken at the end of normal expiration, the subject making an effort to inspire against obstruction, as in Müller's experiment. The pressure of the air in the lungs is 675 mm. The intrapleural pressure is 670 mm., or a negative pressure of (760−670)=90 mm. The size of the heart is distinctly greater than in Fig. 5, and in contrast to Fig. 2, with the minimal cardiac inflow, is most marked. The heart in Fig. 6 is receiving the maximal inflow of blood that can be brought about by voluntary change of intrapleural pressure. The clinical picture corresponds closely to that seen in the attempt at inspiration against obstruction after a series of expiratory coughs in whooping-cough or in some phases of the dyspnœa of asthma. The density of the shadow of the lung roots should be compared with that in Fig. 2, when the cardiac inflow was at the minimum. The subjective disturbance in this experiment of Müller is not so marked or so easily produced as that in Valsalva's experiment.

The Significance of the Dead Spaces of the Chest.

As in the neck, so in the chest, certain spaces of great pathological significance are never seen in the routine dissection of the formalin-fixed cadaver. The textbook diagrams of fascial planes in the neck and of lines of pleural reflection in the chest do not emphasize the existence of those "dead spaces" filled with loose areolar tissue

which permit considerable distension of certain viscera, such as the pharynx and oesophagus, and of extreme distension of the veins in any condition involving severe physical effort or pathological venous congestion. In the thorax it is important to realize the extent of the fascial spaces in the posterior mediastinum and in relation to the lung roots, for those "dead spaces" not only allow room for expansion of engorged veins, but also determine the direction of expansion and spread of enlarged lymphatic glands and mediastinal tumours. The root of the left lung is almost encircled by the relatively resistant arch of the aorta, with a marked condensation in the surrounding connective tissue, whereas the root of the right lung is almost encircled by the dilatable vena azygos major and superior vena cava. The enlargement of glands, whether of the carinate group at the bifurcation of the trachea, or of those in the hilum of the right or left lung, is therefore directed towards the right side of the thorax. It is this tendency for the glands to enlarge on the right side which accounts for the phenomenon of right-sided paravertebral dullness, which has been so rightly emphasized by Riviere.[3] Similarly the conduction of the whispered voice from the third to the fifth dorsal spine on the right side, as described by d'Espine, is another manifestation of the enlargement of the glands to the right. Opie has emphasized that the common calcium-bearing glandular lesions, distinguished by the deposition of calcium salts, are right-sided irrespective of the side in which the pulmonary and intrapulmonary glandular lesions occur. In fatal infantile disease the calcium-bearing mass of glands often extends as far as the right side of the bodies of the vertebrae. Opie[4] has also stressed that the commonest demonstrable site of calcification, either radiographically or at necropsy, is in that lymph node which sits to the right of the trachea just above the bifurcation and above the arch of the vena azygos major.

Furthermore, the mediastinal pleura of the right side, above the level of the lung root, covers over a dead space extending from the superior vena cava anteriorly to the trachea and oesophagus medially, the right vagus lying somewhat freely therein. Enlarged glands in this area are frequently seen, and it is the perifibrosis thereof which so frequently leads to a strange "bruit de diable" over the right apex and neck, and renders the clinical signs in this area equivocal. The lowest gland in this space, just above the arch of the vena azygos major, is the one which most frequently displays a lesion, as mentioned above.

In order to obtain an instructive radiogram of the chest by freeing the right and left lung root from the shadow of the heart and great veins, it is essential to take the radiogram in that phase of respiration which fills the lungs with air and at the same time empties the heart of blood to the maximal extent. This is best accomplished by pinching the nostrils of the patient at the end of inspiration, either digitally or by a clip, and asking him to expire forcibly (Fig. 2), as in Valsalva's experiment. If the condition of the patient is such that Valsalva's experiment is dangerous, then the radiogram should be taken at the end of expiration, with forced expiration against obstruction, as in "bearing down" (Fig. 5). The information thus gained adds greatly to the value of the radiogram, and saves the expense of two or more oblique radiograms. Although with routine work with a Coolidge tube it is difficult to determine the size of those glands at the hilum which are enlarged but uncalcified, it should be noted that the gas tube often gives information of the degree of enlargement of both the calcified and uncalcified glands. This is well seen during and after an attack of measles or whooping-cough.

The repetition of the classical experiments of Valsalva and Müller, with the visible aid afforded by the *x*-ray screen and photography, clearly demonstrates the wide variation in appearance of the thorax in the same individual, and shows the need for further standardization in routine radiography of the chest. A given individual under different phases of respiration may simulate "cor bovinum" or "cor pendulosum." A brief study of the six radiograms presented indicates the need for the reconsideration of many of the terms used by the radiologist. Such terms as "dilated heart," "peribronchial fibrosis," and "increased hilum shadows" may have to be abandoned.

With the growth of knowledge accurate diagnosis is coming to depend, even in greater measure than it has in the past, on considerations of exact anatomy and physiology applied with understanding to the concrete pathological problem presented by each individual patient.

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THE DEEP SUBMAXILLARY LYMPH GLANDS.

BY

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THE submaxillary lymph glands have for long been recognized as a chain of glands occupying the groove between the lower border of the mandible and the superficial surface of the submaxillary salivary gland. The number of glands is variably given, but three large ones are considered fairly constant. The biggest of these is usually in the centre of the chain, lying below the facial artery as it turns upwards on to the mandible. Other glands, placed one anteriorly and one posteriorly to this, complete the trio. There may be additional smaller glands in the chain, or one of the main three may be absent, particularly the posterior one. These glands lie beneath the superficial layer of deep cervical fascia, but outside the capsule of the submaxillary gland. Occasionally one finds mentioned deeper lymph glands beneath the salivary gland or inside its capsule, but no very exact account of observations on which such statements are based can readily be found.

It is well-known that lymph glands are to be found actually embedded in the substance of the parotid gland. So intimate is the relationship between the two that, as Neisse demonstrated, salivary acini are to be found invading the interior of some of these intraparotid lymph glands. It does not yet seem to have been determined whether such interrelations exist between the submaxillary salivary and lymphatic glands, although Poirier and Cunéo make the positive statement that "contrary to what we have noticed in the case of the parotid, there do not appear to be any lymphatic glands included in the submaxillary salivary gland."

In 1903 von Brunn addressed himself to this problem. He specially wished to find out if metastases in the submaxillary salivary gland occurring in cases of labial or lingual carcinoma were to be explained by the presence of lymph glands inside the salivary gland. He gives, as surgeons will do, a black list of the standard anatomy textbooks of his time, which threw no light upon his problem. Even the voluminous Sappey failed him. Turning to more specialized works, mostly studies of the lymphatic drainage of the tongue, he found that although one or two investigators who had injected the lymphatics of this region did not find any deep submaxillary glands, others made passing mention of small glands inside the submaxillary gland capsule or even enveloped by the gland. But these last did not give satisfactory accounts of work on which their statements were based. Von Brunn, therefore, himself examined 61 submaxillary salivary glands, which he cut into sections 2 or 3 mm. thick. The sections were examined unstained, and his drawings at any rate are only naked-eye views. Of the glands, 15 were removed at operation from 9 cases of cancer of the lower lip or tongue. One or two of those contained carcinomatous nodules, but there were lymph glands in none. The remaining 46 submaxillary glands were taken from 23 subjects of all ages, dead of conditions other than disease of this region. In two only, from different individuals, were lymph glands found. In each case a single small gland was seen embedded in connective tissue prolonged into the submaxillary gland as

a thick, vertical septum from around the facial artery ascending in its groove on the posterior pole of the salivary gland. This position von Brunn characterized as clinically, though not anatomically, in the gland substance.

In 1907 Bartels, in a specially successful injection of the lymphatic vessels draining the tongue in a newborn child, noted a small lymph gland injected lying close to the submaxillary gland. He described it as lying under the capsule of the submaxillary gland, and designated it as a "parasubmaxillary" gland similar to those described by von Brunn. But he stated that it was separated from the salivary gland by the facial vein, which deeply furrowed the posterior end of the latter, and from his illustration it might quite well be regarded as a variant of a member of the superficial submaxillary chain which is sometimes found lying below the others on the anterior facial vein as it crosses the superficial aspect of the salivary gland. The little gland was connected by a lymphatic vessel with the middle gland of the main submaxillary chain, which had been injected from the lymphatics passing from the tongue. Bartels did not trace any direct lymphatic from the tongue to this parasubmaxillary gland; as it was unconnected with any other gland it was presumably injected by retrograde flow from the main submaxillary lymph gland just mentioned.

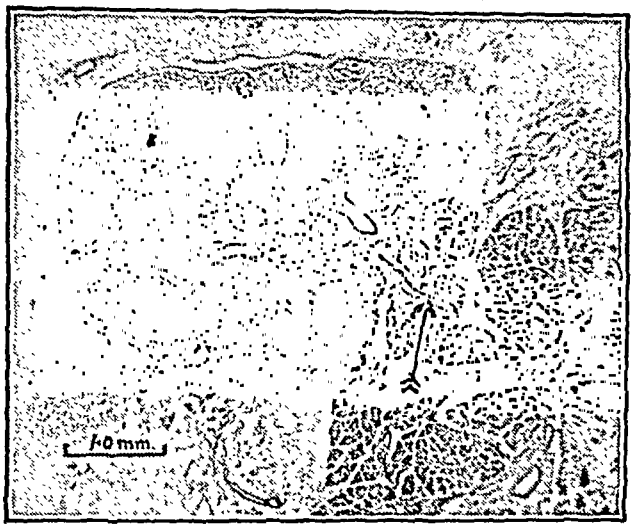

FIG. 1.—Low power photomicrograph of deep submaxillary lymph gland. Note salivary tissue (on the right) invading hilum. The arrow points to the union of the duct draining the invading acini with another from the adjacent salivary lobule.

In his volume on the lymphatic system in Bardeleben's textbook, Bartels classifies the deep glands such as those described by von Brunn and himself, as well as those more casually mentioned by others under the capsule of the submaxillary gland, as "paramandibular" glands, distinct from the "mandibular" glands. (In this work Bartels corrects the term "submaxillary" of the B.N.A. into "mandibular.")

If, as is probable, these intracapsular lymph glands have only a localized drainage from the salivary gland itself, one cannot be certain of revealing them by injection methods. It seemed that the only sure way to determine their presence and exact relation to the salivary gland would be to examine microscopically stained serial sections of the latter. This was therefore done with four submaxillary salivary glands taken from young children.

Two of those showed no trace of any lymph gland directly related to them. In another a lymph gland of typical structure was found closely applied to its posterior pole beneath the salivary gland capsule. It was directly applied to the subjacent salivary acini which at the hilum of the lymph gland mingled with the issuing lymphatic vessels. Beyond this on one side a thin process of the lymph gland was prolonged for some distance under the capsule over a salivary lobule. In the remaining submaxillary gland a lymph gland was found under the capsule presenting still closer relations to the salivary tissue (Fig. 1). Salivary acini were seen invading the hilum of the lymph gland and lying scattered throughout its medulla, abutting on the cortex in places (Fig. 2). The invading acini were drained by a duct which passed out of the lymph gland to join another draining the adjacent part of the submaxillary gland. This recalls the finding of Neisse in the parotid gland.

Thus there do exist, in some cases but not in all, deep submaxillary lymph glands inside the capsule of the submaxillary salivary gland, and directly related to the salivary acini. There seems to be no good reason for putting these deep glands, as Bartels has done, in a separate group from the more constantly found and more superficially placed submaxillary lymph glands. As in the case of the parotid salivary and lymph glands, all the lymph glands regionally associated with the submaxillary salivary gland may be classed together as submaxillary lymph glands. The main glands of this group, constantly present in varying numbers, are superficially situated under the deep fascia and external to the submaxillary gland capsule. Smaller and deeper members of the group are sometimes found embedded in the capsule (as those described by von Brunn) or inside the capsule in direct relation to the salivary tissue (as those I have now described).

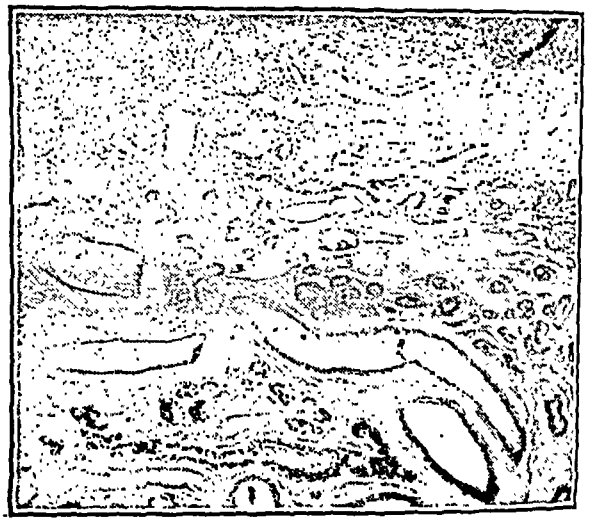

FIG. 2.—Higher power view of another section of the same lymph gland as in Fig. 1, showing adjoining cortical zone (above) and medullary zone (below). The medullary portion is studded with salivary acini; a salivary ductule is running horizontally close to the lower edge of figure.

The practical importance of the occasional presence of these deep lymph glands is twofold. Surgically, one cannot be sure of removing all submaxillary lymph glands present without removing also the salivary gland, as is the usual practice. Pathologically, these deep glands may be responsible for some occurrences of cancerous metastases in the salivary gland, and may be the real seat of the rare cases of apparently primary tuberculosis in the submaxillary gland.

In examining the sections used in this investigation one was struck by the comparative absence of lymphoid tissue round the submaxillary ducts. Where present at all this was confined to very small collections of lymphocytes around the smaller, but not the smallest, ducts. Rawitz has described masses of lymphoid tissue visible to the naked eye in stained sections of submaxillary gland in *Cercopithecus sabeus*. These masses surrounded the smaller ducts and were devoid of all structural appearances resembling those of organized lymph glands. Rawitz claimed to have excluded the possibility of these masses being of inflammatory nature. No such appearances were seen in the human glands here studied.

My acknowledgements are due to Professor Evatt, of the Royal College of Surgeons, Dublin, who kindly supplied the submaxillary glands examined, and to my laboratory assistant Mr. Weston, who undertook the laborious preparation of the sections.

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SPONTANEOUS AND ARTIFICIAL PNEUMOTHORAX.*

BY

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PNEUMOTHORAX, or the presence of air in the pleural cavity, is, I think, a subject worthy of our consideration for two reasons: in the first place, because the occurrence of spontaneous pneumothorax, though perhaps rare, is one of our medical urgencies, and therefore cannot be considered unimportant; and in the second place, because the induction of artificial pneumothorax has now become an established method of treatment in certain cases of pulmonary tuberculosis. In fact, Sir James Kingston Fowler has said that "the induction of artificial pneumothorax is the only advance in the treatment of pulmonary tuberculosis since the introduction of sanatorium treatment as carried out at Nordrach."

Source of the Air.

Normally the pleural cavity, save for a little lubricating fluid, is a vacuum. Air may reach it:

(*a*) From the atmosphere, the result of a penetrating wound of the chest wall which perforates the parietal pleura. Apart from pneumothorax artificially induced, such instances are but seldom met with, though I have known it to be caused in a man by a deliberate stab in his side with a hat-pin during an altercation with his wife.

(*b*) From the lungs, the result of the rupturing of a tuberculous focus, usually a cavity, or the bursting of an emphysematous bulla, or laceration of the lung by an adhesion under strain.

(*c*) From a hollow viscus, the result of a foreign body ulcerating through the wall of the œsophagus, or occasionally by a peptic ulcer perforating the diaphragm.

Of these, the lung is pre-eminently the source of air in spontaneous pneumothorax, and the preponderating cause is the rupture of a tuberculous focus, usually a tuberculous cavity. Should such a cavity be small and its contents not highly infected with pyogenic organisms, then hydropneumothorax will result, whereas the rupture of a large cavity containing a quantity of highly infected material will give rise to pyo-pneumothorax, which is of the two the much more common complication. Simple pneumothorax, unaccompanied by fluid, may be due to laceration of lung by a pleural adhesion of tuberculous origin, or, as suggested by Parkes Weber,[1] to the rupture of a "cicatricial" bulla, the result of a previous minute tuberculous focus and adherent to the parietal pleura, the adhesion keeping the rupture open for a time. In some of these latter cases, however, hydro-pneumothorax may result owing to the cicatricial bulla containing a caseous remnant.

RECURRENT PNEUMOTHORAX.

In rare instances it happens that this accident occurs several times at varying intervals in the same patient. A case has been reported in which as many as eleven attacks have occurred. Personally I have seen but one case in which recurrent spontaneous pneumothorax has occurred, and that was the case of a man, aged 30, who gave a history of three attacks. The first was in December, 1922, and affected the left side. The other two attacks were both right-sided, and occurred in June, 1923, and March, 1928, respectively. The man was of athletic build, and examination of his chest when I saw him on May 18th, 1928, revealed no evidence either clinical or radiological of pulmonary disease. Moreover, he stated that each winter between the two last attacks he had played Rugby football regularly.

With few exceptions spontaneous pneumothorax makes its appearance in these cases like a "bolt from the blue" in a patient in whom no pulmonary disease was suspected, and in whom no pulmonary disease, even after the attack, can be detected by any known method. On the whole, the prognosis in these cases is good, whereas the incidence of pneumothorax in cases of known pulmonary tuberculosis is of extreme gravity. It seems probable that the explanation offered for recurring spontaneous pneumothorax is also the explanation of many cases of spontaneous pneumothorax attributed to the rupture of an emphysematous bulla, for it would appear that a bulla such as is seen on the margin of a lung in emphysema would, on rupturing, collapse, and prevent the escape of air in a quantity sufficient to produce an appreciable pneumothorax. Furthermore, emphysema is so common that were it a potent etiological factor pneumothorax might be expected to be met with more frequently. That adhesions could play a part in maintaining the patency of the aperture is unlikely, for adhesions in emphysema are conspicuous by their absence. It may be that pneumothorax arises only in those cases of emphysema where the ruptured bulla is in free communication with a bronchus large enough, and in consequence rigid enough, to resist collapse.

Pneumothorax has been classified into open, closed, and valvular, according as the aperture in the lung remains open, or is so small that it closes almost immediately, or is valvular, which no doubt explains the majority of cases. *In these cases air enters the pleural cavity during inspiration*, and, owing to the opening being valvular, cannot escape during expiration; thus the imprisoned air gradually accumulates until it exerts a pressure within the pleural cavity sufficient to close the valvular opening even during inspiration. If this state continues long enough the valvular opening will heal, and the air will ultimately be absorbed. Should, however, absorption of air take place before the valvular opening has healed it will burst open and allow more air to escape into the pleural cavity. This, according to Fishberg,[2] is the explanation of the return of dyspnœa in some cases of pneumothorax after paracentesis.

Symptoms.

The onset of pneumothorax in the majority of instances is abrupt. The patient is suddenly seized with intense pain in the affected side, has urgent dyspnœa, and all the symptoms of collapse. In some cases, however, the onset is anything but acute; in fact, the presence of pneumothorax may be unsuspected until discovered in the course of routine examination. The acuteness of the symptoms at the onset depends upon the functioning ability of the affected lung immediately preceding the escape of air into the pleural cavity. If the tuberculous infection is limited in extent so that the lung is for the most part functioning when the rupture occurs, then at the moment of rupture the symptoms will be intense, because a functioning lung has suddenly been put out of action; but if, as is sometimes the case, the whole lung is extensively involved with tuberculous infection so that prior to the rupture it has little or no function, then at the time of the rupture the symptoms will hardly be perceptible.

Physical Signs.

The affected side, which is immobile, is enlarged and the intercostal spaces may bulge, as opposed to what occurs in simple pleural effusion, when, as pointed out by Hale-White,[3] the affected side is often seen to be actually smaller than the sound side. The percussion note is hyperresonant, or even tympanitic, and the breath sounds over it are diminished in intensity. A cough, or even spoken words as heard over the affected side of the chest, and even rales should they be present, assume a peculiar metallic quality. It is in this condition also that the so-called "coin sound" is typically heard. One coin is placed flat on the upper part of the chest wall in front on the affected side, and an assistant taps it with another coin while auscultation is performed behind, with the stethoscope on the back at a point opposite the coin. With each tap of the coins a bell-like tinkle is heard through the stethoscope. If, in addition to air, there be fluid in the pleural cavity, then that fluid is found to shift with altered positions of the patient, so that an area which emits a dull note on percussion with the patient sitting up may become resonant on his lying flat. Moreover, with the patient in the erect posture, as is well demonstrated in radiograms, the upper limit of the fluid is a horizontal line, whereas in uncomplicated pleural effusion the upper limit of the fluid is represented by a curved line with its convexity upwards and its

* An address delivered before the North Lancashire and South Westmorland Branch of the British Medical Association on December 5th, 1928.

highest point in the axillary line. Again, when both air and fluid are present in the pleural cavity, a splashing sound will be produced on shaking the patient. The displacement of the heart in pneumothorax is frequently very great, for the entry of air into the pleural cavity destroys the cohesive property of the pleura by separating their two opposing surfaces so that the lung collapses, thus leaving unopposed the normal negative pressure set up by the other lung, and in consequence the heart is pulled over towards the sound side.

Treatment.

The acute symptoms at the onset should be relieved by a hypodermic injection of morphine and the application of a hot fomentation to the side. In many cases this is sufficient, and in three or four weeks the air will have been absorbed. In other cases, however, it may be necessary to tap the air in the pleural cavity, and this may have to be repeated three or four times in the first twenty-four hours. In such cases Fishberg recommends the injection of a quantity of air into the pleural cavity, on the assumption that the rise of pressure so caused will be sufficient to keep the perforation in the lung closed long enough to enable it to heal. In hydropneumothorax the same conservative plan is adopted as in the treatment of a simple pleural effusion. No mechanical intervention is undertaken for some three weeks, unless rendered necessary at an earlier date by the appearance of the signs of positive intrathoracic pressure. At the end of this time, if there are no indications of absorption, air is removed, and only after this has proved inadequate is fluid withdrawn. In pyo-pneumothorax the pus is withdrawn as soon as diagnosed, preferably by repeated aspirations in tuberculous cases.

ARTIFICIAL PNEUMOTHORAX.

The treatment of pulmonary diseases by the induction of artificial pneumothorax was first suggested by Carson, a Liverpool physiologist, about 1822, but it is only in recent times that the method has been employed on an extensive scale. It is now recognized as a valuable therapeutic measure in properly selected cases of pulmonary tuberculosis, in severe cases of haemoptysis, and to replace a pleural effusion or "tuberculous empyema." Less frequently it is employed in the treatment of bronchiectasis and pulmonary abscess.

In regard to pulmonary tuberculosis, all are agreed that the most suitable type of case for pneumothorax therapy is the one in which the lesion is unilateral and unaccompanied by firm adhesions, but opinions differ in regard to the most suitable stage in the course of the disease in which to employ the treatment. Some authorities advocate pneumothorax therapy in the early stages of unilateral lesions, on the grounds that the chances of the disease becoming bilateral are thereby diminished, that there is less likelihood of meeting with firm adhesions, and that the more local the disease the more chance is there of the lung refunctioning after compression. Others, however, prefer to wait until residence in a sanatorium has been given a trial before resorting to artificial pneumothorax. Personally, I adopt the latter course, and only consider the induction of artificial pneumothorax if, at the end of six months' residence at a sanatorium, there is no improvement in the patient's condition. The effect of sanatorium treatment in these early cases is, in my experience, so beneficial that the number of cases that will require the induction of pneumothorax is very small. The value of pneumothorax therapy lies more in the fact that it may prove beneficial in those cases which do not respond to ordinary sanatorium treatment, rather than in its being applicable to great numbers.

It is sometimes employed with success in cases in which both lungs are involved, provided that the second lung is but slightly affected, but such a procedure is not without risk, for it may, and does sometimes, lead to rapid extension of the disease in the uncollapsed lung.

Method of Induction.

To the method of induction of artificial pneumothorax I do not propose to refer, for the technique can only be learnt from an actual demonstration. An initial 300 c.cm. of air is introduced, not with the object of causing collapse of the lung, but of producing a cavity of reasonable size which can be enlarged by subsequent refills. The first refill is usually given the next day, and the second about two days after the first. Afterwards the refills may be repeated at intervals of three days, then at four or five, the intrapleural pressure being gradually raised each time until at the end of two or three weeks efficient collapse has, as a rule, been obtained. In these refills the amount of air given varies between 600 and 900 c.cm. If more than this is required it is safer to give the refills at more frequent intervals than to put in a larger quantity at one time. It then remains to space and adjust the refills so as to prevent the lung from expanding again. This can only be determined by a careful watch on the temperature chart, the patient's weight, and the signs, symptoms, and *x*-ray appearances in each case. Frequent *x*-ray examination is the best way of ascertaining the amount of collapse. In cases of haemoptysis, where rapid compression of the lung is desired, a larger quantity of air than is usual in the ordinary case of pulmonary tuberculosis may be given.

Once the lung has collapsed efficiently it is inadvisable to allow it to expand under two years, and even at the end of that time, if on expansion there is a return of symptoms of active pulmonary tuberculosis, further refills must be given. After such efficient collapse monthly refills are usually sufficient to maintain it.

The presence of laryngeal tuberculosis is no bar to the employment of artificial pneumothorax, but its induction is contraindicated when there is extensive and active disease in both lungs, or when there is extensive tuberculous disease elsewhere; also in cases complicated with heart disease, diabetes, asthma, bronchitis, and emphysema, and in old people and persons of a highly nervous temperament.

The main principle underlying the therapeutic value of artificial pneumothorax is rest. Rest is essential to the healing of any wound, and collapse of the lung affords such rest by annulling the respiratory excursions. Moreover, by relieving the state of tension in which lung tissue normally exists, it promotes healing by allowing cavities to collapse, with consequent apposition of their walls and ejection of their toxic and infective contents. Again, collapse of the lung induces a venous and lymphatic stasis in the lung, and thus promotes the formation of fibrous tissue. The effect of such stasis is also to retard the absorption of toxic products into the general blood stream and to impede the escape of tubercle bacilli into the lymph stream, thus tending to localize the lesion.

Furthermore, it is suggested by Goebel[4] that the tubercle bacillus, being an aerobic micro-organism, requires a plentiful supply of oxygen, and therefore does not thrive so well in a lung which is collapsed owing to obliteration of the pulmonary capillaries.

REFERENCES.

[1] Mitchell Lecture, *Lancet*, November 5th, 1921. [2] Maurice Fishberg: *Pulmonary Tuberculosis*, published by Henry Kimpton. [3] *Practitioner*, July, 1921. [4] *Lancet*, December 14th, 1912.

THE MENTAL ASPECT OF EPIDEMIC ENCEPHALITIS.*

BY

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Occurrence.

MENTAL symptoms were found to have occurred in a high proportion of cases. Thus, of 113 patients, mental symptoms were noted in 92, at either acute or chronic stage. In view of the variation of symptoms and their relation to the age of the patient the cases were analysed with special reference to the age factor. For this purpose the patients were divided into two groups: (1) children and adolescents up to the age of 18 years inclusive, and (2) patients aged 19 years and above. One patient from each group failed to survive to the chronic stage.

* Being the abstract of a paper which was read before the Liverpool Medical Institution on December 13th, 1928.

Children and young people showed a rather greater liability to mental affection than did the patients of adult years. Of the 113 patients, 47 were of Group 1; 42 of these (that is, 89.4 per cent.) showed mental symptoms, and of the 5 patients not so affected none were under the age of 15 years. On the other hand, from the 66 adult cases mental affection was noted in 44 (that is, 66.6 per cent.). In Group 1, therefore, mental symptoms occurred with greater frequency than in Group 2, and were the rule in all cases under the age of 15 years.

Mental Symptoms in Epidemic Encephalitis: Occurrence of Symptoms According to Age Groups.

Type of Case or Symptom.	Group I. Children and Adolescents (aged 1-18 inc.).	Group II. Adults (aged 19 and over).
ACUTE STAGE:		
Total cases of epidemic encephalitis ...	47	66
Cases showing mental symptoms ...	42 (89.4%)	44 (66.6%)
Acute delirium	27 (77.8% became chronic)	29 (34.4% became chronic)
Sleep disturbance	25	24
Emotional or conduct change	9	4
Psychotic symptoms...	3	5
Catalepsy stupor, etc.	13	13
CHRONIC STAGE:		
Conduct change	21	11
Moral change	12 | 55	0 | 24
Emotional instability	22	13
Psychotic symptoms	5	13
Phobias and psychoneurotic symptoms	4	3
Bradyphrenia	11	13
Nocturnal excitement	12	6

DEGREE OF PERMANENCE.

There appeared, too, to be a greater tendency towards the more permanent type of mental affection among children and adolescents than among adults. Out of 92 cases showing mental symptoms at some stage, a history of acute delirium was given in 56—27 in Group 1, 29 in Group 2. In 21 cases out of 27 (that is, 77.8 per cent.) in Group 1 mental symptoms were noted in the sequel, while of the 29 adult patients only 10 showed a mental sequel (that is, 34.4 per cent.). The degree of mental affection at onset appeared to bear no relation to the symptomatology of the sequel.

PROGNOSIS.

With regard to the general question of prognosis in the case of mental disorder occurring during epidemic encephalitis, it has already been indicated that there is a greater tendency to the more permanent type of mental affection among children and adolescents than among adults. Of the 61 cases in which mental symptoms occurred during the chronic stage, or sequel of the disease, 23 showed gross mental change such as should warrant special care, whether the symptoms consisted of change of conduct, moral change, or states akin to the manic-depressive psychosis or chronic delusional insanity. Of these 23 cases, 16 belonged to Group 1, and while under observation none of the 16 recovered a normal state of mind. On the other hand, from the 7 cases belonging to Group 2, which were observed over the same period of time, several of whom were certified, 5 showed a complete return to sanity. It would seem, therefore, that the prognosis with regard to mental affection, other than delirium at onset, which occurs during childhood or adolescence, is extremely bad. On the other hand, in adults, even when the symptoms are of gross mental disorder, and might indicate a bad prognosis where the case is one of pure psychosis, the prognosis is relatively good, since in patients in whom the encephalitic mental state resembles psychotic disorder of an extremely chronic type complete recovery frequently occurs.

THE AGE FACTOR IN SYMPTOMATOLOGY.

The dependence of mental symptomatology on the age of the patient, so often recorded in the past, was well illustrated in the present series. The case records were analysed to determine the incidence of the following groups of symptoms: in the acute stage from delirium, neurosis, emotional instability, change in conduct, moral change, disorder of sleep, nocturnal excitement, psychotic symptoms, and evidence of katatonia, catalepsy, or stupor; and in the chronic stage for bradyphrenia and euphoria in addition to the above.

During the acute stage the symptomatology of the two age groups was very similar, with the exception that patients who exhibited marked emotional instability and change of conduct as the chief feature of their acute attack were more common in Group 1, comprising children and young adults.

In the sequel the differences between the two groups were very much more marked. The mental symptomatology of Group 1 was characterized by change in conduct, moral change, emotional change, and nocturnal excitement. In adults, on the other hand, not only was the tendency to mental affection generally less, but among those cases affected psychosis occurred with greater frequency.

MORAL DISORDER.

In classification of the symptoms, definite distinction has been drawn between disorder of conduct and moral disorder, since the former may exist in marked degree, without any element of the latter, and also a certain amount of conduct disorder may depend on physical involvement, an aspect to which further reference will be made. Of the whole series, 12 patients exhibited moral change, but none of these came from Group 2. Among the symptoms met with in such cases were observed the following: uncontrolled use of bad language, gross cruelty, pugnacity and violence, thieving, lying, mythomania, in which the patient seemed unable to refrain from telling the most obvious untruths or from ridiculous exaggeration, truancy from school, running away, begging, marked and precocious erotism, masturbation, indecent exposure, incest, sodomy, or indecent assault. No somatic sexual precocity, such as that noted by Wimmer,[1] was observed, however. Among young males there was naturally a greater tendency to the more violent type of disorder, such as criminal or indecent assault.

DISORDER OF CONDUCT.

Change in conduct, too, proved much more common among children and adolescents than among adults, two-thirds of the 33 cases exhibiting such changes falling into Group 1. Every degree in change of conduct was noted, from the acquisition of some particular habit to conditions in which almost an entire change of personality was involved. Grimaces, noises, nail-biting, carelessness as to, or perversion of, daily habits, singing, jumping, mercyism, and spitting occurred.

Patients suffering from disorder of morals and conduct often showed themselves quite amenable temporarily, as if enabled for the moment to exercise voluntary control—when, for a short time, indeed, many of them would exhibit acute consciousness of their shortcomings; but as soon as outside influence was withdrawn their symptoms would return. Voluntary attention was frequently diminished, but instinctive attention was markedly increased, the patient showing an abnormal degree of curiosity. Though the intelligence quotient, as measured by Stoddart's modification of the Binet-Simon tests, was found to be very much below normal in several cases, it was difficult to determine whether any actual impairment of intelligence was present, since the poor response to a test might be accounted for by the derangement of attention just described, or by bradykinesia and bradyphrenia of the patient—the first preventing adequate continuity of concentration, the second group of factors causing rapid fatigue and disinclination for mental effort generally. Any defect of intelligence so recorded, therefore, would appear to be rather of a functional character, than to be due to any organic brain involvement.

PSYCHOTIC SYMPTOMS.

A resemblance was noted between patients suffering from epidemic encephalitis and those afflicted with such psychoses as manic-depressive insanity and dementia

praecox. There were found to be distinct points of difference, however, between the mental disorders of epidemic encephalitis and the psychoses which they resemble. The delusional state of epidemic encephalitis is more transient and variable than that of chronic delusional insanity. The mental outlook is objective and the immobility bradykinetic in those cases which resemble melancholia, but which differ from it for those reasons. The apparent katatonia of epidemic encephalitis is rather bradykinetic and bradyphrenic than part of the introversion of dementia praecox.

PSYCHONEUROTIC SYMPTOMS.

Cases closely resembling definite types of psychoneurosis were not of common occurrence, and apparently bore no relation to the age of the patient. Well-marked psychasthenic symptoms, however, occurred in a few cases. At first sight the similarity between the mental symptoms of epidemic encephalitis and those of the psychoneuroses appears a strong one. On thorough investigation, however, it is found that there are two important differences. In the first place, the former may clear up and disappear quickly without the application of any treatment, while the latter, in the absence of psychological treatment, tend to pursue a chronic course or to improve very gradually. Secondly, the effects of psychotherapy on post-encephalitis tend, with certain exceptions, to be of a transient character, while in the psychoneuroses permanent recovery may be looked for. In other words, by psychological treatment in epidemic encephalitis we are only dealing with what has been vaguely described as the "large functional element," which is present in many organic nervous diseases, whereas in hysteria and the psychoneuroses we are concerned with conditions which, if not of psychogenic origin, are at any rate much more dependent upon psychic factors.

Among those who support the psychogenic theory of the causation of this condition considerable claims have been made for the value of psychological treatment. Apart from extravagant claims, however, psychotherapy has proved of definite value as a symptomatic form of treatment in a number of cases—this especially in the cases where insomnia or sleep inversion occurred. The method of treatment was mainly that of suggestion, and the effect was quickly obtained. The various "stunt" methods of suggestion which have been described, such as the injection of innocuous substances, do not appear to be of value since they have no sound rationale and can only be transient in effect. In intelligent patients, where a large so-called functional element is superimposed on the organic trouble, psychotherapy may be of considerable and lasting benefit.

REFERENCE.

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Memoranda:

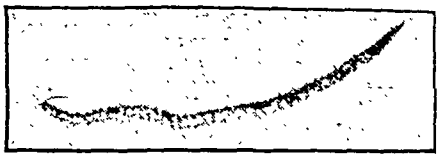
MEDICAL, SURGICAL, OBSTETRICAL.

A CENTIPEDE IN THE NOSE.

A STONEMASON'S labourer, aged 28, recently presented himself to me with the following history.

For two or three years he had suffered from difficulty in nasal breathing, deafness, slight vertigo, and headache. For the past few weeks, however, one nostril seemed to be definitely obstructed, and tightness and irritation in his nose caused insomnia and sneezing. Involuntary nasal whistling occurred from which he sought relief by breathing through the mouth. One morning, when he was trying to clear his nose, a large and very active centipede was ejected through one of the nares. With some difficulty he captured the centipede alive and brought it to me in a box. Since that morning his nose has felt altogether more comfortable; the difficulty in nasal breathing and the local irritation have practically ceased. Examination of the nares showed enlarged turbinals and a deflected septum, but there was no ozoena and no sign of gross trauma. The patient does no gardening and has no recollection of smelling flowers at any time in the past two months. On the other hand, his story that the insect came from the nose and nowhere else was very clear.

Cases of nasal infection by insects, though rare, do occur in this country. Greenbottle and bluebottle flies (blow-flies), even in Great Britain, occasionally deposit their ova in the human nose or ear, extensive ulceration and actual necrosis of the soft parts and even of bone being produced as these ova mature. Such ova have even been found in the anterior chamber of the eye, having reached there probably by way of the nasal sinuses. How easily blow-fly infection may occur must be known to many who were on active service in the tropics and saw cases of wounded being taken up with masses of flies adhering to their eyes, mouth, and nose. Blow-flies will lay their eggs on any open sore, and in Gallipoli and other war zones the sufferings of the wounded were often aggravated by this cause. Wounds or



ulcers infected by larvae must be dealt with promptly and thoroughly. They should be irrigated with a 1 in 20 carbolic solution or swabbed with pure benzine. Tumours resulting from the pressure of larvae should be freely opened and the contents expressed. Iodine seems to be inadequate; I have poured iodine upon a mass of writhing maggots without producing any apparent effect upon their vitality. Gad-flies, or bot-flies, whose maggots live in certain tumours in the skin of oxen, in the stomach and intestines of horses, and in the nostrils and other cavities of sheep, goats, and deer, have occasionally produced nasal infection in man, leading to inflammation and even necrosis of tissue. The grey flesh-fly, common everywhere in summer and autumn, in place of eggs produces living maggots which have sometimes been observed in abscesses in the human nose and ear; they number 50 to 80 in a swarm and change to pupae in five to eight days, developing into flies eighteen to twenty days later.

On the whole it appears probable that the centipede did not enter the patient's nostril in its adult state, but was accidentally transferred there at some earlier phase of its development. The photograph, which could be taken only after the creature had been chloroformed, gives but a poor idea of its normal active appearance.

Eastbourne. J. GORDON WILSON, M.D., Ch.B.

ILEO-ILEAL INTUSSUSCEPTION DUE TO A FIBROMA.

THE occurrence of a case of intussusception in an adult is sufficiently unusual to merit recording.

A miner, aged 25, was admitted to the Nottingham General Hospital with a history of having had, during the past four months, five attacks of vomiting associated with pain referred to the umbilicus. This pain was described as one of distension; it was accompanied by rumbling as though wind was trying to pass. Defaecation gave relief, but latterly aperients in increasing doses had been required.

The abdomen was distended with a well-marked "ladder pattern"; it was tympanitic and there was some epigastric tenderness. Rectal examination revealed nothing abnormal. An enema produced a constipated result, subsequent to which the bowels were well opened naturally.

Through the right linea semilunaris the peritoneal cavity was opened; small gut distended to the size of the patient's fist presented with collapsed coils of ileum below it. On passing the hand down into the right side of the pelvis a mass could be felt like an intussusception; this was brought up into the wound and proved to be one of the ileo-ileal type. Reduction was easy, only about two inches of gut being involved. At the apex of the intussusception a lump could be felt in the lumen of the bowel, so after applying a clamp across the loop the intestine was opened longitudinally and a tumour about 2 inches by 1 emerged; this was cut away along with its short pedicle. The wound of the intestine was then stitched up transversely with a loop on the mucosa stitch and a superimposed Lembert suture. Before releasing the clamp the ileum proximal to it, which was not only greatly distended but also hypertrophied, was lightly clamped for a small area, and a purse-string suture was inserted. At the middle of the area a puncture was made, and a large catheter was inserted. On removing this second clamp much flatus and several ounces of faecal fluid escaped through the catheter. As the catheter was withdrawn the purse-string suture was tied and the puncture wound then buried. The abdominal wound was repaired, a muscle drain being inserted.

The patient made an uninterrupted recovery, and six months later wrote "I do not feel anything from my operation."

Dr. Kilian Clarke, pathologist to the hospital, reported that a section of the tumour showed it to be a pure fibroma.

I wish to acknowledge my indebtedness to Mr. C. H. Allen for permission to treat and describe this case.

Nottingham. J. LLEWELLYN DAVIES, M.B., F.R.C.S.

AN UNUSUAL INJURY TO THE PATELLA.

THE following case may be of interest, having regard to its comparative rarity.

I was recently called to a woman who, while chasing her husband round a table, struck her right knee against the table-leg, and found that she could not move the limb immediately afterwards. On examination the leg was found to be partly flexed at the knee-joint, and was "locked." Where the patella is normally found was a marked angular swelling, which on palpation proved to be the patella. The blow on the medial edge had dislocated the bone by rotation on its ligament, and it had come to rest between the lateral and medial tibial surfaces of the femur. Manipulation was attended by severe pain, but, under an anaesthetic, reduction was easily made by flexion of the knee and "rotation" of the patella into position. After twenty-four hours free and painless movement, without effusion, was obtained.

Newhall, Burton-on-Trent. E. M. R. FRAZER.

Reports of Societies.

ULTRA-MICROSCOPIC VIRUSES.

DISCUSSION AT THE ROYAL SOCIETY.

SIR ERNEST RUTHERFORD, O.M., P.R.S., presided over a discussion at the Royal Society, on February 28th, on ultra-microscopic viruses infecting animals and plants. So much interest was evinced that a continuation was arranged for March 14th. On this occasion, unlike ordinary meetings of the society, the proceedings took the form of a conference, without set papers.

The Work on the Filterable Virus and some Unsolved Problems.

SIR CHARLES MARTIN, F.R.S., who opened the discussion, said that the discovery of the first filterable virus was made by a Russian botanist nearly forty years ago; he was looking for the cause of mosaic disease in tobacco, and, failing to detect any visible microbic agency, filtered the juice of the infected plant through a porcelain filter and found the filtrate infective for healthy plants. Later, Loeffler and Frosch discovered that the contagia of foot-and-mouth disease could be passed through a porcelain filter. Many pathologists then started investigations from this point of view on diseases which seemed to have no adequate cause, with the result that now more than a hundred diseases were attributed to invisible or filter-passing organisms. These viruses included bacteriophage, supposed to be an ultra-microscopic organism parasitic in bacteria, and those of various plant, insect, and mammal diseases. In this group of diseases had been included the various poxes, also nervous diseases such as poliomyelitis and encephalitis, sand-fly fever, dengue, yellow fever, possibly measles and mumps, and even influenza. Typhus fever and Rocky Mountain spotted fever had also been placed, perhaps unjustifiably, in this group. The members of the group had nothing in common clinically or epidemiologically. In some cases the path of infection was direct; in others it was through air, or by food, or the bites of insects. The only passport for inclusion in the group was that somebody had succeeded in getting an infective filtrate through a filter designed to keep back ordinary micro-organisms. The group was continually having new admissions and expulsions. Chicken diphtheria, for example, had been expelled, also trachoma and scarlet fever, on the ground that a microbial origin had been satisfactorily established for these diseases. One feature about certain of these virus diseases, not common to bacterial diseases, was the cellular response of the host by the formation of curious bodies in some of the cells affected. Whatever their true significance might be, they were so characteristic that in some cases they could be used for the diagnosis of the disease.

Varieties of Filters Used.

Turning to filters and their structure, Sir Charles Martin said that these were of two kinds: mineral filters made of unglazed porcelain of different grades or of diatomaceous earth with a little asbestos, or colloidal membranes of different permeabilities. A good deal of work had been done in the endeavour to determine the average size of the pores; one method rested on Poiseuille's law, another on the amount of pressure involved in overcoming the surface tension by blowing bubbles, but the latter involved a good many assumptions which did not seem justified. Whether the particle would pass through the filter or not depended not only upon the dimension, but upon the action between the particle and the walls of the crevices, and upon whether the particle was rigid or could be distorted radially or was capable of motility of its own. Finely ground porcelain would stop particles of about the order of 0.2 micron, and coarser ground of about the order of 0.5. Anything above 0.2 micron being held back, it was obvious, in view of the limit of resolution of the microscope, why anything that went through should be invisible. It was merely a coincidence that these organisms should be invisible as well as filterable. The range of discovery, however, could be increased by the use of ultra-violet light, and he understood that Mr. Barnard, with a wave-length of about 250$\mu\mu$, had been able to photograph particles down to a size of 0.08 micron. Some of the viruses ran through the filter without any serious fall in concentration; others appeared only to pass through the filter by accident. Among the good filterers were the viruses of mosaic diseases, foot-and-mouth disease, and the Rous sarcoma; on the other hand, the viruses of typhus, trench fever, and Rocky Mountain spotted fever might have been passed through some of the coarser filters, but most of the people who had tried the experiment had not been successful, and the same was true of the poxes, with the exception of the particular strain of vaccinia virus discovered by Levaditi and called neuro-vaccinia. The virus of canine distemper was a filter-passer, but a poor one, and for many years it awaited verification.

The Process of Filter Passing.

What were the dimensions, then, of some of the good filterers? There were many pitfalls in trying to determine this point. Experiments had been made in filtering through collodion membranes of different permeabilities, and testing the passage of particles of known size. Colloidal solutions of arsenious sulphide had been used, also collargol, a colloidal suspension of silver, both of which had particles of a definite order of size. Although the experiments of some investigators suggested a much smaller size—the virus of foot-and-mouth disease had been stated from one series of experiments to be not bigger than one of the smaller protein molecules—yet a good many others had not been able to repeat these observations, and had given the order of magnitude of some of the good filterers as equal to that of collargol particles—that is, 20$\mu\mu$. How small could a living organism be? There must be a certain size for life to begin, because it involved an aggregate of molecules, and rather complicated molecules at that. It looked as if an alternative hypothesis was required as to the nature of these viruses. Some sort of catalyst had been suggested, but this the speaker found extremely difficult to visualize, and he preferred to consider that the dimensions were not of the small order suggested by some observers, and that these viruses were living organisms.

What was the simplest common measure of a living organism? First, the capacity to take dissimilar molecules and make them into molecules similar to its own; secondly, multiplication; thirdly, variation, following upon not quite perfect assimilation. After careful consideration of all the facts of which he was aware, he had not been able to find any essential distinction between viruses and microbes except their size and cultivability on inanimate materials. The viruses being so very small, perhaps their powers of assimilation were extremely limited, and therefore required to have their foodstuffs prepared three parts of the way before they could use them to build up new viruses. The evidence that they had been cultivated apart from living cells was unconvincing; many of them had been cultivated in symbiosis with living cells and in glass vessels. Bacteriophage could be cultivated in growing bacteria, Rous sarcoma in pieces of spleen tissue, and Rocky Mountain spotted fever and typhus had apparently been so cultivated, or at least the virus had remained alive for a very long time. It looked as though they were obligatory parasites, and support was given to that view by the apparent

absence of the saprophytic virus. With ordinary micro-organisms only a fraction of 1 per cent. were pathogenic to animals or plants; the others subsisted upon inanimate material.

Finally Sir Charles Martin emphasized some of the difficulties in the work on filter-passers. Work with an agent which could not be seen or propagated in the ordinary way, and in which every single observation required the inoculation of an animal or plant, and a period of waiting of perhaps weeks or months for the answer "Yes" or "No," was rather heartbreaking. No method was available for securing pure cultivation of viruses. Freedom from external contamination might be secured, but if two viruses got mixed up there was no simple method of separating them except by inoculating them into animals which would be immune to the one and not to the other. It was extremely difficult to decide in a human disease whether it was due to a filter-passer or not. It seemed absurd, for example, that after all these years it should still be uncertain whether influenza was due to a filter-passer or to such an organism as Pfeiffer's bacillus. If there was *any animal* which could reproduce the disease, many people in that room could give the answer to the question within a fortnight.

Virus Diseases of Plants.

Professor P. A. MURPHY said that virus diseases of plants gave the impression of being a more homogeneous group than animal virus diseases appeared to an outsider. The difficulty was that while it was easy to filter the sap of a plant and to obtain a filtrate free from any visible life, in numerous diseases of plants presumed to be virus diseases it was not possible by mechanical means to infect the plant with the filtrate. On the other hand, virus diseases could be transmitted from plant to plant by grafting or pruning, and this was looked upon as the hall mark of virus disease in plants. Furthermore, many of them could be transmitted by an appropriate insect vector. It was characteristic of virus diseases of plants that they were systemic and affected all the plant tissues —leaves, stem, root, everything except the seed—which, among plant diseases in general, was very unusual, and suggested that the agent producing these virus diseases was entirely distinct from the fungi, bacteria, and occasionally protozoa which produced other diseases in plants. Unlike animals infected with virus diseases, the majority of the plants infected were carriers.

Dr. KENNETH SMITH dealt with the insect carriers of plant viruses. Was the insect the host of the virus or merely a mechanical carrier? In the mosaic group of diseases it was fairly obvious that the insect was not any more than a mechanical carrier, but in certain other plant diseases the virus was spread only by one particular insect, and in such case it would appear that there was some obligatory action between the virus and the insect. As to the length of time for which the virus remained infective in the body of an insect carrier after it had no longer access to the infected plant, in one case the insect had been found infective after two months' feeding upon a plant which was immune. The offspring of infected aphids had been found not infective to the healthy plant.

Dr. J. A. ARKWRIGHT, F.R.S., added a short contribution on the virus in foot-and-mouth disease in animals, which virus, he said, was easily filterable. The infectivity of foot-and-mouth disease among naturally susceptible animals was very high. After an attack of the disease the animal was completely resistant for a time, not for as long as the immunity after scarlet fever or measles, but for longer than that after herpes or erysipelas. During the period of immunity the blood contained antibodies, which could be shown experimentally to neutralize the virus.

Ultra-microscopy with Ultra-violet Radiation.

Mr. J. E. BARNARD, F.R.S., explained some of the difficulties from the microscopical side. With a view to trying to improve the microscopical method, he had almost entirely devoted himself to the light of shorter wave-lengths. It must be remembered that, in addition to their minuteness, these viruses might possibly have other characteristics; their optical quality in terms of visual light was not different from that of the medium or body fluid in which they were, and this prevented them from being seen by any means ordinarily available. While, however, this characteristic might hold good for a given range of wave-lengths, he could not imagine that it was true for all available wave-lengths. If a body had the same refractive index as its medium for, say, the middle part of the visible spectrum, it was highly improbable that it would have the same optical constants in some part of the ultra-violet. Again, the light used in microscopical work determined in large part the order of resolution; therefore, it appeared that with light of shorter wave-lengths it should be possible to see some of the characteristics of a body which was smaller than could be seen by visual light. On the physical side the perfection of a microscopical apparatus for use with radiations extending down to the limit of transmission by quartz presented in theory no difficulty at all. The practical difficulties, however, were very considerable. He had now collected a fair amount of apparatus whereby one could, with reasonable certainty and fair accuracy, photograph bodies and organisms of smaller size than was possible with the ordinary microscope. One of the difficulties with ultra-violet radiations was that any source of light used must be of the nature of a spark. To get anything like a photograph of value of a body which was in fluid, and therefore often in rapid motion—if not motion of its own, certainly in rapid Brownian motion—such a photograph had to be obtained in an extremely short time. One recent development was a dark-ground illuminator for ultra-violet rays, and by this means it was hoped to reduce the exposures to more workable limits. Mr. Barnard showed on the lantern screen a number of results obtained by this method, revealing clearly fine differentiations of granules of an order of size of something less than 0.2 micron.

Sir ERNEST RUTHERFORD asked Mr. Barnard what ratio his experiments with ultra-violet rays bore to the ordinary microscope in respect to the size of image obtained.

Mr. BARNARD replied that if an organism of the order of size of 0.3 micron could be properly seen by an ordinary microscope, using a wave-length of 5,000 Angström units, then, working with 2,500 Angström units, one should be able to see satisfactorily an organism of the order of 0.08 micron. Asked whether there was any likelihood of getting beyond this, Mr. Barnard replied that the only limitation was the difficulty of getting fused quartz of requisite quality.

Filterable Tumours.

Dr. W. E. GYE said that the filterable tumours of fowls, discovered by Peyton Rous, constituted an exceedingly important group of new growths because an effective filter-passing agent could be extracted from them easily. In this respect they contrasted sharply with the tumours of mammals. The agent might be obtained in various ways, but he and those working with him had found that the method of obtaining it in greatest concentration or activity was to treat the tumour tissue with a saturated salt solution which he described. The filtrate obtained was usually infective in doses of about 0.001 c.cm., and the tumour produced was a true tumour developed from the connective tissue of the animal which was inoculated; from this tumour further infective filtrates might be obtained. The the essential phenomena encountered in filterable viruses were met with here—namely, that apparently the agent could reproduce itself indefinitely in the infected tissues of the animal. There was a large group of filterable tumours of very diverse structure and biological character, all yielding an infective filtrate specific to fowls, and each infective filtrate gave rise only to tumours of the type from which it was obtained. If, for example, a fowl were inoculated in one breast from a filtrate of spindle-cell carcinoma and in the other from a filtrate of endothelioma, the original tumour in each case would be imitated. When Rous first discovered these filterable tumours most investigators refused to accept them as true tumours, but today, after eighteen years, they were universally admitted to be actual new growths. The filterable agent had given rise to a good deal of controversy. In the belief of some physiologists it was an enzyme. One French investigator rejected both the virus and the enzyme, and declared that the agent was a "physico-chemical principle," whatever that might mean. Dr. Gye went on to refer to

destruction or loss of activity of the filtrate on incubation, a characteristic which he had been studying now for some years. In respect to this property also it resembled a good many filterable virus diseases. He concluded with some remarks on antiseptics. The agent of these tumours, whatever its precise character might be, was susceptible to the whole range of antiseptics as known and applied to ordinary bacteria. The general conclusion was unavoidable that the action of antiseptics upon these agents was the same as that which was expected and known to occur in the case of ordinary organisms. One antiseptic which he had studied with special care in this connexion was acriflavine, which would act in the presence of serum. If one tried to kill the virus of bovine pleuro-pneumonia with acriflavine in the presence of serum, should the serum be inactivated by heat or by old serum, the dilution of acriflavine required to kill the organism was 1 in 5,000, but if the serum was fresh, then the virus of pleuro-pneumonia could be killed at dilutions of 1 in 40,000 or 1 in 50,000. Exactly the same thing applied to the action of acriflavine on the filtrates of the tumours of which he had been speaking, and from such evidence as this he was convinced that the agents in these tumours were of the same order as the pleuro-pneumonia virus, and also that these organisms were of the same order as ordinary bacteria.

At the adjourned discussion, on March 14th, Professor Ledingham and others are to speak.

RADIUM TREATMENT OF MALIGNANT DISEASE OF THE UTERUS AND OVARIES.

A MEETING of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine was held on February 15th, with Dr. J. S. FAIRBAIRN in the chair, when Professor J. HEYMAN (Stockholm) read a paper on the uses of radium in the treatment of malignant disease of the uterus and ovaries.

Professor Heyman opened by stating that for a long time it had been known that certain carcinomas could be cured by radiological treatment, the term "cure" meaning the absence of recurrences for a period of five years or longer; cancer of the uterus belonged to this category. Radiological treatment, when carefully adjusted, excited a healing process characterized by destruction of the tumour cells and regeneration of the tissue which was the seat of the destructive process. So in a cured cervical cancer the cervix and vagina were found to be restored to their normal outlines. In most cases, however, a moderate atrophy of the uterus and vagina remained. Only those who had been engaged in radiotherapeutic work for some considerable time were fully able to realize the exceedingly great care and precision with which radiotherapy had to be handled, and the severe damage which might be inflicted on a number of patients by unskilled operators. The Radiumhemmet, founded by Forssell in 1910, was a special clinic for radiotherapy, particularly intended for the treatment of malignant growths; and, from the very beginning, treatment was only applied in the case of inoperable malignant tumours. When undoubted results had been gained in these cases, the treatment of borderline cases, and, lastly, operable cases, was undertaken. Thus, during 1910–18, the inoperable cases in the series made up 80 to 90 per cent. of the total number. But, none the less, in these inoperable cases, five-year results fully comparable with the best results obtained by surgical operation were realized. Forssner and Essen-Möller had led the way in submitting operable cases of cancer of the cervix for radiological treatment. During the period 1914–23 inclusive, 737 cases of carcinoma of the cervix had been treated at the gynaecological department of Radiumhemmet. The follow-up department was efficient, and was greatly aided by official Government recognition. Of the 737 patients primarily radiologically treated, 170 were alive, free from recurrences five years after the treatment—23.1 per cent. five-year cures. During the period 1914–23, 188 operable cases were treated; of these, 82 were alive, free from recurrences after five years—43.7 per cent. cures among operable cases. Inoperable and borderline cases during the same period numbered 549; of these, 88 patients were cured and alive, free from recurrences after five years—16 per cent. of cures. A detailed account of the treatment would be found in *Acta Radiologica*, vol. x, fasc. 1. Professor Heyman maintained that the governing principle in the local radium treatment was the small number of relatively heavy doses given within a relatively short period of time, and at intervals adjusted with reference to reaction and course of healing. Thus, within a month, there were three applications which occupied from nineteen to twenty-three hours, and in every case a filter equivalent to at least 3 mm. of lead was used. Finally, percutaneous treatment with radium at a distance showed remarkable primary results; for this at least 2 grams of radium were required. Forty-six patients with cancer of the body of the uterus had been treated with radium from 1913 to 1921; 45.7 per cent. were inoperable. Of these, 20 were alive and free from symptoms at the end of five years—43.5 per cent. In the treatment of cancer of the body the same principles were followed as in cancer of the cervix, the vaginal dose being decreased. Operation was advised if at the end of about two months after treatment symptoms of recurrences appeared. Radiological treatment alone would not yield any lasting results in carcinoma of the ovaries, and it was necessary to adopt a combined surgical and radiological treatment. Radium treatment in these cases was combined with x-ray treatment, and should the tumour become small and movable surgical aid was called in. It was of the utmost importance that the treatment of gynaecological cases should be left in the hands of the gynaecologist trained in radiology. The point was emphasized that the good results that had been obtained, although largely dependent upon the technique employed, were, perhaps, above all due to the fact that the treatment had been attached to a radiotherapeutic clinic.

ASTHMA.

AT a meeting of the Section of Medicine of the Royal Society of Medicine, held on February 26th, with Dr. R. HUTCHISON in the chair, Professor KARL HANSEN of Heidelberg read a paper on the allergic and psychical factors in asthma.

Professor Hansen said that asthma was a clinical term embracing a whole distinct symptomatology. He excluded all forms of cardiac, uraemic, and hysterical asthma, and dealt only with bronchial asthma, characterized by spasms of the bronchial muscles and increased exudation. At the present day the cause of this excitement of the parasympathetic nervous system was thought to be some allergen, and Professor Hansen stated that he intended to exclude non-allergic bronchial asthma. Dealing first with the phenomenon of allergy, he showed how Blackley had brought out an ingenious theory to account for hay fever many years ago, and how this theory was confirmed by the discovery of anaphylaxis fifty years later by von Behring and Richet, and applied clinically by von Pirquet, who introduced the conception of allergy. Professor Hansen then sketched briefly the theoretical foundations of allergy, and laid down the criteria upon which the diagnosis of an allergic disease could be based. These included an exact history, a positive result of the cutaneous test, the passive transferability of the cutaneous reaction to healthy persons through the serum of the diseased person, the inspection of the patient's environment, and the proof of the existence there of specific allergens, the experimental production of the disease by exposing the patient to the influence of allergens, and, lastly, the disappearance of the symptoms of the malady after the removal of the allergens from the surroundings of the patient. While a study of the exogenous factor was of importance in allergic diseases the endogenous factor must also be considered, for the presence of allergens in the surroundings of human beings did not necessarily bring about illness or an attack. In the first place, only a small percentage of mankind seemed to have any disposition to allergic disorders, and there was evidence that the allergic patient had inherited a particular constitution. Secondly, it was well known that animals which had been subjected to anaphylactic shock were for a time immune to the action of allergens, a principle utilized by Freeman in the treatment of hay fever by means of desensitization. This might explain the fact that patients susceptible to certain allergens could at times withstand the presence of

these allergens without any reaction at all. A third factor, frequently overlooked, was the conditions under which absorption of the allergens took place, as illustrated by the case of a workman who for years had applied a certain preparation to furs by means of a paint-brush, but only had his first attack of asthma when he used this preparation, to which he was sensitive, in a spray. Climatic influences also played a part in altering sensitiveness, and so also did various influences of periodicity in the course of life, as, for example, was shown by the greater tendency of asthmatic women to suffer attacks shortly before menstruation. Professor Hansen next discussed the significance of the psyche in the production and control of organic disturbances. He expressed the view that the "person" alone was in the proper sense the subject of biological and clinical observation and treatment, a view which must involve a study of the relations of the psyche to the body. An investigation into the psychical factors in disease was very difficult, and liable to serious errors. Nevertheless, it was important to discover if psychical factors could be proved to influence the disposition to disease in the face of known pathogenic substances affecting the organs. The study of asthmatic patients under the influence of hypnotism gave some help, but there were many indeterminable influences at work. Professor Hansen then described in detail the life-history of an asthmatic patient, aged 50, who had suffered from the malady since 10 years of age. This patient showed a positive cutaneous reaction to horse dandruff and to bed feathers, and had frequently experienced attacks if she inhaled the dust when bedding containing feathers was shaken near her. She also revealed a complex psychological situation, and there was a remarkable association between the asthmatic attacks and certain emotional experiences. Professor Hansen finally sketched his theory of the association between allergic and psychical factors in asthma. It seemed that in asthma there was an ever-renewed intrusion of allergens into the organism, but, except in extreme cases, these intruding physical agents only led to a derangement expressing itself as illness when they found the body prepared by certain psychical experiences. It was certain, said the speaker, that the vegetative nervous system played a most important part.

Dr. M. CULPIN, in opening the discussion on Professor Hansen's paper, said that the subject of asthma was full of difficulties for the clinical psychologist. In the literature it was possible to find the case described by Professor Hansen very closely paralleled. He described a case under his own care in which asthma had been present for twenty years, brought on by very different stimuli, which, on investigation, were shown to be linked together by association of ideas. Following the revelation to the patient of this association the attacks ceased. In patients subject to pathological states of anxiety there occurred attacks of "panic" in which, together with the psychological disturbance, various objective signs of fear were present, and in some cases symptoms of cardiac or gastro-intestinal disorders appeared, replacing the anxiety state. Asthma might bear a similar relation to the anxiety state, but Dr. Culpin emphasized that this claim was neither absolute nor exclusive. He looked upon the allergic phenomena as "freakish manifestations of a biochemical Puck," and he thought some help in correlating them with the psychic factors might be found in the study of conditioned reflexes.

Dr. R. D. GILLESPIE said that the psychiatrist had not much opportunity for studying asthmatic patients, since they did not come to special hospitals dealing with functional nervous disorders. In the literature there was also a paucity of references to the psychological aspects of asthma. It would be instructive to know how many neurotic subjects had had attacks of asthma in their previous history. He was interested in the discussion of the possible symbolic value of asthmatic attacks, but he thought it important to distinguish psychogenic dyspnœa from true asthma. He thought that asthmatic patients might be looked upon as having a constitutional pattern which could express itself as an asthmatic attack.

Dr. E. P. POULTON referred to some experiences with migraine, an allied disease in his opinion, which illustrated the effect of psychical factors in influencing the disorder.

Dr. G. H. ORIEL recounted a case in which, following a severe emotional experience in the home, a girl developed angioneurotic oedema, and her mother urticaria. Later, when affairs were settled, it was found that the daughter, who had developed egg sensitiveness, had once more become normal. He referred also to the high blood sugar of the anxiety state, which appeared to develop through the action of the endocrine system.

Dr. A. P. CAWADIAS said that he had seen cases of asthma develop after emotional upsets, but such patients also reacted to certain allergens. Treatment by diet and specific anti-anaphylactic remedies removed the asthma. He thought that the explanation of the interrelation of the psychic and allergic factors would come with a better knowledge of the vegetative nervous system, recent work on which was vague and meagre.

Dr. E. PARKES WEBER thought it was impossible to get away from the fact that psychic factors could influence asthma. The reaction of the body to the psychical factors of disease depended largely on the pattern of the individual. The effect produced was analogous to that of physical agents in the familiar "seed" and "soil" hypothesis.

Dr. G. GRAHAM inquired what part adrenaline played in the relationship between psychical factors and asthma. In his view it was very important to obtain a method for estimating the amount of adrenaline in the blood.

DEATHS UNDER ANAESTHETICS.

AT a meeting of the Section of Anaesthetics of the Royal Society of Medicine on March 1st, with Dr. ASHLEY S. DAY presiding, a paper was read by Dr. GERALD M. SLOT on deaths under anaesthetics, with special reference to their pathology.

Dr. Slot said that the material upon which the paper was based had been obtained during the last five years, through the courtesy of certain of the London coroners, in respect to anaesthetic deaths occurring within their jurisdictions. Broadly speaking, the *post-mortem* findings in deaths from anaesthetics could be classed under five headings: (1) status lymphaticus (a very small but definite proportion of cases); (2) some gross accident during the administration of the anaesthetic; (3) such abnormalities as were frequently present in cases other than anaesthetic cases (for example, myocarditis, arterio-sclerosis), and in which the anaesthetic could not be regarded as culpable; (4) gross disease, such as intestinal obstruction or general peritonitis, in which the prior condition of the patient must have been precarious; (5) changes occurring in deaths under spinal anaesthesia and also nitrous oxide anaesthesia. It was not possible for the pathologist to state, except in cases of grossest overdosage, how much anaesthetic had been given. The smell of the anaesthetic noticed on opening the thorax varied according to the time at which the examination was made after death. The *post-mortem* findings in status lymphaticus were quite definite, including enlargement of the thymus, hyperplasia of the glandular tissue at the base of the tongue, usually some excess of the tonsils and oral lymph tissue, and hyperplasia of the lymphatic tissues of the gastro-intestinal system, the stomach having a characteristic "sago-like feel." There was usually, but not always, enlargement of the abdominal lymphatic glands. Dr. Slot discussed the morbid physiology and pathology of the thymus in relation to these deaths. One of the first things the pathologist considered was the weight of the thymus gland, but it was very difficult to be dogmatic about this, more especially as the scales for ascertaining weights in mortuaries were usually defective. He believed that in status lymphaticus there was a general dyscrasia of more than one endocrine organ, and the thymus was not alone inculpated. He noticed a similarity between deaths occurring in this condition and deaths from anaphylaxis. So many different opinions were held as to the cause of death in status lymphaticus that it was evident the real cause was not yet known. With regard to deaths occurring as a result of gross accident in administration, as a rule the *post-mortem* changes were quite obvious, including the red and oedematous condition of the buccal and oral mucosæ and congestion of the lungs, which smelt strongly of the anaesthetic. Death in these cases was probably due as much to shock as to any other factor. He described three recent cases which he had investigated, and in each case

in his opinion, the anaesthetist was entirely blameless. In the first case there was pulmonary embolism, which he believed to be more frequent than was supposed in anaesthetic deaths; in another there was acute pulmonary oedema, and death was probably due to the asphyxial effects of the oedematous fluid; and in the third there was coronary thrombosis. In discussing various theories of the action of anaesthesia Dr. Slot mentioned that he had tried to verify the assertion that the anaesthetic increased the fluidity of the lipoid cells, but without success. Speaking of various anaesthetics, he said that in the cases he had investigated only two deaths had been definitely due to ethyl chloride. This anaesthetic had a marked effect on the blood pressure. Vagus inhibition of the heart was more likely to occur with ethyl chloride than with ether. Respiration always ceased before circulation, an important point to bear in mind in restorative technique. With regard to nitrous oxide, his impression was that with short nitrous oxide anaesthesia death did not occur, though he had seen three deaths when nitrous oxide was used for a longer gas-oxygen anaesthesia, but in these cases the operations were of great severity, and his view, which was endorsed by the coroner, was that the patients had died from surgical shock. In nitrous oxide death, again, respiration ceased before circulation. With regard to chloroform, he was convinced that some of the deaths from chloroform were acidosis deaths. Delayed chloroform poisoning was not very common, but he had seen two fatal cases. In deaths under spinal anaesthesia which he had seen the *post-mortem* examination revealed nothing at all. It was said—but he had not seen it—that in these deaths there was evidence of asphyxia.

Mr. A. DOUGLAS COWBURN, one of the London coroners, substantiated as far as his experience went the main contentions of Dr. Slot. The distinction between deaths from an anaesthetic and deaths while under an anaesthetic was one which many people failed to realize. Death might occur from the effects of shock, due to surgical manipulation or otherwise; from toxaemia; or from the desperate measures to which the surgeon and anaesthetist had to resort in the case of a patient extremely ill; but very rarely had death occurred, in his experience, from what might be called an overdose of anaesthetic. The only exception was with ethyl chloride, which he frankly confessed he detested. He had himself seen it given, and had seen one death under it. When death did occur under ethyl chloride, however, it was usual to find that the anaesthetic had been given by some resident officer, not by an experienced anaesthetist. As to status lymphaticus, he agreed with Dr. Slot that it was ridiculous to give a diagnosis of this condition merely because the Malpighian corpuscles of the spleen were enlarged or because there was an excess of lymphoid tissue here and there. The thing must be looked at all round, otherwise the diagnosis only brought discredit. Three years ago an eminent surgeon told him definitely that he did not believe in the existence of status lymphaticus, which had been invented only to shield the anaesthetist. Mr. Cowburn was able to tell him from his personal experience of two deaths from status lymphaticus which had come under his observation in which no anaesthetic had been administered at all. The *post-mortem* appearances suggested status lymphaticus and nothing else. He gathered that Dr. Slot considered chloroform a dangerous drug. Many years ago, when the speaker was a hospital resident, the staff were told that young children, and also women in labour, could be given chloroform with impunity. Now he learned that pure chloroform was never given. Mr. Cowburn added a word as to the difficulties which medical men encountered in their work in public mortuaries. In the majority of cases the mortuaries attached to London coroners' courts were disgraceful; there was one conspicuous exception (Wandsworth): Paddington was better than the rest, and in his own jurisdiction (Southern and Clapham districts) he had been able to induce the authorities entirely to remodel one of the mortuaries, and to fit it with every convenience for the doctors to carry out their responsible duties.

Dr. JOSEPH BROMFIELD thought that both Dr. Slot and Mr. Cowburn had been too sweepingly kind to the anaesthetist. It had always seemed to him that the question of deciding the cause of death under an anaesthetic was extremely difficult. How was one to say that the cause was surgical shock and not the anaesthetic? With regard to the cause of death in spinal anaesthesia catastrophes, many believed that it was the extreme action of the spinal anaesthesia in lowering the blood pressure. He could not agree as to the dangers of ethyl chloride. It had never given him a moment's anxiety.

Dr. C. F. HADFIELD also said that he had had no anxiety with ethyl chloride, except on two occasions, both of them long ago, when he was less experienced. He agreed, however, that it was necessary to teach students how potent a drug it was, and how rapid in its action.

Dr. C. L. HEWER mentioned that in the dental department of the Queen's Hospital for Children about 2,500 cases were dealt with every year, and for the past fifteen years there had not been a single death. All the cases had ethyl chloride, and in about two-thirds of them the anaesthetic was given by residents who had no special experience.

Dr. Z. MENNELL thought the chief danger of ethyl chloride arose from the fact that the comparatively inexperienced did not realize what a powerful drug it was and how quickly anaesthesia occurred. He thought Mr. Cowburn was too hard on chloroform; in certain cases late chloroform anaesthesia was essential.

The PRESIDENT took the view that ethyl chloride was a dangerous drug, and he detected an inconsistency in Dr. Hadfield's remark that it was safe, but that students should be taught its potency.

Dr. SLOT devoted his reply chiefly to some further considerations on status lymphaticus, which, he said, was probably not one condition, but several conditions grouped together.

PROTEIN SHOCK THERAPY.

AT a meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland, held in the Royal College of Physicians on February 15th, with the president, Dr. R. J. ROWLETTE, in the chair, Dr. V. M. SYNGE read a paper on protein shock therapy.

Dr. Synge said that treatment consisted in the intravenous injection of T.A.B. vaccine, two injections being given, the first containing 100 million *B. typhosus*, 50 million paratyphoid A, and 50 million paratyphoid B, while in the second injection, given five to seven days afterwards, there were double the number of organisms. In about an hour after injection a rigor occurred, with a sharp rise in temperature to 103° or 104° F. There was severe headache, with pain all over the body and sweating; in some cases there was vomiting with diarrhoea. Aspirin and, in some instances, morphine were given to relieve the pains. In cases which did well the temperature was always normal within twenty-four hours; if the temperature remained up for forty-eight or seventy-two hours there was never any improvement as a result of the treatment. Twelve cases (*chronic sciatica*, chronic arthritis, persistent muscular rheumatism) were treated. In most instances there was slight temporary benefit, in some no improvement whatever, and in a few cases permanent cure. Particulars of two illustrative cases were given as follows:

A man, aged 49, had had *right*-sided sciatica for nine years, with tenderness along the course of the nerve and wasting of the right thigh; the hip-joint was normal. He had been unable to work for nine months. After treatment the pain disappeared completely and the patient resumed work. When last heard of fourteen months after treatment he was still free from pain.

A man, aged 25, had had left-sided sciatica for four months. After the first injection there was a rigor with pyrexia, the temperature not becoming normal for forty-eight hours. After the second injection there was again a rigor, with high temperature, which did not fall for seventy-two hours. No improvement followed the treatment.

Dr. Synge said that this method of treatment was not new; it was often unsuccessful, but it deserved wider trial in chronic cases of sciatica and rheumatic conditions where ordinary methods of treatment had been employed and had failed. It should obviously not be employed in the case of feeble patients, or of those with cardiac disease.

The PRESIDENT said he had never understood why vaccines were the form of protein which were most commonly employed, since the T.A.B. vaccine, in addition to its

protein content, must contain a certain amount of toxin and cause some toxaemia, a complication which would be avoided by using proteins in which there was no toxin. The method of protein shock had been used largely in acute conditions, such as puerperal sepsis, but with poor results. It was, however, encouraging to hear of anything which gave immediate results in such an acute condition as sciatica. He wondered if the considerable burns which were produced by the use of Corrigan's button in this condition caused protein shock.

Dr. PRESTON BALL was disappointed that Dr. Synge had not obtained better results from protein shock therapy. He personally had treated fifteen cases, following the method advocated by Dr. Yeomans of Harrogate, with very good results. The objection which he personally found to the treatment was the extraordinarily alarming results which it produced. About an hour after the first injection the patient's temperature went up, sometimes exceedingly high; he looked and felt ill, but after a few hours the condition subsided. Dr. Ball had found the treatment successful in cases where there had been profuse sweating, occurring immediately after the injection, and the temperature had come down rapidly. He thought that in the case mentioned by Dr. Synge which had not been successful the result might have been good if the treatment had been continued. The routine course included at least five injections. In one case of his own in which, for unavoidable reasons, he had only been able to give two injections, the patient not only got no better, but became worse. He asked whether Dr. Synge considered it necessary to make sure that no kidney disease was present before giving the treatment, since T.A.B. vaccine contained a little carbolic acid, and was likely to produce haematuria. He regarded the treatment as being of very great value in cases where nothing else had succeeded, and where no focus of infection could be found.

Dr. E. T. FREEMAN referred to a paper which he had read before the Medical Section about four years ago on protein sensitization, and said he had first used this treatment for cases of chronic urticaria and similar conditions. He had at first used peptone, but now used T.A.B. vaccine; this produced a very rapid effect in a very short time. He mentioned a case of mucous colitis in which he had given about twenty injections; the motions had decreased from twenty a day to three a day. The patient had remained well for some months, but then returned to hospital, and was given an enema, which had started the colitis again; on this occasion the treatment had not been successful, and caecostomy had been performed. This case, he thought, showed that sometimes in the same patient, with the same condition, the results would vary. In cases of bony involvement he had found that the treatment sometimes brought about alleviation of pain, but the results were never permanent. He also referred to a post-puerperal septic case in which no septic focus had been found, and in which he had suggested an injection of mercurochrome. One hour after the injection the patient's temperature had gone up to 107° F., and had remained very high for four days; it had then dropped to 100° F., and had never risen above that, the patient making a complete recovery. Dr. Freeman thought that the great objection to this method as a routine was that it was utterly impossible to foretell the result, and nothing could be promised to the patient; some did very well, and others did not. It was an unpleasant treatment, and he thought that if it were possible to know the kind of case that would respond to it, it might be used with greater assurance and greater frequency.

Dr. G. E. NESBITT referred to the great variety of proteins and the different degrees of shock which they produced. The procedure seemed to be largely on the lines of the malarial treatment of parasyphilitic infections, a method which he personally disliked; he did not think it would succeed as a permanent form of therapy. He asked whether Dr. Synge had made any observations on the white cell content in his cases, and said this might be of interest in view of the different results which would be obtained. The leucocyte reaction might have varied, and it would have been interesting to know if it was positive in successful cases and negative in unsuccessful ones.

Dr. W. G. HARVEY referred to the difficulty of knowing exactly what protein shock was; he thought the term "non-specific therapy" might be more applicable than "protein shock therapy." He referred to a case of lupus erythematosus which had been particularly resistant to treatment. The patient, while in hospital, had had an attack of rheumatic fever lasting for about three weeks; at the end of this time the lupus erythematosus had cleared up completely and absolutely.

Dr. A. B. CLERY mentioned the case of a man who, before going to France in the war, had had two injections of T.A.B. vaccine. While in France he had contracted trench fever, and had afterwards suffered from very severe pain in the legs, recurring every month or two months, and made much worse after taking even a small amount of alcohol. When seen by Dr. Clery after the war he had had a small varicose vein in his leg, and Dr. Clery sclerosed the vein in order to relieve the pains. The vein disappeared, but the pain still continued. Dr. Clery then gave a third injection of T.A.B. vaccine, subcutaneously; the same evening the patient's temperature had risen to 102°, the next day it was 100°, and the third day normal. Since then the patient had remained perfectly well, and had had no recurrence of the pains.

Dr. SYNGE, replying, said that the reason he preferred T.A.B. vaccine to other forms of protein was because it was a standard preparation; it was therefore easy to decide on the amount which should be given at each injection. In asthma he believed that large doses of peptone had been given to produce shock, but he personally had never tried this, and thought that in this disease it might not be altogether safe. It was unlikely that the small amount of carbolic acid contained in the vaccine could produce haematuria, though the method might be unsafe in patients whose kidneys were bad. He had not investigated the white cell count in his cases. The treatment was unpleasant; many patients after one injection refused to have a second, and some who had had two refused to have a third. If improvement did not occur after the first, or at any rate after the second injection, he thought it meant that the treatment was not going to be successful. If it was an unpleasant treatment it was harmless, and the cures amounted to 20 or 25 per cent., which, in his opinion, rendered it a treatment which was worthy of trial.

Congenital Pyloric Stenosis.

Dr. R. E. STEEN read a paper on congenital pyloric stenosis dealing chiefly with diagnosis and treatment. He emphasized the importance of obtaining a careful history, and concluded that if the diagnosis was not suggested here it would probably be missed at the routine examination. He regarded the association of vomiting and constipation as a syndrome of outstanding value in arousing suspicion; visible peristalsis made the diagnosis extremely probable, but only palpation of the pyloric tumour rendered it certain. He was of the opinion that a tumour could be palpated in every case of pyloric stenosis.

Dr. B. CRICHTON, referring to the large number of cases of congenital pyloric stenosis mentioned by Dr. Steen, said that he thought these figures might be rather misleading, since they gave the impression that pyloric stenosis was a common disease, which he did not think was the case. He had seen only four cases during the last six years, but he had encountered three or four of pyloric spasm. He wondered whether there was now believed to be any connexion between pylorospasm and hypertrophic stenosis. In pyloric stenosis the cardinal symptoms were vomiting, appearance of the tumour, visible peristalsis, and constipation, but last year he had seen a case in which only one symptom had been present—namely, constipation—and this was undoubtedly the most important one. He mentioned the possible value of estimating the gastric contents and of x rays in these cases, and said that he thought sometimes such observations might clinch the diagnosis. He believed that in cases where an operation was deemed necessary it should be performed as soon as possible, since waiting lowered the child's strength. He feared that a general practitioner would need great courage to perform severe in treating a child medically, since this entailed lavage twice daily; the treatment might be continued for

six or eight weeks, and if by that time there was no improvement, it might be too late to operate. Operation was undoubtedly the treatment of choice in these cases, once the diagnosis was definitely made.

Dr. J. P. SHANLEY referred to the rarity of cases of congenital pyloric stenosis, and said that in Temple Street Hospital there had not been a case for some years. Vomiting was a very common condition in children, even the projectile type, and he thought that this had not been sufficiently recognized. Visible peristalsis was a definite phenomenon, though it also was frequently present in thin babies. The tumour was pathognomonic, if it could be found. It had been reported that out of forty cases a tumour had been discovered in two only; Dr. Shanley wondered if it was justifiable to operate if a tumour could not be found, and said he thought the anaesthetic was the important part of the operation. Although Rammstedt's operation had reduced the mortality, gas and oxygen anaesthesia had diminished it still more. He suggested the advisability of giving a local anaesthetic in these cases.

The PRESIDENT, referring to the rarity of cases of congenital pyloric stenosis, said that during the fifteen years he had been pathologist at the Rotunda Hospital he only remembered having been asked once to perform a *post-mortem* examination on a suspected case of the disease. It had been reported that most of these cases occurred in the first four days of life, and therefore there should be an appreciable number in the first eight days.

NORMALITY OF TEMPERATURE AND PULSE RATE IN GIRLS.

AT a meeting of the Forfarshire Medical Association at University College, Dundee, on December 13th, 1928, with Dr. CHARLES KERR, the vice-president, in the chair, Dr. J. H. P. PATON (St. Andrews) read a paper on observations on the normal temperature and pulse.

Dr. Paton said that as medical officer of a large school for girls he had had special opportunities of observing many individuals in health, and of detecting the symptoms accompanying the onset of disease. From this work one or two facts of some clinical importance had emerged, which might enable one to define more closely than was usually attempted the limits within which the temperature and pulse might be considered normal. His observations had been made exclusively on girls between the ages of 14 and 17, and he did not claim that the results were necessarily applicable to persons of different ages and of the other sex. According to most authorities the normal temperature of the mouth was about 98.4° F., and temperatures below 98° were regarded as subnormal; these standards, he submitted, were inaccurate and misleading. For example, the temperature of convalescents, as found in actual practice, was, according to them, usually subnormal. In the majority of cases, however, the convalescent reading was of the same order as that found in health. He submitted two charts, in both of which the temperature of convalescence was below 98°, and therefore might be considered subnormal but for the fact that it differed in no way from the readings obtained from the same individuals in health. In his experience also the so-called normal temperature of 98.4° was so rare that its occurrence always warranted a suspicion of ill health. On three occasions he had had the morning and evening temperatures of a group of healthy girls recorded for a continuous period of a fortnight. The temperatures were taken orally with thermometers certified by the National Physical Laboratory, and never within half an hour after meals or within an hour of participation in active games. Altogether 108 girls were observed morning and evening, and 3,655 temperature readings were recorded. Only 25 per cent. of the readings were above 98°, and 75 per cent. were subnormal according to the usual standards. He had several reasons for supposing that even these results did not place the ruling temperature sufficiently low. In the first group of girls the records above 98° were about 10 per cent. more frequent than in the two latter groups. At the time of these first observations there was a period of very severe frost, and in the evenings the girls tended to gather round hot fires. That this resulted in some increase in the general level of the temperature seemed probable, for on the coldest night of all more than half of the girls in one house had temperatures of 98.4° or over; all admitted that they had been sitting round the fire in a very hot room. This source of possible error was avoided in later series. Secondly, a study of the charts indicated that many of the occasional readings of 98.4° or over were due to some transient disturbances of health, such as toothache. Thirdly, a few individuals had a habitually high level of temperature, and such an individual record raised the average. The following conclusions could safely be drawn from the records: (1) the normal or ruling temperature of girls aged 14 to 17 years was nearer 97.4° than 98.4°; (2) girls in whom the mean approximated to 98.4° were rare; (3) a temperature of 98.4° in the mouth was so suggestive of illness that it should not be disregarded unless no other disturbance of health could be detected.

The clinical importance of these conclusions, from the point of view especially of the early detection of the exanthemata and other infective diseases, was undoubted. Dr. Paton illustrated this point by charts from cases of measles. He held that a temperature of 98.4° warranted the isolation of a susceptible measles contact, and he had found the advantage of this interpretation of the temperature chart in the prevention and control of epidemics. A slight departure from the subject's usual temperature was by itself of no significance; the state of the pulse was the best guide in estimating the significance of a temperature on the borderline of fever. Two modifications of the heart's action were to be looked for in the young as confirmatory evidence of the pathological significance of a slight rise of temperature; these were increase in rate, and diminution or disappearance of the normal respiratory irregularity (sinus irregularity). Sinus arrhythmia, he was convinced, was invariably present in healthy children. When irregularity of the heart could not be detected upon deep breathing in the horizontal position, it could be assumed with confidence that the child was ill. In some cases the temperature and pulse rate were not disturbed though the irregularity was absent, but he could confidently assert that in these cases other evidence of disturbance of health would be present, if not at once, then in a few hours. He had made several thousand observations on this point, and on no occasion had he found sinus arrhythmia absent in a girl who was in good health. He wished to make it clear, however, that this irregularity did not always disappear in disease; the cause of its disappearance seemed to be some toxic effect upon the sino-auricular node or upon the reflex arcs governing it. When the sinus arrhythmia disappeared in disease it usually reappeared in convalescence, thus affording evidence that the toxaemia which caused its disappearance was at an end. Its reappearance was thus a valuable guide in deciding the stage at which the patient might be allowed to get up. He had found these observations on the temperature and pulse of great service in detecting the early stages of ill health in children. He had made it a rule during the first fourteen days of term, when introduction of infectious disease into the school was most liable to occur, that all temperatures were recorded night and morning, and every record of 98.4° reported at once. If after thorough examination, including observation of the pulse rate and sinus arrhythmia, any other evidence of disturbance of health was found, then the girl was isolated for twenty-four hours. He had succeeded by these means in preventing outbreaks of the exanthemata and in limiting them once they had arisen.

THE CLINICAL PATHOLOGIST AND TOXICOLOGIST IN MEDICAL PRACTICE.

AT a joint meeting of the Manchester Medical Society with the Manchester Pathological Society, at the Manchester University, with Dr. R. W. MARSDEN in the chair, Sir WILLIAM H. WILLCOX gave an address on the role of the clinical pathologist and toxicologist in medical practice.

Sir William Willcox remarked that medical practice to-day owed a very great debt to clinical pathology, biochemistry, and toxicology. It was not too much to say that the enormous advances made in medicine during the

last twenty years were mainly due to the increase in knowledge resulting from researches in these branches. On looking back it was striking to note how recent was the origin of clinical pathology; its foundations were laid by the discovery of the typhoid bacillus by Eberth in 1880, of the tubercle bacillus by Koch in 1882, of the diphtheria bacillus by Klebs in 1883 and by Loeffler in 1884, and of the pneumococcus by Frankel in 1886. For some years after the discovery of these important pathogenic organisms clinical pathology rather confined itself to the finding of the organisms in suspected cases of illness, and remained a branch of medicine more or less separate from clinical medical practice. In 1896 Widal and Durham first applied the agglutination test for the diagnosis of typhoid fever. Since that time a vast amount of study had been made of the reactive phenomena of the body to various specific infections, so that at the present day valuable diagnostic tests existed for a large number of diseases. The studies in immunity had provided medical practice with some of its most valuable therapeutic remedies, such as diphtheria and tetanus antitoxins as types of passive immunization, and the various forms of vaccine therapy, such as typhoid vaccine, whereby active immunity was induced, either for prophylactic purposes or for the treatment of active disease. Refinements in bacteriology had enabled diseases to be differentiated and subdivided. Thus clinical typhoid fever had been subdivided into true typhoid and paratyphoid fever, the organism of the latter being differentiated by Gwyn in 1898. Paratyphoid fever itself had been subdivided into paratyphoid A and B by the work of Schottmüller in 1900; and a further variety, paratyphoid C, had been defined by Hirschfeld in 1919. More recent advances in cultural bacteriology had shown that a number of non-lactose-fermenting organisms of the paratyphoid group existed, which might cause fevers of the enteric type; examples of these were the *Bacillus asiaticus* and *pseudo-asiaticus*, the *Bacillus faecalis alkaligenes* and its pseudotype, the bacillus of epidemic jaundice, and the *Bacillus morgani*. The term "parenteric organisms" might conveniently be applied to these. These organisms were *undoubtedly pathogenic, and their presence could not be overlooked* as of no importance. Attention had been called to the prevalence of mixed infections by the paratyphoid group of organisms; thus, a case of typhoid or paratyphoid infection might reveal in the intestine one or more of the parenteric organisms. The Widal agglutination test for paratyphoid A and B, or even for true typhoid, might be affected by the presence of such a parenteric infection. It was well known that this test might on rare occasions be negative throughout a severe attack of true typhoid or paratyphoid fever. In diphtheria the recent discovery of the intradermal Schick test had enabled an existing immunity to be diagnosed and the necessity or not of giving antitoxin to an exposed person to be clearly indicated. In scarlet fever the intradermal Dick test had a similar value. In this disease a valuable aid to diagnosis during the rash period had been provided by the Schultz-Charlton intradermal serum test, where a definite blanching indicated a positive diagnosis. The production of immunity by vaccine or serum therapy in a person suffering from an acute or chronic infection required the closest clinical observation. Sensitization might easily result from incorrect uses of biotherapy, and harm instead of good result. Studies in haematology had proved of the utmost value and guidance in the diagnosis and treatment of various infective conditions. The recent discovery of the value of liver therapy in pernicious anaemia had largely followed haematological studies of this disease, and blood examinations were of great value in indicating the beneficial effects of treatment, and also in the diagnosis of early cases suitable for treatment. Biochemistry had expanded remarkably; chief among the recent advances had been the methods of estimating the function of such organs as the kidney, liver, and pancreas. The treatment and management of cases of renal disease and diabetes were mainly dependent upon the blood estimations for urea and sugar respectively. Toxicology had furnished recent instances of striking advances in knowledge. For example, improved methods of analysis had shown that arsenic might exist in minute amounts normally in the body, and that the urine of a normal person, not exposed to arsenic in any way, might contain up to 0.1 mg. of arsenic in a litre. Similarly, recent researches in America had shown that lead was commonly present in normally healthy persons who had not been exposed to lead in any way. The amounts found corresponded approximately to about 0.07 mg. in a litre. Sir William Willcox urged that at the present time the fullest advantage should be taken of advances in knowledge, and every case be submitted, where possible, to those investigations which might be of value in diagnosis and treatment. The investigations should be in the definite direction of furthering accuracy in diagnosis, unnecessary routine investigations being deprecated. The closest co-operation and consultation between the physician and the clinical pathologist or toxicologist were essential for a proper interpretation of the results. The patient, and not the disease, had to be treated, and therefore the clinical pathologist, in order to achieve success, should not treat cases except in association with a clinical colleague.

RECENT WORK ON ACUTE INFECTIOUS DISEASES.

AT a meeting of the Windsor and District Medical Society on February 20th, Dr. J. D. ROLLESTON read a paper on some recent work on the acute infectious diseases, dealing in particular with chicken-pox; diphtheria, measles, scarlet fever, and vaccinia.

Dr. Rolleston said that as regards the relationship between herpes zoster and varicella, he had until recently been inclined to side with Comby, the principal representative of the dualist school, who regarded the association of the two diseases as a mere coincidence, but his belief had been shaken by the case of a young woman who had had an attack of chicken-pox followed by facial paralysis. On investigating the source of infection he had learnt that a younger sister had had a few spots some weeks before, and examination of the child revealed the typical pigmented scars of chicken-pox on the trunk. Further inquiry elicited the fact that the father had had an attack of cervical herpes zoster about a fortnight before his little girl's eruption appeared. *Unlike Trousseau*, who said that no physician had ever seen a patient die of the disease, Dr. Rolleston, in the course of twenty-eight years' fever practice, had met with four fatal cases of varicella. Two were examples of the bullous and one of the gangrenous type, while the fourth was complicated by pneumonia in an alcoholic man aged 62. Allusion was made to the prevalence of diphtheria of a malignant type in various European countries, including different parts of Germany—particularly Berlin, the Rhine district, and Breslau—Budapest, Padua, and Barcelona. The malignant character of diphtheria on the Continent was in striking contrast with the generally benign type prevalent in London, where the mortality in 1927 in the Metropolitan Asylums Board hospitals was only 4 per cent., the lowest hitherto recorded in the history of the Board. Dr. Rolleston then discussed some of the aberrant localizations of diphtheria, such as diphtherial whitlow, endometritis, and urethritis, and the present position of prophylaxis and treatment. Dealing with the prophylaxis of measles by injection of convalescent serum, which he described as one of the most important preventive methods in medicine, he said that it was specially indicated in the case of ill-nourished rickety children living in insanitary dwellings, but he did not consider it necessary in hospitals with a hygienic environment or in well-to-do families, since in his experience measles contracted in such surroundings always ran a mild course. He was not in favour of the active immunization of nurses against scarlet fever as he was in the case of similar inoculation against diphtheria. Not only was scarlet fever much less serious, but its incidence among them was naturally much lower than that of diphtheria. He spoke highly of the value of anti-scarlatinal serum, but reserved it for cases of any degree of severity, so that in the course of three years he had employed it in only 320 cases out of over 3,000 scarlet fever patients admitted to his hospital. He had been much impressed by its value in septic cases, provided it was used early. In conclusion, Dr. Rolleston dealt with recent work on the nervous sequels of vaccination.

Reviews.

DISEASES OF THE LIVER, GALL-BLADDER, AND BILE DUCTS.

ROLLESTON'S *Diseases of the Liver* was first published in 1905, and immediately became the leading textbook on the subject in the English language. A second edition appeared in 1912, and now a third has been called for. In the seventeen years which have elapsed since the publication of the last edition an enormous amount of work has been done on all aspects of hepatic physiology and pathology, and it is therefore not surprising that the original author, Sir HUMPHRY ROLLESTON, should have felt it desirable to seek the help of a younger colleague in the arduous task of revision, and he has made the excellent choice of Dr. J. W. McNEE, who is already so well known for his original investigations in this department of medicine. The book will accordingly, no doubt, be known in future as Rolleston and McNee's *Diseases of the Liver, Gall-bladder, and Bile-ducts*.[1]

Owing to the large amount of new material which has had to be included, the present edition is longer than the last by more than seventy pages, but the number both of coloured plates and of illustrations is less, although many of the latter appear for the first time. Amongst the entirely new matter there come first sections on the anatomy and physiology of the liver, in the latter of which a clear and succinct account of the metabolic and other functions of the organ are given. As the authors point out, some knowledge of the latest work on liver physiology is necessary for the proper understanding of changing conceptions of hepatic and biliary disease. The section on functional diseases of the liver and tests of hepatic function contains a full description of the biochemical and other tests for liver efficiency, but we could have wished for a clearer expression of the authors' views as to the absolute and relative values of the different tests. We notice, too, that in this section, despite its title, there is no account of functional disorders of the liver such as appeared in the last edition; indeed, the term "biliousness" is nowhere mentioned, and has disappeared from the index. The authors may have had some good reason for this omission, but it seems regrettable; and we should have liked also to have heard their views on the possible relation of disordered hepatic function to such conditions as migraine and to the acidosis of childhood. The section on jaundice has been practically rewritten to bring it abreast of present knowledge, and no fuller or clearer account of the varieties and modes of origin of this symptom could be desired. A comparison of it with the corresponding section in the last edition will show how revolutionary the change of view on many aspects of the subject has been. Atophan and its allies, however, are not mentioned among the possible causes of toxic jaundice. Another entirely new chapter describes the radiological diagnosis of diseases of the biliary tract, and deals fully and critically with the new methods available and their diagnostic value. An appendix to the book is devoted chiefly to an excellent description of the van den Bergh reaction, of which Dr. McNee has had so much experience.

These are the sections in which the new edition chiefly differs from its predecessor, but throughout the whole book many minor changes have been made. Weil's disease is definitely identified as spirochaetosis icterohaemorrhagica, of which a very complete description is given embodying all the new work that was done upon this disease during the war and afterwards. Acute yellow atrophy is now spoken of as "acute and subacute necrosis of the liver," and the authors foreshadow other changes in nomenclature which may be necessary before long. They play, indeed, with the idea of reclassifying hepatic disease on the basis of "hepatitis" (a conception for which there is much to be said), but they have wisely decided in this matter to make haste slowly. Meanwhile, this new edition is a monument to the learning, diligence, and clinical experience of the writers, and a credit to British medicine. It is both exact and exhaustive; indeed, if we might venture to say so, it is almost too exhaustive—more than 120 pages, for example, are devoted to portal cirrhosis alone—for the authors have been so careful to do full justice to the work of others, and to leave no facet of the subject unexamined, that it is a little difficult in places to see the wood for the trees, and a less high-power view would have been easier to grasp. As a standard work of reference, however, the book deserves, and will no doubt enjoy, an even greater measure of success than it has had hitherto.

[1] *Diseases of the Liver, Gall-bladder, and Bile-ducts.* By Sir Humphry Rolleston, Bart., K.C.B., M.D., etc., and John William McNee, D.S.O., M.D., etc. Third edition. London: Macmillan and Co., Ltd. 1929. (Med. 8vo, pp. xiii + 834; 57 figures. 42s. net.)

RADIUM TREATMENT OF CANCER.

THE publication of Mr. STANFORD CADE'S important textbook[2] should go far to dispel the illusion that this country still lags behind the Continent in the treatment of cancer by radium. A number of works dealing with individual aspects of radium therapy are available to the English reader; Mr. Cade's book, however, is the first in English to cover the whole subject-matter and to present it from the practical standpoint of the operating surgeon. Whatever the previous convictions of the reader, this book will certainly make him realize that there is much to be said in favour of using radium in the treatment of cancer of certain regions. In particular, the results of radium therapy in carcinoma of the tongue, larynx, breast, and uterus appear to equal if not surpass those procured by surgical methods. The technique now employed in treating carcinoma of the tongue and buccal cavity seems definitely to hold out a better hope of success than any other means. The difficult question of how to deal with the lymphatic glands is admittedly unsettled, though Mr. Cade leans towards a Crile's operation, followed by prolonged irradiation of the neck for two weeks, or in some cases longer, by means of a Columbia paste collar. Whereas formerly the method of choice was to irradiate with large doses for short periods, the tendency to-day, in the treatment of most cancers, is to rely on small doses for very long periods. The results of this modern technique in the treatment of cancer of the breast are already such that the surgeon must seriously consider whether radium therapy does not offer at least as good prospects of cure as Halsted's operation. The gynaecologist also will have to decide whether, in cases of carcinoma of the cervix uteri, radium does not give better results, and with practically no risk, than he may expect to obtain from Wertheim's operation. Time and further work alone can settle these questions, but certainly Mr. Cade, and such workers as Dr. Malcolm Donaldson, make out a very strong case for radium.

At this moment, when so many appeals are being made to the public to buy radium for the hospitals, a technical work, such as Mr. Cade's, will prove of inestimable value, and we cannot recommend too strongly that every surgeon who has hitherto not had the opportunity to employ radium should read this volume very carefully. Although a book, however good, will not of itself give the reader skill in the administration of radium, it will at least put him on the right lines and save him from disaster.

The book is profusely illustrated by coloured plates and drawings, which help to explain the often rather elaborate technique of modern radium therapy.

[2] *Radium Treatment of Cancer.* By Stanford Cade, F.R.C.S. London: J. and A. Churchill. 1929. (Roy. 8vo, pp. viii + 153; 47 figures, 15 plates. 15s.)

ANTE-NATAL CARE.

ANTE-NATAL care now plays so prominent a part in midwifery practice that a book[3] by Dr. W. F. T. HAULTAIN and Dr. E. C. FAHMY, the first devoted solely to this subject to be brought to our notice, is sure of a wide welcome. That it comes from the Edinburgh school, where ante-natal work was started and developed by the late

[3] *Ante-Natal Care.* By W. F. T. Haultain, O.B.E., M.C., M.B.Camb., F.R.C.S.Ed., and E. Chalmers Fahmy, M.B., F.R.C.S.Ed. With a foreword by Professor R. W. Johnstone, C.B.E., M.D., F.R.C.S.Ed. Edinburgh: E. and S. Livingstone. 1929. (Cr. 8vo, pp. xi + 113. 1 plate. 5s. net.)

J. W. Ballantyne, gives it a special claim to our consideration. The book is handy in form, with little more than 100 pages; it must therefore be regarded as an outline of essentials only. The first of twelve chapters gives a short account of the arrangement and working of the Edinburgh Ante-natal Clinic, including reproduction of the case-cards and a photograph of the examination room—all of it valuable to those who may have charge of similar clinics elsewhere. All patients at their second visit are submitted to the Wassermann test; it is admitted, however, in the final chapter that this is not an absolute criterion during pregnancy, and that a negative result cannot be regarded as reliable. Among the chapters specially calling for notice there is one on the examination of the patient in which not only are the methods of diagnosing positions and presentations clearly described, but also the rectifications of posterior positions of the vertex and external version in breech presentations are considered. The chapter on albuminuria, eclampsia, and chronic nephritis is also good, though for a work of this size a disproportionate amount of space seems to be devoted to the treatment of the patient in convulsions. The chapter on pain in pregnancy is useful, and the concluding one on venereal diseases gives an excellent and practical summary of diagnostic and therapeutic methods.

In its obstetrical teaching the book is sound and can be generally recommended. Some readers, however, will feel a little disappointed at the restricted view here given of the ante-natal field, for the authors have presented merely an abstract of those parts of obstetrics which are applicable to their subject, and devote sparing attention to the educational and social aspects. In matter and style the book is rather reminiscent of the formal treatise on midwifery, and for this reason it conveys less than we had hoped of the spirit of ante-natal work. The authors would have done better, we think, if they had given less information about the treatment of eclampsia and placenta praevia, which can be readily obtained elsewhere, and had entered more fully into minor troubles and the fears of the pregnant woman, which pass without notice in textbooks and yet are often difficult to dispel.

DISEASES OF THE BRAIN.

THE section of *Nouveau Traité de Médecine et de Thérapeutique*[4] devoted to brain diseases opens with a chapter of great interest which, under the heading of "*Commotion cérébrale*," describes the effects of physical violence upon the intracranial contents. The writer is insistent that cerebral commotion is not a condition of slight or ingravescent concussion, but may exist independently or in association with this condition. It is marked by symptoms indicating a varying degree of paralysis of all the nervous mechanisms of the brain, begins universally with loss of consciousness and medullary inhibition, and, if not fatal in this stage, gradually progresses through a condition of subcoma, still with completely generalized signs indicative of paresis, to complete recovery, even retrograde amnesia being rare. If any signs are present of localized defects these are due to concomitant contusion. The cerebro-spinal fluid may be under great pressure and albuminous, but is never haemorrhagic or xanthochromic. This condition, he says, is caused by an *ébranlement transmis* in which the skull vibrates as a whole, giving a perfectly generalized shock to its contents. The difficulty of accepting this explanation arises from the fact that the force applied to the skull is always directional—always applied to one aspect—and, however instantaneous, will lead to a distortion of the cranium maximal along the corresponding diameter; and even if the skull could be subjected to a perfectly generalized sudden pressure and release its physical conformation, would lead to a perfectly definite deformation maximal along one plane. Moreover, the rarity of retrograde amnesia in commotion, and its admitted frequence in contusion, alone is a strong argument in favour of our regarding contusion as resulting from a commotion which has been sufficiently severe to result in not immediately recoverable lesions at the places where the yielding has been maximal.

The second chapter deals in a methodical way with the pathology and symptomatology of cerebral haemorrhage, including a valuable description of the *état lacunaire* and basal haemorrhage. The author supports Charcot's claims for one particular branch of the lenticulo-striate artery as the artery of cerebral haemorrhage, although the work of Foix and Hilleman among others has recently discredited this view. Perhaps undue insistence is laid upon the suddenness of onset of the symptoms of cerebral haemorrhage and too little upon the almost invariable prodromal condition, but these defects are amply compensated for by the clear and valuable description of syndromes resulting from haemorrhage into the mid-brain. Cerebral syphilis is described in a chapter to itself as distinct from those on general paralysis and cerebral softening, an arrangement which necessitates much repetition but which is difficult to avoid. All these are clearly and exhaustively dealt with, and their information is fully up to date. There remain for description the chapters on cerebral tumours and cerebral abscess. The usual classification is adopted and the description of the characteristics of each type of neoplasm is clear and complete. The explanations provided for those signs usually held to be indicative of increased intracranial pressure are not clearly separated from those peculiar to the site in which the tumour is found.

This work can hardly be considered a complete and exhaustive examination of the subjects with which it deals, but within the scope provided for discussion the matter is well arranged and clearly set forth.

THE FLUORESCENT SCREEN AS AN AID TO TREATMENT OF FRACTURES.

IN a monograph[5] on this subject Dr. RADUTZESCO, a Rumanian who has served as a foreign assistant in the clinic of Professor Pierre Duval in Paris, describes the systematic diagnosis and treatment of fractures of the wrist and ankle with the help of x rays and the fluorescent screen, and illustrates his work with a number of reproductions of x-ray plates. He describes the "radioscopie shovel" of Dr. Henri Béclère. (It would have been better to call a spade a spade, for this appliance is far more like a spade than a shovel.) The precautions necessary to protect the surgeon and his assistants from the effects of the rays are also described. The screen should be covered with lead glass at least 10 mm. thick. The other precautions are those now usual with x-ray workers. The plaster splints of Hennequin, Delbet, and Quénu are described and recommended, and eleven cases of fracture of the lower ends of the forearm and leg bones, and one of the middle of the shaft of the humerus, are very fully described and illustrated by 33 plates, the figures showing the conditions before, soon after, and weeks after the injuries. The author sums up the results of his experience in a number of "Conclusions," which are rendered in five languages besides the original French. The effort of the translator into English is not altogether successful. "Intervention sanglante" is not adequately rendered by "fleshy operations," and in another paragraph the author's meaning is badly distorted.

We think this is likely to be a useful work, although it seems almost a counsel of perfection to suggest that such elaborate proceedings should be made the routine for a class of cases that are adequately treated generally by the ordinary use of x rays, provided that the surgeon is experienced and instructed in sound principles. In a hospital treating many fractures it would be difficult to spare the time and space necessary for all these radiographs and screenings. There is a table of contents, but no index to this book.

[4] *Nouveau Traité de Médecine et de Thérapeutique.* Publié sur la direction de MM. P. Carnot et P. Lereboullet. Fascicule XXXII *bis*: Maladies du Cerveau. Paris: J. B. Baillière et Fils. 1928. (6½ × 9¾, pp. 356; 65 figures. 50 fr.)

[5] *La Réduction des Fractures sous l'Écran Radioscopique.* By Dr. Radutzesco. Préface de M. Pierre Duval. Paris: Maloine et Cie. 1928. (Med. 8vo, pp. 196; 125 figures, 48 plates. 50 fr. sans majoration.)

NOTES ON BOOKS.

No. 2 of the Memoir Series of the London School of Hygiene and Tropical Medicine contains an account of researches conducted during 1924 and 1925 in Polynesia and Melanesia[6] by Dr. PATRICK A. BUXTON. These have reference principally to filariasis, but notes are appended on other diseases occurring in Samoa and other archipelagos, more especially on yaws, Samoan conjunctivitis, and helminthiasis; a chapter is added on the customs of the Samoans of a hundred years ago, and of the foreign influences which have affected them, and their results. In the examination of cases of filariasis the author considers that the presence or absence of six physical signs should be regularly recorded—namely, enlargement of the superior inguinal glands, the inferior inguinal glands and the epitrochlear glands, the enlargement or fibrosis of the epididymis or testis, and the presence of hydrocele. Enlargement of the epitrochlear gland is the commonest physical sign of filariasis; it is that most closely correlated with the presence of micro-filaria in the blood, and will not improbably be used in Oceania in the same way that spleen rate is used by the malariologist. It is, however, rare in some regions, and cannot, therefore, be of general utility throughout the tropics. Hydroceles are common in Oceania; they are mostly bilateral, and generally caused by filariasis, though whether due to blocking of lymphatics, to the production of a toxin, or to secondary infection is not clear. With regard to elephantiasis, assuming that the filaria is an essential antecedent to its development, the exact position of the parasite as an etiological agent is still obscure; whether it is an immediate cause or an adjuvant is not known, and owing to the impossibility of obtaining *post-mortem* examinations the pathology of elephantiasis could not be studied in Oceania. With regard to the vector of the non-periodic filaria in Fiji and Polynesia there seems to be little doubt that it is *Aëdes variegatus*. Myositis, suppurative and non-suppurative, which has generally been regarded as due to filaria, was studied in thirty-two cases; the author concludes that it is a staphylococcal pyæmia of unknown origin, characteristic of the damp tropics. The volume is illustrated with many excellent photographic plates.

When we reviewed the fourth edition of Professor C. P. EMERSON'S *Essentials of Medicine* (June 11th, 1921, p. 858) we commended it as a clearly written book for nurses and for students beginning a medical course. In the eighth and considerably revised and enlarged edition,[7] recently issued, the author, by eliminating from his account all that is accidental, rare, or disputed, once more succeeds in presenting in an interesting manner the general outline of clinical medicine, leaving it to the student as he grows in knowledge and experience to fill in the details.

The *Minutes of the General Medical Council and of its Various Committees*[8] for the year 1928 have now been issued, with seventeen appendixes, in a volume which includes the customary reports of the two sessions of the General Medical Council and of its Executive Committee, of the meetings of the English, Scottish, and Irish Branch Councils, and of the Dental Executive Committee. The appendixes comprise memorandums on the training of medical practitioners and midwives, reports of the Education, Dental Education and Examination, Public Health, Pharmacopœia, and Examination Committees. The *General Index* to the Minutes of the General Medical Council and of its Executive and Dental Executive Committees, and of its three Branch Councils from 1903 to 1928, and relating to volumes xl to lxv, also just issued, follows the plan of the previous issue in grouping the references under each head in chronological order, in indexing each subject under two or more headings, and in supplying a sufficient number of cross references.

The British Journal Photographic Almanac[9] for 1929 should be welcomed by photographers of all types, from the amateur "dabbler" to the trained professional. The editor, Mr. GEORGE E. BROWN, contributes an interesting article on the use of the camera in the detection of crime, and Mr. T. J. L. Bentley deals exhaustively with action photographs and their making. The volume includes a series of excellent reproductions of fine photographs from many parts of the world. Recent developments in photography are fully discussed.

[6] *Researches in Polynesia and Melanesia.* Parts V–VII (Relating to Human Diseases and Welfare). By Patrick A. Buxton, M.R.C.S., D.T.M. and H. No. 2 of the Memoir Series of the London School of Hygiene and Tropical Medicine, published by the School in November, 1928. (Cr. 4to, pp. xi + 159; 27 plates, 6 figures. 9s.)

[7] *Essentials of Medicine.* By Charles Phillips Emerson, M.D.; Nellie Gates Brown, R.N., assisting in the revision of this eighth edition. London: J. B. Lippincott Company. 1928. (5½ × 8½, pp. viii + 583; 164 figures. 12s. 6d. net.)

[8] *Minutes,* 12s.; *Index to Minutes,* 7s. 6d. London: Constable and Co., Ltd. 1929.

[9] *The British Journal Photographic Almanac, 1929.* Edited by George E. Brown, F.I.C. London: H. Greenwood and Co., Ltd. 1929. (4½ × 7¼, pp. 758; illustrated. 2s. net.)

Volume xxii of the *Transactions of the Medico-Legal Society*[10] covers the proceedings of that body during the session 1927–28. Among the papers is one by Professor Louise McIlroy on "Influence of parturition upon insanity and crime," which provoked an interesting discussion on the medico-legal aspects of infanticide. Drunkenness was the subject of two communications, one relating to "pathological drunkenness" as a defence of insanity at a murder trial, and the other discussing drunkenness and civil and criminal responsibility. The papers by Dr. Gerald Slot on "Pain in its medico-legal aspects," and by Dr. John Glaister, jun., on "Hair—considered medico-legally," should also be mentioned.

Dr. R. FORTESCUE FOX'S *British Spas and Climatic Health Resorts, 1929*,[11] which is incorporated in the *Medical Directory*, has been published separately in pamphlet form. In addition to notes on the choice of waters, sea bathing, etc., detailed information is given about all the principal health centres in Great Britain, and also certain New Zealand spas.

[10] *Transactions of the Medico-Legal Society, 1927–28.* Jointly edited by Gerald M. Slot, M.D., M.R.C.P., and Everard Dickson, barrister-at-law. Vol. xxii. Cambridge: W. Heffer and Sons, Ltd. 1928. (Demy 8vo, pp. xxv + 130. 12s. 6d. net.)

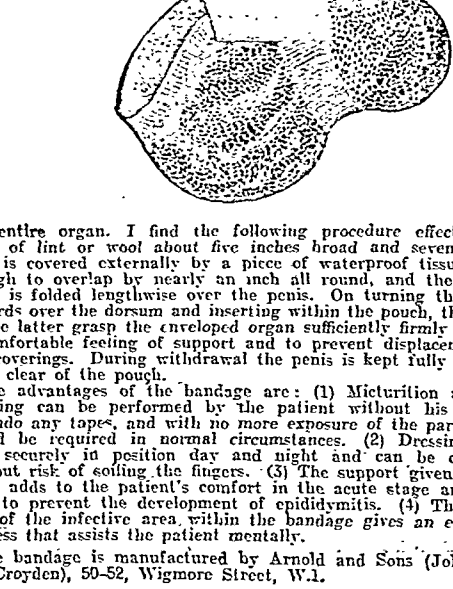
[11] *A Guide to British Spas and Climatic Health Resorts, 1929.* London: J. and A. Churchill. 1929. (6 × 9¼, pp. 108; illustrated. 1s. net.)

PREPARATIONS AND APPLIANCES.

A SUSPENSORY BANDAGE FOR USE IN GONORRHŒA.

DR. A. GARDNER (R.M.S. *Empress of Scotland*) writes: In the treatment of gonorrhœa in the male, I have found the following suspensory bandage much appreciated by patients as a comfortable support, and as a convenient and cleanly means of holding dressings in position.

The bandage differs from the ordinary suspensory bandage in having a separate pouch for the penis in addition to the usual support for the testicles. This pouch is suspended from the pubic attachment of the bandage, and is provided with an adequate elastic-bound opening at the root of the penis, whereby the latter can be withdrawn for the purpose of micturition or changing of dressings. To ensure that the dressings will be securely held in position within the pouch and to enable them to be handled without risk of the fingers coming into contact with discharge, it is essential that they be large enough to envelop



the entire organ. I find the following procedure effective. A piece of lint or wool about five inches broad and seven inches long is covered externally by a piece of waterproof tissue large enough to overlap by nearly an inch all round, and the double layer is folded lengthwise over the penis. On turning the edges inwards over the dorsum and inserting within the pouch, the walls of the latter grasp the enveloped organ sufficiently firmly to give a comfortable feeling of support and to prevent displacement of the coverings. During withdrawal the penis is kept fully covered until clear of the pouch.

The advantages of the bandage are: (1) Micturition and redressing can be performed by the patient without his having to undo any tapes, and with no more exposure of the parts than would be required in normal circumstances. (2) Dressings are held securely in position day and night and can be changed without risk of soiling the fingers. (3) The support given to the penis adds to the patient's comfort in the acute stage and may help to prevent the development of epididymitis. (4) The isolation of the infective area within the bandage gives an effect of tidiness that assists the patient mentally.

The bandage is manufactured by Arnold and Sons (John Bell and Croyden), 50–52, Wigmore Street, W.1.

Nova et Vetera.

HERRINGS AS FOOD AND PHYSIC.

THE announcement in the press that an "eat more fish" campaign is to be inaugurated by those interested in the catching and marketing of fish recalls a similar attempt made 150 years ago. By the middle of the eighteenth century fishing on the east coast had fallen into a parlous condition. It had been decaying gradually for a hundred years previously. Invaded by foreigners, chiefly Dutch, with larger boats and better gear, the all-important herring fishery had ceased to be one of the great sources of English wealth. The frequent wars with Holland were due in large part to the difficulties and jealousies arising out of the herring industry. In the year 1748 a serious attempt was made to revive the fishery, which could be done only by the provision of a large sum of money to subsidize the building and equipment of suitable boats. A bill was accordingly passed by Parliament announcing (1) that as the fishery was of great advantage to the trade and navigation of the kingdom all possible impediments to it should be removed; (2) that a bounty of 30s. per ton was to be paid to all new vessels between twenty and eighty tons suitable for, and employed in, the fishery; and (3) that a Company of Adventurers be formed with power to raise a capital sum of £500,000, interest at the rate of £3 10s. a year being guaranteed to the proprietors for a period of fourteen years. At a meeting held in the City the names of a number of gentlemen were proposed to the Crown for nomination as officers in the Charter. In addition, certain local committees were formed at outports subscribing the sum of £10,000. The Prince of Wales consented to be the Governor of the Company.

It is probable that the appeal for money did not meet with a satisfactory response, for a need appears to have arisen for an "eat more fish" campaign. In the year 1752 a surgeon named James Solas Dodd published a book of 175 pages, designed to arouse public enthusiasm in favour of herring as food and physic. The book opens with an introductory bibliography of the fish from ancient times, showing the esteem in which it had been held from the reign of Philip of Macedon onwards. There follows an exhaustive account of the natural history of the fish, with the fullest anatomical details, these being supplemented by an account of their migration and the methods of catching and curing them for the market. Then, however, comes the real purpose of the book, to discuss the "cold temperament" of the herring, and its freedom from harmful "heating" qualities.

From the author's numerous recipes for the preparation of the herring as food we cite the following.

To Stew Herrings.

When your herrings are scaled, washed and the fins cut off, put them in a stewpan, with no liquor, but a quarter of a pint of white wine, some mace, whole pepper and salt. When they are half stewed, put in some thick cream, and a little piece of butter dipped in flour; when that is melted, put in some oysters with their liquor; keep them often shaken till the fish and oysters are enough, or that the oysters will break; squeeze in a little lemon, give them a scald, and pour them into a dish.

To Roast a Brace of Herrings.

Take two very large herrings washed very clean, strew a little salt, hang them on the spits of a tin-oven. Throw away all the water that comes from them for the first half-hour; then throw on a little nutmeg, mace and cloves, beat fine, and a little salt; flour and baste with butter and crumbs of bread. When one side is done turn the other. Then have ready some anchovy and melted butter, some of the liver of the fish boiled and bruised fine; mix it well with some butter and two yolks of eggs, strain through a sieve, and put them into a saucepan again with a few shrimps, or pickled oysters, the juice of a lemon, and a little red wine. Put it into the pan that you put your herrings in, and stir all together; then pour it again into the saucepan, keep it stirring, let it boil, and then serve it up, garnished with pickled barberries.

A Fricasse of Rocs.

Take a quantity of soft roes blanch'd, cut them into dice; put a lump of butter in a stew-pan, and toss it up with an onion cut small. After that put in your dice, and give them two or three tosses; this done, put a little flour over them, moisten them with a little fish broth, season with salt, pepper, sweet herbs, and fine spice, and let them stew gently. Being done, thicken it with volks of eggs, parsley cut small, and a dash of vinegar, served up hot.

Note that pickled roes will do as well steeped in water to unsalt them, and omitting salt in the seasoning.

Not content with the use of herrings as food the author proceeds to consider their medicinal value. He quotes Dr. Fuller on feet cataplasms, and supplies an explanation of how these act. Herring cataplasms fall into the acrid and stimulating category, being indicated when the spirits are oppressed, stupid, and sluggish, as in soporose cases. Here is one of his prescriptions:

A Cataplasm of Herring.

Take white briony root new digged up (or if it be dried, then the powder of it) two ounces; black soap three ounces, pickled herrings (or anchovies) four ounces; salt one ounce and a half; and mix. It is to be bound to the soles of the feet, and changed every twelve hours, and is chiefly used where the febrile matter assaulting the head, and oppressing the spirits, causes a stupor or sleepiness.

Various authors are quoted who recommend salt herrings as a remedy for plague; herring, dried and powdered, is alleged to open obstruction of the urinary passages; the ashes of burnt herrings serve as a lithotriptic; used in clysters the herring is held to be a remedy in sciatica and dropsies. The oil is excellent in the treatment of cramps and convulsive contractions, while an elixir of the bones operates in febrifick cases by stimulating sweat and urine.

Here are a few of the prescriptions in which herrings are used, with the diseases to which they are appropriate:

Extract of Herrings.

Take six pounds of fresh herrings, four ounces of salt of tartar, and put into a matrass, and pour on six pints of rectified spirits of wine; let it stand in infusion in a bath heat for four days, then decant, and pour on six pints more, and let it infuse till it will give no more tincture. Put these tinctures together and filter them, and exhale the humidity in a sand heat, till the matter be left at the bottom the thickness of honey. Half a scruple of this taken for a dose in the form of a bolus is of great service in all urinary obstructions, and joined to other deobstruents may be of great utility in other obstructions.

A Cleansing Ointment of Herrings.

Take fresh herring twelve pounds, oil of olives the same quantity, boil three hours and strain off. Then add gum euphorbium, powder of white hellebore, each four ounces. Gum olibanum, gum sarcocol, and gum elimi, each half a pound; yellow wax, two pounds. Melt and make an ointment.

This is a medicine of great service in the itch and all cutaneous eruptions, and may be conveniently joined with an eighth part of mercury; allay'd with turpentine for leprosies, being warily used.

Essence of Herrings.

Take twenty soft roed herrings, cut them in pieces, and put into a cucurbite with a quart of spirits of wine, and eight ounces of white wine. Let them digest in horsedung for six weeks, and pour off and filter for use.

This is a diuretic, and may be taken to the quantity of thirty drops in a proper vehicle.

A very long recipe describes how herrings can be distilled "after the manner of vipers," the results being (1) a volatile salt which is a high sudorifick and deobstruent, of excellent service in maligunant fevers and very prevalent in epileptic cases, (2) a fetid oil to be applied to contracted sinews, and (3) a spirit with the same virtues as the salt.

Various parts of the fish have their several uses: The gills burnt to powder are accounted a specifick in, and a preservative from epilepsies. One that was troubled with a fistula at the lower orifice of the stomach, was cured by swallowing every morning for a month, a herring's heart. The liver dried to powder, and mixt with honey is a present cure for toothache. The gall mixt with honey and taken cures dysentery. The spawn put in a linen cloth and applied, is excellent in the piles. The soft roe distill'd produceth a water exceeding frog's spawn water for a cooling cosmetick, is good in burnings, redness in the face, and eruptions of the body. The oil of the roes is good for deafness, mixt with eels gall and dropped into the ear.

Perhaps the most curious of all the nostrums quoted is that in which herrings assist in the preparation of a general anaesthetic.

Take the oil pressed out of fresh herrings, a pint, a boar's gall, juices of henbane, hemlock, aifel (that is, the little house leek) lettuce and wild cat-mint, each six ounces, mix them together, and boil them well, and put them into a glass vessel well stopt. Then take three spoonfuls of the above and put into a quart of warm ale and let the person who is to undergo any operation sit before a large fire, and drink of this by an ounce at a time, till he falls asleep, which sleep will continue during the space of three or four hours; and all that time he will be insensible of any thing done to him.

The author is a little shy of this prescription and rather doubts whether it would render a man entirely insensible to pain, and gives an amended version of his own as a hypnotic, a drachm to be rubbed into the pulses of the wrist to procure sleep.

The work concludes by an appeal to people to invest in a scheme, which is no South Sea bubble, but guaranteed by the State. Therefore under such appearances of success let no one fear a loss, but cheerfully contribute to the raising of this undertaking to the acme of perfection; then we shall rejoice and sing; then again the entire balance of power will be in British hands, and then we may sit down each man under his own vine and his own fig tree, and fear no invader, since after that period should any be so daring as to shock our peace, we could draw from our busses a train of hardy veterans, true British seamen, who alone could guard that island they support.

MARK R. TAYLOR, M.R.C.S., L.R.C.P.

CONGENITAL DISLOCATION OF THE HIP.

LECTURE BY MR. H. A. T. FAIRBANK.

ON the afternoon of February 28th, in the Medical Building of the University of Liverpool, Mr. H. A. T. FAIRBANK delivered the Lady Jones Lecture in orthopaedic surgery, his subject being congenital dislocation of the hip, with special reference to its anatomy.

Changes in the Acetabulum.

Mr. Fairbank began by describing the anatomy of the dislocated hip, basing his description on a study of 35 museum specimens, 50 open operations, and the literature of the subject. The primary anatomical fault, he said, was deficient growth of the upper acetabular margin, to which all other changes were secondary. The malformation involved the cotyloid ligament, the cartilage, and the bone. Before many years the acetabulum became triangular, with the apex upwards and backwards; the margins were fairly straight, sharp, and even undercut. In dry specimens the socket was surprisingly deep, but the floor was flat; in the fresh state it was largely filled by cartilage and fibro-fatty material. The ilium presented a wavy anterior margin, with a deep notch for the psoas tendon. A false acetabulum, which might be a shallow pond considerably larger than the femoral head, and suggestive of decided mobility of the latter in all directions, was usually seen on the dorsum ilii. The floor might present flat-topped bosses with the margin raised, even to the extent of forming a deep cup with an eburnated surface, resembling, in fact, a typical osteo-arthritic socket. In a bilateral case these changes might occur on one side only. A raised hollow facet might represent the false joint. The surface of the bone behind the true acetabulum was usually modified; owing to the increased strain thrown on this region of the bone by the capsule, it might be markedly roughened or thickened to form a rough ridge; or it might present a facet, usually single, corresponding to a similar facet on the lesser trochanter. This facet, which lay within the joint cavity, with the capsule attached to its posterior margin, might overlap the acetabulum to a considerable extent.

The False Joint.

The head of the femur was usually small, and it might be wedge-shaped, conical, mushroomed, eroded and lipped, or largely worn away. The angle of the neck was usually normal, though coxa vara and coxa valga sometimes occurred. Ante-torsion of the head and neck was usually present, but rarely extreme. The neck might present a polished facet, more commonly in front, the result of friction against the capsular sling. The lesser trochanter in adults might be well formed as in children, hardly be visible, or be capped by a facet with a lipped margin. The capsule was stretched upwards by the head, and the cavity became hour-glass shaped, with an isthmus in the middle, which was accentuated by the psoas tendon which crosses it. In the floor of the false joint the capsule blended with the periosteum and became fibro-cartilaginous; it was much thickened in front and below, and particularly behind. The ischio-capsular band, which was very strong, arched over the neck to join the fibres from the front of the acetabulum, thus forming a *capsular sling*. The ligamentum teres was often absent in older cases and after forcible treatment; very rarely it interfered with complete reduction. The joint cavity always extended backwards over the ischium, a vertical fold of the synovial membrane sometimes marking the separation of this posterior extension from the true acetabular portion. Also present in some cases, and situated just above the upper margin of the joint, was a horizontal fold which piled up on the upper margin if the femur was pulled down as, for example, in attempted reduction. In adult specimens this fold might be prominent, the isthmus being displaced outwards towards the femur. It partly, and even completely in some cases, separated the upper portion of the cavity containing the head from the other two below.

Action of Muscles.

Of the muscles, the adductors, hamstrings, and rectus were short, but only the first interfered with reduction. The sciatic nerve was short, but could be relaxed by flexion of the knee. Injury to this nerve during reduction was due to bruising rather than stretching. The psoas tendon passed horizontally backwards and outwards to the femur, and acted as a sling supporting the pelvis. The glutei were not much shortened, but they were weak on account of the reduction of their area of origin. They abducted the femur and held it to the pelvis. The obturators and associated muscles ran obliquely upwards to the femur, and acted as important slings for the pelvis.

The pelvis, said the lecturer, was therefore supported on the femur by the thickened bands in front, but particularly by the "capsular sling" over the neck, assisted by the psoas in front and the obturator group of muscles behind. The characteristic gait was due to the weak abductor muscles acting at a mechanical disadvantage, since the levers, formed on the one hand by the head and neck, and on the other by the ilium, were shortened, while the distance from the head to the midline, in which the body weight acted, was increased. Other possible factors were the antero-posterior instability of the head and the adductor action of the obliquely running obturators which must contract to support the pelvis. Furthermore, the weak abductors (glutei) not only acted at a mechanical disadvantage, but had to resist the adductor pull of the obturators.

Pain and increasing disability in adolescence or adult life might be due to muscle strain, but if severe they were due to arthritis. Arthritis might be infective in origin or a typical osteo-arthritis; a villous arthritis had been described. The prognosis of the untreated case was not hopeless, and many patients reached middle life without serious disability.

Treatment.

In treating a case, said the lecturer, two objects had to be kept in mind—namely, to cure the limp by providing a stable joint and to diminish the chances of arthritis. Both objects were best served by early reduction, preferably when the patient was between 18 months and 2 years of age. Permanent cure at this age, and even up to 5 years, meant, in the majority of cases, a practically normal hip. In older cases a cure could still be effected, though often without realizing the second object, the reduced hip being far from normal. During manipulative treatment, after apparent reduction, further leverage movements were necessary to get the head well home. There was a growing tendency in the United States, and to some extent in this country, to resort to open reduction as a routine. This procedure, though useful in old patients in whom the hips could not be reduced by manipulation, was, in Mr. Fairbank's view, to be condemned as a routine, on the grounds that it had no advantage over the simpler manipulative methods, by means of which, in the great majority of young patients, true reduction could be obtained. Ante-version was not a common cause of relapse, and its correction by osteotomy was rarely necessary. Failure of the upper lip of the socket to grow out was the cause of relapse.

Operative Procedures.

The advisability of attempting reduction after the age of 9 for a unilateral, and of 6 for a bilateral case, was very doubtful; the anatomical results were so bad that permanent benefit, even though reduction were obtained, was questionable. Hey Groves's method of transferring the head, enclosed in its capsular dome, to the acetabulum, which was gouged out to receive it, had no advantage over reduction coupled with a bone-grafting operation to make an upper lip. The making of an upper lip was a most useful operation when relapse was imminent after manipulative reduction, or when the latter, as in the case of a patient 4 years or older with a subluxated hip, held out little hope of cure. "Anterior transposition" by manipulation (*that is, transposing the head to the region* of the anterior inferior spine) when reduction was impossible, though difficult to achieve, was favoured by some surgeons. Adduction and flexion deformity were more satisfactorily corrected by osteotomy. Finally, the difficult problem of the irreducible adolescent or adult case suffering from pain and increasing disability had to be considered. Arthrodesis was the only operation which could afford permanent relief, and in unilateral cases it was the operation of choice. Osteotomy might be suitable for the adolescent with moderate pain and no æ-ray signs of arthritis, and it probably mattered little which method of osteotomy was used; opinions differed as to the value of this operation, and its mechanical and anatomical results called for careful consideration. The shelf operation—that is, the turning down of a bone flap or fixing a graft above the head, pulled down towards, but not to, the acetabulum—might increase the stability, but could not be expected to relieve arthritic pain for long. In a bilateral case it might be the only possible procedure when the other hip had been ankylosed. Mr. Fairbank condemned simple excision of the head. By this operation the pain, though at first relieved, soon returned, and the limp was much exaggerated.

ROYAL MEDICAL BENEVOLENT FUND.

SUBSCRIPTIONS are very urgently needed to enable the Committee to meet the many calls for financial help which are made by those members of the medical profession, their widows, and dependants who are afflicted by poverty and want, more especially at this time of year, when poverty is made the harder to bear owing to illness and bodily suffering. Every reader who is not already a regular subscriber is urged to consider whether one guinea at least could not be given in response to this appeal. Subscriptions and donations should be sent to the Honorary Treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, Cavendish Square, London, W.1.

At the last meeting of the Case Committee forty applications were considered and thirty-six grants were voted, amounting to £744 3s. The following is a summary of four cases.

Daughter, aged 46, of M.D. Left penniless on the death of her father, and, in spite of delicate health, trained as a nurse; she broke down badly after working at a hospital during the war. She attempted to resume work later, but in the end was forced to give up. She is now suffering from tuberculosis. There is no relation who can help. The Fund voted £36 towards the sanatorium fees, and with this as a start a friend who knows and admires this lady's uphill fight throughout her life is endeavouring to raise a special fund so that treatment in the sanatorium can be continued.

Daughter, aged 25, of L.R.C.P. Is suffering from tuberculosis and every hope is held out of a cure by immediate treatment. The applicant, however, has no private means to enable her to do this. Fund voted £25, and with the co-operation of the Guild enough money has been raised for one year's treatment.

Widow, aged 57, of M.R.C.S. Her husband died in 1929, having been a lunatic for the last years of his life. During these years his wife had had to attend her husband, and on his death such little income they had, amounting to £117 per annum, ceased. Her brother is able to contribute £26 per annum. Being an energetic and capable woman it is hoped that after she has had time to recover her health, which has been badly broken by all she has had to suffer, she will be able to find work and fend for herself. To give her the necessary rest and opportunity to find work the Fund voted £28 towards her maintenance.

Widow, aged 60, of M.B. Her husband died in November, 1928. After everything is settled and debts are paid the income which she may hope to receive from her husband's estate will be 15s. a week. Voted £30 in four instalments. Her total income will then be only £69 a year, but she hopes she may find some lodgers to take into her home and thus augment her income.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing, especially for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles. The gifts should be sent to the Secretary of the Guild, 58, Great Marlborough Street, W.1.

NEW YEAR HONOURS.

THE list of New Year honours, which has been delayed owing to the illness of the King, was issued as a special Supplement to the *London Gazette* on March 1st. The names of the following members of the medical profession are included.

Baron.

Sir BERKELEY G. A. MOYNIHAN, Bart., K.C.M.G., C.B., M.S., LL.D., D.Sc., President of the Royal College of Surgeons of England, Consulting Surgeon to the Leeds General Infirmary.

Companion of Honour.

FLORENCE ELIZABETH, LADY BARRETT, C.B.E., M.D., M.S., B.Sc., Dean of the London School of Medicine for Women, President of the Medical Women's International Association.

K.B.E. (Civil).

CHARLES HUBERT BOND, C.B.E., D.Sc., M.D., F.R.C.P., LL.B., Commissioner, Board of Control.

D.B.E. (Civil).

Miss ANNE LOUISE MCILROY, O.B.E., M.D., D.Sc., Professor of Obstetrics and Gynaecology, Royal Free Hospital School of Medicine for Women, University of London; President, Maternity and Child Welfare Group of the Medical Officers of Health.

Knighthood.

KHAN BAHADUR NASARVANJI HORMASJI CHOKSY, C.I.E., *medical practitioner*, Bombay.

CARRICK HEY ROBERTSON, M.B., F.R.C.S., F.A.C.S.(Hon.), Surgeon to the Auckland Hospital, New Zealand.

C.B. (Civil).

Sir WALTER MORLEY FLETCHER, K.B.E., M.D., D.Sc., F.R.S., Secretary of the Medical Research Council.

C.M.G.

JOHN HOWARD LINDETT CUMPSTON, M.D., Director-General of Health and Director of Quarantine, Commonwealth of Australia.

FRANK COLE MADDEN, O.B.E., M.D., F.R.C.S., Dean of the Faculty of Medicine, Egyptian University, Cairo.

ARTHUR JOHN RUSHTON O'BRIEN, *M.C.*, M.B., Surgeon Specialist and in charge of the Gold Coast Hospital, Gold Coast.

AMBROSE THOMAS STANTON, M.D., Chief Medical Adviser to the Secretary of State for the Colonies.

C.I.E.

Lieut.-Colonel CHARLES ISHERWOOD BRIERLEY, I.M.S., Chief Medical Officer and Inspector-General of Jails, North-West Frontier Province.

Lieut.-Colonel ROBERT ERNEST WRIGHT, I.M.S., Professor of Ophthalmology, Medical College; Superintendent, Ophthalmic Hospital; and Medical Officer, Civil Orphan Asylums, Madras.

Lieut.-Colonel HAROLD HOLKAR BROOME, I.M.S., Principal and Professor of Surgery, King Edward Medical College, Lahore.

HENRY TRISTRAM HOLLAND, M.B., Ch.B., F.R.C.S.Ed., Medical Missionary, Baluchistan.

C.B.E. (Civil).

Miss MARY HANNAH FRANCES IVENS, M.B., M.S., Ch.M., Clinical Lecturer in Obstetrics and Gynaecology, University of Liverpool.

Lieut.-Colonel JOHN KENNETH SPROT FLEMING, O.B.E., Deputy Director-General, I.M.S.

O.B.E. (Civil).

NORMAN PARSONS JEWELL, *M.C.*, M.D., Resident Surgical Officer, European Hospital, Nairobi, Kenya.

JOHN CRICHTON STUART MCDOUALL, M.R.C.S., L.R.C.P., Director of Medical and Sanitary Services, Sierra Leone.

M.B.E. (Civil).

Miss ISABELLA HARDIE CURR, L.R.C.P., L.R.C.S., in charge of the McLeod Hospital for Women at Inuvil, near Jaffna, Island of Ceylon.

Kaisar-i-Hind Medal (First Class).

Mrs. PEARL SMITH CHUTE, Lady Doctor in charge of Canadian Baptist Mission Hospital, Akidu, West Godavari District, Madras.

JOHN HUTCHISON, L.R.C.P. and S.Ed., Church of Scotland Mission, Chamba State, Punjab.

NOWROJI JAMSHEDJI BANDORAWALA, Principal Medical Officer, Bikaner State.

Two other New Year Honours will be especially welcomed by members of the medical profession, with whom the recipients have long had very close association. Sir ARTHUR ROBERTS, K.C.B., Permanent Secretary, Ministry of Health, has been promoted to be G.C.B., and Miss WINIFRED CLARE CULLIS, O.B.E., M.A., D.Sc., Professor of Physiology, London (Royal Free Hospital) School of Medicine for Women, has been promoted to be C.B.E.

British Medical Journal.

SATURDAY, MARCH 9TH, 1929.

SECURITY OF TENURE IN PUBLIC POSTS.

A RECENT decision by Mr. Justice McCardie in the King's Bench Division, in the action *Brown v.* Dagenham Urban District Council, must have caused surprise and, indeed, consternation in the minds not only of members of the various public services, but of the average man, who has an idea that English law is the crystallization of common sense and of the universal desire for fair play. Throughout the long struggle for constitutional liberty in this country no right has been guarded more jealously than the fundamental principle that no man shall be condemned behind his back. Only a few weeks ago we had, in the Salvation Army case, an example of the importance the judicature attaches to the exact observance of this principle. The result of the Dagenham case seems to show that local authorities, in virtue of the extraordinary powers given to them by various Local Government Acts, may safely ignore this principle. The plaintiff in this action sought to recover damages, for alleged wrongful dismissal, from the urban district council, under whom he served as assistant overseer and clerk, and the case thus, incidentally, raised a question affecting the security of tenure of office for all local public officials, including medical members of the public health services. The question, his Lordship said in delivering judgement, was whether Section 189 of the Public Health Act, 1875, conferred on district councils a power of dismissal similar to that possessed by the Crown—a power of dismissal which could not be negatived or impaired by any contract of service. "The position created by the section is remarkable. I conclude that the council could dismiss its clerk, at pleasure, whatever might be the contract between them." The plaintiff's claim for wrongful dismissal, and his application for a declaration that he had not been dismissed from his office, therefore failed.

Complaint was made during the course of the action that the defendant council had given the plaintiff no opportunity of stating his case before they dismissed him from office. That, said his Lordship, was regrettable; but no right of hearing before dismissal was given by Section 5 of the Local Government Act. 1894, or by any other Act; and the plaintiff was not therefore entitled to a hearing. This is an amazing doctrine, but we suppose that we must take it as being law unless it is upset on appeal to a higher court. In these circumstances it seems to be beyond question that most officers appointed under the Public Health Acts can be dismissed at any time at the pleasure of the council under which they hold office, irrespective of any contract made between the council and the officer as to notice of termination of appointment. While Mr. Justice McCardie's decision in this case is based on Section 189 of the Public Health Act of 1875, it appears that similar powers are held by municipal corporations under the Municipal Corporations Act, 1882, and by county councils also, seeing that the provisions of the 1882 Act which relate to appointments and dismissals (Sections 17 and 19) are incorporated in the Local Government Act, 1888, which brought county councils into being.

County medical officers, and, indeed, most medical officers of health, have some protection owing to the fact that the consent of the Minister of Health has to be obtained before such appointments can be terminated by the local authority. But the fact remains that medical officers of health constitute only a small proportion of the whole number of medical officers in the local government service, and it seems clear that assistant medical officers in the public health service and in many public institutions can be dismissed at any time without reason at the pleasure of the council appointing them, and that any contract entered into between the local authority and the officer as to notice of termination of service is legally *ultra vires*. Clearly, the usual form of advertisement, which states that the appointment is terminable on either side by so much notice, is misleading, and future advertisements should indicate that the person appointed will hold office during the pleasure of the employing council. There is another aspect of this question which must add to the uneasiness with which officers in the public health service will have read of this action. If, as laid down by Mr. Justice McCardie, a local authority can determine an appointment at any time, the officers will lose all advantages of the Superannuation Act, except that they will be entitled to repayment of their contributions to the superannuation fund, with compound interest thereon.

It is, of course, true that incidents such as that disclosed in this action are rare, and we believe that few local authorities would act in the arbitrary way adopted by the Dagenham Urban District Council, but the possibility remains, and with it the feeling of uncertainty. It is therefore desirable that definite action should be taken by all interested bodies to effect a change which would bring the local authorities within the ordinary law which regulates the relations of employer and employed. And certainly it will be necessary to secure changes in the Local Government and Other Officers Superannuation Act so that an officer who has completed a certain number of years of service and is dismissed from his appointment shall be entitled, in the absence of evidence of misconduct, to a pension in accordance with his years of service, with due regard to Sections 9 and 11 of the Act.

The opinion expressed by Dr. H. C. McManus in two letters on this subject which have appeared lately in our columns, contending that most officers in the public health service and in other public medical posts are prejudiced by their lack of security of tenure, is materially fortified by the decision of Mr. Justice McCardie in the Dagenham case. From correspondence we have received it is apparent that many members in the public services are looking to the British Medical Association to do all in its power to improve their present position as regards security of tenure, to counter so far as possible the effects of Mr. Justice McCardie's recent judgement, and also to deal with the points we have just raised in respect of superannuation. The matter is coming before the Public Health Committee at its meeting this week, and we have no doubt that the Council of the Association, on the advice of that committee, will seek the co-operation of other interested bodies in pressing on the attention of the Minister of Health and of Parliament the necessity for prompt action which will clear up the most unsatisfactory situation now disclosed, and will give to members of the public services a sense of security so long as they carry out their duties in a satisfactory manner.

BRITISH COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS.

IT is doubtful if the importance of midwifery and gynaecology in the medical curriculum is even yet fully recognized by the general body of professional opinion. The tendency rather is to regard the study of medicine and surgery as fundamentally important, and somewhat indiscriminately to class all other branches of practice—for example, orthopaedics, ophthalmology, oto-rhinology, midwifery, and gynaecology—under the heading of specialties. With the growing complexity of medical studies it is inevitable, perhaps even desirable, that certain subjects and groups of subjects should shift from the province of the general practitioner to that of the professed expert. Few would deny, for example, that this holds good in the case of ophthalmology. Can it be maintained that it is true of obstetrics and gynaecology? These two together form a single well-defined whole, whose position to-day as one of the three subjects of a qualifying examination can be traced back to the Medical Act of 1886—"A qualifying examination shall be an examination in medicine, surgery, and midwifery."

It may be questioned, furthermore, whether in any branch of practice so much depends on the knowledge and skill of the ordinary general practitioner as in the practice of midwifery. The general practitioner, as a rule, does not conduct major surgical operations; whenever possible he calls in a surgeon, or sends his patient to a hospital. Even medical cases, if they present exceptional difficulty, may often be dealt with in a similar manner; a consultant may be called in, or the patient may be transferred to a general hospital. But most of his midwifery the general practitioner has to conduct himself; if an emergency arises he must be adequate to meet it; the shortage of maternity beds is general throughout the country, and only rarely at present is he in a position to call in the aid of a specialist. When the fact is added that 3 000 women die each year as the result of childbirth, and that 75 per cent. of the diseases of women owe their origin to what should be a physiological act, it must surely be admitted that every movement to improve the undergraduate and post-graduate teaching of midwifery and gynaecology merits the closest and most sympathetic attention. Such a movement is that initiated by a number of the leading teachers, past and present, of these conjoined subjects in the United Kingdom, to form a British College of Obstetricians and Gynaecologists, with the object of encouraging the study and improving the practice of obstetrics and gynaecology.

The proposed College, of which provisional Articles of Association have recently been drawn up, aims at establishing a Fellowship and admitting to such status those medical practitioners judged by the College to have advanced the science and art of obstetrics and gynaecology. The difficulties involved in constituting the foundation Fellowship and foundation Membership are to be met by making only practitioners engaged in teaching students and graduates at approved hospitals eligible for nomination to the Fellowship, and those holding staff appointments in approved non-teaching hospitals eligible for nomination to the Membership. The promoters further propose to admit to honorary Fellowship of the College not only distinguished obstetricians and gynaecologists, but other eminent persons, whether members of the medical profession or not. Among the objects of the proposed College is the institution of a post-graduate diploma in obstetrics and gynaecology, and authority is being sought to co-operate at some future time, if invited, with existing licensing bodies in the examination of candidates for qualifying diplomas. The post-graduate diploma would be granted only to registered medical practitioners. The College hopes to foster the study and improve the practice of obstetrics and gynaecology by advising in regard to technical training, instituting lectures and demonstrations, and diffusing information on all matters relating to this branch of practice by means of periodicals, books, or other publications. Among its wider activities the College contemplates the possibility of promoting or opposing any legislative or other measures affecting the practice of obstetrics and Gynaecology. In the draft Articles of Association it is laid down that the council shall consist of twelve Fellows and six Members, elected territorially, together with a president, treasurer, and honorary secretary, each of whom must also be a Fellow or Member of the College.

The Memorandum and Articles of Association will be signed by Dr. Henry Russell Andrews, Professor William Blair Bell, Mr. Comyns Berkeley, Sir Francis Champneys, Bt., Dr. Thomas Watts Eden, Professor John Martin Munro Kerr, Professor Charles Gibson Lowry, Sir Ewen John Maclean, and Professor William Fletcher Shaw, and we understand that the project has the approval of every professor of obstetrics and gynaecology in the United Kingdom. The College is thus well sponsored, and its objects will, we think, commend themselves to all who have at heart the progress of obstetrics and gynaecology.

THE HONOURS LIST.

To the medical profession there are two features of more than ordinary interest in the list of New Year Honours which was published on March 1st after a delay of two months owing to the illness of the King. One is the barony conferred on the President of the Royal College of Surgeons of England, and the other is the recognition accorded to a number of women engaged in the work of medical education.

Sir Berkeley Moynihan's elevation to the peerage will be widely welcomed, not only on personal grounds but because it is the first time this honour has been paid to a surgeon in the active practice of his profession. There has been a growing tendency of late years to add to the House of Lords men engaged in the varied intellectual activities which make up the life of the nation; and it is good that the Upper House of the Legislature should have the advantage of the counsel of another practising member of our profession who has identified himself with the forward movement in science, practice, and organization. His knowledge of public and professional affairs and his gift of clear exposition should prove of great value when matters affecting the health of the community are before Parliament. There is no need for us to dwell on the services Sir Berkeley Moynihan has rendered to the science and art of surgery, or on the reputation he has won for himself as operating surgeon, teacher, and orator; his name is a household word, not only in this country, but throughout the medical profession in every part of the world.

Lady Barrett, Dean of the London School of Medicine for Women, is the first medical woman and the third member of our profession to be awarded the high distinction of admission to the Order of Companions of Honour. Her colleague Dr. Louise McIlroy, Professor of Obstetrics and Gynaecology, becomes Dame Commander in the Order of the Bri[illegible]

Empire; and another member of the teaching staff of the London School of Medicine for Women, Dr. Winifred Cullis, Professor of Physiology, is appointed a Commander in the same Order. Miss Frances Ivens, Clinical Lecturer in Obstetrics and Gynaecology in the University of Liverpool, is also awarded the C.B.E. Another distinction which will give particular pleasure to the medical profession is the K.B.E. conferred upon Dr. C. Hubert Bond, Commissioner of the Board of Control, whose work for psychological medicine and for the mentally afflicted is well known to our readers.

LORD DAWSON AND THE LOCAL GOVERNMENT BILL.

THE main feature of the debate on the second reading of the Local Government Bill in the House of Lords was a speech by Lord Dawson of Penn. For this pronouncement he deserves well of the medical profession and the public. Lord Dawson, while favourable to the bill in general, confined his observations to those provisions which dealt with the reform of public health administration, and pointed out two dangers which were inherent in the bill as it stood, but against which it would, if the Government were willing, be quite easy to provide safeguards. These dangers are two of those to which the British Medical Association has prominently drawn attention, and which have been more than once commented upon in articles in the *Journal*. New public health duties will, under the proposals of the bill, be placed upon the councils of counties and of county boroughs, and many of these duties, more particularly in the case of counties, are different in kind from any that the councils have previously been entrusted with. The establishment and management of hospitals for the treatment of general medical and surgical conditions is one of these duties, and though some of the councils have some experience with regard to hospitals for notifiable infectious diseases, to tuberculosis sanatoriums, and, to a smaller extent, with regard to maternity homes, this cannot be held to equip either the councils themselves or their medical officers of health adequately or fully for their new duties. It will, too, be possible for the councils to conduct their hospitals, whether transferred from the Poor Law guardians or newly established, either in competition with, or in co-operative organic connexion with, any existing voluntary hospitals, large or small, in their area. Lord Dawson, voicing the emphatic opinion of the medical profession as well as his own, stated that the latter method was the only reasonable one, and that in any case it would be foolish to "start a new venture, and a sound venture, which might lead to a wide establishment of municipal hospitals for curative medicine in this country and neglect all the traditions and the knowledge that had been gained during the years" by those, both medical and lay, who had been intimately associated with the work of the large voluntary hospitals. Lord Dawson therefore pleaded that the power to co-opt such experienced persons on the committee of the council entrusted with the establishment or conduct of hospitals should be converted into a duty, and so be secured instead of being merely a possibility. He referred to the committee in question as the Public Assistance Committee; but though this is indicated in the bill, perhaps with undue emphasis, as a possible arrangement, councils are not bound to adopt it in their administrative schemes. It is to be hoped that councils will in those schemes—at all events in the case of all county boroughs and many counties—assign their hospital functions to their Public Health Committees, which may, under the bill, equally contain a minority of co-optative members. Even if, in the case of some counties, it may prove a more convenient immediate arrangement to leave transferred hospitals under the Public Assistance Committee, this should be merely a device for gaining time, and they should, after a defined and limited period, pass under the control of the Public Health Committee, possibly by means of a hospital subcommittee of that committee. In any arrangement, should co-option remain permissive only, every effort ought to be made to secure it. Lord Dawson's second main point was connected with his anxiety—shared by the British Medical Association—lest the general body of private practitioners should be dissociated from the health work of the local authorities. He observed that "up to now the medical staff of the health services of this country had been run by a small number of medical men. They had been men who had specialized in preventive medicine—medical officers of health, tuberculosis officers, school medical officers. Ever since the Ministry of Health Act was passed it had been a regrettable fact that the policy of these official doctors proceeded on lines totally divergent from those doctors who constituted four-fifths of the profession and who belonged to the curative branch. That divergence was lamentable." There is some over-emphasis here, but Lord Dawson's suggestion was that in each area "there should be set up, under the chairmanship of the medical officer of health, an advisory council of doctors." Such a representative advisory statutory medical council has been proposed by the Association, but it is not at the moment being pressed for. The opinion is that in present circumstances the very important end desired may be better attained by securing co-option of members of the general profession on the various committees of councils dealing with the public health services, and by bringing about a closer connexion between Divisions or Branches of the Association and the councils and chief medical officers of local government authorities. If this can be achieved there may be developed a real alliance between prevention and cure in health matters, for both are the concern of, and, in fact, are largely practised by, public health medical officers and private practitioners alike.

EVOLUTION OF THE HUMAN FOOT.

THE H. O. Thomas Memorial Lecture, which was delivered by Sir Arthur Keith at Liverpool last May, has now been published in the *Journal of Bone and Joint Surgery*; it will repay careful study. Like all Sir Arthur Keith's handiwork, it is characterized by learning, research, keen observation, and clarity of exposition. He returns to an aspect of the subject with which he dealt nearly seven years ago (*British Medical Journal*, 1922, i, 736), filling in detail and adding the results of new investigations into the evolutionary history of the human foot. Taking as examples the feet of pronograde monkeys, orthograde apes, and man, this fascinating inquiry leads us to a study of the anatomy of the foot in each of the genera considered, and of the evolution of the muscles and tendons, in response, as it were, to the calls made upon them by the needs and habits of each genus or species. The importance of muscular action in the maintenance of an efficient foot has been long insisted upon by Sir Robert Jones, and the anatomical and developmental evidence brought forward by Sir Arthur Keith fully supports this view. The fate of ligaments when unsupported by muscles can be seen by all who will look at the deformities following anterior poliomyelitis, while, on the other hand, the apparently flat foot of the stage dancer shows that well-developed muscles can render the foot highly efficient, notwithstanding great laxity of ligaments. The mechanical arch of the foot, in an architectural sense, with its so-called keystone, is a figment of the imagination, and belief in its existence can only be retained by those whose mechanical insight is as small as their appreciation of the role of muscles. In examining the form and functions of the foot it is necessary, as Sir Arthur Keith points out, to bear in mind the

important consideration that evolutionary alterations in the human foot involve widespread changes in all the systems of the body, and that the type of foot of the orang, the gorilla, the chimpanzee, the gibbon, and others is the response of evolution to the demands of the whole organism. Lord Monboddo, with his admirer Peacock, and others, believed that modern man was the degenerate descendant of giant ancestors. In a sense Sir Arthur Keith supports this view, for he sees reason to think that we may be descended from giant arboreal ancestors, whose bodies, like that of the East African gorilla, became too heavy for climbing; they adopted, therefore, a terrestrial life, and developed a heel-bearing *plantigrade foot*. This study of the structure, and especially of the muscles of the foot of the gibbon, the great apes, and man, shows beautifully how the human foot may have developed from that of an unknown arboreal ancestor to its present state; Sir Arthur Keith confesses his ignorance how this has been brought about, but declares his certainty that the change has been effected "by biological means which are still resident in the body and will be discovered." The forces which we call Providence or Nature have thus, through uncounted ages, been busy fitting us with feet suited to the needs of barefooted man, but European man compresses all this elaborate mechanism of bones, muscles, and ligaments into a stiff unyielding case, which allows only a few of the crudest movements of the foot. We may judge to what an extent this restriction has been carried by the fact that the movements of the foot in everyday use can be so successfully imitated by an artificial one as to defy detection when the amputation is below the knee. Yet such a prosthesis, in place of the elaborate mechanism of the living foot, has only one joint which allows a hinge movement at the toes, and another outside the foot proper, at the ankle. Woman, meanwhile, emulous of her pronograde ancestor, raises her heel three inches from the ground, and destroys the efficacy of the hallucial lever by forcibly squeezing her great toe into a position of complete mechanical inefficiency. Yet despite this her athletic achievements surpass all that we have heard of Atalanta or the Amazons.

RADIUM FOR THE LONDON HOSPITALS.

To a distinguished gathering, which included the Lord Chancellor (Viscount Hailsham), at a reception at the Wellcome Historical Medical Museum on March 1st, Sir John Rose Bradford, P.R.C.P., explained the methods which the committee of the King Edward's Hospital Fund proposes to adopt in utilizing the radium purchased with Sir Otto Beit's gift of £50,000. It was much regretted that Sir Otto Beit himself was prevented by illness from attending. Sir John Rose Bradford reminded the company that this generous gift was not the only service that Sir Otto Beit had rendered to medicine; many years ago he gave a large sum to be expended in the foundation of fellowships for the pursuit of investigations into the causes and nature of disease. The problem of dealing, on behalf of the London voluntary hospitals, with a gift of £50,000 for the purchase of radium, Sir John Rose Bradford said, had not been an easy one. The quantities of radium at present available, owned or on loan, at the hospitals had first to be ascertained. No one hospital possessed quantities approaching those available at some treatment centres on the Continent, nor would possess such quantities even as a result of this gift and of the gifts of £25,000 to the London Hospital for the same purpose. The decision of the Fund committee was that, in the first place, a certain very limited number of hospitals should be provided with a quantity of radium sufficient to enable them, with their own supplies, to function as radium centres, not only treating their own patients, but supplying radium emanation to other hospitals; and, in the second place, that there should be distributed among the hospitals in a more general way, as far as the amount at the disposal of the Fund permitted, such supplies as would enable them to treat, if not all, a certain number of their patients who required radium treatment. Certain special hospitals—those dealing with diseases of women, for example—had greater immediate need of radium than others. Three of the twelve large teaching hospitals had, or would shortly have, as a result of specific donations, quantities of radium of their own sufficient to provide radium emanation, and at present would not share in the Beit allocation. In another case an allocation would be made sufficient in amount, with the radium available at the hospital, to provide emanation. Thus four radium centres would be established. Some of the other teaching hospitals had only very small quantities in their possession, and one of them had none at all. After allocation through the Fund these would all have quantities adequate to meet at least some of their needs. Allocations would also be made to certain of the general hospitals without schools, to the hospitals for diseases of women, and to some of the other special hospitals, having in view the nature of the diseases treated by them. These hospitals had been asked to inform the Fund of the measures they proposed to take for the use and custody of the radium. Sir John Rose Bradford instanced the chief regulations which had been made for the distribution. The radium would be on loan to the individual hospital for one year, and would be subject thereafter to withdrawal at one month's notice. It would be available for all hospital patients, ordinary or pay-bed, but it was not to be removed from the hospital premises without the written authority of the Fund. Periodical reports from the hospitals would be expected, showing the stocks of radium, the milligram hours of use, and the number of patients treated. In conclusion, Sir John Rose Bradford emphasized the urgent demand for larger amounts of radium, especially for research into the best methods of treatment. He also mentioned that approximately one-quarter of the fund available had to be expended on the costly provision of containers and the placing of the radium therein. Before the gathering broke up a vote of thanks was accorded to Mr. Henry S. Wellcome for his hospitality, and Mr. Wellcome, after describing the radium benefaction as one of the finest pieces of Samaritan service to the community, spoke of his expectations with regard to the future of his museum, which, he said, was as yet in its infancy, and occupied merely a temporary abiding place. It was his hope to rehouse the entire collection. The exhibits represented, he said, only one-tenth of those available.

UNIVERSITY HYGIENE.

HYGIENE, as understood in this country, has a wider and a narrower meaning. In its wider sense it is the rule of health for the whole community. In its narrower sense it is a special system or way of living enjoined upon people who can be grouped together as sharing common risks or a common environment peculiar to their group. In this narrow sense we speak of naval or military hygiene, of school hygiene, or industrial hygiene, as special departments in each of which the distinctive factor is readily apparent, but we do not speak in the same definite way of university hygiene, since no specific code of health for undergraduates has so far been laid down. The country doubtless is not indifferent to the welfare of the members of its universities, but their general circumstances and occupational conditions have not hitherto been thought to mark them out as a class in need of organized health guidance. In North America such guidance is in many cases freely given, and university hygiene there often represents an extensive field of activity. It may embrace the medical inspection of freshmen and

follow-up inspections in later years, the supervision of gymnastic training, the discovery and employment of athletic talent, the care of the sick undergraduate and his medical or surgical treatment in hospital. In these particulars, as is pointed out by Dr. Robert Jacquet, president of the National Students' Union of France, in his essay on university hygiene,[1] America is ahead of England and France; but whereas in England the average undergraduate, a member of a "caste sportive et fortunée," may stand little in need of organized health care, the French student too often is under hygienic and other disabilities for which some remedy is urgently required. The lodgings available to students in France are usually of an inferior type, dark, ill ventilated, and inadequately heated, and the standard of attendance may not be high. The hostels provided by the universities themselves are an improvement on these furnished lodgings, but are frequently situated in some old quarter of a town, with narrow streets and a thronging population. At Nancy, however, a residential college is being built in a fine open park round the château of Montbois. Sport in the French universities appears to have fallen from its high ideals of twenty years ago. It no longer seeks to foster manliness. It has become, instead, a commercial enterprise, in which the search for champions has been carried to inordinate lengths. University sport, in Dr. Jacquet's view, should be taken from the hands of trainers, and committed, in its medical and ethical aspects, to the general charge of the Minister of Education, the governing body of each university assuming the responsibility of local management and arranging time tables so as to give each undergraduate free access to the playing fields. In the matter of feeding all but two French universities have restaurants of their own. These places are under student management, but with the best will in the world, Dr. Jacquet thinks, the student manager has neither the time nor the training to make himself a competent restaurateur. The town councils of university towns should assume this charge, by way of return for the distinction and profit they derive from the presence of a university in their midst. Hygiene should be taught to all undergraduates, not students of medicine only. Any vocational examination of boys to ascertain their fitness for a profession should be carried out by medical men, aided, it may be, but certainly not displaced, by physiologists or psychologists. Approval is expressed of university dispensaries, convalescent homes, rest camps, and accommodation for open-air teaching. Dr. Jacquet's essay is an earnest appeal on behalf of the student community of his country, and its effects are sure to be watched with sympathy on this side of the Channel.

VARIETY IN REPETITIVE WORK.

THE latest report[2] issued by the Industrial Fatigue Research Board deals with a matter which, in one form or another, must have engaged the attention of every intelligent worker in any sphere—a comparison of the effects produced by variation and by uniformity in work. An earlier investigation showed that in most repetitive processes in industry the operations are not repeated with mechanical precision, but that some variety is introduced, either by a cessation of work or by some change in its nature. This arises sometimes from the conditions of the work and sometimes from the action of the operator. Subsequent inquiry has yielded inconclusive evidence as to the effects of variety upon output, and Mr. Wyatt and his colleagues accordingly attempted first to clear the ground by investigating the result of introducing changes into certain repetitive processes—soap wrapping, handkerchief folding, and bicycle chain making—and then extended their inquiry to three other processes—tobacco weighing, cigarette making, and assembling cartridge cases—in an effort to determine (1) the optimum duration of one form of activity before changing to another, and (2) the most suitable type of work for the alternating processes. They found that when the form of work was changed at specified times within the work spell, output was usually increased, and a steadier rate of working was maintained. Results were most favourable where there was a substantial difference in the successive tasks performed, but although output was not much affected in such cases minor changes in the nature of the work done were welcomed by the operatives. Where numerous changes were made the results were unsatisfactory; the "swing of work" was interrupted, and the maximum rate was seldom attained. The most suitable interval between changes in the form of activity proved to be from one and a half to two hours; and output was higher when changes were made at prearranged times than when made casually at the whim of the operatives. This brief summary of the investigators' conclusions does not do full justice to their work, for their inquiry, like others of this series, opens up several new avenues of investigation and brings to light facts which should prove of considerable value to those engaged in industrial administration. The report is not explicitly of much medical interest, for it is concerned mainly with the relation between output and certain aspects of working conditions in the factory, and does not deal directly with the psychological or physiological sides of the question. It gives, however, some interesting notes on the mental attitude of the operatives concerned in the experiments. Such documents, moreover, should be of some value to those engaged in general practice in industrial areas. Lastly, there is a strong "human interest" in investigations of this nature. Which of us, having performed any long and tedious task, can fail to sympathize with the girl operatives employed in fixing lids to cigarette tins who, having been supplied with lids in batches of three gross at a time during the investigation, objected at its conclusion to reverting to batches of five gross? The change made no difference to the amount of work to be done, but, as the report observes: "A certain amount of pleasurable satisfaction is evoked by the successful completion of a task, even though it is only part of a larger whole."

INCIDENCE OF TUBERCULOSIS IN ADELAIDE.

IN the course of his report on the state of the public health of the city of Adelaide for the year ending September 30th, 1928, the medical officer of health, Dr. E. A. Johnson, gives an account of an interesting investigation into the prevalence of tuberculosis among hospital patients. Dr. J. B. Cleland, professor of pathology in the University of Adelaide, made an analysis of his findings in 800 unselected cases on which he had personally conducted *post-mortem* examinations. Many of these cases came from the public hospitals, some even from the consumptive home, so that the incidence of tuberculosis found in this investigation was probably higher than among the general body of the population. Yet of the 800 cases under consideration as many as 527 were shown by necropsy to be free from any tuberculous focus. The 273 to be accounted for included 230 with definite tuberculous lesions; in 103 of these the lesions were healed and calcified; in 11 the lesions were small and healing or quiescent, and only in 51 were there extensive pulmonary lesions. In 43 cases slight lesions were present, but the evidence as to their possible tuberculous nature was indefinite. In short, among 800 hospital

[1] *Essai sur l'Hygiène Universitaire.* Par Dr. Robert Jacquet. Préface de M. Edouard Herriot. Paris: N. Maloine; Nancy: C. André. (Roy. 8vo, pp. iii + 143; illustrated. 15 fr.)

[2] Report No. 52. By S. Wyatt, M.Sc., M.Ed., and J. A. Fraser, M.A., B.Ed. (assisted by F. G. L. Stock). *London:* H.M. Stationery Office, or through any bookseller. 1s. 3d. net.

patients approximately 550 had no obvious tuberculous lesions, while in a majority of the rest what lesions were present were slight, quiescent, or healed. The figures are interesting in view of the far greater prevalence of pulmonary lesions one would expect to find in the course of a similar investigation among hospital patients from a large European centre.

INFLUENZA.

As pointed out in our note of last week (such a note necessarily goes to press before the returns of the current week are available) the course of the mortality ascribed to *influenza* and of the notified prevalence of pneumonia down to the week ending February 16th suggested that the maximum for the whole country had been reached, although increases were still taking place in the Midlands, the North, and Yorkshire. The returns for the week ending February 23rd showed, however, that this expectation was not fulfilled. In London itself, although the notifications of pneumonia continued to decline—the returns for the three weeks ending with that of February 23rd were 689, 562, and 554—the deaths ascribed to influenza increased from 393 to 473. The expected increases in the Midlands, the North, and Yorkshire were larger than had seemed probable, so that the total of notifications of pneumonia, which had fallen in the week ending February 16th to 3,658 (3,898 in the previous week), increased sharply to 4,451. There has been a corresponding but patchy increase in the numbers of deaths from influenza in the great towns, so that the total mortality, 1,764, was very large—40 or 50 per cent. greater than might have been anticipated. One naturally asks whether the unfavourable turn can be attributed to weather conditions. The returns of the week ending February 16th showed no sign of this, but in those of the week ending February 23rd there is a decided increase in the proportion of deaths from influenza at ages over 65, so that this proportion, already large, had become the greatest yet recorded this year. In 1895, a year also blessed—or cursed—with prolonged cold in February, there was also a sharp increase of mortality ascribed to influenza and respiratory diseases—indeed, a sharper increase than this year. Hence the weather may be given the credit of part of the unfavourable turn taken by the prevalence of influenza. In the circumstances it would be even rasher than it usually is to prophesy when the wave of mortality will subside. Clinically the type of illness continues to be generally mild, but we cannot doubt that the winter of 1928-29 will prove to have been an unfavourable one for those in the decline of life.

OXFORD OPHTHALMOLOGICAL CONGRESS.

THE nineteenth annual meeting of the Oxford Ophthalmological Congress will be held on July 4th, 5th, and 6th, 1929, under the presidency of Mr. A. B. Cridland. The members will assemble at Keble College (where accommodation has again been offered) on the evening of Wednesday, July 3rd, and on the following morning there will be a discussion on "Diseases of the lacrymal apparatus," introduced from the ophthalmological aspect by Professor Joseph Meller of Vienna, and from the rhinological by Dr. J. S. Fraser, surgeon to the ear, nose, and throat department, Edinburgh Royal Infirmary. The Doyne Memorial Lecture will be delivered on the morning of July 5th by Dr. Ida Mann, her subject being "Some observations on the vascularization of the vertebrate eye." On Friday afternoon there will be a discussion on the "Ocular manifestations found in fractures of the skull," to be opened from the point of view of the general surgeon by Mr. Hugh Cairns, and from that of the ophthalmic surgeon by Mr. Charles Goulden. Miscellaneous papers and demonstrations are also being arranged, and one afternoon will be given up wholly to demonstrations. The annual dinner of the congress will be held on July 4th in the Hall of Keble College. The full programme will be issued in June. All communications should be addressed to Mr. C. G. Russ Wood (12, St. John's Hill, Shrewsbury), who is acting as honorary secretary.

ROYAL COLLEGE OF SURGEONS COUNCIL ELECTION.

THE Secretary of the Royal College of Surgeons of England has sent out the usual election notice, which on this occasion informs the Fellows of the College that on Thursday, July 4th, at 11 a.m., there will take place an election of four Fellows into the Council in the vacancies occasioned by the retirement in rotation of Sir H. J. Waring, Mr. C. H. Fagge, and Mr. W. Sampson Handley, and by the resignation of Sir James Berry. Blank forms of nomination and of the requisite notice from a candidate may be obtained on application to the Secretary, and the same must be received by him, duly filled up, not later than Monday, March 18th. A voting paper will be sent by post on April 2nd to each Fellow whose address is registered at the College. The candidate elected by the smallest number of votes will become substitute member of Council for Sir James Berry until 1931.

THE annual Harveian Lecture before the Harveian Society of London will be given by Dr. E. Graham Little, M.P., on Thursday next, March 14th, at the Paddington Town Hall, Paddington Green, at 8.30 p.m. The subject of the lecture is "The medical profession, the voluntary hospitals, and the De-rating Bill." As this measure is of great importance to the whole medical profession, all practitioners and students are cordially invited to attend.

UNDER the auspices of the National Council for Mental Hygiene, Sir Maurice Craig, M.D., will deliver a lecture on the problem of nervous breakdown, at the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Wednesday, March 13th, at 5 p.m.

WE regret to announce the death of Alex Hill, M.D., F.R.C.S., who was in succession Master of Downing College, Cambridge, Principal of University College, Southampton, and secretary of the Universities Bureau of the British Empire.

THE KING.

THE bulletin issued from Craigweil House, Bognor, on Saturday, March 2nd, after an interval of a fortnight, laid stress upon two points. One is that the King continues to make slow but steady progress. The other is that the complete recovery which is confidently looked for must not be endangered by premature exertion of any kind. "One of the most anxious features of His Majesty's grave illness was severe exhaustion due to prolonged toxaemia. For this reason careful avoidance of any sustained effort of body or mind will be necessary for a lengthened period." The logic of this will be apparent to every medical reader who recalls the violence of the streptococcal infection, the length of the acute stage of the illness, and the prostration which follows such bad infections even in young patients. For weeks on end the King's life hung in the balance, and restoration to health after so severe and so protracted an illness must be a matter of months.

INDUSTRIAL MALADIES.

LECTURES BY SIR THOMAS LEGGE.

SIR THOMAS MORISON LEGGE, C.B.E., M.D., late Senior Medical Inspector of Factories, has delivered on the last three Monday evenings the Shaw Lectures of the session to the Royal Society of Arts, his general subject being "Thirty years' experience of industrial maladies." In his first lecture, however, Sir Thomas Legge explored a more pleasant territory, telling his audience how in his rounds of factory inspection he had kept a disengaged eye for the "looks" of the worker, and had divided female workers into categories of beauty. Thus he had found some factory girls—and he showed photographs to prove it—whose features recalled the work of Rossetti and Burne-Jones and the Greek type generally; others recalled Reynolds, Gainsborough, Raeburn, and Lawrence, and others again, of the more "pretty" type, were after *Romney. These, of course, were young women, under* 30; the marks of age appear quickly on the factory worker, and had he taken the age period 31 to 40, instead of 18 to 30, he would have found, not 72 per cent. of good looks, as with the younger women, but only 25 per cent. One great improvement in looks as also in health was due to the disappearance of the anaemia which he was accustomed to find thirty years ago among the young women employed in factories. He also noticed the splendid teeth of women workers in the East End of London, in striking contrast to their sisters in the North of England.

Prevention of Occupational Diseases.

In his second lecture, speaking of the prevention of occupational diseases and poisonings, Sir Thomas Legge said that he had come to certain conclusions which he could express as aphorisms. He enunciated them bluntly in a *wholly impartial spirit*, having the greatest respect and regard for both sides in industry, employers and employed: "Unless and until the employer has done everything, the workman can do next to nothing to protect himself." "If you can bring an influence to bear external to the workman—that is, one over which he can exercise no control—you will be successful, and if you cannot or do not, you will not." "All industrial lead poisoning is due to the inhalation of dust and fumes, and if you can stop their inhalation you will stop the poisoning. It is not due to dirty hands—that is, eating with unwashed hands." He proceeded to give some examples of how influences external to the workman had resulted in great improvement, if not in the disappearance of the malady, after mere regulations had proved a failure. One of these was, in match manufacture, the substitution of sequi-sulphide of phosphorus for yellow phosphorus; another the conversion of *pulp white* lead into oil paint ready for the market in automatic closed-in machines, so successfully achieved by the white-lead makers; yet another the use of low solubility glaze in pottery manufacture. Commenting upon the great diminution in the number of cases of lead poisoning since 1910, Sir Thomas Legge said that this was due in a measure to the fact that employers began to appreciate the risk of using lead and to the improved appliances for removing fumes and dust. Strict regulations by the Home Office had accounted to some extent for the remarkable fall in the number of cases occurring in the white lead industry, but ten times as important in this respect had been a discovery made within the trade itself. It was found that white lead would mix more readily with oil than it would with water, and that if white lead were put in a closed machine with oil the two would mix together intimately, and would come out at the other end as lead ready mixed for the painter. This was an important achievement, and had had a far-reaching influence in reducing the number of lead poisoning cases.

As for the pottery industry, if he were asked what was the sheet anchor for the protection of a worker in the dangerous trades, he would say the provision of fans for carrying away dust, but here again what had given the *coup de grâce* to lead poisoning in the pottery industry had been a revolution in technique, brought about this time by an invention by Sir Edward Thorpe, then Government chemist, who discovered that if the glaze and lead used in pottery were mixed in definite proportions with a certain amount of ground siliceous material it would form a bi-silicate of lead which was insoluble in the alimentary canal and also in the lungs. Thus it came about that low solubility glaze was used in the pottery industry to-day. An industry in which lead poisoning had appeared since the war was ship-breaking. The armour plating of battleships was cut up with an oxy-acetylene pipe, and when the flame came into contact with the red lead paste at the back of the plates it volatilized the lead and created a fume which was inhaled by the workman and caused illness. There had been an extraordinary rise in the number of cases due to the inhalation of this fume, and this indicated once more that lead poisoning was due to the inhalation of fume or dust, and not to swallowing, because in this particular instance there was nothing that could be swallowed. Here, again, it seemed necessary to emphasize that to stop lead poisoning it was important to get some means external to the workman over which he could not exercise control, and not to rely upon wash-basins, respirators, or gloves, because the lead that caused the trouble did not go through the skin.

In the accumulator industry the most dangerous processes were concerned with what was called the pasting of the plates. If only some means external to the worker were found whereby the plate paster could be made automatic there would be an immediate drop by about 50 per cent. in the number of cases of lead poisoning in the accumulator industry. Short of this, however, a great deal could be done, and indeed had been done, in the accumulator industry to mitigate the risks which the workers ran in inhaling lead compounds. In one particular accumulator factory, among about 1,000 persons exposed to lead, there were 11 cases of lead poisoning in 1926 and 18 cases in 1927. The firm in question recognized the necessity for tackling the problem, and carried out improvements to a very high state of perfection. The first thing done was to appoint a whole-time medical officer, who immediately began to study the processes and the risks attending them, examining also the effect upon the blood of the workers. As a result of the measures taken not a single case of lead poisoning occurred in that factory last year.

Diseases Scheduled for Compensation.

In his final lecture, Sir Thomas Legge spoke from twenty years' experience of compensation for industrial diseases. After dealing with several of the diseases and forms of poisoning scheduled, he said that he thought the time had come to consider whether chronic poisoning by sulphuretted hydrogen gas should not be added to the list of scheduled diseases. If this were done he had no doubt that it would stimulate, before long, the discovery of some means external to the workman, such as locally applied exhaust ventilation, which would cause the disease to become a negligible factor. No one knew what new occupational maladies, involving an enlargement of the schedule, might arise as a consequence of industrial developments in chemistry. Poisoning from tetrachloride or from manganese was undreamed of when workmen's compensation was instituted. One disease, asbestosis, he thought, would have to be scheduled in the same way as silicosis, which in its symptoms it resembled.

Sir Thomas Legge (whose chairman was Mr. Ben Tillett, a well-known trade union secretary) devoted a large part of his lecture to explaining some of the useful suggestions with regard to previously disregarded maladies that had been brought forward by trade union secretaries. One such secretary, himself almost blind, was the first to direct attention to glassworkers' cataract. As a consequence, Sir Thomas Legge went down to St. Helens and examined the eyes of 500 glassworkers who had been subjected to the glare of the furnace, taking 278 other persons, not so exposed, as controls. He found among the 500 glassworkers that in the right eyes of 64 and the left eyes of 72 there were quite obvious changes, whereas among the controls the figures were 14 and 13 respectively. The reason why among glassworkers the left eye was more often affected than the right was because the left eye was turned inwards upon the "glory hole" of the furnace. After these and other investigations on the frequency of senile cataract, he had

no hesitation in concluding that glassworkers were specially subject to the condition, and recommending the scheduling of the disease. The same trouble was subsequently discovered among men exposed to the glare of molten iron.

Another instance in which the suggestion of a trade union secretary had been of value was with regard to a form of poisoning brought about among shuttle workers when West African boxwood (*Gonioma kamassi*) was used. Such workers were noticed to show a tendency to doze, almost falling from their benches, and it was discovered that the wood contained an alkaloid which was a very powerful depressant of the heart. He examined numbers of men suffering from that form of poisoning, with the result that the condition was scheduled; but the use of the wood had now been discontinued, other woods taking its place, and there had been no more cases.

It was another trade union secretary who noticed how the makers of briquettes or patent fuel suffered from the effect of the pitch which constituted 10 per cent. of the briquette. The lecturer had examined a large number of men, and found the frequent occurrence of skin cancer from this cause. In the years 1920–26, amongst patent fuel workers there were 143 cases of epitheliomatous ulceration or skin cancer for which compensation was paid, and the number of deaths was only 5; but in other trades the proportion of deaths to notified cases was much larger. For example, in tar distilleries there were 89 cases and 12 deaths; among the retort men employed at gasworks, 41 cases and 16 deaths; and among mule-spinners (no doubt whatever due to a mineral oil) 260 cases and 73 deaths. These figures suggested that in certain trades there were large numbers of cases which went unnotified, owing to the non-dissemination among the workers of the necessity of getting treatment for a dangerous condition, otherwise it was difficult to explain the disproportionately high death rate to number of cases. He believed that radium offered a probable means of curing the malady or making it less fatal.

After dealing with chrome ulceration, with baker's dermatitis (the number of cases of which he thought might be expected to increase from year to year), and with silicosis, Sir Thomas Legge turned finally to the malady which accounted for the greatest number of compensation payments—namely, miners' nystagmus. In 1927 the number of cases for which compensation was paid was 9,736, in 1,892 of which the first payment had been made during that year. This compared with 2,759 cases of subcutaneous cellulitis of the hand ("beat-hand"), 2,309 cases of "beat-knee," 367 cases of "beat-elbow," 279 cases of inflammation of the synovial lining of the wrist-joint, and 275 cases of lead poisoning and its sequelae. He mentioned that miners' nystagmus had not come within his purview, because his work had been limited to factories and workshops; but he shared the view of Dr. J. S. Haldane and others that it was due to the enormous strain, ending in a psychoneurosis, caused by looking at the non-reflecting coal surface.

JORDANBURN NERVE HOSPITAL AND PSYCHOLOGICAL INSTITUTE, EDINBURGH.

THE one hundred and sixteenth annual meeting of the Royal Edinburgh Hospital for Mental Disorders at Morningside, Edinburgh, was held on February 25th, with the Lord Provost, Sir Alexander Stevenson, in the chair. The report of Professor G. M. Robertson, physician-superintendent, showed that in the institution, including Craig House and West House, there had been under treatment during 1928 a total of 277 voluntary patients and 795 certified patients. During the year 114 voluntary patients were admitted, as compared with 98 under certificate, and the excess of those admitted voluntarily, which has been the rule for several years past, is accepted as a gratifying development, because it is usually accompanied by earlier treatment and by a more willing co-operation on the part of the patient in the measures adopted, transforming the atmosphere of detention into the freer air of the modern hospital. In the six nursing homes which have been established by the managers during the past ten years there had been treated during 1928 a total of 203 patients.

The report deals specially with the Jordanburn Nerve Hospital and Psychological Institute, which has been provided by the managers as a new departure, distinguished from the other institutions already under their management, enjoying the legal status conferred by their new charter, and corresponding in general to that of voluntary hospitals for general physical diseases.

The Jordanburn Nerve Hospital is a one-story building of 50 beds, divided equally between the two sexes. A verandah runs the whole length of the building on the southern side, and faces a garden, two acres in extent, for the provision of the fresh air and sunshine which are essential agents in the treatment of nervous disorders. The entrance is in Morningside Park, which is conveniently situated for access from the city. In order to meet the requirements of nervous patients who can receive treatment and at the same time carry on their duties at home or in the workshop, the managers have built a new out-patient department at a cost of £10,000, where a clinic will be held every forenoon at 10.30, and at other suitable hours. The clinic is intended also to provide Edinburgh with facilities for the performance of the various psychological investigations, examinations, and mental tests that every great city should have at its disposal for its educational, social, and judicial services, and will thus play the part of an important civic institution. The organization of the clinic, in addition to giving advice in psychiatry, will have a mental deficiency department, a department for neurology in which organic nervous diseases and epilepsy will be dealt with, a psychological department for research work, a child guidance clinic, and a social service department, from which workers will visit patients in their homes.

The report points out that the provision of all the necessary machinery for team work under one roof gives the Jordanburn Nerve Hospital a unique position in relation to problems of nervous disorder. Co-ordination of the whole scheme will be effected under the directorship of the physician-superintendent of the Royal Mental Hospital. The work of the out-patient department is intended to be gratuitous, and most of the staff are voluntary workers, but it is hoped that such expenses as are incurred will be defrayed by the public in view of the benefits conferred. As regards in-patients, it is intended that one-fourth of the accommodation shall be reserved for those who cannot pay for treatment. The extent to which the managers will be able to help the poor will depend, however, on the financial support that they receive from the public, and on funds or endowments that may be bequeathed by those who sympathize in the objects of the institution. In the paying wards the rate will be two guineas a week. The teaching of undergraduates is to receive careful attention, and the managers are building a lecture theatre at a cost of £8,000, which is expected to be ready before the beginning of next year. It is intended to use this for classes of medical students, for post-graduate teaching, and for popular lectures of an educational character. It is also intended ultimately to erect psychological laboratories on a site which has been set apart near the hospital, but as the additional cost is expected to be £20,000 the construction has meanwhile been deferred.

Inaugural Dinner.

To mark the inauguration of the Jordanburn Nerve Hospital a dinner was held in the Hall of the Royal College of Physicians, Edinburgh, on February 25th. The MARQUESS OF LINLITHGOW, K.T., presided. Sir WALTER FLETCHER, in submitting the toast of "The Jordanburn Nerve Hospital," said that in the great war he was inclined to think that the medical profession had been better prepared than the military profession, but in one direction medicine had been found wanting, for it had no organized approved scientific system for dealing with war neuroses. The medical profession had not had, in its medical training, any instruction in the processes of the human mind in relation to the machinery of the nervous system, and specialists were at that time torn by acute controversies over what were the best methods of dealing with forms of mental disorder. After the war, however, great gain had come in this particular field of work, and a great wealth of experience had been obtained. In Scotland he believed he was right in saying that over 60 per cent. of all who entered the mental hospitals did so voluntarily and not as certified insane. Edinburgh led the way in respect of its attitude to mental disorders, and

he thought this city was striking out in front of any other civic capital. He thought the present movement was not unworthy to rank with any of the great Edinburgh enterprises of the past. Dr. ROBERT A. FLEMING, President of the Royal College of Physicians, gave details of the inception and history of the Royal Edinburgh Hospital for Mental Disorders, and referred to the many cases in which mental experts failed to make up their minds in medico-legal cases as to whether a criminal was sane or insane; but this new departure which they were celebrating might lead to greater improvement in this respect. Professor LORRAIN SMITH expressed congratulations to the board of management on the foundation of the new institute at Jordanburn, and said that this was one of the few occasions in which, coupled with a hospital which was a place of treatment, there was to be an institute as a place of investigation. The foundation of the institution was a memorable event in the medical school and in the city of Edinburgh. Miss OLGA NETHERSOLE, of the People's League of Health, said she was convinced that what the Government did not spend on adequate housing, education, and protection of workers had to be paid a hundredfold in hospitals, workhouses, asylums, and homes for cripples. There was work for voluntary health organizations in connexion with the prevention of mental breakdown, which was one of the costliest and least hopeful to the national expenditure. This comparatively new branch of medicine must look to research and education for its great advance. Sir ARTHUR H. ROSE, chairman of the Board of Control, in proposing the toast of "The Board of Managers," said that Scotland owed a great deal to the authorities who managed its royal asylums, for without these progress in dealing with the terrible affliction of mental disease could never have been so great in Scotland as it actually was. He thought that the public spirit of the board at the Morningside Hospital had now taken a material step in advance in the treatment of this terrible affliction. Professor G. M. ROBERTSON, in proposing the toast of "The Chairman," expressed his admiration of the work which the board of managers of the Royal Edinburgh Hospital for mental disease had done, and he thought that in the present instance the board was not only keeping in the van, but was doing a valuable work in exploration.

New Zealand.

[FROM OUR CORRESPONDENT.]

Annual Conference of the New Zealand Branch of the British Medical Association.

THIS conference, arranged to take place under the patronage of His Excellency the Governor-General on February 19th and following days, comprises sections of surgery, medicine, diseases of the eye, ear, nose and throat, obstetrics, radiology, psychiatry, and preventive medicine. The programme includes a discussion on cancer, to be opened by Mr. Sampson Handley of the Middlesex Hospital, and keen satisfaction is expressed by members of the New Zealand Branch that he is to honour the conference as representative of the Association. Mr. Victor Bonney's visit last year was most inspiring and instructive, and earned the deep gratitude of the Branch, which is anxious to maintain the closest possible relationship with the parent body. Other features of the conference are a series of surgical operations, clinics, and demonstrations to be held at the Wellington Hospital, and an extensive programme of entertainments, including receptions at the Houses of Parliament and the Viceregal residence. Arrangements have been made for meetings of the New Zealand Fellows of the College of Surgeons of Australasia, to take place on the day preceding the opening of the conference.

Dangerous Drugs.

New regulations have been issued under the New Zealand Dangerous Drugs Act, and the schedule of drugs to which the Act applies has been extended. A medical practitioner in emergency may, orally or by telephone, direct a registered chemist to whom he is known personally to dispense for a patient a dangerous drug, but must forthwith reduce such prescription to writing and transmit it to the chemist. He may only prescribe in any case for the purposes of medical treatment, and must understand that his prescription shall be dispensed only once, though, if he so directs, it may be dispensed on not more than three occasions, at intervals to be specified on the prescription. The chemist must retain such prescription for one year. The various proprietary preparations of heroin *linctus* and syrup cocillana come within the scope of the Act.

Mental Defectives Act.

Some of the provisions of the amended Mental Defectives Act of New Zealand are noteworthy. If any magistrate or justice is of opinion that a person brought before him charged with an offence is mentally defective he shall forthwith advise the chairman of the board, who shall require an investigation of each case to be made by a psychological clinic, the term "mentally defective" including the feeble-minded and the socially defective, and not simply the insane. Every person who, except for medicinal purposes on the written authority of a registered medical practitioner, supplies any intoxicating liquor to be consumed by any mentally defective person registered under this Act commits an offence, and is liable on summary conviction to a fine of fifty pounds. Furthermore, every woman or girl whose name is registered in accordance with the provisions of this Act shall be deemed mentally defective, and every person who has, or attempts to have, carnal knowledge of any such person shall be guilty of an indictable offence accordingly.

Native Medical Practitioners in Fiji.

Suva, the centre of the South Pacific, has had a system of training native medical practitioners, but by the aid of the Rockefeller Institute this system is to be developed and extended. The problem of giving medical aid to native populations is one of method and of finance. The annual expenditure of training native doctors for Fiji and the islands in the vicinity is likely to be about £3,300; the cost of the buildings and plant is £8,000. A tutor who came from Aberdeen University has been appointed, and will take charge of the main part of the practical teaching, and Government medical men and resident scientific officers will take charge of the more specialized teaching. The course is a three-year one, and forty students, chosen by competitive examination, and young men of high intelligence and good physique, will be trained without cost to their parents. When their training is complete they will be sent to various districts and given a salary ranging from £45 to £150 a year. They also will be given quarters, and, where there is no fully qualified doctor, will be allowed the right of private practice. When the scheme has developed arrangements will be made for post-graduate training.

Ireland.

Goldsmith and Medicine.

GOLDSMITH and his connexion with the medical profession was the subject of a lecture given recently at Trinity College Medical School, Dublin, by Dr. T. P. G. Kirkpatrick, honorary lecturer in the history of medicine. There was a large attendance. The Provost was in the chair, and, in opening the proceedings, said when they were celebrating the bicentenary of Oliver Goldsmith's birth last term he did not remember that anyone had said anything about Goldsmith's connexion with medicine or of his being a medical man. He did remember an examination paper which said: "Goldsmith at once took out a medical degree, but had no practice, and never had any patients but one—and that was himself, and he nearly killed himself—the only patient he had; and after that," the writer added, "he took to literature." Goldsmith's association with the medical profession was a phase of that great man's life which Dr. Kirkpatrick would deal with. He said that Goldsmith entered Trinity College as a sizar at the age of 15 on June 11th, 1745. Both as a child and a schoolboy he was said to be dull and stupid, but the fact that at 15 years of age he had learned enough Greek and Latin to pass the entrance examination to

Trinity as a sizar did not lend much support to that view. There were no contemporary records of Goldsmith, such as they had of his contemporary and great compatriot Burke, who, though a fellow student, did not seem to have known him; nor did Goldsmith seem ever to have joined Burke in the debates of the Historical Society. That Goldsmith's life in college was miserable was unlikely from all that was known of his character. He left college with a competent knowledge of the classics, and also with a much wider knowledge of life than was usual for one who had just graduated. A man who had sold his bedclothes to shelter the derelict might well have learned more of the problems of life than the scholar whose polished periods were to procure for him a bishopric. They had not a trace of evidence that Goldsmith had any idea of following the medical profession until shortly before he set out for Edinburgh, in the autumn of 1752; nor, indeed, was there any evidence that he ever returned to Trinity College after he took his degree in 1750. Although Goldsmith had referred to the lecturers and professors in Edinburgh, he never mentioned any medical lecturer in Trinity. There was no evidence that Goldsmith, when he started the study of medicine, did not intend to become a doctor. He attended with considerable regularity lectures in Edinburgh, but it seemed strange that he should have left Edinburgh without taking a degree in medicine. At that time there was no strict curriculum or regulation for candidates seeking medical degrees, since the statute which afterwards governed such matters was not formulated till 1767. It must be remembered, however, that at Edinburgh University it was then the exception rather than the rule for students to proceed to a degree either in arts or medicine. It could not be assumed, the lecturer went on, that Goldsmith did not intend to pursue the practice of medicine because he did not seek a degree in Edinburgh, or that his studies there had not qualified him to do so. From Paris Goldsmith went to Berne, Basle, and Geneva, and thence into Northern Italy. He was reported to have spent some months in Padua, where it was suggested he took a medical degree. For this suggestion there was no evidence, nor was there any that the University of Padua granted the degree of Bachelor of Medicine at all. Having referred to Goldsmith's return from the Continent to England, Dr. Kirkpatrick went on to say that some time subsequently his old friend and fellow student at Edinburgh—Dr. Fanu Sleigh—met and assisted him to start in medical practice in a small way at Bankside, in Southwark, and that, writing in reference to this, Goldsmith said: "By a very little practice and a very little reputation as an author I made a shift to live." The little practice in medicine gave him ample time, however, for writing. Through the acquaintance with Dr. Milner, one of the most interesting episodes in Goldsmith's medical career occurred—his proposed appointment as medical officer in the East India Company at Coromandel, for which he had the more or less definite promise of an appointment at £100 a year, with the prospect of a private practice, that was believed would bring it up to £1,000. After the offer was postponed, the idea was ultimately cancelled by the Surgeons' Hall on the ground that he was not qualified. The cause of this rejection was not recorded. On March 31st, 1763, Goldsmith signed an agreement with James Dodsley, the publisher, to write a book called *A Chronological History of the Lives of Eminent Persons of Great Britain and Ireland*. In this agreement, written in his own hand, and preserved in the British Museum, Goldsmith describes himself as "Oliver Goldsmith, M.B." As far as was known this was the first occasion on which he was recorded as a bachelor in medicine, although it was not uncommon to find him referred to as "Doctor Goldsmith," or described as "Oliver Goldsmith, M.B." It was reasonable to suppose that in describing himself in an official document as "M.B." Goldsmith did so correctly, and that at that time he had, in fact, been granted that degree. The records of many universities had been searched, but in none had there been found any documentary evidence for a degree in medicine granted to Goldsmith. If it was so, he must have been granted it *in absentia*. Furthermore, it must have been given by the special grace of the board, without the performance of the usual acts. Dr. Kirkpatrick then referred to a subsequent attempt of Goldsmith to supplement his income by medical practice, and how it ended, and he concluded with a description of Goldsmith's death in 1774.

Medical Practice in the Free State.

An interesting discussion was held in Dublin on February 22nd, when Dr. J. P. Shanley read a paper on the State and medicine to a meeting of the Section of State Medicine of the Royal Academy of Medicine in Ireland. Dr. Shanley remarked that the Medical Act of 1858 did not, unfortunately, restrict the practice of medicine to those on the *Register*, and that even to-day anybody who so wished could treat cancer of the stomach with herbs, replace an alleged dislocated vertebra, "cure" diphtheria, or prescribe glasses for acute glaucoma. Indeed, in view of certain recent legal decisions, such a quack appeared to be in a safer position in the case of an action for malpraxis than a legally qualified and duly registered practitioner. The right to sue for fees was of little value, since medical men did not often wish to take this course. Dr. Shanley thought that a profession which gave so much gratuitous and unstinted service to the State deserved better treatment from it. With the coming of the national insurance scheme the State had taken a really big step forward in the control of the profession; but, while such a service might possibly be a good method of overcoming difficulties in Ireland, care would have to be taken to avoid an excess of bureaucratic interference. The control of merely medical matters should be in the hands of the medical profession. Although the Irish Public Health Council in 1920 had reported strongly in favour of a State medical service for Ireland, the Free State Government had not yet attempted to establish it; the Local Authorities Employees Act was, however, a courageous effort to abolish abuses which had prevailed under the old system of medical appointment. The president, Professor J. W. Bigger, who followed, suggested that a State medical service would benefit doctors by introducing the possibility of promotion. The selection of candidates by the local appointments commissions seemed now to be working well and to be as fair as possible. Complaints were often received from candidates, however, that they had to pay a fee on each application, and were often obliged to travel long distances for an interview; the president thought it ought to be quite possible to remedy these grievances. The ensuing discussion turned largely on possible improvements in the working of the appointments commissions. It was suggested that the various kinds of appointments might be graded, so as to make it easier to attract in each instance the most suitable type of medical practitioner, and to facilitate promotion as the reward of merit.

County Wexford Medical Practitioners.

At a recent meeting of the medical practitioners of county Wexford it was decided that the county board of health be informed that the dispensary medical officers had decided not to accept a lower fee than £6 6s. a week for locumtenent work. It was also decided that the Irish Medical Secretary should be asked to forward copies of the decision of the meeting to those doctors who were absent, for their signatures. In consequence of the repeated refusals of the health board to increase the salaries of the Enniscorthy Union medical officers of the county home the meeting decided to appeal to the Department of Local Government and Public Health to fix an increased scale by sealed order. Dr. O'Brien, surgeon to the county hospital, thanked the health board for considering the draft regulations for the treatment of private patients in the county hospital. The board's suggestion that it should arbitrate in cases of dispute between the surgeon and patient, and that the decision should be final, might work out satisfactorily, but he regretted he could not fall in with the view for the following reasons: (1) the arbitration court was not fairly constituted; (2) the members of the health board were not permanent; (3) it would not be just or loyal to his colleagues. He was prepared to adopt the draft regulations in their original form supplied by the Department of Local Government and Public Health, and thus bring to a close an unpleasant controversy.

Scotland.

Presentation to Sir Leslie Mackenzie.

At a luncheon held in the North British Hotel, Edinburgh, on February 23rd, in honour of Sir Leslie Mackenzie and Lady Mackenzie, a portrait of Sir Leslie Mackenzie, by Mr. Henry W. Kerr, R.S.A., was presented to him. At the luncheon he was the guest of the Society of Medical Officers of Health and of the Scottish Society of School Medical Officers, and the chair was occupied by Dr. Thomas Adam, president of the former society. Dr. A. K. Chalmers, lately medical officer of health for Glasgow, proposed the health of the guest, and said that it was their desire to recognize the excellence of his work as medical member of the Board of Health for Scotland. Four movements had impressed themselves indelibly on the development of the public health services during the first quarter of the present century. Inquiries into the physical training of school children had formed a special subject of attention by Sir Leslie Mackenzie and Dr. Matthew Hay of Aberdeen, and this subject had now become the physical education of the school child, as a natural expansion of the maternity and child welfare movement. The tuberculosis movement, again, from modest beginnings towards the end of last century, had expanded in time to the institutional treatment of this disease. Venereal diseases, also, which caused much untold misery to mothers and children, had raised in an acute form the responsibility of the State as the guardian of future generations. The fourth great movement had been in relation to housing. All these movements reflected a wide change in public thought, and had become the expression of a public health conscience. With this work Sir Leslie Mackenzie had been intimately and honourably associated, and for this reason they were doing honour to his work. Sir Leslie Mackenzie, in replying, said that no meeting in Scotland could give him more profound satisfaction than one at which he met friends and colleagues, and which represented every phase and stage of his work in the public health and school health administration of Scotland. He said that in 1901 he took office as the first medical inspector under the Local Government Board, and he proceeded to comment on the special movements that had been inaugurated during his period of service. In 1906, he said, they had hardly a single bed for tuberculosis, and to-day the accommodation for these patients approached 5,000. The Royal Commission on Physical Training had appointed Professor Matthew Hay and himself to examine 1,200 school children, of whom 600 were in Edinburgh and 600 in Aberdeen. From this narrow sample he had felt justified in concluding that nothing short of systematic medical inspection gave any hope of improvement, and he made that recommendation explicit in his report. In 1903 the Houses of Parliament had declared strongly in favour of medical inspection, and for three years he had spent a great deal of his time in lecturing upon this subject. The medical profession were not at first favourable, but the younger generation saw that they had at last succeeded in bringing clinical medicine on to the preventive plane. The true initiative in establishing medical inspection rested with the late Sir Henry Craik, and to him, as well as to Sir John Struthers, his successor, and Sir George Macdonald, we owed the splendid system that held within it so many active minds at the present time. Twenty-five years ago everyone was speaking of infant mortality, and to-day people spoke of child health or child welfare and maternity service. Here also he had had an opportunity of playing a certain part. In the year 1915–16 he was asked by the Carnegie Trustees to prepare the Scottish Report on Scottish Mothers and Children. It was gratifying to find that after twelve years the report was still asked for; it had circulated largely in America, and he knew that many workers had found it of some value. The Royal Commission on Housing, known as the Ballantyne Commission, was, he thought, the most important that had sat in Scotland for over a hundred years. The late Mr. Gillespie and he had drafted a clause applying the conception of a nuisance clause under the Public Health Act to the provision of housing, and this became the fundamental proposition in the 1919 Housing Acts of England and Scotland. The result to-day had been that in England there were, he believed, nearly 1,000,000 new houses, and in Scotland the first 100,000 houses were safely on the way to erection. This social revolution had centred on the point that the local authorities had been obliged first to survey their districts by seeing that the people were properly housed, and secondly to provide houses. Speaking of the civil service, he said that it was constantly subjected to attack, but although no one pretended that the service was perfect, he had been convinced by twenty-seven years as a member of it that it was in a thousand ways a magnificent service. Lady Mackenzie also received a presentation, for which she briefly expressed her thanks.

Glasgow Royal Asylum.

The annual meeting of contributors to the Glasgow Royal Asylum was held on February 21st, with the Lord Provost, Sir David Mason, in the chair. The physician-superintendent, Dr. D. K. Henderson, in his annual report, stated that the total number of patients under treatment during the past year had been 653, including 135 new admissions. Of the 117 patients who had been discharged, 45 had recovered. The death rate had been 4.7 per cent. of the average number resident. The voluntary form of admission was being more widely utilized, as shown by the fact that 68 of the patients admitted entered the asylum in this way. Dr. Henderson, in drawing attention to some of the social implications of mental disease, pointed out that the 1927 report of the General Board of Control for Scotland showed that there was one certified mental patient to every 264 of the population. If to this figure was added the number of voluntary patients, of mental defectives, and of criminals in whom mental disorder and defect were present, a still better idea of the significance of mental illness to the health of the community was obtained. This problem was becoming more insistent because there was a steady increase in the numbers requiring institutional care, and the problem had now become one of prevention. Twenty years ago it was reckoned that 40 per cent. of the admissions to mental hospitals were directly or indirectly due to alcohol or syphilis, but this was hardly true to-day, for there had been a notable decrease in both these causes, and the public was gradually evolving a better moral standard in regard to them. The problem to be faced now was more social than medical. The common factor in the associated problems was that they had to deal with unstable, difficult, ill-balanced personalities, and investigation showed that such maladjustments had their beginning not late in life, but in infancy or adolescence. In the past the worst cases had been segregated in institutions, the less gross were educated in special schools, and in addition there was the much more difficult problem of making provision for and helping those whose defects were not due so much to hereditary influences as to unhealthy environment. The establishment of child clinics, which had taken place already to a considerable extent in the United States, was very important in relation to this matter. The purpose of such clinics was the individual study and treatment of children who were failing to adapt themselves to any aspect of life. Here the aim should be to develop agencies and clinics whereby touch could be established with such children before their habits became set. Such an organization demanded a staff of psychiatrists, psychologists, and social workers to deal with patients in their own homes. To a certain extent this need was already met by psychiatric out-patient departments attached to general hospitals, but these departments were not yet sufficiently organized to take the place they ought to take in the life of the community. The Lord Provost, in moving the adoption of the report, said that if the advantages of the voluntary system of admission were better recognized there would be fewer cases of chronic insanity, and Colonel J. A. Roxburgh, in seconding, said that the directors of the institution were anxious that the public should regard it no longer as a place of detention, but as a place of cure.

Western Infirmary, Glasgow.

At the annual meeting of contributors to Glasgow Western Infirmary, held on February 22nd, the Lord Provost, Sir David Mason, announced that a gift of £5,000 had recently been received by the Infirmary from Sir Henry and Lady Mechan, for the purpose of purchasing radium for the early treatment of cancer. In drawing attention to the deficit on the year's working of over £12,000, which was due largely to the increased number of patients treated, the chairman suggested that there was room for improvement in the subscriptions given by some of the warehouses, shops, and offices in the city. He also pointed to the fact that during the year 300 cases of motor accidents had been dealt with in the Infirmary, and he saw no mention in the report of any contribution from persons treated on account of these accidents. Colonel John A. Roxburgh, in seconding the report, said that they would be glad to see the gap between ordinary income and ordinary expenditure filled up, although the financial position of the Infirmary was still satisfactory. He referred to the rapidly increasing scope of radium therapy and the encouraging results which were being obtained in certain cases of malignant disease, which made the recent gift of radium to this hospital highly acceptable. Research work on cancer had been carried out in the laboratory of the Infirmary through the benefaction of the Robert Donald Trust, and the radium would be under the charge of the Donald Research Scholar for Cancer, Dr. A. A. Charteris, who was making a special study of this form of treatment. It was not proposed to limit the benefits which would accrue under this scheme to hospital patients only, and any of the radium which was not in use in the Western Infirmary would be available to the hospital staff, by special arrangement, for the treatment of private patients.

Leith Hospital.

At the annual meeting of Leith Hospital an appeal was made by the chairman, Mr. John A. Lindsay, for a supply of radium, which was urgently needed for the treatment of certain cases of a grave or hopeless nature. He also stated that it was desirable to take advantage of the reconstruction that was at present going on in the vicinity of the institution to secure adjoining ground so that there might be more air space round the hospital. Mr. Ernest Brown, M.P., in seconding the report, said that it would be a mistake to suppose that because a greater concentration of the public health services was taking place at the present time, there would not be as much need for private and individual work in connexion with hospitals, such as Leith Hospital, in the future. With the inauguration of new efforts there would be more scope for the work of voluntary hospitals as time went on.

Red Cross Work in Edinburgh.

The annual meeting of the Edinburgh Branch of the British Red Cross Society was held on February 28th. Lord Provost Sir Alexander Stevenson presided. The chairman remarked that there had been an excellent record of beneficent work performed by the Red Cross since the war as well as during the war years. Its members, drawn from all classes, had performed deeds of bravery and unselfishness which commanded the admiration of the world, but even in time of peace the Red Cross Society had a great work to do. With regard to the society's work on behalf of the miners' fund, he said that they had reached no less a sum than £31,000, and it had been a great satisfaction to him that the Red Cross Society had formed a depot to receive gifts of clothing from which about 27,000 articles had been distributed. The county director's report showed that enrolments of members for the Voluntary Aid Detachments continued to progress. In Edinburgh the membership now consisted of 120 mobile members, 122 immobile members, and 37 probationers, who displayed a satisfactory standard of efficiency on examination. It was stated that during the recent influenza epidemic the Scottish nursing service would have been defeated in its work if it had not been for the great assistance given by members of the Red Cross.

Central Midwives Board.

At a meeting of the Central Midwives Board for Scotland, held for the election of the office-bearers, Dr. James Haig Ferguson (Edinburgh) was unanimously re-elected chairman, and Dr. Robert Cochrane Buist (Dundee) was re-elected deputy-chairman. The meeting appointed other committees, and also examiners for the ensuing year, and approved and revised, subject to inspection by the board, institutions applying for recognition under the new regulations, with the teachers attached thereto, for the training of midwifery nurses.

Correspondence.

VOLUNTARY HOSPITALS IN SCOTLAND.

SIR,—The report in your issue of March 2nd (p. 413) of the meeting of the Scottish Regional Committee of the British Hospitals Association calls for some comment, as it does not represent the actual position of matters. To enable this to be done the following facts must be kept in view.

In 1927 the central office of the British Hospitals Association sent to the Scottish Regional Committee a series of inquiries, asking for their opinion on them. A meeting was held in October, 1927, for the consideration of these inquiries, but they were never discussed. The Regional Committee decided to set up local committees in the five regions of Scotland, who should explore the needs of their respective areas and consider the possibility of co-operation between the statutory authorities and the voluntary hospitals. Further, it decided to approach the Secretary of State for Scotland, asking him to receive a deputation of representatives of the leading hospitals to discuss the position and ask for his view on the lines along which the hospitals authorities should proceed in co-operation. It was also resolved that another meeting of the Regional Committee should be held in Glasgow to receive and consider the report of the deputation to the Secretary for Scotland.

The Secretary for Scotland agreed to receive the deputation on December 9th, 1927. This meeting took place, and at it the Secretary for Scotland appointed a Liaison Committee to be a channel of communication between himself and the voluntary hospitals, the Liaison Committee to ascertain the views of the voluntary hospitals in the respective areas that the committee represented.

Although it had been decided at the meeting in October, 1927, that another meeting of the Regional Committee should be held in Glasgow, to receive the report of the deputation to the Secretary for Scotland, this meeting was not held until February 29th, 1928. At this meeting it transpired that the Liaison Committee had never taken any steps to ascertain the views of the voluntary hospitals in their respective areas on the changes proposed in the Local Government (Scotland) Bill. What, apparently, it had done since its formation was to assume executive powers, and, as one of its members stated, "to be actively engaged in drafting proposals for the Local Government (Scotland) Bill"; and this was done without consulting the voluntary hospitals in their respective areas. The outcome of this has been that a clause, drafted by the Liaison Committee after subsequent meetings with the Scottish Health Department, and intended to safeguard the interests of the voluntary hospitals in any co-operation with the municipal hospitals, was not accepted. It might have been different had the committee had behind it the weight of the opinion of the voluntary hospitals; and, from the report in your columns, one of the members of the Liaison Committee now admits that the Liaison Committee in the role it has assumed "could be effective only if it had behind it an informed body of opinion." Not having this, the result was bound to be what has taken place, and the whole question of the relationship between the statutory authorities and the voluntary hospitals has been decided, not on the views of the latter, but on the opinions of the individual members of the Liaison Committee.

It is only right that the medical profession in Scotland should know exactly what has happened, and what has brought it about. Already there has appeared in Glasgow a protest against what has occurred, and the Scottish Regional Committee at its last meeting passed a mild censure on the Liaison Committee when it pointed out that "it would be desirable to have the views of the areas co-ordinated before they went forward to the Liaison Committee, for it would be unfortunate if different views were put forward from the various areas on any particular subject."

At the recent meeting of the Scottish Regional Committee it was thought that the Regional Committee of the British Hospitals Association was the best body to concentrate the opinions of the voluntary hospitals, and it is quite clear that the Scottish Regional Committee is being used as a stalking horse to shelter this attempt to gain control over the voluntary hospitals in Scotland. Such a role is not the function of the British Hospitals Association; it was established to consider *questions in connexion with the management of the hospitals*, but it was not intended to have any say in what would be called *hospital policy*.

One unfortunate outcome of these efforts of various bodies to be the dominant factor in controlling the voluntary hospitals is to undermine the voluntary principle in connexion with hospitals services, and to weaken it instead of strengthening it. What is really needed is an independent central body elected by the voluntary hospitals themselves, and representative of their views.—I am, etc.,

Glasgow, March 4th. GEORGE THOS. BEATSON.

THE AFTER-EFFECTS OF RADIUM TREATMENT.

SIR,—The following account of the after-effects of radium therapy in patients treated by me at the Christchurch Hospital and privately is given in the hope that it may stimulate other workers to report their own experience of mishaps that may follow this form of treatment. It is a subject on which I am often asked questions by my colleagues in New Zealand.

Untoward sequels of radium treatment may be divided into excessive skin reactions, fibrosis of deep tissues, increased pain, and mental or psychical changes. An overdose of radium used externally may be followed by telangiectasis, scarring, and loss of hair, but these should not occur with ordinary care, and are no longer seen in the *x*-ray clinic. Telangiectasis may be unsightly, but if a malignant growth has been destroyed the scarring is a small disability compared with the destruction that would have occurred if no treatment had been used. It has been stated that treatment with radium or *x* rays before operation may embarrass the surgeon by formation of fibrous tissue, but as this treatment should only be given a few days before operation the difficulty should not arise.

My follow-up reports give no indication that increase in pain occurs in the majority of cases after radium treatment. Certainly in external cancer the patients often tell me that the pain has been absent after the first application, but in uterine cases I have records of pain occurring in the hips, groin, back of leg, and in the lumbar spine. All these cases have been re-examined, and my notes show that pain had been present before the use of radium, and pelvic or *x*-ray examination showed metastasis in the soft tissues or bone.

The mental after-effects of radium are at present undetermined, and I can find no statement about them in the literature. Experiments by Horsley and Finzi on the effect of radium applied directly to the brain tissues in animals showed vascular changes, but no change in the neuroglia or nerve cells. The conclusion drawn was that the nerve tissue was relatively insensitive, and that vascular disturbance accounted for nerve derangement after the application of radium.

An elderly man was sent to me for treatment of a huge crater ulcer on the right parietal area. The whole of the bone beneath the crater had been destroyed, and the brain was visible. With much hesitation I buried radium round the edges of the ulcer for twenty-four hours, and some weeks later I found that the growth was apparently arrested. No complaint of headache was made, and no nerve symptoms ensued. I have had two other cases in which the bone over the brain was thinned out and the growth was treated with buried needles without any cerebral symptoms following.

In contrast an elderly patient came for treatment with a small papilloma and a small patch of keratosis on the side of the forehead. These were treated simultaneously with a radium plaque applied over a piece of lead rubber, in which holes had been cut to expose the two areas. Both lesions disappeared after one treatment of ninety minutes. About six weeks later I heard that the patient had developed aphasia, which lasted about a fortnight. I was asked if this might be due to the radium, and expressed the view that it was merely a coincidence.

During the same month I was asked to treat a middle-aged lady for menorrhagia. The patient did not come for treatment, and a few hours later her medical attendant telephoned to say that she had had a "stroke." Had the stroke occurred after the introduction of radium the treatment would inevitably have been held responsible.

In this hospital and in private practice I have treated 66 patients for malignant disease of the uterus, 68 for menorrhagia, and 7 for fibroids. Every case has been carefully followed up, and two of the menorrhagic cases have been reported as suffering from mental symptoms. The superintendent of the neighbouring mental hospital, to whom I referred the question, stated that he had no record of any case in which radium was suspected as being the cause of mental breakdown.

I think that the extraordinary success of radium treatment in the uterine haemorrhage of middle life must be due to the action of the gamma rays upon the ovarian tissue, causing a practical castration. I can see no other explanation why long-standing haemorrhage should cease with such dramatic swiftness. Does this radium castration prove more dangerous mentally to the patient than oophorectomy or than the slower atrophy of age? In males the operation of vasectomy in cases where patients were unable to undergo prostatectomy was supposed to be followed by rapid senile decay. Prior to 1914 I had performed vasectomy on a number of old men who were unfit for operation, but in no case did senility follow. Castration in young males does not apparently damage the mental powers. The history of eunuchs who rose to political prominence in the Eastern empires suggests that a castrated male is not below the average in brain power.

For the treatment of menorrhagia we use as a routine dose 50 mg. of radium element in platinum tubes (wall thickness 1 mm.) enclosed in rubber drainage tubes 1 mm. thick, and placed in the uterus for twenty-four hours, the total dose being 1,200 milligram hours. We have not yet had a case in which the haemorrhage did not cease. Every patient is warned that menopausal symptoms will occur, and my follow-up reports show that all experienced hot flushes, sweating, headaches, etc.

I am unable to say whether these symptoms are more pronounced in radium patients than in women passing through the normal climacteric, but the fact that two patients treated for menorrhagia have developed mental symptoms makes me anxious to learn from other radium workers if they have similar records. I would feel sorry to refuse treatment to a woman suffering from violent long-continued haemorrhage for fear that the treatment may be followed by mental catastrophe, and it would be a satisfaction if the experience of other hospitals in this matter could be obtained.

It is known that surgical operations on the uterus and ovaries may be followed by mental breakdown; I have seen insanity follow hysterectomy. In other regions surgery has been blamed for mental troubles. Recently a patient under my observation committed suicide after operation for hyperthyroidism, yet it would be incorrect to quote this as the result of a skilfully performed operation.

I have always been averse to using intrauterine radium applications in any but middle-aged women. In two cases recently I consented to use this treatment in women under 30 suffering from severe and long-continued haemorrhage that medical treatment and curetting had failed to relieve, but I gave only one-third of the routine dose. Sufficient time has not elapsed since treatment to report whether normal menstruation has reappeared.

I have so far declined to use radium for dysmenorrhoea, but I think that if the patient is going downhill into chronic invalidism it might be justifiable to use a small dose of radium in the hope that temporary cessation of the painful periods would be followed by a normal flow. I am

aware that many of these cases are of nervous origin, but, even so, temporary relief might be the means of regaining normal mental balance.—I am, etc.,

P. CLENNELL FENWICK,
Officer in charge, Radium and Deep Therapy Department, Christchurch Hospital.
Christchurch, New Zealand.

LOCAL ANAESTHESIA IN OPERATIONS FOR HAEMORRHOIDS.

SIR,—Dr. T. H. T. Barber's communication published on March 2nd (p. 397) will help to dispel the widespread but very antiquated belief that the removal of piles is followed by days of such pain and discomfort that the ordeal is scarcely worth while. Under modern conditions the operation is one of the most gratifying and satisfactory in surgery; the much-dreaded after-pain and discomfort have been reduced to a minimum, and, in fact, have been rendered quite negligible. The only criticism I venture to offer to Mr. Barber's remarks is that he did not sufficiently emphasize the practical simplicity of his own admirable recommendations.

I have employed local anaesthesia for the removal of piles for the last twenty years; 1/2 per cent. novocain solution, to which adrenaline (supplied in ampoules) is added, is usually at hand and acts as perfectly as more complicated preparations. The skin round the anal orifice is very thin and if a fine dental needle is used the whole circumference of this area can be anaesthetized in five minutes without the knowledge of the patient. Deep infiltration is unnecessary. The sphincter becomes gradually relaxed; it should not be forcibly stretched. I have come to regard stretching of the sphincter, no matter how thoroughly, as one of the causes of after-pain and one of the determining factors in producing transient retention of urine. A triangular mosquito forceps applied to the anaesthetized skin provides a traction handle for the extrusion of the pile-bearing area.

I am not wedded to any particular form of operation, but I rather favour a modification of the much-maligned Whitehead method. Modern technique has made it a safe and satisfactory procedure, when the indications are present. With local anaesthesia it is seldom necessary to ligature or clip a single vessel during the preliminary dissection. After removal of the pile-bearing area on each side the sutures are introduced in the manner recommended by Mitchell. A well-trained sister and a Reverdin's needle expedite this part of the procedure. Great care is taken to bring skin and mucous membrane neatly in line. The external sphincter is visualized without difficulty, especially if a head light is used. No skin is removed. The line of suture is smeared over with bipp and a generous dressing of sterilized vaseline applied. A tube is inserted, but in a few cases owing to discomfort needs early removal.

Local anaesthesia, asepsis, and accurate suturing have placed the operation for removal of piles in the realm of minor surgery. I have under my care at the moment a patient who told me that for ten years he had abandoned all his favourite outdoor recreations owing to trouble from piles; he was urged not to face an operation with its aftermath of torture. He now knows better, and during convalescence hopes to square accounts with his persuasive but deluded friends.—I am, etc.,

Dublin, March 3rd. W. I. DE C. WHEELER.

SIR,—I can thoroughly endorse Dr. T. H. T. Barber's plea in the *Journal* of March 2nd for the use of local anaesthesia in operations for haemorrhoids and anal fissure. One very great advantage of local anaesthesia is the absence of post-anaesthetic vomiting, which, after general anaesthesia, is a common cause of perianal swelling and oedema.

Dr. Barber describes a technique in which the anal canal is anaesthetized by novocain applied on pledgets of cotton-wool, then a series of subcutaneous perianal injections is given, and finally an infiltration of the sphincter muscle by six or seven injections. In all he appears to puncture the skin about twelve to fifteen times. I can recommend the following technique as being simpler, very rapid in its action, and one which avoids distortion of tissues in the operation area.

The solution is a 1 per cent. solution of novocain (1½ oz.) to which 6 drops of adrenaline (1 in 1,000) are added immediately before use. With the patient lying on his right side and the knees well drawn up, a wheal is raised in the middle line one inch behind the anus. Next, using a 10 c.cm. syringe and a two-inch No. 20 Record needle, and with the left forefinger in the rectum, 10 c.cm. of the solution is injected deeply in the middle line posterior to the rectum. The solution is slowly injected as the needle is advanced. The syringe is then refilled, and 10 c.cm. is injected deeply into the sphincter on the left side; the left forefinger puts the sphincter on the stretch, and the solution is injected as far forwards as the two-inch needle permits. This point in practice is level with the anterior margin of the anus, or even slightly beyond it. The right side of the sphincter is treated in a similar manner, 30 c.cm. of the solution being used in all. The entire injection can be done rapidly through the single point of puncture posteriorly. The anaesthesia develops immediately; the patient can be placed at once in the lithotomy position, and the operation proceeded with. Complete relaxation of the sphincter is obtained, and a perfect anaesthesia for any local operation can be relied upon. In some cases, if a large external pile needs removal anteriorly, a few extra drops of anaesthetic solution may be injected subcutaneously in front of the anus.

I have used this method as a routine for all pile and fissure cases, and have found it useful for other local conditions. There have been no complications, post-operative pain has not been marked, and the patients have invariably been grateful for the employment of this type of anaesthesia. Furthermore, it renders radical operation possible and safe in subjects who, from age or intercurrent conditions, would otherwise be debarred from operation.—I am, etc.,

London, W.1, March 4th. W. B. GABRIEL.

VACCINATION IN THE LIGHT OF RECENT EXPERIENCE.

SIR,—There may or may not be confusion in the statistics coming from Northern Rhodesia and other countries, but the very definite statement was made in the *Monthly Epidemiological Report* (February 15th, 1928), issued by the League of Nations, that "small-pox of severe type appeared in June, 1927, in Northern Rhodesia, where ordinarily only the mild Kaffir-pox is met with," and certain figures were given. But it was not stated whether the Kaffir-pox had disappeared or whether it still continued side by side with the severe form. My letter in the *Journal* of February 16th (p. 319) was written in the hope that more information on the nature of small-pox in Rhodesia would be forthcoming. Meanwhile it is interesting to note that there has been a revival of small-pox, of moderately severe form, in Northern Rhodesia. In the *Times* of February 9th there is a quotation from the weekly bulletin of the Health Section of the League of Nations for February 8th, in which it is stated that "small-pox is widespread in Northern Rhodesia, 4,235 cases with 301 deaths having been reported since the beginning of the year." It is surely worth while to investigate the behaviour of a disease which, in the course of a little over two years, presents a varying fatality rate, which, beginning at 3 per cent., rises suddenly to 20 per cent., dies down to 5 per cent., and again rises to 7 per cent. at the end of the period.

I think Dr. Garrow has misunderstood the object of my suggested test. I agree with him that "it is reasonable to suppose that small-pox and alastrim would confer immunity against each other"; that is, if alastrim is a variant of small-pox. But if alastrim is quite a different disease from small-pox, then it is reasonable to suppose that the one will not protect against the other.—I am, etc.,

Hemingford Abbots, March 3rd. E. W. GOODALL.

A NEW METHOD OF APPROACH IN GASTRIC SURGERY.

SIR,—I feel that the statements made by Mr. Digby Chamberlain (February 23rd, p. 343) under the above heading call for some comment from the radiologist's point of view. Mr. Chamberlain describes the results of two inoperable cases of carcinoma of the stomach and operable dimensions by a large single dose of *x* rays. The rays were applied directly to the tumour at the exploratory operation, the object being to avoid damage to the skin.

It is unfortunate that Mr. Chamberlain has not given radiologists more definite guidance in the matter of dosage. All that he says is that deep x rays were applied in one case for forty, and in the other for thirty, minutes. He does not state the focal distance, the milliamperage, the secondary voltage (minimum wave-length), or the filtration. Nor does he give any quantitative measurement of the dose in recognized units, such as X, H, the French R, or the German R. It is hardly an exaggeration to say that to state the dose in terms of time alone is just as inadequate as it would be to express the dose of morphine according to the number of seconds occupied in its injection.

Since, however, Mr. Chamberlain uses the word "deep" it may be presumed that he means a voltage of at least 150 kV filtered through at least 0.5 mm. Cu., and his main contention is that the dose which was administered could not have been applied transcutaneously without the risk of damage to the skin. Now under these conditions, using a double coil with a focal distance of 28 cm., the tube giving 2 ma. (the usual output over a long period), thirty-five minutes gives approximately 16X, a dose which, at this filtration, causes a barely perceptible erythema, if any. The exposure can be prolonged considerably further before the skin is seriously damaged. It is therefore very doubtful whether the risk of damage to the skin is as great as Mr. Chamberlain fears, and whether he has gained anything by avoiding the transcutaneous route.

Moreover, by this method only one portal of entry is, from the nature of the case, possible, whereas by the ordinary method several may be used. But Mr. Chamberlain has no use for the cross-fire method. He states that "experience shows that one big dose is considerably more efficacious than a number of smaller applications applied to the growth at intervals by the cross-fire method." Here Mr. Chamberlain is confusing two things—(1) the use of several portals of entry at one sitting or on consecutive days, (2) the repetition of the dose at intervals. As regards the first point the advantage of the cross-fire method is not a mere matter of opinion, but is a fact capable of mathematical determination in terms of quanta of energy, and of experimental proof by means of the iontoquantimeter. As regards the second point, the confident statement that the single dose is superior to the repeated dose may represent Mr. Chamberlain's experience as a surgeon, but it is one which the great majority of radiologists will regard as at least very much open to question.

As a matter of fact, radiotherapy after "exteriorization" of the stomach has been practised by Finsterer in 19, and by Werner in 48, cases, and in spite of one case of apparent disappearance of the tumour recorded by the latter it has never been demonstrated that this procedure is superior to the ordinary method.

Cases of gastric carcinoma are so distressing that the appearance of any new and promising method is welcome, and no one would wish to grudge Mr. Chamberlain his success in his two cases. At the same time, one cannot help feeling that real advance in this subject can only be born of clear thinking and accurate measurement.—I am, etc.,

Cambridge, Feb. 28th. FF. ROBERTS, M.D., M.R.C.P.

THE CIRCULATION UNDER THE SPHYGMOMANOMETER CUFF.

SIR,—Dr. Harrington Sainsbury and I seem agreed that the blood is a colloid and incompressible, but we are not agreed that the five inches of the brachial artery under the cuff remain full under a pressure sufficient to obliterate the pulse at the wrist. If the pressure in the cuff be quickly raised, as it usually is, and should be, the pressure soon exceeds that of the blood in the artery, and the blood, being a liquid, is bound to move on to a lower pressure level. No doubt when the pressure is reduced so as to give the systolic and diastolic pressures, the artery fills up; that this filling up is a gradual process is shown by the movement of the lever from the systolic to the diastolic pressure. As to the effect of a rigid artery in apparently raising the blood pressure, this would no doubt occur with a perfectly rigid artery, but it would be difficult to find five consecutive inches of a brachial artery perfectly rigid, and the strength of a chain is its weakest link. Therefore I do not wish to dispute Dr. Sainsbury's contention on this point.

Dr. Leonard Hill's article is extremely interesting, but personally I do not see what it has to do with the fullness or otherwise of the brachial artery under the sphygmomanometer cuff. I am well aware that of recent years Dr. Hill's views on the capillary circulation have performed a complete *volte-face* from the time when he said that in the inverted body the pressure in the cerebral capillaries might amount to 100 mm. of mercury. He has for some years raised the capillary endothelium to the high level of a secretory structure, as Heidenhain had done before him. He has never succeeded in proving his own contention nor in abolishing the effects of capillary pressure. Even now he acknowledges that, "how living cells secrete into and absorb from the circumambient medium we do not know."

Every morning I douche out my nose with a saline solution; the secretion stimulated by the saline quickly stops, but when I lower my head six to twelve inches or more there is a rapid excretion of a limpid fluid rushing out in drops. I fail to account for this in any other way than the increase in capillary pressure which undoubtedly takes place.—I am, etc.,

Cannes, Feb. 25th. JAMES BARR.

THE INTRACUTANEOUS TUBERCULIN TEST.

SIR,—From the figures quoted by Professor Lyle Cummins on February 23rd (p. 336) the following conclusions might be drawn: (1) The vast majority of persons will react to 1/10 c.cm. of a 1 in 1,000 dilution, irrespective of whether they are tuberculous or not. (2) A lesser number will react to 1/10 c.cm. of a 1 in 5,000 or 1 in 10,000 dilution. On the whole, healthy persons are more likely to show this extreme degree of sensitivity than persons suffering from clinical tuberculosis, but a sufficiently large number of the latter group react to make the distinction valueless.

My own observations on the test are at present on a very small scale; but so far as they go they have been carried out carefully, and the results are more or less in harmony with those obtained by other observers with the same and with analogous tests. They are so strikingly at variance with those of Professor Cummins that I quote some of my results.

Results in 120 Cases (110 Adults) Tested with 1/10 c.cm. 1 in 1,000 T.A.F. Intradermally.

Group.	Cases.		
I. Pulmonary tuberculosis (sputum T.B.+)	25	15 pos.,	10 neg.
II. Non-pulmonary tuberculosis	7	7 ,,	0 ,,
III. Early tuberculosis (bacilli not found) ...	48	42 ,,	6 ,,
IV. Clinically free from tuberculosis ...	40	6 ,,	34 ,,
	120		

With regard to the cases in Group III, the diagnosis has not been confirmed by the demonstration of tubercle bacilli or by other evidence which would be regarded as unequivocal; Professor Cummins may reply that some of these cases should be included in Group IV. While I should not be prepared to admit this, I would point out that even the amalgamation of Groups III and IV would only give 55 per cent. positives against Professor Cummins's 93 per cent. among healthy persons (I am not sure how many persons would be considered to constitute 93 per cent. of a total of 46).

Moreover, I found that those clinically positive patients (Group I) who reacted were all patients with active disease in whom one felt that the prognosis was poor. My chronic patients who had returned from a beneficial course of sanatorium treatment, etc., were usually negative (and, incidentally, in some cases negative to 1/10 c.cm. 1 in 100). This observation also appears to be at variance with that of Professor Cummins; but it seems more in harmony with the fact that a person who has had a successful course of therapeutic tuberculin will give a negative reaction. If tuberculin tolerance confers any degree of tubercle-toxin tolerance the converse will likewise hold.

To my mind the most striking feature about Professor Lyle Cummins's work is the constantly high number of

positive reactions obtained in every test, irrespective of the type of person tested. My own conclusions may not be correct, but the comparative frequency with which I obtained negative reactions suggests that there may be some factor to explain the extraordinary discrepancy between his results and mine. I note that he employed old tuberculin; now old tuberculin contains glycerin, which is itself an irritant to sensitive skins; I invariably used T.A.F. (prepared by Meister Lucius), which is said to be free from glycerin and toxic albumoses. Moreover, there may be lack of agreement as to what constitutes a positive reaction. About twenty-four to thirty-six hours after testing a red flush may be seen at the site of inoculation; this does not, by itself, constitute a positive reaction. About the third or fourth day, in positive cases, a hard nodular swelling appears beneath the skin and is of maximum intensity about the sixth day. The redness may have disappeared by this time, but the nodule persists for fourteen days or more, and it is this nodule which is characteristic of a true positive reaction. It has been my practice to see patients a week after testing, and I do not regard a reaction as positive unless I can feel the nodule. I do not attach any significance to a mere redness appearing shortly after inoculation. These factors may to some extent explain the discrepancy between Professor Cummins's results and my own, but it seems unlikely that they can account for the whole difference. I fear that the truth is that the series tested is, in each case, too small to justify the drawing of definite conclusions. I would suggest, however, that a positive or negative reaction to tuberculin may be accounted for by one of many factors.

1. A negative reaction may be due to the fact that the person is uninfected.

2. A negative reaction may be due to anergy; this is seen in very advanced cases, and the diagnosis will be apparent without the employment of a tuberculin test.

3. A negative reaction may be due to high tolerance. This is seen (*a*) in persons who have had a successful course of therapeutic tuberculin; (*b*) in chronic tuberculous persons who have successfully fought the disease (that is, sanatorium treatment may produce a degree of tubercle-toxin tolerance which corresponds to tuberculin tolerance); (*c*) healthy persons who have developed high tolerance as a result of frequent "latent infections" which have been successfully resisted without the development of clinical tuberculosis.

4. A positive reaction indicates high sensitivity, and may be seen in a variety of phases. It always indicates "infection," and usually infection in an active state. It occurs in a high proportion of persons suffering from active disease, but who are not anergic; it appears in a high proportion of persons suffering from very early disease who have not yet developed tolerance; it develops at some time during the lifetime of a large number of healthy persons who have recently had "a dose of infection" and whose systems have not yet established a "state of equilibrium." A great many of these "healthy reactors" may never develop clinical tuberculosis, but it is impossible to predict this with certainty in an individual case.

(It will be understood that I am referring to reactions to test doses. All infected persons would react positively to a dose of tuberculin of sufficient potency.)

A fuller account of my observations will be found in the *Transactions of the Assurance Medical Society* for February, 1929, together with a review of the literature on the intracutaneous and other local tuberculin tests.

Professor Lyle Cummins remarks at the beginning of his article that an intradermal dose produces a local reaction and no appreciable general or focal response. Yet in his concluding paragraph he makes the surprising suggestion that this method should commend itself to those using tuberculin therapeutically.—I am, etc.,

London, W.1, Feb. 23rd. T. WARWICK PRESTON, M.D.

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2. Burhans: *Journ. Amer. Med. Assoc.*, 1927, p. 1299.
3. Forbes and Green: *Arch. Pediat.*, November, 1925, p. 736.
4. Luker: *Med. Journ. of Australia*, June 12th, 1920, p. 548.
5. Mantoux: *Académie des Sciences*, 1908.
6. Smith: *Trans. Amer. Pediat. Soc.*, 1925.

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2. Erlandsen and Petersen: Quoted by Riviere (8).
3. Gunter, F. E.: *Tuberculin in Practice*, 1928.
4. Hamman and Wolman: *Tuberculin in Diagnosis and Treatment*, 1912.
5. Krumbhaar and Musser: *Amer. Journ. Med. Sci.*, 1914, i, 540.
6. Morland, E.: *Lancet*, 1912, ii, p. 638.
7. Riviere, Clive: *Early Diagnosis of Tubercle*, 1912.
8. Wolff-Eisner: 1909.

SIR,—For more than thirty-eight years I have been studying the phenomena caused by hypodermic and even intravenous injections of tuberculin in every sort of chronic tuberculosis, and in the last few years I have been personally studying the effects of what I prefer to call intracutaneous or intracuticular (rather than intradermal) injections of tuberculin; at a low estimate I have made many more than 50,000 injections of all kinds. In all my early observations I carried out personally all the necessary laboratory and clinical work; I examined every sputum, and made all the bacteriological investigations upon mixed infections with my own hands.

I think that team work is not always trustworthy, and may easily lead to error, because correct observations, even upon the character of skin lesions, may require some special training and experience. Certainly, if assistants cannot be trusted to measure the doses of tuberculin for themselves, they are not likely to be versed in the technique of the administration of intracutaneous doses. Some knowledge of technique is necessary before one can rely on the effects of the intracutaneous injections of minute doses. I should not be inclined to draw conclusions from the results of intracutaneous injections of small doses of tuberculin given by a group of assistants. There are numbers of errors which may creep in *à la dérobée* at different stages of the proceedings. Accordingly I must ask medical men not to be impressed by the casual observations made by a few juniors and then summarized in statistical form. I am too jealous for the reputation of tuberculin to allow Professor Lyle Cummins's contribution (February 23rd, p. 336) to pass without a severe criticism of the "bricks and mortar" that form the basis of his statistical analysis. To appraise the merits or demerits of any new system one must be sure that the evidence comes from those who have had some considerable experience in this highly delicate field of inquiry.

Why Professor Cummins should select B. W. preparations in preference to the preparations known as Koch's T.A. and T.A.F., which are recognized all over the world as the standard of tuberculin of this type, he himself must explain. The choice of the testing reagent in such an investigation is of prime importance, and personally I should discount the value of experiments with this particular preparation.

If doses are reduced to 1 in 10,000 and 1 in 5,000 the borderline is reached when effects due to unskilled injection may be attributed to the innocent dose. I have confined myself to observations with 1 in 1,000 dilutions, and my conclusions are in entire disagreement with those of Professor Cummins. I should have imagined that the fact that healthy persons gave more severe reactions than the tuberculous would have aroused his critical faculty. Moreover, the only description of the reaction is one of linear measurement. I have never heard that reactions to tuberculin could be measured merely in centimetres.

Again, Professor Cummins's assistants were warned that diluted tuberculin is liable to deteriorate. My own experience is that this rapid deterioration is due to faulty technique—mainly contamination. I am well aware that Koch originally pointed out this fact, but I found out that strict technique removed this tendency.

Lastly, Professor Cummins is still obsessed with the phantasm of danger which Koch designated "thericht." I have used tuberculin openly at the Sydney University for ten years, and since then in London for another twenty years, and all my pupils would vindicate my view that tuberculin used by an expert in proper doses never does any harm. Yet Professor Cummins uses these words: "Special precautions were taken to avoid too deep a puncture. The escape of tuberculin into the subcutaneous areolar tissue vitiates the test and exposes the patient to the risk of a general reaction." Later, he says that in such attempts (the use of concentrations stronger than 1 in 500) "the possibility of dangerous constitutional reactions should not be lost sight of." In Professor Cummins's investigations the largest dose given intracutaneously is 0.0002 c.cm. After a long experience I am convinced that a single dose of 0.0002 c.cm. T.A. or T.A.F. given subcutaneously will never do harm. *A fortiori* it is

not possible to conceive that this dose, or even a much larger dose given intracutaneously, can do any harm.—I am, etc.,

W. CAMAC WILKINSON, M.D.Lond., F.R.C.P.

London, W.1, Feb. 27th.

COLLES'S FRACTURE.

SIR,—The two papers published in the *British Medical Journal* by Edwards and Clayton (January 12th, p. 61) and by Grasby and Trick (March 2nd, p. 391), are of great interest and importance. Neither, however, seems to me to explain the real cause of disablement in so many of these cases—namely, neglect to reduce the forward luxation of the lower end of the ulna so frequently present. When reduction of the fracture of the radius has been secured, the surgeon's thumb should be placed beneath the displaced lower end of the ulna and with a firm thrust it should be pushed dorsally. With this as a fixed point the hand and wrist are swung round into palmar flexion, pronation, and ulnar deviation. Dogma should be avoided in regard to the choice of splints and the position of fixation, but, in severe cases, the extreme Cotton-Loder position indicated above is the best, using moulded gutter splints of metal or plaster.—I am, etc.,

Edinburgh, March 2nd. W. A. COCHRANE.

IMMEDIATE ENUCLEATION FOR QUINSY.

SIR,—The kind remarks on the value of this method made by Mr. Whitelocke of Oxford (February 23rd, p. 374), following my memorandum of February 16th, will, I hope, be followed by others, both specialists and general practitioners, for the latter are the medical men who most often treat cases of quinsy from start to finish. Many specialists have told me that they enucleate an occasional case, and the journals of oto-rhino-laryngology often have abstracts of reports of foreign surgeons who praise the method. But English textbooks practically never even mention it as a possible course of action, whereas it should be regarded as the best course for over 95 per cent. of quinsies, just as immediate operation is regarded as the best treatment for the majority of cases of acute appendicitis.

Regarding Mr. Whitelocke's technique, it is what I learnt to do myself in 1914, but I could not get a decent snare until 1919; by that time I had found that the Collins pile forceps was superior to a snare, just as now most rhinologists use a Luc's forceps (not a snare) for ethmoid surgery, while a decent blunt-pointed, but sharp, straight (Mayo) scissors was superior to the knife. With the scissors the operation is so safe. Make a snip, wriggle the closed points into the extra-capsular space, then open the points widely, and the gloved finger does nearly all the rest. The lassitude and the pain make most quinsy patients prefer the ease of a "little whiff" over the side of their beds; the bother of "local" frightens them, and, personally, I have not wished to devitalize inflamed tissue with local anaesthesia, though, like Mr. Whitelocke, I always use it in debilitated patients—for example, during the course of phthisis or rheumatic fever. Since last August I have treated eight patients; six were between the ages of 18 and 25, and these needed the removal of *both* tonsils and the post-nasal adenoids, which the use of 10 or 15 c.cm. of ethyl chloride enabled me to do. Of the other two, one was too ill, and the other, a heavy, gouty publican, demanded to have as little done as possible, as he had to be at work next day, which he duly was!

I only removed the one tonsil, and nothing else, in these two cases, and hence novocain might have been useful.—I am, etc.,

Bishop's Stortford, Feb. 23rd. R. A. R. WALLACE, F.R.C.S.

SIR,—From time to time one reads in medical literature reports of cases the operative results of which are so excellent as to lead one to consider the necessity of altering one's technique. Such a case is that reported by Mr. Whitelocke in your issue of February 23rd (p. 374). His patient was suffering from "a large left quinsy" which must have been evolving for some time in view of its size and the attendant constitutional symptoms. Under the double influence of a sedative and local anaesthesia, the tonsil of the affected side was dissected out and the abscess evacuated. His patient made so rapid a recovery that on the following day he was correcting examination papers, and two days later he was conducting a viva voce examination.

My experience is so much at variance with that of Mr. Whitelocke, and his results are so incomparably better than my own, that I would ask him to be good enough to reply to the following questions.

1. What sedative (quality and quantity) does he give to overcome the trismus which has been such a distressing feature in so many of my cases? In many of them—even after local and general anaesthesia—the local inflammatory reaction has been so marked that I have had considerable difficulty in introducing a knife.

2. How does he, in such cases, differentiate—at operation—the capsule of the tonsil from the adjacent parts? In the few instances where I have tried to remove the tonsil in cases of peritonsillar abscess I have found it difficult to recognize the tonsil capsule and to deal with the haemorrhage which results.

3. What is his after-treatment of these cases? Although I try to be as gentle as possible, I cannot recall a case of even an uncomplicated tonsillar dissection where the patient would be capable of correcting an examination paper on the day following his operation.

—I am, etc.,

London, W.1, Feb. 24th. MICHAEL VLASTO.

THE DICK TEST IN SCARLET FEVER.

SIR,—With reference to the letter of Dr. William Brown on February 16th (p. 321), it would appear that he wishes us to believe that a positive Dick reaction in a patient who has had scarlet fever has a different significance from a positive Dick reaction in a person who has not had the disease. I cannot agree with this view.

The Dick reaction is a criterion of an individual's immunity to a specific toxaemia. The accepted conception of scarlet fever is that of a local infection with the *Streptococcus scarlatinae*, giving rise to a toxaemia which produces the typical rash (Kinloch, O'Brien, and others maintain that scarlet fever is only one phase of streptococcal infection). The Dick-positive reaction, whether in a healthy individual or a patient convalescent from the disease, always indicates susceptibility to scarlet fever.—I am, etc.,

Ilford, Feb. 25th. A. R. BALMAIN.

TREATMENT OF ACTINOMYCOSIS.

SIR,—In an interesting article on the treatment of actinomycosis with iodine (*Journal*, February 23rd, p. 347) Mr. Hubert Chitty quotes reports of two cases of mycetoma which had been cured by the same treatment. In Madras, where mycetoma (Madura foot) is a very common disease, we have for some years past persevered with the administration of iodine in many forms, including that recommended by Mr. Chitty, but without ever obtaining a cure of the disease. The main suffering in mycetoma is due to septic infection of the sinuses which are present, and which will improve with any sensible surgical treatment. The early effects of iodine and other drugs for this reason have sometimes been very promising, the late results always disappointing. At one time we hoped to cure the disease with deep *x*-ray therapy. The swelling was generally enormously reduced with this treatment, and the symptoms were alleviated, but after several months we were still able to cultivate the fungus from the tumour. A mycetoma, which does not become infected with other organisms, may, in my opinion, often remain small in size and cause very little suffering.—I am, etc.,

Chesières, Switzerland, Feb. 25th. E. W. C. BRADFIELD. Lieutenant-Colonel I.M.S.

CEREBRAL ANGIOSPASM.

SIR,—With reference to the correspondence on this subject in your issues of February 9th and 16th, it would appear that the condition is less uncommon than has been supposed. The following three cases may be cited.

A medical practitioner, aged 45 at the time, was on holiday, convalescent after paratyphoid fever, leading an unusually sedentary life, and smoking considerably more heavy tobacco than his customary quota; he had been constipated for a few days. While

at breakfast one morning he suddenly lost the power of his right hand and dropped his knife; on rising from his seat his right leg gave way under him and he fell. He was unable to speak, but did not lose consciousness, and was able to write with his unaffected hand. The condition lasted a few hours, and two days later he was perfectly well. There have been no recurrences nor other symptoms of vascular disease during the fifteen years which have elapsed, and he has been conducting a busy practice.

A male, aged 62, consulted me four months ago complaining of attacks of loss of power and dizziness. The attacks had commenced seven years previously, occurred periodically for two years, and then remained absent for five years; they had returned a few weeks before I saw him, and became more frequent, until he was having them as often as twice weekly. The attack commences with dizziness and loss of power on the left side, and unless he can support himself with the right arm he falls; there is no loss of consciousness or of the power to speak. After a period of ten to forty-five minutes he vomits and breaks out in a cold sweat, and the paralysis disappears; he feels weak and upset for the next two days, but no paralysis or weakness of the affected side persists. He was formerly a heavy drinker, but has given it up; he smokes two ounces of thick black tobacco per week; his bowels are constipated. On examination, three days after his last attack, no abnormality of any of the reflexes was elicited. The pulse was full and bounding, and of high tension; the arteries were thickened, but not calcareous; the heart was normal and the urine free from albumin. He improved during the next fortnight on purgative and general treatment, but three weeks later the urine contained albumin and a trace of blood. For the past two months he has had no attacks and the urine has been clear.

A male, aged 49, was referred to me by Dr. Ivy McKenzie complaining of symptoms of angina pectoris. The anginal attacks date from April, 1928. There is a clear history of attacks of cerebral angiospasm fully a year prior to the first attack of angina. In March, 1927, he awoke one morning with paralysis of the right arm and leg; the paralysis persisted for half an hour and then disappeared completely. There were two subsequent attacks, each lasting half an hour, and in each instance the paralysis disappeared completely after the lapse of that time. There have been no recurrences of these attacks since. On examination the nervous system was normal. The blood pressure was not raised, nor were the radial arteries palpably abnormal. The heart was of normal size, the sounds being of poor intensity, but free from murmurs; electro-cardiograms were suggestive of myocardial degenerative changes (inverted T in leads II and III and left ventricular extrasystoles). The urine contained no abnormal constituents. The patient's bowels were constipated and the tongue was furred.

In all three cases constipation appears to have been a factor; in two there is a history of smoking heavy tobacco. The association of the arterial spasm with arterio-sclerosis and chronic renal disease in one case, and with angina pectoris and probably disease of the coronary arteries in another, is interesting.—I am, etc.,

Glasgow, Feb. 24th. A. A. FITZGERALD PEEL.

SIR,—Mr. Juler's comment on March 2nd (p. 421) on the cases described by Dr. Gubb and myself is apposite. The diagnosis of my case at the time was not "cerebral angiospasm"; but whatever may be the pathological explanation, it probably applied also to Dr. Gubb's case. In my case the tentative explanation was that the resistance of the arteries was increased by senile change, and that with the low blood pressure attending dyspepsia the blood supply to the left hemisphere was insufficient to maintain its functions. It is an interesting question whether angiospasm was present. I have no recollection of the state of the kidneys; but the patient's general health was so good, and the paralysis so transient, that we may have had no occasion to examine the urine.—I am, etc.,

Cambridge, March 2nd. F. J. ALLEN.

SIR,—Mr. F. Juler, on March 2nd, objects, on the basis of ophthalmological evidence, to the theory of angiospasm put forward by Drs. Gubb and Allen. May I be allowed to side with them as the result of my own investigations, and bring some ophthalmological reasons for supporting this theory, which is usually termed "vascular crisis," a name given years ago by Pal in his monograph on this subject?

In advanced cases of hyperpiesis where the kidney efficiency is still good one can see a focus of exudation in the retina differing from retinitis albuminurica by its sharply outlined edges, its colour, and absence of ophthalmoscopically detected retinal oedema. It strikes the investigator by the fact that adjoining vessels are not covered by this exudation, and are seen sharply outlined, in contrast with retinitis albuminurica, where they are covered by the exudation; and their outline is diffuse. Such a focus may sometimes be accompanied by minute retinal haemorrhages—flat or striate—in its immediate neighbourhood. In one case I saw newly formed tiny vessels passing from the intact retina into the exudation, and abruptly ending near the periphery of the latter. This kind of exudation may lead to a permanent scar of the affected part of the retina, but it may also disappear after a few days, or even a few weeks, without leaving any trace; the retina completely recovers, as judged by the ophthalmoscope. The picture is especially beautiful in the red-free light.

In my opinion the most probable explanation of this phenomenon lies in the disturbance of local metabolism by diminished oxygen supply, caused by angiospasm of minutest arterioles or capillaries. That the larger vessels are not guilty is evidenced by the fact that only a very small part of the retina is affected, and that they do not show any change before, during, or after the appearance of such an exudation. If the angiospasm is extensive or has existed too long, or the lumen of the vessels is completely obstructed by atheroma or by a thrombus, a scar of the retina will result; but if the angiospasm is not so extreme, the retina may fully recover. Most probably a complete analogy exists between those retinal complications of hyperpiesis and vascular spasmodic attacks of cerebral origin.

The subject is too large to be covered in a letter, but I may add that additional evidence of vasomotor influence is afforded daily by using the oscillometer. An extreme case was published by Oertel, who saw actual gangrene of the intestine follow a prolonged spasm of the mesenteric artery. See also the theory of Volhardt on nephritis.

I cannot agree with the expression "arterio-sclerosis with hyperpiesia" in Mr. Juler's letter. The name is very misleading, and these diseases, in my opinion, have very little in common, if anything at all. I discussed this important matter more fully in my papers in the *British Journal of Ophthalmology* in 1927 and 1929.—I am, etc.,

London, E., March 3rd. N. PIRIE.

CARDIAC DISEASE IN SOUTH AFRICAN NON-EUROPEANS.

SIR,—It was with much interest that I read Dr. Heimann's paper on heart disease in South Africa (February 23rd, p. 344). Whilst in Kenya Colony I carried out a similar series of investigations amongst the natives there, and the statement of Dr. Carey Coombs (quoted by Dr. Heimann) prompted me to publish some of my observations.[1] It may be of interest briefly to contrast these with those of Dr. Heimann.

My observations were not confined to inmates of a hospital in a town, but were conducted partly at a hospital in a large native reserve and partly while on tour in the native reserves. In this way not only were large numbers of sick natives seen near their own homes, but systematic examination of healthy natives was also carried out. During my tour of over two years, approximately 1,800 in-patients were admitted to the hospital under my care, 12,000 labour recruits were examined (in the paper quoted above there was a printer's error in the figures), several hundred natives of all ages were examined in connexion with a census of the population and a systematic examination of normal blood pressures, and thousands of sick natives were seen on tour in the reserves. From all these I was only able to collect records of ten cases of valvular heart disease. It would seem, therefore, that this condition must be much rarer in East Africa than it is in South Africa. All these cases were aortic regurgitation, and I never encountered a case of mitral stenosis. The etiology is discussed in my paper, but my conclusions were *that certain* cases seemed most probably rheumatic in origin.

Syphilis is common amongst some tribes in East Africa, but in my experience syphilitic heart disease is rare. I am interested to note that Dr. Heimann had seen cases of syphilitic pericarditis, as I reported a case that appeared to be a gummatous pericarditis and myocarditis.[2] I

[1] *Kenya and East African Medical Journal*, September, 1928, p. [illegible]
[2] Ibid., May, 1928, p. 48.

blood pressure I never encountered, and arterial degenerations appeared to be of lesser degree than in Europeans. I also found that the normal blood pressure in the African native differed in certain respects from that in the European.[1]

In his conclusion Dr. Heimann remarks that there does not appear to be a wide divergence between the etiology, pathology, and clinical signs of heart disease in Europeans and African non-Europeans. With this I cannot altogether agree. As far as rheumatic, syphilitic, and other infective lesions are concerned, that remark appears to be true. But the type of disease that manifests itself as hyperpiesia, angina pectoris, and coronary thrombosis, and which presents such a serious menace to a healthy old age in the European, appears but rarely to affect the African.

I encountered a type of case in Kenya that I have not been able to correlate with any condition that I have seen described. The essential feature of these cases is a displacement of the apex beat to the left. On casual examination it appears that the heart is enlarged. The absence of any obvious reason for such enlargement led me to investigate a number of these cases.[2] I came to the conclusion, after such investigations as circumstances permitted, that the heart was displaced to the left, and not appreciably enlarged. There appeared to be no impairment of the function of the heart. There was no chest condition detectable that could account for this condition, but all the cases I encountered were associated with an enlarged spleen, and had come from malarious districts. I have been unable to decide whether the splenic enlargement could be responsible for cardiac displacement.—I am, etc.,

C. P. DONNISON, M.B., B.S.Lond.,
Late Medical Officer, East African Medical Service.

South Benfleet, Essex, Feb. 27th.

AMAUROTIC FAMILY IDIOCY.

SIR,—Dr. Robert Platt's further remarks on this subject on February 23rd (p. 373) are very acceptable. In regard to the R—— family tree, I have had news this week of a branch of it which has made South Africa its country of adoption.

Shalom R——, a son of the related ancestors, migrated there and married, his wife not being the remotest relation. They had two male children, of whom the younger, at the age of about 25, was confined in a mental institution. Full particulars of his case are not yet to hand. The elder had three children, by a wife who again was not in any way related to him, of whom the first was stillborn, the third is alive and well, and the intermediate one died. From the description of its symptoms it is reasonably certain that it was an amaurotic family idiot, though the condition was diagnosed at the time as "cerebral abscess."

A sister of Shalom R—— also lost a number of grandchildren in infancy from causes at present not ascertained.

This must only be regarded as an advance notice of these cases, since there has not yet been time to get into communication with the South African medical men concerned, as I hope to do. Further, the sensitive and apprehensive temperament of the adult members of the family may, they suggest, have some relationship with this disease. I offer it for what it is worth.

In this family, at least, I hold that heredity has a marked bearing, and I shall be much interested to know if Dr. Mandel, on deeper investigation, can establish collaterals to his cases.

Assuming that all these cases are the outcome of DR—DR marriages, it would appear that DR types are not rare throughout the scattered Jewish race, in which event this disease should be more common, or that the DR members of this family tree have been highly unfortunate in selecting their mates, even from widely separated parts of the world. Alternatively, I suggest that in the R—— family there is a tendency to this disease more strong than a simple Mendelian recessive characteristic.

While Mendel propounded a working hypothesis of the first order, he left confessedly unexplained the origin of the transmissible character of a "sport," to which category this disadvantageous condition may belong. In sporadic cases we may imagine that transmissible virulence has not been attained, especially as the subject has no chance of breeding. Mendelism, satisfactory up to a point, awaits its Einstein.—I am, etc.,

D. STENHOUSE STEWART.

Hull, Feb. 23rd.

[1] *Lancet*, 1929, vol. i, p. 6.
[2] *Kenya and East African Medical Journal*, November, 1927, p. 241.

INTRACRANIAL SURGERY.

SIR,—In the review of my report to the Medical Research Council on intracranial surgery, published in your issue of March 2nd (p. 406), you "express regret at the almost complete omission of the names of English neurological surgeons" from the bibliography. May I point out that the report was not concerned with the work of English neurological surgeons, but was, to quote from its opening paragraph, "an attempt to describe the methods of diagnosis and treatment employed in Dr. Harvey Cushing's clinic at the Peter Bent Brigham Hospital, Boston"?

It should also be explained, as was done in the report, that the neuro-surgical clinic is merely one part of the general surgical clinic, directed by Dr. Cushing. The neuro-surgical cases are not segregated, but are scattered through the general surgical wards so that all house officers and surgical dressers may come into contact with them.—I am, etc.,

HUGH CAIRNS.

London, E.1, March 5th.

*** We are very glad to publish Mr. Cairns's letter, which corrects a misapprehension. His list of references applies directly to the text of the report, and is not a general bibliography.

THE CAUSE AND CURE OF MORNING SICKNESS.

SIR,—Dr. Richmond, in his instructive memorandum in the *Journal* of February 23rd (p. 349), suggests that the cures he has wrought in the condition of the morning sickness of pregnancy have been due to opening the cervical canal by means of tampons of glycerin.

In view of the recognized propensities of glycerin, when locally applied, of acting as a stimulant to uterine activity resulting in the evacuation of the viscus, it would be interesting to know whether in any of the cases so treated the cure of the pathological condition coincided with a premature termination of the physiological one.—I am, etc.,

JAMES KILPATRICK REID, M.B., Ch.B.

Birkenhead, Feb. 25th.

ACTINOTHERAPY AND DEAFNESS.

SIR,—I wish to thank Mr. Norman Barnett for his suggestion (February 16th, p. 323) of a functional cause of the case of chronic deafness which I reported in your columns on January 19th (p. 133). When I recorded the case I gave all the information I could vouch for. Since writing, a specialist's report has been placed in my hands, dated December 10th, 1926, from which I quote, "Her deafness is apparently of some considerable standing, as the middle ear contents, ossicles, foot piece of stapes, show marked adhesions—fixation."—I am, etc.,

T. C. HUNTER.

Morpeth, Feb. 25th.

Universities and Colleges.

UNIVERSITY OF OXFORD.

IN Convocation on February 26th a decree was passed to discontinue the examinations for the Diploma in Public Health until further notice.

On the motion of Dr. E. W. Ainley-Walker, a decree was passed unanimously accepting with gratitude the gift of £1,000 from the fund placed at the disposal of the Prime Minister by Lord Beaverbrook for the promotion of medical knowledge. This sum, it was announced, will be used for the establishment of studentships for medical research.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on March 1st the following medical degrees were conferred:

M.B., B.Chir.—J. A. Hartley, J. D. Proctor.
M.B.—A. J. Dix-Perkin.

UNIVERSITY OF ABERDEEN.

THE Senatus of the University of Aberdeen has resolved to confer the honorary degree of LL.D. upon Dr. Walter Elliot, M.P., Parliamentary Under-Secretary of State for Scotland. The graduation ceremony will be held on March 27th.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

The Local Government Bill in the House of Lords.

Discussion in Committee.

IN the House of Lords on Tuesday, March 5th, the Local Government Bill was considered in committee, the EARL OF DONOUGHMORE in the chair.

The MARQUESS OF READING moved an amendment to Clause 4 (provisions as to the alternative powers of giving assistance), providing that in so far as administrative schemes prepared by local authorities under the clause related to hospitals they should take reasonable steps to seek full co-operation with every voluntary hospital in the area of the authority.

Lord DAWSON OF PENN also had an amendment on the order paper, to the effect that a council in preparing a scheme under this section shall have regard to the desirability of consulting (*a*) any body existing in the area which is so constituted as to be representative of the voluntary hospitals in the area, and (*b*) any body existing in the area which is so constituted as to be representative of the duly qualified medical practitioners in the area, including those on the medical and surgical staffs of any voluntary hospitals in the area.

The EARL OF ONSLOW, speaking on behalf of the Ministry of Health, intimated that he would be prepared to move a new clause to the following effect: "The council of every county and county borough shall make such arrangements as they think desirable for securing that the functions transferred to them under this part of the Act with respect to the provision of hospital accommodation will be discharged after consultation with such body, if any, within the county or county borough as they consider to represent the voluntary hospitals in the area."

This new clause was criticized in the subsequent debate by several lords as too loosely drafted and vague in its terms, and complaint was made that it did not meet the desire expressed by Lord Dawson to ensure consultation with the medical profession in each area.

Lord ONSLOW said that the Government desired to meet the wishes of the House. He undertook to have the clause redrafted before the report stage. He hoped that in its new form it would be acceptable to the House, including Lord Dawson.

The MARQUESS OF READING withdrew his amendment.

Lord DAWSON said he would not move his amendment, but he hoped that they would get something more out of the Government.

Debate on Second Reading.

In the House of Lords, on February 26th, the second reading of the Local Government Bill was moved by the LORD CHANCELLOR (*Lord Hailsham*), who, in his exposition of it, said that under the bill, by centralization and specialization in selected institutions under the Poor Law, a far more skilled service could be provided than was possible to-day. The bill gave power to the county councils for provision of hospitals or maternity homes or for the making of subscriptions and donations to existing hospitals and institutions. Provision was made for the recovery from those who accepted assistance in these public institutions of a contribution towards the expense, but that did not apply to treatment in infectious hospitals, including hospitals for the treatment of tuberculosis and venereal disease, since it was in the interests of the public that persons should be isolated in those institutions as soon as possible. Provision was also made for acceleration of the process under which medical officers of health became full-time servants of the State, and for the making of regulations prescribing the qualifications of such officers and of health visitors. The bill further enjoined a survey by county councils of the existing accommodation in hospitals for infectious diseases.

Lord PARMOOR moved the rejection of the bill.

The debate was resumed on February 27th. Lord BEAUCHAMP contended that the bill should have split Poor Law functions into three, all the health, mental deficiency, and children's services being given to the county councils.

Lord DAWSON OF PENN said he proposed to limit his remarks to the parts of the bill of which he had some knowledge, and particularly that which concerned the foundation of hospitals, a subject concerning which discussion in the House of Commons had been strictly limited. In Part I of the bill were clauses which enabled and might encourage councils to found general hospitals for treatment of general medical and surgical disease. This new departure probably ushered in a new era for medicine in this country. He thought the proposals right if suitably safeguarded, but neither county councils, county borough councils, nor their medical advisers had previous experience of the whole field of curative medicine. They had a limited knowledge in the application of curative medicine at tuberculosis clinics and in maternity; the fact that the councils had run Poor Law hospitals was but little training for the running of big general hospitals. The powers in the bill enabled the councils to convert Poor Law hospitals into general hospitals and to found general hospitals at a time when the demand for hospital accommodation was increasing throughout the country. Hospitals were now needed for the whole nation. They used to be for the sick poor; now everyone was poor, and sometimes sick. Social and economic conditions and the progress of knowledge demanded hospitals. The art of medicine now called to its aid a number of sciences, and these new sciences required team work. Years ago a disease of the chest required a stethoscope and a bottle of medicine. To-day it also required, besides the clinical skill of the physician, the radiologist and the bacteriologist. A surgeon who wished to operate on the stomach now perhaps required the skill of the chemist or of the radiologist. Many branches of knowledge had to act in co-ordination. Each of these specialties required its equipment, and the equipments had to be brought together for efficiency and for cost, because the more science progressed the greater the cost of treatment. But for what he might call mass production a large proportion of the population would be without these benefits—another reason why people in increasing numbers needed hospital treatment. He admitted that the voluntary hospitals of the country could not entirely fulfil these needs, and believed that one of the questions before the Government when preparing the bill was how this hiatus could be filled up. There could be a considerable extension of a form of co-operative hospital in garden suburbs and garden cities, where there was great scope for a system of co-operative treatment. Co-operative health societies could be linked with insurance societies to solve some of the difficulties of hospital provision, but even when that had been done a large gap would remain to be filled. All the conditions of to-day tended to move the location of illness from the home to the institution, and so the need for hospital accommodation was great. Yet, as he had said, neither the councils nor the medical staffs had experience in the curative treatment of disease. The councils were advised by medical officers of health and by people who looked after clinics. In their own domain these did excellent work, but their experience of curative medicine was little or none, although four-fifths of the medical men in this country were engaged in it. Part I of the bill lacked appreciation of the essential conditions of success. In effect, it said to the Public Assistance Committees, "You can convert your Poor Law hospital, if you wish. You can build large hospitals. We would like you to co-opt a few people who know something about the running of a general hospital, but we will not force you to do so." A hospital was not a building made with hands. It was an organization, an assemblage of great traditions. The efficiency, the flexibility of administration, the public spirit, and the warmth of heart of the hospital service of this country had all grown up round the voluntary system, which had made the hospitals of England famous throughout the world. The ambition of the young man of talent was to get to these hospitals. There he worked for years at a pittance to gain experience, reputation, and discipline. That was the recognized road within the profession, and from the hospitals also the nurses came. Obviously the voluntary hospitals should be the kernel round which any new hospital system should be built, and legislation should provide that this mode of progress was not only permitted but secured. The voluntary hospital was a tender plant, and could be easily killed. Let it direct in forming up the new hospital policy which was needed for the country. Supposing there were no co-opted minority on the Public Assistance Committees, and that they had a free hand. Supposing—and this was not imagination—that a council were returned committed to the policy of a whole-time municipal medical service. That council would build up a service independent of the voluntary hospitals, competing with them, and overlapping them. At the moment some boroughs were trying to run a medical service. The avowed object of certain people was to set up municipal hospitals, staff them with a full-time staff, and run them as a municipal service. That would be a disaster. How would they get their staff? Presumably they would advertise for it, as if physicians and surgeons grew like gooseberries on a bush. Advertisements did not bring in the right people, and already there had been lamentable consequences of the wrong people staffing hospitals. The Government should make compulsory the co-option of a minority skilled in hospital work on the Public Assistance Committees. On Education Committees it was compulsory to have a co-opted minority of people skilled in education. If that was sound for education, why not do it for health? The medical profession had practically unanimously asked that co-option of a minority skilled in hospital work should be compulsory. The King Edward's Hospital Fund had taken the same line. Could the House of Lords desire to start a new venture which would lead to a wide establishment of municipal hospitals and neglect all the traditions and knowledge that had gathered during the years? He wished to urge one other amendment on

Government. Hitherto the health services of the country had been run by men who had specialized in preventive medicine—medical officers of health, tuberculosis officers, school medical officers. He admired their work, but they had never had anything to do with disease, and many of them had not been in contact with hospitals since their student days. How could they be expected to advise their councils wisely on curative hospitals? Ever since the Ministry of Health Bill passed the policy of the official doctor had proceeded on lines divergent from those doctors, constituting four-fifths of the profession, who belonged to the curative branch. That divergence was lamentable, and would be still more serious if it continued. To meet it he suggested that there should be set up, under the chairmanship of the medical officer of health, in each district which the council administered, an advisory council of doctors. This proposal had been before the Ministry of Health for some time, and would bring to the aid of the men who had to administer the experience of the men who knew. He believed the hospital policy of the bill could confer great and continued benefit on the community if the Government would accept the safeguards he had suggested in the form of amendments at a later stage.

Lord UNSLOW, replying for the Government, said Lord Dawson of Penn had ably dealt with the question of hospitals. On this matter there was some misapprehension about the effect the bill would have. The bill only made one change in the law—by giving county councils the powers now possessed by county boroughs and county districts to establish hospitals or to subscribe to existing voluntary hospitals. Those powers were given under Section 131 of the Act of 1875 to local authorities; but in those days local authorities did not include county councils, because these did not exist. The bill, therefore, merely put county councils in the same position as county boroughs. It gave county councils the right and duty to take over existing Poor Law institutions. They would allocate these to the best advantage, using one for tuberculosis, another for chronic cases, and so forth. As to voluntary hospitals existing, or to be established in the future, the Government looked for the closest co-operation between them and local authorities. The county councils, with their new hospital activities and powers, should work in close co-operation with voluntary hospitals in London and everywhere else. Such co-operation had been growing fast lately, and they hoped the bill would increase it. It would be difficult to amend the bill in order to make a statutory provision on this question. Possibly the machinery of the Voluntary Hospitals Committee, which included representatives of the hospitals, the medical men in the district, and the local authorities, might be utilized. Lord Dawson's proposal for compulsory co-option could be more easily discussed if he later moved an amendment. Turning to the question of block grants, Lord Onslow said it had been contended that this system, especially in the case of maternity and child welfare, would militate against the efficiency of the services. Maternity and child welfare services were most essential in the poorer districts, which, under the percentage grant, could not spend a considerable amount upon them. Under the bill necessitous areas would receive a large proportion of the Exchequer contribution, and so would be able to devote more money than in the past to maternity, child welfare, and other health services. Against local authorities which did not spend sufficient money on maternity and child welfare, the Minister would have under the bill a weapon which had never existed before.

The House divided and read the bill a second time, by 102 to 20.

The House of Commons was again in committee on the Local Government (Scotland) Bill on March 5th.

Army Estimates.

Presenting the Army Estimates to the House of Commons on February 28th, on the motion that the Speaker leave the chair, Sir LAMING WORTHINGTON-EVANS drew special attention to the assistance given to the army by members of the medical profession. He said the army could derive nothing but benefit from a good understanding between the civil and military branches of the medical profession, which displayed itself in fruitful co-operation on many committees. He hoped that as the scope and attractiveness of the Army Medical Service became better known through their advocacy the present welcome increase in the number of candidates would continue.

Mr. J. W. LAWSON commented on the recruiting statistics in the Army Report. Dental standards had been lowered, the height standard had been lowered from 5 ft. 3 in. to 5 ft. 2 in., yet only 36 per cent. of recruits were accepted.

Lady IVEAGH protested against the test-firing of 16 in. shells from Kent to a target in Essex, passing over the town of Southend. This affected the value of that town as a resort for convalescents. She had a protest against the firing, which had been signed by thirty-four medical men practising in Southend. This letter declared that "instances in which definite injury has resulted to our patients are within our experience, while ill effects on children have been frequently brought to our notice." Mr. DUFF COOPER said the War Office were alive to the hardships of her constituents in Southend, but had not been able to discover a more suitable place for this firing.

Mr. BECKETT spoke of the small proportion of cases of tuberculosis in the army which were admitted to be attributable to service. The Admiralty had agreed that such men should have the right of independent appeal and adjudication. The Secretary for War should also do justice to these cases.

A vote for War Office pensions and other non-effective charges was taken later the same night. Dr. VERNON DAVIES asked whether there was any chance for a service man to appeal against the decision of the medical chiefs of the War Office or of the authorities at Chelsea. Were there any methods by which a man could obtain, either himself or through his agents, any record of his medical history or of the reason which determined whether he was entitled to a pension or not? Medical men were being constantly worried about such cases, and, as far as Dr. Davies could find out, the opinion of a civilian medical man in a case of that kind was of no account. He did not criticize the authority or the skill of the medical officers of the War Office or at Chelsea, but it would give satisfaction to the civilian medical profession to have information of the procedure in this class of case.

Sir LAMING WORTHINGTON-EVANS said that when a man claimed a pension on account of disability his papers went to the board at Chelsea, and were examined with the greatest care. The medical evidence was sifted, and the man was examined. The man had an appeal to the medical authorities at the War Office, and the board there really did give justice in these cases.

Dr. DAVIES thanked Sir Laming for his explanation, but asked him to consider the possibility of co-opting civilian members to the appeal board at the War Office.

The House agreed with the vote. Closing the debate, Mr. DUFF COOPER said the health of the troops at Shanghai had considerably improved, but was not satisfactory.

Bills.

On February 28th the House of Lords passed the Factory and Workshop (Cotton Cloth Factories) Bill through committee. This bill authorizes the issue of regulations regarding humidity in cotton-weaving sheds. On the same day the House of Lords further debated legal points in the Age of Marriage Bill.

Illicit Drug Trade in China.

On February 27th, in a reply to Sir Robert Thomas, Mr. G. LOCKER-LAMPSON said that, with a view to preventing participation by British subjects in the illicit drug trade in China, the British Government had enacted regulations under which subjects so offending would be liable to heavy penalties, and in the last resort to deportation.

On February 28th Mr. CECIL WILSON asked the Home Secretary to explain what had become of a balance of 1,017 kilograms of heroin, unaccounted for in the totals of that drug exported from, or available for, internal consumption in the United Kingdom in 1924 and 1925. Sir W. JOYNSON-HICKS replied that the figures included 745 kilograms of heroin in 1924 and 15 kilograms in 1925 which were not necessary as such, but were reconverted into morphine. The bulk so reconverted consisted of illicit consignments to the Far East, which were seized at Hong-Kong and sent home to this country for disposal. The balance in each year approximated to the general average of the surplus of heroin imported and manufactured over that exported or re-exported. The substance was useful for medicinal purposes, and the object of the Home Office was to prohibit its use except properly in medicine. Heroin seized at Hong-Kong was not destroyed, but sent here to be utilized for medicinal purposes.

Sterilization of Mental Defectives.—Colonel WEDGEWOOD asked, on February 27th, whether the Minister of Health had received a petition, signed by many doctors, asking for the sterilization of criminals and mental defectives, and whether the Government intended to take any action in the matter. Mr. CHAMBERLAIN replied that he had received a resolution urging that an inquiry should be held into the best methods for dealing with mental deficiency, including a special inquiry into the possibility and advisability of legalizing sterilization under proper safeguards and in certain cases. He could not yet indicate the intentions of the Government in the matter.

Inmates of Mental Institutions in Scotland.—Sir JOHN GILMOUR stated, on March 5th, that in Scotland, at January 1st, 1929, there were in royal asylums 3,616 lunatics; in district asylums 12,515; in parochial asylums 241; in private asylums 42; in the lunatic wards of poor-houses 830; and under care in private dwellings, including specially licensed houses, 1,623; making in all a total of 18,917. There were, in addition, 969 patients voluntarily in residence in the respective institutions at that date, and 73 inmates of the criminal lunatic department of the prison at Perth.

Hookworm Disease.—Mr. AMERY told Sir Robert Thomas, on February 25th, that the medical departments of the East African dependencies were alive to the importance of combating hookworm disease. Special intensive campaigns against it have been undertaken in the past two years by the medical departments of

Kenya and the Tanganyika Territory with encouraging results, and were still in progress. No returns of the number of cases successfully treated in 1928 were available. While officers are from time to time deputed to undertake special work against the disease, its treatment was part of the ordinary duties of all Government medical officers in the East African dependencies.

Fibrosis of the Lungs.—Sir W. JOYNSON-HICKS stated, on February 28th, that he had seen the report by a medical inspector who attended an inquest at Leeds on a woman who, up to four years ago, was employed at an asbestos factory in Armley, and who died of fibrosis of the lungs. Sir William said it appeared from medical evidence that death was due to the effects of dust. The effects of this dust were already the subject of a comprehensive inquiry by the medical inspectors, one of the main objects of which inquiry was to determine the precautions needed for the prevention of this disease.

Early Rickets in Distressed Areas.—In answer to a question by Dr. Vernon Davies, on February 25th, Sir KINGSLEY WOOD stated that the measures taken to prevent the onset of rickets, and to deal with such cases as arose, were a matter in the first instance for the maternity and child welfare authorities of these areas. Mr. Chamberlain was advised that the authorities were alive to this matter. He had recently sanctioned increased expenditure on the supply of milk to expectant and nursing mothers and to young children in these areas. Dr. DAVIES asked whether Sir Kingsley would communicate with the South Wales health authorities to see that cases of rickets were followed up after treatment. Sir KINGSLEY WOOD said that he would look into that. Dr. DAVIES asked Sir Kingsley if he knew this was not a question of shortage of food, but of improper food which the children were receiving. Sir KINGSLEY WOOD said that was so. He reminded the House that the report just issued by officers of the Ministry of Health stated that to a great extent disease has been controlled by means of maternity and child welfare services.

Maternity and Child Welfare Centres in Scotland.—The LORD ADVOCATE (Mr. W. Watson) told Mr. Campbell Stephen, on February 26th, that at the end of 1928 there were 193 maternity and child welfare centres in operation in Scotland. During the year ended December 31st, 1927, the number of mothers who attended the centres for advice or treatment or for food and milk was approximately 55,000. The applications for food and milk were 17,208 in respect of mothers, and 44,598 in respect of children. The total expenditure on food and milk for the year ended May 15th, 1928, was £52,864, and the total expenditure under schemes of maternity service and child welfare, excluding food and milk and administrative expenses, was £205,931.

Consumption of Opium in Hong-Kong.—Asked by Mr. Ponsonby to give the reasons for the failure to restrict the consumption of opium at Hong-Kong, Mr. AMERY said the Hong-Kong Government had established a monopoly of the sale of opium with the intention of restricting consumption by charging high prices. That monopoly was not effective because of the abundance of cheap opium in China and the proximity of Chinese territory. In the hope of solving the difficult problem in Hong-Kong the British Government suggested in 1928 that the League of Nations should send a commission of inquiry to investigate the opium problem in the Far East. The League had agreed to do so.

Radium.—Mr. LOCKER-LAMPSON stated, on February 27th, that in a few weeks' time the Government would receive a report from a subcommittee of the Committee of Civil Research on the radium requirements of this country and the possible sources of supply. Until this report had been considered the Government could not judge whether to ask the League of Nations to institute an inquiry into the conditions of production and sale of this substance. On the same day Mr. CHAMBERLAIN, in reply to Dr. Little, said that the Medical Research Council, in apportioning the stock of radium salt which had been bought at the public expense, paid consideration to the technical experience in its use of those to whom it was supplied.

Registration of Doctors for Military Purposes.—Mr. MALONE asked the Secretary for War, on February 26th, whether circular letters were being addressed by district military headquarters to medical practitioners in the district requesting the practitioners to fill in a form stating whether, in the event of mobilization, they would be willing to devote a portion of their time to work in the local military hospitals in order to fill the vacancies created by the withdrawal of regular Royal Army Medical Corps officers for the expeditionary force; whether this registration of doctors for military purposes was being carried out all over the country on his instructions; and, if so, with what object. Sir LAMING WORTHINGTON-EVANS answered that inquiries were being made by the military authorities in various parts of the country to see how far the local civil medical practitioners could be counted on in the event of mobilization to act in a civil capacity in hospitals in the United Kingdom in place of Royal Army Medical Corps officers until relieved by other Royal Army Medical Corps officers.

Medical History of Discharged Soldiers.—On February 28th Mr. SHEPHERD asked a question about the medical history of a man discharged from the army. Mr. DUFF COOPER, Financial Secretary to the War Office, said the medical records of soldiers were confidential. To disclose details from them would be contrary to established practice. Dr. VERNON DAVIES asked whether an appeal was not handicapped if the appellant could not get particulars of the medical history of the case. Mr. DUFF COOPER said the previous history was open to the people advising the appellant.

Health of the Mercantile Marine.—Sir RICHARD LUCE asked, on February 28th, whether the necessary sickness and mortality statistics were available or in preparation for the joint committee appointed by the Board of Trade and the Ministry of Health to consider matters affecting the health of the mercantile marine. Commodore KING replied that in addition to statistics published by the Registrar-General an annual return was published by the Board of Trade of all deaths on ships registered in the United Kingdom. Whether these statistics could be improved or supplemented was being considered by the joint advisory committee.

Colonial Surgical Appointments.—Dr. DRUMMOND SHIELS asked Mr. Amery, on February 25th, whether in one colony certain surgical appointments were reserved for holders of the Fellowship of a particular Royal College of Surgeons; whether this practice had the approval of the Colonial Office; and, if not, whether he would call the attention of the Colonial Government to the matter. Mr. AMERY said he was informed that in one of the colonies there was a departmental regulation that had the effect of excluding from consideration for certain surgical appointments candidates other than holders of a particular surgical diploma. He did not think that assignment to particular technical posts could fairly be based on academic qualifications alone to the exclusion of other qualifications, such as experience, skill, and personal suitability. He was inviting the Colonial Government concerned to attend to the matter.

Factory Inspectorate.—Answering Mr. Kelly, on February 28th, Sir W. JOYNSON-HICKS said the number of factory inspectors actually employed was now slightly larger than six months ago, vacancies having been filled. The question of increasing the factory inspectorate was being considered by a departmental committee under the chairmanship of Sir Vivian Henderson. The House would be informed of the recommendations of this committee.

Notes in Brief.

There are in England ninety-eight day nurseries recognized by the Ministry of Health. The policy of the department is to encourage these nurseries.

On the allegation that bombs or shells carrying disease or plague germs were used by the German forces on the Western Front during the war the British War Office has no information beyond that contained in the official history of the war.

Obituary.

SIR HECTOR MACKENZIE, M.D., F.R.C.P.,

Consulting Physician to St. Thomas's Hospital, the Brompton Hospital for Consumption, and King Edward VII Sanatorium.

WE deeply regret to announce the death on Saturday, March 2nd, at his residence in Upper Brook Street, of Sir Hector William Gavin Mackenzie, at the age of 72. He was ill for a few days only with symptoms of bronchopneumonia of the type which is now so prevalent.

Hector Mackenzie gave evidence of his outstanding ability at an early stage of his career, and such were the opinions formed of his prospects at Cambridge that it was regarded almost as a ground for condolence when he graduated in 1880 as fifth Wrangler. Immediately after this he was elected a Fellow of his own college, Emmanuel. In 1882 he entered the medical school at St. Thomas's Hospital and carried off various prizes, the culminating one being the Mead Medal for Clinical Medicine. He qualified in 1884 as M.R.C.S.Eng., and graduated M.D. Camb. in 1888. After holding the junior medical appointments at St. Thomas's, he was elected assistant physician, then physician, and ultimately, on his retirement in 1919, consulting physician. Concurrently with these appointments at St. Thomas's he was the holder of similar posts at the Brompton Consumption Hospital, and for a shorter time at the Royal Free Hospital. He became Fellow of the Royal College of Physicians in 1892, examined in medicine for the Conjoint Board for four years, served as censor for three years from 1916, and delivered both the Bradshaw and Lumleian Lectures. During the war he served as captain in the R.A.M.C.(T.) attached to the 2nd London General Hospital at Chelsea. He was knighted in 1923.

Without any doubt Mackenzie was a most able general physician, and extended his purview over the whole range of medicine. But in two directions he could claim to be a specialist of the best type. He spoke with authority on diseases of the thyroid, for in 1892, simultaneously with, but independently of, Dr. Fox of Plymouth, he discovered the epoch-making fact that thyroid extract was as effective when given by the mouth as under the skin. The authority with which he could claim to speak on the subject of diseases of the chest was perhaps based rather on his long association with Brompton Hospital and the King's Sanatorium than upon any achievement parallel to that in the territory of the ductless glands, but it was fully

justified by virtue of his highly developed skill and ripe experience. Mackenzie's writings were mainly devoted to the two lines of thought to which reference has just been made. He was not the author of any independent treatise, and his literary work has to be sought either in the reprints of lectures or in articles in various systems of medicine. He wrote well and with restraint; it might perhaps have been lighter reading if there had been less of the latter quality. His characteristics as a physician and teacher may be deduced from the sketch of his personality which it is the aim of the following lines to give. They are written, as might be supposed, by a colleague and close friend of many years' standing.

"There was a curious dichotomy between Mackenzie the hospital physician and Mackenzie the social individual; this was definite enough to justify their being tabulated under (*a*) and (*b*). It was not, of course, a case of Jekyll and Hyde, for they were both Jekylls, but of a different type. Jekyll (*a*) was an extremely taciturn individual. There was no dourness about the taciturnity, which seemed to depend upon an abnormally high threshold for speech. He never went to meetings of his colleagues, and on his clinical ward rounds it was not altogether easy for the students to extract the spoken word. This was always good when it came, but the difficulty was to get it. In spite of this difficulty of communication Mackenzie's students got to love him, and the friendships thus formed proved in some cases to be lifelong. In his relations to hospital patients Mackenzie suffered to some extent from his difficulty in establishing a personal tie, but at all events they had from him the best that modern medicine could give. Mackenzie as a social entity—whom we may call Jekyll (*b*)—was a different being. He was quiet still, but full of humour, and possessed of a characteristic laugh which was rather a chuckle than a laugh. He was a cultivated musician, was a good linguist, and a reader of wide scope. In congenial society, preferably one of both sexes, he could let himself go, and was worthily described as 'the life and soul of the party.' His great hobby was skating, and he was enjoying this within a fortnight of his fatal illness. This is a very faulty sketch of what was a most complex character. No attempt has been made to conceal the existence of a negative phase beyond which many colleagues and potential friends found it difficult to penetrate. If they had succeeded they would have found a being of remarkable charm and of singularly rich equipment."

Sir Hector Mackenzie, when Bradshaw Lecturer before the Royal College of Physicians of London in 1916, chose as his subject exophthalmic goitre; and in 1922 his Lumleian Lectures were devoted to diseases of the thyroid gland. He also contributed articles on the thyroid to Allbutt's *System of Medicine*. In 1902, when the British Medical Association last met at Manchester, he was president of the Section of Pharmacology. He married in 1890, but leaves no children.

Mr. W. H. BATTLE, consulting surgeon to St. Thomas's Hospital, writes:

As one who was closely associated with Hector Mackenzie during the greater part of forty years, I should like to add a few lines to those which have been contributed by others of his colleagues and friends. He was a difficult man to know, and did not encourage attempts to become intimate; but when one did have the privilege of intimacy he was responsive and revealed a very fine character. He was never too busy, even at the end of a long round in the wards, to see another hospital patient, and never allowed himself to be hurried. His attitude was one of quiet confidence, which impressed the patient, as well as others present, conveyed a feeling that he recognized the importance of what he was told, had weighed the evidence, and that the verdict was fully considered before it was given. It sometimes appeared to patients that "the Doctor" had not told them everything that they wanted to know, but as time passed they found that they had been told the essential facts. Whilst he was rightly regarded as possessing a special knowledge of diseases of the chest, his insight in a difficult case often proved a surprise to those who did not understand his modest demeanour, or know the extent of his knowledge of medicine. His contributions to the study and treatment of diseases dependent on changes in the thyroid gland were especially valuable. A consistently hard worker, he did not allow himself much in the way of holiday or recreation. In recent months he appeared to be somewhat failing in health, but he always scoffed at the suggestion that he should take care of himself, and did not deviate from the path of duty which he had marked out as the one to follow. It will be evident that his opinion would be extremely valuable in difficult insurance cases, and it will be hard to follow a man who was so practical and conscientious in even minute details, one of such high ideals, wisdom, and forgetfulness of self.

Dr. FRANK C. EVE, consulting physician, Hull Royal Infirmary, writes:

We have lost Sir Hector Mackenzie, and no one can fill the gap; we can but treasure his memory. I knew him for thirty years—as his clerk, house-physician—and ever afterwards sought the fruits of his wisdom. He was always the same—quiet, unassuming, equable, and kindly through and through, with dry humour twinkling in the background. He had a remarkable mind, like a complicated and rather ponderous machine of which the workings were entirely hidden. You presented your problem to the machine, and after a while began to wonder if anything was going to come out. Eventually—perhaps extracted by questionings—the solution was duly delivered, thoroughly thought out, and often highly illuminated. He had the great gift of sagacity, which is so much rarer than cleverness. Once I joked with him about the German language being the only one to possess a special word (schadenfreude) to denote "joy at the misfortunes of others." The conception seemed genuinely to pain and shock him—revealing his gentle nature. He brought the best side out of those who knew him, partly by his essential goodness and partly because he seemed only to see one's good points and to be blind to one's faults. This rare quality will yield him many mourners. Of this great and simple physician the words might have been written, "Write your name with love, mercy, and kindness in the hearts of those about you, and you will never be forgotten."

We have to record, with regret, the death of Sir JAMES HOSKER, which took place at his home in Bournemouth on February 13th. James Hosker, who was born in 1857, received his medical education at the London Hospital, qualifying M.R.C.S., L.R.C.P. in 1882. After holding various posts he engaged in general practice in Boscombe, holding in turn appointments of surgeon and of consulting surgeon to the Royal Victoria and West Hants Hospital. Hosker took an active part in public life. He was chairman of the Bournemouth Constitutional Association, and served his town first as councillor, then as alderman, and finally as mayor. The honour of knighthood was conferred on him in June, 1928. He was an active member of the British Medical Association, being member of the Dorset and West Hants Branch Council in 1904, and president of the Dorset and West Hants Branch in 1909. A man of many and varied interests, he held high and honoured positions in Freemasonry, and the directorship of various electric supply companies; he was also a trustee of the Kennel Club. He is survived by his widow.

Dr. ALBERT TRONSON OZZARD, late of the British Guiana Medical Service, who died on February 1st, obtained the diploma M.R.C.S. in 1886, and the L.S.A. in the following year. He had been a member of the British Medical Association for many years, and was president of the British Guiana Branch from 1922 to 1924. We are indebted to Dr. J. H. Conyers, late Surgeon General to British Guiana, for the following appreciation. Dr. A. T. Ozzard had served the colony for the long period of forty years (1887–1927), and had filled with distinction the various posts of district medical officer and resident surgeon to the Suddie and Georgetown Public Hospitals; he had also acted as surgeon general. To us, his colleagues, Ozzard was known as a keen scientific worker, and however great the routine demands of his work he always found time to call in the powerful aid of his microscope in the diagnosis of obscure

cases. He was one of the colony's earliest workers on the subject of ankylostomiasis, and the good work of Ozzard, Ferguson, and others of the British Guiana Medical Service on this subject led the Rockefeller Commission to start in British Guiana its earliest antihookworm campaign. Ozzard's studies in blood pathology led to the discovery of the *Filaria ozzardi*, so named by Sir Patrick Manson. Such is the brief record of a strenuous life in a tropical climate, broken by attacks of grave illness. His last work was the investigation of a severe epidemic of malaria in the upper reaches of the Demerara River at the end of 1926. Unfortunately he contracted the infection, and this was the immediate cause of the final breakdown in health, which lasted until his death. Our sympathies are with his widow, daughter, and two sons.

JOSEPH BROWNLIE WALLACE, who died at Clapham Common on February 22nd, graduated M.B. and C.M. at the University of Glasgow in 1888. After holding a house appointment in the Glasgow Eye Infirmary and acting for two years as an assistant he commenced practice in 1891, and continued in active work until the day of his sudden death, except for a serious breakdown of his health in 1923. There can be little doubt that this failure was due to overstrain during the war. He then undertook, in addition to his own large practice, the work of some of his colleagues absent on active service, and he acted on the emergency staff in the air raids. Wallace was a man in whom independence of character and steady judgement were combined with much kindness of heart and gentleness of manner. Absorbed in his professional work and a happy family life, he had little time for outside interests, but he enjoyed to the full extent the affection and confidence of a wide circle of patients and the respect of his colleagues. He held the rank of honorary captain in the R.A.M.C.(T.), and was Admiralty surgeon and agent in one of the London districts.—C. O. H.

We regret to announce the death, at the age of 39, of Dr. SAROZ KUMA SANYAL, which took place in Palestine on January 29th. Dr. Sanyal obtained his medical education at the London Hospital, and in 1915, after qualifying M.R.C.S., L.R.C.P., joined the army, serving with His Majesty's Forces in France till 1918, and in Mesopotamia till 1921. On demobilization he proceeded to Ammam, Transjordania, Palestine, where he built a hospital, and, with the help of an Arab staff which he trained himself, carried on medical work among the Bedouins. He was held in great esteem by the people among whom he worked. He is survived by a widow and one son.

The Services.

MEDICAL APPOINTMENTS TO THE KING.

Colonel T. G. F. Paterson, D.S.O., I.M.S., has been appointed Honorary Physician, and Colonel E. F. Mackie, O.B.E., V.H.S., Honorary Surgeon to His Majesty the King, with effect from September 24th, 1928, and September 28th, 1928, respectively.

TERRITORIAL DECORATIONS.

The Territorial Decoration has been conferred on Lieut.-Colonel John K. Lund and Major Henry J. D. Smythe, M.C., of the R.A.M.C.(T.).

DEATHS IN THE SERVICES.

Deputy Inspector-General Isaac Henry Anderson, R.N.(ret.), died at Twyford, Winchester, on February 2nd, aged 80. He was educated at Queen's College, Belfast, and graduated as M.D. in the late Queen's, afterwards the Royal, University of Ireland in 1869, also taking the L.R.C.S.Ed. in 1871. He entered the navy in September, 1871, became staff surgeon in 1883, and attained the rank of fleet surgeon on May 19th, 1892, retiring with an honorary step of rank as D.I.G. on May 23rd, 1902. He served on H.M.S. *Salamis* in the Egyptian war of 1882, receiving the medal and the Khedive's bronze star; and subsequently at Suakin, in the Eastern Sudan campaign of 1884, gaining a clasp to the Egyptian medal. In 1894 he was in charge of the naval hospital at Simonstown, and received the thanks of the Admiralty for services rendered at the Cape of Good Hope Hospital during the epidemic of fever which occurred after the Benin expedition. He received a Greenwich Hospital pension for good service on April 10th, 1917.

Medical News.

THE next evening reception at the Royal Society of Medicine will take place on Wednesday, March 13th. Fellows and their friends will be received in the library at 8.30 p.m. by the President and Lady Dawson of Penn. At 9.15 p.m. Dr. Leonard Williams will give an illustrated address on Napoleon II. Various objects of interest will be exhibited in the library.

AT the meeting of the Pharmaceutical Society of Great Britain to be held in the lecture theatre at 17, Bloomsbury Square, W.C., on Tuesday next, March 12th, at 8 p.m., a lecture will be given by Sir Herbert Jackson, F.R.S., Director of Research, British Scientific Instruments Research Association, on the nature of the changes which take place in various forms of glass. Medical friends of members will be welcomed.

THE Fellowship of Medicine announces that on March 11th Dr. F. W. Price will lecture on pitfalls in cardiology at the Medical Society of London, 11, Cavendish Square, W.1, at 5 p.m. On March 13th, at 4 p.m., Dr. W. J. O'Donovan will give a demonstration at the Wellcome Museum of Medical Science, 33, Gordon Street, W.C.1, on the treatment of skin diseases by light therapy: indications and limitations. On March 14th, at 11 a.m., Mr. S. L. Higgs will give a clinical demonstration at the Royal National Orthopaedic Hospital, and on the same date at the Infants Hospital, at 4 p.m., Dr. Eric Pritchard will give a clinical demonstration of cases illustrative of the difficulties arising in connexion with digestive disturbances in infants. There is no fee for attendance at any of these lectures and demonstrations. From March 11th to 22nd there will be a course in orthopaedics at the Royal National Orthopaedic Hospital; instruction will continue throughout the day, Monday to Saturday inclusive. During this period also there will be a course at the Royal Eye Hospital, instruction being given daily from Monday to Friday inclusive at 3 p.m. The following courses will be held in April: a practitioners' course at the London Temperance Hospital; tropical medicine at the London School of Hygiene and Tropical Medicine; electro-therapy at the Royal Free Hospital; medicine, surgery, and gynaecology at the Royal Waterloo Hospital; and neurology at the West End Hospital for Nervous Diseases. Copies of all syllabuses, and details of the general course of work in the affiliated London Hospitals, are obtainable from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

A THREE months' course of lectures and demonstrations in clinical practice and in hospital administration for the diploma in public health will be given by the medical superintendent, Dr. F. H. Thomson, at the North-Eastern Hospital of the Metropolitan Asylums Board, St. Ann's Road, Tottenham, N.15, on Mondays and Wednesdays at 4.45 p.m., and alternate Saturdays at 11 a.m., beginning on Monday, April 8th. The fee for the course complying with the revised regulations of the General Medical Council is £4 4s., but a course under the old regulations can be taken for £3 3s.

IN connexion with the annual congress of the Royal Sanitary Institute to be held in Sheffield from Monday, July 15th, to Saturday, July 20th, 1929, a health exhibition will be held in the Cutlers' Hall in that city. The exhibits will include appliances and materials used in the various branches of hygiene (personal and collective) and sanitation, and in housing. Sections will be devoted to hospital design and construction, to public health equipment and to such matters as rat extermination, tropical hygiene, bacteriology, and health propaganda. Information regarding the exhibition may be obtained from the Secretary of the Institute, 90, Buckingham Palace Road, S.W.1.

WE are asked to state that hospitals situated within eleven miles of St. Paul's desiring to participate in the grants made by King Edward's Hospital Fund for London for the year 1929 must make application before March 31st to the honorary secretaries of the fund at 7, Walbrook, E.C.4 (G.P.O. Box 465A). Applications will also be considered from convalescent homes which are situated within the above area, or which, being situated outside, take a large proportion of patients from London.

THE People's League of Health has issued in pamphlet form a verbatim report of the speeches made by its deputation to the Minister of Health on December 4th, 1928, on the effect of noise on the health of the community. The proceedings of this deputation were reported in our columns on December 8th, 1928 (p. 1053).

THE Chadwick Trustees invite applications for two travelling scholarships of £400 a year each, to be awarded next July, one in sanitary science and the other in municipal

engineering; they are intended to enable their holders to study the methods in use in foreign countries for the prevention of disease and the improvement of public health, or the details of sanitary administration and engineering in urban or rural areas. Candidates must be British subjects between the ages of 25 and 30, who have graduated in a British University, or can produce evidence of ability to prosecute methodical study and research. Applications should be made by letter, before March 25th, to the Clerk of the Chadwick Trustees, at 204, Abbey House, Westminster, S.W.1, from whom more detailed information may be obtained.

THE Sections of Urology, Pathology, and Therapeutics of the Royal Society of Medicine will hold a joint discussion on urinary antiseptics, at 1, Wimpole Street, W., on Thursday, March 21st, at 8.30 p.m.

THE first international congress relating to medical services in connexion with aviation will be held in Paris from May 15th to the 20th. The subjects to be discussed include: the transport of wounded in war, the medical uses of aviation in peace, and the physiology of aviators. Further information may be obtained from the general secretary, 35, Rue François-Ier, Paris VIIIe.

THE thirty-eighth congress of the French Association of Surgery will be held in Paris on October 7th under the presidency of Dr. Tixier of Lyons, when the following subjects will be discussed: Indications for, and results of, osteosynthesis in the treatment of: Pott's disease, introduced by MM. Rocher of Bordeaux and Sorrel of Paris; evolution and treatment of wounds of the tendons of the hand, introduced by MM. J. C. Bloch of Paris and P. Bonnet of Lyons; and surgical treatment of pulmonary tuberculosis, introduced by MM. Lardennois of Paris and Bérard of Lyons.

THE eighth congress of the International Society of Surgery will be held at Warsaw from July 22nd to 25th, under the presidency of Professor Hartmann of Paris. Special railway concessions are available, and arrangements are being made for a party to travel to Warsaw by ship from Zeebrugge, calling at Copenhagen, Riga, Helsingfors, and Stockholm. Further information may be had from the general secretary, Dr. L. Mayer, 72, Rue de la Loi, Brussels.

THE fifth English-speaking Conference on Maternity and Child Welfare will be held at the Friends House, Euston Road, N.W., from July 3rd to the 5th, when the subjects for discussion will be: the care of the child between the ages of 1 and 5; maternal mortality and morbidity; the establishment of special venereal disease clinics for women and children in connexion with maternity and child welfare departments; and the suffering entailed on mothers and young children by prolonged waiting in out-patient departments. Lectures and film displays on child welfare will be given and visits will be paid to child welfare institutions. Further information may be obtained from Miss J. Harford, National Association for the Prevention of Infant Mortality, Carnegie House, 117, Piccadilly, W.1.

THE thirteenth international congress of ophthalmology will be held at Amsterdam from September 5th to 13th under the presidency of Professor van der Hoeve of Leyden, when the following papers will be read: geographical distribution and control of trachoma, etiology and non-operative treatment of glaucoma, and diagnosis of suprasellar tumours.

THE third congress of the French Societies of Oto-neuro-ophthalmology will be held at Bordeaux under the presidency of Professor Portmann from May 17th to 20th, when a discussion will be opened by Drs. Halphen, Moubrun, and Tournay of Paris, on headaches in oto-neuro-ophthalmology.

THE March issue of *The Prescriber* is devoted to spa treatment. Its contents include articles on the scientific application of mineral waters, baths, and douches; accessory spa treatments; and environment as an aid in this connexion. Dr. Fortescue Fox contributes a note on the scope of waters internally and externally, and there is a descriptive list of spas in Great Britain, Ireland, and New Zealand, with numerous illustrations.

DR. HAVEN EMERSON, professor of hygiene at Columbia University, New York, has been invited by the Greek Government to investigate sanitary conditions in Greece.

THE Umberto Primo prize of 3,500 liras, offered by the Rizzoli Institute of Bologna for the best work or invention relating to orthopaedics, is now open to medical practitioners of all countries. Further information can be obtained from the president of the institute.

PROFESSOR HAYASHI, dean of the Faculty of Medicine at Tokyo, has been nominated an officer of the Legion of Honour.

DR. TYTGAT of Ghent has been elected president of the Belgian Société de Chirurgie.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9561, 9562, 9563, and 9564* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediocra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

PAINFUL SCAR.

"X. Y. Z." asks for suggestions for the treatment of a painful scar on the inner side of the foot, the result of an operation some years ago. The scar is about 4 in. long, and is still red.

ENURESIS.

"K." asks for any suggestions in the treatment of enuresis in a boy aged 15. Bed-wetting occurs practically every night, and has gone on since infancy. The patient is well developed and normal in other respects. The usual treatments have been tried, and drugs, such as belladonna, citrates, thyroid, etc., employed. The tonsils and adenoids were removed years ago.

GROWTH ON SPONGES.

MR. P. MAYNARD HEATH (London, W.1) asks for information about a disease of the domestic sponge characterized by the formation of a black growth filling the pores. The condition is unaffected by domestic cleansing.

ADMINISTRATION OF ULTRA-VIOLET RAYS.

"A. M." asks: (1) What is the most suitable form of heating for a small room in which an ultra-violet ray lamp of the combined mercury vapour and carbon-tungsten type is installed from the point of view of the preservation of the lamp itself, and also from that of the effectiveness of the rays in treatment? (2) At what temperature should the room be kept for the safety of the lamp? (3) Is it not the case that an atmosphere heated by a steam radiator will reduce appreciably the effectiveness of the rays on account of moisture and dampness which must necessarily result from this form of heating? (4) What is the simplest method of testing the efficiency of the lamp after twelve months' use?

TREATMENT OF CHRONIC CONSTIPATION.

DR. T. W. ROTHWELL (Sedbergh) writes: I was called to see a workhouse patient suffering from chronic non-obstructive constipation. I first ordered him one ounce of castor oil with no result. I then gave him a tablet composed of aloin 1/4 grain, phenolphthalein 1/2 grain, ipecacuanha 1/15 grain, strychnine 1/100 grain. Of these he had three, three times a day for two days with no benefit. I then ordered an enema, with medium result, but he was still absolutely constipated, with no signs of an obstruction. I then gave him the following pill:

℞ Pulv. aloes	16 parts
Pulv. colocynth.	8 ,,
Pulv. jalap verum	8 ,,
Pulv. saponis cast.	8 ,,
Ol. caryophylli	1 part

Weight of pill 5 grains.

Of these he had three pills thrice daily for three days, with no result. I then put him on calomel 6 grains every four hours. After taking 36 grains he had had no result. Intending to give him 1 minim of croton oil the next morning, I learnt that he had had a copious motion after the administration of 42 grains of calomel. Does this constitute a record for calomel dosage? Also what is the poisonous dose of calomel, if any? Can any of your readers inform me what would be a safe and efficient treatment of this kind of constipation? The man is 45 years old and is inclined to be melancholic; he is quite satisfied with an enema as a means of securing a bowel movement.

SOUND-PROOF DOORS.

DR. H. M. SPEIRS (Diss, Norfolk) writes: An easy and practical method of overcoming this difficulty is to nail a sheet of "celotex" (which is a wood pulp sheeting, made from sugar-cane) over the door. I have done this with success.

TREATMENT OF UNCONTROLLABLE COUGH.

DR. A. J. COLBY TINGEY (Hastings) writes in reply to "D. H. A.": I have found chloretone inhalant (Parke, Davis) effective in cases of incessant cough due to irritable conditions of the nose and throat. It should be used as a spray with a nebulizer.

INCOME TAX.

Allowances.

"D. P. H." has been assessed to pay £8 12s. in respect of £103 10s. received for temporary service as assistant medical officer of health; the amount appears to be excessive.

*** Evidently, although the earned income relief has been given, nothing has been deducted in respect of the personal allowance of £135 per annum. Unless that allowance has been received as a set-off against other income for the same year, it should be claimed promptly. The travelling expenses of 7s. 6d. per week were apparently incurred between the residence (temporary or permanent) and the place of employment; if so, they are not allowable, but if they were incurred in going about to do the work for which the remuneration was received the total amount is allowable.

Subletting Part of Premises.

"TAXPAYER" owns the premises containing his surgery and has let the upper part as an unfurnished flat. Must the rent received be returned for assessment to tax?

*** The point does not seem to be covered by direct judicial authority, but there appears to be no ground on which the authorities can claim that such a rent should be returned for assessment. We assume that "Taxpayer" pays the rates, but does not supply services such as lighting, cleaning, etc. On the other hand, the rent received is a material factor in deciding what proportion of the Schedule A assessment on the premises can be deducted in arriving at the profits of the practice. We do not mean that the appropriate deduction is necessarily the excess of that assessment over the net rent received, but the greater that amount the stronger is the authorities' argument for some restriction of the amount to be allocated to the "surgery."

Car Transaction.

"W. M. W." bought a new car in 1926 for £360. He has now sold it for £100, and bought a second-hand car for £250. What can he claim?

*** He cannot claim more than the out-of-pocket expenditure—that is, £250−£100=£150. He should, however, retain a note of the facts, because if the next car he buys should be a new car costing more than £250, these facts should assist him in resisting any suggestion that the second replacement involved an improvement of his car equipment.

Cash Receipts or Bookings.

"A. G. M." has been informed by his local inspector of taxes that "income tax is assessed now on the 'work done' basis and not on the actual payments received." Is this correct?

*** We are not aware of any general change in the attitude of the Inland Revenue Department on this matter. That attitude we have understood to be that, although the value of the year's bookings is strictly correct, the amount of the cash receipts is accepted as being reasonably equivalent taking one year with another, provided that there are no special circumstances which suggest that the amount of fees being booked is increasing—in that case the cash receipts tend to lag behind the value of the bookings, and do not afford a fair index to that value.

LETTERS, NOTES, ETC.

TREATMENT OF INFLUENZA.

DR. W. BASTIAN (Coventry) writes: I have read with interest the note by Dr. Garry Simpson on March 2nd (p. 430) concerning the treatment of influenza with the combination of drugs as first suggested by Sir Archdall Reid of Southsea some years ago. During the recent severe epidemic of influenza, and previously, I have had the same experience as Dr. Garry Simpson, and know of no better treatment, even in the case of quite young children. The sweating is so profuse that one can only suppose that therein lies the merit of the treatment, in that the toxins are excreted in the sweat. I am aware that this idea has been laughed at by some pathologists, but what alternative explanation is there? I have also found this compound powder (aspirin, phenacetin, and pulv. ipecac. co.) the most useful in the early stage of all acute specific diseases, and for measles it is the ideal treatment in suitable doses.

EPIGASTRIC PAIN IN INFLUENZA.

DR. C. MACKAY SEWARD (West Lothian) writes: During the last two epidemics of influenza I have noticed the fairly frequent incidence of the symptom of epigastric pain. This appears to arise from any of three causes: (1) Neuralgia of the nerves supplying the epigastrium may be present when there is hyperalgesia, unaccompanied by muscular tenderness or gastric symptoms. (2) The pain may be muscular, when the condition may be either an acute fibrositis, unaccompanied by hyperalgesia and preceding the onset of coughing or vomiting, or it may take the form of a muscular strain, as a result of frequent coughing or vomiting. My criteria for a muscular origin of the pain were: (*a*) pain and tenderness brought on or increased by use of the rectus, the upper segments of which seem most commonly to be involved, as in lifting the head from the pillow; and (*b*) tenderness elicited by grasping the muscles laterally, without backward pressure, as suggested by Hutchison. The third cause is acute gastritis, when vomiting is an early symptom, with deep epigastric tenderness and, sometimes, diarrhœa.

CALCIUM LACTATE AS A MUSCULAR TONIC.

DR. G. P. BARFF (Ash Vale) writes: Five years ago I noted for the first time some surprising results in the metabolism of the voluntary muscles during the administration of calcium lactate to middle-aged and elderly patients. In the case of one, aged 73, who had been an athlete and rowing man in his youth, the arm muscles before treatment were very flabby from old age and want of use, while the pectoral and back muscles could not be made out. No exercises were given for the muscles; he walked, as usual, about a mile a day. After taking the calcium lactate mixture for a week, after tea, the arm muscles became very much more prominent, the biceps bunched up well on contraction and hardened, and, moreover, old rowing muscles not seen by him for many years reappeared in the forearms, while the pectoralis major muscles filled out obviously, and later the back muscles reappeared. He was under treatment for about three weeks, and wrote twelve months later to say his arm muscles were still in evidence. He also experienced a feeling of fitness. Further investigations led me to the belief that a simple saline remedy of this kind will increase the tone of the muscles in conjunction with dieting.

ULTRA-VIOLET LIGHT TREATMENT OF BED-SORES.

DR. ELIZABETH C. MUDIE (Glasgow) writes: A patient suffering from paralysis of the right side was irradiated by me with the quartz mercury vapour lamp in order to control a very large bed-sore which covered the right ischial tuberosity. To my great surprise not only has the local condition cleared up, but the whole situation has vastly improved. The patient can now control the bladder, has a very large degree of movement in the arm and leg, can turn almost without assistance, and has markedly improved in mental acuity. She is 70 years old and weighs 16 st. I should be interested to hear if others have tried actino-therapy in these so-called hopeless cases.

THE NATURE OF DISEASE.

DR. GORDON WILSON (Thurlstone, near Sheffield) writes: May I add another to the definition of disease cited by Sir Humphry Rolleston in your issue of February 16th (p. 281)? So far as I am aware it is original, but I may be wrong. "Disease is an unsatisfactory reaction of a particular individual to his environment, and death is the absence of all reaction to his environment." The "unsatisfactoriness" of the reaction may be evident to the individual himself or to society only. It would take too long to write out the full implications of this definition, but personally I find it so useful that, like the pragmatist, I regard it as true.

ULCERATIVE ENDOCARDITIS.

DR. G. ARBOUR STEPHENS (Swansea) writes: Will you allow me to point out in connexion with the interesting case of ulcerative endocarditis reported by Drs. Macdonald and MacNab on February 23rd (p. 348), that, although three of the valves showed signs of inflammation, there were no murmurs heard. Further, the opening of the tricuspid valve was interfered with by a clot, and, according to all theories regarding the cause of the heart sounds, a very marked murmur ought to have been heard. The "gallop rhythm," as well as the "reduplication of the sound," can be accounted for by the modification of the pericardial fluid, which was increased in quantity, as well as altered in quality, and I venture to claim this case as one which supports my theory of the heart sounds.

THE INVENTOR OF ESPERANTO.

A CORRESPONDENT has drawn our attention to the fact that Dr. Zamenhof, the inventor of Esperanto, who was born in 1859, died in 1917, and therefore did not live to celebrate his seventieth birthday, as implied in our last issue.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 49, 50, 51, 52, 53, 56, and 57 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 54 and 55.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 59.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

227. Agranulocytic Pharyngitis following Antisyphilitic Treatment.

A. BOCAGE and L. FILLIOL (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, January 3rd, 1929, p. 1807) report a fatal instance of agranulocytosis in a case of syphilis. The patient, an anaemic man aged 30, developed necrotic pharyngitis three weeks after the termination of the first course (ten weeks' duration) of novarsenobenzol-bismuth injections; during this course he had had one slight febrile attack. The necrotic pharyngitis was severe, and was accompanied by rigors, headache, and dysphagia, but the patient did not mention it when he came for the second course of injections after an interval of four weeks. During the night following the injection of the second dose of this course the patient had rheumatic pains in the legs, with fever; the next day the gums were bleeding and purpuric patches appeared on the legs. Two days later he was admitted to hospital in a state of severe toxaemia; he was sallow, his features were drawn, there was severe dysphagia, and speech was very painful. The patient had a constant flow of blood-stained saliva, and expectorated thick mucus. The teeth were covered with blood clot; necrotic patches were seen on both tonsils. The temperature rose to 104.4° F. and intestinal haemorrhages recurred. Transfusion and the administration of haemostatics failed to avert death. The necropsy showed the characteristic changes in the bone-marrow cells described by Schultz, accompanied by large numbers of a Gram-positive micro-organism resembling *B. perfringens*. The authors believe that an acute bacterial infection occurred during the first course of injections. The patient was recovering spontaneously from this infection when the resumption of the antisyphilitic treatment caused an aggravation of the bacterial infection. Novarsenobenzol was probably responsible for the haemorrhages, but, although the haemolytic action of *B. perfringens* is well known, the authors, in the absence of blood examinations before and after the initial pharyngitis, cannot be sure that this organism was the original cause.

228. Migraine.

C. W. MCCLURE and MILDRED E. HUNTSINGER (*New England Journ. Med.*, December 27th, 1928, p. 1312), following the study of a series of 78 patients, discuss the etiology, symptomatology, and treatment of migraine. Its onset at periods other than adolescence is said to be more common than is generally recognized, and paroxysmal headache is frequently the only symptom. The occurrence of positive cutaneous food protein reactions points to the advisability of withholding reacting proteins from the dietary. Disturbances in lipoid metabolism, abnormal liver function, and positive protein sensitization reactions were definite pathological findings, suggesting that hepatic dysfunction plays an important part in the production of symptoms, and that the condition bears some relation to the etiology of chronic cholecystitis and peptic ulcer. The authors point out the value of intraduodenal therapy—namely, the introduction into the duodenum through a tube of 30 c.cm. of 33 per cent. magnesium sulphate solution at weekly intervals, and the importance of keeping the patient well nourished, the degree of relief being often in direct proportion to the gain in weight and strength. The correction of eye strain, working conditions, and other underlying causative factors must receive attention, but the adoption of surgical measures to relieve symptoms without careful forethought is deprecated.

229. Demineralization of Bones in Pulmonary Tuberculosis.

ARGUING from the fact that in bone tuberculosis a specific inflammation results in decalcification, A. VALLEBONA (*Rif. Med.*, December 17th, 1928, p. 1656) has endeavoured to determine whether there is any loss of mineral salts in the long bones of sixteen patients suffering from pulmonary tuberculosis who were examined radiologically. In each case Koch's bacillus was present in the sputum, and the patients reacted positively to all the biological tests. Each tuberculous patient was compared with a healthy individual of the same sex, and about the same age and weight, the skeletal and muscular systems being approximately comparable; in the control cases no indications of tuberculosis were found in the history, physical examination, and radiography. X-ray photographs of the forearms of the patient and the control were taken on the same plate. The author concludes that although demineralization was apparent in certain cases of pulmonary tuberculosis, it was not at all constant. In the cases in which the tuberculosis was slight and localized there was no bony change; when the local lesion was severe, but without general distribution, no demineralization was seen. Where a grave local lesion was present together with general distribution, and particularly in cases of long-standing disease, a definite bony change was obvious. This was seen most clearly in adolescents.

230. Early Diagnosis of Scarlatinal Nephritis.

E. BRASIELLO (*Il Policlinico*, Sez. Prat., January 14th, 1929, p. 41) records his observations on 123 cases of scarlet fever, 46 of which had renal complications. In 43 of these it was possible to determine the onset of the renal lesion by haematological examination before any indication of it could be found in the urine or in the patient's general condition. In the great majority of cases (about 90 per cent.) the renal change could be discovered ten to twelve days before it was manifested by the examination of the urine or the general condition, while in the remainder the only indication of a renal lesion was a more or less marked retention of urea and sodium chloride without anything abnormal being found in the urine. In such cases, to which the term analbuminuric uraemia or analbuminuric oedema has been applied, a careful watch should be kept for possible damage to the kidney. The first sign of impaired renal function is given by a simultaneous rise in the urea and sodium chloride in the blood as well as of the systolic blood pressure, and it is only when the renal lesion has become more or less pronounced that it is detected by examination of the urine and general condition.

231. Infectious Mononucleosis (Glandular Fever).

E. SCHWARZ (*Wien. klin. Woch.*, January 24th, 1929, p. 98) suggests that glandular fever, or infectious mononucleosis, is a definite clinical, epidemiological, and pathological entity produced by a lymphotropic virus which evokes the following symptoms: fever, swelling of lymph nodes and spleen, and a lymphoblastic plasma-cellular blood picture. Some have suggested that it is merely a sequel of whooping-cough and of rubella; one writer has seen, in Brazil, cases of fever following tick-bites in which there developed a diffuse itching erythema, generalized swelling of lymph nodes, accompanied by lymphocytosis, with excess of plasma cells in the blood picture. Further, many patients with glandular fever exhibit a characteristic sore throat. Etiologically and [illegible] disease closely resembles an acute [illegible] recent observations compel the [illegible] er relationship or etiological identity.

232. Optic Neuritis in Herpes Zoster.

J. DUPORT (*Thèses de Lyon*, 1927–28, No. 37) records a personal case, in a woman aged 70, and has collected eight similar cases from the literature, of ophthalmic zoster followed by optic atrophy and complete blindness. Several explanations have been advanced of this occurrence—namely, that it is a mere coincidence, a reflex disturbance, an irritation of the branch connecting the ophthalmic with the optic nerve, and herpetic meningitis. Duport is in favour of the theory of there being an intracranial meningitis with a secondary optic meningitis and neuritis. The diagnosis is made by the presence of the vesicular eruption or the scars of herpes and ophthalmoscopic examination, which usually shows a unilateral lesion. Of Duport's nine cases, seven were unilateral and only two bilateral. The prognosis should always be guarded, vision being either entirely lost or considerably diminished. Treatment consists in the administration of arsenic and strychnine, associated with radiotherapy in cases of persistent pain.

233. Causes of Sudden Death.

R. JAFFÉ (*Deut. med. Woch.*, November 30th, 1928, p. 2010) deprecates the too free use of the diagnosis "heart failure" in cases of sudden death, on the grounds that important information is often unobtainable unless a careful necropsy is performed. He gives details of seventy-three inquests in cases of sudden death in which the causation was obscure, and advocates more detailed investigation when "status lymphaticus" is apparent in otherwise healthy children. He discusses the probable way in which death occurs in cases of high arterial pressure, coronary sclerosis, and other such conditions, emphasizing the point that what is frequently obscure is why a heart, which has continued to

function in spite of anatomical change, has for some hidden reason been brought to a standstill. He draws attention to the greater variety of pathological and functional conditions which may be concerned, and adds that these problems have considerable importance from the point of view of insurance, as well as from that of medical pathology.

234. Post-encephalitic Adiposis Genitalis.

O. COZZOLINO (*La Pediatria*, January 1st, 1929, p. 19) reports a case of limited adiposis following an attack of encephalitis a year previously. A boy, aged 8, suffered from diplopia, sleepiness, choreic manifestations, diarrhoea, progressive mental weakness, and polyuria, followed some months later by progressive adiposis especially affecting the nates and genital area. The genital organs were small, but the testes were in the scrotum. While in hospital he put on nearly 3 lb. in sixteen days. There was no evidence of pituitary tumour, but a radiogram showed some narrowing of the sella turcica. There was no reaction after pilocarpine and no signs of suprarenal or alimentary glycosuria; some increase of pressure followed the administration of adrenaline. The author discusses the nature of the lesion and refers to other cases of this post-encephalitic sequel.

235. Syphilitic Phlebitis.

S. GREZZI (*Rev. méd. Latin-Amér.*, December, 1928, p. 241), who records a typical case of bilateral phlebitis in the secondary stage in a man aged 22, and has collected forty-eight cases from the literature, states that syphilitic phlebitis may occur in both hereditary and acquired syphilis. Its rarity is in striking contrast with the frequency of syphilitic arteritis. The affection is commonest in the male sex and in the superficial veins of the lower limbs. The symptoms are scanty, the most prominent being the aggravation of the pain and loss of frictional capacity in the limb at night. The other diagnostic features are the lack of local signs, the large number of veins attacked, the absence of embolism, the previous history of syphilitic infection or a positive Wassermann reaction, and the action of specific treatment. *Treponema pallidum* has been found in the affected veins. The condition must be distinguished from lymphangitis and erythema nodosum. Combined specific treatment with arsenical or bismuth preparations has an immediate effect, and must be associated with rest in bed with the limb in a splint.

Surgery.

236. Surgical Treatment of Pulmonary Abscess.

R. FONTAINE (*Arch. Méd.-Chir. de l'Appareil Respirat.*, October, 1928, p. 400) classifies pulmonary abscess according as it is due to (1) acute inflammation (pneumonia or broncho-pneumonia); (2) chronic bronchitis or bronchiectasis; (3) suppurative embolism; (4) foreign body in the bronchi; (5) penetrating wound of the lung; and (6) hepatic abscess. An abscess may also develop around a subjacent malignant tumour, or may follow surgical interventions such as tonsillectomy, gastric operations, or even appendicectomy. Diagnosis is often difficult, but stereoscopic skiagraphy after the intratracheal injection of lipiodol and bronchoscopy are valuable diagnostic aids. Surgical methods of treatment of acute pulmonary abscess are: bronchoscopy with aspiration of abscess, which has usually to be repeated frequently; artificial pneumothorax; phrenicectomy; and pneumotomy, which has given the best results in carefully selected cases. The treatment of chronic abscess is entirely surgical; of indirect methods, bronchoscopy, artificial pneumothorax, and phrenicectomy are seldom successful. Stripping the parietal pleura and thoracoplasty have been effective in many cases, but simple drainage is useless. Of the two direct methods, lobectomy in one stage is very dangerous; performed in two stages it is less risky, but very difficult, and the mortality is high. Pneumectomy by means of the thermo-cautery, in a series of 45 patients, resulted in 69 per cent. of "cures"; 11 patients died and 10 of the "cured" patients were left with bronchial fistulae. Fontaine concludes that, in chronic pulmonary abscess, bronchoscopy and artificial pneumothorax are useless unless combined with other measures. Treatment by collapse should always be performed as a preliminary, and only two subsequent operations should be considered: (1) stripping the parietal pleura, and (2) thoracoplasty preceded by phrenicectomy. Removal of the parietal pleura is suitable only in recent cases, in which the abscess is apical; other cases require thoracoplasty, which is not more dangerous than stripping the pleura. Collapse procedures are contraindicated when serious pleural complications are present; when it fails, pneumectomy should be performed, or a two-stage lobectomy, if possible. The mortality from pulmonary abscess is so high that Fontaine considers that surgeons are justified in taking great risks.

237. Deformity in Infantile Paralysis.

W. R. MACAUSLAND (*New England Journ. Med.*, January 3rd, 1929, p. 18) emphasizes the importance of prevention rather than correction of defo[illegible] infantile paralysis. The development of [illegible] upon a number of factors, such as muscle imbalance due to paralysis of certain groups of muscles, ligamentous and tissue contraction, habit posture in the effort to alleviate pain, and gravity. Effort at prevention should thus be directed to keeping the limbs in correct positions: the foot at right angles to the leg, the hip and shoulder in abduction, the knee in extension, the elbow in right-angled flexion, and the wrist in hyperextension. A fracture board under the mattress, and supports beneath the angles of the scapulae, are recommended to keep the spine in extension. When, later in the course of the disease, it is known which groups of muscles are mainly affected, plaster bandages or light mechanical appliances are used to keep the limb in an attitude of over-correction. If the paralysed muscles are kept relaxed the greatest possible return of power is ensured. Still later, in convalescence, the prevention of spinal curvature is very important, since it may arise insidiously and become a definite deformity before the trouble is evident. Correction becomes necessary immediately a malposition is recognized; neglect leads not only to increase of the actual defect, but to deformities in related parts of the body. Manipulations, fasciotomy, tenotomy, and osteotomy are among the simpler surgical procedures indicated, but for the restoration of muscle balance tendon transplantations are of value in selected cases. Transplantation of the tibialis anticus into the cuboid for varus deformity, of the peroneal for valgus deformity, accompanied by astragalectomy, and of the sartorius for quadriceps paralysis, are among the most successful operations. [illegible] as an excellent stabilizi[illegible] perform astragalectomy.

238. Cysts of the Psoas Bursa.

ACCORDING to C. DE GÉRY (*Bull. et Mem. Soc. Nat. de Chir.*, December, 1928, p. 1466) cysts of the psoas bursa are of rare occurrence and may be classified in four groups: the purulent; the tuberculous; the syphilitic; and simple cysts. The last of these are most frequent, providing twenty-four cases out of thirty-three in the author's experience. The size of the cyst ranges from that of a hen's egg to that of an infant's head; there are also considerable variations in shape. Frequently the cyst is as firm and unchanging in size as a solid tumour, the walls containing the cystic fluid being very thick. Communication of the hygroma and the hip-joint has been noticed in about 50 per cent. of cases; it is known that such a communication of the serous bursa of the psoas with the adjacent joint cavity is often found, most frequently in older patients. Apart from pain, more or less intense, and due to the compression or displacement of the crural nerve, there are no functional disturbances, the movements of the hip being unimpaired. The cyst usually contains a thick yellow fluid, and sometimes foreign cartilaginous bodies which, by their number and size, may give rise to complications. The causation of chronic hygromas of the psoas bursa is obscure; rheumatism, syphilis, tuberculosis, and muscular trauma have all been cited as possible factors. Treatment may consist in the puncture of the cyst, aspiration of the fluid, and the washing out of the cavity with an antiseptic fluid such as iodine. The complete removal of the cyst is preferable when possible.

239. Fatal Perforation in Paratyphoid B Fever.

A. POP (*Zentralbl. f. Chir.*, January 12th, 1929, p. 77) describes an ambulant case of paratyphoid B infection in which perforation occurred. A man, aged 51, was admitted to hospital with symptoms of peritonitis. He had not consulted a doctor, although he had suffered occasionally from abdominal pain since 1925. There was no history of haematemesis nor of melaena. Four weeks before admission his illness commenced with anorexia, severe epigastric hunger pains, evening rigors, and diarrhoea followed by constipation. He had not discontinued work. Three days before admission he had a sudden severe pain in the right iliac fossa, accompanied by vomiting and fever. He grew worse rapidly and was admitted with symptoms of acute obstruction; the pain was constant and there was distressing hiccup. The temperature was 102.1° and the pulse 96. The spleen was enlarged on percussion; the abdominal wall was rigid and there was dulness on percussion over the right lower quadrant, where there was tenderness on deep pressure. The recto-vesical pouch was obliterated and very tender. When the peritoneum was opened in the mid-line, faecal fluid

escaped; intestinal coils in the right iliac fossa were adherent and covered with purulent exudate. A perforation as large as a pea was found in the lower ileum; this was sutured and the peritoneum was drained. Serological tests showed a paratyphoid B infection. The patient died four days later. Pop refers to the rarity of perforation in paratyphoid B fever. He has found records of nine previous cases; five were due to paratyphoid A infection, the remainder to paratyphoid B. Two of the latter were ambulatory cases. Of nine cases of operation for perforated paratyphoid ulcer five patients recovered.

240. Bifid Renal Pelvis and Ureter.

REPORTING a case of this rare anomaly R. LE FUR (*Bull. et Mém. Soc. des Chir. de Paris*, January 18th, 1929, p. 72) distinguishes between (1) bifurcation of the ureter and renal pelvis, in which the ureter, single below, divides into two with two pelves, and (2) duplication of these organs, the two ureters opening separately into the bladder. There are varying degrees of this condition. In the first the ureter soon bifurcates into two large calyces, which reunite at the hilum. In others the bifurcation is more or less extensive, but there is still only a single vesical orifice for both ureters, which may reunite either near the bladder, at the middle of the ureter opposite the first sacral vertebra, or at the upper third of the ureter above the sacrum. In total duplication one of the ureters always enters the bladder at the normal point, while the other may open into the bladder, prostate, ejaculatory canal, or seminal vesicle. The two ureters are enclosed in the same sheath, and one is always above and never behind the other. Their calibre is ordinarily normal, and in cases of dilatation the lower ureter is usually the dilated one. Of the two pelves the upper is most frequently the smaller, and receives only the calyces of the upper fourth of the kidney. The two are usually separated by a marked prominence formed by a column of Bertin, and are always isolated from each other without any intercommunication. The kidney is elongated, and is sometimes divided into two parts by a depression. Changes in the blood vessels and hilum do not appear to be more frequent than in normal kidneys. Bilateral bifurcation of both ureters is much rarer than the unilateral type.

241. Erosion of Neck Vessels in Scarlet Fever.

J. D. ROLLESTON and W. G. SEARS (*Brit. Journ. Child. Dis.*, October–December, 1928, p. 281), who record two fatal cases which they had seen in the course of six months, state that erosion of the neck vessels giving rise to fatal haemorrhage is a very rare event and practically only occurs in scarlet fever and gangrenous angina. In scarlet fever the vessels liable to be involved are the external and internal carotid, superior thyroid, and lingual arteries, and the external or internal jugular veins. The haemorrhage from erosion of the vessel may be secondary to faucial ulceration or a cervical abscess, and may occur from the mouth, the ear, or the wound in the neck where the abscess was opened. Most of the recorded cases have been fatal, but recoveries have been reported after ligature of the common carotid or merely plugging the wound. The authors' first case was that of a male infant, aged 11 months, who in the course of a moderately severe attack of scarlet fever, complicated by suppurative cervical adenitis and otorrhœa, had profuse haemorrhage from the external auditory meatus and died in a few minutes. At the necropsy the bleeding vessel was not found, but the source of the haemorrhage was probably one of the veins in the neighbourhood of the cervical abscess. The second patient was a female child, aged 2 years, with a septic attack of scarlet fever, also complicated by suppurative cervical adenitis. In this case the haemorrhage took place from the wound where the cervical abscess had been opened, the internal jugular vein being the source of the haemorrhage.

242. Treatment of Hernia by Alcohol Injections.

F. WYSS (*Schweiz. med. Woch.*, January 26th, 1929, p. 85), who records the results of treatment of hernia with alcohol injections in 3,084 cases, states that this method was first introduced by Schwalbe in 1876, but received little attention owing to the excellent results of operative treatment. The procedure can be employed either in clinics or in out-patient practice; Wyss prefers the latter. A permanent cure is obtained in 91 per cent. of cases. The advantage of the method is that the patient is able to continue his work; he runs no risk, and in only 4 per cent. of the cases were there any complications, while such as occurred were not serious and cleared up entirely. The injections can be given irrespective of the patient's age and health, or of the duration and size of the hernia. Patients so treated can, in case of relapse, be operated on later with success.

Therapeutics.

243. Purine-base Diuretics in Angina Pectoris.

N. C. GILBERT and J. A. KERR (*Journ. Amer. Med. Assoc.*, January 19th, 1929, p. 201) believe that the purine-base diuretics are of very definite value in many cases of angina pectoris, and that their unpleasant effects may be eliminated in part by a careful study of the patient's individual reactions to the different preparations, to dosage, or to different methods of administration. A tabulated summary is given of the results produced by these drugs in a series of 86 ambulatory patients, none of whom were laboriously engaged, the effect on the pain being alone considered. Caffeine was not used in this series, the preparations employed, with their customary doses, being as follows: theobromine, 5 grains; theobromine sodium acetate, 10 grains; theobromine sodio-salicylate, 7½ or 10 grains; theophylline, 2 grains; theophylline sodio-acetate, 4 grains; and theophylline-ethylenediamine, 1½ to 3 grains. Four doses a day were usually given, but the number, as well as the dosage and time of administration, were changed, if necessary, in order to minimize ill effects. Other drugs were not used, with the exception of laxatives or purgatives when needed. The daily life of the patients was not altered, but owing to the frequency of attacks of angina a ter taking food they were cautioned to rest half an hour before and half to one hour after meals and to avoid gas-producing foods. The drug was given for three or four days and then discontinued for the same length of time; in most cases it was administered the first four days of each week and omitted the last three; this was done to avoid nausea or other unpleasant symptoms, and to prevent tolerance. The very definite risk of inducing tolerance was combated by alternating the preparations. Of the series only 14 patients received no relief from any of the drugs used; 7 of these were very neurotic, 3 had advanced coronary disease, and 1 had syphilitic aortitis. The authors agree with Heathcote that the order of intensity of vaso-dilator power is (1) theobromine, (2) theophylline, and (3) caffeine. They think that the clinical phenomena of angina pectoris can best be explained by the blood flow in the coronary vessels being inadequate to the needs of the heart muscle at the moment. They conclude that the purine-base diuretics are capable of producing an increased coronary flow, and that beneficial results can be expected from their administration, except when an increased coronary flow is precluded by advanced anatomical changes in the vessels.

244. Quinidine in Auricular Fibrillation.

AN attempt is made by J. PARKINSON and M. CAMPBELL (*Quart. Journ. Med.*, January, 1929, p. 281) to assess the value of quinidine from records of a study of twenty patients with paroxysmal and forty-four with established fibrillation, in which this drug seemed more useful than digitalis. They gave 5 grains of quinidine sulphate in tablet form by the mouth twice a day in paroxysmal cases; in established cases an initial trial dose was followed by increasing doses of 5 grains a day until 30 grains a day was being taken. Quinidine and digitalis were not given together, but in cases of congestive failure digitalis was given first, followed after an interval by quinidine. The authors found that the use of the drug is free from risk; they consider it the best method of treatment in paroxysmal fibrillation when the attacks are so long or frequent as to justify continuous medication, provided the patient is well in the intervals. In established fibrillation of recent onset they maintain that it is the treatment of choice, since in the absence of serious failure or much cardiac enlargement it often restores normal rhythm better than digitalis. They add, however, that treatment with digitalis is best in long-established fibrillation with a large heart, marked congestive failure, or active infection. In the absence of disease other than the arrhythmia, treatment with quinidine may be short, but it should be prolonged in cases with rheumatic or thyroid disease. It tends to postpone the tendency to cardiac failure or embolism, and if used at once on the onset of fibrillation in a patient in good health it is considered to be a safe and effective remedy.

245. Treatment of Syphilitic Aortitis.

R. HIFT (*Wien. klin. Woch.*, January 17th, 1929, p. 79) states that neosalvarsan, bismuth, and mercury succinimide have superseded the iodide treatment of syphilitic aortitis in preventing the occurrence of valvular damage and aneurysm; when combined these drugs yield the best results. Hift claims that 75 per cent. of his patients with mesaortitis have been rendered fit for work in this way, and are almost or entirely free from pain. He recommends that the Wassermann test be performed in every patient over the age of 30

who suffers from heart disease, though a negative result is not always conclusive. As regards treatment, the anatomical site of the syphilitic lesion is said to be less important than the subjective symptoms, the general health, and the state of the circulation. Death during treatment should not be attributed necessarily to specific medication; cases of sudden death have been observed in untreated mesaortitis. The only contraindications are grave ill health, "status angiosus," and evidence of circulatory failure. Mercury and bismuth are to be preferred in cases of moderate circulatory failure or more definite anginal conditions. For well-compensated cases, especially when the patient has had but little previous treatment, combined medication with salvarsan is recommended.

246. Dosage of Histamine.

L. M. GOMPERTZ and W. COHEN (*Amer. Journ. Med. Sci.*, January, 1929, p. 59) discuss the effect of smaller doses of histamine in stimulating gastric secretion. As the result of examining a series of patients, they conclude that histamine hydrochloride in doses of 0.25 mg. appears to be useful in all conditions where a safe and efficient gastric stimulant is indicated. This dose is said to be devoid of untoward effects, and therefore the previously recommended larger dosage of 0.5 mg. no longer seems necessary or desirable in diagnostic or therapeutic procedures. The authors think that their determination of the minimal effective dose paves the way for considering the possible use of the drug for therapeutic purposes in appropriate cases of impaired function of the gastric secretory glands. They add that the secretion and acidity resulting from injection of this small dose is considerably greater than that which follows the administration of a standard test meal.

247. Rectal Administration of Liver.

H. PULFER (*Deut. med. Woch.*, January 18th, 1929, p. 99) describes two cases of severe pernicious anaemia which were successfully treated with fresh liver administered per rectum. Both patients had an unconquerable dislike to liver, which caused nausea and vomiting if taken by the mouth except in amounts which were insufficient to effect any change in the blood. It was decided to employ clysters of 150 grams of fresh liver rubbed through a hair sieve and diluted with milk, 15 drops of tincture of opium being added; this enema was daily injected into the previously washed out rectum. The effect of this treatment was startling. In the first patient the haemoglobin rose in five days from 17 per cent. to 41 per cent., and the red cell count from 710,000 to 2,100,000; in a month the red cell count was 3½ millions and the haemoglobin percentage 86. In the second case the haemoglobin rose in twelve days from 30 per cent. to 70 per cent.

248. Iodine Dosage in Exophthalmic Goitre.

W. O. THOMPSON, A. G. BRAILEY, and PHEBE K. THOMPSON (*Journ. Amer. Med. Assoc.*, December 1st, 1928, p. 1719) have endeavoured to determine the effective range of iodine dosage in exophthalmic goitre. In a study of twenty-five cases it was found that as great a reduction in basal metabolism was obtained by the daily administration of one drop of compound solution of iodine (6.3 mg. of iodine) in twelve cases, and of half a drop (3 mg. of iodine) in eight cases, as with higher doses. The minimum dose that will produce a maximum reduction in basal metabolism has not yet been definitely determined, but this probably lies between one-fifth and one drop of compound solution of iodine (1.3 and 6.3 mg. of iodine). These observations suggest that the minimum dose is a little less for patients at rest in bed than for those who are up and at work. The authors add that when it is considered that one drop of the compound solution contains about twenty-four times the amount of iodine computed by Plummer to be destroyed in the form of thyroxin daily, these results are not surprising.

249. Yatren and Emetine in Colitis.

ACCORDING to L. F. BOUROVA (*Meditzinskaya Misl Usbequistana*, November, 1928, p. 14) the combination of yatren and emetine in amoebic and ulcerative colitis is more effective than emetine alone. Using both drugs together the results were favourable in 96 per cent., as compared with 35 per cent. when emetine alone was administered. In amoebic colitis the results were equally good, both with emetine alone and with the addition of yatren, which was given by the mouth in doses of 0.5 gram three times daily, or in enemata (2 per cent. solution in 200 c.cm. for one enema) during eight to ten days, followed by eight days' rest. The treatment is repeated one to three times if necessary.

Anaesthetics.

250. A Controllable Spinal Anaesthetic.

N. H. GOSSE (*Canadian Med. Assoc. Journ.*, January, 1929, p. 29) advocates the use of a spinal anaesthetic termed "spinocain," which was first introduced by G. P. Pitkin. The preparation contains novocain and strychnine sulphate in a solvent of gliadin and alcohol with normal saline solution in a 2 c.cm. ampoule. A second ampoule of 1 c.cm. capacity, containing ephedrine hydrochloride 5 per cent. and novocain 1 per cent., is used as a preliminary to the spinocain injection to anaesthetize the track of the spinal needle and to prevent any fall in blood pressure which might otherwise result from introducing novocain into the spinal canal. The strychnine is considered to act as a direct stimulant to the vaso-constrictors, to inhibit the action of the anaesthetized nerves, and to stimulate those unaffected. The alcohol, by rendering the anaesthetic fluid of lower specific gravity than that of the spinal fluid, associated with the increased viscosity produced by the gliadin, is thought to assist in the better control of the anaesthesia. As to dosage, Gosse believes that it is rarely necessary to exceed 100 mg. per 150 lb. of body weight. He considers the solution to be the best for spinal anaesthesia and worthy of a wider application.

251. G. P. PITKIN (*Amer. Journ. of Surg.*, December, 1928, p. 537) defines the ideal spinal anaesthetic as one which is certain in effect and constant in duration; has an intensity in direct proportion to the amount injected; does not affect the heart action, arterial pressure, or respiratory function; lessens nausea and vomiting; and abolishes pallor, cold sweats, anxiety, and after-effects. As a result of experience in 11,000 cases, he claims that spinocain has been found to be most satisfactory in producing controllable spinal anaesthesia; it is said to induce a sure, well-defined sacral anaesthesia within three minutes in every case. The equipment for its use is not expensive, and the surgeon may be his own anaesthetist. Controllable spinal anaesthesia is indicated in all cases of tuberculosis, asthma, chest conditions, and for diabetic or nephritic patients to whom inhalation anaesthesia may be harmful or even fatal. Acute abdominal conditions respond well to spinal anaesthesia, as the sphincters are relaxed, peristalsis is increased, acidosis lessened, and distension or ileus less likely to appear. The spinal puncture and injection of spinocain should be conducted with the patient lying on the side; the knees are flexed upon the abdomen, the head is bent forward, and the back is bowed out. The skin over a wide area extending from the fifth or sixth dorsal vertebra to the sacrum is painted with a 3/5 per cent. tincture of iodine. By palpating along the lumbar spine from the twelfth dorsal to the sacrum a wide interspace is found which is the point chosen for puncture; this must be made at right angles to the long axis of the spine and the needle must enter the dura, when the spinal fluid should flow through it. The injection of the anaesthetic solution must not be made until clear spinal fluid flows through the needle, as this is the only assurance that its point is inside the dural sac, and, unless the solution is injected into the subarachnoid space, anaesthesia will not occur. For anaesthesia of the perineal region only 1 c.cm. of spinocain is required, with the patient in a Trendelenburg position of 15 to 18 degrees. For anaesthesia of the legs 2 c.cm. is used, with the table in a Trendelenburg position of 10 to 15 degrees. For anaesthesia to the umbilicus, 2 c.cm. is sufficient for short operations, with the patient in a 7 to 10 degrees Trendelenburg position.

252. Post-operative Acidosis.

V. RAFFO and U. VALLEBONA (*Arch. Ital. di Chir.*, November, 1928, p. 529) publish the results of an examination of 43 patients suffering from various diseases, with reference to post-operative acidosis. The acid-base equilibrium after surgical intervention tends towards ketosis, acidosis, or a combination of these. Ketosis may be partly due to fasting, insufficient oxidation (hepatic insufficiency, morphine, asphyxia), deficient elimination, fat embolism, or faecal stasis. The factors tending to produce acidosis are vomiting, diarrhoea, haemorrhage, nervous reflex, toxic action of the anaesthetic, insufficient pulmonary elimination, fasting, dehydration, purgatives, oliguria, disturbances of the circulation, or certain drugs (morphine, caffeine, calcium). Factors likely to increase the alkalinity of the blood are vomiting, diarrhoea, haemorrhage, and increased irritability of the respiratory centre. The high figures of the alkaline reserve are often only the expression of a special form of acidosis. Post-operative acidosis may pass unobserved in the clinic and only be revealed in the laboratory. The various symptoms attributed to acidosis or ketosis are not pathognomonic, and often fail in well-marked cases of acidosis.

253. **Death from Spinal Anaesthesia.**

E. A. RYGH and D. H. BESSESEN (*Minnesota Med.*, November, 1928, p. 744), considering the causes of death from spinal anaesthesia, state that, while prior to ten years ago the mortality compared unfavourably with that from general inhalation anaesthesia, there are indications to-day that, owing to improved methods as regards drugs and dosage, spinal anaesthesia will eventually supplant other anaesthetics for operations below the diaphragm. The principal causes of death are the action of the drug upon the respiratory system and upon the vasomotor centres, the former following phrenic paralysis through the third, fourth, and fifth cervical nerve roots, or the effect upon the respiratory centre from access of the drug to the fourth ventricle, while the latter results from anaemia of the respiratory centre, due to vasomotor paralysis through the splanchnic nerves with reduction in blood pressure. Vasomotor disturbances can be readily detected by estimating the blood pressure every few minutes for the first ten minutes following injection; preparation is made to give adrenaline and saline injections at once if the blood pressure falls below 100 mm. Important factors in controlling the level of anaesthesia are the specific gravity and diffusibility of the solution used and the position of the patient; by securing accuracy in dosage and employing non-toxic drugs with the addition of adrenaline or ephedrine, and watching the blood pressure, a fatal issue from respiratory or vasomotor paralysis is rendered practically impossible. Patients suitable for spinal anaesthesia are those with surgical lesions below the level of the diaphragm in whom the Trendelenburg position is not contraindicated and in whom there is no hypotension, consideration of the blood pressure being most important.

Obstetrics and Gynaecology.

254. **Rapid Termination of Pregnancy.**

RAPID delivery by manual dilatation of the cervix under spinal anaesthesia has recently been recommended by Delmas as a reliable and safe procedure in cases of accouchement forcé and others (see *Epitome*, November 10th, 1923, para. 375). LE LORIER (*Bull. Soc. d'Obstet. et de Gynécol. de Paris*, December, 1928, p. 903) has tried Delmas's method in seven cases—one of uterine inertia, two of death of the foetus and ruptured membranes, one of foeto-pelvic disproportion, one of neglected shoulder presentation, and one of painful hypertonic uterus in a patient in whom ligamentopexy had been performed. In three cases the os had not begun to dilate; in three cases forceps delivery was used, and in three internal version was effected. In all, manual dilatation of the os was secured with facility and speed, and perineal tears, if noted, were minimal. As against the operation, however, it is noted that in all but one instance cervical tears (falling short of the vaginal vault) occurred; that in one case intrauterine manœuvres were impeded by the contraction ring; and that one patient exhibited uterine atony, with copious and fatal haemorrhages, two hours after labour. According to M. METZGER (*ibid.*, p. 911), who reports five cases of manual dilatation of the cervix under spinal anaesthesia (dystocia being present), dilatation of the os and relaxation of the perineum are readily obtained as a rule, but hypertonia of the uterus may lead to difficulties in forceps application, internal version, or embryotomy. One patient died on the fourth day from the effects of a sudden haemorrhage (cephalotripsy had been performed although the os was not completely dilated); another had a considerable metrostaxis on the fifth day. V. CATHALA (*ibid.*, p. 915) concludes that while dilatation of the cervix under spinal anaesthesia may have limited indications where accouchement forcé is required, it is by no means sufficiently free from danger to be employed as a means of painless delivery, at a selected time, in patients in whom uncomplicated labour is to be expected.

255. **Treatment of Cervical Cancer.**

F. DELPORTE and JEAN CAHEN (*Le Cancer*, No. 4, 1928, p. 289) describe the results of treatment of cases of epithelioma of the uterine cervix for six years. They suggest that research is required on the lines of making the cells of the neoplasm more susceptible to the influence of radiotherapy by increasing their sensitivity. They prefer treatment by radium to surgical methods, and give details which may be summarized as follows. When possible radium tubes are placed round the cervix, and when this can be dilated without risk of sepsis they are introduced within the uterus, but it is often found advisable to delay the intracervical treatment until the tumour has grown smaller and a better view can be obtained. This stage lasts for about twelve days, and results in cures lasting at least five years in 50 per cent. of both operable and inoperable cases. If, however, there is invasion of the uterine adnexa, intra-abdominal treatment is undertaken about six weeks later. Through a central incision below the umbilicus the uterus is examined and three or four needles are placed in suitable positions round it, the anterior and posterior surfaces of the uterus and broad ligaments being packed by gauze to protect the bladder and rectum. The wound is sutured in three layers, except for about one inch, through which the gauze and threads attached to the needles appear. The needles and anterior portion of the gauze are withdrawn after about a week, and the gauze in the pouch of Douglas is removed on the twelfth day. The authors claim a considerably higher proportion of cures in their cases treated by these methods than follow the use of deep radiotherapy. Detailed tables are given of the results obtained, and the percentage of cures is stated as 44 to 54 in operable cases, 25 to 35 in inoperable cases, 10 to 13 in the very advanced stages, and 13 to 18 in patients with recurrences.

256. **Abortifacient Poisoning.**

ACCORDING to N. CANDELA (*Ann. di Ostet. e Ginecol.*, December, 1928, p. 1511) about one-half of criminal abortions follow the ingestion of capsules of apiol. The symptoms of poisoning by this drug show no fundamental difference from those due to the other chemical abortifacients, such as quinine and ergot. Abortion is not secured with certainty even in cases in which the poison proves lethal, and individual variations in susceptibility are well marked. In six cases of poisoning by apiol taken as an ecbolic Candela noted, as the most common findings, pharyngeal necrosis, cloudy swelling of the liver, intense visceral congestion, and intestinal perforation. Renal symptoms included haematuria, nephritis, and uraemia. It is probable that many cases of toxic abortion following ingestion of apiol are wrongly regarded as due to toxic sequels of mechanical injury of the genital organs. From both the therapeutic and medico-legal points of view the detection of apiol poisoning in combination with induced abortion is of importance, and by tests in guinea-pigs Candela has satisfied himself that toxic doses of apiol are associated with the appearance of the drug in the urine, where it can best be detected by making the urine alkaline, extracting by gentle shaking with ether, and adding to the washed concentrated ethereal extract some pure sulphuric acid, when a rosy purple coloration is produced.

257. **Sterility.**

C. MAZER and J. HOFFMAN (*Med. Journ. and Record*, January 16th, 1929, p. 90), from an analysis of 500 cases in the gynaecological department of the Mount Sinai Hospital of Philadelphia, consider that as a preliminary to treating sterility in women the fertility of the male must be definitely established. The male is primarily responsible in about 25 per cent. of the cases and indirectly for most of the infections resulting in female sterility—as, for example, gonorrhoeal endocervicitis and salpingitis; and lacerations of the cervix with subsequent infection play an important part. By means of the Rubin test of transuterine insufflation, or of utero-salpingography with lipiodol, the patency of the Fallopian tubes can be determined; the freeing of adhesions, straightening of tortuosities, dislodging of inspissated mucus, and the opening up of a passage afford a rational method of treatment and diagnosis in some cases. The authors point out that one out of every seven marriage unions in America remains barren, and that the incidence of non-patency and stenosis of the Fallopian tubes in sterile women is about 33 per cent. Endocrine dysfunction from puberty with undeveloped genital organs was present in about 14 per cent. of the cases, while such dysfunction of later development occurred in about 4 per cent. Uterine fibroids, malpositions, and ovarian cysts were only occasionally responsible for sterility. In most of the cases of relative sterility foci of infection were the apparent cause of repeated abortions and prematurity, while syphilis was responsible only in six. In one-fifth of the patients no apparent cause of sterility could be found, and one-third of these eventually bore viable children without any definite treatment having been adopted.

258. **Myomectomy during Pregnancy.**

ACCORDING to S. LIEBMANN (*Zentralbl. f. Gynäk.*, January 19th, 1929, p. 172) conservative operations for myoma during pregnancy can be recommended with confidence; if adequate care is given to the wound in the uterus the pregnancy will probably continue, and dangerous complications are unlikely to occur either during or after labour. Liebmann describes six cases of enucleation of large myomata during pregnancy: one was followed by abortion, five went on to term or nearly to it; four patients had living spontaneously born children, and one could not be traced beyond term. In the first case, that of a nullipara aged 34, married for fifteen years, a subserous myoma filling the true and false pelvis was removed

during the fourth month. In the second case, a myoma reaching above the navel was enucleated during the third month in a nullipara aged 32. In the third case the tumour occupied the pouch of Douglas, and in the fourth an intramural node the size of the fist was extirpated during the third month. The fifth case was that of a nullipara, aged 41, who during the sixth month was found to have a subserous myoma the size of a goose's egg, and subsequently had abdominal pain, pyrexia with rigors, pyuria, and jaundice. The appearance of signs of peritonitis led to a diagnosis of acute purulent cholecystitis, but at operation the acute signs and symptoms were found to be due to infection of the myoma from adhesions to the small intestine and transverse colon. The tumour was removed and drainage was arranged. Six weeks later a living child was expelled spontaneously; the patient recovered after a post-partum attack of pyelitis, followed by bilateral crural thrombosis and metastatic tonsillitis. In the sixth case the myoma, removed during the third month of pregnancy, was necrobiotic.

Pathology.

259. The Virus of Post-vaccinial Encephalitis.

E. BERGER (*Centralbl. f. Bakt.*, January 24th, 1929, p. 138) inoculated the corneas of twelve rabbits with quantities of calf lymph in doses ranging from 0.05 to 0.1 c.cm. The animals were killed at intervals and the brain was examined for the presence of the vaccinia virus. The technique employed was the enrichment method of Ohtawara—namely, the simultaneous inoculation of the brain suspension on to the cornea and into the testicle of normal rabbits. In four out of the twelve rabbits the virus was demonstrated in the brain; these were examined between the fourth and the sixth day after inoculation. There was no evidence of the production of a vaccinial encephalitis, and from the fact that the virus was demonstrable only when the enrichment method was used—simple corneal inoculation giving uniformly negative results—he concludes that it was present in small amount only. In further experiments rabbits which had received corneal inoculations with vaccine lymph were anaesthetized with a chloroform-ether mixture for ten minutes at a time on the second, third, and fifth days after inoculation. No evidence was obtained that this treatment was able to activate the virus in the brain, nor was this brought about by inflicting mechanical injury to the skull. Since many workers believe that post-vaccinial encephalitis is due to the activation of some other virus lying latent in the body, the author made experiments to ascertain whether it was possible to produce an encephalitis, in rabbits chronically infected with herpes, by the inoculation of vaccinia virus. Four rabbits which had survived the corneal inoculation of herpes virus were inoculated two or three weeks later with vaccinia virus, the inoculation being made on to both corneae. All the animals developed keratitis, but none of them showed any symptoms of encephalitis. This attempt to activate the herpes virus—a virus which is known to produce encephalitis in rabbits—resulted in failure.

260. The Thymus and the Healing of Fractures.

O. BARTOLI (*La Chir. degli Organi di Movimento*, December, 1928, p. 168) produced simple fractures of the radius in twenty-four rabbits; he injected one series of six with extract of rabbit thymus; another series received similar injections of extract of calf thymus; in a third series of six the thymus was removed; the fourth (control) series had no treatment. The injections were commenced two or three days after making the fracture, 1 c.cm. of the extract being injected every day until the animal was killed. The animals were killed respectively on the tenth, twentieth, thirtieth, forty-fifth, sixtieth, and seventy-fifth days after the fracture; the progress of healing was noted during life by *x*-ray examinations, and after death by making sections. The results are expressed in tabular form, and indicate that in the group of rabbits which received the homologous extract there was complete ossification and re-establishment of the medullary canal by the thirtieth day, whereas in the control untreated rabbits at this date the callus was cartilaginous, showing only an initial zone of ossification. In group 2, which had received heterologous extract, there was a cartilaginous callus partly ossified; in the animals from which the thymus had been removed the callus was osteoid. At the seventy-fifth day those which had received homologous extract showed only a trace of residual callus, whereas with the untreated, though the callus was completely ossified, the absorption of callus was only commencing. Those rabbits which had received heterologous thymus still had a big callus; in those from which the thymus gland had been removed the callus was osteoid, showing a few calcified trabeculae.

261. Cholesterinaemia in Diphtheria.

P. LEREBOULLET, M. DAVID, and DONATO (*Arch. de Méd. d'Enf.*, December, 1928, p. 703), who record eight illustrative cases in children aged from 2½ to 12 years, made more than 500 estimates of cholesterin in the blood serum of diphtheria patients by Grigaut's colorimetric method, with the following results. In malignant attacks during the first three or four days of the disease the cholesterin content of the blood is lowered to 75 per cent., increased in 20 per cent., and normal in 5 per cent. During the next ten days there is almost always a lower value than during the first four days, and in rapidly fatal cases the fall is quick and considerable. The hypocholesterinaemia is usually accompanied by a similar fall of the glucose content of the blood. After the fifteenth day the degree of cholesterinaemia is variable. In prolonged forms which remain severe and often prove fatal hypocholesterinaemia persists, but in cases which end in recovery there is a progressive rise in the cholesterinaemia. In moderate attacks the cholesterinaemia remains normal or is slightly lowered. In cases which run a favourable course from the first, or which have received large doses of serum on the first day accompanied by subcutaneous injection of suprarenal extract, hypercholesterinaemia may be found. In laryngeal diphtheria the variations in the cholesterinaemia correspond to the degree of diphtherial intoxication. Intercurrent disorders, such as eruptive fevers, broncho-pneumonia, otitis, and suppuration, always cause a fall in cholesterinaemia. Serum sickness, especially when pronounced, always gives rise to hypocholesterinaemia. In diphtherial paralysis, on the other hand, hypercholesterinaemia appears to be very frequent. Injections of cholesterin oil in doses of 1.50 or 3 grams per mille, either alone or in association with suprarenal extract, are followed by encouraging, though inconstant, results.

262. Streptococci in Spinal Fluid in Acute Poliomyelitis.

E. C. ROSENOW (*Journ. Amer. Med. Assoc.*, November 24th, 1928, p. 1594) found Gram-positive diplococci of varying size and shape, arranged singly in short chains, or in small clumps, in the sediment of the spinal fluid of eighteen cases of epidemic poliomyelitis. These organisms were also found in the spinal fluid of three monkeys in which typical poliomyelitis developed after intracerebral inoculation of emulsions of glycerolated brain and cord from three fatal human cases. The cell counts ranged from 15 to 1,270 for each cubic millimetre of spinal fluid in the different cases. The organism was found in the preparalytic stage as early as twelve hours after the onset, and after the paralysis had begun as late as the fourth day of disease. Control smears were made of the spinal fluids from twenty-four other cases of disease of the central nervous system, but in none of these were diplococci demonstrable in smears or on culture. Great difficulty was encountered in cultivation of the organisms from the spinal fluid. All primary cultures in ordinary media proved negative, but growth was obtained in fifteen of the eighteen cases when the spinal fluid or the sediment only was inoculated into a concentrated autoclaved alkaline extract of yeast. The freshly isolated strains of streptococci like those obtained in previous epidemics produced flaccid paralysis in rabbits. The organisms were agglutinated by hyper-immune poliomyelitis antistreptococcal serum.

263. Metabolism of Undernourished Children.

C. C. WANG, JEAN E. HAWKS, and MILDRED KAUCHER (*Amer. Journ. Dis. Child.*, December, 1928, p. 1161) have tried to determine the possible relationship between the nitrogen intake and the rate of growth in normal and undernourished children. They investigated eight normal and nine undernourished children whose ages ranged from 4 to 12 years, the first being on a high protein diet of 4 grams of protein per kilogram of body weight, and the second on a low protein diet of half that protein value. The diets were of equal calorie value. Except, however, in a group of eight children who figured in both experiments the calorie intake and the nitrogen intake varied considerably in different children. The percentage utilization of the calories in a person on the high protein low protein diet was greater than in one on the high protein diet, owing to the higher coefficient of digestibility of the food mixture of the low protein diet. Underweight children seemed to utilize the nitrogen of a low protein diet more efficiently than did normal children. A striking gain in weight followed an increase of the protein in the diet, even in normal children; this was especially marked in undernourished children. The authors advise a diet containing 4 grams of protein per kilogram of body weight for undernourished children, and recommend that the diet of all children, normal or underweight, should contain one quart of milk, for its calcium and vitamin content as well as for its protein content.

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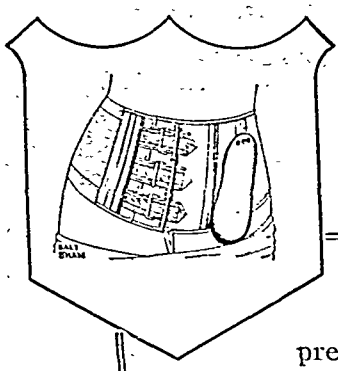

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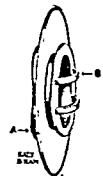

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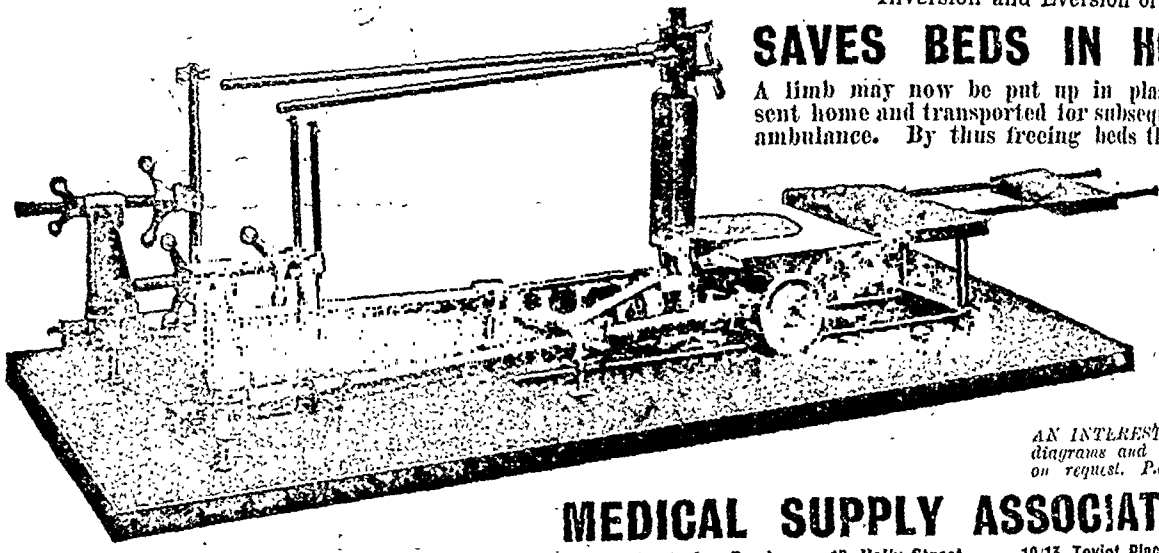

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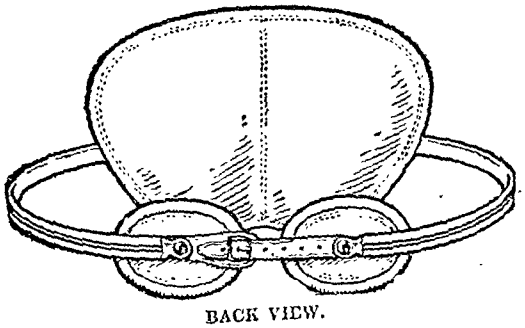

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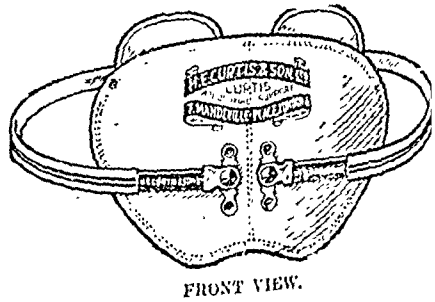

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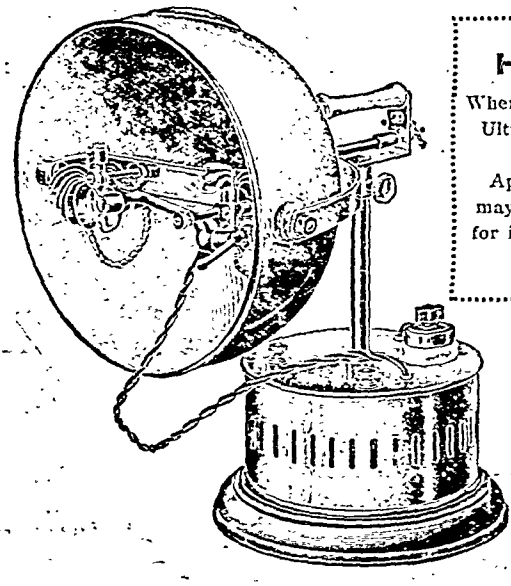

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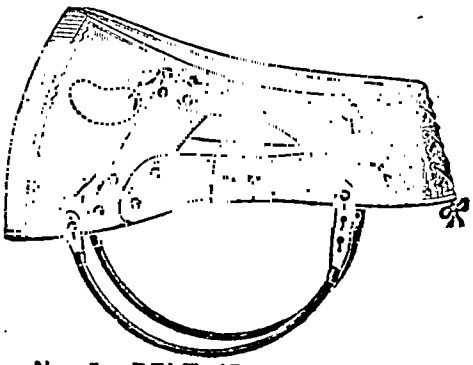

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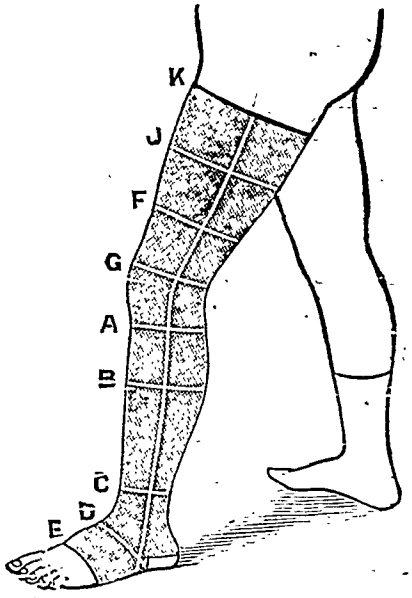

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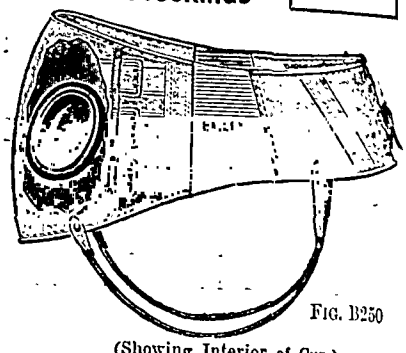


FIG. B250
(Showing Interior of Cup.)
SPECIAL BELT FOR AFTER COLOSTOMY.

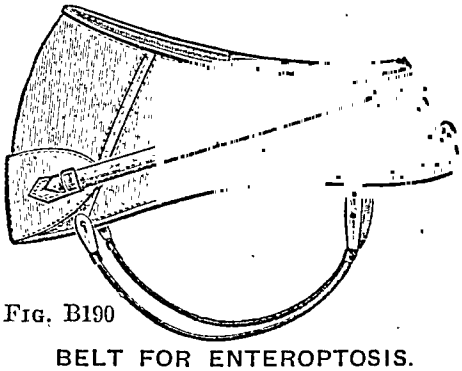
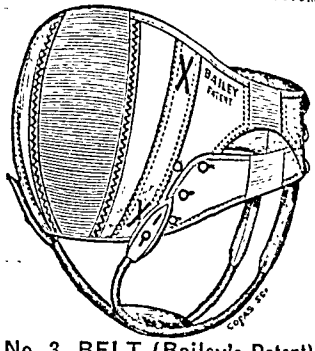


FIG. B190
BELT FOR ENTEROPTOSIS.



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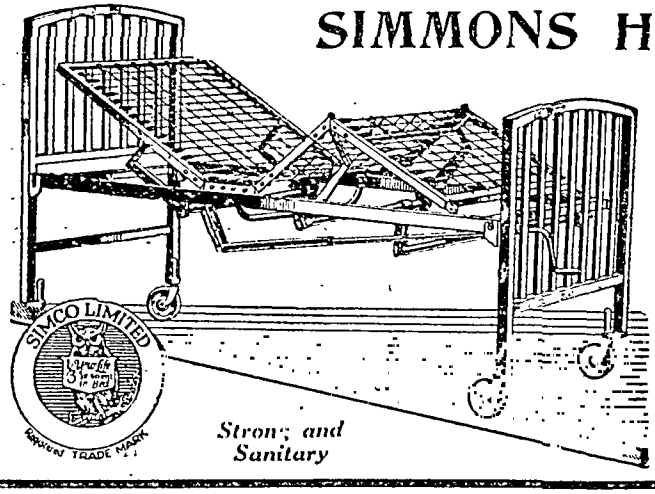

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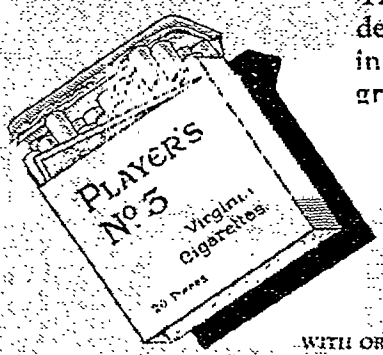

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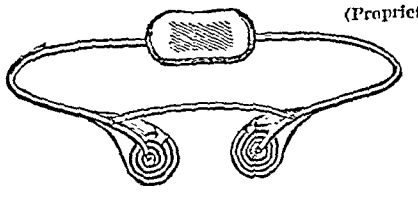

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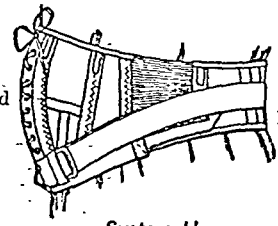

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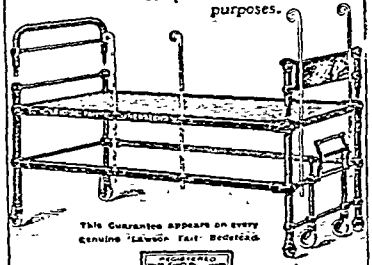

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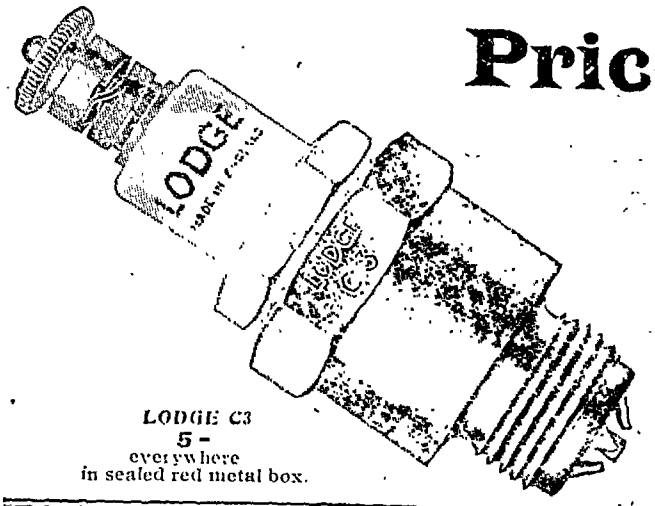

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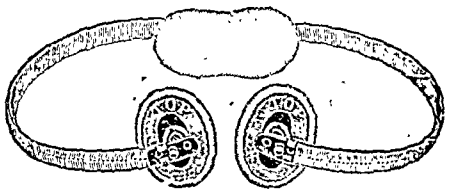

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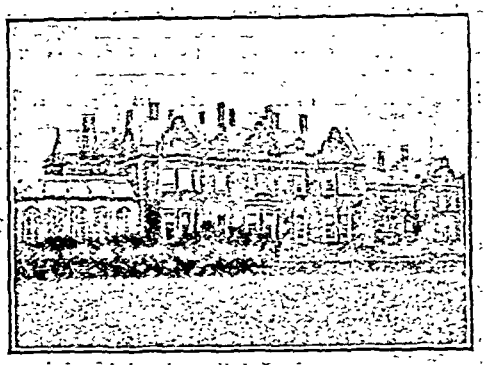

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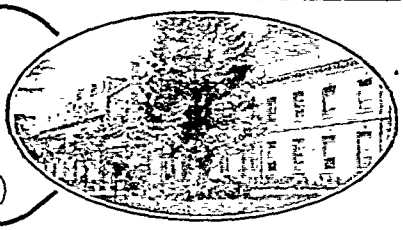

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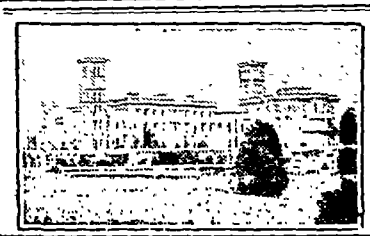

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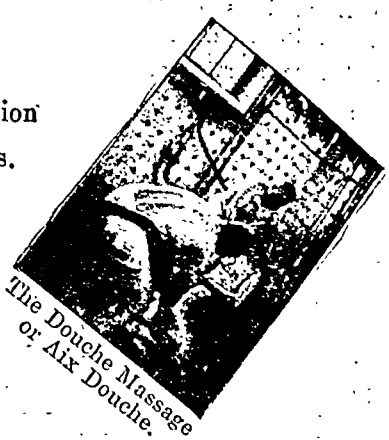

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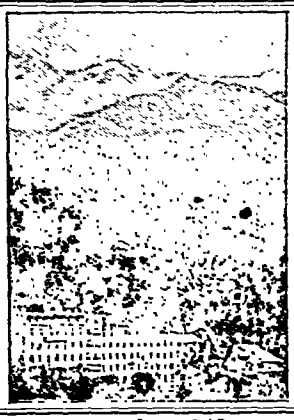

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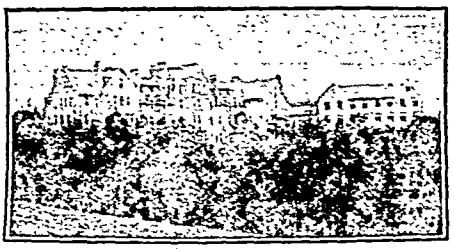

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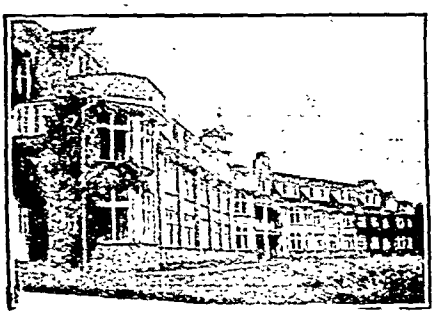

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The Government of Burma

require a DIRECTOR for the HARCOURT BUTLER INSTITUTE OF PUBLIC HEALTH, RANGOON. Candidates must be fully qualified medical men and experienced bacteriologists, and preference will be given to those possessing a Diploma of Public Health. Salary Rs.1,650 a month, rising by annual increments of Rs 50 a month to Rs.1,850 a month. Five years' agreement. First-class passage out and home. Strict medical examination.

Further particulars and forms of application may be obtained upon request by post-card to the Secretary to the High Commissioner for India, General Department, 42, Grosvenor Gardens, London, S.W.1. Last date for receipt of applications March 13th, 1929.

Bedfordshire County Council.

ASSISTANT MEDICAL OFFICER (RESIDENT).

Applications are invited for the appointment of a Male Assistant Medical Officer (Resident) at the Bedfordshire Sanatorium, near Bedford.

The officer appointed will also be required to act as an Assistant School Medical and Assistant Tuberculosis Officer in the County. The officer, who will be under the direction of the County Medical Officer of Health, will be required to perform such other duties as the Council may direct.

Applicants must be single, registered medical practitioners, and have had experience in Tuberculosis work. Experience in School Medical Inspection, and the possession of a Diploma in Public Health, are desirable. The person appointed will be required to devote the whole of his time to the duties assigned to him, and not to engage in private practice.

Salary £400 per annum, together with board, residence, laundry, garage, etc., and a travelling allowance of £150 per annum, the appointment to be subject to three months' notice to be given by either side at any date.

Co[illegible] an be obtained from the
[illegible] Shire Hall, Bedford.
[illegible] age, qualifications, and previous experience, accompanied by copies of three recent testimonials, and endorsed "Assistant Medical Officer (Resident)," should be sent to the undersigned not later than Wednesday, March 20th.

Shire Hall, J. B. GRAHAM,
Bedford, Clerk of the County Council.
February 25th, 1929.

Manchester Babies' Hospital,

BURNAGE LANE, LEVENSHULME.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER. Appointment is for six months from May 1st. Salary at the rate of £50 per annum, with laundry.

Applications, together with copies of testimonials, should be sent to the undersigned, and marked "Junior R.M.O.," by Friday, April 26th.

ANGELA LOPEZ, Secretary.

General Infirmary, Salisbury.

(General Hospital. 151 Beds.)

Two HOUSE SURGEONS (male) required. Candidates must be unmarried, fully qualified and registered. Salary £150, with board, etc.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary at once

Durham County Council and CHESTER-LE-STREET URBAN DISTRICT COUNCIL.

APPOINTMENT OF DISTRICT TUBERCULOSIS MEDICAL OFFICER AND MEDICAL OFFICER OF HEALTH.

Applications are invited for the above appointments. Candidates must be registered in the *Medical Register* as holding a Diploma in Sanitary Science, Public Health, or State Medicine, and must have had satisfactory experience in the diagnosis and treatment of Tuberculosis.

The County Council will pay a salary of £500 per annum, rising by annual increments of £25 to a maximum of £550 per annum, for the post of District Tuberculosis Medical Officer, and both appointments will be subject to six months' notice on either side.

Travelling and subsistence expenses according to scale will be paid by the County Council in spect of the duties of the District Tuberculosis Medical Officer.

The Chester-le-Street Urban District Council will be prepared to appoint the person selected by the County Council for appointment as District Tuberculosis Medical Officer as their Medical Officer of Health and to pay a salary at the rate of £200 per annum.

It will be a condition of appointment that if either post is terminated the other appointment will also be automatically vacated.

The appointments will be subject to the approval of the Minister of Health, and will require the whole time of the person appointed, who will not be allowed to engage in private practice.

The person appointed will be required to live in or near Chester-le-Street.

Applications, accompanied by copies of not more than three recent testimonials, must be addressed to the County Medical Officer, Shire Hall, Durham, and must be received by him not later than the first post on March 13th.

Shire Hall, HAROLD JEVONS,
Durham. Clerk of the County Council
February 25th, 1929. Durham.

The London County Council

invite applications for appointment as EIGHTH ASSISTANT MEDICAL OFFICER (male) in the MENTAL HOSPITAL SERVICE. Candidates must be under 35 years of age and be registered to practise both in medicine and surgery in England. Salary £300 a year, rising by annual increments of £25 to £400 a year, plus fluctuating temporary additions, making the total commencing remuneration approximately £423 a year. No emoluments. Charges made for board, lodging, etc. (at present £2 9s. weekly) if required to be resident. Candidate appointed will be pensionable under the Asylums Officers' Superannuation Act, 1909. Form of application, on which full particulars are given, can be obtained from the Acting Chief Officer, Mental Hospitals Department, The County Hall, Westminster Bridge, S.E.1. Completed applications must be received by Thursday, March 21st. Canvassing disqualifies.

North Riding Infirmary,

MIDDLESBROUGH.

(General Hospital. 150 Beds.)

JUNIOR HOUSE SURGEON (male) wanted to commence duties April 1st next. Appointment for six months. Salary £150 p.a., with board, residence, and laundry.

Applications, stating age, nationality, and experience, with three recent testimonials (copies) should be delivered to the undersigned not later than Wednesday, March 20th.

CHARLES POSTGATE, Secretary-Supt.

Addenbrooke's Hospital,

CAMBRIDGE.

Applications are invited for the post of HOUSE SURGEON (male). The appointment is tenable for six months from April 1st, but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £130 p.a., with board, residence, and laundry. Candidates, who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four recent testimonials, on or before Thursday, March 21st.

W. H. HEAD, Secretary-Supt.

Bedfordshire County Council.

ASSISTANT MEDICAL OFFICER (Woman).

Applications are invited for the above appointment. The officer appointed will be required to assist chiefly in the School Medical and Maternity and Child Welfare Services of the Council. The officer, who will be under the direction of the County Medical Officer of Health, will be required to perform such other duties as the Council may direct.

Applicants must be registered medical practitioners, possess a Diploma in Public Health, and have had experience in the branches of Public Health referred to. The person appointed will be required to devote the whole of her time to the duties assigned to her, and not to engage in private practice.

Salary £600 per annum, together with a travelling allowance of £170 per annum, the appointment to be subject to three months' notice to be given by either side at any date.

[illegible] ed from the
Co [illegible] , Bedford.
pr [illegible] ations, and
th [illegible] y copies of
[illegible] endorsed
"Assistant Medical Officer (Woman)," should be sent to the undersigned not later than Monday March 18th.

Shire Hall, J. B. GRAHAM,
Bedford. Clerk of the County Council.
February 25th, 1929.

Bedfordshire County Council

ASSISTANT COUNTY DENTIST.

Applications are invited from Dental Practitioners holding a registered Diploma or Degree in Dental Surgery for the post of Assistant County Dentist.

The officer appointed will be under the direction of the County Medical Officer of Health. His chief duties will be in connection with the dental inspection and treatment of school children; he will also be required to perform certain services in connection with the Maternity and Child Welfare and the Tuberculosis Departments of the Council.

The officer appointed will be required to devote the whole of his time to the duties of the office, and not to engage in private practice.

Salary £450 per annum, together with a travelling allowance of £150 per annum.

Further particulars can be obtained from the County Medical Officer, Shire Hall, Bedford.

Applications, stating age, qualifications, and previous experience, accompanied by copies of three recent testimonials, and endorsed "Assistant County Dentist," should be sent to the undersigned not later than Monday March 18th.

Shire Hall, J. B. GRAHAM,
Bedford. Clerk of the County Council.
February 25th, 1929.

North Lonsdale Hospital,

BARROW-IN-FURNESS.

Applications for a HOUSE SURGEON are invited from fully qualified male practitioners experienced in the administration of Anæsthetics. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, and accompanied by copies of three recent testimonials, to be sent to the Secretary, so as to reach him not later than March 18th.

St. Mary's Hospitals, Manchester

Two HOUSE SURGEONS for the WHITWORTH STREET WEST HOSPITAL (Maternity), and Two for the WHITWORTH PARK HOSPITAL (Gynæcological), each for a period of six months from May 1st next. Salaries at the rate of £50 per annum, with board and residence.

Application, with copies of three testimonials, to be sent to the undersigned on or before March 14th.

R. RATCLIFFE, Secretary.

Cameron Hospital,

WEST HARTLEPOOL.

HOUSE SURGEON (male), to commence duty on March 30th. £150 per annum. Applications, with copies of testimonials and particulars of age, qualifications, and experience, to be sent to the undersigned on or before March 2[illegible]

H. WOODHALL, Secretary.

Bristol City Mental Hospital.

THIRD ASSISTANT MEDICAL OFFICER.

Applications are invited from unmarried gentlemen, duly qualified and registered, and not over 35 years of age, for the above post. Salary commencing at £500, rising by two annual increments of £25 to £350 per annum, with board, apartments, laundry, and attendance. £50 in addition if possessing a Diploma in Psychological Medicine. Fully equipped laboratory with trained Assistant for research and clinical pathology

The appointment is subject to the Asylum Officers Superannuation Act, 1909. Application forms, which are obtainable from the Medical Superintendent, should reach him at the Mental Hospital, Fishponds, Bristol, completed with copies of three testimonials, by Wednesday, March 20th.

The Council House, JOSIAH GREEN,
Bristol. Clerk to the Visiting
March 4th, 1929. Committee.

Western Ophthalmic Hospital,

Marylebone, N.W.1.

Applications are invited for the posts of SENIOR and JUNIOR NON-RESIDENT HOUSE SURGEONS. The salaries are at the rate of £150 and £100 per annum respectively, and the appointments are for six months. Some previous Ophthalmic experience is required. The selected candidates will be required to take up duty on April 1st. Applications, accompanied by copies of three testimonials, should reach me by March 15th, and candidates should be prepared to attend before the Medical Committee on March 22nd, at 4 p.m. Candidates should state in their applications whether they are prepared to accept either post.

H. W. BURLEIGH, Hon. Secretary.

Brentwood Mental Hospital,

BRENTWOOD, ESSEX.

JUNIOR ASSISTANT MEDICAL OFFICER required. Commencing salary £510 per annum, rising to £610 per annum by annual increments of £25, subject to deductions under the Asylums Officers Superannuation Act, and a charge of £2 2s. per week for board, lodging, and washing. Every encouragement is given to obtain the Diploma in Psychological Medicine, which carries with it an additional £50 per annum. Applications, giving full particulars of qualifications, accompanied by copies of three recent testimonials, to be sent to the Medical Superintendent as soon as possible.

The Guest Hospital and Eye

INFIRMARY, DUDLEY.
(General Hospital. 104 Beds.)

Applications are invited for the post of ASSISTANT HOUSE SURGEON. Duties include Medical, Surgical, Eye, Ear, Nose, and Throat, and Venereal Diseases work. Salary £150 per annum, with furnished apartments, board, and laundry.

Candidates must be fully qualified and registered. Applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, should reach the undersigned not later than March 20th.

H. RAYMOND HURST,
March 4th, 1929. Secretary.

Mansfield and District Hospital.

The Board of Management of the above Hospital (130 Beds) invite applications for the post of ASSISTANT HOUSE SURGEON (male).

Salary at the rate of £150 per annum, with residence, board, and laundry.

The appointment is for six months and is renewable. Duties to commence on April 4th.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

Dated this 2nd day of March, 1929.

A. H. LIMB, Secretary.

Swansea Hospital.

(316 Beds.)

HOUSE SURGEON wanted, gentleman, single. Salary £150, with board, residence, and laundry. Duties to commence April 1st.

Applications, stating age, nationality, and experience, with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS, Secretary.

Junior Assistant Medical Officer.

—Applications are invited for this post at the FIFE & KINROSS DISTRICT ASYLUM, CUPAR, FIFE. Salary £300 per annum, with board, lodgings, etc. The appointment is subject to the provisions of the 1909 Asylum Officers Superannuation Act. Apply, stating full particulars, to the Medical Superintendent.

West Norfolk and King's Lynn HOSPITAL.

RESIDENT ANÆSTHETIST AND CASUALTY OFFICER (either Sex).

Applications are invited for the above post, which will become vacant early in April.

Salary at the rate of £100 per annum.

At the end of six months' service the candidate appointed will be expected to proceed to the office of House Surgeon at a salary of £150 per annum.

Applications, giving particulars as to age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned on or before March 21st.

H. M. HOWARD, Hon. Secretary,
King's Lynn.

The Hostel of St. Luke

(Clergy Nursing Home),
14, Fitzroy Square, London, W.1.

The Committee of Management invite applications for the post of RESIDENT MEDICAL OFFICER (male) to the above Hostel.

Candidates must have had previous experience as House Surgeon at a general Hospital. The appointment is for one year at least. Salary at the rate of £200 per annum, with board, residence, and laundry. A fortnight's holiday will be allowed every six months, and the Locum will be paid by the Committee of the Hostel.

Applications and enquiries should be addressed to the Secretary of the Hostel, at 14, Fitzroy Square, W.1, and reach him before March 15th. The successful applicant will be required to take up his duties on March 25th.

The Miller General Hospital.

Greenwich Road, S.E.10.

Applications are invited from qualified Dental Surgeons; holding a registrable medical qualification in addition, for the post of HONORARY ASSISTANT DENTAL SURGEON.

Attendance is required in the Out-patient Department on Saturday mornings.

There is an honorarium of thirty guineas

[illegible] particulars, accompanied by recent testimonials, should be sent to the Secretary as soon as possible.

March 4th, 1929.

The Royal Albert Hospital and EYE INFIRMARY, DEVONPORT.

A vacancy for an ASSISTANT HOUSE SURGEON (unmarried) exists.

Applicants must be fully qualified, registered, and the appointment will be for six months. Salary £50 per annum, with apartments, board, and laundry free.

Applications, stating age, accompanied by copies of not more than three testimonials, should reach the undersigned not later than Friday, March 15th.

By Order of the Committee,
FRANK ROWE,
March 4th, 1929. Secretary.

North Ormesby Hospital,

MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £115 per annum, with board, residence, and laundry. There are three residents, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned at once.

GEORGE WATTS, Secretary-Supt.

Cornelia & East Dorset Hospital,

POOLE.

The Committee of Management invite applications for the post of HOUSE SURGEON (male). Salary £100 per annum, together with board, residence, and laundry. The successful candidate will be required to commence duty on April 10th.

Applications, with copies of testimonials, to be sent to the undersigned not later than March 23rd.

E. S. FOLEY, Secretary.

Liverpool Stanley Hospital.

Wanted, One Male HOUSE PHYSICIAN and Two Male HOUSE SURGEONS for April 1st. Salary at the rate of £100 per annum, with board, laundry, etc. Engagement for a period of six months.

Candidates must be on the *Medical Register*, and applications, with copies of three recent testimonials, should be lodged with the undersigned on or before March 12th.

E. W. OSBORN, Secretary.

Queen Charlotte's Maternity

HOSPITAL, Marylebone Road, N.W.1.

ASSISTANT RESIDENT MEDICAL OFFICER (male) required, to commence duty on April 1st, 1929.

Applicants must be registered. Appointment for three months. On completion of this appointment the selected candidate will be expected to proceed to the post of Senior Resident Medical Officer (for three months), on the recommendation of the Medical Staff.

The salary of the Assistant Resident Medical Officer is at the rate of £50 per annum, and of the Senior Resident Medical Officer £100 per annum, with board, residence, and washing allowance (4s. weekly).

Applications, with copies (not originals) of not more tha[illegible] ill be received by th[illegible] 16th. Canvassing is

[illegible] ARTHUR MAYO, Secretary.

Royal Northern Hospital,

Holloway, London, N.

Applications are invited for the following posts:

HOUSE PHYSICIAN for nine months (six months House Physician and three months Casualty Officer) from April 15th.

OBSTETRIC HOUSE SURGEON for six months from April 15th.

Salary in each case at the rate of £70 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent by March 16th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER, Secretary.

Royal Waterloo Hospital for

CHILDREN AND WOMEN,
Waterloo Road, S.E.1.

There is a vacancy for the post of HONORARY SURGICAL REGISTRAR at the above Hospital. Candidates must be Fellows of the Royal College of Surgeons. Preference will be given to candidates having had experience of special departments.

Particulars regarding the appointment can be obtained from the undersigned, to whom applications should be sent not later than March 22nd, with [illegible]t more than three recent testimonials.

J. H. TEASDALE, Secretary.

Ear and Throat Hospital,

BIRMINGHAM.

THIRD HOUSE SURGEON wanted (non-resident). Must be qualified and with clinical experience. Appointment for six months. Salary at the rate of £150 per annum, with lunch five week-days: Duties to commence May 1st.

Applications and testimonials to be forwarded on or before March 16th to the undersigned.

S. G. GREW,
February, 1929. Secretary.

Ear and Throat Hospital,

BIRMINGHAM.

SECOND HOUSE SURGEON wanted (non-resident). Must be qualified and with clinical experience. Appointment for six months. Salary at the rate of £150 per annum, with part board. Duties to commence April 1st.

Applications and testimonials to be forwarded on or before March 16th to the undersigned.

S. G. GREW,
February, 1929. Secretary.

Royal United Hospital, Bath.

Wanted on March 31st, a HOUSE SURGEON and an ASSISTANT HOUSE SURGEON. Salaries £150 and £100 p.a. respectively.

The appointments will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three recent testimonials, must be sent addressed to the Secretary not later than the 15th inst.

J. M SHEPPARD, Secretary.

Birkenhead General Hospital.

(156 Beds.)

Applications are invited for the post of CASUALTY SURGEON (male). Salary £100, with board and residence; to take up duties about March 25th.

Applications, stating qualifications, experience, and nationality, with three copies of recent testimonials, to be sent to the Secretary-Superintendent by March 12th.

Western Skin Hospital,

44-46, Hampstead Road, N.W.1.

Vacancy occurs for HONORARY ASSISTANT DERMATOLOGIST. Applications and testimonials should be sent to—

S. FERGUSON BUNDY, Secretary.

Royal East Sussex Hospital, HASTINGS.

Applications are invited for the post of PATHOLOGIST to the above Institution (*honorarium £200 per annum*).

Candidates must be either a Fellow or a Member of the Royal College of Physicians of London, Edinburgh, or Northern Ireland, or be a Graduate in Medicine of one of the Universities of the United Kingdom, and also be duly registered under the Medical Acts.

The successful candidate will be at liberty to *practise privately as in the case of the former* holder of the post, but must continue to give priority to Hospital and such Public Health Authorities' work as may be arranged for, and the use of the Laboratory for private work is subject to certain conditions.

A trained Laboratory Assistant is provided by the Hospital.

Further details as to the possibilities of the post and practice may be obtained on application.

Applications, accompanied by copies of three recent testimonials, should reach the Secretary *not later than 12 noon on Saturday, March* 16th.

The post of MEDICAL OFFICER to the V.D. Department under the Public Health V.D. Regulations, 1916, is also vacant, and candidates are eligible to apply for this post, the appointment being subject to the approval of *the Ministry of Health* and the Local Authorities. This post has been held by the Pathologist, and carries with it a salary of £375 per annum and other emoluments of the minimum value of approximately £50 per annum.

Applications are also invited for the post of HONORARY ASSISTANT PHYSICIAN to the Hospital. Candidates must be either a Fellow or Member of the Royal College of Physicians of London, Edinburgh, or Northern Ireland, or be a Graduate in Medicine of one of the Universities of the United Kingdom, and also be duly *registered under the Medical Acts.*

Applications, accompanied by copies of three recent testimonials, should reach the Secretary not later than 12 noon on Saturday, March 16th.

WILFRED G. KEMSLEY, Secretary.

Hospital of St. Cross, Rugby.
(100 Beds.)

Applications are invited for the posts of SENIOR and JUNIOR RESIDENT MEDICAL OFFICERS (Males).

Candidates must be registered medical practi*tioners, and must be prepared to begin duties* on April 1st. Salary for the Senior post at the rate of £150 per year, Junior at the rate of £100 per year, with board and residence in the Hospital.

Candidates are requested to state whether they are prepared to accept the post of Junior if not selected for the Senior office.

The appointments are for a period of six months only; at the end of that time the Junior will be eligible to apply for the Senior post, which then becomes vacant.

This Hospital is recognized by the University *of London for the purposes of the M.D and M.S.*

Applications, stating age and qualifications, with copies of three recent testimonials, should be received by me not later than Monday, March 18th.

CAPT. W. COCKBURN,
March 4th, 1929. Supt. & Secretary.

Cardiff City Mental Hospital.
WHITCHURCH, near CARDIFF.

Applications are invited for the post of RESEARCH CHEMIST at the above. Whole*time. Age not to exceed 30 years.* Commencing salary £800 per annum, with dinner and tea daily.

Applicants must be Graduates in Science of a University of Great Britain or one of the Dominions, and should be able to produce evidence of a sound training in Analytical Chemistry, Biochemistry, and Biophysics.

*Evidence of previous research work in Bio*chemistry would be an advantage.

The candidate appointed will be expected to participate in team-work in association with the Medical Staff of the Hospital.

The appointment is subject to the terms of the Asylums Officers Superannuation Act, 1909.

Applications to be upon a form which may be obtained, *with particulars, from the Medical Superintendent of the above Institution.*

The Metropolitan Ear, Nose, AND THROAT HOSPITAL.
(1838) (*Incorporated*), Fitzroy Sq., W.1.

HOUSE SURGEON (non-resident). Salary £150 per annum.

Applications are invited for the above appointment, and should be forwarded, with not more than three recent testimonials, to the undersigned, from whom further particulars may be obtained.

Manchester Royal Infirmary.
APPOINTMENT OF *HONORARY* ASSISTANT PHYSICIAN IN CHARGE OF OUT-PATIENTS.

The Board of Management invite applications for the above appointment.

Candidates must hold the qualification of a Fellow or Member of the Royal College of *Physicians* in London, and shall have a *Diploma from some University requiring* examination for its degrees. Candidates are required to forward diplomas, original testimonials (not exceeding eight in number), and *certificate of age* with their applications, addressed to the Secretary, on or before 9 a.m. on Thursday, March 21st, from whom also a copy of the rules can be obtained. Candidates are *required to furnish 45* copies of their applications and dated testimonials, addressed to the Secretary, for distribution prior to the meeting of the Committee.

Canvassing, directly or indirectly, is forbidden, and the *Committee reserve to them*selves the right on proceeding to election to take into consideration any complaint that canvassing on behalf of any candidate has taken place.

By Order,
FRANK G. HAZELL,
February 26th, 1929. Gen. Supt. & Sec.

West London Hospital,
Hammersmith Rd., W.6. (226 Beds)

Required, One Non-resident HOUSE OFFICER *for Children's Department* for six months from April 1st next, subject to one month's notice *on either side. Applicants may be male or* female, must be unmarried, and the appointment may be renewable for a further period up to 12 months. Hours 9—5.30 (*approx.*). Salary at the rate of £5 5s. weekly, with lunch daily. Candidates must be registered under the Medical Act. The holder must have held a resident appointment at a Children's Hospital or in the Children's Department of a General Hospital. Applications (which must be made on printed forms obtained from me) must reach *me not later than first post on Monday, March* 18th. Selected candidates will be required to call upon such members of the Medical Staff as directed, to be in attendance at a Meeting of the Medical Council on Friday, March 22nd, at 5.30 p.m., and the House Committee Meeting at 5 p.m. the same day, when the appointment will be made.

H. A. MADGE, Secretary.

West London Hospital,
Hammersmith Rd., W.6. (226 Beds)

Required, One HOUSE PHYSICIAN and Two HOUSE SURGEONS (males) for six months from April 1st next, subject to one month's notice on either side. Salary at the rate of £100 p.a., with board, lodging, and washing allowance. Candidates must be registered under the Medical Act. Applications (which must be made on printed forms obtained from me) must reach me not later than first post on Monday, March 18th. Selected candidates will be required to call upon such members of the Medical Staff as directed, to be in attendance at a Meeting of the Medical Council on Friday, March 22nd, at 5.30 p.m., and the House Committee Meeting at 5 p.m. the same day, when the appointments will be made.

H. A. MADGE, Secretary.

West London Hospital,
Hammersmith Road, W.6. (225 Beds.)

Applications are *invited* for the post of HONORARY ASSISTANT ANÆSTHETIST. Candidates are required to be registered under the Medical Act, to send applications, with copies of testimonials, so as to reach me not *later than Thursday, March 21st; to attend* the Medical Council Meeting at 4.30 p.m. on Friday, March 22nd, and prior to that date to call upon and send copies of their applications and testimonials to each member thereof; to abstain from canvassing, but nevertheless to send copies of their applications and testimonials to the Members of the Board of Management, who *will elect on Tuesday, March 26th,* at 5 p.m., when selected candidates must be in attendance.

H. A. MADGE, Secretary.

Royal National Orthopædic HOSPITAL.

HONORARY ASSISTANT SURGEON.

The Committee propose to appoint an Honorary Assistant Surgeon, whose duties will include attendance in the Out-patient Department on Tuesday and Friday afternoons and charge of beds.

Applications, with copies of three recent *testimonials*, should be sent to the Secretary, 234, Gt. Portland Street, W.1, on or before April 3rd.

Royal Sussex County Hospital, BRIGHTON.

Notice is hereby given that a meeting of the Elective Committee will be *held in the Board* Room at the Hospital on Wednesday, April 3rd, at 12.15 p.m., for the purpose of electing an *HONORARY CLINICAL ASSISTANT* to the Ear, Nose, and Throat Department, to assist the Surgeon in charge, and to perform *his duties* in his absence, and such Elective Committee is hereby convened accordingly.

The appointment will be for two years, and the holder will be *eligible* for re-election.

Applications are invited for the above office from gentlemen who are Members or Licentiates of the Royal College of Physicians of London, Edinburgh, or Dublin, or Graduates in Medicine of one of the Universities of the British Empire, or Fellows or Members of the Royal College of Surgeons of England, Edinburgh, or Ireland, or Masters or Bachelors of Surgery of one of the Universities of the British Empire, and who are *duly registered* under the Medical Acts.

Applications, with proof of the above named qualifications, must reach the Secretary Superintendent at the Hospital before 12 noon on Monday, March 18th.

By Order of the Board of *Management*,
L. L. W. LANCASTER-GAYE,
Secretary-Superintendent

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A HOUSE SURGEON and a HOUSE PHYSICIAN are required on April 4th and 14th respectively.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, March 18th, with copies of not more than three testimonials given *specially for the purpose, and also evidence of* their having held a responsible Hospital appointment.

The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, March 20th, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY,
February, 1929. Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A PART-TIME JUNIOR CASUALTY OFFICER is required on April 8th, to assist in the Casualty Department, from 10 a.m. to 3 p.m. (*Saturdays* 10 a.m. to 1 p.m.), under the *direction of the Casualty Officer.*

Candidates must be registered medical practitioners, and have held a responsible Hospital appointment.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, March 18th, *accompanied* by copies of not more than three testimonials written specially for the purpose.

The appointment is made for six months and is non-resident.

Salary at the rate of £150 per annum, with luncheon.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, March 20th, at 5 p.m. precisely.

Forms of [illegible] may be obtained from the Secretar[illegible]

By Order [illegible]
[illegible] Secretary.
February, 1929.

All Saints' Hospital (for Genito-URINARY DISEASES).

In-patient Dept.: 91, Finchley Road, S.W.3.
Out-patient Dept. & Secretary's Office:
49-55, Vauxhall Bridge Road, S.W.1.

HOUSE SURGEON (male) *required* April 1st for nine months as under:

Three *months* Assistant House Surgeon (non-resident) at £100 per annum.

Three months Junior House Surgeon (non-resident) at £150 per annum.

Three months *Senior* House Surgeon (resident) at £150 per annum, with board and laundry.

The duties of the Assistant and Junior House Surgeons consists of attendance at the Out-patient Department *every afternoon* and three evenings weekly.

Applications, stating age, experience, and qualifications, and enclosing copies of recent testimonials, should reach me not later than March 20th.

D. H. EADE, Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH.**
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	EAST RIDING COUNTY COUNCIL. *(Assistant Tuberculosis Officer.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*		YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
		YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. *(Grenada with Carriacou, St. Vincent and St. Lucia.)*

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec. Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, *Western Australia.*
QUEENSLAND. *(Brisbane Associated Friendly Societies' Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), *British Medical Association*, Adelaide St., Brisbane.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
March 6th, 1929.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

The Kensington, Fulham and CHELSEA GENERAL HOSPITAL.

Vacancy occurs on the Honorary Medical Staff for a PHYSICIAN for Diseases of the Skin. Applications are invited from qualified and registered medical gentlemen, engaged solely in the practice of Dermatology. Twenty copies of the application, each accompanied by three copies of testimonials, should reach the undersigned not later than March 12th. This Hospital, which is in process of rebuilding, will shortly have 112 beds. Present duties will consist of one attendance per week in the Out-patient Department, which is being kept open during rebuilding.

SUPERINTENDENT, 194, Finborough Road, S.W.10.

The Royal Infirmary, Sheffield.

There is a vacancy on the Honorary Surgical Staff for the post of ASSISTANT SURGEON, and notice is hereby given that, in accordance with Rule No. 32, the Election Committee, with whom the appointment rests, will proceed to fill up the vacancy at a special meeting to be held at the Royal Infirmary on Wednesday, March 20th, at 11.45 o'clock a.m. Candidates are requested to forward applications, with diplomas and testimonials, to the undersigned on or before Monday, March 11th.

Board Room, JNO. W. BARNES, F.C.I.S.,
March 5th, 1929. Gen. Supt. & Sec.

N.B.—The Surgical Registrar will be an applicant for the post.

The Cancer Hospital (Free), Fulham Road, London, S.W.3.

The Committee of Management invite application for the appointment of an ANÆSTHETIST to the Hospital.

Preference will be given to candidates who are engaged in Anæsthetic practice only.

Particulars as to honorarium, rules, etc., may be obtained from the undersigned, to whom applications must be submitted, together with copies of testimonials, by first post Wednesday, March 27th.

J. COURTNEY BUCHANAN, Secretary.

Royal Free Hospital, Gray's Inn Road, W.C.1.

Applications are invited from duly qualified medical men for the post of CASUALTY OFFICER. Previous experience as Hospital Resident essential. Salary £150 per annum. Intending candidates should submit applications, stating age, and accompanied by copies of three recent testimonials, to the undersigned before March 26th. The appointment is tenable for six months from May 1st.

REGINALD R. GARRATT, Secretary.

Stirling Royal Infirmary. (146 Beds.)

Applications are invited for the post of JUNIOR HOUSE SURGEON for *six months*. Commencing duties almost immediately. At the end of *six months* he may be appointed to the post of Senior Resident.

Salary at the rate of £120 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Royal Infirmary, Stirling.

Seamen's Hospital Society, Greenwich.

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, for six months from April 1st. Salary £110 per annum, and a proportion of fees, with board, residence, and washing. Candidates must be *males*.

Applications, with copies of three testimonials, to be sent in by March 18th, to the undersigned.

Greenwich. R. E. V. BAX,
March 5th, 1929. Secretary.

Applications are invited for the post of ASSISTANT SURGEON in the Orthopædic Department, ST. THOMAS'S HOSPITAL. Candidates must be Fellows of the Royal College of Surgeons, England.

Applications, accompanied by testimonials, are to be sent to the Dean's office at the Hospital not later than March 18th.

A. P. B. IRWIN, Secretary.

The Prince of Wales's General HOSPITAL, *Tottenham*, N.15.

Applications are invited for the post of HONORARY ANÆSTHETIST, to attend on Tuesday afternoons. The appointment is for one year, subject to re-election. Honorarium of £20 per annum.

Applications, stating age and qualifications, accompanied by copies of three recent testimonials, must be sent in by first post on Monday, March 25th next, to

FREDK. W. DREWETT,
March 4th, 1929. Director.

The Prince of Wales's General HOSPITAL, *Tottenham*, N.15.

Applications are invited for the post of HONORARY DERMATOLOGIST. Candidates must be either a Graduate in Medicine of a recognized British University, and a Fellow or Member of one of the Royal Colleges of Physicians, or a Fellow of one of the Royal Colleges of Surgeons, and engaged in consulting practice.

Applications, with copies of three recent testimonials, to be sent to me on or before Monday, March 25th next.

FREDK. W. DREWETT,
March 4th, 1929. Director.

Clayton Hospital, Wakefield.

Applications are invited for the post of HOUSE SURGEON, vacant on April 1st. Candidates must be legally qualified and registered. Salary at the rate of £150 per annum, with board, lodging, and washing. Applications should be sent to the undersigned on or before Monday, March 18th.

HENRY MAW, Gen. Supt. & Sec.

Clayton Hospital, Wakefield.

Applications are invited for the post of HONORARY ANÆSTHETIST to the above Hospital. Particulars of the appointment may be obtained from the undersigned, to whom applications should be sent.

HENRY MAW, Gen. Supt. & Sec.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
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All advertisements must be received not later than first post Tuesday previous to date of publication.

ASSISTANCIES.

Wanted, April 1st, Assistant, male, outdoor, to take charge of Branch Surgery, Colliery Practice, Co. Durham. Salary £240 per annum plus half midwifery fees, plus board and lodgings. Belfast Graduate preferred. Experience in panel practice essential.—Add., No. 1274, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately, Assistant for Branch Surgery in London industrial suburb. Furnished rooms provided, also free board and attendance, or allowance in lieu. Salary £300 p.a. and half midwifery fees. Scotch or Ulster bachelor preferred.—Address, No. 1316, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, at once, private and panel practice, large industrial town in West Midlands. Single, young, Scotch preferred, ex H.S. or H.P. Prospects if suitable. Principal on staff of local hospital. Salary to commence £250. Write, stating experience and references. — Address, No. 1322, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, male, to take charge of Branch Surgery, where rooms are provided. Must be experienced, reliable, and well received.—Reply, stating age and all essential particulars, with photograph, to Dr. HARE, Durham City.

Wanted. — Assistant, male, single, well up in Surgery and Anæsthetics. Salary £375 per annum, with rooms, coal, light, and attendance.—Dr. A. H. JAMES, The Park, Blaenavon, Mon.

Wanted. — Assistant, married or single. £300, with rooms, attendance, fuel, and board. Usual bond.—Send photograph, state height, and experience.—Address to "X.," c/o Messrs. R. SUMNER & Co., Ltd., Wholesale Druggists, Liverpool.

Wanted.—Assistant, with view to Partnership. Rural Practice, Wales. Salary £450, living out. Must have held House appointments. Testimonials and photograph. — Address, No. 1333, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant (outdoor), male, single, with some previous experience, for private, panel, and indus. Practice (Yorkshire) Commencing salary £250 a year and all found. Usual bond.—Interview.—Add., No. 1312, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Second Assistant, Industrial Practice, embracing Hospital, South Wales. Suit recently qualified male. £300, all found. Cars kept.—Address, No. 1430, B.M.A. House, Tavistock Square, W.C.1.

Wanted for Country Practice in N.R. Yorks, for three or four months, male outdoor ASSISTANT. Details.—Address, No 1314, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, in Glasgow or neighbouring districts, ASSISTANTSHIP by Woman Graduate with British and Continental experience; hospital 3½ years, G.P. 1½ years. Free shortly. — Address, No. 1436, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Part-time Woman ASSISTANT; Afternoon Surgeries; Cash Practice in N.W. district. Suit recently qualified woman.—Address, No. 1319, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Urgent.—Male Assistant, with view to Partnership, aged about 30. Some capital an advantage. Lancs. —Address, No. 1324, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view, by M.B., B.Ch., B.A.O.(Belf.); ex H.S. Teaching Hospital; 6 yrs.' exper. G.P., panel and private. Near London preferred. Keen mids. Ex. refs. Own car. Age 29, single. —No. 1331, B.M.A. House, Tavistock Sq., W.C.1.

Assistant required, outdoor, male, British, for Practice in pleasant surroundings on Welsh border. Regular time off duty. Car supplied. — Reply, stating age, driving ability, and other essential particulars, to "E.," c/o Messrs. R. SUMNER & Co., Ltd., Wholesale Druggists, Liverpool.

Assistants:—Outdoor and Indoor (male), also LOCUM TENENS, wanted immediately. Good salaries offered. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Assistant, indoor, young, Scot preferred, recently qualified; £240 p.a. State age, height, religion, date of qualification. Send no testimonials, a reference only.—Add., No. 1315, B.M.A. House, Tavistock Sq., W.C.1.

Assistant, male (married preferred), for mixed Practice in London, S.E. — Address, No. 1320, B.M.A. House, Tavistock Square, W.C.1.

Assistants and Locum Tenens.—Doctors immediately available for the foregoing, of good address, experience, and of British birth, are invited to call upon THE MEDICAL AGENCY, Watergate House, 15, York Buildings, Adelphi, W.C.2.

Lady Doctor requires an Assistantship (London preferred); 3 years' experience of general practice, panel and private. — Address, No. 1325, B.M.A. House, Tavistock Square, W.C.1.

Scottish Graduate requires ASSISTANTSHIP, 3½ yrs. qualified, æt. 27, single; ex H.P., H.S., R.M.O. (Fevers); one years' experience G.P. (panel and private). Excellent testimonials. Free now.—Address, No. 1326, B.M.A. House, Tavistock Square, W.C.1.

Woman Assistant wanted for working-class Practice, London, N. Commencing salary £208 p.a., and all found. —Address, stating height and experience, No. 1335, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Assam.—Wanted for a group of TEA ESTATES in this district of INDIA, a fully qualified MEDICAL OFFICER who has had a good general experience. A married man between 30 and 35 years of age, and who has had some training in Tropical Medicine, would be preferred.—Apply, with full particulars, to "Mercator," c/o Messrs. WM. PORTEOUS & Co., 9, Royal Exchange Place, Glasgow.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Gerrard 2699, THE DISPENSERS' BUREAU, 145, Shaftesbury Avenue, London, W.C.2.

Doctor's daughter desires post as SECRETARY-CHAUFFEUSE to doctor. 4 years' experience in country practice. Excellent references.—Address, "Macmillan," c/o Dr. BARNETSON, 27, Craigmillar Park, Edinburgh.

Educated Lady, good [illegible] post with Doctor as [illegible] Perfect French. [illegible] c/o JAMES GLASS, 180, Broadhurst Gardens, N.W.6.

Lady Dispenser (Hall) requires POST, preferably part-time. Has [illegible] can drive a car, typewrite, [illegible] or South-West district. [illegible] M.A. House, Tavistock Square, W.C.1.

Dispensers supplied to Doctors at short notice, without fee. Quals. and exper. in priv. and panel prac. Perm. and part-time Bookkeeper-Dispensers, Secretary Dispensers, Nurse-Dispensers, and Chauffeuse Dispensers.—Write, wire, or 'phone Central 3554. THE RELIANCE BUREAU FOR DISPENSERS, 87, Holborn Viaduct House, 12, Holb. Viad., E.C.1.

Lady Dispenser - Bookkeeper (Hall) desires POST with Doctor, whole or part-time. Experienced in private, panel and club practice. Excellent testimonials. Address, No. 1332, B.M.A. House, Tavistock Square, W.C.1.

Pathological and Bacteriological LABORATORY ASSISTANTS ASSOCIATION.—Pathologists and Bacteriologists requiring SKILLED CERTIFICATED LABORATORY ASSISTANTS are invited to communicate with H. GOODING, Hon. Sec., "Moelfre," 10, Holbeck Grove, Victoria Park, Manchester. No fees.

Part-time work, evenings and/or week-ends, wanted in London by Post Graduate Student, English, æt. 30. Good experience in G.P. and Hospital. — Address, No. 1304, B.M.A. House, Tavistock Square, W.C.1.

Typewriting undertaken by Expert. — Medical Theses, Testimonials, etc. Five minutes from Swiss Cottage Station. Numerous letters of appreciation from satisfied Doctors. — BEATRICE RADFORD, 27, Buckland Cres., Swiss Cottage. Phone: Primrose Hill 0803.

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Wanted.—Scotch Locum Tenens June 1st, for six months. Seaside Village, South Scotland. Work very light. Address, stating age, personal and professional references, and other essential particulars, to No. 1431, B.M.A. House, Tavistock Sq., W.C.1.

Locum Tenens, now available. Qualified 1907, St. Barts.; English; used to panel, private, and mental work. Best references.—Reply, stating terms, to "Medicus," The Red House, Lancing, Sussex. 'Phone: 57 Lancing.

Lady Locum required, London W.; General and Panel Practice; for night from March 20th. State essential particulars.—Address, No. 1307, B.M.A. House, Tavistock Square, W.C.1.

M.B., Ch.B., requires Post as LOCUM TENENS or TEMPORARY ASSISTANT; ex H.S. and H.P.; experience in private and panel practice.—Address, No. 1317, B.M.A. House, Tavistock Square, W.C.1.

M.D., family, desires Hospitality LOCUM, August, England or Scotland, seaside preferred; otherwise if scenery and fishing essential. Own house in Southern Cathedral Town available if desired. No. 1305, B.M.A. House, Tavistock Sq., W.C.1.

Part-time Locum wanted for three weeks commencing April 2nd for West London Practice, within easy reach of centre. Readily combined with post-graduate or other work.—Address, No. 1329, B.M.A. House, Tavistock Square, W.C.1.

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PARTNERSHIPS.

Wanted by M.B., Ch.B.Edin., English Public School, aged 33 years, PARTNERSHIP, view succession, [illegible] Practice, some panel; resid. dist. near [illegible] town pref. Exp. G.P. and Hosp. Half [illegible] min. £750. Interv. arranged. Some capital [illegible] —No. 1306, B.M.A. House, Tavistock Sq., W.C.1.

Coast Town. — Partnership in excellent Practice. Cash receipts 1928, £3,130. Good corner house, 7 bedrooms, garage, and garden. Rent £60 p.a. Incoming partner must have practical knowledge of Surgery. Premium — half share — £2,100. — BRITISH MEDICAL BUREAU, 33, Cross St., Manchester.

For Sale.—Partnership in non-dispensing Practice in good residential Town in North Wales. Big income, easy payments of premium. Charming house with garden, to rent, in best quarter. Great opportunity and scope.—Address, No. 1309, B.M.A. House, Tavistock Square, W.C.1.

Partnership.—Share of Practice of better industrial type, near Manchester, is offered for sale owing to the intending retirement of a partner. The share produces over £2,000 per annum. Premium £3,500 (to include share of book debts), payable by arrangement. A commodious house is also for sale.—No. 1321, B.M.A. House, Tavistock Sq., W.C.1.

M.B., B.S. Conjoint, H.S., H.P., requires PARTNERSHIP with large panel. Preferably N.E. or Midlands. £2,000 p.a. All capital available. — Address, No. 1035, B.M.A. House, Tavistock Square, W.C.1.

M.R.C.S., etc., London trained, Prizeman, Senior Res. Hosp. appts., wide exp. G.P., English, 35, married, own car, wants PARTNERSHIP or PRACTICE out of inc. Free April 1st. Full partics. and highest refs. exchgd. —No. 1310, B.M.A. House, Tavistock Sq., W.C.1.

PRACTICES.

Wanted.—We have innumerable applicants for sound investments in all districts, incomes from £600 to £4,000, with and without panel. Correspondence invited from prospective Vendors. — THE MEDICAL AGENCY (W. H. Grant), Watergate House, 15, York Buildings, Adelphi, W.C.2

Wanted by (Edin.) M.B., Ch.B., D.P.H., aged 33, exper. in G.P. and major operative surgery, a good-class old-estab. PRACTICE, or PARTNERSHIP succession. Income desired £1,200 up. Capital avail. In confid.—No. 1311, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—London or South preferred, but district not essential if PRACTICE is large enough (£2,000 per annum upwards). Large panel essential. Particulars and price.—Address, No. 1313, B.M.A. House, Tavistock Square, W.C.1.

Belfast. — Growing suburb. Good HOUSE, garage, large garden, and orchard for sale, with small but steadily increasing PRACTICE. Pleasant residential district. Good scope for further increase.—Address, No. 1328, B.M.A. House, Tavistock Square, W.C.1.

Country Practice, 40 miles from London. Mostly private, £600 per annum. Capable of great increase. House and good garden may be rented. — Address, No. 1323, B.M.A. House, Tavistock Square, W.C.1.

Death Vacancy. — Immediate disposal.—Large Panel and Private PRACTICE. Good corner house, main road, near London Hospital. Excellent surgery and garage attached.—Address, No. 1437, B.M.A. House, Tavistock Square, W.C.1.

Death Vacancy. Liverpool, populous district. Good house to rent, or sell cheap. Net receipts £350, with excellent scope for increase, panel and private.—Apply MANCHESTER MEDICAL AND SCHOLASTIC ASSOCIATION, 6, Brown Street.

Death Vacancy for Sale in one of the best residential suburbs of Leeds. Conducted by deceased for 30 years. Small panel. Excellent freehold house with garage can be purchased or leased.—Apply, No. 2425, REYNOLDS & BRANSON, LTD., Wholesale Chemists, Leeds.

For Sale.—Practice nearly £1,200 p.a. London, S.E. Mostly cash. Increasing panel about 400. Good premises just rebuilt. Long lease. Price £1,650 or near offer.—Address, No. 1224, B.M.A. House, Tavistock Square, W.C.1.

For Sale. — Old-established PRACTICE in thriving Midland town. Cash receipts over £1,000. Midwifery and night-work, small amount. 1½ years' purchase. Good house and garage, may be let on lease.—Address, No. 1317, B.M.A. House, Tavistock Square, W.C.1.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2

Good-class Country Practice within 20 miles of Manchester. Receipts £1,400, increasing yearly. Good house to let (rent £60), containing 5 bedrooms, 2 entertaining rooms, surgery and waiting room, garage. Premium £2,000 or near cash offer.—Apply, STOWELL & BAYLEY, Chartered Accountants, 46, Pall Mall, Manchester.

Lancs. Town, near Manchester. —Sound old-estab. middle and working-class PRACTICE. Cash receipts last year £1,855. Panel over 1,500. Excellent detached house, garden, and garage. Vendor retiring. Premium—Practice—1½ years' purchase; house £1,500, part on mortgage, or may be let on lease, with option to purchase. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Lancs. Town.—Old-estab. Practice, at present held by medical woman. Cash receipts £2,275. Panel 1,450. Good house, 4 bedrooms. Rent £60 p.a. Premium 1½ years' purchase, part by arrangement.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Medical Practices required and available; also PARTNERSHIPS; London and Provinces. No charge at all unless result obtained. *Strictest confidence.—Principals only* write, A. G. MEAD, Egyptian House Piccadilly, London.

Medical Practice for Sale.—Good-class Practice for sale in industrial town near Glasgow. Panel 750. Net income from panel and general £750 to £800. Appointments. House and consulting room in main thoroughfare. Suitable for Lady Doctor. —No. 1003, B.M.A. House, Tavistock Sq., W.C.1.

Manchester. — Excellent Practice. Cash receipts 1928, £1,650, including transferable appointments value £750 p.a. Panel 360. Good house, 3 bedrooms, garage, small garden. Rent £60 p.a. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester.—Old-estab. mixed PRACTICE. Average cash receipts £1,480. Panel 1,422. Good corner house to rent on lease, 6 bedrooms, garage. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Near Manchester.—Old-estab. middle and working-class PRACTICE. Average cash receipts £1,000. Panel 1,330. Good house, excel. position; 2 recep., 3 bedrooms, garage; to rent or sell. Prem. 1½ years' purchase.—Address, No. 1330, B.M.A. House, Tavistock Square W.C.1.

North Wales Coast.—Good-class PRACTICE. Cash receipts 1928, £1,749. Panel 713. Excellent modern house, 4 bedrooms, lawn; also well-fitted Surgery and garage to rent. Good scope. Premium 1½ years' purchase. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Near Manchester. — Old-estab. mixed PRACTICE. Average cash receipts £1,964 p.a (Auditor's figures). Panel 1,100. Good detached house, 5 beds., garden, garage, for sale at £1,200, or would rent at £70 p.a. Premium—Practice—1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Old-established General Practice for sale in W.6. Income over £900 per annum. Panel 770. *House on long lease.* Rent £90 per annum. Price 2 years' purchase, cash. — Address, No. 1300, B.M.A. House, Tavistock Square, W.C.1.

Practice for Sale in large town in Lancashire. Receipts £1,730 per annum, number on panel 1,485, rent of house £75 per annum. One and a quarter years' purchase. Reason for disposal, ill health.—For further particulars apply to Messrs R. SUMNER & Co., Ltd., Wholesale Druggists, Liverpool.

Practice, with Partnership Introduction, for Sale. Home Counties. Panel over 700. Income over £600. *Energetic man would largely increase, as district is growing rapidly. Premium £900.—Address, No. 1334,* B.M.A. House, Tavistock Square, W.C.1.

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S. Midlands.—Small country el 240. 8 bed- Price, 1256.

S. Midlands. — 50 miles from London.—Small Country Town PRACTICE for sale, £350. Panel 250. Exceptionally attractive Georgian house (8 bedrooms, elec. light, gas, etc.), and garden. Price, Practice and house (freehold), £2,300.—Address, No. 1432, B.M.A. House, Tavistock Square, W.C.1.

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APPOINTMENTS.—Contd.

County Borough of Dudley.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER (Male).

Applications are invited for the post of Assistant Medical Officer of Health and Assistant School Medical Officer.

Candidates, who must have been qualified and registered for at least three years, and possess a Diploma or Degree in Public Health, will work under the direction, supervision, and control of the Council's Medical Officer; they should have had special experience in the diagnosis and treatment of Children's Diseases, Ante-natal, Maternity, and Child Welfare work, as well as of the administration of general anæsthetics, including gas for Dental work.

Salary £600 per annum, rising by yearly increments of £25 to £650.

The Officer will be expected to reside in the County Borough, and the appointment will be subject to three calendar months' notice on either side.

Further particulars and forms of application may be had from the undersigned, by whom all applications must be received not later than March 18th.

Municipal Buildings, Priory St., Dudley. J. BROCK ALLON, Town Clerk. February 25th, 1929.

County Borough of Grimsby.

ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited for the position of Assistant Medical Officer, whose duties will be primarily in connection with the medical inspection of school children. Age not to exceed 45 years. Salary £600 per annum, rising to £750 by annual increments of £25.

The successful candidate will be required to give full-time service and act under the supervision of the Medical Officer of Health, who is Chief School Medical Officer. Preference will be given to candidates who have had definite experience in School Hygiene and in Diseases of Children, and who hold a Diploma in Public Health, as when the schools are not in session other Public Health work will be required. Candidates must have had at least three years' professional experience after qualifying. Refraction and Orthopædic experience will be deemed to be additional qualifications for the post.

Applications (forms not supplied), accompanied by copies of three recent testimonials, to be sent to the undersigned not later than March 30th.

170, Victoria St., Grimsby. JOHN W. JACKSON, Town Clerk. March 4th, 1929.

Croydon Union.

APPOINTMENT OF RESIDENT ASSISTANT MEDICAL OFFICER (MALE).

The Guardians Invite applications for the above appointment at their MAYDAY ROAD HOSPITAL.

Candidates should have held a resident hospital appointment, and be experienced in Anæsthetics, and the duties will include occasional visiting of the Guardians' Homes.

Any further particulars may be obtained from the Medical Superintendent.

Salary £300 per annum, with full residential emoluments, valued at £140.

Application forms may be obtained of the undersigned, and should be returned completed, together with copies of three recent testimonials, not later than first post on Friday, March 22nd.

Union Offices, Mayday Road, Thornton Health, Surrey, March 4th. NORMAN P. WALKER, Clerk to the Guardians.

Salop County Council.

MEDICAL INSPECTION OF SCHOOL CHILDREN AND MATERNITY AND CHILD WELFARE.

[illegible] ed from registered [illegible] the post of ASSIS- [illegible] to work under these [illegible] Salary £600 per annum, rising by annual increments of £25 to a maximum of £700, with travelling and out-of-pocket expenses on a fixed scale.

The salary will be subject to a deduction of 5 per cent. for superannuation under the Local Government and Other Officers Superannuation Act, 1922, and the candidate selected will be required to pass a medical examination.

Applications should be sent on or before April 5th to the County Medical Officer of Health, College Hill House, Shrewsbury, from whom forms of application, conditions of appointment, list of duties, and any other information can be obtained.

Merthyr General Hospital,

MERTHYR TYDFIL.

Applications are invited for the post of RESIDENT MEDICAL OFFICER at this Hospital (105 beds, mainly surgical) for a period of six m[illegible] [illegible]ril 1st. Salary at the r[illegible] with board, rooms, and [illegible] must have had experience in administration of anæsthetics.

Applications, stating age and qualifications and enclosing copies of not more than three recent testimonials, should be addressed, Hon. Sec., Honorary Medical Staff, not later than March 11th.

The District Infirmary,

ASHTON-UNDER-LYNE
(General Hospital, 200 Beds, mainly Surgical.)

Wanted for April 1st, RESIDENT SURGICAL OFFICER (male). Salary at the rate of £200 per annum, with board, residence, and laundry. Previous experience essential. Six months' appointment.

The Resident Staff consists of a Resident Surgical Officer and three House Surgeons.

Applications, with testimonials, to be sent not later than March 16th to the undersigned.

FRANK OLIVER, Gen. Supt. & Secretary.
March 2nd, 1929.

West Herts Hospital,

HEMEL HEMPSTEAD
(110 Beds. 24 miles from Euston.)

Applications are invited for the appointment of a JUNIOR RESIDENT MEDICAL OFFICER, to commence duties on or about April 1st next. Salary £100, with rooms, board, and laundry.

Preference given to male candidates.

Particulars to be obtained of, and applications, stating essential particulars, and enclosing copies of recent testimonials, to be sent at once to—

ROBT. L. BUTTERFIELD, Clerk to the Hospital.

The King Edward VII Welsh NATIONAL MEMORIAL ASSOCIATION.

Required immediately at the NORTH WALES SANATORIUM, LLANGWYFAN, near DENBIGH (236 beds for pulmonary and non-pulmonary cases), THIRD ASSISTANT RESIDENT MEDICAL OFFICER (male). Salary £250 per annum, plus maintenance. This appointment is limited to a period of one year.

Applications, stating age, qualifications, and previous experience, together with copies of three recent testimonials, should reach the undersigned not later than Thursday, March 14th.

Memorial Offices, Westgate Street, Cardiff. D. A. POWELL, Principal Medical Officer

West Middlesex Hospital, ISLEWORTH.

APPOINTMENT OF ASSISTANT MEDICAL SUPERINTENDENT.

The Guardians invite applications for the appointment of Assistant Medical Superintendent and Assistant Medical Officer of their WARKWORTH HOUSE INSTITUTION and SCATTERED HOMES, which are adjacent, from gentlemen with previous experience in major surgery and in administration in similar Institutions.

Commencing salary £450 p.a., rising, upon approved service, on April 1st, 1930, and thereafter annually by £50, to £600 p.a. Applications, upon forms to be obtained by forwarding a stamped addressed foolscap envelope, are to be returned to the undersigned before noon on Wednesday, March 20th.

Toolands House, Isleworth, Middlesex. F. E. HARMSWORTH, 34, Twickenham Rd., Clerk to the Guardians.
February 28th, 1929.

Salford Royal Hospital. (263 Beds.)

Applications are invited for the following vacancies, which will occur in the Resident Medical Staff (male) on March 31st next:

HOUSE SURGEON (attached to the Orthopædic Department). Salary at the rate of £125 per annum.

HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

Forms of application, which may be obtained from the undersigned, must be delivered without delay.

By Order of the Board,
GEORGE RUDDLE,
Salford Royal Hospital, Manchester. Gen. Supt. & Secretary.
March 4th, 1929.

The Gloucestershire Royal INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (145 Beds.)

Applications are invited for the post of *SECOND HOUSE SURGEON (male)*. Salary £100 per annum, with board, residence, and laundry. (Four resident medical officers.) The appointment is for six *months*, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be received by the undersigned not later than Wednesday, March 13th. The elected candidate will be required to enter upon his duties on Monday, March 18th.

F. J. SYMONS,
March 1st, 1929. Secretary.

The General Hospital, BIRMINGHAM.

Applications are invited for the post of Whole-time Non-resident *SURGICAL CASUALTY OFFICER* to take charge of the Casualty Department daily from 9 to 5.

Candidates must be Fellows of one of the Royal Colleges of Surgeons and have held a surgical appointment. Salary £400 a year.

The appointment will be made for one year in the first instance and be subject to renewal for a further two years.

Applications, giving full details of qualifications and experience, and accompanied by testimonials, should reach the undersigned by March 19th.

A. H. LEANEY, *House Governor.*

Victoria Hospital, Worksop.

HOUSE SURGEON (male) required to take up duties on April 1st. Candidates must be unmarried, fully qualified and registered, and good anæsthetists. Salary at the rate of £170 per annum, with furnished rooms, board, and laundry. Beds 56.

There is a Dispensary attached to the Hospital, which is under the charge of the House Surgeon.

The appointment is for six months, renewable at the discretion of the Board.

Applications, stating age, experience, etc., with copies of three recent testimonials, to be sent to the undersigned not later than March 18th.

JAMES BOOTHROYD, Secretary.

St. George's Hospital, S.W.1.

A Resident MATRON is required at the above Hospital at an early date. Apply, in writing, stating experience and qualifications, together with copies of three testimonials, not later than March 23rd, to the Secretary-Superintendent, St. George's Hospital, London, S.W.1.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIANO, LONDON."

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ST. LUKE'S HOSPITAL.
FOR MENTAL DISORDERS.
Private Nursing Staff Department.
Trained Nurses for Mental and Nervous Cases can be had immediately.
Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.
Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

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NEW MENTAL NURSES CO-OPERATION,
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Telegrams: "Psyconurse, Padd., Lond." *Telephone:* No. 6105 Padd.

Derbyshire County Sanatorium, near CHESTERFIELD.

Applications are invited for the post of *RESIDENT ASSISTANT MEDICAL OFFICER (male or female)* at the Derbyshire County Sanatorium. Candidates with previous Institutional experience of Tuberculosis will be preferred, and practical experience of Artificial Pneumothorax work will be considered an additional qualification. Candidates must be single.

Salary will be at the rate of £350 per annum, together with board, lodging, etc.

Application forms may be obtained from the undersigned, to whom they must be returned, together with copies of not more than three recent testimonials, on or before March 18th.

W. M. ASH,
Derby. County Medical Officer.
February 25th, 1929.

National Hospital for Diseases of THE HEART, Westmoreland Street, London, W.1.

RESIDENT MEDICAL OFFICER.

Applications are invited for the post of Resident Medical Officer (Male).

The appointment is for a period of six months from April 1st, but may be renewed for a further period not exceeding six months. Salary at the rate of £150 per annum, with board, residence, and washing.

Candidates, who must be duly registered medical practitioners, will not be expected to call on the Hon. Medical Staff, but should send their applications, with copies of three recent testimonials, to the undersigned at the Hospital not later than Thursday, March 14th.

ROBERT G. E. WHITNEY, Secretary.

Walsall General Hospital.

The Committee invite applications for the posts of:

SENIOR HOUSE SURGEON. Salary £200 p.a.
JUNIOR HOUSE SURGEON. Salary £100 p.a.

Candidates, who must be registered under the Medical Acts, must have had experience in the administration of Anæsthetics and produce three recent testimonials. The appointments will be for six months.

The Hospital contains 100 beds and is equipped in all Special Departments.

Applications must be received by the undersigned not later than the first post Monday, March 11th.

WALTER FRANCOMBE,
February 25rd, 1929. *Secretary.*

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Sheffield. — Death Vacancy. — About £300 p.a., previously more. Visits 5/- up. No panel or night work. Good house, 6 bed., etc. Tennis lawn. Premium, house and practice, £2,500, part deferred.—No. 8425.

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Southern County.—Over £16,000 p.a. One-tenth share for sale, increasing to 1/5. Mids. 3 gns. up. Visits 5/- to 5 gns. Panel about 7,000. Must be F.R.C.S.Eng., and hold University degree.—No. 8421.

Kent.—Country Practice.—About £1,050 p.a. *Old-estab.* Visits 5/- up. Panel nearly 400. Appts. £55 p.a. Good house, with 6 bed., etc.—No. 8420.

S. E. Coast Town.—About £700 p.a., *scope for increase.* Panel 420. Visits 2/6 up. Small house to rent, £52 p.a. *Premium only £500; easy terms.*—No. 8410.

Staffordshire.—Over £1,000 p.a. Very little night work. No panel. Fees 3/6 up. Good house and garage. Seven bedrooms, etc.—No. 8412.

Mediterranean Port. — About £1,100 p.a. Appts. £100. Visits 10/-. No panel. Mostly English. Good flat. Premium £1,000, on easy terms.—No. 8411.

Home Counties. — £4,500 p.a. 1/4 share for sale. No panel. Visits 5/- to 21/-. Mids. 5 gns. up. Scope for surgery.—No. 8409.

Nottinghamshire. — Increasing NUCLEUS £600 to £700 p.a. Mids. 5 gns. up. Visits 3/6 to 21/-. Small panel. Corner house to rent. Prem £750.—No. 8397.

Lincolnshire.—About £1,370 p.a. Unopposed. Panel and appts. about £800 p.a. Mids. 3 gns. Fees 4/- to 6/-. House, 6 bed., etc., good garden, with garage, to rent.—No. 8386.

Kent. — Average £1,250 p.a. Mids. 7½ gns. up. Visits 7/6 to 21/-. Non-panel. House, 5 bed., etc.—No. 8380.

Western County.—£600 to £700 p.a. Unopposed. Clubs and appts. over £100 p.a. Fees 3/6 to 12/6. Panel about £300 p.a. Good house and garden. Premium, house and practice, £2,100.—No. 8375.

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The Manchester Medical Agency, lately under the control and management of the Manchester Medical Committee, has now been taken over by the British Medical Bureau as their Northern Branch.

Medical Practitioners in the North requiring the services of the Bureau are recommended to consult the Branch Manager, at the Offices, 33, Cross Street, Manchester.

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10 LONDON, E.—Partnership in exceptionally old-established Practice averaging over £3,500 p.a. Good fees and appointments. Two-fifths share for disposal at 1½ years' purchase, or one-third could be purchased at first. Small house may be bought or rented at a moderate figure.

11 S.E. COAST.—Partnership in steadily increasing Practice about £2,500 p.a. in popular watering-place. Panel 1,800. Convenient house (5 bedrooms), garden, and garage, to rent. Premium one-half share 2 years' purchase.

12 LAKE DISTRICT. — Practice averaging £1,500 p.a. Panel about 500. House purchasable by arrangement. Exceptional educational facilities. Premium £2,000 cash.

13 HOME COUNTIES.—Junior Partner required in Practice about £5,500 p.a. in charming and select country town, easy distance of coast. Suitable house to rent. Premium one-sixth or one-fifth share at 2 years' purchase

14 LIVERPOOL. — Cash and Panel Practice about £865 p.a. in working-class district. Panel over 1,200. Large house to be sold. Great scope. Premium 1½ yrs.' purchase.

15 EAST COAST.—Partnership in Practice in small watering-place. Suitable house available. Share worth about £1,200 at 2 years' purchase.

16 YORKSHIRE (W.R.). — Partnership in Practice nearly £3,300 in colliery district. Panel 3,000. One-half share after a preliminary assistantship.

17 S.E. COAST. — Third Partner required in Practice £3,750 p.a. in favourite summer resort. Panel 3,976. Share up to one-third at 2 years' purchase.

18 HOME COUNTIES. — Partnership in Practice of £5,000 p.a. in good country town under 50 miles from London. Panel 2,500.

19 FLINTSHIRE.—Increasing Country Practice about £1,000 in growing district, with good prospects

20 S. MIDLANDS.—Practice over £1,700 p.a. in country town 100 miles from London. No panel, appointments, or midwifery. House (5 bedrooms), with garage and garden, for sale. Premium—Practice 1½ yrs.' purchase.

21 HOME COUNTY.—Partnership in Practice about £3,000 p.a. in very desirable residential district within 15 miles of London. Partner should be aged 30 to 32, have held Hospital appointments, and preferably possess a University degree. Three-eighths share at 2 years' purchase

22 MIDLANDS. — Partnership in mixed Practice between £3,600 and £3,700 p.a. in suburb of Cathedral City. Panel over 2,200. Partner should be aged about 30, with Hospital experience, and able to do Surgery. Premium one-half share 2 years' purchase.

23 LONDON.—Partnership in Practice £3,400 p.a. in Northern suburb. Panel about 3,200. Incoming Partner must have had experience and be either English or Scotch Premium one-third share 2 years' purchase.

24 S.W. OF ENGLAND. — Middle and working-class PRACTICE about £2,150 p.a. in a sport town Panel 1,226. Well situated house (6 bed and dressing rooms) to be sold or let. Premium 1½ years' purchase.

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Practices and Partnerships for Disposal (continued).

25 LANCASHIRE.—Partnership in Practice over £3,700 p.a. in first-rate town. Panel 2,600. House (4 bedrooms) to rent. Premium one-half share 1½ years' purchase.

26 SOUTH OF ENGLAND.—Surgical Partner required (not over 36) with University degree and F.R.C.S. England, in sound Practice in first-rate town with good Hospital. Share of £1,500 p.a. at 2 years' purchase.

27 MIDLANDS. — Partnership in Practice £3,375 p.a. in attractive town. Panel 1,000. Well-situated house (5 bedrooms) to rent. Partner must be well qualified, preferably a Surgeon who would have chance of Hospital appointment. One-half share at 2 years' purchase.

28 LONDON, S.E. — "Lock-up" Practice about £400 p.a. in suburban district. Panel 145. Rent 25/- weekly. Premium £350. Considerable scope.

29 MIDLANDS.—Partnership in mixed Practice £3,800 p.a. in county town. House (5/6 bedrooms) to rent. *One-half or one-third share at 2 years' purchase. Partner should* have F.R.C.S. degree.

30 S. WALES. — Practice averaging £1,627 (about £650 p.a. from panel) in good town. Modern house (6 bed and dressing rooms) for sale or rent. Premium one-half year's purchase.

31 NURSING HOME for Nine Patients in select seaside resort on S.E. Coast. Gross cash receipts average £1,750 p.a. Double-fronted house, with operating theatre. Premium, freehold, goodwill, furniture, *about* £5,000

32 S.E. COAST.—Partnership in non-dispensing Practice, over £3,800 in residential town. Good house to rent. Share worth £1,500 at 1½ years' purchase.

33 SOUTH COAST.—Health Resort.—Practice about £900 p.a. (including appointments about £155). No panel or midwifery. Suitable house or flat. Premium £1,500

34 Nr. NEWCASTLE-ON-TYNE.—Old-estab. Town PRACTICE over £800 p.a. Panel 440. Pleasantly situated house (4 bedrooms) to rent. Plenty of scope. Prem. 1½ years' pur.

35 CO. DURHAM. — Practice of £1,460 in growing suburb of seaport town. Panel 646. House (5 bedrooms) on main road to be sold or let. Premium 1½ years' purchase.

36 S. WALES.—Non-dispensing Practice in large seaport town. Receipts for past 3 years averaged £1,543 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,500.

37 GLOUCESTERSHIRE.—Country Practice averaging £535 p.a. Panel 450. Convenient (small) house, and excellent garden, 1 acre. Garage small car. Premium, house and practice, £3,000.

38 KENT. — Practice averaging £1,030 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, practice, £1,500.

39 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first-rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. *Premium one-third* share 2 years' purchase.

40 LONDON, E.—Rapidly increasing Lock-up PRACTICE in populous district. Receipts 1928, £780. Panel 570. Rent £50. Premium £950.

41 HOME COUNTIES. — Non-dispensing PRACTICE about £1,300 in residential district, adjoining first-rate town. Practically no panel. Modern house (5 bedrooms) for sale. Golf, fishing, etc. Premium £1,650.

42 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. House to rent. *One-third* share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

43 X-RAY and ELECTRO-THERAPEUTIC PRACTICE in important town. Receipts last year £1,050. Detached house for sale or rent. Premium £1,500.

44 S. OF ENGLAND.—Ear, Nose, and Throat PRACTICE in a watering-place. Receipts average over £600 p.a. (*one day a week only*). *Income easily* doubled by one resident. Premium £750.

45 N.W. ENGLAND.—Partnership in Practice about £3,500 p.a. in seaport town. Panel about 2,500. Choice of two houses to rent. Premium one-fourth or one-third share 2 years' purchase.

46 SOUTH MIDLANDS. — Practice about £1,150 p.a. in county town. Panel 485. Good house (7 bedrooms), with garage and garden, for sale. Very good Hospital.

47 GLOUCESTERSHIRE.—Country Practice averaging £654 p.a. (Elevation 600 feet). Near two good towns. Panel 500. Large house, with garden and paddock, for sale. Scope for increase. Premium £800.

48 NOTTS. — Practice worth between £600 and £700 p.a. in *residential district* on outskirts of first-rate town. Small panel offering plenty of scope. Excellent modern house to rent. Premium £750.

49 MIDLANDS.—Partnership in middle-class Practice averaging £5,450 p.a. in flourishing and growing town. No panel and little midwifery. Applicant should be between 25 *and* 40 *years of age, and preferably*, though not essentially, a University Graduate. Premium one-fourth share (ultimately increasing to one-half) 2 years' purchase.

50 S. WALES.—Practice over £1,200 p.a. in small country town, amidst beautiful scenery. Panel about 300. Old-fashioned house, with garage and garden. Cottage hospital. Premium £1,500.

51 N. WALES COAST. — Partner required in old-established non-industrial Practice. Receipts about £5,600. Panel over 2,000. Well-equipped modern house to rent. Premium for one-half share £4,000, on easy payments.

52 MIDLANDS. — Country Practice about £1,000 p.a. in residential district *and hunting centre*. Panel 600. Large house (9 bedrooms) with over 13 acres of land for sale. Premium, practice, 1½ years' purchase.

53 LONDON, S.E. — Partnership in well-established Practice of £1,900 p.a. in good residential district. Exceptionally well built detached house (6 bedrooms) to be rented. One-half share at two years' purchase. Good scope.

54 N. DEVON. — Partner required (after preliminary assistantship) in Practice worth £3,000 p.a. in first-rate country town. Panel over 2,100. Well-equipped Hospital. One-third share to suitable man at 2 years' purchase.

55 MIDLANDS.—Country Practice of over £1,000 p.a., within 5 miles of good town. Panel 531. *Comfortable* and convenient house (5 bedrooms, etc.), with electric light, central heating, and acre garden, for sale. Premium, practice, 1½ years' purchase.

56 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. Partner should be keen worker and a good surgeon. One-third to two-fifths share at 2 years' purchase.

57 MIDLANDS. — Practice about £350 p.a. in manufacturing village. Panel 190. House (4 bedrooms, etc.), and one acre of garden. Premium—Practice and house, £2,000.

58 NORTH WALES. — Country Practice averaging £1,250 p.a. in Welsh-speaking district. Panel over 530. Centrally situated house (5 bedrooms). Premium one year's purchase.

59 S. WALES. — Easily worked Panel and Contract PRACTICE over £1,000 p.a. in colliery district. Small house (4 bedrooms) to rent. Premium one year's purchase.

60 ESSEX. — *Practice averaging £1,216 p.a.* in outlying district—30 minutes by rail from London. Panel 550. Nice detached house (5 bedrooms) for sale. Premium for practice 1½ years' *purchase*.

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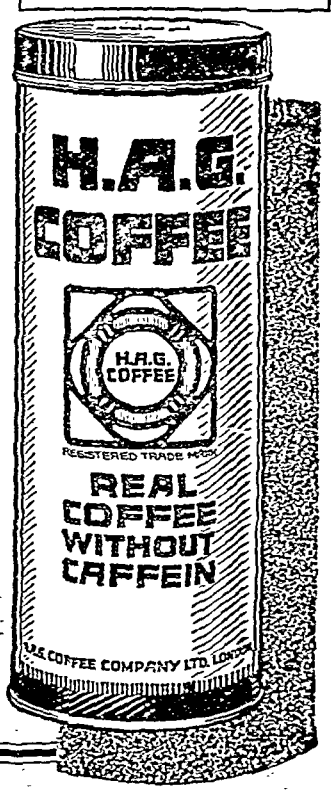

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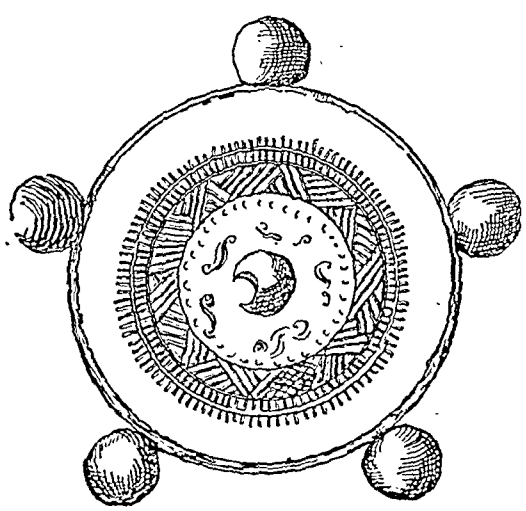
BELLED MIRROR OF ANCIENT JAPANESE MANUFACTURE. THE MIRROR, STILL AN OBJECT OF RELIGIOUS HONOURS, WAS A VERY SACRED EMBLEM TO THE ANCIENT JAPANESE.—The mirror, symbol of the sun and concrete token of the presence of the sun-goddess, figures largely in Japanese myths. In one of these the sun-goddess gives the mirror to her grandchild, Ninigi, in sending him down to be the ruler of the world; she tells him to look upon it as her emblem or even as her actual self. The mirror was considered, also, to be the symbol of virtue and was buried with the dead as an amulet against decay. An especially sacred mirror mentioned in the Chronicles of Japan under the date 92 B.C. was an object of worship at that time; it was, later, enshrined at Ise, where it is still preserved with the greatest veneration. Sun-worship was the central feature of the early religion of Japan. Shinto, "the way of the gods" is, however, now almost extinct. Nevertheless, it served to give a religious quality to some of the principles which have led to stability in the state, e.g., to the idea of reverence for the Mikado.



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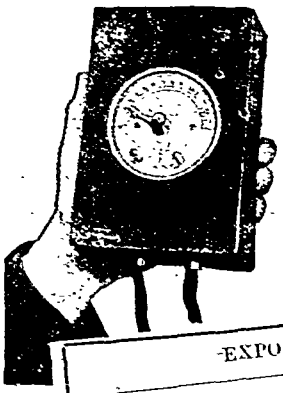

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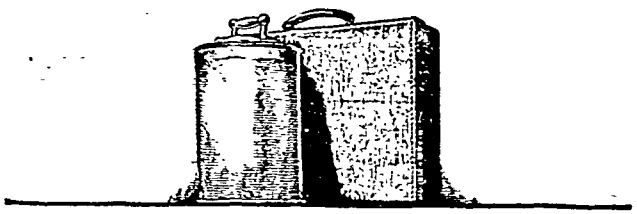

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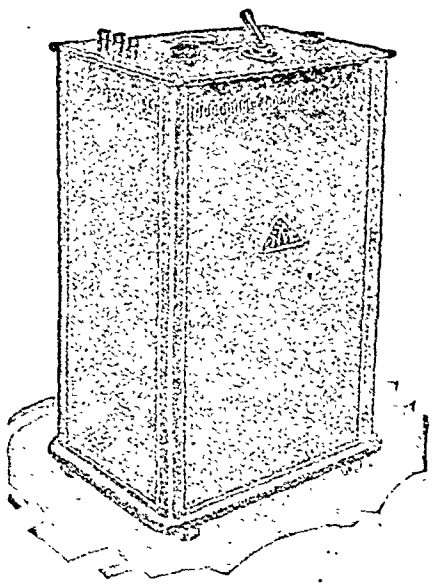

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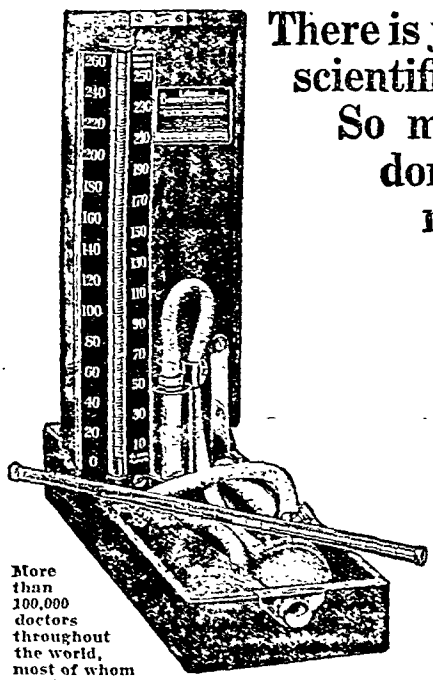

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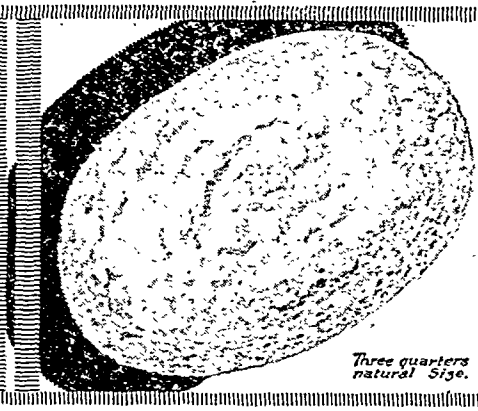

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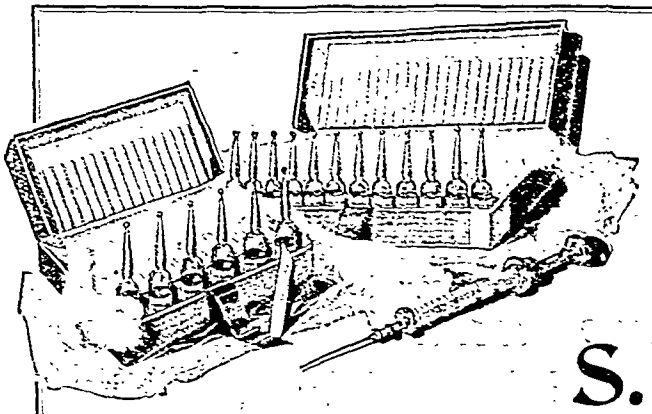

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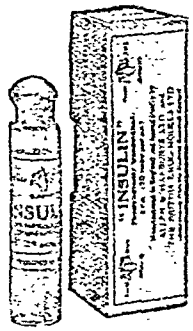

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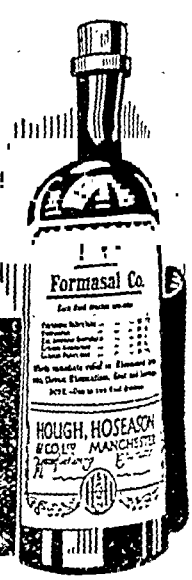

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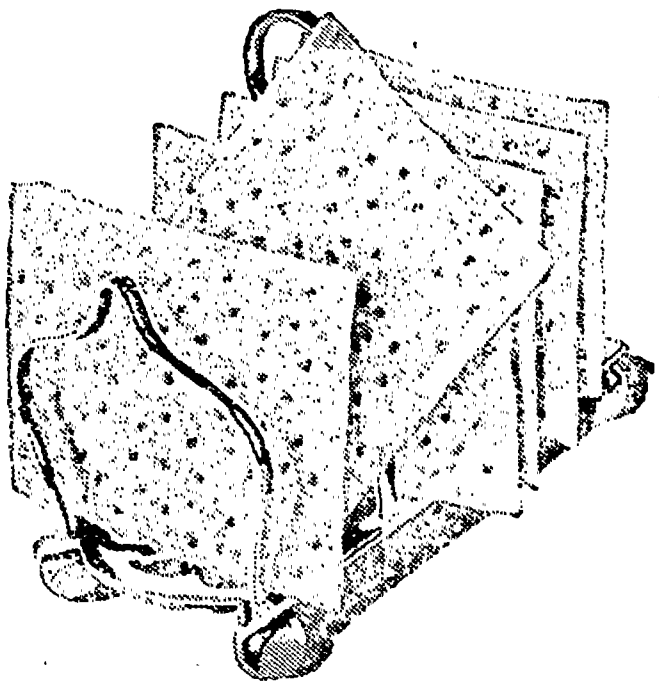

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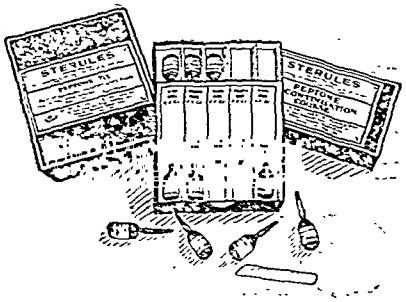

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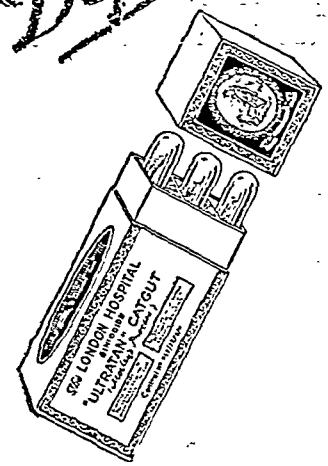

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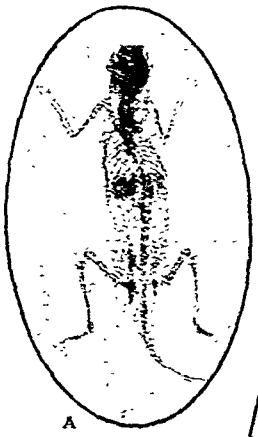
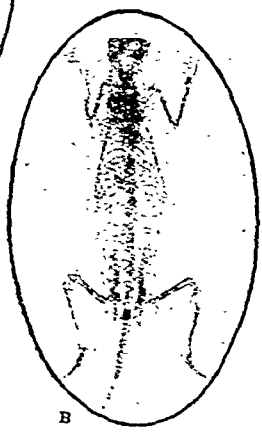


A

A—Skiagraph of rat rendered rachitic by deprivation of vitamin D.



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A Lecture
ON
ACUTE CEREBRAL LESIONS AT DIFFERENT AGES.

DELIVERED BEFORE THE WEST SUFFOLK DIVISION OF THE BRITISH MEDICAL ASSOCIATION, OCTOBER, 1928,

BY

S. A. KINNIER WILSON, M.D., F.R.C.P.,
PHYSICIAN TO OUT-PATIENTS, NATIONAL HOSPITAL FOR PARALYSED AND EPILEPTIC, QUEEN SQUARE.

ACUTE cerebral lesions may be reckoned among what my old teacher, the late Sir William Gowers, once called "the uncommonplaces of medical practice." Not occurring often enough to become familiar, if not banal, yet not so rare as to render ignorance of their nature and treatment pardonable, they are seen by the practitioner more frequently than by the consultant, and in nearly every instance necessitate his coming to quick decisions and adopting prompt therapeutic measures. Obviously he must have a certain confidence in his own diagnosis when such circumstances prevail, and must have at ready disposal some formulation of diagnostic elements on which to rely during the first hours after the lesion reveals itself. A waiting policy does not always serve at these times.

In this, as in many other instances, the problem is to know how to approach the problem. Working rules are necessary if he is to grasp the essential features of the situation and avoid being misled by non-essentials. Text-book descriptions doubtless cover all eventualities, but their application to the practice of medicine leaves him on occasion in perplexity. I do not pretend that the problem can be simplified by any rule of thumb devoid of exceptions and infallible in its working; all of us commit errors of diagnosis and of judgement, and sometimes hesitate not so much from ignorance as from fullness of knowledge. When this situation develops, another dictum of the same great clinical teacher deserves to be recalled: "Be decisive in your indecision"—in other words, be sure of your reasons for not being sure, and adopt measures calculated at least to do no harm.

One of the most convenient and practical ways of dealing with the problem of an acute cerebral lesion is by attending to the age of the patient. At any given age period, what are the probabilities? The generalizations sketched below have their value, relative though not absolute, and are worth bearing in mind.

I. IN CHILDREN AND YOUNG PEOPLE.

Numerically and proportionately less common in childhood and early adolescence, abrupt cerebral affections constitute no actual rarity and are often not a little disconcerting. Since the observer is able to dismiss all thought of degenerative lesions from his mind in such cases, the pathological possibilities are more or less restricted to toxic and toxi-infective processes, pressure, trauma, and blood-vascular states. Of these, the first-named form the majority.

1. Much the most frequent is one or other variety of *encephalitis*, by which pathological term is to be understood a brain infection, whether specifically known or not. A sporadic encephalitis (not, in all probability, identical with what is now called epidemic encephalitis)—sometimes described as acute non-suppurative encephalitis—is a fairly common affection of childhood, producing usually a hemiplegia and less often a diplegia. When a preliminary stage of malaise, fever, and vomiting, with headache, possibly with delirium and stupor, is succeeded by generalized convulsive attacks with unconsciousness, rigidity, cyanosis, and so forth, and followed by paralysis on one side of the body, the syndrome is not so sudden as to preclude a very good idea of its nature being formed. But in a minority of cases the paralysis supervenes abruptly on a convulsion, or even without the latter, just as it appears unheralded in a small proportion of cases of acute poliomyelitis. Diagnosis then is perhaps less definite, but the probability is not; lumbar puncture is likely to reveal a finding comparable (in greater or less degree) with that of acute poliomyelitis should the case be one of acute polioencephalitis—a poliomyelitis variant; if the fluid is negative, however, the case may none the less be one of encephalitis, though not occasioned by the virus of infantile paralysis.

In a recent instance a schoolboy was sent to bed with an ill-defined ailment—slight rise of temperature, headache, pains in the neck; on the third day he developed diplopia, followed by complete aphagia and a remarkable dysphonia, a high-pitched, "reedy," "piping" intonation which he was incapable of modulating. Lumbar puncture showed a fluid differing immaterially from the normal, and the case was fairly, as I think, classified in the group of acute bulbar encephalitis.

I have often thought that some of the obscure cases of quick death in seemingly healthy children, the sole symptoms being clouding of consciousness with respiratory or cardiac embarrassment and failure, are attributable to polioencephalitis of the medulla, of the class already mentioned—namely, that without recognizable prodromata. Here, indeed, lies one of the serious difficulties connected with polioencephalitis; no definite relation has been made out between the mildness or otherwise of the preliminary syndrome and of the paralytic consequences. The former may actually escape notice, or be ignored, yet palsy may set in after a truly fulminant fashion.

Of less diagnostic difficulty are the varieties of cerebral disorder arising abruptly in the course of one or other of the *specific fevers and exanthems*, and set down (in some instances at least) to encephalitis. These juvenile encephalopathies are well recognized, however rare their incidence and variable their actual pathology. They are known as an occasional development in scarlatina, diphtheria, measles, mumps, pertussis, typhoid, small-pox, etc., as well as in influenza, pneumonia, and other infections. The underlying pathological condition is more frequently a matter of surmise than of proof; sometimes a haemorrhagic encephalitis, in other instances it is a vascular state of haemorrhage, embolism, or thrombosis, or a cerebral oedema associated with nephritis, or a serous meningitis. In a valuable series of papers J. D. Rolleston[1] has collected information bearing on these rather out-of-the-way cases, as has recently also my former house-physician and present colleague W. P. H. Sheldon.[2]

Attention may next be directed to the occurrence of *encephalitis after vaccination* (ordinary cow-pox), a sequel that has aroused some concern in the course of the last three years, over one hundred cases having been recorded in that time (Lucksch,[3] Bastiaanse,[4] Turnbull and McIntosh,[5] Wiersma,[6] Perdrau,[7] Bouman,[8] and others). There can be little doubt that such cases were formerly extremely infrequent, and the conclusion seems justifiable that they are somehow connected with the times through which we are passing; at any rate, one theory at present offered is to the effect that encephalitis after vaccination is due to activation by the vaccine of another "invisible virus," conceivably that of epidemic encephalitis or a herpetic one. Valuable experimental evidence in favour of the view that the encephalitis is not due to the vaccine itself has been furnished by Pette.[9] Clinically, convulsions and hemiplegia seem to be rather common in vaccination encephalitis; an initial stage of general cerebral disturbance is usually definite and of some little duration, although localizing symptoms develop with rapidity. The pathological lesions resemble those of acute disseminated encephalomyelitis of the adult.

2. Of interest and importance is the group characterized by symptoms suggestive of *meningitis* or pointing to the existence of *meningeal reactions* of toxic or toxi-infective origin. Classified as meningismus or as circumscribed serous meningitis (both terms being as a fact rather indefinite from a pathological viewpoint), the type of case is that in which intracranial symptoms (cerebral, cerebellar, pontobulbar) develop unexpectedly and alarmingly early or late in the course of an indefinite illness, with mild meningeal indications, for which no source of infection is discoverable. Serous meningitis is the least sinister of all meningeal states; it consists chiefly in an increase of cerebro-spinal fluid in the appropriate cerebral and meningeal spaces, producing an internal and/or

external acute hydrocephalus, apparently always of a non-microbic character—in some instances (and these are the simplest diagnostically) a reaction to sepsis at some near but extra-meningeal spot (ear, nasal passages, tonsils). To this variety the term "meningitis serosa comitans" is sometimes applied. In numerous other examples of the affection, however, the meningeal reactions are localized (meningitis serosa circumscripta), producing focal symptoms and signs, although the underlying source seems to be a diffuse toxicosis of diverse kinds. Lumbar puncture yields an essentially negative fluid, sterile, with cytology little altered, but with perhaps a protein increase, and usually under considerable pressure. The remarkable feature of most cases is also a fortunate one; after withdrawal of fluid the symptoms are mitigated, and in not a few cases soon entirely disappear. I have been misled by cases of this kind on more than one occasion.

A little boy of 8 developed in the course of a few hours a complete right hemiplegia and aphasia, signs of general disturbance being minimal. No source of infection could be found. I diagnosed the case as one of encephalitis and gave a guarded prognosis. Lumbar puncture yielded a normal fluid under pressure, and within twenty-four hours thereafter the symptoms had completely vanished.

Cases of this kind are highly deceptive, but other examples of *meningitis serosa* simulate cerebral tumour (so-called pseudotumor cerebri) and are less calculated to give rise to acute cerebral symptoms.

3. We do well to bear in mind the possibility of insignificant *traumata* being succeeded after a variable interval by *sudden cerebral disturbance*. Trifling knocks raise haematomata on youthful heads with surprising ease. The serous meningeal reactions already alluded to may follow tearing of arachnoid tissues by trauma; in other cases subdural or subarachnoid haemorrhage results. I have seen more than one example of trivial injury turning out to be serious, but none so dramatic as that recorded long ago by Erichsen.

"A little girl was going downstairs with her mother to dinner. She said, 'I will go first, mamma,' and started to run downstairs, but she missed her footing and fell forwards, striking her head slightly against the wall. She felt a little dazed at the time, but went to her dinner, ate, and afterwards felt slightly sick. She was sent to bed, slept soundly, and was dead next morning. There was a clot found between the dura mater and the skull on the side of the head that had been struck, but no fracture."

The fatal injury may be so slight, indeed, that no concussion symptoms are produced, a point to which particular attention is directed. When we remember that in the growing child both periosteum and meninges are highly vascularized for purposes of nutrition, it is likely enough that corresponding to the visible "bump" where his head has been knocked is a haematoma greater or less in degree of the intracranial membranes. This state of affairs, in point of fact, has been found by Wood Jones,[10] who adduces evidence strongly suggesting a venous and not an arterial origin for the haemorrhage. Sheldon's[2] series embraces several cases belonging to this group; in one instance a child hit his head against a table; in another, a boy fell off a kitchen chair.

Consideration of this part of our subject naturally leads to the problem of what has been called *traumatic delayed apoplexy* ("traumatische Spätapoplexie"), a matter of peculiar medical and sometimes medico-legal importance. The condition is not confined to youthful cases, but may be conveniently referred to in the present section. A latent period of days or weeks may elapse between the date of the injury and the onset of ominous cerebral symptoms. Numerous instances of delayed apoplexy are now on record (Bollinger,[11] Marie and Crouzon,[12] Lambert,[13] Buzzard and Cunning,[14] Warrington,[15] Allen,[16] and others). For admission in the class the appended criteria require attention: (1) cases in which apoplexy might develop spontaneously must be rigorously excluded (syphilis, nephritis, alcohol, heart disease, arterio-sclerosis, etc.); (2) the injury must have been definite though not of necessity severe, or producing unconsciousness; (3) the symptoms of the lesion must have appeared within a short space of time and under observation. During the interval between injury and apoplexy cerebral symptoms of a general kind and slight in degree may be noted; sometimes they appear to be non-existent. In one of Sheldon's cases a child fell against a cupboard, and "several weeks" of seeming health elapsed ere vomiting and loss of consciousness set in, these symptoms preceding death by only a few hours. But in the Buzzard-Cunning case, after a trivial head injury through a fall, seventeen days of headache were succeeded by drowsiness and other symptoms of pressure, and a craniectomy revealed bleeding from the superior longitudinal sinus.

It is impracticable to lay down any exact time limits for cases coming within this category; only those can be admitted in which causal connexion between trauma and symptoms is reasonably definite and in which from the date of infliction of the former a reasonably brief period elapses ere the latter make their appearance. I have had to adjudicate in a case of right hemiplegia and aphasia developing suddenly four weeks after a trifling knock on the skull through the patient (a man of 46) striking an overhead rafter, and I decided against the diagnosis of delayed apoplexy.

4. Where some more or less obvious *blood state* is in existence the explanation of acute cerebral lesions in youthful subjects is not obscure. I need only allude in passing to the occurrence of haemorrhage, thrombosis, or embolism, or combinations of these, in heart disease; in marantic cases, in leukaemia, splenic anaemia of infancy, purpura haemorrhagica; in any severe anaemia, in scurvy, haemophilia, and so forth.

5. There remain for discussion the always difficult and disconcerting cases of sudden death from *haemorrhage* in children and adolescents, of which numerous examples have been published (cf. a useful paper by Hawthorne[17]). Unless an autopsy is obtained cases of this kind are shrouded in obscurity, and their pathology is a pure speculation; if the patient recovers it is equally so. Here we touch what Sir William Gowers once called "the old and inevitable antagonism between pathology and therapeutics." Each flourishes at the expense of the other, and the ends for which we gain our knowledge can be the chief obstacle to its acquisition.

Briefly, in my experience the *pathological possibilities* are: (*a*) bleeding from an unsuspected vascular intracranial tumour; (*b*) bleeding from an otherwise undiscoverable miliary aneurysm ("congenital aneurysm"); (*c*) bleeding from a structurally defective blood vessel without aneurysmal formation. A fourth possibility has been suggested by Goldflam[18]—namely, (*d*) bleeding of the nature of capillary oozing during hyperaemia following constriction—a disorder of vasomotor function. The term "spontaneous subarachnoid haemorrhage" is in vogue for cases of this kind, though it is somewhat misleading. Clearly, if evidence of aneurysmal formation or neoplasmic haemorrhage is discovered at necropsy the case should in point of fact be described under the heading of cerebral aneurysm or tumour, as the case may be. The literature on these types is considerable, clinico-pathological instances and useful reviews having been published by Symonds,[19] Beadles,[20] Fearnsides,[21] Turnbull,[22] Weber and Bode,[23] Marburg,[24] and many others.

As is to be expected, the symptomatology is highly variable, depending on both the degree and the site of the haemorrhagic extravasation. Elsewhere[25] I have given a full account of "spontaneous" leakage from a frontal tumour in a youth of 19; the extravasation spread through the ventricular system and passed under the basal meninges, reaching the vertex in one direction and the spinal cord in the other. In this instance the clinical picture for seventy-two hours was that of decerebrate rigidity. The usual syndromes of ventricular, cortical, pontine, basal haemorrhage may be encountered.

A recent example was the case of a healthy schoolgirl of 17, who, after two days of insignificant malaise diagnosed as nothing more than a cold, became unconscious at 3 o'clock in the morning and was dead at 9. Lumbar puncture yielded a fluid laden with fresh blood. No necropsy being granted the case remains as obscure as it is tragic.

I have also had occasion to observe more than one instance of cerebral haemorrhage in youthful subjects supervening apparently on excessive emotional disturbance. Such cases provide food for thought even if objective corroboration is awanting.

A married woman of 20 ascertained that her husband was conducting a liaison with another person. In a state of intense emotion she went to confront them with the righteous indignation of a young wife. After a painful scene she left the house and fell unconscious on the pavement outside. Two days elapsed ere consciousness returned, accompanied by right hemiplegia and complete motor aphasia. Now, when she is 45 years old, the hemiplegia remains, and a trace of the former speech defect.

Here, doubtless, we may imagine a miliary aneurysm or a weakened spot in the wall of the left Sylvian artery to have ruptured under the influence of the altered vascular balance attributable to excitement.

II. In Early and Middle Adult Life.

In the age periods comprised by the twenties, thirties, and forties most of the etiological factors already enumerated are still in the picture. Trauma, encephalitis, blood states, cardiac disease, and "spontaneous" vessel rupture must always be considered possibilities. To these we now add acute cerebral lesions associated with (1) pregnancy, parturition, and the puerperium; (2) neurosyphilis; (3) haemorrhagic pachymeningitis.

1. Much that is still enigmatic surrounds the occasional development of acute hemiplegia (or paraplegia) *before, during, or after confinement*. Half a century ago clinicians were attracted by the conception of "reflex paralysis"—sometimes also described as "urinary paralysis"; Sir Samuel Wilks[26] contended that a paraplegia might be induced by an external irritant, that "the blood vessels are thereby diminished in calibre, the blood supply to the spinal cord is diminished in amount and its power departs." He was concerned mainly with cases of temporary paralysis, and sought an explanation in irritation of vasomotor nerves innervating blood vessels. *Inter alia*, he made the theory of reflex paralysis apply to the case of paraplegia succeeding labour. About the same time Fussell[27] stated that cows not infrequently suffer from paraplegia after calving, that they lie down, unable to move their hind legs, and apparently have no feeling in them when they are touched. In about a fortnight recovery ensues. Similar phenomena are known to occur in pregnant mares.

Present-day conceptions have widened in range without gaining in precision. Puerperal hemiplegia (inclusive of *pre-puerperium cases*) includes a rather heterogeneous collection of morbid states. Apart from the ordinary causes (syphilis, cardiac disease, etc.), to which, of course, the pregnant woman as well as any other may be subject, certain processes are apt to develop in connexion with this physiological condition. A review by *Duhot*[25] informs us that of 46 cases 17 were occasioned by cerebral haemorrhage, youthful though the patient frequently was. Physiological hypertrophy of the left ventricle and increased richness of the blood are thought by themselves to be insufficient, and the additional factor of albuminuria is incriminated. Localized *cerebral oedema*, rather than haemorrhage, and the local effect of toxicosis ought not, however, to be overlooked. Another variety is meningeal haemorrhage, but its explanation is unfortunately not clear. It may develop in the absence of albuminuria or cardiac disease, or of any evident visceral or toxi-infective process. I may mention an ingenious theory to the effect that increased activity of the suprarenal glands in pregnancy, as disclosed by a condition of hypercholesterinaemia, leads to a rise of blood pressure from time to time, and so to meningeal haemorrhage.

But in other instances thrombosis instead of haemorrhage provides the causation, and its pathogenesis is equally indefinite, unless we fall back on the analogies alluded to above and assume not so much a "reflex" paralysis as one originating in *stagnation of viscous blood owing to* a weakly acting heart or a low blood pressure. The paraplegia of pregnancy (sometimes called Moxon's paraplegia) may result from a thrombosis of this kind in the long anterior spinal artery.

The physiological peculiarities of pregnancy and the puerperal state deserve more attention from the neurologist. Three cases of epilepsy occurring solely during pregnancy and in the absence of eclampsia have been reported by Curschmann.[29] Amelioration of the characteristic symptoms of *myasthenia gravis in the course of* pregnancy has long been known but never explained. The evolution of abnormal clinical conditions during a normal physiological process should surely check the misconceptions of those who persist in the habit of making "symptoms" constitute "diseases," and who with equal persistence *ignore the physiological nature of the former*.

2. Little need be said of *neurosyphilis* in these days, when any suspected case of acute cerebral disorder can be made to run the gauntlet of serological tests and a verdict obtained within a few hours. Clinically, neurosyphilis turns up in unexpected quarters and in unwonted guise. A sudden loss of consciousness with epileptic fits and consequent paresis may be the first indication of incipient general paralysis; an acute hemiplegia or monoplegia may betray an *endarteritis syphilitica*, or a little-suspected *gummatous meningitis*; *syphilitic* cerebral haemorrhage, less well recognized and less often envisaged, should not be overlooked.

Only a week or two ago sudden headache, sickness, malaise, and rise of temperature, followed by right facial weakness and considerable aphasia, led me to diagnose encephalitis in the case of a man of 35; but routine insistence on the tests of the clinical laboratory enabled me next day to correct it to neurosyphilis, with corresponding improvement in the prospects of recovery.

3. A rarer affection is that known as *pachymeningitis haemorrhagica interna*, the pathology of which is explanatory of its somewhat unusual symptoms. Occurring more frequently among those addicted to alcohol than others, it is signalized by intense headache, vomiting, sometimes convulsions, and abrupt loss of consciousness. There is not uncommonly a rise of temperature accompanied by signs of meningeal irritation; a bloody spinal fluid is obtained by puncture, with marked increase of albumin and globulin; smears are always negative and cultures sterile. Recovery ensues, hastened by withdrawal of spinal fluid, but recurrence of the attacks constitutes the danger. In the cases I have observed myself neurosyphilis was excluded, yet the basis of some recorded instances appears to have been of this nature (Hassin[28]).

Thus on his return home from a city dinner a middle-aged man suddenly fell unconscious on his bedroom carpet, with generalized convulsions and immediate rise of temperature. Meningeal symptoms appeared and a clinical diagnosis of some form of meningitis was made. Only on the fifth day was lumbar puncture resorted to, when a clear fluid of an extraordinary pink-orange-yellow colour was withdrawn. Spectroscopy showed it to be full of haemoglobin derivatives. In view of the history and of the habits of the patient a diagnosis of pachymeningitis haemorrhagica interna was made, and confirmed by the subsequent course of the case.

This example of the condition is almost identical with one reported by *Fried*.[31] Another instance, however, occurred in a younger man, in whom three separate attacks similar to the above developed at approximate intervals of six months; recovery was much slower after the second, and a fourth was fatal. At necropsy the peculiar stratiform alternation of membranous and haemorrhagic layers over the postero-superior and postero-lateral aspects of the encephalon was at once recognized.

III. In Later Life.

If we assume with some arbitrariness that the *fiftieth* year of life ushers in a degenerative period, we may expect thereafter acute cerebral affections, of which the commonest symptoms are hemiplegia, aphasia, and hemianopia, and the commonest lesions vascular. Naturally the clinician must not forget the exceptions to the general rule; Bright's disease may bring cerebral disaster in its train long before 50, and families are known that are unhappily distinguished by hereditary apoplexy.

Vascular lesions, then, haemorrhagic or thrombotic, constitute by far the major portion of the cerebral attacks of later years: these should always be regarded as cerebral *traumata*, and treated by rules applicable to lesions of the *vascular* system. Differential criteria between haemorrhage and thrombosis often appear more impressive on paper than during anxious moments at a bedside; diagnosis is reached in numerous instances fully as much by scrutiny of the exact order of events as by consideration of the objective signs. In the subjoined paragraphs an outline is given of the points to weigh before committing oneself to a precise opinion. The condition of the vascular system is at least as significant in this connexion as the nature of the cerebral syndrome.

1. Inquiries directed towards the question of previous attacks may throw a sidelight on the present one. If slight seizures have occurred previously thrombosis is suggested; if a single severe previous attack, either. There may have been thrombosis originally, and haemorrhage now, or vice versa.

2. Asking next for the details of the present illness, the clinician notes that a more or less definite aura and a certain measurable duration for the unfolding of the attack characterize thrombosis, whereas there is little or none of this in the other process. Physical or mental exhaustion precedes thrombosis, it may be, but has little if any bearing on the occurrence of haemorrhage, as has, for that matter, the question of previous excitement. Ernest Jones[32] has shown that quite a proportion of haemorrhage cases (subsequently confirmed) have their onset during rest or sleep. These are points of some moment, for if the ictus is attributable to a combination of special circumstances rather than to severity in degree of vascular change the prognosis as regards recurrence is proportionately better.

3. At the bedside, commencing with the state of the pulse and heart, the examiner concludes that a feeble pulse and weakly acting heart suggest thrombosis; a full and perhaps bounding pulse, with cardiac hypertrophy and a blood pressure above normal for the patient's years, is in favour of haemorrhage. Thickened or tortuous peripheral vessels indicate either, as does the presence of albuminuria demonstrable in catheter specimen or otherwise. Similarly, retinal haemorrhages noted with the ophthalmoscope do not favour one diagnosis rather than the other, unless they happen to be severe and massed, in which case they point to cerebral bleeding.

4. Attention is also given to the loss of consciousness. Only if a large vascular area is out of action is unconsciousness likely to accompany thrombosis, whereas the laceration caused by extravasated blood inhibits the cortex, according to some, by irritation of corticipetal systems. Enduring unconsciousness strongly favours haemorrhage; a short initial loss, thrombosis. In basal, pontine, and ventricular cases the mechanism of production of the symptom consists in general (cerebral) vaso-constriction by excitation of a vasomotor control centre in the medulla. Should the obscuration of consciousness, trifling at first, steadily deepen as the hours pass, an ingravescent extravasation is indicated; yet in progressive thrombosis a not dissimilar phenomenon is occasionally remarked. The duration of these is never so prolonged, nor is there the same dubiousness of continuity, as may sometimes be observed in the cases of delayed traumatic apoplexy alluded to above.

5. As for concomitant epileptic seizures, if Jacksonian their repetition manifests a thrombotic process; if generalized, either that or haemorrhage. Since cortical vessels are more prone to the former than the latter the differential value of the symptom is explained.

6. Rise of temperature does not of itself furnish a means of distinguishing. It points to implication of the upper pons and is seen typically in pontine, basilar, and ventricular cases. Its steady and fairly rapid heightening is suggestive of early death.

7. If now the observer turns to other possible localizing indications apart from Jacksonian attacks, during the period of unconsciousness he may readily enough be able to diagnose capsular, pontine, unilateral, or bilateral sites of invasion, but of themselves these do not serve in differentiating between the two chief processes under discussion. The case is rather altered when consciousness returns. He may then be in a position to note that an enduring aphasia favours occlusion, since, as already mentioned, cortical thrombosis is as a fact more frequent than cortical extravasation. Again, hemianopia suggests a similar vascular origin, haemorrhage in the distribution of the posterior cerebral being distinctly rare.

With various interesting phenomena that can be demonstrated during the period of physiological decortication or decerebration (for example, the reflexes of Magnus and de Kleijn) I am not here concerned, as they do not shed light on the nature of the vascular process underlying the neural semeiology.

Since *embolism* may occur at any age, roughly speaking, I have left its consideration to the end. It does not present those difficulties which seem to be inseparable from the other two, except perhaps when the circumstances are unusual. Thus if the practitioner finds a patient with mitral stenosis and a weakly acting heart at the degenerative period, is his acute cerebral lesion embolic or thrombotic? Again, war experiences have shown how traumatic thrombosis of the internal carotid may cause a sudden cerebral attack by detachment therefrom of an embolus (Colledge and Dunn[33]).

When examination reveals a lesion of the vascular system in the emboligenic circulatory area, as it may be called, diagnosis of an acute cerebral ictus without premonitory symptoms can rarely if ever be erroneous. Infective endocarditis can scarcely be overlooked, although a presystolic murmur may be missed and milder endocarditic manifestations disappear.

Concluding reference to the controversial question of *temporary or transient hemiplegias* and other analogous cerebral disorders must of necessity be brief. The reality of these clinical disturbances is, of course, undeniable, but their pathogenesis is in the nature of things likely in most instances to be matter of speculation rather than of proof. Too facilely has acceptance been voted to the theory assigning them to an angiospasm—a transient constriction of a cerebral vessel thought to be itself in a degenerating condition; several weighty considerations militate against this view. (1) Leonard Hill[34] has shown experimentally that the cerebral circulation passively follows changes in general arterial and venous pressure, and is controlled by bulbar centres acting on the general circulatory system. If cerebral arteries are constricted corresponding capillaries become congested with venous blood—not emptied, with resultant local anaemia. (2) The pial network of vessels is so closely interwoven that symptoms from strong and persistent localized cramp in some of its twigs seem improbable, as collateral supply would supplement the arrest (Allbutt). (3) All arteries under the control of vasomotor nerves react to adrenaline by contraction, but the cerebral vessels do not (Florey[35]). (4) The tacit assumption is made that arterio-sclerotic arteries are specially prone to spasm, yet in that state the muscular elements have lost their contractility by undergoing fibrous degeneration. (5) Advocates of the theory of angiospasm do not appear to have faced the difficulty that the local cerebral anaemia of the motor zone which they postulate is unaccompanied by Jacksonian or general epilepsy; yet evidence has collected to demonstrate the association of hyperexcitability with cerebral vascular constriction, even if temporary.

The truth is insufficient attention has been given to the occurrence of microscopic organic lesions as a foundation for the symptom-complex, transient and recurrent, set down to angiospasm (Achard, Foix, and Leblanc,[36] Evans,[37] and others). Again, if a vessel is degenerated transient reduction of general blood pressure may result in a failure to maintain the column of blood against peripheral resistance, or to overcome partial obstruction; hence the development of transient paresis or paralysis from relative ischaemia. I do not doubt, further, that this is the correct explanation of those cases in which transient amaurosis is stated to coincide with observed spasm of retinal vessels (Lundie,[38] Bruner[39]); because of passing hypotension the artery may seem to diminish in calibre and perhaps actually do so, yet of arteriospasm in the strict sense there need be no trace. In fine, other possibilities than angiospasm may legitimately be utilized in the elucidation of transient cerebral attacks; and since this is so the physician need not seek a pathogenesis capable of being applied universally, and should realize the intrinsic variations among them on the clinical side as well.

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THE TREATMENT OF COLLES'S FRACTURE.

BY

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THE admirable short paper by E. D. Grasby and S. R. Trick in the *British Medical Journal* of March 2nd (p. 391), following upon that of Edwards and Clayton in the *Journal* of January 12th, prompts me to offer a few remarks on the treatment of Colles's fracture.

Colles's fracture is at once the commonest (sharing this distinction with fracture of the clavicle), one of the easiest to treat, and generally the worst treated, of all fractures of the human body.

The first-mentioned paper is "an endeavour to ascertain the causes for the imperfect results that obtain from the usual methods of treatment at present adopted." The principal conclusions arrived at are:

> "1. Colles's fractures without displacement yield uniformly good results, as observed two years after the injury.
> "2. Where displacement was a marked feature of the fracture the results two years after the injury are invariably unsatisfactory.
> "3. The disability was in each case due to osteo-arthritis in the inferior radio-ulnar joint, resulting from incomplete reduction."

From this we must infer that at a great London teaching hospital a Colles's fracture is never properly reduced. For, apparently, when the displacement is not considerable, reduction is not considered necessary, and, when displacement is considerable, the result is invariably unsatisfactory owing to incomplete reduction. We need not, however, infer that the results so candidly reported from this clinic are in any way exceptional. They are indeed the usual results of the methods of treatment at present adopted. I personally never, or hardly ever, see a case of Colles's fracture which has been properly reduced, although many of the cases that I see have had some sort of manipulation previously. The reason for these uniformly bad results is that the method of reduction almost universally employed—namely, that advocated by Sir Robert Jones—is entirely inadequate in the hands of the majority of those who have to treat these cases.

In the classical Colles's fracture—and most cases are of this type—there are three characteristic displacements of the lower fragment of the radius in relation to the upper—namely, (1) displacement upwards and backwards; (2) abduction to the radial side; and (3) rotation about a transverse axis—that is, backward tilting of the lower articular surface, the importance of which is rightly emphasized by Edwards and Clayton. Each of these displacements must be deliberately corrected if a good result is to be obtained.

Colles's fracture is produced by great force—that is, the whole weight of the falling body upon the fixed wrist—and *it requires great force to reduce it.* The reduction of a Colles's fracture is a matter of sheer force; there is no trickery about it whatever.

General surgeons as a rule have no conception of the amount of force that orthopaedic surgeons can, and often do, employ in quite ordinary manipulations, and I think that some orthopaedic surgeons hardly realize it themselves. It may be that the powerful hands of Sir Robert Jones (and some others) can reduce a Colles's fracture in any manner that he chooses; but I am convinced that the method which he advocates is quite inadequate in the hands of the great majority of those who have to deal with Colles's fractures.

For general use there is no method to compare with that of *reduction over a wedge.* By this method the upper fragment is fixed, and the lower fragment is compelled by sheer force to go in whatever directions the operator wishes. Briefly the actual procedure is as follows:

The patient must be fully anaesthetized. Some expert anaesthetists can give gas or gas and oxygen for long periods, and can even obtain muscular relaxation (with luck), but this is quite exceptional. As ordinarily given, "a whiff of gas" is entirely inadequate for the proper reduction of a Colles's fracture. In these circumstances the reduction is always hurried, the patient is usually stiff or moving, and, above all, there is no time for a critical review of the reduction before he comes round, nor for a repetition of the manipulation if it should be found to be incomplete. The reduction should be done deliberately with the patient fully anaesthetized. I think that regional (brachial plexus) anaesthesia might be employed here much more often than it is.

For the manipulation the fracture is laid flexor surface downwards across the wedge,* so that the lower end of the upper fragment rests directly on the wedge. For the right side it is convenient to have the wedge lying on the table by the patient's side; for the left side (unless the surgeon is left-handed) it is more convenient to have it on an outlying small table. The upper fragment is firmly held by the surgeon's left hand on the wedge. The lower fragment is gripped by the surgeon's right hand with the thumb on top and the ball of the thumb directly over the prominence which the displaced lower fragment makes on the dorsum. The lower fragment is now forced downwards and forwards and towards the ulnar side. The amount of force required varies in different cases, but in all cases it is considerable, and I have many times put the whole weight of my body on to this fracture in order to reduce it properly. At the end of this manœuvre the backward tilt of the lower fragment is corrected by a sharp forward flexion movement.

Many surgeons make a point of first disimpacting the fracture by dorsiflexing the wrist and temporarily increasing the deformity. This is harmless, but unnecessary. The only objection to it is that it is apt to make a surgeon think that he can reduce the fracture by some clever manœuvre instead of by force. In reducing over a wedge disimpaction occurs just as readily as soon as the lower fragment is made to move, and then all that is necessary is to force the fragment into its proper position.

After the reduction the fracture should be critically examined. The positions of the styloid processes should be noted and compared with the normal. The prominence on the dorsum should be felt for, to make sure that it has quite disappeared, and it should be seen that the forward concavity of the lower end of the radius is restored. Lastly, the position of the hand as it hangs freely in relation to the lower end of the radius should be noted. If any part of the deformity remains uncorrected, the manipulation should be repeated.

There is very little tendency for the deformity to recur after a Colles's fracture has been properly reduced, unless the wrist is dorsiflexed, or the splint which is applied presses the lower end of the radius backwards.

The popular Carr's splint, as originally designed and as supplied to general practitioners and commonly used by them, is a bad splint, because it presents a flat surface to the normal forward concavity of the lower end of the radius and so causes the lower fragment to be tilted backwards. As padded up and applied by experts it is, no doubt, quite efficient, but then it is no longer a "Carr's splint."

* The so-called orthopaedic wedge is merely a short round horizontal bar covered with rubber, standing about four inches high on a firm base. For those who want one occasionally and have not got one, I may add that an ordinary flat iron, borrowed from the kitchen, with its round horizontal handle covered with a folded towel or other soft material, makes a perfectly good "orthopaedic wedge."

Colles's fracture should be put up with the wrist moderately flexed. The best position is that in which the hand hangs naturally when it is unsupported and the muscles are relaxed under the anaesthetic. No splint is more efficient or more comfortable than a plaster strip moulded to the flexor surface of the forearm and hand, leaving the fingers free.

The proper use of plaster-of-Paris requires a little practice, but I would submit that the putting up of a Colles's fracture in plaster is within the capacity of any practitioner; it requires less special knowledge and skill than the alteration of an unsuitable splint in order to make it suitable.

An assistant supports the elbow and steadies the limb by making light traction downwards and forwards on the middle fingers. The part is wrapped in a layer of cotton-wool over which an ordinary bandage is applied firmly, but not tightly. A four-inch plaster bandage is placed in warm water, and, when bubbles have ceased to rise, it is lightly squeezed and then applied evenly round and round the limb from the elbow to the middle of the hand. Three or four bandages are applied in like manner, and as soon as the plaster is set it is cut up each side with a sharp scalpel, and the top or dorsal half is removed. The lower half remains as the splint, and it is kept on with an ordinary bandage.

It has been suggested that this fracture should be put up with the forearm supinated, as is usually done with other fractures of the radius and ulna. But the supinated position is much more irksome to the patient, and I doubt whether it is really necessary in this case. Colles's fracture is produced by a fall on the pronated hand and it is impacted in the pronated position. In reducing it by the method described the lower fragment is forced back into its original—that is, normal—position in relation to the upper fragment, and if it is allowed to heal in this position normal movements should follow.

Massage and movements of the fingers are usually begun a day or two after the reduction, and movements of the wrist-joint in about ten days to a fortnight. But these times are of little importance as compared with the complete reduction of the deformity.

In conclusion, is it too much to hope that surgeons in charge of fracture departments allow their house-surgeons and dressers not merely to watch, but actually to do these manipulations with their own hands? Outside the immediate vicinity of large hospitals the great majority of Colles's fractures will be and must be treated by general practitioners, and the actual reduction of a few of these fractures under supervision is worth more to the future practitioner than all the demonstration that can be given.

VALUE OF THE HINTON TEST IN THE SERUM DIAGNOSIS OF SYPHILIS

IN COMPARISON WITH THE KAHN AND WASSERMANN REACTIONS.

BY

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HAVING seen with interest the results of the new Hinton test as applied in the Wassermann Laboratory of the Harvard Medical School and in the pathological laboratory of the Massachusetts General Hospital, Boston, U.S.A., and been fired with Dr. Hinton's enthusiasm during a personal demonstration and discussion of his test, we decided to examine it in a comparative manner with our routine "Wassermann" specimens from the Somerset Hospital, the Peninsula Maternity Hospital, and, in a special series of cases through the kindness and courtesy of Dr. C. Kevin O'Malley, from the venereal disease clinics of the Health Department of Cape Town. One of us (J. H. F.) is responsible for the Hinton tests, the other (E. C. G.) for the Kahn and Wassermann reactions.

THE HINTON TEST.

Our basis for the test is the technique used by Dr. Hinton in June, 1928, which embodies some important modifications (then unpublished) of his original test as appearing in the *Boston Medical and Surgical Journal* of June 16th, 1927 (pp. 993–996).[1] We have used the test with this technique throughout, and have also subjected the procedures to critical experimentation and study, as will appear in the sequel.

The details of the Hinton test, as we have it in a personally annotated reprint with Dr. Hinton's own unpublished modifications (to June, 1928), are briefly set forth as follows:

The test is an "agglutination," by syphilitic serums, of a suspension of cholesterol in *glycerinated* hypertonic saline containing a mere trace of the alcohol-soluble, ether-insoluble extractives of beef muscle. The addition of the glycerol is the main feature of difference from the Kahn, the Sachs-Georgi, Sigma, Meinecke, and other "flocculation" methods of diagnosing syphilitic serums.

Preparation of Reagents.

The "antigen" or "indicator" is prepared from beef muscle (preferred by Hinton to beef heart). The method follows that described by Neymann and Gager,[6] and by Kahn.[2] A small quantity, say 1/2 lb., is freed from fat and connective tissue, chopped and minced, and dried for four or five days on a tray in an oven with a thermostat set at 55° C. It is then powdered, and extracted by vigorous hand-shaking in a stoppered graduate, using ether in the proportion of 1 gram of powder to 4 c.cm. of ether. The process is repeated four or five times until the ether comes away clear, and the residue collected on filter paper and dried. It is then extracted in a glass-stoppered bottle with 95 per cent. alcohol in the proportion of 1 gram of dried residue to 5 c.cm. of alcohol. Extraction is continued for three days at room temperature, and the "indicator" ("antigen") is then filtered off. To every 1 c.cm. of extract is now added 9 c.cm. of a 0.7 per cent. solution of cholesterol in absolute alcohol (prepared several days previously).

The "stock indicator," as Hinton calls it, keeps indefinitely in stoppered bottles of 50 to 100 c.cm. capacity in a dark cupboard at room temperature. The "indicator" actually used for the test is a glycerinated suspension of the cholesterolized antigen *freshly* made up with sodium chloride solution on the day it is to be used. Hinton now makes up a 3 per cent. as well as a 5 per cent. sodium chloride suspension. Two parts of the 5 per cent. (or 3 per cent.) NaCl are added to one part of "stock indicator" pipetted with a clean dry 5 or 10 c.cm. pipette into a 100 c.cm. stoppered graduate. This is shaken vigorously and left for half an hour. Twelve parts of saline are added, the suspension is shaken, and finally, after adding fifteen parts of 50 per cent. glycerol, again shaken thoroughly.

Hinton finds it unnecessary to "inactivate" the serum to be tested, but where routine Wassermann tests are being done it will have been "decomplementized" by heating to 55° C. for half an hour.

The test is carried out in three 10 mm. and 100 mm. (serum) tubes conveniently held in a numbered (Wassermann) rack. This should be of brass and have three shelves to stand immersion without upsetting the serum tubes.

To Tube 1 is added 0.1 c.cm. of serum and 0.5 c.cm. of 5 per cent. NaCl suspension.
To Tube 2 is added 0.3 c.cm. of serum and 0.5 c.cm. of 3 per cent. NaCl suspension.
To Tube 3 is added 0.5 c.cm. of serum and 0.5 c.cm. of 3 per cent. NaCl suspension.

The tubes are shaken thoroughly and placed in a shallow water-bath at 37° C. for six to sixteen hours. The test needs about 1 c.cm. of serum, and the quantities are easy to pipette.

A positive reading consists in a definite "agglutination" of the cholesterol suspension into more or less coarse clumps, with a complete clearing of the medium. A good positive reading in at least one tube (generally the first) constitutes a positive diagnosis of syphilis.

Modifications of Technique.

As a result of our experimentation with the test we submit the following conclusions and modifications of the technique:

1. The saline emulsion of our antigen* when made up with 5 per cent. NaCl is slightly too unstable, tending to "auto-agglutinate," whereas the 3 per cent. NaCl suspension is definitely too stable and too "inert," giving few positives. We found that a 4 per cent. NaCl-glycerol suspension gave uniformly better results without the needlessly extensive range of sensitiveness intended with the more complicated two-dilutions technique.

* Antigen preparations would appear to vary slightly in sensitivity, as we have noticed in using different batches of antigen.

2. The suspension becomes most sensitive if allowed to stand for half to three-quarters of an hour before use.
3. The 4 per cent. NaCl suspension is added in 0.5 c.cm. amounts to each of the three tubes containing respectively 0.1, 0.3, and 0.5 c.cm. (or 0.1, 0.2, and 0.4 c.cm.) of "inactivated" serum. We use a 20 c.cm. burette graduated in one-twentieths of a cubic centimetre, and find that this makes the addition of 0.5 c.cm. of the suspension to a large series of tubes a rapid and accurate process.
4. *To ensure thorough mixing, each tube is shaken with the* mouth held loosely between the thumb and forefinger (one tube in each hand); and a rackful of tubes may be shaken by hand in this way with remarkably little trouble and loss of time.
5. Keeping the tubes overnight in the water-bath or incubator at 37° gives the clearest readings. (This would seem to be indispensable, as with a room temperature of 22° to 26° unreliable results were obtained, and preliminary incubation at 55° C. for half an hour to an hour did not improve these results.)

Modified in this way the readings are for the most part clear-cut. Zone phenomena are infrequent and obvious.

Pseudo-Reactions.

A pseudo-reaction is sometimes obtained. For the most part this consists of a fine even flocculation, evident in all three tubes, and tending to be most marked in the tube with the largest amount of serum. On a few occasions this was quite confusing with our use of Hinton's "two-strength" technique, but the fact that there was not much pseudo-agglutination in the 0.1 c.cm. tube caused us to suspect the result in every case. With the 4 per cent. suspension these pseudo-reactions are much less marked and have never given the slightest trouble in reading in 114 cases (vide infra). Hinton emphasizes the clarity of the fluid in which the flocculi float in the case of the true as contrasted with the pseudo-reaction. It may be said that these pseudo-reactions are of slight practical importance and give little or no trouble after a short experience with the tests. Pseudo-reactions, it must be remembered, complicate the Kahn and other techniques, and even the Wassermann reaction is not wholly free from difficulties in reading. As to the validity of the test, Dr. Hinton is, to our certain knowledge, bringing out data from a very large number of observations, and our results support his personally expressed contentions fairly well.

THE KAHN REACTION.

R. L. Kahn, in 1921, appreciating that the "precipitate" in the heterophilic flocculation tests for syphilitic serums was lipoidal in character, as contrasted with the serum globulins in specific immune precipitations, was led to study the variable factors in the reaction, and to evolve a method of stabilizing the conditions of flocculation (precipitation). This method involves:

1. Choice of highly unstable antigen-saline suspension.
2. Optimum concentration of ingredients.
3. Quantitative relation between antigen suspension and serum.
4. Agitation to bring forth the precipitate, especially in weak serums.

The antigen is an alcoholic extract of dried beef heart from which the ether-soluble "non-reactive" extractives have been removed by a careful method of extraction based upon that of Neymann and Gager[6]: 0.6 per cent. of cholesterol is added as experiments indicate that this is the optimum. The optimal amount of saline to add to the cholesterinized antigen is determined by a preliminary antigen titration in which varying quantities of 0.85 per cent. NaCl are added in a standard manner, and note taken of the solubility of the precipitate on the further addition of "test" quantities of saline. The antigen saline proportion we found to be the optimal averaged 1:1, and this is made up ten minutes before the test. We took this titre to indicate correct sensitivity as we had no standard antigen for control-standardizing purposes.

The test proper is conducted with heated serum (56° C. for half an hour being the standard). To 0.05, 0.025, and 0.0125 c.cm. of antigen dilution in agglutination tubes in a suitable (Sigma) rack are added 0.15 c.cm. amounts of heated undiluted serum. We used thorough shaking, by hand, for three minutes to facilitate the reaction. No addition of saline (as recommended by Kahn) was found necessary to make readings clearer. We noted, however, that clear-cut reactions were not immediate, and indeed several hours were necessary before the routine readings could be taken. This led to our leaving the racks at room temperature overnight and reading them along with the Hinton reactions next morning. We consider that this delayed reaction might indicate some lack of sensitivity in our antigen suspension, but conclude that all other details agreeing with the standard Kahn routine technique, our late (eighteen-hour) readings may be taken as reliable.

Pseudo-reactions were noted in a few cases and were apt to be confusing; our eighteen-hour readings, however, were, on the whole, clear-cut and easy to read. The question of the validity of the results, and the possibility of "false positives," may be referred to a consideration of our tables, and to the experience of other workers.[7] We used cerebro-spinal fluids without the preliminary *preparation* advocated by Kahn, so as to compare with the Hinton and Wassermann tests. We conclude from our limited observations that this led to very inferior results.

THE WASSERMANN REACTION.

We have employed as a routine the No. 4 method of the Medical Research Committee's Special Report Series No. 14 (1918),[4] which is a standardized method calculated to yield results, both positive and negative, of the highest degree of validity and reliability.[5] Our complement *minimum haemolytic dose averaged 1 in 30: and the minimum haemolytic dose of the haemolytic immune body 1 in 1,500.*

The serums delivered to us were not always satisfactory, and a number had to be refused on account of haemolysis, gross turbidity, etc. Certain serums with a definite degree of haemolysis were put up and often gave definite reactions. Such of these as were controlled by a subsequent test we have thought fit to include in our series. Anticomplementary serums were ignored, but it is to be noted that in a number of these the Hinton and Kahn tests gave good positives. Wassermann readings were taken immediately after removal of the racks from the water-bath, as it was found that standing even for a short time at room temperature furthered haemolysis and was apt to change weakly positive tubes to negatives (complete haemolysis). Our series of 612 cases includes some 30 odd repeat observations.

TABLE I.—In a comparison of the Hinton and Wassermann tests 612 examinations gave:

Complete agreement in 551 cases (90 per cent.)—	
Both tests negative	384
Both tests positive	167
Doubtful agreement in 15 cases (2.5 per cent.)—	
Hinton negative, Wassermann weak...	4
Hinton positive, Wassermann weak..	8
Hinton weak, Wassermann negative	3
Disagreement in 46 cases (7.5 per cent.)—	
Hinton positive, Wassermann negative	34
Hinton negative, Wassermann positive	12

TABLE II.—In 460 of these cases, in which the Kahn test was also performed, the Hinton compares with the Wassermann as follows:

Complete agreement in 420 cases (91.3 per cent.)—	
Hinton and Wassermann negative	238
Hinton and Wassermann positive	122
Doubtful agreement in 4 cases (0.9 per cent.)—	
Hinton negative, Wassermann weak..	4
Disagreement in 36 cases (7.8 per cent.)—	
Hinton positive, Wassermann negative	31
Hinton negative, Wassermann positive	5

TABLE III.—In a comparison of the Kahn and Wassermann tests in this series of 460 cases we get:

Complete agreement in 428 cases (93 per cent.)—	
Both tests negative	310
Both tests positive	118
Doubtful agreement in 8 cases (1.7 per cent.)—	
Kahn weak, Wassermann negative	4
Kahn negative, Wassermann weak	3
Kahn positive, Wassermann weak	1
Disagreement in 24 cases (5.5 per cent.)—	
Kahn positive, Wassermann negative	15
Kahn negative, Wassermann positive	9

TABLE IV.—Comparing the Hinton and Kahn tests we have:

Complete agreement in 425 cases (92.4 per cent.)—	
Both tests negative	297
Both tests positive	128
Doubtful agreement in 4 cases (0.9 per cent.)—	
Hinton negative, Kahn weak...	4
Disagreement in 31 cases (6.7 per cent.)—	
Hinton negative, Kahn positive	6
Hinton positive, Kahn negative	25

TABLE V.—Comparing the three tests for these 460 cases, we have:

Complete agreement in 407 cases (88.5 per cent.)—	
All three tests negative	290
All three tests positive	117
Doubtful agreement in 8 cases (1.7 per cent.)—	
Hinton and Wassermann negative, Kahn weak ...	4
Hinton and Kahn negative, Wassermann weak ...	3
Hinton negative, Kahn and Wassermann weak ...	1
Disagreement in 45 cases (9.8 per cent.)—	
Hinton and Kahn negative, Wassermann positive	4
Hinton negative, Kahn moderately positive, Wassermann positive	1
Hinton and Wassermann negative, Kahn positive	4
Hinton and Kahn positive, Wassermann negative...	11
Hinton positive, Wassermann and Kahn negative...	20
Hinton and Wassermann positive, Kahn negative	5

DISCUSSION.

Comparing these tables, we note that the Hinton and Kahn tests agree fairly closely with the Wassermann reaction, the Kahn slightly more closely than the Hinton. To evaluate the small differences would necessitate clinical data to supplement the serological findings. Satisfactory clinical data were not obtainable in our present series, and we are now at work on a smaller series of selected cases with a view to obtaining a correlation of serological findings with reliable clinical evidence. These results, together with further investigations relating to the fundamental principles underlying the Hinton test, we hope to publish in due course.

We may note in our present series, however, that the Hinton test gives more "positives" than either the Kahn or the Wassermann, and this means either that the test is more sensitive or that it gives a greater number of "false positives." The Kahn also gives a slightly greater number of positives than the Wassermann, and a number of authorities feel that the question of "false positives" with the Kahn calls for some hesitancy in accepting the result in the individual case.[8] It is agreed that false positive Wassermann reactions are very rare under the standardized conditions of the No. 4 method. A ±, and even a + Wassermann, however, demands a repeat, and perhaps a provocative injection of salvarsan, if the clinical evidence of syphilis is insufficient. We have one or two + and − Wassermann reactions, with a negative Hinton, that would need this corroboration of the Wassermann result.

The Hinton test, in our opinion, gives more "false positives" than the Wassermann, but probably (as far as our evidence goes) fewer than the Kahn. This is advanced tentatively, especially in view of the criticisms of our Kahn technique which we have offered above. On the other hand, we feel strongly, on the evidence of a number of the cases having highly suspicious histories, and sometimes giving a positive Kahn reaction also, and occasionally a positive Wassermann on repetition, that the majority of positive Hinton reactions (where the Wassermann is negative) do denote a greater sensitivity of the flocculation test. In the noticeably small number of cases —namely, 5 in our smaller series, and 12 in the larger series—where the Wassermann reaction is positive and the Hinton negative, such evidence as we can command suggests that the inconclusive nature of the ± or + single Wassermann must be considered, as well as the alternative explanation that the Hinton "misses" these cases—that is, gives false negatives. In only two cases, both admitting of doubt, from the incompleteness of the Kahn in one and of the Wassermann in the other, did a positive Kahn accompany a positive Wassermann and the Hinton "miss." *Tables I and II, unfortunately, are not comparable on* these points, as the Kahn was not performed in quite a proportion of the interesting cases.

With regard to our modification of the Hinton test, we may note that the 4 per cent. NaCl-glycerol indicator was applied to 114 specimens simultaneously with Hinton's "two-strength" indicator, and a greater sensitivity was observed in practically every one of the 36 positives. There were no qualitative differences, save that in two cases with a marked pseudo-reaction *in the original Hinton test* we obtained a slighter and more easily recognized and discounted reaction with the 4 per cent. suspension.

Our larger series includes 45 cerebro-spinal fluids which give the following comparison:

TABLE VI.

	Hinton Test.	Wassermann Test.
36 cases	negative	negative
1 case	positive	positive
1 ,, ...	weak positive	positive
1 ,, ...	positive	weak positive
1 ,, ...	negative	weak positive
3 cases	negative	positive
2 ,, ...	positive	negative

These few cases rather suggest that the Hinton test is not quite so sensitive with cerebro-spinal fluids, especially as the serums from two of the three cases with positive Wassermann and negative Hinton reactions gave a positive with both tests. The same is true of both of the weakly positive Wassermann reactions. Concerning this point we hope to furnish further evidence at a later date.

The Kahn test, incidentally, was done on 28 of these cerebro-spinal fluids (without the preliminary "concentration" advocated by Kahn), without a single positive result, although including one with both Wassermann and Hinton positive, and two with positive Wassermann and negative Hinton, and one weakly positive Wassermann and negative Hinton, and one with positive Hinton and negative Wassermann. Kahn advocates a preliminary concentration of the precipitating factor in cerebro-spinal fluids by globulin precipitation. Our meagre results would suggest that this is an essential step, and worthy of trial with the Hinton test also.

CONCLUSION.

We have in the Hinton test, especially with the author's slight modification, a very economical, simple, and highly sensitive test for syphilitic serums. There are indications that the test is somewhat more sensitive and more reliable than the Kahn test. It is a further step towards evolving a simple flocculation technique for routine use. We do not hold that the Hinton test is comparable in reliability with a carefully standardized Wassermann technique, such as the Medical Research Committee's No. 4 method, but it would appear to pick out certain types of cases, especially "treated" cases and the controversial "latent" cases, when the Wassermann test at times fails. In the absence of other evidence, however, one cannot feel that a diagnosis of syphilis is to be made on the Hinton (or for that matter any flocculation reaction) alone, whereas a repeated good positive Wassermann reaction does appear to have that significance.

In short the Hinton, like the Kahn, etc., must be reserved as a supplementary test to the Wassermann. It may be used with the same reserve as applies to other flocculation methods: (*a*) where Wassermann facilities are inadequate or not sufficiently organized (for example, in young countries), or (*b*) in hospitals *as a valuable routine on all cases*, to suggest when a further blood sample should be submitted to the central Wassermann laboratory. Difficulties with pseudo-reactions and false positives still weigh against its use by the general practitioner removed from the convenience of a handy serological laboratory.

We desire to express our appreciation of the interest and advice of Professor William Campbell, through whose courtesy we are enabled to publish these investigations.

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THE CERVICAL SYMPATHETIC AND ITS RELATION TO THE THYROID GLAND IN EXOPHTHALMIC GOITRE.

BY

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In this country theories as to the causation of exophthalmic goitre have principally been focused on the thyroid gland, and as a result of such hypothetical basis for the disease operative treatment has been almost entirely directed towards this structure. On the other hand, a very cursory review of the literature of the etiology of this disease, especially from Continental and American sources, demonstrates the fact that in the minds of a very large proportion of investigators an explanation based on a morbid change in the thyroid alone is inadequate to account for the complex phenomena of the disease, and accordingly many theories have been propounded introducing a neurogenic or toxico-neurogenic factor.

Surgery has followed up this reasoning by attempting to effect a cure through extirpation of presumably diseased nervous pathways of the cervical sympathetic system. What, briefly, are the results of surgical intervention directed towards two totally different anatomical structures? Since the commencement of the present century a large series of operations for exophthalmic goitre have been carried out both on the sympathetic and the thyroid; and the outcome of both procedures has been a reasonable proportion of absolute cures or of cases where there has been pronounced amelioration of the symptoms. In order to exemplify briefly this point the following observations may be cited.

Chaîier in 1926 reported a series of nineteen cases of cervical sympathectomy for toxic goitre. The end-results will be seen from the following table.

Cured	3
Greatly improved	9
Slightly improved	6
Recurring	1

During the past few months I selected at random a series of eleven cases of exophthalmic goitre all of which had undergone partial thyroidectomy or ligation of the thyroid vessels, and visited the patients personally in their homes. Their condition as shown in the table below is assessed on such cardinal symptoms as exophthalmos, tremor, pulse rate, nervous irritability, digestion, weight, and general well-being.

Cured (7 years 1; 3 years 1; 2 years 1; 1 year 1*)	4
Unchanged (5 years 1*; 2 years 1; 1 year 1; 6 months 1*)	4
Improved (1 year 1; 9 months 1)	2
Dead (four years later from phthisis)	1

An asterisk indicates that the patients had undergone ligation.
The patient who died showed no improvement before death.

Allowing for spontaneous cures one absolute fact emerges, and that is that the syndrome of exophthalmic goitre can be definitely relieved or absolutely cured by either (*a*) extirpation of a considerable portion of the thyroid gland, or (*b*) excision of the right and left superior cervical sympathetic ganglia and as much of the cervical sympathetic cord as will embrace the variably present middle ganglion.

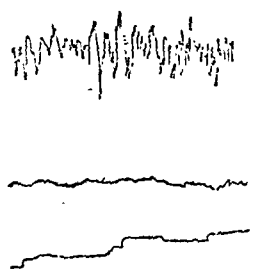
The preliminary results of an investigation of the neuro-glandular etiological relations may now be discussed under two headings—clinical and anatomical.

CLINICAL.

Two cases of exophthalmic goitre have been subjected to the operation of cervical sympathectomy, and in each case there was an exhaustive examination before and after operation.

CASE I.

A woman, aged 62½ years, was taken ill in 1921 with asthenia and palpitation. A few months later exophthalmos developed, and enlargement of the thyroid gland was noticed by her friends. It was further observed that the gland varied in size from time to time; when it was especially prominent the neck was painful. Despite medicinal treatment her condition deteriorated, and she was admitted to hospital on June 8th, 1926. On admission she presented a nervous and emaciated appearance; she weighed 99 lb. The thyroid gland showed diffuse hypertrophy of right and left lobes, with a small adenoma of the isthmus. Exophthalmos was bilateral, and was present to a marked degree; measurement of the globar projection on the micrometer scale was 50 + 2. The pronounced tremor of both hands is indicated in the accompanying illustration. The basal metabolic rate determined by the Douglas bag and Haldane apparatus was + 44 per cent. (The patient had been many weeks in bed, and samples were collected after twelve-hour fasts.) In the adrenaline tolerance test 5 *mm.* of 1 *in 1,000* solution produced a rise of brachial pressure of 2 mm. of mercury and 43 beats per minute.



Heart.—Severe auricular fibrillation was present; the apex beat was highly irregular. There was no bruit; the pulse rate was 104 per minute.

Electro-cardiograph.—Lead I: Extrasystoles, R.V., 1. Lead II: Rate, A. 480; V. 120. Rhythm irregular.

Bowels frequency:			
Day (6 a.m. to 10 p.m.)	1	1	1
Night (10 p.m. to 6 a.m.)	0	0	0
Micturition frequency:			
Day	5	6	5
Night	1	1	1

The knee-jerks were very sluggish. Pressure pain over the thenar region was produced by 2.5 kilos.

The patient was treated by x rays and digitalis, but the result was negligible, and there was pronounced increase of the nervous instability. At an operation on August 21st, 1926, the right and left superior cervical sympathetic ganglia and both cervical cords as far as the inferior ganglia were excised. The operation was conducted under gas and oxygen anæsthesia; there was a rise of the radial pulse of 6 per minute; both pupils were contracted, and enophthalmos was easily observed.

During the first few days after operation there was severe auricular fibrillation, which was controlled by digitalis. The exophthalmos steadily returned to the pre-operative condition. The micrometer reading was 50, and after seven days the basal metabolic rate was reduced by 13 per cent. The tremor showed decided diminution in frequency and amplitude of cycles. Neck measurements before and after the operation were as follows:

	August 26th.	September 28th.
Trans-cricoid plane	30 cm.	30 cm.
Mid-crico-manubrial plane ...	32 ,, ...	31 ,,
Supramanubrial plane	34 ,, ...	33 ,,

The pressure pain and adrenaline tolerance were unchanged.

Re-examination, August 27th, 1927.—Her condition shows a steady improvement up to this date; she has gained in weight and feels stronger. The exophthalmos has slightly improved, tremor is practically negligible except when overtired or worried. Prior to operation her writing was illegible; it is now clear with no suggestion of vibration. Pulse 80 to 90; she still has attacks of palpitation. The thyroid shows no change in the size of the lateral lobes. The adenoma has now become cystic and slightly larger.

Re-examination, May 25th, 1928.—She has had a recent attack of influenza and much mental worry. Tremor has returned within the past fourteen days; her handwriting is legible though extremely shaky; the weight has considerably decreased, the radial pulse is 90 per minute; heart-beat very irregular; neck measurements show a pronounced diminution in the size of the thyroid: circumferences were as follows: trans-cricoid plane 28 cm.: mid-crico-manubrial plane 30 cm.: supramanubrial plane 33 cm.

Exophthalmos was still very pronounced, and certainly more so than on the last previous visit.

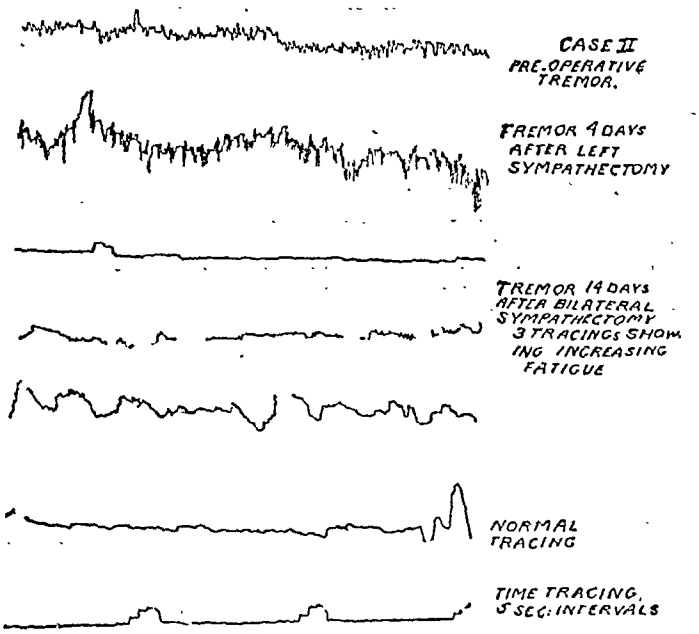
CASE II.

A man, aged 31, with a history of cyclical nervous instability, with early onset of hand tremor, loss of weight, and nervous irritability. Three years after the appearance of the initial symptoms enlargement of the thyroid gland was noted. Eighteen months later exophthalmos developed, and six months after this severe attacks of palpitation occurred. On December 8th, 1927, the right and left superior thyroid vessels were ligatured: iodine was administered and the patient was sent home on December 18th. Following this he lost 23 lb. in six weeks during a severe exacerbation of all the symptoms. He was readmitted to hospital on January 30th, 1928. On examination he weighed 7 st. 4½ lb. (his normal weight was 11 st.). Exophthalmos was present in both eyes, principally due to pronounced spastic retraction of the eyelids, especially the outer part of the superior lid; there was slight oedema of the lower lids. There was diffuse enlargement of the entire thyroid gland; it was pulsatile with audible bruit.

Circumferences of the neck were as follows: cricoid plane 36 cm.; mid-crico-manubrial plane 40 cm.; supramanubrial plane 43 cm.

The tremor was of the rapid fibrillary type with a rhythm of eight cycles per second. There was slight dilatation of the right side of the heart and auricular fibrillation. Pulse 101. The basal metabolic rate, estimated by the Douglas bag and Haldane apparatus, was + 75 per cent. Pressure pain was 10.5 kilos over the thenar region. In the adrenaline tolerance test 5 mm. of a 1 in 1,000 dilution produced a rise of 25 mm. of mercury in the blood pressure and an increase of pulse rate to 112. There was a generalized faint pigmentation and alopecia of the face and scalp. His bowels acted twice during the day and not at all in the night, and he passed water two to four times in the daytime.

On February 29th *resection of the left cervical sympathetic cord was performed without disturbing the ganglia.* Immediately after the operation there was a pronounced increase in tremor and rhythmical motion of the whole arm, with a frequency of three cycles in five seconds. The hand tremor increased ten cycles per second. The exophthalmos was unchanged. There was hyperidrosis of the right side of the face; the left side was dry. Immediately after operation the temperature was 99° F., the pulse 128, and the respirations 24. After five days the corresponding figures were 98.4° F., 118, and 22.



On March 7th, 1928, excision of the right superior sympathetic ganglion and a portion of the cord was performed. Following a transitory febrile period due to tonsillitis the hand tremor subsided markedly, the recording lever remaining stationary for considerable intervals, with an occasional slow rhythm of four or five cycles per five seconds. There was pronounced diminution in the spastic retraction of the eyelids.

On March 20th the basal metabolic rate was + 32 per cent., a fall of about 40 per cent. The adrenaline tolerance test showed a rise of blood pressure of 10 mm. of mercury, with no increase in the pulse rate. The pressure pain figure on the right side was 9 kilos; on the left 8 kilos.

Re-examination, May 23rd, 1928.—The patient appeared to be very well and had gained weight; on May 14th he weighed 8 st. 4 lb. Hand tremor was negligible. The exophthalmic appearance was greatly improved. He had no attacks of palpitation; pulse rate 88.

From a study of the data of the foregoing cases the following points may be deduced.

1. That in cases of exophthalmic goitre extirpation of the *cervical sympathetic ganglia has a threefold effect on the* syndrome of the disease: (*a*) an immediate phase of increase in all the symptoms, due probably to augmented thyroid activity; (*b*) followed quickly by the first improvement phase, in which there is a considerable fall in the *basal metabolic rate and a diminution of hand tremor*; (*c*) a second improvement phase sets in after a month or more in which there is a general amelioration of all the symptoms. It is the variability of the degree to which this latter improvement progresses that determines the question of ultimate success of the operation.

2. The effect of sympathectomy on the exophthalmic appearance is apparently uncertain. If the appearance is due to spastic retraction of the eyelids as in Case ii, then sympathectomy effects an improvement. On the other hand, where the appearance is due to the projection of the ocular globe as a whole sympathectomy has little or no effect. It is interesting to note here an observation made *post mortem* on an exophthalmic eye. After death there was still decided ocular prominence, and incision of the conjunctiva and examination of the orbital contents showed the forward displacement to be due entirely to the accumulation of a considerable quantity of clear fluid.

3. The effect of sympathectomy on the thyroid gland in Case i produced post-operative increase in the size of the adenoma and shrinkage and atrophy after some months. In Case ii the size and tension of the thyroid diminished from the onset of the first improvement phase.

Floresco, Missirolli, and Wiener found that section of the cervical sympathetic excited transitory thyroid hyperfunction, followed by rapid atrophy of the thyroid gland, an observation which provides us with an explanation of the post-operative crises and the changes in the size of the thyroid.

4. In weighing the foregoing results it will be remembered that Case i had had prolonged radiation and Case ii ligation of the superior thyroid vessels, and both had undergone a course of iodine treatment, the results of which procedures had been negligible at the time of sympathectomy, at which period they were judged grave operative risks. The *inadequate ultimate results in Case i* led to a closer investigation of the anatomical connexions between the sympathetic and the thyroid glands.

5. In each case histological examination of the extirpated ganglia revealed the following changes: granular *degeneration or atrophy of the nerve cells, increase of* connective tissue, and hyperpigmentation comparable to the changes described by Wilson and Durante of the Mayo Clinic.

In conclusion a few words may be added as to the *practical aspects of the sympathetic operations for this* disease. As far as one can say at present they are not a cure, but nevertheless, if successfully carried out, they produce a very considerable improvement. This amelioration is considerably greater than that obtained by ligaturing the blood vessels, and since the technique is no more difficult, and the risks are not more hazardous, it seems a reasonable proposition to undertake it in cases where the symptoms are of such a degree of severity as would contraindicate a partial lobectomy, thereby obtaining a margin of improvement which would permit this operation to be performed at a later stage.

Again, this operation would appear to be eminently suitable in cases where the cardiac derangement is too serious to allow any thyroid operation to be contemplated, and where the thyro-toxic symptoms are progressive despite medicinal treatment and therefore endanger life, as in Case i.

ANATOMICAL.

According to Berkeley, Crissafulli, and Rhinehart, and further quoted by Wilson and Durante, the superior and middle cervical sympathetic ganglia furnish the entire nerve supply to the thyroid gland.

It is obvious that if this statement is accepted the operation of sympathectomy need only embrace these two ganglia *on both sides in order to effect a complete denervation of* the gland. Such is the operation usually practised, and such was the technique in the cases investigated personally. The measure of success for this procedure has been fully discussed; that this should be incomplete at once suggests an *inadequate denervation*, hence a most careful investigation of the nerve supply from the inferior cervical ganglion has been carried out.

In all, six adult bodies and five *foetuses* have been examined. In every case a communication was found to exist between this ganglion and the thyroid gland on both sides of the neck; it was variable in its position and anatomical course. The following are the chief variations.

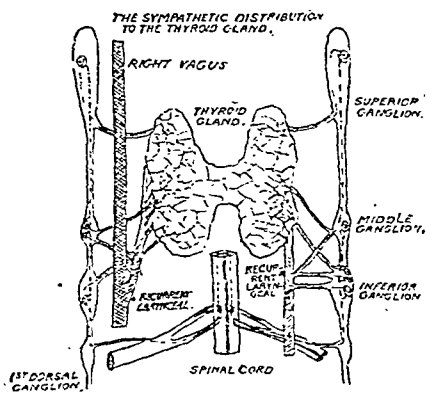
1. The communication may arise either as one or two delicate nerves from the inferior cervical ganglion. On the *left side*, after passing inwards and downwards a short distance, it doubles back along the course of the recurrent laryngeal nerve to be distributed to the postero-inferior aspect of the lower pole of the left lobe of the thyroid. On the *right side* this filament (or filaments) frequently anastomoses with the right recurrent laryngeal nerve at a distance of about 1 to 2 cm. from the origin of the nerve from the vagus, after which the fibre may be traced as a distinct fasciculus on the lower and inner surface of that nerve, and leaves it as a plexus of delicate filaments

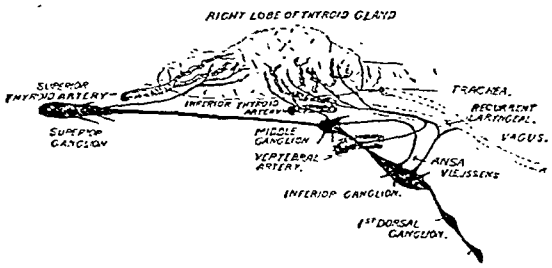
to be distributed to the corresponding aspect of the right lower pole.

2. The communication may arise as a branch from the sympathetic cord between the middle and inferior ganglia, in which case the ultimate distribution is the same as in the previous instance.

3. On the left side there may be several small filaments arising from the inferior and middle cervical ganglia, which pass inwards and downwards closely associated with the vertebral artery and reach the left recurrent nerve, when they are distributed both upwards and downwards in that nerve; those fibres passing towards the head may be partly traced into branches to the thyroid gland.

These communicating fibres to the recurrent laryngeal are indicated in the accompanying illustrations.





Pavlovsky has emphasized the importance of a group of fibres from the inferior cervical ganglion which reach the thyroid along the inferior thyroid arteries. Although in a few instances there were filaments from the middle ganglion accompanying this vessel they were not so constant and definite a feature as that described above.

The practical deduction to be made from the anatomical findings is the importance of extirpation of the middle and inferior cervico-ganglionic section of the sympathetic on at least one side—namely, that on which the thyroid changes are most pronounced. If partial denervation of the gland results in considerable mitigation of the symptoms, then it seems logical to suppose that a similar and still more complete procedure would be correspondingly more effective.

Further, it might be tentatively pointed out that since all the sympathetic supply to the thyroid passes out of the spinal cord at the level of the first and second dorsal segments and traverses the inferior ganglia, it follows that removal of the latter should be equivalent to removal of the entire three ganglia, and would obviate a more extensive operation.

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DELAYED CORNEAL ULCERATION FROM MUSTARD GAS.

BY

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THE two following cases which have come under our notice seem sufficiently important to be placed on record, and this for two reasons: first, because of their intrinsic clinical interest, and secondly, because of their specific importance from the point of view of war pensions. One of us has seen both cases, and so is able to be sure of the essential similarity between them.

We wish to emphasize that these ulcers have features which are so characteristic as to render them almost pathognomonic, and there should be no fear, therefore, of false claims being made for pensions on account of ordinary corneal ulcers.

The history of the two cases is as follows.

CASE I.

A medical man was attacked by mustard gas in 1917, and is in receipt of a pension for defective sight of the left eye from corneal nebulae resulting from ulceration in 1922. The right cornea was unaffected until May 7th, 1928—that is, eleven years after the gassing. It then spontaneously became ulcerated at a point downwards and to the nasal side. The ulcer at first was small, but afterwards enlarged so as to involve more than one-third of the area of the cornea. From the first it was deep and crater-like at its centre, extending down to Descemet's membrane. For many weeks it seemed that it would perforate at this spot; but this did not happen, and it ultimately healed over. In the substance of the cornea were grey lines of infiltration radiating more or less from the borders of the ulcer; a small area only was stained by fluorescein.

On curetting, the surface epithelium of the cornea was found to be sodden and ill nourished for a considerable area around; it easily separated, leaving a large bare surface. The substantia propria was infiltrated in such a way as to produce a sort of cleft in its substance in a plane parallel with the surface. The ocular conjunctiva exhibited the appearance, to be referred to later, which is characteristic of these cases. (Fig. 1, C, Fig. 2, D.)

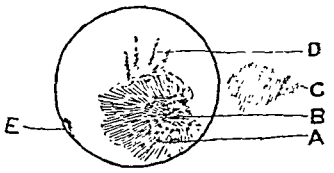

FIG. 1.

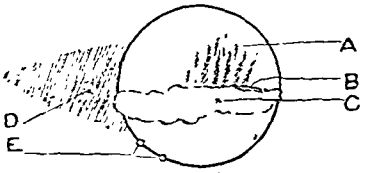

FIG. 2.

Some iritis developed, but it was very mild in degree, and called no trouble; the left eye remained quiescent throughout. There was never any very acute reaction in the eye, and photophobia was less marked than would have occurred from an ordinary ulcer. The general appearance was that of a slowly spreading, very indolent ulcer, of which a small part only stained; corneal infiltration extended in advance of the ulceration, which gradually spread so as to invade the pupillary area, producing considerable defect of vision, which necessarily is permanent.

At the end of five months it seemed that the extension of the ulcer had stopped. The clear point where Descemet's membrane had been exposed was becoming healed and the excavation gradually filling in. This progress has continued up to date; repair, however, is even now, at the end of seven months, by no means complete.

CASE II.

A healthy man, aged 38, when first seen by one of us gave the following history. He had suffered badly from mustard gas burns in the usual parts of the body, including the eyes, in July, 1917;

he was invalided as a consequence, and written down as B 2. From that time to the present he has been bothered at intervals by bright lights, but otherwise has had no particular trouble until July, 1928, when both corneae developed small deep ulcers, which showed little staining with fluorescein. Since then his trouble has slowly progressed, until on November 22nd, 1928, the condition of the eyes was as follows.

Extending across the cornea of the right eye from side to side, and beyond it on each side, invading the sclera for a short distance, was a deep, gutter-like excavation of the corneal tissue (Fig. 2, C). The edges had a somewhat rolled appearance, and at the situation B, Fig. 2, were sodden-looking and stained on instilling fluorescein; the remaining area did not stain. Above the ulcer, in the situation A, Fig. 2, was a greyish, somewhat linear infiltration of the cornea, and at E were two small punched-out circular ulcers. The conjunctiva over the area D, Fig. 2, was opaque white, and marbled in appearance, as described later.

The condition of the left eye was in all essentials similar to the right, but ulceration was not so extensive. There was the same gutter-like excavation affecting the part of the cornea exposed in the palpebral fissure. It extended rather more than half-way across the cornea, and involved the adjoining corneo-scleral junction; a small spot only stained. The conjunctiva showed the same scarred appearance, and there was no intraocular involvement.

It may at once be stated that all the eyes had essentially similar features, though differing in detail, and were clearly similar to the case published by Mr. Humphrey Neame in the *Transactions* of the Royal Society of Medicine in November, 1928.

We may now examine the special features of these ulcers. First the intolerance of light is much less marked than might have been expected from the extent of the ulcer, and the circumcorneal injection of the eyes was less than would be present in other forms of corneal ulcer of similar dimensions in patients of this age. The ulcers themselves showed a marked tendency to involve the parts exposed in the palpebral aperture—that is, of course, the part originally exposed to the gas. They were deeply excavated, had a gouged-out appearance, and the tissue at the edge appeared sodden and ill nourished. They extended deeply into the substantia propria—so deeply, in fact, as to expose Descemet's membrane in Case i. They did not, however, perforate. In general appearance they reminded one a little of a Mooren's ulcer. The instillation of fluorescein did not produce extensive staining, but only showed up small spots or areas, chiefly at the edges.

From the shelving side of the ulcers infiltration could be seen extending into the adjoining cornea, and showed up as a grey area in it which had a linear arrangement (Fig. 1, D, Fig. 2, A). In one case iritis was present, but it was quite mild, and this in spite of the long persistence of the condition. In both of our cases, as well as in Neame's, one or two small localized, deep, nearly circular ulcers developed at the limbus (Figs. 1 and 2, E).

A marked feature of the ulcers was the long period, roughly ten years, between what clearly was their ultimate cause and their actual development; their extreme indolence; their situation in the palpebral aperture; their deep, gouged-out appearance; the comparatively mild symptoms; and their slow healing. The conjunctiva within the palpebral aperture has a very characteristic appearance, and even now is a good deal reminiscent of its appearance at the time of the gassing. It is somewhat swollen and in parts is almost of a homogeneous pearly white colour; in other parts, where it is less opaque, it has a marbled appearance, the "veining" effect being produced by the vessels, which in places show great irregularity in their calibre. It seems reasonable to suggest that it was the damage done to the vascular and nerve supply of the cornea by the gas, and the subsequent scarring, which has resulted in permanent impairment of the nutrition of the cornea and so to its ultimate ulceration.

With regard to treatment, we believe the most help is to be obtained from curetting any staining area, and cauterizing this small point very carefully with carbolic, or with the actual cautery. We have tried many other drugs without any clear advantage. We seriously contemplated sewing the lids together, and are inclined to believe, like Mr. Herbert Fisher, that this would prove valuable. We doubt whether any form of corneal section is advisable.

NINE CASES OF ERYTHEMA NODOSUM.

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DURING the winter of 1926 and spring of 1927 nine cases of erythema nodosum came under our notice in a busy country general practice. A short account of these cases may not be uninteresting as throwing some light upon the etiology of the condition.

Case 1.—A single woman, aged 23, first came under our notice with complete blindness in the right eye. She was sent to hospital to see a consultant, who reported to us that she was suffering from a retrobulbar neuritis of rheumatic origin. She was given salicylates internally and made a complete recovery in two months. She resumed her duties, but eight months later complained of pains in her limbs. On examination it was found that she had developed well-marked erythema nodosum, but had no signs or symptoms of rheumatism. Under our usual treatment—namely, sodium salicylate internally and liniment of methyl salicylate locally—she made a complete recovery within a fortnight.

Case 2.—We were called in to see this patient, a youth, aged 17, after he had been in bed with pyrexia for two days. For a further four days he remained feverish, but there was no other sign or symptom and a diagnosis could not be reached. The pyrexia did not respond to quinine treatment. On the seventh day of the fever he was given the following mixture every four hours.

Sod. salicyl.	gr. vij
Liq. ammon. acetas	℥i
Spirit. chlorof.	ɱvij
Aq. camph. ... ... ad	℥ss

Twenty-four hours later his temperature started falling, and coincidently with this erythema nodosum appeared on both legs causing much local pain and tenderness. Local application of liniment of methyl salicylate relieved the pain and the patient made an uneventful recovery. Apart from some asthma and a nasal catarrhal condition this patient had always been well. His mother was also slightly asthmatic, but the rest of the family—father and two brothers—were very strong and healthy.

Case 3.—A farm labourer, aged 37, reported with typical erythema nodosum on both legs. He declared that he felt perfectly well, but the "lumps" on his legs were somewhat tender to pressure, and his legs generally ached. His temperature and pulse were normal. He was sent home to bed and given the usual antirheumatic treatment. The following day we were summoned urgently to see the patient, and found him with a temperature of 101°, a rapid pulse, and feeling very sorry for himself. He had been feverish all night. A thorough examination revealed nothing more than the nodules on the legs. Within a further twenty-four hours the temperature and pulse had returned to normal, the nodules became smaller, and the patient recovered. He has been perfectly well for the last two years. The patient had been a healthy man until this illness, but it is interesting that one sister has since come under our care for pulmonary tuberculosis and has recently been discharged from sanatorium, and a brother was given three months' leave for chronic cough and doubtful signs in the chest.

Case 4.—The patient was a schoolgirl, aged 15. We were called upon to visit her father, a farmer, aged 47, who had always been a particularly strong and healthy man, but for the previous week he had suffered from a short dry cough, marked shortness of breath, and some cyanosis. The diagnosis of rheumatic pleurisy with pericarditis was later verified by his response to treatment and he made a complete recovery. Casually we were asked to look at the girl's legs because she had been complaining of pain in them since the previous day. She had well-marked nodules on both legs with some pyrexia and sweating. Under antirheumatic treatment she recovered rapidly.

Case 5.—This patient, a woman aged 42, consulted us for "painful lumps" in both legs, diagnosed as a typical erythema nodosum. The usual treatment was prescribed. Three days later we were summoned to see her as she was worse. To our surprise we found her legs were more tender and inflamed. On further inquiry it was discovered that the dispenser had given her methyl soap liniment instead of liniment of methyl salicylate. She obtained immediate relief with the latter liniment, but it took three weeks before the nodules completely disappeared with the pain. It is interesting to note that about fifteen months previously we had attended her only son for acute rheumatic arthritis, and he had been under our treatment for three months.

Case 6.—A woman, aged 45, consulted us with erythema nodosum of both legs. She felt a little run down and out of sorts, and complained of tenderness of the legs, but her temperature was normal, and apart from well-defined nodules on her legs nothing abnormal was found on examination. She was placed on the ordinary treatment. She was seen twice again; on the

occasion she reported herself as free from trouble with her legs, and asked for a tonic. The patient declared that she had derived much relief from the local application of methyl salicylate ointment.

Case 7.—A married woman, aged 55, consulted us for "tender lumps on her legs." She complained of not feeling well, but, apart from slight anaemia and the condition of her legs, she appeared to us to be quite well. Our usual treatment was prescribed, and when she reported again in a week's time she was much improved.

Case 8.—This patient, a married woman aged 65, was under our treatment for heart trouble—aortic and mitral regurgitation. On this occasion she suddenly fell ill, with a temperature of 102° and a rapid irregular pulse. After four days of irregular pyrexia she apparently improved, the temperature returning to normal, but her pulse remaining somewhat irregular. Two days later—on the seventh day of her illness—she developed erythema nodosum, first in the left leg and later in the right leg. She could not tolerate salicylates, and it was many weeks before the nodules disappeared from her legs. The patient recovered from this attack, but died about nine months later from heart failure.

Case 9.—An unmarried woman, aged 22, reported with erythema nodosum in one leg only, much debility and anaemia, but no fever. She found great relief in the local application of methyl salicylate ointment. Finally, she made a complete recovery, but the marked debility and anaemia persisted for several weeks. We attended this patient subsequently on two occasions for erythema pernio, which responded to treatment with calcium lactate.

The series obviously is too short to warrant any final conclusions, but we could not help being struck by the following facts:

1. In four cases only were we able to detect pyrexia (Cases 2, 3, 4, and 8). In two cases the nodules on the legs apparently were present before the pyrexia (Cases 3 and 4); in the other two cases (2 and 8) the fever had abated before the nodules appeared.

2. The close association in two cases (4 and 5) between a family history of acute rheumatism and erythema nodosum. In two of the cases (1 and 8) there had been a definite attack of acute rheumatism.

3. In every case marked relief to the tenderness in the legs was obtained by the local application of methyl salicylate, either as the liniment or as the ointment.

4. Internal administration of sodium salicylate definitely did appear to have a beneficial effect, and intolerance to the drug was accompanied by the prolonged course of the condition (Case 8).

5. The families of all these patients are well known to us, and in no instance, except Case 3, was there a past history of tuberculosis.

THE USE OF HEROIN AFTER ABDOMINAL OPERATIONS: A WARNING.

BY

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THE relief of pain after an abdominal operation is not infrequently one of the first cares of the surgeon, and for this purpose the injection of morphine or heroin is often necessary. For some years, in common, I believe, with many surgeons, I have favoured heroin rather than morphine. My reasons are shortly as follows: (1) heroin is more effective as an analgesic than morphine; (2) it has less after-effect as regards distension, constipation, and general malaise; (3) if a tube of morphine has been kept for some little time a change into apomorphine may occur, with resulting vomiting.

For a good many years, both in hospital and in private practice, when necessary 1/6 grain of heroin has been administered without the slightest ill effect. The following two cases are cited, however, as a warning.

CASE I.

A lady, 64 years of age, rather asthmatic, suffered from chronic cholecystitis. Owing to the asthma, in order to give as little anaesthetic as possible, 1/4 grain of morphine together with 1/100 grain of atropine was administered half an hour before operation, but it was done purposely for the reasons mentioned above.

The operation consisted of a cholecystectomy, and the anaesthetic was gas and oxygen and warmed ether. The operation was completed in forty-five minutes, and the patient was back in bed at about 10 a.m. At 1 p.m. I saw her, when she was well round, and complaining of a lot of pain. She was sufficiently conscious to be asking for her artificial teeth. As she seemed to be in great pain I ordered 1/6 grain of heroin, which was administered just after 1 o'clock. At 1.25 I received a telephone message to come round to the nursing home at once. The injection had relieved the pain within five or six minutes, and the matron had left the room, but thought that she would go in and see her again after about ten minutes. On going into the room the patient was talking, when suddenly she became quiet and the matron noticed a change in her breathing. She immediately realized that the patient was profoundly unconscious, administered strychnine, brandy, and ether hypodermically, and sent for me. When I arrived the patient was blue, the skin was mottled, and she was breathing about once in every two and a half minutes; but the pupils were not pin-point, and never were during the whole course of events. The pulse was good, about 80. I immediately thought of internal haemorrhage and of a possible embolism, but obviously neither of these catastrophes had occurred.

At the time I was in the dark as to the cause of the patient's condition, and although it occurred shortly after the administration of the heroin, I did not believe this to be the cause. The patient was literally *in extremis*. The tongue was pulled out, the mattress turned round, and artificial respiration commenced. Owing to the conformity of the chest the greatest difficulty was experienced in forcing inspiration, and all that seemed possible to do was to empty the chest of air.—A voluntary breath was taken about once every two minutes. After a short time I sent for Dr. R. J. Clausen, who had administered the anaesthetic, with the intention of possibly inflating the lungs through a laryngeal tube. Pending his arrival, artificial respiration was maintained. Dr. Clausen considered that it would be inadvisable to pass a laryngeal tube, and tried to stimulate inspiration by the administration of carbon dioxide. This, however, did not meet with any success.

After about an hour the respirations seemed to be rather better. The patient was now breathing about once every minute, and it was then noticed that if artificial respiration was stopped the pulse began to flag. After about an hour and a half the respirations approximated two to the minute, and the first sign of hope appeared—namely, the coffee which had previously been administered per rectum was returned. Just about this time a few involuntary faeces movements were noticed, and artificial respiration could be left off for a short while. After about two hours I noticed that the inspiratory movement of artificial respiration stimulated a voluntary respiration, but that without artificial respiration only two to three respirations a minute were voluntarily performed. At the end of three hours there were definite signs of returning consciousness, and a conjunctival reflex was occasionally obtained when artificial respiration was continued. On ceasing the artificial respiration the reflex disappeared.

At this time I realized that the breathing was that of a profoundly drugged person, similar to what I had seen in morphine poisoning. It was necessary to continue intermittent artificial respiration for another hour, care being taken that the artificial inspiratory movement did not stifle a voluntary expiratory effort, and vice versa. At 6 p.m. respirations were about five to the minute, and the need for artificial respiration no longer existed. At 6.30 the patient recovered consciousness—that is, after five and a half hours.

The following morning respirations were ten to the minute. Convalescence after this was uneventful, except for considerable pain in the right arm, which had been dislocated during the movements of artificial respiration. This necessitated another anaesthetic for replacing the joint by Kocher's method.

The tube of heroin tablets (1/6 grain) was subsequently investigated. It was not a new tube, and tablets had already been administered to other patients without ill effect.

While the patient was convalescent I vaccinated the right arm with 1/6 grain of heroin dissolved in water, and vaccinated the left arm with a normal saline to act as a control, in order to see if a possible idiosyncrasy for heroin existed. No difference between the two sides could be detected. It is, of course, possible that a desensitizing effect may have been produced, though this is very unlikely.

CASE II.

The second case, for particulars of which I am indebted to Mr. W. E. Tanner, was that of a patient, aged 49, on whom cholecystectomy and appendicectomy had been performed. Before the operation 1/100 grain of atropine was given, and the anaesthetic was open ether. About an hour after the patient had been put back to bed 1/6 grain of heroin was given hypodermically. The patient became comatose, with pin-point pupils and no conjunctival reflex. The respirations fell to three a minute, the pulse to 60. She was given pituitary extract and strychnine, and artificial respiration was carried out.

Five hours after the injection of heroin the respirations were nine to the minute. The patient was drowsy, but could be roused. Fifteen hours later the patient was fully conscious; the respirations were eighteen to the minute, and she made an uninterrupted recovery.

CONCLUSIONS.

I have thought it well to put these two cases on record to serve as a warning. Respiratory stoppage must be very rare, but nevertheless when it does occur the very alarming situation can scarcely be imagined.

It is interesting that both these cases were cholecystectomies. In the one case morphine had been given prior to the operation, but not in the other. On the other hand,

the case which had had no morphine prior to the operation had had the heroin administered much sooner than in the first case. Since this episode, which nearly ended in a catastrophe, my practice has been (1) to be quite sure that the patient is fully round from the anaesthetic before any hypodermic injection is administered, and (2) to give only 1/12 grain of heroin, and to repeat it if necessary. My preference for heroin over morphine is still very strong; but the above two cases show that its effect on the respiratory centre may be exceedingly dangerous unless it is given in small doses. It is to draw attention to this fact that I have thought it advisable to publish these two cases.

THREE CASES OF VOLVULUS OF THE SIGMOID FLEXURE OF THE COLON.

BY

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IN the first half of 1928 three cases of intestinal obstruction due to volvulus of the sigmoid flexure of the colon came under my care and recovered after operation.

CASE I.

A woman, aged 45, was admitted to the Bedford County Hospital on January 6th, 1928, suffering from extreme abdominal distension, severe pain, and great difficulty of breathing. She gave a long-standing history of constipation, sometimes getting no action of the bowels for three weeks. For three years she had been liable to attacks of abdominal pain, but had never vomited. The history of the present attack was absolute constipation for five days, abdominal pain for two days, retching but no vomiting, and great difficulty in breathing.

On admission to hospital the abdomen was greatly distended, no movement was visible, and there was tenderness in the lower abdomen, especially on the left side.

Operation.—The abdomen was opened in the middle line, and a large quantity of stinking blood-stained fluid escaped. A large cyst-like swelling presented, filling the pelvis, extending well above the umbilicus, and measuring ten or twelve inches vertically. This swelling was black in colour, resonant, and evidently was gangrenous bowel. It was too large to extract through the incision, so was punctured with a large trocar, giving vent to horribly fetid gas. The gangrenous bowel was then delivered from the abdomen, and a piece about eighteen inches long was found to be twisted. This was resected, and the ends of healthy bowel were brought out of the wound and tubes tied in. The cut ends of healthy gut were fixed to one another and to the edges of the peritoneum. When the patient recovered from the anaesthetic her first remark was that she could breathe freely.

The colostomy acted three days later. On February 20th the spur between the divided ends of bowel was crushed by an enterotome, and came away on March 2nd.

She left the hospital on April 23rd with a small sinus. When last seen, on October 19th, there was a pinhole aperture from which a little gas escaped; her bowels were acting well, she had grown stout, and was in perfect health. After the operation *x*-ray examinations with a barium meal and enema showed that the part of bowel removed consisted of sigmoid flexure and pelvic colon.

CASE II.

A lady, aged 19, pupil at a physical training college, was taken ill at 4 a.m. on May 27th, 1928, with abdominal pain situated chiefly under the left costal margin and in the left loin. She did not vomit, and there was no rise of temperature. Enemata were given without result, and no flatus was passed. These symptoms continued until I saw her on May 28th, at 7 p.m. There was then slight distension of the abdomen, and the chief pain was in the left upper quadrant. There was considerable difficulty of breathing. Morphine and atropine were given, as it was thought the symptoms might be due to enterospasm.

On May 29th there was no improvement, and she was admitted to a nursing home for operation. A subumbilical median incision was made, and the sigmoid flexure of the colon was found to be enormously distended, twisted, and [illegible]sured about six inches in diameter, and pressed [illegible] The gangrenous bowel was brought out [illegible]d resected. Tubes were tied in the cut ends.

On June 2nd, as the abdomen remained distended and there was no discharge from the colostomy, a caecostomy was performed, and 25 c.cm. of *B. welchii* serum was given. Ten days later the caecostomy closed, and on July 1st the patient got up.

On July 11th an enterotome was inserted to crush the spur between the divided ends of the bowel. The bowels acted naturally on July 18th, and next day the clamp was removed. From this time the opening rapidly closed, the bowels acted daily, and on August 4th she left the nursing home with a minute fistulous opening. On October 30th this had completely closed; the bowels acted daily after a dose of petroleum.

Before the attack of volvulus the patient had been very healthy except that she suffered from constipation, for which she had taken large doses of various aperients.

CASE III.

A gentleman, aged 74, was admitted to a nursing home on June 10th, 1928, suffering from symptoms of intestinal obstruction of three or four days' duration.

Previous History.—In 1917 he suffered from constipation, with pain in the back and chest due to flatulence. In 1919 he had a similar attack. In 1926 he had a worse attack, and was in bed for a month.

On admission to the nursing home he had absolute constipation and no flatus could be passed. Enemata had no effect. He had been vomiting for two days. The abdomen was very distended.

A subumbilical median incision was made and an enormous distension of the pelvic colon and sigmoid flexure was found, due to a twist. Owing to the age of the patient and to the bowel not being gangrenous resection was thought to be contra-indicated. After untwisting the bowel an opening was made near the lower end of the volvulus and a large tube inserted. This gave some relief, but the abdomen remained distended. At the operation 25 c.cm. of *B. welchii* serum was given.

On June 16th caecostomy was performed. This was followed by acute gastric dilatation, manifested by great swelling over the stomach and persistent vomiting. The viscus was washed out two or three times a day for three days, and saline enemata, pituitrin, and strychnine were administered.

He gradually improved, and the caecostomy and colostomy openings discharged freely. He gradually regained health and strength, and, except for the bowel acting through the colostomy, may be considered to have regained his normal health.

Remarks.

The interest of these cases lies in the fact that they all recovered, that they occurred within six months, and are the only cases of volvulus I have met with in a period of over thirty years' work as surgeon to a hospital.

THE SAFETY OF ETHYL CHLORIDE, AND THE POSITION OF THE PATIENT DURING GENERAL ANAESTHESIA.

BY

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AT a coroner's inquiry into a recent death under ethyl chloride in Melbourne the question was raised as to the safety of ethyl chloride as an anaesthetic. Like every other anaesthetic, there is a risk in its administration under certain conditions, especially by the closed method—that is, a method in which air is not admitted to the patient during induction—but given a free supply of air during induction and used in either the open or semi-open method, it is one of the safest of all anaesthetics, not even excepting nitrous oxide and oxygen. The above remarks do not mean that one can be free and easy with it; no anaesthetist at any time can ever be free and easy with any anaesthetic. By the semi-open method the air valve in the inhaler, which should have a diameter of not less than half an inch, is gradually closed over as induction proceeds, so that by the time induction is completed—which is, as a rule, in from one and a half to two and a half minutes—the air valve is fully closed. This will give from three to five minutes' full anaesthesia.

Ethyl chloride is not a drug that should be used for prolonged anaesthesia, nor is it intended that it should so be used, except under very exceptional circumstances, and in the hands of an expert. This is for two reasons: first, its great cost, and secondly, its wastefulness when used for any length of time by the open method. It is one of the very best of all the anaesthetics we have for short operations of from one to five minutes or for preliminary induction to ether. In using the words "ethyl chloride" I include also somnoform, which is 83 per cent. ethyl chloride, 16 per cent. ethyl bromide, and 1 per cent. methyl bromide. At the Melbourne Dental Hospital and the Melbourne Eye and Ear Hospital it has been used in considerably over 75,000 patients of all ages during the past twenty-three years, and there have been two deaths, one of which I think should not have happened. The collapse occurred during a second administration of ethyl chloride to an exceptionally delicate female patient who had recently had a very severe haemorrhage and was not, in my opinion, a fit subject for the second administration of an anaesthetic, either local or general.

This morning (December 6th), on reading the report of the inquest in the morning papers, I decided to test for myself the so-called dangerous effects of ethyl chloride under what would normally be considered disadvantageous circumstances. Feeling off colour with a threatening cold, I took 15 grains of antipyrine and 5 grains of caffeine citrate in half a glass of hot water, and followed this by a good breakfast. I then went down to the Melbourne Dental Hospital and, sitting upright in the dental chair, had the following administrations given to me by Dr. Aird.

First Administration.

Pulse before induction (good, regular) ...	100
Blood pressure before induction	158 mm.
Anaesthetic—Ethyl chloride by the semi-open method	8 c.cm.
Pulse 1 minute after induction began ...	104
Blood pressure 1 minute after commencing induction	170 mm.
Pulse 2 minutes after commencing induction	102
Blood pressure 2 minutes after commencing induction	162 mm.
Time of induction	2 min. 10 sec.
Duration of anaesthesia	5½ min.

There was then an interval of fifteen minutes before the second administration—this time semi-open somnoform.

Second Administration.

Pulse before commencing administration ...	80
Blood pressure before commencing administration	158 mm.
Amount of somnoform used	5 c.cm.
Pulse 1 minute after administration ...	104
Blood pressure 1 minute after administration	176 mm.
Pulse 2 minutes after administration ...	104
Blood pressure 2 minutes after administration	164 mm.
Time taken to induce full anaesthesia ...	2 min. 35 sec.
Duration of anaesthesia	4½ min.

Interval of fifteen minutes. This time the method used was open ethyl chloride.

Third Administration.

Pulse before commencing administration ...	84
Blood pressure before induction commenced	156 mm.
Amount of ethyl chloride used	13 c.cm.
Time taken in inducing full anaesthesia ...	2½ min.
Pulse 1 minute after induction	102
Blood pressure 1 minute after induction ...	150 mm.
Pulse 2 minutes after induction	104
Blood pressure 2 minutes after induction ...	156 mm.
Duration of anaesthesia	5 min. 40 sec.

The first administration was commenced at 11.35 a.m., and the third at 12.20 p.m. Following upon the third administration I felt slightly sick, but with no real tendency to vomit. I left the hospital at 12.45 p.m., and after a pick-me-up enjoyed a hearty lunch at 1 p.m. It will be noticed that the blood pressure rose during induction in both the semi-open methods and remained about normal during the open method of induction. The pulse rate also rose during induction, and was always of good volume. On each occasion the anaesthetic was taken quietly, without any attempt to struggle, and in all three administrations the induction was of a quite pleasant nature. At no time was there the least feeling of want of air, fullness in the head, or pulsation of the heart, but just a very pleasant sensation of drifting off to sleep, with a creepy feeling gradually spreading from the feet upwards.

At the Melbourne Dental Hospital all general anaesthetics are given in the upright position at an angle of about 80 degrees. In my own work, for all classes of cases and patients of all ages, I always prefer the head and shoulders well raised and at an angle comfortable for the patient during induction. Whatever general anaesthetic is used comfort of the patient during induction is an essential. No patient can take an anaesthetic decently if he is in an uncomfortable position while going under. The same patient who will resist going under in a head low or prone position will take chloroform quite naturally and quietly if sitting comfortably in an armchair. He will have none of that feeling of fullness in the head or increased pumping action of the heart, so frequent and so very disturbing to a full-blooded patient when placed in the prone position. The comfort with which a patient will take a general anaesthetic in the upright position, as against the distress felt when in the prone position, was markedly illustrated in many cases in which I was able to give chloroform and ether to able-bodied men in the Royal Navy and Royal Australian Navy during the war. I was fortunate in having frequent opportunities of trying induction on one and the same patient in both the prone and the upright position, and the lurid remarks passed by these men against the prone position, as compared with the upright or semi-upright, were very instructive.

Persons undergoing general anaesthesia show during induction a marked tendency to cerebral congestion, which expresses itself as cerebral excitement and a tendency to struggle; this is especially the case if the patient is not comfortable. No anaesthetist should commence his work until he is assured of the comfort of his patient. With an upright patient not only is there less tendency to struggle, which means there is less strain thrown on the heart, but less anaesthetic is required for induction purposes. We are working with the advantage of a not overcongested brain. The anaesthetist can always lower the patient quietly to a more prone position for the comfort of the surgeon, after induction, should it be necessary to do so. Personally, I always prefer to retain, whenever possible and not inconvenient to the surgeon, a certain amount of head and shoulder elevation throughout the operation.

Conclusions.

Using these methods for over thirty years in patients of all classes and all ages, I have not had a single anaesthetic fatality. During induction we require a brain as anaemic as possible; we can get all the congestion required from the anaesthetic itself during induction. Induction of anaesthesia in a patient with a congested brain produces struggling, general discomfort, noises and a feeling of fullness in the head, and throws an extra strain on the heart. If that heart is abnormal or lacking in tone, then the extra strain may result in collapse and in a death, which might have been avoided.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

LEPROSY IN AN INFANT.

MANY cases of leprosy in infants have now been recorded, but in the present instance some unusual clinical details appear worthy of publication.

A female child was born in the leper home at Kangpokpi (Manipur State, Assam) on December 25th, 1924; both parents were Kabui Nagas undergoing treatment for leprosy. The mother was said to have had leprosy for twelve years, but the only signs of the disease were a few anaesthetic patches. The father had more extensive lesions and raised bacilli-bearing patches; after the birth of the child he developed a nodular eruption, thus proving that his disease was systemic and infectious.

The child at birth was noticed to have an ulcer on the plantar aspect of the right heel, about one-half by three-quarters of an inch; it did not readily heal on the application of zinc oxide ointment, and at the end of a week, since the child was born of leprous parents, it was thought wise to put her on local applications of hydnocarpus oil. Within two weeks the ulcer had healed completely, leaving a firm but slightly depressed scar, which has not broken down.

In May, 1925, the child and her parents were discharged as probably cured, but returned in seven months' time; before they left the colony no evidence of leprosy could be found in the child, but on its return a typically discoloured patch, measuring about 2½ by 3 in., on the left scapular region was noticed; this was treated by the usual method of subcutaneous injections of hydnocarpus oil and creosote (4 per cent.), and entirely cleared up in two months. There has been no recurrence since (June, 1928), and the area which was affected is normal both in colour and sensation.

Soon after the return to the asylum of the parents the mother of the child developed ascites, with a large liver and spleen; she went downhill rapidly and died greatly emaciated. No necropsy could be performed. The child is still living with the father.

The question at once arises whether this is an authentic case of pre-natal leprosy. If it is, then the theory that leprosy can be transmitted to the offspring of lepers before birth is strengthened. The initial ulcer, though suspicious, cannot be definitely proved to have been of leprous origin, and it is known that hydnocarpus oil will heal indolent ulcers when other remedies fail. *B. leprae* was not found in the ulcer, but this certainly does not exclude the diagnosis of leprosy, and anaesthesia in such a small child

was very hard to determine. The fact that signs of leprosy appeared in the child some months later strengthens the view that the initial lesion was of the same origin.

From whence did the child get the infection if it was pre-natal? The mother was not an infectious case, by the ordinary tests, and therefore it is questionable if she infected her child. Did the infection come through the father? Japanese workers have demonstrated that the testicle is one of the earliest infected organs, and Dr. Kobayashi uses the method of puncturing this organ as a means of diagnosis in doubtful cases which are sent to the Oshima Leper Home. Infection may therefore have been transmitted by the father, but it is strange that the heel should be affected first.

We consider that the case reported is unique, and that it is worth while recording it in the hope that others who have greater experience may be able to throw light on this question.

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A CASE OF BILATERAL SYNDACTYLISM.

THE following case may be of interest as a surgical curiosity.

The patient, a young man of eighteen, has the middle and ring fingers of each hand joined together throughout the whole length of their normally contiguous surfaces. Each finger otherwise appears as a separate entity.

On both sides (1) the skin on the palmar aspect of the two fingers forms one plain surface, (2) the groove on the dorsum runs between the whole length of the fingers, (3) each nail is separate, and (4) there is free movement in all joints except the distal, the two fingers working together.

In the right hand, the distal joints are fixed in the position of extension, and the middle finger is longer than the ring, as is usual. In the left hand the distal joint of the middle finger is markedly hyper-extended, while that of the ring finger is apparently so to a less degree. This makes the two fingers appear of equal length.

From the radiogram it will be observed that the bones of each finger are normal, with the exception of the terminal phalanges, which are fused. In the right hand an exostosis has grown laterally from the tip of the ring finger to unite with the shaft

of the middle, and there are arthritic changes in the joints of both fingers. In the left hand, the proximal and distal ends of the phalanges are joined together, but the shafts of the bones are separate. This is evidently the cause of the hyper-extension of the middle finger, the joint of which is dislocated. The apparent hyper-extension of the ring finger is shown as really being a bowing backward of the phalanx. Here again the joint has undergone arthritic changes.

As regards family history, it is interesting to note that an uncle on the father's side had the same condition.

No treatment has been suggested, as there is very little disability, and any operative intervention would probably have no beneficial result. I understand that syndactylism of the fingers, particularly to the extent described, is not common, and have therefore ventured to record the case.

Kidderminster. C. PETVIN PORTER, M.B., Ch.B.

BABY BORN WITH A "TAIL."

THE following case seems to be of sufficient interest as a rarity to report.

On November 23rd, 1928, a Chinese woman gave birth to a full-term baby girl with a "tail" 1½ inches long. The baby weighed 6 lb. 9 oz., and appeared to be normal in all other respects. This was the third pregnancy, and there was no history of abnormalities in previous children.

On the fifth day the "tail" was removed by operation under local anaesthesia. It was not homologous with the tail of the lower animals, but was an outgrowth, consisting of skin and subcutaneous tissue only, from the region of the fourth sacral vertebra, the spinal column itself being complete. The baby left hospital on the sixteenth day in fairly good condition, though not yet having regained its birth weight.

I am indebted to Dr. F. R. Ashton for permission to publish this case.

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Reports of Societies.

CHRONIC DYSPEPSIAS IN CHILDHOOD.

AT a meeting of the Medical Society of London, held on March 11th, with the president, Dr. J. W. CARR, in the chair, a discussion took place on the chronic dyspepsias of children over the age of infancy.

Dr. REGINALD MILLER said he proposed to deal with the subject partly by comparing chronic indigestion in children with that in adults and partly by considering certain points of more than ordinary difficulty. In regard to the former he thought that the chief difference in the child lay in the diminished importance, both in frequency and severity, of gastric as opposed to intestinal dyspepsia. From this it followed that local abdominal symptoms were far less marked in children than in adults, being often overshadowed by the general constitutional symptoms. Dr. Miller divided the dyspepsias of childhood into three etiological groups: gastric, hepatic, and intestinal. Dealing with gastric cases under the usual subdivisions of organic, reflex, and functional disorders, he pointed out the rarity of the organic group and the infrequency of the reflex group, with the exception of those cases where chronic appendicitis caused gastric symptoms. The subject was controversial, but he thought it fair to say that in the child pain in the right iliac fossa connoted disease of the appendix or neighbouring organs far more constantly than in the adult. Of the functional gastric dyspepsias less work had been done in investigating those of children than of adults, though one recent paper had suggested that hyperchlorhydria was a common cause of dyspepsia in children. In cases where a sharp pain was felt directly after food Dr. Miller believed that it was produced in the intestine rather than in the stomach, and was the result of stimulation of peristalsis. Weakly older children might have atonic dropped stomachs, and there was a rare group of cases of gastromegaly, the causation of which was not understood. Dealing next with the so-called hepatic cases, Dr. Miller stated that he thought many of the symptoms could really be traced to intestinal toxaemia with secondary disturbance of the liver. He said that, with regard to cyclical vomiting, there had been a tendency of late years to claim that a very large group of cases with chronic symptoms, not only nervous, but also abdominal, were due to a sort of latent acidosis with lowered alkalinity of the blood. It had been stated by Dr. Cameron[1] and Dr. Osman[2] that 30 per cent. of hospital children suffered from cyclical vomiting, but in view of the high bread and low fat diet of the hospital child Dr. Miller wondered whether the terms acidosis and cyclical vomiting were being used in their accepted sense

[1] *British Medical Journal*, February 2nd, 1929, p. 185.
[2] Ibid., January 26th, 1929, p. 159.

He thought that such latent acidosis would be relieved by comparatively small doses of alkali, and maintained that the correct sequence of events was, first, intestinal indigestion, then toxaemia arising from this, and, finally, as a result of the toxaemia, constitutional symptoms, including those of the nervous system. In diagnosing intestinal indigestion, the general symptoms of which were not always immediately suggestive of disorder of digestion, and might be attributed to psychological causes, he relied upon four signs. These were: enlargement of the abdomen, the occasional or persistent occurrence of obviously abnormal stools, the presence of gross indigestion as shown by microscopical and chemical examination of the faeces, and the presence of much indican in the urine. Certain types of intestinal indigestion could be recognized by careful examination of the faeces. These types included coeliac disease, shown by malabsorption of fat, starch indigestion, an uncommon form due to gross overfeeding with starch, paraffin indigestion, caused by overdosage with liquid paraffin, nut indigestion, possibly resulting from the use of the various preparations of bran and husks now on the market, cases associated with the presence of Lamblia, and cases of constipation with toxaemia. Why was one constipated child in perfect constitutional health and another obviously ill from toxaemia? The cause of the toxaemia was thought by some to be purely mechanical, while others invoked the presence of some abnormal bacterial infection. Dr. Miller said he had been unable to correlate toxaemia with any changes in the intestinal flora. Lastly, he referred to the frequency with which mucus was found in the stools of many patients with intestinal indigestion, a fact suggesting that the cause of toxaemia lay in a colitis which increased the permeability of the colonic wall.

Dr. W. G. WYLLIE stressed the close interplay in young children between the gastro-intestinal and the nervous systems. In many intestinal disorders nervous symptoms occurred which were no doubt secondary, although they often predominantly coloured the mother's picture of the child's ailment. In certain gastric disorders it was not so clear that the nervous symptoms were necessarily secondary, and, indeed, it often appeared that the reverse was the case. The liver undoubtedly played an important part in all the dyspepsias, but liver function tests had so far failed to indicate in what manner the liver was inadequate except in cyclical vomiting, where it was known that a glycogen depletion occurred. Another important feature of the dyspepsias in childhood was the abundant manufacture of mucus in the gastro-intestinal tract. Dr. Wyllie classified the chronic dyspepsias of childhood in two groups, roughly intestinal and gastric, but he emphasized that many of the terms used merely denoted clinical features and were lacking in scientific precision. Chronic intestinal dyspepsia he described as essentially a disease of the urban child of the hospital class. The symptom-complex included various "nervous" manifestations, such as restless nights, while fainting attacks and signs of vasomotor disturbance were also present. Sometimes wasting, loss of appetite, and a cough led to the suspicion of tuberculosis, and in some cases a troublesome papular rash was a marked feature. All these symptoms diverted attention from the bowel, but undigested food and excess of mucus in the stools were invariably present. A tendency to diarrhoea and great excess of mucus brought some of the cases into the category of "mucous disease." About the causation of coeliac disease, continued Dr. Wyllie, the two prevalent views were that it was due to a bacterial infection, possibly by organisms of the dysentery group, or, alternatively, to a primary disorder of fat metabolism. He mentioned recent work which showed that in cases of coeliac disease the blood fat was above normal. In chronic colitis it was very important to have the stools examined bacteriologically: in four recent cases Dr. Wyllie had found the Sonne type of dysentery bacillus. In cases of the gastric type vomiting was the prominent symptom. The speaker described first bilious attacks which occurred especially in children of a pronouncedly nervous disposition, and secondly, cyclical or recurrent vomiting. With regard to this latter disorder he thought further scientific proof was required to settle what were the exact disturbances of fat and carbohydrate metabolism present. These attacks of cyclical vomiting occurred in children of a peculiarly nervous temperament, often with a neurotic strain in their forebears, and it seemed to Dr. Wyllie that it was more reasonable to hold that cyclical vomiting was of directly cerebral origin than that it was dependent upon an intestinal disorder. In conclusion, he mentioned the relationship between dietetic deficiencies, including deficiencies of vitamins, and gastro-intestinal disorders.

Dr. B. E. SCHLESINGER said that while much clinical knowledge of the dyspepsias of childhood was available very little was known of their etiology. With regard to cyclical vomiting he inclined to the view that the cause was primarily nervous, and cited the case of a child with migraine, cyclical vomiting, and vasovagal attacks not unlike epilepsy, in which the fits were entirely brought to an end by a judicious diet containing increased carbohydrates and decreased fats. He knew a family in which one child had migraine and another cyclical vomiting, and suggested that both conditions might be related to some disturbance in the circulation of the brain. In this connexion it was of interest to note a case of migraine in a child who had also shown a persistent rise in blood pressure, quite uninfluenced by drugs, and another case in which vertigo and cyclical vomiting were associated; reduction of the blood pressure by means of liquor trinitrini had led to cessation of symptoms. He was interested in the class of "nut indigestion" mentioned by Dr. Miller, and he wondered if wholemeal bread might cause a similar disturbance. Dr. Schlesinger said that neither in the colitis of children nor of adults had he found alteration in the bacterial flora, and he suggested that the production of mucus in such cases, which was so little understood, might be a defensive mechanism on the part of the body.

Dr. F. G. CHANDLER inquired as to the origin of foul breath in dyspeptic cases. He also asked for help in the diagnosis of a patient, a sturdy boy of 6, who had frequent attacks of pallor with distension of the abdomen and urgent desire to defaecate after food. He also inquired as to the importance of air swallowing in the child, and whether food idiosyncrasies played any part in the dyspepsias of childhood.

Dr. W. S. C. COPEMAN, dealing with the problems of etiology, suggested that the trouble might begin in the infant, and that dyspepsia in later life might be due to dietetic and therapeutic errors in the infant. A study of infant feeding in France and Germany indicated that a much higher carbohydrate diet was favoured than in this country, and in the adult state the Frenchman was reported to be less liable to hyperchlorhydric dyspepsia than the natives of those countries where higher protein diets in infancy and childhood were employed. In certain cases of whooping-cough treatment with large doses of alkalis had led to a prolonged and persistent alteration in the hydrochloric acid content of the gastric juice.

The PRESIDENT said he had been struck by the references to the catarrhal condition of many children attending out-patient departments, and he had many years ago referred to the condition as a "muco-membranous catarrh" which affected both the respiratory and the gastro-intestinal tracts. He was of the opinion that measles played an important part in the production of the dyspepsias of childhood, and while the respiratory complications of measles were more widely recognized and were more serious in their results, the dyspepsias which arose after measles were numerically very noticeable. Children thus affected suffered for weeks and even for months from a dyspepsia in which loss of weight, loss of appetite, flatulence, and usually diarrhoea were prominent symptoms. He thought the prevalence of such cases after measles favoured the theory of a bacterial origin for many of the dyspepsias of childhood.

Mr. ZACHARY COPE said that he thought several surgical conditions which gave rise to dyspeptic symptoms should be mentioned. He instanced chronic tuberculous glands in the abdomen, whether calcified or not, which often gave rise to colicky pains which might be very vague and puzzling in their nature. Unless the condition was diagnosed early an acute intestinal obstruction might arise demanding a dangerous operation. Chronic intussusception might also give rise to a dyspepsia lasting for weeks, and

the tumour was not always felt in such cases. Finally, tuberculous peritonitis might cause dyspeptic symptoms associated with some distension of the abdomen.

Dr. MILLER said, in reply, that measles was so commonly the first and most debilitating infectious fever from which children suffered that it was bound to precede many cases of dyspepsia without having a causal connexion. He thought it dangerous to speak of the surgical conditions enumerated as dyspepsias. In reply to several questions he said that air swallowing was very common in children, and that while the cause of foul breath was often unknown, he had seen cases in which not only the breath but the whole patient had a disagreeable odour. He agreed with Dr. Wyllie as to the primary cerebral origin of what was generally accepted as true cyclical vomiting. With regard to coeliac disease, he thought it was also a question of careful definition, and he set out his reasons for being unable to accept the theory that this condition had a bacterial origin.

Dr. WYLLIE, replying briefly, stressed the importance of increased knowledge of the chemistry of the intestinal canal in cases of dyspepsia in childhood. He thought a low-grade infection might alter the chemistry of the cells of the intestine without actually producing obvious lesions.

DIAGNOSIS AND TREATMENT OF LOW BACK PAIN.

AT a meeting of the Orthopaedic Section of the Royal Society of Medicine, on March 5th, Dr. M. D. SMITH-PETERSEN (Boston, U.S.A.) opened a discussion on low back pain by considering the differential diagnosis between lumbo-sacral and sacro-iliac conditions, and reviewing the operation of sacro-iliac arthrodesis and its end-results. The president, Mr. NAUGHTON DUNN, was in the chair.

Dr. Smith-Petersen said that the differential diagnosis between lumbo-sacral and sacro-iliac conditions was not dependent upon any one pathognomonic sign; it could only be made on the basis of a careful history, covering an analysis of injury and its resultant pain distribution. By such a carefully taken history ideas were formed in regard to the diagnosis, so that the examination itself became more productive of evidence differentiating the two regions. In a general way it might be said in relation to injuries that leverage applied from above and producing hyperflexion of the spine resulted in muscle or ligamentous sprain, or, if very severe, compression fractures. Lifting injuries, on the other hand, might cause muscle sprain of the erector spinae, or ligamentous sprain of the sacro-iliac joints. The pain resulting from such an injury was necessarily dependent on the innervation of the structures involved. Injury of the supporting ligaments of the spine brought about local pain at the site of the injury, sometimes accompanied by referred pain along the peripheral distribution or the particular spine nerve supplying the innervation. Sacro-iliac sprain was accompanied by local pain over the sprained ligaments, with referred pain over the peripheral distribution of the first and second sacral nerves, these nerves supplying the innervation to the sacro-iliac regions. This distribution of pain was commonly referred to as "sciatica," the area involved being the gluteal region, the posterior and postero-lateral regions of the thigh, the knee, calf, and outer aspect of the ankle. This term, "sciatica," was misleading, since it implied involvement of the entire sciatic nerve, whereas actually there was involvement only of the first and second sacral nerves.

Physical Examination.

In the examination the attempt must be made to be as systematic as possible; the examination should include inspection, palpation, and motions. Inspection did not yield any particular information which assisted in differential diagnosis; it was helpful only in determining the acuteness of the symptoms by observing the presence or absence of muscle spasm. Palpation was of great importance, and should be performed in such a way that the examiner at all times knew which anatomical structure he was palpating. It was decidedly useful in differentiating a lumbar from a sacro-iliac lesion, since lesions of these regions gave rise to a very definite localized tenderness over the particular structures involved, and these areas of tenderness did not in any way overlap. In examining the mobility of the spine this part of the examination should be carried out in standing, sitting, and lying positions, with particular reference to mechanical leverage of muscles in these positions. For example, forward bending was limited in the standing and sitting positions in lumbar lesions, whereas the same motion was limited in sacro-iliac lesions with the patient standing, but free with the patient sitting. In the lying position the same motions were induced but in a passive manner, and if gently performed would yield valuable information.

After such a careful history and examination, the next step, necessarily, was to submit the patient to x-ray investigation. It was not possible to make a diagnosis of sacro-iliac relaxation or sprain by an x-ray examination, since though the appearances might be confirmatory they were not diagnostic. The diagnosis must be based on clinical findings, and the x-ray examination should be resorted to purely for confirmation; in sacro-iliac relaxation it was frequently negative. If there was a long history extending over a period of years the changes that might be found were narrowing of the joint line, increased density along the joint, and hypertrophic changes along the inferior margin of the joint. Disalignment of the pubis as seen in stereoscopic x-ray examination was sometimes considered evidence in favour of a slight sacro-iliac disalignment, but it was not proof of such a condition.

Dr. Smith-Petersen said that it had been his experience that cartilage removed from the sacro-iliac joint in cases of recurring sprain or relaxation showed perfectly definite histological changes; it was only natural that these changes should be present. In sacro-iliac disalignment or sprain the congruous surfaces of the sacrum and ilium no longer fitted. Prominence came into apposition to prominence, and consequently the covering cartilage was exposed to abnormal pressure. Cartilage exposed to abnormal pressure underwent degenerative changes as follows. (1) Myxomatous degeneration of the matrix; this was shown by deeper staining reaction and by nesting of the cartilage cells. (2) Surface fibrosis; instead of the hyaline cartilage extending to the joint surface the surface of the cartilage was covered by a layer of fibrous tissue—evidence that nature was trying to repair the damage brought about by the abnormal pressure to which the cartilage had been exposed. (3) Degeneration of the matrix was followed by a replacement fibrosis, so that instead of there being a clear staining matrix there were connective tissue fibres winding in and out among the cells. Such replacement fibrosis was normally seen in older people between the ages, perhaps, of 60 and 70, but when it was found in persons aged 20 to 30 it was distinctly abnormal. (4) Calcification of the cartilage cells was one of the late changes; it was seen chiefly in the basilar region of the cartilage next to the osteo-chondral junction. The changes just described were, in the speaker's opinion, characteristic of a traumatic arthritis as it affected hyaline cartilage.

The Operative Treatment.

Dr. Smith-Petersen said that he had described the operative fusion of the sacro-iliac joint in detail in previous publications; an important change had been made since the last of these, and consisted in a resection of the posterior iliac crest, allowing better approximation of the periosteum and gluteal fascia to the lumbar fascia. This was important, since the region of operation was one exposed to constant strain. Great care must be taken to avoid stretching of the scar of the incision.

Post-operative treatment involved four weeks in bed. No plaster cast was applied, but only a surgical dressing held in place by means of a binder. The amount of pain during the first few days after the operation varied in different individuals. Some patients insisted that they had no pain as compared with the pre-operative condition, their relief being almost instantaneous. Other patients had relatively severe pain, an aggravation of the pre-operative pain; this might last for two, three, or four days. At the end of this period most patients were absolutely comfortable, able to move in bed, and even to rest on the side of the operation. They were allowed to lie in any

position in which they were comfortable. At the end of the third week the patient was gradually allowed to sit up in bed. At first the headpiece of the bed was raised to an angle of 30 degrees, and as the days went by this angle was increased. The patient was never allowed to sit up in bed without first having the footpiece of the bed raised so as to keep his knees and hips flexed. If a hospital bed was not available a large pillow was used for this purpose. At the end of the fourth week the patient got out of bed and began to stand up and walk. It almost invariably required another week before the patient was able to do a great deal of walking. At the end of the fifth week the patient left the hospital. Activities were gradually increased, but no exercises were prescribed until the end of the eighth week. At that time mild postural exercises were started, these being of such a character as not to put any strain on the incision or joint. Some patients had returned to relatively hard work at the end of two to three months; this had always been against advice. As a rule the speaker did not like patients to return to heavy lifting and labour until the end of the third to fourth month. At the end of six months the patient should be able to lead a normal life without restrictions.

End-Results.

Altogether 160 to 170 cases had been dealt with; of these they had recorded end-results in 100. No cases were reported which had been operated upon less than a year ago; this eliminated a certain number. In the remaining cases they had been unable to get into touch with the patients, either by mail or by actual examination, so that a true end-result could not be given. Of the 100 cases, 88 were absolutely successful, 8 partially successful, and 4 cases were considered to be failures. In the 8 partially successful cases the patients had returned to their former activities, but had occasional discomfort either in relation to their scar or discomfort in the region of the peripheral distribution of the first and second sacral nerves. They had been definitely improved by the operation, and were glad they had had it, but they were not complete cures. Of the 4 failures, 2 turned out to be cases of arthritis. The speaker believed that in arthritis the response to the operation was poor, and relief from pain was very slow in coming about; he therefore advised against an operation until every step had been taken to rule out a possible arthritic condition. Of the other 2 failures one patient went to another clinic for relief of low backache; a very radical bone graft operation was performed which resulted in persistent pain. In the other case also there was persisting lumbo-sacral backache; first and second sacral nerve pain had been relieved in all four cases, but the patients had been unable to return to their former occupation, and consequently should be classified as failures.

Successful cases constituted a group in which entire relief from pain had been secured. The patients had returned to their pre-injury activities, whether the patient was a society woman or a labourer. They were in no way limited, and this point the speaker emphasized: there was permanent relief from pain, resulting in unlimited activity. Anybody could treat these cases by recumbency, rest, support, manipulation, and even plaster casts, and temporarily achieve relief, but in the cases operated upon permanent relief had been achieved without limitations in activities. No case had been operated upon without first having been given a chance of relief by conservative measures such as those mentioned. The series of operative cases constituted, then, a small proportion of cases actually seen, the remainder being relieved by conservative measures. In a series of 400 industrial accident cases the diagnosis of sacro-iliac relaxation or sprain was made in 20 per cent.: the diagnosis was discussed in full and written down in the report. Of this 20 per cent. a small portion—less than 5 per cent.—had been operated upon. It was true, then, that the operation had never been employed without first thoroughly studying each case, and trying every normal method of conservative treatment.

SIR ROBERT JONES spoke of the treatment of such cases in his own early days in practice, forty-five years ago. His uncle had a very large industrial practice, and injury to the back, due to lifting weights or to falls, was very frequent among the cases he was called upon to treat. On examination a good many of the cases were found to be accompanied by sciatica and by pains, particularly around the glutei. The simple treatment consisted first of all of applying a little counter-irritant for the lower part of the back, and then the use of a paper-plaster, consisting of pitch put on thick plaster, six or eight layers of which made a very firm cardboard indeed. As a rule, after from three to six weeks, the patients got quite well, but a certain number did not, and in those days these were almost taken for granted to be neurotics, or perhaps malingerers. His own attention was drawn to the value of manipulation through his observation of a patient who, as the result of a fall, quickly recovered from an obstinate condition for which he had been under treatment more or less for two years. Thereafter the speaker manipulated the spine in these cases, often with astonishingly effective results. He learned a good deal as to the probable cause of the pain from Goldthwaite, the American orthopaedist, but he feared that frequent successes in the manipulative treatment of these back cases had induced a complacency which should never exist in surgery, and now Dr. Smith-Petersen had come along and proved conclusively that there was a type of case where it was not enough simply to say that there were adhesions which wanted breaking down, but that there was a distinct pathological lesion. He still thought, however, that in a great many cases recovery was obtained by the breaking down of adhesions; this was difficult to prove, but he felt that the same thing happened at the lumbar-sacral angle as happened undoubtedly higher up in the spine. It had never seemed to him that any pain had quite the same intensity as the pain of adhesions. In many cases in which the sacro-iliac joint and the lumbar spine were involved there was distinct inflammation and movement of structures with very little pain indeed. In early cases of tuberculosis, for example, there was not very much pain, and even in advanced tuberculosis, with a very mobile joint, the pain was often the least prominent of the symptoms. An American orthopaedic surgeon sought his advice in a case of sacro-iliac trouble which had lasted for a long time and resisted all forms of treatment. The speaker urged that an attempt be made to break down any adhesions, and somewhat sceptically the attempt was made, with the result that the case yielded readily to manipulation. While he agreed with everything that Dr. Smith-Petersen had said, he would still, in a typical case, before venturing to operate, try to break down adhesions, a course of action which often produced quite dramatic effects.

Dr. STACEY WILSON (Birmingham) emphasized that any injury of the spine was certain to be followed by a muscular contraction to protect the injured part, and that after recovery from the injury the habit of contraction would remain. This spasmodic contraction, which was the cause of the continuance of the trouble, could be overcome by rhythmical exercises, of which the speaker gave a demonstration.

Mr. A. S. B. BANKART thought there was no doubt as to the existence of adhesions which needed to be broken down. He noted the omission from Dr. Smith-Petersen's lecture of any mention of the commonest cause of backache—namely, the neurotic spine; not the "hysterical spine" of young girls, but a definite neurosis superimposed upon a lesion. This coloured the whole symptomatology of these simple conditions. It accounted for the diversity of symptoms which had been described, and opened a wide and profitable field for every conceivable kind of therapeutics.

The PRESIDENT said that his experience was that most of the cases got better by conservative treatment, but the results from operation which Dr. Smith-Petersen had shown were certainly astounding.

Dr. SMITH-PETERSEN said that he was accustomed to use manipulations, which he had included under the term "conservative methods." His conservative treatment consisted of supports, but if there was any evidence of disalignment he used manipulations. At the same time, American orthopaedic surgeons did not appear to have been so successful in regard to manipulations as their British colleagues.

DOSAGE IN RADIUM THERAPY.

A MEETING of the Section of Surgery of the Royal Society of Medicine was held, under the presidency of Sir HOLBURT WARING, on March 6th, at the Middlesex Hospital, when Professor SIDNEY RUSS gave an address on some principles of dosage in radium therapy. A demonstration of cases treated with radium by the surgeons of the Middlesex Hospital took place at the end of the meeting.

Professor Russ advanced some considerations on the amount of screening desirable in the application of radium. If it was desired to carry out pure gamma-ray therapy a screen was required which would cut out all the alpha and beta radiation. To cut out the alpha radiation was easy, but it was difficult to say what thickness of screen sufficed for the beta. Physicists appeared to be agreed, however, that 1 mm. of platinum or 2 mm. of lead and silver would give over 99 per cent. of what they called easily absorbed radiation. There had been some controversy as to whether better results were obtained with 1 mm. of platinum or with 1.5 mm., but so far as his own investigations had gone he had not been able to discover that the additional screening furnished essentially different results. From a survey of physical considerations he thought it could be said that a pure gamma radiation was being dealt with when a screen of 1 mm. of platinum was employed. The main principles of dosage were: (1) to produce a lethal action on malignant cells; (2) to do as little damage as possible to normal tissues; (3) to encourage local reactions in normal tissues which would assist the disappearance of the tumour; and (4) to secure as uniform a radiation of the malignant mass as possible. Animal experiments had shown the lethal action from a radium tube to be rather surprisingly limited to a zone around the tumour. Generally speaking, it would be correct to say that radium must be looked upon as supplying a localized form of treatment. A very important matter in radium dosage was to avoid damage to the normal tissues. This had been for years recognized by the French school, who gave the name of "radio-necrosis" to the actual destruction of normal tissues which might accompany the irradiation of a tumour. Dominici and others had laid great stress on the ill effects of giving an overdose to the normal tissues. Not only did this hinder the gradual transformation of the malignant cells, but it interfered with any processes which the body—the host—might put forward in the endeavour to complete what radiation had begun. An essential point was to encourage any local reaction of which the body was capable. It was also very desirable so to arrange the radiation that the malignant mass was as uniformly irradiated as possible, save perhaps for additional irradiation at the growing edge, where the normal tissues of the host were being invaded. Professor Russ showed photographs of radium tubes variously disposed, with a view to pointing out that, if some regions received an adequate irradiation, other regions must receive an irradiation which was less than adequate. The time-intensity element raised one of the most important considerations in radium dosage. Here the biological reaction differed from and was less predictable than the physical. If it was a question of ionizing the air or affecting the photographic plate, then big intensity for a short time and small intensity for a long time were equivalent over a wide range. In the case of the biological reaction other factors appeared to intervene. Some remarkable results had been obtained in radium therapy by using the radium for longer intervals and cutting down the intensity of the radiation. One reason put forward to explain the increased effect was that the cells in a growing mass of tissue, being in a state of division, would be more vulnerable to the long-continued application. Professor Russ, however, was doubtful on physical grounds whether this reason was correct, and he said also that it was not agreed among clinicians that all growths were better treated with small doses for longer time. In the Stockholm technique for the treatment of cancer of the cervix uteri a strong dose for a short time was employed. In conclusion, he suggested that it might be worth while to consider whether the normal tissues generally, while able to cope perfectly well with a certain intensity of radiation, might not be overwhelmed when that intensity was exceeded. One could apply a source of radium to a subcutaneous nodule in such a way that a slight damage to the skin was caused, but with a more limited intensity, while the nodule equally disappeared, there was no skin damage. The action so far as the nodule was concerned was apparently the same, but in respect to the skin it was different. Was it that, when a certain intensity was exceeded, the processes in the normal tissues which would repeatedly restore equilibrium were no longer able to function?

Dr. EDGAR HAYDON (Newton Abbot) related some experiences of radium treatment in a small hospital in South Devon. Large doses of radium in uterine cases had proved most successful. In cases of antrum trouble he had also seen better results from fairly large doses of from 50 to 100 mg. A small incision was made in the cheek, piercing the wall of the antrum, and 100 mg. was left in for about eighteen hours or 50 mg. for thirty hours. He described also how the tongue and tonsils had been treated by the implantation of radium tubes. For surface radiation the method had been followed of encircling the growth, keeping the tubes a distance of 1.5 cm. apart, and pointing them to the centre of the growth.

Dr. MALCOLM DONALDSON said that clinically this question of dosage continued for a long time was very important. He was not altogether convinced that even in such cases as carcinoma of the cervix the heavy intensity for the short time was the better course. He would put it rather in this way, that in certain growths it was not so essential to have length of time. Professor Heyman of Stockholm had declared recently that 50 per cent. of his recurrences occurred *in situ*. This never happened when doses were applied of small intensity for a long time. The actual condition *in situ* was better in the case of growths treated by a small dose for a long time.

Sir HOLBURT WARING described a case in a girl, aged 14, who had been treated by radium two years previously for what was supposed to be sarcoma of the maxilla. She responded to treatment in that there was no evidence of local recurrence; but she had recently again come under observation on account of acute intestinal obstruction with general peritonitis. She was operated upon, and in a segment of the small intestine was found what was apparently a tumour mass. On excision and microscopical examination it was pronounced by the pathologist to be a sarcoma of the intestine, in his opinion secondary to the growth which had been cured in the jaw. He would have liked to hear opinions with regard to local and secondary recurrences in connexion with the problem of dosage. It seemed a matter in which a good deal of co-operation was called for between surgeon, radiologist, biochemist, and biophysicist.

HYSTEROTOMY AND TRACHELOTOMY.

AT a meeting of the North of England Obstetrical and Gynaecological Society on February 22nd, with the president, Dr. G. W. FITZGERALD (Manchester), in the chair, Dr. J. W. A. HUNTER (Manchester) read a note on hysterotomy.

Dr. Hunter pointed out that the word "hysterotomy" was used both for an incision into the uterine body through an abdominal incision and for an incision of the cervix per vaginam. He suggested that the word "trachelotomy" was more suitable for the latter operation, and he used it throughout in his note. Trachelotomy could be employed to facilitate the emptying of the gravid uterus either during pregnancy or at full term, when it was usually performed during labour. The note dealt with the use of the operation in labour; the cases of failure of the cervix to dilate were divided into two classes: (1) those in which the cervix was normal, and (2) those in which the cervix was abnormal either in size or consistency. The mechanism of normal cervical dilatation was described, and failure of this was noted as frequently due to premature rupture of the membranes, associated with slight disproportion between the foetal head and the maternal pelvis. The lecturer cited cases where the cervix was abnormal in length or structure; these were the cases where the cervix was congenitally long or elongated as a part of prolapse,

and those in which it was hard, thick, and fibrous, but not appreciably elongated. The last type was seen in elderly primigravidae, or in multigravidae as the result of scar tissue formation. The cases might be complicated by premature rupture of the membranes, slight extension of the head, or occipito-posterior positions. The patients were usually left for a considerable time, to give the cervix a chance of dilating, but eventually their pulse and temperature began to rise. There was often a history of considerable intervention, and the child might be dead. Recognized methods of delivery had difficulties and disadvantages. Trachelotomy allowed clean incisions into the cervix, which could be stitched up carefully immediately afterwards; it permitted delivery by forceps or craniotomy. The methods described involved one or two postero-lateral incisions from the external to the internal os, behind the middle line to avoid the cervical branches of the uterine artery. This length of incision prevented it extending further during delivery. If two incisions were decided upon it was important to mark the site of the second before making the first, since, after the first, much retraction occurred and orientation was difficult. The importance of accuracy of apposition in suture of the incisions was emphasized.

Clinical Demonstrations.

Professor CARLTON OLDFIELD (Leeds) showed a specimen of some foetal bones and a uterus removed after death. The foetal bones had caused intestinal obstruction.

The patient had had a Caesarean section performed in March, 1926. In July, 1927, she was admitted to hospital with abdominal pain; she was found to be six months pregnant, and had been taking "salts" to produce abortion. She had similar symptoms in December, 1927, with a little vaginal discharge, but left hospital well early in January, 1928, and was told to report just before full term. She was readmitted acutely ill in April, 1928, and said she had miscarried shortly after her discharge in January. She now had an inflamed swelling at the upper end of the old abdominal scar which, a day or two later, discharged pus and faeces. This was opened and two fistulae into the intestine were repaired, but she died of intestinal obstruction. At the necropsy a rupture was found in the old uterine scar, and the foetal bones were found in an enlarged loop of the small intestine just below the loops in which the fistulae had been repaired.

Mr. N. L. EDWARDS (Derby) described a case of uterine fistula following Caesarean section.

The patient, aged 25, had had a Caesarean section performed for obstructed labour in 1923; the convalescence from this was uneventful, no rise of temperature being recorded. A year later the upper end of the wound broke down, discharging a small quantity of pus. The sinus persisted and after May, 1928, menstrual fluid escaped from it at the menstrual periods, which were regular. In September, 1928, the fistulous track was excised entire, together with a wedge of the anterior uterine wall in which were embedded two thick silk sutures. Sections of the fistulous track showed no evidence of endometrioma. The case illustrated the dangers of unabsorbable sutures in the uterine wall.

Considerable discussion followed, several members expressing the opinion that it was the method of suture rather than the material used which mattered in ensuring a well-healed uterine scar.

Professor CARLTON OLDFIELD recounted two cases of ruptured malignant ovarian cysts admitted as acute abdominal emergencies.

In each case when the abdomen was opened it was found full of "boiled sago" like material, which was mopped out and the ruptured cyst removed; both abdomens were reopened later and the rest of the generative organs were removed. Both patients had had prophylactic deep x-ray treatment since the operation. One patient had remained well for three and a half years, when she developed symptoms suggesting a recurrence. The other patient had a recurrence a year later in the transverse colon; fifteen months subsequently there was one in the jejunum, and now, another fifteen months later, one had appeared in the roof of the vagina involving the bladder.

Discussion was particularly invited on the use of prophylactic deep x-ray treatment, and on prognosis in malignant ovarian neoplasms. Several members expressed the opinion that deep x rays were not without danger, and that the prognosis in these cases was not so bad as was usually thought.

Professor FLETCHER SHAW (Manchester) read notes on a case of uterine diverticulum in a patient, aged 34, who had been married for eight years and was sterile.

She complained of recurrent severe pain in the left iliac fossa at the menstrual period. Examination revealed a mass the size of a small orange in the region of the left appendage. At an operation this mass was found to be a cystic left ovary. In the left broad ligament there was a hard tumour of regular outline, about 1½ inches long and 1 inch wide; its upper border was about half an inch below the round ligament and Fallopian tube, and in no way connected with either. It was enucleated from the broad ligament by a considerable amount of blunt dissection; the pole nearest to the uterus had to be cut out with scissors. Sections showed that the tumour had a thick outer muscular coat, and contained a cavity lined with endometrium, but with no retained blood. Its relation to and its entire separation from the round ligament and Fallopian tube precluded it from being described as a poorly developed uterine horn. Professor Fletcher Shaw considered it to be a diverticulum budded out from the uterine cavity, and then shut off therefrom.

Miss IVENS (Liverpool) recorded a case of puerperal gas gangrene infection.

A primigravida, aged 28, had had no ante-natal care, and came into labour one month after the expected date. Many vaginal examinations had been made and a forceps delivery attempted before she was admitted to hospital. On admission the maternal pulse was 128, the temperature 98° F., and the child was dead. There was a putrid offensive vaginal discharge; the cervix was three-quarters dilated and lacerated. Perforation and cleidotomy were necessary to effect delivery. The cervix and perineum were repaired; an intrauterine douche and an injection of antistreptococcal serum were given. The next day she received 20 c.cm. of the Weinberg antigangrene serum, and 20 c.cm. anticoli serum subcutaneously with saline solution. *B. aerogenes capsulatus* was recovered from the lochia by inoculation of a rabbit. The patient made an almost complete recovery, although the uterus remained high and fixed. Miss Ivens considered that when a woman after labour or abortion showed a yellowish tint and reddish urine it was probable that she was suffering from a severe gas gangrene infection. She recommended animal injection to identify the organism, and the early use of a powerful antitoxin.

OPPORTUNITIES FOR MEDICAL WOMEN ABROAD.

AT a meeting of the London Association of the Medical Women's Federation, held at the British Medical Association House on February 26th, with the president, Dr. HUXLEY, in the chair, the subject under discussion was "Opportunities for work for medical women abroad." Papers were read by Dr. M. E. JOHNSTONE (Canada) and Dr. K. ATKINSON (America), and letters on the subject were sent by Dr. Emslie Hutton (Near East) and Dr. M. Hickley (South Africa). Miss L. MARTINDALE and Dr. K. WARREN (Uganda) also contributed to the discussion. Dr. Johnstone spoke especially of the Province of Alberta, where she had been working under the Department of Public Health. There the opportunities were very good, as there was complete reciprocity in the matter of registrable qualifications; and, indeed, the Department of Public Health was now advertising for several women district medical officers to go out at once. The work was mainly among the women settlers. The infant and maternal mortality rate was at present excessively high, owing to the lack of medical facilities. The climate was one of extremes, but very healthy, and the whole province was in a state of rapid expansion and increasing prosperity. The prospects for Government medical work, or for general gynaecological practice in one of the larger towns, were very good at the present time, and would probably improve still more. Dr. Atkinson spoke of hospital work in the United States, especially (where her experience was greatest) in Philadelphia and San Francisco. After touching on the differences between the British and American hospital systems, she spoke hopefully of the prospects of gaining "intern" posts, and of the value of these, and the possibility of passing to resident appointments from them. Conditions on the whole did not appear to be vastly different from those prevailing in England. Dr. Emslie Hutton's letter was not encouraging for English women. Over the whole of the Balkan States and Russia there seemed to be practically no opening for their services, though for native qualified women there were numerous appointments. A few mission hospital appointments only were open to foreigners, but there was great opposition from officials. Dr. Hickley wrote of South Africa from two distinct points of view—namely, practice in large towns and "up country." The former was hopeful, as specialists were rare, and there was always scope for the running of a specialty in connexion with a general practice. She noted, however, that the supply of South African graduates was really sufficient for the needs of the country. Practice in the outlying districts she considered unsuitable for a woman, both on account of the difficulty of transport and the great distances that had to be traversed, and on account of the attitude of the natives. Mrs. Warren spoke of her work in Uganda, and implied that there was room for more women, but that up to the present the prospect had not seemed alluring, and practically none had applied. Government work was essential, as private practice did not yet exist. The British population was relatively very small.

Reviews.

SURGICAL PATHOLOGY.

THE textbook on *Surgical Pathology*[1] by Mr. CECIL WAKELEY and Mr. ST. J. D. BUXTON will probably attract particular attention, because works on that subject, although indispensable alike to students and practitioners, are comparatively scarce as compared with books on general pathology; of the latter there would appear to be almost a superfluity on the market. Practising surgeons, engaged in hospital work and teaching, and interested it may be in some special branch of surgery or in points of research arising out of their own cases, have little inclination to divert their interest into the work of a general survey; and probably few, other than born teachers, care to face the labour involved in so wide a field. In these days, therefore, a good book on surgical pathology is a thing to be prized. What a student expects to find in a work of the kind is a description which will help him to recognize any and every pathological condition or process that he is likely to meet with clinically, together with an account of its cause and possible consequences; and further, any points, although possibly of minor theoretical interest, which have a special bearing on surgical practice. To present these matters as simply and directly as possible, and in an attractive manner, is the aim which the authors have had in view, and as a practical, useful, and comprehensive guide to the subject, whether for students or practitioners, their book could not be bettered. Special care has obviously been taken with the index which is commendably full and clear.

In their preface, the authors, very properly, make no mention of examinations, but it would be unreasonable to suppose that even the serious student should take so disinterested a view of the subject as not to have the fear of the examination table before his eyes. He will naturally inquire how far the book is going to help him when confronted with a specimen which he has never seen before and which the examiner has studied beforehand. In order to acquit himself with comfort in these unequal conditions he will be wise to adopt the advice which the authors offer—namely, that if he uses their book he should do so in the museum and study it and the specimens together. Surgical pathology, they point out, cannot be learnt by means of mere verbal descriptions even with the aid of the best of illustrations; and as regards many surgical affections, those of the bones, for example, there is no place, other than the museum, where the subject can be properly and adequately studied. Students in this country are fortunate in having free access to the best museums in the world, and, if they adopt the advice given, they will find what is generally considered the laborious task of "going through the museum" much lightened and enhanced in interest.

The authors' manner of writing has a freshness and directness which certainly aids in maintaining interest; lengthy and verbose discussions on intricate pathological problems are avoided, and attention is concentrated on matters of immediate practical import. A word may be said with regard to the illustrations. It is notorious that, since the employment of photography in the illustration of medical works, constant use is made of figures which fail to show anything they are intended to show. This common blot on medical works has been scrupulously avoided by the authors; their illustrations are uniformly good and instructive, and it is to be hoped that the example thus set will be followed by others. The whole plan and execution of the work is good, and as the authors' position is a guarantee that the information contained in it is authoritative, there is every reason to think that the book will be used and appreciated. Students have long felt the need of a work of this kind, and it exactly meets the need.

[1] *Surgical Pathology.* By Cecil P. G. Wakeley, F.R.C.S.Eng., F.R.S.Ed., and St. J. D. Buxton, M.B., B.S.Lond., F.R.C.S.Eng. Bristol: J. Wright and Sons, Ltd.; London: Simpkin Marshall, Ltd. 1929. (Med. 8vo, pp. xvi + 904; 392 figures. 45s. net.)

AN INDEX OF SYMPTOMATOLOGY.

MESSRS. JOHN WRIGHT AND SONS of Bristol have recently issued *An Index of Symptomatology*[2] as a companion volume to their well-known series dealing with diagnosis, treatment, and prognosis. It is edited by Dr. H. LETHEBY TIDY in collaboration with twenty-five special contributors. The work aims at presenting for each disease a description of its clinical manifestations that will enable the practitioner to recognize a typical case, and the student to retain in his mind a picture of the condition in its most characteristic form. In general, this "index" follows the scheme of its companions, and, used in conjunction with them, it should help considerably in the solution of difficult diagnostic problems. The articles, which cover all branches of medicine, surgery, gynaecology, and the specialties, are tersely written and well up to date.

The book is illustrated with four beautiful coloured plates and a number of reproductions of photographs and charts. The radiograms are clear and convincing, though those depicting diseases of bone are, on the whole, more effective than the rest. The figures illustrating diseases of the skin are, however, not so instructive. It is doubtful if the appearance of even so characteristic an eruption as that of herpes zoster can be faithfully conveyed by a photograph in monotone. One realizes, of course, that the cost of production precludes the generous use of coloured plates, but in the illustration of skin conditions the expense of reproducing photographs hardly appears to be justified by their utility.

Dr. Tidy and his collaborators are to be congratulated on producing a volume worthy of the series to which it belongs.

MATERNITY AND CHILD WELFARE.

IN the preface to *Maternity and Child Welfare*[3] Dr. ETHEL CASSIE states that this work is primarily intended as a textbook for public health workers. During the last twenty-five years a new profession for women (that of health visitor), now numbering some thousands of trained workers, has come into existence. The Ministry of Health has gradually tightened up the qualifications till the necessary training has become a long and arduous one. A suitable textbook has been long overdue, and Dr. Cassie is to be congratulated on having, very largely, supplied the need. Most of the book is excellent; lucid, and easy to read, its teaching is simple and direct. Chapters on such subjects as health visiting as a profession, child welfare centres, ante-natal care, heliotherapy, and the minor ailments likely to be met with at school and special clinics, give just the facts which the public health nurse ought to know—facts which, hitherto, she has been unable to obtain except from scattered writings, or from lectures specially arranged for her benefit.

The section on breast-feeding might well have been extended. Little or nothing is said about such difficult problems as those of the nervous child (a condition which Cameron says is the cause of 50 to 60 per cent. of the failures [illegible] of the early and obstinate indigestion [illegible], or of the management of the crucial period when the mother is resuming her domestic duties; and wet-nursing is hardly mentioned. On these matters health visitors can hardly have too much information. Dr. Cassie's teaching as to the time taken in emptying the stomach, and its bearing on the right spacing of feeds, is curiously indecisive. Though advising three- or four-hourly feeds, she says there is very little left in the stomach at the end of two hours, and that regularity of feeding is more important than actual spacing; the reasons given for longer intervals being the trouble in preparing the feeds, the disturbance of the child's sleep, and the peristalsis induced by too frequent feeds. Health visitors might well have been provided with a stronger armoury

[2] *An Index of Symptomatology.* By various writers. Edited by H. Letheby Tidy, M.D.Oxon., F.R.C.P.Lond. Bristol: J. Wright and Sons, Ltd.; London: Simpkin Marshall, Ltd. 1928. (Sup. roy. 8vo, pp. xii + 710; 130 figures, 4 plates. £2 2s. net.)

[3] *Maternity and Child Welfare.* By Ethel Cassie, M.D., B.S., D.P.H.Ed. London: H. K. Lewis and Co., Ltd. 1929. (Demy 8vo, pp. viii + 228; 13 figures. 8s. 6d. net.)

than this for their difficult compaign against the traditional two-hourly feed. Leven, Barrett, and Ladd have shown that even in healthy breast-fed babies a considerable residue often remains in the stomach long after the expiration of two hours; and it is certain that indigestion, brought about by two-hourly feeds, is a frequent cause of inefficient suction and premature weaning. In the section on milk mixtures some of the quantities are obviously incorrect, which must tend to confuse non-medical readers. Cod-liver oil is recommended instead of additional cream or butter in the feeds (as much as 9 or 10 drachms in twenty-four hours for a baby weighing 14 lb.). In a textbook intended for non-medical women is it quite wise to advise such mixtures for continued use, especially in view of the warnings of Mellanby, and, more recently, of Agdur, as to the toxic effects of the oil in large or long-continued doses? Dr. Cassie speaks of additional feeds after a breast feed as "supplemental"; other writers speak of them as "complemental," reserving "supplemental" for full feeds given instead of breast-feeds. Cannot we get some agreement?

There are indications of hasty proof-reading throughout the book, but, as a whole, it is well written, and suitable for the purpose for which it is designed.

DETERMINATION OF HYDROGEN IONS.

THE third edition of Professor MANSFIELD CLARK'S well-known monograph on *The Determination of Hydrogen Ions*[4] has just appeared. As regards its quality it is sufficient to say that it maintains the high standard set by the previous editions. The author, in his preface, hints, however, that the book is in danger of being killed by its own success. The measurement of hydrogen-ion concentration has attained a remarkable and increasing popularity, a popularity that is very largely due to the work and writings of Mansfield Clark. In consequence the literature on the subject is expanding to unmanageable dimensions, and the author suggests that in a few years it will be as hopeless to recount all aspects of the utilization of the determination of hydrogen ions as it would be to note all the uses of thermometry. Again, the author expresses some dissatisfaction with his work on the grounds that the material has far outrun the range of the subject and the depth of treatment that can be encompassed. This dissatisfaction will not, however, be shared by his readers, for the writer expounds his difficult subject in a clear and readable style, and always succeeds in preventing the general principles from becoming lost in masses of technical detail. The main portion of the book treats of the general principles and technical details of the methods by means of which the hydrogen-ion concentration is determined. In a summary of thirty pages at the end the special applications of the method are mentioned. Then follows a bibliography of nearly a hundred pages, and the work concludes with an appendix containing tables of useful mathematical constants. Throughout the book all the most recent advances in technique are recorded, and the important ones are described in full working detail; this indicates that a vast amount of labour has been expended in the preparation of the new edition. The same point receives further confirmation from the fact that considerably more than half the references are to works published subsequent to the appearance of the last edition in 1924. Professor Mansfield Clark says in his preface: "Partly because the literature is what it is, the subject is not here presented as I conceive some genius will some day present it—with brilliant simplicity, and withal, rigidly." The readers of this book will, however, agree that in default of this hypothetical genius they are very thankful to possess the clear exposition given by the author. Moreover, if genius consists in a capacity for taking infinite pains, then Professor Mansfield Clark has earned the title very thoroughly.

We have also received a small book[5] written in German by Dr. GUNTHER LEHMANN, containing a careful and scientific study of the hydrogen ion from both the theoretical and practical standpoints. It can be commended, particularly to physicists, chemists, and bacteriologists. Numerous diagrams and illustrations of apparatus are provided, and the subject-matter is set out clearly, compensating to some extent for the absence of an index.

[4] *The Determination of Hydrogen Ions.* By W. Mansfield Clark, M.A., Ph.D. Third edition. London: Baillière, Tindall and Cox. 1928. (Med. 8vo, pp. xvi + 717; 100 figures, 1 plate. 30s. net.)

[5] *Die Wasserstoffionen-Messung.* Eine erste einführung von Gunther Lehmann. Leipzig: J. A. Barth. 1928. (Med. 8vo, pp. viii + 141; 52 figures. R.M.13.50.)

THE MEDICAL HISTORY OF CANADA.

DR. JOHN J. HEAGERTY of the Canadian Department of Health compels admiration not only for the amount of research involved in his two-volumed book *Four Centuries of Medical History in Canada, and a Sketch of the Medical History of Newfoundland*,[6] but also for the skill with which he has enlivened details that might otherwise have been dry as dust. As well as dealing with a lengthy period, this standard work covers a wide field of subjects, and, as Mr. A. G. Doughty remarks in a brief preface, the light it casts on the national history will interest the general reader. The early records of disease available for this history are fortunately very full, since the Jesuit missioners took meticulous notes and forwarded them to the headquarters of the Order in France, where they were carefully preserved. The subject-matter occupies eighty-four chapters, and the six parts into which the two volumes are divided deal with the epidemics of disease, the pioneer medical men, medicine and surgery, public health, the medical schools, and hospitals, the first of which was the Hôtel-Dieu at Quebec, opened by the French in 1639. The sketch of the medical history of Newfoundland, forming an appendix of about twenty pages, is a reproduction of an address given in 1925 by Dr. L. E. Keegan, president of the Newfoundland Medical Society.

Rather more than half of the first volume is devoted to the consideration of the following epidemic diseases: scurvy or mal de terre, small-pox, yellow fever or mal de Siam, plague, ship-fevers, mal de la Baie St. Paul, leprosy, cholera, and influenza. Scurvy was the first disease mentioned by the early explorers of the continent, and it attacked them as well as the Indians, who, however, had a remedy in the bark of a tree called "annedda"; interesting descriptions of its ravages are quoted from Jacques Cartier and Champlain. Small-pox appeared with the advent of white settlers and exterminated whole tribes of Indians, who suspected the Jesuits of causing it by witchcraft, and therefore tried to take their revenge. Inoculation was introduced about 1768, and vaccination as early as 1798 by John Clinch, a friend of Jenner. The Indians, who had the opportunity of this protection in 1806, did not take kindly to it, and indeed small-pox still exacts its toll from them. A specially interesting account is given of what was known as St. Paul's Bay disease, because it began in that locality about 1773; though presenting anomalous symptoms, it was regarded as syphilis, because of the curative effect of mercury. Before their contact with white settlers the Indians appear to have had few diseases, scurvy and eye affections caused by the irritation of the smoke in their dwellings being the commonest; whereas infections such as measles, scarlet fever, typhus and typhoid fever, diphtheria, venereal disease, and possibly tuberculosis were importations. The record of the pioneer medical men in the various provinces sometimes throws a curious light on their activities; thus Bonnerme, the first doctor to visit Quebec, narrowly escaped hanging for implication in a plot to poison Champlain, only to die the next year of scurvy. Michel Sarrazin (1659–1734), the most famous surgeon of his time in Canada, and a naturalist, described the beneficial effects on small-pox of an infusion of the roots of the pitcher-plant, called after him *Sarracenia canadensis*. The first medical journal in Canada—*Journal de médecine de Quebec*, published both in French and English—appeared in 1826 and survived for two years: the first medical society also started in the same city in 1826. Ether anaesthesia was first tried early in 1847 in Montreal, and chloroform in the following year in Quebec. The growth of public health is traced from the seventeenth century in

[6] *Four Centuries of Medical History in Canada, and a Sketch of the Medical History of Newfoundland.* By John J. Heagerty, M.D., D.P.H. With a preface by A. G. Doughty, C.M.G., F.R.S.C. Bristol: J. Wright and Sons, Ltd.; London: Simpkin Marshall, Ltd. 1928. (6½ × 9½; Vol. i, pp. xviii + 395; Vol. ii, pp. vii + 374; 38 illustrations. 50s. net the two volumes.)

detail, with accounts of quarantine arrangements, public health associations, and the development of vital statistics.

The sections on the medical schools and the hospitals, the sanatorium movement, and the care of the insane in the Dominion are mines of information, and an extensive bibliography and a good index complete the usefulness of this well-written work as a source of reference.

CLINICAL CHEMICAL PATHOLOGY.

A Handbook of Clinical Chemical Pathology,[7] by Dr. F. S. FOWWEATHER, is a short volume compiled for the special purpose of interpreting the work of the chemical pathologist to the clinician. Sir BERKELEY MOYNIHAN has contributed a foreword, and therein expounds very clearly the need for such a volume:

"This delegation of a part of the work involved in the application of laboratory tests from the clinician to a second person is perhaps unfortunate, but it is surely made inevitable by the growth of the subject. It has already been abused, and a system has to some extent grown up which has been rightly ridiculed as 'penny-in-the-slot diagnosis.' Here the clinician sends a specimen to the laboratory and expects to receive in return, not merely the result of the analysis, but also a brief diagnosis of his case. This abuse is due to the fact that the clinician has not sufficient knowledge to give him confidence to interpret for himself the results of chemical analysis and to incorporate them, along with the information he has gained from clinical examination of the patient, into a composite picture. The duty and the pleasurable task of making a diagnosis rests finally with the clinician, and never with the laboratory worker. It is with a desire to help the clinician to take advantage of laboratory methods in this way that the book has been written."

The author, in accordance with the purpose of this volume, has made no attempt to produce a handbook for laboratory workers, but has endeavoured to state concisely the nature and value of the more important methods used in clinical pathology. Among the subjects discussed are the acid-base balance, glycosuria, functional tests for the stomach, liver, and kidney, basal metabolism, calcium content of blood, and vitamins.

Pathological chemistry is a subject that has advanced very rapidly in recent years. The original literature on the subject is overwhelming in bulk, and most textbooks are so filled with technical details of laboratory methods as to be unreadable by others than specialists in the subject. These facts have made it extremely difficult for clinicians to keep in touch with the methods of pathological chemistry, which they nevertheless have had to employ. Dr. Fowweather's book should do much to remove the difficulty indicated, for it is written in a simple and easy style, and is so short that it can be read in an evening; but none the less it gives a clear and up-to-date account of the most important facts regarding the clinical value of pathological chemistry.

NOTES ON BOOKS.

THE issue of the *Medical Register*[8] for 1929 reveals the fact that the number of names added to it year by year continues to fall. The peak year of 1924, when there were 2,796 new entries, contrasts sharply with 1928, in which there was a decrease of 285 on the corresponding figure for 1927. The membership of the medical profession is still growing, however, and in 1928 amounted to 54,252. New registrations in England during 1928 numbered 859; in Scotland 404; in Ireland 217; and in the colonies and abroad 176. This total of 1,656 new entries compares with 1,941 in the preceding year. The number of names removed from the *Register* in 1928 was 1,038, as compared with 1,035 in 1927. Last year 845 names were removed on evidence of death, one due to cessation of practice, 188 because of failure to comply with the inquiries of the Registrar as to cessation of practice or change of address, while 4 were struck off under the disciplinary powers conferred by the Medical Act.

The *Dentists Register*[9] for 1929 contains 14,388 names, of which 6,824, or 47.43 per cent., are registered with medical, surgical, or dental qualifications. This compares with 6,788, or 46.57 per cent., so registered in the previous year, out of a total of 14,576 on the *Register*; the remainder in each case were registered under the provisions of the Dentists Acts of 1878 and 1921. Of the 264 new names added to the *Register* in 1928, 239 were registered with qualifications and 22 under the Dentists Act of 1921; this reveals a sharp decline from the numbers of the previous year—362 and 38 respectively. The number restored to the *Register* under the Acts of 1878 and 1921 was 251, and the number removed for this reason, or because of death, was 703. The useful local address list of previous years appears again, and indicates the dentists practising respectively in each postal district of London, each town or village of the United Kingdom, each town or country abroad, and in each of the Services.

The *Medical and Dental Students Register*,[10] issued by the General Medical Council, shows that the number of new medical students registered in 1928 was 1,363, which is 149 more than in the previous year. Scottish registrations numbered 577, an increase of 38. There were 545 English registrations—an increase of 42—and 241 Irish registrations, as compared with 172 in 1927. Dental students registered in 1928 numbered 256, an increase of 12 on the previous year.

A recent addition[11] to the "Notable British Trials" series deals with the case of Eugene Marie Chantrelle, who was executed in Edinburgh in 1878 for the murder of his wife by the administration of opium. Chantrelle in the first instance succeeded in creating the impression that death was due to poisoning caused by an undetected escape of gas in her bedroom. A *post-mortem* examination, however, showed no signs of coal-gas poisoning nor any evidence of the cause of death; analyses of vomit stains on bedding and on clothes worn by Madame Chantrelle, however, were found to contain considerable quantities of opium. This factor, coupled with evidence of the undoubted viciousness of the accused, and of the fact that he had a short time before insured his wife's life for a substantial sum—the policy taking effect only in the event of her death by accident—made his conviction certain. While medical evidence inevitably bulked largely in the proceedings at the trial, the matters dealt with are hardly of first-rate medico-legal importance to-day, and the main interest in the book centres round the character of Chantrelle, who appears to have been a villain of the type commonly depicted in old-fashioned melodrama—a man of good family and education, accomplished and intelligent, but ruthless, unscrupulous, debauched, and dishonourable.

In an attractively illustrated volume entitled *The Sack-'em-up Men: An Account of the Rise and Fall of the Modern Resurrectionists*,[12] Dr. JAMES MOORES BALL of St. Louis first summarizes the history of anatomy, thus touching one province of Dr. Charles Singer's authoritative writings, and then enters on his real subject, the activities of the body-snatchers, resurrection men, or sack-'em-up men who, a hundred and more years ago, provided the material for anatomical teaching in this country. He gives also some information about anatomical instruction in North America, including the "resurrection," as recently as 1878, at the Ohio Medical College, of John Scott Harrison, the son of one President and father of another President of the United States, the true story of which, he says, will not be published in our day. This monograph is dedicated to the Council and Fellows of the Royal College of Surgeons of Edinburgh, where the author collected illustrations and much of the material so well utilized here in these pages. The term "resurrection days" is applied to the period when the Irish, Scottish, and English teachers of anatomy were obliged by the existing state of the law to employ grave-robbers, who were not deprived of their occupation until the passing of the Anatomy Act in 1832, introduced by Henry Warburton. The familiar story of Burke and Hare a hundred years ago is accompanied by an account of the words "burking" and "burkism," and by many photographs, including a striking caricature of Robert Knox. The tragic story of the ruin of Knox is fully told; he was regarded by Lord Cockburn as one of the least culpable of the anatomists of his time; in fact, it was only an accident that saved Monro tertius from sharing his fate. Under the title of "respectable resurrectionists" some of the greatest names, such as Vesalius, John Hunter, Liston, and in America Valentine Mott, are included. For this well-written monograph the author has read widely, and with a light hand conveys much historical lore.

[7] *Handbook of Clinical Chemical Pathology*. By Frank Scott Fowweather, M.D., M.Sc., D.P.H. With foreword by Sir Berkeley Moynihan, Bt., K.C.M.G., C.B. Churchill's Empire Series. London: J. and A. Churchill. 1928. (5½ × 8¼, pp. xii + 216; 19 figures. 8s. 6d.)

[8] *The Medical Register, 1929*. London: Published for the General Medical Council by Constable and Co., Ltd. 1929. (21s.)

[9] *The Dentists Register, 1929*. Published for the Dental Board of the United Kingdom by Constable and Co., Ltd. 1929. (12s.)

[10] *Medical and Dental Students Register, 1929*. London: Published for the General Medical Council by Constable and Co., Ltd. 1929. (7s. 6d.)

[11] *Trial of Eugene Marie Chantrelle*. Edited by A. Duncan Smith, F.S.A.Scot., advocate. Notable British Trials. Edinburgh and London: W. Hodge and Co., Ltd. 1928. (Demy 8vo, pp. 243; illustrated. 10s. 6d. net.)

[12] *The Sack-'em-up Men: An Account of the Rise and Fall of the Modern Resurrectionists*. By James Moores Ball, M.D., LL.D. Edinburgh and London: Oliver and Boyd. 1928. (Med. 8vo, pp. xxvi + 255; 19 figures, 60 plates. 16s.)

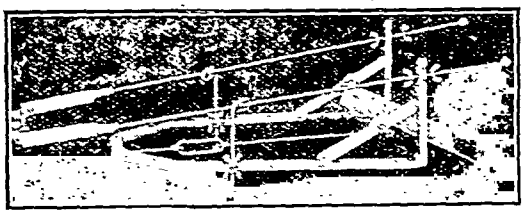
PREPARATIONS AND APPLIANCES.

IMPROVED SPLINT FOR TIBIA AND FIBULA FRACTURES.

DR. J. R. ATKINSON (Vancouver, British Columbia) writes:

My experience and the experience of others in the handling of fractures of the tibia and fibula has shown me the great difficulty, and in some cases the impossibility, of getting proper extension of the tibia and fibula and of holding them when correction is made. This led to the development of the splint shown and described herewith. After using it on every case of fracture of the lower limb which has come under my care during the past few years, and observing it in use by other doctors, I am able to state that results have been good.

The splint is for a fractured lower limb, and is designed to provide such support for the limb that the fractured ends

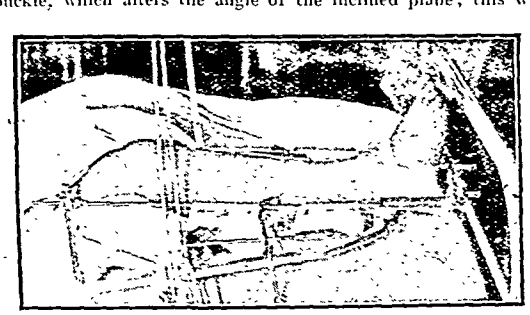


Splint for fractures of the lower limb.

may be drawn apart and readily adjusted, during which adjustment free access is afforded to the location of the fracture. When both bones of the lower leg are fractured the broken ends will, under the tension of the muscles, tend to overlap one another, and difficulty is experienced in applying the required tension to bring the fractured ends into their correct relative position, or when support is afforded from the crotch, without an exceedingly uncomfortable and painful pressure applied on this part, which is not adapted to receive such pressure.

In this splint the required resistance for the tension applied to draw the fractured ends of a broken leg to their proper position in relation to one another is imposed on the underside or back of the thigh, adjacent the knee-joint, the axis of the thigh being angled to that of the leg to provide a suitable resistance. The splint frame, by which the tension is imposed on the leg and the resistance of that tension distributed, is so designed to afford free access to the leg at the location of the fracture for an inspection of it generally, or by x rays, and for manipulation, or for attending to any open wound on any part of the leg or foot. The uprights may be adjusted to impose the required torsion or twist on the limb to bring the fractured ends together.

It will be noted that the angle at which the leg is held in relation to that of the thigh may be adjusted by the turnbuckle, which alters the angle of the inclined plane; this will



The splint in use; the thigh and ankle bandages are quite loose.

also alter the anterior or posterior alignment of the bones. Such parts of the splint as are directly connected to the limb are adjustable so that it may be adaptable to variation in the size of the limb it may be required to be used on.

The splint is not only convenient for the operator, as it offers ample facilities for inspection and manipulation of the fractured limb, but it is also comfortable for the patient. As the splint firmly attaches the injured leg to the thigh, and to no other part, the patient has freedom of movement, and can assume the position which is most comfortable; it permits the patient to use a wheel-chair, and to assume a sitting posture in bed if desired. As a first-aid splint it is convenient and safe, as anyone in a factory or camp can apply it temporarily (over boot and clothing) to a fellow worker to prevent further injury while the patient is being moved to a hospital, thus eliminating serious complications which often arise after an accident. The limb cannot slip or get out of place, freedom of motion is allowed the rest of the body, and the limb can be placed under the fluoroscope and the fractured ends be seen as they are being pulled into their correct position. After setting, the splint is locked, and the fractured leg may be comfortably supported from the bed on a Balkan frame or other swing. Radiographs can be taken as often as required while the limb is in the splint. Physiotherapy, careful massage, and stimulation with a faradic current or lamp can be practised.

The frame is made of burnished aluminium, and the complete splint weighs about 5½ lb. It has ample strength, and is simple and positive in operation. The advantages claimed are: (1) prevention of shortening and deformity; (2) lessens danger of knee- and ankle-joint stiffness; (3) lessens danger of atrophy of leg muscles; (4) time required for recovery is materially shortened; (5) comfort for the patient; (6) convenience and assurance for the operator.

MILK PREPARATIONS.

We have received a series of samples from the West Surrey Central Dairy Company. During recent years knowledge of infant feeding has advanced rapidly, and this company are putting on the market a number of substances which have been prepared in accordance with the results of recent research on infant nutrition. These preparations should prove a great convenience to the medical profession, for it is always difficult, and often impossible, to prepare privately many of the special mixtures for infant feeding that have been proved to be of benefit in institutions.

Cow and Gate Milk Food is a dried milk manufactured from pure English milk. It is made in two strengths—namely, half cream milk and full cream milk. The makers point out that dried milk has a special value for infant feeding in tropical and sub-tropical countries. They quote evidence that the milk available for purchase in India is very frequently adulterated and contaminated, and that the use of dried milk reduces the risk of dysentery and diarrhoea from fly infection.

Brestol.—The makers argue that "Hitherto, when it has been found necessary to apply modification in infant feeding, the physician has had to resort to dairy creams of uncertain composition, or to emulsions of an unsatisfactory character. Dairy cream, with its uncertain fat, and protein, and preservative content, with its doubtful bacteriological (including tubercle) content, and with its questionable vitamin activity, has also the disadvantage of bad keeping qualities; whilst in most emulsions full cognizance has not been taken of the necessity for supplying to the infant a cream possessing properties and characteristics identical with those of healthy breast milk." They have therefore prepared an emulsion of fats which has a saponification number and iodine number identical with those of human milk. Fat-soluble vitamins and orange juice have been added. The manufacturers claim that brestol is a product "which is easily and accurately prescribed, readily digested and assimilated, and which will be found invaluable in all cases of infant feeding and diet rectification."

Lacidac is a preparation of dried milk to which lactic acid has been added so that one pint of milk will contain one fluid drachm of lactic acid *B.P.* The preparation is made in two strengths—namely, separated (1 per cent. fat) and half cream (16 per cent. fat). This preparation is made in accordance with the researches of Marriott (*Journ. Amer. Med. Assoc.*, 81, 2007; 89, 862), who found that marasmic children frequently suffered from deficient gastric acidity, and that the administration of lactic acid milk reduced the mortality of such infants from 78 per cent. to 26 per cent.

Haemolac is dried cow's milk to which a small quantity of iron has been added (0.55 per cent. iron and ammonium citrate in dried milk). Cow's milk only contains about one-third the iron content of human milk, and Mackay (*Arch. of Dis. in Childhood*, 3, 117, 1928) showed that whilst the normal haemoglobin percentage in the blood of infants from 4 months upwards was at least 80 per cent. of the adult normal, yet 25 per cent. of artificially fed infants fell below this standard. She found that administration of a medicated milk of the same formula as haemolac produced a striking benefit. The iron content of haemolac, which is about 200 mg. Fe_2O_3 per 100 grams, is far higher than that of human milk, which is 4 mg. Fe_2O_3 per 100 grams of dry substance, and the iron causes the stools of the infants to turn black. *Haemolac* is recommended for premature infants, babies under weight at birth, and anaemic babies. It seems to have been prepared on a basis of sound physiological and clinical evidence. In view of the great difference between the iron content of haemolac and of normal milk, it would, however, be interesting to know whether equally good results could not be obtained with a quantity of iron somewhat nearer the normal content.

Lacquin is dried milk to which quinine has been added so that half a pint of prepared milk (breakfast cup) contains 2½ grains of quinine. The milk is also flavoured with coffee. This preparation is recommended as a method by which prophylactic doses of quinine can be taken by children or adults in a palatable form. Moreover, it provides an easy method of giving infants quinine in doses approaching the usual curative dose. The makers state, however, that children with malaria require relatively large doses of quinine, and that therefore additional quinine would be needed for curative treatment.

"EXANTHEMATIDES."

SECOND LETTSOMIAN LECTURE BY DR. H. W. BARBER.

THE second Lettsomian Lecture[1] by Dr. H. WORDSWORTH BARBER was delivered to the Medical Society of London on March 6th. Dr. Barber's general subject is dermatology in relation to other branches of medicine, and on this occasion he dealt with the nature and significance of a group of eruptions provoked by micro-organisms or toxins reaching the skin by way of the blood stream, to which eruptions he gave the generic name "exanthematides." Under this term were included the syphilides, tuberculides, and trichophytides, together with certain eruptions, some of which might be associated with rheumatic diseases, and for which the term "streptococcides" was suggested.

Syphilis, Tuberculosis, and Rheumatic Fever Compared.

Syphilis and tuberculosis, said the lecturer, were outstanding among diseases, if the specific fevers were excluded, for their ubiquity, their serious nature, their chronicity, and the amount of information collected concerning them, and they had dominated medical thought and research for generations; they still dominated dermatological thought and research over the greater part of the world, for syphilis and tuberculosis belonged in great part to the domain of dermatology. Rheumatic diseases also had cutaneous manifestations which were so closely akin to certain syphilitic and tuberculous eruptions in their mechanism of production and significance that one was able to draw from them deductions of the highest importance. The evidence that rheumatic fever was allergic in nature, and that the streptococcal group of organisms was responsible, seemed to the lecturer to be overwhelming; he had yet to hear any argument to the contrary that would bear examination. In all three diseases—syphilis, tuberculosis, and rheumatic fever—there was usually an initial lesion, and in all three there was a decided tendency to relapse, which seemed to be due to the breakdown of a partial immunity. In both tuberculosis and rheumatic fever the presence of lesions in the walls of the serous cavities or joints was accompanied by the outpouring of a sero-fibrous exudate. It was true that differences could be found between the three diseases, and in these differences consisted the peculiar features of the respective maladies. He was led, therefore, to submit a comparison between certain cutaneous manifestations of tuberculosis and syphilis, together with those of the severer forms of ringworm infection, on the one hand, and those of rheumatic or streptococcal infection on the other. All these eruptions might be conveniently classed together as "exanthematides."

The Syphilides, Tuberculides, and Trichophytides.

Taking, first, the syphilides, the lecturer pointed out that in the average case of undoubted syphilis there was first a period of incubation of about three weeks' duration; then a primary period, also of about three weeks, during which the spirochaetes multiplied locally, but the Wassermann reaction was negative; after this a second incubation period between the first appearance of the Wassermann reaction and the development of the secondary eruptions, when the various forms of secondary syphilides became successively less extensive, but larger in size, and the Wassermann tended to diminish; next a period of freedom from symptoms, with the Wassermann negative, and finally a tertiary period in which the Wassermann reaction was positive in from 60 to 80 per cent. of the cases. The secondary syphilides represented the allergic reactions of the skin against the spirochaetes.

Turning to the tuberculides, the lecturer said that although tuberculosis could not as readily as syphilis be divided into primary, secondary, and tertiary periods, nevertheless some such division could be made in the majority of cases. The term "tuberculides" was proposed by Darier in 1896 for a group of eruptions occurring in association with other manifestations of tuberculosis. The lecturer could not accept Darier's classification in its entirety, as, for example, the inclusion of the lupus sarcoid or lupoid of Boeck, but in general, in the mechanism of their production, the tuberculides resembled the secondary and tertiary eruptions of syphilis.

With regard to the trichophytides, these were generally eruptions, comparable with the others, occurring as a result of local infection of the skin with a ringworm fungus. As in the majority of cases of syphilis, there was a primary lesion of the skin, developing at the site of inoculation, as a result of which the skin as a whole might become sensitized. Only in the severer forms of suppurative ringworm were secondary eruptions likely to be seen. In some cases the eruptions were due to a dissemination of the fungus spores through the blood stream; in others they resulted from exogenous spread.

Allergic Reaction to Streptococcal Infection.

Some years ago, Dr. Barber continued, he had himself proposed the name "streptococcides" to designate certain eruptions which were allergic reactions to streptococcal infection, comparable to the other groups. Syphilis, tuberculosis, and ringworm were well-defined and established diseases, and a definite diagnosis of one or the other could usually be substantiated; but the streptococcal group of organisms was in a state of flux. Strains that in the laboratory were apparently identical might have very different pathological properties, and it was often impossible to furnish definite proof that a given condition was due to streptococcal infection. Nevertheless, the establishment of a group of streptococcides was justified by the evidence which had accumulated from independent sources during the last few years. The great interest of such a comparison lay in the fact that with certain types of cutaneous or subcutaneous reaction not only were the clinical appearances much the same whatever the organism represented, but the histological picture was similar in form, showing that the defensive allergic reactions to organisms might depend rather on the tissues infected than on the nature of the infection. All these eruptions which he had called the exanthematides were dependent on two factors: an allergic state of the skin towards the particular infecting organism responsible, and the conveyance to the skin of the organism or its toxin by the blood stream. They represented antibody-antigen reactions designed to destroy the organism or toxins *in situ*.

The lecturer discussed a number of types of eruption from the point of view of this classification. With regard to erythema nodosum—a term which, like erythema multiforme, was used loosely—he thought it was clear that this type of eruption was in rather rare cases a tuberculide and, also rarely, a trichophytide, witness cases cited by Bloch and others. Erythema nodosum was probably not a specific morbid entity; in the majority of cases it was of streptococcal origin.

The Skin as a Defensive Mechanism.

The significance of the cutaneous and intracutaneous tests with tuberculin, trichophytin, and similar extracts the lecturer considered to lie only in affording evidence that the skin was sensitized to the specific antigenic substance of the infective organism. It followed that a positive reaction indicated that infection with a particular organism had taken place, and that there was continuing allergy towards it.

In conclusion, he wished to raise a question which to his mind was of profound interest and importance—namely, the extent to which, when active infection was present, the cutaneous manifestations of such infection constituted a protection against invasion of deeper organs. Might not the rash represent part at any rate of the body's campaign against the invading organisms, and recovery from an acute exanthem be partly dependent upon the rash? The evidence in favour of this view was strong. The popular idea that the eruption was an effort to drive out infection, and that care must be taken not to drive it in again, should not be too readily scorned as superstition. In the case of the streptococcides, could not the same defensive role against visceral damage be detected? The allergic condition of the skin was to some extent a protective mechanism against the involvement of the more vital organs.

[1] The report of the first lecture was published in the *British Medical Journal*, March 2nd, page 412.

British Medical Journal.

SATURDAY, MARCH 16TH, 1929.

THE STATISTICS OF MORBIDITY.

A DOCUMENT recently printed for the Health Section of the League of Nations[1] raises, both directly and indirectly, an interesting question—namely, whether records of sickness can be made to yield information of the same value as records of mortality. The document is an essay by the distinguished medical statistician Dr. E. Roesle of the Reichsgesundheitsamt, and his principal object is to provide materials for the preparation of a list of causes of morbidity designed to play a part like that played in the field of mortality statistics by the well-known International Classification of Causes of Death. Prima facie there is a strong case in favour of Dr. Roesle's proposals. Nobody now doubts the utility of international comparisons of mortality statistics (when made with common sense and discretion), or denies that an internationally agreed classification has increased the precision of such comparisons. It will also be generally agreed that, as causes of inefficiency and suffering, there are many definable forms of illness which make hardly any direct contributions to the statistics of mortality. Hence, it may be urged, international comparisons of morbidity rates may, from the hygienic point of view, be quite as important as comparisons of specific death rates.

Dr. Roesle points out that there is a lack of agreement between the several national and international authorities upon principles of classification, and, after a very careful analysis of the data of various health insurance offices in Germany and Hungary, as well as of seemingly comprehensive returns from Moscow, he makes detailed proposals which, *inter alia*, would help to remove some of the more glaring discrepancies between the data. This is a useful piece of work. It is certain that when the returns of two populations on approximately the same cultural and industrial level—for example, two industrial cities of the same State—give incidence rates of, say, "neurasthenia" differing by hundreds per cent., the medical practitioners in the two places are not using the word "neurasthenia" in the same sense, and it is possible that one may discover what is the surrogate term in the place with little "neurasthenia." If that possibility can be implemented, then the amalgamation of the two headings may permit of a useful comparison. These are all solid arguments in favour of such collations of data as Dr. Roesle has made; but it is possible that statisticians, being human, may have more faith in the power of their art of classification and analysis than it merits. We suggest that data of morbidity differ intrinsically from those of mortality. When a practitioner of medicine has watched an illness from its earliest stages to the death of the patient he can, in many instances, pass beyond a symptomatic to a complete diagnosis. But in minor illnesses, or even in serious illnesses only under observation at the beginning, that is not possible. It is easy for an office statistician, learned in official nosologies, to be contemptuous of the frequency with which "merely symptomatic diagnoses"—such as "debility," "nervous debility," "gastric catarrh"—occur in records of morbidity, and to urge the importance of more scientific definition. Actually much minor illness cannot be truthfully defined more strictly, and it is not scientific, but realistic, in a mediaeval sense, to pretend that it can. Chaucer's Doctor of Physic (if he knew his Galen as well as the poet said he did) had a more detailed nosological classification in his memory than even a student of 1929 on the eve of his final examination (we remember a distinguished surgeon saying that nobody but a student the night before the final "Conjoint" could precisely classify neoplasms). There is, we think, a danger that this realism may lead us to mistake a mere elaboration of ignorance—inevitable ignorance—for knowledge.

Since all available statistics of general morbidity (other than those of Russia) are based upon the records of insured persons, a large majority of whom are industrially employed, it is natural to expect that the analysis of the data should throw light upon the problems of industrial hygiene so much discussed. Certainly, in view of the dogmatic statements respecting the deleteriousness of this or that factor of industrial life often made without any evidence, light is needed. But an examination of some recent reports of the Industrial Fatigue Research Board would satisfy any reader that the study even of general morbidity—making but the broadest classifications by causes—is a very difficult matter. On February 19th Dr. A. B. Hill read, at a meeting of the Royal Statistical Society, a useful paper which illustrated some of the difficulties. He pointed out, *inter alia*, that "recorded" illnesses have a predilection for beginning on a Monday and ending on a Saturday. Whether this means that those who might have gone back to work at the end of the week did not, or that those who ought to have stayed at home on Monday decided to try not to lose more time, is an interesting point; the *fact*, whatever its interpretation, illustrates the distinction between data of recorded morbidity and of recorded mortality. Apart from traffic accidents, and the doubtful case of overlying of infants, there is no reason to suppose that one day of the week is more deadly than another.

We need not labour the point; it will be clear enough to practitioners of medicine. The time is past when careful classification of records and their accurate statistical analysis were sneered at as mere juggling with figures. That foolish attitude should not, however, be replaced by a belief that almost any records can be made scientifically comparable if only statisticians of sufficient eminence will classify and analyse them.

[1] C.H. 730. *Société des Nations—Essai d'une Statistique comparative de la Morbidité devant servir à établir les listes spéciales des causes de Morbidité.* Par Dr. E. Roesle. Geneva, 1928.

SCIENTIFIC LITERATURE.

THE latest edition of Mansfield Clark's classical work on *The Determination of Hydrogen Ions*, reviewed in another column, is full of valuable information, but there is nothing in the book of greater general interest to scientific workers than the figure, inserted in the preface, which shows the time distribution of the references contained in the bibliography. This figure shows that in 1910 about fifty papers were published on the subject of hydrogen-ion concentration, and that this number has doubled every four years, and now approaches 1,500 per annum. The curve suggests that the 2,000 level will be reached in another five or six years. As the author says: "The situation has made obsolete some of the old ideals of scholarship. It has made trivial all available facilities of library, abstract, and review. It has made the monograph almost futile. It has made ridiculous him who claims to combine thorough investigation with thorough *re*-search." In writing this Professor Mansfield Clark

conveys the experience and opinions of all who are compelled to cover popular fields of scientific research. Undoubtedly scientific workers are threatened with the necessity of choosing whether they will spend their energy and time in keeping up with the literature and writing monographs, or whether they will devote themselves to original research. Unfortunately, however, it is only those with a first-hand knowledge of a subject who can write a monograph that is worth reading, because such persons alone can sort out the grain from the chaff. It is a pity that Professor Mansfield Clark did not supplement his interesting curve by a second curve showing the number of papers per annum that were of any real importance; it is safe to say that the two curves would have followed very different courses.

There is no doubt that scientific workers will have to depend more and more on authoritative monographs for an account of the existing knowledge in any subject, and those who devote themselves to the tedious task of producing such works deserve the gratitude of their fellows. The flood of scientific literature is, however, being augmented unnecessarily, and it could be checked if public opinion in the world of science would show its firm disapproval of certain practices. The publication of substantially the same article in several different journals, and possibly in different languages, is, to say the least, a misdemeanour. Medical science in particular suffers from this practice. We have heard the suggestion that it would be checked if contributors were charged a special high advertisement rate for all articles that were found to have appeared elsewhere. The habit of estimating the merits of candidates for scientific posts or the activity of university departments by the weight of published material is also responsible for a large amount of over-publication, and this would cease if attention were paid to quality and not to quantity.

Finally, there is the problem of publishers who run scientific journals for profit, and aim at producing the greatest possible number of volumes a year, regardless of the quality of the articles published therein. This evil is not prevalent in this country, but it is rampant in Germany. The funds and shelf space of libraries are exhausted by certain "wastepaper basket" journals, whose volumes increase yearly in geometrical progression. There is only one remedy for this—namely, the organized boycott of journals which do not maintain a certain critical standard of editorship. Such a boycott has been mooted before now, but it has failed because there are so many libraries in Europe, and particularly in America, to whom expense is of less consequence than the completeness with which they cover the literature of science. The exploitation of scientific institutions in this manner will only be prevented when it is generally recognized that the encouragement of a scientific journal that maintains no critical editorship is not merely a waste of money, but actually handicaps the progress of science.

THE LOCAL GOVERNMENT BILL: CONSULTATION WITH THE PROFESSION.

THE suggestion made by Lord Dawson in the course of the consideration of the Local Government Bill by the House of Lords that a clause should be inserted requiring the council of a county or county borough to consult with (1) any body in its area representing voluntary hospitals or their medical and surgical staffs, and (2) any body in its area representing the general body of the medical profession, before settling its administrative arrangements, has been received sympathetically by the Government. We believe there is no doubt that the former of these suggested consultations will be imposed on the councils; but we would strongly urge the Government to accept for inclusion in the bill in its proper place the latter consultation also. It is of vast importance that private medical practitioners, whether general or consultant, should be brought into intimate connexion with the public health services, and a provision such as that indicated would be a very great advance in this direction; it would in many cases prevent local difficulties which are apt to render the public health medical services much less efficient and useful to the public than they should be.

THE LEAGUE OF NATIONS AND THE OPIUM QUESTION.

FULL particulars of the astounding case of illicit trafficking in morphine, heroin, and cocaine, to which reference was made in the *Journal* of February 2nd (p. 213), are vouchsafed in the report to the Council of the League of Nations of the twelfth session of the Opium Advisory Committee, just published. The intermediary in this huge contraband enterprise was the Chemische Fabriek Naarden at Bussum, a few miles south-east of Amsterdam. During the year 1927 and the first half of 1928 nearly 1,000 kilograms of morphine, 3,000 kilograms of heroin, and 90 kilograms of cocaine, mainly derived from Basle, Mannheim, and Hamburg, were re-exported, chiefly to the Far East, Shanghai being the most common destination. The committee remarks that this factory at Bussum "probably dealt with about half the total annual world production of heroin," the alkaloid regarded as the most perilous in its illicit use, and whose manufacture is now prohibited in the United States. This centre for international contraband, now suppressed, appears to have escaped detection partly by these narcotics being treated as "in transit," and therefore not appearing in the statistics of import and export, and partly by their incorrect description as "pharmaceutical products," "mediums," or "perfumeries." Indeed, "every contrivance was used to render inquiries into the origin of the narcotics impossible." This traffic was admittedly "contrary to the spirit of the law" and to the terms of The Hague Convention of 1912 and that of Geneva of 1925. It serves abundantly to prove that the production of these dangerous drugs is grossly in excess of any conceivable medical or legitimate requirement, and amply justifies the contention of China that smuggling of European alkaloids into that country demands no less scrutiny than the exports of opium out of it. The Advisory Committee encounters grave difficulty in regard to the production of opium by the failure of Persia and Turkey, which probably between them raise a million kilograms of opium annually, to favour the League with any reports of their traffic. It is further deplored that "more than one-half of the States members of the League, including six members of the Council, have not yet ratified the Geneva Opium Convention of 1925." The committee gave consideration to a scheme, which has been adopted in Spain and is supported by the United States, for notification in advance by each State of its requirements of each of the drugs for a determined period. Reference has previously been made to this scheme in the *Journal*, but the committee did not think it advisable to take any action in regard to it. The new Permanent Central Opium Board met for the first time at Geneva during the sittings of the Opium Advisory Committee, and the possibility of overlap in their duties by the two bodies was considered, but no decision was arrived at in regard to the delimitation of their respective functions.

PARASITIC PROBLEMS OF THE WEST INDIES.

In discussing some of the parasitic problems of the British West Indies at a meeting of the Section of Tropical Diseases of the Royal Society of Medicine on March 7th, Dr. T. W. M. Cameron pointed out that these islands, once the most important British colonies, now form a backwater of the Empire, and, apart from Jamaica, Trinidad, and Barbados, lie off the main steamship lines. The Lesser Antilles form a double crescent from Trinidad in the south to St. Kitts in the north. The inner range is volcanic, and the outer coral, while Trinidad is largely composed of metamorphic rocks. All are tropical, but the intense summer heats are mitigated to a great extent by the trade winds. The rainfall is abundant, and all except the most southern are liable to visitations from very severe hurricanes, which do an enormous amount of damage. The important industries are sugar, cocoa, coconuts, spices, sea-island cotton, and citrous fruits; while Trinidad has besides a very profitable oil industry. In general, the water supply is good and the sanitation poor, but exceptions to both exist. Port of Spain, for example, is one of the most sanitary and up-to-date cities in the tropics, with an excellent water supply and water sewage. In Antigua much has been done to improve the very deficient water supply, and nowadays it is fairly adequate. The important diseases are tuberculosis, intestinal diseases, venereal disease, and yaws. Malaria is common, and a number of very troublesome animal parasites abound. Among the important insect pests are mosquitos of all kinds—the yellow fever mosquito being particularly active, although the disease itself is now absent. Sand-flies, larval mites, and jigger fleas also combine to worry the stranger, and in some islands extra assistance is rendered by snakes and blood-sucking bats. Malaria is endemic in all the islands except Montserrat and St. Kitts. Until 1927 it was absent also from Barbados, but in that year a serious outbreak occurred, and it has not yet been stamped out. Filariasis appears to be absent from Trinidad and Grenada, but it is very common in some of the other islands—especially Barbados, Antigua, and St. Kitts. Everywhere it is decreasing, and, as mosquito control continues to be energetically prosecuted, it should ultimately be stamped out. One of the commonest parasites in all the islands is *Ascaris lumbricoides*, the common roundworm, and locally it is attributed with considerable disease-causing properties. A similar worm, morphologically at least, occurs in pigs in many parts of the world; yet it is a curious fact that in the West Indies, where faeces disposal is poor, and where pigs are given every opportunity to become infected from human sources, the parasite scarcely ever occurs in pigs. It seems highly probable, therefore, that the human and porcine varieties of ascaris are quite distinct physiologically, and not mutually infective. *Schistosoma mansoni*, discovered in 1902 by Sir Patrick Manson in a patient from the West Indies, while present in many foreign islands, has only been notified from three British possessions there—Antigua, St. Kitts, and St. Lucia—and in the last instance only three cases have been reported. In Antigua the disease does not appear to be a severe one, and Dr. Cameron found no infected snails, although he was able experimentally to infect the *Planorbis* so common in the only stream in the island. In St. Kitts, on the other hand, in places where the parasite occurs there is a 20 per cent. infection; it is found, however, only in villages beside the permanent streams, and as there are no more than three of these the general health of the island is only slightly affected. St. Kitts is overrun with African monkeys, and these are infected too—but here again only near the streams. This raises an undoubted complication in eradication, as therapeutic measures alone, effective as they can be in the case of this parasite, cannot eradicate a disease in which there is a wild reservoir host. Snail eradication is the only method at present available. Hookworm disease is present in about 60 per cent. of the population in the southern islands, but is rare in those north of Guadeloupe. In Barbados—a coral island with a clay highland area on the windward side—there is an infection of 20 per cent. on the coral and 65 per cent. on the clay. In Antigua, an island with a coral belt, a clay belt, and a volcanic mountainous belt, the distribution is respectively 6, 12, and 32 per cent. This and ascaris are both potent factors in causing debility, anaemia, and general lack of energy. Both are carried by faeces, and both could be eradicated by an efficient sanitary system. It is difficult, however, to get the natives to use latrines, even where available, and unless the latrine habit can be cultivated no amount of treatment will eradicate the disease. This implies education and sanitary propaganda—a much more difficult task than it would appear at first sight, owing to the mentality of the peasants. It requires the judicious spending of considerable sums of money, and as most of the islands, except Trinidad, are in a poor state financially (which was accentuated by the recent hurricane), the prospects of eradication are not too bright. However, Canada has become interested in these islands, and she may be able to increase their prosperity. The authorities, civil and medical, are well aware of their responsibilities, but money is lacking, and there is little co-ordination among the islands. The suggestion of Sir Patrick Manson for a medically trained governor-general for all the colonies in this area is one which still merits serious consideration. Without health prosperity is impossible, and if the striving after health and after prosperity were both controlled by one person much could be done.

ESTIMATION OF ABILITY.

In 1927 the Medical Research Council published a report[1] embodying the results of a study in vocational guidance conducted during the period 1923–26 jointly by the Industrial Fatigue Research Board and the National Institute of Industrial Psychology. This experiment, the first of its kind to be carried out in Great Britain, was planned so as to demonstrate the possibilities of vocational guidance—in other words, to determine as completely as possible the nature and interrelation of the personal qualities of each child under investigation, rather than to obtain results of definitely practical value. It was limited accordingly to the study of only 100 children. In 1924, however, continuance of the research on a much larger scale was made possible through the generosity of the Carnegie United Kingdom Trust, and Mr. F. M. Earle, of the National Institute of Industrial Psychology, has carried out an investigation involving the comparison of a group of 600 children, each subjected to various kinds of intelligence tests, and on this basis given vocational guidance, with a similar untested control group about whose occupations no recommendations were made. The following up of these two groups to determine the success or failure of each individual child in relation to the vocational advice he has received, or to the vocation he has chosen independently, is still proceeding, and the results will not be ready for publication for some little time. Meanwhile, however, the Medical Research Council has issued a report,[2] prepared by Mr. F. M. Earle and his fellow workers, on the use of performance tests—that is, of tests in which intelligence is measured by the performance of some specific act, and without recourse to language, either oral or written—in vocational guidance. In this report the results of

[1] Report No. 33. London: H.M. Stationery Office. 1926. 4s. net.
[2] Report No. 53. The Use of Performance Tests of Intelligence in Vocational Guidance: An Investigation conducted for the National Institute of Industrial Psychology. By F. M. Earle, M.Ed., B.Sc., M. Milner, B.Sc., and other Members of its Staff. London: H.M. Stationery Office. 1929. 2s. 6d. net.

performance tests have been analysed, first to determine whether they are satisfactory instruments of measurement, and secondly, to discover the basic abilities required to carry them out successfully. The use of performance tests has been advocated for several reasons. They are of value in the examination of children at low mental levels, and of children who may be unacquainted with the particular language it is decided to employ. The Binet tests favour children with verbal fluency, who may, however, be lacking in qualities of reasoning, judgement, and foresight. Though these tests may bear a close relation to the abilities demanded for success in school, they often give little indication of a child's prospects of success in occupational life. It is found, furthermore, that some children are more interested in the concrete situation involved in the performance tests than in the more abstract problems set by the verbal tests, and are likely, therefore, to put more effort into their solution. The children studied were at school-leaving age, the great majority being just under 14, and the performance tests used were revised from the series described by F. Gaw,[1] and standardized by her for English children. It was found that as affording a "composite" age scale the complete series of tests had its limitations, and that the tests could not be combined into a satisfactory single "total score." Accordingly, an endeavour was made to determine the exact part played by general intelligence in securing success, and to obtain information as to the relative importance of the specific abilities involved. It was found that abilities measured by the tests did not, as appears to be the case with general intelligence, develop uniformly from age to age. Using the mental age method of interpretation, a boy or girl may have a mental age of 16 in one test and of 10 in another, which is confusing when the tests are measures of abilities other than, as well as of, intelligence. For each separate test it was necessary to differentiate between the relative parts played by general intelligence and by specific abilities in achieving successful performance. The investigation suggests that special abilities tend to show themselves more definitely at about puberty than previously. The composite mental age norm derived from the results of a number of performance tests is therefore held to be more reliable for younger children, whose success depends mainly on general intelligence, than for children at the age of 13 or 14. It may also be more reliable for girls who, in performing the tests, seem to use general intelligence rather than special abilities. The correlation coefficient of the performance tests with the Binet test was 0.94 for girls as against 0.44 for boys. That there is a factor common to all the performance tests is certain; but whether it consists only of the general factor common to all mental tests, or of this factor in combination with some group factor, cannot be decided on the evidence of the results so far obtained. The investigators record the fact that the situations created by the performance of the tests rouse significant reactions, the systematic observation of which is likely to prove valuable in determining whether or not the child is likely to develop suitable adjustment to particular kinds of work.

[1] Report No. 31. London: H.M. Stationery Office. 1925. 2s. 6d. net.

LORD FINLAY.

VISCOUNT FINLAY OF NOVAR, who died on March 9th, aged 87, will long be remembered as a great jurist who held the highest offices open to the profession of law. He was also (if the Scots phrase may be used of one so eminent) a "stickit doctor," having graduated M.B. at the University of Edinburgh at the age of 22. The early intention of making medicine his career was no doubt due to home influences, for his father, Dr. William Finlay, was a Fellow of the Royal College of Physicians of Edinburgh, and long enjoyed a good practice in that city. Robert Finlay, however, relinquished medicine soon after becoming qualified; he never practised, and his name disappeared many years ago from the *Medical Register*. The law claimed his whole energies and gave his peculiar gifts their natural scope. For nearly half a century—from 1867 until his appointment as Lord Chancellor in 1916—he practised with great and deserved success at the Bar, and for ten years was a Law Officer of the Crown. In 1920 he was appointed the British member of the Permanent Court of Arbitration at The Hague, and in the following year a member of the International Court of Justice set up by the League of Nations Assembly. As Member of Parliament from 1910 to 1916 for the Universities of Edinburgh and St. Andrews, Sir Robert Finlay represented a constituency largely medical, and thus for a time regained touch in some measure with the profession to which he had first belonged. He would have attained high rank in any calling, but it is probable that the law gained more than medicine lost when, as a young medical graduate, Finlay came from Edinburgh to London to read for the Bar.

INFLUENZA.

IN the week ending March 2nd the death roll of influenza in the great towns of England and Wales again lengthened, from 1,764 to 2,183. These last two weeks have seen the largest returns since the pandemic years 1918–19; for the total in the worst week of the 1922 recrudescence was only 1,450. The notifications of primary pneumonia increased from 4,451 to 5,874, also a "record" figure. The local distribution of mortality and morbidity suggests that the epidemic was subsiding in Lancashire and in London, but still increasing in the Midlands, Yorkshire, and the North. In London and Lancashire the epidemic has developed synchronously. In both areas the maximum of notifications of pneumonia was in the week ending February 9th, and of deaths from influenza a fortnight later. In Yorkshire and the Midlands the notification rate of pneumonia did not begin to rise unmistakably until the London and Lancastrian maxima were passed, and in both areas the ratio of notifications to gross population is already larger than in the worst week of London. Birmingham was conspicuously affected in the week ending March 2nd, when deaths from influenza increased from 80 to 229. Clinical reports still speak of the mildness of type, and the age distribution of the deaths ascribed to influenza continues to select the aged.

PHYSICAL EXAMINATION FOR MOTOR DRIVERS.

FOLLOWING upon a resolution moved by Dr. Stella Churchill in the London County Council, the Public Control Committee of that authority has been considering whether all holders of motor drivers' licences should be required to undergo a physical examination. Under the existing law the county council, as licensing authority, has no power to refuse to grant a licence to drive a motor car unless the applicant is under the age of 17 years (14 years in the case of a motor cycle) or is disqualified from obtaining a licence. The committee has ascertained the practice in other countries, which appears to be widely divergent; in some countries a driving test is imposed, in others medical certificates have to be obtained, whilst in at least two countries both a medical examination and a driving test have to be passed. It has not been possible to obtain particulars as to the number of accidents attributable to the physical unfitness of the driver. Four of the eight London coroners have stated that there is no record during the past three years of any case of fatal accident in their districts being due to some physical defect of the driver which could have been ascertained by the making of a physical examination when he applied for a licence, and in no case do any of the London coroners state that a fatal accident resulted from the driver's physical disability, although this inference might be drawn in one or two cases.

In the view of the London County Council committee, the question at issue is a national one; it is at present being dealt with from that standpoint both by the Royal Commission on Transport, which has heard evidence as to the necessity or otherwise of instituting a physical test for applicants for licences, and in the Road Vehicles Regulation Bill, introduced into the House of Lords by Lord Cecil, and now under consideration by the Select Committee, which would require a person to satisfy the licensing authority that he was physically fit and competent. In these circumstances the Public Control Committee has, with some reason, decided to take no action. If there is need for a changed practice it should be met by a uniform policy applicable to the whole country.

EMIL VON BEHRING.

ONE of the greatest benefactors of humanity, Emil von Behring, the seventy-fifth anniversary of whose birth is being celebrated in Germany this week, was born at *Hansdorf, near Deutsch-Eylau, West Prussia, on March 15th, 1854*, the son of a schoolmaster, who was father of eleven other children. He started his professional career at the age of 26 as an army surgeon, and two years later, in 1882, published his first scientific work on the action of iodoform as an antiseptic. In 1888 he left the army, and the following year became Koch's assistant at the Hygienic Institute of Berlin, where two years later, in collaboration with Kitasato, he discovered tetanus antitoxin, and published his first article on diphtheria and tetanus antitoxin, for which he was awarded the prize of 50,000 francs by the Institut de France, and of 25,000 francs by the Académie de Médecine. At Christmas, 1891, he made the first trials of diphtheria antitoxin in von Bergmann's and Heubner's clinics at Berlin. In 1894 he was appointed professor of hygiene and bacteriology at Halle, and in 1895 occupied the corresponding chair at Marburg. Orders and distinctions in the following years were showered upon him by the learned societies of all European countries. In 1901 von Behring was made the first recipient of the Nobel Prize, in acknowledgement of his discovery of diphtheria antitoxin, and received the title of nobility. During the next four years he conducted experimental studies in connexion with the prevention of bovine tuberculosis, and in 1905 turned his attention to the collection of milk by aseptic methods and its preservation by formalin and hydrogen peroxide. Besides numerous shorter articles on the experimental therapeutics of anthrax and streptococcal infection, the hygiene of milk supply and water, and other subjects, von Behring was the author of books on blood serum therapy (1892), the etiological treatment of infectious diseases (1893), the history of diphtheria (1893), the control of diphtheria (1894), and the general treatment of infectious diseases (1898).

SIR E. FARQUHAR BUZZARD will deliver an address to the North Western Tuberculosis Society, in the Anatomy Theatre of the Medical School, Oxford Road, Manchester, on Thursday, March 21st, at 3.15 p.m., on tuberculosis and the nervous system. The meeting will be open, and the attendance of medical practitioners is cordially invited.

AT the next meeting of the Society for the Study of Inebriety on Tuesday, April 9th, at 4 o'clock, at 11, Chandos Street, Cavendish Square, W., Dr. J. D. Rolleston will open a discussion on "Alcohol in therapeutics."

THE British Association for the Advancement of Science, at the invitation of the Court of Common Council, will hold its centenary meeting in 1931 in London.

South Africa.

Passing of the Natal Medical Council.

AT the final meeting of the Natal Medical Council on December 14th, 1928, the president, Dr. D. Campbell-Watt, delivered a valedictory address, which is published in the issue of the *Journal of the Medical Association of South Africa* for January 12th. The president reminded his hearers that, in 1856, the Natal Medical Committee was formed; it was replaced later by the Natal Medical Board, which continued until the coming into operation of the Medical and Pharmacy Act of 1896, and the creation of the Natal Medical Council. This, like other provincial councils, was now being superseded by the Union Medical Council under the consolidating Medical and Pharmacy Act of 1928. The membership of the Natal Medical Council had always consisted of seven medical practitioners and one dentist; three of the seven, together with the dentist, were nominees of the Government, while the remaining four medical members were elected by the registered medical practitioners of Natal, forming one constituency. Of the original members of the first council only Dr. Archibald McKenzie and Dr. Campbell-Watt had had an unbroken record of thirty-two years' service on this body. One feature of the early days was the presence of the principal medical officer, which appointment was a survival of the old Medical Board; in 1909 the last of these officers left the council. The first president of the council had been Colonel James Hyslop, who had held the office for twenty-one years, during which Dr. Campbell-Watt was secretary; after Colonel Hyslop's death, in 1917, Dr. Campbell-Watt succeeded to the post of president, and the present secretary, Dr. Russell-Strapp, began his service in that capacity. Commenting on various aspects of the history of the Natal Medical Council, Dr. Campbell-Watt remarked that it was curious how the proverbial coach-and-four had been driven through the penal sections against unqualified practice, Natal having thus been a happy hunting-ground for the quack. Another curiosity was to be found in the amending Act of 1919, which permitted the South African student to proceed to any first-class medical or dental school in the world, and thereafter claim registration in South Africa on presentation of his diploma, irrespective of the fact that reciprocity of this kind was very rare. During the life of the Natal Medical Society it had given effect to the registration of 589 medical practitioners, 149 dentists, 655 trained nurses, 29 mental nurses, and 396 midwives. While registration was compulsory for medical practitioners and dentists, it was still only voluntary for nurses and midwives. The president remarked that, though delegates from the Natal Medical Council had co-operated with others in forming a consolidating Medical and Pharmacy Bill for the Union of South Africa in 1910, the fruits of this work had only just appeared; it had thus taken eighteen years to place a measure of this kind on the statute-book. In his final utterance as president, Dr. Campbell-Watt recalled the happy friendships which had made it easier for the Natal Medical Council to act up to the highest traditions of the medical profession, and expressed his conviction that the new Union Medical Council, as the supreme authority on medical ethics, would have a salutary and profound influence on the national welfare. The Natal Medical Council had fulfilled its destiny in the medical history of South Africa, and its successor would continue the work and traditions with a higher status, a wider horizon, and more extensive responsibilities.

Post-graduate Course, Capetown.

Under the auspices of the Cape Western Branch of the Medical Association of South Africa (British Medical Association), in co-operation with the medical faculty of the University of Capetown and the members of the staff of the New Somerset Hospital, a post-graduate course was held during January. The syllabus was arranged for the mornings only, but additional afternoon functions included a visit to the City Hospital for Infectious Diseases and to the Corporation Sewage Disposal Works at Athlone. On

January 11th an evening was spent at the new medical school buildings at Groote Schuur, which were thrown open for inspection. Clinical demonstrations in the departments of bacteriology, pathology, and chemical pathology were conducted by members of the university staff. On January 18th the course was brought to a conclusion by a meeting of the Cape Western Branch of the Medical Association of South Africa (British Medical Association), when a paper on the value of post-graduate instruction was read by Mr. E. Barnard Fuller. In the discussion that followed members who had attended the course expressed their appreciation of the facilities provided, and at the same time criticized certain features of the syllabus. The committee responsible for arranging the course regarded it as experimental to some extent, but there is little doubt that it was much appreciated by those who attended it, and that it served a definite purpose. It will almost certainly be repeated next year.

Hospital Policy in the Cape Peninsula.

At the beginning of 1927 the six hospitals controlled by the Cape Hospital Board—namely, Somerset Hospital, Woodstock Hospital, Rondebosch and Mowbray Cottage Hospital, Victoria Hospital (Wynberg), Simonstown-Kalk Bay Hospital, and the Peninsula Maternity Hospital—together accommodated 478 patients. The number of beds has since been increased to 536, and will shortly be further increased to 540. The daily units recorded at the six hospitals during 1927 were 161,394, compared with 174,024 during 1928, and the number of in-patients treated increased in the same period from 7,989 to 8,855. The total number of out-patients, which in 1927 was 116,943, rose in 1928 to 143,017. Similar increases are recorded in the board's two convalescent homes, where the number of persons dealt with rose from 642 to 714. In a comprehensive statement on the problem of augmenting the at present inadequate hospital accommodation, the board has outlined schemes for a new hospital on the Groote Schuur estate, the rebuilding of the Peninsula Maternity Hospital, an extension of the Woodstock Hospital and of the Victoria Hospital, Wynberg, and the conversion of a building at the Eaton Convalescent Home into a dormitory for non-European inmates. A considerable addition to the Cape-town Free Dispensary has been made possible by a bequest from the estate of the late Mr. Hiddingh. The position in regard to the district nursing service is interesting; in 1926 there were nine district nurses operating throughout the Cape peninsula; there are now twenty-two, and provision is being made for a further extension during 1929. A sister tutor has been appointed to the new Somerset Hospital, and the board will recommend the appointment of additional sisters to teach the probationers of the hospitals at Woodstock, Rondebosch, and Wynberg.

Medical Training for Natives.

At the European-Bantu Conference held in Capetown in February resolutions were passed urging the Government to adopt the recommendation of the Hospital Survey Committee of 1927 as the basis of a hospital programme for the needs of non-Europeans. This would involve the immediate provision of one bed for every 1,400 of the non-European population, the ratio within ten years to become 1 in 700. The need was impressed upon public health authorities for the establishment of easily accessible out-patient clinics for natives, and for the provision of an adequate ambulance service. The conference supported the recommendations of the Loram Committee that facilities be provided for the full medical training of non-Europeans in university courses, carrying the same entrance requirements and registrable qualifications as those applicable to Europeans. To defray the cost of training it was suggested that loans be made available for the assistance of deserving native medical students, and that pending the establishment of adequate facilities in South Africa a system of bursaries and loans be instituted to enable students to proceed overseas. Similar recommendations were made in relation to the training of non-European probationers in general nursing and in midwifery, and it was proposed that there should be a difference between the salaries of the registered nurse and of the unregistered. Chiefs, district councils, hospital boards, and municipalities were urged to provide careers and adequate remuneration for non-European nurses and health assistants. The conference welcomed the interest shown by the South African Council for Child Welfare in work among the non-Europeans, and recommended joint councils and other bodies to assist in the formation of welfare societies concerned with non-European children, and in the organization of health propaganda and instruction.

India.

Work of Indian Medical Schools.

In spite of financial handicaps progress is being made in developing the educational facilities at King Edward VII Memorial Hospital and the associated Seth Gordhandas Sunderdas Medical College in Bombay, which came into existence in 1925. In the annual report for the year 1927–28 it is stated that there were 50 fresh admissions to the College, bringing the total number of students at the end of the year to 139, of whom 6 were women students. For the Intermediate M.B., B.S. examination 57 candidates were presented at various times, of whom 28 passed. The first class of students admitted to the College appeared for Part I of the Final M.B., B.S. examination last September, and those who were successful will have qualified to take the second part at the end of the current year. Since the institution of the College considerable advance has been made in developing the various museums and in the equipment of the special departments, but it is regrettable to note that insufficiency of the resources available has prevented the anticipated expansion of research work. In one case certain investigations have had to be suspended. This side of the work of the College suffers also from the heavy demands made by the exigencies of teaching upon the time of the staff. At King George's Medical College, Lucknow, according to the report for 1927 of the inspector-general of civil hospitals for the United Provinces, there were 258 students at the end of the year, as against 243 the previous year. In the various examinations constituting Part I of the Final M.B., B.S. the number of students who appeared was 59, and the number of those successful was 34; in Part II the number appearing was 73, and the number of passes was again 34; in Part II of the First M.B., B.S. examination 36 candidates passed out of 56 who presented themselves. There was a decrease of 20, at 305, in the number of students under instruction at the medical school for men at Agra, and only 51 students passed the final examination as compared with 80 in 1926. The numbers of students on the roll at the women's school, 63, and the number of passes in the final examination, 7, were in each case one less than in the previous year. Such figures have something more than an academic interest, for they indicate the efforts being made to secure a high standard of medical training in India.

Financial Assistance for the Pasteur Institute.

The steady increase in the demands made on the Pasteur Institute at Kasauli has resulted in financial embarrassment, which is very gravely hindering its work. The popularity of antirabic treatment is now nearly three times what it was in 1910, and nearly twenty times that of 1901, when the Institute was opened. During 1926 more than 6,000 patients were dealt with, and over 2,000 others were to the local centres at Lahore, Rawalpindi, and Allahabad where vaccine is supplied by the Pasteur Institute. It has proved impossible to secure the necessary additional residential hospital accommodation, to keep the buildings in proper repair, and to provide up-to-date apparatus and equipment. An appeal for an increased grant was made in 1927 to the Government of India, which has now decided to accede to this request on the understanding that the additional liabilities so incurred shall be limited. The Government of the United Provinces has undertaken to contribute an additional sum of 10,000 rupees annually, and the Government of the Punjab has also agreed to make a recurring grant of 50,000 rupees during the year 1929–30, these donations being subject in both cases to the approval

of the legislative councils. A few Indian States have also promised to increase their contributions, but it is not thought that the amount available from this source will be large. It is generally realized that, should the Institute be compelled to close its doors for want of funds, the Government of India and other bodies benefiting at present by the services it renders would have to make separate provision for the antirabic treatment of patients from departments and areas directly administered by them, and also be obliged to undertake research.

Medical Service in Northern India in the Eighties.

Under the title of "Echoes of the past," Lieut.-Colonel G. H. Younge, R.A.M.C.(ret.), has contributed to the *Journal of the Royal Army Medical Corps* for January a description of a five-year tour of duty in the Bengal Presidency between forty and fifty years ago. Such a record must be of interest alike to the young officer who has just entered the service, to the older man who has done ten or twenty years' service, and has himself been through a somewhat similar tour of duty; most interesting of all to the contemporary who can look back on somewhat similar experiences of his own, nearly half a century ago. Much has changed during this period, and nowhere has change been more marked than in India. But to the man who went to India in the seventies or early eighties, Colonel Younge's account recalls memories long past and gone. *Forsan et haec olim meminisse juvabit.* Except for one unique experience, Colonel Younge's tour of service comprised the usual routine of duty, leave, sport, etc., which all young medical officers went through, and most of them probably enjoyed—ordinary hospital duty, cholera duty and cholera camps, marching in relief, travelling in charge of detachments, an artillery field firing camp, leave in the hills, at Masuri, and a six months' tour of hill duty, at Dalhousie. The author was stationed for considerable periods at Benares, Cawnpore, and Mecan Meer, and had the advantage, when moving in charge of detachments, of visiting many other places of interest—Calcutta, Lahore, Tiruzpur, Darjeeling. Of the great show places of Northern India, Cawnpore is the only one described, Agra and Delhi are not mentioned. His tour of duty, of course, began with the voyage to the East. And that voyage was an experience of a time long passed away, for he went out, as practically all officers then did, on one of the five famous old Indian transports, which were vessels of the Royal Navy, their ships' complements being all naval officers and men. He went out in the *Jumna*, and returned home in the *Serapis*, the latter the vessel in which King Edward VII, when Prince of Wales, made his journey to India. These transports disappeared from the Navy List some thirty years ago. Nowadays all trooping is done in hired transports of the mercantile marine, though for some years certain of the vessels of the Royal Indian Marine were used in this capacity. An interesting but unpleasant experience, which can have fallen to the lot of very few, was that of being present at the public execution of a British soldier. The criminal had "run amok," and had murdered several comrades. He was sentenced to be publicly hanged on the parade ground at Cawnpore, before the garrison of that station, and also in the presence of several other regiments which were halted there for the purpose, while on the march. This, we believe, was the last occasion on which such a public execution of a British soldier took place in India. It was the foundation of Kipling's poem of "Danny Deever." One of Colonel Younge's earliest duties was to go to Darjeeling in charge of a batch of invalids. The author states, "I longed to see Kinchinjunga, the highest peak of Mount Everest, but unfortunately during the whole of my stay it was hidden in a thick mist." During the rainy season, Kinchinjunga is often invisible from Darjeeling for days together, owing to mist. The view of the great ice and snow mass of Kinchinjunga, with its attendant smaller peaks, Paudine, etc., forty-seven miles only from Darjeeling, across a deep valley, must be one of the most magnificent views in the world. But Kinchinjunga (28,156 feet), splendid as its massive bulk is, has nothing to do with Everest (29,002 feet), a much higher and larger mountain, far to the west of Kinchinjunga, and not visible from Darjeeling.

Scotland.

Health of Scotland.

THE return of the Registrar-General for Scotland for the quarter ending December 31st, 1928, together with the supplementary return for that year, has just been published. The birth rate of the year was 19.8 per 1,000, and the marriage rate 6.7 per 1,000, both identical with the figures for 1927. The death rate was 13.3, as against 13.5 in 1927. This is the fourth successive year in which the death rate has been between 13 and 14 per 1,000. The birth rate, along with that of 1927, is the lowest yet recorded, the previous lowest being that of 1917, which was 20.3, as compared with the maximum Scottish birth rate, which occurred in the year 1876, and was 35.6 per 1,000, or 44 per cent. higher than it is now. The infant mortality of the year shows a decrease of 3, having fallen from 89 per 1,000 registered births to 86. The death rates from tuberculosis show reduction, that from all tuberculous disease having fallen from 100 per 100,000 to 97, and that of tuberculosis of the respiratory system having fallen from 71 per 100,000 to 68. Both of these rates are the lowest Scottish rates as yet recorded. Deaths from malignant disease numbered 6,902, a number which differs by only 17 from that of the previous year. The death rate for the fourth quarter of the year was 12.9 per 1,000, which is 0.8 less than that of the fourth quarter of 1927. With regard to the causes of death, of the 15,851 deaths registered in the quarter, 484, or 3.1 per cent., were attributable to the principal epidemic diseases, including 3 from enteric fever, 18 from measles, 37 from scarlet fever, 115 from whooping-cough, 119 from diphtheria, and 192 from diarrhoeal diseases among children less than 2 years old. In the counties, including burghs, the principal epidemic disease death rate ranged from 1.0 in Shetland to 0 in Berwick, Nairn, Orkney, and Peebles. In the larger burghs this death rate ranged from 0.8 in Hamilton, 0.5 in Glasgow, Motherwell, and Kilmarnock, to 0.2 in Edinburgh, Dunfermline, and Kirkcaldy, and 0.1 in Perth. Deaths from epidemic diseases other than those grouped as the principal epidemic diseases included 32 from cerebro-spinal meningitis, 32 from encephalitis lethargica, 41 from erysipelas, and 15 from acute poliomyelitis. Deaths from influenza during the quarter numbered 255, which constituted a death rate of 21 per 100,000. Deaths from malignant disease numbered 1,758 during the quarter, and constituted 11.1 per cent. of the total deaths. These numbered 76 fewer than in the fourth quarter of the previous year. Deaths from pneumonia, exclusive of influenza, numbered 1,458, equalling 9.2 per cent. of the total deaths of the quarter, but being 245 fewer than in the fourth quarter of the previous year.

Dinner to Sir James Leishman.

A complimentary dinner to Sir James Leishman on his retirement from the chairmanship of the Scottish Board of Health was held in Edinburgh on March 8th. Lord Provost Sir Alexander Stevenson presided, and the dinner was attended by about 160 persons, of whom the majority were associated with the work of the Department of Health for Scotland. Lord Alness proposed the health of the guest, and referred to the invaluable work which had been done by Sir James Leishman in connexion with the National Health Insurance Act and the Board of Health for Scotland. In his reply, Sir James Leishman said that it was a disturbing fact that the population of Scotland had remained practically stationary in recent years. He regarded with some perturbation the fact that the best of the population were leaving Scotland for the colonies and America. The cost of the social services of Scotland at the present time practically touched £1,000,000 per week, an amazing figure undreamt of by the older type of economist and statesman, and one calculated to give pause even to progressive men of all parties with reference to the capacity of the country to bear burdens. The annual health insurance income in Scotland amounted to about £4,000,000 from all sources, and up to three years ago the expenditure had been a good deal less. Although they

had built in Scotland some 89,000 State-aided and rate-aided houses, and were building 15,000 more, one of the real problems in the country still was bad housing, not only in the large cities, but in mining, agricultural, and highland areas. He thought that the Insurance Act had been a notable experiment in providing general practitioner treatment for the workers of the country, upon whom it had conferred a substantial benefit. The weakest part had been certification of sickness, but he would say no more on that point. One of the future problems was to bring together the municipalities and the voluntary hospitals in a good working arrangement.

Edinburgh Post-graduate Courses in Medicine.

The syllabus of post-graduate courses organized by a joint committee of the School of Medicine of the Royal Colleges and of the University of Edinburgh has just appeared. Since the first organization of post-graduate teaching in the Edinburgh Medical School in 1905, the courses which are offered to graduates have shown a great development both in number and in variety. A new feature of these courses consists in a course on clinical medicine, which will be given daily from 11 to 12 during the month of May by members of the medical staff of the Royal Infirmary, the fee being 3 guineas, while a course of instruction in medical side-room technique will be arranged if there are sufficient applicants. A similar course on clinical surgery will also be held from 11 to 12 for a period of six weeks by the members of the surgical staff of the Royal Infirmary, the fee being 3 guineas. During the summer vacation a four weeks' course in obstetrics, gynaecology, and diseases of children will be held from July 15th to August 10th, and will comprise clinical midwifery and gynaecology, obstetrical and gynaecological anatomy, physiology, and pathology, as well as child welfare and ante-natal clinics. The minimum number for which the course will be held is 12, the fee being 10 guineas. On its conclusion a four weeks' general practitioners' course will be held from August 11th to September 7th. This will include applied anatomy, clinical medicine, clinical surgery, clinics upon infectious diseases, gynaecology, diseases of children, diseases of the eye, diseases of the ear, nose, and throat, and dermatology. In addition, demonstrations will be given upon bacteriological diagnosis, morbid anatomy, insulin therapy, tuberculosis, radiology, ultra-violet ray therapy, dental treatment, and venereal diseases, in the afternoons. The fee is 10 guineas for four weeks, or 6 guineas for two weeks. Concurrently with the last, and at similar fees, a general surgical course will be held. This will include applied anatomy, general surgery, surgical operations, and clinics at the Royal Infirmary and the Royal Hospital for Sick Children, surgical pathology and physiology, venereal clinics, and radiology. The special departments of surgical diagnosis in renal disease, abdominal surgery, and gynaecological operations will also be dealt with. During the period of these courses special classes on vaccine therapy, medical chemistry, diseases of the blood, and radiology can be taken by those desiring to do so at a special fee. At other times of the year, during the academic terms, post-graduate classes can be attended dealing with tuberculosis, diseases of the nose, ear, and throat, ophthalmoscopy, venereal diseases, and surgical pathology. Various university classes, suitable for graduates, include medical entomology, diseases of tropical climates, psychology, bacteriology, neurology, chemical physiology, and applied anatomy. These are chiefly parts of courses of instruction for various university diplomas, but may be taken separately by any graduates interested in the subjects.

Glasgow Maternity Hospital.

At the annual meeting of the contributors to the Glasgow Royal Maternity and Women's Hospital, Sir John MacLeod, honorary treasurer to the institution, referred to the deficit on the year's working amounting to £4,000 on the ordinary accounts, which was £270 greater than the deficit of last year. This necessitated an encroachment on capital which could not go on indefinitely, as it would ultimately exhaust the capital fund. It was in the interest of the community at large that such an institution should receive greater public support, which he hoped would be forthcoming. Dr. Macfarlane said that the value of the social service which this hospital rendered to Glasgow was not fully understood by the entire community, which ought to take a greater interest in it. The Lord Provost said he considered that the Glasgow Maternity Hospital had a particular grievance in the fact that it was not treated by the Scottish authorities in the way that similar institutions were treated, and he thought that the Scottish Office might do more in answer to the representations which were made on behalf of the hospital.

Glasgow Eye Infirmary.

The annual meeting of the Glasgow Eye Infirmary was held on February 25th. Lord Provost Sir David Mason presided, and referred to the fact that this was one of the oldest philanthropic institutions in Glasgow, having been in existence for 105 years. It was interesting to note that in 1824 there had been 209 patients, that the 1,000 mark had been passed in 1851, and the 10,000 mark in 1883, the 20,000 in 1902, and the 30,000 mark in 1927. During the past year the number of out-patients had been 32,053, and the total attendances 72,562. The patients came not only from Glasgow and Scotland, but from various parts of England, as well as from the United States, the Transvaal, and British Guiana. The expenditure had exceeded the ordinary income, although there had been a gratifying increase in employees' subscriptions amounting to £192. He thought that it was scarcely fair to expect the citizens of Glasgow to bear the whole burden of the upkeep, and some scheme might be devised to appeal to likely sources beyond the limits of the city.

Glasgow Students and the Hospitals.

The special effort made by Glasgow students in January last on behalf of local hospital charities succeeded in raising the sum of £17,000. A meeting of the committee appointed by the Students' Representative Council for the purpose of allocating this sum was held on March 1st, and the following distribution was made. The Royal, Western, and Victoria Infirmaries, and the Royal Hospital for Sick Children and Maternity Hospital are each to receive £1,500 for the endowment of beds, while for ordinary purposes the Royal Infirmary is to receive £570, the Western Infirmary £425, the Victoria Infirmary £285, the Maternity Hospital £335, the Samaritan Hospital £300, the Ear, Nose and Throat Hospital £300, the Eye Infirmary £300, the Cancer Hospital £300, the Dental Hospital £500, the Elder Cottage Hospital and Lock Hospital £150, the Glasgow District Nursing Association, Ophthalmic Institution, and East Park Home £100 each. A grant was also made to the National Miners' Relief Fund of £2,975, and to the Lord Provost's Fund of £1,650.

Ayr County Hospital.

The report on the work of the Ayr County Hospital in 1928 presented at the annual meeting on February 25th showed that the number of patients treated in the wards during the year had been 1,773, of whom 1,467 were surgical and 306 medical. The ordinary income for the year had been £10,035, an increase of £835, while the total ordinary expenditure was £12,951. The total income from all sources had been £16,503, and the total expenditure £13,048, the credit balance being carried to maintenance reserve fund. The chairman, Colonel Houldsworth, thought that the financial position was satisfactory, because that of the voluntary hospitals in the country had been such in the post-war years to balance ordinary income with ordinary expenditure, and in this respect the county hospital had merely shared the common experience. Reference was made to the alarming number of cases arising from motor accidents, and the chairman said that many of those injured resided outside the hospital district and paid no contribution whatever for their treatment and maintenance in the hospital. He hoped that by some system of insurance, which would be compulsory upon the owners of motor cars, a solution would be found for this difficulty, as had been recommended by the Hospitals Association.

England and Wales.

Medical Society of London.

THE anniversary dinner of the Medical Society of London was held at the Trocadero on March 8th, with the president, Dr. John Walter Carr, in the chair. The toast of the society was proposed by Mr. Justice McCardie, who expressed appreciation of the good cheer always provided by doctors when they dined together, and of the habitual cheerfulness of doctors in the course of their daily work. The gathering that evening represented, he said, the things that united, rather than those that divided, the members of a calling. Sir Henry McCardie ended with a tribute to the great traditions of the medical profession and of this venerable society, now in its 157th year. The president, in his reply, drew an ingenious parallel between the Royal Society of Medicine and the Medical Society of London on the one hand, and the United States of America and Great Britain on the other. He then spoke of the opening up of the library and its development under the honorary librarian, Dr. A. F. Voelcker, and the registrar and secretary, Mr. Carter, and of the recent purchase, on advantageous terms, of the freehold of 11, Chandos Street. In the capable hands of Dr. Feiling and Mr. Davies-Colley, the honorary secretaries, the society was holding its own in all directions and "bringing forth fruit in old age." The health of the visitors was proposed by Mr. V. Warren Low, who recalled that Lettsom, their founder, delighted in hospitality, and that the society had done so ever since. Among the medical guests whom he welcomed with sparkling phrases were Sir John Rose Bradford, President of the Royal College of Physicians; Surgeon Vice-Admiral A. Gaskell, Medical Director-General, R.N.; Sir Ewen Maclean, President, and Dr. H. B. Brackenbury, Chairman of Council, of the British Medical Association; Colonel Samman, Master of the Apothecaries Society; the presidents of a number of sister societies; and the Editors of the *Lancet* and the *British Medical Journal*. Lord Riddell, in reply to the toast, declared his admiration for the medical profession and for the many-sidedness of so many of its members; he wondered what it was that made them speak so well, and what he himself had done to deserve the shafts of Mr. Warren Low's wit. Sir Ewen Maclean, who also responded, said that the Medical Society of London had amply justified its splendid detachment from the great amalgamation of 1907. Such medical bodies rightly left professional politics to the British Medical Association, which in the revolution of 1912 played its necessary part, and was now watching on behalf of the profession the new Local Government Bill. He asked for real and earnest help from individual members of the society in the shaping of this great measure along wise lines.

Cardiff Medical Students' Club: London Branch.

The London Branch of the Cardiff Medical Students' Club was inaugurated at a dinner on St. David's Day at Frascati's Restaurant, under the presidency of Dr. Dan Davies; some fifty former students of the Cardiff Medical School who are continuing their studies at various London hospitals owing to the closure to them of the Cardiff Royal Infirmary were present. The chairman, proposing the toast of "Dewi Sant," said that the study of the early history of the University of Wales, its struggles, and its successes, could not fail to deepen the patriotism of young Welshmen. Unlike other universities, which had owed much to benefactions from the rich, the University of Wales had been built up largely on the contributions of the peasantry. He felt sure that the breaking up of the federal University of Wales would be a retrograde step. Professor E. H. Kettle, who proposed the toast of "The Welsh National School of Medicine," expressed his firm faith in the future of the school, but feared that the ideals which had inspired those who had worked for the development of a great national institution had been replaced of late by pettiness of vision and selfish considerations. He hoped that the eclipse of the school would be only temporary, but its future recovery would need financial assistance from the Government; this was unlikely to be forthcoming unless there were substantial guarantees that the deplorable situation of last year would not recur. Mr. W. D. Lovelock-Jones, who seconded, expressed the sincere hope that Welsh nationalism would demand the resurrection of the school. Professor A. W. Sheen, in reply to the toast, said that negotiations were still in progress; he held out some hope that by next October the school might be re-established. Professor A. M. Kennedy also responded, and, though less optimistic, voiced his appreciation of the loyalty of the students in Cardiff to the professors. The toast of "The Cardiff Medical Students' Club" was proposed by Mr. J. P. G. Howells, and was seconded by Miss M. E. H. Jones. Professor T. Graham Brown, the president of the club, replied, and conveyed greetings from the junior students working in Cardiff. The health of "The Professors" was proposed by Mr. E. Llewellyn Williams and Mr. D. C. Harris, Professor E. C. Collis responding. Sir Ewen Maclean, who proposed the health of "The Guests," commented on the severity of the requirements of the University of London. The final toast of "The Chairman" was proposed by Mr. Lambert Rogers, and was accorded musical honours.

Leicester Medical Service.

The annual meeting of the Leicester Public Medical Service was held on March 5th, when the report of the board of management for the year 1928 was presented. It was stated that the continued depression in industry had had an adverse effect on the receipts, and the importance of increasing the number of subscribers was emphasized. The work in the various special departments for treatment had been continued, and the facilities thus provided had been welcomed by a large number of subscribers. Accommodation had been provided by arrangement with the Ministry of Health for the regional medical officer and the regional dental officer, as well as for the dental treatment of expectant mothers. A benefit fund established and maintained by donations from the trustees of the late Miss Sarah Barlow and the medical profession in Leicester, to enable uninsured people in straitened circumstances to purchase insulin at a greatly reduced cost, had proved very helpful in an increasing number of cases. The annual meeting of the Leicester subdivision of the Union of Medical Practitioners was held on the same day at the Central Dispensary. It was reported that the scheme for collective locumtenencies during holidays and sickness had proved of considerable value to the members. Donations to medical and allied charities, amounting to £113, were authorized by the committee during the year.

Gifts of Radium to the London Hospital.

Lord Knutsford informed the quarterly Court of Governors of the London Hospital on March 6th that two gifts, each of a gram of radium which cost £12,000, had been made to the hospital by two donors who insisted upon remaining anonymous. In addition, one of these had given £13,000 to be used as an endowment for a radium laboratory in which radium emanations could be collected in platinum containers for distribution. It was a condition of the gift that, if there was any excess of these emanations over that required for hospital cases, it should be available for members of the surgical staff for private patients, and also for treating cases of cancer in other hospitals. Assistants to work in the new laboratory were being trained by Professor Russ, head of the radium department at the Middlesex Hospital. Lord Knutsford explained that previously to receiving these gifts they had been endeavouring to treat nearly 1,000 cases of cancer a year, though they only had enough radium to deal with about 150. An additional endowment for the radium laboratory had been received from the East End Tradesmen's Association, and amounted to £1,800. Lord Knutsford expressed regret that the quinquennial appeal for £200,000 had only realized £118,337. It would soon be necessary to consider the question of enlarging the *x*-ray department, in which last year 25,000 radiographs had been taken.

Correspondence.

THE INTRACUTANEOUS TUBERCULIN TEST.

SIR,—I hope you will allow me space to reply to some of the points raised by Dr. Warwick Preston and Dr. Camac Wilkinson in your issue of March 9th (p. 475) in regard to my paper on intradermal tuberculin tests published in the *Journal* of February 23rd at page 336.

I am glad to be able to inform Dr. Camac Wilkinson that the tuberculin produced by Messrs. Burroughs Wellcome and Co. is quite as reliable as that of Meister Lucius and Bruning. This I have proved by carrying out simultaneous tests on the same persons with serial dilutions of both preparations, and finding the resulting reactions quite comparable up to the highest dilutions used. I elected to employ "old tuberculin" for the tests, because I had satisfied myself by long experience that it is one of the most reliable forms of tuberculin, and because it was important to work on lines comparable to those of another and far larger investigation now in progress in South Africa in order that the one series of observations might supplement the other. Further, it is to be noted that old tuberculin is the only tuberculin preparation recognized in this country for standardization under the Therapeutic Substances Act.

I need not remind Dr. Camac Wilkinson that the standardization of tuberculins, even when carried out on the most approved lines, still leaves much to be desired. It is difficult or impossible to make sure that one batch is of exactly the same strength as the next. The margin of error has been greatly reduced in recent times, but it has not yet been eliminated. For this reason it was necessary, in our investigation in Wales, to use the same batch of tuberculin throughout. This was rendered possible by the kindness of Dr. R. A. O'Brien, who was good enough to put aside a supply of batch No. 1154 for our special use.

On the question of a possible fallacy due to the presence of glycerin and toxic albumoses in the old tuberculin employed I am in a position to reassure Dr. Warwick Preston. Parallel tests were carried out, at the same time and on the same patients, with dilutions of a pure tuberculin protein free from glycerin and peptone, prepared by my colleague Dr. W. H. Tytler, and the results were strikingly similar. Again, Dr. Preston's fear that perhaps mere redness was taken as a "positive" is without foundation. A raised plaque of oedema, usually surrounded by a blush and sometimes showing a small bluish central area with a tendency to vesication—the "cocarde" of Mantoux—is the most typical reaction, but the essential is the raised and palpable plaque which must be sufficiently definite to be measured with the millimetre scale. My readings were carried out on the third day, the time of maximum reaction.

Reverting to Dr. Camac Wilkinson's remarks, the tests were not in any sense "casual observations made by a few juniors." Those on the healthy group, and some of those on the sick, were carried out by me personally. The rest were performed by members of the medical staff of the Welsh National Memorial Association, all of whom were whole-time tuberculosis experts possessing long experience of tuberculin, both in treatment and in diagnosis. Dr. Camac Wilkinson seems to think that it was a reproach to these investigators that the dilutions of tuberculin were made up by me and not left to them. I can assure him that all of them are quite familiar with the dilution of tuberculin for routine work; but, for an investigation on standard lines, standard methods are necessary, and slight personal idiosyncrasies are avoided by supplying the dilutions from a laboratory where the same technique is always employed. Again, it may be true, as Dr. Wilkinson thinks, that well-made dilutions of tuberculin keep indefinitely; but why chance it? We know that they keep without appreciable deterioration for three weeks or a month, and it is surely better to work on uniform lines within the limits of certainty.

Neither of your correspondents seems to have realized that my object was to compare the effects of varying strengths of *the same* tuberculin, not the effects of varying types of tuberculin in the same concentration. It is not surprising that there should be discrepancies between my results, obtained with a dilution of 1 in 1,000 of Burroughs Wellcome and Co.'s old tuberculin, read at three days, and those of Dr. Preston with 1 in 1,000 of T.A.F. of Meister Lucius and Co., read at the end of a week. What is more interesting is that Dr. Preston's findings confirm mine to the effect that his highest percentage of "positives" was in the non-pulmonary, and his lowest in the more severe pulmonary cases. He does not specify the exact composition of his "clinically free from tuberculosis" group. Mine consisted of healthy male adults residing in London. I have no doubt that a group of healthy persons could be found in which only 15 per cent. reacted, and there is no difficulty in finding such a group at any time amongst young children. I may say, however, that I have since tested another batch of adult non-tuberculous males, obtaining a slightly higher percentage of positives than that recorded in my paper. This finding is, in my opinion, the most important result so far gained from our Welsh investigation.

It is very necessary that the medical profession should realize that, so far as adults in this country are concerned, a positive tuberculin reaction has no diagnostic significance whatever. Medical men with less experience of tuberculosis than Dr. Preston and Dr. Wilkinson might, if this fact were not appreciated, diagnose a patient as tuberculous because of a marked positive tuberculin reaction, put him through a long and expensive course of tuberculin treatment, and finally announce the "cure" of a "pathological" condition which had never existed.—I am, etc.,

Cardiff, March 9th. S. LYLE CUMMINS.

TREATMENT OF EMPYEMA.

SIR,—There seems to me reasonable doubt as to the soundness of Dr. Stacey Wilson's respiratory dynamic published on March 2nd (p. 419). Probably the improvement in lung expansion after the operation for empyema, which he attributes to his method of inducing the patient to make expiratory efforts with a closed glottis, is really due to deep inspirations, and to the physiological effect of the contractions of the bronchioles during expiration. His patients' lungs expand for the same reason that the almost solid lung of the newborn infant expands after birth. How does he account for the baby's lung and all the alveoli becoming distended with air, for the baby's tidal respiration would only fill the trachea, bronchi, and bronchioles? But the dilatation of bronchioles in inspiration is followed by contraction, and so before all the first intake of air is expelled a fresh inspiration is made through the now widely opening bronchioles; once again the inspired air is obstructed in escape, and so the lung becomes more and more distended till all the alveoli are expanded, otherwise the child has areas of atelectasis.

Fortunately surgeons have discovered that a chest wall may be opened—as, for example, for a chronic empyema—and that, so long as the visceral pleura is not opened, the partially collapsed lung will not collapse more, but will even expand and come up to the opening in the chest wall, provided the expansile force *from within* is not too much hampered—as, for example, by greatly thickened pleura. I certainly do not suggest that expiration with a closed glottis may not be some additional help. It helps the baby when born—hence the value of crying lustily—but the glottic closure is only part of the all-essential similar and coincident contraction of the bronchioles. In fact, the effort to close the glottis involves concomitant bulbar impulses to the co-responding bronchiolar contractions.

One may ask, too, how Dr. Ramsbottom explains his case (*a*)—March 9th, p. 443—of pneumothorax following perforation of the *parietal* pleura by a hatpin; surely it must have been due to lesion of the *visceral* pleura, which is totally different in result in the matter of lung collapse.

The practical clinical import of these bronchiolar contractions during expiration has been insufficiently recognized. I drew attention to this question twenty-six years ago in a contribution to the *Bristol Medico-Chirurgical Journal* of March, 1903; I would gladly forward a reprint of this to anyone interested.—I am, etc.,

Bristol, March 9th. PATRICK WATSON-WILLIAMS.

A COLLEGE OF OBSTETRICS AND GYNAECOLOGY.

SIR,—In your article on the above subject (March 9th, p. 462) you state that you understand that the project has the approval of every professor of obstetrics and gynaecology in the United Kingdom. That may be so; but, as one who practised those branches of medicine for thirty-eight years, and was a professor for thirty-two, I should like to give some reasons for my disapproval.

Your article states that the proposed movement is made with the object of encouraging the study and improving the practice of obstetrics and gynaecology. There is an old-standing society still in existence for this purpose—namely, the Section of Obstetrics and Gynaecology in the Royal Society of Medicine. This Section includes nearly all the teachers of those subjects in this country, and is one of the finest schools for the above purposes in the world; no information is afforded as to the ways in which its object could be better achieved by a college. It appears to me that the improvement in teaching depends on the individual teachers, and not on the college of which they are members. The further objects of the proposed college—"advising in regard to technical training, instituting lectures and demonstrations, and diffusing information on all matters relating to this branch of practice by means of periodicals, books, or other publications"—are already carried out by the present Royal Colleges, the Royal Society of Medicine, and the special and general medical press. The "institution of a post-graduate diploma" and the seeking of authority "to co-operate, if invited, with existing bodies in the examination of candidates for qualifying diplomas" seem to point to a desire to compete with the present licensing bodies, or, alternatively, to grant licences of a higher grade, which would lower the value of the present degrees and diplomas. There seems no probability that the licensing bodies will give the required invitation to their competitors to provide examiners, whom the Royal Colleges have hitherto chosen from amongst the same obstetricians and gynaecologists as would form the Fellows of the new college. In that case the diplomas would be honorary and post-graduate, and the intention would seem to be to stamp the F.C.O.G. as an individual superior in the practice of obstetrics and gynaecology to the F.R.C.P. or F.R.C.S. This would be resented by the holders of those qualifications.

There is no doubt that general practitioners are responsible for a good deal of bad obstetrics and gynaecology; but the remedy seems to be for the specialists to show that they do better work, and not to bemuse themselves with the idea that a new set of capital characters can be as easily attached to a man's work as appended to his name. The present movement is due to the neglect of obstetrics and gynaecology by the Royal Colleges. The Royal College of Physicians instituted a special diploma in 1783, and has conferred its Fellowship on a number of its obstetrical and gynaecological members; but it cannot be said—although Harvey, Blundell, Denman, Matthews Duncan, and others received that honour—that, in recent years, the Fellowship has been conferred as freely as on its medical members, or as the importance of the subject and the character of its practitioners deserved. An improvement in this respect is overdue, and would be welcomed, I think, by many Fellows who are not specialists. But to form a new college, which could not, at least for many years, compete in tradition, buildings, library, or funds with the existing Royal Colleges, would be to place obstetrics and gynaecology in a position of inferiority which its importance and achievements do not deserve. Far better would it be to extend the conjoint work of the two Royal Colleges by a complete amalgamation, as Clifford Allbutt suggested, into a Royal Academy of Medicine.—I am, etc.,

HERBERT R. SPENCER, M.D., F.R.C.P.

London, W.1, March 9th.

COLLES'S FRACTURE.

SIR,—In your issue of March 9th (p. 477) Mr. Cochrane expresses the view that the real cause of disablement after Colles's fracture lies in "neglect to reduce the forward luxation of the lower end of the ulna so frequently present," and calls attention to the fact that this was not explained in our article on fractures of the lower end of the radius, which appeared in the *British Medical Journal* of January 12th.

The reason of the omission is not far to seek. We are not familiar with forward luxation of the ulna in association with *Colles's fracture*. We regard the ulna as the fixed bone in relation to which the lower fragment of the broken radius suffers a variety of displacements. Even if Mr. Cochrane's description is interpreted as backward subluxation of the lower radial fragment upon the ulna, we still maintain that such is a rare accompaniment of this type of fracture. We have encountered the condition in not more than three cases in the last five years. The radial fragment when it is forced directly backwards in the shock of the impact, rotates around the ulna, the movement taking place at the lower radio-ulnar joint, and resembling the act of normal supination. In the most severe cases of backward displacement of the lower radial fragment it is conceded that such a subluxation may occur, but certainly no case of failure reported in the article to which Mr. Cochrane refers can be attributed to it.

Varying degrees of subluxation at the inferior radio-ulnar joint certainly do occur, however, in Colles's fracture, but in no sense can the subluxation be regarded as a forward luxation of the ulna. We refer to the altered relation of the articular surfaces of this joint caused by *backward tilt* of the lower fragment of the radius, which is the most *constant displacement of Colles's fracture*. The *utmost* care must be taken fully to reduce this displacement, so that the lower articular surface of the radius faces downwards and slightly forwards, a point upon which very great stress was laid in the article mentioned above. If full correction of this backward tilt is obtained, subluxation at the inferior radio-ulnar joint is reduced automatically.—We are, etc.,

HAROLD EDWARDS,
E. BELLIS CLAYTON.

London, W.1, March 11th.

PROGNOSIS IN ECLAMPSIA AND ALBUMINURIA OF PREGNANCY.

SIR,—Dr. James Young, in his letter of your issue of March 2nd (p. 419), brings forward further evidence in favour of his contentions. This is all to the good, and justifies the concluding paragraph of my first letter (February 16th, p. 320) that criticism would be helpful. For the moment this new evidence must be left for consideration before its ultimate importance and weight can be assayed in the subject under discussion. What I must evidently repeat is that at present no "positive" and "conclusive" evidence exists—words deliberately and intentionally chosen—that the kidneys are previously "healthy," using that word in its broadest sense, before the initial attack of toxæmia. What would Dr. Young call evidence based on the examination of the renal ability or disability of a large series of women before the first pregnancy and the result tabulated with the results and complications of their subsequent pregnancies? In comparison, his fresh evidence, though important (as every possible link is important in obscure problems under investigation), is evidence by inference only, if I may so describe it; the hypothetical investigation mentioned above may well be, in the present state of medicine and society, impossible, but I can assure Dr. Young that some, if only in a small way, are slowly collecting such evidence.

With regard to Dr. Young's remarks in the second paragraph of his letter, careful re-reading of my letter will show that I (quite intentionally) refrained from expressing personal "views." What I pointed out was that other workers had emphasized the difficulty in distinguishing "*nephritic*" from "toxic" cases, even with elaborate biochemical investigations. It is hardly an answer to reiterate that these workers have confused the issue in holding there are two conditions, not one. That is just the point I think where the views diverge.

Grateful, Sir, as I am for the room you have found for this correspondence, I am aware that the whole subject is so technical and one mainly for experts that I feel it would be more suitable for discussion in the columns of a paper devoted entirely to obstetrics, and having reason to

know that these questions will be examined and discussed elsewhere in a not far distant future, perhaps I may leave it at that.—I am, etc.,

Norwich, March 4th. ARTHUR CROOK.

MINOR ORTHOPAEDICS IN GENERAL PRACTICE.

SIR,—It gave me great pleasure as I read Professor John Fraser's address in the *British Medical Journal* of March 2nd (p. 383) to feel that I, a general practitioner, was so much in agreement with one in authority. With one statement alone did I not agree. Professor Fraser says a hallux valgus of any degree is almost invariably accompanied by flat-foot, and the *cause* in the majority of cases is flat-foot. Certainly half—I believe more than half—the cases of hallux valgus I have seen have not been accompanied by flat-foot. I know three middle-aged sisters each of whom has well-marked hallux valgus, and each has well-arched feet. Another patient, an elderly lady, with severe hallux valgus and a hammer-toe, had a well-arched foot.

I believe the commonest cause of hallux valgus to be the wearing of shoes with high heels and toes pointed out too far. I mean when the shoes are placed side by side the medial line of the foot (inside the shoe) traced forwards from the heel is turned outwards at the metatarso-phalangeal joint of the great toe. The foot is thus placed in the position of hallux valgus, and the high heels cause the weight of the body to press the feet more firmly into this incorrect shape. In support of the second part of this theory is the fact that the great majority of cases occur in women, even though men use equally badly shaped footwear.

But what disappointed me in Professor Fraser's address was that, after hinting that the cause of several of these distressing conditions of the feet lay in faulty footwear, he did not denounce the manufacturers of boots and shoes who give so much discomfort—and often anguish—to the wearers, and so much unnecessary labour to the consulting surgeon.

In relation to the prevailing shape of footwear I should like to point out the following facts:

1. When a baby's feet are placed side by side so that the heels and great-toe joints touch, then the great toes lie parallel and touch throughout their length. The same applies to the feet of a savage, whose feet are always bare. But I know of no place where shoes of this shape are obtainable ready-made for adults. From the metatarso-phalangeal joint the medial lines of all shoes and boots turn away from one another so that the contained great toes cannot lie parallel, but are forced apart to enclose a considerable angle between them.

2. A neat shoe can be made of anatomically correct shape, the only difference being that, when placed side by side, the feet would lose the appearance of being turned out, which the present shoe gives.

3. When I have approached those who sell shoes and discussed this point with them they say that a neat shoe of the desired shape can easily be made, but that no adult has a foot of that shape. That this is so I can affirm. I have never seen an adult accustomed to wearing boots or shoes who can place the feet side by side and show the great toes lying parallel. There is, however, hope for the coming generation if those in authority will denounce the modern shoe and direct the shoe manufacturers in the way they should go. I believe they are quite ready to listen.

—I am, etc.,

R. A. MURRAY SCOTT, M.B., B.Chir.Cantab.

Leeds, March 4th.

CEREBRAL ANGIOSPASM.

SIR,—Recent correspondence regarding cerebral angiospasm prompts me to draw attention to an article on this subject (*British Medical Journal*, May 16th, 1914) by Professor William Russell of Edinburgh, which was reprinted in his book *The Sphygmometer: Its Value in Practical Medicine* (Baillière, Tindall and Cox, 1921). Anyone who is interested in this phenomenon will derive a good deal of benefit from the perusal of this article.

In my experience cerebral angiospasm is by no means uncommon. I have a patient whom I have observed for more than seven years, a man over 70 years of age, who has had numerous attacks. He is now so well schooled in the premonitory symptoms that he can prevent an attack by taking 1/4 grain of erythrol tetranitrate. In the many attacks during which I have seen him he has suffered from hemiplegia and loss of speech. These have invariably passed off quickly following 1/2 grain of erythrol tetranitrate. Phenacetin I have found equally useful.

I feel perfectly sure that it lies within the power of anyone to prevent in these subjects such a disastrous consequence as cerebral softening, if only the varied manifestations of cerebral angiospasm are kept in mind.—I am, etc.,

P. H. J. TURTON, M.D.Ed.

Heanor, nr. Nottingham, March 9th.

SIR,—I have notes on a case diagnosed as cerebral angiospasm which I saw in 1922. A man, aged 56, woke up one morning early with a feeling of oppression; he was confused and hemiplegic. The paralysis passed off in twelve hours, but returned in twenty-four hours; a few hours later it again disappeared but recurred and passed off as quickly, save for a slight dragging of one foot. The urine was normal, and so, apparently, was the heart. The blood pressure was 300; it was tested several times and treatment reduced it to 230 mm. The patient kept well for eighteen months; then one morning while shaving he had precordial pain, returned to bed, and sent for me. I was auscultating the heart when I heard its beats cease. Mistrusting my ears I looked up at his face; he was dead.—I am, etc.,

Darlington, March 5th. W. W. FORSYTH, M.B.

VACCINATION IN THE LIGHT OF RECENT EXPERIENCE.

SIR,—It would be of very great interest to the average medical officer of health if some authoritative pronouncement could be made on the relation between alastrim and small-pox. If they really are two distinct diseases, how are they to be distinguished? The question is of vital importance if the subject of vaccination is raised. Is it worth while going to the trouble of searching out and following up contacts, and insisting on vaccination, for a disease which, according to some authorities, is merely like a mild chicken-pox? In the second place, why vaccinate a contact and thereby almost certainly prevent him from working for a number of days, when this measure is to protect him against risk of infection by a disease so mild as not to be worth worrying about?

But are there two diseases? Obviously the Ministry of Health does not think so, or it would not require such stringent regulations carried out. Furthermore, is it always possible to say definitely that one is dealing with alastrim or with small-pox? Alastrim, it is said, does not kill; neither does mild scarlet fever, but it is quite capable of infecting another child so that a fatal result ensues.

Surely alastrim is only mild small-pox, and it does not breed true, despite Dr. R. P. Garrow and others. In Yorkshire in 1927 I had an outbreak of small-pox in which the initial cases were so slight that some patients had not even called in a doctor; yet these cases infected others, one girl so severely that the medical superintendent of the hospital to which she was admitted, a man of much experience, anticipated her death. She eventually recovered, but for a time her eyesight was in danger. Needless to say, her rash was typical of small-pox. Doubtless I shall be told that the first cases, though mild, were really true small-pox; but how is one to know that in the first place?

There is another side to the picture. Last year I was called to the union infirmary to examine a tramp with a severe attack of typical small-pox; his face was covered with confluent or semi-confluent pustules. He was delirious, his pulse was poor, and he was pulled through only by dint of careful nursing. But in due course certain of his contacts at a common lodging house developed small-pox; all of these were quite unprotected by vaccination; yet their only symptoms were a few spots, with practically no malaise or discomfort at all. Indeed, had it not been for the first case, and the fact that they were being inspected daily, I am confident that their disease would not have been recognized, for no one would have seen it.

In view of the above facts, what is one to think except (1) that small-pox, like scarlet fever, affects some severely and others mildly; (2) that it appears sometimes in severe epidemics and sometimes in epidemics of the type generally prevalent to-day; and (3) that the types—that is, mild (alastrim) and severe (small-pox)—do not breed true to type, but true to disease, of which there is one?

In view of the fact that we do not know how each individual will be attacked by the disease, we still advise vaccination in epidemic times and safeguard our contacts as well as we can. Thus do we endeavour to limit the spread of the disease, which, though mild to many at the present time, is severe to the few. Unfortunately we do not know which the few will be, nor do we know even how long the present mild type will persist.—I am, etc.,

F. A. BELAM, M.D., D.P.H.,
M.O.H. Guildford.

March 4th.

PYORRHOEA ALVEOLARIS.

SIR,—I write to endorse the remarks of Mr. J. H. Badcock on February 23rd (p. 373) with reference to the value of the regular use of the toothbrush in oral hygiene.

Some few months ago I was asked to undertake the duties of part-time regional dental officer. A large percentage of the patients I have seen are "working" folk of middle age, to whom the use of the toothbrush has been unknown from one year's end to the other. Suffering from digestive troubles, they have been referred by their medical man to their dentist, and he has marked their mouths for a wholesale clearance of the teeth. An oral examination in every case reveals a similar state of things—a more or less complete set of teeth, discoloured and unutterably dirty, with considerable deposits of "tartar" in each jaw, and a general septic gingivitis and alveolar absorption. As a consequence the teeth, though often free from caries, are loose, and owing to their unwholesome condition worse than useless for the purposes of mastication. Without doubt pyorrhoea alveolaris in such cases is a dirt disease, and preventable, and one never sees, as I know from over thirty years' experience in private practice, such a state of things in the mouths of people with whom the intelligent use of the toothbrush has been a matter of daily routine.

The truth is that there are millions of people in this country who to-day are ignorant of the fact that daily cleansing of the mouth can affect their health one way or the other. In the present generation this continued neglect has done its work, but if the boys and girls of the working classes can only be induced to understand the necessity of a clean mouth, the daily use of the toothbrush would make such cases as I have described relics of an age which forgot to brush its teeth.—I am, etc.,

F. C. PORTER.

Nottingham, Feb. 27th.

The Services.

HONORARY SURGEON TO THE KING.

COLONEL F. G. PROUDFOOT, T.D., Assistant Director of Medical Services, 48th (South Midland) Division, Territorial Army, has been appointed Honorary Surgeon to His Majesty the King, with effect from February 16th last.

DEATHS IN THE SERVICES.

Surgeon Lieut.-Colonel William Michael Courtney, *Bengal* Medical Service (ret.), died on December 2nd, 1928, aged 83. He was born on September 29th, 1845, the son of Patrick Courtney, Esq., of Drogheda, was educated at the Ledwich school of medicine in Dublin, and took the L.R.C.S.I. and L.A.H. in 1868. Entering the I.M.S. as assistant surgeon on October 1st, 1869, he became surgeon major after twelve years' service, and surgeon lieutenant-colonel when that rank was instituted in 1891, retiring on December 7th, 1895. He spent his whole service in military employment, and served on the north-east frontier of India in the Daphla campaign of 1873-74; in Burma in 1886-87, gaining the medal and clasp; and in the Chin Lushai campaign of 1889-90, receiving a clasp.

Lieut.-Colonel Phirozsha Jamsetji Damania, Bombay Medical Service (ret.), died on December 15th, 1928, aged 77. He was born on August 29th, 1851, was educated at the Grant Medical College, Bombay, where he took the L.M.S. in 1876, and, after coming to England, the L.S.A. in 1877 and the L.R.C.S.Ed. in 1878. He entered the I.M.S. as surgeon on March 30th, 1878, attained the rank of lieutenant-colonel after twenty years' service, and retired on October 28th, 1893. He served in the Afghan war in 1880-81, receiving the medal, and in Burma in 1885-87, gaining the medal with a clasp.

Lieut.-Colonel Cecil Edward Bulteel, Indian Medical Service, died on December 20th, 1928, aged 51. He was born on August 17th, 1877, was educated at King's College, London, and took the M.R.C.S., L.R.C.P.Lond. in 1901. Entering the I.M.S. as lieutenant on September 1st, 1902, he became lieutenant-colonel on March 1st, 1922. His service had been spent in military employ, and his last appointment was the command of the Indian military hospital at Belgaum. He served on the north-west frontier of India and in Afghanistan in the third Afghan war in 1920-21, was mentioned in dispatches in the *London Gazette* of August 3rd, 1920, and received the O.B.E. on January 1st, 1920.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE John Lucas Walker studentship of £300 a year for original research in pathology has been awarded to Neil E. Goldsworthy, Ph.D., for three years.

At a congregation held on March 9th the following medical degrees were conferred:

M.B., B.CHIR.—G. W. Pimblett, R. G. Apthorpe.
M.B.—W. E. Underwood.
B.CHIR.—E. A. E. Palmer.

Congregations will be held next term on April 26th, May 11th and 24th, and June 8th, 15th, and 18th.

UNIVERSITY OF LONDON.

THE Senate at its meeting on February 20th resolved:

(1) That the Department of Hygiene and Public Health at University College be closed on July 31st, 1929, and that the work for the Diploma in Public Health and for post-graduate and research students in hygiene hitherto carried on in that department, in conjunction with that in bacteriology carried on in the University College Hospital Medical School for candidates for the Diploma in Public Health, be transferred as from the same date to the London School of Hygiene and Tropical Medicine.

(2) That the teaching of epidemiology and vital statistics for the Diploma in Public Health be transferred to the London School of [illegible] as from August 1st, 1929.

[illegible] direction of research in epidemiology [illegible] for the Diploma in Public Health, at present undertaken by a Reader at University College, be continued in the Department of Applied Statistics and Eugenics at University College.

(4) That [illegible] University College [illegible] be known as "The D[illegible]"

Candidates for the degree of Ph.D., which is to be instituted in non-clinical subjects for internal students in the Faculty of Medicine, will be required to hold, in a branch of study akin to that in which they propose to proceed to the Ph.D. degree, the degree of M.B., B.S., or B.D.S., or B.Pharm. The regulations for the Ph.D. degree are to be amended accordingly.

The ceremony of Presentation Day will be held in the Albert Hall on Wednesday, May 8th, at 2.30 p.m., and the graduation dinner will take place at 8 p.m. on the same day in the Merchant Taylors' Hall, Threadneedle Street, E.C.

A course of lectures on mental deficiency, supplemented by a course of clinical instruction, will be held from May 27th to June 1st. A course, mainly for those of the school medical service, for the purpose of studying exceptional conditions allied to mental deficiency, will be held from June 3rd to 8th. Full particulars may be obtained on application to Miss Evelyn Fox, care of the University Extension Department, University of London, S.W.7.

Applications for grants from the Dixon Fund for assisting scientific investigations must be sent in between April 1st and May 15th, accompanied by the names and addresses of not more than two persons to whom reference may be made. Full particulars may be obtained from the Academic Registrar.

UNIVERSITY COLLEGE.

A Bayliss-Starling Scholarship of about £120 for physiology and biochemistry will be awarded by the University College Committee in June next. Candidates must submit, on or about May 15th, to the Secretary of University College, London, a statement giving full particulars of his educational career and of his qualifications for entering on a course of training in the principles and methods of research.

UNIVERSITY OF MANCHESTER.

THE Council and Senate adopted a resolution on March 5th asking the University Court to authorize conferment of the degree of Doctor of Science (*honoris causa*) upon Sir Ronald Ross, K.C.B., M.D., F.R.S., in recognition of his great work in the prevention of malaria. It is proposed to confer the degree on Founders' Day, May 15th, two days after Sir Ronald Ross's seventy-second birthday.

UNIVERSITY OF SHEFFIELD.

MR. VINCENT TOWNROW, F.R.C.S., has been appointed lecturer in diseases of the ear, nose, and throat, and Dr. Rupert Hallam lecturer in dermatology.

Obituary.

CLEMENS PIRQUET, M.D.,

Professor of Paediatrics in the University of Vienna.

THE medical profession has lost one of its most notable members by the tragic death of Freiherr Clemens Pirquet.

Clemens von Pirquet was born in Vienna in 1874, and in that city he has died, leaving behind him, as a memorial of his indefatigable work in the cause of the children, the Children's Hospital and Clinic attached to the University of Vienna, in the development of which he played such a prominent part. He was educated at Kalksburg, and later in the Universities of Vienna and Graz, obtaining the M.D.Graz in 1900. For some years after this he acted as assistant to Professor Escherich, and in 1908 became professor of paediatrics at the Johns Hopkins University at Baltimore. After two years he returned to Europe, and, first at Breslau and later at Vienna, he built up for himself a world-wide reputation. Immediately after the war Pirquet, who had now discarded the "von," threw himself whole-heartedly into co-operating with various agencies which sought to succour the children of Austria. With an amazing administrative ability and grasp of detail he combined an immense knowledge of the scientific aspects of nutrition, so that he was able to advise as to the best methods of distributing food and money down to the last crumb and farthing. Then followed the acceptance of an invitation to return to America, but, once across the Atlantic, nostalgia set in, and Pirquet returned to Vienna to the clinic to which all students of paediatrics have felt themselves drawn at one time or another.

Of Pirquet's contributions to medical science the cutaneous tuberculin reaction which bears his name is known to a wide circle, but although of great value in illustrating the clinical conception of allergy which he introduced, and demonstrating the wide distribution of tuberculous infection, this represents to a more limited section of the scientific world only a very small part of his labours. His work on the assessment of the state of nutrition of children by measurement of the weight and sitting height, the mathematical formulae devised to express an "index of nutrition," and the correlation of this with the dietetic requirements as illustrated by his "nem" system, was the most important piece of collected and sustained research for which Pirquet was responsible; and for this he will be most gratefully remembered by posterity. This system of nutrition was by no means easy to follow, as was indicated by the reviewer of a second edition of a work by Pirquet and his associates on the nutrition of healthy and sick children, mentioned in these columns last year (May 19th, p. 851), but no one belittled the sound basis of Pirquet's views on human nutrition, and he had abundant opportunity for the practical application of his ideas during the starvation period in Vienna. His "Pelidisi" system for estimating and recording the state of nutrition of children by observation of the skin, muscle tone, etc., was an extension of the sitting height and weight formula; again, while not easy to follow, especially in some of its clinico-mathematical conceptions, the system was essentially scientific, and has formed a basis for many inferior systems in other parts of the world.

Pirquet's work and writings have had considerable influence on paediatrists, especially of the German- and English-speaking races during the pre-war years, and his stimulating presence and gracious manner will now be sadly missing from the Vienna school. Many of those for whom the opportunity of visiting Pirquet there had not yet arrived were looking forward to hearing him open a discussion on the prevention and cure of tuberculosis in early childhood at the Annual Meeting of the British Medical Association in Manchester this year, and their disappointment will be keen. The children of the world have lost a great friend—he was president of the Union Internationale de Secours aux Enfants—the medical profession has lost a great leader, and the Austrian nation a cultured nobleman who loved his people dearly and served them well

DR. CHARLES PAGET LAPAGE, president of the Section of Diseases of Children at this year's Annual Meeting of the British Medical Association in Manchester, sends the following appreciation: The untimely death of Professor Clemens von Pirquet is a very great loss. Only his own country, which has benefited so much by his work, can estimate fully the greatness of that loss, but those of us who knew the value to paediatrics of his initiative and energy and clear thinking feel that we have lost a leader and a great man. He was coming to Manchester in July to open a discussion in the Section of Diseases of Children on tuberculosis in infancy and early childhood: its prevention, diagnosis, and cure. In a letter on January 21st he keenly discussed all the arrangements for this meeting, and concluded, "Looking forward to see this part of England." We in Manchester, therefore, feel a keen sense of personal loss that death has deprived us of the opportunity of meeting and hearing this outstanding physician.

CLIVE RIVIERE, M.D., F.R.C.P.,

Physician to the City of London Hospital for Diseases of the Chest and to the East London Hospital for Children.

THE death of Clive Riviere is an irreparable loss, not only to the Chest Hospital, which he served so well, and to all his friends, but to progressive medicine. He inspired confidence, admiration, and affection in all who knew him: confidence in his judgement, admiration for his skill and character, affection for his gentle and unselfish disposition. He was ever thoughtful and considerate for others. He was devoid of all pettiness, and any feelings of jealousy were entirely foreign to him. With a mind of great originality was combined a high order of technical skill, and it was a delight to watch his work. His sensitiveness to suffering in others served as a constant stimulus to him to aim at its relief, and he was continually thinking over and devising new ways to alleviate or to cure conditions that were regarded as hopeless. Of a family of artists, he was himself an artist. He was a man of wide interests and culture, fond of music and reading, loving the beauty of simple things, the countryside, and the sunshine. With all his qualities of greatness, with a world-wide reputation that his work and his writings had justly given him, he was the most shy, the most humble-minded and modest of men. In him we have lost one who was indeed the very pattern of an English gentleman and a great physician, who was at once a master and a friend.

He was born in 1872 at Charlton Kings in Gloucestershire, son of Briton Riviere, R.A. His mother was a daughter of John Dobell and a sister of Sydney Dobell. He was first educated at St. Andrews University. It may surprise those who knew him to learn that there he distinguished himself at golf. In fact, he was excellent at all games demanding quickness of eye and delicacy of touch. He rarely played them, however, and never in his later years, as he found life too full to spare time for games. These faculties, however, combined with an artistic sense and a very musical ear, undoubtedly helped him to achieve eminence in his particular branch of medicine. After St. Andrews he was sent to University College School, and thence to University College. He began his professional training at St. Bartholomew's, where he gained the Brackenbury Scholarship and became house-physician, casualty physician, and demonstrator of pathology. He was qualified in 1898, when he obtained the M.B. of London University. In 1900 he gained the M.D. and the M.R.C.P., and in 1909 the Fellowship of the Royal College of Physicians. While at St. Bartholomew's he began to take a special interest in affections of the chest, one of his earlier papers being "X-ray tuberculous fibrosis in children," which appeared in the *St. Bartholomew's Hospital Reports*. After a period at Tübingen University he became registrar at Great Ormond Street, then physician to the Shadwell Hospital for Children, from which he resigned in 1928, and was physician to the City of London Hospital for Diseases of the Chest, Victoria Park, where he was actively engaged in progressive work until the time of his death. He

here that he did the work that gained for him a world-wide reputation. He was one of the pioneers of artificial pneumothorax treatment in this country, and he lived to see a general adoption of this wonderful method which he championed through many years of neglect. His book on the subject is classic. His next most valuable contributions to medicine were his insistence and instruction on the early diagnosis of pulmonary tuberculosis, which he rightly held to be of such vital importance in successful treatment, and his work on the development of the surgery of the chest. His teachings on the former are incorporated in his book *The Early Diagnosis of Tubercle*, a masterpiece of lucidity and breadth of view, qualities which characterize all his writings.

It is a tragedy that his work was cut short at a time when great advance is being made in thoracic surgery, in which he would have continued to take an important and progressive part. He was for ever devising new and improved methods, and at the time of his death was working out a new operation for apical collapse to take the place of the present unsatisfactory measures for apicolysis. Among other achievements must be mentioned his writings on tuberculin treatment and bronchiectasis. Although a physician to a children's hospital, he was not so well known in this respect. Many cases, however, of tuberculosis in young children gravitated to him, and he was greatly interested in them. Children at once took to him and loved him.

His last act was one of characteristic devotion to duty. Feeling far from well, he went, on a bitterly cold evening, to see a nurse at the hospital who was desperately ill with pneumonia. He came back, and in a few hours had a rigor. Pneumonia set in, and was accompanied by a most painful diaphragmatic pleurisy. After four days he was much better, but on the fifth night a pneumonic area on the other side spread rapidly, and he was overwhelmed by it and died the following afternoon of heart failure.

F. G. C.

Dr. ROBERT HUTCHISON writes: By the sudden and untimely death of Clive Riviere the profession has lost a man of a type that can ill be spared. He might be described as being in the best sense of the word a gentleman, and he will be held in remembrance more for what he was than for what he did. Modest, kindly, and courteous, he was truly one who envied not, vaunted not himself, was not puffed up. He loved all beautiful things and hated everything ugly, mean, or pretentious, and his many friends will always be grateful for the example of a character of so much charm. Their sympathy will also go out in full measure to her who shared with him twenty-three years of singularly happy married life, and who was always his chief friend and companion.

ROWLAND HILL COOMBS, M.D., M.R.C.P.,

Consulting Physician to the Bedford County Hospital.

WE regret to record the death, at the age of 84, of Dr. R. H. Coombs, which took place at his home in Bedford on March 3rd.

Rowland Hill Coombs, eldest son of Dr. James Coombs, was born at Bedford, receiving his early education first at the Modern School and afterwards at Bedford School. In 1862 he entered as a student at St. Bartholomew's Hospital, qualifying L.S.A. and M.R.C.S. in 1866, and L.R.C.P. in 1867. In 1884 he graduated M.D.Durham. In 1922, being then in his seventy-eighth year, he passed the examination for Membership of the Royal College of Physicians of London; probably he was the oldest candidate who ever sat for that examination. For more than fifty years Dr. Coombs was physician to the Bedford County Hospital, and at his jubilee presentations were made to him by the staff, and he was entertained to dinner by the medical men of Bedford. For many years he was surgeon to the Bedfordshire Militia and lieutenant-colonel in the Royal Militia Staff Corps; later, when the Militia was incorporated into the Special Reserve, he held the rank of surgeon lieutenant-colonel in the Bedfordshire Regiment. Among his other medical appointments were those of medical officer to Elstow School and medical officer to the Isolation Hospital of the Bedford Rural District Council. Some years ago he retired from private practice, but continued to carry on the duties of his public appointments till a few days before his death.

Dr. Coombs played an important part in the public life of Bedford. He was the oldest justice of the peace for the borough, his appointment dating from 1894, a trustee of St. John's Hospital and of the Bedford Municipal Charities, and a former director of the House of Industry. In 1909 he became Deputy Lieutenant of the County, an office he held until his death. As long as he could he attended the bench and carried out his duties as magistrate.

During the greater part of his professional life Rowland Coombs was an active member of the British Medical Association. He held office as president of the South Midland Branch in 1894; from 1901 to 1903 he was a member of the South Midland Branch Council. From 1904 to 1906 he was on the executive committee of the Bedford and Hertfordshire Division, and acted as its representative at the Annual Representative Meetings from 1904 to 1912. In 1910–11 he represented the Territorial Services on the Naval and Military Committee of the Association. He is survived by a son—Dr. H. M. Coombs, who practises in Bedford—and by three daughters.

News has been received of the death of Dr. CHARLES M. EKINS at Alexandria on February 10th. Son of the late Major-General Ekins of the Indian Army, Charles Ekins studied medicine at University College Hospital, qualifying M.R.C.S., L.R.C.P. in 1900. During his student days he was a prominent Rugby footballer. After serving as a civil surgeon with the R.A.M.C. during the South African war, Ekins went to Egypt twenty-five years ago. Entering the Egyptian Government's Public Health Department, he served for several years in the provinces, and in 1906 was appointed director of the Alexandria State Hospital. There he remained for eighteen years, during which period he set himself to organize the hospital and to make and keep it efficient. From this Government post he retired in 1924, having done excellent service and gained the esteem and affection of all his colleagues, and established himself in practice in Alexandria. On January 1st, 1928, he was appointed physician, and on July 1st, 1928, medical director, to the Anglo-Swiss Hospital. Ekins was not only capable, but he was very human, optimistic, and kindly; he will be greatly missed by patients and by hosts of friends. He married eighteen years ago, and is survived by his widow.

We have to announce the death, at the age of 47, of Mr. DOUGLAS W. HUME, which occurred suddenly at his home in Bangor on February 12th. Mr. Hume received his medical education at St. Bartholomew's Hospital, obtaining the diplomas M.R.C.S., L.R.C.P. in 1906, and graduating M.B., B.S.Lond. in 1907. In 1914 he became a Fellow of the Royal College of Surgeons of England. In the course of a distinguished career at St. Bartholomew's Hospital he was awarded the Matthews Duncan exhibition in 1906, and the Bentley prize in 1909. During the period 1909–10 he was president of the Abernethian Society. For a short time after qualification he was house-physician to the East Sussex Hospital at Hastings, but returning to St. Bartholomew's Hospital he held a series of appointments from 1907 to 1915, including those of senior resident anaesthetist, house-surgeon, and ophthalmic house-surgeon. In 1915 he obtained the commission of major in the R.A.M.C., and until 1919 was surgeon specialist to the Norfolk War Hospital with charge of 1,040 beds. From 1919 to 1922 he was superintendent of two Ministry of Pensions hospitals at Exeter, remaining there till January, 1923, when he engaged in practice at Bangor, being shortly afterwards appointed honorary surgeon to the Carnarvonshire and Anglesey Infirmary. Mr. Hume was the author of a number of papers, including "A case of natural appendicostomy" (*St. Bartholomew's Hospital Journal*, 1910), "Ligature of subclavian artery for aneurysm" (*British Medical Journal*, 1910), "Ilio-tibial band grafts for cure of inguinal hernia (*British Medical*

Journal, 1921), "Slipping peroneal tendon treated by Kelly's operation" (*British Medical Journal*, 1922). Dr. J. Wilson Reid (Beaumaris, North Wales) writes: The death of D. W. Hume is a great loss to surgery in North Wales. The accuracy of his diagnosis and the excellence of his technique were only matched by the pains he took over every case, no matter how trivial. He was of a very retiring disposition, and never valued his own opinion highly enough, so that the world of medicine and surgery will lose by the fact that he did not publish more. He will be affectionately remembered by all who came in touch with him. The gap which his death leaves in our midst will be very difficult to fill.

The death took place in London, on February 28th, of Dr. ALISTAIR JAMES MACGREGOR, who formerly practised in Dunfermline and acted as medical officer of health for the burgh. Dr. Macgregor was a son of the late Dr. Duncan Macgregor of Pathhead and Tranent. He graduated M.B., C.M. at Edinburgh in 1888, proceeding to M.D. with honours in 1892. Shortly afterwards he commenced practice in Dunfermline, where he was a highly respected practitioner for between thirty and forty years. After taking the D.P.H. of Edinburgh in 1905, Dr. Macgregor became medical officer of health for Dunfermline, a post which he held till his retirement three years ago, when the post was filled by a whole-time medical officer. In this appointment he acted as medical superintendent of the West Fife Hospital for Infectious Diseases, and as tuberculosis medical officer to the Dunfermline Insurance Commission. He was also parochial medical officer for Dunfermline burgh and police surgeon. Dr. Macgregor took a great interest in many of the social activities of Dunfermline, and in particular was a prominent member of Dunfermline cricket club, being a cricketer well known throughout Scotland. He is survived by a widow and daughter.

Dr. JAMES STIRLING ROBERTSON, who died on February 13th, at his residence in Clydebank, after a brief illness, was the oldest member of the profession in the district. He received his medical education at Edinburgh, where he graduated M.B., C.M. in 1883. A colleague writes: So long ago as 1886 Dr. James Robertson was elected a member of the London Fabian Society, where, under the influence of its distinguished membership, and of his own natural bent, he became greatly interested in social problems, which presented themselves in plenty in the area where he practised. He was a J.P. for Forfarshire, a member at one time of the education authority, an active member of the British Medical Association, and chairman of the Local Panel Committee. He was a well-informed contributor to the press on social topics, and a highly esteemed member of the medical profession. His breadth of outlook, his keenness of mind, and his kindly counsel will long be remembered with gratitude.

Dr. PRICE MORRIS, who died on February 27th, at the age of 78, was for many years a well-known and popular figure in the district of Colwyn Bay and Colwyn. He was born in Llanfair Talhaiarn, where, at the early age of 16, he used to go about with Dr. Davies, the old custom of apprenticeship for a doctor being still prevalent. After his apprenticeship he went to Anderson College, Glasgow, where he obtained in 1874 the diplomas L.R.C.P.Ed. and F.R.F.P.S.Glas. After practising for a time at Hebden Bridge, near Halifax, and later in Cwmaman, Aberdare, he returned to Llanfair Talhaiarn, where he built up a most extensive practice over a sparsely populated area, removing later to Colwyn. From then until 1923, when failing health necessitated his retirement, he was engaged in active practice. He was very fond of fresh-water fishing and horses; he was chosen on several occasions to act as a judge of horses in the Colwyn Agricultural Show. In his early years he found time to ride to hounds with the Flint and Denbigh pack. In 1897 the Colwyn Bay Cottage Hospital was built; Dr. Morris, who was one of the prominent movers in its inception, held the appointment of senior surgeon to it until 1911, when he became consulting surgeon. For thirty years he was parish medical officer and vaccination officer to a district which included Colwyn Bay, Rhos, Glanconway, Dafarn Newydd, and Llysfaen. In the middle period of his life he was very fond of walking, and few of its inhabitants knew so intimately the geography of North Wales, especially West Denbighshire and the mountains and valleys of Merionethshire and Carnarvonshire. A colleague (A. N. L.) writes: Dr. Price Morris's merits as a doctor were outstanding, and he rose with success in every sense of the term for very many years. He was an exceedingly shrewd diagnostician and always knew his own mind, and was able to penetrate to the essential feature of a case while others were groping among the non-essentials. His very determination inspired his patients with the will to get better, and his visits have often been described to the writer as resembling a breath of sea breeze in the sick bedroom. He had the faculty of expressing himself in such a manner that he was always carefully listened to and his advice followed; though in no way eloquent, his arguments were cogent and clear, and at times he could be extremely dogmatic. For instance, in emphasizing the importance of fresh air in a case of consumption, he had been known to put his stick through the window of the cottage bedroom. His life was spent in the service of humanity, and in his business relations as well as in his professional work, he was always kindly and considerate to others.

Dr. FREDERICK CLAUDE EVILL, who died on March 3rd, at the age of 67, was the senior medical practitioner in Barnet, where he had practised since 1897. He received his medical education at St. Bartholomew's Hospital, and obtained the diplomas M.R.C.S., L.R.C.P. in 1886. After holding house appointments at St. Bartholomew's, the Central London Ophthalmic Hospital, and the Brompton Hospital for Consumption he went to Australia, and conducted a practice at Broken Hill, New South Wales, where he was senior surgeon to the local hospital. On returning to England he settled in Barnet, and was appointed surgeon to the Barnet Victoria Cottage Hospital. Apart from his medical practice he found time for active work in connexion with the Chipping Barnet Parochial Church Council and the National Society for the Prevention of Cruelty to Children. He had been a member of the Hertfordshire Medical and Panel Committees since their formation in 1912, and at one time was chairman. He was a strong supporter of the British Medical Association, and served on the Metropolitan Counties Branch Council from 1913 to 1926; he was vice-chairman of the West Herts Division in 1914, 1917–18, and in 1927, and chairman in 1915, 1919–21, and 1927–28. Ill health compelled his retirement from practice, but it was hoped that he would recover his strength; his regretted death was, therefore, unexpected. A colleague writes: We shall all miss Dr. Evill very much. He was of a particularly gentle disposition, and made an extraordinarily good chairman of our medical committee, his good nature acting like oil on the troubled waters of controversy.

THE LATE DR. J. F. BULLAR.

DR. A. NIVEN ROBERTSON writes: As one of the many house surgeons at the Free Eye Hospital of Southampton who had the good fortune to be trained in eye work under Dr. Bullar, I would like to add a few words to your obituary notice (February 2nd, p. 230) in appreciation of his great work in Southampton. He was the founder and maker of the Free Eye Hospital. When he started specializing in ophthalmic work in Southampton there was no eye hospital. He started a small eye clinic in one of the obscure streets of the town along with his faithful assistant, Miss Monk, the present matron of the Free Eye Hospital. It began in a very small way, but soon his great skill and ability it was not long before he obtained a name as a skilful ophthalmic surgeon, and the patients became so numerous that his activities were transferred to a building which is now the Free Eye Hospital of Southampton. This consisted of a large villa in its own grounds, and with the able administration of its founder, with the help of others whom he interested in his projects, this villa was gradually converted into a first-class hospital, with in-patients. The first floor contained the female cases and the ground floor the

cases. A room on each floor was added as an operating theatre. Previously the bathroom was the only theatre. A spacious waiting room was built, a dispensary was added, and all modern appliances were obtained, such as a large electro-magnet for the removal of foreign bodies. The docks always supplied a large number of such casualties. What astonished me most on my arrival there was that the chief did all his refractions in a room practically undarkened. I felt that it was an impossible task to do refractions in the light, but soon found that it was easy. He was a very skilful operator, and a past-master in the specialty which he had taken up. With all his patients he had a kindly way, and possessed a great gift of pawky humour. He treated all, rich or poor, alike. Sometimes to the wealthier classes, whom he treated at his own consulting rooms in Carlton Crescent, he seemed a little brusque, but he had a kind heart beneath his occasional off-hand manner, and I shall always remember the merry twinkle of his kindly eyes. He had no "side" about him; he was honest, and he was beloved by all who really knew him.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

The Local Government Bill.

Committee Stage in the House of Lords.

As briefly reported in this column last week, the House of Lords, in committee on the Local Government Bill on March 5th, discussed amendments to safeguard voluntary hospitals. Lord ONSLOW, who was in charge of the bill for the Government, moved an amendment of Clause 2. This amendment deleted the words "elsewhere than in the County of London" from a provision regarding the functions of Poor Law authorities in respect of infant life protection. Before amendment this section ran:

"functions under Part I of the Children Act, 1908, shall, elsewhere than in the County of London, be discharged by the councils of counties and county boroughs as functions under the Maternity and Child Welfare Act, 1918."

The House agreed to the amendment.

Clause 4 relates to administrative schemes, and provides that within six months after the passing of the Act the council of every county and county borough should prepare, and submit to the Minister of Health, a scheme of the administrative arrangements for discharging the functions transferred to the council under the Act.

Lord Reading's Amendment.

Lord READING moved to add the proviso:

"In so far as such scheme relates to hospitals the council shall take reasonable steps to seek and to continue to secure full co-operation with every voluntary hospital within, or serving the area of, the council."

He said he proposed this in the interest of voluntary hospitals to ensure that there should be full consultation with them before any action was taken which might impair their usefulness. These hospitals were in danger of being injured if the bill remained as at present. His purpose was to ensure co-operation with the voluntary hospitals and co-ordination so that there might be no overlapping of the work of rate-supported hospitals and voluntary hospitals, and so that the voluntary hospitals might be consulted in order that the best use might be made of existing institutions. This was intended by the framers of the bill. The words he proposed to insert were taken from the Local Government (Scotland) Bill, and appeared there almost identically in Clause 27. He knew the Minister of Health was in full sympathy with the idea. They should make quite clear what was the intention of the bill. He noted that an amendment on the subject had been put down by the Government that day which proposed to ensure that county councils should make such arrangements as they thought desirable for securing that the functions transferred to them should be exercised in consultation with some body in their area representing the voluntary hospitals. Lord Reading said he thought this provision would allay the apprehensions of those who were concerned with the voluntary hospitals. He asked whether, when the bill became law, the Minister of Health would draw the attention of councils to this proviso, because the clause as it stood was not mandatory. Supposing that under the functions conferred by the bill a council wished to start a new rate-aided hospital, he hoped the Ministry would emphasize that the council should first ascertain from the voluntary hospital that it was unable to do the work better. If the voluntary hospital was doing the work, and could perhaps do it better with the aid of the council, then it would be wrong to start a rate-aided hospital whose functions would overlap those of the voluntary hospital.

Lord Dawson's Amendment.

Lord DAWSON OF PENN had given notice to move to add to the clause:

"A council in preparing a scheme under this section shall have regard to the desirability of consulting (*a*) any body existing in the area which is so constituted as to be representative of the voluntary hospitals in the area, and (*b*) any body existing in the area which is so constituted as to be representative of the duly qualified medical practitioners in the area, including those on the medical and surgical staffs of any voluntary hospitals in the area."

He said he understood that for the convenience of the House all the amendments connected with hospitals were to be discussed together. He did not think that voluntary hospitals required any defence. Without them medical progress and the progress of nursing would not exist. He did not contemplate that in future there would be voluntary hospitals alone. Inevitably municipal hospitals must arise. They would arise slowly, and in their beginnings they should have the advantage of consultation with the great voluntary hospitals which now existed, and be brought into touch with their traditions. Those who knew about voluntary hospitals should co-operate with those who had little experience of curative medicine, and little or nothing to do with it. The medical officer of health was now the main person responsible to the councils on questions of health. As long as the councils dealt with preventive medicine that worked well enough, but when the councils were about to enter on the founding of hospitals, which would steadily grow, it was reasonable to bring to the aid of the medical officer of health those members of the medical profession who had spent their lives in the cure of disease. The whole-time medical officers of England and Wales numbered 1,740, whereas the medical men who were in active practice in England and Wales numbered 30,000. Could the great work of hospital management on which the councils were going to enter be undertaken without an organic nexus with those whose lives were spent in curative medicine? His amendment not only asked that councils in preparing schemes should consult representatives of voluntary hospitals, but that they should also consult the doctors of the district, who were competent to deal with the cure of disease. It was as easy to find a coherent body of medical men in any district as to find a coherent body representing the management of voluntary hospitals. Experience of the Poor Law was little or no help in the administration of a curative hospital. The status of the medical officers was different. Experience of the Poor Law might be a disadvantage in founding a hospital which was to approximate to the quality and work of the voluntary hospitals. In dealing with the health of the people it would be more and more necessary to have institutional treatment. Improvement in the quality of panel practice would depend largely on institutional provision. He did not deceive himself by thinking that voluntary hospitals alone were any longer going to be adequate to the needs of the country, and for that reason he was most anxious that some machinery of co-operation should be provided which did not depend on the will of the local authority nor upon which Minister of Health was in office. Should there come into office some Minister in favour of an entirely nationalized or municipalized medical service for the country, an opinion such as Lord Dawson expressed, if recorded in the bill, would make it difficult for him to transpose the medical policy of the country. Lord Dawson added that he was not wedded to the words of his amendment.

Lord JOICEY said no question in the bill aroused more interest in the country than this of the hospitals. Owing to taxation voluntary hospitals had difficulty in getting enough money to carry on their work, and as time went on it would be necessary for some contribution to be given if these hospitals were to continue in their present form. Anyone who had to do with voluntary hospitals realized that the services they gave through the medical profession and the nurses could not be so satisfactorily rendered by any hospital under the control of a local authority or of the Government. On Tyneside and the Wear the workmen had a system of contributing to the voluntary hospitals, and their representatives were put on the committees, providing a valuable body of men who took an interest in the hospitals. It would be disastrous if the great services of the voluntary hospitals were not assisted generously.

Lord ATKIN suggested that the amendment which Lord Onslow had put down on the subject was too restricted. It only proposed consultation with any body within the county which was considered to represent the voluntary hospitals. If no such body existed then no obligation would be placed upon the county council. It was essential that the new scheme should be started with the good will and co-operation of the medical profession. It was impossible to start a hospital system to which the poor could come freely and the moderately poor on making payment if necessary unless the medical profession and the general practitioners had some voice through their proper representatives in the organization. He supposed the new municipal hospitals, if founded, would wish to draw on the good will and services of specialists and consultants. Surely it would be right if such a scheme were devised after consultation with the medical profession as a whole. The British Medical Association represented,

for practical purposes, the whole of the medical profession, and had branches in every county, so there should be no difficulty in consulting the medical authorities.

Lord KNUTSFORD said those with experience of voluntary hospitals were extremely anxious to co-operate with the bill. They desired that any new hospital should not overlap and do the same work as the voluntary hospitals. They did not wish money to be wasted in carrying out work which might be done by a hospital set up by the county council across the road.

Lord JESSEL asked what would be the proper authority to consult in London. Would it be King Edward's Hospital Fund? He hoped the British Medical Association would have some say in the matter.

Lord READING said he supported Lord Dawson's proposal that the representatives of the medical practitioners should be consulted.

Reply for the Government.

Lord ONSLOW, for the Government, said there had been a valuable discussion of the bill as it affected the voluntary hospitals of the country. The Government desired to encourage the co-operation between local authorities and hospitals, from which so much might be expected in the future. The Government also wished to make the best use of existing institutions. They all knew what was meant by a voluntary hospital, but there was no precise definition of one. The first thing the Voluntary Hospitals Commission had had to do was to devise a definition, which worked fairly well for the purpose of distributing a Government grant, but could not be used at present because it did not include such institutions as mental hospitals. The amendment which later he would move for the Government proposed that county and county borough councils should themselves be judges of the bodies which might represent the voluntary hospitals of their districts. The Government proposed that the authorities should make arrangements for meeting these bodies, and the Minister of Health would be glad, in a circular or otherwise, to point out the disability of the fullest co-operation with the voluntary hospitals. Under the clause which he hoped to introduce local authorities could consult the local hospital committees where these functioned or were resuscitated for the purpose. These committees had developed in some places, and would become hospital councils in some county boroughs. Alternatively the local authorities could use the committees of the British Hospitals Association, which, he believed, were soon to be reorganized and put on a county basis. Voluntary hospitals committees, where they functioned, included representatives of the local authorities, of the medical profession, both general practitioners and consultants, and of voluntary hospitals, both large and cottage hospitals. Any hospital had only to join the British Hospitals Association and its views would be available to the local authorities through that channel. Lord Onslow understood that Lord Dawson accepted the Government amendment, as it covered the point put in the first part of his own amendment, but Lord Dawson desired to ensure consultation with some body representing the practitioners on the medical and surgical staffs of the voluntary hospitals in the area. Lord Onslow could not propose anything at the moment to meet this desire. He hoped on the report stage to add to the clause words providing that some of those consulted should be representatives of the medical profession in the district. He did not know whether King Edward's Hospital Fund would be the most suitable body for London. It was desirable to leave the local authority to choose the body which would best represent the voluntary hospitals in the district.

Lord HANWORTH said the clause Lord Onslow proposed to move was so loose that it carried out nothing. He suggested another form of words.

Lord READING then withdrew his amendment.

Lord DAWSON said he would not move his amendment now. He did so in the hope they would get more out of the Government than good intentions. The amendment proposed by Lord Onslow gave very little.

The House then agreed to Clause 4.

Clause 5, dealing with alternative powers of giving assistance, empowers councils to declare that assistance which can legally be given, either as poor relief or under seven special statutes, shall be given under these statutes, such as the Public Health Act, Mental Deficiency Act, and Maternity and Child Welfare Act.

Lord RUSSELL moved to add to the list of Acts "or any other enactment mentioned in the scheme."

The LORD CHANCELLOR, in resisting this amendment, said the Lunacy Act had been deliberately omitted from the list of enactments. Under the Lunacy Act a public lunacy authority could only deal with certified lunatics, but under an earlier section of the Lunacy Act a number of persons infirm in mind but not certified were in Poor Law institutions. If brought under the Lunacy Acts these persons must be certified, which would probably be undesirable, or the powers of lunacy authorities might be extended to deal with persons without certification, a controversial alternative. The Government thought that the question of taking lunacy out of the Poor Law altogether, as he thought the Royal Commission on the Lunacy Law recommended, should be dealt with when Parliament dealt with the Lunacy Acts. It was hoped to introduce comprehensive legislation based on the Commission's report.

Lord Russell's amendment was negatived.

Consultation with Hospital Representatives.

The House of Lords was again in committee on the Local Government Bill on March 6th, when Lord ONSLOW moved to insert, after Clause 12, the following new clause relating to consultation by councils of counties and county boroughs with bodies representing voluntary hospitals:

". . . The council of every county and county borough shall make such arrangements as they think desirable for securing that the functions transferred to them under this part of this Act in respect to the provision of hospital accommodation will be discharged after consultation with such body, if any, within the county or county borough as they consider to represent the voluntary hospitals in the area."

He said he moved this subject to the undertaking he had given Lord Dawson that on the report stage he would add words providing not only for consultation with the representatives of voluntary hospitals in the county or county borough, but also with the medical and surgical staffs of the voluntary hospitals. He had not had time to reconsider the wording of the clause.

Lord COZENS-HARDY remarked that hospitals, particularly those with medical schools, had spheres of influence which sometimes marched with the boundaries of a county or county borough. He asked for reconsideration of the words "within the county or county borough," and also of "voluntary hospitals in the area."

Lord DAWSON had given notice that, as an amendment to Lord Onslow's suggested new clause, he would propose to add words enjoining consultation by the local authority also "with any body existing in the area which is so constituted as to be representative of the duly qualified medical practitioners and of the medical and surgical staffs of the voluntary hospitals in the area."

Lord Dawson suggested that it would be unwise for the House to commit itself to the wording of Lord Onslow's clause, which did not meet the wishes of the friends of voluntary hospitals. Lord Onslow's offer to arrange for the representation of medical and surgical staffs of hospitals was not all that was desired. They wanted a body representative also of the duly qualified medical practitioners.

Lord Dawson did not move his amendment, and Lord Onslow's new clause was provisionally accepted.

Recovery of Maintenance Expenses.

Clause 15 places on the councils of counties and county boroughs and all other local authorities the duty of recovering from any person who has been maintained by them in an institution, other than an institution for treatment of infectious disease, all the expenses of maintenance or such part as the authority deem that person able to pay. Lord PARMOOR moved to leave out the operative part of the clause. He said it imposed on the county council an obligation to recover from any person who had been maintained in any hospital the incidental expenses incurred. This would prevent people from taking advantage of hospital treatment. Voluntary hospitals, by a well-known legal principle, had no power to recover charges in respect of patients. When a man was brought in who could afford an adequate payment they could not ask him to pay. At St. Bartholomew's Hospital, which treated over 100,000 patients in a year, there was no question of payment being enforced. The whole of medical and surgical science was at the disposal of a man, however poor. Why, when a county council provided treatment, were venereal disease and tuberculosis the only two infectious diseases for the treatment of which a charge would not be made?

The LORD CHANCELLOR said that when to-day the guardians provided relief for a person in an infirmary or in a workhouse the recipient and those legally liable to maintain that person were liable for the cost of the relief, and the guardians were under a statutory obligation to recover. If the clause were carried county councils would be able to recover expenses of treatment in hospitals maintained under the Poor Law powers, but not in those established under Public Health Acts. That was an indefensible anomaly. Infectious disease, which he understood to include scarlet fever and small-pox as well as venereal disease and tuberculosis, was treated differently, because a man was sent to hospital to protect his fellows from the risk of contagion.

Lord PARMOOR withdrew his amendment, and Lord Arnold moved another to make the recovery of the expenses of treatment optional instead of compulsory.

Lord READING regretted that the Government insisted on the provisions of the clause, but by 85 votes to 29 the House rejected the word "shall."

On a subsequent amendment which he proposed to the same clause Lord ARNOLD asked whether surgical tuberculosis was dealt as an infectious disease. Lord ONSLOW said he could not answer definitely.

Lord DAWSON said Lord Arnold's amendment was an illustration of the importance of having doctors who spent their life [illegible]

curable disease associated with the medical officer of health from the moment that councils undertook these questions. It would be impossible to draw up a list of what the medical profession regarded as infectious diseases, because knowledge was ever growing. The present opinion would be that a large number of cases of tuberculosis were not dangerous to the health of others. In many cases of surgical tuberculosis the danger of transmission of the disease was very small. The same might be said of cancer. The prevailing opinion was that cancer was not an infectious disease.

Lord BLEDISLOE agreed that opinion on the infectivity of disease varied with medical knowledge. A Royal Commission which sat some twenty years ago to consider the relationship between human and bovine tuberculosis had stated that tuberculosis was of a markedly hereditary character. That opinion had been scrapped by all enlightened medical men for at least fifteen years.

Lord ARNOLD withdrew his amendment, and a discussion followed on the propriety of recovering hospital costs from the relatives of patients.

Lord COZENS-HARDY moved to add a proviso that a local authority should not seek to recover cost of treatment from a patient or from his relatives when an association or fund for the support of hospitals had bargained with the council to pay an agreed charge in respect of that patient, being a person entitled to benefits from that association or fund. He said this was intended to help the associations which, by weekly contributions from employers and their workmen, had done much to relieve the financial anxieties of many voluntary hospitals.

Lord ONSLOW said the point was interesting and important, and had not been raised in the Commons. He asked time to consider it, whereupon Lord Cozens-Hardy withdrew his amendment.

Clause 15, and subsequent clauses, were added to the bill.

The Whole-time Medical Officer of Health.

The debate was resumed on March 7th, when Lord HALSBURY moved an amendment to Clause 53, which makes provisions regarding medical officers of health. The first section of this clause enacted that every county council, after consultation with district councils wholly or partly within the county, should formulate arrangements for securing by a combination of districts or otherwise that every medical officer of health subsequently appointed for a district should be restricted by the terms of his employment from engaging in private practice as a medical practitioner. Lord Halsbury moved to leave out all the words after "securing," and to insert "the future appointments by district councils of medical officers of health, whether by combination of districts or otherwise, which shall most conduce to the efficient carrying out of public health services within the county as a whole, as well as within the district to which they are respectively appointed." Lord Halsbury said it was true that at the end of Clause 53 a proviso enabled the Minister in exceptional circumstances to waive the condition that in future when any medical officer was appointed he should be appointed as a whole-time officer and not allowed private practice. That, however, was to be the ordinary and primary condition. The second report of the Royal Commission on Local Government was in accordance with the report as drafted, but this finding was based on evidence given by the Minister himself and by county councils and other administrative bodies which were thinking primarily of what would be most convenient for them. Undoubtedly whole-time servants would be more suitable for their purpose, and more easy to deal with; but the question really was whether the medical officer of health would not be more efficient in his district if he were to keep up the curative part of his work as a doctor and not be confined to an administrative position where he did not exercise his profession.

Lord ONSLOW said Lord Halsbury cut at the root of the recommendations with regard to medical officers made by the Royal Commission and embodied in the bill. The report of that Commission showed that the Rural District Councils Association considered it desirable that the medical officer of health should be a whole-time officer whenever practicable, although it was in the rural districts that the part-time officer was usually found. Lord Onslow cited a letter from the Medical Secretary of the British Medical Association to the *Times*, in which he said that the policy of that body as adopted in 1911 was that "in the general interests of public health and the medical profession it is desirable . . . that medical officers of health should, as a rule (and without prejudice to those at present holding part-time appointments), be required to devote their whole time to official duties." Lord Onslow said there had been a tremendous development of these duties in recent years, and the demand for specialized knowledge had made it necessary that the medical officer of health should have a diploma in public health. Further, the private practitioner had to attend to his private as well as his public duties, and it was undesirable that a man should be placed in a position where these duties might conflict. It was not necessary that the medical officer should serve one district alone. He might serve two or three districts or an urban and a rural district, but it was desirable that he should be a whole-time public servant. Another point was that there might be situations in which a private practitioner with great demands upon his time would have to choose between the interests of his private patients and his public duties. There was a provision in the bill whereby, when a system of part-time officers was working well, a loophole was given for their employment, but as a general rule the right policy to follow throughout the country was to have whole-time medical officers of health in accordance with the terms of the bill.

Lord HALSBURY thereupon withdrew his amendment, and Clause 53 was agreed to; as was Clause 54, which deals with the qualifications of certain medical officers and health visitors.

Maternity and Child Welfare.

Clause 55 is concerned with maternity and child welfare services. It provides that in any district where services under the Maternity and Child Welfare Act are provided by a council which is not the local educational authority, the Minister may, on the representation of that educational authority, and if he is satisfied that the change would conduce to more efficient administration, transfer to the local health authority the maternity and child welfare duties which are being performed by the other council.

Lord ARNOLD moved to insert an amendment providing that, when taking such action, the Minister should have regard to local conditions and requirements. He said the amendment would withdraw maternity and child welfare services from the councils of certain urban districts which had grown rapidly in the last twenty years, but were not educational authorities. He instanced the cases of Coulsdon, Purley, Sutton, and Barnes. He also wished to ensure that the Minister should not be able, on the application of the county council, to transfer maternity and child welfare services to the county council unless satisfied that the transfer would conduce to more efficient administration, having regard to local conditions and requirements. Lord Arnold said that under this bill the county councils would be overburdened without the necessity of administering maternity and child welfare schemes, which had for years been administered by others. Why should Parliament upset existing arrangements if they worked well?

Lord ONSLOW said the Maternity and Child Welfare Act of 1918 had provided that a district could become a maternity and child welfare authority, but the bill encouraged and provided machinery for the transfer of these duties to a body which was a school medical authority. The clause, however, provided a great deal of latitude so as not to interfere with the child welfare committee which was doing good work. The reason for the policy of combining child welfare functions under an authority which was also a school medical authority was to place the supervision of the child and the mother also under the care of one and the same local authority from pre-natal days until the child ceased to be of school age. Provision was made to bring the midwives under the same supervision as the maternity and child welfare authorities. It was desirable that the school medical authority should be under the same body. They might trust the Ministry of Health to see that, in order to obtain uniformity, they did not take away what was being well done already. Uniformity would be obtained gradually.

Lord ARNOLD said he thought Lord Onslow's reassurance would do something to remove misgivings. The amendment was withdrawn, and Clause 55 was added to the bill, as was also Clause 56 dealing with notification of births.

Clause 57 enacts that if the council of any district has established a child welfare and maternity committee and employs a medical officer of health, who, by the terms of his appointment, is restricted from engaging in private practice, that council may apply to the Minister to be made the local supervising authority under the Midwives Act, and the Minister may so direct after consultation with the county council.

Lord HALSBURY moved to limit this to councils which were also local educational authorities. He said the amendment would provide larger areas for the control of midwives than did the bill. Midwives objected that if they were under the control of small areas their work would take them outside those areas, and they would find themselves under a dual control with conflicting rules and regulations made by the district council and the county council. If the district were that of the local educational authority it would be a district of some size. The larger the area the less likelihood of such local difficulty as that of a doctor preferring one particular midwife because he had been working with her and employing her to the exclusion of others. Furthermore, it would be much easier to get an experienced inspector for the larger area. Under the Midwives Act, 1902, there was power for counties to delegate the inspection of midwives to a smaller area. Ten counties adopted that, but every one of them, after trial, gave it up.

Lord KNUTSFORD said he was authorized to say that the Central Midwives Board objected to the transfer of powers of inspection of midwives from the county council to a district council. Objection was also taken by Queen Victoria Jubilee Nurses, by the Incorporated Midwives' Institute, and by the College of Nursing. This was the first opportunity there had been of voicing the unanimous opinion of every one of the bodies concerned with

midwives. It would be impossible for the district council to employ a whole-time inspector of midwives' work.

Lord ONSLOW drew the attention of the House to the recommendations of the Royal Commission on which the clause was based. The Commission recommended that the county council should transfer these functions to a district council only when the Minister was convinced that the district council was in a position to discharge the whole of the functions of the local supervising authorities. A number of towns approaching the 50,000 limit had felt some displeasure because these duties had been taken away from them, and the clause was directed to meet the case of such towns. He did not think that the interest of the midwives was likely to be injured by its provisions.

In asking leave to withdraw his clause, Lord HALSBURY hoped that before the report stage Lord Onslow would consider whether the midwives themselves should be given some say in the matter. The House then agreed to Clause 57, and also after a technical amendment to Clause 58, which deals with the provision of hospital accommodation for infectious disease.

The committee stage was completed on March 8th. On that day Lord BUXTON moved an amendment to Clause 78, which provides for the discontinuance of grants set out in the schedule to the bill. He moved to insert "other than grants for maternity and child welfare." He said that under the existing system when a local authority wished to institute or extend a maternity home or child welfare institution the Ministry of Health gave a grant, pound for pound. If these services were brought, as the bill intended, under the block grant system no additional grant for the extension of maternity and child welfare work would be given. The Government grant for these services had risen from £12,000 a year in 1924 to just over £1,000,000 a year, and there were 2,634 centres. The present system had been a great stimulus to the centres, but that was a reason for giving them greater encouragement instead of damping them down. He did not think that the method suggested in the bill whereby a Minister could force a recalcitrant authority to institute or extend these centres was a good one.

Lord BUCKMASTER said the British ratio of maternal mortality was a disgrace. Compared with those in Holland the deaths were as 14 to 2. There was hardly a medical man who would not say that maternal mortality was almost entirely preventable, as in Holland.

Lord ONSLOW said Lord Buxton's amendment would alter the bill fundamentally, cutting at the root of its financial system. A percentage grant was a stimulus to the richer areas, but maternal mortality was in the poorer districts, which could not afford to raise the initial sovereigns to get this pound for pound grant from the Government. To enable those poorer areas to get the necessary money for their services the Government had brought forward the block grant. It was the duty of the Minister of Health to see this service was effectively carried out. Local authorities would be told they would not get the money unless they spent it properly.

Lord Buxton's amendment was negatived, and Clause 78 approved.

The House approved Clause 93 and subsequent clauses, including those dealing with transferred officers, compensation to existing officers, and the superannuation of transferred Poor Law officers. Amendments on these provisions were moved, but withdrawn, and the committee stage was completed.

Bills.

The Factory and Workshops (Cotton Cloth Factories) Bill formally passed through report stage in the House of Lords on March 5th. On March 7th it was read a third time and sent to the Commons.

The Mount Vernon Hospital Bill was read a second time in the House of Lords on March 7th, on the motion of Lord Donoughmore, chairman of committees.

Small-pox.—In an answer to Mr. T. Griffiths, on March 7th, Mr. CHAMBERLAIN said the number of deaths classified as due to small-pox for the purposes of the Registrar-General's statistics during the thirteen months ended January 31st last was 58. No statistics were available giving the total number of deaths from influenza during the current year. He was aware of the importance of early medical attention in cases of influenza, but he saw no reason to empower the guardians of rural parishes to make emergency orders for medical and other relief in cases of illness. Answering a further question, Mr. Chamberlain said he had seen the statement of the medical officer of health for Stepney that many cases of small-pox had been mi[illegible] special instructions had been issued by [illegible] advising medical officers to take special [illegible] of such occurrences, but the matter had been referred to in a circular issued by the department last year, and in the annual reports of the chief medical officer. Mr. Chamberlain, on March 7th, also told Mr. Groves that the figure of 37 deaths from small-pox in the first half-year of 1928, given in the chief medical officer's annual report for 1927, were, as explicitly stated in the report, provisional.

Vaccination and Encephalitis.—Mr. CHAMBERLAIN, replying to Mr. Groves, on March 11th, said that from October 1st, 1927, till December 31st, 1928, 65 cases in which symptoms suggestive of disease of the central nervous system within a month of vaccination had been brought to the notice of his department. Of these, 32 were fatal. All cases of this kind were reported to the Departmental Committee on Vaccination, but he was not yet able to say how many of these 65 cases were regarded by the committee as cases of encephalitis following vaccination.

Silicosis.—Sir W. JOYNSON-HICKS, on March 11th, told Mr. Kelly that local joint committees of employers' and workers' representatives had been set up under the Refractories Industries (Silicosis) Scheme for seven areas. A scheme now under consideration for the sandstone industry provided for the appointment of similar committees to deal with cases of silicosis in that industry. The areas and constitution of the committees under this new scheme would be settled in consultation with the employers' and workers' associations.

Mental Deficiency.—Dr. FREMANTLE asked Mr. Chamberlain, on March 7th, the date of publication of the second section of the report of the Departmental Committee on Mental Deficiency. Mr. CHAMBERLAIN said he could give no undertakings about any portions of the report save the section which Lord Eustace Percy had promised to publish. He had not yet had time to consider it properly. Dr. FREMANTLE remarked that the report was extraordinarily important.

Census of the Insane.—On January 1st, 1929, the insane patients in England and Wales were: in county and borough mental hospitals 115,690, in registered hospitals 2,034, in licensed houses 2,615, making a total of 120,339. A previous answer by Sir John Gilmour showed that, on the same date, the total number of lunatics in Scotland was 18,917.

Poor Law Relief.—Mr. CHAMBERLAIN states that in January, 1929, the number of lunatics in asylums under the Poor Law, persons in receipt of domiciliary medical relief, and casuals was approximately 127,000. On January 12th the number of persons in receipt of other forms of Poor Law relief in England and Wales was 1,141,997. The latest figure available for the number of persons in receipt of relief in Scotland, exclusive of vagrants, is 209,461, on September 15th, 1928.

Sanitation in the Hop Gardens.—Mr. CHAMBERLAIN announced, on March 7th, that the terms of a further general communication to Kentish local authorities with reference to sanitary conditions during the hop-picking season were being considered. In three instances last year representations from the Ministry of Health had led to the adoption of an improved code of by-laws.

Notes in Brief.

Mr. Chamberlain cannot undertake to introduce legislation empowering local authorities to close redundant slaughter-houses.

The question of payment of midwives for emergency work will be considered by the departmental committee appointed to inquire into the working of the Midwives Act.

In the year 1928 the number of convictions for drunkenness in the Metropolitan Police district were: males 18,364, compared with 21,177 in 1927; females 4,916, compared with 5,977 in 1927. In the City of London the equivalent figures were: males 280, compared with 298; females 81, compared with 84.

Mr. Chamberlain has no information showing the approximate number of inhabitants of condemned houses in England and Wales, nor the approximate number who live in areas designated as slums.

[The report on the Local Government (Scotland) Bill has been held over until next week.]

Medical News.

SIR HUMPHRY ROLLESTON will give a lecture on industrial disease and its prevention before the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W.1, on March 21st, at 3 p.m., with the Duke of Northumberland in the chair. At the sessional meeting of the Institute to be held in the Council House, Birmingham, on April 5th, Mr. H. H. Humphries will open a discussion on some drainage problems in Birmingham, and Dr. H. P. Newsholme will open a discussion on co-ordination and co-operation in preventive medicine.

AN industrial nursing conference, arranged by the Industrial Welfare Society, will be held at the Hotel Metropole, London, on April 19th. Lady Dawson of Penn will receive the nurses at an evening reception. On April 20th visits will be made to several factory clinics, so that the delegates will have an opportunity of seeing industrial nursing in practice.

UNDER the auspices of the National Council for Mental Hygiene, Sir C. Hubert Bond will deliver a lecture on the mental hospital of to-day, at the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Wednesday, March 20th, at 5 p.m.

AT the meeting of the Royal Microscopical Society in the lecture hall at 20, Hanover Square, London, on March 20th, at 7.30 p.m., a discussion will be held on Dr. H. Moore's paper on "The mode of formation of the image in the microscope." The biological section will meet in the library on April 3rd.

THE annual business meeting of the Mental After Care Association will be held at Bridewell Royal Hospital, New Bridge Street, E.C., on Tuesday, March 19th. The president, Sir Charles Wakefield, will take the chair at 3 p.m.

THE last of the present series of lectures arranged by the Fellowship of Medicine will be given at the Medical Society, 11, Chandos Street, W.1, on March 18th, at 5 p.m., when Mr. H. W. Carson will speak on pitfalls on the right side of the abdomen. The final demonstration of the series will be given at the Wellcome Museum of Medical Science, 33, Gordon Street, W.C.1, on March 20th at 4 p.m., by Dr. S. H. Daukes, on the various methods of drug administration. The lecture and demonstration are free to medical practitioners. There will be no further special courses until after Easter. Those taking place in April are as follows: a daily practitioners' course, 4 to 5.30 p.m., at the London Temperance Hospital, April 8th to 19th: a course in tropical medicine at the London School of Hygiene and Tropical Medicine, April 9th to May 2nd; electrotherapy at the Royal Free Hospital, on Wednesdays at 5.15 p.m.; medicine, surgery, and gynaecology at the Royal Waterloo Hospital, April 15th to May 4th; and a course in neurology at the West End Hospital for Nervous Diseases, from April 15th to May 11th, at 5 p.m. daily. Detailed syllabuses of these courses, with information about the general course of work at the various London hospitals, and copies of the *Post-Graduate Medical Journal*, may be obtained from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

A NEW series of specially conducted tours is being arranged this year under the auspices of King Edward's Hospital Fund for London. The first is a visit to the Regent and Gerrard telephone exchanges on Saturday, March 23rd, at 2.30 p.m., when the Assistant Controller of Telephone Exchanges will explain the working of the telephone system. Tickets (price 7s. 6d.) may be obtained from the Secretary, King Edward's Hospital Fund for London, 7, Walbrook, E.C.4.

THE funeral of Sir Hector Mackenzie took place at Highgate Cemetery on March 6th. A memorial service held in St. Thomas's Hospital Chapel was attended by a large gathering of members of the medical profession and representatives of bodies with whom he had long been associated.

THE programme has now been issued for the Congress of the Royal Institute of Public Health to be held in Zürich from May 15th to 20th. The subjects of sectional discussions are State medicine and municipal and social hygiene; industrial hygiene and industrial diseases; child welfare, school hygiene, and women and public health; pathology, bacteriology, and biochemistry; tuberculosis; climatology and sports hygiene; and veterinary medicine and meat hygiene. In connexion with the congress visits are being arranged to Rheinfelden, the Rhine Falls and Schaffhausen, and other places of interest. Extensions to Lucerne, Leysin, Innsbruck, Munich, and Czechoslovakia are also practicable. Further details about the congress may be obtained from Dr. T. L. Kelynack, 37, Russell Square, W.C.1.

THE Minister of Health has expressed his approval of a proposal to invite the International Union of Local Authorities to hold its next congress in 1932 in this country. A unanimous resolution in favour of such an invitation being given was passed by the Association of Municipal Corporations in November last. Resolutions in sympathy with this action have been since passed by the Corporation of the City of London, the London County Council, the Parliamentary Committee of the County Councils Association, and the Urban and Rural District Councils Association.

A TOUR is being arranged for the middle of July to include various climatic resorts and spas in North Spain; it is proposed to visit San Sebastian, Bilbao, Santander, Burgos, Santillana, and Altamira, among other places. The tour will last about ten days and be conducted in charabancs; it is limited to medical practitioners and their wives and daughters. Further information may be obtained from Dr. M. Mañero, Ronda del Conde Duque, Madrid.

A POST-GRADUATE course in children's diseases will be held in Paris from April 3rd to 13th, at the Hôpital des Enfants-Malades, 149, Rue de Sevres. The fee is 250 fr., and further information may be obtained from the secretary of the Faculty of Medicine of the University of Paris.

THE first annual conference week of the International Society of Experimental Phonetics will be held in Hamburg from July 24th to 31st. Addresses, demonstrations, and practical work will be arranged, and there will be an exhibition of apparatus. Further information may be obtained from Professor E. W. Scripture, 25, Howard Road, Coulsdon, Surrey.

THE thirteenth International Congress of Physiology will be held at Boston, U.S.A., under the presidency of Professor H. H. Howell, from August 19th to 23rd.

WE have received the first issue, published in January, of a new monthly journal, entitled *Revue Belge des Sciences Médicales*, which is the official organ of the Medical Section of the Scientific Society of Brussels. The editorial staff consists of Professor L. De Beco of Liège, Drs. J. F. Heymans of Ghent, A. Lemaire and J. Maisin of Louvain, and A. Bessemans and J. Rodhain of Brussels. The first issue consists of original articles, clinical records, a survey of recent work on haematology, abstracts from current Belgian literature, and reviews of books. The subscription is 80 francs for Belgium, 100 francs for France, and 175 francs for other countries.

THE Amalgamated Press Ltd. is issuing in about thirty fortnightly parts a popular presentation of modern biological principles, entitled *The Science of Life*, written in collaboration by Mr. H. G. Wells, Professor Julian Huxley, and Mr. G. P. Wells.

THE issue of the *Journal of the Egyptian Medical Association* for December, 1928, is a special historical number, printed in English, French, German, and Arabic, and containing articles on ancient and modern Egyptian medicine and the evolution of public health administration in Egypt. It is copiously illustrated with photographs and diagrams of surgical instruments found in the course of excavation or depicted on the walls of temples.

MR. BERNHARD BARON, who recently gave £10,000 for a new casualty department at the Royal Sussex County Hospital, Brighton, has notified the authorities of his intention to contribute £5,000 towards a new operating theatre.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediscern Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62559 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

INSOMNIA IN CHILDHOOD.

"P. F. C." asks for suggestions for the treatment of a boy, aged 4, with normal development and previous good health, except for long-standing constipation and nocturnal enuresis. During the past five months he has woken up regularly at about 2 a.m., when he chatters and plays, refusing to go to sleep. An uncle suffers from epilepsy, but otherwise the stock is healthy.

ENURESIS.

DR. R. E. M. TAUNTON (London, W.7), replying to "K." (March 9th, p. 485), writes: I suggest trying Dr. H. C. Cameron's glucose prescription, which in many cases I have found to be effective. To 1 lb. of liquid glucose add two pints of water and one or two lemons. Boil down to one and three-quarter pints and bottle it. The dose is 2 oz. three times a day. This causes no gastric symptoms or glycosuria, and enuresis often ceases after the first day's administration of the glucose.

INCOME TAX.

Partial Use of Car for Private Purposes.

"W. M. K." states that his car is used for private purposes one month in each year. The inspector of taxes proposes to exclude from the total car expenses £10, as representing part of the year's cost of insurance, wear and tear, and licence. "W. M. K." contends that that is wrong, because those expenses are not increased by private use—that is, they would be the same if the car were left in the garage during the holiday month.

*** We think that there is little, if any, prospect of contesting successfully the inspector's view. The general practice where private benefit is derived from business or professional expenditure is to make some reasonable allocation between the two, and we fear it is too well settled to be disturbed in such circumstances as are explained. It is not entirely inequitable.

Cessation of General Practice Work.

"G. M. C." sold the practice as from January 1st, 1928, did no professional work for four months, and since then has been taking clinics and giving lectures. What should be done to avoid being charged income tax for 1928-29 on the basis of the earnings for 1927—the previous year.

*** The previous year's basis applies to the calculation of the amount of profits assessable for a particular source of income. As "G. M. C." is not assessable for 1928-29 in respect of the sort of profits earned in the previous year—that is, the earnings of general practice chargeable under Schedule D—that basis has no application. "G. M. C." should write to the inspector of taxes dealing with the assessment, stating the full facts and undertaking to supply an amended statement as soon as possible of the actual earnings for the year ending April 5th, 1929.

LETTERS, NOTES, ETC.

QUININE IN INFLUENZA.

DR. H. B. GLADSTONE (London, S.E.) writes: A note on the treatment of influenza in the *British Medical Journal* of March 9th (p. 486) prompts me to advocate the use of quinine, which Burney Yeo in his handbook of treatment regarded as as much a specific in influenza as in malaria. After dabbling in the coal tar products this view was urged on me by a late member of Guy's staff, and since then, for at least fifteen years, I have used quinine and found it a specific. In the 1918 epidemic 2 grains every four hours did not seem to benefit, so I doubled the dose. The type was a severe one, and the remedy had to be stronger. The result was striking; cases that were stuporose became quite bright in twenty-four hours after taking 2 grains every two hours. In a small institution, where infants were admitted, as an emergency measure, from homes where the mother was ill with influenzal pneumonia, several of which had the complaint, among a staff of eight nurses only one contracted the disease, and that in a fugitive way, because they were all given 2 grains of quinine four-hourly as a preventive. Influenza is a disease where the toxins depress the nervous system, and sedatives are dangerous. The complaint needs tonic treatment from the first—quinine for five days, with aspirin for the first two days for the pains (if severe), then strychnine and hypophosphites, or calcium lactophos. A sedative linctus is usually needed for night cough. Although quinine is a popular remedy, *skill is required in carrying on the treatment, so one is not* merely doing what any layman can do, and complications have to be met. Some patients cannot take quinine, and then sedatives and coal tar products are really beneficial. Here the nervous system is already overexcited, and nerve stimulants would do harm; but in 90 per cent. of cases this does not come in. Quinine acts as an antiseptic as well as a tonic. It is best given in solution—not in pill form—as then it disinfects the throat in swallowing. For this reason (local action) small doses given frequently are better than massive doses at longer intervals.

THE HOUSEHOLD MEDICINE GLASS.

DR. T. R. E. HILLIER (London, N.W.) writes: A very large number of people nowadays use a medicine glass in place of the "domestic" measures—namely, the teaspoon, dessertspoon, and tablespoon. Theoretically, this is a step in the right direction, but let us see what it means in practice. I should say that 99 per cent. of the medicine glasses in use by the layman (and by some doctors I) are in the shape of a diminutive tumbler. These are quite accurate when it is required to measure an ounce or half ounce, but I defy anyone to measure accurately a drachm with one—an ordinary teaspoon is preferable, though the size of these spoons varies a good deal. Now many medicines are prescribed in drachm doses, particularly in the case of children, where the need for accuracy is even greater. There is only one common-sense form of glass, and that is a conical one, with a broad substantial base, marked clearly in teaspoons and tablespoons. Conical measures can, of course, be obtained, but they are almost invariably marked in drachms and ounces—of little use to the ordinary lay person. Moreover, people usually take what is offered them, and this is always the "little tumbler." Bottles marked with the doses may be suggested as a remedy, but most people pour out too much and will not be bothered to replace the excess, or too little, thinking it will be "near enough." All this may appear very obvious, but nevertheless I have proved it to be a matter of considerable importance.

OATMEAL, VITAMIN D, AND CALCIFICATION.

DR. J. D. MACKAY writes: The report by Mrs. Mellanby and Dr. Lee Pattison, on December 15th, 1928 (p. 1079), makes a point which I have not yet seen emphasized in your correspondence columns, the importance to the industrial population of their statement that "cereals, and especially oatmeal, inhibited perfect calcification of the teeth when this vitamin [D] was deficient in the diet." A large amount of oatmeal is consumed by the youngsters of the industrial population under these conditions of deficiency; for working people will not, or cannot, buy sufficient milk—half a pint of milk, perhaps, or a small tin of condensed skimmed milk, to last a few days. There are other sources of vitamin D, but the course which seems to recommend itself would be to forbid oatmeal, and to use, as a substitute, wholemeal (wheat) or wheat-meal. These millings, alone or mixed, make excellent porridge and other things in which oatmeal is used, and would appear to be free from the defects of the latter. There is, however, another point on which this attribute of oatmeal—the prevention of calcification—has given rise to speculation: has it any value at the other end of the scale, in the later years of life? Will a diet of oatmeal, under suitable conditions, prevent calcification where it is *not* wanted? Perhaps these eminent investigators, to whom the thanks of the whole nation are due for their labours, might express an opinion. This latter hope seems the only consolation to the Scots for this sacrifice of their historic diet on the altar of progress; a vision of wild old men champing their oats is at least stimulating.

PAINFUL SHOULDER.

"T. F.," referring to Mr. P. B. Roth's letter on traumatic synovitis of the shoulder, published on December 22nd, 1928 (p. 1156), writes: I have suffered from pain in both shoulders following injuries, the first nearly two years ago, the second more recently. The symptoms have been precisely those described by Mr. Roth. The pain and occasional tenderness have been most marked over the insertion of the deltoid into the humerus, and under the outer third of the clavicle. It has seemed to me to be highly improbable that the symptoms have been due to synovitis, as has been suggested. On the first occasion, while jumping off my bicycle, I fell on one knee, and, to save some plants I was carrying, I must have forcibly contracted the muscles of the shoulder—so forcibly, I concluded from what followed, that some muscular injury must have been caused. The trouble lasted for about four months. The second injury was occasioned by a more serious fall, but there again it may have been caused by a sudden forcible attempt to preserve equilibrium. The immediate pain in the shoulder was severe, and necessitated lying by the side of the road for some time to avoid fainting. This fall occurred within two weeks of six months ago. I still cannot put my hand in my trousers pocket without pain, and I am wakened regularly every night by pain, chiefly near the insertion of the deltoid into the humerus. One symptom not mentioned previously has suggested to me that the innervation of muscles about the joint may have suffered in some way. There has been, and in a minor degree still may be, a sudden jerking of the arm at the commencement of a movement, such as forcibly thrusting a spoon into a coffee cup; this causes spilling of the coffee. The improvement in my condition is so slow that I anticipate another six months passing before all the symptoms disappear.

TYPICAL FLIES.

DR. F. H. HAINES (Ringwood) writes: I note your review of E. K. Pearce's *Typical Flies* on March 2nd (p. 405). The photographs seem to be extraordinarily good. They are designed to give an idea of the "facies" of the species represented and not of the smaller structural points, although they often do this. They compare most favourably with similar illustrations in certain recent classics on other orders of insects, and would give a beginner the "hang" of the families. Your reviewer's sample of the notes is, I think, hardly fair, nor his comment thereon. It is of first importance to know the colour of the insect the tyro wishes to identify. If thousands of insects are black, thousands are not! Has your reviewer tried to reproduce a whole insect in focus?

MEDIAEVAL TOWNS AND SPAS OF GERMANY.

MR. HENRY BAERLEIN writes: Attention was drawn in your columns by a news paragraph which appeared in your issue of February 16th (p. 330) to a projected tour at Whitsuntide to the mediaeval towns and spas of Germany. This tour I was organizing on the lines of previous expeditions to Czechoslovakia and Jugoslavia, and was aiming at again having between twenty and thirty participants. After the appearance of the notice in the *British Medical Journal* a number of doctors wrote to me for details, but have not yet decided to go; may I point out that if the number of acceptances by the end of March falls short of twenty the tour cannot take place, as the agency in whose hands the management lies cannot for any smaller number make the proper and economical arrangements, either at hotels or in trains. Prospective travellers should send a deposit of £15 to me at the Bath Club, 34, Dover Street, London, W.1, which will be immediately returned if the numbers still fall short of twenty by March 31st.

A DISCLAIMER.

MR. A. P. BACHA, F.R.C.S., writes from Bombay disclaiming all responsibility for a paragraph which appeared in the local vernacular press referring to his professional work and attainments. He protests strongly against the deliberate use of such publicity in the Indian press.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 56, 58, 59, 62, 63, and 64 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 60 and 61.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 67.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

254. "Agranulocytosis."

W. C. HUEPER (*Arch. Intern. Med.*, December, 1928, p. 893) recalls that Schultz, in 1922, described a type of necrotic angina accompanied by a marked absolute and especially granulocytic leucopenia, and regarded these symptoms as manifestations of a disease which he called "agranulocytosis." Since then about 125 cases have been recorded under this name or that of "agranulocytic angina" (Friedemann). Hueper now records observations on five cases seen between November, 1927, and April, 1928. The etiology is unknown. Most authorities regard it as an infectious disease representing a septicaemia with an atypical reaction of the haemopoietic system, due either to bacteria with a special affinity and toxicity to the granulocytic system or to an atrophy and aplasia of this organ caused by septic infection. According to these investigators the bacterial cause is either non-specific or specific (streptococci, *B. pyocyaneus*, or fuso-spirillosis). The disease starts after a period of prolonged ill health, or, more frequently, in previously healthy subjects, with high continued fever, malaise, dysphagia, and dyspnoea; slight jaundice is present in about 50 per cent. The patient rapidly gets worse, and death occurs after coma of two to seven days' duration; there may be rarely remissions of a few days to several weeks. The outcome is usually fatal. At the onset the tonsils are enlarged and reddened, and show yellowish-white plugs, which merge to form dirty grey or yellowish coats; on removal of these an ulcerated surface appears. Sloughing of the tonsils rapidly ensues, and a similar necrotic process may be found on the pillars, uvula, palate, tongue, pharynx, gums, anus, vulva, vagina, and cervix. Staphylococci, streptococci, and pneumococci are the organisms usually found in the throat. The blood shows a considerable leucopenia; the granulocytic cells decrease first and may disappear completely, but there is also a lymphocytic diminution, which closely follows that of the granulocytic cells. The red cells are normal or exhibit only slight changes. Blood cultures are positive in only 10 per cent., when they contain haemolytic and non-haemolytic streptococci, *Streptococcus viridans*, *B. pyocyaneus*, *B. acidi lactici*, and *B. coli*. The disease is far more frequent in women than in men and mainly affects the middle-aged; it is apparently non-contagious. The prognosis is bad, but not absolutely hopeless. Recovery has followed the use of anti-streptococcus serum and *x*-ray applications to the long bones.

265. Intradermal Vaccination.

DURING the past fifty years many methods of vaccination have been advocated as being improvements over existing ones, but all of these have not proved equally satisfactory. C. ARMSTRONG (*Journ. Amer. Med. Assoc.*, November 17th, 1929, p. 1530) believes that new methods should be proved by adequate tests to be equal or superior to established ones, and that the superiority should be demonstrated not alone in the percentage of "takes," but also in the character of the local and general reactions and in the relative freedom from complications. The methods should also be practically free from the possibility of error which might prove harmful to the patient. He discusses, somewhat critically, the advantages claimed by Toomey and Hauver of the intradermal injection of the virus, and concludes that it is wise to employ a well-tried satisfactory conservative method, such as the multiple pressure one. In this procedure the insertion is made through a drop of lymph by pressing the side of the needle point rather firmly against the taut skin and raising and lowering it from twenty to thirty times. The pricks should cover an area never more than one-eighth of an inch in greatest diameter. The fluid is wiped off immediately, and, as the trauma is scarcely visible, a shield or dressing, which may lead to unsatisfactory results, is useless. This method gives a typical vesicle of maximum firmness, since the procedure neither removes nor destroys the epidermis, and thus there is little chance of accidental infection.

266. Severe Scarlet Fever.

S. I. EDELMANN (*Jahrb. f. Kinderheilk.*, January, 1929, p. 322) states that during the period 1919 to 1924 804 cases of scarlet fever were admitted to the infectious department of the children's clinic of the Second State University at Moscow. Of these, 120, or 14.9 per cent., were classified as severe, 23 being toxic, 43 septic, and 54 a combination of the two. Of the 120 patients, 89 died, a mortality of 69 per cent., 10 deaths taking place within twenty-four hours of admission. The severity of the attack was due to two factors—namely, affection of the vascular nerve supply and local involvement of the heart and cervical glands. In toxic scarlet fever the symptoms are those of involvement of the sympathetic nervous system, while in septic cases necrosis of the throat, nasopharynx, and cervical glands, and septicaemia develop at an early stage. The prognosis in cases with cervical cellulitis and early septicaemia is very unfavourable, the percentage mortality being highest in such cases. The complications of severe scarlet fever in order of frequency are adenitis, otitis, pneumonia, and nephritis. Although cardio-vascular disturbance is frequent, myocarditis and endocarditis are very rare, the latter especially so. Moser's serum was found to be the only measure which had any effect on the course of toxic scarlet fever.

267. Prophylactic Inoculation against Pulmonary Infections in Children.

IN the course of about fifteen months J. MINET and WAREMBOURG (*Journ. de Med. de Paris*, December 6th, 1928, p. 981) inoculated 50 cases of measles and 29 of whooping-cough in children, aged from 3 months to 15 years, who were admitted to the infectious diseases department of the Hôpital Saint Sauveur at Lille. The vaccine employed contained, in 1 c.cm., 100 million pneumococci, 50 million streptococci, 350 million staphylococci, 100 million enterococci, and 600 million *B. pyocyanei*. Although the wards were very crowded the results were excellent. Apart from a mild case of broncho-pneumonia no patient developed any respiratory complications, although several had more or less severe bronchitis on admission, or even patches of congestion. The dosage of the vaccine was as follows: 1/2 c.cm. up to the age of 2 years, 1 c.cm. from 2 to 5 years, and 1½ c.cm. after 5 years, given on admission, and repeated two days later.

268. Subacute Bacterial Endocarditis in Childhood.

G. M. LAWSON and R. S. PALMER (*New England Journ. Med.*, December 13th, 1928, p. 1205) review the literature, including Schlesinger's article (see *Epitome*, June 23rd, 1928, para. 610) dealing with the youngest case on record, the child being only 5 years old; they state that in their experience at the Massachusetts General Hospital the earliest age at which subacute bacterial endocarditis has occurred was 6 years, and the next earliest 8 years. The present authors record three fatal cases, in children aged 6, 8, and 10 years, and describe a very unusual case of *Streptococcus viridans* infection in a male infant aged 21 months, without evidence of valvular damage. Death took place, but there was no necropsy. The appearance of the colonies grown from the blood suggested that the case belonged to the subacute bacterial group.

269. Cretinism.

R. L. KNAGGS (*Brit. Journ. Surg.*, January, 1929, p. 371) defines cretinism as a condition characterized by dwarf growth associated with defective mental development. It occurs among the children of goitrous or cretinous parents in districts where goitre and cretinism are endemic, or sporadically in goitre-free districts in the children of healthy parents. Cretinism is due to the insufficient supply of the secretion of the thyroid gland and is allied to the myxoedema of adults. There are three definite and distinct conditions—endemic cretinism, sporadic cretinism, and cachexia strumipriva—the two former developing in infancy or early childhood, and the latter, which follows the removal of the thyroid, usually occurring in adult life. Cretinism may supervene after some infectious illness, such as measles or whooping-cough. Sufferers from endemic cretinism are frequently dwarfs, from forty to sixty inches in height when fully grown, with short, broad bodies. The neck is short and thick, the abdomen large and pendulous, the forehead low, broad, and sloping, and the nose flat; the eyes are small and widely separated. The legs are short and sometimes crooked, with weak, ill-developed muscles. Idiocy is an essential part of cretinism. Sporadic cretinism, unlike the endemic type, is not associated with goitre, but with a wasting or absence of the thyroid body; the outward signs are, however, very similar. It is characteristic of cretinism that the ossific centres are very late in appearing in the cartilaginous epiphyses, and the evidence of delayed endochondral ossification is well marked in the spine. The pelvis is usually very diminutive, its true conjugate being two-thirds and its breadth only half the normal dimensions. The chief features of the histology of cretinism are: a diminution in the amount of cartilage proliferation in the ossification zones, the formation of a continuous layer of bone separating the

proliferating cartilage from the marrow, and a change in the marrow from an active cellular tissue to a more or less inert fatty one. In the endemic disease the living agent is probably conveyed to the individual by contaminated food or water; in sporadic cases and in myxoedema the toxic substances may arise from the patient's natural intestinal micro-organisms. Treatment consists in the careful and continuous administration of thyroid extract, which has a very marked effect in sporadic cretinism, there being a rapid increase of stature and physical development. If this condition is treated at an early stage the general improvement is so steady that the patient may become practically normal. In endemic cretinism thyroid therapy is not so satisfactory, since, although ossification and growth are increased, there is little improvement in the mental condition.

Surgery.

270. Ambulatory Treatment of Varicose Ulcers.

L. DE GAETANO (*Il Policlinico*, Sez. Prat., January 28th, 1929, p. 113) gives an account of the technique he employs in the ambulatory treatment of varicose ulcers. The principle of this lies in directing the venous and lymphatic circulation from the superficial parts towards the deep. By encouraging the patients to walk, the muscular contractions also facilitate the return circulation; the katabolic products of the cellular elements which caused the formation of the ulcers, and are also the reason for their persistence, are at the same time removed. The technique of the method has two stages: a period of preparation and a period of apparatus. During the first of these the skin is disinfected, the eczema cured, and the ulcerated tissue stimulated to heal. The means employed are rectified benzene to cleanse the skin, alcohol acidified with acetic acid to disinfect, an anti-eczema ointment, and an ointment containing scarlet-red to stimulate the epithelial cells. This period lasts from a few days in mild conditions to three weeks in inveterate cases. In the second stage the limb is raised to a right angle with the trunk for five to ten minutes; a thin layer of sterile gauze is then applied, and finally the compressive bandage is fixed. This bandage consists of strips of plaster 2 cm. wide; it is warmed before application, and is pressed sufficiently close, each layer overlapping the previous one, beginning at the foot and ending at the knee. Béslier plaster is preferred by the author. The limb is then bandaged in Velpeau bandages. The author claims that this method is compressive and therefore differs from Baynton's, which is protective only. To complete the cure the patient is advised to walk about, so causing the blood to return through the deeper veins. The patient is seen again after five to seven or more days for the removal of the apparatus. When the strapping is removed, pus and the products of maceration are seen on the gauze, and a tendency to granulate is observable in the ulcers. The time for cure to be effected is variable. Mention is made of one patient who had rested for many months and tried innumerable remedies without avail; in less than a month he was cured by the ambulatory method, which, the author adds, is welcomed by patients who have not the time to rest or the courage to face operative measures.

271. Malignant Tumours of the Pancreas.

G. DENCKS (*Deut. Zeit. f. Chir.*, January, 1929, p. 147) remarks that, although tumours of the ampulla of Vater can be diagnosed early owing to their characteristic symptoms, operative treatment is often unsuccessful. Simple tumours are very rare, sarcoma is less rare, and carcinoma is the commonest variety found. The tumour usually projects into the bowel from a broad base; even when quite small it can occlude the bile duct sufficiently to produce severe jaundice. The origin of these tumours is doubtful. Metastasis is not common. In most cases a deep jaundice is the only disability, but difficulties in diagnosis may arise when other conditions are present, such as cholecystitis or infection of the bile ducts. An operation should swiftly follow the making of the diagnosis. The transduodenal is the usual route, and resection of the duodenum is the most radical method. Dencks has operated on eight patients; in three the tumour and metastases were so extensive that nothing could be done. Of the remaining five patients, two between the ages of 31 and 34 had sarcoma, and three between the ages of 48 and 61 carcinoma. Metastases were found in one case of sarcoma and in one of carcinoma; in both the symptoms had been present for more than eighteen months. The chief symptoms were epigastric pain, pressing and dragging in character, and worse after meals; loss of appetite; jaundice which began early, but in all except one instance showed remissions; and the invariable presence of occult blood in the stools. Loss of weight was considerable, but slight gain occurred in hospital. In Dencks's cases the tumours gave rise to no symptoms until they had reached the size of a chestnut or plum. There was no serious infection of the biliary passage. The liver and gall-bladder were both enlarged. X-ray examinations of the stomach and intestine afforded valuable help in diagnosis. In two cases the radical resection of the duodenum was performed, in two a transplantation was effected, and in one radium was inserted.

272. Acute Intussusception in Children.

P. BOHÉME (*Rev. de Chir.*, 1928, No. 8, p. 582) gives an account of nine cases of intussusception in infancy or early childhood observed during the last few years. Of these, four cases were operated on after the failure of medical treatment; three recovered and one died. In four cases the intussusception was reduced spontaneously, and of these all recovered. One patient died as a result of the failure of medical treatment, surgical intervention being refused. The symptoms were violent colicky pains, with vomiting, restlessness, the passing of a small quantity of blood, and tenderness; in most cases the tumour could be felt. Bohême states that an operation should not be undertaken until this tumour has been felt, since the other symptoms are not sufficient in themselves to justify a diagnosis of intussusception. He does not consider that an acute intussusception necessarily involves immediate surgical treatment, since one child did well who was not operated on until the sixth day. Medical treatment should first be tried, though in the series of cases reported it was unsuccessful in three out of five. In cases of failure surgical intervention is the only alternative, and affords a fairly good hope of recovery in spite of the youth of the patient.

Therapeutics.

273. Influence of Morphine on Respiration.

SINCE morphine decreases mental and physical functional activity F. P. CHILLINGWORTH and A. CANZANELLI (*Journ. Lab. and Clin. Med.*, January, 1929, p. 291) reasoned that the slowing of the respiratory apparatus accompanying its administration would limit or retard the need for oxygen and decrease the output of carbon dioxide, and hence a partly asphyxiated subject would live longer because the available oxygen would be utilized more slowly. A brief review is given of the behaviour of the respiratory centre under the influence of morphine, and the results are recorded of a series of experiments to ascertain the use of this drug to delay asphyxiation in man. The tests were made on white rats in air-tight compartments; it was found that, with proper dosage, morphine could prolong life in such conditions. It was also shown that morphine is a depressant of the respiratory centre and of all physical activity, this general depression slowing respiration by reducing oxygen consumption and by raising the oxygen and carbon dioxide thresholds. Owing to the diminution in the utilization of available oxygen, the oxygen level at which death occurs is reached later in morphinized than in untreated subjects. Since the oxygen threshold is raised by morphine, the authors believe that in cases with marked anoxaemia (pneumonia) other drugs should be used, or at least reduced doses of morphine be given, perhaps more frequently. Decreased functional activity indicates a slowing of the basal metabolic rate.

274. Treatment of Meningococcal Meningitis.

K. HOLTZ (*Arch. f. Kinderheilk.*, November 27th, 1928, p. 293), who records an illustrative case, states that the value of the intrathecal serum therapy of meningococcal meningitis is still a matter of dispute, in spite of numerous records of its success and favourable statistics. In view of the variable severity of this infection, the mortality from which even apart from treatment ranges in different epidemics from 20 to 80 per cent., statistical evidence of the value of serum treatment cannot be regarded as conclusive. Holtz records the case of a girl, aged 8, suffering from a very severe attack of meningococcal meningitis, who made a rapid and uncomplicated recovery after treatment by large doses of antimeningococcal serum (270 c.cm.) combined with injection of air (160 c.cm.) for displacing the cerebro-spinal fluid, 600 c.cm. of which were evacuated. The advantage of first displacing the cerebro-spinal fluid by air lies in the fact that it not only helps to rid the central nervous system of micro-organisms and their toxins with the associated hyperaemia, but it also enables the serum to reach the surface of the brain and the ventricles in a much more concentrated form. Early employment of the serum is an important factor in the success of the treatment. A guide for the duration of the treatment is furnished by the change in the cellular reaction of the cerebro-spinal fluid from a polymorphonucleosis to a lymphocytosis.

275. **The Maintenance Dose of Digitalis.**

As a means of ascertaining the maintenance dose of digitalis, A. W. BROMER and H. L. BLUMGART (*Journ. Amer. Med. Assoc.*, January 19th, 1929, p. 204) considered that an index of the degree of digitalization present might be better indicated by the characteristic alterations in the T-waves as seen in electrocardiograms following the administration of the drug than by estimations based on the toxic symptoms, nausea and vomiting. Accordingly they conducted a series of experiments on eight male patients whose ages ranged from 14 to 62; one of these showed auricular fibrillation and the remainder a normal sinus rhythm. None of the patients had received any digitalis preparation for at least a month, a period sufficient for complete elimination of the drug. A freshly prepared and standardized galenic tincture was used throughout the investigation. The experiments, which are fully described, showed that the daily maintenance dose of digitalis ranged from 19.8 to 28.9 minims, the average being 23.5 minims, or approximately one minim per hour. In a given individual the greatest variation was 3.1 minims. The daily maintenance dose was not apparently related to the weight of the subject or to the total therapeutic dose calculated according to the Eggleston method; it was essentially the same for all subjects regardless of cardiac lesions or of the degree of circulatory compensation. The earliest definite alteration in the T-wave occurred when an average of 54.8 per cent. of the total therapeutic dose (Eggleston) was within the body. The authors conclude that this method may be used as a quantitative index of the amount of digitalis effective within the body.

276. **Powdered Milk Preparations.**

IN reply to the assertion that evaporated milk is "dead" milk, A. ROUMR (*La Gynécol.*, November, 1928, p. 643) states that milk dried on heated cylinders still contains a sufficient quantity of ferments such as diastase and oxydases to maintain children in good health. He quotes the statistics produced at the International Dairy Congress in 1923, showing that the use of this milk in Great Britain had been accompanied by a remarkable decrease in infant mortality. Milk dried over heated cylinders at a temperature of 105° to 110° C. should contain antineuritic and antiscorbutic vitamins in ample quantity. At a temperature of 98° to 100° C. almost complete sterilization occurs, except in regard to non-spore-bearing and thermo-resistant bacteria. Cold cannot destroy pathogenic micro-organisms, and pasteurization is therefore preferable to refrigeration. Any partial deficiency of vitamins may be supplemented by a teaspoonful of fruit juice (preferably lemon juice), which contains excess of vitamins B and C. If in the case of older children there is reason to fear rickets, 10 to 20 drops of cod-liver oil should be given every twenty-four hours, or irradiated substances may be substituted. If irradiated milk-powder is given, 5 or 6 drops of an oily solution of ergosterol should be added.

Dermatology.

277. **Thallium Acetate in Ringworm of the Scalp.**

G. V. BEDFORD (*Canadian Med. Assoc. Journ.*, December, 1928, p. 660) advocates depilation with thallium acetate in the treatment of ringworm of the scalp in children, and especially in favus capitis; *it may be particularly useful in* rural districts where *x* rays are not available. After careful weighing without clothes the child is given a single dose of *thallium acetate accurately prescribed in a dosage of 1/8 grain* (8 mg.) per kilo of body weight, and administered the first thing in the morning in half a wineglass of sweetened water, *food being withheld until noon.* A daily shampoo with liquid green soap is given, with an application each night and morning of ammoniated mercury ointment (2 per cent.) or sulphur ointment (5 per cent.). *In about a fortnight depilation com*mences and is usually complete in about three weeks. Since the hair quickly begins to grow again, it is important that the *daily shampooing and applications* should be continued for at least a month to protect the new hairs against infection. In a series of twenty-one cases toxic effects occurred three *times, comprising* pain and swelling in the knees and ankle-joints, which cleared up under salicylate treatment; such toxic symptoms are more likely to occur in children approaching puberty than in younger patients. Since the powder tends to deliquesce, it should be dispensed in a glass container. M. J. ORMEROD (ibid., p. 663) describes the pharmacological and toxicological aspects of thallium, and concludes from clinical and experimental evidence that the drug is well borne by young children up to 7 or 8 years of age. *In animals the action* of the drug was found to be cumulative, acting much like lead and arsenic, with early involvement of the central nervous system, as evidenced by *apathy, tremor,* and paralyses. Metabolism is affected, and there is calcium deficiency, which probably explains the muscle cramps, but there is no evidence that permanent damage to the hair follicle results, nor that lasting endocrine disturbances ensue.

278. **Congenital Haemorrhagic Angiomatosis.**

C. H. FLANDIN and P. SOULIÉ (*Bull. et Mem. Soc. Méd. des Hôp. de Paris*, December 20th, 1928, p. 1781) report a case of hereditary haemorrhagic angiomatosis, a peculiar *familial* disease first described by Osler under the name of congenital haemorrhagic telangiectasis. The essential characters of this malady are *haemorrhages (chiefly nasal and gingival)*, followed by the appearance, especially on the face and more rarely on the hands and feet, of discrete vascular spots, *which bleed easily and progressively* become prominent. The repeated haemorrhages ultimately cause an anaemic state which is often serious. The familial and hereditary nature of the disease is markedly shown in the authors' case, since isolated appearances of the condition had been noted in four successive generations. The patient, a woman aged 54, had suffered from frequent epistaxis since her youth, and the last attack was so severe as to cause a state of syncope with extreme pallor and dyspnoea. On examination, several carmine-red, slightly raised spots were seen on the face, with a few on the fingers, lips, upper surface of the tongue, and on the conjunctivae near the border of the lower eyelids. The patient had previously noted several red spots under the nails. The haematological examination was normal, the Wassermann test being negative. Cardiac examination revealed an aortic systolic souffle, propagated to the cervical vessels and followed by a hard second sound. Attention is drawn to the red colour of the spots. In cases previously reported the tint was more cyanotic and there was evidence of venous dilatation; in the present case arterial dilatation was apparently present. According to Darier these red spots are due to a proliferation of the dermic vascular apparatus. The probable cause of the haemorrhages is traumatism, even though unrecognized; and the facility and duration of the bleeding, which is in marked contrast to the conditions over the normal skin, is due to the fineness of the skin over the spots. Since there was no alteration in the blood, the authors consider that the change was vascular rather than haemic, and that the haemorrhages are due to the direct rupture of small arterioles of abnormal calibre. The pathogeny of the disease is unknown.

279. **Atrophic Bullous Cutaneous Distrophy.**

A. PASINI (*Ann. de Derm. et de Syph.*, December, 1928, p. 1044) reports two cases of pemphigus secondary to epidermic cysts, and in each case associated with a rare papular rash which the author had never seen before. The patients were both females, their ages being 27 and 17; in one case there was a hereditary history. The papules, which were chiefly distributed on the trunk, developed slowly and did not disappear; they were of an ivory-white colour and projected 1 or 2 mm. above the surface. *In some places* they measured 15 mm. across. They were primary in origin and their appearance was never preceded by any premonitory symptoms. They were nearly always grouped around a follicular orifice, and in some cases a transitory bulla appeared at the summit. They caused no pain and never showed signs of inflammation or cicatricial character. Probably the etiological factor was some trophic change. The nails were affected.

Obstetrics and Gynaecology.

280. **Etiology of Accidental Haemorrhage.**

F. J. BROWNE and GLADYS H. DODDS (*Journ. Obstet. and Gynaecol. of the British Empire*, Winter, 1928, p. 661) record further work in the experimental induction of accidental haemorrhage (premature detachment of the placenta) in rabbits. In a previous paper Browne (*British Medical Journal*, 1926, i, p. 683) had shown that in rabbits who had received during three months intravenous injections of 1 per cent. sodium oxalate solution, and had then been mated, further injections of sodium oxalate and of an emulsion of *B. pyocyaneus* about the twentieth day of pregnancy were followed within a few hours by external accidental haemorrhage, accompanied in some cases by concealed retroplacental haemorrhage, placental thrombosis and infarction, and extravasation of blood in the myometrium. These experiments were taken to support the view that chronic nephritis is an essential predisposing cause of accidental haemorrhage. In the present paper the microscopical characters of the kidneys are described in detail; although the oxalate injections had been given for three months only, the cortex, especially in the region of the first convoluted tubes, showed very extensive fibrosis, and in many areas the tubules had all but disappeared and had been replaced by connective tissue, round-cell infiltration being conspicuously absent. In further experiments, here recorded, Browne and Dodds show that

(1) the haemorrhagic phenomena about the twentieth day of pregnancy can be induced (provided that chronic nephritis has been set up by oxalate injections before conception) by injections of *B. pyocyaneus* emulsion and of uranium acetate, or by injections of emulsion alone, or by injections of uranium acetate alone; (2) when an oxalate nephritis has not been induced the bacillary emulsion does not cause accidental haemorrhage even if acute nephritis is set up, and uranium acetate injection, accompanied by acute nephritis, is unable to induce accidental haemorrhage or placental infarction save in exceptional cases. The conclusion drawn is that the existence of an antecedent chronic nephritis is the essential factor in the production of accidental haemorrhage. It is noteworthy that in some of the animals suffering from chronic oxalate nephritis ante-partum haemorrhage occurred spontaneously during the second half of gestation, and that in all these animals the liver function (as shown by the bromsulphthalein test) seemed normal, and no morbid hepatic conditions were demonstrable after death. In these animals albumin was often absent from the urine between pregnancies and during the early part of pregnancy; it reappeared in the latter half of gestation and before the onset of spontaneous haemorrhage. The authors believe that there is a close pathological connexion between (1) placental thrombosis followed by infarction; (2) so-called utero-placental apoplexy with retroplacental haematoma and haemorrhage, and thrombosis in the uterus and broad ligaments; and (3) revealed accidental haemorrhage. Although clinically separable, these conditions are probably to be regarded as pathologically similar manifestations of maternal toxaemia, the toxins acting primarily on endothelium; the chronic nephritis operates by interfering with the excretion of such toxins, or possibly by interfering with a physiological metabolic function of the kidneys.

281. Prognosis in Carcinoma of the Ovary.

E. ALFIERI (*Ann. di Ostet. e Ginecol.*, January 31st, 1929, p. 1) compares the records of incidence, operability, and prognosis of carcinoma of the ovary furnished by the University clinic at Milan with those obtained elsewhere, and deplores the fact that the importance of early diagnosis has not received the same degree of recognition in the case of carcinoma of the ovary as in that of uterine cancer. He states that 70 to 80 per cent. of malignant ovarian tumours are carcinomatous; that about 7.5 per cent. of patients admitted to gynaecological clinics suffer from ovarian tumours, of which 20 per cent. are malignant; and that, although carcinoma of the cervix is almost four times as frequent as ovarian carcinoma, the latter is as common as carcinoma of the body of the uterus. At the time when hospital or specialist treatment is sought the prospect of cure in the average case of carcinoma of the ovary is certainly not better than in the average case of cervical cancer, and considerably less than in corporeal cancer; this is attributed to the slightness of the early symptoms, to the tumour being inaccessible to simple abdominal operation, to bimanual examination being apt to be neglected or too long deferred, and to a common reluctance to open the abdomen in cases of cystic ovarian tumours which have not yet been proved to be increasing or to produce symptoms. The proportion of inoperable cases encountered by the author and others is about 50 per cent., and the primary operative mortality about 15 per cent.; five years' cures after operation number from 10 to 20 per cent. Alfieri concludes that better results in treatment of ovarian carcinoma cannot be secured until it becomes the rule for operation to be undertaken promptly in all cases of ovarian tumours in which there is no contraindication on grounds of general health. Although four-fifths of tumours are benign, they are liable to serious complications, such as adhesion, torsion, apoplexy, necrosis, suppuration, and rupture.

232. Pregnancy after Portes's Operation.

LÉVY-SOLAL, LAENNEC, and DELARUE (*Bull. Soc. d'Obstét. et de Gynécol. de Paris*, December, 1928, p. 918) describe the case of a woman, aged 27, with general pelvic contraction, whose first labour had been terminated by craniotomy, and whose second labour, at term, was characterized, after nineteen hours' "trial," by pyrexia and by fetor of the liquor amnii. The operation of Portes-Caesarean section, followed by suture of the abdominal wall with the stitched uterus left in the exteriorized position, was performed, in view of the manifest signs of infection; the uterus was returned to the abdomen at a second operation thirty-one days later. The next pregnancy took a normal course and was terminated by Caesarean section at the beginning of labour, three years after the Portes operation. The old uterine scar, which was macroscopically satisfactory, was excised and proved histologically to be of normal character. PORTES and J. SEGUY (*ibid.*, p. 921) describe a case of spontaneous delivery at nine months of a living infant, weighing 2.25 kilograms, in a woman in whom Portes's operation had been employed four years previously.

Pathology.

283. Susceptibility to Infections and Capacity to Produce Antitoxin.

C. ZOELLER (*C. R. Soc. de Biologie*, November 23rd, 1928, p. 1578) maintains that susceptibility to disease and the capacity to produce antitoxin are not necessarily identical in the same subject. The following four combinations may occur. (1) Both the susceptibility and the capacity to produce antitoxin may be increased; there are subjects who are susceptible to the disease but can easily be protected by inoculation. (2) The susceptibility may be heightened, while the capacity to produce antitoxin is feeble or absent; these are subjects who are susceptible to the disease, liable to relapses, and refractory to inoculation. (3) Susceptibility may be weak or absent, while the capacity to produce antitoxin is enhanced; these are more or less insusceptible subjects who readily undergo spontaneous or artificial immunization. (4) Susceptibility may be slight and the capacity to produce antitoxin be weak or absent; these subjects are unsuitable as donors and are relatively protected owing to their low degree of susceptibility. The first group comprises persons who have had a typical attack of diphtheria, but who are subsequently shown by the Schick reaction to be quite capable of acquiring immunity to the disease. The second group consists of hypersusceptible individuals, the frequency of whom in a community restricts the efficacy of a method of immunization. In addition to human subjects, the third group contains animals like the guinea-pig, which has a considerable capacity to form antitoxin, but has no susceptibility to spontaneous diphtherial infection. The fourth group includes very young children, who are alike unable to contract diphtheria and to become immunized, as well as persons who have undergone passive immunization.

284. Distribution of Growth in the Long Bones.

E. BERGMANN (*Deut. Zeit. f. Chir.*, January, 1929, p. 303), by measuring the distances between the metaphyseal lines of calcification, has shown that in the growth of the long bones the greatest addition to length is from the distal cartilage of the femur, an amount almost double that derived from the proximal epiphysis of the femur. In the case of the tibia the distal and proximal zones of growth are about equal, and in the arm the growth is about three times as great in the epiphyseal centres most distant from the elbow-joint. Observations on the lengthening of the leg of a child suffering from tuberculosis of the knee-joint suggested that the diseased condition had produced a local hyperaemia which had increased the rate of growth. Not only has the diaphysis a pathological increase of growth, but the ossification of the epiphyses is much more advanced than on the healthy leg, so that the diseased knee appeared to belong to a person a year older. This hastening of ossification is shared by the patella; the patella of the diseased knee is twice as ossified as the healthy patella.

285. The Secretory Function of the Stomach.

IT is a well-known fact that many cases of disease of the gall-bladder are accompanied by gastric hypoacidity. In order to find the actual relation between the two phenomena S. O. BADYLKES (*Tezapevtichesky Archiv*, vol. vi, Fasc. 6, 1928, p. 534) performed seventy-one experiments on the isolated stomachs of dogs, and arrived at the following conclusions. Foreign bodies and inflammation of the gall-bladder cause a marked diminution of the secretion and of the acidity of the stomach, and a slight decrease of the duration of the secretion. The secretory curve and the digestive power of the gastric juice remain unaffected; in the stomach isolated as in the Heidenhain experiment there is an increase of the digestive power of the gastric juice. The diminished secretion in cholecystopathies is caused by an inhibition through the sympathetic nervous system. Following short acute irritation of the gall-bladder, a possibly compensatory increase in the gastric secretory activity could be noted after the period of initial inhibition.

286. Urinary Infection by Morgan's Bacillus I.

A. JERVELL (*Norsk Mag. f. Laegevid.*, December, 1928, p. 1245) records two cases in women, aged 27 and 35 respectively, in whom Morgan's bacillus I was cultivated from the urine, and in the younger patient from the blood and faeces as well. The clinical symptoms did not differ from those of ordinary *B. coli* infections of the urinary tract. In both cases the serums showed a high agglutination titre, and serological identity of the two strains was shown by agglutination, absorption, and complement-fixation tests. These cases support the view that Morgan's bacillus is closely related to *B. coli* pathogenically.

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Even *more* luxurious is the 1929 Staples Mattress—deeper springs, softer cords and long end springs. Little refinements for the fastidious everywhere. The resilient Staples springs hold the spine straight and the vital organs of the body undistorted the whole night through. Muscles are naturally relaxed and automatically the nervous system obtains complete rest for the duration of sleep. Always pre-eminent for Luxury the 1929 Staples stands in a class by itself—Built only for those who demand the Best—More costly to produce but the PRICE REMAINS THE SAME.

Staples Mattress, 3' 99/-, 4' 6" 118/6.
There is *also* the
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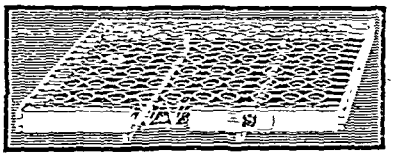

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"The finest mattress made"

A visit to our works showroom at Staples Corner, Cricklewood, is well worth while. The "Commonsense Health" Mattress Booklet and new 1929 Catalogue of Staples Bedstead Designs, are sent post free on application to Dept. 4.

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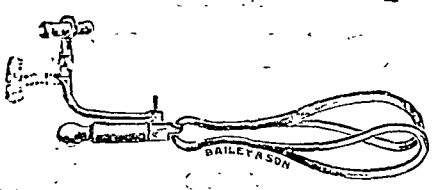
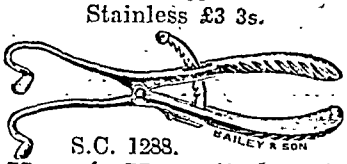


S.C. 1390. **Neville's Axis Traction Forceps,** with Metal Handles, £2 7s. 6d. Stainless £4 14s. 6d.

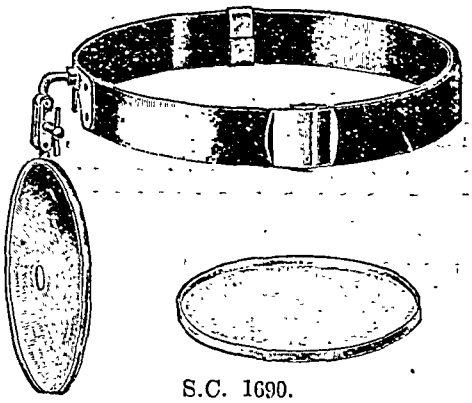
S.C. 1395. **Anderson's Midwifery Forceps** £1 10s. Stainless £3 3s.

S.C. 1393. **Milne-Murray Axis Traction Forceps,** with removable Traction Rods, £2 18s. 6d. Stainless £5 5s.

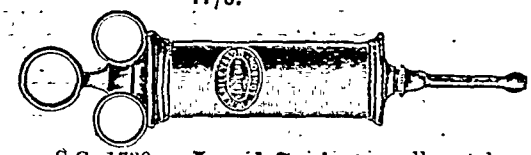


S.C. 1288. **Mason's Mouth Gag,** with Racket or Sliding Action, 17/6.

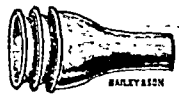
Buxton's Gag, 15/-.



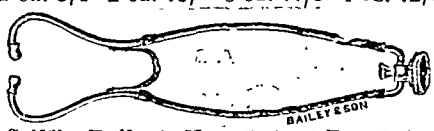
S.C. 1690. **Head Mirror,** with Webbing Head Band and Cover for protecting Mirror, 12/6.



S.C. 1730. **Aural Syringes,** all metal, nickel-plated, fitted with either "A" or "B" pipes. 1 oz. 8/6 2 oz. 10/- 3 oz. 11/6 4 oz. 12/6



S.C. 1727. **Gruber's Aural Speculæ,** round or oval hole. Set of 3 - 7/6.



S.C. 1561. **Bailey's New Patent Revolving Stethoscope, 18 6**

S.C. 1753. **Thudichum's Nasal Speculum.** 3/- each.

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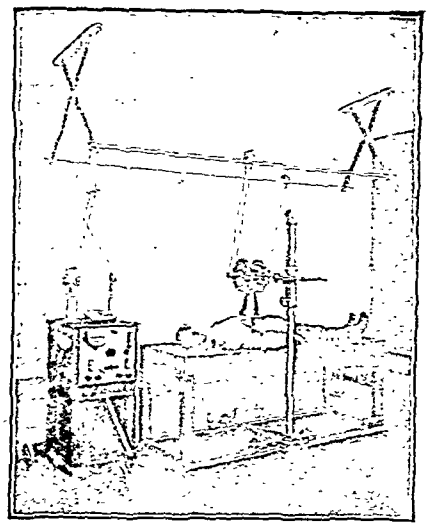

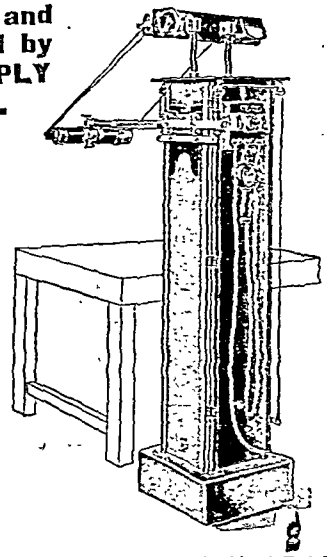

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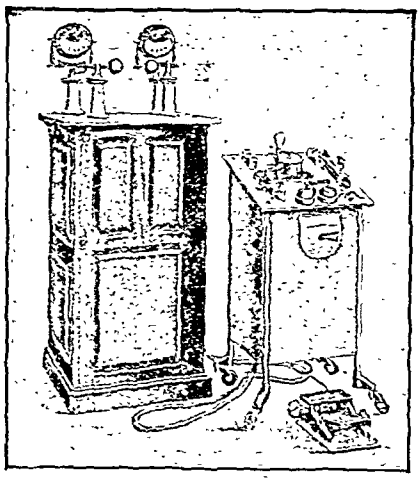

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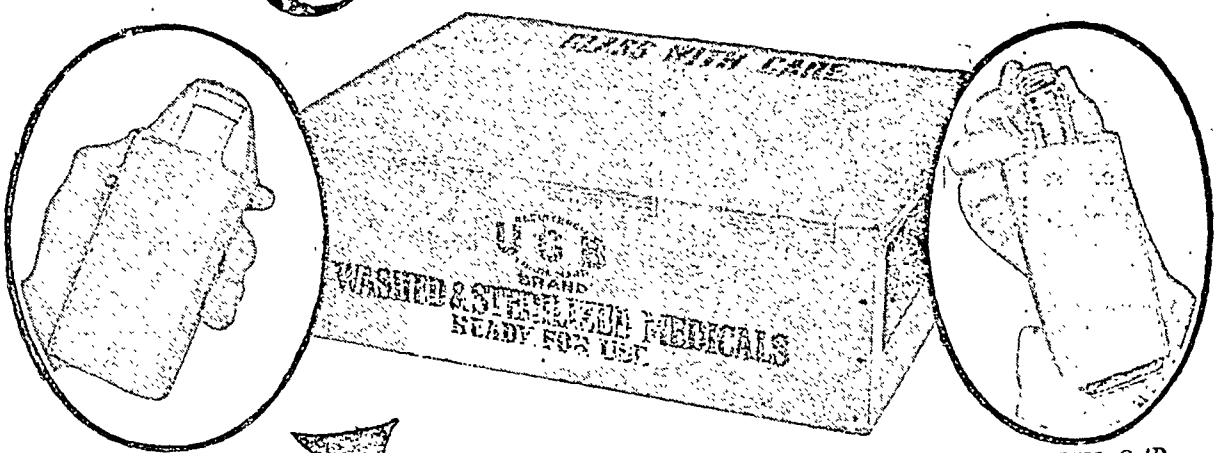

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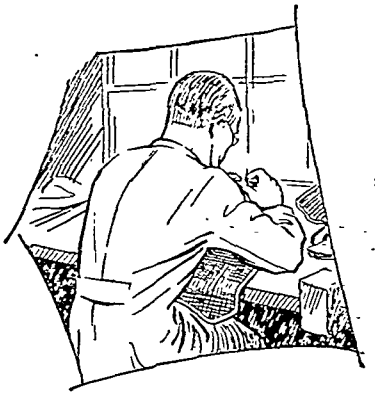

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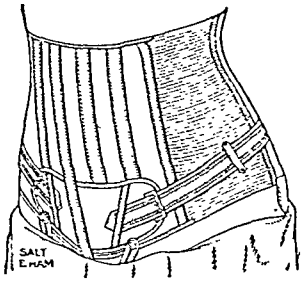

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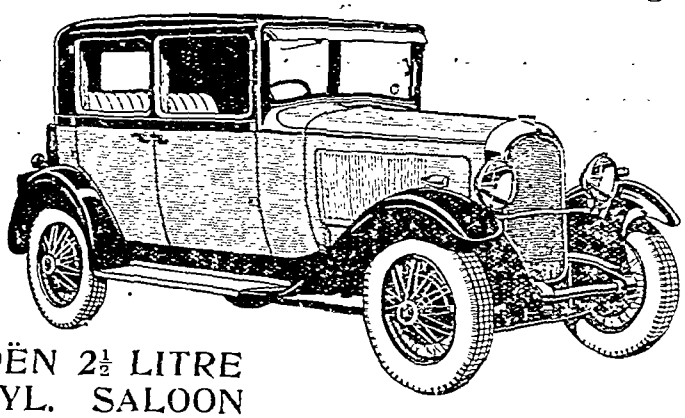

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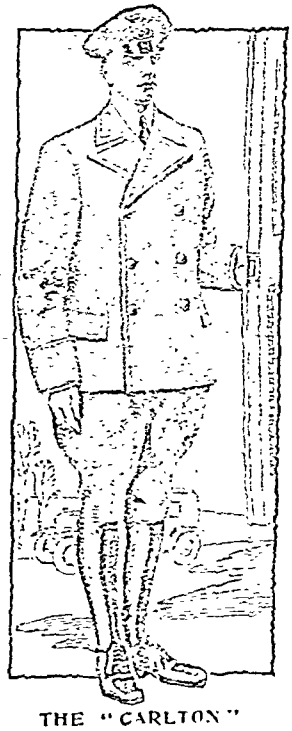

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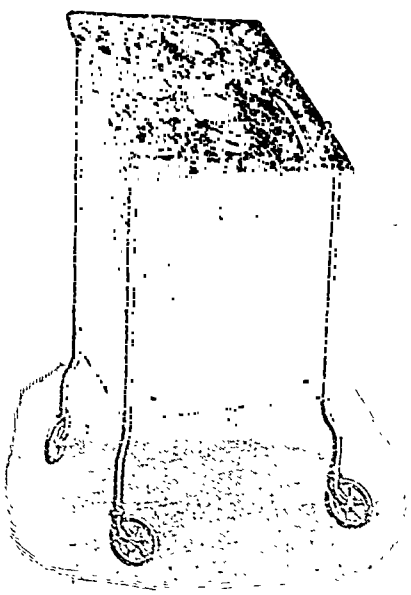

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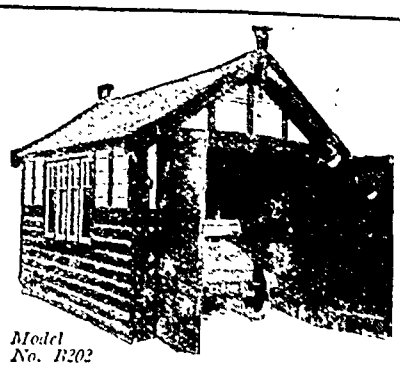

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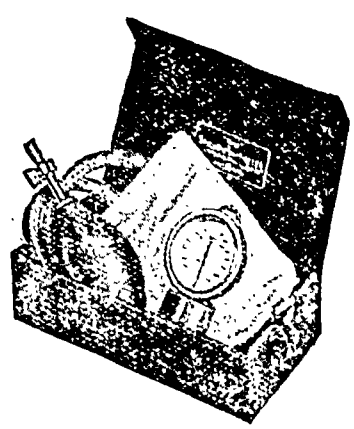

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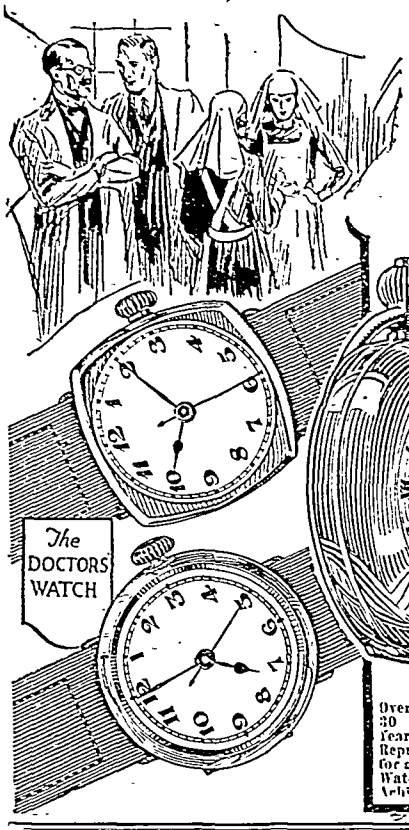

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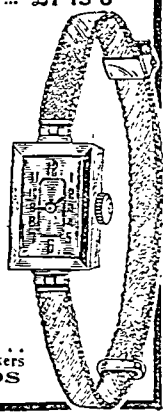

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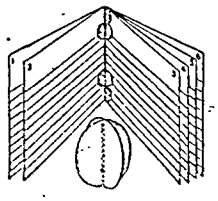

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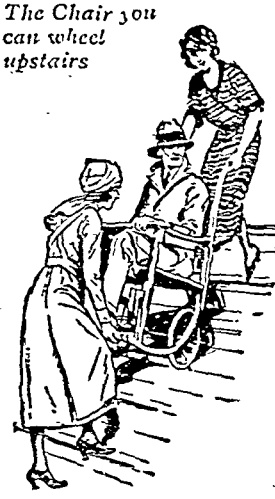

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FOR MENTAL DISORDERS,
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FOR THE UPPER AND MIDDLE CLASSES ONLY.

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Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This Registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, *persons suffering from incipient nervous and mental disorders*, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical baths, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for *Diathermy and High Frequency treatment. It also contains Laboratories for* biochemical, bacteriological, and pathological research.

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Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy *is a feature of this branch, and patients are given every facility for occupying themselves* in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The Seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

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For terms and further particulars apply to the Medical Superintendent (Telephone: No. 56 Northampton), who can be seen in London by appointment.

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For the care and treatment of Ladies suffering from Mental Diseases.
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For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

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This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.

For terms, etc., apply to the Medical Superintendent

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A private mental hospital for the care and treatment of mental and nervous disorders in both sexes. Voluntary patients received for treatment.

The house is 6 miles from Hyde Park Corner, in the midst of beautiful grounds and pleasure gardens extending to 65 acres. In nearly all cases patients have their own bedrooms sitting-room, and private nurse.

Terms are from 10 guineas a week, including all expenses.

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Attendance at School is a necessary part of the satisfactory treatment of Epilepsy in Children.

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(for Mental Disorders).

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situated in extensive grounds, amid beautiful country and within easy distance from London, receives a few LADIES requiring treatment for mild Nervous and Mental Disorders.

Apply, Chief Physician, Office of the Hospital, 19, Nottingham Place, London, W.1.
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A PRIVATE HOME for the treatment of *Gentlemen* suffering from Mental or Nervous Illness, including the *allied disorders* of Alcoholism and the Drug Habit. All types of early Mental or Nervous cases are received without certificates as Voluntary Boarders. Bracing Hill country. See *Medical Directory*, p. 2133.—Apply to Medical Superintendent. Telephone: 10 C.P.O. Church Stretton.

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A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
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Completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Croquet, Squash Racquets, and all indoor Amusements, including Wireless and other Concerts. Occupational Therapy. Daily services in the Chapel.
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Patients of the EDUCATED CLASSES, IN A PRESUMABLY CURABLE CONDITION, are eligible for admission. With a view to the early treatment of eligible cases VOLUNTARY OR UNCERTIFIED patients are admitted. PATIENTS WHO CAN CONTRIBUTE THREE GUINEAS WEEKLY TOWARDS THE COST OF MAINTENANCE MAY BE RECEIVED AS VACANCIES ARISE. Treatment is carried out on the most modern principles. In connection with this Hospital there is a Convalescent Home on the Surrey hills at Witley.
For further particulars apply to the PHYSICIAN SUPERINTENDENT.

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A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

CHEADLE ROYAL,

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This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.
For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.
Telephone: 165 GATLEY.

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A PRIVATE HOME for the care and treatment of persons with mental and nervous disorders.
TERMS: According to requirements. Certified Patients and Voluntary Boarders received.
Mansion on outskirts of Bath, with 20 acres of grounds (see *Medical Directory*, page 2134).

Apply to NORMAN LAVERS, M.D., Resident Physician. Telephone No.: Bathwick 2159.

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A first-class Country Mansion especially adapted for the reception of a limited number of ladies and gentlemen mentally affected.
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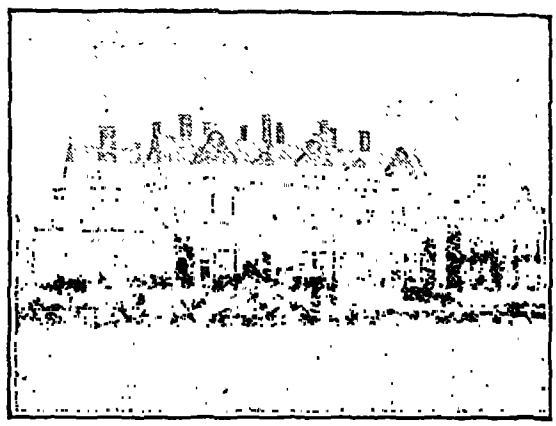

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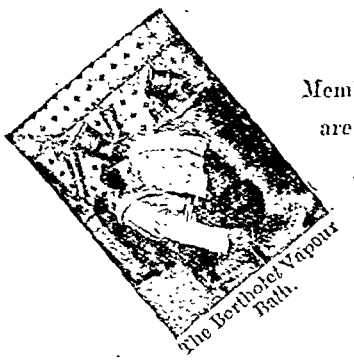

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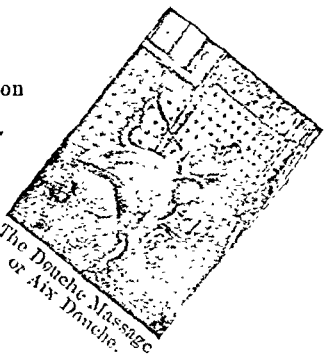

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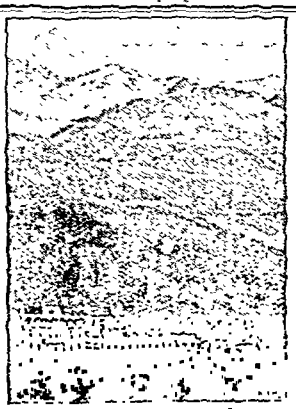

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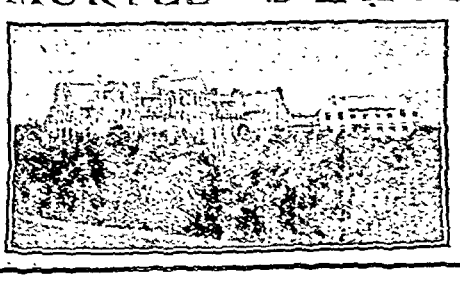

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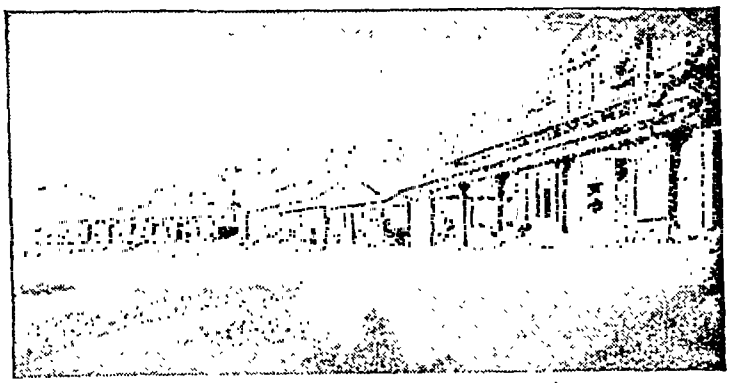

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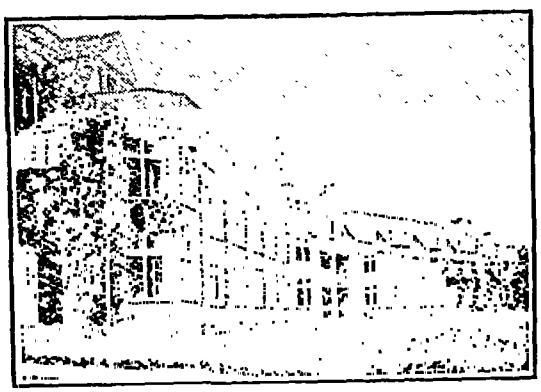

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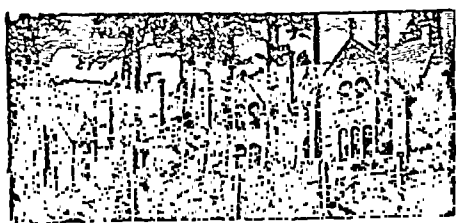

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PROFESSORS.

Chemistry—George Barger, D.Sc., F.R.S.
Zoology—J. H. Ashworth, D.Sc., F.R.S.
Botany—Wm. Wright Smith, M.A., F.R.S.
Anatomy—Arthur Robinson, M.D.
Physiology—Sir E. Sharpey-Schafer, LL.D., F.R.S.
Materia Medica—Alfred J. Clark, M.C., M.D., F.R.C.P.
Pathology—J. Lorrain Smith, M.D., LL.D., F.R.S.
Bacteriology—Thomas Jones Mackie, M.D.
Forensic Medicine—Sydney A. Smith, M.D., D.P.H.
Public Health—Percy Samuel Lelean, C.B., C.M.G., F.R.C.S.
Medicine—W. T. Ritchie, M.D.
Surgery—D. P. D. Wilkie, M.D., Ch.M.
Midwifer Johnstone, M.A., M.D.
Clinical .M., M.D.
Clinical " M.D., W. T. Ritchie, M.D., and D. Murray Lyon, M.D.
Tuberculosis—Sir Robert W. Philip, M.D.
Therapeutics—David Murray Lyon, M.D.
Psychiatry—George M. Robertson, M.D.

UNIVERSITY LECTURERS.

Clinical Surgery—Geo. L. Chiene, M.B., W. J. Stuart, M.B., J. W. Struthers, M.B., Henry Wade, M.D., J. M. Graham, Ch.M.
Clinical Medicine—D. Chalmers Watson, M.D., Edwin Matthew, M.D., John Eason, M.D., J. D. Comrie, M.D., Alexander Goodall, M.D.
Clinical Gynæcology—R. W. Johnstone, M.D., William Fordyce, M.D., H. S. Davidson, M.B., James Young, M.D., W. F. T. Haultain, M.B., Douglas Miller, M.D.
Clinical Midwifery—R. W. Johnstone, M.D., William Fordyce, M.D., James Young, M.D., H. S. Davidson, M.B., Douglas Miller, M.D., W. F. T. Haultain, M.B., E. C. Fahmy, M.B., John Sturrock, M.B., Clifford Kennedy, M.B.
Diseases of the Eye—A. H. H. Sinclair, M.D., H. M. Traquair, M.D., E. H. Cameron, M.B., C. W. Graham, M.B.
Clinical Instruction in Diseases of Children—Charles McNeil, M.D., N. S. Carmichael, M.B., Ch.B., L. H. F. Thatcher, M.D., Gertrude Herzfeld, M.B., and Norman Dott, M.B.
Anatomy—E. B. Jamieson, M.D.
Applied Anatomy—T. E. Jardine, M.B.
Histology—May L. Cameron, M.A., B.Sc., M.B.
Physiological Chemistry—W. W. Taylor, D.Sc.
Experimental Physiology—H. Dryerre, Ph.D.
Physiology of the Nervous System—A. Ninian Bruce, M.D., D.Sc.
Experimental Pharmacology—(Vacant).
Materia Medica—A. C. White, M.B., Ph.D.
Pathology—Theodore Rettie, D.Sc., W. G. Millar, M.B.
Morbid Anatomy—J. Davidson, M.B.
Bacteriology—D. G. S. McLachlan, M.B.
Physics—G. A. Carse, M.A., D.Sc.
Chemistry—Edgar Stedman, B.Sc., Ph.D.
Diseases of the Larynx, Ear, and Nose—John S. Fraser, M.B., J. D. Lithgow, M.B., W. T. Gardiner, M.B., G. Ewart Martin, M.B.
Tropical Diseases—Lt.-Col. E. D. W. Greig, C.I.E., M.D.
Medical Entomology and Parasitology—J. H. Ashworth, D.Sc., F.R.S., A. E. Cameron, M.A., D.Sc.
Tropical Hygiene—J. du P. Langrishe, D.S.O., M.B., B.Ch. (conjointly with Professor).
Sanitary bertson, M.D.
Diseases o M.D., R. Cranston Low, M.D.,
Robert l, M.B., Ph.D.
Clinical Instruction in Infectious Fevers—Alexander James, M.D., W. T. Benson, M.D.
History of Medicine—J. D. Comrie, M.A., B.Sc., M.D.
Surgical Pathology—K. Paterson Brown, M.B.
Venereal Diseases—David Lees, D.S.O., M.B.
Psychology—James Drever, M.A., B.Sc., D.Phil.
Radiology—J. M. Woodburn Morison, M.D., D.M.R.E.
Neuro-Pathology—F. E. Reynolds, M.B.
Psychiatry—William McAlister, M.B.
Clinical Experimental Methods—(Vacant).

Practical Instruction is afforded, under the superintendence of the Professors, in Laboratories with the necessary appliances, and in Tutorial and Practical Classes connected with the above Chairs, and opportunities are afforded to Students to extend their practical knowledge and engage in original research.

Opportunities for Hospital Practice are afforded at the Royal Infirmary, the Hospital for Sick Children, Maternity Hospital, the City Fever Hospital, and the Royal Edinburgh Hospital for Mental Disorders. Upwards of 2,760 beds are available for the Clinical Instruction of Students of the University.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh, viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.).

The minimum Class Fees for M.B. and Ch.B., including Hospital Fees (£12), amount to about £210, and the Matriculation and Examination Fees to £45 3s. An additional Fee of £21 is payable by those who proceed to M.D., and £21 by those who proceed to Ch.M.

The annual value of the Bursaries, Prizes, Scholarships, and Fellowships in the Faculty of Medicine amounts to about £3,600, and that of the other Bursaries, etc., tenable by Students of Medicine, amounts to about £1,820.

POST-GRAD of instruction are given for the University Diplomas in Public Health, Tropical Medicine and Hygiene, e Diplomas are open to approved registered practitioners as well as to graduates in Medicine and Surgery o also takes part in the Courses given under the auspices of the Edinburgh Post-Graduate Courses in Med Faculty of Medicine, provision is made for research by students of graduate standing. In the University vided for candidates for the Degree of Ph.D. whose applications to engage in research have been accepted by the Senatus.

A Syllabus and further information as to Matriculation, the Curricula of Study for Degrees, etc., may be obtained from the Dean of the Faculty of Medicine; and for Degrees in the Faculties of Arts, Science, Divinity, Law, and Music, from the Deans of these Faculties, or from the Secretary; and full details are given in the University Calendar, published by James Thin, 55, South Bridge, Edinburgh. Price, by post, 6s.

March, 1929. By authority of the Senatus, W. A. FLEMING, Secretary.

SCHOOL OF MEDICINE

OF

THE ROYAL COLLEGES, EDINBURGH.

(Founded 1505)

SUMMER SESSION, 1929.

Opens on APRIL 16th.

The Lectures qualify for the English and Scottish Universities and other Medical Examining Boards.

One-half of the Qualifying Classes required for graduation in the University of Edinburgh may be attended in this School.

The School offers a large choice of Teachers upon the various subjects comprised in the Medical Curriculum.

Calendar, giving particulars of the Classes, Fees, Examinations, &c., sent (price 6d.) on application to THE DEAN OF THE SCHOOL, Surgeons' Hall, Edinburgh.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.

(University of London.)

ADVANCED MEDICINE COURSE.

A REVISION COURSE in Clinical Medicine, Morbid Anatomy, Applied Biochemistry and for M.D. and M.R.C.P. given in the Medical Hospitals. It will commence on Tuesday, May 14th, 1929, and will last eight weeks.

A similar Course will be given in October, November, and December, 1929.

A Course in Advanced Surgery will also be given, and will commence on March 4th, 1929.

Further particulars and the syllabus of the Course may be obtained on application to the Dean (H. WILLOUGHBY LYLE, M.D., F.R.C.S.), King's College Hospital Medical School, London, S.E.5.

Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims.
Chemistry, Physics, and Biology Labs.
MANCHESTER TUTORIAL COLLEGE,
327, Oxford Road, Manchester.

Required by the Government

of SOUTHERN RHODESIA, an ASSISTANT SCHOOLS DENTAL SURGEON, for school children. Salary per annum, plus local of £150 per annum. Passage to Salisbury will be provided. Applicant must be under 32 years of age, should be single, and must hold Dental degree or diploma registrable in Great Britain, but dentists registered under the Dentist Act, 1921, will not be accepted.

Private practice not allowed.

Application should be addressed to the High Commissioner for Southern Rhodesia, Crown House, Aldwych, London, W.C.2, from whom full details of the duties and of the terms of the appointment can be obtained.

Hendon Urban District Council.

COMBINED POST OF RESIDENT MEDICAL OFFICER AT THE ISOLATION HOSPITAL AND ASSISTANT MEDICAL OFFICER FOR GENERAL PURPOSES.

Applications are invited for the above post. The successful candidate will be required to reside at the Isolation Hospital (at present under construction) and to perform the duty of Resident Medical Officer, together with other duties in connection with the Council's Maternity and Child Welfare and School Medical Services, and generally to assist the Medical Officer of Health.

Candidates must possess a Public Health qualification and should have had Fever Hospital experience.

The salary is £500 per annum, rising by annual increments of £25 to £600 per annum, with board, lodging, and laundry. If the officer appointed takes up duty before the Hospital is completed an allowance at the rate of £150 per annum will be made in lieu of board and lodging, etc.

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The successful candidate will be required to pass a medical examination.

Applications, on forms to be obtained from the undersigned, together with copies of not more than three recent testimonials, to be sent to the undersigned not later than April 6th.

Dated this 4th day of March, 1929.

Town Hall, Hendon, N.W.4. LEONARD WORDEN, Clerk to the Council.

Hendon Urban District Council.

ASSISTANT MEDICAL OFFICER.

Applications are invited for the above post. The duties will be mainly in connection with the Council's Maternity and Child Welfare and School Medical Services, but may include other duties under the direction of the Medical Officer of Health.

Candidates must possess a Public Health qualification.

The salary is £600 per annum, rising by annual increments of £25 to £700 per annum.

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The successful candidate will be required to pass a medical examination.

Applications, on forms to be obtained from the undersigned, together with copies of not more than three recent testimonials, to be sent to the undersigned not later than April 6th.

Dated this 4th day of March, 1929.

Town Hall, Hendon, N.W.4. LEONARD WORDEN, Clerk to the Council.

University of Durham College

OF MEDICINE,
NEWCASTLE-UPON-TYNE.

PUBLIC HEALTH LABORATORIES and BACTERIOLOGICAL DEPARTMENT.

Applications are invited for the post of Whole-time ASSISTANT. Applicants must be registered medical practitioners (male), with experience of Public Health Bacteriology and Clinical Pathology. In addition to work in the Public Health Laboratories, the Assistant will be required to take part in teaching.

Appointment will be probationary in the first in , from £350 to £ .

of three recent testimonials, should be submitted not later than March 19th to the Registrar, University of Durham College of Medicine, Newcastle-upon-Tyne.

Sculcoates Union (Hull).

APPOINTMENT OF NON-RESIDENT SENIOR MEDICAL OFFICER (Male).

The Guardians of the Poor of the above-named Union invite applications for appointment of a full-time non-resident Senior Medical Officer at the Institution, Beverley Road, Hull. Applications will be considered from fully qualified persons between and including the ages of 30 and 45 years only.

The number of inmates is about 900, of whom approximately 300 are sick.

The salary will be at the rate of £700 per annum, rising by annual increments of £50 to a maximum of £800 (no bonus); there are no other emoluments attached to the office, and the salary is inclusive of all fees which might otherwise be received by the Medical Officer. The person appointed will be required to repay to the Guardians all fees received by him under the Lunacy Acts.

The person appointed must provide his own residence at a place to be approved by the Guardians, and must have held a post in a General Hospital or in a Poor Law Infirmary. He may, to some extent, after April 1st, 1930, be subject to the instructions of the Medical Officer of Health for the City of Hull.

The attention of candidates who are not already in the Poor Law Service is drawn to the provisions of the Local Government Bill affecting transferred Officers on the abolition of Boards of Guardians.

The above-mentioned salary is inclusive of a payment of £10 per annum in respect of Vaccination duties, and £25 per annum in respect of duties as Medical Officer of the Cottage Homes, Hessle, near Hull (approximate number of children 120).

The appointment is subject to the provisions of the Poor Law Officers Superannuation Act, 1896.

The Infirmary is not under separate administration. The staff comprises the Senior Medical Officer, a Resident Assistant Medical Officer, a Visiting (Operating) Surgeon, a Superintendent Nurse, and 65 other Nurses.

Particulars of the duties will be sent on request. Applications, setting out qualifications, dates of registration, experience, etc., together with copies of not less than three recent testimonials, must be sent so as to be received by me not later than the 23rd instant.

Selected candidates will be notified when and where to attend.

12, Harley St., Hull. W. BARROW, Clerk to the Guardians.

March 6th, 1929.

Bedfordshire County Council.

ASSISTANT MEDICAL OFFICER (Woman).

Applications are invited for the above appointment. The officer appointed will be required to assist chiefly in the School Medical and Maternity and Child Welfare Services of the Council. The officer, who will be under the direction of the County Medical Officer of Health, will be required to perform such other duties as the Council may direct.

Applicants must be registered medical practitioners, possess a Diploma in Public Health, and have had experience in the branches of Public Health referred to. The person appointed will be required to devote the whole of her time to the duties assigned to her, and not to engage in private practice.

Salary £600 per annum, together with a travelling allowance of £170 per annum, the appointment to be subject to three months' notice to be given by either side at any date.

Further particulars can be obtained from the County Medical Officer, Shire Hall, Bedford.

Applications, stating age, qualifications, and previous experience, accompanied by copies of three recent testimonials, and endorsed "Assistant Medical Officer (Woman)," should be sent to the undersigned not later than Monday, March 18th.

Shire Hall, Bedford. J. B. GRAHAM, Clerk of the County Council.

February 25th, 1929.

Romford Union.

OLDCHURCH HOSPITAL.

RESIDENT SECOND ASSISTANT MEDICAL OFFICER.

The Guardians of the Romford Union invite applications for the appointment of a Second Assistant Resident Medical Officer (male) at their Oldchurch Hospital, Romford, which has a present accommodation of 550 beds.

Applicants must be single, and preference will be given to one who has held the position of House Surgeon or House Physician in a General Hospital.

The appointment is governed by the regulations laid down in the orders of the Ministry of Health.

The salary will be at the rate of £250 per annum, subject to deductions under the Poor Law Officers Superannuation Act, 1896, with furnished apartments, maid, rations, and laundry.

Forms of application may be obtained from the undersigned upon receipt of a stamped addressed foolscap envelope, and must be returned not later than Monday, the 25th instant.

By Order,

Union Offices, Romford. R. H. MASON, Clerk to the Guardians.

March 7th, 1929.

Queen's Hospital, Birmingham.

(A General Hospital and a Medical school.)

Applications are invited for the following resident appointments at the salaries stated, together in each case with board, apartments, and laundry:

ANÆSTHETIST. £70 to £100 p.a. according to experience and previous Hospital appointments.

Three HOUSE SURGEONS. £70 per annum.

All the above appointments are for six months from April 1st.

Full particulars and official form of application can be obtained from the undersigned, to whom applications should be sent.

G. HURFORD, House Governor.

March 12th, 1929.

Herefordshire General Hospital,

HEREFORD. (125 Beds.)

Applications are invited for the post of HOUSE SURGEON (male). 12 months appointment, renewable. Salary £150 per annum, with board, residence, and laundry.

Applications are also invited for the post of HOUSE PHYSICIAN (male). Six months' appointment, renewable. *Salary £100 per annum*, with board, residence, *and laundry*.

Candidates must be *fully qualified and registered*. Applications, stating age, qualifications, and experience, together with not more *than* th th

Cheshire Joint Sanatorium,

MARKET DRAYTON.

Applications are invited for the post of RESIDENT (Male) CLINICAL BACTERIOLOGIST at the Cheshire Joint Sanatorium.

There are 240 beds, and excellent opportunity for Research.

Salary in the first instance, £400 per annum, plus board and lodging.

Applications must be *made on forms which* are obtainable from the Medical Superintendent.

Salop County Council.

MEDICAL INSPECTION OF SCHOOL CHILDREN AND MATERNITY AND CHILD WELFARE.

Applications are invited from registered medical practitioners for the post of ASSISTANT MEDICAL OFFICER to work under these schemes. Salary £600 per annum, rising by annual increments of £25 to a maximum of £700, with travelling and out-of-pocket expenses on a fixed scale.

The salary will be subject to a deduction of 5 per cent. for superannuation under the Local Government and Other Officers Superannuation Act, 1922, and the candidate selected will be required to pass a medical examination.

Applications should be sent on or before April 5th to the County Medical Officer of Health, College Hill House, Shrewsbury, from whom forms of application, conditions of appointment, list of duties, and any other information can be obtained.

Italian Hospital,

Queen Square, W.C.1.

The Committee of Management invite applications for the post of HONORARY ANÆSTHETIST from fully qualified candidates.

Applications, with testimonials (copies only) should be sent to the Secretary on or before Saturday, March 30th.

The ROYAL INSTITUTE of PUBLIC HEALTH

Patron.
HIS MAJESTY KING GEORGE V.
Patroness.
HER MAJESTY THE QUEEN.
Vice-Patron.
H.R.H. THE PRINCE OF WALES, K.G.

ZURICH CONGRESS, 1929

Wednesday, May 15th, to Monday, May 20th

(Whitsuntide)

President.
The Right Hon. The Lord Meston of Agra and Dunnottar, K.C.S.I., LL.D.,
Chancellor of The University of Aberdeen.

The Scientific work of the Congress will be conducted in the University of Zurich in the following Sections:

SECTION I. "State Medicine and Municipal and Social Hygiene."
SECTION II. "Industrial Hygiene and Industrial Diseases."
SECTION III. "Child Welfare, School Hygiene, and Women and Public Health."
SECTION IV. "Pathology, Bacteriology, and Biochemistry."
SECTION V. "Tuberculosis."
SECTION VI. "Climatology and Sports Hygiene."
SECTION VII. "Veterinary Medicine and Meat Hygiene."

Visits will be made to many centres of Medical, Hygienic, Industrial, and Educational interest.

At the close of the Congress members can visit various Swiss health stations, including Arosa, Davos, Montana, and Dr. Rollier's Clinic at Leysin, or take extensions to the Tyrol, the Bavarian Highlands, Munich and Czechoslavian Spas.

SPECIAL CONCESSIONS FOR RAILWAY TRAVEL ARE BEING GUARANTEED BY THE FOREIGN GOVERNMENTS.

The Congress is open to medical men and women and all others interested in Problems of Personal and Public Health.

Full particulars can be obtained on application to the Hon. Secretaries of the Institute, 37, Russell Square, London, W.C.1.

Park Prewett Mental Hospital,
BASINGSTOKE, HANTS. (1,450 Beds.)

JUNIOR ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Junior Assistant Medical Officer (male).

Candidates must be registered and unmarried. Age not exceeding 36 years. Experience in the treatment of Mental Diseases and having been a House Surgeon in a General Hospital will be considered additional qualifications.

The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Salary £350 per annum, with board, furnished apartments, laundry, and attendance, valued for superannuation purposes at £150 per annum. An additional £50 a year is payable for the possession of a Diploma in Psychological Medicine.

Applications must be made on the prescribed form, obtainable on request with a stamped addressed foolscap envelope from the Medical Superintendent, to whom applications must be sent (marked A.M.O.), accompanied by three recent testimonials, on or before Saturday, April 6th.

West London Hospital,
Hammersmith Rd., W.6. (226 Beds.)

Required, One Non-resident HOUSE OFFICER for Children's Department for six months from April 1st next, subject to one month's notice on either side. Applicants may be male or female, must be unmarried, and the appointment may be renewable for a further period up to 12 months. Hours 9—5.30 (approx.). Salary at the rate of £5 5s. weekly, with lunch daily. Candidates must be registered under the Medical Act. The holder must have held a resident appointment at a Children's Hospital or in the Children's Department of a General Hospital. Applications and copies of testimonials (in quadruplicate) must reach me not later than first post on Monday, March 18th. Selected candidates will be required to call upon such Members of the Medical Staff as directed, to be in attendance at a Meeting of the Medical Council on Friday, March 22nd, at 3.30 p.m., and the House Committee Meeting at 5 p.m. the same day, when the appointment will be made.

H. A. MADGE, Secretary.

West London Hospital,
Hammersmith Rd., W.6. (226 Beds.)

Required, One HOUSE PHYSICIAN and Two HOUSE SURGEONS (males) for six months from April 1st next, subject to one month's notice on either side. Salary at the rate of £100 p.a., with board, lodging, and washing allowance. Candidates must be registered under the Medical Act. Applications and copies of testimonials (in quadruplicate) must reach me not later than first post on Monday, March 18th. Selected candidates will be required to call upon such Members of the Medical Staff as directed, to be in attendance at a Meeting of the Medical Council on Friday, March 22nd, at 3.30 p.m., and the House Committee Meeting at 5 p.m. the same day, when the appointment will be made.

H. A. MADGE, Secretary.

West London Hospital,
Hammersmith Road, W.6. (225 Beds.)

Applications are invited for the post of HONORARY ASSISTANT ANÆSTHETIST. Candidates are required to be registered under the Medical Act, to send applications, with copies of testimonials, so as to reach me not later than Thursday, March 21st; to attend the Medical Council Meeting at 4.30 p.m. on Friday, March 22nd, and prior to that date to call upon and send copies of their applications and testimonials to each member thereof; to abstain from canvassing, but nevertheless to send copies of their applications and testimonials to the Members of the Board of Management, who will elect on Tuesday, March 26th, at 5 p.m., when selected candidates must be in attendance.

H. A. MADGE, Secretary.

The General Hospital,
BIRMINGHAM.

Applications are invited for the following Resident appointments from April 15th:

RESIDENT ANÆSTHETIST. Salary £120 per annum.

HOUSE SURGEONS (Two). Salary £70 per annum.

GYNÆCOLOGICAL HOUSE SURGEON. Salary £70 per annum.

HOUSE SURGEON to the Throat and Ear Department. Salary £70 per annum.

Applications, giving full details of qualifications, and accompanied by testimonials (if desired), should reach the undersigned by March 18th.

A. H. LEANEY, House Governor.

Evelina Hospital for Children,
Southwark, S.E.1.

The Committee of Management requires a HOUSE SURGEON (male) for eight months, from April 12th (during first four months duty in Casualty and Out-patient Department). Salary £120 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, to the undersigned at the Hospital, before March 27th. Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates must attend Committee of Management. Date of meeting will be notified by the undersigned, from whom rules and other particulars relating to the post must be obtained.

By Order of the Committee of Management,
H. C. S. SMITH,
March 11th, 1929. Secretary-Supt.

Torbay Hospital, Torquay.

Notice is hereby given, in accordance with Rule 8, that the Court of Governors will meet to elect:

(*a*) an HONORARY PHYSICIAN in Charge of the Medical Out-patients' Department;
(*b*) an HONORARY SURGEON in Charge of the Surgical Out-
(*c*) an HONORARY OFFICER for Electro-therapeutical Department;
(*d*) an HONORARY ANÆSTHETIST.

Candidates are required to be registered under the Medical Act.

Applications, accompanied by copies of not more than three testimonials, should be sent to the undersigned not later than Friday, April 5th next.

E. L. GRIST,
March 11th, 1929. Secretary.

Lewisham Hospital.

The Guardians invite applications for the post of FIFTH ASSISTANT (Male) MEDICAL OFFICER at the above Hospital. Candidates should be under 30 years of age. Salary £300 per annum (subject to small statutory deductions towards superannuation), plus full residential allowances.

The appointment, in the first instance, is for six months, renewable.

Further information may be obtained from the Medical Superintendent at the Hospital, High Street, Lewisham, and all applications should be sent as soon as possible to me.

By Order,
Guardians' Offices, 394, High St., Lewisham, S.E.13.
W. R. OWEN, Clerk to the Guardians.
March 5th, 1929.

The Royal Infirmary, Doncaster.
(121 Beds.)

THIRD HOUSE SURGEON (male) required immediately. Duties include ophthalmic, medical, and casualty work. Opportunity for gaining excellent experience.

Appointment is for six months, and successful candidate is eligible for re-appointment and probably promotion.

Salary £150 per annum, with board, residence, and laundry.

Applications, with full particulars, should be addressed to the undersigned by Thursday, March 21st.

J. LAWRENCE MEARS,
March 11th, 1929. Secretary-Supt.

The Royal Infirmary, Sheffield.

OPEN ELECTION.

A vacancy having arisen in the post of SURGICAL REGISTRAR to the Royal Infirmary, Sheffield, the Weekly Board invite applications therefor.

Candidates must be Fellows of one of the Colleges, and the successful candidate will not be allowed to engage in general practice. The post is tenable for one year, and the holder will be eligible for re-election. The salary is £200 per annum.

Applications, stating age and qualifications, together with copies of testimonials, to be sent to the undersigned not later than April 2nd next.

Board Room. JNO. W. BARNES, F.C.I.S.,
March 6th, 1929. Gen. Supt. and Secty.

Victoria Hospital, Blackpool.
(132 Beds.)

HOUSE SURGEON (Second), male 12 months. Salary £120 per annum, with residence, board, and washing. Applicants (who must be duly qualified and registered) are requested to send in their applications, stating age, qualifications, and experience, with three recent testimonials, not later than March 23rd, and endorsed "House Surgeon," to—

JOHN HACKING, Hon. Secretary.

Blackburn and East Lancashire
ROYAL INFIRMARY.

RESIDENT HOUSE PHYSICIAN (male) required at a salary of £150 per annum, with board, residence, laundry, etc. In addition to Medical Wards, to be attached to Eye, Ear, Nose and Throat In-patients.

The Hospital contains 240 beds, with X-ray, Massage, V.D., Eye, Ear, Nose, and Throat Departments, Pathological Laboratory, etc. There is no outside work.

Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent at once to the undersigned.

Royal Infirmary, Blackburn.
NATHAN A. SMITH, Gen. Supt. & Secretary

Lincoln County Hospital.

Wanted for May 1st, a JUNIOR HOUSE SURGEON, male, unmarried. Salary at the rate of £150 per annum, rising to £200 per annum at the conclusion of six months' approved service. Board, residence, and washing will also be provided.

Every candidate for the appointment must be registered under the Medical Acts.

Applications, stating age and other particulars, with copies of testimonials (not more than three), are to be sent to the undersigned, from whom further particulars may be obtained.

Lincoln. ARTHUR MOORE,
March 8th, 1929. Secretary-Supt

Royal Hospital, Richmond,
SURREY.

Applications are invited for the following posts:

SENIOR HOUSE SURGEON (male). Salary £150 per annum.

JUNIOR HOUSE SURGEON (male). Salary £100 per annum.

Board, residence, and laundry provided.

Both appointments will be for six months, commencing April 1st next. Candidates must be fully qualified, registered, and single.

Applications, with copies of testimonials, should be forwarded to the undersigned by March 23rd.

RICHARD ALLEN, Secretary.

The Miller General Hospital.
Greenwich Road, S.E.10.

Applications are invited from qualified Dental Surgeons, holding a registrable medical qualification in addition, for the post of HONORARY ASSISTANT DENTAL SURGEON.

Attendance is required in the Out-patient Department on Saturday mornings.

There is an honorarium of thirty guineas towards travelling expenses.

Applications, stating full particulars, accompanied by copies of three recent testimonials, should be sent to the Secretary as soon as possible.

March 4th, 1929.

St. Marylebone General
DISPENSARY, 30, Marylebone Lane, W.1.

The Council of this Institution having determined to open a Dermatological Department, invite applications for the office of PHYSICIAN to the proposed Department. Every candidate must be a Doctor in Medicine of one of the Universities of the United Kingdom, and/or a Fellow or Member of the Royal College of Physicians of London, practising solely as a Physician. Applications and testimonials must be forwarded to the Secretary not later than April 8th, and candidates will be asked to attend the Medical Committee on April 9th.

Mansfield and District Hospital.

The Board of Management of the above Hospital (130 Beds) invite applications for the post of ASSISTANT HOUSE SURGEON (male).

Salary at the rate of £150 per annum, with residence, board, and laundry.

The appointment is for six months and is renewable. Duties to commence on April 4th.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

Dated this 2nd day of March, 1929.

A. H. LIMB, Secretary.

Southampton Children's Hospital
154, Winchester Road (45 Beds.)

The Committee of Management invite applications for the post of RESIDENT MEDICAL OFFICER (lady). To commence duties on April 15th. Salary £100 per annum, with board, residence, and laundry.

Applications, stating age, and accompanied by copies of testimonials, to be sent in not later than April 12th to the undersigned, from whom further particulars may be obtained.

ELLA K. MATTHEWS, Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	EAST RIDING COUNTY COUNCIL. *(Assistant Tuberculosis Officer.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
	COUNTY OF BRECON. *(Probationer Assistant (Female) Medical Officer of Health.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. *(Grenada with Carriacou, St. Vincent and St. Lucia.)*

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec. Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies' Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
March 14th, 1929.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Princess Alice Memorial Hospital
EASTBOURNE. (95 Beds.)

Applications are invited for the post of JUNIOR HOUSE SURGEON (male), rising to SENIOR after three months, subject to satisfactory performance of duties. Candidates must be unmarried, fully qualified and registered. The appointment is for six months commencing April 1st. Salary at the rate of £100 per annum as Junior, £125 as Senior, together with board, lodging, and laundry.

Applications, stating age and qualifications, and accompanied by copies of not more than three recent testimonials (one of which must be from Medical School), should reach the Secretary not later than March 21st.

The Cancer Hospital (Free),
Fulham Road, London, S.W.3.

The Committee of Management invite application for the appointment of an ANÆSTHETIST to the Hospital.

Preference will be given to candidates who are engaged in Anæsthetic practice only.

Particulars as to honorarium, rules, etc., may be obtained from the undersigned, to whom applications must be submitted, together with copies of testimonials, by first post Wednesday, March 27th.

J. COURTNEY BUCHANAN, Secretary.

Applications are invited for the
post of ASSISTANT SURGEON in the Orthopædic Department, ST. THOMAS'S HOSPITAL. Candidates must be Fellows of the Royal College of Surgeons, England.

Applications, accompanied by testimonials, are to be sent to the Dean's office at the Hospital not later than March 18th.

A. P. B. IRWIN, Secretary.

Wingfield Orthopædic Hospital,
HEADINGTON, OXFORD

HOUSE SURGEON required, resident. Orthopædic experience. Salary £150 per annum. Applications should be sent, with testimonials, to the Secretary before March 31st.

All Saints' Hospital (for Genito-Urinary Diseases).

In-patient Dept.: 91, Finchley Road, N.W.8.
Out-patient Dept. & Secretary's Office: 49-55, Vauxhall Bridge Road, S.W.1.

HOUSE SURGEON (male) required April 1st for nine months as under:

Three months Assistant House Surgeon (non-resident) at £100 per annum.
Three months Junior House Surgeon (non-resident) at £150 per annum.
Three months Senior House Surgeon (resident) at £150 per annum, with board and laundry.

The duties of the Assistant and Junior House Surgeons consists of attendance at the Out-patient Department every afternoon and three evenings weekly

Applications, stating age, experience, and qualifications, and enclosing copies of recent testimonials, should reach me not later than March 20th.

D. H. EADE, Secretary.

Royal National Orthopædic Hospital.

HONORARY ASSISTANT SURGEON.

The Committee propose to appoint an Honorary Assistant Surgeon, whose duties will include attendance in the Out-patient Department on Tuesday and Friday afternoons and charge of beds

Applications, with copies of three recent testimonials, should be sent to the Secretary, 234, Gt. Portland Street, W.1, on or before April 3rd.

General Infirmary, Salisbury.
(General Hospital. 151 Beds.)

Two HOUSE SURGEONS (male) required.

Candidates must be unmarried, fully qualified and registered. Salary £150, with board, etc.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary at once.

Cardiff City Mental Hospital.
WHITCHURCH, near CARDIFF.

Applications are invited for the post of RESEARCH CHEMIST at the above. Whole-time. Age not to exceed 30 years. Commencing salary £800 per annum, with dinner and tea daily

Applicants must be Graduates in Science of a University of Great Britain or one of the Dominions, and should be able to produce evidence of a sound training in Analytical Chemistry, Biochemistry, and Biophysics.

Evidence of previous research work in Biochemistry would be an advantage.

The candidate appointed will be expected to participate in team-work in association with the Medical Staff of the Hospital.

The appointment is subject to the terms of the Asylums Officers Superannuation Act, 1909.

Applications to be upon a form which may be obtained, with particulars, from the Medical Superintendent of the above Institution.

Royal Waterloo Hospital for
CHILDREN AND WOMEN,
Waterloo Road, S.E.1.

There is a vacancy for the post of HONORARY SURGICAL REGISTRAR at the above Hospital. Candidates must be Fellows of the Royal College of Surgeons. Preference will be given to candidates having had experience of special departments.

Particulars regarding the appointment can be obtained from the undersigned, to whom applications should be sent not later than March 22nd, with not more than three recent testimonials.

J. H. TEASDALE, Secretary.

Junior Assistant Medical Officer.

—Applications are invited for this post at the FIFE & KINROSS DISTRICT ASYLUM, CUPAR, FIFE. Salary £500 per annum, with board, lodgings, etc. The appointment is subject to the provisions of the 1909 Asylums Officers Superannuation Act. Applications, stating full particulars, to the Medical Superintendent.

ASSISTANCIES.

Wanted. — Assistant, male, in Colliery Practice, South Wales. Some experience in Anæsthetics. Must sign usual bond. Work fairly light. Salary £252 per annum, indoors.—Address, No. 1518, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, single, well up in Surgery and Anæsthetics. Salary £375 per annum, with rooms, coal, light, and attendance.—Dr. A. H. JAMES, The Park, Blaenavon, Mon.

Wanted. — Assistant, male, aged 25 to 30, single, for panel and private practice. Salary £250 per annum and board. — Address, No. 1507, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, Central London area, part-time (Mornings and Evenings only), or Outdoor full-time. State age and full particulars. Usual bond.—Address, No. 1516, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.-Indoor Assistant, male, for colliery and mixed Practice near Newcastle-on-Tyne. Age under 30 years. Salary £275 p.a. Send particulars, testimonials, and photo.—Address, No. 1515, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, outdoor, male, British, single. April or May. Comfortable small house, best suburb. Ample time for reading.—Apply, stating age, exper., refs., and other essen. partics. (photo returned), A. F. MARTIN, M.D., Heaton, Bradford.

Wanted. — Outdoor Assistantship by Woman Doctor; six years' experience in general practice, midwifery, panel, private, and anæsthetics. Own car and cycle. — Address, No. 1508, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Several Assistants for Practices in London and Provinces, also Part-time ASSISTANT for Practice, two evenings a week.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Wanted immediately. — Assistant for Private and Panel Practice, with or without view to Partnership. Lancs. Town. Salary £500, outdoor. Single male preferred. Send full particulars.—Address, No. 1530, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately for Industrial Practice in South Wales, young male outdoor ASSISTANT. Salary to commence £250, and all found. Good prospects for suitable man.—Address, No. 1517, B.M.A. House, Tavistock Square, W.C.1.

Wanted — April 1st — Male ASSISTANT, outdoor, thoroughly experienced in panel practice and midwifery. Car provided. Salary £325 increasing, with rooms and board. Write, stating experience and references. — Address, No. 1529, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view to Partnership, preferably with opportunity for Surgery. Graduate of 5½ years' standing; aged 30. Experienced in general practice; ex H.S., etc. — Address, No. 1521, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by M.B., Ch.B.(Edin.), æt. 26, 2½ years qualified; ex H.P. and H.S.; R.M.O. (Mental Hospital); experienced Anæsthetist. Can dispense — Address, No. 1527, B.M.A. House, Tavistock Square, W.C.1.

Assistants.—Outdoor and Indoor (male), also LOCUM TENENS, wanted immediately. Good salaries offered. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Assistantship wanted by Woman Graduate, M.B., Ch.B.Edin.; 6 years' Hospital experience, anæsthetics, mids., skins. Interview London, Easter.—Address, No. 1506, B.M.A. House, Tavistock Square, W.C.1.

Male Part-time Assistant wanted. Panel and Private Practice; no mids., light work. Able to take charge occasionally at Locum fees. £4 per week, with bed, fuel, light, and attendance Very little night work.—No. 1526, B.M.A. House, Tavistock Sq., W.C.1.

M.B., 33 years, single, R.C., excellent refs. and experience, drive car, wants good ASSISTANTSHIP or (easy terms) PARTNERSHIP or PRACTICE, with scope for R.C. panel. — Address, No. 1532, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted.--Part-time Pathologist. Harrow district. Resident or non-resident. State qualifications and other essential particulars.—Apply, BM/BS.9L, London, W.1.

Assam.—Wanted for a group of TEA ESTATES in this district of INDIA, a fully qualified MEDICAL OFFICER who has had a good general experience. A married man between 30 and 35 years of age, and who has had some training in Tropical Medicine, would be preferred.—Apply, with full particulars, to "Mercator," c/o Messrs. WM. PORTEOUS & Co., 9, Royal Exchange Place, Glasgow.

Advertiser, with wide general experience, including routine orthopædics, electro-therapy, ultra-violet rays, etc., is anxious for OPENING in Partnership to work latter, or Dental X-rays. South of England preferred.—No. 1510, B.M.A. House, Tavistock Sq., W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Country Doctor requires NURSE-DISPENSER, also to help bookkeeping. State previous experience and salary required. — Apply, Dr. FOOT, Crawley Down, Sussex.

Competent Shorthand-typist with knowledge of medical terms desires non-residential post as SECRETARY-RECEPTIONIST with doctor.—Address, No. 1515, B.M.A. House, Tavistock Square, W.C.1.

Dispenser-Bookkeeper (Hall) woman, desires POST with Doctor or Institution. Experienced in private and panel practice. *Good references.*—Address, No. 1524, B.M.A. House, Tavistock Square, W.C.1.

Dispensers supplied to Doctors at short notice, without fee. Qualified and exper. in priv. and panel prac. Perm. and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—*Write, wire, or 'phone Central 3679,* THE RELIANCE BUREAU FOR DISPENSERS, 87, Holborn Viaduct House, 12, Holb. Viad., E.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Gerrard 2699, THE DISPENSERS' BUREAU, 145, Shaftesbury Avenue, London, W.C.2.

Doctor doing Post - Graduate work desires PART-TIME WORK in or near London.—Address, No. 1585, B.M.A. House, Tavistock Square, W.C.1.

Experienced Chauffeuse - SecreTARY, 24, requires RE-ENGAGEMENT with Doctor; free mid-April. Keen to continue dispensing. Bristol or Somerset preferred. Live in or out. References. — Address, No. 1509, B.M.A. House, Tavistock Square, W.C.1.

Lady Chauffeuse - Secretary, *qualified dispenser,* certificated cook, good French and German, seeks POSITION with Doctor, town or country. Doctor's references. —Address, No. 1503, B.M.A. House, Tavistock Square, W.C.1.

Lady (C.M.B., Rotunda trained) desires post as RECEPTIONIST to Doctor. —Address, No. 1504, B.M.A. House, Tavistock Square, W.C.1.

Typing and Translations from German into English undertaken by expert dical terms. Medical Address, No. 1514, re, W.C.1.

The Royal Army Medical Corps ASSOCIATION. — If you require men trained in all branches of hospital work.—Dispensers (capable of undertaking returns, clerical work, etc., connected with Ministry of Health), Clerks, Laboratory Assistants, general hospital duties, Porters, Caretakers, etc,—Apply, Secretary, 76, Claverton Street, S.W.1.

The Charterhouse Typewriting BUREAU, 18-21, Charterhouse Square, E.C.1.—Typewriting, Duplicating, and Translations of all descriptions. Medical work a speciality. Testimonials typed and returned same day. Very mod. terms. Clerkenwell 6672.

LOCUMS.

FOR LOCUM TENENS APPLY TO Mr. PERCIVAL TURNER, Ltd. The oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals. 4, ADAM ST., Strand, London, W.C.2. Teleg.: "Epsontian, Lond." 'Phone: Gerrard 0599

A Medical Man, experienced in panel and general practice, is now free for engagements as LOCUM or ASSISTANT at moderate fee. British, bachelor, cyclist, and abstainer. — Address, No. 1586, B.M.A. House, Tavistock Square, W.C.1.

Hospitality Locum.—Wanted the 8th April, locum as above for small country practice near London for about 3 weeks. Own car essential. Comfortable house, servants. Extend to wife if desired. Expenses.—Address, No. 1519, B.M.A. House, Tavistock Square, W.C.1.

Locum Tenency wanted.— A Doctor with large experience of panel and industrial practice would like to assist or relieve a Doctor on Thursdays and/or Sundays from 2 p.m. onwards (industrial practice preferred), in London or not too distant suburb. Terms by arrangement. —Address, No. 1512, B.M.A. House, Tavistock Square, W.C.1.

M.B., Ch.B., requires Post as LOCUM TENENS or TEMPORARY ASSISTANT; ex H.S. and H.P.; experienced private and panel practice.—Address, No. 1535, B.M.A. House, Tavistock Square, W.C.1.

LOCUM TENENS.
FOR A RELIABLE SUBSTITUTE CONSULT
THE MEDICAL AGENCY.
(WILLIAM H. GRANT.)
WATERGATE HOUSE, 15, YORK BUILDINGS, ADELPHI, W.C.2. *Tel.* { GERRARD 8954 / RIVERSIDE 1254 (*Night Calls*)
Telegrams:
"REASIDE, TUBERCLE, WESTRAND, LONDON."

PARTNERSHIPS.

Wanted.—Surgical Partnership by M.B., F.R.C.S.(Ed.), aged 38; ex H.S., R.S.O., Hospital Surgeon. Preference large provincial town, with two or more partners in first-class general Practice. *Extensive experience* all major operations, general surgery, and gynæcology. Highest *surgical references.*—No. 1584, B.M.A. House, Tavistock Sq., W.C.1.

Wanted by M.B., Ch.B.Edin., English Public School, aged 33 years, PARTNERSHIP, view succession, better class Practice, some panel; resid. dist. near large town pref. Exp. G.P. and Hosp. Half share, min. £750. Interv. arrang'd Some capital avail. —No. 1306, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Third Partner, well qualified, with special knowledge of Obstetrics and Gynæcology, for good class non-dispensing Practice, within 20 miles of London. —Address, No. 1587, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Partnership in non-dispensing Practice in good residential Town in North Wales. Big income, easy hours ments of premium. Charming house and garden, to rent, in best quarter. Great opportunity and scope.—Address, No. 1309, B.M.A. House, Tavistock Square, W.C.1.

Partnership.—Share of Practice of better industrial type, near Manchester, is offered for sale owing to the intending retirement of a partner. The share produces over £2,000 per annum. Premium £3,500 (to include share of *book debts*), payable by arrangement. A commodious house is also for sale. No. 1321, B.M.A. House, Tavistock Sq., W.C.1.

M.B., B.S. Conjoint, H.S., H.P., requires PARTNERSHIP with large panel. Preferably N.E. or Midlands. £2,000 p.a. All capital available. Address, No. 1035, B.M.A. House, Tavistock Square, W.C.1.

M.B., B.S.(Lond.) Conjoint, male, 31, seeks PARTNERSHIP (£1,000 or over), 50 miles radius London. Two years' hosp. appts. Seven years G.P. Car; capital. County town preferred. Keen methodist.—Address, No 1523, B.M.A. House, Tavistock Square, W.C.1.

Required, well-qualified Medical PARTNER Man, with literary tastes, to join in old-established Coaching Share worth £500 per annum for duplicate. Address, No. 1581, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES.

Wanted.—An energetic Partner to take up a one-third share in a well-established Practice in the West Riding of Yorkshire. Public appointments with £1,000 a year. Present figures show a certain £700 per annum as a one-third share. Practice capable of considerable increase. Young man with about five years' general experience preferred. Advantageous terms can be arranged for payment out of profits if required. Prompt application and modern qualifications essential. —No. 1580, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Practice of £1,000 to £1,600. S. or S.W. England, preferably in County Town, mixed panel and private, with good house, and scope for surgery. Cash available.—Address, No. 1582, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.D.Cantab., F.R.C.S.Eng., Public School, better-class PRACTICE or PARTNERSHIP, within 100 miles London, or good-class suburb. Ample capital. —Address, No. 1505, B.M.A. House, Tavistock Square, W.C.1.

Wanted by experienced Practitioner, London, mixed general PRACTICE or PARTNERSHIP succession. Income about £2,000, including good panel. Capital available. — Address, No. 1585, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—We have innumerable applicants for sound investments in all districts, incomes from £600 to £4,000, with and without panel. Correspondence invited from prospective Vendors. — THE MEDICAL AGENCY (W. H. Grant), Watergate House, 15, York Buildings, Adelphi, W.C.2.

Wanted by (Edin.) M.B., Ch.B., D.P.H., aged 33, exper. in G.P. and major operative surgery, a good-class old-estab. PRACTICE, or PARTNERSHIP succession. Income desired £1,200 up. Capital avail. In confid.— No. 1511, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—General Practice *(middle-class) £800—£1,400 p.a., London* or easy reach. Experienced practitioner, ample capital, and open to purchase now. Replies in confidence. No agents.—Address, No. 1525, B.M.A. House Tavistock Square, W.C.1.

Wanted by Medical Man

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Belfast. — Growing suburb. Good HOUSE, garage, large garden, and orchard for sale, with small but steadily increasing PRACTICE. Pleasant residential district. Good scope for further increase.—Address, No. 1328, B.M.A. House, Tavistock Square, W.C.1.

Death Vacancy. — Unopposed long-established Country PRACTICE for sale in delightful village between Coventry, Rugby Leamington. Panel 1,200 increasing; private practice. Combined receipts average £1,500. Most desirable Doctor's house, rented, unusually large garden, with tennis court.— Apply, "MEDICO," 144, Edmund Street, Birmingham.

Death Vacancy.—Lancs. Town. —Good house, excellent situation. Receipts over £600, much scope. Panel about £300.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

For Disposal.—A good Practice is not always to be had *directly*, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2.

For Sale. — Nucleus, Woman's PRACTICE, S.W.5, London. Fees 2/6 to 5/-. Receipts £5 per week. Offer for immediate sale. — Address, No. 1532, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Liverpool.— PRACTICE, established few years, rapidly increasing. Last 12 months £550; panel 700. Excellent central position and exceptional prospects. Premium £850. House for sale £750. —No. 1591, B.M.A. House, Tavistock Sq., W.C.1.

For Sale (9 miles from Charing Cross).—Good old-established PRACTICE. Average income for last 3 years £3,388 15s. 4d. Transferable appointments £160. Number on panel 2,800. Nice house, containing waiting room, 2 consulting rooms, dispensary, 2 reception, dining and billiard rooms, 6 bedrooms, dressing, maid's sitting, and large boxrooms. Electric light and gas in each. One acre ground, tennis court, well-kept fruit and vegetable gardens, garage for 3 cars. Freehold property, to be sold. All furniture, fittings, drugs, etc., also for sale.

For further particulars of this and other Practice, apply to Agency Manager, M.P.U. AGENCY, Ltd., 56, Russell Sq., London, W.C.1.

Kent (15 miles from Charing [illegible] panel and private £300. Panel 200. weekly, long lease. Excellent opportunity young energetic doctor. Suit lady.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Kent (12 miles from London).— Death Vacancy.—Mixed-class PRACTICE. Receipts £1,000 to £1,100 a year, including panel. House, garden, and garage, on very cheap rental. Locum in charge. Offers invited. —Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Lancs. Town. — Sound old-established middle and working-class PRACTICE. Cash receipts last year £1,855. Panel over 1,500. Excellent detached house, garden, and garage. Vendor retiring. Premium—Practice—1½ years' purchase; house £1,500, part on mortgage, or may be let on lease, with option to purchase. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Lanarkshire.—General Practice in Industrial Town (Death Vacancy) (R.C. preferred), producing last year, including panel, approximately £800. Good house in excellent repair, with surgery attached; electric light and garden.—For further particulars apply to WM. B. THOMSON & MCLEAN, Solicitors, Wishaw, who will receive offers for Practice and Property up till March 25th curt.

London, W.—Electrical Practice. —Old-established.—Receipts about £1,100 p.a., good profit. Excellent premises. Owner going abroad. Premium £1,650, to include equipment.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

London. — Well-established working and middle-class Cash PRACTICE, corner surgery premises, lease; receipts past year £430, now over £500; great scope; vendor specialising. Reasonable inclusive offer accepted.— No. 1522, B.M.A. House, Tavistock Square, W.C.1

Manchester. — Good Nucleus. Cash receipts April, 1928, about £450. Panel 760. Good house, 5 bedrooms. Rent £46 p.a. Premium, best cash offer.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester. — Old-established PRACTICE. Nice house, garage, etc., rent £75 on lease, or for sale. Receipts nearly £1,500. Panel 1,422. Much scope. Price 1½ years' purchase, good part deferred.—MANCHESTER MED. & SCHOL. ASSOC., 6, Brown St.

Manchester. — Good-class Practice *(non-panel) in first-rate residential* suburb. Average cash receipts £2,105 p.a. Fees 5/- to 21/-. Excellent house to rent on lease. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester. — Working-class PRACTICE. Average cash receipts £1,100. Panel 944. Scope. Good house in main road, 3 bedrooms, garage, etc., to rent on lease. Premium £1,375.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester.-Old-estab. Practice. Average cash receipts £1,480 p.a. Panel 1,422. Good corner house to rent on lease, 6 bedrooms, garage. Plenty of scope. Premium for quick sale—1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Near Manchester. — Old-estab. mixed PRACTICE. Average cash receipts £1,964 p.a. (Auditor's figures). Panel 1,100. Good detached house, 5 beds., garden, garage, for sale at £1,200, or would rent at £70 p.a. Premium—Practice—1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Near Manchester. — Old-estab. *Detached house, large garden, garage,* £70, or would sell. Receipts £2,000. Excellent scope. Panel 1,134. Opposition weak. Price 1½ years' purchase, good part deferred.—MANCHESTER MED. & SCHOL. ASSOC., 6, Brown St.

North Wales Coast.—Good-class PRACTICE. Cash receipts 1928, £1,749. Panel 715. Excellent modern house, 4 bedrooms, lawn; also well-fitted Surgery and garage to rent. Good scope. Premium 1½ years' purchase. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Practice for Sale in large Town in Lancashire. Receipts £1,730 per annum; number on panel 1,485; rent of house £75 per annum. One and a quarter years' purchase. Reason for disposal ill health.—For further particulars apply to Messrs. R. SUMNER & Co., Ltd., Wholesale Druggists, Liverpool.

Practice for Sale.—Go d-class Country PRACTICE with n 20 miles of Manchester. Receipts £1,400, increasing yearly. Good house to let (rent £60), containing 5 bed- [illegible] irgery and waiting £2,000. — Apply, Accountants, 46, Lau Mau, Manchester.

S. Midlands.—Small country Panel 240. an), 5 bed- len. Price, No. 1236.

S. Midlands. — 50 miles from London.—Small Country Town PRACTICE for sale, £350. Panel 250. Exceptionally attractive Georgian house (8 bedrooms, elec. light, gas, etc.), and garden. Price, Practice and house (freehold), £2,300.—Address, No. 1432, B.M.A. House, Tavistock Square, W.C.1.

To Doctors.—For immediate Sale, good class PRACTICE in Rock Ferry, Birkenhead. Vacant by death.—Apply by letter to DUNCAN OAKSHOTT & Co., Solicitors, 43, Castle Street, Liverpool.

To Purchasers. — Do not buy without expert assistance. With 40 yrs.' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Gerrard 0399. Telegrams: "Epsomian, London"

Unopposed Country Practice in *charming district of Scotland.* Panel and private. Owner retiring through ill health. Shooting, fishing, golf. — Address, No. 1435, B.M.A. House, Tavistock Square, W.C.1.

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Bromley, Kent. — Imposing Corner RESIDENCE. Ideal position for Doctor. Extensive building developments all round. Six bedrooms, *bathroom, 3 reception* rooms. Garage. Good garden. Freehold £2,250 only.—Apply for key and particulars, CARTER, LAW & LEECH, Auctioneers, Bromley.

Bournemouth.—House for Sale, suitable for Doctor retiring. Small non-panel medical practice attached as recreation. (Clever surgical colleague near.) Ready May or June. £2,500. — Full particulars from BULSTRODE & SONS, *Christchurch*, Hants.

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Doctor's unique opportunity to establish Practice near London. Resident owner of Georgian House offers accommodation, attendance, garage.—Address, No. 1520, B.M.A. House, Tavistock Square, W.C.1.

Downham, Kent.—Self-contained FLAT (over shop), 5 rooms, bath, etc., main road; suit Doctor. Decorations as required; side and back ent. Rent £195 incl.— Miss E. WEIR, 8, Athlourne Grove, East Dulwich, S.E.22.

Excellent opportunity for Medical Practice within 50 [illegible] FREEHOLD HOUSE [illegible] comfn. Garage [illegible] reception rooms; 5 beds. House, good [illegible] car; £2,500 No offers.—Reply in [illegible] No. 1529, B.M.A. House, Tavistock [illegible]

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Fine Corner HOUSE, facing new Estate of Flats (all let and occupied). Good-class district. Close High Street, Kensington. Contains four bedrooms and *three reception rooms*, K. and B. Ground rent £10. Over 50 years' *lease. To be sold on March* 22nd, at The Mart, 155, Queen Victoria Street, E.C. Send postcard to Auctioneers, Messrs. PATTISON and Co., 1, Bank Parade, West Kensington Station, W.14, for particulars.

Flat to let, Dorset Sq., Baker St. 4½ yr. lease. *Rent incl. £100 p.a.* Large recep., 2 bed, consult. room (sunlight installed), *furniture to be taken* itable Doctor, Masseur, bargain. No goodwill. 1588, B.M.A. House,

Harley St. — To Let, part-time (Monday and Friday afternoons), large well-furnished CONSULTING ROOM on first floor, with attendance and telephone.—Address, No. 1579, B.M.A. House, Tavistock Sq., W.C.1.

Modern Freehold House for Sale *situated* on corner of two main omnibus routes in South-East London. High-class residential suburb being rapidly populated by a desirable class of resident and having at present insufficient number of Doctors to cope with the demands of the growing district. An ideal opportunity for a Practitioner desiring to work up a practice. Garage, tennis courts, etc.; also room for extension of property. Price £2,250, of which a substantial amount could remain on mortgage.—Address, No. 1511, B.M.A. House, Tavistock Square, W.C.1.

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Suitable for Private Hospital, High-class School, or Club House. Old-MANSION, 10 miles from West End, three rooms about 35 ft. long, 12 bedrooms, capable of addition, palm house, stabling, garage, cottage (3 rooms). Freehold £4,850, including half acre land. Photo sent.—HARMER, Sudbury, Priory Estate, Wembley.

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Wimpole St.—Spacious Second *Floor CONSULTING ROOM*, 23 ft. by 17 ft., with large bedroom and modern bathroom, communicating. Newly decorated. Rent £300 p.a., including usual services.—Write, Box 566, SAMSON CLARK & Co., Ltd., 57, Mortimer Street, W.1.

APPOINTMENTS.—Contd.

The Gloucestershire Royal INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (145 Beds.)

Applications are invited for the post of SECOND HOUSE SURGEON (male). Salary £100 per annum, with board, residence, and laundry. (Four resident medical officers.) The appointment is for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be received by the undersigned not later than Wednesday, March 20th. The elected candidate will be required to enter upon his duties at once.

F. J. SYMONS,
March 1st, 1929. Secretary.

Chester Royal Infirmary. (211 Beds.)

Applications are invited for the appointment of HONORARY ASSISTANT PHYSICIAN, vacant by *the resignation of Dr. N. T. GLYNN.*

Candidates must be Graduates in Medicine of a University in the United Kingdom or a University within the Empire whose degrees have been recognized by the General Medical Council as entitling to registration in the *Medical Register* of the United Kingdom.

Applications, stating age and qualifications, and with copies of not more than three testimonials, should be delivered addressed to the Chairman, Board of Management, Royal Infirmary, Chester, on or before Wednesday, the 27th instant. The successful candidate will be required to reside within three miles of Chester *Cross.*

Canvassing is prohibited.

J. ROWSE MITCHELL,
March 5th, 1929. Secretary.

Manchester Royal Infirmary.

RESIDENT SURGICAL OFFICER.

The Board of Management invite applications for the above appointment, which will become *vacant on June* 1st. Applicants must not be less than 25 years of age. They must be registered and hold a Medical and Surgical qualification.

The appointment is for twelve months, renewable for a further period of *one year*, subject to the provision of the By-laws as to notice. Salary £200 per annum, with allowance for laundry.

Full information is obtainable *from the undersigned*, to whom applicants *must send* twelve copies of their application and *testimonials* by *Wednesday, April* 17th.

By Order,
FRANK G. HAZELL, Gen. Supt. & Sec.

Derbyshire Hospital for Sick CHILDREN.

Applications are invited for the posts of (1) HONORARY PHYSICIAN and PATHOLOGIST; (2) HONORARY OPHTHALMIC SURGEON; (3) HONORARY SURGEON (Ear, Nose, and Throat), on the staff of the above Hospital, from *duly* qualified practitioners. Such applications should be accompanied by three *testimonials* and sent to the undersigned on or before Tuesday, March 19th. The election will take place at the *Hospital* on Tuesday, March 26th, at 3 p.m.

ARTHUR N. WHISTON,
25, St. Mary's Gate, *Derby.* Secretary.

Montagu Hospital, Mexborough, YORKS.

Applications are invited for the position of HOUSE SURGEON (lady) at the above Hospital (64 Surgical beds). Ten Maternity beds are also shortly to be brought into commission. Commencing salary £120 per annum, with board, residence, etc.

The position will become vacant on April 18th, and the successful candidate will be required to take up her duties on or about that date. One month's holiday will be allowed each year.

Applications, stating qualifications, should be addressed to the undersigned so as to be received not later than Thursday, March 28th.

DONALD WILSON, Secretary.

Chelmsford and Essex Hospital.

RESIDENT MEDICAL OFFICER

Applications are invited for the post of Resident Medical Officer. The appointment is for twelve months. Salary £150 per annum with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned, not later than March 25th, to Chelmsford, on or before Saturday, March 23rd.

R. G. MORRISH, Secretary.

City of Leeds.

ASSISTANT RESIDENT MEDICAL OFFICER, KILLINGBECK SANATORIUM.

Applications are invited from registered medical practitioners (male) for the post of Assistant Resident Medical Officer at the Tuberculosis Sanatorium, Killingbeck (220 Beds). Applicants must be unmarried, and preference will be given to those who have held previous Hospital appointments.

The appointment will be for one year at a salary of £250 per annum, with board, residence, and laundry.

Applications, stating age and experience, together with copies of three recent testimonials, endorsed "Tuberculosis Officer," should be delivered to the Medical Officer of Health, 12, Market Buildings, Vicar Lane, Leeds, not later than the first post on Saturday, March 23rd.

Leeds. THOS. THORNTON,
March 11th, 1929. Town Clerk.

The London County Council

invite applications for appointment as EIGHTH ASSISTANT MEDICAL OFFICER (male) in the MENTAL HOSPITAL SERVICE. Candidates must be under 35 years of age and be registered to practise both in medicine and surgery in England. Salary £300 a year, rising by annual increments of £25 to £400 a year, plus fluctuating temporary additions, making the total commencing remuneration approximately £423 a year. No emoluments. Charges made for board, lodging, etc. (at present £2 9s. weekly) if required to be resident. Candidate appointed
the Asylums Officers
Form of application,
are given, can be obtained from the Acting Chief Officer, Mental Hospitals Department, The County Hall, Westminster Bridge, S.E.1. Completed applications must be received by Thursday, March 21st. Canvassing disqualifies.

Borough of Reigate.

APPOINTMENT OF MEDICAL OFFICER AT THE MATERNITY AND CHILD WELFARE CENTRE.

The Town Council invite applications from men and women medical practitioners for the above appointment for one year as from June 1st next. The salary will be after the rate of £150 per annum.

The duties, which must be strictly adhered to, comprise attendance at two sessions of two hours each on Tuesday and Thursday afternoons from 2.30 to 4.30 at the Health Centre in connection with Infant Welfare; and one session of two hours each month, on Wednesdays, for Antenatal work, commencing at 2.30. The Medical Officer to arrange for a Locum Tenens in the event of his or her inability to attend.

The other duties and conditions attaching to the appointment can be obtained upon application to the undersigned.

Sealed applications, marked "Medical Officer —Infant Welfare Centre," should be sent to the undersigned at the Municipal Buildings, Reigate, not later than Monday, April 15th.

Dated this 6th day of March, 1929.

By Order,
ALFRED SMITH, Town Clerk.

Ear and Throat Hospital,

BIRMINGHAM.

THIRD HOUSE SURGEON wanted (non-resident). Must be qualified and with clinical experience. Appointment for six months. Salary at the rate of £150 per annum, with lunch five week-days. Duties to commence May 1st.

Applications and testimonials to be forwarded on or before March 23rd to the undersigned.

S. G. GREW,
February, 1929. Secretary

Ear and Throat Hospital,

BIRMINGHAM.

SECOND HOUSE SURGEON wanted (non-resident). Must be qualified and with clinical experience. Appointment for six months. Salary at the rate of £150 per annum, with part board. Duties to commence April 1st.

Applications and testimonials to be forwarded on or before March 23rd to the undersigned.

S. G. GREW,
February, 1929. Secretary

Leicester Royal Infirmary.

(400 Beds.)

A HOUSE PHYSICIANCY.

A vacancy will arise on April 1st. Candidates are desired to send in applications forthwith. Salary at the rate of £125 per annum. Preference to candidates with Hospital experience. Applications to—

HARRY JOHNSON,
March 8th, 1929. House Gov. & Sec.

Coventry and Warwickshire Hospital, Coventry.

A vacancy having arisen for an HONORARY PHYSICIAN on the Staff of the *above-named Hospital*, applications are invited for the post.

In conformity with the Laws of the Institution, candidates must hold the Degree of Doctor in Medicine of a British or Irish University, or be Members or Fellows of the Royal College of Physicians of England, Edinburgh, or Ireland.

Candidates shall be resident in the City of Coventry, or within six miles thereof, or shall take up their residence within that radius within six months from date of appointment.

Canvassing, either directly or indirectly, will be deemed a disqualification.

Applications, with original testimonials, and registration certificates, must reach the undersigned on or before April 8th.

Candidates will in due course receive notice of their eligibility or otherwise from the Secretary, and after receipt of such notice eligible candidates are at liberty to send through the post printed copies of their application and testimonials to the Governors of the Hospital, a list of whose names and addresses will be furnished by the Secretary.

No such application or copies of testimonials shall be sent until receipt of such notification from the Secretary.

By Order of the Committee,
(Miss) R. HOOPER,
March 15th, 1929. Secretary.

The Middlesex Hospital, W.1.

SENIOR RESIDENT ASSISTANT ANÆSTHETIST.

Applications are invited from qualified registered medical practitioners for the above post, vacant on April 1st until the end of December, 1929.

The appointment would be of value to gentlemen intending to specialise in anæsthetics.

The holder is eligible to apply for re-appointment for further periods of 12 months from January in each year.

Candidates must show that since qualification they have taken steps to acquire experience in the administration of anæsthetics.

Board and residence are provided and salary at the rate of £120 per annum.

During his term of office the holder may not take any other Hospital appointment, nor engage in practice outside the Hospital.

Applications, together with testimonials, should be forwarded not later than 12 noon on Monday, March 25th, to the undersigned, to whom prospective candidates should apply for a copy of the rules governing the appointment.

S. R. C. PLIMSOLL, Secretary.

South London Hospital for Women,

South Side, Clapham Common, S.W.4.

The Board of Management invite applications from fully qualified medical women for the undermentioned appointments:

HOUSE PHYSICIAN; HOUSE SURGEONS (Three); each for a period of six months from May 1st.

Salary at the rate of £50 per annum, with board, residence, and laundry. Candidates are expected to call on Members of the Hon. Medical Staff (particulars to be obtained from the Secretary) before Saturday, March 30th, by which date applications and copies of testimonials must reach the Secretary at the Hospital.

Royal Devon & Exeter Hospital,

EXETER. (225 Beds.)

HOUSE PHYSICIAN (Male).

Applications are invited for the post of House Physician at this Hospital vacant on April 16th next. The appointment is for six months, but candidates are eligible for re-election.

Salary at the rate of £130 per annum, with board, apartments, and washing.

Applications, giving particulars as to age and qualifications, together with certificate of registration and copies of three recent testimonials, should be sent to the undersigned on or before Thursday next, 21st inst.

By Order of the Committee,
S. S. COLE,
March 14th, 1929. Secretary & Manager.

Elizabeth Garrett Anderson Hospital,

Euston Road.

Applications are invited from fully qualified medical women for post of ASSISTANT OBSTETRICIAN on the Staff of this Hospital.

Applications, with testimonials, should be sent to the Secretary, from whom further information can be obtained, before April 3rd next.

IMOGEN H. MURPHY, Secretary.

The District Infirmary,

ASHTON-UNDER-LYNE.
(General Hospital, 200 Beds, mainly Surgical.)

[AMENDED ADVERTISEMENT.]

Wanted, for May 1st (not April 1st as previously stated), RESIDENT SURGICAL OFFICER (male). Salary at the rate of £200 per annum, with board, residence, and laundry. Previous experience essential. Six months' appointment.

The *Resident Staff* consists of a Resident Surgical Officer and three House Surgeons.

Applications, with testimonials, to be sent not later than March 20th to the undersigned.

FRANK OLIVER,
March 11th, 1929. Gen. Supt. & Sec.

London Temperance Hospital,

Hampstead Road, N.W.1.

Applications are invited for the post of HOUSE PHYSICIAN which will become vacant on April 15th.

The appointment is for a period of six *months* at a salary of £100 per annum. Ceteris paribus, preference will be given to total abstainers.

Applications, accompanied by not more than three testimonials, stating qualifications, age, etc., must be received by first post Thursday, April 4th, addressed to the undersigned.

A. C. ADAMS, Secretary.

Radcliffe Infirmary and County Hospital, Oxford.

Applications are invited for the post of HONORARY ASSISTANT SURGEON to the above Hospital.

Twenty-five copies of applications and testimonials, which will be [illegible] of the Electing
the undersigned, [illegible]
may be obtained
April 6th.

A. G. E. SANCTUARY, Administrator.

Clinical Pathologist. — Man,

single, fully qualified and registered. Well-equipped laboratories and other facilities for original work. Salary £400 (or £450 with Diploma in Psychiatry), increasing £20 yearly to £700, with board, lodging, laundry, and attendance, or £100 in lieu of these emoluments should the man appointed eventually live out. No deductions from salary for pension or other purposes. Appointment terminable on three months' notice. *Apply in writing to* Physician-Supt., CRICHTON ROYAL MENTAL HOSPITAL, Dumfries.

Altrincham General Hospital,

CHESHIRE.

HOUSE SURGEON required, male or female. Candidates must be fully qualified and registered. Salary £105 per annum, with board, residence, and laundry.

Applications, stating age and experience, together with copies of recent testimonials, to be sent in not later than Tuesday, March 19th, to WILLIAM MOODY, *Secretary*, 31, Market St., Altrincham, Cheshire.

Altrincham General Hospital,

CHESHIRE.

The Board of Management invite applications for the appointment of HONORARY PHYSICIAN on the Honorary Staff of the *Hospital*.

Applications to be sent to WILLIAM MOODY, Secretary, 31, Market St., Altrincham, *Cheshire*.

Clayton Hospital, Wakefield.

Applications are invited for the *post* of HOUSE SURGEON, vacant on April 1st. Candidates must be legally qualified and registered. Salary at the rate of £150 per annum, with board, lodging, and washing. Applications should be sent to the undersigned on or before Monday, March 18th.

HENRY MAW, Gen. Supt. & Sec.

Royal East Sussex Hospital,

HASTINGS.

Licentiates of the Royal Colleges of Physicians of London, Edinburgh, and Ireland are eligible for the vacant posts of PATHOLOGIST, ASSISTANT PHYSICIAN, and MEDICAL OFFICER of the V.D. Department at the Hospital.

Particulars of the Secretary.

Swansea Hospital.

(316 Beds.)

HOUSE SURGEON wanted, gentleman single. Salary £150, with board, residence, and laundry. Duties to commence April 1st.

Applications, stating age, nationality, and experience, with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS, Secretary.

Bristol City Mental Hospital.

THIRD ASSISTANT MEDICAL OFFICER.

Applications are invited from unmarried gentlemen, duly qualified and registered, and not over 35 years of age, for the above post. Salary commencing at £300, rising by two annual increments of £25 to £350 per annum, with board, apartments, laundry, and attendance. £50 in addition if possessing a Diploma in Psychological Medicine. Fully equipped laboratory with trained Assistant for research and clinical pathology.

The appointment is subject to the Asylum Officers Superannuation Act, 1909. Application forms, which are obtainable from the Medical Superintendent, should reach him at the Mental Hospital, Fishponds, Bristol, completed with copies of three testimonials, by Wednesday, March 20th.

The Council House, Bristol. JOSIAH GREEN, Clerk to the Visiting Committee.

March 4th, 1929.

West Norfolk and King's Lynn HOSPITAL.

RESIDENT ANÆSTHETIST AND CASUALTY OFFICER (either Sex).

Applications are invited for the above post, which will become vacant early in April.

Salary at the rate of £100 per annum.

At the end of six months' service the candidate appointed will be expected to proceed to the office of House Surgeon at a salary of £150 per annum.

Applications, giving particulars as to age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned on or before March 21st.

H. M. HOWARD, Hon. Secretary, King's Lynn.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

Applications are invited for the post of HONORARY [illegible] Tuesday after [illegible] one year, sub, of £20 per annum.

Applications, stating age and qualifications, accompanied by copies of three recent testimonials, must be sent in by first post on Monday, March 25th next, to

FREDK. W. DREWETT, Director.

March 4th, 1929.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

Applications are invited for the post of HONORARY DERMATOLOGIST. Candidates must be either a Graduate in Medicine of a recognized British University, and a Fellow or Member of one of the Royal Colleges of Physicians, or a Fellow of one of the Royal Colleges of Surgeons, and engaged in consulting practice.

Applications, with copies of three recent testimonials, to be sent to me on or before Monday, March 25th next.

FREDK. W. DREWETT, Director.

March 4th, 1929.

Manchester Babies' Hospital, BURNAGE LANE, LEVENSHULME.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER. Appointment is for six months from May 1st. Salary at the rate of £50 per annum, with laundry.

Applications, together with copies of testimonials, should be sent to the undersigned, and marked "Junior R.M.O.," by Wednesday, April 3rd.

ANGELA LOPEZ, Secretary.

North Riding Infirmary, MIDDLESBROUGH.

(General Hospital. 150 Beds.)

JUNIOR HOUSE SURGEON (male) wanted to commence duties April 1st next. Appointment for six months. Salary £150 p.a., with board, residence, and laundry.

Applications, stating age, nationality, and experience, with three recent testimonials (copies) should be delivered to the undersigned not later than Wednesday, March 20th.

CHARLES POSTGATE, Secretary-Supt.

Seamen's Hospital Society, Greenwich.

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, for six months from April 1st. Salary £110 per annum, and a proportion of fees, with board, residence, and washing. Candidates must be males.

Applications, with copies of three testimonials, to be sent in by March 18th, to the undersigned.

Greenwich. R. E. V. BAX, Secretary.

March 5th, 1929.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

NURSES
MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

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(In conjunction with the MALE NURSES' ASSOCIATION).

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Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

ST. LUKE'S HOSPITAL.

FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

The Hospital for Sick Children, Great Ormond Street, London, W.C.1.

A HOUSE SURGEON and a HOUSE PHYSICIAN are required on April 4th and 14th respectively.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, March 18th, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment.

The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, March 20th, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY, Secretary.

February, 1929.

The Hospital for Sick Children, Great Ormond Street, London, W.C.1.

A PART-TIME JUNIOR CASUALTY OFFICER is required on April 8th, to assist in the Casualty Department, from 10 a.m. to 3 p.m. (Saturdays 10 a.m. to 1 p.m.), under the direction of the Casualty Officer.

Candidates must be registered medical practitioners, and have held a responsible Hospital appointment.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, March 8th, accompanied by copies of not more than three testimonials written specially for the purpose.

The appointment is made for six months and is non-resident.

Salary at the rate of £150 per annum, with luncheon.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, March 20th, at 5 p.m. precisely.

Forms of application may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY, Secretary.

February, 1929.

Addenbrooke's Hospital, CAMBRIDGE.

Applications are invited for the post of HOUSE SURGEON (male). The appointment is tenable for six months from April 1st, but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £130 p.a., with board, residence, and laundry. Candidates, who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four recent testimonials, on or before Thursday, March 21st.

W. H. HEAD, *Secretary-Supt.*

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London, S.E.—About £800 p.a. Cash and panel. Visits 3/- up. Panel 800. House, 3 bed., etc., to rent.—No. 8435.

Eastern Counties.—Share worth about £700 p.a. Visits 5/- up. Panel and appts. over £900 p.a. Mids. 2 gns. up.—No. 8434.

S. W. England. — £4,000 p.a. Up to 1/5 share after preliminary assistancy. Panel about 2,000. Surgical scope. Premium only 1½ years' purchase. House available.—No. 8407.

Nottingham. — Death Vacancy. —About £860 p.a., excluding appts. of about £400 p.a., doubtful of transfer. Visits 7/6 up. Midwifery refused. Small panel of 157. Large house, with 5 bed., etc., good garden, garage, etc., available. Premium 1½ years or offer.—No. 8433.

Kent.—Nucleus over £600 p.a. *Visits 3/6 to 15/-. Mids. 3 gns. Panel* 450. House, 4 bed., etc, with large garden to rent. *Excellent scope. Open to offer.*—No 8432.

Lancs. Coast.—About £3,000 p.a. 1/3 to 2/5 share. Appts. over £500 p.a. Visits 5/- and 7/6. Panel 450. Scope for surgery. House to rent.—No. 8429.

Nr. S. Coast.—About £1,300 p.a. Visits 3/6 to 12/6. Panel about £425 *p.a. Mids. 3 to 7 gns. House, 6 bed., etc., to* rent. Tennis.—No. 8428.

Sheffield. — Death Vacancy. — About £300 p.a., previously more. Visits 5/- up. No panel or night work. Good house, 6 bed., etc. Tennis lawn. Premium, house and practice, £2,500, part deferred.—No. 8425.

Lincolnshire. — About £1,000 p.a. Appts. over £70 p.a. Fees 3/6 up. Panel 675. Few mids. Good house and large garden. Tennis.—No. 8422.

Southern County.—Over £16,000 p.a. One-tenth share for sale, increasing to 1/5. Mids. 3 gns. up. Visits 5/- to 5 gns Panel about 7,000. Must be *F.R.C.S.Eng.*, and hold University degree.—No. 8421.

Kent.—Country Practice.—About £1,030 p.a. Old-estab. Visits 5/- up Panel nearly 400. Appts. £55 p.a. Good house, with 6 bed., etc.—No. 8420.

S. E. Coast Town.—About £700 p.a., scope for increase. Panel 429. Visits 2/6 up. Small house to rent, £52 p.a Premium only £500; easy terms.—No. 8410.

Staffordshire.—Over £1,000 p.a. Very little night work. No panel. Fees 3/6 up. Good house and garage. Seven bed. rooms, etc.—No. 8412.

Home Counties. — £4,500 p.a. 1/4 share for sale. No panel. Visits 5/- to 21/-. Mids. 5 gns. up. Scope for surgery.—No. 8409.

Nottinghamshire. — Increasing NUCLEUS £600 to £700 p.a. Mids 5 gns. up. Visits 3/6 to 21/-. Small panel Corner house to rent. Prem. £750.—No. 8397.

Lincolnshire.—About £1,370 p.a. *Unopposed.* Panel and appts. about £500 p.a. Mids. 3 gns. Fees 4/- to 6/-. House, 6 bed., etc., good garden, with garage, to rent.—No. 8386.

Kent. — Average £1,250 p.a. Mids. 7½ *gns. up. Visits* 7/6 to 21/-. Non-panel. House, 5 bed., etc.—No. 8380.

Western County.—£600 to £700 p.a. Unopposed. Clubs and appts. over £100 p.a. Fees 3/6 to 12/6 Panel about £300 p.a. *Good house and garden.* Premium, house and practice, £2,100.—No. 8375.

SPECIAL NOTICE.

FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants prepared to pay part of purchase money down and balance by instalments over 7 years (on the security of a Life and Sickness Policy). Full particulars on application to Mr. Percival Turner.

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FOR SALE.

WEST COUNTRY.—PARTNERSHIP, with view to Succession, in old-established non-panel G.P. Receipts over £2,000 p.a. One-fourth share to [illegible]. Suitable only to 'Varsity Graduate. [illegible] fixed G.P. in residential working-class [illegible] lease, with living accommodation over [illegible]. Growing panel of 160. Receipts over £420. [illegible] if desired. Enormous scope.

LONDON, S. [illegible] with living accommodation [illegible]. Increasing panel of [illegible]. Premium £800.

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LANCS.—Old-established middle-class PRACTICE in manufacturing town. Receipts over £4,250. Panel 2,600. House (corner) for sale at £1,100. Premium for Practice 1½ years' purchase, payable part down and balance as arranged.

ASSISTANTSHIPS.—We have several Assistantships, some with view, with and without scope for surgery. Suitable only for practitioners of British birth.

LONDON, S.E.—Well-established G.P. in thickly populated district. Large house to let on lease at low rental. Receipts approx. £1,000. Panel 750. Fees 2 6 up. Premium for Practice, furniture, car, drugs, and lease £2,0:0.

SOUTH-WEST COAST.—PARTNERSHIP in well-established [illegible] G.P., with Nursing Home attached. [illegible] X-ray, and Electro-therapy. Receipts [illegible] 1,000. Suitable for well-qualified ma[illegible] half share 2 years' purchase.

MIDLANDS.—X-ray and Electrical PRACTICE, situated in large town. Excellent corner detached house for sale, or would be rented on long lease. Receipts over £1,200 p.a. Two appointments worth over £150 p.a., possibly transferable. Premium for Practice, to include instruments and appliances, £1,250, payable, to suitable candidate, part by instalments. Excellent scope for experienced man.

NOTTS.—NUCLEUS middle-class G.P. with growing panel. Fees 3 6 up. Receipts approx. £700 p.a. Corner semi-detached freehold house. Premium £900 for Practice and £1,250 for house, or may be rented.

If the investment you are seeking is not advertised here, let us know your wants, and we will gladly forward details of others suitable to your requirements.

LONDON, W.1.—NUCLEUS Lock-up Surgery, with excellent scope for anæsthetics, etc. Premium £100.

MANCHESTER.—Well-established Private and Panel Practice [illegible] Receipts [illegible].

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LONDON, W.—Well-established G.P. with excellent scope for development. Receipts over £500 p.a. Increasing panel of about 360. House may be rented at £86 p.a. Prem. £750.

CORNWALL.—PARTNERSHIP after short preliminary Assistantship in well-established good-class Practice. Receipts over £4,000 p.a. Panel 2,000. One-fourth share at 1½ years' purchase, or larger share if desired. Preference given to London Graduate keen on medicine, aged about 30.

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7. GOOD-CLASS PRACTICE in a flourishing Town (West) averaging £1,600, including [illegible] able only [illegible] rner resi- [illegible] £2,000.
8. [illegible] established [illegible] d receipts over £2,000. Panel 1,000. Growing connection. Well-situate house on lease at about £100. Price 1½ years' purchase.
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1. MIDLANDS. — NUCLEUS in middle-class Practice. Receipts £600 to £700 p.a. Panel 116, and rapidly increasing. Good house to rent or for sale. Garage.
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7. NORTH WEST MIDLANDS — £1,000 p.a. Well established PRACTICE. Panel 1,200. Good scope. Suitable locum.
8. *MIDLANDS.—PARTNERSHIP.*—One-third share, £700 p.a. guaranteed.—Industrial Practice in healthy district on borders of nice country. Good house to rent. Garage and garden. Panel 1,950, and [illegible]

FINANCIAL ASSISTANCE [illegible] to approved applicants for the purchase of Practices or Partnerships on very reasonable terms. Full Particulars on application.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

12, Stratford Place, Oxford Street, W.1.

Tele. Address: Triform, Wesdo—London.

Telephone: Mayfair {178 178

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads:—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence.

Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

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Assistants and Locumtenents can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out.

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Medical Men wishing to receive Resident Patients should enrol their names on the books of the British Medical Bureau. A large number of Patients are placed yearly through this medium.

ACCOUNTANCY.

The British Medical Bureau has its own staff of fully qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Books & Accounts, etc.

Practices and Partnerships for Disposal. **Full particulars sent free.**

1. SOUTH MIDLANDS.—Partnership in old-established Practice in first-rate residential district within 60 miles of London. Small panel. Share of £1,000 or £1,500 at 2 years' purchase. Graduates of Oxford and Cambridge (or London) and aged not under 30 desired.

2. EAST ANGLIA.—Country Practice about £1,470 p.a., easy reach of important town. Panel about 1,000. Nice house (10 bed and dressing rooms), with electric light, etc., for sale. Premium 1½ years' purchase.

3. SOUTH COAST.—Non-dispensing Practice about £1,800 p.a. in residential town. No panel. Very good house in best part.

4. SOUTH OF ENGLAND.—Practice about £900 p.a. in progressive seaport town. No panel or midwifery; but ample scope. Well-situated house to rent. Premium 1½ years' purchase

5. SOUTH OF ENGLAND. — Partnership (after preliminary assistantship) in Practice about £3,000 p.a. (panel and appointments £960) in attractive town. Detached house (3 bedrooms) for sale. One-half share at 2 years' purchase.

6. LONDON, W. — Practice (carried on by Medical Woman) in suburban district. Receipts 1928, £535. Panel 360. House (3 bedrooms, etc.) to be sold or let. Premium £750

7. CHESHIRE.—Partnership in Practice over £5,000 p.a. in better industrial town. Panel 3,700. House, with 7 bed and dressing rooms, for sale or rent. Premium two-fifths share (to include share of book debts) £3,500, part by instalments.

8. LONDON, S.E.—Practice about £800 p.a. in populous district. Panel over 700. No midwifery. House (3 bedrooms) to rent. Premium 1½ years' purchase.

9 WEST END OF LONDON.—Partnership in high class non-dispensing Practice in the best part. No panel. Share worth £1,500 to £1,750 p.a. for disposal.

10 GLOUCESTERSHIRE. — Partnership (after preliminary assistantship) in Country Practice about £3,600 p.a. Applicant should be aged 28 to 30, and have held resident Hospital appointments. One-sixth share at first at 2 years' purchase.

11 JUNIOR PARTNER REQUIRED in Practice in first-rate residential town within 40 miles of London. House (4 bedrooms) to rent. Share worth about £900 p.a. at 2 years' purchase.

12 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. No panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

13 NORTH WALES. — Country Practice averaging £1,230 p.a. in Welsh-speaking district. Panel over 530. Centrally situated house (5 bedrooms). Premium one year's purchase.

14 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. Panel over 1,400. Partner should be good at midwifery. Premium one-third share 2 years' purchase.

15 LONDON, E.—Partnership in exceptionally old-established Practice averaging over £3,500 p.a. Good fees and appointments. Two-fifths share for disposal at 1½ years' purchase, or one-third could be purchased at first. Small house may be bought or rented at a moderate figure.

16 S.E. COAST.—Partnership in steadily increasing Practice about £2,500 p.a. in popular watering-place. Panel 1,800. Convenient house (5 bedrooms), garden, and garage, to rent. Premium one-half share 2 years' purchase.

17 LAKE DISTRICT. — Practice averaging £1,500 p.a. Panel about 500. House purchasable by arrangement. Exceptional educational facilities. Premium £2,000 cash.

18 HOME COUNTIES.—Junior Partner required in Practice about £5,500 p.a. in charming and select country town, easy distance of coast. Suitable house to rent. Premium one-sixth or one-fifth share at 2 years' purchase.

19 LIVERPOOL. — Cash and Panel Practice about £865 p.a. in working-class district. Panel over 1,200. Large house to be sold. Great scope. Premium 1½ years' purchase.

20 EAST COAST.—Partnership in Practice in small watering-place. Suitable house available. Share worth about £1,200 at 2 years' purchase.

21 YORKSHIRE (W.R.). — Partnership in Practice nearly £3,500 in colliery district. Panel 3,000. One-half share after a preliminary assistantship.

22 S.E. COAST. — Third Partner required in Practice £3,750 p.a. in favourite summer resort. Panel 3,675. Share up to one-third at 2 years' purchase.

23 FLINTSHIRE.—Increasing Country Practice about £1,000 in growing district, with good prospects

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Practices and Partnerships for Disposal (continued).

24 S. MIDLANDS.—Practice over £1,700 p.a. in country town 100 miles from London. No panel, appointments, or midwifery. House (5 bedrooms), with garage and garden, for sale. Premium—Practice 1½ yrs.' purchase.

25 HOME COUNTY.—Partnership in Practice about £3,000 p.a. in very desirable residential district within 15 miles of London. Partner should be aged 30 to 32, have held Hospital appointments, and preferably possess a University degree. Three-eighths share at 2 years' purchase.

26 MIDLANDS. — Partnership in mixed Practice between £3,600 and £3,700 p.a. in suburb of Cathedral City. Panel over 2,200. Partner should be aged about 30, with Hospital experience, and able to do Surgery. Premium one-half share 2 years' purchase.

27 LONDON, N.—Partnership in Practice £3,400 p.a. in Northern suburb. Panel about 3,200. Incoming Partner must have had experience and be either English or Scotch. Premium one-third share 2 years' purchase.

28 S.W. OF ENGLAND. — Middle and working-class PRACTICE about £2,150 p.a. in seaport town Panel 1,225. Well situated house (6 bed and dressing rooms) to be sold or let. Premium 1¼ years' purchase.

29 LANCASHIRE.—Partnership in Practice over £3,700 p.a. in first-rate town. Panel 2,600. House (4 bedrooms) to rent. Premium one-half share 1¼ years' purchase.

30 SOUTH OF ENGLAND.—Surgical Partner required (not over 36) with University degree and F.R.C.S. England, in sound Practice in first-rate town with good Hospital. Share of £1,500 p.a. at 2 years' purchase.

31 MIDLANDS. — Partnership in Practice £3,375 p.a. in attractive town. Panel 1,000. Well-situated house (5 bedrooms) to rent. Partner must be well qualified, preferably a Surgeon who would have chance of Hospital appointment. One-half share at 2 years' purchase.

32 LONDON, S.E. — "Lock-up" Practice about £400 p.a. in suburban district. Panel 145. Rent 25/- weekly. Premium £350. Considerable scope.

33 MIDLANDS.—Partnership in mixed Practice £3,800 p.a. in county town. House (5/6 bedrooms) to rent. One-half or one-third share at 2 years' purchase. Partner should have F.R.C.S. degree.

34 S. WALES. — Practice averaging £1,627 (about £650 p.a. from panel) in good town. Modern house (6 bed and dressing rooms) for sale or rent. Premium one-half year's purchase.

35 NURSING HOME for Nine Patients in select seaside resort on S.E. Coast. Gross cash receipts average £1,750 p.a. Double-fronted house, with operating theatre. Premium, freehold, goodwill, furniture, about £5,000

36 S.E. COAST.—Partnership in non-dispensing Practice, over £5,800 in residential town. Good house to rent. Share worth £1,500 at 1½ years' purchase.

37 SOUTH COAST.—Health Resort.—Practice about £930 p.a. (including appointments about £155). No panel or midwifery. Suitable house or flat. Premium £1,500

38 CO. DURHAM. — Practice of £1,460 in growing suburb of seaport town. Panel 646. House (5 bedrooms) on main road to be sold or let. Premium 1½ years' purchase.

39 S. WALES.—Non-dispensing Practice in large seaport town. Receipts for past 3 years averaged £1,543 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,500.

40 GLOUCESTERSHIRE.—Country Practice averaging £535 p.a. Panel 452. Convenient (small) house, and excellent garden, 1 acre. Garage small car. Premium, house and practice, £3,000.

41 KENT. — Practice averaging £1,030 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, practice, £1,500.

42 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first-rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. Premium one-third share 2 years' purchase.

43 LONDON, E.—Rapidly increasing Lock-up PRACTICE in populous district. Receipts 1928, £780. Panel 570. Rent £50. Premium £950.

44 HOME COUNTIES. — Non-dispensing PRACTICE about £1,500 in residential district, adjoining first-rate town. Practically no panel. Modern house (5 bedrooms) for sale. Golf, fishing, etc. Premium £1,650.

45. EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

46 X-RAY and ELECTRO-THERAPEUTIC PRACTICE in important town. Receipts last year £1,050. Detached house for sale or rent. Premium £1,500.

47 N.W. ENGLAND.—Partnership in Practice about £3,500 p.a. in seaport town. Panel about 2,500 Choice of two houses to rent. Premium one-fourth or one-third share 2 years' purchase.

48 SOUTH MIDLANDS. — Practice about £1,150 p.a. in county town. Panel 485. Good house (7 bedrooms), with garage and garden, for sale. Very good Hospital.

49 GLOUCESTERSHIRE.—Country Practice averaging £634 p.a. (Elevation 600 feet). Near two good towns. Panel 500 Large house, with garden and paddock, for sale. Scope for increase. Premium £800.

50 NOTTS. — Practice worth between £600 and £700 p.a. in residential district on outskirts of first-rate town. Small panel offering plenty of scope. Excellent modern house to rent. Premium £750.

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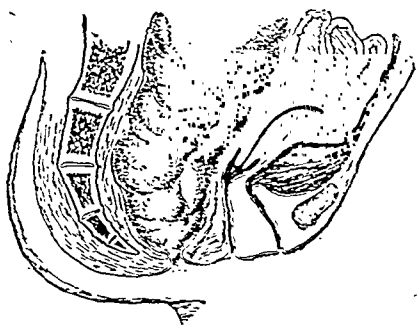

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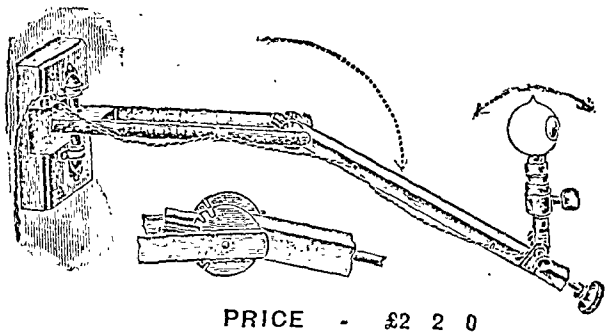

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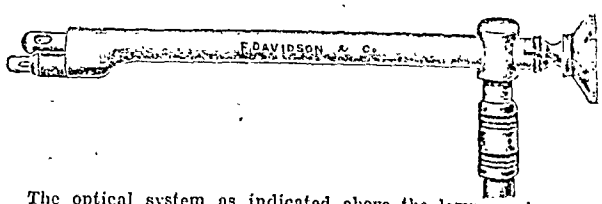

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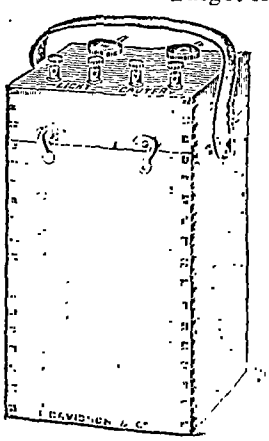

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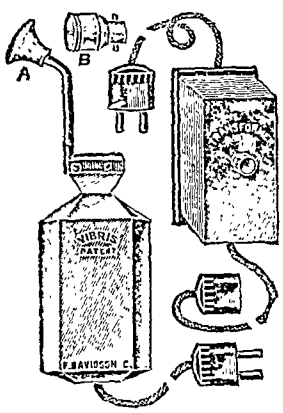

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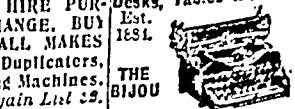

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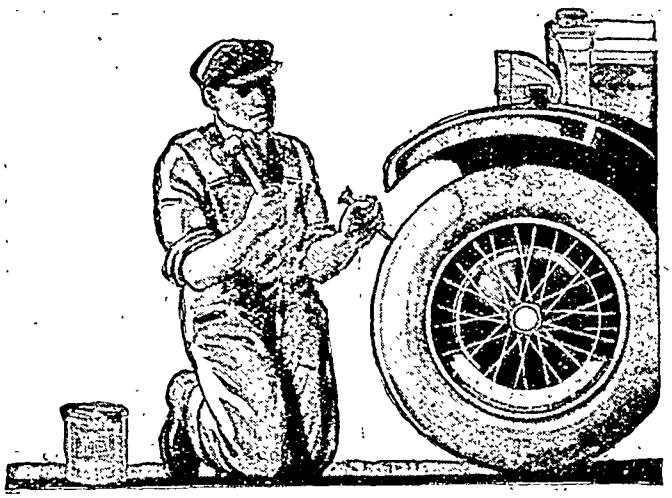

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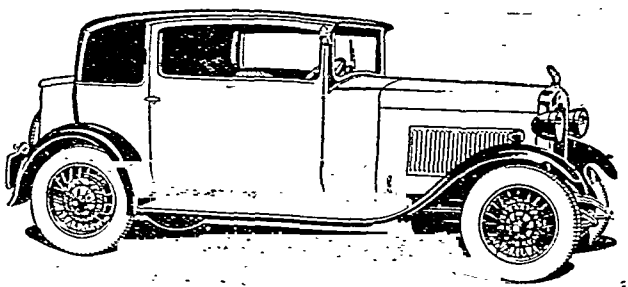

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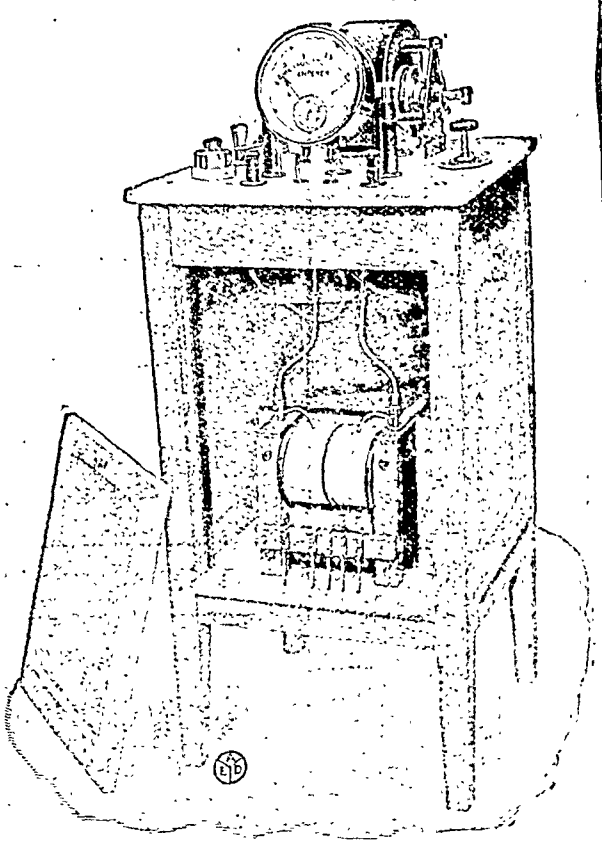

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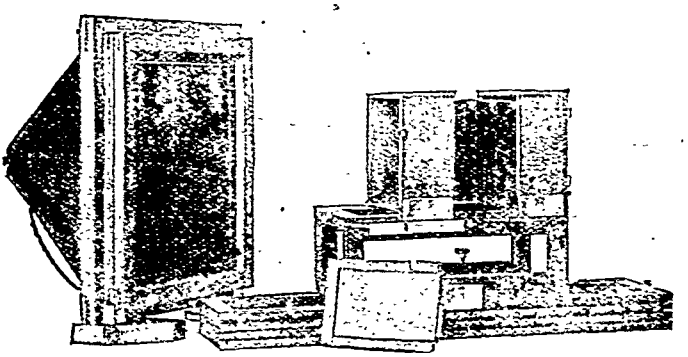

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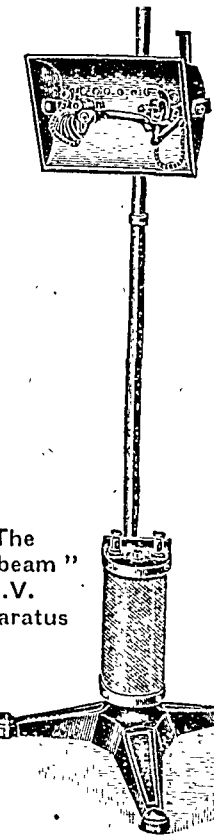

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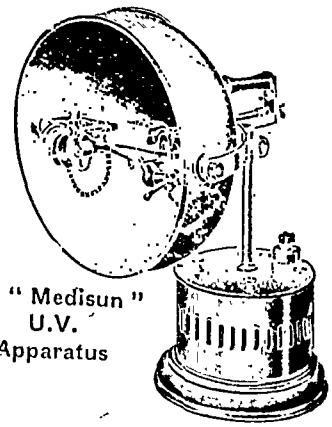

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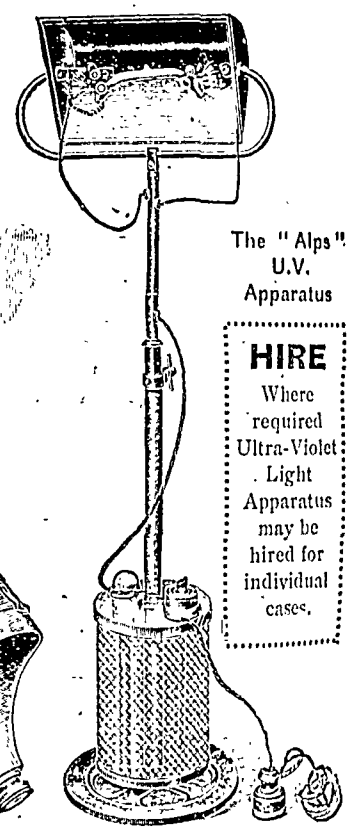

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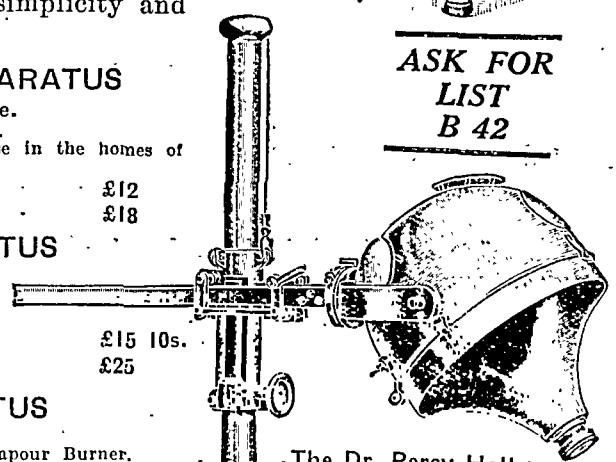

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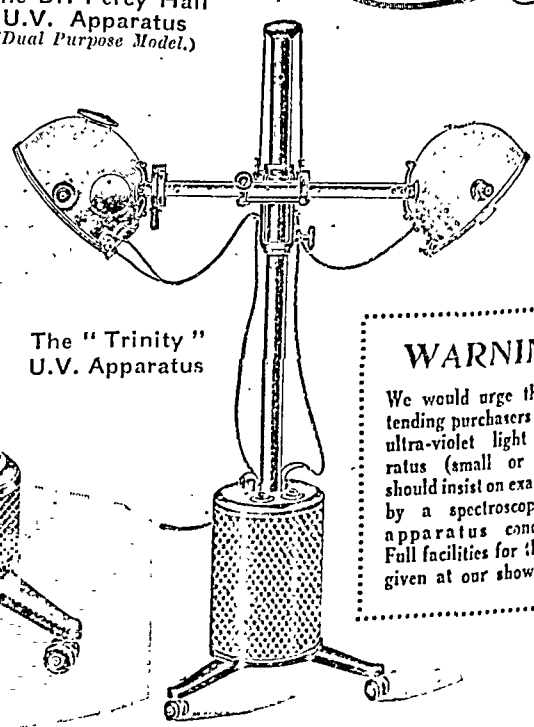

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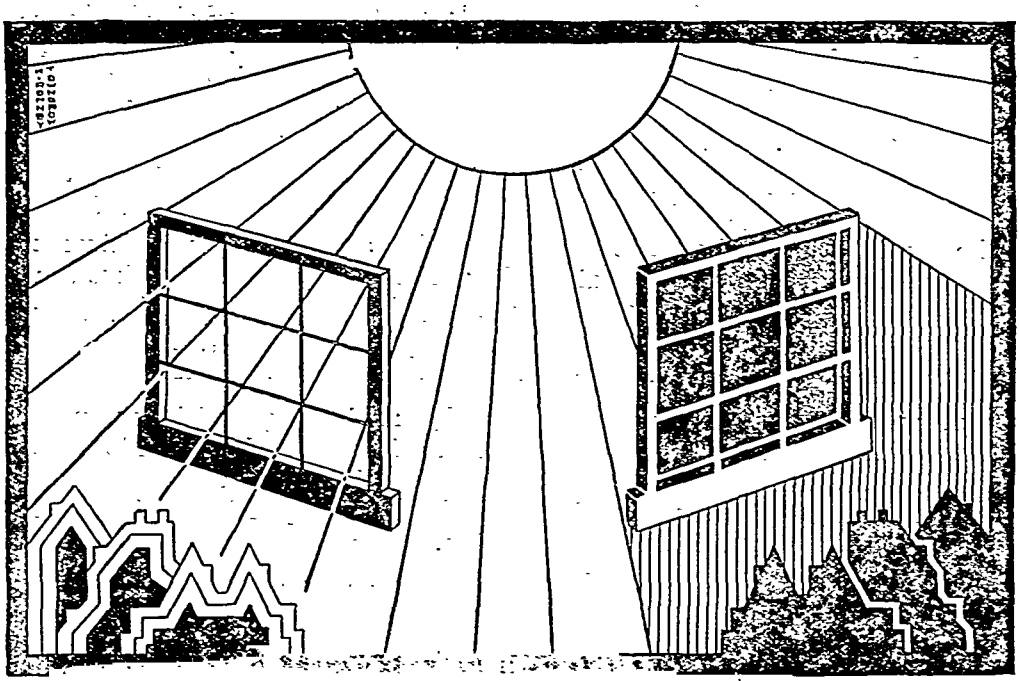

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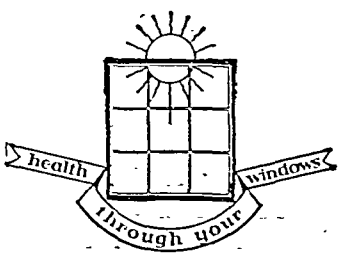

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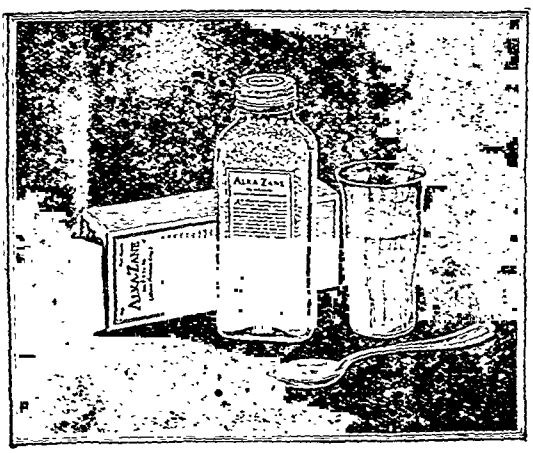

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The close association between the efficient action of the ovaries and the blood calcium index, provides a good reason for the administration of Kalzana in these cases. The chemical composition of Kalzana, calcium-sodium-lactate, is unique, and the special feature of the sodium element is that it raises the blood alkalinity, thereby promoting the retention of the calcium constituent.

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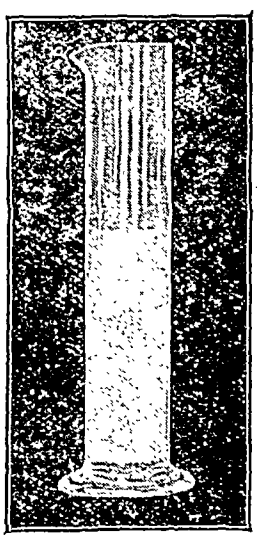

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A solution to the problem of feeding in many acute and chronic affections is found in the use of the 'Allenburys' Diet, which presents distinct advantages over cow's milk both with regard to food value and digestibility. The 'Allenburys' Diet is a palatable and highly nutritive food beverage prepared from pure fresh full-cream milk and whole wheat, and is particularly easy of assimilation. It replaces with advantage milk and the milk dishes commonly employed in sickness and convalescence and can often be taken and retained where other foods are rejected. As a stimulating and sustaining beverage for people of all ages, it is infinitely superior to tea, coffee, etc. It can be made in a minute simply by adding either boiling water or milk.

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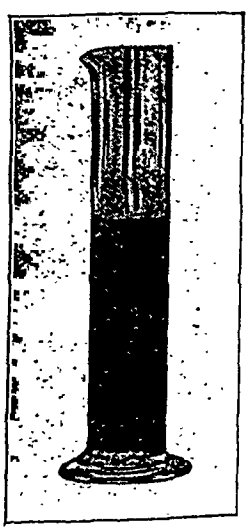

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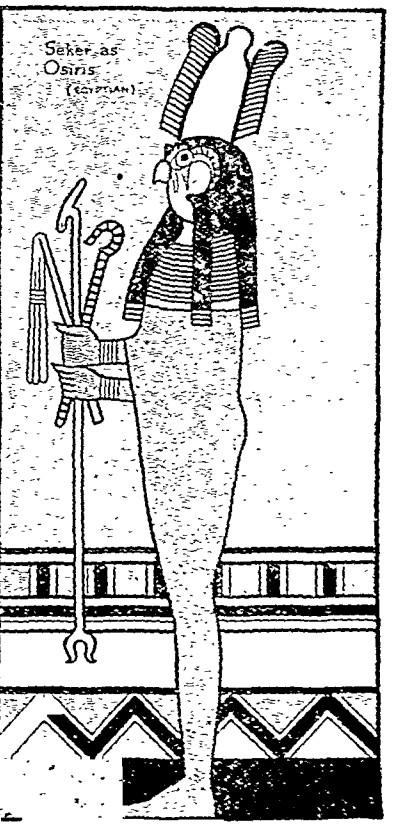

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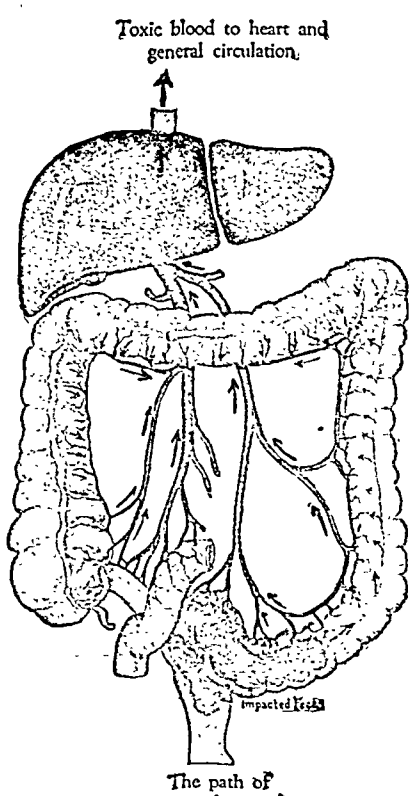
Dissolves Intestinal Toxins



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Not the least valuable of its properties is the behaviour of Nujol toward intestinal toxins.

If a watery solution of indol be shaken up with Nujol, more than half the indol is quickly taken up. Nujol readily dissolves this and other waste and poisonous substances, many of which are more soluble in Nujol than in water. Once absorbed in Nujol they cannot be absorbed by the system, as Nujol itself is non-absorbable.

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Nujol is a safe and effective treatment in all types of constipation and intestinal toxemia.

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Is radically different from the ordinary fluid "pepsin" preparations because it contains the entire soluble constituents, organic and inorganic, of the stomach glands, all the various complex potent catalytic constituents. It is not made by dissolving "pepsin" in a vehicle; it is an entire gastric juice extract.

To prescribe 'Pepsencia' is to give the patient the benefit of a standardised product of long maintained reputation and efficacy, of established value in medical practice as a digestant, a vehicle, an aid to other treatment; useful also in therapeutic feeding as a means of preparing the well-known milk foods junket and whey.

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Brand's Essences are scientifically prepared, in jelly form, from the finest English meats, and contain upwards of eleven per cent. of proteid. The nourishing and stimulating properties are IMMEDIATELY ABSORBED, without residue, in the alimentary canal. No time is lost in process of assimilation. No work entailed by the digestive organs. Absolutely pure. Contains no gelatine, colouring, or preservatives. Good for young and old alike.

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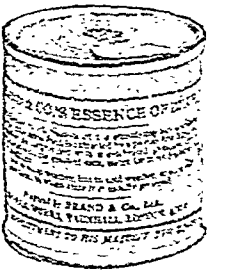

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Statistics alone do not make us arrive at this conclusion; it is due to the knowledge that there is not another baby food which so closely resembles breast milk, and to the fact that practitioners all over the country are recognizing the truth of this statement.

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As a result of prolonged investigations on the production of anti-diphtheritic serum an antitoxin, conforming to the following specifications, is now available to members of the medical profession.

Concentration of 2,500 units per c.c.
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Sealed ampoules of 1 c.c. containing 1,500 units
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The concentrated and the super-concentrated are both guaranteed not to exceed 10% in protein content.

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MISTOL has proven especially efficacious in coughs and colds, simple, congestive, and catarrhal rhinitis, hoarseness, bronchitis, and laryngitis.

Mistol consists of menthol, eucalyptol, and camphor carefully combined in proportions recommended by leading nose and throat specialists. A specially prepared petroleum base keeps the soothing, healing ingredients in direct contact with the mucous membrane for a considerable length of time. Moreover, it prevents it being easily washed away by the natural secretions.

Mistol and the Mistol Dropper are a real advance in nose-and throat therapy. With head tilted back, the patient should let Mistol drop into each nostril until it is felt to be running into the back of the throat. Unlike douches, Mistol avoids any possibility of sinus trouble. It is manifestly superior to salves which do not reach all parts of the mucous membrane.

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Special discounts to the Medical Profession and to Hospitals.

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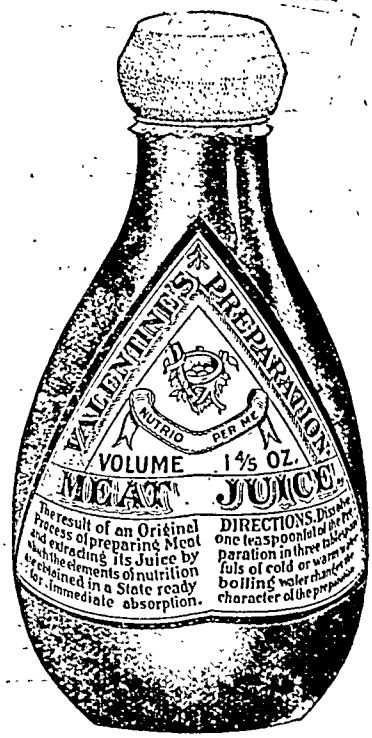

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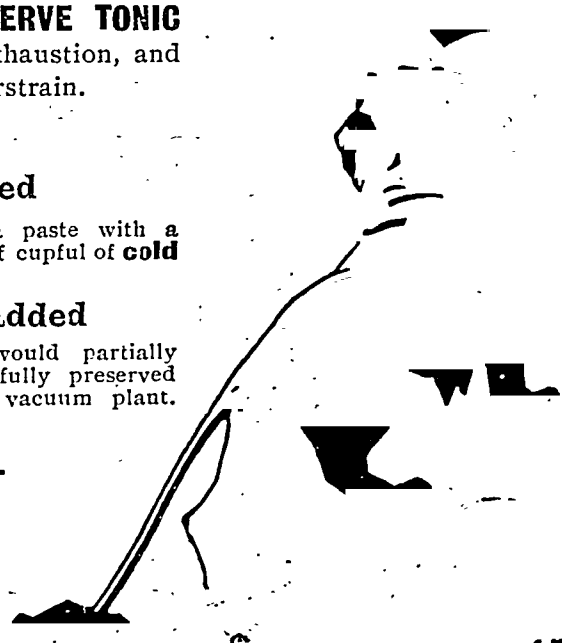
by mixing one large heaped teaspoonful to a paste with a little **cold** water, then adding a quarter to a half cupful of **cold** water or, preferably, milk.

Hot liquids must not be added

as the heat, besides affecting the flavour, would partially destroy the valuable vitamin content so carefully preserved during manufacture by the use of the latest vacuum plant.



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FOR

Hypodermic, Intramuscular, Intravenous, and other forms of Injection.

(Care should be taken to prevent confusion as to use in each instance.)

	Box of	
ACID NUCLEINIC (*hypod. and intram.*) *for promoting leucocytosis in acute fevers, pneumonia, etc.* ... ... 5%, 1 c.c.	10	5/6
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SODIUM MORRHUATE (*subcut. and intrav.*), *in tuberculosis and leprosy* 3%, ½ c.c., 5/6; 1 c.c., 6/6 2 c.c.	„	7/6
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The Original Preparation
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CERVICAL ADENITIS.

Typical Case.

The following case will illustrate the application of Local Anæsthesia in children in whom the establishment of General Anæsthesia would seem especially hazardous.

B. D., aged 9 months.
Diagnosis: Suppurative cervical adenitis.
Operation: Incision and drainage.
Anæsthesia: Local infiltration, 20 c.c. of a 0.5 per cent. Novocain-Adrenaline solution.
Operation: A direct infiltration was made over the swelling, using 20 c.c. of a 0.5 of 1 per cent. Novocain-Adrenaline solution. The skin was picked up with towel pins to avoid pressure, and a transverse incision was made down to the cervical fascia. At this point the operation was delayed when the cervical fascia was infiltrated. This layer was then picked up with towel pins and a sharp-pointed hemostat was forced through and spread widely, opening the abscess.

—Extract from PRACTICAL LOCAL ANÆSTHESIA (Farr).

(Full technique of this and one hundred other operations under Local Anæsthesia will be found in the above work published by Henry Kimpton, 263, High Holborn, London, W.C.1.)

THE SAFEST LOCAL ANÆSTHETIC.

Ample supplies of Novocain are available for the use of Surgeons at all the chief Hospitals. Specify " Novocain " for your next operation.

Does not contain Cocaine, and does not come under the Dangerous Drugs Act.

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Also employed with success in hay fever, associated skin affections, angio-neurotic œdema, cyclic vomiting, periodic diarrhœa, and the migraine-epilepsy syndrome; in short, to such conditions as exhibit an anaphylactic character or sensitisation.

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Concentrated Fluid Extract of LIVER

for the treatment of Pernicious and Secondary Anæmia, Banti's Disease, and Acute Aplastic Anæmia.

The Palatable, "Ready to take," Stabilised product, accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in their list of New and Non-Official Remedies.

ONE OUNCE = Half Pound Fresh Warm Liver.

The following is a typical report sent voluntarily by a Medical Practitioner:

P. Anæmia. *Man—56 years of age.*

Treated with GLANOID CONCENTRATED FLUID EXTRACT OF LIVER

10.10.28	.....	R.B.C. 2,200,000	H.C. 55%
27.10.28	.....	,, 2,400,000	,, 75%
12.11.28	.....	,, 3,400,000	,, 85%
17.11.28	.....	Great improvement.	
19.12.28	.....	R.B.C. 4,000,000	H.C. 100%
20. 2.29	.....	,, 5,000,000	,, 100%

Extract stopped.

Patient now on small amounts of Liver.

Note Change of Address.

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For many years Benger's Food, as is well known, has been used by practitioners throughout the world as a routine diet in all gastric cases, debility, and in cases of milk intolerance. The reason for this may be briefly stated:—

Benger's Food is a special wheaten flour preparation containing, in suitable amount, the two natural digestive principles — Amylopsin and Trypsin — in a latent state.

It is devised and expressly intended to be used in conjunction with fresh cows' milk, or diluted milk, if desired.

The two enzymes are in such condition as to exert their digestive powers under the condition which obtains during the preparation for use.

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ANCIENT JAPANESE *KOTO*, OR LUTE, SIMILAR TO THAT WHICH SERVED FOR OBTAINING AUGURIES FOR THE EMPRESS JINGO IN CONNECTION WITH HER EMPIRE-BUILDING EXPEDITION AGAINST KOREA. HER CONQUEST GAVE A GREAT IMPETUS TO CIVILISATION IN JAPAN.—Internal development, together with the idea of Yamato empire within her borders, seems to have progressed steadily for several centuries before our era, but the first great awakening to a sense of nationality is ascribed to the time of the Empress Jingo, whose name signifies "divine merit or success." This sovereign, whose semi-legendary story is believed to contain a large germ of truth, decided to gain dominion over Korea, "Land of Treasure," "Land of Gold and Silver," as she described it to her ministers, to whom she addressed the following message when her plans were complete: "To make war and move troops is a matter of the greatest concern to a country. Peace and danger, success and failure, must depend upon it. If I now entrusted to you, my ministers, the duties of the expedition we are about to undertake, *the blame, in case of ill-success, would rest with you. This would be very grievous to me.* Therefore, although I am a woman, and a feeble woman, I will for a while borrow the outward appearance of a man and force myself to adopt manly counsels. . . . . If the enterprise succeeds, all of you, my ministers, will have the credit, while, if it is unsuccessful, I alone shall be to blame." She then set out commanding in person her fleet and army. The expedition, which appears to have lasted about three years, ended with the submission of Korea and establishment of a Japanese control, which endured for several centuries. An enormous impetus was given to civilisation in Japan through the importation of literature and the arts. Material benefits accrued also in the form of iron, implements, precious metals, silk and other fabrics.

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An Address
ON
THE PLACE OF SURGERY IN THE TREATMENT OF PEPTIC ULCER.*

BY
D. P. D. WILKIE, M.CH., F.R.C.S.,
PROFESSOR OF SURGERY IN THE UNIVERSITY OF EDINBURGH.

THE choice of this subject for my lecture requires a little explanation, if not apology. The question of the advantages of medical over surgical treatment of peptic ulceration, and vice versa, has been debated almost *ad nauseam*. My object in this paper is not so much to uphold one line of treatment against another as to review the facts regarding the etiology of chronic ulceration so far as we know them, and to formulate rational lines along which the physician and surgeon, working hand in hand, may determine in which class of case, and when, medical measures should give place to surgery.

It is no new discovery in medicine that peptic ulceration will frequently yield to rest, frequent fluid feeds, and alkalis; nor, on the other hand, is it altogether surprising that extensive gastric resections are survived and followed by comparative comfort. What the patient with peptic ulceration wants to know is, what type of treatment will in his case restore him to health in a reasonable time with a probable chance of his remaining well under something approaching ordinary dietary and working conditions.

ETIOLOGY OF ULCERATION.

Few subjects have engaged the attention of so many experimental research workers as this. It has been shown that gastric ulceration may be produced by many factors, singly or combined. Blood infection may produce multiple acute ulcers, deranged or interrupted nerve supply may lead to ulceration, retrograde venous embolism may occasionally cause ulcer. Buchner has recently shown that by a combination of starvation and the injection of histamine into rats gastric ulceration occurs regularly. As in the human subject, it occurs not in the acid-secreting part of the organ, but in the part immediately adjacent to this. Rowlands, Underhill, and Mendel, and recently Magee, Anderson, and McCallum, have shown that ulceration may appear in the stomach as one of the manifestations of deficiency disease, and Rogoff and Stewart that it may follow adrenalectomy, an operation which, as Dale has shown, produces a condition of the blood not unlike that following injection of large doses of histamine.

It has always been difficult in the experimental animal to maintain ulceration and to get the typical deep punched-out chronic ulcer found in the human subject. Further, in this particular case it is difficult to produce experimentally conditions which are quite comparable to those in the human being. We are therefore thrown back to a large extent upon our clinical and pathological observations on the human subject. We reflect on the fact that the condition is met with in relatively healthy young adult males; that its symptoms are, to begin with, strictly periodic; that hyperacidity is present in the early stages; that painful spasm, as evidenced by the relief obtained by swallowing anything, is the rule. Further, we remark that dental infection is a frequent but by no means constant accompaniment, and that in many cases there is a history of acute or chronic appendicular trouble. We find that constipation, worry, overwork, loss of sleep, excessive smoking, and irregular meals, particularly if these are of the carried or snack-counter type, all seem to precipitate or aggravate the condition, which is more common among the highly strung and nervous than among the more phlegmatic members of the community. We note that, whilst multiple acute ulcers may be widespread, the chronic variety is found in certain strictly localized sites along the lesser curvature of the stomach, especially at the point where the body of the stomach abuts on the pyloric canal, and in the first part of the duodenum, approximately half an inch beyond the pylorus, and, in the latter case, usually multiple, one on the anterior and one on the posterior wall. We have good grounds for stating that the cause of gastric and duodenal ulcers must be one and the same, as they are so frequently found together. In my own series of duodenal ulcers a coincident gastric ulcer was present in 15 per cent., and of gastric ulcers a coincident duodenal ulcer was present in over 50 per cent. of cases. That a certain degree of gastritis accompanies and probably precedes ulceration is a fact of experience. *Post-mortem* room observations show that multiple scars of healed ulcers are not uncommon, and frequently alongside an active penetrating ulcer are found the scars of other more superficial and healed ulcers.

What is the initial and primary factor in determining the ulcer? I believe that it is a blood-borne infection which settles in the lymph follicles of the stomach and duodenum, some of which soften and erupt on the surface, the devitalized tissue undergoing digestion and leaving small follicular ulcers. The infection is streptococcal in type, and the primary source is usually the teeth or tonsils, and possibly, in some cases, the appendix. My reasons for this belief are as follows: In many cases we have recovered a streptococcus in pure culture from the base of an excised ulcer. In a number of cases we have found a coincident streptococcal infection of the gall-bladder and the appendix, and, whilst we have not been able to demonstrate experimentally the same selective affinity of the streptococcus for the stomach and duodenum that we have for the gall-bladder, we have sufficient evidence to point to the probability of this being the case.

There is admittedly a great tendency for acute ulcers in the stomach and duodenum to heal. Why is it that a certain number of such ulcers develop into the chronic peptic variety, and why are they found in such definite restricted areas of the stomach and duodenum? If we examine the common ulcer sites we find two characteristic features—first, the mucosa is relatively fixed, and secondly, the blood supply is relatively precarious. The greater curvature of the stomach, which contains few lymph follicles and the mucosa of which is lax and mobile in order to accommodate itself to the changing capacity of the organ, is practically immune from ulceration. The lesser curvature, on the other hand, is rich in follicles, is comparatively a fixed part, and is capable of little expansion: a defect in its lining remains open and is, moreover, in the direct traffic route of the entering food. The first part of the duodenum is, like the stomach, part of the foregut, has a smooth, unfolded mucous membrane rich in lymph follicles, and receives the acid chyme practically undiluted.

If these facts explain to some extent the *site* of chronic ulceration, what determines chronicity? Clinically we recognize two features in ulcer cases—hyperacidity and spasm. Further, we know that factors such as worry, excessive smoking, etc., which upset the nervous system, may, and frequently do, contribute to the onset of an "attack" of ulcer symptoms. From radiological studies we learn that in the duodenal ulcer cases rapid initial emptying of the stomach occurs, and during this period the patient is free from discomfort. A small residue is left in the stomach; this is hyperacid, pyloric spasm sets in, and the patient experiences the typical gnawing pain which he can relieve to some extent by swallowing fluid or food, which will cause pyloric relaxation. The majority of duodenal ulcers are small and shallow, and if given rest and shielded from the hyperacid gastric chyme, the tendency to healing is well marked. In the case of gastric ulcer acid appears to play a less important part, indeed hypo-acidity is present in many cases of chronic ulcer; hypermotility is also less pronounced and pyloric spasm comes on earlier after taking food. The drag on the irritated lesser curvature after taking food induces painful local spasm, which handicaps the blood supply and does not favour healing. The pain is notably relieved by the recumbent attitude, which obviates or lessens the drag.

It is a notable feature in the history of ulcer cases that a country holiday will almost always dispel an attack—that is to say, fresh air, sunlight, and a change of diet have an immediate beneficial influence. In reviewing the etiology of peptic ulcer we must therefore consider,

* Delivered to the Hyde Division of the British Medical Association on January 24th, 1929; illustrated by lantern slides.

I believe, three main factors: infection, nervous influences, and a possible dietary vitamin deficiency. In this connexion Mr. Garnett Wright has suggested that the success of the modern medical treatment of ulcer depends on the correction of vitamin deficiency by the giving of raw eggs, cream, etc., to patients who were accustomed to live on tea, white bread, cakes, and tinned or cooked foods.

In the light of the facts stated above we can understand how the removal of septic foci in the mouth, rest in the recumbent position, the ensuring of adequate sleep, the cutting down or out of tobacco, the giving of small meals of fresh vitamin-rich fluid food at frequent intervals, and the supply of alkali, may together favour, indeed almost ensure, the healing of gastro-duodenal ulceration in all but old-standing and neglected cases.

THE RATIONALE OF SURGICAL TREATMENT.

Apart from emergency operations for perforated ulcer, operative treatment for peptic ulcer is a practice of not many years' duration. It may be said to have started when it was found what great relief followed a gastro-enterostomy for irremovable cancer of the pylorus. The earlier operations were all done to relieve a mechanical difficulty—that is, a stenosis resulting from the cicatrization of an ulcer in the duodenum or stomach. The brilliant results of such operations induced surgeons to try the same short-circuiting operation in cases of ulcer without stenosis in order to give rest to the ulcerated part. It was further found that the short-circuit permitted the entry of a certain amount of bile, mixed with pancreatic and duodenal secretion, into the stomach, and thus reduced acidity. This, the so-called physiological action of the stoma, was held by many, notably Paterson, to be the most beneficent effect of the operation. The results of gastro-enterostomy for chronic duodenal ulcer with some degree of mechanical difficulty from stenosis—that is, with a somewhat dilated stomach—were almost uniformly good. In a few regurgitant vomiting from a badly placed stoma resulted, and in a small percentage (less than 3 per cent.) a peptic ulcer developed at the stoma.

In another group, however, in which an irritable ulcer without stenosis but with marked hyperacidity and pronounced gastric hypermotility was present, the results of the short-circuiting operation were by no means so favourable. Here the danger of jejunal ulcer is a very real one, and only the most careful and prolonged after-treatment will prevent it. The consequence has been that an injudicious selection of cases for the operation, resulting in the development of jejunal ulceration in an unpleasantly large group of individuals, has prejudiced the good name of one of the most beneficent of surgical procedures.

The case of gastric ulcer is altogether different. After a few years of trial gastro-enterostomy was found to be most uncertain in its results in the treatment of gastric ulcer. Almost 50 per cent. of patients continued to have symptoms, and in a few cases malignant disease supervened on the simple ulcer which had not healed. As with duodenal ulcer, so with the smaller non-penetrating gastric ulcers, healing will result in a large proportion of cases under systematic medical treatment. When the ulcer is large and penetrating, however, even prolonged medical treatment will fail in many instances to cure, and during this long and tedious course of treatment malignant disease may have supervened and spread to the regional lymph glands or beyond them. The rule of the Mayo Clinic, that all penetrating gastric ulcers of 1 cm. or more in diameter must be regarded as potentially malignant and should be removed, is one that I would have our ultra-conservative and optimistic medical friends take to heart.

Size, penetration, and tendency to stenosis and hour-glass constriction should, in my opinion, be the indications for surgical intervention.

THE BLEEDING ULCER.

After a patient has had one or more severe haemorrhages the question of surgical intervention usually arises. The problem presents itself first as to the risk run by persevering with purely medical measures, and, secondly, as to the immediate risk of operation and the possibility of dealing with the bleeding ulcer in such a way as to give a reasonable hope of lasting cure. To maintain that a patient never dies of haemorrhage from an ulcer is to go contrary to facts. Any pathologist of experience can cite very many cases where haemorrhage from an ulcer was the immediate cause of death. The operation for haemorrhage during the acute and threatening stage is, however, not only a dangerous, but in my experience an unsatisfactory, one. More often than not the haemorrhage has stopped at the time of operation, no definite bleeding point can be dealt with, and the patient, even if transfused, is not in a fit condition to allow of the radical treatment which would appear to be the only rational means of ensuring against recurrence. I believe it is wiser to tide the patient over the immediate effects of the haemorrhage, taking the risk of another, possibly fatal, bleeding, and to operate not earlier than ten days after the last severe bleeding. If no radiographic examination has been made prior to the bleeding it is usually wiser to wait until this can be done, for if it shows no gross deformity, either in stomach or duodenum, it is questionable if any operation should be performed.

For the bleeding duodenal ulcer a short-circuiting operation may be successful, but in my experience it fails in about 40 per cent. of cases to prevent recurrence of bleeding sooner or later. The persistently bleeding duodenal ulcer is usually on the posterior wall, is penetrating, and shows little tendency to heal after a short-circuiting operation. It is in this class of case that a partial duodenectomy is, to my mind, indicated, and I would reserve this operation for this type of ulcer. If the patient's general condition or the technical difficulties make such radical treatment undesirable a temporary closure of the pylorus and a gastro-enterostomy may be carried out.

For the bleeding gastric ulcer local excision with a short-circuit or a partial gastrectomy is required. In both cases the suitable operation is no minor one, and should not be attempted until the patient's condition is such as to make the immediate risk little if at all greater than that of any major gastric operation.

CONSERVATIVE MEDICINE VERSUS RADICAL SURGERY.

In this country at the present time there is unquestionably a strong trend in favour of prolonged medical treatment of peptic ulcers, no matter at what stage or of what size the ulcers may be. The writings of MacLean and Hurst have done much to stimulate a renewed interest and zeal in the purely medical lines of treatment. This swing of the pendulum was perhaps inevitable after a period in which operative treatment was resorted to without much nicety of discrimination and selection of cases, with its inevitable aftermath of unsatisfactory results. On the Continent, on the other hand, the tendency has been in the direction of ever more radical surgery. It has gone so far that in some clinics a total extirpation of the "ulcer-bearing area" is the standard treatment for duodenal as well as for gastric ulcer. Some surgeons, with a naive disregard for the facts of physiology, remove what they term the acid-secreting part of the stomach with the object of avoiding a jejunal ulcer. As Buchner has so clearly pointed out, ulcers are found not in the acid-secreting parts, but in those which, whilst not secreting acid, are exposed to acid content.

THE ARGUMENT.

If we examine the basis of the argument of the ultra-conservative *school against operative* treatment we find that it rests on their experience with the surgical derelict—the few with regurgitant vomiting, and the rather larger number with jejunal ulcer. Also we find that they have a very natural aversion to the sacrifice of a large part of a most useful and highly specialized organ because of the presence on its wall of a small infective ulcer. Further, they state that, given time and care, even the largest gastric ulcers will heal under medical treatment.

On the other side their more surgically minded brethren point to the large number of the populace who suffer from chronic ulcer and who cannot or will not carry out the prolonged medical treatment and still more prolonged dietetic regime which some physicians advocate so strongly

Further, they emphasize the real danger of overlooking early malignant disease if chronic penetrating gastric ulcers are to be subjected for an indefinite period to persistent and unrelenting medical measures.

THE VIA MEDIA.

In this, as in so many fields in which strong and opposing views prevail, the truth will probably be found somewhere between the extremes. I suggest the following as the rational lines to follow in dealing with ulcer cases.

A. For all acute ulcers, for those which have not caused more than six recurrent attacks of symptoms, for those which give rise to no gross deformity in the radiogram and show no signs of true penetration, for those which have not given rise to more than one serious haemorrhage, and for those in highly nervous subjects, medical treatment should be given a fair and prolonged trial.

B. For all chronic ulcers causing gross deformity and organic stenosis, for all cases where more than six attacks have occurred, where strict dietetic regime is impossible, where there is definite *x*-ray evidence of serious organic deformity, for all the penetrating gastric ulcers, and particularly for those in which the *x*-ray photograph discloses a crater judged to be 1 cm. or more in diameter, surgery is demanded and medical treatment unjustifiable. For all ulcers which have bled freely on three or more occasions surgery must be considered.

THE CONSERVATIVE SURGERY OF ULCER.

How may we give the unquestionable benefits of surgery to the groups of cases indicated above, and at the same time avoid the unpleasant, and indeed dangerous, complications of regurgitant vomiting and jejunal ulcer, whilst conserving as much normal tissue as we can? For the duodenal ulcer with marked stenosis a posterior gastro-enterostomy, placed not too far to the left and with a roomy aperture in the mesocolon, cannot be improved on; the results are consistently good.

Perhaps the most impressive review of the results of the conservative surgery of duodenal ulcer is that given by Balfour, who followed up the cases of one *hundred medical men* operated on in the Mayo Clinic for duodenal ulcer. The average time since operation was eight and a half years. A gastro-enterostomy had been done in 82 per cent. of the cases, excision in 6 per cent., and gastro-duodenostomy in 2 per cent. In 90 per cent. the result of the operation was complete relief from symptoms, and in the great majority the reports were almost extravagant in their praise of the effects of the operation.

For the persistently recurring duodenal ulcer without much stenosis or gastric dilatation—the type which we feel should be cured by medical measures, as it often is for a short time—in the man who cannot take any liberties without suffering and will not lead "the life of a weaned child," for this type a gastro-enterostomy always carries with it a potential jejunal ulcer, and a gastro-duodenostomy is undoubtedly the operation of choice.

GASTRO-DUODENOSTOMY FOR DUODENAL ULCER.

In the last few years I have gradually substituted this operation for posterior gastro-enterostomy in all cases without very definite stenosis. At first I practised it mainly in female patients with a lax, readily mobilized duodenum, but latterly I have found that it can be done almost as easily and with equal advantage in the male. The rationale of the operation is that it excludes from the food stream the ulcer-bearing area of the duodenum; that the new opening is in the pyloric end of the stomach, the peristalsis of which is not interfered with; that the acid gastric contents are discharged into the second part of the duodenum directly opposite the point of entry of the bile and pancreatic juice; that the rest of the small intestines need not be disturbed, and incidental complications from adhesions, etc., are thus minimized; that the ulcer or ulcers are left untouched, a direct attack upon the average duodenal ulcer being, in my opinion, quite unnecessary.

The essentials for the operation are complete and effective mobilization of the second and the commencement of the third parts of the duodenum. To obtain this the *hepatic flexure of the colon must be freed, the peritoneum* on the outer side of the second part of the duodenum incised, the fascial bands, which hold down the second and especially the third parts of the duodenum, divided, and the duodenum brought to the surface. Morison's pouch is then packed off, and the anastomosis carried out with two layers of No. 00 catgut sutures. It is better to do the operation without clamps, as the less the duodenum is traumatized the better. In this operation the pylorus and first part of the duodenum are folded the one on the other, making an effective barrier to the passage of food through the pylorus. In the few cases where satisfactory mobilization of the duodenum has been impossible a Finney's operation has been performed with almost equally good results.

It may be urged against this operation that the post-operative course is frequently not so smooth as that of a posterior gastro-enterostomy. Against this, however, may be claimed the infinitely smaller risk of a peptic stomal ulcer. I have not encountered any, and I have only heard of two. The operation disturbs the normal physiology less than does a gastro-jejunostomy, and the possibilities of late complications are infinitely less. When the stomach is grossly dilated or markedly ptosed it does not give the effective drainage obtained by a gastro-jejunostomy, and in one case where drainage was unsatisfactory I had subsequently to perform the latter operation, which gave complete relief.

SURGICAL TREATMENT OF GASTRIC ULCER.

When an ulcer has actually penetrated the muscular coats of the stomach and is adherent to the pancreas, and especially when it is associated with one or more duodenal ulcers—which it is in over 50 per cent. of cases in my series—the chances of sound healing and lasting cure by medical measures are exceedingly small. Without in any way wishing to labour the question of malignant degeneration of simple gastric ulcer, and while considering that it is a relatively rare complication, I believe that it occurs sufficiently often to make long-continued medical treatment unjustifiable. It is well-nigh impossible to obtain reliable *figures on the question*. Two cases, however, where the course from simple ulceration to malignancy was observed, impressed me with the danger. In one case a man over 50 years of age had been under medical treatment for over eight years for what was *diagnosed as duodenal ulcer*. He came to operation on account of jaundice associated with a palpable swelling below the right costal margin—taken to be the gall-bladder. I found a healed duodenal ulcer and a large gastric ulcer, not palpably malignant, but associated with a large secondary malignant nodule in the liver. The edges of the ulcer were found to be infiltrated by malignant disease.

The second case was in a woman of 28 who, two years previously, had had a gastro-enterostomy performed for what appeared to be a simple peptic ulcer of the lesser curvature. When I saw her, two years after her operation, she had a palpable mass in the epigastrium. This proved to be a malignant mass on the lesser curvature spreading from the edges of a penetrating ulcer.

I believe that large gastric ulcers should be excised. Whether the operation be a partial gastrectomy or a free local excision with a gastro-enterostomy, a gastro-duodenostomy or a Finney's operation is, I think, a minor technical matter. Personally I prefer to do a local excision with a gastro-duodenostomy. This ensures free drainage from the stomach, and excludes the duodenal ulcer which is so often present as well, whilst conserving normal tissue and maintaining an attitude of respect for what, after all, cannot but be a useful organ.

The Cautery Method.—When an ulcer is found high on the lesser curvature and of no great size, the destruction of the base and floor of the ulcer by means of the thermo-cautery along with a short-circuiting operation, as introduced by Balfour, is a method which in my hands has given very good results. For larger ulcers—that is, for those in which surgical treatment is most clearly indicated—excision is, I believe, undoubtedly preferable.

Cholecysto-gastrostomy.—The bilification of the stomach by anastomosing the gall-bladder to that organ, advocated and practised in this country by Braithwaite, is based on

the conception that the neutralization of the acid gastric juice by the regurgitant fluid through a gastro-entero-stomy is due mainly, if not entirely, to the bile contained in that fluid. Whilst good results have been reported in cases of gastric ulcer so highly situated in the lesser curvature as to preclude excision, and in a number of cases of doubtful pathology with hyperacidity as their dominant symptom, the basis of the method is insecure, as bile in itself is not alkaline, and after a gastro-intestinal anastomosis it is the duodenal and pancreatic secretions rather than the bile which give the regurgitant fluid its neutralizing properties. I have carried out this operation in only two ulcer cases, one of very high lesser curvature ulcer and one of gastro-jejunal ulcer. In both cases some immediate improvement resulted, but the symptoms of acidity and pain returned.

Ulcer as One of Many Septic Foci.

No treatment of ulcer can bear the promise of lasting cure if it does not take cognizance of the other foci of infection which accompany it. The prevalence of dental infection is to my mind the most important single factor in determining the frequency of peptic ulcer. It is indeed surprising to find in the vast majority of the patients sent for surgical operation after ineffective medical treatment that gross dental infection has been left untreated. In many of these cases we recover from the pyorrhoeal pockets the same streptococcus as we find in the ulcer. Efficient dental treatment must, therefore, be a first consideration, no matter what other lines of therapy we may follow.

It is within the abdomen, however, that we so frequently find other infective foci which must be dealt with at the same time as the ulcer. The combination of an ulcer in the stomach or duodenum or both with infection in the gall-bladder and appendix is quite common. All these lesions must be dealt with if complete and lasting relief is to be obtained. The following brief note of a case will illustrate the significance of a thorough eradication of foci.

Mr. A. B., aged 57, had thirteen years previously had a gastro-enterostomy performed for duodenal ulcer. He obtained some temporary relief, but his old pain soon returned; he suffered from nausea, flatulence, and constant abdominal discomfort, and led the life of a chronic dyspeptic. On examination we found him emaciated, with a dilated stomach and tenderness over three points in the abdomen—just to the left of the umbilicus, just below the right costal margin, and in the right iliac fossa. *X*-ray examination showed his stomach to be dilated, the stoma stenosed and irregular, evidently from a jejunal ulcer. At operation a jejunal ulcer was found and excised and his stoma enlarged. His gall-bladder was thickened and inflamed, as was his appendix; both were removed. Regional lymph glands were taken from all three sites and from all the *Streptococcus viridans* was grown in pure culture. On injection into rabbits both cholecystitis and duodenal ulcer were produced. Since the second operation the patient has enjoyed perfect health and lost all his dyspeptic symptoms.

It may be that we shall eventually succeed by suitable inoculation in immunizing patients against these multiple streptococcal abdominal lesions, or, still better, by timely dental treatment and better dietary and hygienic treatment, in preventing them. Till then, however, surgery must continue to play a part in dealing with the full-blown lesions, and surgery, whilst conserving healthy tissue, must deal thoroughly and radically with the different foci.

An Address
ON
RADIUM AND ITS SURGICAL APPLICATIONS.

GIVEN BEFORE THE BRISTOL MEDICO-CHIRURGICAL SOCIETY
BY
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RADIUM was discovered by Madame Curie in 1898, and its discovery marks an epoch in the history of science. It destroyed at one blow the conception of the atom as an indestructible unit, upon which the whole of chemistry and the greater part of physics had been built, and it opened up a field of investigation which has provided work for physicists for the last thirty years, and has led to discoveries which have revolutionized all our ideas of the physical universe.

Soon after the element had been isolated Becquerel, by inadvertently carrying radium in his pocket, discovered its destructive action on the human tissues, but although attempts were made to turn this to surgical advantage, it was only in isolated cases and in special regions that effective results were obtained. Whilst fully recognizing the value of the work done with radium in diseases of the skin and in carcinoma of the cervix, one must admit that only lately have the surgical possibilities of radium been appreciated, or any attempt been made to exploit its powers. Indeed, those who have had the opportunity of studying the subject must feel that we are only at the beginning of what may prove to be a new epoch in the treatment of malignant disease. For the first time in the history of medical science we hold in our hands a power which beyond any question can cure cancer in many of its forms, and which can destroy a malignant growth without its surgical removal, and it is our business to explore its possibilities to their utmost limits.

This is a subject which none of us can afford to neglect, and it is essential that every surgeon should realize what can be done with radium and understand the methods by which it is applied. To use it effectively he must know something of the physical properties of the new weapon which has been placed in his hands, and I therefore make no apology in describing briefly those physical properties which are fundamental in the action of radium when it is used by the surgeon.

The revolutionary conception involved in the discovery of radium was the idea that an element could decay, and in the process of decay be transformed into an entirely different substance. It has been established, however, beyond any possible question that certain elements possess this power, and they can indeed be arranged in a number of definite series in which each element is the product of the last. The most important of these is the uranium series in which radium occurs, and you will see the parentage and descendants of radium set out in the family tree shown in Table I. Not only do we know its family history, but we know the expectation of life of each of its members, as represented by its half-value period, the time in which one-half of the element has disappeared, and you will see that this varies considerably, since while uranium attains the patriarchal age of five thousand million years radium itself is half gone in 1,750 years, and radium A in three minutes. It is indeed to this rapid decay of radium and the other elements in the centre of the table that we owe the surgical possibilities of radium. There is something which stirs me profoundly in this dry table. Th

TABLE I.—*The Uranium Series.*

Element.	Atomic Weight.	Radiation.	Half-value Period.
Uranium 1	238	$\alpha\,\beta\beta$	5,000,000,000 years.
Uranium 2	234	α	2,000,000 years.
Ionium	230	α	140,000 years.
Radium	226	$\alpha\,(\beta)$	1,750 years.
Radon	222	α	3.85 days.
Radium A	218	α	3 minutes.
Radium B	214	$\beta\,(\gamma)$	26.7 minutes.
Radium C	214	$\alpha\,\beta\,\gamma$	19.5 minutes.
Radium D	210	β	17 years.
Radium E	210	β	5 days.
Polonium	210	α	136 days.
Lead	206	—	—

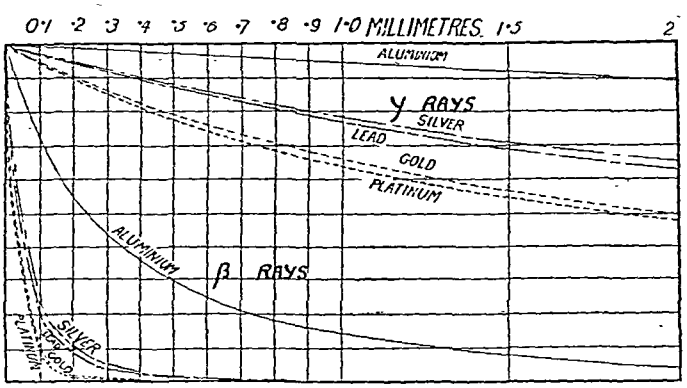
evolution of uranium occupies a period of five thousand million years, and it began perhaps when our world was a glowing nebula. For a few days only it exists as radon; for those few days perhaps—we are not yet quite certain—it offers to us the cure of cancer.

We have spoken of "decay," but in order to understand the real meaning of the term and its importance for our subject we must first say something of the modern view of the structure of the atom. We owe to Rutherford the conception of the atom as a minute solar system, in which the nucleus is the sun, whilst the electrons flying round it with inconceivable velocity are the planets. In very general terms radio-activity and mass are properties of the nucleus, whilst chemical affinities and spectroscopic properties are manifestations of the flying electrons. The electrons are all identical, each carrying the same negative charge: the nuclei are all different, but they are built up of the same units, electrons carrying a negative charge, and protons which each carry an exactly equal positive charge.

The simplest atom of all is the hydrogen atom, consisting of a single proton as nucleus, with a single electron flying round it. Next in order comes the helium atom, its nucleus built up of four protons and two electrons welded together, whilst its planetary system consists of two electrons whirling round the nucleus. To us its importance can scarcely be exaggerated, for the nucleus is identical with the alpha particle, so that an alpha particle may be regarded as a helium atom deprived of its two planetary electrons, whilst it does not require much imagination to see that it must carry a positive charge exactly double the negative charge carried by each electron. When we point out that the electron, set free to fly through space, is the beta particle, and that with its liberation is bound up the production of gamma rays, it will be realized that the helium atom carries in miniature the whole physical basis of our subject.

TABLE II.—*Dimensions of Waves and Atoms.*

Angström Unit (A.U.)	1/10,000,000 millimetre.
Wave length of green light	5,000 A.U.
,, of *x* rays	12 A.U. to 0.5 A.U.
,, of gamma rays	1 A.U. to 0.04 A.U.
Diameter of hydrogen atom	1 A.U.
,, of nucleus	1/25,000 A.U.
,, electron (β particle)	1/125,000 A.U.



Transparency of metals to beta and gamma rays.

Contrasted with these simple structures the radium atom presents an enormous complexity. Its nucleus is a dense cluster of 226 protons and 138 electrons, some at least of which are grouped together to form alpha particles, whilst around this nucleus whirl no fewer than 88 electrons. The formation is unstable and alpha particles are being constantly discharged from the nucleus, beta particles from the nucleus and from the planetary system. As each particle is projected into space the characters of the atom are changed. It is no longer radium, but one of its derivatives, and this is the physical interpretation of "decay." Radium becomes radon, radon becomes radium "A," which is so unstable that within a few minutes it has lost an alpha particle and become radium "B." Finally stability is reached in an atom indistinguishable from that of lead, and so far as we know no further change occurs.

If nothing further were said a very false impression might be gained of atomic structure, for I have said nothing at all about the size of the atom as a whole, or the relative sizes of its parts. The atom is so minute that to form any real impression of its size we must take an entirely new unit for our measurements: the most convenient is the Angström unit, one hundred millionth of a centimetre, often denoted by the symbol A.U. On this scale the wave-length of green light, in the middle of the visible spectrum, is 5,000 A.U.: the wave-length of *x* rays ranges between 12 A.U. for the soft rays and 0.5 A.U. for the hard rays; and the wave-length of the softest gamma rays is 1 A.U., whilst the hard gamma rays may be as short as 0.04 A.U.

On this scale the diameter of the hydrogen atom is almost exactly 1 A.U., but this is the diameter of the orbit of the electron as it whirls through space around the nucleus. The diameters of the nucleus and electron are far smaller, each being about 1/25,000 A.U. You may, indeed, represent the hydrogen atom by one golf ball travelling around another in an orbit about a mile across. On the same scale the diameter of a single tissue cell would be about 100,000 miles. When we talk about the impact of beta particles on the tissues it is well to bear these facts in mind. Even the most enthusiastic golfer will see something remarkable in the destruction, by quite a large number of golf balls, of an object relatively fifty times the diameter of the moon. And when, as will appear later, he sees that the destruction may equally well be produced not by the golf balls themselves but by the ether waves—gamma rays—which accompany their discharge, he will probably require the next letter of the Greek alphabet to express his feelings.

We are now at last in a position to understand the property of radium which gives to it for us its peculiar value, the radiation which accompanies decay. As we have seen, it takes three forms, the alpha, beta, and gamma rays, and we may now sum up briefly the very different characteristics of these three forms.

The alpha rays consist of particles identical with the nucleus of helium, each carrying a positive charge of electricity, and they are projected from the nucleus with a velocity of 10,000 miles a second. In spite of this terrific velocity they have little power of penetration and are stopped by a thin sheet of paper. Even in air they rarely travel further than a couple of inches, so that although they carry the great bulk of the energy produced by the dissolution of radium they are of no practical value in surgery.

The beta rays are formed by electrons, of very small mass, carrying a unit negative charge of electricity, and projected with any velocity up to 180,000 miles a second, falling just short of the velocity of light. The soft rays of low velocity are easily stopped by a thin sheet of aluminium, but the hard rays of high velocity can pass through 0.2 mm. of silver. All but a small percentage of beta rays are, however, stopped by 0.5 mm. of platinum or by a centimetre of the body tissues. Their surgical action is therefore very local, and it is often better to avoid it altogether by the use of screens.

The gamma rays are ether waves of exceedingly short wave-length, less than 1/5,000 of that of light. They are set up apparently by the discharge of the beta particles, they travel with the velocity of light, and their power of penetration is so great that they are scarcely affected by the screens which almost abolish beta rays; they can pass through several inches of lead, and they are only reduced by about 50 per cent. in passing through four inches of the body tissues.

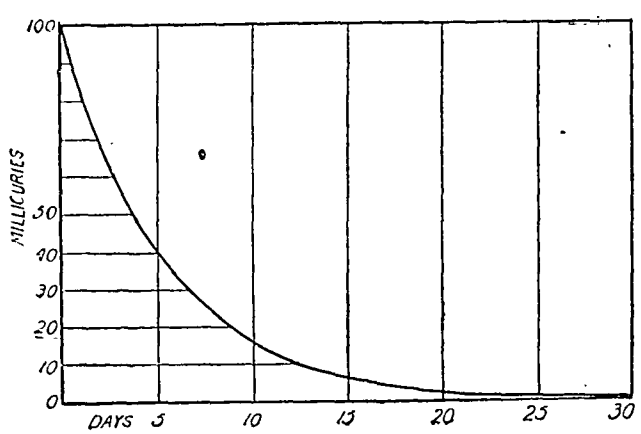
It is thus upon the beta and the gamma rays that the surgical action of radium depends. The former are destructive in their effect, and they are chiefly used in surface applicators for the production of superficial scarring. The gamma rays, on the other hand, have two very remarkable effects: they stimulate the activity of the tissue cells, and especially the production of fibroblasts, and they have a definite selective action on tumour cells, probably, at the moment of their division, causing them to disintegrate and disappear. Their total effect when they can be suitably applied is to cause the disappearance of a malignant tumour and its replacement by a scar.

I must say one word more about the process of decay. The decay of radium is so slow that where we use the element itself we may regard it as a constant source of radiation. It produces radon at a constant rate, and this by its decay produces its still less stable products with mathematical uniformity. In many instances, however, it is more convenient to use radon rather than the element itself, and the whole situation is then entirely changed. Let us consider for a moment the properties of this extraordinary substance, still more remarkable than the radium from which it springs.

Radon, the emanation of radium, is the very spirit through which it exercises its powers. It is a heavy inert gas with no known chemical affinities, and it decays with such rapidity that in 3.85 days one-half of it has vanished, whilst at the end of nine days only a fifth remains. So long as it remains in contact with radium the decay is made up by production, so that after a certain time equilibrium is established. If radium is left undisturbed this is reached in about a month, and thereafter production and decay exactly balance. At this stage radium has reached its maximum radio-active power, and the radio-active power of a milligram of element is defined as a millicurie.

TABLE III.—*Decay of Radium Emanation.*

Days.	Millicuries.	Days.	Millicuries.
0	100	12	11.5
1	83.5	14	8.0
2	69.8	16	5.6
3	58.3	18	3.9
4	48.7	20	2.7
5	40.7	22	1.9
6	34.0	24	1.3
7	28.4	26	0.93
8	23.7	28	0.65
9	19.8	30	0.45
10	16.5		



And now we meet with the most extraordinary fact of all. This gas radon can be separated from the parent radium and packed in containers, carrying with it what, for all practical purposes, is the entire radio-active power of the radium, which is left behind for the time being entirely inert. The total volume of the gas is only a minute fraction of that of the radium from which it arose, and if you purchase one gram of radium at a cost of £12,000, wait patiently for a month, and then with the most delicate precautions pump off the emanation, you will be rewarded with 0.6 of a cubic *millimetre* of evanescent gas. But that minute bubble might cure fifty cases of cancer before it itself expires.

You will see at once the extraordinary convenience of using the emanation instead of the element. It carries all the powers of its parent for a few days, and then the... simply vanish; its bulk is infinitesimal; its monetary valu... is *nil*. It can be inserted into a growth and simply le... to decay, and the patient can be sent home without ris... to himself or to the radium capital of the hospital. It i... essentially a method of curing out of income.

At any one moment the action of radon is precisely the same as that of a certain amount of radium, but there is this essential difference: that the amount is always diminishing. The effect of this will be clear from the chart, where it will be seen that in 3.85 days the value is down to one-half, in nine days to one-fifth. This can, however, be neutralized by starting with a larger dose, and it is a useful practical rule that the total radiation of 1.5 millicuries of emanation is physically almost the same as that from 1 milligram of element in a period of eight days.

APPARATUS AND MODES OF APPLICATION.

We must now turn to the apparatus used in the application of radium and to the methods by which it is applied. The apparatus itself is of the simplest description, and consists chiefly of needles containing radium element and seeds containing radon gas. Flat applicators are also used in the treatment of skin conditions, but these concern the dermatologist rather than the surgeon.

Needles are small platinum tubes varying in diameter from 1.5 to 3 mm., with a point tipped with iridium, and an eye through which a stout silk thread can be passed. A small cavity occupies the whole of the needle except the eye and the point, and this is packed with insoluble radium sulphate, the utmost care being taken to secure absolute uniformity in packing. The wall of the needle should be not less than 0.5 mm. in thickness, so as to cut off the whole of the beta rays. The length of the needle will vary with the requirements of the case. At the London Hospital our needles are 2, 3, 4, and 6 cm. in length, and we have the convenient arrangement that each needle contains one milligram of radium per centimetre of length.

Seeds are minute capsules containing radon gas. Usually the gas is sealed up into a tiny glass capillary, which is then inserted into a tube of platinum, gold, or silver, to cut off the beta radiation. Theoretically platinum is the most efficient screen, but personally I have found silver screens entirely satisfactory. Silver presents the advantages that it is cheap and easily worked, and I have recently elaborated a plan by which the radon is drawn directly into a long silver tube, which is then cut up into suitable lengths. The method of cutting ensures an absolute seal, and the saving of time and trouble, and of personal risk to the laboratory assistant, is considerable.

These needles and seeds provide small sources of gamma radiation, which may be either introduced into the tissues or fitted into external applicators.

Introduction into the tissues is controlled by the empirical observation that the gamma radiation from a milligram of radium can in a period of about five days destroy the cancer cells in a cubic centimetre of tissue. The total amount of radium required in milligrams is thus the volume in cubic centimetres of the tissue to be irradiated, although in the case of large growths, from the effect of cross radiation, a smaller amount will suffice. It must be distributed evenly, the needles or seeds being placed about two centimetres apart, and it must be placed chiefly in the growing edge of the tumour. The needles are attached to stout silk threads, since they contain radium element, and their loss would be disastrous. The seeds may be attached to fine silk threads and be removed later, or they may be simply inserted and left in the tissues, where in most circumstances they do no harm. The insertion of seeds is less likely to be followed by the slight sepsis which sometimes follows the insertion of needles, whilst they have the great advantage that the patient can go home. The action of the needles is, however, uniform, and not diminishing, and on this account they are preferred by some surgeons.

The treatment of a case of carcinoma of the breast furnishes an excellent example of the introduction of radium needles. We may describe the arrangement worked out by Mr. Keynes at St. Bartholomew's Hospital, which has given brilliant results. Two groups of needles are inserted into and beneath the tumour itself on differ...

planes; two rows of needles follow the lymphatics along the borders of the two pectoral muscles; a third group occupies the axilla; a fourth is inserted beneath the clavicle in the region of the costo-coracoid membrane; a fifth is placed above the clavicle; and a sixth group is inserted one in each of the upper five intercostal spaces and one in the rectus sheath. The actual number of the needles will vary between forty and fifty with the dimensions of the breast and of the tumour, and the total amount of radium between 75 and 100 milligrams. The needles are left in place for from seven to nine days and are then removed.

The tongue is an ideal site for the use of seeds. About eight or twelve are required, each containing from 1 to 2 millicuries of radon gas, and they are inserted into the base of the growth, usually through the tongue itself. In this way the actual growing edge is subjected to an intense cross-fire radiation, whilst, as access is obtained directly through the soft tissues of the tongue, the treatment of growths far back, in situations quite inaccessible to ordinary surgery, is perfectly simple. In most cases the tumour will disappear by magic and three weeks later it will have been replaced by a contracting scar. The glands on both sides of the neck are now dissected out in the most thorough manner, and three weeks later the treatment is completed by the external application of radium needles mounted on a thick wax collar made of Columbia paste.

For the irradiation of tumours or of glandular deposits by external application, it is essential that the radium should be supported at some distance from the skin, as otherwise certain areas of the skin will receive a dose which they cannot tolerate and will break down. A convenient plan is to mould a sheet of Columbia paste, a mixture of beeswax 100, paraffin wax 100, and pine sawdust 200, to the region. The wax should be 1.5 centimetres thick, and on its outer surface radium needles should be planted, screened in the ordinary way with 0.5 mm. of platinum. Small needles containing from 0.5 to 1.5 mg. of radium should be distributed at a distance of 1 cm. apart over the surface, whilst special regions, such as the eye or nose, can be protected by the introduction of thin lead plates into the wax mould. The whole appliance should be covered with a thin sheet of lead for the protection of the nursing staff. Even more convenient than wax in many cases is a sheet of spongy rubber; it has the great advantages of lightness and adaptability, and the needles are easily attached to it by strapping. The period of application varies with the strength of the needles and the requirements of the case, from a few hours to a month.

The most dramatic method of applying radium is by the concentration of several grams into a "radium bomb," which is virtually used as a source of intensely hard x rays, the patient being placed at a distance of a foot or more from the centre of the bomb. In the arrangement devised by Dr. Cheval of Brussels 4 grams of radium are embedded in the centre of a hugh block of lead weighing over a ton and supported on steel girders in the ceiling of one room and the floor of the room above. A double cone cut in the lead allows of the exposure of two patients to intense gamma ray radiation, one above and one below. So long as the attendants keep outside the cones, which are marked out by circles on the floor and ceiling, they are perfectly safe, whilst by an ingenious arrangement the radium itself can retire into a recess in the lead block or be advanced to the centre of the cone. The method is costly and very extravagant of radiation, but the results are said to be extremely good.

THE CLINICAL RESULTS OF TREATMENT BY RADIUM.

Turning to the clinical aspects of radium, brilliant results have been obtained in the treatment of rodent ulcer, of carcinoma of the cervix uteri, of carcinoma of the tongue and buccal cavity, and of carcinoma of the breast, in this historical order. It is now being applied in almost every region where cancer develops, and I feel convinced that complete success is only a matter of time. Every region presents its own peculiarities and its own difficulties, and methods which succeed in one region or with one type of growth may fail in another. The mere external application of radium may suffice to destroy a rodent ulcer or a carcinoma of the cervix; it will be futile in the case of the mouth or the breast, where much more drastic methods are required. To show, however, the range of its power I propose to describe very briefly a few of my own cases, making no claim that the results are permanent or that the methods which I have used are the best. The cases do, however, in my opinion, fairly represent the results which one may expect.

Carcinoma of the Palate.

A man of 55 came to see me last April complaining of a discomfort in the palate of three weeks' duration. At the junction of the hard and soft palate, and extending on to both and on to the alveolar margin, on the right-hand side, was a hard nodular mass of ulcerated fungating carcinoma. There was a large mass of hard glands in the right anterior triangle of the neck. The tumour was destroyed with my steam cautery, and the glands were dissected out completely. Healing was perfect in a fortnight, but three weeks later the tumour recurred.

In May I inserted into the base of the tumour six radon seeds, each containing 1.5 millicuries of radon. In fourteen days the growth had disappeared, and was replaced by granulations, in three weeks healing was complete, in six weeks there was no trace even of a scar, and he was wearing his toothplate. He remains in perfect health, with no sign of recurrence.

Epithelioma of the Lip.

A man of 65 was sent to me last September with a huge mass of growth involving the whole of the lower lip and extending almost to the chin. It had started a year previously as a small nodule at the left corner of the mouth. Six needles, each 2 cm. long and containing 2 mg. of radium, were inserted into the lip along the margin of the growth, and were left in place for a week. In three weeks the great bulk of the growth had disappeared, but a week later two small nodules still remaining were treated by the insertion of small radon seeds. A fortnight later the glands were cleared out from both submaxillary triangles, and as the margin of the lip was very ragged a narrow strip was taken from it. In such an advanced case a permanent cure is too much to expect, but the immediate result was remarkable, and from the cosmetic point of view it was extraordinarily good. A remarkable feature was the reappearance of a lip apparently destroyed by carcinoma, demonstrating conclusively the selective action of the radiation employed. No visible carcinoma remained, and, should recurrences appear, they can probably be dealt with by similar means.

Carcinoma of the Thyroid.

A lady of 70 came to me last September with the history that a small swelling, which had always been present in the neck, had for five weeks been growing rapidly, and was now producing severe respiratory obstruction. There was a hard nodular swelling involving both lobes of the thyroid, with several hard glands adjacent to it. It was fixed to the trachea and attached to the skin. It was regarded by myself and by Mr. Hayward Pinch as a typical carcinoma of the thyroid. It grew so rapidly that in ten days the circumference of the neck had increased by 1½ in. Twenty radon seeds, each containing 1.5 millicuries of radon, were inserted through two small punctures, one on each side of the trachea, and were distributed as far as possible throughout the tumour. In ten days the tumour had completely vanished, and although the neck was very thin the thyroid gland could no longer be felt. The circumference of the neck had diminished by 3 in., and all symptoms of obstruction had disappeared. She remains in perfect health.

Carcinoma of the Oesophagus.

A man of 72 had suffered from increasing difficulty in swallowing for three months, and he could now only swallow sips of water with great difficulty. A tall, powerfully built man, he had lost 3 st. in weight, and he was so weak that he could scarcely stand. An x-ray film showed that the oesophagus was obstructed by a malignant growth ten inches from the teeth. On oesophagoscopy a large ulcerated mass of growth was seen encircling the oesophagus, bulging prominently inwards on the left side. Into the substance of the growth eight radon seeds were inserted, each containing 1.5 millicuries. In twenty-four hours there was a distinct improvement in swallowing, which may, however, have been due to the passage of a bougie at the operation. In a week he was taking ordinary soft foods, and was obviously gaining weight and strength. In four weeks he was taking an ordinary full diet, with the sole precaution that he should eat slowly. In six weeks he had gained nearly 2 st. in weight, and appeared to be in perfect health.

Carcinoma of the Stomach.

A man of 53 had complained for three months of epigastric pain, increased by food, of loss of appetite, and of loss of weight, which he estimated at 2 st. On exploration a firm, smooth oedematous tumour of greyish colour was found involving the lesser curvature, and extending upwards almost to the cardiac orifice. It was regarded as a carcinoma of a rapidly growing type, and it was obviously quite inoperable. There were, however, no enlarged glands. Into the substance of the tumour were inserted six platinum needles, each 4 cm. long and containing 4 milligrams of radium element. They were so arranged as to radiate from a centre on the anterior surface of the stomach, and the threads collected here were buried in an invagination of the anterior wall of the stomach, formed as for a Witzel's gastrostomy. The threads were brought out in a bunch through the laparotomy

opening, which was then closed. Five days later the needles were withdrawn without difficulty. The patient made a normal recovery: his pain ceased, his appetite returned, and in three months he had regained his normal weight and was the picture of health.

Angioma of the Meninges.

A man of 45 had suffered for years from fits at long intervals. Recently the fits had become more frequent and severe, and they were now accompanied by loss of consciousness. They were Jacksonian in type, commencing in the left hand and spreading to the face and leg. Beyond a slight increase in the deep reflexes on the left side there was little to be made out on a neurological examination. On exposing the right Rolandic area by means of an osteoplastic flap formed with my craniotome, and on opening the dura, a mass of huge interlacing veins was found occupying the whole of the upper portion of the field, and forming a vascular tumour about three inches in diameter. As no direct treatment seemed practicable the dura was closed, and on to its outer surface were sutured six radium needles, each 2 cm. long and containing 2 mg. of element. The needles were arranged as the spokes of a wheel, and the attached threads were brought out through the central hole in the bone flap. The bone was replaced, the threads were brought through the scalp flap, and the scalp was sutured into position.

The after-history of the case was somewhat remarkable. Three days later he noticed a weakness of the left arm, which developed next day into a complete paralysis. On the following day the needles were drawn out by the threads without difficulty, having been in position for five days. A week later he had completely recovered the use of the arm. There has been no recurrence of the fits, and he seems to be in perfect health.

These cases are only chosen to show the effects which radium can produce in a great variety of situations, and under conditions where the ordinary methods of surgery are not applicable. The brilliant work of Regaud in Paris, of Hayward Pinch and his assistants at the London Radium Institute, of Keynes at St. Bartholomew's, of Cade and his colleagues at Westminster, of Birkett of Manchester, and of many others, has shown that in cancer of the uterus, of the skin, of the breast, and of the mouth and tongue, success can be depended upon as a routine. It has rather been my aim to show how wide are the powers of radium, and that where we have failed it is rather our method of application than our weapon itself which is at fault. I am convinced that we are only on the threshold of a great adventure; I feel that a new world of surgical technique is opening before us; I am beginning to believe that at last we hold in our hands the key to the cure of cancer.

SOME EFFECTS OF DEEP X RAYS UPON THE CELLS OF THE BLOOD.

A PRELIMINARY NOTE ON A PHAGOCYTIC TEST.

BY

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THE experiments about to be described are the result of an attempt to observe *in vitro* the effect of the rays employed in deep *x*-ray therapy upon the living cells of the blood. The rays used were the hardest that it has been possible to generate up to the present. The apparatus used was the latest type of constant potential generator with valve rectification, voltage 220,000, metalix water-cooled tube, filtration 1 mm. copper and 3 mm. aluminium.

That these rays have a destructive effect upon living cells is too well known to need discussion here. It is not clear, however, whether such rapid disappearance of white blood cells as occurs, for example, in cases of leukaemia undergoing deep *x*-ray therapy can be accounted for purely by this destructive effect on the cells themselves, or whether other factors come into play. It is more than probable that whatever direct injury occurs to the cells is caused by the secondary rays thrown out by all elements of sufficiently high atomic weight which obstruct the path of the original hard rays in their course through the body. The greatest cell destruction would then occur in the neighbourhood of foci producing these secondary rays, and the importance of this factor was clearly brought out in our first experiment.

A large block of clean paraffin wax was cast with outside dimensions of approximately 6 in. by 4 in. by 4 in. The block was divided longitudinally so as to form a close-fitting lid over a little central chamber hollowed out in the lower half of the block. The capacity of the chamber was about 2 c.cm. Freshly drawn, oxalated blood could be placed in the chamber and submitted to controlled irradiation.

The methods used in examining the blood will be described in the next paragraph. For the moment the important point to note is that if blood was placed in the simple paraffin block described, practically no lethal effect could be produced upon the blood within one and a half hours, however intense the irradiation. If, however, the little central chamber was surrounded by a layer of material relatively opaque to *x* rays, damage to the cells was very soon apparent. The most satisfactory method of producing secondary rays near the blood was found to be surrounding the little chamber within the paraffin block with a layer of blotting paper soaked in a solution of metallic salts, so that the paper was covered with a thin layer of wax and was separated from the blood only by this layer. Before the metal-containing paper was inserted, blood from cases of splenomedullary leukaemia placed in the chamber was submitted to full radiation for two hours—about six times the therapeutic deep therapy dose—but no definitely lethal effect upon the white cells could be detected. When the paper was inserted, damage to the cells could be observed after only fifteen minutes' similar irradiation. The more closely the chamber was surrounded by metallic salt—in other words, the more intense the secondary radiations—the more quickly were the white cells affected.

Methods of Observing Damage to Cells.

To examine individual blood cells while the blood was being irradiated in the chamber small samples were removed at intervals and thin films spread. These were stained by all the usual histological methods, but no certain differences could be made out to distinguish normal from damaged cells. The oxidase reaction was applied to the films and vital staining with cresyl blue attempted, but again no differences could be demonstrated. The only positive results were obtained when samples of blood, before and after irradiation, were kept under sterile conditions at laboratory temperatures up to three days, at the end of which wet film preparations stained with neutral red were made. It then appeared that nuclear degeneration had occurred more quickly in the irradiated white cells. But the differences were not sufficiently sharp to justify the method for quantitative purposes. It must also be explained that blood counts performed upon the samples of blood in the chamber during and many hours after irradiation showed no reduction in the number of red or white cells present. Furthermore, prolonged agitation of the blood in a mechanical shaker did not result in any breaking up of irradiated cells. In short, no actual reduction of the number of cells, red or white, in the blood could be demonstrated and no changes in staining reaction detected.

The Phagocytic Power of White Cells.

It seemed, therefore, that, in order to demonstrate the cell damage caused by the rays, some direct biological method must be used. Experiments were then made upon the phagocytic power of the white cells towards staphylococci, and this method has, we think, given definitely promising results.

Using a marked teat pipette, small equal quantities of blood were drawn during irradiation from the chamber at five- or ten-minute intervals, and to each was added the same amount of an emulsion of staphylococci in 1 per cent. citrate in normal saline. After allowing these mixtures to remain in the 37° incubator for five to ten minutes films were spread and stained with Leishman's stain, the whole procedure following the lines of an opsonic index determination. Direct examination of the films gave a reading of the percentage of white cells in any particular sample still retaining their phagocytic power. Loss of this power was taken to indicate a lethal effect upon the white cells.

The important points noted as a result of this experiment are as follows:

(*a*) If a normal or leukaemic blood be placed in the chamber and irradiated as described, complete loss of all phagocytic power in the polymorphs is observed within about thirty-five minutes.

(*b*) This loss of phagocytic power appears to be quite permanent. The experiment was varied in different ways and samples of blood given time to recover before examination, but no return of phagocytic power could be detected.

(*c*) In passing, it was noted that in fresh unirradiated bloods phagocytic power was possessed only by the relatively mature forms of polymorphonuclear and hyaline leucocytes. It is of interest that myeloblasts, myelocytes, and transitionals appear to have no phagocytic power towards the usual types of bacteria.

(*d*) The lethal effect appeared to begin upon the polymorphs at about the same point, whether in normal or leukaemic bloods.

Thus the experiments with the paraffin block appeared clearly to demonstrate a directly destructive effect by the rays on the white cells, and also that this destructive effect was produced mainly, if not entirely, by the secondary radiations and not by the original hard rays.

Some success with this method *in vitro* at once suggested applications of the test for phagocytic power upon the white cells of patients undergoing deep therapy treatment.

Direct Tests upon Irradiated Patients.

In this respect the first fact to be observed was that if blood from a leukaemic patient be taken twenty-four hours after deep therapy treatment and, as already described, mixed with staphylococci, a considerable number of the polymorphs, although they stain quite normally, will be found to have lost their phagocytic power. The test was therefore systematically applied to patients during actual irradiation. It was found that, whatever part of the body was irradiated, within about twenty minutes the percentage of actively phagocytic polymorphs began to fall. If the test was repeated at intervals a few other important points could be noted—namely:

(*a*) After full irradiation of the spleen in, for example, a case of splenomedullary leukaemia, although the first treatment will result in loss of phagocytic power in a considerable number of the polymorphs, the percentage varying according to the dose given and the width of the field irradiated, the proportion of white cells which disappear from the circulating blood within the next few hours is much less than this, and it takes a few days for all these damaged cells to be removed from the circulation.

(*b*) While the damaged cells are disappearing, a number of new normal polymorphs are being produced, so that a point is reached at which production and destruction balance each other and the immediate fall in the white count ceases. In some cases it may rise again slightly, and a test of the phagocytic power of the cells then shows that the rise is due to fresh normal cells.

(*c*) If these irradiated cases be, however, further watched it will often be found that although all the damaged non-phagocytic cells have disappeared from the circulation and a secondary rise, as above described, may even have occurred, still the fall in the white count continues. At this stage all the cells are normal in their phagocytic power, and the falling count can be accounted for only by some directly depressant action possessed by the rays upon the source of the cells—namely, the reticulo-endothelial system.

In short, it is evident that we can account for most of the immediate fall in the white count of irradiated cases of leukaemia by the directly lethal effect of the secondary radiations upon the blood cells themselves. But the more gradual later fall probably arises from depression of the white cell producing mechanism. Much further work must be done to confirm and elaborate such points as these, but the initial facts are put forward to illustrate the way in which the methods described appear to throw some light upon the mechanism of the deep *x*-ray treatment of leukaemia.

Irradiation and Normal Blood.

Let us next consider the effect of deep therapy upon the cells of patients showing a normal blood picture. Here, again, according to the intensity of the irradiation which their lesions have required, there is also a fall in the phagocytic power of their polymorphs and a gradual removal of the damaged cells from the circulating blood. This effect lasts for a few days, until, reproduction of new cells becoming gradually more effective, the white count slowly returns to normal.

It will at once be clear, however, that the ordinary methods of blood counting in any of these cases do not, at any particular moment, tell us how many of the patient's leucocytes are normal effective cells. Some such test as we have described must be applied before we can be sure they are functionally normal. We believe, therefore, that the test of phagocytic power in the polymorphs may have useful clinical application in the case of patients treated with deep therapy or other irradiation. Whether the results will be helpful in diagnosis and prognosis is at present under investigation. Meanwhile it may be worth while to note the following points.

The first concerns the known fact that actively septic patients, leukaemic or otherwise, are not usually favourable subjects for irradiation. The septic element often becomes more pronounced, and the demonstration of the rapid disappearance of phagocytic power in the leucocytes of these patients throws some light upon this antiseptic failure. If these patients must be irradiated, it is well to apply the test for phagocytic power so that this function of their white cells shall not be driven too low. For this purpose an ordinary white count is not sufficient.

Secondly, it is clear that the initial fall in a patient's white count, following irradiation, is a function of the number of directly damaged cells. By noting the loss of phagocytic power, even while irradiation is actually taking place, we can make an immediate estimate of what the fall in the white count will be and control the dosage accordingly. Using ordinary methods of blood counting, this fall has actually occurred before we can estimate it. Furthermore, in patients whose white cell count is already low, and in whom it is undesirable to cause too great a fall, a useful method of controlling dosage and of forecasting the white cell loss is the application of the phagocytic test. Irradiation may well be stopped at a point where not more than 25 per cent. of the patient's polymorphs have lost their phagocytic power. Any future irradiation would depend upon the restoration or otherwise of phagocytic power.

Summary.

A method is described of estimating the phagocytic power of the polymorphs in patients undergoing deep *x*-ray treatment, and some possible clinical applications of the test in treatment control are put forward.

Some results with the test are discussed in relation to the theories concerning the effects of irradiation upon leukaemic and other patients.

TONSIL PUNCTURE: A NEW METHOD OF INVESTIGATION.

BY

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DISEASE of the tonsils, as a clinical entity, has been known for many centuries. Celsus, who was born in Rome about the time of Christ, devotes a whole chapter to the subject in his *De Medicina*, and makes many references to tonsillar diseases in other portions of the work.

In our day acute and chronic affections of the tonsils rank among the diseases which are frequently encountered. The work which follows is concerned with the modern viewpoint of the tonsil as a source of focal sepsis. Among such sources the tonsils occupy an important position. Our present investigations have convinced us that this importance has not been exaggerated and that hidden infection in the tonsils may be responsible for much ill health, both definite and indefinite. Irwin Moore[1] gives a list of fifty-one diseases which may result from focal infection of tonsillar origin. The results of such infection may reach and affect any part of the body by way of the lymphatics or the blood stream. Moore states that the general opinion is that after the age of 5 years nearly all tonsils are

useless and are in the majority of cases a menace to health.

The tonsils are examined in every case when a search is being made for a possible source of focal sepsis in a patient, and it is a common experience to discover a tonsil or tonsils which can only be described as "doubtful"—that is, it is difficult to say if we are justified in advising their retention or their removal. The tonsil may even be small and fibrosed, and yet may be a potent source of trouble.

Although much may be learned by an experienced observer from an inspection of the tonsils *in situ*, and from any history which bears upon them, the standards of assessment as to their normality or otherwise have been somewhat arbitrary hitherto, and the personal factor must of necessity play a part in the examining physician or surgeon. We have tried to arrive at a more accurate estimate by means of direct puncture into the substance of the tonsil, with subsequent investigation of the aspirated material on lines which have been standardized.

Reasons for the Procedure.

In order to make clear our reasons for this scheme it is necessary to refer briefly to the structure of the normal tonsil and its alteration in chronic inflammatory disease. A normal tonsil consists of a mass of lymphoid tissue covered on its free surface with the stratified epithelium of the mucous membrane. Its surface is pitted with apertures leading into crypts, which are lined by a prolongation of the stratified epithelium of the surface, and into them the ducts of numerous small mucous glands open. The lymphoid tissue of the tonsil is at intervals aggregated into nodules, in which the lymph cells are more closely arranged than elsewhere. In the centre of these nodules active multiplication of the lymph cells occurs. In the lymphoid tissue are numerous blood vessels and lymphatic channels.[2]

In chronic inflammatory disease the appearances are changed. We find that the chief histological differences are in the crypts and in the epithelium of the surface. The continuity of the stratified epithelium of the crypts is frequently broken at the base of the crypt. In some instances there is a band of fibrous tissue around the crypt, lying close to the surface of the stratified epithelium which lines the crypt—a protective phenomenon in response to constant irritation in the crypt—and this fibrous band, like the stratified epithelium, is frequently broken at the bottom of the crypt. The epithelium on the general surface of the tonsil is rarely intact in such cases, and sometimes there are small areas of ulceration on this surface. The significance of such solution of continuity in the stratified epithelium is obvious. Organisms can obtain a free entrance directly into the tonsillar substance, and they can escape easily in a reverse direction, from the tonsil into the mouth, and be swallowed with the saliva.

Other pathological points which we have noted are a thickening of the capsule of the tonsil; an increase in the interstitial connective tissue, especially in the immediate neighbourhood of the crypts; and sometimes an increase in thickness of the walls of the vessels, affecting chiefly the fibrous layer of the wall. In sections stained by Gram's method it was difficult to pick out organisms, but some short-chained streptococci were occasionally seen in the part of the tonsil near to a crypt; in some cases there were minute abscesses immediately under the capsule; no tonsillar calculi were found.

In view of these findings we repeat that an inspection of the tonsil leads us only part of the way along the track. Particularly if Eve's suction method is employed, it is not unusual to see a crypt or crypts filled with a yellowish mass of micro-organisms or food debris. Although this might be one of the points in favour of condemning the tonsil, it must not be forgotten that this crypt may be intact at its base and may be almost, if not entirely, impervious to the entry of micro-organisms. In fact, the onward march of the latter may actually have been easier in a neighbouring wide-mouthed but empty crypt. The bacteriological investigation of a crypt may therefore be rather a hindrance than a help in determining the true condition of the tonsil. Since it is recognized also to be useless, from a bacteriological standpoint, to rely on cultural results from swabbing the surface of the tonsil, except in such conditions as diphtheria or Vincent's angina, we have adopted the plan of deep puncture into the substance of the tonsil.

Technique of Tonsil Puncture.

(*a*) *Apparatus Required.*

A supply of Bonain's solution, which consists of cocaine hydrochloride, menthol, and pure carbolic acid, 1 gram of each; a probe or forceps for a small pledget of wool, with which this solution is applied to the tonsil; a tongue-depressor; an all-metal syringe with guarded needles, made for us for this purpose by Messrs. Allen and Hanburys, and a test tube containing 5 c.cm. of sterile bouillon.

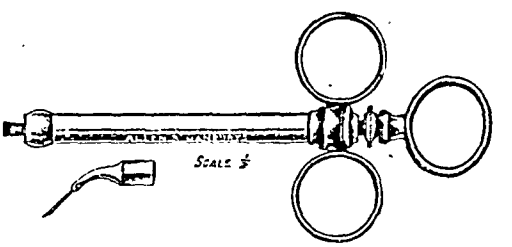
(*b*) *Procedure.*

The operator, wearing a head-mirror, sits facing the patient, and a good light is reflected on to the mirror from a lamp behind the patient's head. The tongue-depressor is inserted and the tonsils are examined. The anterior pillar of the fauces may be pressed upon by another spatula held in the operator's left hand, as recommended by Irwin Moore, thus enabling a thorough inspection of each tonsil to be carried out. After selecting a spot for puncture, which should be preferably in the fleshy portion of the tonsil, away from a crypt, the tongue-depressor is withdrawn.

A pledget of wool is twisted on to the probe or forceps and dipped lightly into the bottle of Bonain's solution. Before withdrawal the wool should be squeezed gently against the side of the bottle in order to get rid of any superfluous solution, which might drip in the patient's mouth.

The tongue-depressor is reinserted and the selected portion of tonsil is swabbed with the pledget of wool steeped in Bonain's solution, the carbolic acid in which makes the surface of the tonsil as aseptic as may be possible. The syringe, with its needle attached, previously sterilized by boiling, is taken in the operator's right hand. The piston is withdrawn about one-eighth of an inch, and is pressed home as the puncture is made. The positive pressure thus obtained tends to dislodge any organisms which might find their way into the needle as it goes through the surface of the tonsil. The needle is pushed into the tonsil as far as it will go; the distance from the point of the needle to its guard is three-eighths of an inch. Once in the tonsil the needle is rotated in various directions, the operator meanwhile exerting gentle suction by withdrawing the piston slowly. After four or five seconds the needle is withdrawn from the tonsil, and care is taken that the needle shall not touch any structure in the mouth during its withdrawal.

The syringe, with the needle attached, is introduced into the test tube containing the sterile broth. The point of the needle should come to a halt about an inch above the surface of the broth, and the piston is then pressed home firmly and quickly. The result is a jet of air, with pus or debris, which is



deposited on the wall of the test tube. Sometimes a definite bead of thick pus is seen, in other cases a small spray of greyish-white material is all that is visible. This material on the wall of the tube is inspected with the naked eye, and the broth is then shaken up so that it becomes thoroughly impregnated with the material which has been shot from the needle.

In rare instances nothing appears to come from the needle when the piston is pushed home. If this is the case, the needle should be introduced into the broth, and some of the latter should be sucked into the syringe and then be ejected. It is advisable to investigate both tonsils, as we have occasionally found one to be sterile and the other to be infected.

The wool plug of the test tube is flamed and replaced; the tube is labelled and put into the incubator, or kept in a suitable warm atmosphere for at least twenty-four hours. A smear from the culture is then stained and microscoped.

Results of Culture.

We have examined 158 tonsils by this method of puncture, the ages of the patients varying from 5 to 51 years. Of these tonsils 17 were found to be sterile on culture.

The following is a list of the organisms obtained from the remainder:

Streptococci were present in pure culture in 111 cases, and with other organisms in 26 cases. Using fermentation tests on the lines suggested by Mervyn Gordon, 81.2 per cent. gave the reactions for *Streptococcus pyogenes* and 18.8 per cent. gave the reactions for *Streptococcus viridans* or *mucosus*; 56.5 per cent. of the streptococci were facultative anaerobes, and 78 per cent. gave a haemolytic reaction on haemoglobin agar.

Diphtheroids were present in 4 cases; staphylococci in 18 cases (3 in pure culture); pneumococci in 5 cases (1 in pure culture); *B. influenzae* in 1 case. One patient who showed staphylococcal infection of the tonsil was suffering from sties and from a pustular eruption on the ear.

It is of interest to note that in two of the cases which were found to be sterile on puncture the patients had suffered from an acute inflammation in the tonsil about three weeks before the puncture was made. The inflammatory process had evidently acted as an efficient, though perhaps temporary, sterilizer of the tonsil.

We have found that little, if any, useful information can be obtained by direct examination of a smear obtained by tonsil puncture. Pus and epithelial debris are frequently present, but it is rare to find organisms in the smear itself.

The Blood Immunity Test.

If after thorough exploration with a needle in the manner which has been described there is no growth of organisms in the broth it appears to be reasonably probable that the tonsil in question is not a source of danger to the patient. But even if organisms grow in profusion in the broth, this is no proof that they are harmful to their host. We therefore pass on to the second stage of the investigation. The work of Solis-Cohen and of Cronin Lowe[3] has emphasized the importance of testing the immunity of the patient's own blood towards organisms obtained from some site of possible infection in his body.

Given accurate standards, with due care in obviating the effects of mass, it appears reasonable that a man's own blood should contain sufficient immune bodies to deal with a small number of organisms from his tissues. In order to obtain correct comparisons with which to work, the following plan was adopted.

A broth culture of streptococci was diluted with more broth until its opacity, after shaking up, was equal to that of a 2,000 million vaccine, and this standard is the one which we always use; 5 c.cm. of supposedly healthy human blood were run into each of five sterile test tubes. The blood in the first test tube was inoculated immediately with three platinum loopfuls of the above culture. The blood in the second tube was inoculated with 0.01 c.cm. of the culture; in the third tube with 0.02 c.cm.; in the fourth tube with 0.1 c.cm.; and in the fifth tube with 0.2 c.cm. Subcultures into broth were made from each tube the next day. It was found that the first tube, inoculated with three platinum loopfuls of the culture, was sterile: but the other four tubes showed a growth of streptococci on subculture. In them the effect of mass was felt.

We have adopted the three loopfuls standard, using a loop of the size shown ○, in testing the effect of his own culture on the resisting power of the patient's blood. We realize that such a standard is not infallible and that it may vary, temporarily or permanently, both as regards the immunity of the "normal" blood and the virulence or otherwise of the strain of organism used in testing. If growth occurs the supposedly normal individual may himself be harbouring, for example, a streptococcal infection. But we have found the three loopfuls to be a good working basis, since, as will appear later, a certain number of patients with infected tonsils can inhibit this strength of their own culture.

To sum up, the broth tube containing the material obtained by tonsil puncture is incubated for twenty-four hours. A film is then stained, and the organisms, if any, are identified. After taking the usual precautions in sterilizing the skin, a sterile needle is inserted into the median cephalic or median basilic vein of the patient, and 5 c.cm. of blood are run into a sterile test tube. This blood is inoculated immediately with three platinum loopfuls of his previously diluted culture; it is then incubated for at least twenty-four hours, and three platinum loopfuls of it are then subcultured into sterile broth. If the organisms originally present in the culture from the tonsil are found to have grown in this subculture, it is presumptive evidence that the resisting power of the patient's own blood is defective as far as the tonsillar organisms are concerned.

It happens not infrequently that more than one organism is present in the tonsil culture. In such cases the blood sometimes exercises a selective power, destroying one organism but failing to inhibit the other. The whole procedure which has been described is in reality quite simple, and can be carried out by any practitioner who is possessed of a suitable syringe, a supply of sterile broth, a platinum loop, and an elementary knowledge of bacteriology. Far from objecting to the investigation, we find that patients welcome it when its objects are explained to them. They realize that a thorough examination has been made, and for this reason they are more willing to submit to a subsequent operation if this is found to be necessary.

In trying any new method mistakes have to be rectified and alterations in technique have to be made. We propose, therefore, for the present, to refer only to the last 50 instances in which this procedure of blood inoculation has been carried out. All the cases showed signs or symptoms which justified an exploration of the tonsils. In these 50 instances the blood was sterile in 11, and grew organisms from the tonsil culture in 39. Neither the age of the patient, nor the sex, nor the type of organism appeared to have any effect as regards the immunizing power of the blood.

If the tonsil is found to be infected, and the patient suffers from such a condition as an arthritis for which no other focal cause can be found, and yet his blood possesses sufficient immunizing power to destroy the organism from the culture, we have had good results from the use of an autogenous vaccine, prepared from the tonsil culture. In this case, of course, the result may be due to non-specific protein shock.

Discussion of the Method.

It will be noted that the relation of adenoids to focal sepsis is outside the scope of our present investigation, which deals only with the method of tonsil puncture. If the tonsils have been found to be diseased and have been removed, the question of the results of the operation is also hardly germane to the present thesis, though it is tempting to record in detail the relief of symptoms and the mental and physical improvement which have almost universally followed the operation. To those patients in particular who have been just within the borderline of ill health for many years, with an absence of *joie de vivre*, and with a mental and physical state which was easily fatigued, as well as to those with more definite ailments, such as backache, joint pains, or skin affections, it comes as a surprise to hear that their tonsils have been found to be diseased. Their scepticism has frequently been followed by pleasant relief after operation. The hitherto uninvestigated tonsil has much to answer for.

We do not wish it to be thought that our interest in the investigation of the tonsils has led to any loss of perspective. We realize the importance of, and deal frequently with, such other sites of infection as the teeth, the nasal sinuses, the genito-urinary tract, and the alimentary tract. As regards the teeth, our profession passed through a phase in which wholesale extraction played a not inconspicuous part. Time brought radiography and saner judgement. We hope that the method of tonsil puncture, especially when it is developed and improved, may save unnecessary tonsillectomy on the one hand, and lead to highly necessary tonsillectomy on the other hand.

An interesting question has been put to us by a colleague: Is it possible that the organisms which are hidden in the tonsil may serve a purpose in the production of antibodies and thus help to immunize the individual by a process of auto-inoculation? This question was introduced by Good many years ago in relation to the crypts. If this is so, removal of the tonsils might be undesirable. Such a process may possibly occur in those cases in which the blood is found to be sterile after inoculation with the organisms. But in other cases, where the blood is not able to resist the organism, we believe that removal of the diseased tonsil is sound in theory and in practice.

Although the tonsil may be the chief source from which the organisms and their toxins pour into the blood stream, the other structures in Waldeyer's ring are frequently found to be infected also, as witness the pharyngeal discomfort which may not clear up for weeks or even months in an adult after the tonsils have been removed and the tonsillar fossae are firmly healed.

In view of Rosenow's work on the selectivity of various strains of streptococci, it would be interesting to know if there is any association between hitherto hidden streptococci in the tonsil and streptococci in the appendix, which, from its structure, has been called the abdominal tonsil, and also if such hidden tonsillar infection may be associated with gastric, duodenal, and jejunal ulcers. The occasional occurrence of the latter after gastro-jejunostomy has never, to our knowledge, been explained satisfactorily. In making such a suggestion we are assuming that the teeth and other possible foci of streptococcal infection have received due attention.

At the risk of reiteration we wish to stress once again the fact that a mere inspection of the tonsils in such cases may lead to an error of judgement, whereas tonsil puncture and thorough investigation may throw light on what has hitherto been obscure in the matter of a cause.

Uses and Possibilities of Tonsil Puncture.

We hope that this method of investigation may be of use to the physician who is endeavouring to trace a focal sepsis, which may be chronic in its manifestations, giving rise to such conditions as fibrositis, arthritis, and neuritis; or acute, in the form of a streptococcal septicaemia whose origin may be baffling. It may be useful to the aurist and laryngologist, both in assessing the condition of the tonsil *per se*, and in relation to affections of the ear and larynx which may spread from hidden tonsillar infection; to the general surgeon, for whom the effects of focal sepsis are also important; to the ophthalmic surgeon, since tonsillar infection plays a part in many eye conditions; to the dermatologist, in helping to solve the problem of certain skin affections; to the neurologist and psychiatrist, since it is becoming increasingly evident that many psychoneuroses and true psychoses may be associated with focal sepsis; and to many other branches of our profession.

We ourselves wish to stress its possibilities in connexion with two outstanding diseases—namely, puerperal septicaemia and carditis. Space will not allow us to go fully into this question, but we should like to outline our views.

We believe that many cases of puerperal septicaemia result from auto-infection, wakened into activity by the stress of labour. The teeth, the urine, and other possible sites of infection in a pregnant woman are now examined as a routine, and we suggest that the tonsils should receive more attention in this respect. If, by puncture, they are found to be infected, particularly by a member of the streptococcus group, and if the woman's immunity is found to be deficient on blood culture, we suggest that an autogenous vaccine should be prepared from the tonsil culture and administered at intervals throughout the pregnancy in order to raise the general resistance as far as possible.

In relation to the prevention of carditis we have high hopes of the usefulness of the method.

It will be seen from the figures we have given that the streptococcus is the organism most commonly found on tonsil puncture. This finding may have some bearing on the question of person-to-person infection in rheumatism, since the streptococcus may be air-borne, especially under crowded and insanitary conditions.

In the report of the Subcommittee of Inquiry into Rheumatic Heart Disease in Children[4] we find that "it is universally recognized that the portal of entry of the infecting organism is, in the majority of cases, through the nasopharynx in general and the tonsils in particular." And again, "In spite of certain difficulties, there is no rival to the streptococcic theory of acute rheumatism." Although the additional question of environment as a predisposing cause must not be forgotten, it seems to us that, from the all-important point of view of *prophylaxis*, it is essential to know if the tonsils of a child are harbouring a member of the streptococcus group.

Another significant fact is the age of onset of acute rheumatism. "First attacks of the severer types occur most commonly about the seventh or eighth year of life," and the tonsils appear to lose their usefulness after 5 years of age. From that time it seems that they cease to be defenders and become attackers. We urge, therefore, that the tonsils of children, particularly those over 5 years of age, should receive due attention from the point of view of exploratory puncture. The procedure is not a difficult one and should require only the same degree of tactful handling as is shown by the school dentist, whose visits, at first a source of apprehension, are now tolerated freely. In the case of a very nervous child we would go so far as to suggest that an anaesthetic should be given for the purpose of tonsil puncture.

If the tonsils yield no growth on culture, they are free from suspicion for the time being, though, of course, the question of adenoids must be borne in mind. The lapse of one or two years, or an attack of sore throat in the meantime, are indications for further tonsil puncture. Should the tonsils be found to harbour streptococci, the child is a potential sufferer from rheumatism, and the removal of the tonsils is a wise step, even without testing the resistance of the child's blood to the organism obtained by puncture, since it is not always easy to obtain blood from a child's vein. If the tonsils are found to be infected we can put the position clearly before the parents of the child.

Although tonsillectomy may not entirely prevent rheumatism, the results of the operation are eminently encouraging, and the report[4] states that "in no case did permanent heart disease show itself for the first time in a rheumatic attack after operation."

We hope that if this method of investigation is adopted, with a wide spreading of the net, it may do much to prevent heart disease in childhood. As regards adults, many sufferers from heart disease acquired such disease in their early years. In the future such early acquisition may be avoided, and it may be possible to reduce the general incidence of heart disease in later life if the tonsils receive due attention by puncture, remembering, of course, other foci of infection also. Heart disease, when once it is established, is an end-result. Our plea is for the efficient investigation of one of the principal sources from which it is known to arise, and for the eradication of such a source when necessary as a measure of prophylaxis.

Summary.

1. Hitherto the condition of the tonsils has been judged chiefly from external appearances.

2. A simple method of tonsil puncture has been described. If the tonsil is found to be sterile removal is probably unnecessary.

3. Should the tonsil be found to be infected, the organisms can be tested against the patient's blood and some idea of the resisting power of the latter to the organism can be obtained.

4. If the immunity of the blood is found to be impaired, removal of the tonsils is probably desirable, other things being equal.

5. Uses and future possibilities of the method are discussed, particularly in relation to puerperal septicaemia and to rheumatic carditis in children.

We wish to express our thanks to our colleague Dr. J. M. Wishart, assistant ophthalmic and aural surgeon, Blackburn and East Lancashire Royal Infirmary, for his interest in the investigation and for allowing us to examine suitable cases; also to Mr. H. W. Floyd, of the laboratory staff, for his help in technical matters.

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CEPHALIC TETANUS.

BY

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WE wish to record the following case of head tetanus as it is an uncommon condition, not often reported, and consequently not well known to the profession.

CLINICAL NOTES OF CASE.

A well-developed boy, aged 12 years, was referred on December 15th, 1927, with the following history. A week previously he had been struck with a cricket bat on the right side of the face. The cheek and side of the nose had been bruised, and an irregular wound caused. This had discharged freely, and a splinter of wood had appeared three days after the accident. Five days after the injury facial paralysis appeared on the right side, and the next day he noticed that the jaws were stiff and he could not open his mouth. He rapidly appeared to become very ill, and the rigidity of the jaws had become extreme.

On examination his general appearance suggested an overwhelming toxaemia. He was of a greyish colour, restless, and emotional, and his respiration was slightly laboured, with a rattle due to mucus collecting in his respiratory tract. There was complete facial paralysis on the right side. Trismus was intense, and he was unable to speak or swallow. He had slight spasm of the facial muscles on the left side. The muscles of the neck were not appreciably affected. There was some hypertonus of the arms.

The wound was about half an inch long, and was situated at the junction of the nose and cheek. His temperature was 96.5° F. and the pulse 80. Subsequently the temperature ranged for the most part a degree or two above normal.

Treatment and Subsequent Course of the Disease.

His condition was improved with 10 per cent. glucose per rectum, and three hours after admission, under chloroform anaesthesia, suboccipital cisternal puncture was performed, and 15,000 units of antitetanus serum were injected after the removal of an equal volume of cerebro-spinal fluid. A further 15,000 units were injected into the facial nerve from its exit from the skull to its peripheral distribution near the wound; 20,000 units were given intravenously. The wound was then opened up and eusol dressings were applied. The jaws relaxed under deep anaesthesia, and opportunity was taken to tie corks between the teeth in order that subsequent feeding could be carried out.

During the next twelve hours his general condition improved slightly, and under anaesthesia 20,000 units were injected into the cisterna by suboccipital puncture, 20,000 intravenously, and 10,000 into the facial nerve distribution. He improved still further, though trismus and facial paralysis were unchanged. Swallowing was still difficult.

On December 18th 20,000 units were given intravenously. The next day, though the temperature and pulse were both still high, there was improvement in the general condition. Trismus was still severe, and any interference with the corks between the teeth increased the spasm; though urged to swallow sips of water and milk the patient was manifestly afraid to attempt this. There was no tendency to generalized spasm. Under chloroform anaesthesia 10,000 units of antitetanus serum were given into a vein.

The following day the slight improvement already evidenced was maintained, but fluid by the mouth was piteously refused, the patient being terrified of attempting to swallow. There was a noticeable smell of acetone in the breath, and this remained evident for nearly a week longer, in spite of the fact that copious enemata of glucose and water and of sodium bicarbonate solution were regularly given and satisfactorily retained. On this day, December 20th, chloroform was administered, and 10,000 units were given intravenously, and the opportunity was taken to remove the corks, which were almost bitten through. These were replaced by two round wooden blocks fashioned like little cotton-reels, adjusted between the bicuspid teeth on each side and fastened together by a string behind the head. Improvement was slow, but occurred day by day.

On December 22nd there was complaint of soreness in the shoulders and arms, but no spasm except in the masseter. Under chloroform 10,000 units were given intravenously and 10,000 into the spinal theca by a puncture in the upper lumbar region, after the withdrawal of a corresponding quantity of cerebro-spinal fluid.

On December 24th, 26th, and 28th intravenous and subcutaneous injections of 10,000 units each were given under anaesthesia. On December 29th trismus was noticeably less, and for the first time the patient allowed one to remove the wooden props, and was able voluntarily to separate his jaws half an inch. He took sips of water, and sucked a small piece of orange. The props were replaced for the night.

The next day he was better still, and took a little drink of milk. Barley sugar was given him to suck, and from this time on the starvation acidosis seemed to disappear, and acetone was no longer present in the breath or the urine.

As his confidence in his swallowing powers returned his diet was steadily increased, the wooden props were dispensed with, and he began to speak intelligibly. On account of this rapid improvement it was thought that further administration of serum was not required, but in view of subsequent events this discontinuance, even in face of the steady abatement of symptoms, was probably unwise.

For the first week of January improvement was steady, and the boy began to eat with appetite, indeed almost ravenously, and to sleep soundly for ten or twelve hours at night. He was allowed to sit in the sun on a balcony for an increasing time each day, and then to walk from his bed to the balcony. All this time, though trismus had been abating steadily, the right-sided facial palsy was still complete. In addition, there was a frequent rise of temperature to 99° or 99.6° F., usually in the evening, but sometimes occurring at other times. Accordingly, on January 10th, after an experimental minute subcutaneous dose, 25,000 units of serum were given subcutaneously and intramuscularly with no ill effect, and with a subsequent lowering of the temperature on the next two days. On January 12th 10,000 units were given, also subcutaneously, and on January 16th 10,000 units were given intravenously; following this there were marked anaphylactic symptoms within a few minutes of injection. Abdominal discomfort, vomiting, diarrhoea, pallor, generalized urticaria, and a pulseless condition caused some alarm. Adrenaline, injected at once, was associated with rapid improvement.

The patient was discharged to his home on January 23rd. He could then open his mouth half an inch. The paralysis was not quite complete. He still looked very frail, and his evening temperature was 99° to 99.5° F. During the past two months the paralysis and trismus have completely cleared up. His general health is now good.

We attribute his recovery mainly to the massive doses of serum administered, and more especially to the route used in this particular case. Both experimental and research investigation seem to point to the advisability of getting the serum to the area in which the toxin is concentrated, and in this case it was possible to carry this out very completely. The injections into the cisterna gave a high concentration in the region of the pons and medulla and intracranial course of the seventh nerve. The injection into the facial nerve distribution from the stylo-mastoid foramen to the region of the wound increased the concentration still further. Serum not utilized locally by these injections is absorbed and adds to the effect of the intravenous and subcutaneous doses.

Summary of Amounts of Serum given and Route Adopted.

Date.	Cisternal.	Spinal.	Intravenous	Subcut. or Intramusc.	Facial Nerve and Wound	Total Units.
	Units.	Units.	Units.	Units.	Units.	
Dec. 15...	15,000	—	20,000	—	15,000	50,000
,, 16...	20,000	—	20,000	—	10,000	50,000
,, 18...	—	—	20,000	—	—	20,000
,, 19...	—	—	10,000	—	—	10,000
,, 20...	—	—	10,000	—	—	10,000
,, 22...	—	10,000	10,000	—	—	20,000
,, 24...	—	—	10,000	10,000 (I.M.)	—	20,000
,, 25...	—	—	10,000	—	—	10,000
,, 28...	—	—	10,000	10,000	—	20,000
Jan. 10...	—	—	—	25,000	—	25,000
,, 12...	—	—	—	10,000	—	10,000
,, 16...	—	—	10,000	—	—	10,000
						255,000

COMMENT.

Cephalic tetanus was first described by Rose in 1872. By 1911 some ninety-four cases had appeared in the literature, and Brown[1] gives an excellent summary of cases reported up to that time. In 84 per cent. of these cases

the first sign of the disease had been trismus, either alone or accompanied by paralysis of one or more cranial nerves. The mortality in which paralysis preceded trismus was 64.2 per cent., as compared with 53.2 per cent. for cephalic tetanus as a whole. Paralysis of the facial nerve was the commonest form of paralysis and appeared on the side of the lesion. Bilateral paralysis had occurred in seven cases, but in all but one the wound had been in the mid-line of the head.

Since this time relatively few cases have been reported. Most of these have been in Continental literature. The rarity of the condition is shown by the fact that the *Medical History of the War*[2] reports only two cases of head tetanus out of 2,529 cases of tetanus occurring on the Western front. A very complete description of head tetanus is given by Courtois-Suffit and Giron,[3] and an admirable illustration by Quervain in *Clinical Surgical Diagnosis*.[4]

The prognosis in head tetanus is, judging from mortality statistics in the cases recorded, much that of the more common generalized form. The incubation period is less, apparently owing to the shorter distance the toxin has to travel, but even with a short incubation period—provided the spasm remains localized to the muscles of mastication—the prognosis is not affected. It would appear that the patient's attention is drawn to his condition earlier in head tetanus, and consequently treatment is more likely to be offered before the toxin has spread to other parts of the nervous system.

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ADENOMA OF THE LIVER WITH MALIGNANT CHANGES ASSOCIATED WITH INFANTILISM.

BY

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CASES of adenoma of the liver are uncommon, but the association with infantilism and the development later of malignancy in the tumour make this case of especial interest.

Clinical History.

A domestic servant, aged 19, was admitted to the Horton General Hospital, Banbury, on September 9th, 1927, complaining of vomiting and diarrhoea. Up to the age of 13 the patient had been healthy and of normal growth. Since that time she had ceased to grow, and there had never been any menstrual periods. Mentally she was bright, and up to the average standard at school. In every other way her health was excellent. Three weeks before admission she began to have attacks of vomiting two or three times daily soon after food: this was unassociated with nausea, and the appetite was good. There was no complaint of pain. At the same time diarrhoea came on. The only other symptom was an aching pain in the region of the right iliac fossa, which began the day before admission and aggravated the vomiting; the appetite, however, was still unaffected. There was nothing to note in the past history beyond the arrest of development at the age of 13. She had a mother and father and five brothers and sisters living and in good health.

On examination the patient appeared undersized for her age, her height being 4 ft. 8 in. and the weight 4 st. 10½ lb., but she was otherwise healthy. The eyes were normal. There were a few slightly enlarged cervical glands on both sides, but the thyroid appeared normal. The skin of the whole trunk showed a faint brownish pigmentation. There was no abnormality in the chest. The abdomen moved well on respiration, but was uniformly distended. Pubic hair was present. There was no tenderness. The liver edge was palpable 2½ in. below the right costal margin. The spleen and left kidney could not be felt. In the right flank was a mass of dense consistency, deep to the parietes and *having an irregular craggy surface. Above, it was* continuous with liver dullness; below, it extended to within 2 in. of the anterior superior iliac spine. It was fairly mobile antero-posteriorly and laterally. Above Poupart's ligament on each side irregular craggy masses could be palpated. No free fluid could be detected. Knee-jerks were present and equal. There was no oedema of the ankles. The urine was acid, specific gravity 1020, no albumin or sugar.

The diarrhoea and sickness improved during the first three weeks in hospital, but the abdomen slowly increased in size, the tumours showing no appreciable change. Four weeks after admission free fluid was definitely detected, and after this the girth of the abdomen increased more rapidly. Two weeks later oedema of both ankles developed, *and the superficial abdominal* veins became very dilated.

On October 31st (about seven weeks after admission) the abdomen was tapped to relieve dyspnoea and general discomfort, and 8½ pints of clear sticky light yellow fluid were drawn off. This contained 2.3 per cent. of albumin, and in the centrifugalized deposit were little masses of tissue cells such as might be shed from some growing epitheliomatous structure. On November 11th a further 3½ pints were drawn off. From this time the patient went rapidly downhill, and died, after being comatose for twenty-four hours, on November 17th—ten weeks after admission. Throughout the patient was apyrexial, and the pulse rate averaged 80 to within the last fourteen days, when it ranged between 100 and 130.

Pathological Findings.

Post-mortem examination revealed some clear blood-stained fluid free in the peritoneal cavity. The great omentum was much thickened and enlarged by numerous knob-like deposits of growth, which completely covered its surface. All other peritoneal folds, and the abdominal surface of the diaphragm, were studded with these knob-like masses of growth closely set together. On the right side of the abdominal cavity, extending down from the liver, was an elongated mass about 5 in. long by 2½ in. by 3 in. Its upper pole was embedded in the right lobe of the liver, but marked off from the liver substance by a definite capsule. It was separate from the right kidney and suprarenal. On section it was firm, and had a hard core of fibrous tissue with a small calcified patch in the centre. The liver itself was somewhat enlarged, and showed congestion on *section; there were one or two knobs of growth on its surface.* The gall-bladder was normal. The kidneys and suprarenals were a little congested, but otherwise normal. The pancreas was normal, and the spleen was not enlarged. The pelvic organs were set in a dense mass of knobby growth, which surrounded and pressed on all the vessels. The uterus and tubes, which were dissected out with difficulty, were infantile, and the ovaries could not be distinguished. There was no *retroperitoneal growth. Examination of the brain, head and* neck, and thoracic organs revealed nothing of note.

Dr. A. G. Gibson of the Radcliffe Infirmary, Oxford, very kindly made a histological examination of the growth. The elongated tumour embedded in the liver showed hypertrophied masses and strands of liver substance. At one spot in the capsule of this growth there was evidence of rapid metastasis into the peritoneal tissue. The secondary growth in the peritoneum showed evidence of much more recent and rapid cell formation, and consisted of strands of liver-like cells with a fibrous stroma. There was no resemblance either in the primary or the secondary growth to a suprarenal or a kidney growth.

Comment.

The tumour was presumably an adenoma of the liver with secondary malignant changes. These rare tumours are described as being often congenital, and the structure of this one, with its fibrous and calcareous centre, goes to show that it must have been of slow growth and present for some long time. When they occur, malignant change is not an uncommon sequel.

It was difficult to account for the lack of development, which did not appear to conform to any well-known type. Deficiency of anterior pituitary lobe secretion at first seemed a possibility, but *x* rays showed a normal skull, and *post mortem* there was no macroscopic abnormality of the gland. Moreover, the presence of pubic and axillary hair is an unusual feature of this condition. The thyroid gland was normal in appearance, and in other ways the patient did not conform to the type of under-development associated with hypothyroidism. Renal infantilism was a third possibility, but the urine was always normal, and the kidneys showed no marked change. Chronic diseases in childhood may delay development, and it would seem, therefore, that in this case the infantile condition of the patient is to be attributed to the state of cachexia produced by a long-standing liver tumour.

My thanks are due to Dr. Penrose of Banbury, under whose care the patient was admitted to hospital, for permission to publish this case, and for suggestions in putting together these notes.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

TREATMENT OF HAEMOPTYSIS.

THE method here described for the arrest of haemoptysis by the *supraglottideal injection of adrenaline* was proposed by my assistant, Dr. Giuffrida, in the course of our joint studies on the local treatment of pulmonary tuberculosis. The injection is carried out by means of a 5 c.cm. syringe, to which is fitted a cannula 2 mm. in diameter and 11 cm. in length, of which the distal 4 cm. are bent on the remainder at an angle of 110°. The material injected consists of 1 c.cm. of a 1 per cent. solution of adrenaline, to which has been added 2 c.cm. of boiled water. The patient, who must be in a good light, is asked to breathe as slowly and deeply as possible, while the operator, holding the tongue between the thumb and forefinger of the left hand and the syringe in the right hand, introduces the cannula along the side of the tongue to the epiglottis, and during a deep inspiration injects the solution. The patient's body is now inclined towards the diseased side, so that the drug may be distributed along the bronchial surfaces to the affected area. The haemorrhage usually stops at once, the method having failed in only six out of a hundred cases. Recurrences may be prevented by repeating injections twelve-hourly for three days, or even six- or eight-hourly should recurrence take place in under twelve hours. Dr. Giuffrida has shown that adrenaline introduced intratracheally has only a local haemostatic action and is without appreciable effect on the blood pressure. The value of the method has been confirmed by Cioffi and Grossi, but does not appear to be as well known as its practical worth would justify. I think the reason for this is that the technique is thought to be complicated and delicate, and its performance to require training and experience. This is not really the case. Although supraglottideal injections may be difficult under normal conditions owing to pharyngeal and laryngeal irritability it is usually easy in the patient with haemoptysis whose psychic condition is associated with a diminution of reflexes.

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TREATMENT OF ACTINOMYCOSIS.

IN view of the recent reports of the successful treatment of *actinomycosis* the following account may be of some interest, even although the result was not happy.

A young man, aged 21, was admitted to hospital on May 28th, 1927, complaining of abdominal pain and vomiting of about ten days' duration. There was a cough, accompanied by mucopurulent sputum, and some rigidity on the right side of the abdomen; indeed, for a time the case was closely observed in view of the possibility of appendicitis. However, in a few days the abdominal signs largely disappeared and, with the development of dullness and other signs of consolidation at the right base, a diagnosis of pneumonia was made. The patient was discharged on June 29th, 1927. The general condition was not good, although all physical signs in the chest and abdomen had cleared up.

On August 23rd, 1927, the patient was readmitted as a case of tumour of the pelvis, there being burning pain on the left side of the abdomen of about three weeks' duration. He had not been fit for work since dismissal, but had not been confined to bed. Examination showed the presence of a firm swelling occupying practically the whole of the left iliac region, and extending an inch or two to the right of the middle line; it was subtympanitic to percussion, and tense, but not fluctuant. The affected area was somewhat board-like to the touch. A rectal examination was negative. The condition was thought to be probably a tuberculous abscess in the abdominal wall. Examination of the lungs was negative. By August 25th the patient was running an intermittent temperature. The swelling was now fluctuant, so it was incised; an abscess cavity in the abdominal wall was opened, and a fair quantity of blood-stained "cold" pus evacuated. This was examined microscopically, but the report was indefinite. The induration surrounding the area gradually increased, and a clinical diagnosis of probable actinomycosis was made. Granules were observed in the pus, and these, when examined microscopically, showed streptothrix mycelium. The condition gradually became worse. Sinuses developed in the hypogastric and right iliac regions, some of them discharging faecal material, and death ensued on May 16th, 1928.

Treatment began in 1927 with the administration of intravenous injections of collosol iodine; 1,176 c.cm. were thus given between September 11th and 29th. Thereafter, until October 21st, collosol iodine was given by mouth in doses of 1 oz. three times a day. On October 25th treatment with the French tincture of iodine in milk began, the initial dose being 2 minims twice daily; this was gradually increased up to 7 minims twice daily; it was discontinued about the end of February, 1928. The iodine was well tolerated, but clinically the condition did not improve. X-ray treatment was also employed under competent directions. No vaccine therapy was tried.

H.M.S. *Rosemary*, Portsmouth. D. LIVINGSTONE POW, M.B.

ACCIDENTAL TRANSFIXION OF PELVIS BY A METAL STAIR-ROD.

THE following clinical details of an interesting surgical case appear to be worthy of record.

A steelworks labourer, aged 35, was admitted to the Royal Infirmary, Sheffield, on September 28th, 1928, after an accident. While going downstairs he trod on the end of a loose stair-rod, and fell heavily, in a sitting position, on to its upturned end, which penetrated his perineum. He walked a few yards crying for help, and then fell to the floor, being seized with very severe pains down his left thigh.

On admission he was seen to be lying on a stretcher in the knee-elbow position with his knees apart, and though obviously in great pain he was not suffering from any marked degree of shock. About twelve inches of a bent thin brass stair-rod protruded from his perineum. The entrance wound was just to the

right, and in front of the anus, and the buried portion, which was afterwards found to be about ten inches in length, traversed the pelvic cavity; the distal end could be seen sticking up under the skin of the abdominal wall in the left iliac region, as shown in the accompanying reproduction of a photograph which was taken after he had been anaesthetized.

The patient was anaesthetized in the knee-elbow position, prepared for operation, and then turned over into the lithotomy position. After rectal examination and the passage of a full-sized metal catheter had shown that the bowel, urethra, and bladder had escaped injury, the stair-rod was pulled out with some difficulty.

The entrance wound was then excised, and the track of the rod was found to run through the central point of the perineum just posterior to the bulb of the urethra. The patient was then placed on his back, and the distal part of the track was exposed by a curved incision in the left iliac fossa. After division of the muscles of the abdominal wall the intact peritoneum was stripped back, and the contused blood-stained track through the substance of the ilio-psoas muscle was seen to run down into the pelvis, deep to the undamaged external iliac vessels. The peritoneum had escaped injury, as the rod appeared to have passed from the central point of the perineum between the layers of the levator ani muscle to the wall of the pelvis, which it followed closely in its upward course round the brim into the iliac fossa. The peritoneum was not opened, as there was no sign of effusion into it; both wounds were stitched up without drainage; the patient was given 1,000 English units of antitetanic serum and 25 c.cm. of anti-gas-gangrene serum.

On the day after operation it was obvious that the left anterior crural nerve had been injured, as a complete paralysis of the quadriceps extensor group of muscles was associated with anaesthesia of the skin over the anterior and inner aspects of the left thigh. The abdominal wound healed by first intention, while the perineal wound for some days showed signs of mild infection. The limb was put up on a back splint, and treated daily by massage and galvanism, and the man was discharged to out-patients on November 6th with the leg in a walking calliper splint.

I am indebted to Mr. T. B. Mouat, who performed the operation, and to Mr. Finch, under whose care the man was, for permission to publish particulars of his case.

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Reports of Societies.

ULTRA-MICROSCOPIC VIRUSES.

RESUMED DISCUSSION AT ROYAL SOCIETY.

THE discussion on ultra-microscopic viruses infecting animals and plants, which was opened at the Royal Society on February 28th (reported in the *British Medical Journal*, March 9th, p. 447), was continued on March 14th, with Sir DAVID PRAIN in the chair.

Vaccinia and Variola Virus.

Professor J. C. G. LEDINGHAM, chief bacteriologist of the Lister Institute, said that his impression, after listening to the first part of the discussion, was that these ultra-microscopic viruses appeared to be similar in most of their characteristics and pathogenic features to visible bacteria, the only difference being one of dimension. Further enlightenment, he thought, would come on the microscopical side through the efforts of Mr. Barnard and his colleagues. Professor Ledingham then passed on to consider the variola virus and the extraordinary transformation after passage through animals, such as the ox and calf, which had made vaccination against small-pox possible. There was a parallel in rabies virus, which, after passage through rabbits, was so altered as to have power no longer to infect dog or man on subcutaneous inoculation, and this had brought into being the Pasteurian antirabic treatment. He did not think that the possibilities of securing living attenuated variants had been quite adequately explored in connexion with animal viruses. It was possible that the immunity conferred by the killed virus was not of long duration; it might be just sufficient to give protection for the period during which the host was susceptible to the disease, but it was not in the same class as the immunity conferred by vaccination against small-pox. With regard to tissue affinity, it had been shown that in the case of certain viruses the point of attack was the reticulo-endothelial system, which took the chief part in the defence. Much which was of general applicability to the study of viruses had been gathered from experiments designed to test how far their proliferation in the tissues could be inhibited or enhanced by the artificial alteration of the "seed-bed" into which they had been introduced. It was known that the action of a virus could be enhanced by adding to it some tissue extracts, or be inhibited by causing some inflammation of the skin—for example, by x rays or the injection of Indian ink. In this respect these viruses did behave very similarly to visible bacteria, and were influenced in the same way. The question of combined virus and bacterial action was also interesting. The classic instance was the association of *B. suipestifer* with the virus of swine fever.

Dr. R. N. SALAMAN, director of the Potato Virus Station, Cambridge, spoke of virus disease as affecting the potato plant. It had been suggested that physiological disturbances due to the introduction of a foreign protoplasm into the plant might be the cause of virus disease, but from experiments, of which he gave an account, he thought it could be concluded that in the potato there was a virus disease which was certainly not due to any physiological disturbance. One curious feature of the potato experiments was that the potatoes of the best varieties were the best carriers. The differences in tolerance were rather striking, and simply from the different degree of the plant's tolerance two varieties of disease could be distinguished one from the other when both produced the same symptoms.

Evolution and the Virus.

Professor F. W. TWORT, superintendent of the Brown Institution, University of London, said that if the ordinary theories of evolution were accepted it must be admitted that the bacterium was a highly organized being, and that there existed forms which were more primitive, otherwise the evolution theory would have to be modified. If there were these more primitive forms in existence it seemed not unreasonable to think that the viruses might be representatives of such forms, and if they existed as viruses in disease it was probable that they existed also outside disease. It would also follow from the supposition that these viruses were representatives of more primitive forms of life, that they must have existed before the organic world was built up, and thus could not have had originally organic material as their foodstuff. They must have obtained their energy from some other source—for example, atmospheric or electrical. It was well known that there were certain atmospheric conditions, particularly those involving electrical disturbance, which had considerable influence on certain states known to be associated with bacteria—for example, decomposition of milk. Climatic conditions also affected materially the appearance and extent of certain effects. Ordinary bacteria, again, would show differences in action according as to whether they were placed in a copper-lined incubator or in a cupboard open to any electrical disturbance that might be present. The speaker suggested that beyond the ordinary radiations which were known to be beneficial or even essential to man—the rays of light and heat—there were other rays of much higher frequency which were detrimental. He had himself carried out a considerable number of experiments on rays of a range of about 31 metres, and he had found indications, particularly with regard to bacteriophage, that these rays had some effect upon the activity of the parasite.

Differences in Immunity.

Dr. C. H. ANDREWES said that the impression left on his mind after the first meeting was that most of the speakers were of opinion that viruses might not be very different from bacteria, and that the immunity might be very much the same in both cases. He wanted, however, to take up the opposite point of view and to stress the differences in immunity as between bacteria and viruses affecting animals. In the first place, most virus diseases left behind them an immunity which was very definite or even absolute—absolute in the sense that it could not be broken down, as the immunity with most bacterial diseases could be broken down, by giving sufficiently large doses to the agent. The immunity was also very lasting, even apparently lifelong. Some workers suspected that this very lasting immunity might be associated with latent persistence of living virus in the animal. Again, it was not possible to immunize in general nor to evoke the production of antibodies against the virus by using heat-killed virus; on the other hand, it was possible to immunize and evoke the production of antibodies by inactivating the virus with such substances as phenol. But this failed to explain the rather remarkable fact that the production of antibodies with these killed viruses could only be effected by using an animal species naturally susceptible to the disease in question. Further, the serum of animals immune to virus disease contained certain antibodies which appeared to be different from other antibodies. In no case had it been shown that the antigen concerned in these reactions was the virus itself. The more characteristic antibodies associated with virus infections had these properties. If an immune serum was mixed with the virus in question and inoculated into a susceptible animal, the typical local or general infection exhibited on giving the virus alone, with no serum, did not develop. It had been assumed that the antibody had acted on or neutralized or perhaps killed the virus *in vitro*, but it did not follow that this obvious explanation was necessarily the correct one. The speaker described some experiments which had shaken his faith in the theory of the union of the virus and antibody in vitro. Further, some experiments at present in progress with vaccinia had indicated also that there was no evidence to be obtained at all readily of any union of the virus and the antibody in the circulation of the animal. If no union occurred outside the body nor in the circulation, one suspected that the essential protective action of the immune serum had to be sought for in the neighbourhood of the cell itself. Yet there were other experiments, again with vaccinia, which suggested that the protective action

of the immune serum did not occur if the virus had been allowed to get inside the cell beforehand. The virus was apparently able to multiply and flourish in the cell which was bathed by fluids containing the antibody. This made one wonder whether the protective action of the immune serum might not operate on the surface of the cell, preventing the virus from getting inside the cell and invading it. He believed there was enough evidence to indicate that the body's defence against a minute parasite such as a virus was probably a very different thing from its mode of protection against the larger bacteria.

Electrical Behaviour of Viruses.

Dr. S. R. DOUGLAS, director of the department of experimental pathology, National Institute for Medical Research, spoke on the electrical behaviour of these viruses. Previous to 1927, observations of the migration of the virus in the electrical field had given most discordant results, but during that year Dr. Todd of the National Institute devised an apparatus for working out these experiments. Using the bacteriophage of the Shiga dysentery bacillus, under different electrical conditions with various *p*H concentrations, the virus was found always to travel to the positive pole. In many of these virus diseases the blood had been found infective. Attempts had been made to discover in what portion of the blood the virus was situated. The history of these researches began with work on rinderpest, when it was found that blood which had been centrifuged and divided into two portions, one consisting of plasma and the other of cells, was free from all virus in the plasma, while the cells were highly infected. In 1914 Charles Todd, again working with rinderpest, found, not only that the plasma was not infective, but that the virus was contained almost entirely in the leucocytes; at least, the leucocytic layer contained one hundred times as much virus as the red cell layer. More recently, Wilson Smith, working in the speaker's laboratory with vaccinia, found that even after intravenous injection of the vaccinia virus into rabbits the plasma was infective for the first twenty-four hours, but that after that, up to the ninth or tenth day, the virus was confined entirely to the leucocytes, the red cells *being free. In the later stages, from the fifth to the ninth* day, although there was a considerable amount of virus present in the leucocytes, the plasma contained a large amount of antibody, which was completely able to mask the production of the lesion when the whole blood was injected.

Yellow Fever Virus.

Dr. EDWARD HINDLE spoke on the yellow fever virus, which, he said, was only moderately filterable. It passed through the coarser filters, and was arrested by the finer ones, but a very peculiar effect emerged from the filtration —namely, that the virus had a different size in the blood from what it had in the mosquito which transmitted the infection. This suggested that some form of evolution took place in the intermediate host. The virus in the mosquito was arrested by even the coarest kinds of filter. Another point which supported the view that the virus of yellow fever was a living organism was the undoubted variation in mortality in virus diseases. In epidemics of yellow fever variations ranging from a mortality of 10 per cent. up to one of 80 or 90 per cent. were found, and the speaker thought that this could be explained by assuming that the virus had similar variations to those found in plants and animals. The features of immunity in most of these animal virus diseases seemed to be distinct from the immunity in bacterial diseases. The very solid immunity obtained in the case of virus disease was a very peculiar thing. In yellow fever the inoculation of a presumably killed virus had produced an immunity in monkeys which, tested up to five and a half months, had shown no sign of diminution, and was continuing.

Dr. BRIERLEY of the Rothamsted Experimental Station said that one of the outstanding differences as between animal viruses and plant viruses was the weight which was placed by the pathologist upon filterability. The plant pathologist did not pay anything like as much attention to filterability as the animal pathologist. A great many plant viruses were not filterable at all, or, if they were, nothing was known about this property. Another striking feature of plant viruses was the way in which they existed in a large number of closely related strains which in nature were yet quite distinct. This had been shown by Dr. Kenneth Smith and others in this country. The extreme specificity of insect transmission in many plant viruses was also very striking. Certain insects would only carry certain viruses. He believed the virus to be some form of organism of the same order of life as bacteria.

Mr. J. E. BARNARD showed a few more slides illustrating the results of his work in ultra-violet microscopy. Among the examples shown were colonies of the virus of bovine pleuro-pneumonia. Photographed by ultra-violet light with dark ground, they appeared well differentiated, whereas in visible light, Mr. Barnard said, it would have been impossible to ascertain from the structure the type of organism. Mr. Barnard said that in his opinion there were at least two saprophytic viruses, probably non-pathogenic, which it was possible to grow and reproduce, though not with great regularity. Of viruses in general, he said that it appeared that these organisms could grow and reproduce themselves in the same way as the ordinary bacillus, but they could also revert to a form in which reproduction was, in his opinion, by an entirely different mechanism.

Is the Virus a Growth-promoting Substance?

Professor A. E. BOYCOTT, director of the pathological department, University College Hospital, who closed the discussion, took up the question of the ultimate origin of the viruses. What had struck him about these viruses was their likeness in behaviour to ordinary pathogenic bacteria. *But wherein did the likeness consist?* In certain superficial resemblances, in the fact that they multiplied (and anything that multiplied we called life), in the fact that they were easily destroyed by heat, which was also known to be destructive of living things, and also in the fact that they caused, like known bacteria, definite disease which could be transmitted from one individual to another. These were, of course, strong reasons—though all of them were on the ground of analogy—for saying that these organisms resembled bacteria. But several of the speakers had evinced a certain uneasiness as to whether these viruses did belong to the same order. There were many considerations which gave rise to doubt. Might not analogy be equally invoked to explain the viruses on the lines of growth-promoting substances? If one took a tissue culture and desired to grow it, one could stimulate it, generally for convenience with embryonic tissue, though it was not necessary that the tissue be embryonic; and by spreading it out, it was possible to grow a great deal more than one started with. In other words, there was a process of multiplication, not essentially different from what was found in, say, the virus of foot-and-mouth disease. This growth-promoting substance, which came into action, for example, immediately following a cut finger, was very similar in some respects to the virus, but no one would say that it was, in any sense of the word, life. The cancer virus differed essentially from the viruses causing epidemic disease, because what it brought about was a local disease belonging to an individual, and there again a form of multiplication occurred very similar to what happened in ordinary growth-promoting substance of normal tissue. With cancer virus, unlike viruses causing epidemic disease, it was possible to start at the beginning, experimentally. In the case of the virus of foot-and-mouth disease, or canine distemper, or measles, it was necessary to start with the disease in question, but in the case of cancer virus one need not necessarily start with *the tumour.* The tumour could be made to begin by irritating the tissues. It seemed to him that with these viruses analogy could be thrown whichever way was desired. It was analogy in either case, and analogy was all that was possible. Take it in one way, and the virus was like a bacillus; take it in another way, and it was more like a growth-promoting substance. At present it seemed impossible to find any criterion which would enable a distinction to be made between them.

TREATMENT OF TETANY.

AT a meeting of the Section of Therapeutics of the Royal Society of Medicine, on March 12th, with the president, Professor J. A. GUNN, in the chair, a preliminary communication on the treatment of chronic tetany with steatorrhoea in adults was presented by Dr. G. C. LINDER and Dr. C. F. HARRIS.

Dr. Linder dealt first with the different types of tetany, and called attention to some of the difficulties encountered in any accurate study of calcium and phosphorus metabolism. He pointed out that the association of tetany and fatty diarrhoea in children with coeliac disease and in adults with sprue had been recognized for many years. This study of three cases of chronic tetany with steatorrhoea in adults, one of whom had suffered from sprue, showed the calcium and phosphorus in the serum to be very much lower than the normal. The tetany was therefore allied chemically to that of rickets. Detailed determinations of the intake and excretion of calcium and phosphorus were made as frequently as possible, as well as observations on the serums, and Dr. Linder showed many charts illustrating the vast amount of work entailed. In the first case calcium chloride by the mouth proved a most effective agent for the relief of tetany and restoration of a normal concentration of calcium in the serum, but after a long period the occurrence of pains in various parts of the body called attention to the fact that decalcification of bone was occurring. This was attributed to neglect of the depression in serum inorganic phosphorus, which was deepened by the acid effect of the calcium salt. Subsequent treatment of this patient with calcium lactate, a high phosphorus diet, and irradiated ergosterol resulted in a positive balance of calcium and phosphorus and a rise of serum phosphorus to normal without fall in serum calcium or recurrence of tetany. The patient soon began to lose her pains, but it was four months before definite evidence of recalcification could be seen in skiagrams. The second patient was treated with radiostol from the beginning, and responded to it in a most satisfactory manner, both the calcium and the phosphorus in the serum becoming normal in two weeks. The beginning of the rise was accompanied by a threefold increase in the excretion of calcium and phosphorus, and this appeared to mean that the vitamin had caused these substances to be withdrawn in large amounts from their depots in the bones, and that the effective threshold for their excretion had been exceeded. This excessive excretion occurred only for the first week, although the level of calcium and phosphorus continued to rise in the serum, and the threshold must therefore have risen too. A fat-poor diet could not be expected to improve on the already satisfactory condition of the patient, but aided considerably in the improvement of her comfort and her state of general nutrition. She increased greatly in weight, the radiostol was discontinued after seven weeks, and no tendency to relapse had been noted in the past four months. The third case was one of sprue, and the patient reacted poorly to radiostol. Although there was some increase in calcium and phosphorus in the serum this was not maintained, and the tetany was unrelieved. The addition to the treatment of a strict fat-free diet was immediately effective in restoring normal serum chemistry and in relieving the tetany. From a consideration of the results of treatment and the metabolic data Dr. Linder formed the opinion that the condition of tetany was due, not to direct interference with the absorption of calcium and phosphorus, but rather to prolonged interference in fat absorption, leading to a deficiency of vitamin D. Treatment directed to the increased supply and better absorption of vitamin D appeared to be more promising than the administration of calcium salts.

Dr. DONALD HUNTER described a case very similar to those reported by Dr. Linder in which ergosterol was given, leading to a rise in the serum calcium and the disappearance of signs of latent tetany. In this form of treatment he thought it had been shown that calcium was drawn from the bones. He mentioned the occurrence of cataract in cases of post-operative tetany, and stated that, with the aid of the slit-lamp, he had found lens opacities present in the case he was investigating.

Dr. GEOFFREY EVANS emphasized the fact that the patients described by Dr. Linder had to be kept on a very strict fat-free diet, and he thought this form of treatment might be of great value in all cases of fatty diarrhoea.

Dr. J. TREVAN inquired if the patients were considered to be suffering primarily from vitamin D deficiency, and whether the decrease in fat intake had been shown to lead to an increase in fat absorption, which seemed to him to be the most remarkable feature of such cases.

The PRESIDENT said that a long time ago he had been puzzled by some of the problems of calcium absorption. He was struck in the present series of cases by the effect of comparatively short periods of administration of ergosterol. He inquired whether Dr. Linder had come to any conclusion as to what calcium salt ought to be included in the *Pharmacopoeia*, and what dosage ought to be recommended. Dr. LINDER replied to some of the points raised in the discussion.

THE FUTURE OF MATERNITY SERVICES.

THE Section of Obstetrics and Gynaecology of the Royal Society of Medicine joined with the Maternity and Child Welfare Group of the Society of Medical Officers of Health, on March 15th, for a discussion on the future of the maternity services. The chair was taken by Dr. J. S. FAIRBAIRN, president of the Section.

A Plea for a Specialist Obstetric Service.

Professor J. MUNRO KERR (Glasgow) recalled the achievements of the last decade, during which great advances had been made in maternal and infant welfare. The supervision of women during pregnancy had definitely lessened the incidence, and still more markedly the severity, of the obscure metabolic disturbances of that period; abnormalities in the position of the child, as well as other complications, could be anticipated, though, unfortunately, the number of women who sought medical advice during pregnancy was not so great as it should be. But the concern of the present discussion was with what Mr. Eardley Holland had called "the tactics of obstetrics," which, still being faulty, resulted in too many casualties. The chief reason was the difficulty of domestic practice. In most medical schools the undergraduate now received proper instruction in obstetrics, yet, even so, he could not leave his school as a perfect obstetrician any more than as a perfect surgeon, although the very day after he was qualified he might, as a locumtenent, be called upon to deal with a placenta praevia or some other serious complication. The public would not agree that such a man should perform a major surgical operation, but there was an idea that parturition was an uncomplicated process, which in very many instances it was not, and even in the simplest case there was a risk of septic infection. Furthermore, a large body of general practitioners did not wish to engage in obstetric practice, for which attitude he did not criticize or blame them, for general practice was as exacting as ever, and required a continually increasing knowledge of medicine. All he asked of general practitioners was that they should allow domestic practice to be so modified as to relieve them of this part of the work which so many found irksome. The reasons why domestic practice could not be satisfactory were:

1. The difficulty in securing surgical cleanliness.
2. The employment of midwives and nurses in domestic duties in addition to attendance on the women.
3. The difficulty of obtaining adequate assistance if operation was necessary.
4. The fact that midwifery practice disturbed the routine of a busy practitioner, so that he was tempted to expedite delivery unnecessarily or prematurely.
5. The fact that 60 to 70 per cent. of obstetric practice in the artisan class had passed into the hands of midwives, so that the general practitioner's opportunities for practice in the craft were limited.

The general practitioner, in his view, should be an expert physician, in close touch with the consultant, the clinical pathologist, and the health officer of the district, but he must no longer be a "jack of all trades." Preventive medicine depended most upon general practitioners, who detected disease in its beginnings, and they should not be worried by obstetric practice, but devote themselves more to pure medicine. It followed that some form of

obstetric service should be established, with a sufficient number of hospital beds to accommodate all primiparae, as well as those multiparae whose labour was likely to be complicated; multiparae in whom uncomplicated deliveries were likely might be attended in their own homes by trained midwives. In Glasgow, to provide beds for all primiparae would mean doubling the total available beds if each patient was to be kept in hospital for ten days; but the speaker thought that many of the women could be taken to hospital by ambulance at the commencement of labour, and after three or four days be similarly taken home without risk. This service, at least in all large centres, should be delegated to obstetric specialists, who would also supervise the work of the midwives, and thus keep them up to the standard inculcated in their training. But even with the best system there would necessarily be an irreducible minimum of casualties; puerperal infection could never be absolutely stamped out.

The Role of the Public Health Officer.

Dr. J. J. BUCHAN (M.O.H., Bradford) was unable to go so far as Professor Munro Kerr in seeing a vista of obstetric specialists conducting routine midwifery practice in this country. Professor Kerr's view of the general practitioner in this branch of medicine ran counter to his own. Dr. Buchan regarded the general practitioner as a potent force in public health—the outlying scout who detected early defects and errors. It would be a calamity from more than one point of view if the general practitioner were divorced from midwifery. The dangers of childbearing were due to three causes, in order of importance: (1) the unfitness of the woman, owing to defects in health or physical development, to undergo the ordeal safely; (2) want of knowledge and failure to seek advice and help on the part of the pregnant woman; and (3) want of facilities for advice and treatment. Maternity work was no longer regarded as the service given by experts from the onset of labour to the end of the lying-in period; the medical profession and the public were slowly becoming conscious of the need of supervision throughout pregnancy, and in the future more attention would be paid in general to the correction of errors in young women which were likely to interfere with normal function. There would be more study of the physiology of the female. The causes of difficult maternity were to be found in very many cases quite early in life, and could be prevented or mitigated long before any question of maternity itself arose. There were, of course, other defects and diseases which appeared later, and were liable to endanger life during child-bearing. How far a woman suffering from nephritis should undertake the risk of maternity was a matter which only the most skilled opinion could determine in each case. To check and prevent such occurrences would seem to demand a procedure of health examination and certification before marriage, an end scarcely likely to be attained within a reasonable time. One practical possibility which might lead to a diminution in maternal mortality was a development of the National Health Insurance Act whereby maternity benefit would be administered, not in cash, but in the form of beds in a maternity service. The midwife, in Dr. Buchan's view, was essentially a health officer; her duties were to observe and supervise the normal. In the care and treatment of abnormalities in any form her duty as an independent practitioner ceased with their detection; her duty then became that of a nurse working under the direction of a medical practitioner. Even the general practitioner should regard his duty primarily as hygienic and preventive. To an increasing extent he was engaged only for abnormal midwifery, with the result that he tended to regard all midwifery as abnormal. Progress in maternity work would be attained by the development of the work of the midwife and the practitioner in preventing physiological abnormality, rather than in seeking the successful treatment of it once it arose. Nevertheless, no scheme could be regarded as efficient in which the fullest use was not made of the obstetric specialist. The ideal would be for the specialist to see every patient in the course of pregnancy and in the early stage of labour. The obstetric specialist must be a real part of the service, linking up the other parts. Unhappily, in all branches of medicine, the really critical diagnosis—the first diagnosis—was often made by the people who were less skilled, in the out-patient department, for example, while the skilled man came later to correct the diagnosis, and perhaps perform the operation.

The Creation of a Maternity Tradition.

Mr. EARDLEY HOLLAND thought that Professor Munro Kerr's views might be realized in the far future; in the meantime one had to depend on the general practitioner and the midwife to do the bulk of maternity work, though institutional midwifery was increasing, and would increase. A criterion of the efficiency of a maternity service was the maternal mortality rate. This rate, obstinately high, indicated that the service was not a good one. Obstetricians understood the reason well enough, but they could not convert to their views the responsible heads of medical thought and education in this country, nor those responsible for public health. The standard of maternity service in any country depended essentially on a tradition, and in this country a great maternity tradition did not exist. This was not the fault of the professional obstetricians, who had been putting up a great fight for years, and had overcome a great deal of opposition. They had persuaded the General Medical Council to impose a certain minimum period which students must spend in the maternity wards; they had secured an increase in the duration of training of midwives from six months to one year; they had caused the institution under the Conjoint Board of a clinical examination in obstetrics and gynaecology; they had brought about the creation of maternity wards in several of the medical schools of London. Public health authorities had also been active during the post-war period. They had issued many eloquent reports, arousing, and even frightening, public opinion; they had established a large number of ante-natal clinics; they had caused important Acts of Parliament to be placed on the statute-book; they had appointed committees to consider various aspects of the question, had instituted inquiries by medical officers of health into all cases of death in childbirth, and had made new regulations for the notification of puerperal pyrexia. That was a fine record, but what had been the result of the activity? The maternal mortality rate refused perversely to diminish. The speaker's criticism of the maternity policy at present pursued by the Ministry was that the Ministry had tackled the problem in the wrong way, and had failed to go to the root. The Ministry had no direct power to reform medical education or to spend large sums of money in building new maternity hospitals and training schools. But the Ministry had not paid enough attention to the views put forward by the obstetricians. The money and man-power at present expended in minor and ineffective measures—ineffective because they did not lower the mortality rate—would give a better return if spent in supporting the reforms urged by the Royal Society of Medicine Committee in 1919 with regard to teaching. The salvation of the position would be large maternity hospitals with attached training schools of university standard staffed by resident experts. If these were established in the right centres the true maternity tradition would be created, first in the medical profession, from which it would spread to the general public. These large hospitals and training schools would not only afford every medical student and midwife an adequate training in midwifery, but they would train the young obstetric expert or specialist, who in this country at present had but small opportunity of receiving training. Mr. Holland went on to urge what he called the three-division principle for all maternity hospitals: a large division for the "clean" cases, a smaller division for emergency cases—cases of ante-partum haemorrhage, and difficult labour of any nature, every one of which was potentially a case of puerperal infection—and, the smallest division of all, for frankly septic cases which arose in hospital. A great deal of puerperal infection in small maternity homes and hospitals was due to the mixing up of the emergency cases in the labour wards and maternity wards with the "clean" cases, cross-infection occurring before the attendants had any warning that a particular case was really infective. The speaker ended with a criticism of ante-natal clinics. The country had "gone mad" on ante-natal work, which had been given an exaggerated importance. He was sure that far more women died from lack of attention during

labour than from lack of care during the ante-natal period. A great deal of ante-natal work, especially municipal, was in his opinion utterly irresponsible, simply because the doctor or person in charge of the patient at the ante-natal clinic during pregnancy was not responsible for her care during labour.

The Position of Midwives.

Dr. EUSTACE HILL (M.O.H., co. Durham) said that his own impression, contrary to what Professor Munro Kerr had suggested, was that the newly qualified practitioner was very keen on taking up midwifery, and this had even led to a certain amount of feeling against the midwife. Professor Kerr's suggestion that midwifery practice should be placed in the hands of expert obstetricians would not be popular among practitioners, at least in many parts of the country. Many obstetric consultants were apt to take too narrow a view of the problem, visualizing it only as applied to large towns, with the provision of maternity hospitals and homes. But in the West Riding, Durham, and Northumberland, to speak only of his own part of the country, there were large areas where it would be impossible, even with motor-car provision, to get any specialist to a case before the need for him was over. He could not agree with Mr. Eardley Holland's criticism of ante-natal clinics. Truly they were in their infancy, many were imperfectly staffed and conducted, and the essential co-operation between the clinic officer and the general practitioner was lacking; but nobody could deny that a proper ante-natal service must be of great value to the community. Large maternity hospitals were desirable, but they would not solve the problem of the urgent case in the remote district. In his own county quite 20 or 25 per cent. of the cases booked for admission to maternity hospitals or homes could not get there before the event was over. In the midwife he was a firm believer, and he was anxious that her status and remuneration should be improved. Her position in scattered districts was one of exceptional difficulty because there were not enough midwifery cases to enable her to make a living. He had looked with anxiety upon the combination of the duties of midwife and ordinary nurse, but he was bound to say that he had found no definite evidence of a tendency to sepsis in midwifery cases attended by a midwife who had been doing nursing duty. The elimination of the handywoman was very important, and one thing which would tell in that direction would be a requirement that every woman eligible for maternity benefit should engage either a properly qualified midwife or a doctor.

Education in Obstetrics.

Lady BARRETT said that probably all obstetricians were convinced that maternity work in hospitals was quite the best type of work done, but she hoped it would not be forgotten that the whole matter was at present in an intermediate stage, and, frankly, she did not think they were quite in a position to define the share to be taken by the general practitioner in obstetric work; at the moment this was very considerable. A few measures might be adopted to enable him to do his work with very much greater facility and satisfaction to himself. She suggested that every patient should have a qualified midwife even though a doctor was in attendance, because it was quite impossible for a busy general practitioner to give the time that the best midwifery required. She could not help thinking that it would be possible to enable these highly trained women to give anaesthetics in the second stage or, at any rate, in the later part when the doctor was present. Although Mr. Holland had spoken in congratulatory terms about the better education of the medical student, yet, even in the schools which gave the longest training, only three months were entirely devoted to midwifery, or six months to midwifery and gynaecology, and the recipient of this training on setting up in practice was supposed to be called in by a midwife who had spent a whole year of training in nothing but midwifery. The standard of education was still decidedly too low.

Dame LOUISE MCILROY thought that the general practitioner ought to conduct the ante-natal examination, and the midwife ought to co-operate with him in the care of the patient. She thought that ante-natal clinics might be run by a panel of general practitioners who had shown interest in and aptitude for midwifery; this would be specially useful in country districts. Mr. Holland had been a little too critical of the public health service. After all, it was only the people responsible for the service, apart from the teachers, who had advanced obstetrics, and obstetricians had until recently stood aloof in questions of administration. Obstetricians were inclined to be unfair in their criticism of the general practitioner; what had they done for his instruction? There were post-certificate classes for midwives, but she was not aware of any post-graduate facilities for the general practitioner, enabling him to take an intensive course. The general standard of teaching ought to be raised; at present the practical teaching was largely given by house-surgeons and juniors in the wards.

Dr. W. S. A. GRIFFITH said that the crux of the problem was the better education of the general practitioner and of the midwife. Within the last twelve months he had read two reports in the *British Medical Journal*, both emanating from Scotland, recounting a series of disasters so terrible that they could only have been the result of a state of ignorance almost inconceivable on the part of those responsible for them. More facilities for teaching were very necessary.

The General Practitioner Defended.

Dr. F. W. H. OXLEY (Poplar) declared that the obstetric specialists of the country were really the general practitioners. Professor Munro Kerr was trying to remove the general practitioner out of practical midwifery. The speaker narrated some of the things which general practitioners had done in this sphere. It was a general practitioner practising in Huddersfield in the later years of the last century who introduced diagnosis by abdominal palpation, and insisted that it was only rarely necessary for the woman to be examined vaginally. It was a general practitioner in the East End of London in the middle eighties who was the first to introduce into this country ante-natal work on a large scale. Another general practitioner, practising in a small country village, was the first to draw the attention of the profession to the very great danger that puerperal fever might be carried through droplet infection from cases of septic industrial accident. While the general practitioners were doing all this, nothing whatever of practical effect was being done by the professional obstetricians, and it required the Chief Medical Officer to the Ministry of Health to wake them up to take an interest in this state of affairs. He thought it only due to a large body of men doing excellent work, often under the most dreadful conditions, to say so much in their defence. On the general question he looked to developments of the maternity service under the National Health Insurance Act. The number of institutional beds needed, he thought, had been exaggerated. Moreover, there was a great danger of infection to healthy patients on going into institutions, so much so that in Aberdeen the death rate in the midwives' cases was only 2 per 1,000, whereas in hospital it was 14 per 1,000; the difference was put down almost entirely to this factor of infection.

Dr. STELLA CHURCHILL, speaking with regard to the domiciliary treatment of midwifery cases, said that she personally would regret very much to see the extension of the Insurance Act to dependants from this point of view so long as the general practitioner had not received an adequate training in midwifery, for the results were not likely to be much better than they were to-day.

Maternity Hospital Administration.

Sir EWEN MACLEAN (President of the British Medical Association) said it was common ground that better facilities were needed for the training of the medical student. Those at present concerned in teaching had gone through many trials and tribulations in order to secure that degree of betterment which did at present exist in the maternity services of the country. There was a tendency to bring railing accusations against the profession as a whole, and it was not appreciated what difficulties a number of them had encountered in their generation over this matter in securing a reasonable number of beds for tuition. It had been stated that the number of additional

beds required for a maternity service to cover the country would be not less than 50,000. But the mere fact of having a maternity hospital, large or small, was not sufficient in itself; a great deal depended upon the way in which the hospital was run and staffed. He was convinced that the ideal method was that in practice at Cardiff at the present moment; there were 51 maternity beds in the Royal Infirmary in direct association with the ante-natal clinics of the local authority. The principal ante-natal clinic, indeed, was situated in a portion of the maternity hospital itself. The association with the general hospital was very advantageous, because its general or special departments were available for service when *required. The speaker believed that the first material con*tribution to a system for dealing with midwifery cases in general would come through the development of the national insurance system, still practically only at its commencement. The proposals made in this connexion by the British Medical Association in its evidence to the Royal Commission were at least worthy of very careful consideration. He was sure that no obstetric specialist had intended his words to express anything inimical to the general practitioner, who was, indeed, the first line of defence, and without whom no ideal system of midwifery service could be reached.

The CHAIRMAN (Dr. Fairbairn) recommended both Dame Louise Mellroy and Dr. Oxley to peruse the *Proceedings* of the old Obstetrical Society and the present Section, from which they would find that nearly all the recent reforms had been foreshadowed by the obstetricians, although, of course, they could do nothing until the authorities took up the matter. He added that he thought there was one unmentioned factor which assisted in the maintenance of maternal mortality. Under the present social conditions the mental attitude of women towards child-bearing had been widely affected. They shrank from what it might involve in the way of pain and suffering, and demanded anaesthetics and a quick termination of labour. The medical attendant at a confinement had pressure brought to bear upon him to this end, not only by the patient herself, but by the husband and friends; such pressure was difficult to resist in a domiciliary case, though easier in a maternity home or hospital.

Professor MUNRO KERR, replying, said that Dr. Oxley, although he claimed the title, was not a general practitioner: he was an obstetric specialist in general practice. Dr. Oxley had asked what contributions obstetricians had made. The speaker would remind him that two of the greatest contributions to practical medicine were made by obstetricians—namely, by Semmelweis, with whom originated the scientific pathology of septicaemia, and by Simpson, who was the first to employ anaesthetics in obstetric practice. Dr. EUSTACE HILL, who also replied, paid a tribute to the general practitioner, the best type of whom, he thought, was found in scattered country districts. The country practitioner was a most able and accomplished man, quite capable of doing much which in the town would be referred to the expert.

CHRONIC METRITIS.

AT a meeting of the Section of Obstetrics of the Royal Academy of Medicine in Ireland on January 25th, with Sir WILLIAM SMYLY (in the absence of the president) in the chair, Dr. D. J. CANNON showed a specimen of chronic metritis.

Dr. Cannon said that chronic metritis, like chronic endometritis, was a relatively rare condition. The majority of cases of so-called chronic metritis were in reality instances of chronic subinvolution, as had been shown by the researches of Goodall and others.

The patient, a nulliparous woman, aged 36, had been operated upon for double prosalpinx about four years previously. On account of the healthy condition of the cervix a Sturmdorf operation was first of all performed, and afterwards both tubes and ovaries had been removed. The uterus was elevated by suturing the round ligaments to its back. As a result of the operation the patient was relieved of all her symptoms except a mucopurulent discharge. About six months before the meeting the patient had returned to Dr. Cannon on account of this discharge, which gave rise to a most annoying eczema and general ill health. She looked anaemic and debilitated. Dr. Cannon performed a complete hysterectomy, and the patient was now restored to health.

The following pathological report had been received on the specimen. "This specimen consists of a small uterus without tubes or ovaries, also a small piece of separate tissue. Sections cut from the small fragment show it to be derived from the cervix. It is composed of fibro-muscular tissue with a partial covering of stratified squamous epithelium. At one point the epithelium is slightly broken, and here there is an area of infiltration with chronic inflammatory cells, plasma cells, and mononuclears. There are a few dilated blood vessels in the body of the section. On cutting into the uterus the mucous lining is somewhat swollen, and the muscular structure shows many small red points. Microscopical sections taken through the wall, including the mucous membrane on both sides of the lumen, show the muscular layer to be in a state of fibrosis and containing many thick-walled blood vessels. The mucous membrane is atrophic, and although glandular acini are present, they are not numerous. There is no evidence of tubercle or malignant disease. The specimen appears to be a fibrotic uterus."

Dr. Cannon said he thought that this case was also interesting from the point of view of the treatment of pelvic infection. As a rule conservative radical treatment, rather than complete hysterectomy, was the treatment of choice. Should there be chronic endocervicitis, some operation should be performed on the cervix as part of the conservative radical treatment. Treatment along these lines helped to cure the discharge in the majority of cases, and this gave clinical support to the view that a vaginal discharge usually had its origin in the cervix, and not in the body of the uterus. Dr. Cannon thought that the pathological report explained the failure of conservative radical treatment in this case.

Sir WILLIAM SMYLY asked if the uterus had shrunk since the tubes had been removed. He did not think that pathologically there was any difference between chronic metritis and fibrosis uteri. Dr. J. S. QUIN referred to the fact that at the time of the second operation the patient's chief symptom was profuse leucorrhoea. This produced symptoms of very great discomfort, and was often very difficult to deal with. He congratulated Dr. Cannon on his success in curing it in this case of hysterectomy, since very often it was not cured by this operation. He asked if the discharge had been bacteriologically examined. Dr. F. W. DOYLE stated that this patient had a tuberculous history, and some years before her marriage had had bone tuberculosis. He had been present at both operations; at the first the case seemed to be one of tuberculous tubes, and on the second occasion there seemed to be a mixed infection.

Dr. CANNON, replying, said that the uterus had shrunk since the removal of the tubes. When he first examined the patient he had suspected tuberculous tubes, but after the operation no tuberculosis had been found. He had not considered radium treatment, since he believed it had been stated that radium should not be used in true cases of chronic metritis where there was a discharge as well as haemorrhage. The discharge, which was muco-purulent, had been examined, but no gonococci had been found.

Sequels of Radium Treatment.

Dr. BETHEL SOLOMONS showed a uterus which he had removed by the Wertheim method from a multipara, aged 57. Regular menstruation had ceased for four years, but a year ago she started to bleed irregularly. On examination there was found a typical squamous cancer of the cervix, which bled easily on examination, and seemed fixed to all the fornices. It was a borderline but somewhat dangerous operative risk. Radium was inserted by Dr. Stevenson, and she was closely watched for four months. Gradually the appearance became nearly normal, but as she had two haemorrhages during that time, he decided to remove the uterus. A microscopical report stated that the glands showed no abnormality; there was no evidence of malignancy, and the muscle walls revealed much hyaline change. There was no excessive fibrous tissue during the operation, but the left ureter was slightly out of its usual position. Recovery was uneventful.

Dr. W. C. STEVENSON, who had given the radium treatment, said that the dose in this case was rather larger than usual, because it had been applied in more than one place. If it had all been given in one site that area would probably have been destroyed altogether. He had begun treatment on October 2nd, and continued it for three days; on the fourth day the patient had taken some bovril, after which severe diarrhoea followed. Dr. Stevenson had used 49 millicuries of radium, and had kept the

radium as far away from the rectum as possible. The cavity of the uterus was 7 cm. long; the radium tube was left for twenty-four hours, and was then pulled down a further two centimetres and left for another twenty-four hours, at which time it was just at the cervix.

Dr. W. A. TAYLOR said that the sequence of events after radium treatment which was described in textbooks had not occurred in this case. The stage of hyperaemia had appeared when the patient had suffered from diarrhoea, but there had apparently been no stage of sloughing, since nothing in the nature of a slough had come away. After the diarrhoea ceased, the condition of the cervix very rapidly improved, and, in fact, it appeared to have healed. This case, he thought, brought to notice the position of radium in the treatment of carcinoma of the cervix at the present time. These cases were classified in the literature as operable, borderline, and non-operable cases. He personally believed that radium removed the borderline cases, since all surgeons now decided to see what radium would do for these patients before operating. The question of giving this patient a further course of radium had been considered, but she had passed from a condition of parametric involvement to one in which no such involvement could be found, and so it appeared that the time for operation had come.

Dr. D. G. MADILL stated that in this case he would have removed the uterus. He thought that a few years ago the dose of radium applied by Dr. Stevenson had been considerably smaller than he now employed. He asked how many needles had been used, where they had been inserted, and whether in some cases needles should be inserted and left in for about six days without being disturbed, as recommended by Dr. Webster.

Dr. A. H. DAVIDSON asked if Dr. Solomons had experienced any difficulty in performing the operation, since it was generally supposed that after radium treatment much fibrous tissue formed and made the Wertheim operation difficult. He thought it possible that the haemorrhages were of fibrotic origin, and wondered whether the radium treatment would not have been sufficient, and whether the operation was necessary and would do good. Radium affected mostly the nearer cancer cells, and not the deeper ones; if in the present case it had killed the more distant cells no operation would have been necessary.

Dr. R. STUMPF said that there were three ways of treating cases like that of Dr. Solomons—namely, radium, deep *x*-ray therapy, or combined treatment by *x* rays and radium. According to recent statistics, the results obtained from each of these were about the same. At a recent meeting of radiologists it had been stated that radiotherapy was as effective in operable cases as was surgical operation. In borderline cases, cure by radiotherapy could be obtained in from about 10 to 15 per cent. Considering that the operative technique in these cases could hardly be improved, and that radiotherapy was only in the early stages, he thought it likely that the time might come when surgical operation would be abolished even in operable cases and all be treated by radium.

Dr. STEVENSON, replying, said that it was sometimes difficult to know how long to wait after radium treatment before operating in these cases. In the present instance, the treatment had been very intense, and the operation had been performed nine and a half weeks afterwards; he thought that this was about the right time to wait. He had not used needles, but had employed the screen method, by which it was possible to supply a much more diffuse dose, and one which was more likely to affect the parametrium. He thought that leaving in the needles for six days would result in giving a very good dose, though he had at present a patient in whom he thought he would leave them for fifteen days.

Anaesthesia in Labour.

Dr. J. S. QUIN read a paper on scopolamine-morphine narcosis in labour; he first described the method used by the Freiburg school and then detailed the method adopted by himself. He considered it important that the first injection should be given to the patient as soon as labour had started, and a further injection after the child was born. In 25 per cent. of the patients treated the result was very good, in 15 per cent. the result was good, and in 10 per cent. there was no apparent benefit from the treatment.

Dr. D. G. MADILL said it had been stated that after the judicious use of scopolamine-morphine the patient would fall asleep, and labour would pass without the patient remembering much, if anything, about it. His experience was that scopolamine-morphine had not been so successful as this. He noticed that Dr. Quin, out of sixty-one cases, only regarded fifteen as complete successes. Dr. Madill attributed failure in some cases to want of complete silence in the patient's surroundings. In his opinion scopolamine-morphine was not the ideal anaesthetic in obstetrics, and he thought there were great possibilities in rectal ether administration.

Dr. BETHEL SOLOMONS said he did not advocate twilight sleep as a general measure; he thought it should certainly be given to the primigravida who dreaded childbirth, and to the multipara who had had a severe time during her first confinement, and who looked forward with fear to the second. There was no doubt that the method was not ideal, and that "blue" babies were often born. The room should never be darkened, for it was necessary that the nurse should have a good view of the patient. Much harm had been done by advocacy of the method in the lay press, and the establishment of twilight sleep homes, where the doctor in charge was not always a specialist in obstetrics. He believed that the ideal anaesthetic in labour had not yet been obtained.

Dr. F. W. DOYLE referred to a gas-oxygen apparatus which had recently been installed at the Coombe Hospital, and said that this method was now being used in America, and, according to the literature, with extremely good results. Gas-oxygen could be given with perfect safety to both mother and child, and did not interfere at all with the progress of labour. It was claimed, indeed, that it accelerated rather than retarded its progress, and it did not cause any interference with lactation.

Dr. A. H. DAVIDSON thought the great disadvantage of scopolamine-morphine narcosis was the supervision which was necessary. It would not be easy for a busy obstetrician to visit a patient every three hours, but if the nurse could be sufficiently trained to give the injection and to see that the patient did not come to any harm from it, it would be a different matter.

Sir WILLIAM SMYLY, referring to the rules laid down for the beginning of scopolamine-morphine injections, thought that the right time to begin the injection was when labour became painful; treatment should be confined to the first stage of labour. Most patients in private practice insisted on receiving some kind of injection, but scopolamine-morphine was certainly not the ideal treatment; it eased patients, however, and helped them greatly in the first stage. Its great drawback was the uncertainty of the result.

THE DIAGNOSIS OF ACHONDROPLASIA.

AT a meeting of the Devon and Exeter Medico-Chirurgical Society at the Royal Devon and Exeter Hospital, on February 28th, with Dr. F. A. ROPER in the chair, Dr. A. L. CROCKFORD showed a girl, aged 1 year 11 months, the subject of achondroplasia. Dr. Crockford said that at first the possibility of thyroid deficiency had been borne in mind, but the mental development and normal articulation in the absence of the natural fullness over the thyroid gland had negatived this alternative diagnosis, made when the infant was aged 6 months. There had been protuberance of the tongue from the earliest days; the typical shaped head, with depressed bridge of the nose, was present, and the lack of parallelism in the fingers resulting in the so-called "trident" hands was of diagnostic significance. An interesting feature of the case was the occurrence of superimposed post-natal rickets, as evidenced by a rickety rosary, and the outward and forward bowing of the femoral bones and tibiae. The treatment employed had been directed to the true (post-natal) rickets, and included cod-liver oil and attention to the diet. Dr. Crockford added that he had been unable to find anything adverse in the family history suggesting a predisposing cause, nor

was there any history of the occurrence of this condition in relatives.

Dr. FAYLE SEALE, commenting on the case, said that achondroplasia and rickets were diametrically opposed from the pathological point of view, in that achondroplasia resulted in premature ossification, while rickets held normal ossification in restraint.

Etiology of Localized Oedema.

Dr. R. N. CRAIG showed a woman, aged 50, who had developed bilateral oedema of the eyelids following an attack of erysipelas. There had been pyrexia during the infective stage of ten days, and then an apparently quiet interval. The swelling of the face recurred, and, in turn, disappeared for four weeks. There had followed the present oedema of the lids, which had remained constant for the past three months. There was considerable swelling below the orbit on each side, and the wearing of spectacles was rendered very difficult on account of the deep pitting set up by their pressure. All protein tests had proved negative. An angioneurotic origin had been considered when the case was first seen. No treatment appeared to benefit the condition, the calcium group of salts being among remedies given a trial.

Dr. W. A. DATE said he had found thyroid extract useful in similar conditions, but Dr. JACKSON thought that the history of infection and the subsequent progress of the case pointed to obstruction of the lymphatics. Mr. NORMAN LOCK mentioned that he had known a similar state of localized oedema to follow a cat-bite.

Treatment of Diabetic Coma.

Dr. F. A. ROPER showed a young man, aged 20, who was just recovering from diabetic coma.

The patient had been admitted to the Royal Devon and Exeter Hospital on February 25th, drowsy, with marked air hunger, patches of cyanosis all over the body, a poor, rapid pulse, and a strong smell of acetone in the breath. He had been under treatment for diabetes for five years, and had been taking 60 units of insulin and following a diet of nine "lines." Two days before admission he had bicycled about twenty-five miles, the temperature on that day being well below freezing point. In the evening he felt ill, and had subsequently had no inclination for food up to the time of admission, but had complained much of thirst. On admission he was noted to be a well-nourished, muscular young man, and to be in a state bordering on coma, with a considerable quantity of urea and acetone in the urine; the blood sugar figure at that time was 0.312. An injection of 30 units of insulin was given at once, and the dose was repeated for three consecutive hours. The same dose was repeated in four hours, followed by 20 units four hours subsequently, until, at 8 p.m. (fifteen hours after admission), a total of 110 units had been injected. At this period the urine was found to be free from glucose. Any attempt at natural feeding was frustated by vomiting at this juncture, and glucose was given by injection only. Since the time of admission there had been several periods when collapse seemed to be imminent, and stimulation had to be effected with brandy, camphor in oil, and digitaline. From midnight up to 3 a.m. on February 26th the progress was more hopeful, but half an hour later the patient was again on the verge of coma. A catheter passed at this time withdrew only 5 oz., the urine being loaded with glucose and acetone. The insulin treatment was renewed energetically, together with glucose injections. At 7.30 a.m. he had sufficiently recovered to take a beaten-up egg and half a pint of milk by the mouth. Improvement was maintained up to 9 p.m. on February 26th, when the patient was found to be sugar-free, but at 1.45 the next morning there was a further relapse, with a return of the glycosuria and acetonuria. At 8 a.m. he showed distinct improvement, 50 units of insulin having been injected during the period of relapse. From this time onward there had been progress, and the cessation of vomiting had permitted a definite diet to be given of 950 calories in the twelve hours, during which 85 units of insulin were administered, the urine remaining sugar-free all the time. When shown to the meeting the patient was conscious, and was practically sugar-free; 20 units of insulin were being given at three-hourly intervals, with 2 drachms of glucose. Feeding ranged from one and a half to two "lines," and had included grape fruit and chicken broth.

Dr. R. A. P. GRAY, who had kept very full notes of the case during the critical periods, gave a detailed account of the three days' continuous combat with coma. He said that success, at any rate temporary, appeared to be probable as a result of the energetic treatment employed. Dr. W. A. DATE, who had attended the patient for some five years, described him as active and athletic, but one who was difficult to maintain on a diet sufficient for his natural requirements. Dr. Date had never known the urine to be entirely free from acetone in this case.

Diagnosis of Still's Disease.

Mr. NORMAN LOCK showed a boy, aged 7, with arthritis of the rheumatoid type. He said that, when first seen early in 1927, there was limitation of movement, and pain, in the left hip. A diagnosis of tuberculosis had been suggested in the first instance, but subsequently the right knee, and later still the left knee, became involved with effusion into, and thickening about, the joints. Treatment had been general, with splinting to prevent deformities, and also three doses of thiosinamine. There had been some slight rise of temperature for nearly two years, but the range was within the normal limits now, and the joints were moving well. Mr. Lock said that, in spite of there being no accompanying splenic enlargement with the arthritis, the true diagnosis was Still's disease.

Dr. T. R. C. WHIPHAM recounted a somewhat similar condition in a boy under his own care several years ago; in this case, however, there had been definite enlargement of the spleen and lymphatic glands. There were several remissions during the observation and treatment, which had been continued for three years. A short-circuiting operation was performed for "colon cut-out." Three weeks after the operation Dr. Whipham had been astonished to find the boy up and about, and able to run down the road. Unfortunately this improvement was only maintained for six months, when the symptoms recurred, and steady deterioration ensued, the boy eventually succumbing to the affection.

ACTION OF LEAD ON THE TISSUES.

AT a pathological meeting of the Liverpool Medical Institution, on February 17th, Dr. M. DATNOW read a paper on the effects of lead on the tissues. After a brief historical review of lead poisoning, Dr. Datnow gave an account of experimental work carried on for the Liverpool Medical Research Organization. The animal employed was the rabbit, and the chief lead preparations used were the phosphate, aspartate, glutamate, hippurate, malate, iodobenzoate, and the benzoyl aspartate, in colloidal suspension containing 0.5 per cent. Pb. The lead colloid was introduced by intravenous injection. Dr. Datnow said that as the liver, with the possible exception of the spleen, was the main organ concerned in taking up lead from the blood stream, it was also the organ which first showed pathological changes. With massive doses, or with very toxic preparations such as 10 c.cm. of lead malate, or 5 c.cm. of the more toxic benzoyl aspartate, extensive haemorrhage was found throughout the liver substance. With therapeutic doses there was only transient cloudy swelling, which cleared up in twenty-four hours. This was confirmed by liver function tests and by clinical observations. Intermediate doses produced extreme dilatation of the capillaries, with compression of the liver cells; the zone of the central vein was first affected. Similar changes were observed in the kidney. In the heart muscle, apart from haemorrhages with lethal doses, no definite pathological changes were found. The spleen showed increased pigment, with dilatation and congestion of the sinuses. Dr. Datnow also briefly mentioned the selective choriotropic effect of lead first pointed out by Blair Bell. He concluded by describing the effects of lead on rat tumours (Flexner rat carcinoma and sarcoma), demonstrating the destruction of the malignant cells, with increased fibrosis in the tumours, after treatment with lead aspartate. The paper was illustrated by a large number of lantern slides.

AT a meeting of the Brighton and Sussex Medico-Chirurgical Society, held on March 7th, with the president, Mr. GEOFFREY BATE, in the chair, Sir ROBERT JONES, Bt., gave an address entitled "The problem of fractures," in the course of which he dealt particularly with fractures of the head and neck of the femur, and those at the ankle, wrist, and lower end of the humerus. He paid special attention to practical points in diagnosis, and indicated the best methods of treatment, illustrating his remarks with demonstrations on a living subject. He insisted on the necessity for early reduction of recent fractures, and for patience in after-treatment, giving many valuable hints for dealing with various cases.

Reviews.

FRACTURES.

THE first edition of Dr. KELLOGG SPEED'S *Text-Book of Fractures and Dislocations*[1] showed him to be as competent a teacher as he is a surgeon. The second edition, of which the text has been entirely rewritten, may be considered almost as a new book. In the days before 1914 compound fractures were rare, but mechanically propelled vehicles on the open roads of every country have produced a great increase in the number of cases of compound fractures of the most serious and extensive kinds, very often infected from the first. Tetanus and gas gangrene were rare—at any rate in this country—before the war, but now it is found necessary, or at least prudent, to give injections of antitetanic serum after road accidents, and to be always on the alert for the early stages of gas gangrene. Naturally, therefore, on examining such a book as this we turn our attention first to the chapter on the operative treatment of fractures, in which the treatment of compound fracture is discussed. The advice Dr. Speed gives on this subject is very sound, and should be taken to heart by every surgeon who finds himself in charge of a compound fracture. The main points insisted on are: the desirability of treating all compound fractures as if they were infected; débridement, or, as the author prefers to call it, épluchage of the wound, including, of course, the skin edge and projecting bone; the need for avoiding or exercising great care in the use of tourniquets; and the value of drenching of the part with an accepted antiseptic solution.

The paragraph headed "What not to do for open fracture" is equally important. "No attempts at reduction, removal of foreign material, picking at the wound, sticking instruments or fingers into the wound, should be made in the first aid." This rule needs emphasis, particularly in the instruction of Red Cross and St. John detachments, for the ardent amateur is much more likely than the practitioner to be led away by his wish to "do something." For shock no alcohol is to be used. The best first-aid treatment of this condition is by warmth, recumbency, and morphine. The author's remarks on the indications for primary amputation are very sound. In the account of the technique of épluchage we find no reference to bipp as used by its inventor, Rutherford Morison.

As for skeletal or direct traction, Dr. Speed gives the following warnings limiting its application: the nail or wire or tongs must not (early) pass through the haematoma of the fracture, the epiphyseal plane, or a joint; it must not split the bone or pass just under the periosteum, where it will cause pain; no foreign material, such as plates, screws, or nails, should be put on the wounds of open fractures. These "don'ts" are of great value, and we quote them to show the author's clarity of expression and the practical nature of his advice. In a very interesting and full discussion of recurrent dislocation of the shoulder and its treatment we find no mention of the important paper by Mr. A. S. Blundell Bankart which appeared in our columns on December 15th, 1923 (p. 1132). It is not evident what method of treatment the author prefers. In the illustrations of flexion treatment of supracondylar fracture of the humerus in the young we think that the angle of flexion is dangerously acute, and must increase the risk of that terror of the fracture surgeon—Volkmann's ischaemic contracture. On this last subject we think that Dr. Speed's estimate of the success of operative treatment is optimistic. Those too often permanently disabling conditions, the fractures of Colles and of Pott, and other fractures near the wrist and ankle, are fully dealt with. The abduction treatment of fracture of the neck of the femur is well described. Needless to say, the necessity for *x*-ray pictures in the treatment of fractures and their medico-legal importance are insisted on, although there are not many radiograms in the book itself.

[1] *A Text-Book of Fractures and Dislocations.* By S. B. Kellogg Speed, M.D., F.A.C.S. Second edition, enlarged and thoroughly revised. London: H. Kimpton. 1928. (6 × 9½, pp. xiv + 952; 927 figures. 50s. net.)

DISEASES OF METABOLISM.

PROFESSOR FREIDRICH UMBER of Berlin is well known in Central Europe as an authority on nutritional and metabolic disorders. His new book on metabolic disorders[2] is a compact and readable synopsis, designed for practitioners, of his well-known larger work on disorders of nutrition and metabolism, of which the third edition, with lengthy post-war revision, appeared in 1925. It resembles in style and scope the Modern Medical Monographs of this country, but is not so well produced as these volumes. Good diagrams are lacking, and there is no readily available bibliography. The book opens with an account of the present state of our knowledge relating to nutrition and metabolism. Detailed reference is made to the large-scale experiments in nutrition made necessary in Central Europe by the war. The known vitamins, A to E, are fully described, with special reference to their action in states of undernutrition. There is a chapter devoted to obesity and its pathology, particular emphasis being laid on the part played by the endocrine system in the production of this disorder; the treatment is described in well-condensed tables. About half the book is devoted to diabetes mellitus. A very well-arranged and complete survey of the etiology, pathology, clinical aspects, and complications is given, and treatment is fully considered. There are further chapters on diabetes insipidus, gout, calculus formation, and metabolic anomalies. The book, which consists mainly of a collection of articles that appeared last year in the *Münchener medizinische Wochenschrift*, contains nothing hitherto inaccessible to English and American readers. But if only on account of the author's great reputation in Central Europe it should be read by those requiring a knowledge of Continental practice in diseases of metabolism.

NEPHRITIS.

ONE of the advantages of endowed lectures at the Royal Colleges is that they stimulate the publication of original work, clinical experience, and reviews of special subjects, and thus may pave the way for a more expanded treatment of the subject. Last year Dr. IZOD BENNETT, a former student of Bright's Hospital, as the Goulstonian lecturer at the Royal College of Physicians of London, took as his subject some problems of nephritis, and now he has in *Nephritis: Its Problems and Treatment*[3] republished these three lectures with but little change, and supplemented them by two fresh chapters on the classification of nephritis and on its treatment. The problem how to fit all the forms of renal disease with their transitions into a satisfactory table has attracted the keen minds of several generations. Dr. Izod Bennett, after criticizing Widal's classification, adopted by MacLean, of hydraemic and azotaemic nephritis as unsatisfactory in that some, and perhaps the majority, of the cases met with in practice fail to fall clearly into either group, brings forward a different classification which is in full accord with Aschoff's recent writings. It consists of three categories: the nephroses; the acute and chronic diffuse, and the focal and embolic forms of glomerulo-nephritis; and arteriolo-sclerosis, divided into the pre-nephritic stage of essential hypertension, the later stage of chronic interstitial nephritis, and the malignant renal sclerosis of Fahr. The chapter on treatment of different forms contains a number of useful tables on diet, and, like the rest of the book, is clearly written and stimulating.

In his compact book *On Nephritis*[4] Dr. CECIL ALPORT has succeeded in giving a clear summary of the present state of medical opinion on the different forms of kidney disease without entering into minute details which might confuse

[2] *Die Stoffwechselkrankheiten.* Von Professor Dr. Friedrich Umber. Zweite, neubearbeite Auflage. Klinische Lehrkurse der *Münchener medizinische Wochenschrift*, Band 4. München: J. F. Lehmanns. 1928. (Med. 8vo, pp. 168. M.5.)

[3] *Nephritis: Its Problems and Treatment.* By T. Izod Bennett, M.D.Lond., F.R.C.P. Oxford Medical Publications. London: Milford, Oxford University Press. 1929. (Demy 8vo, pp. viii + 92; 3 figures. 6s. net.)

[4] *On Nephritis (for the Student and the Practitioner).* By A. Cecil Alport, M.D., M.R.C.P. With an introduction by Professor Frederick Langmead, M.D., F.R.C.P. London: W. Heinemann (Medical Books) Ltd. 1929. (Cr. 8vo, pp. xvi + 175; 2 plates, 4 figures, 3 charts. 7s. 6d. net.)

the student and busy practitioner. Dutifully dedicated to "Ricardus Bright, the Father of the Medical Unit System," of whom two portraits are included, the volume begins with a brief historical outline of the subject. Here the probable neglect of the etiological importance of the toxic factor in chronic parenchymatous nephritis is mentioned and illustrated. The author recognizes that his classification of diseases of the kidney into four groups—inflammatory or parenchymatous, vascular, a special group for Rose Bradford's kidneys, and the nephroses—is not absolutely watertight, for the last two cannot be detached from the later stages of the first group, and the senile kidney, though included under the vascular category, is not so much a disease as a part of old age. The several forms of nephritis are then described, and special chapters are devoted to the eye changes in nephritis, to uraemia, and to the urinary and functional tests. An appendix contains "A pharmacopoeia of drugs for use in renal disease (for students)"; this tactful parenthesis may, however, be neglected by the practitioner, who, as elsewhere in this readable handbook, will find much to satisfy his thirst for information and guidance.

SPEECH DISORDERS.

THERE are two comparatively recent works published in the United States that are of value in the consideration of disorders of speech, one by Dr. J. S. GREENE on *The Cause and Cure of Speech Disorders*,[5] and the other by Dr. J. M. FLETCHER on *The Problem of Stuttering*.[6]

Dr. Greene's book is a systematic study, and aims at being a textbook. He differentiates between the person who stutters or hesitates in his speech, the stammerer who is unable to utter certain sounds, and the person whose voice is abnormal. In his view the plight of the stutterer has not been bettered in recent years owing to the continued search for a physical cause of the condition. It is not realized that what he needs primarily is a mental reconstruction besides correction of his objective faulty speech habit and mannerisms. Dr. Greene maintains that there is nothing physically wrong with the sufferer, that he can use his speech organs as well as anyone else, and that time and energy are wasted in physical exercises. Each case demands special treatment, since stuttering is only a symptom displayed by an individual with a nervous constitution. To effect a cure a composite therapy—medical, psychological, re-educational, and social—is necessary. This scheme, it is claimed, has been a great success in the National Hospital for Speech Disorders in New York (the first hospital of the sort), of which Dr. Greene is the director. Stammering, he maintains, is a defect in enunciation which is not dependent upon the emotional speech life of the individual, but upon the mechanical speech life. His treatment, which is set out in full, differs according to the type of defect, and it is claimed that it is most successful.

Dr. Fletcher is a psychologist and approaches the problem from that standpoint and not that of a medical practitioner. He has some scathing criticisms to make of Dr. Greene's methods and of his book; indeed, he charges him with being ignorant of the history of the subject that he is treating! Dr. Fletcher certainly knows his history, and his book is worth reading if only for its summary of what has been done in the past. The number of cures is amazing, from mental to surgical, including a number of operations upon the tongue and throat. There is an excellent review of the most recent work in psycho-analysis. The followers of Freud do not appear to have succeeded. In eleven years Brill handled 600 cases, and attempted psycho-analysis in sixty-nine; five were cured, but one of these relapsed. Reed says that the stutterer will eventually be found to contradict almost every theory that may be set forth regarding the nature of his trouble. He could trace no definite traumatic experiences, no inhibitions against obscene words, and no connexion with sex experience, such as earlier investigators had found. Dr. Fletcher gives a very lucid exposition of his own views. He considers that in these cases we are not concerned with the abstracted processes of articulation with which the speech specialist deals, but speech as a complex mental reaction to a concrete social situation; it is always *ad hoc*. "The situation is a function of vocal communication." This explains the failure of many forms of environmental training. Children in some schools are brought into apparent speech control, but they fail hopelessly so soon as they are outside, for the situation has changed. He maintains that the chief problem in the stutterer's self mastery is that of discovering and of fostering within himself certain mental and emotional states which are (*a*) known to affect his speech favourably, and (*b*) which he finds it possible to maintain under the stress of actual speaking conditions. This book by Dr. Fletcher is a clear and scientific study of a difficult problem.

[5] *The Cause and Cure of Speech Disorders*. By James Sonnett Greene, M.D., and Emilie J. Wells, B.A. New York: The Macmillan Company. (Demy 8vo, pp. x + 458; illustrated. 20s. net.)

[6] *The Problem of Stuttering*. By John Madison Fletcher, Ph.D. London and New York: Longmans, Green and Co., Ltd. (5½ × 8, pp. xiv + 362; 5 illustrations. 10s. 6d. net.)

MELLOR'S CHEMISTRY.

THE eighth volume of Mellor's Chemistry[7] is devoted to nitrogen and phosphorus. Reviews of preceding volumes of this treatise have appeared from time to time in this *Journal*, and little need be added to the praise already accorded to the author's work. It is a classical production in the truest sense, for it is impossible to glance through its pages without gaining the impression that nothing has been overlooked in its preparation. The voluminous references to bibliography appended to each discussion can only be described as amazing. The statements contained in the text are assembled in a connected sequence that must have cost untold labour in arrangement, and, having regard to their multitude, one can only wonder how it was done. Not a word is wasted to make a sentence brief, nor spared to make a sense clear. But the supreme delight is the spirit of romance with which the whole work is clothed, beginning with the dedication which is inscribed: "To the privates in the great army of workers in chemistry. Their names have been forgotten. Their work remains"—and continuing throughout with every attention to the arresting details of history. Thus we may read here how in 1680 Robert Boyle deposited with the secretary of the Royal Society a sealed packet containing an account of his preparation of phosphorus which was published posthumously in 1693, and how Dulong, after his discovery of the dangerously explosive nitrogen chloride, continued his work on this compound after it had cost him the loss of three fingers and one eye. To this book belongs the place of honour in any chemical library.

The ninth volume is also now ready and deals with the group arsenic, antimony, bismuth, and the related rarer elements. In this group there are perhaps fewer matters of general or non-technical interest, and the volume is mainly occupied with the terms of pure chemistry, but there is much information of absorbing interest on arsenic in its relation to life and living creatures.

NOTES ON BOOKS.

THE publication of a sixth edition of *Diseases of Infants and Children*,[8] by Dr. H. D. CHAPIN and Dr. L. T. ROYSTER, within a few years of the fifth is a proof of the popularity of this work. Much revision and elaboration has been necessary to incorporate recent progress in paediatrics, and this has been accomplished without materially adding to the size of the book, although the method of putting a great deal of matter in small print is open to objections. This book is intended essentially for those who wish to have a somewhat complex subject presented in as brief a form as possible. The authors have succeeded in the main, although the result is by no means a small volume, while in places clarity has been sacrificed to brevity. It is to be regretted that no references to authors quoted are given anywhere in the book.

[7] *A Comprehensive Treatise on Inorganic and Theoretical Chemistry*. By J. W. Mellor, D.Sc., F.R.S. Vols. viii and ix. London: Longmans, Green and Co., Ltd. 1928. (Roy. 8vo, vol. i, pp. x + 1110; 156 figures; vol. ii, pp. xi + 867; illustrated, each volume 63s. net.)

[8] *Diseases of Infants and Children*. By Henry Dwight Chapin, M.D., and Lawrence Thomas Royster, M.D. Sixth, revised edition. London: Bailliere, Tindall and Cox. 1928. (6 × 9¼, pp. xv + 675; 184 figures, 9 plates. 30s. net.)

Dr. F. ROQUES's work on epidemic encephalitis in pregnancy, labour, and the puerperium,[9] which represents an amplification of a review recently published in the *Journal of Obstetrics and Gynaecology of the British Empire*, is based on the study of 40 previously unpublished English cases under treatment at Sheffield, the National Hospital, Queen Square, and the Middlesex Hospital, and 171 cases, mostly of Continental origin, collected from the literature. The obstetrical aspect of acute epidemic encephalitis and Parkinsonism, which has hitherto received little attention from British writers, is fully discussed in all its bearings, including the condition of the child born to the infected mother. A full bibliography is appended, but there is no index. The work should find a wide circle of readers, appealing as it does alike to the obstetrician, the neurologist, the consulting physician, and the general practitioner.

We have received three instalments of a new German series entitled practical differential diagnosis for practitioners and students,[10] and edited by Professor GEORG HONIGMANN. They constitute parts 5 to 7 of the first volume, which is devoted to internal medicine. Diseases of the liver and bile ducts are dealt with by Professor GLÄSSNER, medical diseases of the locomotor system by Dr. ERNST FREUND and Dr. ALBERT SIMO, and infectious diseases by Dr. ALBERT HERZ. The information given is concise, clear, and practical, so that these three little works can be consulted with profit by those familiar with the German language.

In a little book entitled *Morpheus, or the Future of Sleep*,[11] Professor FRASER-HARRIS deals in a pleasant and informative way with the subject of sleep. He attributes sleep to four influences—chemical (fatigue products), the absence of sensations, the absence of emotion and ideas, and the diminution of the blood supply of the brain. He gives some hints as to the hygiene of sleep, and discusses dreams, attributing them chiefly to aberrant sensory impressions, and scarcely at all to unconscious influences, as some would do. Finally, he puts in a strong plea for the abolition of noise in the future regulation and planning of cities.

Who's Who in the Nursing World[12] for 1929—the second year of issue—gives information about the various administrative, examining, and training bodies and institutions, and other organizations concerned with the nursing profession, together with biographical notes of its leading members.

Sir RONALD ROSS's Nobel Prize Lecture, originally given in 1902, when the award was made to him, and published under the title *Researches in Malaria* two years later, has now been published in a French translation.[13]

We have now received the second part of the fourth edition of Professor HERBERT ASSMANN's textbook of radiological diagnosis[14]; the first part was noticed in these columns on December 8th, 1928 (p. 1042). The second volume begins abruptly in the middle of the section relating to the stomach, and deals with the remainder of the abdominal organs, the nervous system, and the joints and muscles. Many of the numerous illustrations are good. The book may be recommended as a companion to the first volume, from which it is inseparable owing to the rather unfortunate division of the matter contained in the two parts.

Dr. JOHN D. GIMLETTE's *Malay Poisons and Charm Cures*[15] has now been republished in a third edition, the text having been revised, with numerous additions. This work has been found of considerable practical value to those engaged in medico-legal work in the Far East since it was first published in 1915. It is also of interest to those who make a study of folklore and oriental beliefs and customs. A review of the second edition appeared in our issue of February 10th, 1923.

In *An Investigation of the Milk Yield of Dairy Cows*[16] Mr. J. F. TOCHER, D.Sc., of the University of Aberdeen, gives a statistical analysis of the data of the Scottish Milk Records Association for a number of years. This monograph, reprinted from *Biometrika*, is not only of considerable interest to statisticians, but should prove of practical value to those concerned with milk production.

[9] *Epidemic Encephalitis in Association with Pregnancy, Labour, and the Puerperium.* By F. Roques, M.D., M.Chir.Cantab., F.R.C.S.Eng. Manchester: Sherratt and Hughes. 1928. (Demy 8vo, pp. vii + 143. 15s. net.)

[10] *Praktische Differentialdiagnostik für Ärzte und Studierende.* Herausgegeben von Professor Dr. Georg Honigmann. Band I: Innere Medizin, Teil 5: Erkrankungen der Leber und Galle. Von Dr. Karl Glässner; Teil 6: Innere Krankheiten des Bewegungsapparates. Von Dr. Ernst Freund und Dr. Albert Simo; Teil 7: Infektionskrankheiten. Von Dr. Albert Herz. Dresden und Leipzig: T. Steinkopff. 1929. (Med. 8vo, Teil 5, pp. 327–392, M.4.50; Teil 6, pp. 393–448, 14 figures, M.4.50; Teil 7, pp. 449–552, M.6.)

[11] *Morpheus, or the Future of Sleep.* By Professor D. F. Fraser-Harris, M.D., D.Sc., F.R.S.E. To-day and To-morrow Series. London: Kegan Paul, Trench, Trübner and Co., Ltd.; New York: E. P. Dutton. 1928. (Feap. 8vo, pp. 94. 2s. 6d.)

[12] *Who's Who in the Nursing World.* Compiled and edited by H. E. Smithers. Second year. London: Professional Publications, Ltd. 1929. (Feap. 8vo, pp. xv + 331; illustrated. 5s. net.)

[13] *Une Grande Page de l'Histoire de la Médecine: La Découverte de la Transmission du Paludisme par les Moustiques.* Sir Ronald Ross, K.C.B., K.C.M.G., F.R.S., etc. Préface et Traduction de l'anglais par le Dr. Charles Broquet. Paris: N. Maloine. 1929. (5½ × 7½, pp. 174; 7 figures, 9 plates.)

[14] *Die Klinische Röntgendiagnostik der Inneren Erkrankungen.* Von Dr. Herbert Assmann. Vierte umgearbeitete und vermehrte Auflage. II Hälfte. Leipzig: F. C. W. Vogel. 1929. (7½ × 10½, pp. 513–1071; 568 figures, 5 plates. M.35.)

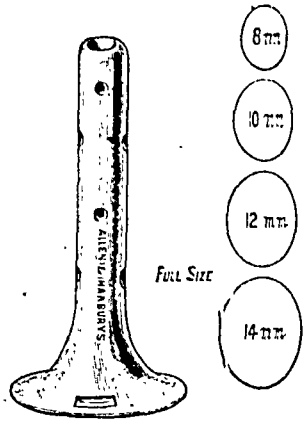
[15] *Malay Poisons and Charm Cures.* By John D. Gimlette, M.R.C.S., L.R.C.P. Third edition. London: J. and A. Churchill. 1929. (Demy 8vo, pp. xiv + 301; illustrated. 10s 6d.)

[16] *An Investigation of the Milk Yield of Dairy Cows.* By J. F. Tocher, D.Sc., F.I.C. From *Biometrika*, vol. xxb, Part 2, September, 1928. London: Biometric Laboratory, University College. 1928. (Imp. 8vo, pp. 165–234; illustrated.)

PREPARATIONS AND APPLIANCES.

DYSMENORRHOEA TUBES OR UTERINE STEMS.

MR. W. MCKIM H. MCCULLAGH (London, W.1) writes: Dilatation of the cervix for dysmenorrhoea gives freedom from pain of the spasmodic type for only twelve to fourteen months, as a rule. Stems have been used to ensure prolonged dilatation at the time of operation, and are inserted for four to five days. Their employment lengthens the time of freedom from recurrence of the pain.



Since those in use are usually of solid glass, and so prevent drainage of the uterine cavity, and also because their measurements are not graduated to suit different sizes of uteri, it was thought that the nest of stems pictured in the diagram would be an improvement. They are silver electro-plated on brass, and of four sizes, 8, 10, 12, and 14 mm., corresponding to the dimensions of Hegar's dilators. They are hollow, and rounded at the upper end; the wall of the tube is perforated with small holes. The base has two apertures for the insertion of a withdrawal tape. They are long enough to occupy the uterine cavity, and so straighten an acute anteflexion of the corpus uteri.

The cervix and body of the uterus are dilated to the extent desired, and a stem of the size smaller is inserted after steadying and exposing the cervical canal by vulsellae on the anterior and posterior lips.

A nest of four of these is made and supplied by Allen and Hanburys Ltd., Wigmore Street, W.1.

QUINOXYL.

Quinoxyl, a preparation recently put on the market by Messrs. Burroughs Wellcome and Co., is a mixture of 80 per cent. iodohydroxyquinoline sulphonic acid ($C_9H_4O_4NIS$) with 20 per cent. sodium bicarbonate. Oxyiodoquinoline sulphonic acid was introduced many years ago as a wound disinfectant under the name "loretin"; moreover, the drug yatren, which has been extensively advertised as a wound disinfectant and also as a gut disinfectant, contains, according to Anselmino, 8-oxy-7-iodoquinoline sulphonic acid mixed with 20 per cent. sodium bicarbonate.

In 1921 oxyiodoquinoline sulphonic acid was recommended as a treatment for amoebic dysentery, and it has been found very satisfactory for this purpose. The dose by mouth is 0.25 to 1 gram. It can also be used as an enema, 5 grams in 200 c.cm. water. The toxic effect of the drug is said to be negligible.

SPRAY FOR LARYNGEAL TUBERCULOSIS.

Dr. PERCY MOREY (Southampton) writes: Those of us who are engaged in dealing with cases of pulmonary tuberculosis have often noticed how very rapidly the cases go downhill once the larynx becomes involved, and how very little can be done to arrest this very troublesome and distressing complaint. From time to time I have tried numerous remedies, chiefly in the form of sprays and inhalations, and have never found anything of real value until recently I tried the effect of a spray of a 2 per cent. solution of collosol mercurochrome (Crookes). This spray is used two or three times a day, with the patient inhaling during the process of spraying, and so far, during the time that I have used it, some three months, every case has benefited—pain has been alleviated, the voice has improved, and there has been a marked improvement in the general condition. Most of my cases have been treated under sanatorium conditions, but, even so, the results from the use of this preparation have been much better than those obtained by any of the other methods I have tried.

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SATURDAY, MARCH 23RD, 1929.

THE ULTRA-MICROSCOPIC VIRUSES.

ALTHOUGH the meeting held recently at the Royal Society to consider the ultra-microscopic viruses[1] achieved little in the way of a discussion, it has at least served a useful purpose. It has provided an excellent summary of the present position of our knowledge of these agents of disease which will be appreciated by those of us who are not familiar with the recent developments in this subject, and, what is equally important, it brought together plant and animal pathologists, who were thus given an opportunity—unfortunately a rare event—of exchanging ideas and seeing how this problem is being tackled in a field of work other than their own particular one.

The problem of the nature of these ultra-microscopic viruses is most perplexing, and extremely difficult of solution. It cannot be dismissed as a question of mere academic importance, an attitude that the pragmatist adopts too readily towards much research, for since the work of Beijerinck on the filterability of the agent of mosaic disease in plants, and of Loeffler and Frosch (1898) on the virus of foot-and-mouth disease, the list of diseases, both of plants and animals, which are due to agents of this class has reached such proportions as to make it imperative to understand the nature of these agents and so be in a position to deal with their ravages in a scientific and more successful manner. In man such diseases as small-pox, chicken-pox, zoster, measles, mumps, yellow fever, dengue, and possibly influenza, epidemic encephalitis, and the common cold, are believed to be due to these so-called ultra-microscopic or filterable viruses; in animals we have foot-and-mouth disease, distemper, rabies, fowl plague, swine plague, and rinderpest—an incomplete but formidable list.

What is the probable nature of these viruses? Broadly speaking, there are two hypotheses current. The one would have us look upon them as something unorganized, enzyme-like in nature, possibly the result of some deranged function of tissue cells, which, once having been generated, would be capable of again setting in train those changes which in the first instance produced them. In other words, they are the products of damaged cells, and though capable of engendering disease are more truly the result of it. The other hypothesis envisages these disease agents as living things and quite possibly bacterial in nature. The former view has been ably championed by Boycott, and its supporters have advanced experimental evidence which purports to show that a virus disease can be produced in a healthy animal or plant by the inoculation of virus-free material. Experiments of this kind discount the possibility that stock which appear perfectly healthy can be virus carriers. That such a possibility does nevertheless exist is now beyond doubt, and the evidence which Dr. Salaman placed before the meeting recently is convincing testimony on this point. He described experiments showing how practically every plant of a certain variety of potato, though apparently healthy, carried the virus of a disease which could be brought to light by grafting on to potato plants of a susceptible variety. There is, however, nothing revolutionary in the idea that apparently healthy stock should be virus carriers. It occurs in the case of bacteria, and the work of Webster in America on the carriage of *B. lepiscpticum* (the cause of snuffles) in laboratory stocks of rabbits, and the investigations of Lauda showing that certain stocks of rats are carriers of a bacterium (one of the *Bartonellae*), are excellent examples of this. The latter is of particular interest. This organism can produce an anaemia which is frequently fatal, but the rats never sicken spontaneously; only when the spleen is removed and the balance between host and parasite is upset does this bacterium gain the upper hand and produce disease. Were it not for the fact that this organism can be demonstrated by bacteriological methods this condition might have been cited as an example of the spontaneous production of a virus.

The second hypothesis—namely, that filterable viruses are organized living things—was subscribed to by the majority of the speakers at the Royal Society symposium. Undoubtedly it is difficult to draw a clear line of demarcation between the living and the non-living. There is no single criterion of life, but several features taken together—such as capability of multiplication, adaptability to changes in environment, and the power of assimilation from the surrounding medium without loss of identity—are characteristic of living things. There is much evidence that filterable viruses fulfil these criteria just as much as bacteria do. These viruses, as Sir Charles Martin pointed out, differ only from bacteria in their smaller size and the difficulty of growing them in a lifeless medium. But even these are not features which clearly differentiate. There are visible pathogenic bacteria, such as the leprosy bacillus, which have so far resisted all attempts to cultivate them. Some cultivable and visible bacteria, such as those isolated by Olitsky and Gates from the nasopharynx of man, are filterable, and there is evidence that some of the so-called ultra-microscopic viruses are probably within the limits of microscopic vision. Paschen of Hamburg and Gordon in this country claim to have demonstrated the virus of vaccinia in stained preparations, and Professor Ledingham, from his own observations, said that he saw no difficulty in accepting these bodies as the virus.

While paying testimony to the valuable work which had been achieved by Mr. Barnard in ultra-microscopy, Professor Ledingham expressed the view that there was still much that could be done in the study of the morphology of these viruses by ordinary microscopical methods. Dr. C. H. Andrewes claimed that a distinguishing feature between filterable viruses and bacteria was the type of immunity which they evoked. He stated that infection with a virus gave rise to a lasting (frequently lifelong) immunity, and suggested that this was due to the persistence of the virus in the infected animal after recovery. But there are bacterial diseases, such as syphilis, in which the immunity is determined by the persistence of the infective agent in the body, and as far as the duration of immunity is concerned examples can be cited of virus diseases, such as foot-and-mouth disease, in which the immunity produced is of comparatively short duration, and herpes in man, where practically no immunity at all results from an attack. Further, the immunity which a virus confers varies much with the animal species infected. It is true that Dr. Andrewes cited experiments which suggested that antiviral serums behaved in a different way from antibacterial serums; but the antigen-antibody reactions studied in the past have been characterized by a fundamental similarity,

[1] The first part of the discussion was reported in the *British Medical Journal* of March 9th (p. 447), and a report of the second part is published this week at page 559.

whether the antigen was a simple protein or a living organism. Since filterable viruses are antigenic, and therefore protein, there seems no good reason for supposing that their behaviour will differ materially from that of other antigens and antibodies.

SILICOSIS AND THE WORKMEN'S COMPENSATION ACT.

PROGRESS is being made in bringing under the Workmen's Compensation Act the disabling condition of silicosis, or silicosis accompanied by tuberculosis. Serious practical difficulties led the Committee on *Compensation for Industrial Diseases* (which reported in 1907) to recommend, as the then more prudent course, that the question of scheduling the disease should be kept in abeyance for the time being. In 1917 pressure was again brought to bear on the Home Office to deal with the subject, owing to the successful measures adopted in the gold-mining industry of South Africa, under successive Miners' Phthisis Acts. These measures have greatly reduced illness by watering, etc., to minimize the dust, and by periodic medical examination to eliminate men found to be suffering from the disease, while awarding them generous compensation. As a result a method was devised for dealing with the difficulties of the situation in this country by "schemes," each applicable to a particular industry or group of industries.

At present three schemes are in operation—the Refractories Industries Scheme, the Metal Grinding Scheme, the Various Industries Scheme—while a fourth has recently been issued in draft for the sandstone industry. Perusal of the four schemes brings out what appears to be a strange inconsistency: those for the Refractories and Sandstone Industries embrace compensation for partial incapacity as well as for death and total incapacity, while the other two are restricted to death and total disability. The reason, of course, is mainly the burden placed on an industry by the payment of claims continued over a period of years in cases of partial disability, involving a levy perhaps of 5 or 6 per cent. on the wages bill from the employers in the particular industry. But, further, in these schemes a profound difference is to be observed in the way in which compensation is obtainable by the workman. Thus, *in the two schemes with compensation* for partial incapacity this is obtainable only through certification by a medical board, while in the other two compensation is obtainable through certification by the factory surgeon, with the usual right of appeal, either by the employer or workman, to a medical referee. Now the unsuitability of the certifying factory surgeon for diagnosing cases that involve claims for silicosis is self-evident. It is not that he would not be right in most cases, but that he would never be sure that he was, since he has to make his diagnosis at a single interview (at a fee of 5s.) without the aid of an *x*-ray photograph. *The Various Industries Scheme, which* has just come into force, adopts the discredited rule of restricting compensation to death and total incapacity, whereas the draft Sandstone Industries Scheme, of a later date, handsomely expresses readiness to recognize partial incapacity as rightly entitling to compensation. To be fair one ought to say that the Home Secretary is evidently aware of the Gilbertian quandary, and the appointment of the Silicosis (Medical Arrangements) Committee is a gallant effort at extrication.

Yet another scheme is in preparation—that for the Pottery Industry. The preliminary survey[1] by Drs. C. L. Sutherland and S. Bryson—members of the medical board appointed under the Refractories Industries Scheme—brought out the fact that of 72 elderly men exposed to unmixed flint dust 47 were found with fibrosis, and of 49 of those examined radiologically 23 showed silicosis. We have before us a similar survey by the same highly qualified medical men[2] (working under the supervision of Dr. E. L. Middleton, H.M. Medical Inspector of Factories) of their clinical examinations of 461 men (of whom 231 were radiologically examined) working on sandstone. In this inquiry the examinations were confined to men employed at the time, no cases of persons already disabled being included, but relatively higher proportions were included of those who had worked for longer periods. The disturbing fact emerges that among masons, quarrymen, and wallstone dressers, about 50 per cent. showed positive evidence of silicosis radiologically. The critical period appears to be between twenty and thirty years of employment. A concluding statement in the latest report by Drs. Sutherland and Bryson is important as pointing to real prevention of the trouble by bringing an influence to bear external to the workman—that is, one over which he can exercise no control—namely, a very effective "device for the application of localized exhaust draught for removal of dust produced by pneumatic surfacing tools." This obviously means that a method has been discovered for utilizing for this purpose the compressed air after it has done its boring work.

Public announcement has been made within the last few days of an international conference of experts on silicosis to be held at Johannesburg in August next year, the Transvaal Chamber of Mines contributing £2,000 towards the expenses and the International Labour Office being asked to vote another £1,000. This is all to the good, and should at least (1) throw light on the detailed administration necessary to work out effectively the schemes we have referred to, and (2) induce Continental countries to deal with this problem, the importance of which they have not apparently hitherto realized. As we go to press we see that a Silicosis Committee has just published a detailed account of the occurrence of this disease in New York City,[3] which we hope to discuss in a future issue.

ACTINOTHERAPY.

WE have on various occasions felt obliged to introduce a note of discord into the harmony that has prevailed between the general public, certain over-zealous practitioners, and the manufacturers of arc lamps, on the subject of the therapeutic value of ultra-violet radiation. In this imperfect world no remedy is perfect, and not even the best advertising can make it so. We have endeavoured to indicate some of the limitations of a treatment which many have regarded as a panacea, and to point to dangers that might follow its improper application, without, however, minimizing the real benefits obtainable in suitable cases from its use by adequately trained persons. In this matter we were under the impression that we reflected the views shared by cautious experienced clinicians and workers engaged in academic research. We may recall that on October 13th, 1928 (p. 661), when commenting on papers in the same issue by Professor W. E. Dixon and Dr. C. E. Heald, read at the Annual Meeting of the British Medical

[1] Report on the Incidence of Silicosis in the Pottery Industry. London: H.M. Stationery Office. 1925. 1s. 6d. net.
[2] Report on the Incidence of Silicosis among Sandstone Workers. London: H.M. Stationery Office. 1929. 1s. 6d. net.
[3] Silicosis among Rock Drillers, Blasters, and Excavators in New York City, *Journal of Industrial Hygiene*, February, 1929.

Association at Cardiff, we held that "although actinotherapy cannot fulfil all the claims made for it by some of its more sanguine exponents, there exists a definite set of conditions in which its employment is indicated; and though in skilled hands it may provide a treatment of the first importance, improperly used it may do the gravest mischief. . . . Actinotherapy, properly applied, is an important agent in the amelioration of rickets and surgical tuberculosis—often, indeed, in these conditions producing complete cure; and certain neurological conditions, anaemias, and skin diseases, though not cured, are usually benefited by this treatment." We emphasized, on the other hand, that "to patients suffering from pulmonary tuberculosis, arterio-sclerosis, chronic nephritis, quiescent appendicitis, and various forms of neurosis, the application of ultra-violet radiation may do definite and irretrievable harm." On December 22nd, 1928 (p. 1150), we returned to the subject in an annotation dealing with a dangerous propaganda conducted in certain quarters in favour of *self-administration of ultra-violet radiation by lay persons*. It will be observed that we were content merely to sound a note of warning. The Medical Research Council has now gone much further, and the current belief is that it is bent on putting out the lights with a douche of cold water. In its report for the year 1927-28, to which detailed reference is made elsewhere (p. 566), the Council states that "the use of artificial light to supply only what the right food can give is merely wasteful"; that in the treatment of children "no objective evidence is provided that results have been achieved that could not have been far more cheaply gained by proper food"; that the increased bactericidal power of the blood, shown in the laboratory to be produced by this treatment, "has not yet been correlated with any permanent effects of value in the body"; that the "same effects for good or evil follow inflammation of the skin blood vessels inflicted by heat or by other irritants than light"; and that "there is no present reason to know that artificial light can do more in this way than a mustard plaster." These conclusions are apparently based, in part at least, upon two investigations—one already published, conducted in 1925 by Dr. Helen Mackay under the auspices of the British Medical Association, on the effects of ultra-violet light given by the mercury vapour lamp upon the health of infants from the East End of London (all subnormal in physique), and the other, now in the press, carried out by Dr. Dora Colebrook, with the approval of the Board of Education, on the effects of light upon children at school. The value of such controlled investigations cannot be overestimated; but when, as in this case, they point to conclusions at variance with those of a large body of experienced clinicians and laboratory workers, caution suggests that final judgement should be suspended until a great deal more work has been done and the seeming contradictions in the results have been resolved. The antidote to over-credulousness is not complete incredulity, but a balanced opinion based on full consideration of all the available facts. We are therefore in cordial agreement with the Medical Research Council when, at the end of this section of its report, it urges the need for "properly controlled trials" at hospitals and clinics employing artificial light.

MUSSELS AND MUSSEL-BORNE DISEASE.

IT is a far cry from gaol fever to an oyster-borne or mussel-borne disease, though it is not so very long since the conditions were first actually distinguished. To-day typhoid and typhus are known to be separate clinical entities, yet we can understand how the confusion that once existed between them arose and persisted. Suppose, however, that during the time the conditions remained undifferentiated both a louse-borne and a mollusc-borne origin had been established in respect of the same symptom group, would this etiological differentiation have raised the question of the identity of the clinical complex? The existence of an apparently twofold etiology would certainly have stimulated inquiry, and no doubt a distinction would have emerged in terms of the measures necessary for the control of each of the causative factors. But, however unrelated they may appear, the work of the clinician and the etiologist go hand in hand, and the Ministry of Agriculture and Fisheries was wise to entrust an inquiry into the sources and methods of prevention of mussel pollution to a medical man who may bring to his investigation the informed vision essential to its successful outcome. The report on mussel purification[1] prepared by Dr. R. W. Dodgson is devoted to a detailed account of the part played by the mussel in the dissemination of typhoid fever, and to a discussion of the theoretical conditions and the practical measures involved in the control of this vehicle of infection. In a prefatory statement Dr. E. S. Russell, Director of Fisheries, writes: "It may seem strange that in a fisheries report so much attention is directed to questions of public health. But it is clear that in the long run the interests of the fishermen and of the public are identical. It is not to the advantage of the fishermen to put on the market a food which is or may be a potential danger to the public health, and it is the duty of the Fisheries Department to co-operate with the health authorities in stopping this gap in the nation's defences against infectious disease." This is excellent doctrine. In Dr. Dodgson's report the medical officer of health, and the estuarial and coastal health authorities desiring a concise account of mussel diseases and of the methods adapted to their prevention, will find the material they require. Mussel poisoning includes at least three distinct pathological conditions or types of conditions. The first is "musseling," a toxic idiopathy of which the chief characteristic is an erythematous rash produced in certain susceptible persons in response to the ingestion of mussel protein. The second is a paralytic condition, always grave and at times fatal. This type of poisoning is wholly distinct from "musseling," and has nothing in common with it either in respect of its etiology or of its characteristic symptoms. The cause, indeed, is unknown, but all the cases on record have followed the ingestion of mussels from foul or stagnant waters. The condition is extremely rare, only about ten cases being on record, and probably it could be eliminated altogether if elementary precautions were exercised and only purified mussels eaten. The third variety is a condition of bacterial food poisoning. If purified mussels only were eaten the risk of food poisoning would probably be no greater than that which might follow the consumption of other foods. But the chief problem is undoubtedly in relation to the mussel as an agent in the dissemination of typhoid fever, and Dr. Dodgson's investigations would appear to have rendered possible a method of mussel cultivation by which this particular danger has been successfully eliminated. Potentially, mussels are more dangerous than oysters, not only because their habitat is nearer to sources of pollution, but because they are more liable to be polluted than oysters living under exactly the same conditions. The technique of mussel cleansing does not appear to be formidable, and it is given in detail in the report: in essence it consists of hosing and bedding in sterile baths, by which the mussel is afforded the opportunity of self-cleansing under conditions in which reinfection from its own integuments and accreta is rendered impossible. In order fully to safeguard the public the process should be applied universally, all mussels, whether cultivated at home or imported, being regarded as contaminated. There can be no doubt that these measures,

[1] *Report on Mussel Purification.* By R. W. Dodgson, M.D., M.R.C.P.Lond., M.R.C.S.Eng. Ministry of Agriculture and Fisheries: Fishery Investigations, Series II, Vol. X, No. 1, 1928. London: H.M. Stationery Office. 1928. (Imp. 8vo, pp. xvi + 497; 15 plates, 9 figures, 3 maps. £1 1s. net.)

though they may appear to be unduly rigorous, are economically sound: outbreaks of typhoid fever cost far more than the measures which might have prevented them.

ACCIDENTAL HAEMORRHAGE AND PLACENTAL INFARCTION.

THE etiology of accidental haemorrhage has for some years attracted investigators, who have been primarily concerned with the problem whether toxaemia of pregnancy should be looked upon as the cause of accidental haemorrhage or as its sequel. In 1926 F. J. Browne communicated the results of his experimental studies to a meeting of the Edinburgh Obstetrical Society, and this admittedly preliminary statement was published that year in the *British Medical Journal* (April 17th, p. 683). Professor Browne has continued this line of research, and some further experimental observations have now been published by him in association with Dr. Gladys H. Dodds, in the *Journal of Obstetrics and Gynaecology of the British Empire* (vol. 35, No. 4). It may be recalled that the investigation began in 1923 with the discovery that injecting a rabbit on the twentieth day of pregnancy with *B. pyocyaneus* gave rise to revealed and concealed haemorrhage four hours later, while the kidneys showed the presence of acute nephritis. Repeated attempts during the next two years to reproduce such experimental bleeding failed. Evidence from hospital and private patients began to accumulate, and supported the view that *chronic nephritis existing before pregnancy predisposed to* haemorrhage. In the present investigation, which was undertaken to clear up certain doubtful points, and especially to ascertain the important factors in the production of haemorrhage, a new series of 35 rabbits was injected with sodium oxalate in order to produce chronic nephritis; the rabbits were then mated. At the twentieth day of pregnancy (corresponding to the sixth month in the human subject) acute exacerbation of the nephritis was caused by *a fresh injection of sodium oxalate, after which an emulsion of B. pyocyaneus* was injected intravenously; accidental haemorrhage ensued in every case. The sodium oxalate was excluded as the cause of the haemorrhage by injecting uranium nitrate first and the bacillary emulsion subsequently. It was then found that in the presence of chronic nephritis haemorrhage could be readily induced by the injection of *B. pyocyaneus* alone, without it being necessary to inject uranium on the twentieth day, and that in animals *suffering from chronic nephritis the production of the acute* form by the injection of uranium was sufficient to cause haemorrhage without any subsequent injection of the bacillus. In the absence of chronic nephritis the injection of *B. pyocyaneus* did not usually set up ante-partum haemorrhage, even though the organisms caused acute nephritis, and no external bleeding occurred in any one of ten experiments designed to test this point. Further, the injection of uranium nitrate to cause an acute nephritis was not usually sufficient to induce ante-partum haemorrhage in the absence of chronic nephritis. Though in such chronic nephritic animals albumin may be absent between pregnancies and during the early part of pregnancy, it appears in the urine in the latter half of the pregnancy and before the onset of spontaneous haemorrhage. This is obviously of importance when considering the recurring toxaemia of pregnancy. The authors claim, therefore, that their results indicate that ante-partum haemorrhage is not due to organisms. It seems to be caused either by failure of the kidney to excrete poisons which eventually lead to the haemorrhage when they have accumulated in the circulation in sufficient concentration, or by chronic nephritis interfering with a normal metabolic function of the kidney. The outstanding conclusion of these careful and exhaustive experimental studies is that chronic nephritis is the one important predisposing cause of accidental haemorrhage. The authors discuss at length the pathology of placental infarction and its relation to external and concealed haemorrhage, chronic nephritis being the essential factor in both. They trace also a fundamental similarity between the haemorrhage and infarction found in cases of chronic nephritis and causing early abortion, and the concealed or revealed haemorrhage and infarction occurring in the last three months of pregnancy, and usually styled accidental haemorrhage.

THE EDUCATION OF THE CRIPPLED CHILD.

THE treatment and education of the cripple with the object of making him a self-reliant member of society is now so much a matter of course that it came almost as a surprise to hear, from the historical survey of crippledom given by Sir Henry Gauvain to the Medical Officers of Schools Association on March 15th, how recent is this outlook upon the physically defective. Throughout the centuries the cripple has been the object of pity, though often, among the coarser-minded, of derision, and even Charles Dickens, in his sympathetic delineations, could only suggest a cheery philosophy in acceptance of a hard lot. Dickens's *Christmas Carol*, however, had an outcome which its author could not have foreseen, for it inspired Sir William Treloar in his work for cripples, and ultimately led him to make the Alton experiment. One great pioneer step was the foundation, thirty years ago, of the Mary Ward (Mrs. Humphry Ward) School, now in Tavistock Place, better known as the *Passmore Edwards Settlement, for children* whose physical defects made it impossible for them to go to an ordinary school. This is the school, adjacent to the home of the British Medical Association, which was unexpectedly visited by Their Majesties when opening the Association headquarters in 1925. It was the first school for invalid and defective children to be supported out of the public rates. The first residential cripples' school to receive official recognition was one animated by the same spirit, and in which the medical profession has always taken a deep interest—the Heritage Craft School, at Chailey in Sussex, founded and conducted by Mrs. Kimmins. The establishment of Lord Mayor Treloar's Cripples' Home at Alton was an outstanding result of this new development of the social conscience. Among other aspects of the same movement enumerated by Sir Henry Gauvain was the establishment of open-air schools, the first of which came into existence at Plumstead in 1907. The efforts made to restore crippled soldiers during and after the war also directed attention to crippledom in the civil population, and to the fact that much of it was unnecessary and avoidable; it began to be realized that treatment combined with education was not only an act of pity to unfortunate individuals, but a remunerative proposition for the State. Various investigations were made into the causes of crippling, which are chiefly tuberculosis, infantile and other forms of paralysis, congenital defects, rickets, and accidents. Rheumatism, said Sir Henry Gauvain, crippling enough in later life, rarely produced joint disease and crippling among children. The education of the cripple, suited to his limitations, and directed (especially later on) to a craft at which he might earn his livelihood, had had a distinct therapeutic value. It had brought to the cripple as many of the amenities and advantages of school life as possible. It had stimulated him to catch up with the normal. It had kept him busy, interested, and happy, and helped to remove his sense of inferiority, though there were still some forty hospitals in this country receiving cripples at which educational facilities were not provided. After a tribute to voluntary work, in which all social advance had originated, no step being taken by officialism until it had been tested by voluntary experiment, Sir Henry Gauvain recounted some interesting and highly encouraging cases which had come within his experience at Alton.

DEATH CERTIFICATION AND PREMATURE BURIAL.

THE Births and Deaths Registration Act, 1926, came into force on July 1st, 1927. It will be remembered that it dealt with the registration of stillbirths, and prescribed a new procedure with regard to the certification of deaths and the disposal of bodies. This new procedure has, we believe, operated quite successfully during the past year and a half, the only actual hitch in its smooth working having been overcome by a semi-official recognition by the Registrar-General that a medical practitioner must in certain circumstances be allowed to send the death certificate to the local registrar by the agency of the person liable to act as informant of the death for registration purposes, a course which might be held to be strictly illegal. There is still a serious gap in the law relating to the preservation of infant life left by the definition of stillbirth embodied in the Act, and an attempt to bridge this gap is being made in the Preservation of Infant Life Bill now before Parliament. As regards death certification and the disposal of bodies, however, most reasonable people are satisfied that the Act does, in fact, effect such reforms as were necessary to prevent premature interment or the detection of crime. Nevertheless there still remains a body of apprehensive and dissatisfied persons clamouring for further enactments. It is not unnatural that Sir George Greenwood should be their spokesman in a publication issued by the Oxford University Press on behalf of the Society for the Prevention of Premature Burial, and entitled *The Law of Death Certification*.[1] It consists very largely of a statement of the provisions of the Act of 1926, with comments thereon. The mistake is made of regarding this Act as a Government measure, whereas it was in fact introduced and piloted through Parliament by private members, and therefore could not contain any clause imposing a charge on public funds. There is a great deal of quite unnecessary repetition and reiteration throughout the volume, and a large amount of sarcastic abuse of everyone who does not agree with the writer. Considerable space is also occupied by quotations, mostly some years old, of remarks made from time to time by certain coroners whose taste for notoriety is itself notorious. The main grievances proclaimed appear to be two—one major and one minor. The minor grievance is that, though the prescribed form of the medical certificate of the cause of death may now be signed only by a registered medical practitioner "in medical attendance during the deceased's last illness," there is no definition of what constitutes such medical attendance. It has been suggested that this should mean "personal attendance by the person certifying upon at least two occasions, one of which should be within eight days of death," but Sir George Greenwood wants something more stringent even than this. Actual experience of ordinary medical practice makes it evident that any such definition would be likely to be both inconvenient and futile. The major grievance is that the law still leaves open the possibility of premature burial, inasmuch as it does not require the body to be viewed after death in every case by the practitioner certifying or some other registered medical practitioner. There are, of course, arguments in favour of such a requirement, and there would be no serious medical opposition to it under proper conditions; but its enactment would entail considerable expense either to the State or to the individual, would necessitate the making of special arrangements for the cases in which considerable distances have to be travelled or for action in time of widespread epidemics, and would probably be resented by the public in a great many cases. The opponents of this requirement hold that these considerations far outweigh any advantages that it would have over the precautions imposed by the recent Act. On the other hand, Sir George Greenwood and his fellow reformers cry: "Good God! if there is a chance of one man or woman in a thousand, in two thousand, in twenty thousand, in a million—if there is any possible chance at all—the risk is so unspeakably horrible that such chance ought to be eliminated absolutely and for ever." The "chance" is that of premature burial; and it will be noted that, however small this may be, absolute elimination is demanded. But these reformers keep on reiterating that "there is but one really trustworthy proof that death has occurred in any given instance—namely, the presence of a manifest sign of commencing decomposition." It follows that the compulsory viewing of a body by a medical practitioner must continue in each case until such decomposition is actually evident, and that only on certification that this has occurred can burial or cremation be allowed. Nothing short of this can satisfy Sir George Greenwood's requirements, but it is probable that the general common sense of the public will rest secure with the really adequate protection which the law now affords.

[1] *The Law of Death Certification.* By Sir George Greenwood. Oxford Medical Publications. London: Milford, Oxford University Press. 1928. (5¼ × 6½, pp. x + 83. 1s.)

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY.

IN our issue of October 27th, 1928 (p. 760), we announced that, under the patronage of the King, the fifth International Congress of Military Medicine and Pharmacy would be held this year from May 6th to 11th at the British Medical Association's House in Tavistock Square. Previous conferences were held in Brussels in 1921, in Rome in 1923, in Paris in 1925, and in Warsaw in 1927. At the forthcoming congress will be discussed the evacuation of the sick and wounded by water and by air, together with the function of the medical services in combined operations; tropical fevers of short duration; wounds of blood vessels and their sequels; the physical and chemical analysis of glass and rubber articles employed by the medical services; and the standard of dental and physical fitness in the various military services. At the exhibition of surgical appliances, instruments, drugs, and of equipment used by the medical officers of the Army, Navy, and Air Force, to be held in connexion with the conference, will be demonstrated a device whereby medical officers may be enabled to ascertain the degree, and, within limits, the cause of the unfitness of candidates for the Air Force. All members of the British Medical Association in the metropolitan area are cordially invited to attend the exhibition.

INFLUENZA.

IN the week ending March 9th there was a slight decrease in the number of deaths attributed to influenza in the great towns of England and Wales: the total fell from 2,193 to 2,127. In the Midlands and Yorkshire the rate of mortality was still increasing, but in other parts of England the maximum had been passed. The notifications of pneumonia tell the same story. To judge from the rates of mortality and morbidity (from pneumonia), the West Midland area—particularly Birmingham—has suffered more severely in the present recrudescence than any other part of England. In the week ending March 9th the notification rate of pneumonia per 100,000 reached 302.7 in the West Midland area, double the rate in London in the week of maximum (151.4) and much greater than the maximum for the North-Western area (206.1). The rate in Yorkshire is intermediate between that of the Midlands and the North-West, but may not yet be at a maximum. In the North the rate is declining and in the week of maximum was nearly the same as in the worst week of the North-West. It would seem that a decline has begun, although several weeks are likely to pass before mortality is normal.

MEDICAL RESEARCH COUNCIL.

ANNUAL REPORT.

I.

Each year the report of the Medical Research Council contains so much material that it becomes increasingly difficult to continue the practice of giving an outline of some of the most important aspects of the work carried out under its direction. The report for the year 1927-28 is actually a little larger than last year's, and while no startling new discovery is described within its covers it is a record of steady progress in many branches of research. The sum of £138,000 was provided by Parliament during the financial year, and it is very satisfactory to note that important additions to the available resources have again been made this year by the generosity of private benefactors and various public bodies. Of the total expenditure, the costs of office administration and scientific organization, including travelling expenses for members and officers of the Council, have not exceeded 6 per cent., despite the fact that no free services are supplied by the Post Office, H.M. Stationery Office, or Office of Works. Co-operation with research organization throughout the Empire, referred to in last year's report, has this year been largely attained. In the autumn of 1927, at the request of the Government of India, the secretary of the Medical Research Council, Sir Walter Fletcher, visited India on leave for five months. While there, he served as chairman of a committee appointed to report upon the organization of medical research in India.[1] This committee did very valuable work, and was able to attend the triennial Congress of the Far Eastern Association of Tropical Medicine, held in Calcutta in December, 1927. The secretary was also able to visit other centres in India, and was especially interested in the possibility of interchange of workers with such organizations as the Indian Research Fund Association. Another circumstance which has aided the progress of Empire co-operation was the visit during the last two summers of Professor Lyle Cummins to South Africa at the invitation of the Tuberculosis Research Committee of the South African Institute for Medical Research, and comparison between the methods and results of inquiries in the two countries has afforded important help to the Tuberculosis Committee, both here and in South Africa.

GENERAL SUMMARY OF RESULTS.

An indication of the Council's general policy is afforded by a study of those matters specially selected for mention and discussion in the introduction to the report. This year the Council indicates the steps whereby the treatment of pernicious anæmia by liver and liver extract was investigated at the National Institute at Hampstead, following the reports of American work, and how the co-operation of manufacturing firms was obtained for getting an adequate supply of liver extract for extensive clinical trials. The Council reported upon these investigations, and supplies of the extract were then made available through the ordinary commercial channels by the firms interested. On the subject of treatment by artificial light the report observes that large sums of public and private money are being expended on the provision of artificial sources of ultra-violet radiation while there is no scientific reason to suppose that the treatment of rickets is better effected by ultra-violet rays falling on the skin than by the direct provision of the necessary food values. In fact, states the Council, "it commonly costs three or four shillings to give by light an effective supply of vitamin D that would cost less than a penny if given by the mouth in the form of cod-liver oil or otherwise." Artificial sunlight is used for the treatment of various conditions other than rickets, but careful control work seems to indicate that results are largely negative. During the winter months 1927-28 Dr. Dora Colebrook, in conjunction with the medical officer of health for Willesden, Dr. Buchan, and with the approval of the Board of Education, carried out a scientifically controlled trial of the effects of light upon children at school. A report on these results is now in the press. It appears that the results of the light treatment were wholly negative. There was no greater gain in weight, height, mentality, or "spirits" in the children who received light treatment, and they actually suffered a greater incidence of minor ailments than the rest. There is likely to be a great deal of discussion about this section of the report, and further study seems to be necessary before passing final judgement. Nevertheless, in the opinion of the Council, many of the claims for phototherapy are fantastic, and "it seems fair to suspect that in much of the present advocacy of light treatment the results *post hoc* are accepted as *propter hoc*."

On the subject of radium and cancer the introduction reviews the progress since 1920, when the Council was entrusted by the Government with 2½ grams of radium. "It is not too much to say that the outlook has been quite transformed in that time." It is true that progress has taken place more at some centres than at others, but everywhere there has been improvement in methods, especially in working out the radio-surgical technique of access. It is maintained that for cancer of the cervix and for certain types of cancer of the tongue radium treatment is as efficient as the knife, without entailing nearly the same risk and suffering. Radium treatment in many centres has still to win its way from the inoperable to the operable types of cancer, but the Council believes that the present policy of using every centre both for treatment and research will eventually lead to the evolution of sound methods of treatment. Finally, the introduction refers to the forthcoming publication of a "System of Bacteriology" in nine volumes.

WORK AT HAMPSTEAD.

Thanks to a bequest made to the Council by the late Right Hon. Lord Justice Ronan, K.C., of Dublin, which defrays the whole of the expense, it has been possible to extend the building of the National Institute for Medical Research, and the new annexe, to be known as the Ronan Building, is to be ready for occupation in the spring; Dr. H. H. Dale has been appointed director-in-chief of the institute. In the department of biochemistry and pharmacology work has been specially directed to the subject of histamine and allied substances, and the work has been extended to the study of an unstable choline ester obtained from the spleen of certain animals. Dr. Rosenheim and Mr. T. A. Webster have continued their investigations into the production of vitamin D by the irradiation of ergosterol, and so far have been unable to produce the vitamin by treatment of other sterols or allied substances. In the pathological section the chief work has again been a study of diseases due to filter-passing "viruses." Captain Douglas and Dr. Wilson Smith have studied generalized vaccinia in rabbits, and Dr. Perdrau has made a special study of vaccinia, dealing with the particular form of encephalomyelitis which has on occasions been found in association with vaccinia. His observations reinforce the view that post-vaccinal encephalitis is not directly due to the vaccinia virus, but that on rare occasions in certain individuals the vaccinia may enable an unknown factor, perhaps another virus, to produce the encephalitis. Mr. I. A. Galloway has continued to work at Hampstead on behalf of the Foot-and-Mouth Disease Committee of the Ministry of Agriculture, and various problems in the immunology of foot-and-mouth disease have been studied. Mr. Dobell has continued his study of the intestinal protozoa of monkeys, and his work upon *Entamœba histolytica* has been extended so that various stages in its life-history have now been described for the first time. It has been found that one part of emetine in five million parts of culture medium will kill the organism in certain experiments. In the department of applied optics the work of the past year has been mostly concentrated on technical problems arising in the study of filterable viruses, and the results now obtained by using ultra-violet light constitute a definite advance. In association with Professor Topley of the London School of Hygiene, photographic observations have been made of the "bacteriophage." Mr. T. C. Angus, in the section of applied physiology, has continued his investigations on the sources of ultra-violet rays. He worked out the dosage and superintended the installation of the lamps used at Willesden in Dr. Colebrook's experiments. Dr. Leonard Hill has been continuing his work on

[1] See *British Medical Journal*, December 1st, 1928, p. 1001.

the blood pressure in the capillaries, especially those of the liver, and has concluded that about half the systolic pressure in the arteries is spent in maintaining the velocity of blood flow. With Captain Douglas and Dr. Wilson Smith, Dr. Hill has investigated the effect on droplet infection of spraying a room with antiseptic solutions, and it is concluded that the use of such sprays in public rooms is justified.

BIOLOGICAL STANDARDS.

Since the Therapeutic Substances Act came into force in August, 1927, there has been much work of an expert and advisory kind for the Standards Department of the National Institute. A systematic survey of the different scheduled substances already on sale in this country under licence has been initiated. This year has also seen the completion of the preparation and testing of the standard tuberculin, which has been adjusted in strength to the closest possible identity with the standard originally created by Ehrlich at Frankfort. The Standards Department has also been able to devote some time to substances not yet scheduled. For example, the difficulties involved in the standardization of scarlatina antitoxin have been to a certain extent elucidated by the work of Dr. Hartley. So far he has been able to measure, with some accuracy, the lethal dose of the toxin for the rabbit, and the practical application of his work to the standardization of antitoxin seems to be in sight. Again, an international standard for digitalis has existed for some time, and in response to a demand from British manufacturers the department is preparing an accurately assayed mixture which will be available to such British manufacturers as require it, in advance of legal control. Work in the production of standard cultures and serums has continued, and the demand for these has been maintained. In view of certain criticisms of the Widal test, Dr. Gardner has investigated the problems which have arisen in connexion with this reaction in persons who have been inoculated against typhoid fever, and specially sensitized suspensions of organisms are now available for use in these cases. An epidemic of infectious jaundice among school children in Oxford has been investigated, and while it was negative as far as finding the *Leptospira icterohaemorrhagiae* was concerned, it revealed that 50 per cent. of the local rats were harbouring this organism.

EXPERIMENTAL MEDICINE.

Work in various clinical units throughout the country has been supported by the Council, mostly by the provision of part-time workers. At University College, under the direction of Sir Thomas Lewis, observations on the peripheral circulation have been continued, and Dr. Harris and Dr. Marvin have brought forward conclusive evidence for the first time that the minute vessels of the skin in the mammal are under the direct control of the sympathetic nervous system. Observations upon itching have also been made, and it is concluded that this symptom is due to stimulation of the sensory nerve endings by histamine or its equivalent. Drs. Grant, Wood, and Jones have investigated the irregularities present on the valves of the heart in relation to the infection which occurs in subacute bacterial endocarditis. They suggest that irregularities of surface play a much less important part than the formation of small platelet thrombi. At St. Thomas's Hospital the work of the medical unit under Professor Hugh MacLean has been mostly concerned with various aspects of the physiology of digestion. The generally accepted theory of regurgitation of alkaline intestinal contents into the stomach has been shown to be no longer tenable, and it has been demonstrated that the stomach possesses a self-regulating mechanism for acid. It has also been shown that the secretion of pepsin bears little relation to the amount of acid present in the stomach. Drs. Gardiner-Hill and Forest Smith have continued their work on the clinical condition associated with some of the endocrine disorders. At St. Bartholomew's Hospital, under Professor Fraser, the medical unit has conducted a considerable amount of work of a biochemical nature. Drs. Linder and Carmichael have shown that the reduction of the chlorides in the cerebro-spinal fluid in cases of meningitis accompanies a corresponding decrease in the arterial blood serum and is not due to changes in the meningeal permeability. Professor Fraser, Dr. Linder, and Dr. Hilton have made observations on the circulation rate in man by a modification of the Fick principle. At Sheffield Professor Mellanby has continued his experiments to determine the chemical properties and the nature of the substance present in cereals which interferes with the calcification of bone. It has been shown that in this respect oatmeal is the worst and white flour the best of cereal products, and in the course of his work Professor Mellanby found that ergot had a decided antirachitic action, which is of interest in that as far back as 1889 Tanret first isolated ergosterol from ergot, and vitamin D must also have been obtained at the same time. At St. Andrews Dr. Rowand has made a further investigation into the occurrence of albuminuria in children, and he has also investigated the occurrence of respiratory catarrhs and the condition of the tonsils and adenoids in children of pre-school age. It is anticipated that these studies will eventually allow some valuable generalizations to be made.

CHILD LIFE.

Problems of the toxaemias of pregnancy have been investigated by Dr. O. L. V. de Wesselow at St. Thomas's Hospital. He has been occupied in a study of the blood volume and its relationship to the plasma protein content in the toxaemias of pregnancy in nephritis and hypertension. Work at Glasgow under the general direction of Professor L. Findlay on the metabolism of infants has been continued. Drs. Graham and Morris have been investigating the acid-base equilibrium with special reference to respiratory and gastro-intestinal disorders. Under Professor L. G. Parsons at Birmingham investigations into some aspects of the biochemistry of acute rheumatism have been continued, and, taken on the whole, the results indicate that the acid-base balance of the blood of rheumatic children is very little different from that of normal children. The work at this centre on coeliac disease has been continued, and the research has concerned itself chiefly with the source of the fat in the faeces. The evidence so far obtained points to the fat being unabsorbed food fat. At University College Dr. H. A. Harris has confirmed his views with regard to the role of vitamins in bone formation, and in Manchester Dr. A. A. Mumford has conducted an inquiry to determine whether, by the use of body measurements and physiological tests, any constant relation can be discovered between the varieties of physical build commonly found among adolescent schoolboys and the various physical activities and aptitudes which these boys display. Drs. Davies and Lightwood are investigating some of the factors concerned in the production of acute rheumatism in children under the age of 16, and Dr. Carey Coombs is supervising collective research on similar lines in Gloucestershire, Somerset, and Wiltshire.

HUMAN NUTRITION.

Under this heading last year some mention was made of an important investigation at St. Andrews. This involved inquiries into the dietaries of 159 households of all classes, carried out over a period of a week, and repeated for 35 households six months later. As St. Andrews is a non-industrial town this investigation has been supplemented by work at Cardiff, where the diet of some sixty households has been the object of study. Work on the importance of iodine in foodstuffs has been carried out at Aberdeen by Dr. A. B. Orr and Dr. I. Leitch. The report on this work has already been issued by the Council, and was noticed in these columns on February 16th (p. 307). With funds supplied by the Empire Marketing Board the Council has investigated the vitamin content of fruit, vegetables, and dairy products in relation to conditions of production, transport, and preservation. Dr. Zilva has been studying the mechanism of the inactivation of the active principle in lemon juice, and with Mr. Hoyle has undertaken an extensive inquiry into the antiscorbutic factor in apples grown in this country and stored for various periods under carefully controlled conditions at the Low Temperature Research Station, Cambridge. The behaviour of vitamins in butter and margarine kept in storage has also been studied.

(To be continued.)

TOXICITY TESTS FOR NEOSALVARSAN.

THE Medical Research Council has just issued a full report[1] of the inquiry conducted by Miss Florence M. Durham, Dr. J. H. Gaddum, and Mr. J. E. Marchal into toxicity tests for novarsenobenzene, concerning which Dr. H. H. Dale, F.R.S., gave a preliminary account to the international conference at Frankfort-on-Main in April, 1928. The attempt to achieve international uniformity in drugs of the salvarsan series brought to light a special set of problems. Unappreciated variations, or undetected accidents of manufacture, resulting sometimes in products unduly poisonous, have long called for the subjection of each batch of these drugs to a toxicity test. A number of arbitrary tests have been evolved, lacking, however, any common basis of comparison, and with no rational basis beyond that of vague practical experience. The means to a more reasonable conformity was found in the establishment of an internationally valid standard material for each important member of the series, samples with a higher toxicity being regarded as unfit for practical use. Following the acceptance of this standard the Medical Research Council's Department of Biological Standards undertook an experimental inquiry to ascertain what constitutes a suitable toxicity test, in the course of which the assumptions common to existing methods have been examined, and in many instances proved to be unsound. In particular, the inquiry has concerned itself with the influence of variability in the most uniform stock of experimental animals, and tables of probability have been drawn up which are applicable to the effects of different practical tests for the purpose in view.

General Purpose of the Test.

It has been suggested, on the hypothesis that toxicity and curative activity vary together, that as well as an upper limit of toxicity a lower limit is required below which it should not be allowed to fall. This hypothesis gets no support from the experience of these investigators, who assume that an independent test for therapeutic potency is applied, according to the recommendations of the International Conference on Biological Standards, which met at Geneva in September, 1925. This conference recommended that every batch of the remedies in question, before issue for use on human subjects, should be tested for therapeutic potency on mice or rats infected with a suitable strain of pathogenic trypanosomes, and that before being certified as fit for general issue it should have been used on a series of human patients under the supervision of a qualified expert. The conference at Frankfort further recommended, in emendation of the technique of the test proposed at Geneva, that samples of every batch should be tested for toxicity on at least ten mice or five rats, or on both, and only such preparations should be passed for issue whose toxicity under experimental conditions does not exceed the standard by more than 20 per cent.

Determination of the Characteristic Curve.

Though variations in sensitiveness to the same poisonous substances are known to occur even in a uniform stock of animals, the implications of this variability for the determination of a minimum lethal dose have not had the same general recognition. It is fortunate that the invariably lethal dose with most substances is many times as great as that which kills only an occasional animal. As a basis for practical measurement a dose must be chosen which kills a stated proportion of the animals treated, though the problem still remains of deciding what is to be regarded as a standard mortality. A lethal dose, as J. W. Trevan[2] suggests, can only be accurately stated as a proposition in probability. The larger the number of animals of a given stock which can be used in each investigation of a standard substance in a series of doses, the more closely will the experimental curve relating death rate to dosage approximate to the theoretical death-rate curve which can be given by an infinitely large number. When such a "characteristic toxicity curve" has been determined the death rate for any particular dose can be read off from it, and the probability that the actual death rate observed in a particular dose will differ from the theoretical death rate by not more than a specified amount can be stated numerically. Conversely, when an unknown quantity of poison has killed a certain proportion of experimental animals, the probability that the dose used differs by not more than a specified amount from the theoretical standard dose producing that death rate can also be estimated. With the data needed for the construction of a characteristic curve the investigators were able to decide on the dose and on the number of mice that had to be injected in order to obtain an accurate measure, within the defined limits, of the toxicity of the drug under examination. The ideal test would obviously be that which, on the one hand, allows every substance to pass if its real toxicity does not exceed that of the standard by more than the agreed proportion, and which, on the other hand, condemns every sample whose real toxicity exceeds the agreed limit. No practical test which passes every sample with a 20 per cent. excess will also inevitably reject every sample with a greater toxicity. It was found, however, that a test could be chosen which would pass a high proportion of drugs having a 20 per cent. excess and reject a high proportion of those in which the figure reached 30 per cent.

To eliminate any effects of variation in sensitiveness among different batches of mice injected on different days, and of variation in quality among the contents of different ampoules, the procedure was to take on one day a batch of mice and to inject an equal number with a range of doses made from one ampoule, and to repeat this until the required number for each dose had been injected. The dose for each mouse was calculated, in milligrams per gram, from its fasting weight, and the solution had a uniform strength of 2 per cent. All injections were made intravenously, and deaths occurring in the three following days were recorded. The first characteristic curve was obtained with mice taken at random, no attempt being made to choose mice of uniform stock or weight. The curve obtained could be regarded as giving only a general indication of the relation of doses to death rates. Further curves were made, using mice of approximately the same age, bred entirely from the laboratory's stock and selected so that their weights all fell within the limits of 18 to 20 grams. In view of the finding that, when the dose injected into each mouse was proportionate to its weight the mortality among small mice was lower than among large ones, a further experiment was undertaken, which established a relationship between dose and weight. Another fact observed was that the percentage mortality among female mice was invariably about 8 to 10 per cent. higher than among males. The investigators emphasize the fact that the curves they obtained relate only to mice of their own laboratory strain, and that each testing centre should therefore construct its own standard curve with mice resembling as much as possible those which would be used in routine tests.

Use of the Characteristic Curve.

The object of the test is not to determine toxicity, but simply whether or not the toxicity exceeds a certain maximum above the standard. The characteristic curve shows in what range the dose should be chosen, and by simple calculations from the available data it is possible to determine how many animals should be injected with that dose and what maximum should be fixed for the permissible death rate. The statistical department accordingly drew up a series of tables indicating, for different values of the probability that any one animal will die, the probabilities that in tests on five, ten, or fifteen animals the death rate will not exceed a specified figure. From the tables the investigators were able to obtain a figure showing the percentage frequency with which the standard itself would pass any test laid down in terms of dose, number injected, and maximum permissible mortality, and were thus able to deduce that any test showing a large percentage of failures of the standard would be unduly severe in its effect on good samples. A series of graphs was prepared, based on the characteristic curve, showing how often the standard preparation, injected in various doses, would be expected to pass a test on five, ten, or more mice. Toxicity is thus stated as "20 per cent. in excess" when the usual dose injected into a number of mice produces a mortality corresponding to that which a 20 per cent. larger dose of the standard would have produced; and the frequency with which a sample having that excess toxicity will pass can be found by taking the point on the appropriate curve which corresponds to a dose exceeding by the given percentage that actually injected.

Tests at Present in Use.

Tests requiring the use of mice are official only in Britain, Germany, and Japan, and the investigators proceeded to consider the validity of each of these tests separately, and of an alternative test prescribed in the American regulations for use when the mouse rather than the rat is chosen as a test animal. The British test, as applied to material having the standard toxicity, is satisfactory, the expectation of failure being only four in a thousand; but in relation to excess toxicity the test is not as discriminating as it should be. Of batches 10 per cent. more toxic, 20 fail out of 1,000, of batches 20 per cent. more toxic, 90 fail out of 1,000, and it is not until 90 per cent. excess is reached that rejection becomes practically certain. The German test, which involves the use of a large number of mice, is more discriminating than the British, and

[1] Reports on Biological Standards. II. Toxicity Tests for Novarsenobenzene (Neosalvarsan). Special Report Series, No. 128. 1929. H.M. Stationery Office. 9d. net.

[2] *Proceedings of the Royal Society B*, 1927, 101, 435.

batches of standard toxicity, and all but 1 per cent. of those having a 10 per cent. excess toxicity, passing the test; on the other hand, 38 out of every 100 batches with a 40 per cent. excess toxicity would still be able to pass. The Japanese test, when used with mice bred in the British laboratory, is unsatisfactory; 81 per cent. of batches with 50 per cent. excess toxicity pass the test, and it appears that a batch would have to be twice as toxic as the standard before its rejection became practically certain. The results of the American tests closely resemble those of the Japanese.

An Improved Test.

The investigators conclude that a more sharply discriminating test can be devised than any at present in use. Taking as their guide in the choice of a dose the fact that the greatest nicety is attained when the mortality rate rises rapidly with increase of dose, they find that, if 18- to 20-gram mice are used, an optimal dose is 7.6 milligrams per mouse. A 50 per cent. mortality produces the steepest curves in the above-mentioned graphs based on the characteristic curve, and thus gives the most discriminating tests. The final demand of their test is for a survival of at least 50 per cent. of thirty mice injected with 7.6 milligrams of the sample under examination. By conducting the tests in three stages, and eliminating from further tests those samples which are practically certain to fulfil the final demand and those which are certain of rejection, the number of samples requiring the full number of thirty mice is reduced to small proportions. All samples of toxicity up to the standard pass this test, and only 4 out of 1,000 fail when the toxicity is 10 per cent. above that of the standard. On the other hand, the test is unduly severe in that only 41 per cent. of material having a 20 per cent. excess of toxicity can be expected to pass it. The stringency, however, can easily be modified without sacrifice of precision by raising or lowering the standard dose and keeping the mortality constant.

Need for a Standard.

The investigators conclude by stressing the need for a uniform and practically stable standard. Comparative biological testing of any substance is possible only when a standard can be prepared and stored in such stable form that samples can be trusted to retain their value for a reasonable time after distribution. In relation to novarsenobenzene, they are convinced that such stability may be ensured with a selected and tested batch, desiccated with great care and thereafter kept at low temperature, and they suggest that the adoption of the precautions recommended by the international conference at Frankfort will soon render available a stable central standard.

Ireland.

The Four Provinces Club.

THE Four Provinces of Ireland Club held its annual banquet and ball at the Hotel Cecil, London, on March 18th, with the president, Mr. J. B. Melville, K.C., in the chair. Among the very large and distinguished gathering of Irishmen and Irishwomen and their guests were a considerable number of members of the medical profession. The chairman and others at the high table were played into the hall by Shaun O'Neill's Irish Pipers; grace was said by the Right Rev. Dr. Amigo, Bishop of Southwark; and during dinner Irish airs were played by the string band of H.M. Irish Guards. After the King's health had been honoured, the toast of "Ireland" was proposed in eloquent and sympathetic terms by Mr. Justice McCardie. The first reply was by Mr. O. Grattan Esmonde, a member of the Dail, who brought a message of congratulation from President Cosgrave; and the second (a model of its kind) by Sir William Wheeler, who reminded his English and Scottish friends that in Ireland there was a close alliance between Literature, Medicine, the Church, and the Law, all of which callings had leading representatives among them that night. If he were asked by a great insurance corporation to report on the health of Ireland, Sir William Wheeler said he would reply that she was a first-class life, and might reasonably be accepted at a reduced premium, but if asked how that health could be maintained, or even improved, he would advise against too rich a diet of undiluted Irish politics. In the twentieth century the social, scientific, and economic interests of all countries were so interlocked that an unrestricted policy of detachment from a neighbour might lead in the case of any nation to a heart-breaking process of decay. Science and letters knew no nationality and no distinction of race or of speech, but they did recognize that their contributions should be dedicated to the service of mankind, and should be worthy of the country from which they sprang. The Four Provinces of Ireland could hold up their heads in this respect. In surgery there was Berkeley Moynihan, whose forefathers came from Munster; and Hugh Rigby, born in Dublin, who had been chosen to operate on the King. Sir William Wheeler also recalled the name of Alfred Keogh, hailing from Connaught, who, as Director-General of Medical Services at the War Office during the war, was the master mind which coped with casualties amounting to almost three million on the Western Front alone. He mentioned, further, a devoted scientist screened from the public gaze, Professor John Joly of Trinity College, Dublin, who had been the force behind the discovery of how to collect radium emanations in such an economical way that they could be used in the treatment of cancer among the poor in every land. Thus science and literature and their allies ranked co-operation high above checkmate, and joined in brotherhood in the service of mankind. The concluding toast of the evening was that of "The Guests," proposed in the warmest manner by the Chairman, and responded to by Lord Justice Russell, Mr. R. D. Blumenfeld, and Mrs. C. J. Mathew, L.C.C. A small reproduction from the beautifully illuminated menu card appears on this page.

FOUR PROVINCES OF IRELAND CLUB.

County Medical Officers of Health in the Irish Free State.

Considerable progress in the appointment of county medical officers of health has been made under the Local Government Act, 1925. In co. Cork a chief medical officer of health has been appointed, with three assistants to carry on the general functions of medical officers of health under his supervision; a chief public health nurse, with six whole-time assistants, has been obtained for school inspection and tuberculosis work. In Kildare and Offaly county medical officers of health have been installed to deal with school inspection, tuberculosis, and other public health work. In counties Louth and Cork the county medical officers of health, in addition to their other duties, are pushing forward with a scheme for the eradication of diphtheria by immunization. Carlow and Westmeath have recently appointed county medical officers of health, and the question is under consideration in at least half a dozen other counties. As regards the four county boroughs, school medical services have made considerable progress in Dublin and Cork, and schemes are now being inaugurated in Limerick and Waterford. Since the appointment of county medical officers of health the notification of infectious diseases and other public health records has greatly improved. In the development of these schemes the Department of Local Government and Public Health has received considerable help from the Rockefeller Foundation.

Tuberculosis in Meath.

At a recent meeting of the Meath Board of Health a letter was received from the Department of Local Government and Public Health pointing out that immediate steps should be taken to bring into operation a suitable scheme for the treatment of tuberculosis in the county, and suggesting that the arrangements should be co-ordinated with other county health services under a county medical officer of health. Dr. Sterling Berry, medical inspector of local government and public health, who attended from the Department of Local Government, said that in 1927 the number of deaths from pulmonary tuberculosis in Meath was sixty-six, and from other forms of tuberculosis twenty-five. If they had a tuberculosis medical officer in the county no doubt a number of these cases would be discovered in the earlier stages of the disease, which was especially necessary in pulmonary tuberculosis, if they wanted to save life. In other forms of tuberculosis—surgical—even if the patient did not die as a result of the disease, he was generally crippled for life and likely to become a charge on the rates. Dr. Berry said he had been looking into some figures in connection with co. Meath, and, considering the nature of the county, some of these figures had startled him. In Meath in 1927 the figure for childbirth deaths was 3.27; in 1924, 3.27; in 1925, 5.95; while in 1926 there were fifty deaths from congenital debility and premature births in this county. In his own district, which embraced some of the poor western districts and which were not in the same category as Meath, the figures were nothing like that. The county medical officer of health would be responsible for maternity and child welfare, and for the inspection of school children. It was a statutory obligation on the county councils to have an inspector of midwives, and this duty would be undertaken by the county medical officer of health. Considering the figures he had given it was quite evident that this officer would be a great advantage in Meath. He could be chief tuberculosis medical officer and medical inspector of school children. Fifty per cent. of the salary as such was repaid by the Government, and when the officer found a child requiring dental treatment or treatment for adenoids half the cost was met, even though the children were treated in their own hospital. So far as the county medical officer of health was concerned, all the Board of Health could do was to send a recommendation to the county council, which had the responsibility of paying. But the Board of Health, as the health authority for the county, could tell the county council that they considered it was time to move in that direction. The medical inspection of school children, Dr. Berry added, was a splendid thing; they were examined by an expert, the disease was detected in the pre-tuberculous stage, and was then arrested. The section gave the Minister full power to ask the Appointments Commissioners to recommend a person in case the county council did not do so. If the county council appointed the man themselves at a salary of, perhaps £800 a year, that might be allocated on the basis of £450 as tuberculosis medical officer of health, and the remainder as school medical officer and inspector of midwives, say £500 or £600, for half-recoupment. The travelling expenses would be dealt with similarly. There was no recoupment in respect of the county medical officer of health.

General Nursing Council (Irish Free State).

At the first meeting of the newly constituted General Nursing Council Sir Edward Coey Bigger and Miss O'Flynn were unanimously elected chairman and vice-chairman respectively. It was reported to the council that the total number of nurses registered in the Irish Free State was 4,881. This number includes 3,869 general, medical, and surgical nurses, 3 male nurses, 901 mental nurses, 44 sick children's nurses, and 64 fever nurses. At the last examination held by the council in Dublin, Cork, and Waterford there were 219 candidates, 21 of whom failed. The council passed a resolution calling on the Minister for Local Government and Public Health to take such action as may be necessary to ensure the appointment to permanent posts in mental hospitals throughout the Free State of only those mental nurses who are fully trained and registered. From their number the council appointed rules, registration, finance, uniform, and badge committees. The penal cases will be considered by all the members of the council. Dr. Kelly, Dr. Leeper, and Dr. O'C. Donelan were appointed to act as an advisory committee to the council in matters connected with mental nursing.

England and Wales.

The Burrow Hill Sanatorium Colony, Surrey.

It is proposed to reopen next month the Burrow Hill Sanatorium Colony at Frimley, in connexion with a new scheme—namely, the treatment and training of tuberculous youths between the ages of 14 and 19. This colony, which is administered by the National Association for the Prevention of Tuberculosis, was originally started for tuberculous ex-service men, and now that the need for it in this respect has been met, a new field of utility is being opened up with the active co-operation of the Ministry of Health. The scheme has been approved by an order of the charity commissioners, provided that preference is given to the dependants of ex-service men. The institution will contain eighty beds, sixty of which are to be available for arrested cases of tuberculosis, while the remainder—in a specially designed block—will accommodate patients in the earlier stages of the disease. While primarily intended for youths suffering from pulmonary tuberculosis, in whom permanent arrest of the disease is ultimately likely to be secured, and who need technical education with a view to being enabled to support themselves economically, cases of glandular tuberculosis without sinuses, or of tuberculous disease of the bones and joints, will also be eligible for admission provided that active orthopaedic treatment is no longer required. Since technical education forms an essential part of the regime, only those who are physically and temperamentally suitable for it can be dealt with. This education will comprise gardening and clerical work; the course in gardening has been prescribed by the Surrey Agricultural Department, and the clerical work will be under the supervision of the Surrey Education Committee. It is hoped that the subsequent placing of the youths in employment will be effected by care committees or other organizations responsible for this kind of work; in some cases promises of employment may be obtained in advance, when efforts will be made to arrange the training of the individual so as to fit him for the particular post. The duration of residence contemplated is one year, or longer, and the inclusive cost of maintenance will be 50s. a week. Facilities will soon be available, therefore, for local authorities in England and Wales who are concerned with the long-period treatment and technical education of tuberculous youths. The Minister of Health has issued to county and county borough councils and tuberculosis joint committees a circular (969) notifying them of the establishment of this institution, and advising them to make use of it. Emphasis is laid on the importance of selecting patients who will be able to remain for as long as may be required; and the hope is expressed that the tuberculosis care committee, or other suitable organization, will charge itself with the task of finding suitable employment for patients on discharge.

Central Midwives Board.

The Central Midwives Board for England and Wales met on March 7th, when Dr. West presided. A letter was read from the acting registrar of the Nurses' Registration Board, New South Wales, asking the Board's views on a proposal to extend the period of training from twelve months to two years for pupil midwives who were not general trained nurses. It was agreed to reply that the period of midwifery training in England has only recently been increased, and that sufficient time had not yet elapsed to enable the Board to express an opinion as to the advisability of extending the period still further. With reference to a letter from the Cheshire county council—which considers the forms for keeping ante-natal

notes, as prepared by the Board, too complicated, and asking approval of one, a specimen of which was forwarded—it was decided to reply that the Board was proposing to consider, in due course, and in the light of experience, a revision of the form of keeping ante-natal notes, but that the existing form was intended for well-trained midwives, and that midwives not sufficiently well trained should be instructed in the method of using the form. Midwives who needed instruction should be advised to take their patients to an ante-natal clinic, and, if this was impracticable, arrangements should be made for a medical examination. The Board did not see its way to approve the form submitted as a substitute for the official one. A letter from the medical officer of health for the county of Southampton was considered. It was stated that a midwife had summoned a doctor for a patient suffering from "severe frontal headache" on the seventh day of the puerperium. The doctor had paid more than one visit and the medical officer of health inquired (1) whether the condition, as described by the midwife, constituted an emergency as contemplated by the rules, and (2) whether the committee would be justified in informing the doctor that, while his account would be paid on this occasion, in the event of his being sent for by a midwife in similar circumstances in future, payment could only be made for the first visit, the ground for such decision being that the condition as described was not a complication of pregnancy. The medical officer of health also suggested that Rule E 21 limited the operation of Rule E 20 to cases which were direct complications of pregnancy and confinement, and asked for the Board's opinion on the point. It was resolved to reply that, inasmuch as the Board had always held that Rule E 20 applied to *all* cases of illness or abnormality occurring during pregnancy, labour, or lying-in, without being restricted in any way by Rule E 21, the Board was of the opinion that the condition referred to in the letter was an emergency within the meaning of Section 14 of the Midwives Act, 1918. The question of payment of fees to doctors under Section 14 of the Midwives Act, 1918, was one for the Minister of Health and not for the Board to decide. Dr. Fairbairn and Dr. Lyster reported on their inspection of the new maternity hospital in Wolverhampton, and on the question of midwifery training there. It was decided that the recommendations of the report should be communicated to the hospital, and that the observations of the hospital authorities thereon should be invited.

Conference on High-grade Milk Production.

A conference is to be held at Reading on April 16th and 17th, under the auspices of the Certified and Grade A (Tuberculin Tested) Milk Producers' Association, for the discussion of matters of mutual interest to those concerned in the production of the highest grades of milk. The chairman of the conference on the first day will be Sir George Newman, Chief Medical Officer of the Ministry of Health, and on the second day Professor Frederick Hobday, principal of the Royal Veterinary College, London. The mornings are to be devoted to papers and discussions, and the afternoons to visits to producers' farms and the premises of distributors in the district, as well as to the University farm and the National Institute for Research in Dairying. The subjects for discussion include the progress of the movement for graded milk in England and Wales, Scotland, and Northern Ireland, the production of tuberculin-tested milk in Holland, the use of milking machines, the variation in the fat content of milk, and the relative values of milk raw and heated. Among the readers of papers are Professor Stenhouse Williams, Dr. R. M. F. Picken, medical officer of health, Cardiff, and Major G. W. Dunkin, of the National Institute for Medical Research, who is to speak on the tuberculin test. The authorities of Reading University are actively co-operating by allowing the conference to be held at the University, and by placing hostel accommodation at the disposal of the visitors. The honorary secretary of the convening association is Lieut.-Colonel C. Maddock, M.D., D.P.H. (Foxglade House, Shinfield, Reading), to whom any communications should be made.

District Nursing in London.

Steady extension of the work of the Central Council for District Nursing in London is a prominent feature of the report of the council for 1928. Notable improvements have been effected in South London, and better nursing arrangements are being made in the new London County Council estate within the Hendon Urban District. A new association has been started in Middlesex for Sunbury, Upper Halliford, and Charlton, in affiliation with the Queen's Institute; this association will be conducted on a provident basis, the payment of 2d. a week being asked. The appeal fund was closed in October, 1928, the amount received being £1,700. About half this sum was distributed last July in order to maintain the amount of awards to associations at the level of recent years; the remainder has been placed on deposit. An appeal for help to King Edward's Hospital Fund was unsuccessful. The total awards made to district nursing associations in 1928 amounted to £4,443, including the sum received from the appeal fund. In addition to the £3,000 entrusted to the council by the trustees of the London Parochial Charities, £400 was also given by these trustees for the administrative work of the council, and £100 was granted for bursaries. Contributions were also received from the Worshipful Companies of Drapers, Cloth Workers, and Skinners, the Society of Apothecaries, and the Peabody and Guinness trustees. A sum of £533 was paid through the council by the Ministry of Health in respect of midwifery and maternity nursing undertaken by certain associations. The British Medical Association is represented on the central council by Mr. Comyns Berkeley, Dr. William Paterson, and Mr. H. M. Stratford.

Arrangements for Dealing with Venereal Disease in London.

The proposed arrangements for the diagnosis and treatment of venereal disease in London for 1929–30 were placed before the London County Council on March 12th. Seventeen general and six special hospitals now undertake in-patient or out-patient and other work under the scheme, and all-day clinics have been provided at St. Thomas's, Guy's, the Royal Free, and St. Paul's Hospitals. An all-day clinic at the London Hospital is expected to be available at an early date, and another at the West London Hospital is in course of construction. Six hostels are also included in the scheme. The county of London, for the purposes of these arrangements, is joined by certain neighbouring authorities—namely, the councils of the counties of Buckingham, Essex, Hertford, Kent, Middlesex, and Surrey, and the county boroughs of Croydon, East Ham, and West Ham. During 1928 the number of new cases which came forward was 25,996, of which, however, 9,595 were found to be not venereal. The number of venereal cases (16,401) shows a decline on preceding years: the average for the years 1924–27 was 18,077. Of the new cases in 1928, those of syphilis numbered 5,270, of gonorrhœa 10,896, and of soft chancre 235. It is pointed out that these figures are not the full measure of the extent to which venereal disease came under treatment in London, as a not inconsiderable number of cases received treatment by general medical practitioners. The number of bacteriological specimens examined at the hospitals at the request of, and free of cost to, practitioners in all areas was 29,406, and 459 practitioners are on the approved list for the free supply of salvarsan or its substitutes. The total expenditure estimated for 1929–30 is £103,760, of which 83 per cent. represents London's proportion, and 17 per cent. that of the participating authorities; three-fourths of the expenditure is recoverable by Government grant.

Royal Bath Hospital, Harrogate.

Presiding at the one hundred and third annual meeting of the Royal Bath Hospital and Rawson Convalescent Home, Harrogate, Viscount Lascelles commented on the need for spending more money on research with a view to preventing rheumatic complaints. The annual report of the committee of management showed that the progress of the institution had been steady and satisfactory. The most urgent needs were the provision of an

electric lift and of a suitable theatre for minor operations of an orthopaedic nature so as to deal more efficiently with serious cases than was at present possible. Special donations were invited for these urgently needed extensions, which were only being delayed for lack of money. Other requirements were an *x*-ray plant and facilities for occupational therapy. The treasurer reported that the hospital balance sheet showed a profit on the year's working of about £500, and the Home a profit of £117. The laboratory account revealed a substantial deficit, and the treasurer emphasized the importance of obtaining an endowment of between £8,000 and £10,000 to provide the necessary income in this respect.

Correspondence.

A COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS.

SIR,—Dr. Herbert Spencer's letter (March 16th, p. 523) has appeared at a critical moment in the history of a great endeavour to establish a British College of Obstetricians and Gynaecologists—at the very moment, in fact, when we are presenting our case, and the objectors theirs, to the judgement of the Board of Trade, at which an inquiry is to be held on Friday, March 22nd, the day on which this issue of the *British Medical Journal* will be published.

I am sure Dr. Spencer's intention is not to put a spoke in our wheel, but merely to represent the other side of the case, which, in various forms, has been laid before us during our deliberations extending over a period of four years, and which has been rejected by us as being apprehensive rather than apprehending.

It is clear, I think, that Dr. Spencer is as anxious as the rest of us are about the present unsatisfactory position of obstetrics and gynaecology—a science limited no longer (in the language of the Chinese) to the "regions below the belt," but embracing many aspects of medicine and surgery, to both of which, indeed, it has itself largely contributed. Nevertheless, physicians and surgeons in the past (there are many enlightened exceptions to-day) have treated gynaecology and obstetrics rather disdainfully as an offshoot, and not as a partner of equal rank.

Our art, which is as old as theirs, and which has also attained to the position of a high biological science, has become differentiated, and cannot any longer be absorbed or suppressed in the progress of evolution: it has its own individuality and ideals, which must find expression at the hands of its own exponents. But while Dr. Spencer seeks to find alternatives to the formation of a new college, and suggests that the various objects we have in view fall within the province of the Obstetrical Section of the Royal Society of Medicine, the medical press, and the Royal Colleges of London, the fact remains that in a period of very many years these alternatives have not materialized. Dr. Spencer evidently has missed what seems to be the reason—namely, unified and concerted effort is necessary to obtain great results. All the bodies mentioned have undoubtedly rendered great service to one cause or another, but none of them has lifted, or, I suggest, has seriously tried to lift, obstetrics and gynaecology from the rut along which it would have travelled indefinitely if it had not been idealized and raised to its present position—academic and practical—by ardent votaries.

At present there are many gynaecological and obstetrical societies scattered throughout Great Britain which are doing work no less valuable than that of the Section devoted to this subject at the Royal Society of Medicine; there are, moreover, colleges elsewhere as important in the eyes of their disciples as are the London colleges in the opinion of those of us who have the honour of belonging to them. The time has now come when the various scattered groups of obstetricians and gynaecologists, while remaining attached and loyal to their own colleges and societies, should bind themselves together in one corporate body to advance their specialty. That, then, is the real issue. Are we to be content with playing for our counties only, or may we not aspire to constitute from our county membership an M.C.C. to represent not only London, but the whole country?

This is not the place, nor is the present the proper time, to go into the arguments and details which will be carefully considered in a few days' time; but I wish, in closing, to make clear the fact that, if we succeed in our application, we shall all fully realize that there are before us long years of spade-work and probation, during which we shall try not only to justify our existence, but also by discipline, hard work, and vision to create a great tradition, and to acquire a home, a library, and that financial status the value of which Dr. Spencer by no means overestimates.—I am, etc.,

W. BLAIR BELL,
Chairman of the Council of Signatories of the proposed College of Obstetricians and Gynaecologists.

Liverpool, March 16th.

P.S.—I regret that time and distance have not allowed me to consult any of my fellow signatories, or to obtain their valuable co-operation in drafting this letter, but I have endeavoured briefly to express in a general way views which, I believe, we hold in common.—W. B. B.

COLLES'S FRACTURE.

SIR,—The discussion in your pages on Colles's fracture grows more complicated each week, as each contributor puts forward a new suggestion, whilst the general principle essential to success in the treatment of any fracture is being overshadowed. Every writer agrees that perfect anatomical reduction is essential, but not one has mentioned the only possible way in which this can be ensured. It matters not what manœuvre is practised—whether the ulna is pushed backwards or the radius forwards—whether one uses one's hands or a wedge—whether one prefers gas or ether—provided that the success of the manœuvre is proved by the immediate post-reduction *x*-ray examination through the splints.

Whether Mr. Bankart agrees or not as to the possibility of reduction by Sir Robert Jones's method under gas anaesthesia, the fact remains that at the Liverpool Royal Infirmary over 400 cases a year are being successfully treated by this method by house-surgeons and house-physicians. But it must be emphasized that the house-surgeon's treatment is controlled, and that every case without exception is returned for a second *x*-ray examination, and inspected the following morning at the daily fracture clinic by the orthopaedic surgeon. If the position is not absolutely perfect the fracture is again manipulated and *x*-rayed as frequently as may be necessary to secure anatomical perfection. Not until then is the patient transferred to the weekly clinic.

In this way the house-surgeon gains as much experience as he wishes, and yet treatment is so controlled that our follow-up clinics show that in 80 per cent. of our cases it is difficult or impossible after twelve months to distinguish the fractured from the normal wrist. These results are secured by the routine described by Sir Robert Jones, except that I always teach house-surgeons to use the manipulative manœuvre in its two component parts, the backward displacement and tilt being corrected by one movement, and the outward displacement by a second. Unless these are practised individually and separately there is a tendency to leave the outward displacement slightly under-corrected, so producing a bad cosmetic result owing to radial deviation of the hand, and a bad functional result owing to arthritis of the lower radio-ulnar joint. A pad over the back of the distal fragment and one over the front of the proximal fragment, with two gutter splints of aluminium, the posterior extending to the knuckles and the anterior falling short of the thenar eminence, provide an entirely adequate, simple, and comfortable method of immobilization.

But individuality is the keynote of surgery, and such details are of no significance as compared with the three essential principles: (*a*) anatomical reduction proved by *x*-ray examination; (*b*) immobilization for a month; (*c*) full finger movement from the first day.—I am, etc.,

R. WATSON JONES.

Liverpool, March 17th.

SIR,—The discussion on Colles's fracture at present taking place in the *Journal* must be of extreme interest to the profession. Anything that can help in overcoming or lessening the disability must be welcome to both the doctor and patient. This is my reason for adding to the discussion a simple line of treatment I have adopted to all fractures for some time past—namely, three-quarter to an hour's massage (by a masseuse) immediately before any attempt is made to reduce the fracture. It is very striking how easily a Colles's fracture can be disimpacted and completely reduced without causing pain to the patient. —I am, etc.,

Bath, March 12th. JOHN S. LEVIS.

ENLARGEMENT OF THE PROSTATE.

SIR,—The valuable discussion which has taken place in your columns recently has had its scope widened by the interesting letter from Mr. Andrew Fullerton (March 2nd, p. 417). I wish to support wholeheartedly this writer's statement regarding the use of an indwelling catheter. The two-stage prostatectomy has been unknown in my practice for several years. I could instance case after case similar to those cited by Mr. Fullerton and bearing out his claims, where men suffering from chronic urinary retention, *and showing dry, furred tongues and parchment-like complexions*, together with a high blood urea and all the other evidences of chronic uraemia, have recovered their health within a week or ten days sufficiently to undergo a successful prostatectomy. *It is a constantly recurring experience to* have patients admitted with a blood urea of 80 to 100 mg., and to watch this figure fall within a week or so to the neighbourhood of 40 mg., with a corresponding improvement in the patient's appearance and in his *sensation of* well-being, this resulting solely from the employment of an indwelling catheter. It should be observed, however, that the catheter must remain in the bladder. *Similar results* cannot be obtained by passing the instrument two or three times daily, as is done by some surgeons. *During this* period the bladder is irrigated twice or thrice each day, and *on each occasion two ounces of mercurochrome are clamped* in the viscus for a quarter of an hour and then released. Though some sepsis may occur in spite of these precautions, I maintain that it is materially less than that caused by a preliminary suprapubic drainage, and that those who fancy they can reduce cystitis prior to prostatectomy by that preliminary operation deceive themselves.

The simplicity of the procedure, the avoidance of a duplicate operation, and the incomparable blessings of a clean field for the main operation are notable assets. Moreover, the mortality during this drainage period is very small and compares very favourably with a definite death rate which I know to occur in the practice of those who do the double operation.

The employment of a finger in the rectum should be abandoned. It is unnecessary, and it is dirty. Even if two gloves are worn, as recommended, and the upper one is changed, the sleeve is nevertheless soiled. Nor is it desirable to remove the glove from the enucleating hand. The prostatic adenoma in the vast majority of instances forms an incomplete collar encircling the urethra in its posterior four-fifths. If the enucleating finger is gently passed into the prostatic urethra it will easily detect the anterior limit of this collar (anterior end of lateral lobe). The force required to commence enucleation at this point is so slight that the gloved finger can *accomplish it without tearing the* glove. This is not the region described by Freyer, nor, indeed, by many subsequent writers, but it nevertheless gives the quickest and easiest access, and merits the attention of any who have not yet tried it. *Some of them will not then* find it necessary to devise excuses for the use of the naked hand.

I agree with Mr. Fullerton that Sir Henry Thompson's dictum that enlargement of the prostate does not occur before the age of 50 requires revision. I have myself operated upon three cases below that age, and know of at least two others operated upon by other surgeons. Moreover, the number of men who present themselves suffering from the results of prostatic hypertrophy within a year or so of reaching the half-century has recently impressed me considerably, symptoms having occurred in not a few prior to reaching that milestone.—I am, etc.,

Manchester, March 12th. JAMES B. MACALPINE.

CYCLICAL VOMITING.

SIR,—In the report of the discussion upon the chronic dyspepsias of childhood at the Medical Society in your issue of March 16th (p. 502) Dr. Reginald Miller is *reported* as quoting a statement of mine to the effect that 30 per cent. of hospital children suffer from cyclical vomiting. There is even a footnote giving a reference to page 185 of your issue of February 2nd, which might lead the reader to suppose that Dr. Miller had found such a statement in some writing of mine.

I do not know the frequency of cyclical vomiting and have never made any attempt to state it. I certainly see numerous cases at the hospital, but then a good many are sent to me specially because my friends know I am interested in this particular disorder. Even so, the total is nothing like 30 per cent. of all the cases I see.—I am, etc.,

London, W.1, March 18th. H. CHARLES CAMERON.

LOCAL ANAESTHESIA IN OPERATIONS FOR HAEMORRHOIDS.

SIR,—*Dr. T. H. T. Barber's paper in your issue of* March 2nd (p. 397) and the subsequent papers by Sir William Wheeler and Mr. W. B. Gabriel should help to popularize a now well-established method of producing anaesthesia for operations upon the rectum and anus. I would like to sound a note of warning in case the incautious use of this method by those who are not well accustomed to local anaesthesia should result in accidents and tend to discredit local anaesthesia in these cases.

Both novocain and adrenaline are very safe drugs unless they are inadvertently injected into a vein; if this should happen even very small doses will cause most dangerous symptoms. The anal region is particularly rich in large veins, and it is most important that care should be used to avoid injecting the solution directly into the venous plexuses. My own practice in using local anaesthesia in operations for piles or fissure is to inject a 1 per cent. solution of novocain under the skin round the anus, starting at the posterior commissure and working forward on both sides till the whole anal cutaneous margin is anaesthetized, and then to pass the needle into the external sphincter guided by a finger in the rectum. The sphincter is very easily anaesthetized in this way and will quickly relax. A further injection into each ischio-rectal fossa will ensure complete anaesthesia of the whole region and allow of the rectum being properly washed out and sterilized, without which no operation upon the rectum is justified.

Personally I prefer not to use adrenaline at all, as I consider that it is more dangerous than novocain should it accidentally get into a vein, and quite excellent anaesthesia can be obtained without using it. I am sure that many accidents attributed to cocaine and novocain have in reality been due to the adrenaline added to them.—I am, etc.,

London, W.2, March 15th. J. P. LOCKHART-MUMMERY.

SIR,—In reply to Sir William Wheeler's letter, on March 9th, regarding my article, which was published on March 2nd (p. 397), I am very gratified to note that he fully supports my thesis by his own valued experience, and that he agrees with my own findings as to the superiority and advantages of local anaesthesia *versus* a general one for these operations. I also observe that he gets equally good results by the use of a simpler method of injections, but that he does not approve any stretching of the external sphincter, and attributes some of the after-pains to this practice.

I quite agree that, for purely operative measures, the complete relaxation obtained at the time of the operation

by the injections is all that is required, but I think that physiological rest for the parts for some days is necessary, and can best be obtained by induced temporary paralysis or abolition of tonicity by stretching the sphincter ani. For the cure of simple non-complicated fissures this may be all that is required. Frequently I have performed a dilatation operation at a nursing home in the morning, the patient returning to his own home the same evening without complaining of pain, and, when necessary, taking up his occupation on the following day. From these experiences I personally do not find that dilating the sphincter materially increases after-pains. With careful dilatation retention of urine should not occur.

Cutting, or the removal of any skin, is, I think, the chief cause of after-pains, and, in complete accordance with Sir William, I believe that no skin should be removed, that no raw surface or edge should be left unsutured, and that careful suture tends not only to lessen after-pain, but prevents spasm, post-operative haemorrhage, and infection.

Butler, in his *Textbook on Materia Medica, Therapeutics, and Pharmacology* (p. 392), says: "Antipyrine . . . analgesic and local anaesthetic. As an analgesic it probably ranks next to opium. The anaesthesia produced by antipyrine lasts for several hours or even days." Perhaps my employment of antipyrine—in vaseline—freely in all cases of simple dilatation, or after any kind of operation on the anus or rectum, may in a great measure be responsible for the minimum of after-pains noticed in all these cases.

Mr. W. B. Gabriel (March 9th, p. 474) draws attention to a very important point—namely, that no perianal swelling or oedema is seen after local anaesthesia (as contrasted with general narcosis), because there is never any vomiting. These complications may be the source of considerable pain or discomfort, lasting for several days after the operation. Following operations under local anaesthesia (the method of performing them is a secondary consideration, the most efficacious and simplest being, doubtless, the best) patients, on returning to bed, feel quite able to have something to eat or drink, and often enjoy a smoke; they are quite comfortable for from five to *seven hours after the operation, when pain may occur*, and last for several hours, though it never becomes intolerable. I suggest that this method, as endorsed by Sir William Wheeler and by Mr. Gabriel, is in all respects superior to any general or spinal anaesthesia.

Further, I think, that for the relief of post-operative pain, the systematic use of antipyrine should be given a fair trial; incorporated in vaseline it may be used immediately after the operation and for all subsequent dressings. It can be associated with any antiseptics that are not chemical incompatibles.—I am, etc.,

T. HENRY TREVES BARBER, M.D., B.Sc.

London, S.W.7, March 12th.

SIR,—I would like to endorse the opinions expressed by Dr. Barber (March 2nd, p. 397) on the advantages of local anaesthesia for the operative treatment of haemorrhoids and their complications. I have used local anaesthesia extensively for the past twelve years, especially for the ligature of haemorrhoids too fibrosed for effective treatment by sclerosing injections (the treatment of choice for simple or uncomplicated piles), and consider that it makes a combination of ligature and injection the ideal treatment when simple and complicated piles coexist. "Simple" haemorrhoids contain only varicose veins whose walls are not markedly fibrosed (*about 50 per cent. of all pile cases*), and "complicated" haemorrhoids may contain thick-walled veins, arteries, dense fibrous tissue, and another lesion—for example, fissure may coexist. A recent case will serve as illustration.

A male patient, aged 31, gave a history of prolapsed bleeding haemorrhoids of several years' duration. He had had to give up riding and sport. Examination showed five haemorrhoids, two small ones, three very large and fibrosed, two of the latter being intero-external. I injected the two small ones and removed the three larger by ligature under local anaesthesia. The patient had no pain or discomfort during the operation, and very little afterwards; he even refused a sedative that night, and was up on the second day, gentle exercise being allowed until healing was complete. Both the patient and his doctor have since warmly expressed their satisfaction at the result.

In sparing as much of the rectal mucous membrane as possible (by injection) and employing local anaesthesia for ligature, post-operative complications, such as stricture of the rectum, retention of urine, pain, and the period of lying up, are reduced to a minimum.

The anaesthetizing solutions I have chiefly used are: 1 per cent. quinine and urea hydrochloride, and a novocain solution somewhat similar to Dr. Barber's; each gives excellent results. Their advantages are that they are practically non-toxic and can thus be used in large dosage, they have a prolonged anaesthetic effect, and are haemostatic.

The technique I employ is simple and effective. It consists of deep infiltration to anaesthetize the sphincter and the tissues underlying the haemorrhoids. This is effected by means of four or five injections equi-spaced around the anus as follows. A 5 c.cm. syringe with a very fine needle 2 inches long is used. The skin at the point of injection is anaesthetized by injecting a few drops subcutaneously, and, by pushing the needle along under the skin, the points for further deep injections are anaesthetized so that only the initial needle-prick is felt. At a point on the skin half an inch from the anal opening, the needle is inserted downwards and slightly inwards through the sphincter to a depth of 1½ in., care being taken not to penetrate the bowel wall and inject anaesthetic into the rectum. A gloved finger in the bowel should obviate this by guiding the needle to its destination. Having reached the tissues underlying the haemorrhoid the solution is injected slowly drop by drop as the needle is gradually withdrawn. After three to five minutes anaesthesia will be complete. I have never found it necessary to apply the solution to the surface of the haemorrhoid nor to inject the anaesthetic into the body of the pile. Quinine and urea, whilst excellent for deep infiltration, should not be employed to anaesthetize the skin, as it causes thickening and induration of the cut edge. About 2 c.cm. of these solutions is necessary for each injection, but experience alone will teach the correct amount, which varies for different patients. Hirschmann has advocated local anaesthesia, both in writings and at British Medical Association and other medical meetings in this country, for over twenty years.

In my view Mitchell's operation should be abandoned in favour of the simple "ligature" advocated by proctologists in this country, which entails only a single cut with the scissors. Ano-rectal operations involving suture, of which Mitchell's is an example, *should rarely be practised*, as free drainage is essential in this region if sepsis is to be avoided. Stretching of the sphincter ani is seldom necessary; it frequently causes much pain, bruising, and damage to the sphincter with varying degrees of loss of control. Insertion of large rubber tubing after operation is unnecessary, and is a common cause of severe pain. Many times as a house-surgeon I answered the agonized appeal of some poor patient to take the tube out, and the relief from pain was always immediate. Haemorrhage after a skilfully performed ligature operation is uncommon.

The combined ligature and injection method causes the least pain, fewest complications, and shortest lying-up period. It is suitable for every type of case except where large sloughing haemorrhoids exist. Local anaesthesia is contraindicated in the latter condition.—I am, etc.,

P. KENNEDY MURPHY, M.D.

London, W.C.1, March 7th.

A NEW METHOD OF APPROACH IN GASTRIC SURGERY.

SIR,—In reply to the letter of Dr. *Roberts in your* issue of March 9th (p. 474), I may say that the object of the experiment was to determine the effect of a single massive dose delivered directly to the growth. *The purpose* of my article was to state the effect observed and the result obtained.

I regret I did not enclose the technical details of the radiation. These I have now obtained from Dr. Cooper, and they are as follows:

Secondary current 3 ma.; secondary voltage 190 kv.; filter 0.5 mm. Cu+0.3 mm. Al; focus-skin distance 23 cm.; exposure 40 minutes. Dose 1.5 E.S.D.

—I am, etc.,

DIGBY CHAMBERLAIN, CH.M., F.R.C.S.

Leeds, March 12th.

"EXANTHEMATIDES."

SIR,—In the abstract of my second Lettsomian Lecture, which you very kindly published in your issue of March 16th (p. 512), there are a few corrections I should like to make to avoid misunderstanding.

In paragraph 3 "undoubted syphilis" should read "untreated syphilis," and I did not say that in the period of freedom from symptoms the Wassermann was negative, but that it was less positive than in the active secondary stage, and might even become negative. In the last paragraph but one "continuous allergy" should read "cutaneous allergy." Lastly, my comparison between syphilis, tuberculosis, and rheumatic fever was quoted *in extenso* from a paper by Swift and his co-workers, to whom, of course, acknowledgement was made in my lecture.—I am, etc.,

London, W.1, March 15th. H. W. BARBER.

THE INTRACUTANEOUS TUBERCULIN TEST.

SIR,—Professor S. Lyle Cummins is hardly correct in stating (March 16th, p. 522) that, "so far as adults in this country are concerned, a positive tuberculin reaction has no diagnostic significance whatever." The Koch phenomenon, of which this test is but a modification, is, as Professor Cummins knows, long past the stage of scientific corroboration; and while it is true that its value in adults is limited, this is due, not to its lack of significance, but to its enormous significance—namely, wholesale infection. While no one familiar with the subject will initiate a long and expensive course of treatment by tuberculin on the strength of a positive intradermal test alone, there are other indications which may make it important to follow up the line of thought thus initiated.

The Medical Research Council has recently seen its way to recommend the intradermal tuberculin test for cattle (Special Report Series, 1925, 1928) as a reliable substitute for the more troublesome subcutaneous test as a means of differentiating sound and infected animals, and although one may not agree entirely with its conclusions, these are supported by a large volume of evidence.

The day is not far distant when greater value will be attached to the conception of a tubercle-free population than to that of tubercle-free cattle, and we are already becoming familiar with the word "detuberculization," which opens up an arresting vision.—I am, etc.,

Wandsworth, March 17th. ROBERT CARSWELL.

TUBERCULIN FOR ASTHMA IN CHILDREN.

SIR,—I was much interested by the paper on asthma in children by Drs. R. H. Simpson and Kenneth Stone, which appeared in the *Journal* of February 16th (p. 291).

What was more especially interesting to me was the fact that the authors use tuberculin in treatment with satisfactory results. As I have used tuberculin for some years in tuberculous asthma, perhaps I may be permitted to discuss the matter from the light of my own experience. I have dealt with the subject at some length in book form,[1] so I will only give a brief summary of the chief points bearing on the matter. I define tuberculous asthma as an "asthma occurring in a patient who reacts definitely to tuberculin or has *x*-ray or other evidence of tuberculosis, and in whom there is no discoverable cause beyond the tuberculous factor."

The following are the main characteristics of tuberculous asthmas:

1. They all react to tuberculin, but usually not very strongly.
2. The systolic blood pressure is a fairly good one, 120 to 140, not low, as one so often finds in tuberculosis.
3. The skiagraphic appearances of the lungs are normal in about 50 per cent. Of the remainder, only a small proportion show definite signs of activity.
4. The diurnal variations of temperature are usually very slight.
5. The season of the year has little influence.
6. With regard to food, they are not usually affected by meat, but they have a peculiar intolerance to fat and, to a lesser extent, to carbohydrates.
7. As to the age of onset, I have known it commence at the age of 4, but in other cases not till after 50.
8. A definite family history of asthma is rare, but a family history of tuberculosis is common.
9. The patients are often in poor health. They seem to be suffering from a mild form of toxaemia. This is in contrast with what one finds in many other forms of asthma.

H. Grossfeld of Vienna[1] considers that genuine cases of bronchial asthma are tuberculous. He also states that, in animals infected with human tuberculosis, asthma may be induced by injecting tuberculin. He thinks that asthma is a protective defence against tuberculous invasion.

While agreeing that the majority of cases of asthma are probably tuberculous, they are not *all* so affected, for, if they were, we should get a much higher proportion of cases reacting to tuberculin than we do. It is certainly a fact that an overdose of tuberculin in a tuberculous asthmatic will produce an attack of asthma. I also agree that in a sense tuberculous asthma may act as a defence against tuberculosis of the lungs. At any rate, it is comparatively rare to see asthma in an advanced stage of phthisis. But this is somewhat of a digression.

Having made a diagnosis on the aforementioned data, I commence treatment with 0.1 c.cm. of tuberculin liniment and double it each week till 1 c.cm. is given. When fairly big doses have been administered in this manner, a tuberculin rash very commonly appears on the arm or any other site where the liniment has been applied, and this is usually accompanied by an amelioration of the asthma. Should this not be the case, I proceed to injections, commencing with T.A.F. 0.0001 c.cm. and cautiously increase week by week. If these doses cause reactions or an attack of asthma, it is generally wisest to return to the liniment and continue with this till the patient is effectively desensitized.

I agree with Drs. Simpson and Stone that there is an "optimum" dose for each case, and it is unnecessary to increase beyond this dose. Having found the optimum dose, which is sometimes big, sometimes surprisingly small, I inject with it once a fortnight or at even less frequent intervals, and eventually discontinue altogether.

I have not found tuberculin of service in non-tuberculous asthmas. I treat these with peptone or autogenous vaccines and get a fair amount of success, especially if a focal infection has been found and dealt with. The success is, however, not to be compared with that which I have had with true tuberculous asthmas treated with tuberculin. Practically every case of tuberculous asthma is ameliorated if not cured. The general health improves, then the attacks of asthma get less severe, and eventually, in most cases, cease altogether.

The difference of opinion between myself and Drs. Simpson and Stone as to the specificity of tuberculin may be due to a difference in technique. As I have said, patients with tuberculous asthma are not, as a rule, very sensitive to tuberculin. The authors use the von Pirquet method; I use the modification of this practised by H. A. Ellis. The point about Ellis's method is that an incision is made through the von Pirquet droplet so as to draw blood. The test is, consequently, more delicate than the ordinary one, a point of considerable importance in diagnosing insensitive asthmas. Another point is that in treatment they use "old tuberculin," which contains albumose, whereas I use "tuberculin albumose free," in which the albumose has been removed, so far as possible, from the preparation. Is it not conceivable that the good results they are getting are due to the albumose? These are, however, minor points. The great thing is that they and some others are gradually realizing the value of tuberculin, which, even at the present time, to most of our profession, spells anathema.—I am, etc.,

London, E.C., Feb. 21st. F. E. GUNTER.

IMMEDIATE ENUCLEATION FOR QUINSY.

SIR,—As Mr. Vlasto would appear to be sceptical of the good result I obtained in the case quoted on February 23rd (p. 374), would you be good enough to allow me to reply to his queries under three headings?

1. Trismus, which is usually most noticeable in the region of the anterior pillar and due to the action of the superior

[1] *Tuberculin in Practice: Its Value in the Diagnosis and Treatment of Early Tuberculosis and Asthma.* Gregg Publishing Company. 1928.

[1] H. Grossfeld. Quoted in *Epitome* of the *British Medical Journal*, November 13th, 1926, para. 468.

constrictor muscle, is overcome not by a sedative, but by the action of the local anaesthetic. The sedative given is two cubes of sedobrol in a warm drink an hour or so before operation. The local anaesthesia is produced as follows. There is no preliminary swabbing of fauces or palate. Three drachms of 0.1 per cent. cocaine solution (1 grain to the ounce), to which 3 minims of 1/1000 adrenaline chloride solution have been added, are injected by a Matthew's syringe with curved needle—a drachm at a time, (*a*) just behind the anterior pillar, (*b*) just in front of the posterior pillar, and (*c*) behind the upper pole of the visible tonsil. There is a noticeable blanching and distension of the mucous membrane, but the injection is not resented by the patient.

2. The operation is proceeded with almost immediately. A short-bladed long-handled knife (Robertson pattern or Bard-Parker, blade No. 15, handle No. 5) is introduced at the base of the anterior pillar, and carried firmly upwards to the upper pole, following accurately the margin of the pillar, which is always clearly defined; the upper pole is encircled, and the knife carried downwards between the posterior pillar and the tonsil till it meets a tongue depressor provided with a flange, by which the left hand holds the tongue downwards and inwards. The tonsil is next drawn inwards and forwards by a Richards vulsellum, and the rest of the dissection of the tonsil completed by a long and curved pair of Mayo scissors in the manner described by Mr. Wallace. In a quinsy the tonsil is more friable than usual, the capsule having almost certainly been perforated in the course of the condition, and may consequently not be completely removed by the Tidding snare; this can be put right on a second inspection. The pus and blood are now carefully swabbed away by gentle pressure in the tonsillar bed. The patient already feels much relieved, and the pillars are relaxed. A pillar-retractor lays the tonsillar bed fully open to inspection, and the mouth is at once rinsed out with a suitable mouth-wash. No serious haemorrhage has so far been experienced.

3. The after-treatment is relatively simple. Frequent mouth-washes are employed for three or four days, or as long as may be deemed necessary. On the same evening the 0.1 per cent. cocaine solution may be safely sprayed on the fauces, or applied to the tonsil bed on a gauze pledget, and aspirin (10 grains) is sufficient to secure a fair night's rest.

Mr. Vlasto will probably agree that the usually accepted treatment of quinsies leaves much to be desired. Cases frequently reach hospital after one or more attempts at incision have been made and have failed. After healing has taken place the tonsil is rarely removed, and the patient is liable to recurrences. Removal of the tonsil removes the cause, just as extraction of a decayed tooth is usually all that is required in the treatment of a dental abscess.

Finally, two important criticisms have been, and will be, levied against this method. First, with regard to the use of cocaine: the very weak solution here employed is sufficient to produce analgesia, if not always complete anaesthesia, and at the same time a marked reduction of haemorrhage and a minimal risk of cocainism. Secondly, it may be considered unsurgical to produce a large raw surface in the presence of suppuration, but experience will show whether such a risk is not far out-balanced by the improvement in drainage, the earlier recovery of function, and the free access of antiseptics to the tonsil bed itself. I feel confident that those who employ this method in quinsies will be agreeably surprised, but they should practise the technique on simple cases first.—I am, etc.,

Oxford, March 11th. HUGH WHITELOCKE.

SIR,—Mr. Michael Vlasto (March 9th, p. 477) appears to have been using the razor edge of a fine technique for a surgical operation, which, comparatively speaking, needs a billhook and hoe.

The trismus yields even in the worst cases to the powerful leverage of the Sydenham gag, while the capsule is represented by the shaggy wall of the abscess cavity on its tonsillar aspect. Sometimes one undoubtedly removes quite an appreciable part of the anterior pillar and other tissues—for example, the ossified stylopharyngeus muscle and styloid process, broken off from the temporal bone, as in one case I reported (February 16th, p. 296), but the patients are all the better for the removal of such coccus-soaked fibrous scars.

The ultimate technique which will survive for use by the practitioner of the future must be one which is quick, easy, safe, and within the capacity of even a moderately clumsy operator, and whose complications permit the application of quick, easy, and safe remedies or preventive steps. The dangers I keep in mind, but have not yet met in 1,000 cases or more, are as follows:

1. Bleeding.—Immediate, reactionary, and secondary haemorrhage can be readily controlled by sharply jerking off with a Collins pile forceps every tag in the empty bed of the tonsil. The forceps are inserted open, with one oral fenestrated end pointing upwards under the supratonsillar fossa and the other as far as possible below the site recently occupied by the inferior pole, and are then closed, with the ends lightly pressing against the empty bed. Haemoplastic deficiency leading to continuous oozing can be treated by injecting, locally, fresh or "proprietary" serum. I have not tried this for quinsy cases, the first method having always proved adequate, but have used it for "bleeders" accidentally operated upon in routine clinic work by the blunt-bladed guillotine method. In these cases I have injected the palate and pillars, and also the retropharyngeal tissues, because oozing came from the post-nasal region as well.

2. Inhalation of clots or pus.—This can only be guarded against by placing the patient in a proper position. Induce anaesthesia with the head well raised on several pillows, and, when fully under, then the head must be absolutely over the end of the table and upside down, and the shoulders raised by a folded towel. Meanwhile the assistant or anaesthetist must be drilled to keep a good airway, by holding the tongue out with the clip and, most important of all, the mandible well forward. This prevents the laborious inhalations which might suck in such clots or pus; these can then fall into the roof of the mouth, whence by a flick of the fingers they may be swept out over the upper incisor teeth.

3. Dislodgement of septic clots into veins resulting in pyaemia.—This danger must be guarded against by avoiding pressure on the quinsy until the long Mayo scissors have opened the abscess. When, as in 20 per cent. of the cases, the condition is a pure streptococcal cellulitis with jelly-like oedema, the scissors can open widely behind the tonsil and scar tissue, and the finger follow to detach the upper pole and posterior pillar.

In one emergency case I enucleated both tonsils for quinsy with only a long artery forceps, a pair of domestic scissors, a safety-pin for a tongue clip, and two cotton reels for a gag. If anyone would care for a demonstration I should be pleased to arrange it, here or elsewhere.—I am, etc.,

Bishop's Stortford, March 11th. R. A. R. WALLACE.

THE CAUSE AND CURE OF MORNING SICKNESS.

SIR,—In his letter published on March 9th (p. 479) Dr. Reid inquires with regard to the recognized propensity of glycerin to cause abortion. I have never had such a case in my practice, and this extending over many years. I have had this same inquiry made by the matron of a nursing home in Glasgow, where the subject has aroused a good deal of criticism.

It is only fair to say that I am cognizant of two cases of abortion which have occurred in the practice of others. The first was one of a lady in Nottinghamshire on whom I had operated for a badly torn cervix with a good deal of prolapsus uteri. My treatment stopped the vomiting, but some time afterwards she aborted with a twin pregnancy. The other case was one which occurred in my son's practice. The treatment was given during July, 1928, and during August she was overworked in nursing two of her relatives. She aborted in September, 1928. My conviction is that in neither case was the glycerin responsible.—I am, etc.,

Paisley, March 9th. ANDREW RICHMOND, M.B., C.M.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Lords having returned the Local Government Bill with amendments, the Prime Minister announced that the House of Commons would consider these amendments on Friday, March 22nd. Among them was Lord Onslow's amendment providing for consultation between the new public health authorities and representatives of the local voluntary hospitals regarding the preparation of schemes for provision of hospitals and other institutional accommodation. The Minister of Health is understood to have ready, for dispatch to counties and county borough councils soon after the bill passes, a model administrative scheme under Clause 4 of the bill.

The Local Government (Scotland) Bill has passed second reading in the House of Lords.

This week the House of Commons further considered the Navy Estimates and debated general questions on the Consolidated Fund Bill.

The Local Government Bill.

Report Stage in the House of Lords.

On March 14th the House of Lords considered the Local Government Bill on report. Lord ONSLOW, who was in charge of the bill for the Government, moved a drafting amendment to Clause 2. He explained that this clause handed over to maternity and child welfare authorities functions under Part I of the Children Act, 1908, and converted functions relating to vaccination into public health functions. It was convenient that these two sets of functions should not be dealt with as transferred functions under Clause 4 of the bill. Similarly, the provisions of Part I of the bill, relating to acquisition of land and to accounts and audit, should not apply to them.

The House agreed with an amendment designed to make the changes Lord Onslow thought necessary.

Administrative Arrangements for Discharge of Functions Transferred to Councils.

Clause 4 enjoins the council of every county and county borough to prepare and submit to the Minister a scheme of the administrative arrangements to be made for discharging the functions transferred to the council under Part I of the Act. Lord COZENS-HARDY moved to add after the word "Act" "and any similar functions under any of the Acts set out in Clause 5." He said the explanatory memorandum accompanying the bill pointed out that the Poor Law administration would be transferred to authorities already providing hospitals "which overlap similar provision made by boards of guardians for persons who are destitute." The memorandum went on to say that, "The organization of the institutional service can only be undertaken by a body viewing the needs of the county as a whole." Lord Cozens-Hardy said a Minister could not judge whether a council had envisaged the whole problem when that Minister had only to deal with the discharge of the transferred Poor Law functions. The bill did not require the scheme to survey the whole area so as to set up administrative machinery which would secure the best use and development of existing institutions. Rationalization of the hospital services might call for the transfer of some functions from the Health Committee to the Public Assistance Committee, but the bill did not provide for that. Without freedom to redistribute functions between the old and new committees a council might find itself hampered in preparing a scheme which would dovetail Poor Law and public health functions into one whole. He had also put down to later clauses amendments designed to secure this, and he would like to make the same insertion into the new clause which Lord Onslow had put down concerning consultation with voluntary hospitals. The new clause meant that voluntary hospitals and the medical profession need only be consulted on a limited portion of the field. The new clause would leave the council free to provide extra hospital accommodation without any consultation if the proposed new institution was not required for Poor Law functions. If overlapping were to be prevented it was essential that the consultation should cover all hospitals, whether provided in discharge of the transferred functions or of similar functions under the Public Health Acts.

Lord ONSLOW said there was no need for the words which Lord Cozens-Hardy sought to add to the clause. Arrangements under the special Acts did not need to be included in the scheme. Where a declaration was made of intention to deal with the destitute under one or other of the special Acts (Public Health Act, Mental Deficiency Act, Maternity and Child Welfare Act, etc.) the result would only be to bring additional persons within a scheme which had in nearly every case been approved by the Minister of Health.

Lord Cozens-Hardy's amendment was negatived.

Consultation with Representatives of Voluntary Hospitals.

The new Clause 13, proposed by the Government while the bill was before the Lords in committee, and then inserted, ran:

"*Consultation by councils of counties and county boroughs with bodies representing voluntary hospitals.*—The council of every county and county borough shall make such arrangements as they think desirable for securing that the functions transferred to them under this part of this Act with respect to the provision of hospital accommodation will be discharged after consultation with such body, if any, within the county or county borough as they consider to represent the voluntary hospitals in the area."

Lord ONSLOW had an amendment to this on the paper.

Lord HANWORTH moved a revised form of the clause, which sought to provide that the persons consulted should include bodies or persons representing the voluntary hospitals of the area and representatives of the medical and surgical staffs of any voluntary hospitals in the area, and that the subjects of consultation should include hospital treatment as well as hospital accommodation. He said he had no right to speak for the hospitals, but intervened as a draftsman. Some very loose terms had been used when the subject of hospital accommodation was discussed in committee. His form of clause proposed to make the consultation compulsory, and to give the council freedom to consult those carrying on work in cottage hospitals who might not have an organization or a share in any committee. He thought the use of the word "accommodation" in the Government clause narrowed the consultation too much. He was sure that the peers had not intended to refer merely to the provision of beds, and he therefore put in the words "and treatment."

As a preliminary to discussion the House discarded Clause 13 in its original form. Lord READING then remarked that the discussion in committee had shown a consensus that specific provision should be made in the bill to ensure consultation with the voluntary hospitals. The Government proposed consultation, but the council would not be bound by anything which was urged by the voluntary hospitals. He approved that. He agreed with Lord Hanworth that it was desirable to specify treatment as well as accommodation. Lord Reading objected to the Government clause leaving to a council the power of determining what body, in its opinion, represented the voluntary hospitals. There might be a dispute in some county on whether a body of persons really represented the voluntary hospitals. Such a dispute ought not to be brought before a court of law, but referred to the Minister, whose decision should be final.

Lord KNUTSFORD urged the House to accept the word "treatment." For the benefit of the people at large he wanted the county councils, in drawing up and carrying out their schemes for new hospitals, to have the experience not only of laymen who had managed hospitals, but of the medical and surgical staff, who represented the highest advance and highest knowledge in the profession. At present the country had two diverse bodies—the voluntary hospital, with a magnificent staff, and the Poor Law infirmary, with perhaps one able man and no staff of importance to help him. No improvement could be carried out unless there was co-ordination and co-operation in working. He hoped that with such recurrent consultation with those at the head of the profession they would no longer see, as they now did in some of the Poor Law infirmaries, one man, however able, doing every sort of operation, as he would never dare do on the staff of a voluntary hospital. He hoped they would not continue to see anaesthetists employed who were nothing like so good as those available in the profession. He hoped they would never see what he saw last year—a young man, not even on the staff of a great hospital, going to take over the locum at one of the biggest Poor Law hospitals, first on the medical and then on the surgical side. That young man had said to Lord Knutsford, "Look at the experience for me." But what about the patients?

Lord BLEDISLOE feared that cottage hospitals might not be represented by the bodies or committees selected as representative of voluntary hospitals. The small village hospitals also served as clinics for examination and treatment, under the Education Act of 1921, of children suffering from small maladies of the throat, ear, or eye, and so justified themselves for county work.

Lord ONSLOW had on the paper the following proposed new clause in substitution for the Clause 13 which the House had just discarded:

"*Consultation as to the provision of hospital accommodation.*—The council of every county and county borough shall, before making provision for hospital accommodation in discharge of the functions transferred to them under this part of the Act, consult with such committee or other body, if any, as they consider to represent both the governing bodies and the medical and surgical staffs of the voluntary hospitals providing services in or for the benefit of the county or county borough."

Lord Dawson's Amendments.

Lord DAWSON OF PENN had handed in two amendments to Lord Hanworth's proposed clause. These provided that the council should also consult "with representatives of the medical faculty of any university which serves the area." He said he wished to point out the crucial differences between Lord Hanworth's clause

and that which Lord Onslow had placed on the paper. The House had agreed in committee that the new public health bodies were, at the moment they entered the field of curative medicine, going to undertake a large responsibility. Neither the councils nor the medical men advising them would have previous knowledge or experience adequate to carry on these new duties, and the sense of the House of Lords in committee had been that some help should be given, not by compulsion, but through conference with the voluntary hospitals and the staffs attached to them, and with that part of the medical profession which had always dealt with curative medicine. He had understood the committee to agree that this consultation should be real, effective, and recurring. The Government clause said there should be this consultation on hospital accommodation. In plain English "accommodation" meant nothing more than the mere fabric and arrangements of the buildings. That was a futile concession. If, on the other hand, the words "and treatment" were included, that did not mean that medical men and representatives of hospital managers were to come in every time to interfere with the proper management of these new hospitals. It meant that real conference should take place to determine not only the buildings to be put up, but the purposes for which they were to be used. He was not wedded to the words "and treatment," but he was to the principle that the people who had acquired experience through generations should bring it to the aid of these inexperienced councils and their medical men. The work of a general hospital had grown up through generations, and there was among members of the staff a tradition, a habit, an atmosphere of restraining opinion, which secured that, while every man got his chance, the right man was put on the right job. If a young and talented man showed a tendency to allow his enterprise to outstrip his judgement, Lord Knutsford, for instance, might step in with a word of restraint. The result was that wrong things were not done and the right men got the right jobs. The system had grown up little by little, with all the talent of the medical profession behind it. All men of talent moved in the direction of hospital work. Did the House wish to alienate the profession? How could they work the hospitals without it? He sometimes imagined that the Government wished to do it, because they brought in the bill without consulting the heads of the profession. Suppose an enterprising council said, with good intentions, that it would take up radium. All the medical profession asked, before these inexperienced councils took up a weapon so useful for the public good, so powerful in the right hands, so dangerous in the wrong, was that they should confer with persons of experience whether this treatment was to be used, and whether, when the treatment was complicated, it should be done in other places. An inexperienced hospital would require years to get the right staff, and could not get it unless the confidence of the profession was won. Until these new places had earned academic standing they would not draw the best men from the universities. About the founding of these new hospitals there had been no proper conference with the medical profession, however informal and unofficial. Surely it would have been natural to have called the heads of the profession together and to have said, "We think of giving powers of general treatment to these new county hospitals. Can you give us advice and draw up a scheme? We do not commit ourselves to accepting it." Because there had been no proper consultation of that sort he was sceptical when he found Lord Onslow's clause gave nothing but a barren concession on hospital accommodation, and contained no words which said the medical profession should be consulted on the purposes for which that accommodation was to be used.

Lord ONSLOW then offered an explanation of his alternative clause (set out above the commencement of Lord Dawson's speech). He said this was prepared to give effect to the desire Lord Dawson had expressed in committee, that there should be consultation with "any body existing in the area which is so constituted as to be representative of the duly qualified medical practitioners and of the medical and surgical staffs of the voluntary hospitals in the area." Lord Onslow remarked that Lord Dawson had not put those words on the paper, and that Lord Hanworth had thought they should be drawn tighter and made more explanatory. The Government had done something to meet that view. Turning to Lord Hanworth's amendment (summarized above), Lord Onslow said the Government could not agree to consultation with "persons" as well as with "bodies." That would enable a local authority to consult with individuals but refuse to consult with the Voluntary Hospitals Association or with the British Hospitals Association. It would enable a county council to "give the go-by" to hospital representatives. The Government thought the body to be consulted should represent the voluntary hospitals in the area, including the medical staffs. Till recently there existed, in practically every county and in many county boroughs, local voluntary hospital committees, formed by the Voluntary Hospitals Association. A number still existed, and were active. In Manchester and Sheffield good work was being carried on by these bodies. Some had become hospital councils, and some, especially in the county areas, existed on paper. Again, the Hospitals Association had a network of committees over the country. They were reorganizing these already to make more serviceable bodies, which would be at the disposal of the local authorities for the purposes mentioned in the bill.

Lord KNUTSFORD interposed to say there were no medical men on the Hospitals Association.

Lord ONSLOW replied that though there were none on the Hospitals Association there were on the voluntary hospitals committees. On these, medical men were represented both by consultants and by general practitioners connected with the hospitals. There might be areas where no committee was available at present, and in these it was desirable that one should be set up. As a result of the bill voluntary hospitals in each area should combine for the purpose of consulting with the local authority. Lord Knutsford assured him that the cottage hospitals, for which Lord Bledisloe had expressed concern, were represented on the Hospitals Association, and he had no doubt that they would have the opportunity of giving their advice. As the local authority was the body responsible for managing its institutions, it should judge, who really represented the voluntary hospitals, and with whom it should establish relations. Lord Hanworth had suggested that where two bodies claimed to represent the voluntary hospitals of the district the Minister should judge. To carry out this suggestion would be difficult. There might be a voluntary hospital committee functioning in an area and doing good work. On the other hand, the Hospitals Association might say, "Surely it is more convenient and better to have one organization between the country." That had already been urged. For the Minister to decide, meticulous local inquiry would be needed. Lord Onslow thought the House could trust the local authority not to use the bad committee rather than the good one. He was willing to meet Lord Hanworth's objections to the phrase "if any" in the Government's new clause. Turning to the proposal that consultation should be about "treatment" as well as about "accommodation," Lord Onslow remarked that if Lord Hanworth thought "accommodation" too narrow he himself thought "treatment" too vague. He was advised that if "treatment" were included a local authority would be under an obligation to consult the committee not only on the internal management of the hospital, but on the medical treatment of the patients. Lord Dawson had said that would be unacceptable. In these circumstances the Government could not accept the amendment proposed by Lord Hanworth.

Lord DAWSON asked whether Lord Onslow would accept the words "hospital accommodation and the functions to which that accommodation should be assigned." He meant no interference of any kind.

Lord ONSLOW said he thought the Government could accept the proposal in that form.

Lord DAWSON said he would like to consult Lord Reading and Lord Hanworth. If told the words he had just suggested were sound drafting he would accept them.

Lord ONSLOW said he and Lord Dawson were getting close together.

Lord HANWORTH said he must adhere to the words "and treatment."

Lord ONSLOW said he was advised by the Government draftsman that "and treatment" would include dealing with the individual patients. Equal facilities would doubtless be suggested for, or claimed by, the medical advisers of the local authorities. These would say, "You are consulted *in regard to* the treatment of patients in the *local authorities'* hospitals. We desire that our medical advisers should be consulted in regard to the management or treatment of patients in the voluntary hospitals." That would not be desirable, and Lord Onslow said he was willing to accept Lord Dawson's new suggestion, which would meet the case. The new experimental system was interesting and important, and ought to be initiated with the good will of all local authorities. He had reason to suppose that this good will would be forthcoming, and that the arrangement would develop into a useful method of consultation between two great authorities dealing with the same subject.

Lord BEAUCHAMP pointed out that in the Local Government (Scotland) Bill "hospital facilities" included "arrangements with respect to the provision of treatment." English hospitals should be treated as well as Scottish hospitals, and the Lords should insist *on including* the word "treatment" in the English bill.

Lord COZENS-HARDY pointed out that Lord Onslow's amendment referred to "voluntary hospitals providing services in or for the benefit of the county or county borough." That met the case of the hospital *serving an area* though not within it.

Lord ATKIN said he could not imagine anything more objectionable than that the medical men in charge of a hospital should have to consult some outside body to determine what treatment they *should render* at a particular time to a particular patient. It did not seem to him that the words suggested by Lord Hanworth could bear that meaning. Treatment could only be in respect of general provisions.

The Lord CHANCELLOR said that if the bill provided that the council must consult with a body which represented the voluntary hospitals, then, when the council proposed to spend money on a scheme, it would be open to anyone to move for a writ of

hibition on the ground that they had not carried out the obligation imposed on them under the clause. If they had consulted with some body which, in the opinion of the court, was not a representative body, then they would not have carried out their duty. There would be more chance of advice being accepted if the persons whom the county council consulted were not forced upon them against their will. The wisest plan would be to let the county council consult those whom it regarded as representative of the voluntary hospitals in the area. Turning to the interpretation of "treatment," the Lord Chancellor remarked that Lord Dawson and Lord Onslow agreed that consultation should extend to the function for which the particular hospital was to be used. If that were so, the Peers would be wise not to insist on putting in words which the Government believed would have an undesired effect. He suggested that the House should accept the clause proposed by Lord Onslow on the understanding that before third reading the Government, in discussion with Lord Dawson, would endeavour to find words providing for consultation on the function for which the accommodation was to be assigned, but not open to the risk of bringing interference with detailed treatment.

The House then divided, and negatived Lord Hanworth's proposed clause by 52 to 42.

Lord ONSLOW then moved his new clause as set out above.

Lord DAWSON moved to amend the clause by adding provisos for consultation also with "the medical faculty of any university which serves the area" and with "the duly qualified medical practitioners in the area." He said the custom had arisen in late years of linking up medical services in voluntary hospitals with the medical faculties of the nearest universities. Representatives of the faculty of medicine who were concerned with laboratory investigations and forms of research should be able to join in any representations made in conferences with the local council. Liverpool University, for instance, by means of its medical faculty, spread its influence over seven or eight counties. Hospitals in all that area turned to it for advice and made use of its laboratories and teachers. Representation of the medical faculty of a university need not be confined to one county. Cambridge, Birmingham, Liverpool, and Manchester served large areas. His second proposal, for representation of the duly qualified medical practitioners in the area, he had raised in the debate on the committee stage. The House should bear in mind that the doctors who up to now had given their advice, which was excellent, because they were admirable in their own domain of preventive medicine, were much fewer than the 28,000 doctors engaged in curative medicine in England and Wales. When curative functions were going to be added to the county councils there should be some representation of the men who spent their lives dealing with disease.

Lord ONSLOW said the Government could not accept Lord Dawson's amendment. The point about representation of the medical faculties of universities was already met by the Government provision for consultation with representatives of the medical and surgical staffs of voluntary hospitals. If the university medical men did not usually attend the hospitals, then those medical men who were attached to the hospitals should be consulted by the councils. Those whose advice the Government desired were those who were intimately connected with the voluntary hospitals administratively, financially, or in a professional capacity.

Lord DAWSON intervened to remark that pathologists, bacteriologists, and those who did chemical and radiological work were not necessarily on the staffs of voluntary hospitals nor connected with the wards and the actual treatment of patients.

Lord ONSLOW said these men were connected with the hospitals in other ways, and their case might be met by the clause. Turning to the second part of Lord Dawson's amendment, Lord Onslow contended that to bring in medical men who were not connected with the hospitals but practised in the area would lead to confusion. It was undesirable that those who were unconnected with the hospitals should be brought in to manage them. Medical men connected with the hospitals would be amply able to supply the advice which the councils would seek.

Lord Dawson's amendment to Lord Onslow's proposed new clause was then negatived without a division, and Lord Onslow's clause was agreed to, after the words "if any" had been deleted on the motion of Lord Reading.

Recovery of Expenses for Maintenance.

Clause 16 (previously numbered as Clause 15), dealing with recovery of expenses from patients in council hospitals, does not allow expenses to be claimed from patients suffering from infectious disease.

Lord ARNOLD moved an amendment to ascertain whether surgical tuberculosis was covered by the words "infectious disease." He also contended that every encouragement should be given to persons suffering from cancer to seek treatment, and proposed that the Minister should have power to exempt from charges sufferers from such diseases as he thought fit.

Lord ONSLOW said the point had been considered, but the Government could not meet Lord Arnold's wishes. An infectious disease was one from which it was desirable to safeguard other persons. Cancer was not considered an infectious disease, and could not be included. Some forms of surgical tuberculosis were not included. The proper course was to lay down a criterion which would safeguard other persons, leaving the local authority to decide what was an infectious disease and what was not. That could not be closely laid down in the bill because, as Lord Dawson had pointed out, knowledge was changing from month to month. Diseases later found to be infectious would automatically come under the scope of the bill.

Lord Arnold's amendment was negatived.

Supervision of Midwives.

Clause 60 deals with the supervision of midwives, and enacts that any district council which has established a maternity and child welfare committee, and which employs a whole-time medical officer, may apply to be the local supervising authority under the Midwives Acts.

Lord HUNSDON moved to confine this privilege to councils which were also local education authorities. His object was to reduce the number of small districts which could apply for the inspection of midwives. He remarked that he was glad the Government, in response to representations in committee, had agreed to provide a local inquiry into these applications by district councils.

Lord ONSLOW said there were 139 district councils covered by the clause, and of them all but 52 were education authorities. Only six or seven large authorities did not happen to be education authorities.

Lord HUNSDON withdrew his amendment, and the House, on the motion of Lord ONSLOW, inserted amendments providing that the supervision of midwives should only be delegated by the Minister after consultation with the county council, and that if requested by the county council the Minister shall hold a local inquiry before making an order.

In Clause 129 (definitions) the following was added:

Page 111, line 10, at end insert ("'Public health services' includes services relating to maternity and child welfare, lunacy and mental deficiency, and the welfare of the blind").

The word "sanatoria" as used in the bill was supplemented by "or other institutions for the treatment of tuberculosis."

The report stage then concluded.

Local Government (Scotland) Bill.

On March 5th the Local Government (Scotland) Bill was considered on report, having previously been amended in committee of the House of Commons.

A new clause was moved on behalf of the Labour party by Mr. Johnston, the purpose of which was to empower the Secretary of State to raise to the status of a large borough, independent of the county, any borough which during the summer months habitually had a large excess of population.

Dr. ELLIOT said that Mr. Johnston had not made out a case; any argument had really been met when the Secretary for Scotland decided to leave the services of water, of drainage, and of sanitation within the purview of all boroughs. It was not considered that a fluctuating population required special provision to be made for poor relief, for lunacy, and mental deficiency. Dr. Elliot said that in small boroughs certain things were done counter to the interests of economy and efficiency. The northern district of Ayrshire had six small boroughs with six infectious disease hospitals averaging fourteen beds each. The object of efficient service would be better secured by a combination which would enable full use to be made of each of these institutions. Three or four years ago a part of the Springvale Hospital belonging to Ardrossan and Saltcoats was destroyed by fire; this was an opportunity for combination with Irvine, but the two boroughs preferred to re-establish the building which had been destroyed. The Government's proposal to make 20,000 population the lower limit for autonomous boroughs was not a temporary adjustment, but an attempt to make a strong financial unit which could put to fullest use existing institutional accommodation and plan its policy over a period of years.

Mr. JOHNSTON protested that the overwhelming majority of the boroughs in Scotland had, when profitable, combined to run joint infectious disease hospitals.

Dr. DRUMMOND SHIELS recalled that in a previous discussion on the same subject the Government had agreed to allow a medical officer to be retained in boroughs whose population was greatly increased during the holiday season. He remarked that boroughs like Oban and St. Andrews had supplied not only their own health services, but the health services for the county and hospital accommodation as well. He thought there was a case for such boroughs retaining their medical officer of health and their control over major health functions.

The clause was rejected by 205 to 115.

On Clause 2, dealing with the transfer of functions of town councils to county councils, Dr. ELLIOT said that the merging of local and county administrations would provide a more efficient service throughout Scotland. Committee after committee had urgently reported that wider areas of health services would be

for the good of Scotland as a whole. With regard to the Highlands and Islands, an authoritative committee, presided over by the Duchess of Atholl, and including Dr. Donald Murray, former member for the Western Isles, had recommended that for the major health services the area of administration in the Highlands and Islands should be the county. The clause was added to the bill by 181 to 93.

Consideration of the bill on report was resumed on March 6th, when Mr. JAMES STUART moved an amendment to delete some of the proposals of Clause 10, dealing with the uniting of boroughs and combining of councils for certain purposes. He suggested that in the case of the counties of Moray and Nairn it was not necessary to amalgamate public health services, because these had been adequately maintained in the past; both the county and the borough of Nairn were served by a voluntary hospital and district nursing services which were not a burden on the rates. In connexion with maternity and child welfare, there was an arrangement with local doctors to attend when children were ill. Although there was no formal scheme for tuberculous cases, adequate provision was made in this respect.

Sir JOHN GILMOUR said the county of Nairn, including the borough, had only a population of 8,790, and the county of Kinross one of 7,963. The Scottish Office desired to combine these two very small counties with their neighbours. Under the national health insurance scheme Nairn and Moray had been combined. Nairn had no county scheme for the treatment of tuberculosis, and none for maternity and child welfare service. Health services which were essentially necessary did not at present exist there. The medical officer of health and the school medical officer were obtained by combination with Moray. There were a considerable number of cases of tuberculosis in the county and borough of Nairn, and no institution existed for the treatment of early or advanced cases. The provision for school health administration was incomplete in Nairn, especially as regards dental treatment and treatment of the ear, nose, and throat. The Government's proposals for combination were accepted by the House by 157 votes to 106.

On Clause 33, which empowers the medical officer of health and sanitary inspector to act for small boroughs, Dr. ELLIOT moved to insert a provision that:

Except with the sanction of the Department of Health no person shall, after the commencement of this Act, be appointed sanitary inspector of a county or borough unless he possesses such qualifications as may be prescribed by the Department of Health.

He said the Government required to reserve the right to take further steps to raise the status of sanitary inspectors. The House agreed to the amendment.

Dr. ELLIOT moved a new clause dealing with the power of councils to expend money on public health propaganda. It ran:

It shall be lawful for any county council or for the town council of a large borough to incur expenditure in making contributions to the central council or committee of an organization approved by the Department of Health, which provides services of the nature of publicity or educational propaganda for any purpose relating to public health, or in the provision by themselves of such services.

Dr. Elliot said the clause was put down in consequence of a discussion in committee about the power of local authorities to spend money on propaganda against venereal disease. He had then agreed to go into the matter again on the understanding that any proposals would not deal solely with that disease, but that general powers would be given for propaganda in respect of health education concerning any kind of disease. This new clause met that undertaking, and he understood it was particularly desired by the city of Edinburgh.

Dr. DRUMMOND SHIELS was glad of the new clause as far as it went. He would have preferred some national effort, either by the Department of Health or by some central organization, whereby national propaganda would have been effectively carried out. It was not certain that dependence on the efforts of local authorities in this matter would be satisfactory. It was right that propaganda should not be confined to any disease. For example, if public health propaganda on the importance of the early treatment of cancer were carried out many lives would be saved. The concession established the principle that health propaganda was the duty of public authorities.

The clause was added to the bill, as was also another clause moved by Dr. Elliot to sweep away the disqualification whereby sick persons in Poor Law institutions were only allowed to receive pensions up to a period of three months' residence.

The report stage then closed and the bill was set down for third reading on March 11th.

Third Reading Debate.

On March 11th Sir JOHN GILMOUR moved the third reading of the Local Government (Scotland) Bill. He said that with the best intentions many of the existing local authorities had been incapable of meeting adequately the problems connected with housing and public health matters. Unless there was a co-ordination of effort there would be wastage and inefficiency. In Glasgow, for example, he did not see that co-ordination and co-operation between either the private hospitals or the private hospitals and the public hospitals which was essential if there was to be real efficiency. The provisions of the bill held out, not only the hope but, in his judgement, the certainty of a great solution of the problem. They had behind them the whole-hearted co-operation of the managers of the great hospitals and of the members of the medical profession, who were closely linked with them. In the development of these services he visualized more and more paying wards within the hospitals and the building of annexes in the fresher and purer air of the countryside, to which would be taken at various stages those who first entered the hospitals in the great cities. It was only by complete co-ordination between the work in the city and the local authorities in the counties outside that they would get a proper solution of this problem. If the bill had dealt with no other problem than the improvement and co-ordination of the medical services he would have been proud to have introduced it.

Mr. JOHNSTON, in moving the rejection of the bill, said that it was with genuine regret that they saw in the measure the disappearance of a training ground for public administration in the form of the small burghs of Scotland. He hoped that it would be explained in Scotland that the Government were giving no relief for hospitals, but were giving relief for distilleries; that venereal disease would be free, but that maternity treatment would be charged for; and that if an old man who was treated for bronchitis could not pay, his son or daughter could be called on to pay, or, if they could not pay, then his grandson or granddaughter could be called on to pay.

Dr. DRUMMOND SHIELS seconded the rejection of the bill. He denied that the change from the percentage grant system to the block grant system was a step forward in regard to the public health services. He could not, he said, get away from the fact that the impulse for this change came from the Treasury, and not from any medical or local government source. Any saving to the Treasury in public health development meant heavier local burdens on depleted resources. That was one of the bad things in the bill, and even child welfare and maternity could not be saved from it. He was more hopeful about the hospital sections of the bill than any other part. The changes that had been made during the committee stage, although by no means all that they could have wished, had made some progress possible. The distinction between infectious and other diseases could not be justified, and they could only hope that the local authorities would use their discretion wisely in exercising their powers to enforce payment. Many of the people requiring treatment were already harassed by rent and other obligations; they needed more money when they were ill rather than to incur new penalities. He regretted especially in this connexion that the Government had not seen their way to exclude maternity hospitals. Presumably there would be paying and non-paying wards in the municipal hospitals, just as there were already in many voluntary hospitals. The voluntary hospitals had reluctantly agreed to the new arrangements, but some of their managers and supporters, and certain eminent members of the medical profession, had been voicing their fears of extinction by the municipal hospitals. No one would deny the splendid work which had been done, and was still being done, by the voluntary hospitals. If it was looked at rightly the new development was not a censure on voluntary hospitals, but was a real triumph for their educational work. They had convinced the community that medical and surgical aid must be promptly and fully available to every member of the population. The voluntary system, admittedly, could not achieve this, and the community, therefore, must accept the responsibility. For many years to come there would be need of all the resources of both voluntary and municipal hospitals, as there was a very big leeway to make up; and even if municipal general hospitals ultimately met a large part of the demand, there was still abundant pioneer work for voluntarism to do. The public conscience was still dull in regard to crippled children, for example, 75 per cent. of whom could be made self-supporting if they were treated earlier. Yet they were languishing in cripple hospitals and private homes throughout the country, a burden and an unhappiness to themselves, and very often a burden on the community. Mental defectives were still largely untouched by any kind of organization. Rheumatic children, who became very often permanent invalids, were, in many cases, without treatment of any kind or any opportunity of getting it. It was well known that the blind and deaf were also a class who had not yet received the attention which their condition and need merited. He hoped, therefore, that no dog-in-the-manger policy would attempt to hamper the new municipal and county efforts to do the barest duty to the community. There were difficulties in regard to the co-operation of the voluntary and municipal hospitals—in regard to staff, medical teaching, and many other matters—but they could be surmounted by a spirit of goodwill, which, he trusted, would be forthcoming.

Dr. ELLIOT, replying to the debate, pointed out that he had as much knowledge perhaps of hospitals and waiting-lists as almost any other member of the House. He had had the compiling of these waiting-lists. He had realized the hope deferred that made

the heart sick as week after week and month after month cases would come up asking for treatment when they knew that treatment would be an advantage, but owing to the shortage of accommodation they were forced to deny it. They were going a great way to remedy that in the proposals in the bill. The Mackenzie Committee reported that 700 beds of the first class could be made immediately available if agreement were reached between the municipal and Poor Law authorities and the voluntary hospitals, and that it would be possible to bring hundreds of beds immediately into service in Glasgow alone. In Aberdeen it had been possible to bring 160 beds into operation and keep them constantly filled. They could do that, and more, in the other cities under the hospital clause in the bill. The bill was read a third time by 269 votes to 86.

On March 12th the bill was introduced into the House of Lords and read a first time.

On March 19th, in the House of Lords, the EARL OF AIRLIE moved the second reading of the Local Government (Scotland) Bill. He said its principal purpose was the provision of adequate areas for carrying out the major local government services with a single controlling authority. EARL BEAUCHAMP moved the rejection of the bill, and expressed regret at the disappearance in so many cases of the *ad hoc* authorities. There would be a large increase in bureaucracy, and much of the splendid work done voluntarily in Scotland would disappear. Lord PARMOOR said that the bill, in respect of matters such as the recovery of expenses of the treatment of the sick, was a great improvement on the English bill. The MARQUESS OF SALISBURY said that if the tendency of the bill, as had been suggested during the debate, was to increase bureaucracy, he would profoundly regret it, and the Government would give consideration to amendments designed to prevent such a result. The bill had been accepted in the country as a great measure of reform. The motion for the rejection of the bill was defeated by 66 votes to 22, and the bill read a second time.

Research on Influenza.—Mr. A. M. SAMUEL, replying on March 12th to Mr. Malone, who asked if the Chancellor of the Exchequer would consider making a grant to the Medical Research Council or any other body for the purpose of research into the pathology of influenza, said that an inclusive grant in aid was made each year to the Council from the vote for scientific investigation. The Council had discretion to allocate any part of the grant to the purpose suggested by Mr. Malone if it should think fit. Mr. Malone asked if Mr. Samuel was not aware of the high death rate due to this malady in the last few months, and the apparent inability of the medical profession to deal with it. He asked whether the Government had not some responsibility to see that this research was carried out. Mr. Samuel replied that such a question specifically dealing with it should be addressed to the Minister of Health.

Notes in Brief.

Since January 1st, 1925, 58 slum clearance schemes have been confirmed by the Ministry of Health.

The Services.

OPERATIONS IN IRAQ.

THE name of Squadron Leader Hugh Leonard Burton, M.B., is among those brought to notice by Air Vice-Marshal Sir Edward L. Ellington, Air Officer Commanding British Forces in Iraq, for distinguished services rendered in connexion with the operations against the Akhwan in the Southern Desert, Iraq, during November, 1927–May, 1928.

ROYAL NAVY MEDICAL CLUB.

THE annual dinner of the Royal Navy Medical Club will take place this year at the Trocadero Restaurant, Piccadilly Circus, on Thursday, April 25th, at 7.30 for 8 p.m. Members who wish to be present are asked to inform the Honorary Secretary, Royal Navy Medical Club, Queen Anne's Chambers, Tothill Street, S.W.1, not later than seven clear days before that date.

DEATHS IN THE SERVICES.

Colonel William Frederick Ruttledge, R.A.M.C.(ret.), died at Farnborough on February 16th, aged 80. He was born on May 1st, 1838, and entered the army as assistant surgeon on March 31st, 1865. As a regimental officer he served in the 5th Foot, the Northumberland Fusiliers. He became surgeon major after twelve years' service, and retired, with an honorary step as brigade surgeon, on April 29th, 1885. After retirement he was employed in the Military Prison Department at Aldershot, and was given the honorary rank of colonel on October 18th, 1902, for services in England during the South African war. He served in the Afghan war of 1878–80, receiving a medal.

Major Charles James Addison, R.A.M.C.(ret.), died of pneumonia in London on February 21st, aged 74. He was born at Wyke Regis, Weymouth, on March 17th, 1854, educated at St. Thomas's and in the Edinburgh Extramural School, and took the L.R.C.P. and S.Ed. and the L.S.A. in 1880. He entered the army as surgeon on February 5th, 1881, became surgeon major after twelve years' service, and retired with a gratuity on November 28th, 1900. He served in the Egyptian war of 1882 (medal and Khedive's bronze star); in the Tirah campaign on the north-west frontier of India in 1897–98 (medal with three clasps); in the South African war in 1899–1900 (medal and clasp); and in the recent great war of 1914–18 (General Service Medal and Mercantile Marine Medal).

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on March 9th the degree of Sc.D. was conferred on Edward Hindle, M.A., Ph.D., Beit Memorial Research Fellow in Tropical Medicine, formerly Professor of Biology in the School of Medicine, Cairo.

UNIVERSITY OF LONDON.

PARLIAMENTARY REPRESENTATION.

SOME members of the executive of the University of London Conservative and Unionist Association, including Sir Philip Magnus, Dr. Sidney Phillips, and Professor W. E. Dixon, M.D., have intimated their intention of supporting the re-election of the sitting member, Dr. E. Graham Little (Independent Conservative).

UNIVERSITY OF DUBLIN.

TRINITY COLLEGE.

AT the spring commencements, Hilary term, held on March 16th, the following degrees and licences were conferred:

LICENCE IN [illegible]. Dundon.
M.B., B.CH. F. R. Falkiner,
E. C. Hi
M.D.—T. J. Kelly.

NATIONAL UNIVERSITY OF IRELAND.

THE Senate, at its meeting on March 15th, recorded its deep regret at the death of Sir Bertram C. A. Windle, who, as Vice-Chancellor of the University and its representative on the General Medical Council and other public bodies, rendered invaluable and unfailing service to the advancement of the University, and expressed its sincere sympathy with Lady Windle and other members of the family in their bereavement. The Senate also adopted a resolution deploring the loss sustained by the death of Dr. Andrew R. J. Dungan, lecturer in medical jurisprudence, University College, Dublin, and tendered its sympathy with the relatives.

Professor David T. Barry, M.D., has been appointed one of the representatives of the University at the seventh centenary celebrations of the University of Toulouse in June next, and Professor W. D. O'Kelly, M.D., will represent the University at the Royal Sanitary Institute Congress to be held in Sheffield in July.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council meeting was held on March 14th, when the President, Sir Berkeley Moynihan, Bt., was in the chair. The Council offered its congratulations to the President on his elevation to the peerage.

The Diploma of Fellowship was granted to Ian Douglas Miller and the Diploma of Membership to W. F. Skaife, these candidates having complied with the regulations.

The following diplomas were conferred jointly with the Royal College of Physicians:

TROPICAL MEDICINE AND HYGIENE.—K. P. Anklesaria, F. C. K. Austin, [illegible] Bandyopadhyay, S. Batchelor, P. S. Bell, [illegible] own, J. Bryant, J. A. Carman, [illegible] L. S. Chatterji, N. Chilton, [illegible] Cook, M. Das, P. T. J. Doss, A. N. Duggal, D. P. Dutta, J. G. Green, H. E. Hargreaves, E. Haworth, [illegible] chorn, Y. M. Khan, C. E. M. J. [illegible] W. S. Nealor, S. L. Rikhye, [illegible] anford, Eileen M. Turner, [illegible] J. B. A. Wigmore, A. J. W. [illegible] Wilson.

OPHTHALMIC MEDICINE AND SURGERY.—S. Anneswami, Y. P. Ledl. [illegible] W. [illegible] on, S. J. A. Laubscher, A. A. El M. Magrabi, Sigrid L. S. Pearson, F. E. Preston, Gertrude E. Pugmire, B. W. Ryecroft, A. E. M. Soliman, A. D. C. Stoute, Annie V. Taylor, Marjorie P. Taylor, G. Vaishnavi.

Licences in dental surgery were granted to 31 candidates.

The President presented to the College a copy of a portrait of Ambroise Paré in the museum at Fécamp in Normandy, thought to be the work either of Mirvelt or Heufchatel.

It was decided to offer to hold a reception at the College in the evening of Tuesday, May 7th, for members attending the fifth International Congress of Military Medicine and Pharmacy.

The Secretary reported that the application for a licence from the Board of Trade for a British College of Obstetricians and Gynaecologists would be heard by the Board on March 22nd, and that the Royal College of Physicians of London and the Royal College of Surgeons of England would be represented by counsel in opposing the application.

Obituary.

WILLIAM WRANGHAM, M.D., M.R.C.P.,

Senior Physician, Royal Infirmary, Bradford.

ON March 16th Dr. William Wrangham, one of the best-known consultants in Bradford, died with startling suddenness from angina pectoris.

Son of the late Dr. Wrangham, William Wrangham was born in 1871 in Lincoln, where his family had lived for many generations, several members of each generation belonging to the medical profession. Having received his medical education at St. Bartholomew's Hospital he qualified M.R.C.S., L.R.C.P. in 1896, graduating M.B. in the same year, and proceeding M.D.Lond. in 1900. During the three years immediately following his qualification he held various resident appointments, and in 1900 he settled in general practice in Bradford, where shortly afterwards he was appointed chief police surgeon, assistant honorary physician to the Bradford Royal Infirmary, and assistant surgeon to the Bradford Royal Eye and Ear Hospital; at the time of his death he was senior honorary physician to the Bradford Royal Infirmary. In 1915, when St. Luke's Hospital was equipped as a war hospital, William Wrangham was placed in charge, with the rank of lieutenant-colonel. In this capacity he served until the hospital was handed back to the civil authorities in 1919, receiving in recognition of his services the Order of the British Empire, and letters of congratulation from the general commanding the Northern Division and Sir Berkeley Moynihan. When, in the following year, St. Luke's Hospital was taken over by the municipality, he was appointed senior honorary physician, and, relinquishing general practice, devoted himself entirely to consulting work, in which he was engaged up to the time of his death. In 1924, when the British Medical Association held its Annual Meeting in Bradford, he was honorary secretary of the Section of Medicine, and in the period 1927–28 he was chairman of the Bradford Division.

William Wrangham was not only a skilful physician, sound in diagnosis and prognosis, and resourceful in treatment, but a man of the highest probity, who was universally honoured by his medical colleagues and the many citizens of Bradford with whom his appointments brought him in contact. He is survived by his wife and two daughters, to whom and to his brother, Dr. J. M. Wrangham of Ripponden, we extend deepest sympathy.

WE regret to announce the death, on March 16th, after a brief illness, of Dr. WALTER JAGGER, one of the leading practitioners in the West End of London. He was born in 1871, and went from Shrewsbury School to study medicine at Edinburgh, graduating M.B., C.M. in 1896. He served in the R.A.M.C. throughout the South African war, and received the Queen's medal with four clasps and the King's medal with two clasps. After leaving the army he practised first in Lincoln, then at Bourne End, Bucks, and for the past fifteen years in London, where he held a number of clinical appointments. During the late war he was on the staff of Princess Christian's Hospital for Officers, and the R.A.F. Hospitals for Officers in Eaton Square and Bryanston Square. With Sir Henry Simson he attended H.R.H. the Duchess of York at the birth of Princess Elizabeth, and he was also in attendance on the Duchess during her recent attack of influenza. Sir Henry Simson writes: Memories going back to the time when we were students together in Edinburgh crowd in upon one when one thinks of Walter Jagger: his happy greetings, his quaint humour, and his old-fashioned courtesy and precision of manner. Nothing was too trifling in order that the thing to be done should be done properly. Whether in the lecture room, at the Students' Union, on the golf course, it was the same—something to be done, a proper way to do it, and always a happy faculty of seeing the humorous side of a situation. I have a suspicion that his service with the R.A.M.C. in South Africa was one of the happiest times of his life. It certainly left its impression on his character in after-life; but he never talked much about it, and it was not until years later, when he came to London, that we renewed the friendship begun in Edinburgh. We were associated very closely as secretaries of the Edinburgh University Club of London, and he gained a considerable reputation for making after-dinner speeches at the club dinners. His friendship was not given easily, but once gained he never let you down.

Dr. ELSIE THOMSON, who died at Kew on March 6th, was the younger daughter of Dr. T. C. Thomson, lately of the Colonial Medical Service at Hong-Kong. She was educated at St. George's School, Edinburgh, and after qualifying as a nurse at the Royal Infirmary, she graduated M.B., Ch.B.Ed. in 1923. Four years later she obtained the D.P.H. She was for some time resident medical officer at the Mothers' Hospital, Clapton, and later gained experience in public health work at Ilford, and under the London and Staffordshire county councils. In 1925 she was appointed assistant medical officer in charge of maternity and child welfare for the borough of East Ham, and retained this post until her death at the untimely age of 37. Elsie Thomson possessed qualities of mind and character that endeared her to all those who knew her. The following is quoted from an appreciation by Dr. Benton, medical officer of health for East Ham: "With the passing of Dr. Elsie Thomson the Public Health Department of East Ham has lost a loyal colleague, and the East Ham Corporation one of their most capable and valued officers. Her sweet personality and patient sympathy with those in difficulties won complete confidence. This has been many times emphasized lately by repeated inquiries from numerous mothers regarding the doctor's health and return to work." The mayor of East Ham attended the funeral at Richmond in his official capacity, accompanied by several representatives of the public health life of the borough.

The following well-known foreign medical men have recently died: Dr. MARCEL LERMOYEZ, an eminent Paris laryngologist, member of the Académie de Médecine, and one of the founders of the *Presse Médicale*, aged 70; Dr. FRÉBAULT, honorary professor of toxicology in the Toulouse faculty of medicine; Dr. RAPHAEL DUBOIS, honorary professor of physiology in the Lyons faculty of medicine; Professor GHERARDO FERRERI, director of the oto-rhino-laryngological clinic of Rome; Professor ALDO PERRONCITO, director of the institute of general pathology at Pavia; and Professor FILIPPO SPECIALE CIRINCIONE, director of the ophthalmological clinic at Turin.

Professor H. R. Kenwood writes: There are many readers of the *British Medical Journal* who will feel a keen sense of regret and of loss on hearing of the recent death of Mr. F. T. MARCHANT at the early age of 49. For thirty-five years he was a highly valued associate of mine in the Public Health Department of University College, London, where he came in contact with a very large number of medical men and women during their training for the D.P.H. He began his work at the College, at the age of 14, as a laboratory attendant; when he ended it he was a member of the College staff, a demonstrator and lecturer of rare ability, and the joint author of a textbook upon hygiene and public health (Jameson and Marchant). He acquired such a good knowledge and technique, both of public health chemistry and bacteriology, and he possessed such a wonderful power of informing and training others, that his services became invaluable. Indeed, his death will deprive the new London School of Hygiene (to the staff of which he had been elected) of one whose special experience and knowledge it will be difficult to replace. His great gifts won for him the esteem, and his good personal qualities the affection, of those who worked with him. Always kindly and sympathetic to those in difficulties, he was almost prodigal with the time and trouble he would devote to assisting them. This generous trait, and his modest, kindly, and unselfish disposition, will be held in tender remembrance by all his associates and by very many who are now medical officials in the public health services of Great Britain and her Dominions. Marchant was a man of poor physique, but the indifferent health by which he was often handicapped levied little toll of his mental energy. He made time for some useful items of research, and in his leisure he was a great reader and student to the end. He was "a home bird"—a fact which will not surprise anyone who knew something of his home life, for it was a very attractive home, if only from the standpoint of the great comradeship and devotion of the two who shared it; and our deepest sympathy will go out to Mrs. Marchant in her bereavement. There was no child of the marriage.

Medical News.

MR. CHARLES HERBERT HAMPSHIRE, M.B., B.S., B.Sc., F.I.C., has been appointed by the General Medical Council to be the secretary of the Pharmacopoeia Commission. He will take up his duties from June 1st. All communications intended for the Pharmacopoeia Commission should be addressed to the secretary of that body at 44, Hallam Street, Portland Place, W.1, and not to any individual.

A SPECIAL discussion on encephalomyelitis of man and animals will take place at a joint meeting of the Sections of Comparative Medicine and of Neurology of the Royal Society of Medicine on Wednesday next, March 27th, at 5 p.m. Mr. I. A. Galloway will open the discussion on behalf of comparative medicine, and Dr. J. G. Greenfield for neurology.

A COMPLIMENTARY dinner to the honorary medical board of the institution will be given by the Trustees of Lord Mayor Treloar Cripples' Hospital and College on Friday, April 5th, at Barbers' Hall.

THE Fellowship of Medicine announces that the first course in April will begin on the 8th; it will be a practitioners' course in medicine and surgery at the London Temperance Hospital, from 4 to 5.30 p.m. daily, lasting for two weeks. The London School of Tropical Medicine will give a series of eight clinical demonstrations on Tuesdays and Thursdays, at 2 p.m., from April 9th to May 2nd. There will be a course on treatment by electrotherapy at the Royal Free Hospital on four successive Wednesdays, at 5.15 p.m., beginning May 10th, and limited to sixteen. Two courses will begin on April 15th. The first is a three weeks' course at the Royal Waterloo Hospital in medicine, surgery, and gynaecology, occupying every afternoon and some mornings; the second course is in neurology at the West End Hospital for Nervous Diseases, each afternoon at 5, and lasting for four weeks, with a minimum entry of ten. Syllabuses of these courses, with information about post-graduate work in London and the provinces, copies of the general course programme, and the *Post-Graduate Medical Journal*, can be obtained on application to the Secretary of the Fellowship, 1, Wimpole Street, W.1.

THE annual general meeting of the Cremation Society of England will be held in the council chamber at 23, Nottingham Place, W.1, on Wednesday next, March 27th, at 3.30 p.m., when the council's report and balance sheet for the year 1928 will be submitted.

THE house and library of the Royal Society of Medicine will be closed from Thursday, March 28th, to Tuesday, April 2nd, both days inclusive.

SIR STCLAIR THOMSON has been elected "correspondant étranger de l'Académie de Médecine"; Professor J. H. Abt of Chicago, an honorary member of the German Society of Children's Diseases; Dr. René Gaultier, president for 1929, and Professor Hayashi, dean of the medical faculty of Tokio, an honorary member of the Société de Thérapeutique of Paris; and Dr. Henry Coppez, president of the annual medical congress known as the Journées Médicales de Bruxelles, which will be held in Brussels in 1929.

AMONG the newly elected Fellows of the Royal Society of Edinburgh are the following members of the medical profession: Dr. E. W. H. Cruickshank of the Physiology Department, Dalhousie University, Halifax, Nova Scotia; Mr. Walter Mercer, lecturer on Clinical Surgery in the University of Edinburgh; and Dr. Sydney A. Smith, Regius Professor of Forensic Medicine, University of Edinburgh.

MR. L. F. HEWITT, Ph.D., B.Sc., has been appointed biochemist at the Metropolitan Asylums Board's antitoxin establishment, Belmont Laboratories, Sutton. Dr. Hewitt is at present Gibbons Research Fellow at the London Hospital, and was formerly Freedom Research Fellow at the London Hospital, and research chemist, under the Medical Research Council, at Mount Vernon, Hampstead.

THE Gifford Edmonds prize in ophthalmology has been awarded to Mr. V. M. Métivier of the Ophthalmic Department of Edinburgh Royal Infirmary, for his essay on the causation and differential diagnosis of proptosis. This prize, founded by Miss Sophie Edmonds in memory of her brother who fell at Magersfontein, is valued at £100, and is awarded every second year.

THE Lord Mayor, accompanied by the Lady Mayoress and the Sheriffs, attended the annual meeting of St. Mark's Hospital on March 15th, illustrating the special patronage by the City of London which the hospital has enjoyed during its ninety-three years of existence. The recent increase in the number of beds at this institution has called for further extensions, including additional accommodation for nurses, a second operating theatre, and expansion of the cancer research laboratories; the cost entailed is about £30,000.

INFORMATION has just been received that the American Medical Association has joined the Association Professionnelle Internationale des Médecins (A.P.I.M.). Other recently joined members are the Medical Associations of Greece and of Palestine.

A PAPER by Messrs. J. Evans and A. O. Jones, on the determination of alcohol in urine, which was read at a meeting of the Society of Public Analysts on December 5th, and mentioned briefly in our issue of December 22nd, 1928 (p. 1140), has now been published in the March issue of *The Analyst*.

THE thirty-third post-graduate course of the Vienna Medical Faculty will be held from June 3rd to 15th, the first four days being devoted to surgery. On June 7th and 8th there will be lectures and demonstrations in orthopaedics, and on the 10th and 11th in neurology; the remaining days will be occupied by gynaecology and obstetrics. Further information may be obtained from the office of the Vienna Medical Faculty, Schlösselgasse 22, Vienna VIII.

THE forty-second congress of the Société française d'ophtalmologie will be held on May 13th, when Dr. Aubaret will read a paper on the etiology and treatment of blepharitis. Further information can be obtained from the general secretary, Dr. R. Onfray, 6, Rue de la Motte Picquet, Paris VII^{e}.

THE Droitwich Development Corporation, Ltd., has now acquired ownership of this town, including the High Street, the three principal hotels, the two existing brine baths, the park, golf links, and many miles of existing roads. The proposals for extension include the erection of a new spa at the cost of £250,000 with one of the largest covered baths in the country, and a building containing more than 100 private baths. A new theatre, concert hall, club, and cinema are also to be constructed, and it is intended that the Droitwich season shall eventually continue throughout the year.

WE have received the first issue of a journal entitled *Rivista di Radiologia e fisica medica*, which is to be published every two months at Bologna under the editorship of Professor G. C. Palmieri and an international editorial committee. Articles will be published not only in Italian, but also in English, French, and German.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

HARVEY AND HERVEY.

"W. H. C." writes: Re-reading Sir Thomas Barlow's Harveian Oration of 1916, printed in the *Journal* for October 28th of that year, I note that he refers to Abraham Cowley's poems, saying "his two poems on Harvey." Has he not confused the poem to William Hervey as one of the two he mentions, the other being the well-known Ode to William Harvey, the real subject of the Oration?

THE TRIANGULAR BANDAGE.

"INQUIRER" writes from New Zealand: I should be glad if any of your readers could enlighten me regarding the origin of the triangular bandage, so extensively used in first aid. I should like to know when and by whom it was introduced.

TREATMENT OF PREMATURE BALDNESS.

DR. M. BROWN (Glasgow) asks for suggestions for treating a nervous lad, aged 18, who is prematurely bald, and is becoming very sensitive about his appearance. There is a mild degree of sexual neurasthenia, but otherwise he is normal. Would glandular therapy help?

PROLONGED ADMINISTRATION OF CASCARA.

"SIGMOID" asks: (1) Can cascara sagrada be administered for long periods without producing deleterious effects? (2) Can the drug produce poisonous symptoms when administered for long periods, and what form will these symptoms take?

ADMINISTRATION OF ULTRA-VIOLET RAYS.

DR. ELIZABETH C. MUDIE (Glasgow), in reply to "A. M." (March 9th, p. 485), writes: (1) and (2) The best way of heating small treatment rooms is by electric radiators. A two-unit fire will keep a room 15 ft. by 15 ft. at 70° F., but in addition I advocate the use of a Sollux lamp, which can be placed over the patient to prevent chill while he is undressing. A temperature of 70° F. will not harm the lamp. (3) A steam radiator should not be used in the treatment room, as moisture in the atmosphere shuts off short ultra-violet rays. (4) It is advisable to have the lamp reconditioned at the end of twelve months, but there are instruments on the market for recording the efficiency of the burner.

ENURESIS.

DR. F. R. PROCTOR-SIMS (London, N.) writes: In reply to "K.'s" query (March 9th, p. 485), I should advise him to try suggestion. I had a case some years ago of a bright, intelligent boy about 10 years of age, who was brought to me by his father for nocturnal incontinence of urine. I spoke to the boy quietly about the drawbacks in life that the habit would be to him, and especially how it would debar him from staying at friends' houses during his holidays. I gave the father instructions about not giving the boy anything to drink close to bedtime, and to see that the boy emptied his bladder before retiring. I told the boy himself that I was giving him some medicine which would wake him up in the night if his bladder got full, and that he was immediately to jump out of bed and micturate. The mixture was a simple bitter tonic. The father called on me a week afterwards and said that there had been no trouble since, and as I have seen neither of them since, I presume it was a cure. I know of one other case which was cured by hypnotic suggestion. With regard to belladonna—if this has to be tried—I wonder if "K." has used the extract belladonna virid 1/10 grain in water t.d.s. I found it in some cases more effective than the tincture.

"L," in reply to the query of "K." on March 9th (p. 485), reports a case in a boy, aged 10, a relative-in-law of his own, who was staying with him as a guest for two months last summer holidays. Treatment consisted in orders that the boy was himself to perform all the tidying-up, washing, and drying involved by his disability, and that preliminary instruction by the women folk, and a certain amount of watching, were all that they were to do for him. The sense of shame and horror he evinced on the first morning gave an idea of the difficulty such orders would meet with in the case of a boy at home in the care of a mother habituated to do everything for him. Undeterred by reports of relapse after dramatic initial success, "L." persisted, and saw to it that no evasion of his orders was practised by anyone. At Christmas the mother gratefully wrote reporting that the resulting improvement had been well maintained. The life of an uncle of this boy had been practically wrecked by enuresis.

TREATMENT OF CHRONIC CONSTIPATION.

DR. ARTHUR E. DRUITT (Southampton) writes: Dr. Rothwell's inquiry in the *British Medical Journal* of March 9th (p. 485) prompts me to reply that I am always surprised at the frequent resort to drugs in chronic constipation without any mention of diet, in view of the uselessness of relying on drugs for an ailment which, in perhaps nine cases out of ten, is brought about by irregular habits and indiscretion in diet. When shall we learn that the wrongness of feeding on white bread can only be properly rectified by changing over to wholemeal? How is it that methods such as regular feeding, rational dietary, the adequate use of water, and the inclusion of sufficient vegetable roughage are not more practised? If, in spite of such reasonable care, the malady still persists, why, instead of falling back on drugs, should not restoration of muscular activity be sought in massage, hydrotherapy, and electrical treatment, combined with physical exercises? In emergencies cathartics hold a valuable place, but chronic constipation is not an emergency, though it is the frequent precursor of such. Unless there is reason to resort to the more specialized forms of treatment, my general practice is to recommend the use of uncooked bran, one tablespoonful for an adult or a teaspoonful for a small child; this is mixed into the breakfast porridge at the time of serving out. It lends itself well to this, and can also be mixed in milk, marmalade, etc., according to taste. It is placed, when needed, upon the table as regularly as is the sugar basin, so that people may help themselves without further comment, and carry on the treatment, if necessary, for the rest of their lives, taking it with them when on holiday. It is a treasure indeed to those who have common sense enough to use it, and who do not mind not being in the fashion of using a special doctor's prescription or the latest preparation of liquid paraffin. The construction of our w.c.'s is, in my opinion, very wrong, inasmuch as it does not encourage the natural attitude for defaecation, and herein lies, aided by natural laziness, a great contributory factor to constipation. When in Damascus, shortly after the war, I was delighted to note in the best houses a simple hole in a stone slab on the floor, through which water constantly trickled, as it was supplied by the fountain in the centre of the dwelling. The natural squatting position was then the only one to adopt, but happily for those who are thus minded and physically inclined, our own w.c.'s can, by a little ingenuity, be likewise utilized.

INCOME TAX.

Assistant—Free Accommodation.

"A. H. W." is at present remunerated by a salary, out of which he pays for his own board and lodging. It is suggested that he should take over his principal's present house, free of rent and lighting charges, and receive a smaller cash remuneration. If he does will he be assessable on the cash only, while his principal deducts the full cost to himself?

*** In our opinion, Yes; provided that the new terms of appointment make it clear that "A. H. W." will have no legal tenancy of the house and no right to sublet any portion of it.

Assistant's Expenses: Professional Subscriptions.

"J. S." is employed as an assistant to a general practitioner. The local inspector of taxes has refused to allow the deduction from the amount of the salary of the subscription to the British Medical Association, Medical Defence Union, etc., on the ground that, as the employer is responsible, those expenses are not "necessarily" incurred by the assistant.

*** The point is whether the expenses are "necessarily incurred" to earn the salary in all the circumstances. If the principal leaves it to the wish of his assistant as to whether he or she joins certain associations, etc., then the subscriptions are not "necessary," however proper and desirable. But if the principal lays it down as a condition of employment that his assistant shall belong to those associations—as he very well may—then the assistant must incur the annual expense of subscriptions, and that expense is necessarily incurred in the performance of the duties, as required by the terms of employment. We have always understood that the above statement of the position is accepted generally by inspectors of taxes.

LETTERS, NOTES, ETC.

PROPHYLAXIS OF INFLUENZA.

DR. E. R. LYTH (Isle of Man) writes: Influenza has been my *bête noire* for many years and, in spite of inoculations and sprays, I have succumbed over and over and over again. Comparatively recently I hit upon the idea of spraying or atomizing my nose and throat with an infusion of tea, and I have found this most helpful; though attending cases of influenza, it has been a new experience to escape and to keep well. There is no pain whatever in the use of the spray, and the tea mixes readily with the nasal mucus. I put in fresh tea from the breakfast teapot each morning after washing out the bottle, and this serves for the next twenty-four hours, being used, indifferently, hot or cold. Two or three compressions of the bulb for each nostril and for the throat before going out and on returning has been my custom, with an extra use of the atomizer before and after seeing any suspicious case.

ENDOGENOUS OR EXOGENOUS.

DR. F. P. DE CAUX (London, W.) writes: Sir James Barr, writing in your issue of March 9th (p. 475), stated that, after douching his nose with saline, a few drops of clear fluid would drop out on lowering his head. It may interest him to know that I douche my nose regularly with glycerinum thymol compositum (*B.P.C.*), and that on lowering my head several drops of pink-coloured fluid run out, and that, if I do not lower my head until several hours have elapsed, when I do so the pink fluid still runs out. If Sir James were to colour his saline with a solution of carmine he might think of another reason than the one he gives.

UNUSUAL SYMPTOMS OF PROSTATE ENLARGEMENT.

"J. C." writes: I was interested to see in the *Journal* of February 9th (p. 233) that when one of Mr. Grey Turner's patients put his hands into water he experienced an instant urge to micturate. I have spoken to surgeons about the reflex connexion between the bladder and hands, but have never obtained any satisfaction. In my own experience when the bladder is over-distended there is acute pain in both palms on starting urination. I wonder if Mr. Grey Turner has noted mental changes in the direction of *tête montée* in early cases of prostate enlargement?

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 47, 48, 49, 52, 53, and 54 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 71.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

287. Polyarthritis and Acute Myelogenous Leukaemia.

G. RIZZO (*Il Policlinico*, Sez. Prat., February 18th, 1929, p. 223) describes a case of acute polyarthritis followed by acute myeloid leukaemia. Two months before admission to hospital the patient had a sore throat with difficulty in swallowing and breathing, which lasted four days, and was followed by pain and swelling of the right ankle and both knees; later both wrists became swollen, with limitation of movements and severe rheumatic pains not yielding to salicylates or iodine. The Wassermann reaction and blood cultures were negative, and the gonococcus was not detected. The blood was slightly anaemic, and there was a leucocytosis of 20,000 per cubic millimetre, of which 86 per cent. were polymorphonuclear leucocytes. The rheumatic pains became more severe and associated with fever and profuse sweating. Later, ulcerations appeared on the tongue and gums, spreading to the tonsils and affecting almost the entire mucous membrane of the mouth; there was purulent discharge from both ears. General asthenia with increased anaemia now supervened, and at less than three weeks before death the white cells of the blood first showed the characteristic qualitative changes seen in myelogenous leukaemia; the lymphocytes were reduced to 0.5 per cent. and the polymorphonuclears to 19.5 per cent., whereas there were 18 per cent. myelocytes, 11 per cent. promyelocytes, 39 per cent. myeloblasts, and numerous nucleated and immature red cells. The spleen and liver were enlarged. The heart was not enlarged or displaced; there was a soft apical systolic murmur, which became more manifest and prolonged towards the base. During the last week of the illness a general haemorrhagic state developed. On the day before death the leucocytosis was 44,000 and the red cell count was 1,200,000 per cubic millimetre. The points of interest in the case noted are the initial angina, followed by polyarthritis, and the prolonged proleukaemic period.

288. Scarlatinal Nephritis.

B. S. HIRSCHBERG and M. E. SSUCHAREWA (*Jahr. f. Kinderheilk.*, January, 1929, p. 340) state that 167 (19.75 per cent.) of the 845 cases of scarlet fever admitted to the infectious department of the children's clinic of the Second State University at Moscow were complicated by nephritis. The incidence of nephritis increased with the age of the patient, being 4.3 per cent. below 1 year, 13.3 per cent. between 1 and 3 years, 18.8 per cent. between 3 and 5 years, 22.1 per cent. between 5 and 8 years, and 23.2 per cent. between 8 and 12 years. The cold season exercised a certain influence on the frequency of nephritis, 19.6 per cent. being found in the spring, 15.6 per cent. in the summer, 20 per cent. in the autumn, and 21.9 per cent. in the winter. The complication may occur at any stage of the infection, but the maximum incidence (23.3 per cent.) was in the third week, while a fair proportion of cases were found in the second week (19.7 per cent.) and fourth week (17.9 per cent.); 11.9 per cent. of the cases commenced in the first week of scarlet fever. Nephritis was somewhat more frequent after severe than after mild attacks of scarlet fever. Throughout the course of the nephritis a considerable involvement of the cardio-vascular system was observed, and was chiefly manifested by rise of blood pressure, dilatation of the heart, and accentuation of the second sound. Increase in weight was found to be a premonitory symptom of nephritis. In a fair number of cases the nephritis was present only in slight degree; in such instances it was only by repeated examination of the urine that a few red cells and traces of albumin could be found in some parts of the urine. Rise of blood pressure and accentuation of the second sound were then of considerable diagnostic value.

289 Pleural and Pulmonary Lesions in Rheumatic Fever.

J. R. PAUL (*Medicine*, December, 1928, p. 383) calls attention to the frequency with which pleurisy occurs as a complication in rheumatic fever. Citing illustrations from the literature of this fever extending over a century, he shows that the conception of the disease as one of all the serous membranes, with a preference for the joint cavities and pericardium, is by no means new. He discusses the question whether a specific lesion of the lung substance proper can be recognized as due to the rheumatic infection, and suggests that the recognition of structures similar to the Aschoff bodies found in the myocardium gives some support to the hypothesis. The difficulty is emphasized of distinguishing between pulmonary and pleural lesions caused by terminal and complicating infections and those which may be due directly to rheumatism, particular reference being made to Coombs's description of the signs of pulmonary collapse at the left base in rheumatic carditis, which is sometimes mistaken for pneumonia. Paul believes that pleurisy, generally with effusion and a copious fibrinous exudate, is a relatively common complication of rheumatic fever, and is usually associated with the more severe cases of carditis and pericarditis, adding considerably to the gravity of the prognosis.

290. Incipient Tuberculosis.

J. HEIMBECK (*Norsk Mag. f. Laegevid.*, January, 1929, p. 18) records his observations on the incidence of tuberculosis in nurses at the Oslo communal hospital since 1924. He found that among 282 nurses aged from 20 to 25 with an old latent tuberculous infection the disease very seldom became activated and gave rise to symptoms. On joining the hospital 299 nurses were found to be absolutely free from tuberculous infection both by clinical examination and the Pirquet test; 57 of them were examined by *x* rays without showing any signs of disease. It was found that all the fresh cases of tuberculous infection occurred in this group of nurses as soon as they were exposed to infection. Clinical, serological, and *x*-ray examination showed that the tuberculous infiltration of the lungs was the immediate result of an exogenous infection. In several cases pleurisy and erythema nodosum proved to be manifestations of this tuberculous infection.

291. Goat Serum Toxin-antitoxin.

L. BIVINGS (*Arch. of Pediat.*, December, 1928, p. 736) records his observations on 350 cases recently immunized in the health clinic of the city of Atlanta with goat serum toxin-antitoxin, and in part subsequently tested by Schick's method. The results were very gratifying. Whereas in the past three years the horse serum product had given rise to severe reactions in at least 40 per cent., only 2 per cent. of the goat serum series showed any reaction. The immunizing value of goat serum toxin-antitoxin compared favourably with the horse serum product. Bivings comes to the conclusion that, in view of the specific sensitization to animal serums following large doses of serum and possibly the use of toxin-antitoxin, goat serum toxin-antitoxin should be employed to prevent the dangers of sensitization to horse serum products of which most of the prophylactic and therapeutic serums are made. He is of opinion that sheep serum probably has the same advantage.

Surgery.

292. Salivary Lithiasis.

L. ARAGÓ (*La med. Ibera*, January 26th, 1929, p. 124) defines four types of calculi found in the buccal cavity: (1) those which develop in the salivary glands and their ducts; (2) those which originate in the mucous glands of the walls of the cheek and lips (very rare); (3) those which are formed between the teeth and the gums (the most frequent variety); and (4) those which are deposited on prosthetic apparatus. The chemical constitution is the same in all, since they are formed principally of earthy phosphates and carbonates. Obstruction to the flow of saliva and persistence of food in the mouth are conditions which favour their formation, so that they are usually found in neglected mouths. The submaxillary glands and ducts are most frequently affected, probably owing to the stagnation of the saliva and the larger size of Wharton's duct. Foreign bodies, such as small splinters of wood, fish bones, and fruit seeds, are more likely to find their way into the opening of Wharton's duct than elsewhere. In Closmadeuc's statistics Stenson's duct was affected in 11 and Wharton's in 101; the combined statistics of Czygan, Buchwald, and Wenzel show that 61.4 per cent. of the calculi were found in Wharton's duct and the submaxillary gland, 20.4 per cent. in the parotid and Stenson's duct, and 18.2 per cent. in the sublingual gland and its duct. The number of calculi varies from one to seven in Wharton's duct and up to twenty in the submaxillary gland; they are more often found in males than in females, and may occur at all ages, but are most frequent in adults. The symptoms are similar, whatever the gland and duct affected. The first sign

is almost always an intermittent swelling of the affected gland at meal times or at the sight of food. The swelling is at first uniform and disappears on pressure; in other cases it is accompanied by pain or salivary colic when the obstruction is complete. The foreign body may be felt on bimanual palpation, or the hard surface may be detected with a sound or by puncture. The diagnosis is readily established by *x* rays. The prognosis is favourable in localized salivary lithiasis, but is aggravated by septicaemia, meningitis, or oedema of the glottis. Treatment consists in extraction of the calculus through an incision in the duct or gland. Partial or complete extirpation of the gland may be indicated in cases of recurrent lithiasis when the glandular parenchyma is intensely degenerated.

293. Appendix Conditions in Young Children.

E. W. PETERSON (*Annals of Surgery*, January, 1929, p. 48) contends that appendicitis can occur as early as the first week of life, and that its rarity in infants has been too greatly emphasized. The diagnosis of appendicitis in very young children is so difficult that the condition is frequently overlooked or not thought of under the age of 2. Many cases of indigestion-colic, gastritis, gastro-enteritis, acidosis, and cyclic vomiting are, he thinks, really unrecognized appendicular disease. The mortality in acute appendicitis in early life is very high, in nurslings over 70 per cent., and in 80 cases of children under the age of 2 it was 50 per cent.; under 6 years the mortality is estimated as from 15 to 40 per cent. Purgation and procrastination are held responsible for the majority of deaths. Out of 100 patients operated on by Peterson 8 were under 12 months old, and this condition was associated with acute intussusception; in the age period 1 to 2 years there were 5 cases; from 2 to 3 years, 10 cases; from 3 to 4 years, 9 cases; from 4 to 5 years, 18 cases; from 5 to 6 years, 23 cases; and in the 6th year, 27 cases. Males were affected in 71 and females in 29 instances. There was a mortality of only 6 per cent. Peterson believes that appendicitis is one of the common causes of intussusception, and that appendicitis should always be suspected when a hernia gives subjective symptoms of any kind, it being the exception to find a normal appendix in a child who has had a hernia, unsupported by a truss, for any considerable period of time. Early recognition and prompt surgical treatment of appendicitis give good results even in infants and the younger group of children.

294. Ganglion of the Hip-joint simulating Femoral Hernia.

C. HAMMESFAHR (*Zentralbl. f. Chir.*, February 2nd, 1929, p. 285) describes the case of an elderly man who fell while wheeling a barrow. Immediately after this severe strain of his thigh the muscles became swollen, and a painful swelling, as large as a hen's egg, appeared beneath Poupart's ligament. The pain increased and peculiar tingling sensations extended as far as the knee and radiated to the back. The patient thought that he had a hernia and requested an operation. When admitted there was a hard, irreducible, slightly mobile oval swelling below Poupart's ligament. Very forcible pulsation over the swelling made the diagnosis of hernia uncertain, and preparations were made to ligature the vessels. At the operation a smooth swelling of the size and form of a hen's egg was found beneath the femoral vessels, and was dissected out with great difficulty. A pedicle of the thickness of a lead pencil communicated with the joint; a probe was passed easily through its lumen into the acetabulum. The cyst wall was dissected out and the pedicle was ligatured. The wall varied in thickness from 1/18 to 1/12 inch, and consisted of scar-like connective tissue. Uninterrupted healing followed, with daily passive movements of the joint. Hammesfahr believes that small ganglia of the hip-joint may account for some obscure cases of coxalgia which have been described as functional or attributed to malingering.

295. Phlebitis following Simple Fractures.

JEANNENEY (*Journ. de Méd. de Bordeaux et du Sud-Ouest*, February 10th, 1929, p. 116) reports two cases of extensive thrombo-phlebitis—a rare complication of non-compound fractures. He states that it appears to be attributable frequently to (1) the site of the fracture; (2) the presence of venous thrombosis, due to the injury; or to (3) a latent systemic bacterial infection which may complicate any fracture. He adds that in cases of thrombo-phlebitis it is especially necessary to order absolute rest, with elevation of the limb, particularly in cases presenting symptoms of previous venous lesions, such as varices or old phlebitis. Calcium salts should not be prescribed, or, if required, very small doses alone are advisable. Passive movements of the injured limb should be performed with great caution.

Therapeutics.

296. Iodine Treatment of Graves's Disease.

M. LABBÉ (*Ann. de Méd.*, January, 1929, p. 5) advocates the administration of iodine in cases of Graves's disease in daily doses of 1½ grains (in form of pills), or even as much as twice that dose. This is usually well taken without producing toxic effects, such as congestion and irritation of the eyes or skin eruptions. In true cases of this disease the benefit is rapid and general; at the end of a week the tachycardia, excitement, trembling, and digestive disturbances are diminished, wasting is arrested, and the patient puts on weight, the basal metabolism being lowered. If the treatment is stopped the symptoms return. The results and the rapidity of the reaction vary with different patients, and in some cases no improvement occurs in spite of prolonged treatment. The author has seen no patient cured by the iodine treatment, but many can be kept in good health by continuing it. The action of iodine affects the symptoms in various degrees; the goitre itself is not changed in volume, though it may become less vascular and cease to pulsate; the exophthalmos is not affected; the tachycardia is often but little influenced; the metabolism, however, returns to normal and the patient puts on weight, trembling is diminished, and the general state is much improved. Iodine is useful in preparing the patient for thyroidectomy, so that the mortality from the operation has been reduced to about 2 per cent.; it is superior to preparation by ligature of the thyroid arteries, or by radiotherapy. Iodine also assists the slower radiotherapy which may be prolonged to a complete cure. The operative treatment, which is preferred in America, is still considered dangerous and uncertain in France.

297. Quinidine Sulphate in Cardiac Arrhythmia.

C. LIAN (*Bruxelles-Médical*, February 10th, 1929, p. 429) remarks that quinidine sulphate is capable of diminishing extrasystolic arrhythmia, and uses it in cases in which the arrhythmia is a translation o a myocardiac or nervous hyperexcitability. He has obtained encouraging success without resorting to large doses. The technique is as follows. For two days he gives one 0.20 cg. dose daily of quinidine sulphate; for the next two days two doses a day; and for the following ten days three doses a day, one before each meal. This course is followed by five days' cessation of treatment. The patient is then given a further course of ten days' treatment; a seven days' course follows; and then a five days' course, with gradually increasing intervals between each course. In cases where there is a slight cardiac insufficiency 1/10 mg. of crystallized digitaline a day in addition to the quinidine sulphate is given. In cases where there is much cardiac insufficiency, or bradycardia, quinidine sulphate is not used. Lian states that, although it was rare for extrasystole to disappear completely under the sole influence of quinidine sulphate, the results were good. The patients became less conscious of the painful sensations produced by extrasystole, as these became less strong and less frequent. The author attributes the improvement to the prolonged course of cure with increasingly long intervals between each period of dosage.

298. Stimulation of the Growth of Hair.

ELSA EICHOLZ (*Dermat. Woch.*, February 2nd, 1929, p. 161) has investigated the action of various agents in stimulating the growth of hair in rabbits, mice, and guinea-pigs, patches of skin being previously shaved and epilated by calcium sulphide and zinc oxide. It was found that chrysarobin and sunlight rays caused hyperaemia and gave the best and quickest growth of hair. Gentle rubbing of the skin with vaseline, benzine, and benzol, and even gentle finger massage, caused slight revival of hair growth, but if the rubbing was severe, so as to produce hyperaemia, the results were almost equal to those obtained with chr[illegible]. Cholesterin-vaseline and trilysin (an [illegible] cholesterin) gave the same results as simple vaseline; trilysin did not appear to possess any specific property as a hair restorer.

239. Malarial Treatment of Syphilis.

H. RUGE (*Urol. and Cutan. Rev.*, January, 1929, p. 8) recalls that the first application of malarial treatment to cases of early syphilis to prevent the occurrence of later complications was due to Kyrle, who based his conclusions on observations of 600 cases. Its value in the early stages of secondary syphilis has not been proved, but it may be of value in the later stages. The best time for malarial treatment is said to be during the fourth to the sixth year after infection. Treatment by malaria in the early stages of syphilis has no advantage over energetic ordinary treatment, but in the

subsequent latent stage a thorough course of malarial treatment may prevent the onset of tabes and general paralysis. In all cases the malarial treatment should be preceded by a course of salvarsan of 4 to 6 grams, and followed by a course of 3 to 5 grams of neosalvarsan. Bismuth may be used with the salvarsan from the first, as well as in the intervals between the paroxysms. The malarial treatment should also be followed by two courses of specific after-treatment.

Neurology and Psychology.

300. Agglutinin Formation in Mental Cases.

SINCE the appearance of agglutinins in the blood following vaccination or infection occurs regularly in so many individuals and animals, F. A. PICKWORTH (*Journ. Mental Sci.*, October, 1928, p. 709) concludes that this phenomenon is doubtless connected with successful resistance to the deleterious effects of the organisms, and that the non-production or abnormalities in the production of agglutinins following injection of bacteria represents a pathological process, probably of the nature of sepsis. Seven graphs are supplied to illustrate the varying reactions of a series of mental hospital patients to injections of T.A.B. vaccine. *Agglutinins may* disappear from the blood in febrile conditions, and Besredka's experiments have shown that high agglutinins may be reduced by the cessation of the production of that particular agglutinin, coincident with the alteration or destruction of the existing serum globulin. Pickworth remarks that the upper part of the small intestine is sterile, and the colon type of bacilli should not occur above the lower part of the jejunum. Arnold and Brody have noted that when the reaction of the duodenum is for long neutral or alkaline the bacterial flora changes to that found in the ileum or caecum; abnormal organisms undoubtedly occur in the upper duodenum in such conditions as pernicious anaemia. It has been shown that leucocytes take up bacteria and transport them to the liver and spleen, where, according to Adami, the bacteria multiply until the tissues react, causing their lysis; the liberated toxins then destroy the neighbouring tissue. Tissue invasion and bacteriaemia urgently demand agglutinin formation through the presence of new deleterious bacterial protein. There is an important connexion between focal and intestinal sepsis, and an undoubted relation between the leucocytes and agglutinin formation. Two important causes of focal sepsis are a bacteriaemia and a depletion of leucocytes. Pickworth has noted changes in the small intestine, such as dilatation and ballooning, and, doubtless, chronic bacterial invasion is common in the acute phases of mental disorder. The frequent occurrence of delusions of poisoning further supports the theory of gastro-intestinal sepsis. Damage to the intestinal epithelium permits the absorption of deleterious bacterial products, and, if these products are toxic to nervous structures, this will give rise to intellectual and emotional deterioration or to specific nervous effects. Local damage of tissue in a patient with bacteriaemia may result in a bacterial focus with possible deleterious local effects. The interrelation between focal sepsis and the variation in agglutinin formation in the insane may occur through high intestinal sepsis caused by infection with paratyphoid or food-poisoning organisms. Poisoning and loss of leucocytes in the intestinal tract, a bacteriaemia of intestinal organisms, and reinfection from pyaemic focal sepsis are highly probable factors in this relation.

301. Centro-lobar Cerebral Sclerosis.

J. MARIE (*Ann. de Méd.*, December, 1928, p. 545) remarks that in recent years a new type of cerebral sclerosis has been isolated; it is characterized by marked anatomical lesions and clinical symptoms. Two varieties of this disease have been observed—a chronic form, first reported by Marie and Foix in 1913; and a subacute and fatal type, described by Schilder in 1912. From these last two observers the name "malady of Schilder-Foix" has been given to the disease. In Schilder's case, a girl aged 14, the affection commenced insidiously with apathy, vomiting, and loss of sight. Blindness became total in four months, the base of the eye showing papillary oedema. A right hemiplegia with dysarthria developed, and death with marasmus ensued in six and a half months. The necropsy revealed a symmetrical, yellowish, massive centro-lobar lesion of varying consistency, which invaded the whole of the white substance of the occipital, parietal, and posterior part of the temporal lobes. This mass was separated from the cortex by a fine band of healthy fibres. In the patient of Marie and Foix, a lad aged 18, the disease commenced as an extremely spastic triplegia, which in five days progressed into a quadriplegic syndrome with aphasia. The spastic triplegia persisted for ten years, the patient dying from pulmonary tuberculosis. A bilateral, symmetric, greyish hard area of sclerosis was found, which involved the white substance of the hemispheres and extended from the occipital lobe to the Rolandic convolutions, the cortex and a fine border of subcortical myelinic fibres being uninvolved. These cases were similar in the following points: the massive attack of the cerebral white substance and of the convolutions; the absolute integrity of the cortex and a fine border of subcortical myelinic fibres; and the symmetry or tendency to symmetrical lesions. Marie gives a detailed description of the anatomical pathology, and classifies the disease in four groups: in the first, the subacute, there is softening of the nervous tissue, as in suppurative encephalitis; in the second and third the consistency of this tissue is increased; and in the fourth it is very dense, and marked atrophy of the white substance is present. The author remarks that these groups really represent stages in the development of the disease, and depend on its duration.

302. Congenital Auditory Imperception.

C. WORSTER-DROUGHT and I. M. ALLEN (*Journ. Neurol. and Psychopath.*, January, 1929, p. 193) believe that cases of congenital "word-deafness" are of considerable rarity, and that in the past many of these have been misinterpreted. They describe fully a case which they regard as one of congenital auditory imperception, the term "word-deafness" being considered too limited. Complete word-deafness, or, more strictly, word-meaning-deafness, is the most important element, but some auditory agnosia is present. Word-blindness in small degree, slight agraphia or dysgraphia, and a pronounced speech defect are associated secondary elements. The disorganization of the speech mechanism has led to the development of a method of expression which is of the nature of so-called "idioglossia." The case reported illustrates the interdependence of each and every elemental part of the speech mechanism, and especially the dependence of normal speech development upon the appreciation of variations in sounds. The observations confirm the modern view that the speech mechanism cannot be divided into clearly defined "centres," but must be regarded as a physiological mechanism which functions as a complete whole. The disorder is probably caused by a biological variation or a local aplasia, but birth injury cannot be definitely excluded. The case raises important questions, including the effect of congenital word-deafness upon the development of speech defects such as idioglossia, the influence of such a defect upon the development of general intelligence, the psychological reactions in those affected with this disability, their influence on behaviour and delinquency, and the importance of applying special methods of education to these patients in order to enable the individual to attain a self-supporting position and to prevent the development of antisocial tendencies.

Obstetrics and Gynaecology.

303. Premature Rupture of the Membranes.

MARGARET SCHULZE (*Amer. Journ. Obstet. and Gynecol.*, January, 1929, p. 20) states that in a series of 6,500 deliveries the percentage of dry labours was 9.3. Factors predisposing to early rupture of the membranes were primiparity, overdistension of the uterus from hydramnios, plural pregnancy, large size of the child, and contracted pelves with non-engagement of the head. In some cases, however, the immediate cause appeared to be due to variations in tensile strength of the membranes from a deficient development of the connective tissue. Labour ensued within one hour of the membranes rupturing in more than half these cases, and only in about 10 per cent. of them was there a delay of more than twenty-four hours. Induction of labour by castor oil and quinine, subsequent to rupture, was successful in 90 per cent. of cases. The first stage of labour (dry) was shortened, occupying six hours or less in 37 per cent. of primigravid and in 64 per cent. of multigravid patients. The second stage was not influenced. Only in 8.4 per cent. of cases did labour last more than twenty-four hours. Operative intervention was more necessary in the dry labours, but in two-thirds of the cases where manipulation was required some other cause of dystocia was discovered. Despite this the maternal mortality in this series was *nil*, while the foetal mortality was under 5 per cent. In 31 per cent. of cases inflammatory reactions of the cord were present, and were the cause of foetal death. This ascending omphalitis occurred where labour had been prolonged, or where some form of dystocia had called for remedy by manipulative intervention. In the series of 6,500 cases a febrile puerperium was present in 13.5 per cent., whereas in the dry labours the percentage mounted to 17. The maternal morbidity is therefore higher when the membranes rupture early in labour. Where the

labour was dry, but uncomplicated in other respects, the issue was usually satisfactory; but where early rupture of the membranes occurred with dystocia from some independent cause labour became a more complex affair. Treatment by Voorhees's bag did not prove successful in lessening foetal mortality or maternal morbidity.

304. Foetal Injuries in Breech Delivery.

ACCORDING to E. B. PIPER and C. BACHMAN (*Journ. Amer. Med. Assoc.*, January 19th, 1929, p. 217) infant deaths in uncomplicated breech labours are due to three accidents: compression of the cord, the occurrence of nuchal positions of the arm, and delay in delivery of the after-coming head. The first accident must be accepted as inherent in the mechanism of breech labour, but the two latter are more often due to poor judgement and technique. As a means of preventing the death of the foetus in these presentations the authors advise elimination of the second and, if necessary, of the late first stage of labour by bringing both feet down early and immediate extraction. For the performance of this operation two procedures are essential: complete anaesthesia, and thorough dilatation, amounting almost to paresis, of the lower uterine segment, cervix, and soft parts of the lower birth canal. The technique of extraction must be such that nuchal positions of the arms are avoided and the after-coming head is guided into the pelvis with the face directed posteriorly. In the authors' method, each step of which is described and instructively illustrated, after the feet have been brought down, the foetal back is rotated posteriorly by drawing on the posterior foot so that the child "sits in the hollow of the maternal sacrum." The foetus is then completely rotated, thus bringing the buttocks out under the symphysis. Traction is then applied until the points of the scapulae appear at the vulva. The arms are now "levered out" by Potter's method, and delivery of the first shoulder draws the head into the pelvis and engages it in the diameter opposite in name to that of the delivered shoulder. The head may then be delivered by standard manual methods, but should any difficulty arise (the authors make only one gentle manual effort) forceps should be promptly used. The authors believe that this procedure will save many infants hitherto lost by long-continued manual manipulations.

305. Bacteriaemia after Labour.

ACCORDING to E. KULKA (*Zentralbl. f. Gynäk.*, January 26th, 1929, p. 202) bacteriological examination of blood taken from the arm at the correct time demonstrates in many cases that a bacterial invasion of the blood occurs during and shortly after labour; this invasion may occur in cases in which childbirth and the puerperium are apyrexial. The presence of pathogenic organisms in the blood-stream in cases of non-febrile abortion has been proved by Schottmüller. In a group of forty cases of spontaneous and other deliveries, with or without puerperal pyrexia, Kulka found that seven patients showed the presence of bacteria in 20 c.cm. of blood removed from the arm ten minutes after delivery of the placenta; these included four in whom no fever occurred during or after labour. In five of the seven cases blood cultures showed the presence of *B. coli*; the children were delivered spontaneously, but in two instances the membranes had ruptured prematurely. The organisms in the other two cases, one of which was afebrile, were a non-haemolytic streptococcus and *Staphylococcus albus* respectively. Kulka believes that many of the negative blood cultures associated with puerperal infection are due to the blood not being abstracted until the supervention of high fever or rigors; at such a stage the invading micro-organisms may have been dealt with by the bactericidal activities of the body.

Pathology.

306. The Infectivity of Erysipelas.

WAGNER-JAUREGG based his malaria treatment of general paralysis on the observation that intercurrent acute infective diseases sometimes had a beneficial effect; occasionally, however, the cerebro-spinal fluid does not return to normal after a single course of malaria, and reinoculation may either produce only a weak response or none at all. THERESE KINDLER (*Derm. Woch.*, January 5th, 1929, p. 7) therefore attempted to excite an analogous febrile reaction by direct inoculation with erysipelas, incidentally testing the reputed infectivity of this condition. The failure of other workers in previous attempts at inducing erysipelas with culture inoculations had been ascribed to a loss of virulence of the cultured strains. Kindler chose three cases of clinical neurosyphilis with positive cerebro-spinal fluid; they had proved resistant to malaria therapy and other forms of treatment. The patients had no signs of other organic disease or history of previous erysipelas. Fourteen inoculations in all were given, consisting (1) of subcutaneous injections of the fluid from vesicles of recent bullous erysipelas; (2) serum obtained from the periphery of an erysipelas lesion applied to scarified areas on the forearm and between the fingers; and (3) gauze which had been used as dressings in a case of acute erysipelas applied to scarified areas. These three methods were also applied to skin in which dermatitis had first been induced by the local use of croton oil and blistering with cantharides plaster. All these attempts produced negative results. Kindler mentions that Kihn has shown that general paralytics are very sensitive to furunculosis and pyogenic lesions of the skin. She also found no difficulty in inoculating an impetigo pustule in one of these erysipelas-resistant cases. She concludes, though the material is small, that possibly the infectivity of erysipelas has hitherto been overestimated.

307. Tissue Changes after Malarial Treatment of General Paralysis.

R. B. WILSON (*Brain*, December, 1928, p. 440) states that the outstanding feature in sixteen cases of general paralysis in which necropsies followed within six weeks after malarial treatment was a strong glial proliferation and the richness of iron in the walls of the blood vessels and microglia. The increase of iron probably indicated an increased permeability of the blood vessels. The presence of numerous macrophages in the meninges was regarded as the expression of an increased phagocytic power, evidence of which had been found in studies of the cerebro-spinal fluid by others. Spirochaetes were found in one case. No evidence was found of a change to a more specific type of reaction. In the earliest stages only there was a considerable predominance of lymphocytes in the meninges, whereas in the cortical perivascular spaces plasma cells predominated throughout. Towards the end of the period the infiltration tended to increase in the arterioles and venules and to decrease in the capillaries. This period of exacerbation was followed by one of restitution, as shown by a gradual improvement in the arrangement of the cortical layers and nerve cells and a considerable reduction of infiltration and glial proliferation, which were found in thirteen cases, one of which came to necropsy after six weeks, and others up to two and a half years after malarial treatment. Among the cases coming to necropsy from six months to two and a half years after treatment, six showed scattered foci of intense inflammation in which the mesodermal tissue had strongly proliferated. Spirochaetes were found in five cases. No improvement in the serological reactions of these cases followed treatment, whereas in cases with histological improvement there was also corresponding serological alteration.

308. A Simple Test for Albumin in Urine.

C. BOSE (*Indian Med. Gazette*, January, 1929, p. 17) describes a simple, delicate, and reliable means of detecting albumin in the urine which is said to possess advantages over the nitric acid test in that it does not precipitate mucin, urea, or urates, unless the last are greatly in excess. The test is applied in a similar way to that of Heller with nitric acid, by allowing a filtered saturated solution of saccharin in water to run slowly down the side of a test tube by means of a pipette and to settle at the bottom. If even a trace of albumin is present a sharply defined white ring forms slowly at the junction of the two fluids. The same result is obtained as with strong nitric or picric acid, but the saccharin solution, being perfectly harmless, colourless, and odourless, and having no toxic or caustic action, possesses the additional advantage of being easily carried in the pocket in a stoppered bottle for use in the patient's home. Since the solution does not precipitate mucin it has an advantage over the heat and acetic acid test. It is added that the albumin-precipitating property of saccharin was discovered while it was being used as a sweetening agent with milk.

309. The Cerebro-spinal Fluid and Hypophysis.

A. GEESINK and S. KOSTER (*Nederl. Tijdschr. v. Geneesk.*, December 8th, 1928, p. 6046) examined the cerebro-spinal fluid obtained by suboccipital puncture of six normal dogs, and of three other dogs, in one of which the hypophysis had been completely, and in two almost entirely, removed. In the normal dogs the action of the fluid, as shown by the production of contractions in the uterus of a guinea-pig, corresponded to that of a 1 in 400 solution of pituitrin. In the case of the dogs in which the hypophysis had been more or less completely removed, distinct uterine contractions were obtained with fluid removed from eight to fourteen months after the operation, though in a less marked degree than in the normal dogs. The cerebro-spinal fluid of the dogs in which the hypophysis has been completely removed produced a slighter contraction than that of the animal in which the hypophysectomy had not been quite complete.

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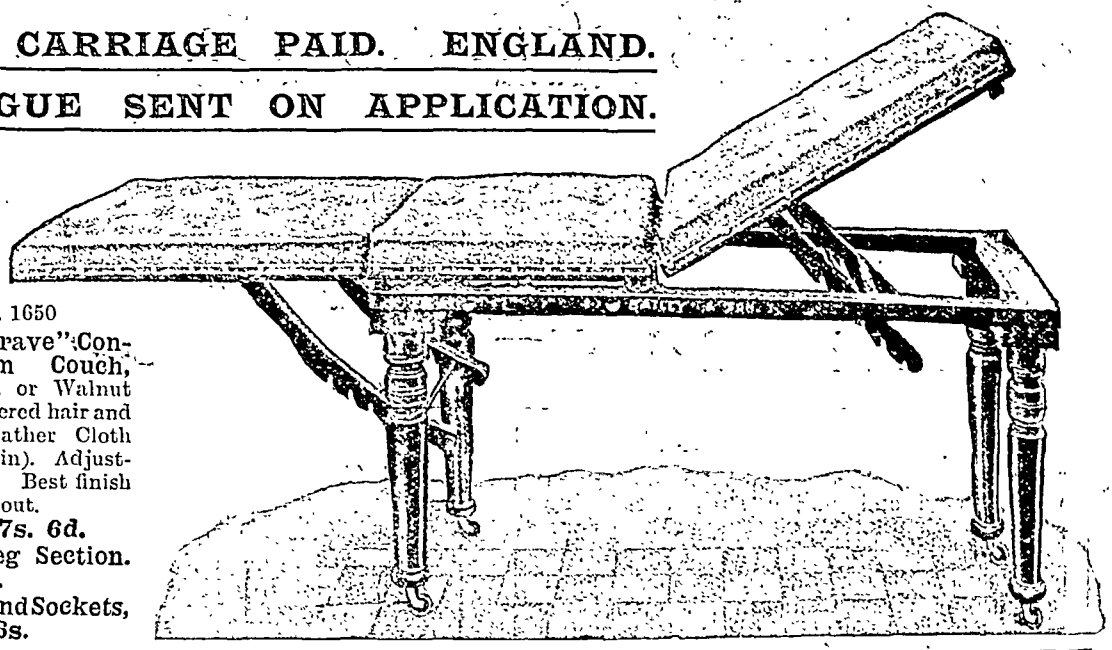

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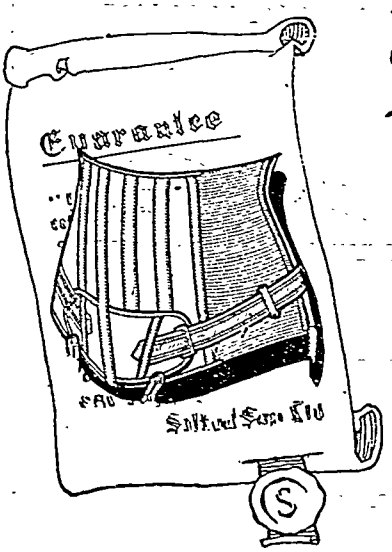

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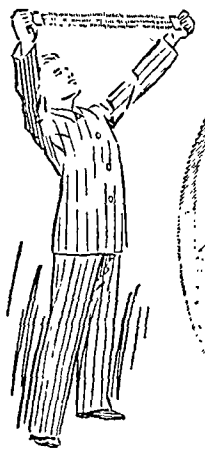

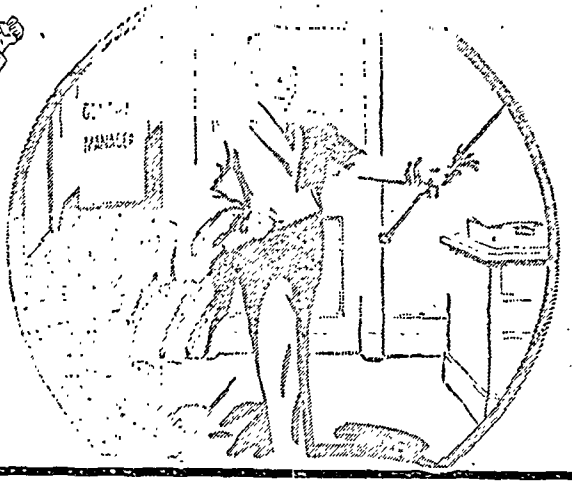

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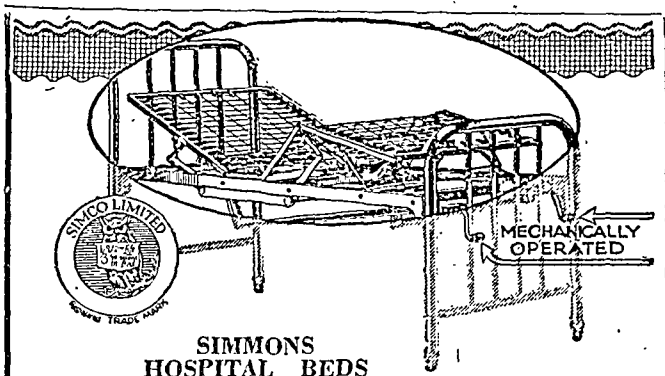

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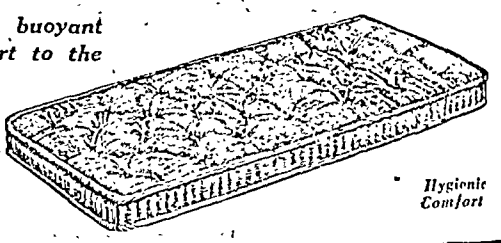

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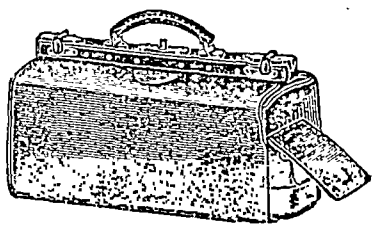

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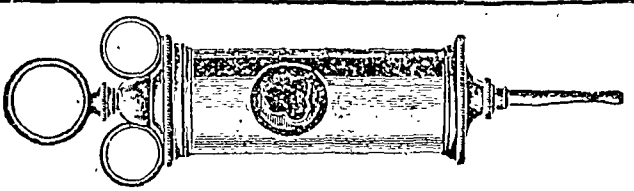

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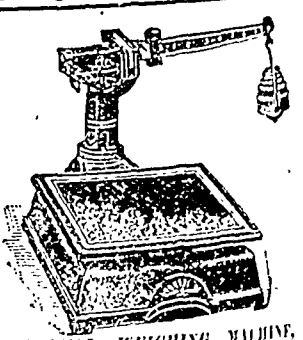

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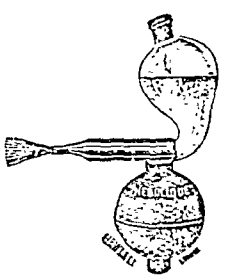

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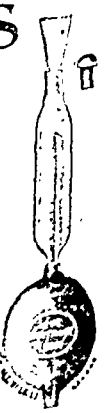

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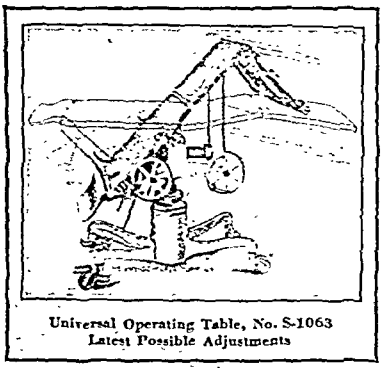

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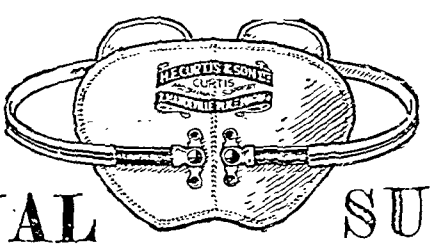

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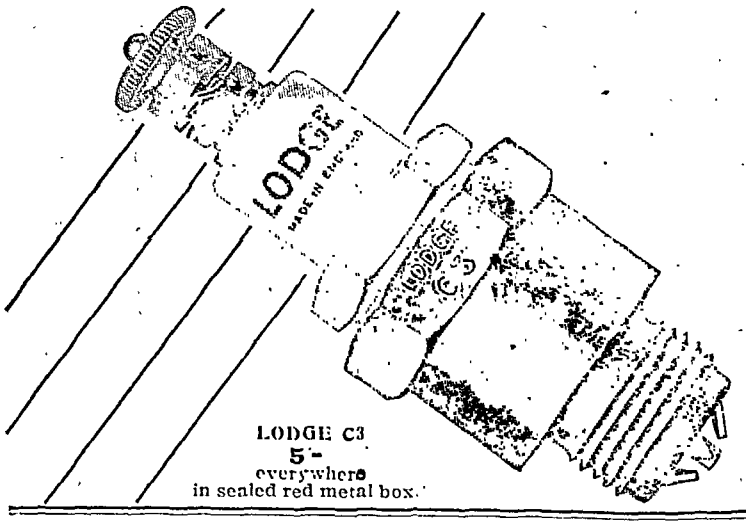

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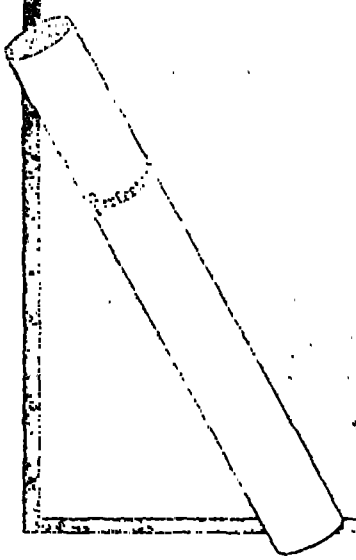

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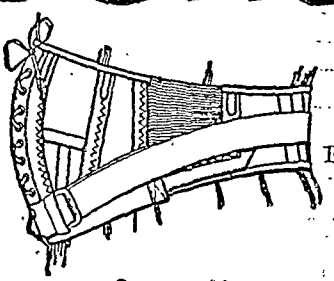

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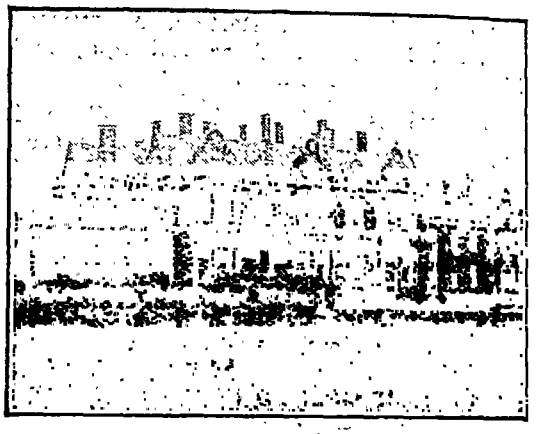

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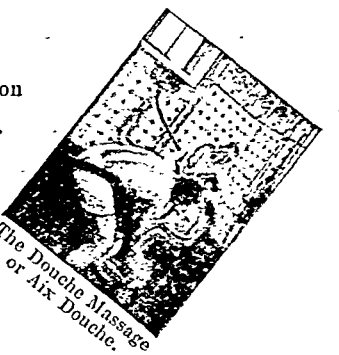

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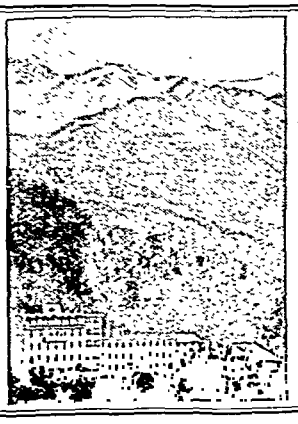

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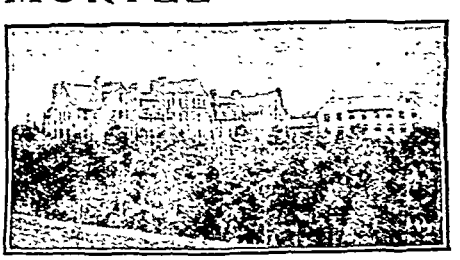

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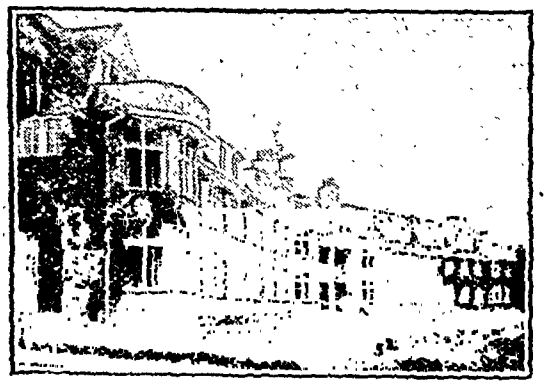

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M.B.,B.S.(Lond.),	*Final* 1906-28 (Completed Exam.)	237
F.R.C.S.(Eng.),	*Primary* (1906-28)	149
	Final	135
M.R.C.P.(Lond.),	1914-28	152
D.P.H.	(Various) 1906-28 (Completed Exam.)	280
F.R.C.S.(Edin.),	1918-28	39
M.R.C.S., L.R.C.P.	*Final* 1910-28 (Completed Exam.)	402
M.D.(Dur.)	(Practitioners) 1906-23	36
M.D.	Various. By Thesis. Numerous successes	

Preparation for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.

M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.). Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

Medical Prospectus (48 pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Courses. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6513.)

UNIVERSITY OF GLASGOW.

FACULTY OF MEDICINE.

Forms of application for permission to commence the study of Medicine in October, 1929, may now be obtained from the undersigned. These forms should be returned by applicants from foreign countries not later than June 15th, 1929, and by applicants from Home and British Dominions Overseas not later than September 15th, 1929.

ROBERT BROUGH,
March, 1929. Registrar.

M.D. THESIS

(Camb., Edin., Glasg., Durh., &c.)

SKILLED COACHING, GUIDANCE, and ADVICE.

From Specialist Tutors, in conformity with the Regulations of the various Universities. Apply for particulars and free booklet, "Hints on Writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

CHELTENHAM COLLEGE.

Twelve Scholarships and Exhibitions (not open to members of College or Junior School). These include five of £80 (increased to £100 for special merit); "James of Hereford" Scholarship of £35 for boys born or brought up in Herefordshire. Also R.A.M.C. Scholarship of £50 (preference to sons of Fallen Officers). Awards made for all-round excellence, or special proficiency in any main subject, including Music. *Preliminary Examination* (at Candidates' own Schools), Monday and Tuesday, *May 13th and 14th, 1929. Final Examination* (at Cheltenham), Wednesday and Thursday, May 22nd and 23rd, 1929.

Apply BURSAR, Cheltenham College.

BEIT MEMORIAL FELLOWSHIPS FOR MEDICAL RESEARCH.

Notice is hereby given that an election of JUNIOR FELLOWS will take place in July, 1929. The Fellows then elected will be required to begin work on October 1st. Junior Fellowships are of the annual value of £400; the usual tenure is for three years. Applications from candidates must be received on or before June 1st, 1929.

Forms of application, and all information, may be obtained by letter only, addressed to—

Sir JAMES K. FOWLER,
Beit Memorial Fellowships for Medical Research, Hon. Secretary.
35, Clarges Street, London, W.1.

London Hospital Medical College.

THE HUTCHINSON TRIENNIAL PRIZE, 1932.

The following subject has been selected for the above prize:

"Remote Consequences of Fracture of the Spinal Column."

The Dissertations for the Prize must be delivered at the Hospital not later than 4 p.m. on March 31st, 1932.

The conditions of the Prize may be obtained on application to the Dean, Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Mile End, E.1.

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam. will commence shortly. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

St. Peter's Hospital for Stone, ETC.,

Henrietta Street, Covent Garden, W.C.2

A POST-GRADUATE COURSE (Fee, Five Guineas) will be held from April 8th to [illegible], 1929. Full syllabus will be forwarded on application to the undersigned.

BEECHY ROGERS, Secretary.

A REALLY GOOD SCHOOL FOR GIRLS.
REASONABLE INCLUSIVE FEES.

MARLBOROUGH COLLEGE,

Tytherington Hall, nr. Macclesfield.

Sound Education. Upper and Lower Schools. Preparation, when desired, for all University Entrance Examinations. Particulars from Sec.

Special Terms to Medical Men.

All Saints' Hospital (For Genito-URINARY DISEASES),

49/55, Vauxhall Bridge Road, S.W.1.

DEMONSTRATIONS IN CYSTOSCOPY are held on:

Wednesdays ...	Mr. Coyte ...	1.30 p.m.
Thursdays ...	Mr. Attwater ...	1.30 p.m.
Saturdays ...	Mr. Loughnane...	1.30 p.m.

Special classes and tuition by arrangement.

Radiographic School.

SCHOOL OF INSTRUCTION in Radiography, Radiotherapy, etc., for the Training of Technical Assistants.

Pupils can now be received on application to the House Governor, King's College Hospital, London, S.E.5.

M.D., F.R.C.P.(Edinburgh) is prepared to BOARD and COACH Medical Student for his final. — Address, No. 1609, B.M.A. House, Tavistock Square, W.C.1.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

Fiji and Western Pacific Medical SERVICES.

The services of a MEDICAL OFFICER are required in the GILBERT and ELLICE ISLANDS COLONY.

Salary £600 per annum, rising by annual increments of £25 to £650 per annum. Free passages and partly furnished quarters are provided.

Candidates may elect to serve on pensionable basis or for a period of five years. In the latter case, subject to satisfactory service, a bonus of £500 will be paid on completion of service.

Further particulars and forms of application may be obtained on application, in writing, to the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, S.W.1.

Stoke and Wolstanton Union.

DEPUTY RESIDENT MEDICAL OFFICER.

Applications are invited from fully qualified medical gentlemen for the appointment of Deputy Resident Medical Officer at the London Road Institution of this Union. The Institution has accommodation for 1,154 inmates, the number of acute and chronic medical and surgical beds (including 150 beds in Mental Wards) being 741. The medical service to the adjoining Children's Homes is performed by the Institution Medical Staff. The Institution is a recognized major Training School for Nurses and Pupil Midwives, to whom the Medical Staff are required to give lectures, and is equipped with modern Theatre X-ray and Electro-Medical appliances. The Medical Staff comprises four whole-time Resident Officers, with visiting Medical, Surgical, Aural, and Ophthalmic Consultants, Radiologist, Pathologist.

The salary assigned to the office is £400 per annum, with board and residence, and the appointment will be subject to termination by one month's notice on either side.

Applications, accompanied by copies of three testimonials of recent date, should be delivered to the undersigned not later than first post on Tuesday, March 26th. Applicants should state age, particulars and dates when taken of qualifications or degrees held, and full details of experience since qualifying.

Union Offices, Stoke-upon-Trent. March 14th, 1929.
T. WOOD, Clerk to the Guardians.

Stoke and Wolstanton Union.

SECOND ASSISTANT RESIDENT MEDICAL OFFICER (Male).

Applications are invited for the appointment of Second Assistant Resident Medical Officer (*male*) at the London Road Institution of this Union.

Salary £200 per annum, with board and residence. The period of the appointment will be limited to one year in the first instance, subject to termination by one month's notice on either side.

The accommodation at the Institution is approximately 1,154 beds, including 590 hospital beds and 150 in Mental Wards. The Hospital is a recognized Training School for Nurses.

Applications, stating particulars of qualifications or degrees held, the date thereof, when taken, and experience since qualifying, together with copies of three testimonials of recent date, should be delivered to the undersigned not later than first post on Tuesday, March 26th.

Union Offices, Stoke-upon-Trent. March 14th, 1929.
T. WOOD, Clerk to the Guardians.

Borough and Port of Poole.

ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited for the above post from registered medical practitioners (*male*) possessing a Degree or Diploma in Public Health. Preference will be given to candidates with at least three years' Public Health work subsequent to qualification. The duties will include School Medical and Port Sanitary work.

The salary is at the rate of £600 per annum. The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and the selected candidate will be required to pass a medical examination.

Forms of application and terms of appointment can be obtained from the undersigned, to whom applications, together with copies of not more than three recent testimonials, must be sent not later than April 13th.

Canvassing, directly or indirectly, will be

CHARLES LISBY, Town Clerk.

March 18th, 1929.

Administrative County of SOUTHAMPTON.

COUNTY MEDICAL OFFICER OF HEALTH.

The Hampshire County Council invite applications for appointment of County Medical Officer of Health from persons legally qualified for the practice of medicine, surgery, and midwifery, and registered in the *Medical Register* as holders of a Diploma in Sanitary Science, Public Health or State Medicine, under Section 22 of the Medical Act, 1886, and of an age not exceeding 45 years at the date of application. The post is established for purposes of superannuation.

The person appointed will be required to devote the whole of his time to the duties of his office and not to hold any other appointment or engage in private practice.

He will receive a salary of £1,250, payable monthly, and all sums by way of fees or otherwise received by him will be paid over to the County Fund.

He will be provided with the necessary offices and clerical staff.

Applications on a prescribed form (which with further particulars of duties and conditions of appointment may be obtained from me), addressed to me and endorsed "County Medical Officer," must be delivered at the Castle of Winchester on or before April 20th.

Canvassing, either directly or indirectly, is prohibited and will disqualify.

The Castle, Winchester. March, 1929.
F. V. BARBER, Clerk of the County Council.

Liverpool Port Sanitary AUTHORITY.

ASSISTANT PORT MEDICAL OFFICER.

The Corporation of the City of Liverpool, as Port Sanitary Authority, require the services of an Assistant to the Medical Officer of Health, whose duties will be in connection with the Tidal Inspection of Vessels, the Medical Inspection of Aliens, and such other duties as may from time to time be assigned to him.

The salary will commence at £700 per annum, increasing to £800 per annum by annual increments of £50.

Candidates must possess a registrable Medical and Surgical qualification, and should hold a Diploma in Public Health, and their age must not exceed 35 years.

The person appointed will require to devote whole-time service to the duties specified, and will be subject to the Superannuation provisions of the Liverpool Corporation Act, 1921.

Canvassing of members of the Council is strictly prohibited.

Applications, stating age, qualifications, and past experience, accompanied by copies of recent testimonials, should be addressed to the Chairman of the Port Sanitary and Hospitals Committee, under cover to the undersigned, and delivered not later than April 5th.

Envelopes to be endorsed "Assistant Port Medical Officer."

Municipal Buildings, Liverpool. March 16th, 1929.
WALTER MOON, Town Clerk.

County of the Isle of Ely.

APPOINTMENT OF COUNTY MEDICAL OFFICER OF HEALTH AND TUBERCULOSIS OFFICER.

The County Council invite applications for the post of County Medical Officer of Health and Tuberculosis Officer.

The salary will be £900 per annum, together with the repayment of travelling expenses according to the County Council's scale, and the appointment will be terminable by three months' notice in writing on either side.

Office accommodation and staff will be provided by the Council.

The officer appointed will be responsible for the organization and administration of the whole of the health work under the County Council, and he must have held House appointments in a Chest Hospital for at least six months or have had special experience in the diagnosis and treatment of tuberculosis.

Special practical experience in Bacteriology and in the diagnosis and treatment of tuberculosis in sanatoria or otherwise, and in the administration of a tuberculosis dispensary, will be deemed additional qualifications. He will also be required to enter into a covenant not to engage in medical practice within the Isle of Ely for a period of five years after the termination of his engagement.

Applications, with copies of not more than three recent testimonials, must be forwarded to the undersigned before April 13th, on a form containing conditions of appointment, which may be obtained from the undersigned.

County Hall, March 16th, 1929.
C. E. F. COPEMAN, Clerk of the County Council.

Borough of Keighley.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

The Keighley Borough Council require the services of an Assistant Medical Officer of Health and Assistant School Medical Officer at an inclusive salary of £600 per annum.

Candidates must be registered medical practitioners of at least three years' standing, and hold the D.P.H. or equivalent qualification, and also have practical experience in the duties of a School Medical Officer and Maternity and Child Welfare. Experience in Refraction, Ultra-violet Light, and Orthopædics will be considered an additional qualification.

The candidate appointed must devote his or her whole time to the duties of the office, and he or she will not be allowed to engage in private or consulting practice. The candidate will be required to reside in the Borough of Keighley.

Applications upon the prescribed form, which may be obtained from the undersigned, accompanied by copies of three recent testimonials (which will not be returned), must be sent to me on or before April 9th, endorsed "Assistant Medical Officer."

The appointment will be determinable by three months' notice on either side.

Canvassing, either directly or indirectly, will disqualify.

Town Clerk's Office, Keighley. March 19th, 1929.
S. WALKER, Town Clerk.

Parish of St. Pancras.

GUARDIANS OF THE POOR.

The Guardians of the Poor of the Parish of St. Pancras invite applications from duly qualified candidates for the joint appointment of JUNIOR ASSISTANT MEDICAL SUPERINTENDENT of the St. Pancras Hospital and JUNIOR ASSISTANT MEDICAL OFFICER of the St. Pancras House, adjacent, with salary of £350 per annum, together with residential allowances, subject to deductions under the provisions of the Poor Law Officers Superannuation Act, 1896.

Candidates must be registered medical practitioners, qualified by law to practise both Medicine and Surgery in England and Wales.

For details as to duties, hours and off-duty time apply to the Medical Superintendent of the St. Pancras Hospital, 4, King's Road, N.W.1.

Application to be made upon forms to be obtained at my office, and selected candidates will be informed when and where they may attend a meeting of the Guardians.

Guardians' Offices, Town Hall, Pancras Road, N.W.1. March 15th, 1929.
B. CHAPMAN, Clerk to the Guardians.

County Borough of East Ham EDUCATION COMMITTEE

OPHTHALMIC SURGEON.

Applications are invited for the post of Ophthalmic Surgeon. The person appointed will be required to attend at the Central Clinic, Town Hall, East Ham, for three sessions weekly. (a session is approximately of 2½ hours' duration).

The duties will include the treatment of cases of defective vision and eye diseases of scholars attending schools under the control of the authority, and work in connection with children under 5 years of age.

The rate of remuneration will be £3 3s. per session.

Applications, stating age, qualifications, and previous experience, accompanied by copies of three recent testimonials, should be returned to the undersigned not later than April 6th.

Education Office, Town Hall, East Ham, E.6. March 12th, 1929.
F. R. THOMPSON, Secretary.

County Borough of East Ham EDUCATION COMMITTEE.

AURAL SURGEON.

Applications are invited for appointment of Aural Surgeon. The person appointed will be required to attend at the Central Clinic, Town Hall, East Ham, for one session weekly of approximately 2 hours' duration. The duties will include the treatment of cases of ear diseases of scholars attending schools under the control of the authority.

The rate of remuneration will be £3 3s. per session.

Applications, stating age, qualifications, and previous experience, accompanied by copies of three recent testimonials, should be returned to the undersigned not later than April 6th.

Education Office, Town Hall, East Ham, E.6. March 12th, 1929.
F. R. THOMPSON, Secretary.

Coventry and Warwickshire HOSPITAL, COVENTRY.

A vacancy having arisen for an HONORARY PHYSICIAN on the Staff of the above-named Hospital, applications are invited for the post.

In conformity with the Laws of the Institution, candidates must hold the Degree of Doctor in Medicine of a British or Irish University, or be Members or Fellows of the Royal College of Physicians of England, Edinburgh, or Ireland.

Candidates shall be resident in the City of Coventry, or within six miles thereof, or shall take up their residence within that radius within six months from date of appointment.

Canvassing, either directly or indirectly, will be deemed a disqualification.

Applications, with original testimonials, and registration certificates, must reach the undersigned on or before April 8th.

Candidates will in due course receive notice of their eligibility or otherwise from the Secretary, and after receipt of such notice eligible candidates are at liberty to send through the post printed copies of their application and testimonials to the Governors of the Hospital, a list of whose names and addresses will be furnished by the Secretary.

No such application or copies of testimonials shall be sent until receipt of such notification from the Secretary.

By Order of the Committee,
(Miss) R. HOOPER,
March 15th, 1929. Secretary.

The Royal Hospital, WOLVERHAMPTON. (Incorporated under Charter.)

A RESIDENT MEDICAL OFFICER wanted.

The Hospital contains 240 beds, the usual Special Departments, and is recognized by the various Examining Bodies for a part of the requisite attendance on medical and surgical practice. Candidates must be registered under the Medical Acts. The appointment is for six months, with a salary at the rate of £150 per annum. Board, furnished rooms, and laundry provided.

Duties to commence forthwith.

Applications, with copies of testimonials, to the undersigned.

Wolverhampton. W. H. HARPER,
March 16th, 1929. House Gov. & Sec.

Queen's Hospital, Birmingham.

Applications are invited for the post of DENTAL HOUSE SURGEON. Candidates must possess the qualification of L.D.S.

The appointment is for six months from April 1st, and the holder is eligible for re-election.

Honorarium £50 per annum (if resident, together with board, apartments, and laundry).

Applications on the official form, which will be supplied, must be accompanied by three recent testimonials, and must reach the undersigned by April 10th.

Birmingham. G. HURFORD,
March 13th, 1929. House Governor.

Central Hospital, Lockyer St., PLYMOUTH.

HONORARY SURGEON.

Applications are invited for the post of Honorary Surgeon to the above Hospital.

Candidates, who must exhibit satisfactory proof that they are Masters of Surgery of one of the Universities of Great Britain and Ireland, or Fellows of the Royal College of Surgeons of England, Edinburgh, or Ireland, to send in their applications, addressed to the undersigned, not later than March 30th.

W. W. URELL, Secretary.

District Infirmary, ASHTON-UNDER-LYNE.

(General Hospital, 200 Beds, mainly Surgical).

A HOUSE SURGEON (male) required. Six months' appointment. Salary at the rate of £150 per annum, with board, residence, and laundry. Preference given to candidates with previous Hospital experience.

The Resident Staff comprises a Resident Surgical Officer and three House Surgeons.

Applications, with testimonials, to be sent at once to the undersigned.

FRANK OLIVER,
March 15th, 1929. Gen. Supt. & Sec.

Golden Square Throat, Nose, and EAR HOSPITAL, London, W.1.

Applications are invited for the following Honorary posts:

(1) REGISTRAR;
(2) CLINICAL ASSISTANT.

Particulars of the duties may be obtained from the undersigned.

F. P. CARROLL,
March 14th, 1929. Secretary-Supt.

The Royal Infirmary, Sheffield.

OPEN ELECTION.

A vacancy having arisen in the post of SURGICAL REGISTRAR to the Royal Infirmary, Sheffield, the Weekly Board invite applications therefor.

Candidates must be Fellows of one of the Colleges, and the successful candidate will not be allowed to engage in general practice. The post is tenable for one year, and the holder will be eligible for re-election. The salary is £200 per annum.

Applications, stating age and qualifications, together with copies of testimonials, to be sent to the undersigned not later than April 2nd next.

Board Room. JNO. W. BARNES, F.C.I.S.,
March 6th, 1929. Gen. Supt. and Secty.

The Willesden General Hospital (Incorporated), London, N.W.10. (106 Beds.)

The Executive Committee invite applications for the appointment of RESIDENT HOUSE SURGEON (male). Candidates must be duly registered under the Medical Acts, and unmarried.

The appointment is for a period of six months from May 1st (the first three months as Junior House Surgeon, the second three months as Senior House Surgeon). Salary at the rate of £100 per annum.

Fully detailed applications, with copies of testimonials, to be received by the Secretary not later than noon on Thursday, April 4th.

March 18th, 1929.

Victoria Hospital for Children, Tite Street, Chelsea, S.W.3.

The Committee of Management invite applications for the post of HONORARY PHYSICIAN or SURGEON for Diseases of the Skin.

Candidates must be either (*a*) Fellows or Members of the Royal College of Physicians of London and Graduates in Medicine of a University recognized by the General Medical Council, or (*b*) Fellows of the Royal College of Surgeons of England.

Applications, with testimonials, should be sent to the Secretary of the Hospital on or before Friday, April 12th.

By Order,
D. ST. JOHN BAMFORD, Secretary.

Walsall General Hospital.

The Committee invite applications (from men) for the post of JUNIOR HOUSE SURGEON. Salary £100 per annum.

Candidates, who must be registered under the Medical Acts, must have had experience in the administration of Anæsthetics and produce three recent testimonials. The appointment will be for six months.

The Hospital contains 100 beds and is equipped in all Special Departments.

Applications must be received by the undersigned not later than the first post Monday, March 25th.

WALTER FRANCOMBE,
March 15th, 1929. Secretary.

Radcliffe Infirmary and County HOSPITAL, OXFORD.

Applications are invited for the post of HONORARY ASSISTANT SURGEON to the above Hospital.

Twenty-five copies of applications and testimonials, which will be forwarded to members of the Electing Committee, must be sent to the undersigned, from whom further particulars may be obtained, not later than Saturday, April 6th.

A. G. E. SANCTUARY, Administrator.

London Temperance Hospital, Hampstead Road, N.W.1.

Applications are invited for the post of HOUSE PHYSICIAN which will become vacant on April 15th.

The appointment is for a period of six months at a salary of £100 per annum. Ceteris paribus, preference will be given to total abstainers.

Applications, accompanied by not more than three testimonials, stating qualifications, age, etc., must be received by first post Thursday, April 4th, addressed to the undersigned.

A. C. ADAMS, Secretary.

Samaritan Free Hospital for WOMEN, Marylebone Road, London, N.W.1.

Vacancies for CLINICAL ASSISTANTS are announced. Applications should be addressed to the Secretary of the Medical Committee at the Hospital, from whom further particulars can be obtained. A fee of one guinea per month payable in advance.

The Hospital for Epilepsy and PARALYSIS, Maida Vale, W.9.

A RESIDENT MEDICAL OFFICER required May 1st; HOUSE PHYSICIAN required May 1st.

Applications are invited for these posts. The salaries are at the rate of £150 and £100 per annum respectively, and the appointments are for six months. Candidates for the post of Resident Medical Officer should state if they are willing to take that of House Physician, and applications, accompanied by copies of three recent testimonials, should reach me by April 4th.

The accommodation at the Hospital does not permit of Women Graduates holding these appointments.

H. W. BURLEIGH,
Secretary and General Supt.

Addenbrooke's Hospital, CAMBRIDGE.

Applications are invited for the post of HOUSE SURGEON to the Special Departments. The appointment will be for six months from April 6th, but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £130 per annum, with board, residence, and laundry. Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned as soon as possible.

W. H. HEAD, Secretary-Supt.

The Belgrave Hospital for CHILDREN (Incorporated), 1, Clapham Road, S.W.9.

The Committee of Management invite applications for the post of HOUSE SURGEON and ASSISTANT HOUSE PHYSICIAN which will become vacant on April 30th.

Applicants (men) must be fully qualified and registered. The appointments are for six months, with board, residence, and washing provided.

Salary at the rate of £100 per annum in each case.

Applications, with copies of testimonials, stating age, to be forwarded on or before Thursday, April 4th.

By Order,
THOS. CLAPHAM, Secretary.

West Bromwich and District GENERAL HOSPITAL. (150 Beds.)

HOUSE SURGEON (male) wanted immediately. Salary at the rate of £200 per annum, with board, residence, and laundry. Candidates must be doubly qualified and unmarried. The appointment will be for the period ending September 30th.

Applications, stating age and qualifications, and with copies of recent testimonials, should be sent to me.

By Order,
Edward Street, West Bromwich. FRANK I. HANCOCK, Secretary & Supt.
March 18th, 1929.

Cassel Hospital for Functional NERVOUS DISORDERS, SWAYLANDS, PENSHURST, KENT.

RESIDENT MEDICAL OFFICER (Male).

Applications are invited for the post of Resident Medical Officer. Candidates must be fully qualified, unmarried, and preference will be given to a man who has had experience in the treatment of Nervous Disorders. Salary £350, rising, with board, lodging, and laundry. The successful candidate will be expected to commence duty as soon as possible. Applications should be sent to the Medical Director, Cassel Hospital, Swaylands, Penshurst, Kent.

Royal National Orthopædic HOSPITAL.

HONORARY ASSISTANT SURGEON.

The Committee propose to appoint an Honorary Assistant Surgeon, whose duties will include attendance in the Out-patient Department on Tuesday and Friday afternoons and charge of beds.

Applications, with copies of three recent testimonials, should be sent to the Secretary, 234, Gt.-Portland Street, W.1, on or before April 3rd.

Cameron Hospital, WEST HARTLEPOOL.

HOUSE SURGEON required to commence duty on March 31st. Salary £150 per annum, with board, etc. Applications, together with copies of three testimonials, to be sent to the undersigned not later than March 27th.

H. WOODHALL, Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.)*.	**PUBLIC HEALTH** *(continued)*.
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	EAST RIDING COUNTY COUNCIL. *(Assistant Tuberculosis Officer.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
	COUNTY OF BRECON. *(Probationer Assistant (Female) Medical Officer of Health.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec. Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies' Institute.)*	Dr. E. S. MEYERS (Hon Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
March 20th, 1929.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Hull Royal Infirmary.

The Appointing Committee invite applications for the office of HONORARY PHYSICIAN to the Institution.

Applicants must have obtained a Degree in Medicine at one of the Universities of the United Kingdom, be a Fellow or Member of the Royal College of Physicians of London, Edinburgh, or Ireland, and be duly registered under the Medical Acts.

Honorary Physicians are appointed for a period not exceeding 20 years, or until attaining 60 years of age, and in accordance with the terms of the Royal Charter. They may not hold any paid appointment to any other Charitable Medical Institution or to a Poor Law Institution.

Applicants are prohibited from personally canvassing, but may send copies of their applications and testimonials to the members of the [illegible] Committee.

[illegible] "The Chairman, [illegible]" must be received at the Institution not later than 10 a.m. on Wednesday, April 3rd.

R. J. CARLESS, House Governor.

March 18th, 1929.

Hull Royal Infirmary.

Applications are invited for the post of THIRD HOUSE SURGEON (male), vacant April 13th.

Applicants must be fully qualified. Period of appointment, six months in the first instance. Salary at the rate of £150 per annum, with board and residence.

Applications, together with copies of testimonials, should reach the undersigned on or before Tuesday, April 2nd

R. J. CARLESS, House Governor.

April 15th, 1929.

East London Hospital for CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.1.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male). The appointment is for one year from May 1st. Applicants must be duly certified practitioners in Medicine and Surgery. Salary at the rate of £200 per annum, with board, residence, and laundry. Applications, together with testimonials, should be sent to the undersigned not later than April 15th.

W. M. WILCOX, Secretary.

N.B.—The House Surgeon is applying for this post.

Applications are also invited for the resident posts of HOUSE SURGEON and Whole-time CASUALTY OFFICER (male). The appointments are from May 1st for six months. Salary at the rate of £125 per annum, with board, residence, and laundry provided. Applications, together with testimonials, should be sent to the undersigned not later than April 15th.

W. M. WILCOX, Secretary.

N.B.—The candidate for the reciprocity scheme with Barnes Hospital, St. Louis, U.S.A., is selected from previous Residents at the East London Hospital for Children.

The Metropolitan Ear, Nose, AND THROAT HOSPITAL. (1838) (Incorporated), Fitzroy Sq., W.1.

HOUSE SURGEON (non-resident). Salary £150 per annum.

Applications are invited for the above appointment, and should be forwarded, with not more than three recent testimonials, to the undersigned, from whom further particulars may be obtained.

Miss L. L. PHILLIPS, Secretary.

Princess Louise Kensington HOSPITAL FOR CHILDREN, North Kensington. (42 Beds.)

HOUSE PHYSICIAN (woman) required for six months from May 1st. During the first three months the House Surgeon will be Senior Resident, after which a new House Surgeon is appointed and the House Physician becomes Senior.

Salary at the rate of £75 per annum for the first three months, and at the rate of £100 for last three months, with board, residence, and laundry.

Applications, together with copies of not more than three testimonials, must be submitted on a form to be obtained from the Secretary, Princess Louise Kensington Hospital for Children, St. Quintin Avenue, North Kensington, W.10. Applications must reach the Secretary's Office not later than the first post on Saturday, April 6th.

Norfolk and Norwich Hospital, NORWICH.

Applications are invited for the posts of:
HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment.
HOUSE SURGEON to the Special Departments (Ear, Nose, and Throat, and Ophthalmic). Salary £120 per annum, with board, residence, and laundry.

Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned not later than Tuesday, April 9th.

FRANK INCH, House Gov. & Sec.

March 22nd, 1929.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
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ASSISTANCIES.

Wanted. — Assistant, male, *single, for good middle-class Practice,* N.E. dist., not colliery. Good experience. Would suit young energetic man. £275, with good rooms, attend., and board. Send photo, stating age, experience, etc., to DRS. KIRK, MATHER & BOWMAN, Harland House, Norton-on-Tees.

Wanted. — Assistant, male, immediately, outdoor. Excellent prospects. State full particulars and references.—Address, No. 1628, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, *single, well up in Surgery and Anæsthetics.* Salary £375 per annum, with rooms, coal, light, and attendance.—Dr. A. H. JAMES, The Park, Blaenavon, Mon.

Wanted. — Outdoor Assistantship by Woman Doctor; six years' experience in general practice, midwifery, panel, private, and anæsthetics. Own car and cycle. — Address, No. 1508, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, male, British, single, April, for private and panel. *Nice residential district near* Liverpool. £400 per annum, extra own conveyance. — Address, No. 1618, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant with view to Partnership in General Practice. Salary £400 p.a. State full particulars — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Indoor Assistant, male, immediately, in good-class suburban Practice, South-East London. Ulster Protestant preferred. *Send essential particulars.* —Address, No. 1605, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistants immediately. Salary £300 p.a. Also LOCUM TENENS. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Qualified Assistant, outdoor, single, British, abstainer, Protestant; experienced minor surgery, mids., anæsthetics; colliery district, South Wales. *Liberal salary reliable applicant. Sign bond.* Interview desirable if arranged, fare and expenses paid —Address, No. 1608, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, Protestant, for private and panel Practice, London, S.E., about 3 miles Charing Cross. Live at Surgery. Good prospects for suitable man. State age, experience, married or single.—No. 1612, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately for Industrial Practice in South Wales, young male outdoor ASSISTANT. Salary to commence £250, and all found. Good prospects for suitable man.—Address, No. 1517, B.M.A. House, Tavistock Square, W.C.1.

Wanted, beginning of April, indoor male ASSISTANT, single, with own motor-bike, or car, for mixed all-round *Practice in Cornwall. Plenty surgery and midwifery.* Ex H.S. Usual bond. Nice district. Salary £300, all found. Interview, London.—No. 1610, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, Part-time male ASSISTANT for busy general practice S.W. London. Suit man recently qualified reading for higher exams. Fee £1 1s. per day. Permanency *later.—Address, No. 1621, B.M.A. House, Tavistock* Square, W.C.1.

Wanted.—Experienced Assistant for few weeks from March 23rd. Panel *and General Practice.* —Address, No. 1637, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with *view to Partnership, in a Practice with* large panel, by M.R.C.S., L.R.C.P.Lond.; æt. 32 years, married. Two years' hospital and general practice experience.—Address, No. 1619, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view to Partnership, by M.B., B Ch. (N.U.I.); 2 years' Hospital experience (ex H.P., H.S., R.S.O.); 3 years in G.P., private, panel, obstetric, and Poor Law. Ex refs. Aged 30.—No. 1617, B.M.A. House, Tavistock Sq., W.C.1.

Assistant required British, for Practice in pleasant surroundings on Welsh border. Regular time off duty. Car supplied.—Reply, stating age, driving ability, and full particulars, to "E.," c/o Messrs. R. SUMNER & Co., Ltd., Wholesale Druggists, Liverpool.

Assistant, outdoor, full-time, wanted for the end of April for a large mixed Practice within 20 miles of W. London. Must be Englishman, young and energetic. Salary £500 to a suitable man. Car desirable, and allowance given —Address, No. 1632, B.M.A. House, Tavistock Square, W.C.1.

Assistant.—A Junior wanted in a large industrial Practice in a University City. Ex Resident preferred, who desires a standard of careful work. Indoor.—For further *particulars, address, No. 1631, B.M.A. House,* Tavistock Square, W.C.1.

Assistant wanted.—Private and panel. Single and of good address. Seaside Health Resort, Lancashire. Work light. Half midwifery fees. Cyclist preferred. £240, all found —Address, No. 1601, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted in Lancs. industrial Practice. Recently and decently qualified man, wishful to learn sound G.P. methods. £250 and comfortable home. Golf, tennis, bridge, music. Drive 2-seater.—Add., No. 1626, B.M.A. House, Tavistock Sq., W.C.1.

Lady Doctor (26), M.B., Ch.B. (Edin.), desires part-time ASSISTANTSHIP, *London. Experienced G.P., refractions.* Own car.—'Phone; Hampstead 7528; or address No. 1620. B.M.A. House, Tavistock Square, W.C.1.

M.B., 33 years, single, R.C., excellent refs. and experience, drive car, wants good ASSISTANTSHIP or (easy terms) PARTNERSHIP or PRACTICE, with scope for R.C. panel. — Address, No. 1532, B.M.A. House, Tavistock Square, W.C.1.

Woman M.R.C.S., L.R.C.P., seeks whole or part-time ASSISTANTSHIP in or near London. Experienced G.P. Understands panel; keen midwifery. Well received.—Address, *No. 1613, B.M.A. House, Tavistock* Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted by M.D., B.Ch., D.M.R.E., part-time DAILY WORK. Fifteen years' general and specialized experience. Drives own car.—Address, No. 1602, B.M.A. House, Tavistock Square, W.C.1.

Clerk required, must be ex-service man, good shorthand typist, with knowledge of medical terms essential. Preference given to one with previous Institution *experience and knowledge of dispensing.* Salary £3 10s., rising to £4. Application, with copies of three recent testimonials, to be sent to the Steward, Heatherwood Hospital, Ascot

Messrs. Cadbury Brothers, Ltd., BOURNVILLE, BIRMINGHAM.

MEDICAL OFFICER.

Applications are invited from fully qualified and registered medical men under the age of 36 for the full-time post of Medical Officer at Bournville Works.

The appointment, which will be for three years, consists primarily in the medical supervision of both men's and women's sides of the factory, and the successful applicant will be expected to commence duties on Sept. 1st.

Applications, stating age, qualifications, and experience, together with copies of testimonials, must be received not later than April 6th by the Secretary, Cadbury Brothers, Ltd., Bournville, Birmingham.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and exper. in priv. and panel prac. Perm. and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 87, Holborn Viaduct House, 12, Holb. Viad., E.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited *to write, wire, or 'phone Gerrard 2699,* THE DISPENSERS' BUREAU, 145, Shaftesbury Avenue, London, W.C.2.

Lady (V.A.D.) requires post with Doctor as DISPENSER. Apothecaries' Hall examination. Some experience in private practice. Excellent testimonials. England or abroad.—Write, A. H., 9, Wellington Road, Wanstead, Herts.

Lady Dispenser (Hall), just *qualified, seeks POST with Doctor,* Hospital, or Institution. — D. BAIRD, 33, London Road, Horsham, Sussex.

Lady Dispenser Book-keeper (Hall), desires POST with Doctor, whole or part-time. Experienced in private, panel, and club practice. *Excellent testimonials.*—Address, No. 1625, B.M.A. House, Tavistock Square, W.C.1.

Lady required as working Cook-HOUSEKEEPER, Doctor's house, London. Very comfortable, labour-saving home. Family four. Every consideration. Reply, stating age, references, salary.—Address, No. 1604, B.M.A. House, Tavistock Square, W.C.1.

Medical Missionary.—The Church of SCOTLAND FOREIGN MISSION COMMITTEE require a fully qualified male Doctor as Medical Missionary in their NYASALAND MISSION. The engagement might be permanent, or temporary, as might be arranged.—For particulars apply to the Secretary of the Committee, 22, Queen Street, Edinburgh.

Required, young Medical OFFICER for RAILWAY in INDIA. Three years' agreement; pay commencing £45 per mensem; free passages.—Apply, BARSI LIGHT RAILWAY CO., *Winchester House, E.C.2.*

Translating and Abstracting GERMAN Medical and Scientific Literature into English undertaken by Medical Woman with considerable experience. Interview London. — Address, No. 1607, B.M.A. House, Tavistock Square, W.C.1.

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A Medical Man, experienced in panel and private practice, is free for engagement, LOCUM or ASSISTANT, at moderate fee. Bachelor, cyclist, abstainer, thoroughly reliable.—Apply, "DOCTOR," c/o 11, Selborne Street, Prince's Road, Liverpool.

PARTNERSHIPS.

Wanted by M.B., Ch.B.Edin., English Public School, aged 33 years, PARTNERSHIP, view succession, better-class Practice, some panel; resid. dist. near large town pref. Exp. G.P. and Hosp. Half share, min. £750. Interv. arrang'd Some capital avail. —No. 1306, B.M.A. House, Tavistock Sq., W.C.1.

Cheshire. — Wanted, Partner to take over Practice gradually. Cash receipts £1,700. Small panel, capable of expansion. No night work. Hospitals and sports available. Excellent opportunity for young man. —No. 1721, B.M.A. House, Tavistock Sq., W.C.1.

For Sale.—Partnership in non-dispensing Practice in good residential Town in North Wales. Big income, easy payments of premium. Charming house with garden, to rent, in best quarter. Great opportunity and scope.—Address, No. 1309, B.M.A. House, Tavistock Square, W.C.1.

Lanc's Town.—Partnership with early succession. Receipts £1,130, excellent scope Panel about £300. House available if desired. Good Insurance appts. Price, half share, 1½ years' purchase, part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Lancashire Town.—Partnership. Half share in old-estab. Practice. Average cash receipts £3,000. Panel 2,516. Excellent house for sale. 5 bedrooms, garage, and garden. Price £1,000 Premium—Practice—1½ years' purchase — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

M.B. (Edin.), M.R.C.P. (Edin.), wishes PARTNERSHIP, after preliminary Assistancy in non-dispensing Practice in Hospital town. Ex H.P., ex H.S. Experience G.P., anæsthetics, ophthalmology.— Address, No. 1611, B.M.A. House, Tavistock Square, W.C.1.

Northwood, Ruislip, Pinner, or surrounding parts.—Wanted, PARTNERSHIP in good-class Practice, with scope for increase, in residential district, by M.B., B.S., with immediate capital available. — Address, No. 1720, B.M.A. House, Tavistock Sq., W.C.1.

Partnership.—Wanted, energetic Physician, Hospital experience essential, for Country Practice within 50 miles of London Share £800 to £1,000, at 2 yrs.' pur. Large house or small modern cottage avail. Cott. Hosp. —No. 1722, B.M.A. House, Tavistock Sq., W.C.1.

PRACTICES.

Wanted by M.D.Cantab., F.R.C.S.Eng., Public School, better-class PRACTICE or PARTNERSHIP, within 100 miles London, or good-class suburb. Ample capital. —Address, No. 1505, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—We have innumerable applicants for sound investments in all districts, incomes from £600 to £4,000, with and without panel. Correspondence invited from prospective Vendors. — THE MEDICAL AGENCY (W. H. Grant), Watergate House, 15, York Buildings, Adelphi, W.C.2

Wanted by (Edin.) M.B., Ch.B., D.P.H., aged 33, exper. in G.P. and major operative surgery, a good-class old-estab. PRACTICE ion. Income desire In confid.— No. 1 Sq., W.C.1.

Wanted. — S.W. England, preferably Exeter or Plymouth, PRACTICE or PARTNERSHIP with early succession, about £1,000 per annum. Good panel.—Address, No. 1616, B.M.A. House, Tavistock Square, W.C.1.

Wanted by Medical Man with ample capital, a General Mixed PRACTICE or PARTNERSHIP in good-sized town within 100 miles of London. Income of about £1,500. Medium house required.—Apply, No. 3482, Mr. PERCIVAL TURNER, 4, Adam Street, Strand, W.C.2.

Wanted, in or near London, G.P.; fair panel; income £800—£2,000. Nice house to rent. Fair cash price offered. Strict confidence. No agents.—Address, No. 1627, *B.M.A. House, Tavistock Square, W.C.1.*

Ambitious Doctor, 7 years own successful Practice, wants good London PRACTICE or PARTNERSHIP where premium acceptable out of takings; otherwise any position with prospects. Every investigation invited.—No. 1630, B.M.A. House, Tavistock Square, W.C.1.

Cheshire Town, near Manchester. —Good-class PRACTICE. Cash receipts 1928, £1,205. Panel 500. Scope for increase. Excellent detached house, 5 bedrooms, garage, and large garden, to rent at £85 p.a. Vendor retiring. Premium 1½ years' purchase. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

For Sale.—Practice on East Coast. —Three years' average cash receipts £2,316, including about £500 from appointments and panel. Good scope. Could be worked single-handed, or would suit partners. Reason for selling, ill health. Urgent. Plenty of living accommodation, and property could be leased or purchased. Price of Practice £3,500, including book debts, etc. Cash receipts Jan. and Feb. this year £385. Mids. about 40 per annum. Fees, visit and medicine 4/- to 10/6, e. and m., 3/- upwards. Established 16 yrs. Modern house designed and built by Vendor, with every surgery convenience and separate entrance. House next door available for partner. —No. 1606, B.M.A. House, Tavistock Sq., W.C.1.

For Sale.—S.W. England, in favour to resort. Good old-established mixed General PRACTICE. Panel 1,300. Cash receipts last three years average £2,400 per annum. Good house on lease. *Price, 1½ years' purchase.* —Address, No. 1614, B.M.A. House, Tavistock Square, W.C.1.

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Lanarkshire.—General Practice in Industrial Town (Death Vacancy) (R.C. preferred), producing last year, including panel, approximately £800. Good house in excellent repair, with surgery attached; electric light and garden.—For further particulars apply to WM. B. THOMSON & MCLEAN, Solicitors, Wishaw, who will receive offers for Practice and Property up till March 25th curr.

Lancashire Town. — Old-estab. PRACTICE. Average cash receipts £1,480. Panel 1,442. Excellent house, 4 bedrooms, good garden and garage, for sale, or would rent on lease at £75 p.a. Premium—Practice—1½ yrs.' purchase, part deferred. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester. — Well-established PRACTICE in very populous district. Good corner house, excellent position, £40. Receipts £550, great scope. Panel 250, increasing. Price £500, to include drugs and fittings.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Medical Practices required and available; also PARTNERSHIPS; London and Provinces No charge at all unless result obtained. Strictest confidence.—Principals only write, A. G. MEAD, Egyptian House Piccadilly, London.

Manchester. — Good-class Practice (non-panel) in first-rate residential suburb. Average cash receipts £2,105 p.a. Fees 5/- to 21/-. Excellent house to rent on lease. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester. — Well-established PRACTICE. Look-up Surgery, rent 21/- weekly. Receipts over £300, rapidly increasing. Panel 350, with much scope; very compact. Price £300—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Manchester.—Old-estab. Practice. Average cash receipts £1,480 p.a. Panel 1,422. Good corner house to rent on lease, 6 bedrooms, garage. Plenty of scope. Premium for quick sale—1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

North Wales Coast.—Good-class PRACTICE. Cash receipts 1923, £1,749. Panel 715. Excellent modern house, 4 bedrooms, lawn; also well-fitted Surgery and garage to rent. Good scope. Premium 1½ years' purchase. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Practice for Sale—Good-class Country PRACTICE within 20 miles of Manchester. Receipts £1,400, increasing yearly. Good house to let (rent £60), containing 5 bedrooms, 2 entertaining rooms, surgery and waiting room, garage. Premium £2,000.—Apply, STOWELL & BATLEY, Chartered Accountants, 46, Pall Mall, Manchester.

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Urgent. Unopposed country PRACTICE for Sale. 10 miles from the East Coast. Easily worked. Cash receipts £1,370, including panel and private. Price £1,350 for immediate cash. Reason for selling, ill health. Established over 100 years. Large detached corner house and garden. Property can be bought or leased.—Address, No. 1605, B.M.A. House, Tavistock Square, W.C.1.

HOUSES, CONSULTING ROOMS.

Bournemouth.—House for Sale, suitable for Doctor retiring. Small non-panel medical practice attached as recreation. (Clever surgical colleague near.) Ready May or June. £2,500. — Full particulars from BULSTRODE & SONS, Christchurch, Hants.

Consulting Room to let, ground floor, front room, medium size, pleasant shape, in Welbeck Street. Rent £150; with office £200.—Apply, Welbeck 8144; or address No. 1615, B.M.A. House, Tavistock Square, W.C.1.

Consulting Rooms to be Let. —Harley Street and District.—Whole or part-time. Lists sent on application.—ELGOOD & CO., 10, Henrietta Street, W.1. Mayfair 1659.

Downham, Kent.—Self-contained FLAT (over shop), 5 rooms, bath, etc.; main road; suit Doctor. Decorations as required; side and back ent. Rent £195 incl.—Miss E. WEIR, 8, Ashbourne Grove, East Dulwich, S.E.22.

For Sale, in centre of rapidly growing Village, 20 miles London, DETACHED HOUSE, 4 bed., 2 rec., kit., scul., bath, surgery, phone, co.'s water, gas, electric. Redecorated. Garage, tennis lawn, gardens, 4 acres land. Pop. 1921—1,232, since more than doubled. Good opening for Doctor. No other Doctor within 3½ miles. Freehold £2,500. Apply, HARPER, London Colney, St. Albans, Herts.

For Sale, Freehold.—Croydon, residential part.—Well-built CORNER HOUSE suitable for Doctor. Small garden; room for garage.—Address No. 1629, B.M.A. House, Tavistock Square, W.C.1.

Harley Street.—For Sale, one of the best HOUSES in this Street, now in the occupation of an eminent Physician. Full particulars from ELGOOD & Co., 10, Henrietta Street, W.1. Mayfair 1659.

Harley St. — To Let, part-time (Monday and Friday afternoons), large well furnished CONSULTING ROOM on first floor, with attendance and telephone.—Address, No. 1579, B.M.A. House, Tavistock Sq., W.C.1.

Ideal House for Doctor. Charlton Kings.—2–3 reception, 8 bedrooms, 2 bath; South aspect; large conservatory suitable sun baths; garden 1½ acres; paddock 1½ acres; garage, cottage; electric light, gas fires.—Address, No. 1623, B.M.A. House, Tavistock Square, W.C.1.

Margate.—To Let.—Suitable ROOMS for Medical Man. Moderate rent. Good opening.—Address, No. 1624, B.M.A. House, Tavistock Square, W.C.1.

South Coast, eight miles. Good opening for Practice commenced. Charming Detached HOUSE, acre garden, garage. Bargain, £1,400. Photos and particulars.—Address, No. 1622, B.M.A. House, Tavistock Square, W.C.1.

Shops (in heart of Medical Area).—Four Imposing Shops and Basements to Let in new building. Fronts fitted to suit Tenants. Rents from £250 p.a.—Plans and particulars of ELGOOD & Co., 10, Henrietta Street, W.1. Mayfair 5659.

To Let.—Consulting Room in Professional House in Kensington. Attendance and heating. Fitted ready for Radiologist. No opposition. Or suit first-class Medical Man.—Apply: 'Phone, Kensington 2492.

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West Hartlepool. — Freehold VILLA (vacant) for sale in Stockton Road. Contains surgery, waiting room, and 2 sitting rooms, kitchen, etc., on ground floor, 9 bedrooms, bath, electric light, large garden. Reasonable price. Has been occupied by Doctors for past 25 years.—BELL & SON, Surtees St.

Wimpole Street. — To suit Medical Man.—MAISONETTE comprising consulting room, 7 rooms, kitchen, bath. £550 inclusive.—ELGOOD & Co., 10, Henrietta Street, W.1. Mayfair 5659.

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For Sale. — Pantostat. — Sunic Universal Machine (Watson) for 220 volts D.C., for Cautery Light, Galv., Sin-Farad., and Vib. Also X-RAY APPARATUS, including two coils, two mercury breaks, fluorescent screen, control trolley, switch board, upright screening stand (minus screen), transformer, rotary converter, overhead high-tension leads and supports, and spring cables. The above were in use up to the installation of new A.C. Apparatus. Prices: Pantostat, £8; X-ray Apparatus, £25.—At Hospital, Newton Abbot.

Handsome Pair of £4 4s. Square Polished ASH TENNIS STANDARDS. Complete with heavy ground plates, powerful fixing screws, and solid brass net-winder, 50/-. Also full regulation size heavy Waterproof Net, with steel headline, 20/-. Both perfect new condition. Never used. Approval against post-dated cheque.—GILYARD, Darley St., Bradford.

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Will anybody interested in acquiring these goods please communicate with Mr. ALEXANDER POLLOCK, 10, Essex Street, Strand, W.C.2, Solicitor to the Administratrix.

APPOINTMENTS.—Contd.

Carnarvonshire and Anglesey INFIRMARY, BANGOR.
(A General Hospital.)

HOUSE SURGEON (male) wanted. Must be fully qualified. Salary £200 per annum, with residence, board, and laundry. Special consideration given to candidates experienced in X-ray work and administering Anæsthetics. Duties to commence May 1st. *Applications*, with two recent testimonials, to reach the *Secretary not later than April 4th.*

Northern Infirmary, Inverness.

There is a vacancy for the post of HONORARY SURGEON to the Hospital. The Hospital contains 84 beds and 14 cots, but is at *present* being rebuilt and enlarged.
Candidates should possess the Fellowship of one of the Colleges of Surgeons.
Letters of application, with testimonials, should be in the hands of the undersigned by April 6th.
20, Church Street, ROBERT GILBERT.
Inverness.

City of York Hospitals.

Applications are invited from fully qualified Medical Women for the post of RESIDENT MEDICAL OFFICER at the MATERNITY HOSPITAL and SANATORIUM.
The person appointed will be under the clinical supervision of the Medical Superintendent and the Assistant Medical Officer of Health.
Salary at a rate of £350 per annum, less deduction of £125 in respect of emoluments, which will include board and residence at the Maternity Hospital, and laundry.
Term of appointment is limited to twelve months.
Applications, stating age, qualifications, and previous experience, should be sent in not later than Saturday, April 6th, to the Medical Superintendent, 50, Bootham, York.

Royal Devon & Exeter Hospital, EXETER. (225 Beds.)

HOUSE PHYSICIAN (Male).

Applications are invited for the post of House Physician at this Hospital, vacant on April 16th next. The appointment is for six months, but candidates are eligible for re-election.
Salary at the rate of £130 per annum, with board, apartments, and washing.
Applications, giving particulars as to age and qualifications, together with certificate of registration and copies of three recent testimonials, should be sent to the undersigned as soon as possible.
By Order of the Committee,
S. S. COLE,
March 14th, 1929. Secretary & Manager.

Mildmay Mission Hospital, Austin St., Bethnal Green, E.2.

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER (male), which becomes vacant on June 1st. Salary £100 per annum, with board, residence, and laundry. The appointment is for six months.
Candidates must be registered under the Medical Acts, and the Mildmay Council is anxious that they should be fully in sympathy with the religious work of the Hospital.
Applications, with copies of recent testimonials, should be sent to the *Medical Superintendent* before April 3rd.

Mildmay Mission Hospital, Austin St., Bethnal Green, E.2.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male), which becomes vacant on June 1st. Salary £100 per annum, with board, residence, and laundry. The appointment is *for six* months.
Candidates must be registered under the Medical Acts, and the Mildmay Council is anxious that *they should* be fully in sympathy with the religious work of the Hospital.
Applications, with copies of recent testimonials, should be sent to the Medical Superintendent before April 3rd.

Mildmay Mission Hospital, Austin St., Bethnal Green, E.2.

Applications are invited for the post of ASSISTANT CASUALTY OFFICER (female), which becomes vacant on May 1st. The appointment is part-time and non-resident, and for six months. Salary £100 per annum.
Candidates must be registered under the Medical Acts, and the Mildmay Council is anxious that they should be fully in sympathy with the religious work of the Hospital.
Applications, with copies of recent testimonials, should be sent to the Medical Superintendent before April 3rd.

Lincoln County Hospital.

Wanted for May 1st, a JUNIOR HOUSE SURGEON, male, unmarried. Salary at the rate of £150 per annum, rising to £200 per annum at the conclusion of six months' approved service. Board, residence, and washing will also be provided.
Every candidate for the appointment must be registered under the Medical Acts.
Applications, stating age and other particulars, with copies of testimonials (not more than three), are to be sent to the *undersigned*, from whom further particulars may be obtained.
Lincoln. ARTHUR MOORE,
March 8th, 1929. Secretary-Supt.

Hendon Urban District Council.

COMBINED POST OF RESIDENT MEDICAL OFFICER AT THE ISOLATION HOSPITAL AND ASSISTANT MEDICAL OFFICER FOR GENERAL PURPOSES.

Applications are invited for the above post.

The successful candidate will be required to reside at the Isolation Hospital (at present under construction) and to perform the duty of Resident Medical Officer, together with other duties in connection with the Council's Maternity and Child Welfare and School Medical Services, and generally to assist the Medical Officer of Health.

Candidates must possess a Public Health qualification and should have had Fever Hospital experience.

The salary is £500 per annum, rising by annual increments of £25 to £600 per annum, with board, lodging, and laundry. If the officer appointed takes up duty before the Hospital is completed an allowance at the rate of £150 per annum will be made in lieu of board and lodging, etc.

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The successful candidate will be required to pass a medical examination.

Applications, on forms to be obtained from the undersigned, together with copies of not more than three recent testimonials, to be sent to the undersigned not later than April 6th.

Dated this 4th day of March, 1929.

Town Hall, Hendon, N.W.4. LEONARD WORDEN, Clerk to the Council.

Hendon Urban District Council.

ASSISTANT MEDICAL OFFICER.

Applications are invited for the above post.

The duties will be mainly in connection with the Council's Maternity and Child Welfare and School Medical Services, but may include other *duties under the direction of the Medical Officer* of Health.

Candidates must possess a Public Health qualification.

The salary is £600 per annum, rising by annual increments of £25 to £700 per annum.

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The successful candidate will be required to pass a medical examination.

Applications, on forms to be obtained from the undersigned, together with copies of not more than three recent testimonials, to be sent to the undersigned not later than April 6th.

Dated this 4th day of March, 1929.

Town Hall, Hendon, N.W.4. LEONARD WORDEN, Clerk to the Council

Borough of Bexhill.

MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified gentlemen for the appointment of Medical Officer of Health of the Borough, subject to the provisions of the Public Health Officers Act, 1921, and the Sanitary Officers Order, 1926.

The gentleman appointed will be required to perform all the duties imposed on a Medical Officer of Health, to act as School Medical Officer, and to carry out all such duties as the Council, with the consent (if necessary) of the Minister of Health, may from time to time direct. He must reside in the Borough and devote all his time to the duties of the office, and must not engage in private practice.

The salary to cover *all the duties* specified above will be £800 per annum inclusive.

Applications, stating age, experience, etc., accompanied by copies of not more than three recent testimonials, should reach the undersigned not later than April 6th, endorsed "Medical Officer."

Town Clerk's Office, Bexhill March 19th, 1929. S. J. TAYLOR, Town Clerk.

City and County of Newcastle-upon-Tyne.

CITY HOSPITAL FOR INFECTIOUS DISEASES.

RESIDENT MEDICAL ASSISTANT (Male).

Wanted immediately, a Resident Medical Assistant (male) who holds a registrable qualification in Medicine and Surgery (and preferably also in Public Health), and possesses a practical knowledge of Bacteriology.

Salary £350 per annum, *with board, lodging,* etc.

Applications, stating age, qualifications, and previous experience, to be forwarded with copies of not more than three recent testimonials to the Medical Officer of Health, Town Hall, Newcastle-upon-Tyne.

March 19th, 1929.

County Council of Durham.

DISTRICT TUBERCULOSIS MEDICAL OFFICER.

The County Health Committee invite applications for a District Tuberculosis Medical Officer, at a commencing salary of £600 per annum, rising by annual increments of £25 to £650 per annum. Travelling expenses will be paid by the County Council.

The appointment will be held subject to three months' notice on either side, and to the following conditions:

(1) The officer appointed must be a registered medical practitioner between the ages of 25 and 45 years, must devote the whole *of his time to the duties of the office,* and must not engage in private practice.

(2) He should have held a House appointment for at least six months in a General Hospital and have had practical experience in the treatment of tuberculosis in sanatoria and otherwise.

(3) He will be attached to the County Health Department, and will, subject to the directions of the County Medical Officer, be under the control of the Central Tuberculosis Medical Officer.

(4) He will be required to reside in his Dispensary area, or such other centre as required by the Council.

(5) *He will be required to carry out the duties* of a District Tuberculosis Medical Officer.

(6) He must be prepared, if called upon, to act as Locum Tenens to other members of the Medical Staff of the County Medical Officer

(7) The holding of a Diploma in Public Health, and practical experience in bacteriological laboratory work, will be deemed additional qualifications for the post.

The candidate appointed will be required to pass the County Council's medical examination, and will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

Applications, endorsed "District Tuberculosis Medical Officer," with copies of not more than three recent testimonials, must be forwarded on or before April 5th next to the County Medical Officer, Shire Hall, Durham, from whom forms of application can be obtained.

Shire Hall, Durham. March 18th, 1929. HAROLD JEVONS, Clerk of the County Council.

Cardiff Union.

ASSISTANT MEDICAL OFFICER.

The Guardians of the Cardiff Union require a THIRD ASSISTANT RESIDENT MEDICAL OFFICER (male or female) for the City Lodge Institution, who must devote the whole of his or her time to the duties, reside in the Institution, and (subject to the orders of the Guardians) act under the direction of the Medical Officer.

The qualifications, conditions, and duties of the appointment, which will be for six months, but renewable if the Guardians see fit, are prescribed by General Orders of the Ministry of Health, and are further defined in Rules adopted by the Guardians, a copy of which (and any *other information desired) may be obtained from* me. One duty will be to give such lectures to the Nurses as may be required.

The salary will be at the rate of £150 a year, with rations, apartments, attendance, and washing, subject to the provisions of the Poor Law Officers Superannuation Act, 1896, for which the present value of emoluments is fixed at £134 10s. a year

Assistant Medical Officers are liable to be called upon by Justices to examine and certify alleged Lunatics, for which fees are payable

Applications, on forms to be obtained from me, must reach me by 10 a.m. Monday, April 8th.

Direct and indirect canvassing is prohibited.

R. STEPHENSON.

11, Park Place, Cardiff. Clerk.

Tunbridge Wells and Counties General Hospital.

Wanted, HOUSE SURGEON (male). Candidates must be unmarried and duly qualified in Medicine and Surgery. (Two Residents.) Vacant now.

In-patients number over 1,400 yearly. Out-patients 6,000, with 50,000 attendances.

Salary £160 per annum, with board, residence, etc., in the Hospital.

This Hospital is approved by the University of London for the purpose of the M.D. and M.S. Examination.

Applications, stating qualifications, with certificate of registration and copies of testimonials, should be sent to the undersigned on or before the first post March 29th next.

J. J. WEBB, Secretary.

The Children's Hospital, SUNDERLAND. (70 Beds.)

Want [illegible] UNIOR RESIDENT [illegible]le) to act as House must possess double Salary £100 per ann and laundry. The appointment is for six months

Applications, stating age, with copies of three recent testimonials, to be received by the undersigned not later than April 1st.

S. C. FRYERS, House Governor and Secretary.

City of London Hospital for *DISEASES OF THE HEART & LUNGS,*

Victoria Park, E.2.

('Bus, Tram, and Rail, Cambridge Heath, L. & N.E.R.).

Applications for a post of HOUSE PHYSICIAN (male), with copies of recent testimonials, are invited to be sent to the undersigned by Monday, April 15th.

The appointment will be for six months from May 1st. Salary at the rate of £100 per annum, with board, residence, and laundry provided.

GEORGE WATTS, Secretary.

Mansfield and District Hospital.

The Board of Management of the above Hospital (130 beds) invite applications for the post of *HOUSE PHYSICIAN* (male).

Salary at the rate of £150 per annum, with residence, board, and laundry.

The appointment is for six months and is renewable. Duties to commence on April 4th.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

Dated this 18th day of March, 1929.

ARTHUR H. LIMB, Secretary.

The London Female Lock HOSPITAL,

283, Harrow Road, London, W.9.

The Board of Management invite applications for the appointment of HOUSE SURGEON (male or female) at the Female Lock Hospital. Salary at the rate of £150 per annum, with furnished rooms, full board, and washing. Candidates, who must be doubly qualified and duly registered, should send in their applications by 10 a.m. on or before April 8th, accompanied by copies of three recent testimonials, to the Secretary, from whom further particulars can be obtained. The appointment is for six months commencing May 10th.

Seamen's Hospital Society, GREENWICH.

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, for six months from April 1st. Salary £110 per annum, and a proportion of fees, with board, residence, and washing. Candidates must be male.

Applications, with copies of three testimonials, to be sent in by March 25th, to the undersigned.

Greenwich. R. E. V. BANY
March 18th, 1929. Secretary.

Hospital of St. John and St. ELIZABETH,

60, Grove End Road, London, N.W.8.

Applications are invited for the post of *RESIDENT HOUSE SURGEON (male).* The appointment will be for six months from May 1st. Salary at the rate of £75 per annum, with full board. Applications, together with three testimonials, should reach the undersigned not later than April 3rd.

F. DUDLEY HOBBS, B.A., Secretary.

Elizabeth Garrett Anderson HOSPITAL, Euston Road.

Applications are invited from fully qualified medical women for post of ASSISTANT OBSTETRICIAN on the Staff of this Hospital.

Applications, with testimonials, should be sent to the Secretary, from whom further information can be obtained, before April 3rd next.

IMOGEN H. MURPHY, Secretary.

Swansea Hospital, (316 Beds.)

HOUSE SURGEON wanted, gentleman, single. Salary £150, with board, residence, and laundry. Duties to commence April 1st.

Applications, stating age, nationality, and experience, with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS, Secretary.

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33, Cross Street, Manchester,

or its Newcastle Branch at

7, Windsor Place, Newcastle - on - Tyne.

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Park Prewett Mental Hospital,
BASINGSTOKE, HANTS. (1,450 Beds.)

JUNIOR ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Junior Assistant Medical Officer (male).

Candidates must be registered and unmarried. Age not exceeding 36 years. Experience in the treatment of Mental Diseases and having been a House Surgeon in a General Hospital will be considered additional qualifications.

The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Salary £350 per annum, with board, furnished apartments, laundry, and attendance, valued for superannuation purposes at £150 per annum. An additional £50 a year is payable for the possession of a Diploma in Psychological Medicine

Applications must be made on the prescribed form, obtainable on request with a stamped addressed foolscap envelope from the Medical Superintendent, to whom applications must be sent (marked A.M.O.), accompanied by three recent testimonials, on or before Saturday, April 6th.

Herefordshire General Hospital,
HEREFORD. (125 Beds.)

Applications are invited for the post of HOUSE SURGEON (male). 12 months appointment, renewable. Salary £150 per annum, with board, residence, and laundry.

Applications are also invited for the post of HOUSE PHYSICIAN (male). Six months' appointment, renewable. Salary £100 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered Applications, stating age, qualifications, and experience, together with not more than three copies of recent testimonials, should reach the undersigned not later than March 26th.

H. W. HART, Secretary.

Cheshire Joint Sanatorium,
MARKET DRAYTON.

Applications are invited for the post of RESIDENT (Male) CLINICAL BACTERIOLOGIST at the Cheshire Joint Sanatorium.

There are 240 beds, and excellent opportunity for Research.

Salary in the first instance, £400 per annum, plus board and lodging.

Applications must be made on forms which are obtainable from the Medical Superintendent.

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(In conjunction with the MALE NURSES' ASSOCIATION),
29, York St., Baker St., London, W.1.
Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

ST. LUKE'S HOSPITAL.
FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

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The Prince of Wales's General
HOSPITAL, Tottenham, N.15.

Applications are invited for the post of HONORARY ANÆSTHETIST, to attend on Tuesday afternoons. The appointment is for one year, subject to re-election. Honorarium of £20 per annum.

Applications, stating age and qualifications, accompanied by copies of three recent testimonials, must be sent in by first post on Monday, March 25th next, to

FREDK. W. DREWETT,
March 4th, 1929. Director.

The Prince of Wales's General
HOSPITAL, Tottenham, N.15.

Applications are invited for the post of HONORARY DERMATOLOGIST. Candidates must be either a Graduate in Medicine of a recognized British University, and a Fellow or Member of one of the Royal Colleges of Physicians, or a Fellow of one of the Royal Colleges of Surgeons, and engaged in consulting practice.

Applications, with copies of three recent testimonials, to be sent to me on or before Monday, March 25th next.

FREDK. W. DREWETT,
March 4th, 1929. Director.

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Hampshire.—Death Vacancy.—About £1,450 p.a. Panel over £500 p.a. Appointments over £400 p.a. House, with 6 bed., etc., and nice garden and garage. —No. 8440.

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Suffolk.—Now about £2,000 p.a., increasing. Half share for sale, with early succession. Appts. about £60 p.a. Panel 2,500. Mids. 2 gns. up. Visits 3/6 to 10/6. Good house, 7 bed., etc., and large garden to rent at £80.—No. 8437.

London, S.E.—About £800 p.a. Cash and panel. Visits 5/- up. Panel 800. House, 3 bed., etc., to rent.—No. 8436.

Eastern Counties.—Share worth about £700 p.a. Visits 5/- up. Panel and appts. over £900 p.a. Mids. 2 gns. up. —No. 8434.

S. W. England. — £4,000 p.a. Up to 1/3 share after preliminary assistancy. Panel about 2,000. Surgical scope. Premium only 1½ years' purchase. House available.—No. 8407.

Nottingham. — Death Vacancy. —About £860 p.a., excluding appts. of about £400 p.a., doubtful of transfer. Visits 7/6 up. Midwifery refused. Small panel of 157. Large house, with 5 bed., etc., good garden, garage, etc., available. Premium 1½ years or offer.—No. 8433.

Kent.—Nucleus over £600 p.a. Visits 3/6 to 15/-. Mids. 3 gns. Panel 450. House, 4 bed., etc., with large garden to rent. Excellent scope. Open to offer.—No. 8432.

Lancs. Coast.—About £3,000 p.a. 1/3 to 2/5 share. Appts. over £500 p.a. Visits 5/- and 7/6. Panel 450. Scope for surgery. House to rent.—No 8429.

Nr. S. Coast.—About £1,300 p.a. Visits 3/6 to 12/6. Panel about 2,425 p.a. Mids. 3 to 7 gns. House, 6 bed., etc., to rent. Tennis.—No. 8428.

Lincolnshire. — About £1,000 p.a. Appts. over £70 p.a. Fees 3/6 up. Panel 675. Few mids. Good house and large garden. Tennis.—No. 8422.

Southern County.—Over £16,000 p.a. One-tenth share for sale, increasing to 1/5. Mids. 3 gns. up. Visits 5/- to 5 gns. Panel about 7,000. Must be F.R.C.S.Eng., and hold University degree.—No. 8421.

Kent.—Country Practice.—About £1,030 p.a. Old-estab. Visits 5/- up Panel nearly 400. Appts. £55 p.a. Good house, with 6 bed., etc.—No. 8420.

S. E. Coast Town.—About £700 p.a., scope for increase. Panel 420. Visits 2/6 up. Small house to rent, £52 p.a. Premium only £500; easy terms.—No. 8410.

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BEDFORDSHIRE.—1 established G.P. available. Premi experienced man of 30 or over.

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7. [illegible]
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11. PEMBROKESHIRE. — Practice about £1,000 p.a. in small town. Panel 361. Well-situated house (7 bedrooms) to rent. Scope for increase. Premium £1,500. Preliminary assistantship if desired.

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13 SOUTH COAST.—Non-dispensing Practice about £1,800 p.a. in residential town. No panel. Very good house in best part.

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16 WEST END OF LONDON.—Partnership in high-class non-dispensing Practice in the best part. No panel. Share worth £1,500 to £1,750 p.a. for disposal.

17 GLOUCESTERSHIRE. — Partnership (after preliminary assistantship) in Country Practice about £3,600 p.a. Applicant should be aged 28 to 30, and have held resident Hospital appointments. One-sixth share at first at 2 years' purchase.

18 JUNIOR PARTNER REQUIRED in Practice in first-rate residential town within 40 miles of London. House (4 bedrooms) to rent. Share worth about £900 p.a. at 2 years' purchase.

19 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. No panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

20 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. Panel over 1,400. Partner should be good at midwifery. Premium one-third share 2 years' purchase.

21 LONDON, E.—Partnership in exceptionally old-established Practice averaging over £3,500 p.a. Good fees and appointments. Two-fifths share for disposal at 1½ years' purchase, or one-third could be purchased at first, part by instalments. Small house may be bought or rented at a moderate figure.

22 S.E. COAST.—Partnership in steadily increasing Practice about £2,500 p.a. in popular watering-place. Panel 1,800. Convenient house (5 bedrooms), garden, and garage, to rent. Premium one-half share 2 years' purchase.

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Practices and Partnerships for Disposal (continued).

24 LIVERPOOL. — Cash and Panel Practice about £865 p.a. in working-class district. Panel over 1,200. Large house to be sold. Great scope. Premium 1½ yrs.' purchase.

25 EAST COAST.—Partnership in Practice in small watering-place. Suitable house available. Share worth about £1,200 at 2 years' purchase.

26 YORKSHIRE (W.R.). — Partnership in Practice nearly £3,300 in colliery district. Panel 3,000. One-half share after a preliminary assistantship.

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28 N. WALES.—Increasing Country PRACTICE about £1,000 in growing district, with good prospects.

29 S. MIDLANDS.—Practice over £1,700 p.a. in country town 100 miles from London. No panel, appointments, or midwifery. House (5 bedrooms), with garage and garden, for sale. Premium—Practice 1½ yrs.' purchase.

30 MIDLANDS. — Partnership in mixed Practice between £3,600 and £3,700 p.a. in suburb of Cathedral City. Panel over 2,200. Partner should be aged about 30, with Hospital experience, and able to do Surgery. Premium one-half share 2 years' purchase.

31 LONDON, N.—Partnership in Practice £3,400 p.a. in Northern suburb. Panel about 3,200. Incoming Partner must have had experience and be either English or Scotch. Premium one-third share 2 years' purchase.

32 S.W. OF ENGLAND. — Middle and working-class PRACTICE about £2,150 p.a. in seaport town. Panel 1,226. Well situated house (6 bed and dressing rooms) to be sold or let. Premium 1½ years' purchase.

33 LANCASHIRE.—Partnership in Practice over £3,700 p.a. in first-rate town. Panel 2,600. House (4 bedrooms) to rent. Premium one-half share 1½ years' purchase.

34 SOUTH OF ENGLAND.—Surgical PARTNER required (not over 36) with University degree and F.R.C.S. England, in sound Practice in first-rate town with good Hospital. Share of £1,500 p.a. at 2 years' purchase.

35 MIDLANDS. — Partnership in Practice £3,375 p.a. in attractive town. Panel 1,000. Well-situated house (5 bedrooms) to rent. Partner must be well qualified, preferably a Surgeon who would have chance of Hospital appointment. One-half share at 2 years' purchase.

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38 S. WALES. — Practice averaging £1,627 (about £650 p.a. from panel) in good town. Modern house (6 bed and dressing rooms) for sale or rent. Premium one-half year's purchase.

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40 SOUTH COAST.—Health Resort.—Practice about £900 p.a. (including appointments about £155). No panel or midwifery. Suitable house or flat. Premium £1,500.

41 CO. DURHAM. — Practice of £1,460 in growing suburb of seaport town. Panel 646. House (5 bedrooms) on main road to be sold or let. Premium 1½ years' purchase.

42 S. WALES.—Non-dispensing Practice in large seaport town. Receipts for past 3 years averaged £1,543 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,500.

43 GLOUCESTERSHIRE.—Country Practice averaging £535 p.a. Panel 450. Convenient (small) house, and excellent garden, 1 acre. Garage small car. Premium, house and practice, £3,000.

44 KENT. — Practice averaging £1,030 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, practice, £1,500.

45 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first-rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. Premium one-third share 2 years' purchase.

46 LONDON, E.—Rapidly increasing Lock-up PRACTICE in populous district. Receipts 1928, £780. Panel 570. Rent £50. Premium £950.

47 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

48 X-RAY and ELECTRO-THERAPEUTIC PRACTICE in important town. Receipts last year £1,050. Detached house for sale or rent. Premium £1,500.

49 N.W. ENGLAND.—Partnership in Practice about £3,500 p.a. in seaport town. Panel about 2,500. Choice of two houses to rent. Premium one-fourth or one-third share 2 years' purchase.

50 SOUTH MIDLANDS. — Practice about £1,150 p.a. in county town. Panel 485. Good house (7 bedrooms), with garage and garden, for sale. Very good Hospital.

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52 S. WALES.—Practice over £1,200 p.a. in small country town, amidst beautiful scenery. Panel about 300. Old-fashioned house, with garage and garden. Cottage hospital. Premium £1,500.

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55 LONDON, S.E. — Partnership in well-established Practice of £1,900 p.a. in good residential district. Exceptionally well-built detached house (6 bedrooms) to be rented. One-half share at two years' purchase. Good scope.

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57 MIDLANDS.—Country Practice of over £1,000 p.a., within 5 miles of good town. Panel 531. Comfortable and convenient house (5 bedrooms, etc.), with electric light, central heating, and acre garden, for sale. Premium, practice, 1½ years' purchase.

58 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. One-third to two-fifths share at 2 yrs.' pur.

59 MIDLANDS. — Practice about £350 p.a. in manufacturing village. Panel 190. House (4 bedrooms, etc.), and one acre of garden. Premium—Practice and house, £2,000.

60 ESSEX. — Practice averaging £1,216 p.a. in outlying district—30 minutes by rail from London. Panel 550. Nice detached house (5 bedrooms) for sale. Premium for practice 1½ years' purchase.

61 MIDLANDS. — Partnership in Practice over £2,000 p.a. in good town. Panel 1,800. Good house (5 bedrooms) available. Partner should be able to undertake major operations. Well-equipped hospital. One-half share for disposal.

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3. SOUTH OF ENGLAND.—In a pleasant town (pop. 11,000) within 5 *miles of favourite watering-place*, old-established *mixed-class* and increasing PRACTICE worth nearly £1,300 last financial year, including transferable appts. and panel of 880. Excellent family residence, standing in its own grounds (tennis court, flower garden, etc.), with ample accommodation. Held at present on lease (2½ years to run) at £90 p.a., and can eventually be bought for £1,700 or less. Premium £2,040, to include drugs, fittings, some furniture, etc.
4. PARTNERSHIP.—SOUTH OF ENGLAND.—The two-fifths share (*producing an income of about £1,750 p.a.*) can be acquired by a suitable gentleman in an old-established connection situated in an attractive town near the sea. Appts. and panel held. Visits 5/- upwards, medicine extra. Very little midwifery. Nice house available, held on short lease, but can be purchased. Excellent educational facilities, and sport of all kinds. Moderate premium accepted.
5. SOUTH-WEST OF ENGLAND.—PARTNERSHIP.—A one-half share in a very old-established Practice situated in an attractive small town, amidst *beautiful surroundings, and within easy reach of the Coast*. Gross cash receipts for the past year over £2,900. Panel of 1,218, which, together with appts., brings in about £900 p.a. Moderate expenses. *Visits 2/6*, plus mileage and medicine 2/6 and 3/6 extra. Very suitable house, with 3 reception, 4 bedrooms, and usual offices. Garden. Price for freehold £750, of which £350 on mortgage. Premium 2 years' purchase.
6. PARTNERSHIP.—SIX MILES NORTH-EAST OF LONDON.—Third Partner required in very old-established mixed-class and increasing Practice situated in populous suburb. Receipts last year nearly £2,800, including appts. (£95) and panel of 3,370. Visits 2/6 and 3/6. Very little midwifery. Good house available (professional rooms, 2 sitting, 3 bedrooms, dressing and bathrooms, etc., garden and garage) on rental at £50 p.a. Premium 2 years' purchase. Excellent prospects of increase.
7. LONDON, WEST.—PARTNERSHIP.—A half share in an old-established mixed general Practice. Average income for the last three years about £4,000. Panel of 3,250. Fees 2/6 to 7/6, visits 3/6 to 10/6, and a few at 21/-. About 30 midwiferies at from 3 to 10 guineas. Convenient house in good position. Held on lease (with no ground rent) with 25 years to run. Price £1,650. Premium £4,000. Must be Scotch or English.
8. CORNISH RIVIERA.—*In a small but rapid*
6,000—6,000) on the Coast, an old-estab. P
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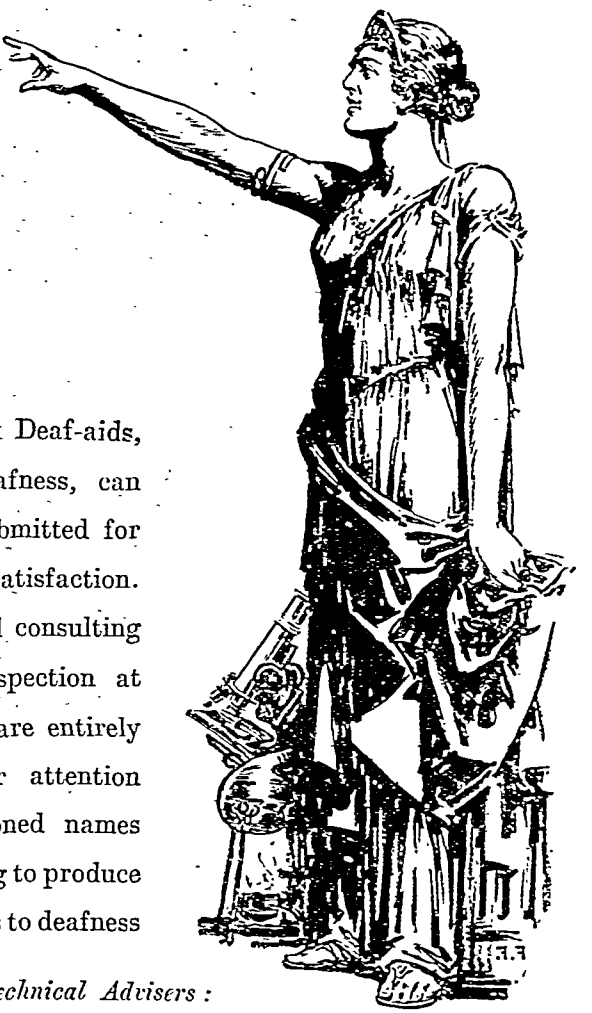

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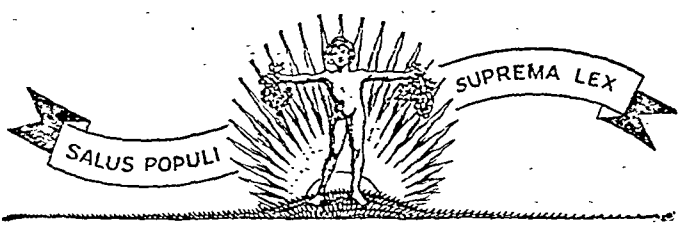

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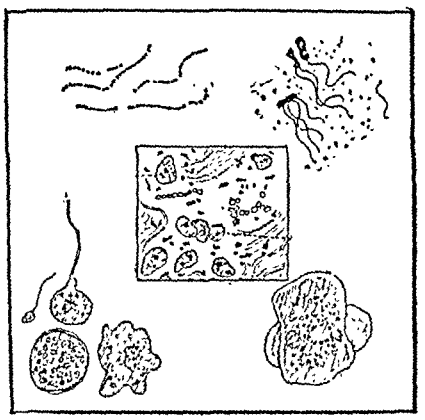

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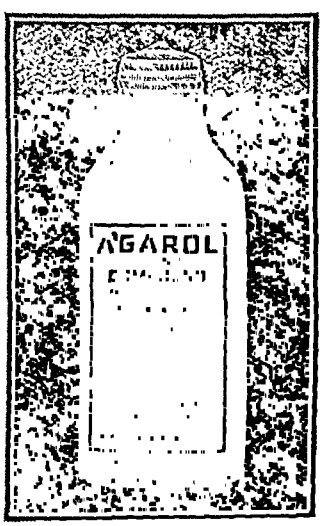

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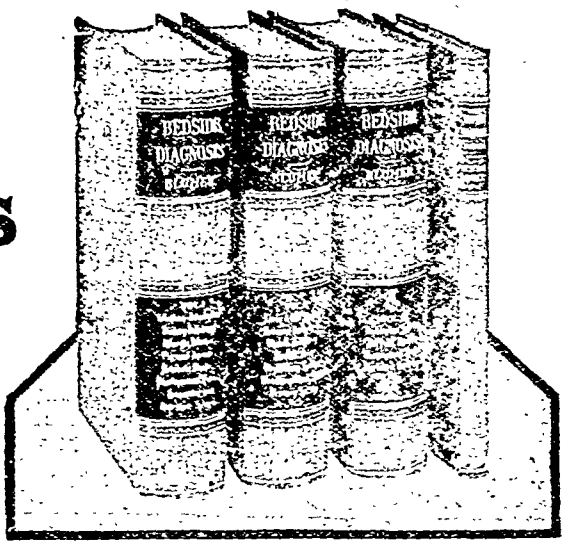

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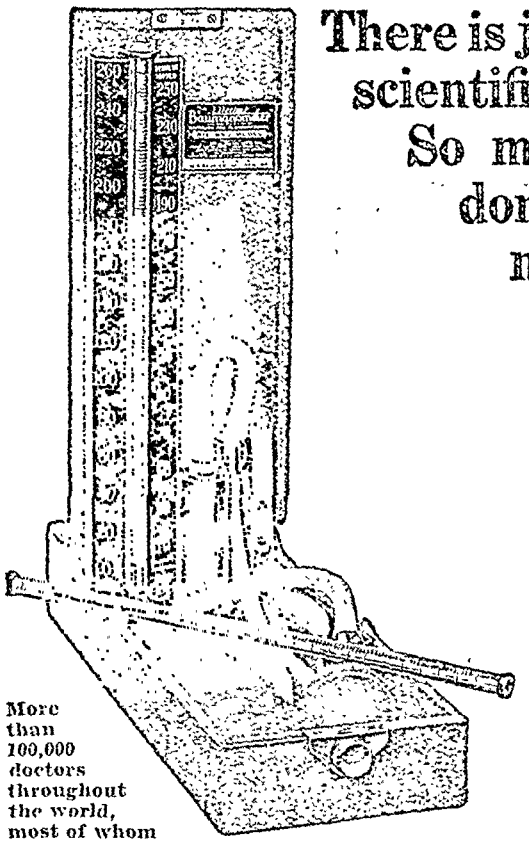

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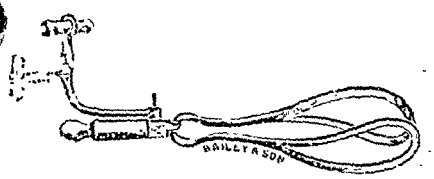

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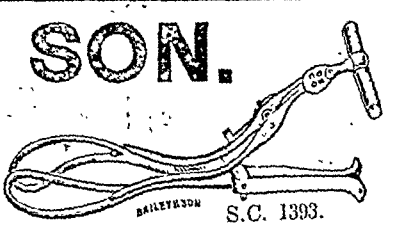

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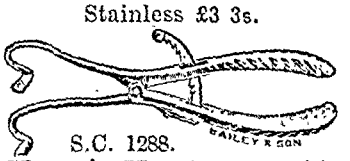

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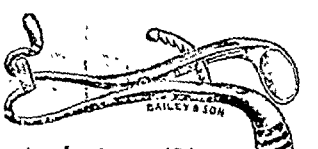

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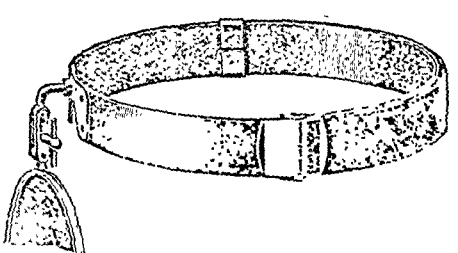

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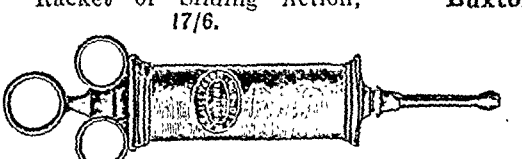

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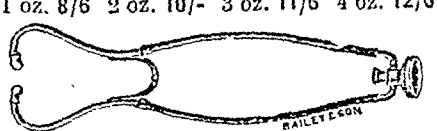

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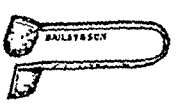

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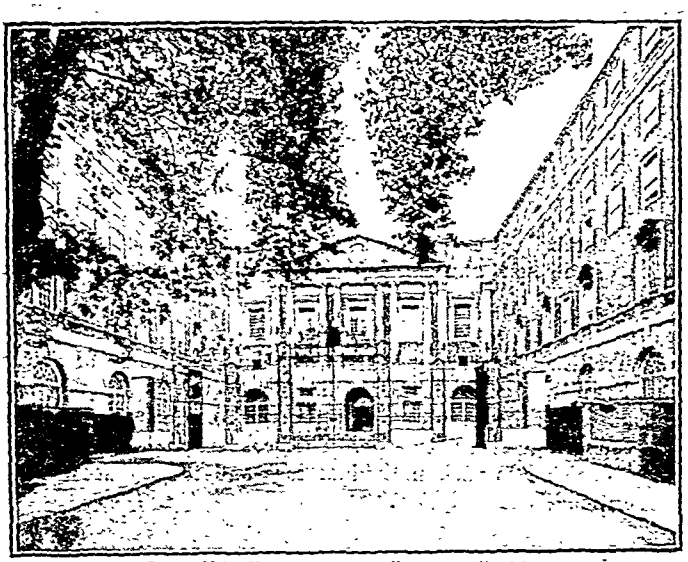

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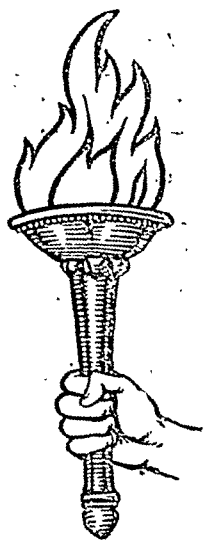
FAMILY  TRADITION

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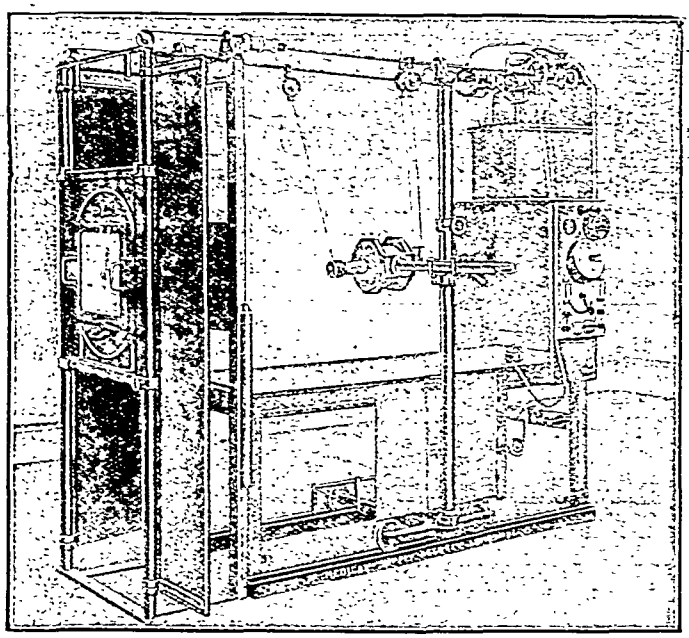

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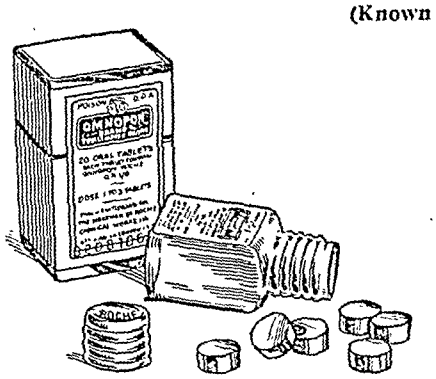

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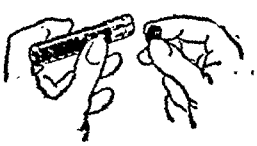
Lysolats

PATENT 118667 (LYSOL TABLETS)



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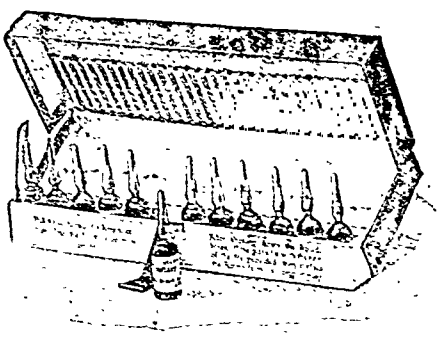

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Uniformity of unitage.
Full potency and stability in all climates.
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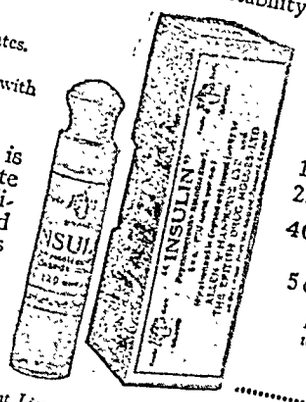

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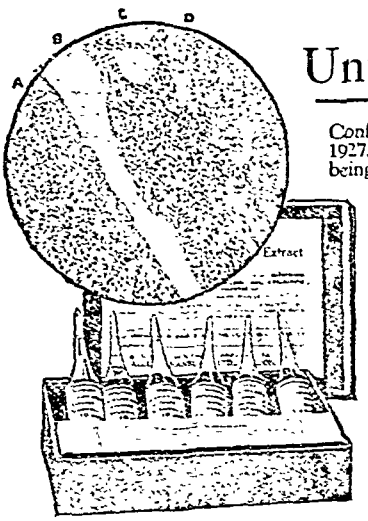

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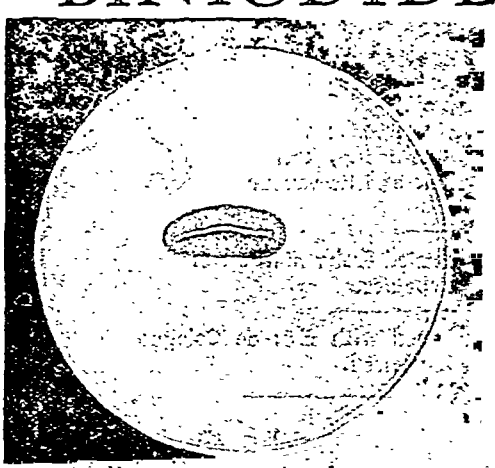

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The London Hospital Catgut may be obtained from all the leading Surgical Equipment Houses

For Head Colds Prescribe "Mistol"

MISTOL and the Mistol Dropper are a real advance in nose and throat therapy. Menthol, eucalyptol, and camphor are combined in a specially prepared petroleum base, which keeps these soothing and healing ingredients in direct contact with the mucous membrane for a considerable length of time.

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IT IS INDISPENSABLE IN THE SURGERY

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MANGANESE BUTYRATE (*intram.*). *in furunculosis, boils, etc.,* 1% ... ... 1 c.c.	10	4/6
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QUININE-URETHANE, *in varicose veins,* 2 c.c.	,,	7/6
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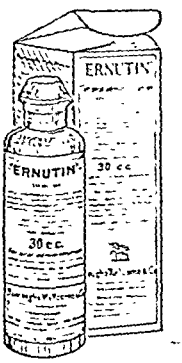

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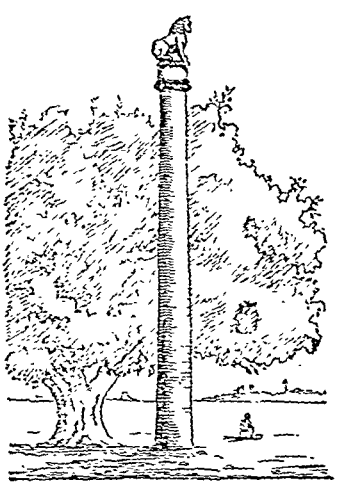

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Observations on THE TREATMENT OF FRACTURES INVOLVING THE ANKLE-JOINT.*

BY

ROBERT OLLERENSHAW, M.D., F.R.C.S.Eng.,

CLINICAL LECTURER IN ORTHOPAEDIC SURGERY, MANCHESTER UNIVERSITY.

SINCE the days of Pott and Dupuytren fractures involving the ankle-joint have received much consideration, though not too much, in view of the disabilities which may follow in their train. Apart from the classical fractures, as usually described, the great importance of the anterior and posterior marginal fractures of the tibia was emphasized by Cotton in 1915,[1] and more recently by Ashurst.[2] It should always be remembered, however, that Astley Cooper described the posterior marginal fracture in 1822.

TYPES OF ANKLE FRACTURE.

Three years ago the British Orthopaedic Association, at its meeting in Manchester, discussed ankle fractures at some length, and I fear that it is not possible for anyone to break much new ground to-day. In considering my contribution to this discussion it seemed to me that an outline of the treatment adopted and the results obtained in a series of my own cases would be of most use. Beyond this, I propose to review a number of isolated cases which have offered more than the usual difficulties in their treatment. The incidence of the various types of fractures at the ankle is shown by the following summary of 100 cases radiographed at Salford Royal Hospital between December, 1927, and November, 1928.

Summary of 100 Consecutive Cases (Radiographic Findings) at Salford Royal Hospital, December 12th, 1927, to November 30th, 1928.

External malleolus	44
Internal malleolus	14
Fibula and internal malleolus and tibial epiphysis	15
Both malleoli	12
Tibia and external malleolus	2
Posterior margin fractures (with malleoli)	7
Anterior margin fractures (alone 1; with external malleolus 1)	2
Astragalus with malleolus (internal 1, external 2)	3
Cuboid with malleolus (external)	1
Total	100

You will notice the large percentage of the simpler type of isolated fracture of the external malleolus. In this connexion I would like to refer for a moment to a point in the mechanism of production of fractures of the ankle. Although, as each one of us can testify, the most usual direction for the foot to turn in an ankle "twist" is towards a varus, or inverted, position, we find that not more than 3 or 4 per cent. of fractures occur which can be described as having been brought about by a forced inversion. What is the reason? Why are 90 per cent. or more of our ankle fractures due to an abduction, or valgus, twist? I believe that many a man avoids a serious fracture because, when his ankle turns into a sudden inversion, he follows it with his body, as the wrestler is taught to do, and so takes the strain. He gives way with the force, and the strain is distributed. In the reverse position it is not possible to give way similarly, and the full straining force falls on the ankle mortise.

The proportion of external malleolus fractures in this list is very close to that shown by an earlier series of 100 fractures, collected prior to the end of 1925 in order to allow us to estimate the ultimate results. As many of you know, it is a matter of some difficulty to trace end-results in hospital cases. The poorer classes are apt to change their residences frequently and so become lost; others are too careless or too illiterate to reply to the answers on the questionary with accuracy. The registrar's office sent out 100 circulars to the consecutive cases prior to December 31st, 1925, and about 65 replies were received. Further cases, continuing the series, were then approached, and, after writing to about 150 patients, complete replies from 100 were obtained, and investigated. The following table embodies, therefore, not strictly a consecutive 100 fractures, but 100 consecutive replies. The proportions, however, fall closely into line with most other series, and I give them as representing our results.

End-results in 100 Consecutive Cases of Ankle Fracture prior to the End of 1925.

	Cases.
External malleolus	42
Returned to former work	39
Average time off work eight weeks.	
Internal malleolus	8
Returned to former work	8
Average time off work eleven weeks.	
Both malleoli, fibula and internal malleolus	35
Returned to former work	30
Average time off work nineteen weeks.	
Marginal fractures	12
Returned to former work	9
Average time off work twenty-six weeks.	
Fibula with dislocation astragalus	1
Returned to former work	1
Away from work twenty-three weeks.	
Fibula, internal malleolus, and astragalus	2
Returned to former work	2
Away from work seventeen and eighteen weeks.	
Total	100

Out of 100 cases, all varieties, there returned to original work 89 per cent. Average time off work fourteen weeks.

In our discussion in 1925, to which I have already referred, one of the speakers reported end-results and provided a series of 60 cases. These were further subdivided into Pott's fractures 20, external malleolus 14, both malleoli 8, various others 18. The first group included all cases which had a fracture of the fibula near the lower end, with displacement of the foot outwards, and some definite sign of injury to the inner ankle. The speaker found that out of his 14 cases of external malleolus fracture 14 had returned to work. A computation of 100 per cent. returns to work in this type of fracture was therefore made. Nothing approaching this recovery rate had ever been hoped for, and the speaker's conclusion was, of course, fallacious. There is no greater error than to calculate percentages on fewer than 100 cases. No one could say what would be the end of the other 86 cases still needed to complete the 100. In series of fewer than 100 only the actual figures can be accepted.

TREATMENT OF FRACTURE AT THE ANKLE.

On arriving at hospital the limb should be placed on a temporary splint for transport to the radiological department. At least two views of the fracture must be taken, lateral and antero-posterior, and the result carefully scrutinized for the less obvious displacements. The gross fractures and dislocations are easily seen, but the lesser degrees of departure from the normal must not be overlooked. With this in mind, I would like to show the radiograms of a fracture which I was asked to see recently. The patient had stumbled and twisted the foot, at the same time plantar-flexing the ankle. The practitioner in charge sent the patient for radiological examination, and with the pictures came the report: "Fracture of external malleolus. There is no displacement."

On the strength of this report the foot was not subjected to any manipulation, but was left to rest on a pillow, and massage was commenced. The ankle became more painful, and refused to allow any movement at all in the direction of dorsiflexion. I was asked to see it, and found the foot plantar-flexed, with some prominence of the

* Made in opening a discussion at the Manchester Surgical Society, February 5th, 1929.

13560]

astragalus in front. The radiogram showed quite a definite displacement forwards of the astragalus (Fig. 1). There is no doubt that had the ankle been left as it was there would have been a very tedious recovery and probably some permanent loss of ankle movement. Under gas anaesthesia I dorsiflexed the foot, with the result shown in Fig. 2. At the end of forty-eight hours the patient himself was able to perform a reasonable degree of dorsiflexion. I would therefore ask radiologists to be especially careful in their reading of the radiograms of injuries before reporting "no displacement," and particularly so if the patient is going home under the care of his general practitioner, who may be relying very largely on the radiologist's report for guidance in treatment.

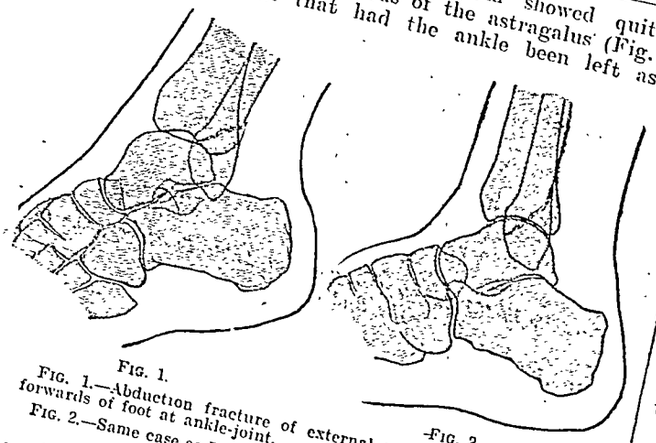

FIG. 1.

FIG. 2.

FIG. 1.—Abduction fracture of external malleolus; subluxation forwards of foot at ankle-joint.

FIG. 2.—Same case as Fig. 1; subluxation reduced.

Reduction of Displacement.

When displacements are revealed by the radiograms, those usually to be overcome are: (1) eversion of the foot; (2) backward displacement of the foot; (3) some degree of equinus; (4) separation of the tibia and fibula. As good an anatomical reduction as possible must be aimed at. It is true that good functional results are seen in which the anatomical result is imperfect, but, on the other hand, there are extremely few poor functional results where a correct anatomical reduction has been obtained. It does occasionally happen that, despite the best of treatment and the most careful reduction, the ankle remains painful. The reason is the development of a traumatic osteo-arthritis. In such a case further treatment, to which I shall refer later, will probably be required.

The displacement having been determined, a general anaesthetic is given and the calf muscles are fully relaxed by flexing the knee. The heel is grasped firmly and drawn forwards whilst the other hand fixes the lower leg. The backward displacement is completely overcome, and the ankle is then dorsiflexed with the foot inverted to approximate the astragalus and internal malleolus (Figs. 3 to 8).

Methods of Fixation.

Our most useful method of fixation is undoubtedly a plaster-of-Paris cast. In the simpler injuries, such as those of the external malleolus only, with no tendency to redisplacement, a plaster strip, as advocated by Kellogg Speed, is sufficient, alone or reinforced with a bandage circularly applied. The ambulatory plaster splint described by Delbet in 1916, consisting of two laterally placed plaster splints fixed by transverse strips to the sides of the leg at the malleoli and below the knee, is easily applied, and is much used in some hospitals. The splint was originally intended for fractures of the leg bones. The apparatus allows movement of both ankle- and knee-joints, and after a week or ten days the patients are encouraged to walk in the plaster splint. Delbet also advised its employment in ankle injuries, and reported 53 good results in 55 cases. My own experience of Delbet's splint is small but increasing, and I am sure that it is a most useful appliance. I have observed that not infrequently more than one plaster is required, and Delbet himself found that of 123 cases in which the splint had been used, 68 cases needed a second cast, 28 needed a third cast, 3 needed even a fourth cast, and only 20 cases got through on one splint.

The plaster splint which I have chiefly used extends from the toes to below the knee. It is, of course, completely unnecessary to fix the knee-joint in a fracture so low down as an ankle fracture. The cast is split laterally along both sides, so as to permit constant inspection and early massage. All the fractures of the external malleolus alone, and others which show no tendency to displacement, are given massage almost at once and are encouraged to commence active ankle movement after two or three days. The fractures which have shown a tendency to redisplacement are retained in the position of reduction for a longer period, varying with the individual case, but always a minimal one. In some few cases of severe marginal fracture with backward displacement of the foot there is difficulty in maintaining even the smallest degree of dorsiflexion after reduction. The tendo Achillis becomes tightened and the obliquity of the line of fracture allows the tibia to slip forwards again. In these circumstances a tenotomy of the tendo Achillis is an

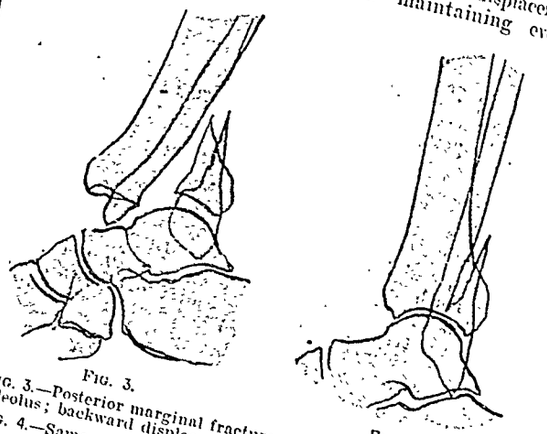

FIG. 3.

FIG. 4.

FIG. 3.—Posterior marginal fracture of tibia; fracture of external malleolus; backward displacement of foot.

FIG. 4.—Same case as Fig. 3; displacement reduced.

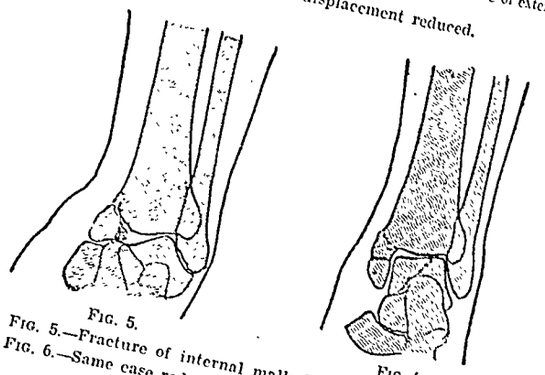

FIG. 5.

FIG. 6.

FIG. 5.—Fracture of internal malleolus and astragalus.

FIG. 6.—Same case reduced.

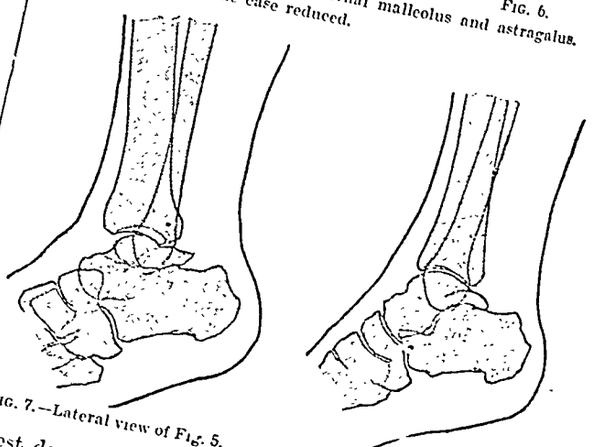

FIG. 7.

FIG. 8.

FIG. 7.—Lateral view of Fig. 5.

FIG. 8.—Same after reduction.

advantage, and I do not hesitate to perform it. In cases of severe comminution at the ankle, sometimes also further complicated by a compound wound, Steinmann's pin and direct traction on a Thomas knee splint are very valuable. After union has occurred all our ankle fractures, except those in children or a few of the more simple fractures in adults, are fitted with a wedged boot and an outside brace to prevent any tendency to valgus when weight-bearing starts.

The question as to the form of splint, however, is of small importance compared with the ability of the individual to use his appliances properly. For anyone to say that this or that splint is the only proper one to use is a mere conceit. Each one should learn to use an apparatus with which he can produce an efficient result, and strive to make his technique with his apparatus as perfect as possible.

Operative Measures.

Operative measures, in recent cases, should be adopted only if the displacement cannot be reduced satisfactorily, or if it cannot be maintained by the usual routine methods. Many have pointed out, and with good reason, the danger of using screws, plates, or other foreign bodies in the presence of a wound, but in several cases of severe displacement, with the tibia fragment projecting through the skin over the internal malleolus, I have fixed the fibula with a plate and screws, merely as a temporary measure.

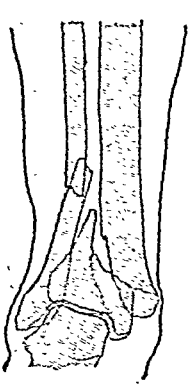

FIG. 9.

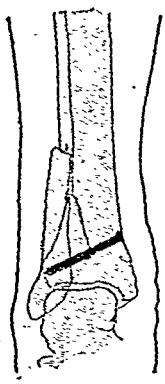

FIG. 10.

FIG. 9.—Very oblique fracture of tibia, almost compound.
FIG. 10.—Fixation by pin.

The tibial wound is cleaned or excised and the fibular wound kept completely shut off. After a short time the plate is removed, usually in two to three weeks. On other occasions, in similar fractures which have stopped short of becoming compound, I have used a screw running from side to side across the lower end of the tibia. (Figs. 9 and 10.)

With severe dislocation of the astragalus, and especially if it should be rotated on a vertical axis, open operation will almost certainly be required. In one of my cases there was a rotation of 90 degrees, the astragalus lying transversely across the fractured mortise. On exposure it was found that all its ligaments, save a few shreds, were torn across. The bone was replaced in position, and although it had no blood supply, and must for a period have survived by means of the synovial fluid, lymph, and blood serum surrounding it, there was a very complete recovery and a range of movement hardly limited at all.

OLD-STANDING CASES OF INCOMPLETE REDUCTION.

This is a group of cases where considerable disability has resulted from an incomplete reduction, usually a failure to correct valgus or to reduce a backward dislocation of the foot. Almost every case in this group requires operative treatment. Every one has to be considered individually, and it is impossible to generalize. I know of no cases requiring greater judgement or more resource; they are among the most difficult cases in the surgery of the extremities. The operative measures decided upon must be most thoughtfully conceived and carefully carried out in every detail, and I would not advise any surgeon who is not familiar with this class of work to experiment with it. I have illustrations of four such cases.

The first case is that of a young man of 25 years, who had a bad eversion fracture ten years before I was asked to see him.

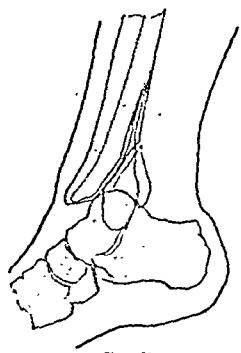

FIG. 11.

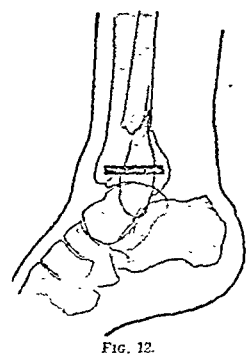

FIG. 12.

FIG. 11.—Old posterior marginal fracture, unreduced.
FIG. 12.—The same, reduced and fixed by ivory pin.

There was a much-everted foot and considerable pain. I performed a cuneiform osteotomy of the tibia and a linear of the fibula. The foot was forced over into varus. The tibia united, but a year later the fibula had not united, and was giving pain. I placed an inlay bone graft in it, and since it has united the foot has become strong, so that he has now been back at heavy labouring work for two years. His range of ankle flexion and extension is from 75 to 120 degrees.

The next case was that of a middle-aged woman who suffered from an unreduced posterior marginal fracture, which occurred two years before. Walking was impossible. The fracture was reconstructed, and the displacement reduced. An ivory pin was driven from back to front of the tibia, and the use of the ankle, whilst not normal, is greatly improved, and walking has become comfortable. (Figs. 11 and 12.)

It happens in some instances that an ankle is so painful that weight-bearing is impossible, and with or without operative treatment, reconstructive or otherwise, the patient gets no relief. I do not hesitate, in such a case, to recommend an arthrodesis of the ankle-joint. There is no doubt that a well-arthrodesed ankle is infinitely superior to one in which a moderate result has been obtained by means of a reconstruction operation.

The last case to which I wish to refer is that of a young man who had suffered in childhood from a separation of the lower end

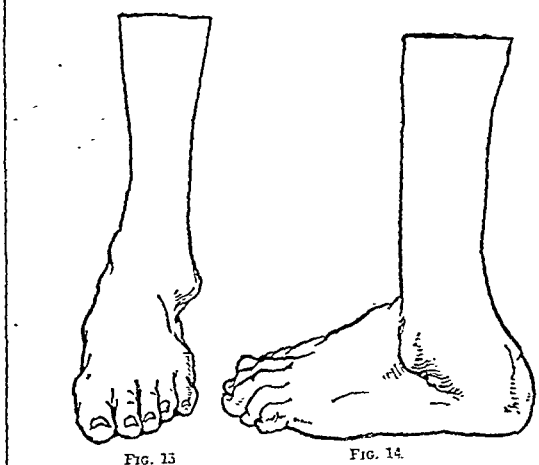

FIG. 13 FIG. 14.

Result of old separation of tibial epiphysis.

epiphysis, and in whose ankle, as growth had been interfered with, there resulted a gross deformity, which had become so bad that it was with much difficulty that he hobbled along. The appearance was as shown in the cast. (Figs. 13 and 14.) Radiograms showed a varus deformity, the fibula being curved to fit round the varus and the ankle-joint deflected more than half a right angle.

(Fig. 15.) A wedge was removed from the fibula; the tibia was divided transversely and opened out, and the gap filled up as far as possible by the piece of fibula and by shavings from the side of the tibia. Union is good, and a useful foot has been obtained. The appearance and function are now excellent. (Figs. 16 and 17.)

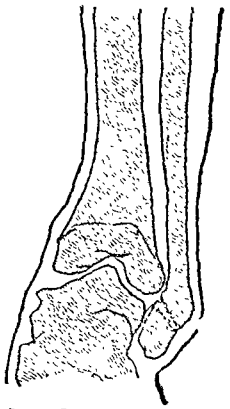

FIG. 15.—Pre-operative radiogram.

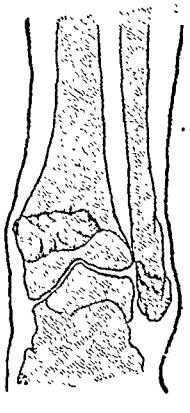

FIG. 16.—After osteotomies and graft.

FIG. 17.—Present appearance.

In conclusion, I would emphasize that function is the ultimate test of treatment, and I know of no better evidence of restoration of function than a return of the individual to his pre-accident work. I stress "pre-accident" because in some estimates of end-results a return to "work" has been accepted. The 1908 article of Clinton Dent, which has been so often quoted, stated: "I can hardly recall a case of Pott's or Dupuytren's fracture where recovery has been good enough to permit a man to return to police work. Among the Metropolitan Police 30 per cent. of all ankle injuries failed to recover for work."

This was a very serious state of affairs, and I hope that I have shown that some progress has been made since that time. Many causes have brought about this improvement, but none, I think, so much as the treatment of the fractures by one department. If you will permit me, I would like to quote the substance of two paragraphs in an article which I wrote for the *British Medical Journal* in 1921. The article was headed "The hospital treatment of fractures."[3]

In order to ensure the most perfect functional result which is possible it is desirable that the same surgeon should supervise the case from start to finish. He should be entirely responsible for the case whilst in the wards; he should supervise its manipulation and splinting, its early massage and, on discharge, its progress through the out-patient and physio-therapeutic departments. In hospitals which have no special department for orthopaedics a member, or members, of the surgical staff should be selected to take charge of the fractures. The number of beds which should be allotted to them for this purpose will, in an industrial area, be about 10 per cent. of the total surgical beds of the hospital.

This arrangement, by which the continual supervision is under one control, has been responsible more than any other single factor for the improvement which may have been obtained in our fracture results.

CONCLUSIONS.

1. Reduction of all displacements should be carried out as thoroughly and as early as possible.

2. A suitable splint which will permit constant inspection, early massage, and active movements at the earliest time should be applied.

3. Open operation in recent cases should be reserved for those in which the displacement cannot be satisfactorily reduced or maintained.

4. In old cases of mal-union operation is indicated.

5. In compiling statistics of end-results percentages should not be calculated on less than 100 cases, and "return to work" should mean the pre-accident work.

6. In the present series 89 per cent. of ankle fractures, of all types, returned to pre-accident work.

7. A fracture case, from the time of its arrival at hospital to the time of its discharge to work, should be under the supervision of one surgeon.

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THE TREATMENT OF ACUTE DIVERTICULITIS.*

BY

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DIVERTICULITIS, like appendicitis, is, as regards our knowledge of it, a comparatively new disease, and is still considered by many doctors a very rare condition. It was not known to the last generation of surgeons, and cases of the condition were described as "pericolitis sinistra," iliac abscess, etc., and the underlying cause of such states remained unrecognizable until recently. It is now a fairly well-recognized condition, although it has hardly found its way yet into the ordinary medical textbooks of the time. Nevertheless, it is by no means an uncommon condition, and is accountable for quite a considerable number of deaths and a still larger number of chronic invalids each year.

SYMPTOMS.

The symptoms are fairly characteristic and, if recognized, are not easily mistaken for anything else. The patient is practically always over 45 years of age, and usually rather stout; for some unexplained reason the condition appears to be quite uncommon in thin persons. The main symptoms are pain in the lower part of the abdomen, tenderness in the left iliac fossa, or just above the pubes, and raised temperature, often accompanied by shivering and mild rigors. The pain is not very acute as a rule, but is distressing, and prevents the patient from moving about freely. The tenderness, if looked for, is very definite and quite characteristic of the condition. Any pressure in the lower left side of the abdomen causes the patient to flinch, and as a rule the area of acute tenderness is very well localized to a certain spot. The temperature is seldom high; usually it ranges from 100° to 101° F. rather than higher. Quite high temperatures are sometimes seen, but are exceptional, except at the onset of an acute perforation, and in this respect it differs from appendicitis, where high temperatures are the rule. Also vomiting, though occasionally a symptom, is a rare one, whereas it is a common symptom at the onset of appendicitis.

Not infrequently a definite resistance or tumour may be felt deep in the pelvis on the left side, and it may be possible to feel this bimanually, either by the rectum or vagina. It need hardly be pointed out that very gentle handling of such a tumour is advisable, or serious consequences may result. Such a swelling can, as a rule, be easily distinguished from a carcinoma of the colon by the fact that it is very definitely tender and that there are obvious symptoms of inflammation present.

The bowels may, or may not, be constipated; on the other hand, there may be a mild diarrhoea from irritation of the colon. In some cases frequency of micturition is a well-marked feature of the case, and when this is present it almost invariably means that the bladder is adherent to the diseased colon and that a perforation from the colon into that organ is threatened. Just as in the case of appendicitis, a dose of castor oil will often precipitate acute symptoms and should on no account be administered.

These symptoms apply, of course, in the main to cases of diverticulitis of the pelvic colon, by far the commonest site, and are considerably modified when the affected portion of the colon is elsewhere. The diagnosis is often extremely difficult when either the ascending or transverse colon is involved, as the symptoms then imitate several other conditions, such as appendicitis, perforated duodenal or gastric ulcer, and cholecystitis.

The acute symptoms may arise from several different causes. Most commonly one or, possibly, two diverticula have become acutely inflamed and caused a small local abscess in the bowel wall, generally just beneath the peritoneum. The inflamed area has become adherent to other structures, such as the bladder, the small intestine, the uterus, or a tube, or sometimes to the abdominal wall. Sometimes a direct perforation into the abdominal cavity is the first symptom, and in such cases a general peritonitis will occur, the exact cause of which may easily be

* Read at a meeting of the North London Medical and Chirurgical Society, February 6th, 1929

missed. Again, a sequence which is not uncommon is for a local abscess to develop around the diseased bowel and for the abscess to rupture into the peritoneal cavity. This is a disastrous happening, as it results in a very acute general infection of the peritoneal cavity owing to the large amount of septic material suddenly released into the abdomen.

The first symptom recognized may be the rupture of an inflamed diverticulum into the bladder. I have known this happen on several occasions, and the result is most distressing to the patient. An acute cystitis results, with the passage of flatus and faecal material "per urethram," and the patient is generally very ill and in great distress.

CAUSATION.

The exact cause of the formation of diverticula of the colon is not yet completely understood. There is no doubt that in some cases an inflammatory process takes place around the diverticula when they are quite small, almost microscopic, and this inflammatory process may spread to a considerable area of the bowel wall. On the other hand, diverticula may reach a considerable size and be very numerous without there being any signs at all of any inflammation around them. In fact, perforation of a diverticulum may occur and cause a general peritonitis without any inflammatory process in the bowel wall having preceded the perforation.

TREATMENT.

Unfortunately the condition is not so easily amenable to operation as is the case with appendicitis. The infective focus is not so localized, nor can it be so readily remedied by the surgeon. In the acute cases, where perforation has occurred with general peritonitis, the only treatment is to drain the abdomen and perform a colostomy well above the perforation. As a rule the perforation will be in some part of the pelvic colon, and in this event the artificial anus should be made with some portion of the left side of the transverse colon. In a few cases simple drainage of the abdominal cavity has been successful, the opening in the bowel closing up. This can hardly be relied upon, however, and is not likely to occur unless the perforation is very small. Deliberate closure of the opening caused by the ruptured diverticulum would seem a possibility, but this is seldom the case. The parts around the opening are much thickened and indurated, and such tissues do not lend themselves readily to satisfactory closure; omental grafting of the opening would be safer, but unless the diverticulitis is very localized attempts to close the opening will usually be failures and may be disastrous; colostomy is the best procedure. When a perforation has occurred into the bladder, immediate colostomy above the site of perforation is the only rational treatment. I have seen a number of such cases, and in all of them the opening into the bladder subsequently healed up quite satisfactorily.

The most difficult cases to deal with are those in which an abscess has formed in association with some part of the colon, and the abscess has subsequently burst or leaked into the peritoneal cavity. The obvious treatment is to drain the abdominal cavity and to drain the abscess cavity separately. Unfortunately what is generally found is that there is a dense mass of gut and adhesions forming the wall of the abscess, which is most difficult to drain properly, and that it is not possible to in any way disentangle or break up the adhesions without the certainty of damaging other parts of the intestine. These are most difficult cases, and even when the patient survives the initial peritonitis, residual abscesses and pocketing are the usual rule, and will call for all the skill and resources of the surgeon to circumvent. I know of few more dangerous lesions to meddle with than a mass of diverticulitis of the colon with adhesions to other organs and parts of the intestine. The lesion is highly septic and the density of tissue is only equalled by carcinoma. The abscess resembles a sponge more than an ordinary abscess cavity, and it is very difficult to establish any kind of satisfactory drainage.

When there is reason to suspect that an abscess has formed from perforation of a diverticulum, but the general peritoneal cavity is not involved, there should be no attempt to temporize in the hope that the abscess will subside. The condition is too dangerous, and even if a general peritonitis does not result, perforation of the abdominal wall or some hollow viscus will almost certainly take place and make conditions for operation more difficult. Operation in these circumstances is particularly difficult and dangerous, and very nice judgement is necessary to decide what is the best course to take. I prefer, when operating upon such cases, to use an oblique incision on the left side of the abdomen, the rectus muscle being dissected out of its sheath and displaced towards the right side; local anaesthesia of the rectus muscle is a great help. This gives very good access and allows of good draining in the flank if this should be necessary. The pelvic colon, assuming that this is the portion involved, should be freed if possible by very gentle manipulation, while the main abdominal cavity is well protected by large intra-abdominal swabs so placed as to localize as much as possible the contamination of the peritoneal cavity which may occur. The involved part of the pelvic colon should be lifted up, if it can be freed, and drawn well over into the left iliac fossa, and the abscess cavity properly drained with a tube or tubes. If the omentum is large enough it should be drawn down and stitched all round the damaged portion of the colon, so as to seal it off and at the same time prevent the small intestine from subsequently becoming adherent to it. The wrapped-up damaged portion of colon should be fixed with a few catgut sutures well into the left iliac fossa and away from the true pelvis, as if subsequent abscess formation should occur it will do less harm in this situation and will be much more accessible. I have had some very successful results from this method of treatment, and in one or two cases have been able to separate the diseased portion of the colon from the bladder, and thus prevent a perforation into that organ. Patients treated in this way have got perfectly well, and with reasonable care have been able to live normal lives for very many years. I have now quite a number of such cases under observation. They have been saved a colostomy, and the inflammatory mischief has in course of time entirely cleared up in most of them, although some have had temporary relapses. The fact that the inflammation is no longer involving the true pelvis renders treatment much safer.

If at the time of operation the damage to the bowel is too severe to justify this method of procedure a colostomy should be done well above the site of the trouble; this will generally mean a transverse colostomy. When this plan has been adopted the question will subsequently arise as to whether it is possible to close the colostomy. This is always a difficult question and will require careful consideration, as the patient's life is perfectly safe if he is content to keep the colostomy, and its closure will involve a fair amount of risk. It is doubtless worth some risk to get rid of the colostomy, but as this is mainly a question of comfort and convenience it hardly justifies running a serious risk to life.

Good *x*-ray photographs of barium enemata will be necessary to see if there is a free enough lumen to justify closing the artificial opening, and also to ascertain whether there is sufficient healthy bowel below the lesion to enable a resection to be done. If a closure is to be done it must not be postponed too long, or the bowel will have become too narrow below the colostomy. Six to eight months is probably about long enough, and, of course, in any case, complete subsidence of all inflammatory symptoms should have taken place. In most of the cases coming under my care the colon at the site of the trouble has been too badly damaged, or its lumen has become too restricted, to warrant any attempt at closing the colostomy without resection of the lesion. I have, however, on several occasions resected the damaged bowel and rejoined the ends successfully, but I have considered it safer to leave the closing of the colostomy to a subsequent operation after the newly joined bowel had properly united.

Resection of the damaged bowel is rather a difficult matter, as there are almost invariably quite a number of dense adhesions to be dealt with before it is possible to free the bowel enough for a resection, and it must always be borne in mind that we are dealing with old septic material, which must not be cut into. When the join has been

made, and as a rule only an end-to-end join is possible, the junction should be wrapped up in omentum. Occasionally it is possible to close the colostomy by short-circuiting the affected part of the bowel. In my experience this procedure has not been very successful, as the fact that faecal material can still get into the diverticulum has resulted in subsequent fresh attacks of inflammatory mischief.

TREATMENT OF GLAUCOMA BY ADRENALINE AND HISTAMINE.

(*THE SO-CALLED "GLAUCOSANS."*)

BY

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AND

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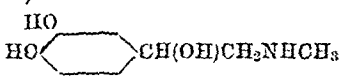
THE importance of any drug which has a beneficial effect on glaucoma, whether acute or chronic, can hardly be overestimated, and consequently it may be of interest to look into the claims made by several authors—notably by Hamburger (1923-28)—on the beneficial effect of the so-called "glaucosan" group of substances in bringing about a diminution of the intraocular tension. This name, introduced by Hamburger, is unfortunate, since the two substances upon which the "glaucosans" are based—adrenaline and histamine—are widely different in both their chemical constitution and their physiological properties.

THE ACTION OF ADRENALINE.

Adrenaline, which is the product of the activity of the chromaffine cells of the medulla of the suprarenal glands, is a methyl-amino-pyrocatechol, with the following formula (Takamine, 1901):



Since it contains an asymmetrical carbon atom there are two possible isomeric forms: the laevo-rotatory form occurs naturally, while the dextro-isomer can be made synthetically. The laevo-form is extremely active, being detectable in a dilution of one part in 250 million of saline (Pysemsky and Kravkov, 1912), but the synthetic dextro-isomer is considerably weaker, so that the racemic mixture has only about half the activity of the natural product (Stolz, 1904). Although the rationale of the action of this substance on the blood vessels has been the object of an immense amount of research since the original investigations of Oliver and Schafer in 1895, it cannot yet be said to be completely elucidated. The generally accepted interpretation of its activity at the present time is as follows:

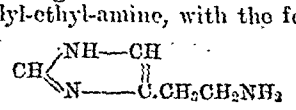
1. In very small doses it dilates the capillaries, probably by direct action upon the capillary walls, thus causing a small drop in general blood pressure (Dale and Richards, 1918) and an increase in the permeability of the capillary walls (Oinuma, 1924).

2. In larger doses, while the first action may to some extent persist, it is completely masked by an active constriction of all the arteries and arterioles which are supplied by the sympathetic nervous system; this is the generally accepted "classical" view of the action of adrenaline (see Anrep, 1912; Elliot, 1912-13; and many others), and it brings about a great increase of the blood pressure.

3. In relatively concentrated doses applied locally, adrenaline causes a direct contraction of the terminal arterioles, the capillaries, and the small venules (Cotton, Slade, and Lewis, 1915), a reaction which can be observed directly with the microscope by injecting a minute quantity into the skin (Carrier, 1922; Heimberger, 1925). Here the drug acts directly on the walls of the vessels, the reaction being equally vivid after denervation (Breslauer, 1919; Lewis, Grant, and Harris, 1927).

THE ACTION OF HISTAMINE.

There is a considerable amount of evidence that histamine, or histamine-like substances, are produced by all organs of the body. Like adrenaline it is an extremely reactive substance, an injection of one-hundred-millionth part of a milligram producing a well-marked effect. Its chemical name is imin-azolyl-ethyl-amine, with the formula:



The general action of histamine is to constrict plain muscle (Dale and Laidlaw, 1910); this includes the musculature of the arterioles, of the larger veins, and also, incidentally, of the pupil. This is accompanied by a dilatation of the capillaries (Dale and Richards, 1918), caused by a direct action on the walls of the vessels comparable to the effect of small doses of adrenaline. The first of these effects tends to produce a rise of blood pressure, and the second produces a profound fall. In such animals as the cat both of these reactions are evident; in dogs, monkeys, and man the constrictor effect on the arterioles is completely masked (Burn and Dale, 1925; Harmer and Harris, 1926), but the dilator effect on the capillaries seems to be universal throughout the mammalia (Lewis and Marvin, 1926; Lewis, 1927). So far as the blood vessels are concerned, therefore, the generally accepted action of histamine in man appears to be:

1. A dilatation of the capillaries by local direct action upon their walls.
2. A widespread dilatation of the arterioles by a local reflex nervous mechanism.
3. An increased permeability of the capillary walls leading to widespread oedema, a result of the direct action of the drug on the capillary walls (Drury and Jones, 1927).

It would seem, therefore, that in their general action the two substances, adrenaline and histamine, are antagonistic; and there is a large amount of evidence that they play such a reciprocal part throughout the body generally, histamine, or histamine-like substances, tending to dilate the capillaries, this influence being kept in check by the constrictor effect of adrenaline (and pituitrin) (see Dale, 1926).

ACTION ON THE EYE.

The action of adrenaline on the intraocular pressure was first adequately studied by Wessely (1900), Parsons (1903), and Henderson and Starling (1904), and later work has merely served to substantiate their conclusions (Thiel, 1924; Samojloff, 1925; and others). There are two main opposing influences at work: the local constriction of the vessels tends to bring about a lowering of the intraocular pressure, while the general rise of blood pressure tends to bring about a rise. In experimental animals either of these may be evident, or they both may occur, the second following the first; in man there is usually a period of hypotension which is followed by a slight rise. It would appear that in cases of simple glaucoma this reaction is retained, the fall of tension being more evident, but that in the acute or absolute forms of the disease the opposite condition may develop. When injected into the blood-stream adrenaline dilates the pupil widely, an action which is evident on subconjunctival injection, but which is retained only with difficulty on instillation into the conjunctival sac except in specially sensitive persons.

After the work of the early experimenters several clinicians used adrenaline clinically for the relief of tension in glaucoma, with, in general, indeterminate results (see summary by Rupert, 1909). Erdmann (1914) and Köllner (1918) revived its use, and recently the extensive writings of Hamburger (1923-25) have attracted considerable attention to the matter. He used the drug as a subconjunctival injection of 0.2 to 0.3 c.cm. of 1 in 1,000 solution after the instillation of holocaine, and his technique has been extensively followed (Hagen, 1923; Gradle, 1924; Römer and Krebs, 1924; Heimann, 1924; Jaensch, 1924; Kayser, 1924; Kafka, 1924; Thiel, 1924-25; Safar, 1925; Dominguez, 1925; Vannas, 1927). Fromaget (1921) employed it as a retrobulbar injection, and he has been followed by Aubaret (1923), Bailliart and Bollack (1921), Liebermann (1924), and Bonnefon (1925); Knapp (1921) relied on drops instilled into the conjunctival sac; Thiel (1925) applied it as an ointment; and Gradle (1925) on a pledget of cotton-wool. While many of these observers reported good results, they were by no means invariably successful;

their findings have been thoroughly analysed by Vannas (1927). *It has become evident that while in chronic glaucoma adrenaline may or may not do good, in acute conditions* its use is definitely dangerous. Moreover, unpleasant effects have been noted from time to time (Mans, 1924; Ring, 1925; Rentz, 1925); for a rapidly increased blood pressure with a pulse running up to 200 a minute involving a considerable amount of collapse is not a thing to be desired in the average type of person who is a glaucomatous subject.

To avoid these unpleasant consequences Hamburger (1925) turned to the less active dextro-isomer of adrenaline, and, combining it with one of the precursors in its preparation (methyl-amino-aceto-pyrocatechol), he introduced the combination as "glaucosan." He claimed that this preparation produced a local vaso-constriction without any general reaction, and that it reduced the tension of the eye, usually for several days, and sometimes for several weeks. The action was, however, so weak that a subconjunctival injection was required, and therefore, in order that the remedy could be made sufficiently powerful to be used as drops, he combined the methyl-amino-aceto-pyrocatechol with synthetic laevo-adrenaline, and produced "laevo-glaucosan." This is said to lower the tension for some days and to dilate the pupil maximally.

Hamburger (1926) considers that the primary cause of glaucoma is a "relaxation of the vaso-constricting mechanism, thereby causing a repletion of the eye with blood"; adrenaline and its derivatives lower the tension immediately by causing a vaso-constriction, and he somewhat paradoxically explains the continued hypotensive action of the drug by the supposition that the reactive hyperaemia which follows the anaemia will lead to "softening of the eye." It must be admitted that this explanation is as unconvincing as it is difficult to follow. However that may be, while good results were claimed in chronic glaucoma, the preparation appeared to be unsatisfactory in acute cases of the disease (probably on account of the mydriasis). Hamburger (1926) therefore turned to histamine (which he called "amino-glaucosan"), a substance which, as we have seen, in addition to producing a capillary dilatation, brings about a very marked miosis by its action on plain muscle. Owing to the severity of its reaction and the short duration of its effects its use in chronic cases seemed undesirable; but in acute cases which are not absolute in nature Hamburger claims good, although not invariably successful, results. The effects of these drugs in clinical cases have been recorded by Fehr (1926), Darier (1926), Koch (1927), Pletnewa (1927), Seligstein (1927), Gifford (1928), Pischel (1928), and Böhm (1928), most of whom report favourably of them, although the results have not by any means been uniformly successful, nor has their action frequently been as long as has been desired. No one, so far as we know, has reported their use in this country; and the following notes may be of interest.

CLINICAL CASES.

The two drugs employed were those recommended by Hamburger—laevo-glaucosan in cases of chronic glaucoma, and amino-glaucosan for acute glaucoma; and they were administered exactly as recommended by him.

Laevo-glaucosan (L.G.) was given after the instillation of 1 per cent. holocaine; two drops were instilled into the conjunctival sac, giving ample time for absorption, and the injections were repeated three to five times at intervals of fifteen minutes. After instillation there was a considerable reaction, and always a greater or less degree of pain. The eye became white, the pupil dilated by a varying amount, and anaemic patches were sometimes visible on the skin of the lids and the cheek. Amino-glaucosan (A.G.) was given also after holocaine, one drop of the 2, 7, or 10 per cent. solution being instilled; the great hyperaemia, sometimes with chemosis, was invariably followed by severe pain. On some occasions where it seemed to be without effect it was repeated.

A. *Chronic Primary Glaucoma.*

1. Female, aged 74; primary chronic glaucoma with symptoms of two months' standing in both eyes; was under eserine on arrival; tension *plus*. L.G. three times in one hour; marked anaemic reaction; some pain; tension unaltered. Slight dilatation of right pupil; wide dilatation of left. Eserine instilled; tension lowered (eserine now more effective). Trephine.

2. Female, aged 57; chronic primary glaucoma of right eye; twelve months. Subacute attack; pupil half dilated. A.G. instilled; repeated in one hour. Severe congestive reaction with pain. Pupil unaltered, tension slightly down. Trephine.

3. Male, aged 43; chronic primary glaucoma; one week's history of symptoms; under eserine on admission; tension high. L.G. four times in one hour; tension and pupils unaltered; reaction marked with pain.

4. Female, aged 66; chronic primary glaucoma; indefinite history. Right tension full, left tension considerably raised. L.G. right and left. Pupils fully dilated; right tension lowered, left tension practically unaltered. Trephine right and left.

5. Male, aged 47; chronic primary glaucoma of right eye; six months' history. Tension full, pupil half dilated. L.G. four times in one hour. Marked reaction with some pain; tension down to normal; pupil widely dilated. Tension remained down three days, then rose slightly. Eserine; tension fell. Trephine.

6. Male, aged 53; chronic primary glaucoma of left eye; three months' history. Had been on eserine, which had kept tension down until present subacute attack, when it was without effect. L.G. four times in one hour. Marked reaction, pupil dilated, tension lowered to normal; began to rise in three to four hours; eserine instilled hourly. Next day tension normal. Trephine.

7. Female, aged 53; chronic primary glaucoma of right eye; six months' history. Tension full, pupil dilated. L.G. four times in one hour. Marked reaction with pain; pupil and tension unaltered. Trephine.

B. *Secondary Glaucoma.*

8. Male, aged 15; iritis with raised tension of left eye. L.G. four times in one hour. Considerable irregular dilatation of the pupil, cornea brighter; tension lower after the second instillation; after the fourth pupil again small, cornea becoming hazy. Irritated by atropine; hyoscine produced dilatation to one-half in three days, when hyoscine irritation supervened and tension returned to normal.

9. Female, aged 43; iritis with raised tension: three weeks' history. Right pupil contracted. L.G. four times in one hour; pupil fully dilated, cornea clear, tension lowered. Pupil contracting in three hours; heat, etc. Uninterrupted recovery.

C. *Acute Glaucoma.*

10. Female, aged 71; acute primary glaucoma; six weeks' history of symptoms. A.G., four instillations; tension fell (90 to 60 mm. Hg (Schiötz). In six hours cornea again becoming hazy, and pupil dilating. Eserine; cornea bright, pupil small, tension small. Later trephine.

11. Female, aged 64; acute primary glaucoma; one week's history; chemosis, pupil two-thirds dilated, tension very high. Dacryocystitis with muco-purulent regurgitation. Eserine for three days; tension lowered considerably; dacryocystectomy. Eserine for one day; then, the tension keeping high, A.G. repeated in one hour. Pupil and tension as before, chemosis and pain. Twelve hours later, posterior sclerotomy; tension down. Twenty-four hours later, large central corneal ulcer developing rapidly into an hypopyon ulcer. Two days later, despite all treatment, ulcer intractable, tension raised. Eye excised.

12. Female, aged 69; acute glaucoma; two weeks' history. Tension high, pupil dilated, cornea hazy, engorged iris, small hyphaema. Eserine, leeches, heat, etc., for two days; cornea slightly brighter, tension somewhat down. A.G., violent reaction, tension and pupil unaltered. Posterior sclerotomy. Eserine continued; tension almost normal. Trephine.

13. Male, aged 73; history of haloes for four years, right and left. Pain in right eye for two weeks. Right eye: cornea oedematous, pupil one-half dilated, circular, inactive, tension stony hard. A.G. four times; pupil small, tension unaffected for some hours. Twelve hours later, no chemosis or oedema, cornea bright, pupil small, tension very much lowered, but still full. Eserine and hot bathings for four days; tension beginning to rise. Trephine (choroidal detachment followed which subsided).

14. Female, aged 58; one week's history of pain and vomiting; had been on eserine during one week before admission to hospital. Acute primary glaucoma; much injection, corneal oedema, pupil two-thirds dilated, tension high. A.G. twice with interval of one hour. No improvement after six hours, then eserine, hot bathing, leeches, etc. Next day, tension lowered but still high, cornea still oedematous. Iridectomy.

15. Male, aged 50; acute primary glaucoma; 12 hours' history; right eye. Cornea hazy, pupil dilated and inactive, tension high and much pain. A.G.; one hour later pupil small but cornea still oedematous and tension still high, although lowered. A.G. repeated; pupil unaltered, tension very much down, cornea bright. Four hours later, tension higher; eserine, hot bathings, leeches, etc. Eighteen hours later, tension still above normal, with considerable pain. Iridectomy.

CONCLUSIONS.

Fifteen cases form a small number on which to build conclusions, but from our experience of them we would suggest:

1. So far as can be seen neither of the two drugs has any prolonged effect in lowering the intraocular tension. Their action would seem to be temporary and adjuvant to other treatment, postponing, perhaps, but not without any special reason replacing, operation. The action of the drugs is neither uniform nor dramatic.

2. In chronic primary glaucoma laevo-glaucosan cann be depended upon to lower the tension; it does so in s

cases, but completely fails in others. It appears, however, that in conjunction with eserine a good effect can be produced in a case where eserine alone has remained ineffective.

3. The dilatation of the pupil caused by laevo-glaucosan may be valuable from a diagnostic point of view, since, so far as our experience goes, the dilatation is not accompanied by raised tension.

4. In secondary glaucoma laevo-glaucosan will succeed in rupturing synechiae which with other mydriatics remain unaffected. In cases of iritis with raised tension it may be effective as a preliminary measure when hesitation is felt in giving atropine at once, or where atropine has failed to relieve the condition. Owing to the accompanying anaemia, however, its repeated use would appear inadvisable in such cases.

5. Amino-glaucosan is an extremely potent miotic. It cannot be depended upon to contract the pupil and lower the tension in every case of acute glaucoma, but it would appear on occasion to be a very useful adjunct to eserine. In cases where the pupil remains dilated and the tension raised after the administration of amino-glaucosan, this preliminary treatment has undoubtedly made eserine effective subsequently in bringing about a contraction of the pupil and a lowering of the tension. No case has been met with where the drug has caused a rise of tension (as has been reported), but in several cases, although given every legitimate opportunity, it has been without any hypotensive effect.

6. Both drugs are accompanied by a severe reaction and pain, in some cases moderate, in others involving considerable distress. The occurrence of a hypopyon ulcer without other obvious cause after the use of amino-glaucosan suggests that the severity of the reaction on the superficial parts of the eye is not without danger to the cornea, especially in cases where infection is known to be present.

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THE PROBLEM OF PUERPERAL SEPSIS: THE BACTERIOLOGY OF THE PUERPERIUM.

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THIS paper deals with the bacterial flora of the cavity of the uterus after delivery, with special reference to the relation between streptococci and abnormalities of the puerperium. It follows our paper concerning the flora of the cervix uteri during healthy pregnancies. The importance of puerperal infection is so great that normal and morbid cases have been considered separately.

It will be seen that the widely accepted belief that morbidity in the puerperium is in the main due to a single cause—infection by *Streptococcus pyogenes*—requires modification in light of the results which follow. Particularly is this the case if the definition of puerperal pyrexia of the Ministry of Health (1926) be accepted as the standard of morbidity—namely, a pyrexia of 100.4° F. or more, affecting a woman within twenty-one days after childbirth or miscarriage, and lasting twenty-four hours on end or occurring more than once in any given twenty-four hours.

In point of fact, much confusion exists on this subject, for there is no precise definition of the several terms "morbidity," "clinical sepsis," etc., employed. This confusion is in no way dissipated by adoption of the too comprehensive standard of the Ministry, which rests on neither a clinical nor a bacteriological basis, and does not discriminate extragenital causes of raised temperature in the puerperium.

It seems very desirable to establish a method to differentiate cases of what may be termed "true" puerperal sepsis due to *S. pyogenes*, highly contagious and sometimes fatal, from morbid cases of subordinate clinical importance due to bacteria of low pathogenicity. A group of cases of "true" sepsis is described, therefore, to enhance this clinical and bacteriological contrast.

SOURCE OF DATA.

Our data are derived from examination of the following groups of cases.

(*a*) Normal puerperia exclusively. A group of 88 women confined at the City of London Maternity Hospital was examined, for the most part early in the puerperium.

(*b*) Morbid puerperia. (1) A consecutive series of 41 cases of puerperal pyrexia, as defined by the Ministry, selected from 460 women recently delivered at the City of London Maternity Hospital. (2) A series of 20 women, all of whom suffered from the severest clinical form of puerperal sepsis, some at the City of London Hospital and some at St. Bartholomew's Hospital.

METHOD.

The methods used have been those already reported in our paper on the bacteriology of pregnancy.[1] Uterine cultures have been made by a guarded swab introduced with the aid of a Fergusson's speculum. Risk of contamination of the swab from other parts of the tract was thus avoided. Aerobic and anaerobic cultures were made in every case. The investigation has been qualitative rather than quantitative. The number of organisms on a swab has often been small, for the swabs were taken for the most part early in the puerperium, from one to three days after delivery. Rather than risk overlooking the streptococcus for which we were searching, the procedure of shaking up swabs in broth, incubating, and plating out eighteen hours later, has been adopted. Use of the same technique and quantities of broth in every test has enabled us to form an approximate estimate of the richness in bacteria of every

GROUP B (1).—MORBID PUERPERIA.

STREPTOCOCCI PRESENT IN UTERUS.

Pyrexia of Genital Origin.

Case No.	Labour.	Puerperium.	Type of Streptococcus.	Other Bacteria.
9	Normal	Morbid	S. cervicis uteri	Diphtheroids
59	Normal	Morbid	S. faecalis	Enterococci diphtheroids
70	Twin birth	Morbid	S. pyogenes	B coli
73	Vaginal and perineal tears. Membranes incomplete	Morbid	S. faecalis	Haemolytic staphylococcus
81	Slight P.P.H.	Morbid	S. pyogenes	Staph.
82	Membranes ruptured artificially. Perineal tear	Morbid	S. faecalis	B. coli
8	Normal	Morbid	S pyogenes	Staph.
93	Normal	Morbid	S. pyogenes	Staph.
123	Breech, extended legs	Morbid	S. cervicis	Staph. albus
173	Manual removal of adherent placenta. Severe P.P.H. Transfusion	Morbid	S. faecalis	Staph. aureus
177	Perineal tear	Morbid	S. faecalis	B. coli
182	Artificial rupture of membranes. Severe P.P.H.	Severely septic. Blood culture sterile	S. pyogenes pure culture	Nil
184	Normal	Morbid	S faecalis	Nil
185	Normal	Severe sepsis. Bilateral phlebitis. Blood culture sterile	S. faecalis pure culture	Nil
192	Induction by bougies. Long labour. Cervical tear. P P.H.	Not seriously ill	S. faecalis	Nil
194	Normal	Morbid, slight	S. pyogenes	Mixed culture
239	Breech, P.P.H.	Morbid, slight	S. pyogenes few colonies	Mainly B coli
242	Long second stage. Severe P.P.H.	Morbid	S. salivarius	Staph. aureus
254	Normal	Morbid	S. cervicis	Staph. albus-diphtheroid
255	Artificial rupture of membranes	Severe toxaemia. Mastitis	S. pyogenes pure culture	Nil
338	Twins. Manual removal of placenta. P.P.H.	Morbid	S. faecalis	B. coli

Pyrexia of Extragenital Origin.

391	Normal	Abscess of breast	S. pyogenes from abscess	Cervical swab not examined
435	Normal	Venous thrombosis of varicose veins	S. faecalis	B. coli

STREPTOCOCCI ABSENT FROM UTERUS.

Pyrexia of Genital Origin.

Case No.	Labour.	Puerperium	Bacteria.
35	Torn perineum	Retained products	Staph. diphth.
51	Severe P.P.H. Transfusion. Manual removal of placenta	Morbid	Staph. diphth. B. Döderlein
72	Torn perineum	Retained products	Staph Döderlein
80	Normal	Morbid	Diphth. haemol. staph.
85*	Slight P.P.H.	Morbid	Haemol. staph.
118	Forceps delivery. Long second stage	Morbid	Diphth staph.
170	Normal	Morbid	Haemol. staph.
191	Manual rotation. Craniotomy. P.P.H. from cervical tear	Morbid	Blood sterile, urine B. coli, c. swab B. coli
253	Normal	Morbid	S. alb., B. coli
272	Perineal tear	Morbid	Staph. aureus
327†	Breech, prolapse of cord. Leg brought down	Morbid	Diphth.
358	Normal	Morbid	Diphth staph.
380	Normal	Morbid	Haemolytic staphylococcus

Pyrexia of Extragenital Origin.

61	Normal	Pneumonia	Enterococci staphylococci
65	Normal	Mastitis	Diphth. haemol. staph.
145	Normal	B. coli pyelitis	Haemol. staph.
155	Normal	B. coli pyelitis	Diphth.
263	Perineal tear	Cold in head	Diphth.

*Swabbed within twenty-four hours of delivery—that is, too early. †Swabbed very late in puerperium.

sample. At the outset inoculations were made directly from swabs to plates, but often no growth was obtained on these primary plates, or at best a meagre yield, in no way representative of the flora recovered by the later method—that is, from broth cultures and plates therefrom. The bacteriological findings in each group are briefly summarized.

GROUP A.—*Normal Puerperia (88 Cases).*

The bacteria found represent the normal uterine flora during the puerperium, and are as follows.

Staphylococcus (44 per cent.).—The most characteristic and frequent organism found; appears very early and is last to disappear, not infrequently persisting beyond the lying-in period. In most instances it produces the characteristic offensive butyric odour on solid media of *S. epidermidis*. Roughly 10 per cent. of the staphylococci found caused vigorous haemolysis of the rabbit's blood medium used. The staphylococci were preferentially aerobic, favouring the view that they were of extraneous origin.

Diphtheroids (20 per cent.).—Many forms of diphtheroid bacilli were found. The majority were of robust growth, appeared early, and persisted late in the puerperium.

Döderlein's Bacillus.—Often the first organism to appear after labour, of frequent occurrence, though less often present than the staphylococcus, preferentially anaerobic.

Enterococci (19 per cent.).—Large ovoid cocci tending in broth cultures to occur in pairs or short chains of four or six, forming large luxuriant pale colonies; more probably indigenous in the vagina than derived from faecal contamination; indifferently aerobic or anaerobic.

Streptococci (19 per cent.).—*S. pyogenes* was found in 2 cases; *S. cervicis uteri* in 7 cases; *S. faecalis* in 9 cases; *S. salivarius* in 1 case. *S. pyogenes* was obtained in mixed culture from two women who experienced normal labours and puerperia. These two strains were vigorously haemolytic, and exhibited "rough" characteristics in culture; there was therefore no reason to doubt their relationship to true *S. pyogenes*, with which their biochemical reactions also agreed. The growth of members of the streptococcus group in general, and of *S. pyogenes* in particular, does not seem to us to be greatly favoured by anaerobic conditions. Anaerobiosis, however, by hindering the growth of the coarser saprophytes, assists the isolation of streptococci. Exceptionally, both growth and haemolytic power of the delicate non-pathogenic streptococcus from the cervix uteri, described in our previous paper, are assisted by anaerobiosis. This cervical streptococcus, like *S. pyogenes*, fails to reduce neutral red, and does not render raffinose and mannite broth acid, but here the resemblance ends; we suggest the name *Streptococcus cervicis uteri* for this organism.

Coliform Bacilli.—Somewhat unexpectedly, *B. coli* was found infrequently (4 per cent.). Bryce,[2] working at the Melbourne Maternity Hospital, found *B. coli* only twice in 119 cases examined in pregnancy (1.7 per cent.), and we ourselves but thrice in the series of 153 normal pregnancies reported by us (2 per cent.). The observation that this organism seldom finds its way into the genital tract under normal conditions is

more than passing interest, for, in our experience, *B. coli* is second only to *S. pyogenes* as a cause of serious puerperal sepsis, *S. faecalis* being third on the list of pathogenic by *Staphylococcus haemolyticus*.

—A Gram-negative coccus similar to that occasionally recovered from the male urethra was found in one case, but no gonococci. A paired, bean-shaped coccus, in shape and size closely resembling the gonococcus, but Gram-positive, noted also by Bryce, was found on two or three occasions. A very large coarsely growing Gram-positive coccus —the colonies described by Bryce as "crumby"—was found fairly frequently. An unnamed organism of the *B. subtilis* group grew from a batch of five swabs received on the same day, and was considered an accidental contamination. A feebly Gram-positive chromogenic bacillus, reminiscent of *B. pyocyaneus*, but forming yellow, not green, pigment, was isolated from several heavily infected swabs.

Anaerobes.—*B. welchii* was not found; other unidentified spore-bearing bacilli, not necessarily obligatory anaerobes, were occasionally found in mixed culture.

Sterile (9 per cent.).—In a few instances no growth was obtained. As will be shown later, the period of maximum floral richness in the puerperal uterus is from the third to the fifth day after delivery; the swabs of our series, therefore, were probably not all taken at the optimum time. Moreover, no normal case was examined on more than a single occasion.

GROUP B (1).—*Morbid Puerperia (41 Cases).*

Group B (1) comprises 41 cases of puerperal pyrexia as defined by the Ministry of Health standard for 1926. The group includes all the morbid cases in a consecutive series of 460 women delivered in the City of London Maternity Hospital in the latter part of last year, and may therefore be considered representative. The cases in this group are tabulated under two headings in accordance with the presence or absence of streptococci. A further subdivision is made into cases with raised temperature recognizably due to genital and those due to extragenital causes.

Generally speaking, the number of organisms present in samples from morbid cases far exceeds that from normal cases, and potentially pathogenic organisms—for example, *S. faecalis* and *B. coli*—are found more often.

The streptococci isolated were classified as *S. cervicis uteri* 4 examples, *S. salivaris* 1 example, *S. faecalis* 9 examples, and *S. pyogenes* 8 examples. *S. pyogenes* was present, therefore, in 8 only out of 34 cases of puerperal pyrexia of genital origin, to which may be added a ninth case with *S. pyogenes* abscess of the breast.

The morbid cases of this Group B (1) may also be classified from a clinical standpoint as (*a*) Minor, (*b*) Major, (*c*) Serious.

(*a*) *Minor.*—The majority, 35 cases, were mild.

(*b*) *Major.*—Three cases; *S. pyogenes* was obtained in mixed culture from the cervices of two moderately severe cases, and a third presented the clinical picture of marked and rather prolonged toxaemia, although her temperature did not exceed 102° F.; a pure culture of *S. pyogenes* was obtained from the cervix of this patient.

(*c*) *Serious.*—Three women were seriously ill; from their cervices respectively *B. coli*, *S. faecalis*, and *S. pyogenes* were recovered in pure culture. Hence the severity of symptoms in the small but important group associated with *S. pyogenes* was proportionate to the intensity of infection.

Dr. Lucy Bryce, in the paper to which reference has been made above, aptly points out that the presence in pure culture of a relatively fastidious organism such as the *S. pyogenes* probably indicates an accession of invasive power, which is associated with virulence for the host, and suggests that the organism in this condition also acquires the power of dominating in culture vigorous strains which would usually outgrow it. A precisely similar phenomenon is familiar in streptococcal follicular tonsillitis. An alternative but somewhat more abstruse explanation is based on immunological principles. It is thought that a specific infection primarily stimulates the non-specific protective mechanism, and as a result the normal and relatively harmless bacterial population is eliminated by the "first-line" defensive powers of the host. A virulent infection resists this non-specific defence and continues to thrive in pure culture until such time as it is subjected to a more slowly acquired specific immunity; at this stage the normal saprophytic population reappears.

Conversely, the occurrence of *S. pyogenes* in mixed culture is indicative of low invasive power against a resistant host, and is associated, as we have shown above, with milder clinical disturbances or none.

GROUP B (2).—*Severe Puerperal Sepsis (20 Cases).*

The onset of severe puerperal sepsis is often attended by a rigor, and the aspect of the patient is characteristic. Temperatures from 103° F. upwards, with violent fluctuations and remissions, occur, and a pulse rate of 130 and over is almost pathognomonic. In 19 out of 20 such cases chosen at random to illustrate this form of the disease a pure growth of *S. pyogenes* was obtained by swabbing the cervix; in one no streptococci were found by this method, but were present in blood culture. Including this case, blood cultures were positive in 10 cases, not undertaken in 5, and negative in 5. There was reason to believe that the number of organisms present in the blood afforded a measure of the severity of the illness. The conclusion follows that in severe puerperal sepsis *S. pyogenes* is almost universally present in pure culture in the cervix uteri and in the majority of blood cultures.

DISCUSSION OF RESULTS.

It appears to us that existing standards of puerperal pyrexia are unsatisfactory and that the definitive terms "morbidity," "clinical sepsis," "puerperal fever," etc., have no precise clinical or bacteriological basis. As a practical alternative we suggest the comparatively simple procedure of examination of a swab from the uterus in all doubtful morbid cases, believing that the cervical swab is of the same value in the diagnosis of streptococcal puerperal sepsis as is the throat swab in diphtheria. Actually, the recognition of the vigorously haemolytic *S. pyogenes* on blood agar plates is an even simpler matter than the identification of the Klebs-Loeffler bacillus from serum. Cases proven due to *S. pyogenes* infection would call for guarded prognosis, and steps would be taken to prevent spread of infection; in the remainder, treatment would proceed along general lines without need for isolation or notification.

As the matter stands at present, if the "severe" and "clinically septic" cases be excluded from consideration, it appears that there is no essential difference between the bacterial flora of the normal and of the morbid puerperium. The injuries and exhaustion which follow prolonged labour, with or without instrumental delivery, seem the decisive factors in rendering the maternal tissues vulnerable to infection by otherwise harmless bacteria. Cases of this class relatively seldom give serious anxiety to the obstetrician and are not infectious.

The picture presented by cases of *S. pyogenes* infection is altogether different, and it is this which has at all times excited the attention of observers, both on account of the severity of the illness and the rapidity with which infection spreads from case to case. As a consequence, bacteriological investigation of the lesser degrees of morbidity have not been sufficiently undertaken, while the preponderance of *S. pyogenes* infection in the more serious cases has led to the admittedly erroneous conclusion that puerperal morbidity is in the main due to this organism.

A similar conclusion has been reached by Colebrook,[2] who, however, in a letter to the *British Medical Journal*, reports *S. pyogenes* as a sporadic infection in only 6 out of 85 morbid cases recently examined by him at Queen Charlotte's Hospital. We do not fully understand the finding of so few examples of *S. pyogenes* in Colebrook's series, but we are whole-heartedly in accord with him in advocating routine bacteriological examination of the cervix uteri in morbid cases.

THE COURSE OF BACTERIAL INVASION OF THE UTERUS DURING THE PUERPERIUM.

The manner in which the normal condition of bacterial sterility within the uterus is restored is not without practical importance as bearing on the question of treatment by douching, etc., during the puerperium. In the course of studying our first group of 88 cases it became apparent that the uterus was invaded very soon after delivery by a profuse growth of organisms from contiguous surfaces which diminished in the later days of the puerperium.

FitzGibbon and Bigger[4] found streptococci in the uterus in 27 of 50 women examined, and later, using even greater care to obtain samples exclusively from the cavity of the uterus, found streptococci in 7 of 25 women examined on the fifth to the sixth day after delivery. Their attention was concentrated on the streptococcus group, and no account was taken of other organisms present.

Stühler and Winckler[5] found the uterus free from infection in most cases by the ninth or tenth day, and, in a

later research, using improved methods, obtained no more than 30 per cent. of positive cultures by that time.

Loeser[6] investigated the problem still more thoroughly, finding the uterus sterile immediately after delivery, but gradually becoming infected so that 25 per cent. of all cervical cultures were positive on the first day, 50 per cent. on the second day, and 100 per cent. on the third day of the puerperium, infection of the fundus uteri following later, reaching its height by the fifth day and afterwards diminishing.

This was confirmed by the study we conducted at frequent intervals during ten days of a trial group of 12 cases. We found the uterus to be invaded almost at once, [illegible]s being obtained in some cases within five to si[illegible]rv; infection increased until the third day, [illegible]ed or diminished slightly by the fifth day, a[illegible]t disappeared by the eighth day. This progres[illegible]n, culminating at the third to the fifth day, a[illegible]ready explanation of the observed delay in the [illegible]oment of puerperal pyrexia until this time. In one-third of a series of 74 febrile cases analysed by us,[7] a rise of temperature occurred on the third day, and in two-thirds from the second to the fourth day inclusive.

Everard Williams and Reynolds[8] have shown that barium sulphate emulsion, dropped into the uterine cavity by means of a specially designed cannula and syringe, gradually passed into the Fallopian tubes and reached the peritoneal cavity through the abdominal ostia. The process was traced by consecutive radiographs. They found by experimental ligation of the tubes that barium salts insufflated into the vagina in rabbits travelled upwards only when the ostia were open. The motive force was held to be an aspiration into the abdominal cavity, and ascending infection of the genital tract was thus explained. It appears, therefore, that the uterus after delivery is inevitably invaded by bacteria from contiguous sources, irrespective of manipulation.

Conclusions.

1. The organisms recovered from the uterus after labour in the majority of cases of "puerperal pyrexia" are similar to those which are found in normal puerperia. It seems possible that the injuries incidental to prolonged labour or instrumental delivery are the chief factors which determine the minor pathogenicity of which these organisms appear to be capable on occasion.

2. *Streptococcus pyogenes* is occasionally found in the absence of symptoms of disease, but in that case it is always in association with other organisms.

3. When *S. pyogenes* is found in cases of "puerperal pyrexia" the severity of the illness is proportionate to the number of streptococci present. The presence of *S. pyogenes* in the cervix uteri should remove the case from the category of "puerperal pyrexia" and allot it to that of "puerperal fever," to be treated accordingly.

4. A means of differentiating *S. pyogenes* infection from [illegible]auses of morbidity is required in cases of doubt [illegible]very case occurring during an outbreak of puer[illegible]is. Bacteriological examination of the cervix [illegible]effective method of diagnosis.

[illegible]e uterus is rapidly invaded by bacteria from con[illegible]ous surfaces early in the puerperium.

6. Uterine infection normally increases up to the third or fifth day and afterwards diminishes.

We are indebted to Mr. Malcolm Donaldson for valuable criticism and advice, and acknowledgement is due from one of us to the Medical Research Council for assistance in conducting the experimental inquiry. We thank the members of the staffs of St. Bartholomew's and the City of London Maternity Hospitals for access to their cases.

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PURPURA FULMINANS FOLLOWING A MILD CASE OF SCARLET FEVER.

BY

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THE following case of purpura fulminans occurring in the course of scarlet fever is, on account of its rarity, worthy of record.

The patient, a girl of 5 years, was admitted to hospital as a case of scarlet fever. The history was to the effect that three days previously she had an attack of sickness, headache, and sore throat, followed by the appearance of a rash on the trunk and limbs. On examination she appeared thin and under-developed. The cheeks were flushed, and she had definite circumoral pallor. A bright punctate rash was present on the body and limbs. The tongue was coated, though peeling had commenced at the margin, and the papillae were enlarged. The throat was congested and [illegible]e the tonsils were enlarged. There was a slight degree of cervica[illegible] of adenitis. Examination revealed no abnormality of the heart a[illegible]tract the lungs. The temperature was 100° F., pulse 124, respirations 28.

During the succeeding days the child appeared to be quite comfortable. She took her food well and slept well. The pyrexia which was present on admission continued between 99° F. and 100° F. for three days, when it rose to 102° F. This rise coincided with an increase in the size of the cervical glands. On the sixth day the temperature fell to normal and remained so throughout. The cervical adenitis subsided completely in a few days. Apart from this rise of temperature there was absolutely no indication of the approach of the more serious condition.

On the morning of the twenty-first day of illness an alteration was noted in the general appearance of the patient. She was now dull and listless and very pale. The pulse, though not increased in rate, was softer than it had been previously. Examination showed areas of ecchymosis over (1) both trochanteric regions, (2) the lateral surfaces of the thighs, (3) the posterior surfaces of the calves. These areas were of a deep purple colour with a narrow bluish margin, and the outline presented a definite scalloped appearance. On palpation there was no tenderness and the affected parts were rough and indurated. On the posterior surface of the left calf the condition had advanced further and a large vesicle had formed on the area of ecchymosis. When seen later in the day the child had become much worse. The pulse rate was increased and the breathing was rapid and shallow. The areas of ecchymosis, especially those on the upper part of the legs, had increased greatly in size. During the night the condition progressed rapidly and the child died the next morning.

Post-mortem Findings.

At the *post-mortem* examination the following points were noted. The areas of ecchymosis extended over part of the anterior, the lateral, and the posterior surfaces of both thighs, and reached from the level of the great trochanter to within two inches of the knee-joints and spread over the posterior and inner surfaces of both calves. There was also an area on the sacral region. An incision was made across one of the areas so as to involve both affected and unaffected parts, and it was found that the affected tissue was deeply injected. The demarcation of affected from unaffected tissue was as well defined in the deeper tissues as on the surface. On examination of the various organs there was no evidence of any internal haemorrhage. The heart, lungs, liver, spleen, kidneys, and bladder all appeared quite normal. In the stomach and intestine there was not the slightest evidence of petechial haemorrhages.

Discussion.

The remarkable feature of the case was that the rapidly fatal condition followed on a very mild attack of scarlet fever. Further, there was an entire absence of any haemorrhage such as bleeding from the gums or from any other mucous surface, haematemesis, melaena, or haematuria.

Other points of interest were the occurrence of the condition at the end of the third week, the sudden onset with no premonitory symptoms, and the very short duration of the purpuric condition. The ecchymosis was confined to the lower limbs and was more or less symmetrical.

A few somewhat similar cases have been recorded. Kerr[1] reported a few cases of purpura haemorrhagica, all of

which, however, were associated with haematemesis and haematuria, and followed cases of septic scarlet fever. Goodall and Washbourn[2] have recorded four cases of fulminating purpura haemorrhagica, and they regarded the condition as a rare complication of scarlet fever. The cases of Rolleston and McCririck[3] were characterized by the absence of haemorrhage from mucous membranes, and in this respect they resembled the one under discussion. However, the period of illness from the first appearance of ecchymosis till the fatal termination was in the present case extremely short. The total duration was only thirty hours. These features bring the present case into the category of purpura fulminans.

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A CASE OF ELEPHANTIASIS NEUROMATOSA.

BY

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AND
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VON RECKLINGHAUSEN in 1882 drew attention to an association of lesions affecting the skin and nervous system—namely, soft tumours of molluscum fibrosum, cutaneous pigmentation (freckles and maculae) scattered all over the body, and multiple fibrous tumours of nerves. Since then two other manifestations, occasionally present, were found to be classifiable in the same group—namely, plexiform neuro-fibroma and elephantiasis neuromatosa of Virchow.

Diffuse neuro-fibromatosis, or von Recklinghausen's disease, consists essentially of a diffuse overgrowth of the connective tissue of the nerves, especially that of the endoneurium separating out the nerve fibres. The fibrous overgrowth may be confined to a single nerve or a plexus, or it may be generalized to include cranial, spinal, and sympathetic nerves—large or small, superficial or deep. When the small nerves in the skin and subcutaneous tissues are affected the overgrowth spreads beyond the nerve filament in which it originates, causing soft fibrous tumours of the skin (molluscum fibrosum), which may be few and widely spread, or so abundant as to cover every inch of an individual except his palms and soles. They vary from the size of a pin's head to a fig, and may be sessile or pedunculated.

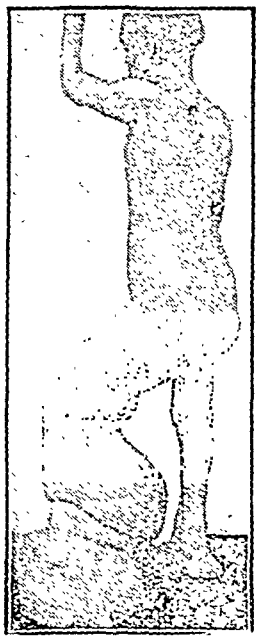

FIG. 1.—The patient. Note the pendulous scalp in the occipital region and subcutaneous nodules in the affected limb.

Plexiform neuro-fibroma is a fibromatosis affecting a group of contiguous nerves, commonly those of the head and neck (fifth and superficial cervical). Commencing shortly after birth, it gradually forms a pendulous mass composed of convoluted, thickened, or beaded nerve cords held together by connective tissue.

Elephantiasis neuromatosa of Virchow is closely allied to plexiform neuro-fibroma and molluscum fibrosum. Here the fibromatosis of the cutaneous nerves merges into a diffuse overgrowth of the skin and subcutaneous tissue, uniformly enlarging the affected region, such as a limb, as in other forms of elephantiasis. The overlying skin may be normal, thickened, or pigmented, and may sometimes contain palpably thickened and coiled nerves, as in plexiform neuroma. The condition is usually congenital and starts at a pigmented spot or a molluscum fibrosum.

In many cases of neuro-fibromatosis death results from sarcoma, the change manifesting itself clinically by rapid enlargement of the lesions. The only treatment is excision of removable masses.

The case here reported is remarkable for the colossal growth of a limb.

The patient, a male Tamil, looks more like a boy of 15 than the man of 20 he is said to be. His outstanding feature is the gigantic size of the left lower limb, which forms a pendulous mass representing about a third of his body weight, and prevents

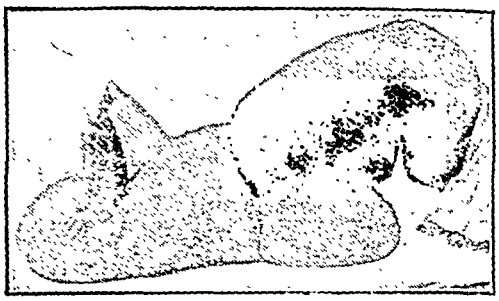

FIG. 2.—The affected portion of the limb before amputation.

him from walking except with the very greatest difficulty. The abnormality is said to have been present at birth and to have progressed with the growth of the boy, especially during the last fifteen years. In addition, he presents the following lesions: small, soft, freely movable, painless, subcutaneous tumours scattered all over the body, particularly on the abdomen, but absent in the palms and soles; a small pachydermatocele of the occipital scalp; pigmentation of the skin in the form of freckles and larger maculae—the palms are pigmented, the soles less so; pigmentation of the mucous membrane of the mouth; and muddy discoloration of the conjunctivae as in argyrosis. He complains of some pain in the affected limb. His mental faculties are not impaired.

Skiagraphy showed a marked atrophy of the epiphyses and smaller bones resulting in distorted outlines. The shafts of the long bones showed an irregularly distributed thickening of the cortex, and greater elongation than on the sound side.

Treatment consisted of amputation at the upper third of the thigh, under spinal anaesthesia. Considering the amount of tissue removed the patient stood the operation very well. The amputated limb weighed 35 lb., the rest of the patient 65 lb.

Dissection of the Amputated Limb.—Apart from the enormous increase in the connective tissue of the soft parts there was also an increase in the bony development, as evidenced by the greater length of the affected limb. The normal tibia (right) was 12 inches long, the abnormal one 15½ inches. The normal fibula was 12 inches, the abnormal one 16½ inches, its lower end curving round the astragalus like a smoker's pipe bowl, and thrusting up the foot bones into a position of talipes equinus (Fig. 3). The skeleton of the affected foot was only a quarter of an inch longer than the other. Both tibia and fibula were bowed, rough, and pitted, the latter especially about its middle. The periarterial sympathetics of the femoral artery at the site of amputation were visibly enlarged. Professor A. G. Smith, to whom I sent a section of it, reported as follows:

FIG. 3.—Skeleton of amputated limb.

"The lumen of the artery seemed to be small. It, and to a lesser extent the vein, were completely ensheathed in a mass of flattened, hypertrophied, tortuous nerve cords—evidently greatly enlarged periarterial sympathetics. The individual nerve bundles were clearly to be distinguished."

Histological examination by Professor Ellison confirmed that the hypertrophied nerves belonged to the autonomic system. He said they were the finest example of non-medullated nerve tissue he had ever seen.

It is interesting to consider what part the autonomic hypertrophy played in the overgrowth of the limb. Were they parts of the same process, or were the hypertrophied sympathetic nerves responsible, even partially, for the generalized overgrowth of the limb, through disordered vaso-constrictor and secretory impulses?

FIG. 4. Patient's mother.

The patient's mother (Fig. 4), who was about 40 years of age, was 5 feet in height, and her physique suggested achondroplasia. The patient was her only child. Despite a certain degree of deformity of her infant's limb at birth, there was no special trouble at the confinement. She said that her parents were normal, but that her grandmother showed similar lesions to hers, which consisted of over 2,000 minute cutaneous tumours and scattered subcutaneous swellings; freckles and patchy pigmentation of the skin; and a diffuse swelling on the dorsum of the right leg, which was stated to be similar to the initial lesion affecting her son.

EOSINOPHILIA IN INSULIN THERAPY.

A PRELIMINARY REPORT TO THE MEDICAL RESEARCH COUNCIL.

BY

R. D. LAWRENCE, M.D., AND O. B. BUCKLEY, M.B., M.R.C.P. M.R.C.P.

THE occurrence of a high degree of eosinophilia in a diabetic patient treated with large doses of insulin was first observed in 1927.[1] Various blood counts gave percentages of 12, 20, 11, 15, and 17.5, and a thorough investigation showed none of the usual causes of eosinophilia to be present. It therefore seemed possible that insulin therapy *per se* might be responsible for the abnormal blood count, and this point has been investigated in other diabetics. It has been found that, of the 20 insulin cases examined, 10 show an eosinophilia varying between 4 and 20 per cent.

Non-Insulin Diabetics.

As far as we are aware, no abnormal eosinophilia has been reported in diabetics. To control this point blood counts have been carried out on 12 diabetics who were not having insulin. In only one (and he suffers intermittently from eczema) has an eosinophilia of over 4 per cent. been found. The others are mostly between 0.5 and 2 per cent., the same as in the non-diabetic population attending our out-patient departments. An eosinophilia of 4 per cent. or over has therefore been taken as a definite degree in classifying our results.

Insulin Cases.

Twenty insulin cases, of all ages and degrees of severity, have been investigated. Of these, 10 have an eosinophilia of 4 per cent. or over, and 5 of 9 per cent. or over. The highest observed is 20 per cent. In none has there been any evidence of parasitic or skin diseases, and the only asthmatic had a low count of 1.6 per cent. No factors have been observed to account for the production of eosinophilia in half these cases and its absence in the other half, such as general allergic tendencies, varying skin reactions at the site of insulin injections, or variations in the diet followed. On the whole the eosinophilia bore no relation to the size of insulin dose, although one insulin-resistant case on 200 units a day showed the highest figure. In a few cases, where repeated blood counts were carried out, considerable fluctuations in the degree of eosinophilia were observed. One case showed 17 per cent. at one time and only 0.8 per cent. on another occasion four months later. It is possible, therefore, that eosinophilia may have been temporarily present in others of our series, but was not discovered by a single blood count. It was noticeable that an increase in the eosinophilia occurred in several cases during the very hot weather in July and August, 1928, being lower before and after these months. This observation we intend to confirm next summer if climate permits. It would be interesting to know the degree of eosinophilia in insulin cases in hot countries.

The Cause of the Eosinophilia.

So far we have only established the presence of eosinophilia in a large proportion of insulin-treated diabetics and its absence in non-insulin cases. No factor other than the insulin has been discovered to account for this eosinophilia. The following ways in which insulin may be responsible suggest themselves.

1. Insulin, by virtue of its physiological action, might produce an eosinophilia. This is hardly likely, and the fact that we have found an eosinophilia in a case of diabetes insipidus treated by injections of pituitary extract is against this possibility.

2. The eosinophilia may be an allergic phenomenon produced in susceptible patients by the protein nature of insulin or by protein impurities in the solution. The latter, however, are almost absent in the brands of insulin (B.D.H. and B.W.) used by most of our patients. Moreover, there has been no sign of local allergic phenomena, such as wheals and urticaria, in these cases.

3. Insulin, being an acid solution, has an irritative effect on the skin and subcutaneous tissues, manifested locally by stinging and oedema at the site of injection. Eosinophilia is possibly produced by this constant skin irritation in the same way that it is so frequently associated with skin disease.

No definite explanation of insulin eosinophilia can be offered at present. The possibilities are being further investigated.

SUMMARY.

An eosinophilia has been found in 10 out of 20 diabetics treated with insulin. It is absent in cases treated without insulin.

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INSULIN FAT ATROPHY A TRAUMATIC ATROPHIC PANNICULITIS.

BY

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A PECULIAR form of local fat atrophy in the subcutaneous tissues following repeated insulin injections has been described, and a case was shown by me before the Clinical Section of the Royal Society of Medicine.[1] In all cases, despite instructions to the contrary, the insulin has been repeatedly injected into the one area instead of varying the site. The situation of the atrophy varies with the site of injection, the arms, thighs, and abdominal wall having been affected. A dimpling of the skin first appears, the depression then spreading in area and extending deeply. As a rule the underlying tissues are not affected, but where the injections have been given deeply the underlying muscle may also atrophy; the skin may adhere to the underlying tissues, but does not itself undergo any change in texture. Neurological changes are generally absent,[2 3] the integrity of the somatic and sympathetic nerve supply being demonstrated by the presence of all forms of sensation, and the pilomotor (goose-skin) reflex on faradic and direct galvanic stimulation[4]; impairment of pain, tactile and thermal sensation may, however, occur.[5] In one of the cases reported no sign of the atrophy remained two and a half years after ceasing injections, though the depression had been deep and distinctly felt through the clothing.[6] The

following brief account of my patient's history is fairly typical.

A married woman, aged 56, a Dutch Jewess, large and rather obese, has suffered from diabetes mellitus for fifteen years. There is a strong family history of the complaint, two sisters and two maternal uncles suffering from diabetes, and her mother having *died in diabetic coma*. The urine has been intermittently sugar-free, but the patient will not keep to a strict diet. Thirst, polyuria, and pruritus vulvae have not been present for some years. There are now no abnormal symptoms except a feeling of lassitude and ill health when the diet has been too generous; physically she appears quite healthy.

Insulin therapy was begun in March, 1927, 20 units twice daily being injected into the arms, more or less in the same area each time, some of the injections being given deeply. In March, 1928, the patient noticed a dimpling of the arms in the injection area, which began to extend deeply. Synthalin treatment was attempted, but was useless in controlling the glycosuria, and insulin therapy was therefore continued by injections into the thighs.

Physical Examination.—The patient has well-covered arms, but on each side of the point of injection below the insertion of the deltoid there is a deep depressed area where subcutaneous fat seems to have entirely disappeared. The skin here appears perfectly normal and is not adherent to the underlying muscle; there are *no sensory nervous disturbances, objective or subjective*, and the pilomotor reflex is intact. The muscle at the bottom of the depression feels abnormally thin, and the humerus can easily be felt through it. Power and function in the arm are not impaired; indeed, the condition gave rise to no symptoms until the patient's fear was aroused by the indiscreet remarks of a medical attendant who prophesied paralysis, so that she now complains of a feeling of weakness. The thighs show an early stage of the same lesion. The fasting blood sugar (November 8th, 1928) was 0.142 per cent., and urine sugar 1.84 per cent.

The accompanying table is an analysis of the recorded cases of this condition. Case 1 is my own; Cases 2 and 3 were described by Barborka[7]; Cases 4, 5, and 6 by Carmichael and Graham[3]; Case 7 by Chapman[6]; Cases 8 to 12 by Depisch[5]; Case 13 by Mentzer and du Bray,[2] and Cases 14 to 21 by Rabinowitch.[8]

Case.	Sex.	Age.	Duration of Diabetes in Years.	Duration of Insulin Treatment.	Case.	Sex.	Age.	Duration of Diabetes in Years	Duration of Insulin Treatment.
1	F.	56	15	1	12	M.	38	7	2
2	F.	34	4	½	13	F.	54	6	2½
3	F.	60	½	½	14	M.	38	5	3½
4	F.	49	5	1½	15	M.	22	2	2½
5	F.	39	18	3	6	F.	14	2½	2½
6	M.	8	—	2	17	M.	8	½	1½
7	F.	48	—	½	18	M.	42	1½	1½
8	F.	50	—	½	19	M.	54	4½	3½
9	F.	45	5	½	20	F.	35	2½	2½
10	F.	54	4	1	21	F.	28	3½	3½
11	F.	53	—	½					

Fourteen of the 21 recorded cases have occurred in women, a fact which, taken together with the greater incidence of diabetes in men, suggests that women are definitely more liable than men to suffer from the condition. The age incidence varied between 8 and 60 years, with an average, including two boys aged 8 and a girl aged 14, of 39.5; excluding these children the figure is 44.4 years. The known duration of the diabetes has varied from 6 months to 18 years, with an average of 5.3 years, whilst the duration of insulin therapy before the appearance of the fat atrophy has varied between 3 months and 3 years 6 months, with an average of 1 year 8 months. The dose of insulin has varied from 10 to 120 units daily, being given in one, two, or three injections a day. The *duration of treatment before the onset of atrophy appears* to bear no relationship to either the dose or the daily number of injections of insulin. The amount of subcutaneous fat is of no significance as some of the patients have been obese and others slender.

In Case 2 there was no further atrophy three months after ceasing injections; in Case 6 improvement began in three weeks, and in Case 7 no sign of the atrophy was present two and a half years afterwards. Cases 6, 14, and 18 were complicated by pulmonary tuberculosis; Cases 3 and 19 had advanced arterio-sclerosis.

In the early days of insulin therapy acute local reactions such as necrosis and sterile abscesses occurred, but with the introduction of better preparations they became rare. An urticarial type of reaction, either local or general, and probably due to protein sensitiveness, is occasionally seen, especially among patients using the American iletin (insulin Lilly), which is prepared from pig pancreas; with the elimination of extraneous substances, and improvement in the technique of preparation, even these reactions are becoming rare. It is unlikely, however, that foreign proteins are the cause of the local fat atrophy described, as in only one of the cases recorded was there any undue immediate reaction[3]; with this patient there was at first a local reaction with English insulin, but on returning to this preparation after using Lilly insulin no reaction was obtained.

Examination of rabbits shortly after an injection of insulin[9] elicits no signs of degenerative changes in the connective tissue cells of the panniculus adiposus, but these *cells are widely separated by a mucigenous fluid, which* produces the localized subcutaneous oedema seen following an injection, and which in the human subject takes eighteen to thirty-six hours to subside. The neighbouring muscles, however, show marked degenerative changes, with leucocytic infiltration, as appears to happen in human muscle if the insulin is deeply injected. Lawrence[10] found that after frequent injections of insulin sections of the skin showed infiltration in the neighbourhood of the vessels by lymphocytes and histiocytes, with some plasma cells and eosinophils, whilst three years after discontinuing the injections there were, in addition, fibrous strands passing down from the corium and dividing the fat into coarse lobules. Mentzer and du Bray, on the other hand, were unable to find lymphocytes in their patient, but recorded *the presence of a calcified cyst.*

It is perhaps natural to attribute the disappearance of the fat to the presence in the insulin of fat-splitting enzymes derived from the pancreas, but Rabinowitch,[8] after concentrating down large quantities of insulin (under low pressure and temperature), was unable to detect pancreatic lipase on applying the usual tests—litmus milk, copper soap, olive oil bile, and ethyl butyrate. He therefore concluded that, unless his method of concentration destroys lipase, none is present. The sterilization of the needle is not at fault, as is shown by the diversity of methods employed by the patients (boiling, ethyl alcohol, lysol, and methylated spirit); the brand of insulin used has also varied among the cases (Lilly, Burroughs Wellcome and Co., Chemosan).

That the reaction in the subcutaneous fat is not specific is borne out by the fact that the early histological appearances following injections of insulin, hypertonic glucose, or saline solutions are identical[9]; whilst the depressed areas of fat atrophy have been observed at the injection sites in narcotic addicts,[2] and foci of lymphocytes have been found on section. A somewhat similar condition, but far more intense and advanced, is seen in traumatic fat necrosis of the breast, where areas of necrosis and liquefaction in the fat are surrounded by abundant newly formed connective tissue.[11 12]

It is probable that the injection of insulin or other substances damages the delicate protoplasmic cell envelope of the fat cells so that fat globules are released, and, acting as foreign bodies in the tissue, result in the formation of histiocytes which take on lipophagic activity. When the slight trauma is constantly repeated, atrophy of the fatty layer is likely to result. If the trauma is more severe, as following an injection of ether into the subcutaneous tissues, a similar but more intense reaction may result,[13] with the formation of a greater amount of fibrous tissue, so that a close resemblance to the appearance in traumatic fat necrosis of the breast is seen.

A patchy atrophy of the fatty layer of the skin resembling the condition under discussion, preceded by the ingestion of the fat by large phagocytic cells, has occurred in association with periods of pyrexia, suggesting an infective origin of the lesion[14]; whilst similar histological appearances were described by Parkes Weber in a case of relapsing panniculitis.[15]

Conclusions.

The subcutaneous fat atrophy described as following repeated injection of insulin into the subcutaneous tissues is a non-specific reaction, the result of repeated small traumata to the panniculus adiposus, and not due to the presence of any pancreatic lipase in insulin, so that the condition might suitably be called a traumatic atrophic panniculitis.

I wish to express my thanks to Dr. du Bray of San Francisco, Dr. Chapman of Bridlington, Yorks, and Dr. Rabinowitch of Montreal for supplying me with details of their cases.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PAINLESS LABOUR WITH INVERSION OF THE UTERUS.

IN view of recent communications on painless labour I believe that the following clinical notes may be of interest.

A multipara, aged 27, had had two previous pregnancies, both of which were normal. She was breast-feeding the last baby when she became pregnant and, therefore, had no idea of the date of commencement of pregnancy.

On November 15th, 1928, she had been performing her daily household duties as usual. At 4.20 p.m. she complained of "slight stomach-ache" with a desire to defaecate: at 4.30 p.m. she had a slight motion, and as a result of straining "felt something come down into her front passage." She arose from the lavatory seat, and without any pain, so she states, delivered herself of a child, which fell to the floor, the umbilical cord being torn. She picked up the infant, went upstairs, and lay on her bed. A friend notified the maternity department of the Radcliffe Infirmary, and a nurse was sent out; she found the patient in good condition with a pulse of 96 per minute, and the child rolled in a blanket. She ligatured the umbilical cord, which was about 3 inches long. The placenta was lying in a pool of blood on the floor. The nurse then examined the mother, and found at the vulva a swelling which she rightly diagnosed as an inverted uterus. She wrapped the organ round with sterile pads and sent for the patient's doctor, who at once ordered the patient to the maternity department of the hospital.

When I saw the patient the pulse was good and she was not in the least degree in a state of shock; I found a partial inversion of the uterus with a portion of the membrane still attached. She was given an anaesthetic, and the surrounding areas and vulvar hair were thoroughly treated with iodine, the inverted portion of the uterus being cleaned up with mercury biniodide (1 in 1,000). I stripped away the membranes and returned the uterus to the pelvis, and the patient was then given a hot intrauterine douche of mercury biniodide (1 in 4,000) followed by saline solution. I injected intramuscularly 1 c.cm. of pituitrin with the same amount of aseptic ergot.

The patient did not have the slightest rise of temperature throughout the puerperium; she and her child left the hospital on the twelfth day, perfectly well. She gave the history that with her first labour she had definite labour pains throughout, but not excessive. With her second confinement "had only about two pains, and these were quite trivial." The present labour was quite painless.

The interesting points of this case are the entire absence of shock, which one usually associates with inverted uterus in the course of delivery; the puerperium absolutely normal; and the child none the worse for its unusual entrance into the world.

I am indebted to Dr. F. G. Proudfoot, K.H.S., the senior honorary obstetric physician, for permission to publish this case.

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LOCAL INJURY AS A POSSIBLE CAUSATIVE FACTOR IN SARCOMA.

REPORT OF A CASE.

INJURY has been regarded as an exciting cause of malignant tumours from the earliest times, and especially by the laity. The part played by various forms of chronic irritation in the production of certain types of epithelioma is undeniable. Dealing with bone sarcoma, Coley (*Annals of Surgery*, April and May, 1911), in a review of 270 cases, traced a history of antecedent local injury in 23 per cent. Of these, in 38 per cent. the tumour developed within the first month after the injury, and in 70 per cent. within the first six months. Discount must be made for the numerous slight traumata to which every active individual is constantly subject, and which may be recalled only by close questioning after the development of a tumour. But the following case illustrates so closely the rapid growth of a sarcoma in direct relation to a definite injury that it seems worthy of record, although it is not possible to be certain that the injury did not merely break down and disseminate a small pre-existing focus of malignant disease.

A railway signalman, aged 45, was in perfect health until April 19th, 1928. On that day, while on duty, he was pulling over a heavy signal lever with his left hand and his head was turned fully to the right, as he was speaking to the telephone boy. He felt something snap in the left side of his neck, and at once experienced a sharp pain, severe enough to make him sit down. He consulted his doctor on April 21st. Dr. Harrowell of Great Haywood found on that day a small swelling the size of a hazel nut under the middle of the left sterno-mastoid muscle. The man continued at work until May 4th, when he again saw his doctor, as the swelling was increasing in size. He ceased work on that day. A skiagram taken a few days later showed no evidence of injury to the cervical vertebrae.

On May 13th his condition was as follows: A florid healthy-looking man, cheerful and in no discomfort. The left side of the neck, from the mandible to below the clavicle, was the seat of a brawny swelling, more prominent in the middle, extending forwards to the margin of the larynx, and back to the edge of the trapezius muscle. The swelling was not tender, it did not pulsate, and no thrill was felt or heard over it. The skin at its margins showed a bluish-purple discoloration. The left pupil was contracted and there was definite weakness in the left deltoid muscle. He was afebrile.

He was admitted to hospital on May 19th. The swelling had markedly increased in size in the interval. On May 21st the left arm became oedematous and paretic. Two days later he could only swallow fluids, and his voice was reduced to a whisper. On May 24th an exploratory operation was undertaken in the hope of relieving the laryngeal pressure. The whole left side of the neck was infiltrated with growth; he died some twelve hours later of cardio-respiratory failure.

Post-Mortem Examination.—Body well nourished, left arm oedematous. The swelling of the left side of the neck extended from the mastoid process and occiput above, to the scapula behind, and to below the clavicle in front. It was more prominent in front just anterior to the mid-point of the sterno-mastoid muscle. On dissection the swelling was found to consist of an unencapsuled mass of new growth. The mass extended from the mastoid process down to the first rib, and behind as far back as the scapula. It surrounded the clavicle and was infiltrating the deep fascial planes of the neck and the prevertebral muscles. Posteriorly the skin also was infiltrated by growth. The carotid sheath was completely surrounded, likewise the subclavian vessels and the upper cords of the brachial plexus. The lymph glands of the area were themselves enlarged and infiltrated by growth. In places the growth was of a purplish colour. There was oedema of the mucous membrane of the left arytenoid process. The oesophagus was pressed upon but not occluded by the growth. There was no sign in the mouth, pharynx, or larynx of any primary focus. The clavicle and first rib, though surrounded by growth, were not invaded by it. The mediastinal glands were not enlarged. The viscera showed no secondary deposits and no noteworthy abnormalities.

On microscopic section the growth proved to be an endothelial sarcoma of high malignancy.

The mass of growth removed *post mortem* was roughly conical, with a vertical measurement of 6 in. and a base of 4 in.

The prominent clinical feature of the case was the rapidity of growth of the tumour, an increase visible from day to day. The importance of the case from the medico-legal point of view is illustrated by the verdict of the coroner's jury, which was as follows: "Death was due to a cancerous growth in the neck caused by an injury sustained in the course of his work." Medical evidence had been given to the effect that the injury was responsible for the rapid increase of the tumour, but probably not for the occurrence of the tumour.

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Reports of Societies.

MEDICAL INDICATIONS FOR INDUCTION OF ABORTION.

THE meeting of the Medical Society of London on March 25th, with Dr. J. W. CARR in the chair, was devoted to a discussion on the medical indications for the induction of abortion and premature labour.

Mr. EARDLEY HOLLAND, in opening, touched first on the medico-legal aspect. The law regarding abortion was compressed in a paragraph in the Offences Against the Person Act, 1861, where it was laid down as unlawful to procure or attempt to procure abortion except with the object of saving the mother's life or of avoiding serious injury to her health. The medical profession was entrusted with very generous powers. It had never been possible to lay down strict rules as to the medical indications, and if it had been possible they would have required constant change in accordance with the march of medical science. Diabetes, for example, was once an absolute indication, but since the introduction of insulin diabetic women could with little risk pass through pregnancy and labour. Some people thought that during the past few years there had been a lowering of the professional standard of responsibility with regard to the induction of abortion, but for his own part he believed the medical profession to be just as honourable a body of men as ever. It was necessary to clear the mind of conscious or unconscious prejudice. The detailed discussion of the medical indications, Mr. Eardley Holland said, he must leave, with the true modesty of the modern gynaecologist, to his medical colleagues. The old gynaecologist would have considered himself perfectly competent to pass judgement, but the younger generation of gynaecologists were not so competent, their leanings being more towards surgery and less towards medicine. The positive indications about which there was more or less general agreement were few in number; beyond these there were a large number of debatable indications, and beyond these again a heterogeneous collection of medical, social, and personal states which could not be classified. Among the more or less positive states he mentioned acute and chronic nephritis, chronic valvular disease of the heart, advanced pulmonary tuberculosis, Graves's disease, and insanity. Among the debatable indications which had come his way were hypothyroidism, hyperthyroidism, certain cases of cardiac disease, less advanced pulmonary tuberculosis, albuminuria or eclampsia in a former pregnancy, severe mental and nervous disturbance in early pregnancy following upon a difficult and dangerous previous confinement, and multiple arthritis deformans, which seemed to be made worse by pregnancy. Then came a little group of indications which might be termed eugenic, including refractory syphilis in the mother, and idiopathic epilepsy—rather flimsy in itself, but, like other indications of the kind, accompanied by social and economic considerations which just turned the scale. Lastly, there were cases which depended not on one indication but on a conglomeration of circumstances. In one case, for example, the patient, aged 45, was suffering from debility following a severe operation for infected gall-bladder, and had a bad family history of tuberculosis. In another case, in addition to a very poor condition of the mother, the father was a mental degenerate, and was said to have seriously injured a former child. The induction of abortion was an uncommon operation both in hospital and private practice, though more uncommon in the former. At the London Hospital between 1924 and 1927, out of 4,000 gynaecological operations, 31 were for the induction of abortion, the indications in nearly all the cases coming within the positive group. In his private cases since 1919, out of about 3,500 patients seen, he had performed the operation for inducing abortion on 28 occasions. The proportion of cases dealt with on what he called positive indications was smaller in private than in hospital practice, and a certain number, carried out at the instance of colleagues, fell within the class of what he had described as debatable indications, on which in the abstract perhaps not everyone would agree, but each case had to be considered strictly on its merits, with due regard to the responsibility placed in the hands of the medical profession.

Dr. B. T. PARSONS-SMITH dealt with the cardiological aspect of the question, passing in review some considerations on the termination of pregnancy in heart disease. He emphasized the serious consequences which pregnancy imposed upon such patients. In the most favourable circumstances additional circulatory strain was inevitable, and the process of pregnancy materially prejudiced the circulatory reserve and favoured the development of decompensation. At Queen Charlotte's Hospital, over a period of fifteen years, the total of 196 cardiac cases were admitted. The pregnancy in 49 of these cases was artificially terminated as follows: induction of abortion, 5; induction of premature labour, 34; Caesarean section at term, 10. The total deaths for the whole "heart" group numbered 32, and for those in which the pregnancy had been artificially terminated, 10—namely, 2 following induction of abortion, 7 following induction of premature labour, and 1 following Caesarean section. It must be assumed that the majority of heart patients would develop some degree of failure during pregnancy, but that proper antenatal care would in most cases enable adequate compensation to be maintained. In a relatively small proportion of cases heart failure might be of so grave a character and so refractory to treatment as to threaten a serious if not fatal issue. This latter group was mainly composed of patients in whom auricular fibrillation and considerable enlargement complicated the underlying conditions of structural heart disease. In all these cases pregnancy constituted a grave risk. Decompensation might be regarded as inevitable, and, failing improvement under treatment, active intervention was justifiable. Every case must be judged on its own merits. One was justified in advising intervention in those cases in which heart failure, especially if it arose in the earlier months of pregnancy, progressed in spite of treatment, and equally in those patients where failure developed and there was a history of decompensation in previous pregnancies. Finally, it must be also remembered that the process of induction in patients with heart disease and failure might, and very probably would, itself constitute a serious maternal risk, as evidenced by the figures from Queen Charlotte's, which showed a mortality rate of 40 per cent. following induction of abortion, and 20 per cent. following induction of premature labour.

Dr. BERNARD HART, who spoke from the standpoint of a psychiatrist, said that the psychoses, or definite insanities, and the psycho-neuroses, or so-called functional nervous disorders, required independent consideration from the point of view of this problem. Psychoses occurring in association with pregnancy might be dealt with under three headings: (1) where a psychosis developed after the occurrence of pregnancy; (2) where pregnancy occurred in the course of a pre-existing psychosis; and (3) recurrent psychoses. With regard to the first group, it was formerly held that the psychoses developing during pregnancy and the puerperium were definite entities constituting special forms of mental disorder; this view had now been generally abandoned. So far as this group was concerned, it was clear that pregnancy was only a circumstance of minor importance, and its removal was not likely materially to affect the course of the disorder. Abortion was therefore not justifiable from the psychiatric standpoint. The second group comprised cases of exhaustion psychosis, a form of disorder in which toxic factors or emotional strains might play a

decisive part. In this group the pregnancy was a factor of definite causal importance, but it had generally been noted that the induction of abortion did not materially affect the course of the mental disorder. On the whole, cases arising early in pregnancy tended to recover before confinement; cases arising late in pregnancy, to recover after confinement. Psychiatrists were increasingly reluctant to recommend termination of the pregnancy in these cases for purely psychiatric reasons. The operation of abortion might itself act as a factor tending to accentuate an exhaustion psychosis. With regard to the group in which pregnancy arose in the course of a pre-existing psychosis, the considerations just mentioned applied with redoubled force. Abortion for purely psychiatric reasons was rarely justifiable. As for recurrent psychoses, two subgroups had been distinguished—one in which the former attacks of insanity had no relation to a pregnancy, and the other where a psychosis had developed in association with a former pregnancy or puerperium. In the first of these subgroups each case must be decided on its merits. Where several attacks had occurred, abortion would seem clearly justifiable on the ground that a continued pregnancy was likely to act as a source of stress. In the second subgroup the indications for abortion were weighty. Coming to the psycho-neuroses, the speaker said that this was a much more difficult field, and one in which there was no place for rigid principles or opinions. This was a sphere of disorders where psychological factors played an important part in causation, and amongst such factors the anxieties and fears centring around pregnancy might be of fundamental importance. Where there was a pre-existing psycho-neurosis, and where the effect of pregnancy was not itself a cause of any anxiety, there was *no indication for abortion*. There seemed no clear evidence that pregnancy brought special dangers in a psycho-neurotic case, except in so far as its existence aroused fresh distress, but there were a great number of cases in which the pregnancy gave rise to acute anxieties and conflicts. The induction of abortion here, no doubt, would relieve the symptoms and perhaps avert the development of a serious nervous breakdown. But the decision must rest on a question of degree, and nowhere could a well-marked dividing line be drawn. There was a series of cases where severe anxiety conditions passed over into clinical factors—a definitely melancholic type. Here the factor which dominated the problem at issue was the risk of suicide. In all these cases the attention of the psychiatrist must be focused upon the central problem of the probable effect upon the mental and nervous health of the patient of allowing the pregnancy to continue. But factors of many kinds had to be considered in determining this probable effect, and the final decision must depend upon the force and interaction of all these factors.

Dr. GEOFFREY MARSHALL said that he had followed up a small group of cases of pregnant women referred from an ante-natal clinic to the tuberculosis department of which he had charge. There was great difficulty in deciding in a given case whether it was a positive or a debatable indication. Certainly the cases could not be grouped according to the amount or the extent of lung involvement. Where a patient had been known to suffer from definite symptoms of pulmonary tuberculosis for a good many years, in spite of the fact that the lesions were fairly extensive, she might be expected to go through pregnancy and labour without any great harm, but where the disease was a recent one the condition might be expected to be worsened by pregnancy. Cases in which there was only a short history were picked out, and the gynaecologists were asked to terminate the pregnancy.

Dr. ANTHONY FEILING noted that among the positive indications mentioned by Mr. Holland there appeared Graves's disease. The speaker believed that if a patient with this disease became pregnant, which was rather unlikely to happen, she had a good chance of going through the pregnancy quite well. Another positive indication set out was acute and chronic nephritis, but this obviously depended very much on the severity of the condition, and he hoped it was not intended that in every case of acute nephritis labour must be artificially terminated. As to hypothyroidism, it was well known that patients with true myxoedema did not become pregnant at all; in milder degrees he could not see why it should be necessary to induce abortion. As for epilepsy, the number of cases of epilepsy affecting one parent in which it was justifiable to terminate pregnancy must be small. Only about 30 per cent. of epileptic persons had an epileptic heredity.

Dr. H. B. DODWELL asked whether severe paroxysmal asthma, incapacitating the woman every winter, would be regarded as an indication. Dr. T. C. CLARE spoke of a pregnant woman who had a single kidney. Was this an indication for abortion? Dr. J. W. CARR, from the chair, said, with regard to phthisis, that in his early days it was believed that during pregnancy phthisis tended to remain quiescent, but flared up acutely after parturition. Was there any danger of an acute "flare-up" after the induction of abortion?

Mr. EARDLEY HOLLAND quite agreed with Dr. Feiling about myxoedema. With regard to single kidney he would certainly have induced abortion. He appreciated what Dr. Parsons-Smith had said about heart conditions, and considered it wonderful how patients with severe cardiac disease passed successfully through labour. Dr. PARSONS-SMITH said that the large majority of women suffering from cardiac conditions would, with adequate rest, pass through pregnancy in normal fashion. Dr. BERNARD HART devoted his reply to discussing the assessment of the risk of suicide in psycho-neurotic pregnant women.

INDUSTRIAL DERMATOSES.

THE Sections of Dermatology and Epidemiology and State Medicine of the Royal Society of Medicine combined, on March 21st, for a discussion on "Industrial dermatoses, their causation, recognition, prevention, and treatment." A large exhibition of photographs of skin conditions due to occupations was provided by Dr. R. Prosser White, Dr. W. J. O'Donovan, Dr. S. A. Henry, Dr. H. A. Cookson, and others.

Dr. J. M. H. MACLEOD, who occupied the chair, said that no more than the fringe of the subject could be touched, but if the discussion excited a keener interest in the problems of the industrial dermatoses it would have served its purpose. The recognition of injuries to the skin from contact with irritants as a result of occupation dated far back in the history of medicine. He had before him a translation by the present President of the United States of a monumental work published in the middle of the sixteenth century by Agricola. In this book the author pointed out the dangers of ulceration from contact with corrosives. Occupational dermatitis did not figure largely in the literature of this country until 1775, when Percival Pott wrote his classic paper on chimney-sweep's cancer, but so far as the speaker could make out it was really Robert Willans who gave the first systematic description of occupational dermatitis, describing the psoriasis palmaris of shoemakers, a dermatitis in metal workers, grocer's itch, and washerwoman's eczema. Since those days the subject of occupational dermatoses had become familiar, and workmen's compensation and industrial insurance had given it an almost exaggerated prominence. There still remained many unsolved problems, and the cause of some of these conditions was still obscure. It was not known, for example, whether baker's itch was due to the flour or to imperfect cleansing methods by the workman. Then there were the problems of idiosyncrasy and allergy as factors in causation. There was some tendency for cases to be labelled occupational dermatoses when in fact the true cause was some pre-existing skin disease or congenital defect. He hoped that the debate would be the means of causing more co-operation between the dermatologist and the industrial physician. He added that this was the first occasion on which a discussion at the Royal Society of Medicine had been opened by a lady; Dr. Sibyl Overton, as medical inspector of factories to the Home Office, had had exceptional opportunities of studying occupational dermatoses at first hand.

Dr. SIBYL OVERTON said that it was being realized that the subject of industrial dermatoses was of the greatest importance both to the individual and to the nation. Through dermatitis, industry might lose many thousand man-hours daily, as well as huge sums in compensation.

Was the increase of dermatitis in industry real or apparent? A vast and increasing number of irritants were used in industry capable of producing dermatitis. The classification of dermal irritants according to their type of action was only partly practicable; there often was a multiplication of modes and causes. Injury to, and separation of, the horn cells was the keystone of industrial dermatoses. The causative agents voluntarily reported to the Home Office each year revealed a steady increase. Alkalis had headed the list for the last three years. Of the industries concerned, engineering had reported the greatest number of cases for this period. The ages and previous history of workers reported as affected with dermatitis in 1928 showed the highest percentage of recurrent cases in males over 50, while a very large number of primary cases occurred in workers under 30. The speaker gave an account of special inquiries into dermatitis in certain industries—namely, baking and flour confectionery, biscuits and sugar confectionery, french polishing, calico bleaching, printing, and dyeing. Of 400 bakers and pastrycooks whom the speaker had examined in various parts of the country, only 12 were suffering from dermatitis, 9 being bread bakers. Only three cases, all slight, occurred among machine mixers of dough. Methods of removing staining from the skin were often highly productive of dermatitis. There was need for increasing knowledge of harmless and effective methods of cleansing the skin in certain industries. Experience had shown the following means of prevention to be effective, their common object being to protect the integrity of the horn cells: (1) emollients before and after work; (2) complete removal of the irritant by harmless methods after work; and (3) inspection of hands and arms by an experienced observer, with a view to enforcing early treatment of minor injuries, such as cuts and burns, scrupulous cleanliness of hands and arms and of overalls, and removal from irritants and prompt treatment for early cases.

Dr. WILLIAM DYSON commented on the type of trade dermatitis which clinically and histologically was indistinguishable from cases usually classified as eczema. It was defined as a superficial non-microbic inflammation of the skin caused in all cases by external irritation in a predisposed subject. He did not recognize any difference between this type of case and eczema, except that the former occurred in a manual worker. The predisposing causes were hyperidrosis, xeroderma, and ichthyosis, senile degenerative changes in the skin, debility, tuberculosis, and anaemia. Relapses were frequently seen, and the cause underlying this liability to recurrence brought into discussion the complicated problem of sensitization. Sensitization to a specific irritant, such as one saw in primula dermatitis, was extremely rare in trade dermatitis, but a general hypersensibility of the skin after long-standing or repeated attacks of dermatitis was common. He held that absorption of toxins from damaged or inflamed epithelium was the causative agent in the production of this hypersensibility. With the object of trying to find scientific data in support of this theory, he had had blood sugar estimations made in over fifty cases. These cases were selected from a number which showed sensitization by having evidence of dermatitis in other parts than the areas exposed to irritation. The results of the investigation suggested: (1) that when sensitization was present a high blood sugar figure was to be expected; (2) that when the products of inflamed epithelium were being absorbed one found on the average a higher blood sugar content than when those products were being discharged on the surface. Thinking that this hypersensitiveness might be an anaphylactic phenomenon he treated a number of patients with injections of their own blood with the object of producing an anti-anaphylactic state, and he described the results obtained. As for prognosis, this was good in a first attack, providing no obvious predisposing causes were present, but bad if the case was of long standing or there had been repeated attacks. It was especially bad if the dermatitis developed in a man who had been working at his trade for many years before he had his first attack. The means of prevention were medical examination before a man was employed and the periodical inspection of all employees.

Dr. HOWARD MUMMERY described his experiences as medical officer to a large catering firm with 5,000 employees, contending that watchful care kept the incidence of occupational dermatoses low. Apart from regular inspection, and application of suitable treatment in early cases, it was important to exclude people from occupations for which they were not fitted. The dry, inelastic skin predisposed to the occurrence of eczema and other skin conditions, and the fissuring allowed the entry of pathological bacteria. He contended that there was no pathological lesion peculiar to bakers. In the factory mentioned dermatitis was of low incidence and steadily decreasing.

Dr. H. MACCORMAC said that the most difficult group to understand were the non-specific eruptions, generally eczematous, which occurred in people who worked at a variety of occupations. The eczema occurred during work, but whether caused by the trade was a matter of dispute. He described an investigation into the dermatitis found among photographers; he thought metol largely to blame.

Sir THOMAS LEGGE approached the question sympathetically from the standpoint of the worker, and said it was the duty of the medical man to inform the sufferer from occupational dermatosis that he could make a claim for compensation through the certifying factory surgeon for his district. The speaker related some of his experiences while he was an inspector of factories.

Dr. W. J. O'DONOVAN feared that if the matter had been solely in the hands of professional dermatologists the great mass of occupational dermatitis would have remained largely undiscovered. Now, however, he thought the pendulum was swinging in the wrong direction, and that the figures were grossly inflated. Many certifying factory surgeons were content to certify cases without reference to dermatologists; but the chief increase was attributable to the incursion of administrators, lawyers, and accountants; hence financial interests loomed large. He feared it was sometimes the worker's mind which was sensitized rather than his skin.

Dr. PROSSER WHITE stressed the importance of knowing the physico-chemical action on the skin of the particular drug or irritant at fault in order to deal adequately with these cases. He agreed that the chief skin injury in occupations was caused by alkali, since that was the most used dirt and stain solvent. The question of sensitization was very difficult, and he thought the modern tendency was not to emphasize sensitization so much.

Dr. ALLAN PARSONS said he had been chiefly interested in baker's itch, a subject on which he had conducted an investigation for the Ministry of Health; but Dr. Overton's address showed that this subject could well be left to the care of the Home Office. There were some interesting cases of dermatitis in hop-pickers. He found that most of the "hoppers" suffered from abrasions and cracks due to pulling the hop flowers off the vines. They had a papular and pustular erythema, with extreme irritation of hands and forearms, and in many cases the face was affected. The same people suffered from the condition year after year. The condition was not very severe; 52 patients attended hospital for treatment for a total of only 81 days.

Dr. LANCASHIRE analysed 100 cases of trade dermatitis which had come under his attention; 13 per cent. of these were not due to trade conditions, though they had been certified as such by the factory surgeon; 20 per cent. were due to exposure to aniline dyes; and 7 were cases of baker's itch, which he regarded as a genuine condition peculiar to bakers and confectioners, and caused invariably by handling the dough. He was sure some of these people were directly sensitive to the handling of dry flour. Eighteen cases occurred among rubber workers, and 8 of these were in rubber tyre builders.

Dr. F. E. FREMANTLE, moving a vote of thanks to the speakers, said he regarded the discussion as a most notable one, and one which was important from the point of view of future legislation, at a time when the State took an increasing interest in helping to insure the worker against accidents in ordinary life. The desire, however, was open to great abuse; definitions were apt to be framed and accepted without due regard to the medical aspect.

Reviews.

FUNDAMENTALS OF SURGERY.

MR. H. S. SOUTTAR has written a textbook of surgery which has many unusual aspects. In his very title, *The Art of Surgery*,[1] the author challenges criticism. "Surgery," he says, "is essentially an Art, for it demands of those who would pursue it a combined dexterity of hand and eye, and an instinctive perception of values, which are the characteristics of the true artist." Dexterity of the eye (a questionable use of words) may be a necessary attribute of a practised craftsman of surgery, but even this will not convert him into an artist, for few would maintain that the surgeon is the creator of any new moral or spiritual experience, which alone distinguishes "the true artist" from his fellow craftsmen. It seems ungrateful to carp at Mr. Souttar's title-page, for this can scarcely affect the value of the contents of the book; yet it may be important to avoid any exaggeration of the surgeon's claims to be a superior person. The values that he learns to perceive are material values, and he is therefore not an artist. It is on this basis that patients are willing to entrust their bodies to his hands. His craftsmanship must be guided and supplemented by intellect, and it is only in the laboratory that he may give rein to the processes of the imagination.

Mr. Souttar is well known to be a sincere, balanced, inventive, and expert craftsman, and the excellence of his book is further proof of this. He is justly appalled at the bulk of the accumulated experience which has to be brought to bear upon modern surgery, and he seeks to lighten the student's burden by describing fully only what is fundamental. Other writers of textbooks have attempted, with varying success, the same process of sifting, but none have had the wit to devise so excellent a method of driving their words home by means of the marginal illustration. The page has to be somewhat large to accommodate the text with margin wide enough for even small drawings, and unless these margins are fully used much space is wasted. This is, in fact, the only possible criticism of Mr. Souttar's method, that he has not carried it far enough, for several hundreds of additional drawings might usefully find a place in the many blank margins. Any student, however, with any capacity for drawing might get much amusement and profit by adding his own diagrams and illustrations. The book contains in addition twelve coloured plates, which are of small value, though they probably add much to the cost of the book. There seems to be a belief among publishers that coloured plates help to sell a textbook, though it may be doubted whether this is really so except in the case of works on dermatology. Most students would be more influenced by a reasonable price than by a few coloured plates on unpleasant shiny paper. Mr. Souttar clearly does not suppose them to be of great importance, as he nowhere provides any list or index of illustrations, and we would ask him to consider omitting them from the next edition. There will assuredly be another edition, for the book is comprehensive, "up to date," practical, and attractively written, so that it cannot fail to find a large number of readers. The margins are used for the headings of the subject-matter as well as for the drawings, so that there is no interference with the continuity of the text. The book is consequently much easier to read than are most textbooks, and this feature, combined with the visual emphasis provided in the margins, should relieve many students of the necessity for using any sort of "cram-book" when once they have familiarized themselves with Mr. Souttar's survey.

It was a bold undertaking to start once again on the "one-man" book in this age of specialization and composite pictures, but the gains given by the resulting cohesion of the chapters and absence of repetition more than outweigh any possible objections. Mr. Souttar will no doubt wish to alter some of his statements in future editions. It seems unlikely, for instance, that he really believes that traumatic myositis ossificans only causes "a little stiffness," and that treatment is rarely required. Other matters of detail will be brought to his notice by his friends, and need not be specified here. Of greater importance is a criticism that may be levelled at Mr. Souttar's descriptions of the various forms of cancer and the means of diagnosing them. In our view any modern textbook of surgery should insist almost to the point of boredom on the necessity for diagnosing cancer before it possesses all the characters by which it is usually recognized. No student, for instance, would understand from a reading of Mr. Souttar's description of cancer of the breast that it is frequently seen in a stage when it shows perhaps only one of the features presented at a later stage, and further, that the prognosis depends so much on early diagnosis that mistakes must be made in the direction of suspecting a lesion which is not carcinoma. This is much the gravest criticism which we have to make of Mr. Souttar's book, for the importance of early diagnosis of cancer cannot possibly be exaggerated, and it should be drummed into the rising generation of medical students by the spoken and the written word until it becomes impossible for him to forget it.

If, however, Mr. Souttar's book has some defects of this kind they are only such as it shares with most others that are available. In many respects *The Art of Surgery* makes a real advance in the succession of textbooks, and we recommend it to all students, and to any practitioner who wishes to be abreast of the times.

[1] *The Art of Surgery.* By H. S. Souttar, D.M., M.Ch.Oxon., F.R.C.S.Eng. London: W. Heinemann (Medical Books) Ltd. 1928. (Cr. 4to, pp. 624; illustrated. 30s. net.)

TWEEDY'S "PRACTICAL OBSTETRICS."

A SIXTH edition of Hastings Tweedy's *Practical Obstetrics*[2] has been recently published by the Oxford Medical Publications. This popular manual has been revised and largely rewritten by Dr. BETHEL SOLOMONS, who is now alone responsible for the text. As in the case of previous editions, the main consideration has been to present the methods so successfully practised in Dublin at the Rotunda Hospital, but the teaching of other schools has not been ignored. As was to be expected, the present Master of the Rotunda discusses his subject in a forcible, straightforward manner, which never leaves any room for doubting what line of treatment he recommends. The different problems of obstetrics are fairly presented, and the recommendations for dealing with them unequivocably stated, the wealth of Dr. Solomons's experience being sufficient guarantee of the practical utility of the advice given. All the chapters have been brought thoroughly up to date, and the results of the author's experience of some of the new methods of treatment of accidental haemorrhage and puerperal sepsis are clearly set forth. Dr. Solomons is a strong advocate of lower segment Caesarean section, but the difficulties of this operation for the less experienced operator are not minimized. A new chapter has been added on the use of x rays in obstetrics with appropriate illustrations. Apart from these the author has wisely chosen his illustrations from block drawings and diagrams which are without exception clear and to the point. The practical teaching of this book has always been its strong point, and Dr. Bethel Solomons has faithfully followed tradition by keeping on the same sound lines.

[2] *Tweedy's Practical Obstetrics.* Edited and largely rewritten by Bethel Solomons, M.D., F.R.C.P.I., M.R.I.A. Sixth edition. Oxford Medical Publications. London: Milford, Oxford University Press. 1929. (Demy 8vo, pp. xii + 739; 284 figures. 25s. net.)

ANATOMY FOR STUDENTS.

As a technical achievement the *Pocket Atlas of Anatomy*[3] by PAUCHET and DUPRET is worthy of the highest commendation. Within the limits of so small a volume are contained 297 plates illustrating most regions of human anatomy. The plates consist of line drawings, in some cases coloured, which are remarkable at once for their simplicity, clarity, and general accuracy. Some of them also display a welcome spirit of originality, and illustrate dissections viewed from an unusual angle. An atlas of anatomy, to justify its production, must possess at least

[3] *Pocket Atlas of Anatomy.* By Victor Pauchet and S. Dupret. Oxford Medical Publications. London: Milford, Oxford University Press. 1928. ($4\frac{1}{2} \times 7\frac{1}{2}$, pp. vi + 306; 297 plates. 12s. 6d. net.)

MEDICAL RESEARCH COUNCIL.

ANNUAL REPORT.

(*Concluded from page 567.*)

II.

General Vitamin Studies.

Work by Professor Drummond at University College on the chemical nature of vitamin A as it occurs in various fish-liver oils has nearly been completed. It has now been shown that practically the whole of the vitamin fraction of cod-liver oil represented by the non-saponifiable portion can be separated into components in a chemically pure condition. From the purely chemical examination of the highly active concentrate from cod-liver oil and other fish oils it is probable that the vitamin constitutes much less than 1 per cent. of the whole material—that is, a ten-thousandth part of the original cod-liver oil. This work has been concurrent with an extensive investigation of the vitamin value of commercial preparations of cod-liver oil undertaken with the aid of a grant from the Empire Marketing Board. Other work by Professor Drummond suggests that the so-called vitamin B complex owes its action, not as now believed to two substances, but to four. At the Field Laboratories, Cambridge, Drs. L. J. Harris and T. Moore have found that large excess of cod-liver oil added to an otherwise satisfactory diet may in fact be injurious to the rat, and this study is being linked with observations on the beneficial effects of an increased allowance of the vitamin B complex. At King's College for Women Professor Mottram and Dr. Hartwell are investigating the relative values of brown and white bread in a diet arranged to imitate that of an agricultural labourer. Dr. Hartwell has also continued her work on the relations of vitamin B to lactation.

Dental Disease.

Dr. E. W. Fish has been investigating the minute structure of teeth, the circulation in them of lymph, and the relation of these to dental disease. Mrs. Mellanby has continued her researches at Sheffield into the structure of children's teeth, and the results, taken in conjunction with those of certain animal experiments, suggest that the fundamental cause of the prevalence of dental caries is a defect of nutrition. An important investigation has been started at Birmingham, where children in three institutions are receiving special additions to their ordinary diet with a view to determining the influence of these on the development of teeth and liability to dental caries. At the London Hospital Mr. J. R. Marrack has found that low calcium in the saliva is distinctly more common in patients with numerous carious teeth, and at Guy's Hospital Mr. A. Bulleid is investigating the possible role of anaerobic bacteria in apical infection of the teeth.

Cardio-Vascular and Excretory Systems.

Dr. J. C. Bramwell and Dr. R. Ellis took part in the studies made at Amsterdam of Olympic athletes, and in particular paid attention to the circulatory mechanism in the long-distance runners. At Cambridge Dr. G. V. Anrep is studying the coronary circulation in the heart by a method which indicates to what extent the cardiac contraction itself may favour or hinder the coronary circulation. Dr. A. A. Osman, at Guy's Hospital, continues his work on the treatment of nephritis by alkalis, whereby further evidence of the efficacy of alkalis in the treatment of anuria has been obtained, and some light has been thrown on the mode of action of alkalis in causing diuresis. With the help of Dr. H. G. Close he has found that the plasma bicarbonate content forms a useful means of differentiating between acute focal and acute diffuse nephritis and between the former and some other causes of haematuria. Dr. G. A. Harrison, at St. Bartholomew's Hospital, has investigated indican retention in the blood in cases of uraemia, but, while the cause of an obscure colour reaction has been elicited, no light has been shed on the causes of uraemia.

Nervous and Mental Disorders.

At Oxford Dr. D. Denny-Brown has continued his work on the problems of reflex posture, and has investigated some related problems of the structure of nerve endings in muscle with special regard to the innervation of muscle by the sympathetic nervous system. At the National Hospital, Queen Square, London, Dr. E. Blake Pritchard is making an experimental study of the knee-jerk by means of optical records under variations of stimulus and in different pathological conditions, and at the same hospital Dr. M. Critchley is working on certain nervous manifestations which occur in cerebral arterio-sclerosis. In the Scottish Asylums Research Laboratory Dr. F. E. Reynell continues his investigations on the paths of infection of the brain, meninges, and venous blood sinuses from neighbouring inflammatory foci, and with Mr. Logan Turner has studied three cases where the primary focus was in the accessory air sinuses. Dr. F. A. Pickworth in Birmingham has made a further investigation of the abnormal agglutinin reactions which occur in the insane, and at Cambridge Miss L. G. Fildes has completed her inquiry into the special psychological causes underlying the condition known as word-deafness and has also made an experimental study of the discriminative power of defective boys.

The Blood and Glands of Internal Secretion.

In Professor Barcroft's laboratory at Cambridge a collaborative examination has been made of the different methods of estimating the oxygen capacity of human blood with a view to elucidating a slight discrepancy between the results obtained by American and British workers. At Charing Cross Hospital Dr. A. B. Rosher has found that there is no experimental evidence of intravascular haemagglutination following the intravenous administration of horse serum. Dr. Stanley P. Davidson in Edinburgh has continued his study of various aspects of pernicious anaemia, and, in particular, has investigated the bacteriology of the gastro-intestinal contents. He finds no bacteria which are not normally present in healthy people, but, on the other hand, certain organisms, especially *B. welchii*, are present in a greater proportion in the faeces of cases of pernicious anaemia. At the Lister Institute Dr. V. Korenchevsky has continued his study of testicular hormones. The aim of the experiments is to use glands having the largest amount of the special secreting tissue, and at the same time devoid of generative tissue. Some direct evidence has been obtained to support the common theory that the degeneration of generative tissue in cryptorchid animals is chiefly due to the higher temperatures of the sexual glands within the abdomen than when descended to the external position. Dr. A. S. Parkes has progressed with his work at University College on the ovarian secretions. The corpus luteum has been shown to be essentially responsible for the characteristic changes of the post-ovulation period of the cycle, including the complete development of the mammary glands during pregnancy, a process in which the foetus has been shown to play no part. Further work on Graves's disease by Drs. Williamson and Pearse has led to the finding of a method by which the two secretions of the thyroid gland can be separated so that their biochemical, physiological, and clinical activities can be studied. The relation of Graves's disease to iodine metabolism has been investigated, and colloid secretion, which contains all the iodine, has been shown not to be responsible for the toxic factor in this disorder. Dr. R. D. Lawrence's work on diabetes and insulin has recently enabled him to show that the usually accepted quantitative relationship between insulin and glucose does not exist. The normal ratio of dosage of insulin to carbohydrate used up is found only to hold good up to a certain point, beyond which relatively small increments of insulin can enable the body to dispose of increasingly large amounts of carbohydrate. At Sheffield Dr. G. A. Clark has done some work which indicates that possibly the vagus nerve exercises a tonic inhibitory effect on insulin secretion.

Tuberculosis and other Infections.

Dr. A. Stanley Griffith, studying the immunizing value of the B.C.G. vaccine of Calmette and Guérin, while unable to confirm the work of Wilbert on the production of immunity to tuberculosis in monkeys, has been able to show that immunity can be produced in the calf by intravenous, subcutaneous, or oral administration of the

accine. Dr. J. W. S. Blacklock in Glasgow has studied twenty cases of fatal tuberculosis, bringing the total numbers in which the infecting organism has been isolated up to eighty-four. In primary pulmonary tuberculosis 96 per cent. of cases are due to the human type of organism. Work on haemolytic streptococci and the infection due to them has been continued under the supervision of a special committee, of which Sir Frederick Andrewes is chairman. A close correlation between a Dick-positive reaction and the subsequent development of puerperal sepsis was found among a hundred prospective mothers, and arrangements are being made to render cases immune to puerperal fever before labour. Dr. L. Colebrook has completed one phase of his work on the arsenical compounds in relation to the chemotherapy of streptococcal infections, and a careful clinical trial is now to be made of the influence of these compounds, principally derived from salvarsan. Study of some of the problems of Hodgkin's disease is being carried on at St. Bartholomew's Hospital under the terms of the Rose Bequest, and a combination of clinical and pathological workers is conducting investigations. The work of the Council on canine distemper, largely made possible by the *Field* Distemper Fund, has now reached a stage where the knowledge acquired is capable of being applied to the production of immunity. Trial of the methods has been made upon dogs kept under ordinary conditions, and wherever a clear comparison has been possible between inoculated and uninoculated dogs the results have been strikingly successful; evidence is lacking only as to the duration of the immunity conferred.

CANCER, RADIOLOGY, AND RADIOTHERAPY.

Studies of cancer at the National Institute by Dr. Gye have been continued. At St. Mark's Hospital Mr. W. B. Gabriel is following up and indexing the after-histories of cases of cancer of the rectum, and Dr. Cuthbert Dukes is grouping cases in which the rectum has been excised, according to the depth to which malignant cells have penetrated. Dr. Helen Chambers at Middlesex Hospital has made further investigations into the effects of tumour products on tumour growths. After tumours have been given a lethal dose of x rays *in vivo* it has been shown that the antigen causing immunity is absorbed in minute quantities spread over several days, and its isolation in concentrated solution is therefore a difficult problem. At Cambridge an investigation into the Shaw-Mackenzie serum test for cancer has been completed. The test was negative in certain cases of cancer, and positive in many other conditions. The biological effects of radiation are being studied by Dr. H. A. Cowell at King's College Hospital, and in particular he is investigating the effects of radiation upon patients with malignant disease to whom fluorescein has been administered.

VISION AND HEARING.

Under the direction of the Committee upon the Physiology of Vision research dealing with problems of the fighting services has been continued along with other investigations of more general interest. Work at Cambridge under Mr. F. C. Bartlett has been concerned with the visual perception of form and movement in the peripheral field of the retina, and in the same laboratory Dr. D. N. Buchanan has continued his investigations on flicker, which has also been the object of research at University College, London, where, under the direction of Dr. R. J. Lythgoe, the effect of light and of dark adaptation on the performance of certain tasks has been studied. All this work has obvious practical interest in relation to the driving of motor cars at night and to some special problems of industry. Dr. W. S. Duke-Elder and Mrs. Duke-Elder at the same College are continuing their work on the physiology and pathology of intraocular pressure. They have discovered that the vitreous humour plays an unexpectedly large part in the control of this pressure, and with Miss Adams a study of the calcium content of the lenses and the blood in cases of cataract has been completed. A second committee has been at work with analogous functions, but concerned with hearing.

PHYSIOLOGY, PATHOLOGY, BIOCHEMISTRY.

General researches in these subjects have been carried on at various centres during the year. At Leeds Dr. H. W. Davies has been investigating oxygen administration, and from a study of the effects of injections of oxygen upon the oxygen saturation of the arterial blood, he has shown that injection of oxygen does not relieve oxygen-want in human patients. At Glasgow Dr. Munro Cameron is examining the pathological basis of nervous affections of the oesophagus, with special reference to spasmodic conditions of its upper and lower ends. Ten fatal cases of cardiospasm have been examined, and it has been established that a degenerative lesion of the intermuscular nerve cells is usually associated with the clinical condition. Dr. R. A. Webb has been working with Professor Dean at Cambridge upon the precipitin reaction. Dr. L. E. H. Whitby, at Middlesex Hospital, has been investigating the bactericidal effect of radium in relation to fluorescence, and has found that beta rays are as strongly bactericidal as x rays and gamma rays. The investigation of two typhoid carriers in Glasgow by Dr. K. Guthrie has shown removal of the gall-bladder in intestinal carriers to be effective treatment. Mr. A. Wormall has shown that ultra-violet rays have a destructive action on the haemolytic power of serum *in vitro*. This action has been studied further, and the destruction is attributed to alterations in the protein components of the complement. Dr. William Robson is studying the part played by tryptophane in the animal organism.

ANAESTHETICS.

The Anaesthetic Committee has continued to collect information about the highly dangerous "late ether convulsions," but so far no adequate explanation has been forthcoming. During the year an inquiry was received from New Zealand as to an impression strongly held there by anaesthetists that ethers made in the British Empire are inferior in anaesthetic value to those originating in Germany and the United States. By suggesting certain tests the committee were able to convince the hospital authorities concerned that this impression has no foundation in fact. Certain research has also been undertaken with regard to the trial of "avertin" for rectal administration.

EPIDEMIOLOGY.

Work on this subject under the joint direction of Professors Topley and Greenwood has been continued, and the mouse population which has now been under continuous observation for eight years is being maintained by daily additions of normal mice, while other long-continued epidemics are being studied. It is hoped to reach a definite conclusion with regard to the importance of natural immunization as a factor in herd-immunity. Another subject which has been studied is the possibility of obtaining knowledge of the vital statistics of mice not deliberately exposed to infection.

STATISTICS.

Work under this heading covers a very wide field, for, in addition to special problems, the staff concerned with this subject is often called upon to study the results of other workers. The Statistical Committee also serves the Ministry of Health in the field of medical statistics. In this connexion one of the most important pieces of work in hand is the analysis of anthropometric data collected for a committee of the Board of Education presided over by Sir George Newman. During the past year Mr. Matthew Young has made a study of the racial significance of blood grouping, and the results seem to indicate that too much importance has been attached to blood group distribution as a criterion of racial classification.

INDUSTRIAL MEDICINE AND INDUSTRIAL FATIGUE.

Miscellaneous researches into industrial problems have been continued, and many of these are discussed at greater length in the annual report of the Industrial Fatigue Research Board. The present report mentions some work on miners' nystagmus, particularly in connexion with the illumination of mines, while the psychological aspect is to

be investigated under a scheme being prepared by Dr. Millais Culpin. A study of the sickness incidence in certain spinning mills is being undertaken with reference to the dusty atmosphere of certain rooms, while some of the problems of load carrying by dock and transport workers are receiving attention.

Concluding Notes.

In its last pages the report gives an account of the work done by holders of the travelling fellowships endowed by the Rockefeller Foundation, and records that these fellowships have been renewed for a third period of three years by the Foundation. The Council expresses its appreciation of the work done by Sir Hugh Anderson during the short period he served on the Council before his death, and records also the loss to the field of physiological research occasioned by the death of Professor Noël Paton. The Council, in conclusion, expresses its gratitude for financial aid it has received from public bodies and private benefactors, which has enabled it greatly to enrich its programme and has rendered certain aspects of its work possible.

THE MENTAL HOSPITAL OF TO-DAY.

Lecture by Sir C. Hubert Bond.

Sir C. Hubert Bond delivered a lecture to the National Council of Mental Hygiene on March 20th on "The mental hospital of to-day." He found some fault with this title because the treatment of mental patients and mental hospital administration generally were advancing so rapidly that no institution could be said to be the mental hospital of to-day. A plan for a new mental hospital in harmony with present-day requirements might be approved, but before the work was completed the general idea as to what a mental hospital should be would have gone on ahead. He disliked also the term "mental hospital." His personal preference was for the old word "asylum," which had quite a good connotation if one studied it, though he agreed that if mental hospitals could be spoken of simply as "hospitals" it would be better still. Other hospitals were not usually labelled according to the conditions they treated, and it would be much better to call a mental hospital after a saint or a locality, and to drop the adjective. In official documents the words "for mental disorder" might be retained, in small type, but it was injudicious to announce to the world and to prospective patients the exact nature of the hospital.

Mental and General Hospitals Compared.

Sir Hubert Bond went on to explore the differences between a mental hospital and a general hospital. If one had regard to the older mental hospitals established in the early nineteenth century it must be said that there was a vast difference, but he doubted whether there need be any great difference, and he considered that the two institutions were becoming much more similar. There was one necessary difference, due to the fact that general hospitals did not usually keep their patients for any long period, *whereas many mental cases had to have institutional care*, not in beds, for years; the ward provision in the two kinds of institutions must therefore be dissimilar. Only one general hospital in the country, so far as he was aware, had wards for mental cases—namely, Middlesex Hospital; the wards were small, but he hoped they would be enlarged. The modern general hospital, again, like the mental hospital, was more and more inclined to remove from the towns into the country, leaving a nucleus for emergency cases. He saw in the future the general hospital taking more the administrative pattern of the mental hospital, and the mental hospital shedding some of its ancient features. In one respect a mental hospital was more of a general hospital than a general hospital itself. *The general* hospital expressly excluded certain cases—fevers, for example, and, save in the one instance mentioned, mental cases. The mental hospital, on the other hand, had to provide for all cases of general illness among its mental patients. Whatever the illness from which a mental patient suffered, he could not be turned out of the institution.

Classification of Patients.

The new Middlesex County Mental Hospital and Colony at Shenley, a plan of which he exhibited, afforded Sir Hubert Bond an illustration of the general lay-out of the modern mental institution. Cases on admission were received at a central building, which was arranged so as to separate different classes of cases. The depressed and quiet patient, for example, saw and heard nothing whatever of the patient who was excited and delirious. Little villas or convalescent homes were provided in one part of the grounds for those who were recovering, and here there was no need for any patient to realize that he was not in an ordinary institution for the sick. About 30 per cent. of the patients were transferred to these homes. Another batch of patients came in, unhappily, to die swiftly; these were accommodated, on the county of Middlesex plan, in one or two most beautiful sick wards; when these were completed there would be no better hospital wards anywhere. Then there were chronic patients, not likely to recover. The lecturer was not willing to admit that these would never come to be considered recoverable, for mental medicine had yet to get to the bottom of these cases; but as things were at present, some 15 or 20 per cent. of those admitted remained for life. The detached wards for these cases had nothing about them which was forbidding, but much, indeed, that was pleasing. For the safety of the public certain cases in a mental hospital had to have their liberty restricted; the only alternative would be an overwhelming number of nurses, and he did not think the end would justify the means. It was here, in what were known as the closed buildings, that the "asylum atmosphere" was to be found, but the signs of restriction, in the modern hospital, were never obtrusive. Patients suffering from epilepsy, again, had to be provided for separately, so that others need not witness their distressing state. Then there were people who, although *their mental illness* was protracted, were *very well behaved* and fond of employment; here there was no necessity for the regime of closed buildings; the patients resided in pleasant cottages, needing no lock and key, except at night. The very existence of these cottages and the liberty enjoyed by the patients there had been the means of encouraging patients of another class—patients who, though not turbulent or excited, were not very pleasant, or obedient, or amenable to persuasion, and had to be separately accommodated—to pay attention to themselves so that they, too, might leave the closed part and enjoy the greater freedom of their fellows. These well-behaved mental patients, for whom no restrictive regime was necessary, and who liked to employ themselves, amounted, usually, to some 16 per cent. of the residents, though it depended very much on the spirit of the institution; he had known institutions in which the figure had been as high as 25 per cent. Altogether, the conditions in a mental hospital were quite unlike the harsh and depressing picture sometimes painted. The lecturer had found that many who wrote and spoke criticizing mental hospital administration had to admit, on being challenged, that they had never visited a mental hospital in their lives.

Hospital Amenities.

Sir Hubert Bond briefly sketched the various departments of the hospital, the administrative block, and the equipment for medical treatment, which last was the same as that existing in the best general hospitals to-day, and included the *x*-ray department, the hydrotherapeutic department, verandah provision for open-air treatment, and so forth. The accommodation of the nurses was an important point. He remembered the day when every nurse in a mental hospital slept actually in the wards; that system was rapidly disappearing, and the nurses were now housed *in a detached home*. Liberal provision was also made for

the entertainment and recreation of the patients—a necessary and economical form of treatment. Another important point was the decoration of the wards with flowers and pictures, and the arrangement of the gardens and grounds. No small part of the business of the medical superintendent was concerned with the occupation of the patients. When he himself had charge of a mental hospital the residents themselves made the furniture, did the upholstery, wove the cloth for garments, made the boots, the mats, the brushes for the whole establishment, and did all the printing and bookbinding.

At the conclusion of the lecture a few questions were asked. In reply to a question as to what happened to a patient after discharge, Sir Hubert Bond said that London in this respect was fortunate in having a very efficient Mental After-care Association; he had never known this body let a case down. He wished to see every county with its own after-care association on the London model.

On a question as to out-patient clinics, he said that these did undoubtedly result in a decrease of hospital admissions. The best organized of these out-patient clinics was that at the Radcliffe Infirmary, Oxford, and it was significant that Oxford was the only mental hospital in the country where the population was decreasing.

VOLUNTARY HOSPITALS AND THE LOCAL GOVERNMENT BILL.

HARVEIAN LECTURE BY DR. E. GRAHAM LITTLE.

AT a meeting of the Harveian Society held at Paddington Town Hall on March 14th, Dr. E. GRAHAM LITTLE, M.P., delivered the Harveian Lecture, taking for his subject the voluntary hospitals and the Local Government Bill.

After describing the bill as the most important measure in its bearings on medical service that the present generation had seen, and sketching its main provisions, by this time familiar, Dr. Graham Little pointed out that it authorized and even encouraged county and county borough councils to provide hospitals and maternity homes, which would in all probability compete with the voluntary hospitals already in existence. Amendments proposed in both Houses of Parliament to provide machinery for securing co-operation between these new hospitals and the old voluntary hospitals had been refused by the Government, and he considered it true to say that there was no real check provided by the bill to prevent competition. Furthermore, the retention by the Minister of Health of complete control of all medical (as of other) officers under the scheme implied the wider extension of departmental autocracy over the profession, already experienced under the National Health Insurance Act. The Minister of Health had made no secret of his desire to extend the health services in such a way as to foreshadow their nationalization. The change in the relationship between the Exchequer and the local bodies also meant a further extension of the power of the Ministry. Block grants were to be substituted for the percentage grants hitherto made to local bodies, and the Minister reserved complete control over such grants, to vary or modify them as he willed.

Dr. Graham Little admitted the necessity for further institutional provision than the voluntary hospitals in their present state of development were able to supply, but he questioned the means proposed to that end. The reason why the voluntary hospitals had proved unable to meet the demands upon them was simply their popularity. The prestige of these hospitals explained why it was that patients were willing to wait for admission to them rather than seek immediate admission to existing Poor Law hospitals. There was no guarantee that patients would not still prefer to wait for admission to the voluntary hospitals. Government departments could not create prestige or personnel. The more logical and economical way of adjusting the difficulty of the empty beds at the Poor Law hospitals and the waiting lists at the voluntary hospitals would seem to be the provision of beds at those institutions where the demand [illegible] vision could be made at a sl[illegible] entailed by the staffing of new hos[illegible] special departments were already in [illegible] tary hospitals, and the extra expendi[illegible] more than the actual cost of providing [illegible] slight addition for the increase of medical [illegible] Ministry of Health was determined upon a [illegible] expensive and dubious experiment—that of e[illegible] the establishment of quite new hospitals—and no [illegible] whatever had been made to prevent competition [illegible] existing institutions.

During the last decade the voluntary hospitals ha[illegible] become largely self-supporting institutions, and a great [illegible] system of insurance for hospital service had developed, voluntary in character, but growing rapidly, and including quite new sections of the population. In these circumstances it was quite possible that the voluntary hospitals might elect to remain independent and continue as now, outside the orbit of the Ministry of Health, at any rate as regards management. They would probably continue to attract, thanks to the freedom and elasticity of the voluntary system, the services, medical and lay, of the best men and women of the time. Under modern conditions of the training of specialists it would be quite impossible to provide the new municipal hospitals with officers of the same status as those who staffed the voluntary hospitals without drawing upon the personnel of the latter.

Dr. Graham Little referred again to a scheme which he, with Mr. Walter Spencer, expounded in the *Times* fifteen months ago, and of which he spoke at the last Annual Representative Meeting. The scheme was, briefly, that in each area the voluntary hospital should take the lead, as its experience and prestige warranted, in the organizing of all the health services, and that a central advisory body should be constituted to guide and co-ordinate the services throughout the country, on which there should be representatives of the Ministry of Health and of the county councils, but with the representatives of the voluntary hospitals predominating. The nearer the new hospitals approached to the atmosphere and practice of the voluntary hospitals the more probable was their ultimate success in securing the confidence of patients, in maintaining economy and efficiency, and in gaining the enthusiastic co-operation of the medical profession.

ROYAL MEDICAL BENEVOLENT FUND.

SUBSCRIPTIONS are very urgently needed to enable the committee to meet the many calls for financial help which are made by those members of the medical profession, their widows, and dependants who are afflicted by poverty and want.

Each month, together with other applicants, there is more often than not a widow who comes for help, having been left destitute by the death of her husband; the amount the Fund is in a position to give is not adequate. Subscriptions and donations should be sent to the Honorary Treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, Cavendish Square, W.1.

At the last meeting of the Case Committee of the Royal Medical Benevolent Fund forty-seven applications were considered, and forty-four grants were voted, amounting to £979 5s. The following is a summary of three cases:

Widow, aged 52, of M.R.C.S., L.R.C.P., *whose husband died in February*, 1929, has been left with £300; her annual income can only be £15. A few friends have clubbed together and have promised to give £60 yearly. The Fund voted £35.

Widow, aged 41, of M.R.C.S., L.R.C.P., whose husband died at the age of 56 in February, 1929. It is hoped that the practice will be sold for £1,750, the interest on which will be the widow's only income. There is a boy aged 9 to educate. The Fund voted a maintenance grant of £26; efforts will be made to find salaried employment for the widow, and help will be given for educating the boy.

Widow, aged 65, of L.R.C.P. and S. Was left destitute on the death of her husband; support of herself as companion to a lady, but has broken down in health, has had an operation, and is now a semi-invalid. Her annual income is £77. Fund voted £25.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing, especially for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles. The gifts should be sent to the Secretary of the Guild, 58, Great Marlborough Street, W.1.

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British Medical Journal.

SATURDAY, MARCH 30TH, 1929.

FRACTURES OF THE ANKLE.

WE think it is a healthy sign that the treatment of fractures and the degree of success achieved in attempts to restore the injured parts *ad integrum* attract the increasing attention of surgeons. Particularly is this true as regards fractures of the lower ends of the bones of the leg and of the forearm involving the ankle-joint and wrist respectively. Any reduction in the efficiency of these joints means disaster for the working man and also a heavy charge on insurance funds. We recently commented on the good results obtained and statistics published by Messrs. Edwards and Clayton of the fracture department at King's College Hospital. The publication of this paper in our columns (January 12th, p. 61) was followed by one from Messrs. Grasby and Trick of Guy's Hospital (March 2nd, p. 391), and a fortnight ago Mr. Blundell Bankart contributed a valuable paper on the treatment of Colles's fracture (March 16th, p. 491), some letters in relation to which will be found at page 619. In our present issue (p. 585) we publish an article by Mr. Robert Ollerenshaw on the treatment of fractures involving the ankle-joint.

Such injuries as Pott's fracture have been frequently discussed, but there remains much to be desired in their routine treatment by the profession in general, and Mr. Ollerenshaw's contribution is welcome. As surgeon in charge of the orthopaedic department of the Salford Royal Hospital he has had good opportunities of acquiring experience, the results of which he communicated recently to the Manchester Surgical Society. Shortly, the result of an inquiry into 100 cases of ankle fracture of all kinds, including such severe injuries as fracture of both malleoli and of the astragalus, is that 89 returned to their *original* work, and that the average time of treatment of all the 100 cases was fourteen weeks, the extremes being eight weeks in the case of fracture of the external malleolus only and twenty-six weeks in that of marginal fracture. As these figures imply, the last-named type of fracture is the most disabling, while its existence may be overlooked and its treatment is difficult. The statistics of cure in the case of fracture of the external malleolus only are still better, for of 42 cases, 39, or more than 92 per cent., returned to their original work. As Mr. Ollerenshaw rightly points out, the statement "returned to work" is not a true indication of cure. A coal porter with a more or less disabled ankle might take up such work as driving a wagon, but if he returns to his original work of carrying two hundredweight of coal upon his back it is obvious that the cure is complete.

Radiographers of late have been able sometimes to hint to surgeons that they have not always appreciated the appearances on the *x*-ray plate or availed themselves thoroughly of the information it can give. Mr. Ollerenshaw is able to show that the report of the radiologist is not always infallible. In Fig. 1 of his paper he points out a gross subluxation of the astragalus from the tibio-fibular mortise in a radiogram on which the report was made of "no displacement." We do not wish to make much of such a case of carelessness, but mention it rather to enforce the teaching that in any cases of unilateral injury to a limb it should be an invariable rule that the sound member ought also to be *x*-rayed from an exactly corresponding point of view in order to provide a criterion of normality. Had this been done in the case in question it is not conceivable that the blunder could have been made. There seems no valid reason why, with proper teaching, every surgeon and every general practitioner who can obtain the help of *x* rays should not get a good result in the treatment of a Pott's fracture. The more severe and complicated injuries may call for special experience and skilled manipulation, and the correction of cases of malunion and old uncorrected displacement by open operation may well be left to surgeons with special experience. Such operations often call for the highest skill, the greatest experience, and the most well-balanced judgement. No routine rules for their performance can be laid down. Mr. Blundell Bankart, in his trenchant criticism of the treatment of Colles's fracture at a large teaching hospital, finds little on which to congratulate the surgeons in charge of these injuries at that school. Nevertheless it is a sign of grace that at such a school the importance of fractures of the wrist and their treatment is recognized in a way that would hardly have been probable before the war.

Such papers as this, and others to which we have referred, show that improvement has taken and is taking place, and we believe that the profession at large is aware of the need for improvement. When we compare Mr. Ollerenshaw's figures with those given by Clinton Dent little more than a score of years ago this encouraging fact is apparent. We believe and hope that the members of that admirable force the Metropolitan Police no longer have to leave the service because of Pott's fracture. All Mr. Ollerenshaw's "conclusions" are acceptable, but we would particularly lay stress on the last one—to the effect that "a fracture case, from the time of its arrival at hospital to the time of its discharge to work, should be under the supervision of one surgeon," and of one only.

THEORIES OF ENZYME ACTION.

SINCE the days of Pasteur problems of enzyme action have held the attention of biologists; indeed, though Pasteur himself was primarily interested in brewing and fermentation, he clearly realized the wide import of his observations. The years that have elapsed since his time have seen a tremendous accumulation of new facts concerning enzymes and their substrates, their source, and the conditions under which they act. To the pure organic chemist such observations must have proved a sore trial. To him cells and cell extracts often appeared simply as "messes"; yet they accomplished, at relatively low temperatures and close to the neutral point, reactions which he could himself bring about, if at all, only at high temperatures and with powerful reagents. It is not surprising that he was at first loath to admit the reality of the bio-phenomena described by the biologists and the bio-chemists. It is clear, however, that these enzyme actions underlie the activity of living cells. The common foodstuffs can be oxidized in the laboratory only by drastic means. The cells deal with them at 37° C. and at reactions close to neutrality; and even cells removed from the living body may retain the power of so doing. It is by these oxidations that the cells live and work. No one who believes in a greater future for medicine than that offered by empiricism and opportunism can afford to neglect such phenomena.

A review of the subject such as that given in Schoen's *Problem of Fermentation*[1] makes it plain that few of the aspects studied so far have much direct relationship to the immediate needs of medicine. The French and the Germans, who have been most active in the field, following in Pasteur's footsteps, have confined most of their attention to micro-organisms. Many of the data so obtained have found immediate practical application in industry. Apart from tanning and brewing, the development of the use of micro-organisms for commercial synthetic chemistry is as recent as it is extensive and striking. Remote from medicine, however, as such work appears to be, it is tempting to think that, could we but follow the clues correctly, the chemical behaviour of these useful and harmless organisms might throw light on the activities of their pathogenic relatives which command so much of our attention.

The study of the activities of mammalian tissue enzymes, difficult as it is, has proved and is proving fruitful. Following the lead of Hopkins and Fletcher, Meyerhof has partly unravelled the cycle of chemical changes underlying muscular activity; clearly, his thought has been greatly influenced by the similarities between carbohydrate degradation brought about by the yeast cell and that which occurs in muscular contraction. The work of Harden and Young on the importance of phosphates in alcoholic fermentation has its counterpart in the work of the Embden school on "lactacidogen." These points, again, are well discussed by Schoen. Wieland, Warburg, and Thunberg on the Continent, and Hopkins, Keilin, and Onslow in England, have built up a great structure of knowledge concerning oxidation systems, both plant and animal. If no comprehensive picture is yet possible there are at least many fragments waiting to be pieced together. But apart from increased knowledge of chemical mechanisms, has any helpful conception of the general nature of enzyme action yet emerged? Does, for example, Emil Fischer's "lock and key" hypothesis still hold the field? With the striking specificity of enzyme action in mind, Fischer postulated that an enzyme was a molecule having a special configuration that would fit the molecule of substrate just as a key fits a lock. Clearly, any given enzyme could thus fit but few substrates. Like Ehrlich's theories of immunity, the hypothesis was built around the facts, and as facts accumulated it became more and more unwieldy. It presupposed the enzyme to be a definite chemical entity; other facts make it certain that its molecule must be of colloidal dimensions; yet we have to picture for a single liver cell no fewer than fifty different sets of such molecules. Quastel states that in *B. coli* the number of enzymes dealing only with oxidations would have to be at least fifty-six. Moreover, many of these enzymes must be specially devised, as Hopkins first pointed out, to cope with materials which the cell could never meet unless it suffered the misfortune of falling into the hands of a biochemist.

It seems that the old theory, having done wonderful service in co-ordinating knowledge and stimulating new work, has had its day. Can we put anything in its place? Quastel and his collaborators, in a series of papers, a summary of which has recently appeared in the *Journal of Hygiene*,[2] have put forward a theory that seems to explain many of the facts, and to provide an excellent starting place for further work. It is interesting that they have once more turned to the micro-organism; to them, however, the micro-organism is not only a living entity: it is a convenient source of the enzyme systems which they wish to study. For purposes of their analysis, they have commonly used "resting" bacteria. These, they explain, are washed suspensions of bacteria which are used under such conditions that they are for the most part "non-proliferating" or "resting" during the time of experiment. They are by no means necessarily dead. Some of their most interesting results, however, have been obtained by using organisms which are, "bacteriologically," dead. On the basis of their researches Quastel and his collaborators conceive that an enzyme is not so much a specific chemical compound as the centre of a particular and sharply localized set of physico-chemical conditions. They suggest that at some colloidal surfaces centres exist where the arrangement of molecules may serve to set up powerful electric fields of force. Such conditions in the inorganic realm are perfectly familiar to the physicist. Molecules having a certain configuration will be attracted and held by the fields of force at these centres. Of the molecules so attracted or adsorbed a certain proportion, having again a definite structure, will be so affected that an electron shift will occur, and they will pass into a condition which enables them very readily to undergo chemical change. This process Quastel terms "activation." Only certain molecules within the range of the field can be adsorbed, and of these molecules only some will be activated. The process is to this extent specific, but the conception differs widely from that of specificity in Fischer's sense. On this basis it has been possible to predict what molecules will be activated by any given system, and to verify the prediction.

To certain orthodox bacteriologists the notion of working with "resting" or non-proliferating bacteria seems to have been a stumbling-block. To them, apparently, bacteria must be either living and proliferating, or dead and unworthy of notice. Such a view would definitely hinder the progress of our studies of the biochemical nature of bacteria and other organisms, for it is clearly of the greatest importance to understand in chemical terms what happens to an organism when it is exposed to different conditions, quite independently of whether it survives the exposure or not. If this were not so it would seem reasonable to object to most of the work done on yeast or on excised tissues, on the ground that these may not be capable of further normal function.

[1] *The Problem of Fermentation*. By M. Schoen. With an introduction by Professor A. Fernbach. A monograph of the Institut Pasteur translated by H. Lloyd Hind, B.Sc., F.I.C., and revised and enlarged by the author. London: Chapman and Hall, Ltd. 1928. (Roy. 8vo, pp. xii + 211. 21s. net.)

[2] *Journal of Hygiene*, 1928, 28, p. 139.

TUBERCULOSIS AMONG PRINTERS.

THE method of statistical analysis might be expected to supply data on which could be based an explanation of the comparatively high death rate from tuberculosis among members of the printing trades. Certainly there is very small measure of agreement about the explanations that have proceeded from other methods of inquiry. Lead poisoning of a slow, chronic, insidious form, producing not true plumbism but a lowering of resistance to infection, has been inculpated on the ground that in the printing trade lead poisoning and tuberculosis go hand-in-hand, both being higher in the occupations with greatest exposure to lead, and both falling as cleanliness and good ventilation increase. Alternatively, it has been held that the excessive incidence is due to cramped quarters, preference for working in an inadequately ventilated atmosphere, a

massive infections. Occasionally stress is laid on the presence in the atmosphere of dust and carbon monoxide created by the printing processes, and a lack of personal cleanliness and regular habits among the workers. These various explanations have this in common, that they invoke the influence of noxious factors in the printer's environment. On the other hand, it has been suggested that the cause may lie in the recruitment by the industry of persons of poor physique, a view which, however, finds no support in an American report by Hoffmann,[1] who concludes that there is no evidence "sufficiently pronounced to be suggestive of men of a decidedly inferior physique seeking employment in the printing trades." The problem is complicated by the fact that while the death rates from tuberculosis are in every age group higher among printers than among the general population of occupied males, the death rates from all causes, in almost every age group, are definitely lower. A statistical inquiry recently conducted by Dr. A. B. Hill[2] on behalf of the Industrial Fatigue Research Board into the incidence of sickness both from tuberculosis and from all other causes among the different occupational groups within the industry, while not explaining the relatively high tuberculosis rates among printers, brings out certain differences between the occupational groups which suggest lines along which a solution may eventually be reached. Medical examination of apprentices entering the trade should determine whether the high morbidity incidence of mortality among compositors aged 16 to 19 years, as compared with that among machine workers in the same age group, is due to the recruitment of weaklings in the one occupation and of a more physically select class in the other. Should it be found, in fact, that between these groups there is equality of physique on entry, some evidence of the effect of environmental factors would be obtained if the medical examination were made, not only on entry, but at intervals during the whole apprenticeship period. Detailed correlation of the conditions existing in specific printing houses, with their morbidity experience, would provide additional data to the same end. Dr. Hill finds that relative to their experience in later life the printers have high sickness and disablement rates in the first years of insurance, and that in this age group they occupy their most unfavourable position when compared with the general insured population. In later groups, on the other hand, they are at a distinct advantage, having throughout insured life a short-period incapacity rate about three-quarters of that for the insured population, and from the age group 35 to 39 onward a long-period incapacity rate only four-fifths of that suffered by other workers. Comparison of the occupational groups points to the conclusion that compositors begin, and perhaps end, their working life with an unfavourable morbidity experience, but that for all the intervening period they have a distinct advantage over others in the printing trade, their only rivals being the bookbinders and rulers. Excessive morbidity figures observed among the printers in the 16 to 19 age group are accounted for in large part by the high incidence of nearly all diseases at these ages among compositors, the latter, indeed, being almost entirely responsible for the pronounced tuberculosis rate in this age group. Phthisis is distinctly high for machine printers of ages 40 to 59, and for warehousemen of the age group 30 to 39; among compositors the liability to phthisis extends up to the age of 30, and reappears in the age period 60 to 69. It is possible that the long period of relative immunity enjoyed by compositors may be due to the operation of unfavourable environmental conditions which, while eliminating the weaker members by death, permits the survival of the more physically fit who possess or can acquire an immunity to tuberculosis. On the other hand, whatever may be the environment, if the occupation attracts an undue percentage of weaklings they would probably be eliminated from the trade, not necessarily because of the conditions of their work, but because they are unfit to retain their health and work under any conditions.

[1] U.S. Bureau of Labour Statistics. No. 427. Washington, March, 1927.
[2] An Investigation into the Sickness Experience of Printers, with special reference to the incidence of tuberculosis. Medical Research Council Report No. 54. 1929. H.M. Stationery Office. 4s. 6d. net.

DOSAGE AND NOMENCLATURE OF DRY PREPARATIONS OF GLANDS.

GLANDULAR therapy is slowly but steadily increasing in importance as our knowledge increases concerning both the effects produced by the active principles, and also the methods by which these can be prepared in a stable form. One annoying source of confusion in glandular therapy is that there has been no generally recognized convention governing the measurement of the active substance contained in the preparations. Hence the strength of different preparations, as measured in terms of fresh gland, has varied considerably, and the confusion has been increased by the amounts of gland being expressed sometimes as weight of dried gland and sometimes as weight of fresh gland. For example, the term "1/2-grain tablet" applied to a preparation of thyroid may mean that the tablet contains 1/2 grain of dried thyroid, or it may mean that it contains the equivalent of 1/2 grain of fresh gland. This uncertainty sometimes results in patients receiving doses of gland very different in magnitude from what the prescriber intended, and it is a constant source of confusion when the results of glandular therapy reported by different authors are compared. The American Drug Manufacturers Association has now agreed upon a series of figures for the amount of fresh gland that a unit amount of preparation should represent, and also upon a standard nomenclature for these preparations. The following are examples of some of the agreed ratios and nomenclature:

Desiccated ovarian substance ...	1 : 6 of fresh ovarian gland.
Desiccated parathyroid substance	1 : 10 of fresh parathyroid gland.
Desiccated thyroid substance ...	1 : 5 of fresh thyroid gland.
Desiccated pituitary—	
Anterior lobe substance	1 : 5 of fresh pituitary anterior lobe.
Posterior lobe substance ...	1 : 6 of fresh pituitary posterior lobe.

If these conventions are generally adopted it will be a great convenience, for it will eliminate the unnecessary confusion that arises from the use of such terms as "thyroid extract," and also the uncertainty produced by such a term as "1/2 grain of thyroid."

LEPROSY IN THE BRITISH EMPIRE.

In its annual report for 1928 the committee of the British Empire Leprosy Relief Association reaffirms the belief that, if the plans which are now being advocated and put into operation in many parts of the Empire can be pushed forward with real determination, there is a possibility of abolishing this disease in many areas within the next thirty years or so. The work of the association is extending, and covers a variety of activities, some of which were described in our issue of June 23rd, 1928 (p. 1071). A new development is illustrated by the announcement that in Fiji nearly 1,000 trees which yield the oils used in the treatment of leprosy are now being grown from seed supplied by the association. It has been recognized that great advantages will accrue if the hydnocarpus oil can be obtained locally wherever it is used, and efforts of this kind are therefore being made in all parts of the Empire where leprosy work is being carried on. The anti-leprosy campaign in India continues to be pushed forward vigorously under the Indian Council of the Leprosy Relief Association, which,

at the instance of Lord Reading, when he was Viceroy, raised a fund of over £160,000 for this purpose. Branches of the association have been formed in many countries, and, during the year under review, the list of grants for enlarging the existing treatment centres and opening new ones shows a total of nearly £4,000. Regular supplies of the most effective drugs are being sent out to these centres, together with other necessary supplies. The association publishes a quarterly journal entitled *Leprosy Notes*, to which several references have been made in our columns.

B.C.G.

THE subject of pre-immunization of infants against tuberculosis by means of the Bacillus Calmette-Guérin continues to occupy the attention of the Académie de Médecine in Paris. Our readers may be reminded that Professor Calmette asserts that a virulent strain of bovine tubercle, attenuated by cultivation on a glycerinated bile medium, not only protects calves from infection with tuberculosis when injected under the skin, but also immunizes infants to the disease if administered by the mouth within ten days of birth. During 1928 a violent, if somewhat unconvincing, attack on Professor Calmette's assertions was carried on by Professor J. Lignières, a veterinary expert, references to which were made in these columns on May 26th (p. 909), June 23rd (p. 1077), and November 24th (p. 950). This attempt at vaccination against tuberculosis has been practised extensively in several parts of Europe, and in one of the Balkan countries the infants of whole communities have received doses of B.C.G. Nevertheless grave doubt has been cast upon Professor Calmette's use of statistics, notably by Professor Major Greenwood in the *British Medical Journal* of May 12th, 1928 (p. 793). At the session of the Académie de Médecine on December 18th last Professor Lignières returned to the charge with more orderly argument, designed to prove that the immunity conferred by B.C.G. is only relative and transitory. He contended also that the vaccination of healthy infants not exposed to the contagion of tuberculosis is not only unjustifiable, but may involve danger to the health of the infants. In the course of his communication Professor Lignières referred to recent experimental work with B.C.G. undertaken in Canada by Mr. E. A. Watson, in collaboration with Mr. C. W. McIntosh and Mr. H. Konst. These researches on B.C.G. and experimental vaccination against tuberculosis were conducted in the research laboratories of the Department of Agriculture, Hull, Quebec. They began shortly after the publication of Professor Calmette's work in 1924, and were directed first to the question of the pathogenicity of B.C.G. Of 134 guinea-pigs injected, 30 were found on death or slaughter to have tuberculous lesions, while in 12 there was extensive caseating generalized tuberculosis. As the authors were convinced that they could eliminate any question of spontaneous or naturally acquired tuberculosis in their guinea-pigs, and were equally confident that contamination of the B.C.G. cultures they used was impossible, they came to the conclusions, from their three and a half years' work, that B.C.G. had not been entirely deprived of virulence; that virulence was a *latent* property of B.C.G., requiring some unusual stimulus, and especially time to awaken it to activity; and that it was capable of causing in guinea-pigs, after a long period of infection and tolerance, a progressive and fatal tuberculosis, which was transferable from animal to animal in serial passage. The second part of the report of the Canadian investigators deals with experiments involving the vaccination of some seventeen calves with B.C.G. An attempt was made to reproduce conditions similar to those of the farm at Gruville, near Fécamp (Seine-Inférieure), where Professors Calmette and Guérin claimed great success for their method. But the Canadian animals were in a more favoured position in that they were drawn from tuberculosis-free herds. Yet all the seventeen animals—fourteen vaccinated and three used as controls—were found when killed to contain tuberculous lesions. The calves, after vaccination, were fed with the milk of tuberculous or suspected cows, as was done at Gruville; but it is noted that since 1927 Professors Calmette and Guérin have introduced an important modification of their methods, in that they now recommend that for thirty days after vaccination the animals should be fed only with boiled milk. The investigators are at present undertaking a series of experiments under the new conditions. It would seem, therefore, that the authors of the report, although anticipating severe criticisms of their experiments, are right in their view that B.C.G. vaccination is still in the experimental stage, and that its innocuousness and its efficiency are both open to question.

J. J. WATERSTON: A MAN BORN OUT OF HIS TIME

J. J. WATERSTON, born in Edinburgh in 1811 and educated in mathematics and physics under Sir John Leslie, at the age of 21 came up to London to train as a civil engineer. Having qualified, he sought for work that would enable him to follow his hobby—pure science. The post of naval instructor to the East India Company's cadets answered his purpose, "giving him leisure and no anxiety, care, or responsibility, and at the same time enabling him to lay up a little for old age." The rest of his life was devoted mainly to scientific thought. In his first serious adventure—namely, an attempt to express mental phenomena in terms of physical changes—he perceived that the excessive refinement of structural adaptations exhibited by living organisms must depend ultimately on molecular adaptations. To molecules, therefore, he turned his attention, since he felt that, in whatever way the phenomena of nature were examined, molecularity was the grand terminus to which all investigations tended. Thus he was led to the study of molecular physics, and in particular to the physics of gases; and in this branch he exhibited a penetration which marks him out as one of the greatest thinkers of the nineteenth century. He discovered that the physical laws common to all gases and vapours could be brought under one broad generalization on the assumption that a gas consists of molecules travelling with enormous rapidity in every possible direction. A carefully written paper, in which this dynamical theory of gases and of heat and temperature was formulated with great precision and clearness, was sent in to the Royal Society in the year 1845—and rejected. The two referees appointed to examine it pronounced it unworthy of publication, one of them expressing the opinion that it was "nothing but nonsense, unfit even for reading before the Society." In itself the incident may be considered trivial, but its practical effect was permanently to eclipse Waterston's splendid generalization. By the rules of the Society publication of the paper elsewhere was prohibited, and although Waterston made some attempts to draw attention to the subject, his efforts were without effect. The discovery was made afresh by other men some fifteen years later, and before the end of the century the dynamical theory had become a commonplace in ordinary textbooks. The incident has a pleasant sequel. A few years after Waterston's death Lord Rayleigh discovered the now celebrated paper in the archives of the Royal Society, and published it in the *Philosophical Transactions* (1892), with a generous appreciation of Waterston's work; and recently Professor J. S. Haldane has edited the collected works,[1] prefaced by an interesting

[1] *The Collected Scientific Papers of John James Waterston*. Edited, with a biography, by J. S. Haldane, M.D., LL.D., F.R.S. Edinburgh and London: Oliver and Boyd. 1928. (Med. 8vo, pp. lxvii + 709; illustrated. 25s. net.)

biography of Waterston, whom he actually ranks highest in the brilliant group of physicists turned out in the early part of the last century by the Scottish universities, including such men as Brewster, Forbes, Thomas Graham, Andrews, Rankine, Kelvin, Clerk Maxwell, Tait, and Balfour Stewart.

TENDENCIES OF MEDICAL EDUCATION IN AMERICA.

THE transition from individualism and *laissez-faire* to communal interference and even control, effected in this country during the middle of the nineteenth century, has had its counterpart in the United States during the last fifty years. As in England so in America, this evolution has not been achieved without considerable changes in social theory—changes, moreover, which have not been confined merely to the domains of politics and economics, but have invaded that synthesis of ideas and beliefs and aspirations collectively known as the spirit of the age. When economic life was dominated by *laissez-faire* so were other institutions, so even was ethics. The gradual supersession of individualism in industry, the revolution which began with factory legislation and moved irrevocably to trusts and rationalization, has been accompanied by a transformation not only in political theory, but by a corresponding change in the structure of nearly all social institutions. In America the most striking changes have been effected in medical education. William Low Bryan, president of Indiana University, writing in the *Journal of the Association of American Medical Colleges*, states that in the past fifty years America has seen the substitution of extreme licence in medical education by the other extreme of social control. As recently as twenty-five years ago America swarmed with medical schools, each autonomous and determining its own course of study and standard of qualification. Many of these schools were fraudulent and unable to give proper training for medical practice. Then, under the inspiration of the American Medical Association, came the passing of *laissez-faire*; schools were inspected with relentless thoroughness, black lists were published, and the weaker schools perished by the score. Within an astonishingly short time so extreme a revolution has been wrought in medical education that there are now signs of a reaction towards the old individualism. In other educational institutions, in the colleges of arts and sciences, this reaction is already an accomplished fact; daring educational experiments are being made, and here and there students are immune from strict prescription in their course of study. In Indiana the non-medical student is free of all rules except that he must not shoot a professor; Mr. Bryan does not state if this rule is rigidly enforced. Significant of the present-day tendency—the tendency perhaps to blend what is best in social organization with a healthy individualism—is Mr. Bryan's peroration. "Across the path of every man," he says, "are the traffic cop, the health officer, and the rest of the police. What is infinitely more important, across the path of the youth are the schools and licensing boards which allow him or forbid him to make his living at his chosen profession. . . . Our task, and if necessary our fight, is to keep the school and all standardizing agencies in continuous living adaptation to the needs of man."

BRITISH JOURNAL OF UROLOGY.

A WELCOME and important venture in medical journalism is the publication, by Messrs. Constable and Co. Ltd., of the first issue of the *British Journal of Urology*,[1] a new quarterly periodical, edited by Mr. Frank Kidd, M.Ch., F.R.C.S., and Mr. H. P. Winsbury White, F.R.C.S., with the assistance of an editorial committee of British urologists. This is the second periodical in English devoted to urology, the first being the *Journal of Urology*, founded in America ten years ago. In a letter which appeared in our columns on March 2nd (p. 421) announcing the forthcoming publication of the new journal, it was pointed out that, although there has been an active British section taking part in the congresses of the International Society of Urology, and the council of the Royal Society of Medicine has thought fit to establish the subject of urology as a separate section, and not as a subsection of surgery—thereby showing that urology was held to be entitled to differentiation as a separate subject for study—"there is nowadays such abundance of special work being done that can only find a voice if it can be given the additional outlet of a journal specially devoted to the subject." The editors of the *British Journal of Urology* hope that not only will the new publication unite in closer harmony and lend added prestige to the work of the ever-increasing number of urological workers in the British Empire, but that it will serve as a link between urologists in England and their colleagues in other countries. In each number, for the help of visitors, will be published a list of the chief British urological clinics, and the editors hope further, by the publication of articles from American writers, to fulfil the great responsibility that rests on all scientific workers to strive for comity among the nations and an age of peace. The present issue contains several original articles, records of interesting cases, biochemical notes, urological hints for practitioners, abstracts from current literature, and an index to that literature conceived on modern lines. A great deal of the material is of interest as much to the general practitioner as to the specialist in urology.

[1] Price 6s. Annual subscription 20s., post free.

INFLUENZA.

IN the week ending March 16th there was a substantial decrease in the mortality attributed to influenza, as well as in the incidence of notified pneumonia. In the great towns the deaths assigned to influenza fell from 2,127 to 1,552, and in England and Wales the number of notifications of primary pneumonia decreased from 5,818 to 4,897. Some Midland cities—for example, Nottingham and Derby—and some cities of Yorkshire—for example, Bradford—had more deaths from influenza than in the previous week, but in most the maximum was reached earlier. The West Midland area, where both notification and death rates were highest in the previous week, still suffered greatly. The rate for deaths from influenza (based on towns only) has fallen in the West Midlands from 234 per million to 171, and the notification rate of pneumonia from 302.7 to 263.1 (by a slip of the pen these rates were erroneously stated last week to be per 100,000 instead of per million). In the south-western area and in Wales the notification rates of pneumonia were still increasing last week, but were on a relatively low level. On the whole, although no doubt mortality will continue to be abnormally great for some weeks, there is sufficient evidence to justify the belief that a general decline has now set in. The recrudescence has been the most serious since the great pandemic, and has taken a heavy toll at ages beyond middle life.

THE PRINCE OF WALES, President of King Edward's Hospital Fund for London, has appointed Lord Dawson of Penn, G.C.V.O., to be a member of the General Council of the Fund.

SIR BERKELEY MOYNIHAN, Bt., upon whom the King has conferred the dignity of a Baron of the United Kingdom, has adopted the style and title of Baron Moynihan of Leeds in the County of York.

DERMATOLOGY AND GENERAL MEDICINE.

THIRD LETTSOMIAN LECTURE BY DR. H. W. BARBER.

IN his third and concluding Lettsomian Lecture[1] delivered to the Medical Society of London on March 22nd, Dr. H. WORDSWORTH BARBER said that in previous lectures he had emphasized the close relationship existing between the skin and the sympathetic nervous system and ductless glands, and he proposed in this lecture to carry the consideration forward, in the first place, into that group of disorders to which Freeman had given the name of "toxic idiopathies," and, in the second place, into a trio of closely related cutaneous conditions—namely, alopecia areata, vitiligo, and scleroderma.

"Toxic Idiopathies."

In speaking of these he called attention to the regrettable tendency which still existed of referring to them as if they were diseases *sui generis*. They included a number of cutaneous, subcutaneous, respiratory, gastro-intestinal, and nervous conditions—for example, in the cutaneous group, urticaria, true infantile eczema, certain forms of eczema occurring after infancy, and some forms of pruritus and prurigo; in the respiratory group, hay fever; in the gastro-intestinal group, certain forms of vomiting and diarrhoea; in the nervous group, migraine. He adopted Freeman's term "toxic idiopathies" because it conveniently indicated their toxic origin and implied idiosyncrasy. By idiosyncrasy he meant that certain persons had an inborn tendency to develop sensitiveness to one or more foreign substances, though idiosyncrasy was a relative term of widely varying incidence. Dr. Barber gave several illustrations of such sensitiveness, and among other observations mentioned that all those who constantly handled salts of nickel sooner or later suffered from nickel dermatitis, showing that the liability to become sensitized by contact with certain substances was found in so great a number of persons that it could not be attributed to individual idiosyncrasy. On the other hand, only a relatively small proportion of those who handled primula became sensitized, and there was often a familial idiosyncrasy towards this plant.

Various observations went to show that the toxic idiopathies, although often familial and hereditary, might nevertheless be regarded as allergic in nature. There was a type of person whose life-history might be said to be "one damned idiopathy after another," though such extreme cases were relatively uncommon. One particular symptom might be traced through several generations, but more often the affected members of the same family manifested different symptoms. Moreover, there was every gradation, from these rare cases of hypersensitiveness to various antigens, with multiple symptoms, down to the cases which showed one symptom only. Probably what was inherited was a disordered balance in the make-up of the endocrine autonomic system on which this tendency depended. A perfectly normal person, with no inherited predisposition, might under stress of an acute or chronic infection or a severe emotional shock develop symptoms of such disturbance with, for the first time in his life, one or more toxic idiopathies. The lecturer had seen asthma, for example, after acute infections or shock. He thought the toxic idiopathies might justifiably be considered as allergic reactions, and the cutaneous manifestations compared with eruptions such as the tuberculides and trichophytides.

Factors Predisposing to the Sensitized State.

Among the toxic idiopathies some cases were met with—for example, hay fever due to a particular pollen, or urticaria from some specific food substance—which were constants, the skin giving a specific reaction, and the whole phenomena being capable of reduction to a relatively simple physiological experiment; but in many other cases no such specific sensitiveness could be found. It was known that the urticarial wheal was provoked by a histamine-like substance or by histamine itself in the skin. Such a response might follow in certain persons merely from stroking the skin; in others from contact of an antigen with sensitized skin cells. Presumably it was a local defensive mechanism. But how was so-called psychogenic urticaria to be explained? One patient consulted him for genuine attacks of urticaria occurring whenever he was confronted with an important business appointment or the prospect of meeting strangers socially. Was it to be supposed that in emotion or anxiety there was a liberation of histamine? In practically all the toxic idiopathies the anxiety state alone might provoke the paroxysms.

The known factors predisposing to the manifestation of the sensitized state were: (1) sensitizing with foreign substances; (2) peripheral irritation; (3) psychical stimuli. The presence of a so-called reflex source of irritation might be of great importance, and was often forgotten. In asthma it was well known that a nasal abnormality might be the provoking cause of the attacks; similarly an overloaded stomach or exposure to strong sunlight might excite the asthmatic paroxysm. Eyestrain, a painful tooth, a misplaced uterus, might provoke disproportionate symptoms of sympathetic disturbance. Those who suffered from the toxic idiopathies, as Freeman pointed out, fell into the hands of different specialists in turn. These patients more than others provided a handle to the accusation against the specialists, and demanded from their consultants a range of knowledge wider than was usually to be expected. In addition to the three factors just mentioned there was a fourth, namely, the metabolic factor, and the lecturer had something to say on the investigations into cyclical changes and on the metabolic restoration following an alteration of environment.

Alopecia Areata, Vitiligo, and Scleroderma.

Dr. Barber turned next to the trio of related conditions already mentioned—alopecia areata, vitiligo, and scleroderma. The literature regarding these conditions, he said, was enormous, but the involvement of the autonomic nervous system was apparent from the experimental and clinical observations. He contented himself with some comparisons between the three conditions and with a brief treatment of each in turn. All three, for example, might occur in a localized and in a generalized form. He discussed the changes which constituted the life-history of a patch of alopecia areata, and particularly emphasized the redistribution of the pigment whereby the part near the root of the hair became depigmented, and, secondly, the atrophy of the hair, which did not occur after parasitic infections such as ringworm. The real significance of the "exclamation mark" hairs in alopecia areata was that, apart from this condition, they were met with, so far as he knew, only on depilation by *x* rays and on the internal administration of thallium acetate. In the etiology of alopecia areata there was the following significant fact: that two at least of the factors which he had mentioned as predisposing to the toxic idiopathies came into play—namely, peripheral irritation and psychical stimuli. There was general agreement as to the importance of the psychical factor in many patients with alopecia areata, and numerous cases had been recorded in which a definite shock preceded its onset. One of his patients had three separate attacks, each one immediately after the death of a relative.

In vitiligo the same predisposing factors were found clinically—namely, peripheral irritation and psychical stimuli. One feature of vitiligo of great interest was its association with pigmented moles, but the discussion of the full significance of this would involve the origin of naevi. He quoted cases, one following a nervous breakdown, which supported the idea of the sympathetic nerve origin of vitiligo. He also referred in the same way, but more briefly, to scleroderma, mentioning its frequent association with thyroid disorders and its occurrence both in Graves's disease and in myxœdema.

In conclusion, Dr. Barber said that he had tried to emphasize the importance of the skin as a vital organ both in health and disease. The appreciation of this importance was gradually gaining ground, but ignorance of the most elementary principles of the etiology and pathology of the skin was widespread. It seemed to him that the student might profitably spend more time in studying the changes

[1] The first and second lectures were reported in the *British Medical Journal* of March 2nd (p. 412) and March 16th (p. 513) respectively.

in the skin and mucous membrane indicative of metabolic changes or the beginnings of disease, and be excused the study of much less relevant matter.

Dr. PARKES WEBER, in proposing a vote of thanks to the lecturer, said that general practitioners were conspicuous, in England at any rate, for their carelessness with regard to the dermatoses, though they had great responsibility thrown upon them in the certification of cases. Dr. HALDIN-DAVIS, in seconding, said that dermatology had been honoured in the choice which the society had made for its Lettsomian lecturer, who had ably demonstrated, what was sometimes forgotten by the physician, and even by the dermatologist himself, that dermatology was a branch of general medicine.

England and Wales.

Royal Sanitary Institute Dinner.

THE annual dinner of the Royal Sanitary Institute was held at the Hotel Metropole on March 21st. The Duke of Northumberland, K.G., presided over a large and distinguished company, which included representatives of Government departments, the services, and medical bodies. Sir John Rose Bradford, P.R.C.P., in submitting the toast of "The Public Health," said that the present was a time, if rightly used, of great promise to public health and to the future of medicine. The Local Government Bill, then in its final stages in the House of Lords, was of supreme importance from that point of view. With regard to the future of the voluntary hospitals he himself had no fear. He did not believe that the British public would tolerate the disappearance of such institutions. While it was true that if the voluntary hospitals disappeared expenditure would be increased by millions, the monetary loss would be small compared with the other losses involved. It must always be kept in mind that the standard of medical treatment, the advance of medical knowledge, and the training of doctors and nurses were mainly due to the voluntary hospitals. The experience and the spirit of the voluntary hospitals must be not only preserved but extended to, and incorporated with, the other institutions with which the present legislation primarily dealt. Sir Arthur Robinson, Secretary of the Ministry of Health, said that he knew the Minister would be ready to adopt as his own every word that Sir John Rose Bradford had said with regard to the voluntary hospitals. He went on to say, after a brief review of recent progress in public health, that, while it was often necessary to dilute the ideal with the practical, the Ministry in the course of years, and very largely owing to the inspiring lead of the present Minister, had come appreciably nearer to one of its ideals with the passing of the Local Government Bill, which touched not only public health, but nearly every element in local government administration. That measure gave to the Ministry, the local authorities, voluntary associations, and the medical profession magnificent opportunities. Actually as it stood it was a great public measure, and potentially it was a still greater one. He could promise that, so far as the Ministry was concerned, there would be a continuance in the well-tried way of partnership with the local authorities and their staffs, and with the medical profession. The toast of "The Royal Sanitary Institute" was proposed by Sir Ewen Maclean, President of the British Medical Association. After touching on the value and scope of the Institute, he went on to show that, in spite of a certain impression which might have been gained from Sir John Rose Bradford's remarks, the financial factor had to be taken seriously into consideration in connexion with the voluntary hospital system. From certain investigations he had carried out he found that for £50,000 put into a voluntary hospital, value to the extent of £1,500,000 per year was returned to the community; at a moderate computation he valued the services of the honorary staff at £350,000 annually. Sir Ewen Maclean added that there was one man who had to be taken into account in all schemes of reconstruction touching the public health—namely, the general practitioner. Any scheme which was so foolishly devised as not to utilize the general practitioner's knowledge and experience was doomed from the first to a severe handicap. He hoped the general practitioner side of the question would be taken into account. The Duke of Northumberland, in responding, referred to the great progress in sanitary science which had taken place during the history of the Institute. The great duty to which the Institute was committed was the education of the citizens in the laws of sanitation. As the science of sanitation improved, multitudes were kept alive who in former times would have been carried off by disease. This in itself raised new problems which would have to be solved before many years had elapsed, and yet another problem would arise with the increasing restrictions which the improvement in sanitation imposed upon the liberty of the subject. But the Institute could not be wrong in pursuing its educative work. Professor Bostock Hill, chairman of council of the Institute, proposed the health of "The Guests," to which Sir Humphry Rolleston, Bt., and Sir Holburt Waring briefly replied.

Extension of University College Hospital.

Prince George presided over the annual meeting of the Corporation of University College Hospital on March 21st, when Sir Herbert Samuelson, chairman of the general committee and treasurer, presented the reports and accounts of the hospital. Sir Herbert said that the past year marked the first stage in the extension scheme initiated in 1922; with the completion of the reconstruction of the main hospital buildings the full complement of 529 beds became available. The Rockefeller Foundation had given a sum of approximately £31,000 to build a new preliminary training school for nurses, and it was hoped that the building would be completed within the next twelve months. The number of in-patients treated during 1928 was 7,753, as against 6,580 in 1927; the out-patients' attendance figure was 258,142, comparing with 247,786 in the preceding year. The hospital was still seriously handicapped by having insufficient supplies of radium at its disposal; although the generous gift of £50,000 to the King's Fund by Sir Otto Beit for the purchase of radium for loan to hospitals would temporarily relieve the situation, the demand for further supplies would soon become pressing. It was hoped that Sir Otto Beit's fine example would evoke other benefactions of a similar nature. Sir Herbert Samuelson referred to the fact that negotiations were in progress between the London County Council and representatives of the voluntary hospitals in London regarding the public health services and the provision of more adequate hospital accommodation; he expressed the hope that the voluntary hospitals, while maintaining unimpaired their traditional heritage, would be assigned a definite and responsible place in the public health service of the country. The income of the hospital for the year was £110,664, an advance of £21,527 on that of the preceding year. The increase reflected the result of a special appeal inaugurated by the Duke of Bedford to clear off the debt of £30,000. The expenditure for 1928 was £100,654, which was larger by £10,005 than the sum spent in the previous year. In order to meet the estimated expenditure of £108,000 for 1929, when the full resources of the hospital would be available, it would be necessary to raise at least £30,000 from voluntary subscriptions and donations.

The Minister of Health at the Royal Free Hospital.

The Minister of Health attended the annual court of governors of the Royal Free Hospital, London, on March 19th. In a reference to the future of voluntary hospitals under new legislation he said that he thought the apprehensions of many were unfounded. It had been feared that the support of municipal hospitals by the rates would mean the end of the voluntary system. If such a result did follow it would be very unfortunate for the ratepayer, because he would have to take on his shoulders a burden hitherto borne by private generosity. But the fact was that these municipal hospitals could not be carried on effectively without the good will and co-operation of the voluntary hospitals. He had recently inserted in the Local Government Bill a clause which made it a statutory duty for local authorities, before considering how to dispose of the hospital accommodation with which they had

to deal, to consult with the bodies in their area representative of the voluntary hospitals and their staffs. The changes made by the bill, so far from injuring voluntary hospitals, would establish them in a position of security such as they had never yet enjoyed; they would be an indispensable feature of the institutional system in their areas. Mr. Chamberlain then turned to the Royal Free Hospital, which, he said, was a century-old example of the value of the voluntary system. It was remarkable also in that it trained only women doctors; he congratulated the hospital on having the names of three of its members in the recent Honours List. The successful invasion by women of almost every sphere of professional and public life was one of the features of the present age. At the same time the callings which had always been, and always would be, predominantly feminine had not suffered. There was no service of which the country had more reason to be proud than its nursing service. At the end of 1928 there were 64,000 nurses on the register for England and Wales, and in the previous year nearly 15,000 had given notice of their intention to practise as midwives. Both in general nursing and midwifery the standard had been continuously raised, so that to-day the qualified nurse was not merely a servant of the doctor, but his intelligent co-operator and partner. It was just seventy years since the name of the first woman doctor—Elizabeth Blackwell—appeared on the *Register*. According to the census of 1921 there were 1,200 women doctors, and since then between 2,500 and 3,000 women had entered the profession. There were also women dentists, pharmacists, veterinary surgeons, and sanitary inspectors; in law, surveying, architecture, accountancy, and in analytical and research chemistry, many women were engaged. In his own department, added Mr. Chamberlain, he was very conscious of this influx. Last year the local authorities were making use of 2,280 health visitors, all of them women, and in addition 340 visitors were employed by voluntary agencies in connexion with infant welfare centres. In the civil service it was no secret that women were entering the administrative grades in open competition; the first woman to succeed was to-day an officer of the Ministry of Health. All this was a noteworthy change in our social system. Mr. Chamberlain looked forward with satisfaction to the growing assistance of women in local administration. Last year no fewer than ten women had been elected mayors. In the Local Government Bill it was provided that where co-option took place on the committees and subcommittees of local bodies some of the co-opted members must be women. He believed that many ladies who, shrinking from a contested election, began by being co-opted, would have their interest so keenly enlisted that if the way of co-option were no longer open they would endeavour to enter as elected members. Prejudice against the progress of women was disappearing, and their co-operation entailed an enrichment of the life of the community.

Northampton General Hospital.

The annual report of the Northampton General Hospital for the year ended July 31st, 1928, will serve to remind its readers of the fact that, while the position of the voluntary hospitals, as a whole, has improved materially since the critical years after the war, there are many institutions which are still faced with crippling financial difficulties. The managers have been able to reduce the average costs per patient, and the ordinary income was slightly higher; in all departments, however, the work of the hospital has increased and the total expenditure has advanced somewhat. Consequently there was a deficit on the current account of over £3,881, and £5,650 has been transferred from legacy account. It may be added that a similar procedure was necessary in the previous year, when the board, faced with an accumulated deficit on working of almost £7,600, took £7,910 from legacy account. The financial reserves of the hospital have consequently been depleted, with a progressive loss in investment income. An appeal is being made for additional annual contributions, amounting to about £5,000 a year, to enable the hospital to balance its accounts in the future, and for donations to wipe out the existing deficit and provide for necessary expenditure. Attached to the report of the hospital is that of the Northamptonshire Hospital Week Committee, which, to present one of the more gratifying features of hospital finance, illustrates the growing importance of organized effort in the collection of moneys for the hospitals. An analysis of the amounts raised by this agency compares the results achieved in the eight years before the war with those of the past eight years by this body and the Northampton Hospital and Convalescent Fund. The average for each year in the pre-war period was £2,020, and for each year in the more recent period £11,148; in the earlier period such contributions equalled 17 per cent. of the hospital's expenditure, and in the later period 30 per cent. of its expenditure. A special effort is being made to complete the Hospital Week Committee's Jubilee Fund, which is to be used to provide a new operating theatre block.

Health and Cleanliness Council.

The Health and Cleanliness Council, which exists to diffuse information about the advantages of cleanliness, and to this end co-operates with public and educational bodies, held its third annual meeting at the Hotel Cecil on March 20th. Dr. G. F. Buchan, the president of the council, at a luncheon which preceded the business meeting, said that the number of representatives of voluntary agencies and local authorities present this year was 188, 32 more than on the last occasion. He explained that the council, at its annual meeting, determined the policy, and an advisory board existed to carry it out. During the year the council had assisted 156 health weeks, co-operating with the medical officers of health and with other organizations in arranging for exhibitions and demonstrations. Prizes were given for essays by school children, and essays from 1,750 schools were submitted for the award of the judges. Various publications to a total of five million copies had been distributed, and a book on health and cleanliness, for the use of teachers in schools, had been accepted in the areas of 145 local education authorities. Some education authorities were allowing the systematic use of their hoardings for the council's effective posters. A cinematograph van was another useful means of propaganda, and since its installation the demand upon its services had been greater than could be met. As a crowning glory the council was given a place in the Lord Mayor's Show, and the exhibit was effective enough to turn even the thoughts of Gog and Magog to soap and water. Dr. Buchan added that the aim of the council was at something more than mere aesthetic cleanliness—namely, at a cleanliness which had its roots in biology. Dr. F. E. Fremantle, M.P., also gave an address in which he spoke of the need for inculcating the health habit. He thought it was sometimes forgotten in the modern "push" for hygiene that, after all, the essential thing was not good housing nor the observance of the rules of sanitation, greatly important as these were, but a healthy spirit in the mind and habit of the people. Given such a spirit, they could, on occasion, disregard any of the rules of health, forego the customary precautions, break the usual regime, sure that the true spirit and understanding would never permit undue transgression. The important thing was the spirit, not the schedule, and he commended the council because it was endeavouring not to put forward a meticulous code of health, but rather to evoke the spirit and desire for health and cleanliness from which all else would follow. After the business meeting those present had the opportunity of seeing the exploits of the latest film star, "Giro the germ."

Coroners' Inquests in London.

The number of deaths reported to the London coroners in 1928 was 8,516, an increase of 838 upon the figure for 1927. Of these deaths, 2,653 took place in mental hospitals and other institutions. An inquest was deemed necessary in 4,173 cases, and 76 per cent. of the inquests, including hospital cases, necessitated *post-mortem* examinations. A verdict of murder was returned in 18 cases, of manslaughter in 2, and of suicide in 571, the last figure representing a decrease of 40 on the previous year. Seven inquests were held in connexion with executions. Deaths from want of attention at birth increased from 27 to 44.

In all, 2,137 persons met their death by accident, as against 1,916 in 1927. There were 55 deaths by drowning. A verdict of "death from natural causes" was returned in 1,129 cases, and there were 14 verdicts of "cause of death unknown." The inquests on newly born children decreased from 108 to 104; there were three verdicts of murder of the newly born, and in 37 cases it was decided that the child was stillborn. Excessive drinking accounted for 30 deaths, the same number as the previous year.

Scotland.

THE KING has appointed Dr. William Macrae Taylor, late surgeon major, 1st Lowland Brigade, R.F.A.(T.A.), to be Surgeon Apothecary to His Majesty's Household at the Palace of Holyroodhouse, in succession to Colonel David James Graham, O.B.E., R.A.M.C.(T.A.), deceased.

Training of Deaf and Dumb Children in Edinburgh.

An interesting survey of the activities of the Edinburgh Royal Institution for the Education of Deaf and Dumb Children was presented to the directors at the annual meeting by Dr. Kerr and Mr. B. P. Jones, late superintendent of the deaf and blind education under the London County Council. The institution consists of two departments: the school proper with between 90 and 100 children, and the Strathern House Nursery School for 30 children, aged 3 to 8. Each child was examined individually, and its capacity for speech and for understanding others was tested by various standards. As a result it was estimated that one in five will leave school understanding and able to be understood by strangers, that a third of the whole will be able to be understood and to work in familiar surroundings, while the remainder will experience more or less difficulty. An unusually high percentage (68) of totally deaf cases, and a similarly high proportion of congenital cases, were noted: the explanation was offered that the baby school is attracting numbers of obviously deaf children, and that others with defective hearing are being cared for elsewhere, or possibly neglected. The risk of partially deaf children becoming dumb for want of immediate care, and the value of early education of the deaf, are stressed and it is noted with satisfaction that the number of children admitted to this institution below the age of 7 years is very large. Among the causes of deafness it is noted that meningitis is incriminated in 17 out of 45 pupils over the age of 9, while among the 60 below this age no meningitis case appears. Meningitis being a rare cause of deafness in this country the suggestion is made that these cases are attributable to the war. The success of a nursery school for the deaf is considered by the examiners to have been demonstrated, and suggestions are made for obtaining improved results in the case of the older children: one proposal is that the possibility of combining the present separate efforts should be explored, and a single educational institution be established for training deaf children in Edinburgh.

Glasgow Royal Hospital for Sick Children.

The annual report of the Royal Hospital for Sick Children, Glasgow, shows that during the past year the number of patients treated in the wards of the hospital numbered 6,492, while the attendances of out-patients at the dispensary connected with the hospital numbered 90,585. At the country branch of the hospital at Drumchapel 502 children were treated. The ordinary income for 1928 was £29,543, and the expenditure £39,989. The deficit in ordinary income was made up from extraordinary income with a surplus of £1,950, and as the ordinary income had shown an increase of £2,300 over that of the previous year, the deficit was slightly less than before. The directors make a special appeal for a fund of £20,000, of which the income would be spent in providing the necessary facilities for research into the causes and prevention of diseases of infancy and childhood, which is urgently required at the present time and which they feel should not be a charge upon the ordinary funds of the hospital.

Preventive Medicine in Teaching.

Dr. J. Parlane Kinloch, Chief Medical Officer of the Department of Health for Scotland, delivered the closing address for the winter session to the students of the Anderson College of Medicine, Glasgow, on March 16th, and took as his subject "Preventive medicine and the medical curriculum." Dr. Kinloch said that in recent years medicine was being studied and taught from a new standpoint, and that teachers in the several departments of medical study were tending more and more to treat their subjects from a preventive point of view. It was one of the aims of the legislature, as well as being desired among the people of this country, that there should be an adequate health service for the whole community. This would involve training of the people in personal hygiene, supervision of maternal and child life, as well as of school life and industrial life, and of the environment in which they lived, together with the comprehensive prevention and treatment of infectious and non-infectious disease. Certain axioms of preventive medicine should be constantly perceptible to the student in all aspects of his work. These included heredity, which determined the inherent constitution of the body; the control of environment, especially in regard to ventilation, water supplies, and insect control; the ways of increasing general resistance to disease by nutrition, open air and sunlight, adequate exercise and rest, etc.; the methods of active protection, which involved the whole range of immunizing processes; and lastly, the epidemic constitution—that is, the factors determining epidemic prevalence. A continued improvement in medical education would certainly lead to an improvement in the medical service, but the conception of prevention must first dominate the entire system of medical teaching. In order to have an adequate medical service it was necessary that the training and work of the general medical practitioner and of the statutory medical officer should be co-ordinated, so that the general practitioner should regain his position of family doctor, fully responsible for watching over the family health and for preventing disease, and employing for that purpose the official machinery provided by local authorities. It might be asked how the medical student was to find time within his five years of training for these further practical studies. His suggestion was that much of the older pharmacology, the older pathology in so far as it related to degenerative processes, and a great deal of the fascinating study of forensic medicine might be omitted from the ordinary medical course, and be reserved for those wishing to specialize after graduation.

Ireland.

School Medical Inspection in Dublin.

IN the course of a lecture for nurses on school medical inspection Dr. Kerry Reddin recalled that in 1879 a definite inspection of school children was established in Paris, and shortly after in Sweden and Belgium. In 1891 similar action was taken by England, which was followed quickly by America and Egypt. Saorstat Eireann had definitely adopted the scheme. The objects of school medical inspection were fourfold: (1) for statistical purposes, to show the physical condition of the child and to establish facts in connexion with the alleged defective physique of children; (2) to benefit the individual child; (3) to conduct propaganda about teeth, digestion, and personal hygiene; and (4) to improve the sanitary condition of the schools in which the children worked in regard to ventilation, light, heating, overcrowding, lavatory and urinal accommodation, washing and drinking facilities, and to supply adequate playgrounds. Medical inspection was provided (1) on admission to school, (2) at the age of 8, and (3) at the age of 12. Dr. Reddin said that up to the end of December they had inspected approximately 12,000 children. Of these 7,000 had one or more defects; 5,000 of these required treatment immediately, and 2,000 were under observation; 2,243 were suffering from tonsillar affections, of whom 507 required treatment and the

remainder were under observation; 1,433 suffered from defective vision, and of these 1,000 required treatment immediately, and 433 were under observation. These figures did not include cases of squint, of which there were nearly 500. There were also 630 cases of external eye affection. Of skin diseases, including ringworm, there were 442 cases, 300 of which required urgent treatment, and 142 were under observation. There were 227 cases of ear disease, of which 132 required treatment, and the remainder were under observation.

Public Health in County Limerick.

At the last meeting of the Limerick County Council a letter was read from the Department of Local Government and Public Health relative to the question of the appointment of a medical officer of health for the county. The department expressed the view that the appointment of such an officer should be considered in conjunction with the county sanitary services on the lines presented by the Local Government Act, 1925. That Act contemplated that the general direction of the public health activities of each county should be placed in charge of a county medical officer of health, whose function had been clearly described in detail. Among other matters of pressing importance might be mentioned eradication of diphtheria and enteric fever cases, the prevention and correction of crippledom, the reduction of infant mortality, which, in the case of co. Limerick, had maintained an exceptionally high incidence for an area comprising no urban districts, and the protection of women against the special dangers associated with childbirth. A school medical service controlled by a county medical officer of health would quickly follow, and provide early treatment for potential cripples, while after-care could be attended to by voluntary organizations. In the county of Limerick the maternity death rate among women from puerperal sepsis stood at an average in advance of any other county in the Saorstat, being, in 1924, 3.65; in 1925, 3.18; in 1926, 4.17; and in 1927, 3.29. From these figures it would be seen that in the county of Limerick there was unmistakable need for organized supervision over maternity practice. The chairman pointed out that every progressive country had such a scheme in operation, and other counties in the Saorstat were already working such a scheme. After some discussion it was decided to adjourn the matter for a fortnight.

Correspondence.

COLLES'S FRACTURES.

SIR,—My friend Mr. Bankart, in an interesting note on Colles's fracture (March 16th, p. 491), states that he never, or hardly ever, sees a case of Colles's fracture which is properly reduced, and he adds:

"The reason for these uniformly bad results is that the method of reduction almost universally employed—namely, that advocated by Sir Robert Jones—is entirely inadequate in the hands of the majority of those who have to treat these cases. . . . It may be that the powerful hands of Sir Robert Jones (and some others) can reduce a Colles's fracture in any manner that he chooses; but . . . the method which he advocates is quite inadequate in the hands of the great majority."

Mr. Bankart pays me an undeserved tribute when he speaks of my "strong hands." My hands, alas! can no longer be classified as strong, but I have no more difficulty now in reducing a Colles's fracture than in the days of my youth. Strength is not an important asset, but the method of its application is.

The principle which underlies my very simple procedure is extension of the radius, pronation of the lower fragment, and supination of the upper. The grip I employ involves *direct* pressure on the lower end of the radius, and disimpaction and reduction are effected by a combined movement.

I have seen many surgeons attempting to reduce a Colles's fracture by the "Jones method" in a hopelessly inadequate fashion. They hold the hand, put traction on the wrist-joint, and pronate. The strength of Samson would be helpless to effect reduction in this way.

The method described by Mr. Bankart, where the arm is placed upon a wedge block, is very like my own as far as the act of reduction is concerned, but apparently no traction is used and preliminary disimpaction is not aimed at. This must involve greater force and crushing of the lower fragment—certainly more force than I ever use. It is surely hazardous to apply the whole of one's body weight—even occasionally—upon a fractured end with the palmar aspect of the wrist over a wedge. There must be some risk of injury to tendons and nerves if this method be followed. I know Mr. Bankart's work so well that in his own careful hands I could predict that his patient would be immune from damage, but what of others? Is it wise or safe?

No, strength is not an important factor. My friends who have watched me reduce this fracture know how little I depend on force. Indeed, in many cases I use no anaesthetic, for the manipulation is rapid, and after the momentary pain of reduction little further complaint is made.

I agree that once reduction is complete the question of type of splint is of no great importance.—I am, etc.,

Liverpool, March 18th. ROBERT JONES.

SIR,—In your issue of March 16th Mr. Bankart made some very interesting observations on the treatment of Colles's fracture. I heartily agree with his general conclusions, but think that the method he advocates of reducing deformity as a routine with the aid of a wedge is open to criticism. There is no doubt that the injury in question is the result of great force, and that impaction of the bone fragments is generally correspondingly firm. Brute force will, no doubt, break through this impaction and approximately reduce the deformity, but there must surely be a risk of serious damage to the nerves and tendons lying between the bone end and the wedge when this method is employed. I have observed evidence often enough of partial involvement of the median nerve, due either to the primary injury or to subsequent manipulation. Damage to tendons or their sheaths always results from the primary injury. Any increase of this caused by the process of reduction must certainly delay return of full function.

It appears to me that in order to replace the lower end of the radius the ideal procedure is to disimpact and then to manipulate the fragment into position. If this procedure is effectual there is much less risk of damage to soft parts. One must admit that there are cases in which manipulation by hand fails to effect full reduction, even when the attempt is promptly carried out. I think then that open reduction through a dorsal incision is justifiable. It is a simple procedure, and it can be carried out with a minimum of trauma to the surrounding structures.

I very heartily agree with Mr. Bankart in his condemnation of the use of the Carr's splint for holding the Colles's fracture. I think there is now general agreement that fixation after reduction is best secured by a dorsal splint with the wrist in a flexed position.—I am, etc.,

London, W.1, March 19th. C. MAX PAGE.

SIR,—In your issue of March 9th (p. 477) Mr. Cochrane drew attention to non-reduction of the forward luxation of the head of the ulna as the real cause of so many bad results in the treatment of Colles's fracture. For this reason we have reviewed the *x*-ray plates in our series of Colles's fractures before reduction, and could find only one particularly severe case in which a true luxation definitely existed.

In addition, some hundreds of *x*-ray plates had been examined previously, and we have no notes of the form of luxation to which Mr. Cochrane refers. It would appear, therefore, that Cotton's forward luxation of the head of the ulna must be uncommon as a cause of unsatisfactory results, our experience being precisely that of Edwards and Clayton.

Mr. Bankart will forgive us if we politely but firmly disagree with the statement in his article of March 16th (p. 492) that "the position of supination is irksome to the patient and not really necessary." As we remarked, the

position is quite comfortable in spite of the forearm being fully supinated, and we believe the position to be necessary because some Colles's fractures have shown a tendency to reproduce the displacement after reduction.

In answer to the last question raised by Mr. Bankart we would add that, through the kindness of Mr. Slesinger, surgeon in charge of the fracture department of Guy's Hospital, Colles's fractures, with others, are reduced by house-officers—a possible explanation for the unsatisfactory results we have found. And also that Mr. Slesinger kindly permitted us to try our own methods of treatment.—We are, etc.,

E. DUDLEY GRASBY,
SCOTT-RUSSELL TRICK.

Tunbridge Wells, March 18th.

THE THERAPEUTIC VALUE OF ULTRA-VIOLET LIGHT.

SIR,—Having read the remarks on artificial light treatment in the report of the Medical Research Council, 1927–28, may I call the attention of your readers to certain statements therein contained?

On page 14 the following lines appear: "*Since the invisible rays of ultra-violet 'light' were found to hold the nutritive properties of sunlight*" (italics mine), "it was natural to suspect that artificial lamps, rich in ultra-violet rays, might be an effective substitute for the missing sunshine in our cities." The first statement in this sentence is incorrect. We know that ultra-violet rays convert ergosterol into vitamin D, and therefore produce the physiological phenomena caused by that product, but this is far from proving that they "hold the nutritive properties of sunlight." Such an assumption is jumping to conclusions, and almost certainly very wide of the mark.

Later (page 15), the report states that "exactly the same effects for good or evil follow inflammation of the skin blood vessels inflicted by heat or by other irritants than light. There is no present reason to know that artificial light can do more in this way than a mustard plaster, which is indefinitely [*sic*] cheaper." The only interpretation to be put upon this statement is that the investigators selected by the Medical Research Council have been inflaming the skin of babies by a dosage of ultra-violet light sufficient to produce this effect. Could any experienced clinician expect to obtain by such means the beneficial effect of properly applied treatment by artificial light? Does the Council really mean, moreover, that a child can be cured of rickets by the application of a mustard plaster? If so, can it quote any case in which such a result has been obtained? We may surely ask it to support its statement by scientific evidence.

On page 14 it says, "No evidence could be found of any gain in weight, of lessened anaemia, or of better resistance to infective illnesses in the treated group as compared with a similar group of untreated children." This statement will cause little surprise.

There is one more sentence that cannot be passed over without comment: "It would seem also to be the special duty of hospitals and schools or other clinics expending large sums of public money upon artificial light to use part of the expenditure to demonstrate by properly controlled trials their justification for spending more." All the great hospitals in London, not to mention the provinces, have expended such sums upon the establishment of departments for giving treatment by artificial light, because this form of treatment has been more than justified by the results obtained, and the sentence is a direct reflection upon the distinguished medical men who are responsible for their administration and to the executive bodies concerned in this considered expenditure.—I am, etc.,

G. MURRAY LEVICK.

London, W.1, March 19th.

SIR,—With reference to the recent report of the Medical Research Council it might be of interest to recapitulate the conclusions I arrived at as the result of work at Queen Mary's Hospital, Carshalton. They were as follows:

1. The light bath gives pleasure to the vast majority of patients and has no dangerous after-effects.
2. Patients with superficial tuberculous ulcers, rickets, and debility do well, but these cases are easily treated without the use of light. The local application of the rays is of value in the treatment of lupus, but the general light bath has little effect.
3. The course of tuberculosis of the spine, hip, or knee, with or without sinuses, is apparently not influenced in any way by the action of light.
4. The treatment gives no protection against the spread of infection.
5. Pigmentation of the skin has little, if any, clinical significance, and absence of pigmentation is no contraindication to light treatment.
6. Light treatment has no definite influence on the physical or mental development of the normal or subnormal child.

The report was published in full in the Annual Report of the Metropolitan Asylums Board, 1925–26, and was referred to in the *British Medical Journal* of August 28th, 1926 (p. 399). Although various modifications of the technique have been tried, the results obtained since 1926 have not led me to alter, to any great extent, my opinions on the value of actinotherapy. The great benefit that is derived from ultra-violet light is a transient feeling of well-being; this, coupled with the healthy appearance it gives the patients, has undoubtedly a beneficial influence, and for this reason only I consider the administration of ultra-violet light justifiable.—I am, etc.,

N. GRAY HILL, *M.C.*, M.B., B.S.Lond.

Queen Mary's Hospital for Children,
Carshalton, Surrey, March 19th.

VACCINATION IN THE LIGHT OF RECENT EXPERIENCE.

SIR,—Dr. F. A. Belam, in the *Journal* of March 16th (p. 524), raises the important practical question of the relationship of "severe" small-pox to the "mild" variety (alastrim), with which we are now so familiar. He concludes that the two (types) "do not breed true to type, but true to disease, of which there is one."

I would suggest to Dr. Belam that a better view of the situation is as follows. We are not dealing with two different "types" of small-pox (the word "type" has merely a clinical significance), but with two distinct varieties. In each variety one may meet both mild and severe clinical types; consequently mere clinical mildness or severity is of no pathognomonic significance in any given case. For the same reason, to call one variety "severe small-pox" and the other variety "mild small-pox" is futile and only adds to the confusion. A far better nomenclature is "variola major" and "variola minor," as first suggested by R. W. Jameson.

The essential and all-important difference (although there are others) between variola major and variola minor is that whilst the one propagates a serious, fatal, and permanently disfiguring affection, the other propagates an affection which (for practical purposes) is non-fatal, non-disfiguring, and clinically trivial. The fact that a small proportion of the cases of variola minor (say, 5 per cent.) can be classed as clinically severe, with a profuse eruption, and that there is a possibility that occasionally, at the extremes of life or in debilitated subjects, the affection may even prove fatal, does not affect the truth of this as a general proposition.

As to the question whether we can rely upon variola minor to maintain its present mild type, or whether it may not revert to the characteristics of variola major, the answer is that although it has now been recognized in this country for over a decade, it has as yet shown no tendency (judging by its case mortality) to increase in severity, or to approximate to variola major in virulence. Any reports to the contrary can be accounted for by local fluctuations such as we find with any epidemic disease. More important is the fact, as testified by that astute observer Dr. C. V. Chapin of Providence, that in U.S.A. there is also no evidence of any reversion. Moreover, there is reason to believe that in certain countries variola minor, under the names of alastrim, amaas, Kaffir-pox, etc., has existed from time immemorial, yet has continued to breed true.

The answer, then, to the question whether we are dealing with one disease or with two, is that there is one disease, small-pox, with two distinct varieties. These two varieties are doubtless very closely related. They have a very

similar relationship to vaccinia, and there is little doubt that they confer mutual immunity against each other. The position is analogous to that of typhoid fever and paratyphoid, and there is a good deal to be said for the names suggested by R. P. Garrow—namely, "*small-pox*" and "para-small-pox."

In view of all this I suggest that in the interest of statistical accuracy it is eminently desirable that the Ministry of Health should now recognize that we are dealing with two entities and authorize distinctive names. At the same time they could enact that both varieties were notifiable and that both could be covered, in any case of doubt, by the one word "small-pox." So long as cases of variola major are included in the same column with cases of variola minor any figures as to case mortality are clearly valueless.—I am, etc.,

Leicester, March 16th. C. KILLICK MILLARD.

THE INTRACUTANEOUS TUBERCULIN TEST.

SIR,—Now that Professor Lyle Cummins has entered into details, I am more than ever convinced that my criticism is sound, and I fear the finding of the investigators adds nothing to our knowledge, and may mislead some who are not *fully conversant with the nature and* meaning of the interesting and illuminating manifestations of allergy, brought to our notice by means of various methods of injecting tuberculin.

Professor Cummins describes the lesion caused by intracutaneous injections of tuberculin as "a raised plaque of oedema, usually surrounded by a blush, etc." The lesion which I can produce at will in a tuberculous subject is certainly not "a plaque of oedema," and a plaque of oedema in no way resembles a "cocarde" (Mantoux). The lesion of my making is a red, raised, indurated, painful, tender area of inflammation, resembling a Pirquet lesion. It is not an oedematous condition, but an inflammatory formation caused by the reaction of sensitized tissue to the specific toxin of the tubercle bacillus. It is a form of allergic reaction, the histology of which has been described and explained in all its wonderful detail by the late Professor K. E. Ranke. Moreover, this allergic manifestation cannot be adequately described on the third day. It may persist for many weeks. I shall therefore be greatly surprised if "this most important result so far gained from our Welsh investigation" does not prove to be worthless. Long ago I said this of Professor Dreyer's work on his "diaplytes," as soon as his work was published, and I was right. I say the same of Professor Cummins's paradoxical views upon the reaction of tuberculin.

But Professor Cummins goes beyond his text, and ventures to make this statement in his reply: "so far as adults in this country are concerned, a positive tuberculin reaction has no diagnostic significance whatever."

The *post-mortem* records of E. France, Mikulicz, Mettetal, and Binswanger show that a positive tuberculin reaction in the hands of experts has the most profound diagnostic significance. Professor Cummins can hardly impeach the evidence of various experts derived from direct *post-mortem* examinations.

There is also clinical evidence, indirect and direct. In my Parkes Weber prize essay, published in 1912, I have tabulated over 120 cases in which a wrong diagnosis was given till I tested with doses of tuberculin. For years I have been investigating certain lesions of the eye, both in children and adults, the cause of which was undetermined until I used tuberculin for diagnosis. Most of these patients came from ophthalmic surgeons. The lesions were chronic conjunctivitis, scleritis, episcleritis, and irido-cyclitis. Till tuberculin was used for testing tuberculosis was not suspected. What is true of lesions in the eye or skin or throat, which we can see, is equally true of tuberculous lesions hidden from sight or too small to give any evidence of their existence until tuberculin tests are properly conducted and logically interpreted by a trained expert.

I trust that medical men will pay no heed to unwise condemnation of the indispensable diagnostic agent discovered by Koch, which should be exploited consistently and zealously on behalf of suffering humanity. If Professor Cummins would pay me a visit I would gladly show him the history of numberless cases, in which test doses of tuberculin have established beyond doubt the etiological factor in many obscure forms of disease, which defied diagnosis by any other means. The advantage of early diagnosis largely depends upon this scientific test. Surely it is a golden truth in tuberculosis that, when diagnosis is easy, treatment is difficult, and when diagnosis is difficult, treatment is easy.—I am, etc.,

London, W.1, March 16th. W. CAMAC WILKINSON.

ESTIMATION OF HEPATIC EFFICIENCY.

SIR,—With regard to the article on estimation of hepatic efficiency published in the *Journal* of March 2nd (p. 395) it may be of interest to note that at the Royal Mineral Water Hospital, Bath, there was carried out for two of the honorary physicians (Dr. Gordon Watson and Dr. Lindsay), on seventy consecutive cases admitted to their wards, Roch's test for the antitoxic function of the liver, as described in *Physiological Principles in Treatment*, by W. Langdon-Brown (fifth edition, p. 165).

This test was made because focal sepsis, so often assigned as the cause of rheumatoid arthritis, seemed an insufficient explanation; so many people have marked focal sepsis and yet do not get rheumatoid arthritis that one suspected it was not the focal sepsis, but some flaw in the antitoxic powers of the bodily metabolism which might be at fault. The liver is the great detoxicating organ of the body; was the liver the offender in these cases? It was decided to test its antitoxic function. The results are quoted below.

Rheumatoid arthritis:		Neuritis:	
Roch's test ++	in 60%	Roch's test ++	in 35%
" " +	in 16%	" " +	in 16%
" " −	in 24%	" " −	in 49%
Fibrositis:		Sciatica:	
Roch's test ++	in 70%	Roch's test ++	in 33%
" " +	in 6%	" " +	in 11%
" " −	in 24%	" " −	in 56%
Osteo-arthritis:		Subacute rheumatic infection:	
Roch's test ++	in 15%	Roch's test +	in 50%
" " +	in 32%	" " −	in 50%
" " −	in 53%		

++ = a strong purple colour given.
+ = a definite change of colour.
− = no change of colour.

It should be noted that this test is for the antitoxic function only, and these notes are sent, not in vindication of Roch's test, but impartially to show the reactions which occurred in these seventy rheumatic cases.

The results were published in the *Proceedings* of a conference on rheumatic diseases held at Bath in May, 1928, and I am making this communication with the kind permission of the two honorary physicians on whose cases the tests were made.—I am, etc.,

LEO DELICATI,
Resident Medical Officer, Royal Mineral Water Hospital, Bath.
March 5th.

THE HISTORY OF CINCHONA.

SIR,—In the paper on the history and lore of cinchona read in the Section of History of Medicine at the Annual Meeting of the British Medical Association at Cardiff and reported in the *Journal* of December 29th, 1928 (p. 1183), Mr. C. J. S. Thompson refers to the "picturesque story" of the fortuitous discovery of the virtues of cinchona bark by an Indian who drank of water into which a cinchona tree had fallen. Mr. Thompson remarks that the st which was not recorded until the eighteenth centu without foundation. It does not, however, appear generally known that a play based upon this story produced by Montigny, the director of the Gymna the Ambigu-Comique Theatre in Paris in the th My authority is Vandam's *An Englishman in Paris* (man and Hall, 1892), vol. i, p. 226. I r to

a summary of the play as given in a note in that interesting book of reminiscences.

"The play . . . was called "Amazampo; or the Discovery of Quinine." The scene was laid in Peru in 1636. Amazampo, the chief of a Peruvian tribe, is in love with Maïda, who on her part is in love with the son of the viceroy. Amazampo is heart-broken, and is stricken down with fever. In his despair and partial delirium he tries to poison himself, and drinks the water of a pool in which several trunks of a tree called *Kina*, reported poisonous, have been lying for years. He feels the effect almost immediately, but not the effect he expected. He recovers and takes advantage of his regained health to forget his love passion, and to be avenged on the oppressors of his country, many of whom are dying of fever. Lima becomes a huge cemetery. . . . Amazampo saves the life of the wife of the viceroy by compelling her to drink the bark-impregnated liquor.

I have never had an opportunity of seeing a copy of the original play, but am sending you this note, which I trust may be of interest to your readers.—I am, etc.,

Kenya Colony, Jan. 27th. JAMES H. SEQUEIRA.

DIET AND APPENDICITIS.

SIR,—In his very interesting address published on January 5th (p. 6) Mr. Zachary Cope puts forward the suggestion that "a predisposition to appendicitis would be lessened by (1) preventing constipation, (2) minimizing the amount of meat eaten, and (3) increasing the amount of food containing cellulose." In support of this may I be permitted to bring forward the following observations?

In my work here I am dealing almost entirely with native people of the Bantu race, and it is a fact of my own experience, and also in that of others, that appendicitis is exceedingly uncommon in them. In the light of the above suggestions it is interesting to observe the habits and customs of these natives as regards bowel evacuation and food.

Constipation.—The natives regard themselves as being constipated if they do not go to stool at least twice a day. Quite commonly they go out three or four times in the course of a day. In this connexion it is to be noted that in their squatting attitude while at stool they employ the pressure effect of the muscles of the abdominal wall to the best advantage. The comfortable water closets of civilization do much to minimize the valuable aid of these muscles.

Meat.—While it is true that the natives are exceedingly fond of meat, it is equally true that they very seldom have it in ordinary circumstances. They are not regular meat-eaters, and the total quantity eaten by the average native in the course of a year is very much less than that consumed by the average European.

Cellulose-containing Food.—The staple article of food among all classes of natives is "mealies" (or maize). They have mealie meal porridge every morning; stamped mealies in the middle of the day; and again the porridge at night. Variety is afforded by the addition of brown beans at midday, and by the occasional use of "kaffir-corn" in place of mealie meal. Even their bread is made from mealie meal; and all this food is very rich in cellulose. In Britain we should give it only to horses. Thus there are in the life of the Bantu people three important factors which, theoretically at least, militate against the onset of appendicitis: (1) frequent and regular evacuation of the bowels, (2) the absence of much meat in the diet, and (3) the presence of abundant cellulose in the everyday food. These people do not suffer from appendicitis, and, moreover, they are not afflicted with gall-bladder affections; as Mr. Cope reminds us, cholecystitis and appendicitis are frequently found together.

While it would appear, then, that the simple diet of these native people serves to protect them from two of the serious diseases of the digestive system, it must also be pointed out that it is by no means a good all-round diet. It is deficient in vitamin quality, and the health of the natives suffers in consequence of his deficiency. That, however, is another question altogether, and does not affect the truth of what I set out to show.—I am, etc.,

R. L. PATERSON, M.B., Ch.B.

Buchanan Medical Mission, South Africa, Feb. 5th.

MINOR ORTHOPAEDICS IN GENERAL PRACTICE.

SIR,—In reference to Dr. R. A. Murray Scott's letter in the *Journal* of March 16th (p. 524) it may be of interest to him to know that nearly thirty years ago I purchased boots, of the shape he desires, at Holden Brothers, Harewood Gate, Oxford Street, W. Their business has been recently transferred to Messrs. T. Holland and Son, 48, South Audley Street, W.

I have recommended boots and shoes of anatomically correct shape to a number of patients for many years. Women, particularly, are difficult to persuade, and many will suffer agonies rather than wear a shoe which they allege is ugly and not "stylish"; on the other hand, not a few, after experience, have been thankful for the advice.

An important matter also, especially for children, is the shape of the sock or stocking. Much of this make of footwear is pointed at the toes and will not allow sufficient expansion for the big toe to take up a straight position, but shops dealing in "hygienic" footwear can supply these articles with a straight "inside" line.—I am, etc.,

W. W. SHRUBSHALL, L.R.C.P.Ed., D.P.H.Lond.

Burgess Hill, March 18th.

CYCLICAL VOMITING.

SIR,—The apparent error which Dr. H. C. Cameron (March 23rd, p. 573) points out in your account of my paper on the chronic dyspepsias of childhood at the Medical Society of London (March 16th, p. 502) was the unfortunate result of compression in your otherwise excellent summary of my remarks. The actual words I used were:

"The frequency of this form of latent acidosis has been much emphasized by Dr. Cameron, and Dr. Osman has stated that 30 per cent. of hospital children suffer from cyclical vomiting."

—I am, etc.,

London, W.1, March 23rd. REGINALD MILLER.

Obituary.

DR. JOHN LAIRD, who died in February at the age of 84, after only three hours' illness, received his medical education in Dublin, where he obtained the diploma L.R.C.S.I. in 1865, and the L.R.C.P.I. and L.M. three years later. For fifty years he conducted a large practice in Sligo, and was subsequently granted a pension by the Sligo board of guardians in acknowledgement of the valuable services he rendered. He contributed many papers to medical periodicals, and wrote a book on tuberculosis, which reached a second edition. He was highly appreciated by his colleagues, and was on one occasion invited to be president of the Irish Medical Association, but declined, being of a retiring disposition. He was buried in Mount Jerome Cemetery, Dublin, on February 25th.

DR. JAMES WILSON, who died on February 9th at his residence in Claughton, at the age of 87, was educated at King Edward's School, Birmingham. When 22 years old he went to America and acted as surgeon to the Northern Forces throughout the whole of the campaign in the late American Civil War, receiving subsequently the thanks of the President and Congress of the United States. He then returned to England, and engaged in medical study at the Universities of Aberdeen and London, obtaining the diploma M.R.C.S.Eng. in 1861, the L.S.A. in 1862, and graduating M.D., C.M.Aberd. in 1875. For a few years he was physician and laryngologist to the Worcester General Infirmary, but a breakdown in health necessitated his undertaking a sea trip to Australia. He later commenced practice in Liverpool, where he specialized in diseases of the throat, nose, and ear. After thirty-six years, however, a second breakdown in health compelled him to limit himself to consultation work. He wrote numerous articles and books, chiefly relating to diseases of the nose and nasopharynx. He was for some time physician for diseases of the throat and nose to the Liverpool Clerks' Association, and medical referee to the National Sanatorium for Consumption at Bournemouth; he had also held

a commission as surgeon in the Royal Navy. He was one of the pioneers of cautery treatment for turbinal hypertrophy, and achieved a distinguished reputation as a specialist in diseases of the nose, throat, and ear. Eight years ago he retired finally, and went to live in Birkenhead. He was twice married, and is survived by his second wife.

Dr. ARNOLD WILLIAM MONTFORT AUDEN of Birch House, Leigh, Lancashire, who died at his residence, after a week's illness, on March 6th, at the age of 65, had been in general practice in Leigh for thirty-four years. The eldest son of the late Rev. W. Auden of Church Broughton, Derbyshire, Arnold Auden was educated at Shrewsbury School and at Clare College, Cambridge, where he graduated B.A. in 1885. He was a man of fine physique and an oarsman of considerable ability, rowing in the school crew at Shrewsbury and for his college at Cambridge. In other directions also he was a distinguished athlete, winning, when at Shrewsbury, the senior steeplechase and the quarter-mile, among other events. After a period as schoolmaster he decided to enter the medical profession, graduating M.B., C.M. at Edinburgh University in 1895. While at Edinburgh he served in the Queen's Rifle Volunteer Brigade. In his practice he was much beloved by all his patients; he was especially considerate to the poor, and a generous subscriber to numerous charities. He was a keen freemason, and held the appointment of medical officer to several of the local collieries. He will be greatly missed in the neighbourhood, and his funeral was an impressive tribute to the respect in which he was held. He was a member of the British Medical Association.

Dr. EDMUND LEE, who died on March 20th, in his eighty-fourth year, was a well-known and highly respected figure in North Manchester medical circles. He was educated in Manchester, and having obtained the diplomas of L.R.C.P. in 1871 and M.R.C.S. in 1873, he engaged in private practice, the whole of his active professional life being spent in Collyhurst, a densely populated industrial district, where his genial and kindly manner and sound attainments attracted a large clientele. In spite of the physical exertions incidental to this class of practice, he maintained the keenest possible interest in the progress of scientific medicine. His leisure hours were largely devoted to keeping himself abreast of such advances as seemed likely to be of practical service to his patients. He was a man of wide reading, and this, coupled with his daily contact with suffering and poverty, gave him an unusually broad, sane, and sympathetic outlook on life. For some years he was chairman of the North Manchester Medical Union. He was hardly ever absent from the meetings, feeling social intercourse with professional colleagues to be an important factor in promoting understanding and *esprit de corps*. He had a record of some fifty years of quiet, unassuming, useful work, and a reputation for fair and neighbourly dealing. At the end of a long life he leaves behind a very pleasant memory. Two of his sons are in practice in Manchester.

Dr. ALEXANDER GRANVILLE, who died in London on March 23rd after a long illness, was born in Egypt in 1874, and received his medical education at St. Bartholomew's Hospital. He obtained the diplomas of M.R.C.S., L.R.C.P. in 1894, and held the offices of house-surgeon and house-physician at the West London Hospital and senior assistant anaesthetist at St. Bartholomew's Hospital. He served in the South African war during 1899–1901, and was awarded the Queen's medal with three clasps. He subsequently joined the Egyptian Government Service, where he held several important posts, including those of inspector of the Public Health Department, medical officer of health for Cairo, director of the Municipal Section of the Ministry of Interior, Cairo, director-general of the Alexandria Municipality, Egypt, and president of the International Quarantine Board of Egypt. He received the honours of C.M.G. and C.B.E. in 1916 and 1920 respectively, and was created a Pasha by King Fuad in 1922 in recognition of his services on the Labour Dispute Conciliation Board of Egypt. He was a Knight of the Order of St. John of Jerusalem, Grand Officer of the Order of Ismail, and had been the recipient of honours from France, Italy, Greece, and Belgium.

The following well-known foreign medical men have recently died: Dr. VAN BOECKEL, principal public health inspector in Belgium; Dr. LÉOPOLD BAUMEL, honorary professor of the Montpellier Medical Faculty, aged 75; Dr. BARATTE, formerly director of the health service of the Dardanelles Expeditionary Force and Commander of the Legion of Honour; Dr. GIUSEPPE TAGNINI, a Bologna neurologist who has given his name to the oculo-cardiac reflex, aged 62; Dr. PIETRO GIACOSA, director of the Institute of Materia Medica and Pharmacology at Turin, aged 75; Dr. J. VON KRIES, emeritus professor of physiology at Freiburg, aged 76; and Dr. ALEXANDER MAXIMOV, an histologist and haematologist of Chicago.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

The Local Government Bill.

Third Reading in the House of Lords.

IN the House of Lords, on March 21st, Lord ONSLOW formally moved the third reading of the Local Government Bill.

Lord DE LA WARR said that peers belonging to the Labour party must continue their opposition to the Bill. It would put some social services, notably the health services, on a block grant system based on a three-year period and thereafter for five-year periods. There was no guarantee in the bill that at the end of those periods new money would be forthcoming from the Exchequer to meet the new demands of the localities. Local authorities would be less free to provide new services.

The LORD CHANCELLOR said the Government believed that in the bill it had effected improvements in the efficiency of social services.

The motion to read the bill a third time was carried by 70 to 11, and the House went on to make final amendments to it.

Clause 2, dealing with the functions of Poor Law authorities in respect of infant life protection and vaccination, was amended to allow councils to acquire land in pursuance of such purposes.

The House then renewed consideration of points left open at the end of the report stage concerning Clause 13. This clause, inserted to meet representations by Lord Dawson of Penn, ran:

13. The council of every county and county borough shall, before making provision for hospital accommodation in discharge of the functions transferred to them under this part of this Act, consult with such committee or other body as they consider to represent both the governing bodies and the medical and surgical staffs of the voluntary hospitals providing services in or for the benefit of the county or county borough.

On the motion of Lord ONSLOW the House agreed to substitute "before making provision" for "when making provision," and to leave out the word "with" from the phrase "consult with such committee." Lord Onslow further moved to add at the end of the clause words providing that the consultation should be "as to the accommodation to be provided and as to the purposes for which it is to be used." He said these words were introduced to meet the wishes of Lord Dawson as far as possible, and he understood that Lord Dawson would accept it. The Government wished to meet in every way it could the Lords who represented hospitals.

Lord DAWSON OF PENN thanked Lord Onslow for trying to meet the view held by himself and his friends. The clause did not do all they asked, but certainly went further than the earlier offer of consultation on "accommodation" only. The clause would bring the people who knew into contact with those who had to administer. It did not go as far as it would be necessary to go in administrative matters. That the mass of the medical profession were debarred from having an effective voice in the health services had always been a serious matter. Unless some steps were taken to bring the mass of the profession and those who knew about these things into responsible contact with those who, for the first time, were to take such a large part in administering the bill, the bill was little likely to have the good effects that were hoped for it. He recognized, however, that this clause gave the right of consultation, and he hoped that out of this poor beginning larger things would grow as the years went by.

The House agreed to Lord Onslow's amendment.

Drafting amendments were made in Clause 62 regarding the provision of hospital accommodation for infectious disease.

Other drafting amendments having been made, the Bill passed the House of Lords, and was returned to the House of Commons.

The Lords' Amendments considered by the Commons.

On March 22nd the House of Commons considered the Lords' amendments.

Mr. CHAMBERLAIN moved that the House should agree with the clause providing for consultation with representatives of the governing bodies and staffs of voluntary hospitals in its form as amended on the third reading in the House of Lords. He said that this was a matter of some importance, and had been considerably discussed in the House of Lords. The purpose of the discussion was to try to ensure that there should be full and ample opportunities for the representatives of voluntary hospitals in any area, including not merely the lay members but the medical and surgical staffs, to offer their experience and to put forward their views before the local authority set to work to revise its hospital accommodation. The Government did not desire to put into the bill more than was necessary, but it became clear in the House of Lords that people of very considerable weight and standing in the voluntary hospitals world were not satisfied that, without some statutory provision, there would be that measure of consultation with the representatives of the voluntary hospitals, which they felt to be not merely desirable, but vital for the proper development of the hospital services of the country in the future. With the object of the clause he had been always fully in sympathy. He had a very strong view that the assistance of the voluntary hospitals would be absolutely essential if the municipal hospitals, which would be reorganized and conducted by local authorities in future, were to be placed on a proper footing. They stood on a very different level from the voluntary hospitals, and it would be a work of time, care, and tact to bring them up, generally speaking, to the same level as that attained by the voluntary hospitals. That could only be done by the exercise of co-operation and good will on both sides. He believed that the provision made in the clause, under which there was the duty laid on the local authorities to consult with bodies representative of the voluntary hospitals, would bring about that co-operation and good will. It would be seen that the body which was to be consulted was such committee or other body as the local authority considered to be representative both of the governing bodies and the medical and surgical staffs of the voluntary hospitals. It would be said, perhaps, that in one area or another there would be no such body. It was quite possible that there was no such body in some areas now, but it was most desirable that there should be such a body, because the voluntary hospitals would never be able to exercise to the full the influence which they should on the health of the district unless there was co-ordination among themselves, and unless there was some body which would represent the various voluntary hospitals concerned, and which could speak for the whole of them when dealing with the local authority. Without such a body there would not be the full measure of consultation which was desirable. He regarded the clause, therefore, as likely to have the effect of stimulating the formation of such representative bodies, and from that point of view to be a valuable addition to the bill.

Mr. GREENWOOD said that to make the best use of the available hospital accommodation there must be consultation between the local authorities and the various voluntary hospitals, but he looked on the new clause with a little suspicion. The Minister of Health seemed to have in hand the organization of the new voluntary hospitals in the future with a view to preventing the development of the public hospitals. He saw no reason why the consultation proposed should not have been confined to the governing committees of the hospitals. Why should the local authorities have to consult the employees of the voluntary hospitals? The words of the new clause had been put in by the most powerful trade union in the country. They were initiated and supported by very influential members of the medical trade union.

Dr. FREMANTLE: What does the hon. gentleman mean by that? Does he mean the British Medical Association?

Mr. GREENWOOD: I mean the organized medical profession of this country.

Dr. FREMANTLE: Which organization does he mean?

Mr. GREENWOOD: There are more than one, I understand. I see no reason why the hon. gentleman should be ashamed of his trade union.

Dr. FREMANTLE: I am not ashamed of it, but I want the hon. gentleman to be precise in what he says.

Mr. GREENWOOD: To please the hon. gentleman I will say at once the British Medical Association.

Dr. FREMANTLE: May I ask if Lord Dawson has anything to do with the British Medical Association?

Mr. GREENWOOD: I should think it very unlikely; but no doubt he is a loyal paying member of his trade union, and is in a position to present its case in the House of Lords. Continuing, Mr. Greenwood asked why it should be made compulsory on the local authorities to consult with the servants of the voluntary hospitals. He was sorry that the Minister had lent himself to this new development of socialism in a very conservative profession. It looked as if there might be behind this proposal the opposition to any development which did not harmonize with their own particular interests.

Sir R. LUCE said that he welcomed the new clause, because some sort of co-ordination was essential in future between the voluntary system and the development of local authorities' hospitals if a great deal of overlapping was to be prevented. A vast amount of experience had been gained by the voluntary hospitals, not only in matters of administration, but in matters of co-ordination. There was need of the separation of different kinds of treatment, and a vast amount of work was necessary in reorganizing and co-ordinating to see that the right kind of work was done in the different hospitals throughout the country. That was a matter on which medical advice was necessary. Therefore it was a little unfair to say that the medical profession should not be consulted in this matter. He welcomed the clause very heartily on behalf of those interested in the development of the hospital system, and in the ensurement that, in any future extension of it, the wonderful old system of voluntary hospitals should not be elbowed out by processes of nature, but should remain the centre round which the new development of hospitals should proceed. They owed to Lord Dawson, who so eloquently and persistently urged the adoption of a clause of this kind, another debt of gratitude in addition to that which the nation owed to him to-day, and would never be able to repay him. (Cheers.)

Mr. PETHICK-LAWRENCE said that the Minister had given no indication of what the local authority would do in cases where no such committee as was contemplated by the clause existed. There was no obligation on the part of the voluntary hospitals to form such a committee.

Sir A. HOPKINSON said that he had had to deal with just such questions as were raised by the clause, which was an admirable one, and co-ordination was absolutely vital in hospital work and development. It was necessary that the medical staff should be consulted, for they were the people who really knew the points in question. In the co-ordination of hospital work in Manchester, of the governing body of which he was a member, the loyal co-operation of the medical men who had given their lives to this work had been of the utmost value. How could they possibly know what steps ought to be taken, not only in the matter of healing, but of research, unless they consulted the people who had been at work for years in connexion with the various hospitals? There was also the question of the training of medical men and nurses. On that point, after many years' experience, he had come to the conclusion that the co-operation of the laymen on the governing bodies, of the local authority, and of the trained medical men was vitally essential.

Sir H. NIELD said that, as one who had been interested in voluntary hospitals for many years, he thought that the attitude of the Opposition, who pretended to be the friends of the poor, was a very ungenerous one. He hoped that they would not hear any more of the ungenerous attacks on the medical profession, who had devoted their lives to the welfare of the public.

Sir H. SLESSER denied that anyone on the Opposition side had attacked the doctors. They all agreed in paying to the doctors the greatest possible tribute, and the question of their merits or demerits was nothing to do with the matter under discussion. The direction in the clause that the local authorities should consult with certain bodies was only a pious aspiration, for even if these bodies existed and consultations took place, nothing was provided as to the consultations being acted upon. The clause could not be interpreted in a court of law, and was meaningless.

Sir KINGSLEY WOOD said that in the House of Lords many most distinguished lawyers and judges who sat on the highest tribunal in the land had devoted considerable time to the discussion and framing of the clause, and he accepted their view that the clause was likely to have a real and practical effect. Its object was to avoid overlapping in the provision of hospital treatment, and he was certain that when the local authorities entered into consultation with the representatives of the voluntary hospitals those consultations would be of the friendliest nature. They would not be empty consultations, but really in the best interests of the poor and the sick of the country. A very large number of associations representative of the voluntary hospitals already existed, and where no such associations or committees existed at present the Minister of Health was assured that the voluntary hospitals would see that they were formed. It was obviously to their interests to do that. The local authorities and the bodies representing the voluntary hospitals could be trusted generally to consult in this matter in a friendly way, and to come to a conclusion which would be to the best interests of all concerned.

The new clause was agreed to.

A further amendment by the Lords, legalizing the practice of associations of wage earners and persons in receipt of small incomes to contribute weekly sums to the support of Poor Law hospitals as well as voluntary hospitals was agreed to. Mr. CHAMBERLAIN, in moving that the amendment should be accepted, said that in one case last year nearly £10,000 was paid to the guardians for services rendered by a Poor Law hospital.

Further amendments of a drafting character were made, and the bill was returned to the House of Lords.

London Lock Hospital.

Mr. CHAMBERLAIN gave a statement to Mr. Pethick-Lawrence and Mr. Arthur Greenwood regarding the London Lock Hospital. He said he had brought to the notice of the board of the hospital the recommendations of the committee appointed to inquire into the hospital. He had received an assurance, which he accepted, that the board had already applied itself to carrying the greater part of the recommendations into practical effect. This task must involve a comprehensive review of the constitution and management of the hospital and considerable time would be required to complete it. Mr. Chamberlain did not think it in the public interest to publish details of arrangements at the hospital which were already under revision by the governing body, if and so long as he remained satisfied at the extent of the changes made and the rate of progress in making them.

Mr. PETHICK-LAWRENCE asked Mr. Chamberlain to take into account that the inquiry was undertaken owing to serious allegations made against the board. He argued that the subscribing public was entitled to know whether the board was exonerated by the report, and, if not, whether the charges made were being met by the proposed alterations.

Mr. CHAMBERLAIN replied that the report of the committee showed that considerable changes in the management of the hospital were desirable. He had an assurance from the chairman of the board that it was addressing itself to making the necessary alterations.

Mr. PETHICK-LAWRENCE further asked whether, as the matter had been going on for some nine years, the subscribing public could not be expected to have any further confidence in the management unless there was real evidence of drastic changes.

Mr. CHAMBERLAIN agreed that the subscribing public would want to be assured that there were to be drastic changes. He had an assurance such changes were being made.

In reply to Mr. Pethick-Lawrence, on March 21st, Mr. CHAMBERLAIN said that he had no evidence of dissatisfaction with the reply which he had given some days previously about the report of the committee which inquired into the London Lock Hospital. He made himself responsible for ensuring that changes at the hospital were carried out with sufficient speed; but it was not practicable to impose a time limit. He could not undertake to publish the correspondence between himself and the board of the hospital.

The Puerperal Fever Death Rate.—In the House of Commons, on March 20th, during a debate on the motion for the second reading of the Consolidated Fund (No. 2) Bill, Mr. J. STEWART said that puerperal fever was still taking as large a toll of life as it did forty years ago. Apparently science, which had reduced the death rate in other directions, had failed in regard to this disease. He would like to know what action the Government was taking in the matter. It might be necessary for the central authority which was finding the money to use some sort of forceful persuasion on the local authorities to induce them to develop their maternity hospital accommodation. It should be possible for every woman at the time of childbirth to have the chance of the best accommodation and treatment. Sir JOHN GILMOUR regretted that greater progress had not been made in dealing with the very serious problem of puerperal fever, but they had taken steps to ensure that in future on every death certificate these facts should be notified, and that in itself would be an advance in giving them information, which could be tabulated. He would also draw attention to a report by Dr. Kinloch, the new head of the Health Department in Scotland, who spoke with peculiar knowledge on this subject. They desired to draw the attention of the whole medical fraternity to his report, which would be made available. He hoped by the steps taken recently in the Scottish Local Government Bill that they would make further progress in regard to the increase of hospital accommodation.

National Insurance: Osteopathic Treatment as an Additional Benefit.—Mr. HANNON asked the Minister of Health, on March 14th, whether his attention had been called to a resolution adopted, at its recent annual general meeting, by the National Federation of Employees Approved Societies, which emphasized the benefit to be derived from osteopathic treatment, and recommended such treatment as an additional benefit; and if he was prepared to consider favourably this suggestion provided treatment was given by competent qualified practitioners. Mr. CHAMBERLAIN replied that his attention had not previously been drawn to this resolution. A registered medical practitioner was not debarred from giving osteopathic treatment, if he thought fit, either under a special scheme approved by the Minister for the purpose of additional benefit or otherwise. If, however, Mr. Hannon suggested legislation to encourage the provision of such treatment by unregistered persons, Mr. Chamberlain could not undertake to regard the suggestion with favour.

Small-pox.—In a reply to Mr. Groves, on March 14th, Mr. CHAMBERLAIN said no experiments had been made at the Government lymph establishment with neuro-vaccine, which Mr. Groves described as recently brought into use on the Continent to replace the lymph of Jenner. No use had been made of this new vaccine for public vaccination purposes in England. Mr. CHAMBERLAIN stated, on March 21st, that the small-pox cases notified in London in the past three weeks were: Bethnal Green 2, Finsbury 4, Holborn 1, Islington 1, Lambeth 4, Poplar 9, St. Pancras 2, Southwark 3, and Stepney 13. He understood that 15 of those notifications were in respect of persons of 21 years or over.

Chlorodyne as a Drug of Addiction.—Lady ASTOR asked the Home Secretary, on March 13th, whether he was aware that fresh evidence of the use of chlorodyne as a drug of addiction had come to light since the Departmental Committee on Morphine and Heroin reported in 1926. Sir W. JOYNSON-HICKS replied that the evidence before the Home Office did not show that the abuse of chlorodyne had been increasing since the Rolleston Committee reported. Lady ASTOR asked whether the Home Secretary proposed at an early date to carry out Recommendation 103 (2) of this committee, which would secure that no preparation could be sold under the name of chlorodyne which contained more than 0.1 per cent. of morphine. Sir W. JOYNSON-HICKS said the recommendation of the Rolleston Committee had been under consideration, but legislation would be required to give effect to it. No opportunity for this had occurred, but the matter had not been lost sight of and was noted for consideration in connexion with the general question of the revision of the Pharmacy Act, which had been under investigation by a departmental committee.

Anthrax.—On March 14th Sir W. JOYNSON-HICKS said a warning of the dangers of anthrax, and the need for immediate recourse to medical examination, was required to be posted up by Home Office regulation in every tannery. Supplies of serum were available in every centre where the industries subject to this risk were carried on. The warning notice to which he referred enumerated the places where the serum could be obtained. Even in isolated factories a supply could always be available in a few hours. Any worker in the industry who was suffering from a boil or pimple or anything which might possibly be anthrax should obtain medical advice and treatment at once. In the case of a Liverpool tannery labourer, on whom an inquest was held on March 6th, neither the man himself, nor the welfare worker, nor the doctor suspected anthrax. He was not aware of an opinion among leather workers that cases of anthrax were due to inadequate inspection of raw hides. If he was given any information showing that serum was not available day and night he would have inquiry made.

Administration of Dangerous Drugs by Hospital Probationers.—On March 20th Sir R. THOMAS asked whether hospital probationers were entitled to administer powerful drugs, such as digitaline and morphine, in the absence of a qualified medical practitioner. Mr. CHAMBERLAIN replied that the administration of drugs within the scope of the Dangerous Drugs Act was subject to special restrictions, but the responsibility for administration rested with the medical practitioner in charge of the case. He could not undertake to decide in general terms who was to be held responsible in the event of the death of a patient as a result of a mistake on the part of a probationer. That must turn on the view taken of particular facts.

Certification of Insane Persons.—On March 13th Dr. VERNON DAVIES asked the Minister of Health if his attention had been drawn to the fact that, owing to a recent High Court case, medical men would not run the risk of certifying insane people. Dr. Davies asked, further, whether Mr. Chamberlain proposed to introduce legislation to deal with the situation, which was inimicable to the best interests of the afflicted persons and the public. Sir KINGSLEY WOOD said Mr. Chamberlain's attention had been drawn to this case. He hoped that any legislation which might be introduced to amend the lunacy laws would include a provision giving effect to the recommendation on this point of the Royal Commission on Lunacy and Mental Disorder.

Phthisis Attributable to Service in the Navy.—Introducing the Navy Estimates on March 14th, Mr. BRIDGEMAN said he had been concerned with the question of pulmonary tuberculosis in the navy and the awards of pensions to those suffering from it. After careful investigations, and with the sanction of the Treasury, the Board of Admiralty had adopted methods which made it easier for men to claim pensions for disease attributable to service. There were still, and would always be, cases on the borderline, but by the method adopted the number of cases recorded as attributable to service would increase.

Lead Paint Regulations.—On March 21st Sir W. JOYNSON-HICKS told Mr. Viant that, as a result of co-operation between the inspectors of his department and the Home Office, substantial progress had been made in compliance with the Lead Paint Act, 1926, and the regulations. As the regulations had been in force for less than eighteen months, it was not possible to form any reliable estimate of their efficiency. The Act was passed on the understanding that before prohibition was resorted to the effect of regulations should be tried, and he was not prepared to reopen this question at present.

Segregation of Mental Defectives.—On March 21st Mr. CHAMBERLAIN, answering Sir R. Thomas, said that the Mental Deficiency Acts of 1913 and 1927 already provided means by which mental defectives, including moral defectives within the meaning of the Acts, could be segregated or placed under guardianship or supervision. He saw no necessity for the appointment of a committee to advise on such segregation.

Notes in Brief.

The Minister of Health is considering the situation by the decision of Mr. Justice McCardie in Brown *v.* Dagenham Urban District Council, which allowed the dismissal of public officials at any time at the pleasure of the body employing them, irrespective of any contract about notice of termination of employment.

The amount of capital expenditure by local authorities on slum clearance schemes in the last five years is estimated roughly at £5,250,000.

Mr. Chamberlain estimates that in England and Wales during 1927 sickness benefit was paid under the National Health Insurance Acts for roughly 30,500,000 weeks, as against 28,250,000 in 1926, and 25,000,000 in 1925. Exact particulars are not available.

Mr. Chamberlain is inquiring into an allegation that a woman patient of Newark, Notts, was certified on account of delirium and sent to Radcliffe Asylum, where she was diagnosed as suffering from scarlet fever.

Universities and Colleges.

UNIVERSITY OF OXFORD.

DR. ORMOND ALEC BEADLE has been elected to a Dr. John Radcliffe Fellowship.

The Radcliffe Prize for the furtherance of medical science in the University has been awarded to Dr. Sidney Campbell Dyde.

UNIVERSITY OF LONDON.

THE degree of D.Sc. in Anatomy has been conferred upon Mr. W. B. Crow, of East London College, for a thesis entitled "Contributions to the principles of morphology."

An academic Diploma in Public Health is to be instituted.

Dr. M. E. Delafield has been appointed the representative of the University at the fourth Imperial Social Hygiene Congress, to be held in London in July.

Sir John Rose Bradford, C.B., has been re-elected vice-chairman of the University College Committee for 1929-30.

Dr. Harold Raistrick has been appointed, as from August 1st, to the University Chair of Biochemistry at the London School of Hygiene and Tropical Medicine, where he will also hold the position of Director of the Division of Biochemistry and Chemistry, as applied to hygiene.

UNIVERSITY OF LEEDS.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—*Part I*: Bessie Brown, W. H. Craven, H. Denton, C. H. Foster, J. F. Galpine, W. L. Hardman, J. N. Hill, G. M. Holliday, L. Hoyle, Eugenie C. Illingworth, I. J. Keidan, R. G. S. Meadley, C. Poniedel, L. J. Richmond, S. Rosenberg, S. Silman, L. Silverman, W. E. Smart, E. J. Wayne, J. W. Whitworth. *Part II*: J. Kak, J. Loofe, G. J. Marks. *Part III*: L. B. Flather, Esther M. Killick (with distinction in medicine), A. C. Shuttleworth, Ivy R. Watson.

M.SC. IN PHYSIOLOGY.—R. E. Tunbridge.

UNIVERSITY OF LIVERPOOL.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—*Part I*: V. T. Parkinson. *Part II*: Teresa Lightbound, V. T. Parkinson.

D.P.H.—*Part I*: A. B. Anderson, J. L. Clegg, Kathleen Edgecombe, R. R. Evans, Bridget M. O. Gordon, B. S. Jarvis, I. S. Jones, J. S. Logan, J. Macdonald, J. C. McFarland, R. L. McMorris, E. Miles, R. J. Ormsby, D. E. P. Pritchard, F. L. Smith, F. C. Speechly.

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.—*Parts I and II*: W. H. Milligan, J. E. C. Walker, P. H. Whitaker, J. Wilson.

DIPLOMA IN TROPICAL MEDICINE.—K. B. Chakravarti, J. Crawford, W. C. Dale, J. R. Dogra, G. D. Drury, T. S. Gill, Margaret A. L. Herbertson, J. A. L. Innes, J. A. McGregor, W. B. McQueen, B. K. Majumdar, I. C. Middleton, J. T. F. Pearse, C. Ramdcholl, Elizabeth J. Robinson, P. B. Robinson, A. Shafi, T. Verghese, S. P. Wilson.

DIPLOMA IN TROPICAL HYGIENE.—S. W. H. Askari, A. Halawani, I. S. Hilmy, H. S. Lawrence, H. M. Setna.

UNIVERSITY OF DUBLIN.

TRINITY COLLEGE.

THE following candidates have been approved at the examinations indicated:

FINAL M.B., PART I.—*Materia Medica and Therapeutics; Medical Jurisprudence and Hygiene; Pathology, and Bacteriology.*—*S. H. Moore, *S. Levy, W. Caldwell, F. M. Lyons. (*In completion*): C. H. Hutchinson, A. A. Lisney.

PART II.—*Medicine*: A. F. Kennedy, L. B. Harris, F. R. Falkiner, T. B. McMahon, J. Beggs, P. A. Thornton, E. C. Hicks, N. Shapira, E. B. A. Solomons, G. B. Thrift, R. M. Wilson, M. E. Kirwan, N. S. Klass, M. H. Fridjhon, J. A. Dowds, C. King, N. H. Lindsay. *Surgery*: J. E. C. Cherry, N. Burstein, P. A. Thornton, Anna M. E. McCabe, H. Dundon, W. B. Hamilton, W. A. Y. Knight, Josephine M. Enright. *Midwifery*: *J. N. U. Russell, *E. F. St.J. Lyburn, *H. T. Fleming, P. O'Shea, R. E. Hemphill, Lilla M. Spiller, E. F. S. Morrison, G. R. Boare A. Rouse, Kathleen A. Wilson, S. Beggs, Dora G. Bradley, R. T. O'Shea, R. P. McGarrigle, Frances E. Wilson, N. Shapira, J. Willoughby, E. J. M. Bam.

DIPLOMA IN GYNAECOLOGY AND OBSTETRICS.—I. S. Marwah.

* Passed on high marks.

The Services.

NAVAL MEDICAL COMPASSIONATE FUND.

A MEETING of the subscribers of this fund will be held at the Medical Department of the Navy, Queen Anne's Chambers, Tothill Street, Westminster, S.W.1, on April 25th, at 11.30 a.m., to elect six directors of the fund.

INDIAN MEDICAL SERVICE.

THE following have been appointed to permanent commissions in the Indian Medical Service: K. F. Alford, H. J. Curran, A. M. Fraser, B. J. Griffiths, W. P. Lappin, E. A. Y. Mackeown, H. T. McWilliams, G. Milne, G. J. O'Connor, P. Sliannon, D. L. Trant, H. S. Waters, E. P. Walsh, W. J. Walsh. Further appointments are about to be made, and young medical men contemplating a medical career in India are referred to the announcement made in our advertisement columns.

DEATHS IN THE SERVICES.

Surgeon Captain Edward Leicester Atkinson, D.S.O., R.N., died suddenly at sea on February 20th, aged 46. He was born on November 23rd, 1882, the son of Edward Atkinson, Esq., was educated at the Forest School and at St. Thomas's, and took the M.R.C.S. and L.R.C.P.Lond. in 1906. In 1905 he won the light-weight boxing championship of the United Hospitals. Entering the navy soon after qualifying, in 1908-9, he served as vaccinator at the Royal Naval Hospital at Haslar, and in 1910 was appointed pathologist and bacteriologist to Captain Scott's expedition to the antarctic regions. When Scott set off for the South Pole he was left in charge of the ship, and commanded the main party at Cape Evans, and the party which went in search of the missing explorers, and found their bodies, buried them, and erected a great cairn over their remains. To the official account of the expedition, drawn up by Dr. Leonard Huxley, and published in 1913, he contributed a chapter entitled "The last year at Cape Evans," which concludes with the story of the finding of Scott's tents and the bodies of Scott and his companions, all except Captain Oates, whose remains were never found. In the great war Surgeon Captain Atkinson served successively with the Grand Fleet, with the Royal Naval Division in Gallipoli, and with a howitzer brigade in France, when he was thrice mentioned in dispatches, and received the D.S.O., and in North Russia in 1919. He was awarded the Albert Medal for rescue work in the explosion on H.M.S. *Glatton* in 1918, when he himself lost one of his eyes; and in 1920 he gained the Chadwick gold medal and prize, an award made every five years to the medical officer who has done the best special work for the health of the army and navy. So recently as last November he married Miss Mary Flint Hunter, daughter of John Hunter, Esq., of Glasgow.

Medical News.

AT a joint meeting of the Section of Psychiatry of the Royal Society of Medicine with the Medical Section of the British Psychological Society, to be held at 1, Wimpole Street, W.1, on Tuesday, April 9th, at 8 p.m., there will be a discussion on the role of anxiety in the psychoses and psychoneuroses. The speakers include Dr. Ernest Jones, Dr. H. Yellowlees, and Dr. R. D. Gillespie.

A SERIES of dances is being arranged by different London hospitals in turn in aid of the Royal Medical Benevolent Fund Guild, in the hall of the British Medical Association House, Tavistock Square, W.C.1. The first of these will be organized by Guy's Hospital, and will be held on Thursday, May 16th, from 8.30 p.m. to 12.30 a.m. Tickets, 6s. each, or 11s. for two, which include light refreshments, may be obtained from Mrs. Hale-White, 1, Portland Mansions, W.1; Miss V. S. Fripp, 19, Portland Place, W.1; or Mr. Winston, Medical School Office, Guy's Hospital, S.E.

A PUBLIC meeting to discuss developments of British chemical manufacturers will be held in the Mansion House, London, on Wednesday, April 24th, at 4.30 p.m., when Lord Melchett (president of the British Science Guild) will take the chair. The programme will include the following addresses: fertilizers from the air, by Sir Frederick Keeble; rayon (artificial silk), by Mr. A. B. Shearer; and synthetic drugs, by Mr. Francis H. Carr. Tickets for the meeting may be obtained on application to the British Science Guild, 6, John Street, Adelphi, W.C.2.

THE Library of the British Medical Association will be closed from the evening of Thursday, March 28th, until the morning of Tuesday, April 2nd.

ON March 25th the Westminster Bank transferred its Russell Square branch, at which the Association keeps its various accounts, to the North Wing of the Extension of the British Medical Association House in Tavistock Square.

A COURSE of post-graduate lectures will be delivered at the Royal Dental Hospital of London School of Dental Surgery, Leicester Square, W.C., commencing on Wednesday, April 10th, when Mr. Bowdler Henry will give a lecture-demonstration on the use and limitations of diathermy in dental surgery. On April 24th Professor J. C. Drummond will speak on certain biochemical aspects of saliva; on May 1st Dr. E. W. Fish will deal with the reaction of the pulp and dentine to caries; on May 8th Mr. J. G. Turner, F.R.C.S., will lecture on pain. The last lecture of the series will be given by Mr. F. St. J. Steadman, who will discuss fractures with special reference to treatment. The lectures, which begin at 6 p.m., are free to practitioners, advanced students, and others interested in the subjects.

THE Fellowship of Medicine announces that a two weeks' practitioners' course will begin on April 8th at the London Temperance Hospital in medicine, surgery, and the specialties from 4 to 5.30 p.m. daily. A series of eight lecture-demonstrations will be given at the London School of Tropical Medicine on Tuesdays and Fridays from April 9th, and a course of four lecture-demonstrations on light and heat therapy on Wednesdays at the Royal Free Hospital from April 10th. A three weeks' course in medicine, surgery, and gynaecology at the Royal Waterloo Hospital commences on April 15th. A course in neurology at the West End Hospital for Nervous Diseases will continue from April 15th to May 11th at 5 p.m.; it consists of lecture-demonstrations, illustrated by cases, and the minimum entry is 10. The Fellowship proposes to start a course for the July M.R.C.P. examination. Lectures will be given on diseases of the brain, nervous system, lungs, heart, blood, kidneys, alimentary system, and spleen, as well as on modern biochemical methods. Detailed syllabuses of these courses, information on post-graduate work in London at the general and special hospitals affiliated to the Fellowship, and copies of the *Post-Graduate Medical Journal* can be obtained from the secretary of the Fellowship, 1, Wimpole Street, W.1.

THE Derby Medical Society has arranged a course of post-graduate lectures to be given by Dr. H. C. Cameron at the Derbyshire Royal Infirmary on Tuesday evenings at 8 p.m. The first lecture, on April 9th, will deal with the newly born, the second, on April 16th, with the infant and its diet, the third, on April 23rd, with acidosis, the fourth, on April 30th, with some surgical operations in childhood, and the fifth, on May 7th, with functional nervous disturbances. The fee for the course is £1 10s. Full particulars may be had from Dr. G. E. Kidman, 134, Osmaston Road, Derby.

As will be seen from our advertisement pages the next election to the Grocers Company scholarships for encouraging original research in sanitary science will take place in May next; they are of the value of £300, tenable for one year, but renewable. Forms of application can be obtained from the clerk of the Grocers Company, Grocers' Hall, E.C.2, to whom they must be returned before the end of April.

QUEEN CHARLOTTE'S Maternity Hospital has now decided to purchase a site of five acres on the Goldhawk Road, near Ravenscourt Park Station, in the borough of Hammersmith. Building operations will commence at an early date on the first section—a separate isolation block (with research facilities) for patients suffering from puerperal fever. This will be the first instance in this country where reception will be provided on a large scale for cases of puerperal infection, and where laboratory research and the training of post-graduate students and midwives can be based upon the study of such cases.

LISTS of medical practitioners serving as members of local authorities or their subsidiary public bodies in Great Britain were published in our issues of December 8th (p. 1057) and December 29th, 1928 (p. 1190), and February 16th, 1929 (p. 314). We have since received intimation that Dr. S. Edwards Jones (Wrexham) is chairman of the Public Health and Small-pox Hospital Committees, a member of the Maternity and Child Welfare Committee and of the Mental Deficiency Committee, and a representative of the Voluntary Hospitals Committee of the Denbighshire County Council. In the Borough of Wrexham Council he is deputy mayor and alderman, and chairman of the Health and Child Welfare Committee, and was mayor in 1910-11. He is a member of the Wrexham Rural District Council and chairman of the Joint Fever Hospital Committee; also a member of the Wrexham Board of Guardians, of which he was for seven years chairman. We have also been informed that Dr. Alex. A. Carruthers is a member of the Parish Council of Shilton, Warwickshire.

THE late Sir Hector Clare Cameron of Glasgow left personal estate of the value of £34,723. He bequeathed the portrait of himself by George Henry, R.A., to the Royal Faculty of Physicians and Surgeons of Glasgow, and £100 to the Western Infirmary, Glasgow.

SIR ROBERT ARMSTRONG-JONES of Plas Dinas has been elected sheriff for Carnarvonshire for 1929.

THE following appointments have recently been made in foreign faculties of medicine: Professor Dubois, dean of the faculty of medicine, and Dr. Ingelrans, professor of therapeutics, at Lille; Dr. A. Barraud, professor of the oto-rhino-laryngological clinic at Lausanne; Dr. Wilhelm Brock, professor of oto-rhino-laryngology, and Dr. Otto Goetz of Frankfort, professor of surgery, at Erlangen; Professor von Eicken, director of the oto-rhino-laryngological clinic, dean of the medical faculty, and Dr. Rõszle of Basle, professor of general pathology and pathological anatomy, at Berlin; Dr. Karl Reuter, professor of medical jurisprudence at Breslau; Dr. Terracol, professor of oto-rhino-laryngology, and Dr. Riche, professor of gynaecology, at Montpellier; Professor A. Fornesco, director of the obstetrical and gynaecological clinic at Cagliari; Dr. Otto Steurer of Tübingen, professor of oto-rhino-laryngology at Rostock; Dr. Eugen Ludwig, professor of anatomy at Basle; Dr. Grasbey, pro-
[illegible] ne; Dr. Holfelder, professor
[illegible] Dr. I. Nasso of Perugia,
[illegible] at Messina, in succession to Professor Cannata, who has been transferred to Palermo; Dr. I. Simon of Pavia, professor of pharmacology and toxicology at Padua; Dr. Salva, professor of clinical ophthalmology, and Dr. Sigaud, professor of anatomy at Grenoble; Dr. de Leobardy, professor of medical pathology and experimental medicine at Limoges; Dr. Quinquaud, professor of physiology at Rheims; Professor Dr. von Haberer, rector of the medical academy at Düsseldorf; Dr. Joseph Schuller of Cologne, professor of pharmacology at Göttingen; and Dr. Guido Fanconi, professor of children's diseases at Zürich.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9961, 9962, 9963,* and *9964* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediscera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

PIGMENTATION OF THE FACE.

"HOPEFUL" asks for advice in the treatment of a female patient, aged 38, who for many years has been distressed by a dark brown staining of the skin below the eyes.

ANOREXIA NERVOSA.

"LOWLANDER" would like suggestions for the treatment of a woman, aged 21, suffering from anorexia nervosa of one year's standing. The patient weighs only 5 st., has no appetite, and is constipated. Drugs have no effect on her condition, though ultra-violet rays have brightened her mentally. She has been twice in hospital.

EMISSION WITHOUT ORGASM.

"PRAC." writes in answer to "M.B., B.S." (March 2nd, p. 429): I do not know of such a case as this in normal people, but have known of involuntary emission without orgasm in a case of adolescent dementia.

THE TRIANGULAR BANDAGE.

DR. N. CORBET FLETCHER (London, N.W.) writes: In reply to the query of "Inquirer" (New Zealand) (March 23rd, p. 585), the triangular bandage was invented about 1850 by Dr. Mayer of

Lausanne (Switzerland). It was popularized by Dr. Esmarch of Kiel, who introduced its use to the German army about 1875, and it was brought in 1877 from Germany to England by the St. John Ambulance Association. Dr. Mayor published in 1831 a book called *Fragments of Popular Surgery*, in which he praised the utility of handkerchiefs which, as he said, "can be cut diagonally into triangular bandages," or, as he called them elsewhere, "three-cornered bandages." In an appendix he described various ways in which the triangular bandage may be (and still is) used. The book was translated from the French by Dr. Thomas Cutler, and published in this country in 1836.

ENURESIS.

DR. T. W. HILL (London, N.W.) writes: In reply to "K.'s" query (March 9th, p. 485), and the replies it has evoked, allow me to give my large experience of similar cases at the Willesden clinic. In the great majority of cases each of the usual practices for the relief of this distressing complaint proves futile, whether it be circumcision, removal of adenoids, sleeping on hard boards, belladonna, etc. The only sure method i[illegible] on the part of the mother, reinforced by [illegible] child. It is my custom when any case [illegible] inquire into the mother's efforts to stop the habit. If there has been punishment or disapproval of any kind, this is promptly stopped. There must be absolute co-operation between parent and child, otherwise success is impossible. How can anyone speak of a sense of shame concerning an action which occurs in sleep, and which is similar to sleepwalking and sleep-talking? A complete psychological investigation is necessary into any source of worry or anxiety (frequently scholastic), and a regime of hope and encouragement introduced. It has been my practice to give the child a chart marked with the days of the week, which should be hung above his (her) bed. For each dry night a star is placed in the corresponding space. This scheme is derived from the American psychologists and proves extremely successful in practice. In about 90 per cent. of cases bedwetting ceases within two months, the time varying according to the duration and severity of the habit.

ILLNESS FOLLOWING A SHAMPOO.

DR. W. U. D. LONGFORD (Holywood, co. Down) writes: On March 4th a patient of mine went to a hairdresser's for a dry shampoo. She was warned by the attendant to hold a towel over her nose "as some people faint." Almost immediately the shampoo was applied the patient collapsed, and, I believe, the attendant was also partially overcome. My patient was carried out of the small compartment to another room with an open window, where the staff tried to revive her. After an hour's massage she had not recovered, so they sent for her mother, who took her home in a taxicab. The patient told me that she never lost consciousness completely, but that she was unable to move a limb or speak. When I saw her she appeared dazed, as if recovering from an anaesthetic, and there was a strong smell of the chemical which had been used as a shampoo. Three days later she was still weak and unable to stand; she complained of severe headache, and her systolic blood pressure was only 95. Not until March 9th was she able to leave her bed, and even now she has not completely recovered, though her blood pressure is 120. I have been unable to discover the nature of the chemical used in the shampoo or any reference to similar cases in available medical literature, but I have a vague recollection of reading of a fatal case of the same kind some years ago.

*** It is possible that the chemical used in the shampoo which caused such serious effects on our correspondent's patient was carbon tetrachloride, which was formerly employed with some freedom in shampoos and brought about the fatal case of which our correspondent has a faint recollection. It is possible that the hairdressing fraternity has also nearly forgotten this case, and has consequently revived the use of this very poisonous compound, which is closely allied to chloroform, but more toxic.

INCOME TAX.

Replacement of Car.

"N. S. P." bought a 12-h.p. car six years ago for £600 and has now sold it for £45, and bought another car at a price of £316. What should he claim?

*** The amount of the actual out-of-pocket cost—that is, £316 – £45 = £271.

"J. D. McC." has claimed obsolescence in respect of a 12-h.p. A car bought in 1924 and replaced by a car of similar make and power bought on January 1st, 1928. The inspector of taxes declines to give effect to an obsolescence allowance because the replacement of the old 12-h.p. A car by another 12-h.p. A car is not within the statutory rule.

*** We consider that the claim is well founded. Having regard to the purpose for which a car is required by a medical practitioner and the wear and tear it suffers, there is nothing abnormal in the contention that a car is "obsolete" for the use to which it is being put in three years. The inspector appears to be putting an interpretation on the word "obsolete" which it is not intended to bear. The judge's dicta in the case of South Metropolitan Gas Company *v.* Dadd support our view, though his decision—on the special facts of that case—was in favour of the Revenue.

LETTERS, NOTES, ETC.

TREATMENT OF INFLUENZA.

DR. TRESSIE PIRES (Burnham-on-Sea) writes: I was much interested by Dr. W. Bastian's account on March 9th (p. 455) of the aspirin, phenacetin, and ipecac. treatment of influenza. After reading Dr. Garry Simpson's note on March 2nd (p. 439) with regard to this powder, I tried the same on a patient, who described its effect as very beneficial after the sweating; the headache and pains in limbs disappeared, and a second dose gave complete relief. Surely, at least, the excess of toxins causing the acute symptoms is here eliminated by the skin—shown by the fall in temperature and the feeling of well-being that the patient experiences—in spite of the fact that the bronchial and nasal secretion, even of a muco-purulent nature, which may continue, gets rid of the rest of the toxic process and debris of cells. I should like to know what dose is effectual in children.

SUDDEN DEATH FROM PNEUMONIA WITHOUT APPARENT SYMPTOMS.

DR. G. DUDLEY (Stourbridge) records another fatal case of symptomless pneumonia in an infant, following that reported by Drs. J. A. Stephen and E. R. C. Walker on January 26th (p. 152). He writes: A male infant, weighing 4 lb., was born two months prematurely on May 29th, 1928; with careful feeding on breast milk and good general nursing the child gradually gained weight and thrived. At the age of 6 months the weight was about 8 lb. and the child appeared to be doing well. About this time the mother had to go into hospital for an operation, and the child was looked after by an aunt. On December 5th, 1928, the infant was seen by a health visitor, who expressed herself as satisfied with his progress. The next day the father went to work at 7 a.m. and left the child asleep and apparently well, but two hours later I was called to the house and found the child dead. There was no evidence from external examination as to the cause of death and there was no history of any recent illness. There was a slight petechial rash round the buttocks which was said to have been of recent origin. At the necropsy the right lung was found to contain large patches of broncho-pneumonia, and there were a few recent pleural adhesions; the spleen was enlarged and the pulp was soft. The other organs appeared healthy. Death appears to have been due to extreme toxaemia, but the interest lies in the suddenness of the event.

PHYSIO-THERAPY IN CHRONIC RHEUMATISM.

DR. J. CAMERON (Beverley) writes: Dr. Frank D. Howitt, in his informative paper on physio-therapy in the treatment of chronic rheumatism (February 23rd, p. 338), refers to Dr. Percy Wilde's book on the pyretic treatment of rheumatism in connexion with the elimination of lactic acid. Dr. Howitt says a condition of hyperthermia quickly follows the immersion of the body in a hot bath, etc., and, further, that "vapour baths" give the best results in rheumatic cases. I have carefully read Dr. Wilde's work, and the essence of his thesis seems to be that in his particular vapour bath the air is simply "saturated" at the temperature concerned; that there is no free "condensed" vapour in the atmosphere of his bath; and that therein lies its efficiency, contrasted with the ordinary vapour bath, the atmosphere of which, while "saturated" for the temperature concerned, is also clouded with "condensed" vapour—in fact, one would say the condition alleged in the Wilde bath is that of the atmosphere in the Red Sea when the temperature is well above 90° F. and the air, of course, "saturated." I wonder if Dr. Howitt has made any comparison of the two conditions—that is, if there *is* a difference—and if he is able to say if there is any real difference in clinical results. If not, then a simple "cure" would be the Red Sea voyage, which I have done several times, or a run to Basra up the Persian Gulf, or anywhere to a hot "saturated" climate.

A CENTIPEDE IN THE NOSE.

MR. A. P. BERTWISTLE (London, W.) writes: There are some points in which I beg to disagree with Dr. Gordon Wilson in his article in the *British Medical Journal* of March 9th (p. 446). The common centipede (*lithobius*) is a much stouter, keratinous insect, possessing sixteen pairs of legs, whilst the millipede, which this closely resembles, has many more legs. I admit, however, that there is a centipede found in the South of England not unlike the one illustrated (*geophilus*). The life-history of both insects is about a year; I do not see how it could have hatched in the nose. Furthermore, these insects do not leave the soil to visit flowers. I suggest the patient got the adult creature into his nose, a favourite habitat, while breaking stones. Dr. Wilson mentions some interesting features of blow-fly infections. I have heard, and seen, one case which suggests that if, before the advent of suppuration, the wound is so infected, it will not become septic. If this is so, would it not be possible to prepare the ideal antiseptic from the maggot? It is quite feasible that maggots take precautions that their food supply shall be preserved against putrefaction.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 42, 43, 44, 45, and 48 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 46 and 47.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 76.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

310. Nervous Complications of Whooping-cough.

M. GIUFFRE (*Arch. de Méd. des Enf.*, February, 1929, p. 82), who records an illustrative case seen in the children's hospital at Palermo, states that a much larger number of cases of whooping-cough with nervous complications have been described in northern than in southern countries. Nervous symptoms usually appear in the paroxysmal stage. In addition to convulsions and spasm of the glottis, which some writers regard as symptoms of latent tetany, forms of cerebral paralysis have frequently been described, accompanied or not by bulbar symptoms and involvement of the special senses. It is rarer to meet with clinical meningitis, disseminated sclerosis, Friedreich's ataxia, Landry's ascending paralysis, and pseudo-tabes, while sensory changes have only been found in association with other symptoms. A few instances have been recorded indicating a spinal lesion giving rise to flaccid paralysis with involvement of the sphincters and sensory changes, or polyneuritis. The psychical changes include dementia, idiocy, and night terrors. As regards the pathogenesis, little importance can be attached to the mechanical factor (increase of intravenous pressure during the attack of coughing) in comparison with the action of the toxins of the Bordet-Gengou bacillus. Some writers maintain that the nervous complications of whooping-cough only occur in children who are subjects of spasmophilia. Pathological investigations have shown that haemorrhages in the central nervous system are much rarer than was supposed. Sometimes no naked-eye lesion has been found, but merely degenerative changes in the nerve cells. Neurath found considerable meningeal infiltration with mononuclear leucocytes accompanied by hyperaemia and very small haemorrhages. Giuffre's patient was a female infant, aged 15 months, who developed left spastic hemiplegia preceded by convulsions limited to the left side of the body during the paroxysmal stage. Complete recovery followed at the end of two months after treatment by lumbar puncture, protein injections, and magnesium sulphate, and bromide preparations internally.

311. Etiological Factors in Leprosy.

G. W. ST. C. RAMSAY (*Trans. Roy. Soc. Trop. Med. and Hyg.*, November, 1928, p. 249) reports that leprosy is very prevalent in Southern Nigeria, the incidence in certain densely populated districts being above 3 per cent. He has collected a series of 616 patients, of whom 68.34 per cent. were males; their ages ranged from 8 to 60, and the average duration of the disease was 6.1 years. The maculo-anaesthetic variety of leprosy accounted for 80.5 per cent. of all cases in this series. Scabies was found in 32 per cent. of patients, mostly children, and Ramsay suggests that this condition may provide foci through which leprosy bacilli gain entrance to the body, and should be considered an important factor in the etiology of leprosy. Blood films revealed the presence of *Microfilaria perstans*, *M. loa*, and *M. bancrofti* in approximately one-sixth of all the cases. Examination of faeces showed a high percentage of hookworms, ascarides, and whip-worms. Entozoa are so prevalent in West Africa that the natives appear to possess a relative acquired immunity to the effects of these parasites. Nasal smears were taken in all cases. The nodular and mixed types of leprosy had a very high infectivity rate; but less than 10 per cent. of the maculo-anaesthetic cases were actively infectious. A positive Sachs-Georgi reaction was found in 42.7 per cent. of the cases. This represents the combined syphilis and yaws percentages, but confirms the general medical opinion that syphilis is extremely prevalent among Southern Nigerian natives. Ramsay agrees with authorities in India that arsenobenzol treatment should be given to every leper who has a positive Sachs-Georgi reaction. He advocates the establishment of voluntary leper colonies by medical missions aided by Government grants.

312. Pathogenesis of Pernicious Anaemia.

J. MEINERTZ (*Deut. med. Woch.*, February 8th, 1929, p. 218), after discussing the symptoms of pernicious anaemia, concludes that, if the raised haemolysis is primary and the disturbance of the marrow activity is secondary, extirpation of the spleen is suggested, since this organ is the haemolyser of used-up and injured red cells. The results of splenectomy are: (1) raising of the haemoglobin and red cell count, so that the colour index approaches normal; (2) enormous influx of normoblasts immediately after the intervention; (3) the appearance of Howell-Jolly bodies; (4) immediate increase in the number of leucocytes, especially lymphocytes; and (5) marked eosinophilia. The course of the disease is altered so that the characteristic crises and remissions are no longer differentiated; those therapeutic measures which failed to act before the splenectomy are now beneficial, and the megalocytes, which were more readily affected by the haemolytic action of the spleen, have now an extended life. The removal of the spleen has also a direct and lasting stimulus on the bone marrow, as illustrated by the increased number of leucocytes. The effect of liver treatment is a complete restoration to health, which, however, is not permanent, the symptoms returning sooner or later if the administration is stopped. The author considers that the disease interferes with the function of the liver in dealing with the toxic waste products of amino-acid oxidation. He concludes that the nature of the disease is a qualitative irregularity of the bone marrow activity, by which more readily haemolysed red cells are produced. By liver treatment the blood picture more nearly returns to normal than by treatment with arsenic, blood transfusion, or by splenectomy, in which the characteristic megalocytosis remains.

313. Idiopathic Pleural Effusions.

M. HÄUTEMANN (*Zeit. f. Tuberkulose*, January, 1929, p. 483) reviews the literature and records his observations on 250 cases of pleurisy admitted to the Neukölln Hospital from 1920 to 1927; 80 of these cases were regarded as of tuberculous origin. After careful examination only 45 of the patients could be found with no obvious signs of tuberculosis to be detected by clinical or radiological methods. An inquiry was made into the subsequent history of the patients; 15 could not be traced, 10 had developed rapidly progressive pulmonary tuberculosis from which 3 had died, while the remaining 20 were in excellent health and showed only the residues of a past attack of pleurisy on physical and x-ray examination. Häutemann comes to the conclusion that in two-thirds of all cases of the so-called idiopathic pleurisy this symptom is the only manifestation of an otherwise latent tuberculous infection, and that the favourable prognosis of the condition is due to the immunizing and bactericidal properties of the pleural effusion. In the great majority of cases of this type of pleurisy there is pulmonary infiltration.

Surgery.

314. Surgical Treatment of Angina Pectoris.

IT has now been fully established that painful stimuli arising in or near the heart may be modified by closing the pathways along which they travel to the central nervous system, and E. P. RICHARDSON and P. D. WHITE (*Amer. Journ. Med. Sci.*, February, 1929, p. 161) compare the results following sympathectomy and paravertebral alcohol injection in angina pectoris. Sympathectomy was first performed by Jonnesco, who advocated the bilateral removal of the whole cervical sympathetic chain, including the first thoracic ganglia. Later, Coffey and Brown reported successful results following removal of the superior cervical ganglion only. For the purpose of comparison the present authors treated four cases by each method, all the eight cases being comparable as regards the seriousness of the anginal condition. In the one series the operations, limited to the left side, were removal of the superior cervical ganglion, of the superior ganglion and sympathetic chain down to the first thoracic ganglion, and of the inferior cervical and first thoracic ganglia, which form the stellate ganglion. The other series, treated by the method of Swetlow, included two cases of coronary thrombosis, which would not have been suitable operative risks. The authors conclude that the results obtained from sympathectomy are not encouraging, and that the relief occasionally obtained involved too great a risk to the patient. Symptomatic relief was more constantly secured by paravertebral injections; the tendency to recurrence after this method is offset by the possibility of repeating the treatment. This procedure is safer than sympathectomy, and is considered to be the first method of choice for angina pectoris when other measures have failed. Injection, generally of the left upper five thoracic nerve roots, is recommended in obstinate cases, and there seem to be no contraindications.

315. Tannic Acid Treatment of Burns.

A. H. MONTGOMERY (*Surg., Gynecol. and Obstet.*, February, 1929, p. 277), from an experience of 24 cases of burns in children, advocates treatment with tannic acid, regarding it as a real advance upon any other method in respect of the reduction of mortality. After a dose of morphine sufficient to control pain the surrounding skin is cleansed with benzene or ether, gross particles of dirt being removed with sterile instruments. A freshly prepared 5 per cent. solution of tannic acid in water is then sprayed over the wound and the child is placed in bed on a sterile sheet without clothes or dressings of any kind, a tent being made with blankets with one or two electric lights suspended from the roof for warmth and drying. The spraying of the wound is repeated every half-hour, and in from fifteen to twenty-four hours a dry brown crust has formed, completely sealing it. After the first half-hour the wound becomes and remains painless. Fluids are given by mouth, hypodermoclysis, or proctoclysis, with, in severe cases, glucose or blood transfusion intravenously, and the child is kept under the tent without any further local applications. At the end of three or four days all evidence of toxaemia has usually disappeared. In superficial burns the crust begins to loosen at the edge as epithelization proceeds, and the loosened portion can be cut away with scissors. In deeper burns the crust usually loosens in from two to three weeks, leaving a granulating surface which can be prepared for grafting by wet saline or Dakin's solution dressings. Advantages claimed are the reduction of scar formation to a minimum, absence of pain, freedom from dressings, the obviation of large weeping wounds, and lessening of toxaemia.

316. Cholecystitis with Haematemesis.

P. MOULONGUET (*Bull. et. Mém. Soc. Nat. de Chir.*, January, 1929, p. 15) remarks that, although gastric haemorrhage occurs frequently in cases of gall-stones accompanied by jaundice, yet a severe haematemesis without jaundice but associated with cholecystitis is not so common and sometimes obscures the diagnosis. These haemorrhages, although occasionally of little significance, may produce a grave condition, due either to their profusion or to their association with acute infective phenomena round the biliary tract. In many cases the occurrence of a gastric haemorrhage suggests the presence of a lesion of the digestive tract, but if, during operation, no abnormality of the stomach or duodenum is found, the biliary tract must be examined. In grave gastric haemorrhage with acute cholecystitis surgical intervention is an urgent necessity. The symptoms may be very diverse in these cases; there may be a profuse haematemesis or only a continuous oozing of blood and an occult melaena. Sometimes there are severe and frequent haemorrhages with considerable haematemesis and melaena. Frequently these severe attacks of bleeding, when allied to the acute infection of cholecystitis, render the prognosis very grave, through anaemia and the results of the infection causing toxic absorption. The pathology of these haemorrhages is interesting since it is so varied. There are said to be four causes: alteration in the constitution of the blood; duodenal erosions and inflammation of the duodenum; thrombosis and aneurysm of the hepatic artery; and haemorrhage into the gall-bladder or bile ducts.

317. Cervical Ribs.

A. RECCIUS (*Zentralbl. f. Chir.*, January 26th, 1929, p. 211), who records an illustrative case in a woman aged 27, states that cervical ribs are most often found in the female sex. The condition is often accompanied by other malformations, such as scoliosis, torticollis, rachischisis, club-foot, or retained testes. Of these, scoliosis, which Streissler found in 16 per cent. of his cases, is the commonest malformation, and involves the lowest cervical and upper dorsal vertebrae. Other concomitant congenital abnormalities that have recently been recorded are horseshoe kidney, absence of sacrum, presence of lumbar ribs, and pseudarthroses of the clavicle. Cervical ribs are also frequently associated with nervous diseases, especially exophthalmic goitre, syringomyelia, and tachycardia. Although the symptoms may naturally appear at any age, their onset is commonest between 20 and 30, owing to the ossification of ribs at this time. In many cases, however, other causes have been responsible, such as trauma or diseases of the ribs themselves. Nervous symptoms, in the form of paraesthesia and pain, first attract attention, and are aggravated by pressure on the cervical plexus or sudden turning of the head. Paralyses as a rule are uncommon; irritation of the sympathetic is manifested by mydriasis, widening of the palpebral fissure, and exophthalmos. Circulatory disturbances of all degrees, ranging from a feeling of chilliness and cyanosis to gangrene of the fingers, may occur. The difficulty of diagnosis is shown by the fact that of Trostler's 63 cases only 17 were correctly diagnosed. In 28 cases the first diagnosis was neuritis, and in 9 progressive muscular atrophy; in another 9 instances the cervical ribs were discovered by accident. When the diagnosis is doubtful an *x*-ray examination is decisive. In most cases associated with symptoms operation is indicated.

318. Poliomyelitis following Tonsillectomy.

W. L. AYCOCK and E. H. LUTHER (*New England Journ. of Med.*, January 24th, 1929, p. 164) record sixteen cases of poliomyelitis, in patients aged from 3 to 25 years, in which the paralysis occurred from seven to eighteen days after tonsillectomy, so as to suggest a causal relationship between the operation and the subsequent paralysis. In answer to the suggestion that the medical practitioner who removed the tonsils was a carrier, and infected the patient at the time of the operation, the authors point out that, with one exception, no two cases in their series were operated on by the same man. In one city where four cases occurred three were operated on by the same practitioner, but at different times. Since poliomyelitis was prevalent at the time, and the physician had performed more than 200 tonsillectomies during the period, the authors are not inclined to associate the cases with the operator, but suggest that the disease may follow the operation, because this procedure opens up the pathway for the virus which may already be present in these individuals.

Therapeutics.

319. Indications for the Administration of Calcium.

H. O. COLOMB (*Med. Journ. and Record*, February 6th, 1929, p. 121), discussing calcium metabolism from the therapeutical standpoint, states that the mere ingestion of calcium salts is insufficient to overcome their lack in the body since the metabolism of this metal has been found to be influenced by phosphates, vitamins A and D, and the internal secretions of the parathyroid and thyroid glands and the anterior pituitary lobe. Calcium is present in all tissues of the body as a necessary physiological salt in some form, either in an organic or in an inorganic combination. Its therapeutical indications are classified as: (1) conditions resulting in jaundice and its concomitants, toxaemia, haemorrhage, and pruritus; (2) those accompanied by intestinal toxaemia; (3) those associated with gastro-intestinal ulceration and a tendency to haemorrhage; (4) those resulting from the introduction of exogenous toxic agents with reduction of the available blood calcium—for example, oxalate and mercury poisoning, the results of intravenous injection of citrates and tartrates and iodide coryza; (5) rickets, hypoparathyroidia, and infantile tetany, in which calcium is indicated as an adjuvant to other therapy, and the essential etiological factor of which is a deficiency in vitamin D accompanied by a lowering of the blood phosphorus and calcium; and (6) those conditions of sympathetic or parasympathetic inequilibration and closely associated with anaphylactic phenomena, including hay fever, asthma, urticaria, serum rashes, frost-bite, angioneurotic oedema, and hyperaesthetic rhinitis. The metabolism of calcium is intimately associated with that of phosphates, and is regulated to some extent by the vitamin D and the parathyroid internal secretion. The metal has a marked affinity for nitrogen and nitrogenous products, and physiologically it is essential to the permeability of the plasma membrane, to the coagulation of the blood, to the rigidity and repair of the bony structures, and to the stability of nervous tissue, due to its fixation of phosphates.

320. Intracardiac Blood Transfusion.

BESIDES the introduction of drugs into the heart, C. ACHARD, A. COURNAND, and Mlle PICHOT (*Bull. de l'Acad. de Méd.*, January 29th, 1929, p. 129) state that it is possible to inject sufficiently large amounts of liquids, such as artificial serum or incoagulable blood, into that organ, and thus to perform an intracardiac transfusion. They believe that this exceptional method of urgency will be found expedient in such cases as those of profuse haemorrhage with a danger of imminent death when intravenous injection is impossible owing to collapse of the veins. The authors report a case in which this method met with brilliant results. A woman suffering from typhoid fever seemed to be at the point of death following one small and two profuse intestinal haemorrhages. Since the veins were collapsed an intracardiac injection of 2 mg. of adrenaline and 400 c.cm. of citrated blood was made at the sternal border of the left third intercostal space. Improvement ensued almost immediately, and after further treatment by subcutaneous injections of camphorated oil, caffeine, sparteine, and artificial serum the patient made an uninterrupted recovery. Another point of interest in this case was a delayed agglutination reaction, this becoming positive only on the fifty-second day of the disease.

321. **Combined Iodine and Sulphur.**

ARMINGEAT (*Rev. de Méd.*, 1928, No. 7, p. 967) claims that the association of iodine and sulphur gives much better therapeutic results, especially in sclerotic conditions, than are obtained when either is administered separately. He points out that many disadvantages attend the use of iodine and iodized preparations, and that there is very little definitely known regarding the action of sulphur. In order to act efficiently, sulphur must be combined and not in the oxidized form. The iodine and sulphur should be combined in a single organic chemical compound, which permits of a maximum simplicity of usage with minimum chances of oxidation. Substances of this nature are thiosinamine, which owes its antisclerous property to the sulphur combined in its molecule, and the old "oil of Haarlem," which is really a synthetic sulphuretted oil. For this form of treatment Armingeat suggests the name "thiodotherapy," and states that remarkable results have followed its use in such diseases as tabes, medullary scleroses, chronic rheumatism, angina pectoris, and emphysematous conditions; it is said to be valuable also in ophthalmology, oto-rhino-laryngology, and urology.

Radiology.

322. **X-Ray Diagnosis of Primary Pulmonary Neoplasms.**

B. P. STIVELMAN (*Journ. Amer. Med. Assoc.*, December 1st, 1928, p. 1690) thinks that the frequency of primary pulmonary malignant conditions has markedly increased during the past twenty-five years, authentic data revealing an incidence as high as 9.4 and 15.5 per cent. of all primary malignant growths. This increase has been ascribed to various causes; the inhalation of tar particles and gasoline fumes, and the influenza pandemic, have been suggested as possible etiological factors. Stivelman mentions a few cardinal symptoms which, while not pathognomonic, are of diagnostic value; these are blood-spitting, dyspnoea, severe and prolonged pain in the chest, and afternoon elevation of temperature. There is no general agreement as to the histogenesis of malignant lung tumours, but it is recognized that pulmonary carcinoma is synonymous with bronchial carcinoma, early pulmonary malignant growths being endobronchial in at least 85 per cent. of the cases. From the radiological viewpoint Stivelman divides primary pulmonary neoplasms into the pulmonary and the pleural; the former are further classified as endobronchial, hilar, lobar, and excavating; and the latter according as an effusion is present or absent. The radiology of these various types is discussed, and the author insists that in early cases tumours near the hilum and those which spread along the bronchial tree cannot be diagnosed without an *x*-ray examination. Early bronchogenic tumours which have not grown large enough to obstruct the bronchus and flat pleural tumours may, however, be missed in such an examination, though physical observations may point to their existence. Central tumours, regardless of their point of origin, are visible radiologically long before other methods of examination will suggest their presence. If large effusions are present tumours cannot be diagnosed by *x* rays unless the fluid is aspirated and a pneumothorax induced, when the radiograph will indicate the contrast between the growth and the surrounding tissue. Spontaneous free or interlobar empyemas and pulmonary abscesses not of metapneumonic origin, when they occur in persons past middle life, are in themselves suggestive of a possible malignant condition. In difficult cases for a correct diagnosis *x*-ray films must be taken in oblique positions; bronchography with iodized oil is helpful, and, particularly, early bronchoscopy must be employed.

323. **Radiological Diagnosis of Cardiac Diseases.**

L. G. RIGLER (*Minnesota Med.*, January, 1929, p. 25) states that organic heart disease usually produces enlargement of one or all the chambers of the heart, and a change in size and shape results. Recognition of enlargement is often the deciding factor in making a positive diagnosis of heart disease, and the determination of shape may aid greatly in diagnosing the type of pathology present. Radiology is the most accurate means of defining the exact size and shape of the heart. Visualization of the oesophagus may assist in the diagnosis, as it may be compressed and displaced by enlargement of the left auricle. Disease of the mitral valves produces essentially three *x*-ray findings: a distinct increase in the transverse diameter of the heart, a marked convexity of the left border due to the conus pulmonalis, and a posterior displacement and compression of the oesophagus in that portion which is in contact with the left auricle. Disease of the aortic valves and hypertension produce practically the same radiological findings. Essentially these are: a marked concavity of the left border of the heart, increase in the transverse diameter, prominence of the left ventricle, and a general enlargement (late) of the whole heart with the left ventricle predominating. Thyroid insufficiency may give rise to a flask-shaped heart, which rapidly decreases in size during thyroid medication. Toxic conditions of the myocardium produce the same kind of heart. Chronic lung conditions may result in a cardiac enlargement the shape of which is similar to that of the mitral heart, but oesophageal displacement is absent.

324. **Radiation Treatment of Hyperthyroidism.**

B. L. W. CLARKE (*Med. Journ. of Australia*, December, 1928, p. 670) describes the results he has obtained by deep *x*-ray therapy in a series of 44 cases of hyperthyroidism, 37 of the patients being women and 7 men. He advocates preliminary rest in bed for about a fortnight, during which he administers Lugol's solution for about ten days. He usually gives a total exposure of four to five hours, in various stages over a period of two to four weeks. He has given an hour's exposure each time, but occasionally even half an hour proved to be excessive. The rays were generated at 200 kilovolt peak, with 4 to 5 milliamperes of current, filtered through copper and aluminium. Clarke finds that *x*-ray sickness can be controlled by rest in bed, the administration of alkali and soda-water, and the local application of ice packs. The treatment of the neck with lead lotion after each irradiation is recommended. The author stresses the importance of prolonged rest in bed after the course is completed, to allow damaged heart muscle to recover. He records 18 cases as being apparent cures of from two to five years' duration, and 13 cases of definite improvement, though the heart was not quite normal. The treatment was of no value in 7 cases; 5 patients were lost sight of, and one girl, aged 17, died of cardiac failure following intense *x*-ray sickness after the second dose.

Obstetrics and Gynaecology.

325. **Puerperal Scarlet Fever.**

V. DE LAVERGNE and A. FRUHINSHOLZ (*Gynécol. et Obstét.*, December, 1928, p. 450) discuss the problem of scarlatiniform eruptions occurring during the puerperium. From a consideration of the literature on the subject and their own observations of such cases they conclude that there may exist a specific puerperal scarlatina, different from true scarlet fever which may also occasionally complicate the puerperium. Certain cases of puerperal scarlatina appear to have their path of infection by way of the genital tract. These cases are notable for the absence of the typical buccopharyngeal picture of a true scarlet fever, in which it is admitted that the principal mode of infection is by droplets. During labour and the puerperium the genital mucosa is particularly exposed, and if any attendant should be a carrier of virulent droplets the way is prepared for a puerperal scarlatina. These observations appear to bear out the hypothesis known as the "phenomenon of Cantacuzène," which suggests that scarlet fever is due to the combined action of an ultra-virus and a streptococcus. Streptococci are frequently found in the cervix, and if an attendant supplies the ultra-virus the result will be a puerperal scarlatina. Further evidence is adduced from considerations of epidemiology. The peculiar characteristic of puerperal scarlatina is that several patients are infected at the same time. Recently at the Nancy Maternity Hospital two women presented signs of scarlet fever on the same day; there had been no case in the hospital for several months. The patients did not occupy adjacent beds, nor did they know each other. The simultaneous eruption could only be explained by supposing that one of the hospital staff was a carrier of the virus. It has also been noticed that the puerperal scarlatina does not spread like an epidemic in a school or military establishment, the cases being generally concentrated within twenty to thirty days. The impression given is that it does not pass so much from one patient to another as by means of some carrier. True scarlet fever, on the other hand, spreads in a centrifugal manner; there is a record of a professor, a house-physician, students, and pupil midwives having been infected from one original patient.

326. **Arthropathies of the Menopause.**

H. J. LAUBER (*Zeit. f. Chir.*, February, 1929, p. 335) refers to the recent literature describing cases of arthropathy, especially of the knee- and finger-joints, occurring among women at the menopause, and asserts that the majority of these joint changes are of purely endocrine origin. Some German writers have described cases of exophthalmic goitre, accompanied by severe arthritic lesions, which were cured

or greatly improved after irradiation or excision of the thyroid gland. Such cases are said to be rare, but arthropathies due to ovarian dysfunction are seen much more frequently. In a typical case, in addition to the usual hot flushes, headaches, and menstrual irregularity, the patient complains of severe articular pains, usually most marked in the fingers and knees. Indefinite tingling sensations and aching pains occur in the limbs, due to vasomotor spasm. Thermal factors, such as changes in the weather, and, in many cases, frequent immersion of the hands in cold water, aggravate the symptoms. The etiology of the arthropathy is indefinite. The improvement that follows, in many cases, the administration of ovarian preparations is held to confirm the theory of endocrine deficiency. The vasomotor spasm appears to initiate degeneration in the para-articular tissues. Lauber recommends the administration of ovarian preparations, potassium iodide, and alternating hot and cold baths. The secondary periarthritis may develop into a chronic destructive process, or, later, secondary arthritis deformans may occur.

327. Tuberculous Salpingitis simulating Ruptured Tubal Pregnancy.

K. A. MEYER and A. F. LASH (*Journ. Amer. Med. Assoc.*, February 2nd, 1929, p. 330) report a case in which necrosis caused by tuberculosis of the Fallopian tube gave rise to the clinical picture of a ruptured tubal pregnancy. A woman, aged 26, was admitted to hospital with severe abdominal pain, a blood-stained vaginal discharge, and amenorrhoea of one month's duration. Apart from two previous attacks of severe pain she had had no localizing symptoms, but for the previous ten years she had had pleuritic pain in the chest, accompanied by cough, slight fever, and nasopharyngitis. At the operation a considerable quantity of liquid blood, with clots, was removed from the pelvic cavity, and firm fibrous adhesions were found, the tubes being nodular and bound down. Bilateral salpingectomy was performed and convalescence was uneventful. The correct diagnosis was established by microscopical section of the Fallopian tube, no chorionic wandering cells or decidual reaction being present; pregnancy could thus be ruled out. A marked tuberculous infiltration of the endosalpinx was discovered; rupture had occurred in an area filled with tubercles. There were no changes in the breasts or uterus, and no corpus luteum of pregnancy. The tubal tuberculosis was secondary to peritoneal disease which had apparently healed. The haemorrhage was not only free in the peritoneal cavity, but had dissected the peritoneum over the bladder and the broad ligament, thus giving rise to the pain in the left lower portion of the abdomen and the tenderness over the bladder. The authors remark that, though the clinical picture of a ruptured Fallopian tube with intraperitoneal haemorrhage is usually due to tubal pregnancy, it should be remembered that inflammation, nutritional disturbance of the tube, and the dragging of adhesions on it may occasionally produce a local decrease in its resistance, with consequent rupture and haemorrhage.

Pathology.

328. B.C.G. and Immunization.

F. GERLACH and R. KRAUS (*Zeit. f. Immunitäts. u. exp. Therap.*, 1929, vol. 59, p. 305) have conducted a series of protective experiments on *Macacus rhesus* monkeys, using Calmette's B.C.G. The inoculation of this strain in a dose of 1/10 mg. intracutaneously into the eyebrow of two monkeys proved comparatively harmless; only a small inflammatory nodule developed, which showed no tendency to enlarge, and which underwent spontaneous retrogression. This is in marked contrast with the inoculation of the ordinary virulent mammalian strains, which give rise to tuberculous abscesses in the neighbourhood, enlargement of the cervical glands, and ultimately to generalized tuberculosis. It was also found that the subcutaneous inoculation of 50 mg. of the B.C.G. strain caused no progressive lesions. In the first protection experiment two monkeys were inoculated each with three doses of 10 mg. of B.C.G. subcutaneously, the three doses being given within a fortnight. Five weeks after the last dose 0.05 mg. of a virulent bovine strain was inoculated intracutaneously into the eyebrow of each of the monkeys. Two other monkeys, each of which had received a single dose of 50 mg. of B.C.G. subcutaneously forty-six days beforehand, were inoculated with the same dose of virulent bacilli. A similar injection was made into two unvaccinated control monkeys. The four vaccinated monkeys remained perfectly well, showing nothing but a small non-progressive, non-ulcerating local lesion; of the control monkeys one died three months later, and the other was killed about the same time; both of them showed generalized tuberculosis. In the second experiment three monkeys were protected with a single dose of 50 mg. of B.C.G., and three were used as controls. All were injected with 0.1 mg. of a virulent human strain. The vaccinated monkeys remained well; of the controls one died in a month, one in about three months, while the third was killed after three months; all of them showed generalized tuberculosis. In the third experiment three vaccinated and two control monkeys each received 1/100 or 1/20 mg. of virulent human bacilli. The vaccinated [illegible] the controls one died and the [illegible] months; both showed generalized tuberculosis. From these experiments the authors conclude that the B.C.G. strain can give rise to undoubted immunity to experimental tuberculosis.

329. Phagocytosis of Haemolytic Streptococci.

R. HARE (*Brit. Journ. Exper. Path.*, 1928, vol. ix, p. 337) describes a series of experiments on the phagocytosis of haemolytic streptococci of high and low virulence by the blood of patients infected with that organism. Todd has shown that haemolytic streptococci which are virulent for mice are able to multiply freely in normal human defibrinated blood, and that the converse of this is true. Consequently Hare defines the term "virulent" as the ability to survive and multiply in normal human defibrinated blood. In the experiments described it was found that the leucocytes in the defibrinated blood of patients infected with haemolytic streptococci ingest virulent strains of these organisms in greater numbers than do the leucocytes of normal persons, and that this phagocytosis is due to a high opsonic power in the serum. This opsonic power is heat-stable, resisting 55° C. for thirty minutes. Little attention has formerly been paid to these opsonins, owing, possibly, to the usual employment of avirulent strains, and it would seem advisable in future studies of immunity in streptococcal infections to employ virulent cultures. The addition of small quantities of serum containing heat-stable opsonins to normal defibrinated blood causes a materially reduced rate of growth of virulent haemolytic streptococci; this is due to increased phagocytosis of the microbes by the leucocytes. Hare discusses the possibility of utilizing this property for the treatment of established or imminent infections by the use of the serums of convalescents or immunized animals. But since ordinary antistreptococcal and antiscarlatinal serums apparently do not contain these heat-stable opsonins, it seems that some special conditions must be fulfilled for their production in animals.

330. The Relation of B. pseudotuberculosis rodentium to B. pestis.

S. I. ZLATOGOROFF and B. I. MOGHILEWSKAJA (*Ann. de l'Inst. Pasteur*, December, 1928, p. 1615) have endeavoured to find out what methods are most useful in distinguishing *B. pseudotuberculosis rodentium* from *B. pestis*. Working with two strains of the former organism, they found that the basal colony type was smooth, but that in old broth cultures rough colonies appeared having a dull wrinkled surface and a crenated or lobate edge. Morphologically the smooth colonies consisted of short bacilli, often displaying well-marked bipolar staining; the rough colonies consisted of larger, often longer, organisms not showing bipolar staining. Biochemically both types of variant fermented the same sugars, but if the results were recorded from twelve to thirty-six hours after inoculation of the media it was noticed that the smooth variants produced acid rather more slowly than the rough. Using Otten's test, it was found that if the organisms were grown in a medium containing 0.05 per cent. glucose the reaction in the cultures inoculated with the rough type first became definitely acid and then returned to neutral, or became slightly alkaline, after seven days; in cultures seeded with the smooth type the same initial acidity was observed, but the return to neutral occurred more slowly, so that after seven days the reaction was only just neutral or was slightly acid. Virulence experiments made on guinea-pigs led to the conclusion that the smooth type was more virulent than the rough; but this difference, though evident in one strain, was hardly observable at all in the other. Serological experiments, using the complement-fixation test, indicated that the smooth and the rough types were antigenically dissimilar. From their observations on the dissociation of *B. pseudotuberculosis rodentium* the authors conclude that most of the differential tests separating this organism from *B. pestis* have been worked out on rough types of *rodentium*. They point out that these tests do not serve to separate the smooth type of *rodentium* from *B. pestis*. The demonstration of the close relationship existing between these two organisms—a relationship that is even closer than has hitherto been suspected—opens up, the authors consider, a new range of epidemiological problems concerning the genesis of plague in rodents.

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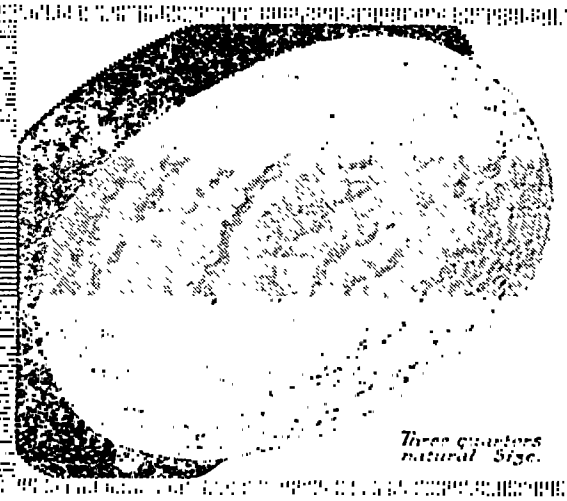

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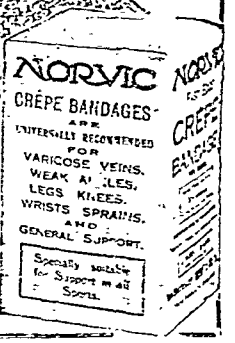

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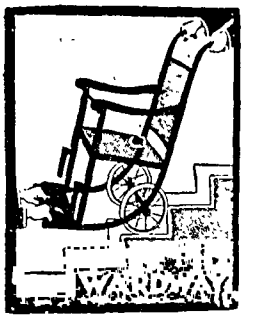

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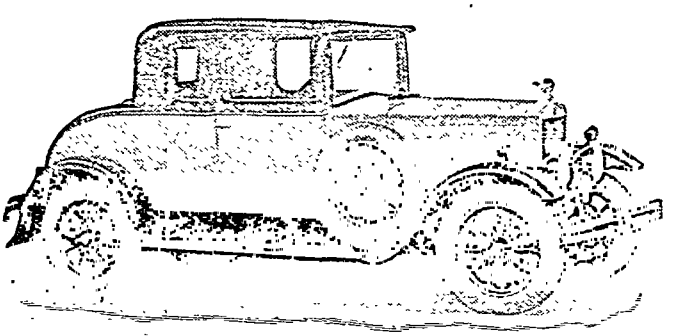

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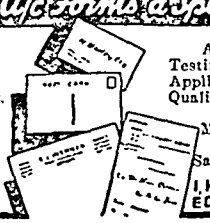

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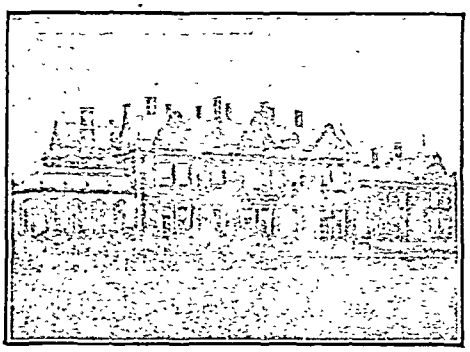

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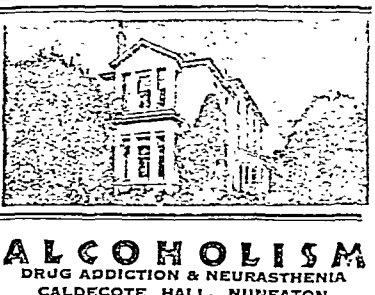

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This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical baths, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The Seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone: No. 56 Northampton), who can be seen in London by appointment.

COURT HALL, KENTON, EXETER,
SOUTH DEVON.

For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

Resident Physicians: BERTHA M. MULES, M.D., B.S.; ANNIE S. MULES, M.R.C.S., L.R.C.P.
Telephone: *Teignmouth* 289.

THE COPPICE, NOTTINGHAM.
HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.

For terms, etc., apply to the Medical Superintendent.

NEURASTHENIA
BELVOIR NURSING HOME, ASTON-ON-TRENT, DERBY.

Private Nursing Home for Neurasthenia and allied Functional Nervous Disorders, for general Convalescent Cases, and those requiring Electrical Treatment.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes. In addition to the methods of general medicine, Psycho-Therapeutic treatment is used extensively in suitable cases. Certifiable cases are not received. Electrical Treatment, Radiant Heat, X-ray, Ultra-violet Light, and Massage is available in the Nursing Home. Billiards, tennis, etc. Fees from 5 to 12 guineas per week. For further particulars apply to—
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Dr. Douglas-Morris can be seen by appointment in London.

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NEWTON-LE-WILLOWS, LANCASHIRE.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

ARRESTED DEVELOPMENT, EPILEPSY, ETC.

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A Private Mental Hospital for the Treatment and Care of Mental and Nervous Disorders.

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CHISWICK HOUSE,
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A modern country house, 11 miles from Marble Arch, in beautiful and secluded grounds.

Fees are from 10 guineas a week.

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SAINT LUKE'S HOSPITAL
(for Mental Disorders).

Treasurer:
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near Gerrards Cross, Bucks,

situated in extensive grounds, amid beautiful country and within easy distance from London, receives a few LADIES requiring treatment for mild Nervous and Mental Disorders.

Apply, Chief Physician, Office of the Hospital, 19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

BARNWOOD HOUSE,
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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN *suffering from* NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
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Telephone: No. 7 Barnwood

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A PRIVATE HOME for the care and treatment of persons with mental and nervous disorders.

TERMS: According to requirements. Certified Patients and Voluntary Boarders received.

Mansion on outskirts of Bath, with 20 acres of grounds (see *Medical Directory*, page 2134).

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The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The Climate is mild and the neighbourhood beautiful.

Apply: The Secretary,
Ruthin Castle, North Wales.

Telegrams: Castle, Ruthin. Telephone: 65, Ruthin.

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A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "Psycholia, London." Telephone: Rodney 4731—4732.

FOR THE TREATMENT OF MENTAL DISORDERS.

Completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Croquet, Squash Racquets, and all indoor Amusements, including Wireless and other Concerts. Occupational Therapy. Daily services in the Chapel.

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(For the reception and treatment of cases of nervous and mental disease.) Tel.: Reliance 2182.

President: Colonel and Alderman Sir CHARLES CHEERS WAKEFIELD, Bart., C.B.E.
Treasurer: Sir LIONEL FAUDEL-PHILLIPS, Bart.
PHYSICIAN SUPERINTENDENT: J. G. PORTER PHILLIPS, M.D., F.R.C.P. Assisted by Physicians, a Pathologist, and a staff of Visiting Consultants.

Patients of the EDUCATED CLASSES, IN A PRESUMABLY CURABLE CONDITION, are eligible for admission. With a view to the early treatment of eligible cases VOLUNTARY OR UNCERTIFIED patients are admitted. PATIENTS WHO CAN CONTRIBUTE THREE GUINEAS WEEKLY TOWARDS THE COST OF MAINTENANCE MAY BE RECEIVED AS VACANCIES ARISE. Treatment is carried out on the most modern principles. In connection with this Hospital there is a Convalescent Home on the Surrey hills at Witley.
For further particulars apply to the PHYSICIAN SUPERINTENDENT.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: Alleviated, London. Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for the treatment of special and suitable cases adjoin the Institution. There is a seaside branch to which holiday parties are sent during the summer months. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

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GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0383.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

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Established 1900 for the treatment of Tuberculosis. Miles of carefully graduated walks through pine-clad hills, with sea and mountain views. Modern treatment, including SANOCRYSIN, ARTIFICIAL PNEUMOTHORAX, etc. X-ray plant, electric light, central heating, wireless. Full day and night nursing staff. On L.M.S. Main Line to Holyhead, 4¾ hours from London. Resident Physicians: Dennison Pickering, M.D.(Cantab.), F. W. Godbey, M.D., D.P.H.; Matron: Miss N. Rennardson, S.R.N.

For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. 20.)

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FOR CHILDREN
BROADSTAIRS.

For the Early & Preventive Treatment of Disease & Convalescence after illness.

The Hospital is intended for the children of Members of the Institution of Civil Engineers, the children of architects, artists, authors, clergymen, members of the medical, legal, and other professions, members of scientific societies, officers of the Navy, Army, and Royal Air Force, officers of the Merchant Navy, schoolmasters and university professors.

Accommodation is provided for 50 Boys between the ages of 4 and 12 years, and 50 Girls between the ages of 4 and 14 years. In special cases the age limits may be raised to 14 for Boys, and 16 for Girls.

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Telegrams: "SMEDLEY'S, MATLOCK." 'Phone: No. 17.
For Prospectus and full information please write MANAGER, M.J

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SHAFTESBURY HOUSE,
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For the care and treatment of a limited number of Ladies and Gentlemen suffering from NERVOUS or MENTAL breakdown. Voluntary Boarders received. Psycho-therapy in suitable cases if desired. Terms moderate. Apply, RESIDENT PHYSICIAN. Tel.: No. 8 Formby.

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PLYMPTON, S. DEVON.

This old-established Licensed House offers every advantage that experience can suggest for the care and treatment of mental cases.
For terms, etc., apply to the Resident Physicians: Dr. ALFRED TURNER, Dr. J. C. NIXON.
Telephone: No. 2 Plympton.

STRETTON HOUSE,
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A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental or Nervous cases are received without certificates as Voluntary Boarders. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. Telephone: 10 P O Church Stretton

BOREATTON PARK,
BASCHURCH, SALOP.

A first-class Country Mansion especially adapted for the reception of a limited number of ladies and gentlemen mentally affected.
For particulars, apply Dr. Sankey.

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Near BEDFORD. (Phone 3417.)

FOR MENTAL AND NERVOUS CASES.
Physician: DAVID AND CEDRIC W. BOWER.
Ordinary Terms, Five Guineas per week.
(Including Separate Bedrooms where suitable.)
Interviews in London by appointment.

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near ROTHERHAM.

A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house with beautiful grounds and park, 6 miles from Sheffield. Station, Grange Lane, G.C. Railway, Sheffield. Telephone: No 34, Rotherham. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S.

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HOME FOR TWELVE MENTAL PATIENTS (LADIES)
Well-appointed private house. Home comforts and Trained Nursing Staff. Eminent Mental Specialist Visiting Physician. A new feature in the Home is the Ultra-violet Ray Treatment
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Apply: Mrs. THWAITES

Tel. & Telegrams: "Haynes, Brentwood, 45."
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Large grounds, 400 ft. above sea. HOME for Ladies Mentally afflicted. Voluntary Boarders received. Stations: Brentwood and Shenfield 1 mile. Liverp'l St. 26 min.—Apply, Dr. HAYNES.

Bishopstone House, Bedford.

PRIVATE HOME for MENTALLY AFFLICTED LADIES. Ten only received. Apply, Medical Officer or Mrs. PEELE. *Telephone:* 2708.

CITY OF LONDON MENTAL HOSPITAL, DARTFORD, KENT.

PRIVATE PATIENTS are received at a weekly charge of TWO GUINEAS and upwards.
Voluntary BOARDERS can now be admitted.—Apply to the MED. SUPERINTENDENT.

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HERMITAGE SANATORIUM,
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Unsurpassed situation, 600 ft. above sea-level, high sunshine record, own farm. Resident Medical Officer. Male cases only.
Inclusive weekly terms 50/-.
Special preferential arrangements for a few private cases at 4 guineas.
Artificial Pneumothorax, etc.

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Resident Physician: W. JOHNSON SMYTH, M.D.

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A Private Home for the care and treatment of a limited number of ladies mentally afflicted. Climate healthy and bracing.
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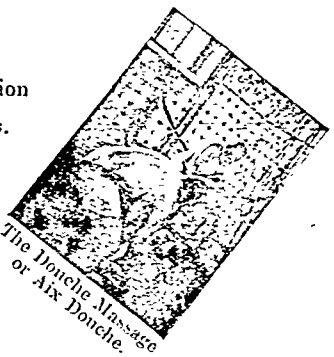

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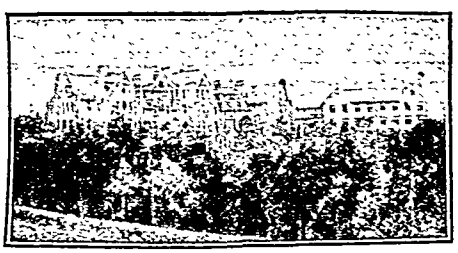

Medical Director: David Lawson, M.D., F.R.S.E.

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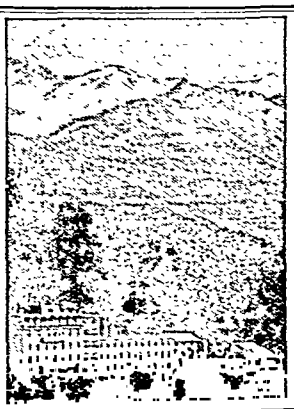
Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.



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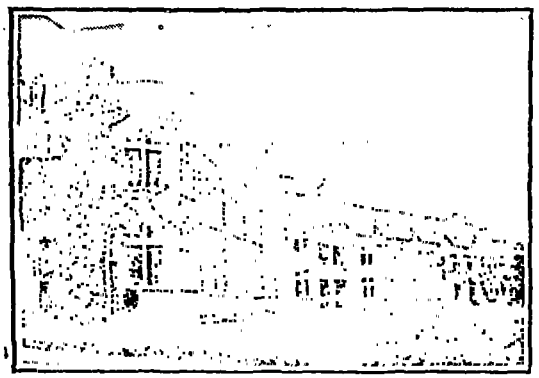

This Sanatorium was specially built for the treatment of Pulmonary and other forms of Tuberculosis, and is situated on an ideal site facing S.S.E.—very sunny district in the "Constable" Country. Special Treatment by artificial Pneumothorax (X-ray Controlled). Electric lighting throughout, and radiators and wireless in all rooms.

TERMS: From 4 to 8 guineas per week.

On the estate of 330 acres there is ample opportunity for training in General Farming, Poultry Farming, Angora Rabbit Breeding, Gardening, etc., and various Handicrafts.

Med. Supt.: Dr. Jane Walker;
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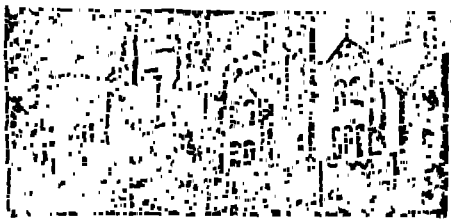
For full particulars, illustrated prospectus, etc., apply to the SECRETARY, East Anglian Sanatorium, Nayland, near Colchester. *Teleph. and Telegrams:* NAYLAND 1.



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This Sanatorium is established for the treatment of TUBERCULOSIS of the LUNGS and the PLEURAL CAVITIES. It is situated in the midst of a large area of park-land at a height of 450 feet above sea-level, on the south-west slopes of mountains rising to over 1,800 feet, which protect it from north and east winds and provide many miles of graduated walks with magnificent views. Average rainfall 29.57 per annum. Full day and night nursing staffs. X-ray plant. Every facility for Artificial Pneumothorax, and for operations on the chest. Electric lighting. Central heating. Home farm. Grade A milk from T.T. Herd. For particulars apply to Med. Supt., H. Morriston Davies, M.D., M.Ch.Cantab., F.R.C.S., Llanbedr Hall, Ruthin, N. Wales.

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Telephone: HOLT 12.

Adjoining KELLING SANATORIUM

FOR THE TREATMENT OF TUBERCULOSIS.

On Piné-wooded heights above Cromer and Sheringham. Dry, Warm Climate. Maximum Sunshine. Completely Sheltered.

Terms: From 6 guineas weekly.

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Medical Superintendent, Kelling Sanatorium.

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OPERATIVE SURGERY.—A Class in Operative Surgery will be held at the above Hospital commencing April 8th (for 14 days approx.). Fee, Seven Guineas. Class limited to six. For full particulars apply—Dean, West London Hospital.

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Examination in which interested.....

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CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral [illegible] higher Medical he higher Surfor the Special Course. Opening theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

BEIT MEMORIAL FELLOWSHIPS FOR MEDICAL RESEARCH.

Notice is hereby given that an election of JUNIOR FELLOWS will take place in July, 1929. The Fellows then elected will be required to begin work on October 1st. Junior Fellowships are of the annual value of £400; the usual tenure is for three years. Applications from candidates must be received on or before June 1st, 1929.

Forms of application, and all information, may be obtained by letter only, addressed to—

Sir JAMES K. FOWLER,
Beit Memorial Fellowships for Medical Research, Hon. Secretary.
35, Clarges Street, London, W.1.

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Prep. Classes and Museum Demons. for next Fellowship Exam will commence shortly. Correspondence course for Sept. and later exams. should begin now. Particulars, Mr. H. C. ORRIN, F.R.C.S., at Surgeons' Hall, Edinburgh.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

(University of London.)

Bacteriology and Immunology.

One year's Course of Study for the Diploma in Bacteriology, beginning in October.

Epidemiology and Vital Statistics.

Special Courses of not less than three months.

Tropical Medicine and Hygiene.

Two Courses yearly, each of 20 weeks, commencing on September 30th, 1929, and February 3rd, 1930.

Diploma in Public Health.

A Course of Study, covering a period of twelve calendar months, beginning in October, 1929.

Enquiries for syllabuses, etc., should be addressed to the Secretary, Endsleigh Gardens, London, W.C.1.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.

(University of London.)

ADVANCED MEDICINE COURSE.

A REVISION COURSE in Clinical Medicine, Morbid Anatomy and Histology, Applied Biochemistry and Bacteriology, suitable for M.D. and M.R.C.P. Examinations, will be given in the Medical School and the Wards of the Hospitals. It will commence on Tuesday, May 14th, 1929, and will last eight weeks.

A similar Course will be given in October, November, and December, 1929.

A Course in Advanced Surgery will also be given, and will commence on March 4th, 1929.

Further particulars and the syllabus of the Course may be obtained on application to the Dean (H. WILLOUGHBY LYLE, M.D., F.R.C.S.), King's College Hospital Medical School, London, S.E.5.

CITY OF LONDON MATERNITY HOSPITAL,

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LIVERPOOL SCHOOL OF TROPICAL MEDICINE

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION [illegible] about three months) for the Diploma in Tropical Medicine commence on October 1st, January 7th, and for the Diploma in Public Hygiene on January 12th and [illegible] for the D.T.H. must [illegible] University.)

For particulars [illegible] Liverpool School of Tropical Medicine, [illegible] Dean, Place, Liverpool. [illegible]broke

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Prospectus [illegible] add[illegible]
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UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, NEWCASTLE-UPON-TYNE.

The Degrees in Medicine, Surgery, Hygiene, and Dentistry, the Diploma in Public Health, the Diploma in Psychiatry, and the Licence in Dental Surgery of the University of Durham are open to men and women.

Students can complete, at the University of Durham College of Medicine, Newcastle-upon-Tyne, the entire course of professional study required for the above degrees, diplomas, and licence; also for the Examinations of the Royal Colleges of Physicians and Surgeons.

Hospital practice is carried out at the Royal Victoria Infirmary, a general hospital containing more than 550 beds, and there are facilities for the study of the various special subjects. General and Special Post-Graduate Courses are held.

Practical Midwifery can be studied at the Princess Mary Maternity Hospital, which contains 90 beds, with an annual indoor and outdoor attendance on 3,000 cases. Lectures are given on Psychological Medicine in the College of Medicine, and clinical instruction at the Mental Hospital, Newcastle. Special Courses of Instruction in Outdoor Sanitary Practice and in the Hospital for Infectious Diseases are given by the City Medical Officer of Health.

Particulars may be obtained from the Dean of the College.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE,
NEWCASTLE-UPON-TYNE.

POST-GRADUATE MATERNITY INSTRUCTION.

There are occasional vacancies for Resident Post-Graduate Students at the Princess Mary Maternity Hospital, Newcastle-upon-Tyne. The course comprises clinical instruction in the wards, attendance on labour cases in the hospital, on the district, and at the ante-natal clinic.

Fees.—Clinical Instruction for two weeks £5 5s.; four weeks £8 8s. Board and lodging at the Hospital £2 per week.

All applications to be made, in the first instance, to the DEAN, University of Durham College of Medicine, Newcastle-upon-Tyne.

UNIVERSITY OF GLASGOW.

FACULTY OF MEDICINE

Forms of application for permission to commence the study of Medicine in October, 1929, may now be obtained from the undersigned. These forms should be returned by applicants from foreign countries not later than June 15th, 1929, and by applicants from Home and British Dominions Overseas not later than September 15th, 1929.

ROBERT BROUGH,
March, 1929. Registrar.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to **The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5,** for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinic, and ante-natal clinics. For further particulars, fees, etc., apply to the Secretary.

(Incorporated 1505.)

Royal College of Surgeons of EDINBURGH.

COPIES OF REGULATIONS for the FELLOWSHIP, LICENCE, HIGHER DENTAL DIPLOMA, and LICENCE in DENTAL SURGERY, containing dates of Examinations, may be had on application to—

49, Lauriston Place, Edinburgh. DAVID THOMSON, Clerk of the College.

THE LONDON HOSPITAL MEDICAL COLLEGE.
(University of London.)

ADVANCED MEDICINE.

A Course of Post-Graduate Instructions in Advanced Medicine suitable for candidates preparing for the M.D., M.R.C.P. Examinations will begin on Monday, April 29th.

The Course will comprise the examination of selected cases in the Wards, Ward Demonstrations, and instruction in Applied Physiology, Morbid Anatomy, Clinical Pathology, and Pathological Chemistry.

Further particulars may be obtained on application to the Dean, Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., London Hospital Medical College, Mile End, E.

ROYAL COLLEGE of PHYSICIANS of EDINBURGH ROYAL COLLEGE of SURGEONS of EDINBURGH ROYAL FACULTY of PHYSICIANS and SURGEONS of GLASGOW.

COPIES OF REGULATIONS for the TRIPLE QUALIFICATION (L.R.C.P.E., L.R.C.S.E., and L.R.F.P. & S.G.), and the DIPLOMA IN PUBLIC HEALTH, containing Dates of Professional Examinations for the year 1928-29. Curriculum etc., may be had on application to Mr. DAVID THOMSON, 49, Lauriston Place, Edinburgh, or to Mr. WALTER HURST, 242, St. Vincent Street, Glasgow, Inspectors and Treasurers at Edinburgh and Glasgow respectively.

London Hospital Medical College.

THE HUTCHINSON TRIENNIAL PRIZE, 1932.

The following subject has been selected for the above prize:

"*Remote Consequences of Fracture of the Spinal Column.*"

The Dissertations for the Prize must be delivered at the Hospital not later than 4 p.m. on March 31st, 1932.

The conditions of the Prize may be obtained on application to the Dean, Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Mile End, E.1.

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REASONABLE INCLUSIVE FEES.

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Sound Education. Upper and Lower Schools. Preparation, when desired, for all University Entrance Examinations. Particulars from Sec.
Special Terms to Medical Men.

NORTH-EAST LONDON POST-GRADUATE COLLEGE,

PRINCE OF WALES'S GENERAL HOSPITAL, N.15.

The Practice of the Hospital is limited to Medical Practitioners. Particulars from T. H. C. BENIANS, F.R.C.S., Dean.

THE GROCERS' COMPANY RESEARCH SCHOLARSHIPS.

With the object of encouraging Original Research in Sanitary Science, the Grocers' Company offer Scholarships, each of £300 a year, with an allowance to meet the cost of apparatus and other expenses in connection with the work, tenable for one year, but renewable for a second or third year, subject to the conditions of the scheme under which they are established.

The next election will take place in May, 1929.

Applications must be sent in before the end of April to the Clerk to the Grocers' Company, Grocers' Hall, London, E.C.2, from whom a form of application and further information may be obtained.

Radiographic School.

SCHOOL OF INSTRUCTION in Radiography, Radiotherapy, etc., for the Training of Technical Assistants.

Pupils can now be received on application to the House Governor, King's College Hospital, London, S.E.5.

AMENDED NOTICE.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

DIPLOMA OF FELLOW.

Notice is hereby given that the next PRIMARY and FINAL EXAMINATIONS for the Diploma of Fellow will commence on TUESDAY JUNE 4th, and THURSDAY, MAY 23rd, 1929, respectively.

Candidates are required to give not less than fourteen days' notice of their desire to present themselves for examination.

Particulars relating to these examinations may be obtained from the Director of Examinations, Examination Hall, Queen Square, Bloomsbury, W.C.1.

The Secretary of State for India proposes shortly to make a certain number of appointments to permanent COMMISSIONS in His Majesty's INDIAN MEDICAL SERVICE. A Selection Committee will meet at the India Office on April 15th to consider applications. Well qualified medical men of European descent (British subjects) who desire to be considered should apply to the Under-Secretary of State for India, Military Department, India Office, London, S.W.1, for forms of application, regulations, and other particulars. Envelopes should be marked on top left corner "Medical Recruitment." The selected candidates will be required to undergo a course of instruction in this country, commencing April 29th next, prior to embarking for India towards the end of the year.

Goculdas Tejpal Hospital, BOMBAY.

APPOINTMENT OF HONORARY SURGEON.

Applications are invited for the above appointment. Goculdas Tejpal Hospital (256 beds) is associated with the Grant Medical College, Bombay, for clinical teaching of post-graduates. The appointment carries an honorarium of Rs.150 per mensem, and will be for a period of five years, subject to termination by three months' notice on either side.

Applications, in duplicate, marked "Honorary Surgeon," stating age, qualifications, and experience, together with copies of three testimonials, must be sent so as to reach the undersigned not later than May 15th.

G. T. Hospital, Bombay. F. N. MOOS, M.D.(Lond.), Superintendent.

Hong-Kong.

A vacancy at present exists for an ASSISTANT MEDICAL OFFICER OF HEALTH, Hong-Kong.

Salary £740 per annum, rising by annual increments of £50 to £1,040 per annum, subject to deduction of 4 per cent. of salary towards the pensions of widows and orphans of Government servants.

The engagement is for three years in the first instance. Free passages are provided. Furnished quarters, if available, are provided at a rental of 7 per cent. of salary, or an allowance is given in lieu.

Private practice is not allowed.

Candidates, who must be British subjects of European parentage and not over 35 years of age, must hold a Diploma in Public Health. Forms of application may be obtained on application, in writing, to the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1.

St. Peter's Hospital for Stone, ETC., Henrietta Street, Covent Garden, W.C.2

A POST-GRADUATE COURSE (Fee, Five Guineas) will be held from April 8th to 19th, 1929. Full syllabus will be forwarded on application to the undersigned.

BEECHY ROGERS, Secretary.

Can anyone recommend a PRIVATE SCHOOL

for a well-mannered, intelligent, but backward boy of 13 years, from Petit Mal and Enuresis? He has had troubles and frequently retires to bed. He would require careful nursing. A house within easy reach of Norwich would be preferred.—Reply to Dr. I. D. DICKSON, 23, Unthank Road, Norwich.

Lowestoft and North Suffolk HOSPITAL, LOWESTOFT.

HOUSE SURGEON (male), preferably with knowledge of X-ray. Salary £120 per annum, board, residence, and laundry. Applications, with copies of three recent testimonials, to the Honorary Medical Superintendent, April 10th.

County Council of Durham.

DISTRICT TUBERCULOSIS MEDICAL OFFICER.

The County Health Committee invite applications for a District Tuberculosis Medical Officer, at a commencing salary of £600 per annum, rising by annual increments of £25 to £650 per annum. Travelling expenses will be paid by the County Council.

The appointment will be held subject to three months' notice on either side, and to the following conditions:

(1) The officer appointed must be a registered medical practitioner between the ages of 25 and 45 years, must devote the whole of his time to the duties of the office, and must not engage in private practice.
(2) He should have held a House appointment for at least six months in a General Hospital and have had practical experience in the treatment of tuberculosis in sanatoria and otherwise.
(3) He will be attached to the County Health Department, and will, subject to the directions of the County Medical Officer, be under the control of the Central Tuberculosis Medical Officer.
(4) He will be required to reside in his Dispensary area, or such other centre as required by the Council.
(5) He will be required to carry out the duties of a District Tuberculosis Medical Officer.
(6) He must be prepared, if called upon, to act as Locum Tenens to other members of the Medical Staff of the County Medical Officer.
(7) The holding of a Diploma in Public Health, and practical experience in bacteriological laboratory work, will be deemed additional qualifications for the post.

The candidate appointed will be required to pass the County Council's medical examination, and will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

Applications, endorsed "District Tuberculosis Medical Officer," with copies of not more than three recent testimonials, must be forwarded on or before April 5th next to the County Medical Officer, Shire Hall, Durham, from whom forms of application can be obtained.

Shire Hall, Durham. March 18th, 1929.
HAROLD JEVONS, Clerk of the County Council.

Administrative County of Southampton.

COUNTY MEDICAL OFFICER OF HEALTH.

The Hampshire County Council invite applications for appointment of County Medical Officer of Health from persons legally qualified for the practice of medicine, surgery, and midwifery, and registered in the *Medical Register* as holders of a Diploma in Sanitary Science, Public Health or State Medicine, under Section 22 of the Medical Act, 1886, and of an age not exceeding 45 years at the date of application. The post is established for purposes of superannuation.

The person appointed will be required to devote the whole of his time to the duties of his office and not to hold any other appointment or engage in private practice.

He will receive a salary of £1,250, payable monthly, and all sums by way of fees or otherwise received by him will be paid over to the County Fund.

He will be provided with the necessary offices and clerical staff.

Applications on a prescribed form (which with further particulars of duties and conditions of appointment may be obtained from me), addressed to me and endorsed "County Medical Officer," must be delivered at the Castle of Winchester on or before April 20th.

Canvassing, either directly or indirectly, is prohibited and will disqualify.

The Castle, Winchester. March, 1929.
F. V. BARBER, Clerk of the County Council.

City and County of Newcastle-upon-Tyne.

CITY HOSPITAL FOR INFECTIOUS DISEASES.

RESIDENT MEDICAL ASSISTANT (Male).

Wanted immediately, a Resident Medical Assistant (male) who holds a registrable qualification in Medicine and Surgery (and preferably also in Public Health), and possesses a practical knowledge of Bacteriology.

Salary £350 per annum, with board, lodging, &c.

Applications, stating age, qualifications, and previous experience, to be forwarded with copies of not more than three recent testimonials to the Medical Officer of Health, Town Hall, Newcastle-upon-Tyne.

March 19th, 1929.

Liverpool Port Sanitary Authority.

ASSISTANT PORT MEDICAL OFFICER.

The Corporation of the City of Liverpool, as Port Sanitary Authority, require the services of an Assistant to the Medical Officer of Health, whose duties will be in connection with the Tidal Inspection of Vessels, the Medical Inspection of Aliens, and such other duties as may from time to time be assigned to him.

The salary will commence at £700 per annum, increasing to £800 per annum by annual increments of £50.

Candidates must possess a registrable Medical and Surgical qualification, and should hold a *Diploma in Public Health*, and their age must not exceed 35 years.

The person appointed will require to devote whole-time service to the duties specified, and will be subject to the Superannuation provisions of the Liverpool Corporation Act, 1921.

Canvassing of members of the Council is strictly prohibited.

Applications, stating age, qualifications, and past experience, accompanied by copies of recent testimonials, should be addressed to the Chairman of the Port Sanitary and Hospitals Committee, under cover to the undersigned, and delivered not later than April 5th.

Envelopes to be endorsed "Assistant Port Medical Officer."

Municipal Buildings, Liverpool. *March 16th, 1929.*
WALTER MOON, Town Clerk.

Nottinghamshire County Council.

APPOINTMENT OF SCHOOL DENTIST.

Applications are invited for the appointment of a whole-time School Dentist at a salary of £500 per annum, rising after two years' satisfactory service by increments of £25 to a maximum of £550. Travelling expenses will be paid in addition according to the scale approved by the County Council.

Candidates must be fully qualified and registered Dentists, and the person appointed will be required to perform such duties as may be from time to time prescribed by the County Education Committee, and to devote his whole time to the duties of the office. He will be a member of the staff and act under the control and direction of the County Medical Officer of Health, and required to reside in a part of the County to be approved by the Education Committee.

The appointment will be terminable by three months' notice on either side.

Application, on the prescribed form (which may be obtained on application to me), accompanied by copies of not more than three recent testimonials, should be forwarded to The County Medical Officer, Shire Hall, Nottingham, not later than April 10th.

Shire Hall, Nottingham. March 23rd, 1929.
K. TWEEDALE MEABY, Clerk of the County Council.

Borough of Bexhill.

MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified gentlemen for the appointment of Medical Officer of Health of the Borough, subject to the provisions of the Public Health Officers Act, 1921, and the Sanitary Officers Order, 1925.

The gentleman appointed will be required to perform all the duties imposed on a Medical Officer of Health, to act as School Medical Officer, and to carry out all such duties as the Council, with the consent (if necessary) of the Minister of Health, may from time to time direct. He must reside in the Borough and devote all his time to the duties of the office, and must not engage in private practice.

The salary to cover all the duties specified above will be £800 per annum inclusive.

Applications, stating age, experience, etc., accompanied by copies of not more than three recent testimonials, should reach the undersigned not later than April 6th, endorsed "Medical Officer."

Town Clerk's Office, Bexhill. March 19th, 1929.
S. J. TAYLOR, Town Clerk.

The Miller General Hospital,

Greenwich Road, S.E.10.

CASUALTY OFFICER (male and unmarried) required. There are four other residents. Salary £150 per annum, with board, residence, and laundry. Duties to commence on or as soon after April 1st as possible.

Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent to the Secretary as soon as possible.

March 25th, 1929.

County Borough of Bournemouth

ASSISTANT MEDICAL OFFICER (Woman).

Applications are invited for the above appointment at a salary of £600 per annum, subject to deductions under the Council's Superannuation Scheme.

Candidates must be registered medical practitioners and possess a Diploma of Public Health, and under the age of 40. The officer will be expected to:

(a) Conduct Child Welfare, Ante-Natal and Post-Natal Clinics;
(b) act as Inspector of Midwives;
(c) supervise Nursing Homes;
(d) inspect and treat children in Secondary and Elementary Schools (experience in Refraction will be considered an additional qualification);
(e) perform such other duties as may be directed by the Council.

The successful candidate will be required to act under the supervision and control of the Medical Officer of Health.

Applications (with photograph if desired), stating age, qualifications, and previous experience, accompanied by copies of three recent testimonials, should be sent to the undersigned not later than April 20th.

Application forms will not be provided, but further information as to the duties, if required, may be obtained from the Medical Officer of Health.

Town Hall, Bournemouth. *March 23rd, 1929.*
HERBERT ASHLING, Town Clerk.

Borough of Keighley.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

The Keighley Borough Council require the services of an Assistant Medical Officer of Health and Assistant School Medical Officer at an inclusive salary of £600 per annum.

Candidates must be registered medical practitioners of at least three years' standing, and hold the D.P.H. or equivalent qualification, and also have practical experience in the duties of a School Medical Officer and Maternity and Child Welfare. Experience in Refraction, Ultra-violet Light, and Orthopædics will be considered an additional qualification.

The candidate appointed must devote his or her whole time to the duties of the office, and he or she will not be allowed to engage in private or consulting practice. The candidate will be required to reside in the Borough of Keighley.

Applications upon the prescribed form, which may be obtained from the undersigned, accompanied by copies of three recent testimonials (which will not be returned), must be sent to me on or before April 9th, endorsed "Assistant Medical Officer."

The appointment will be determinable by three months' notice on either side.

Canvassing, either directly or indirectly, will disqualify.

Town Clerk's Office, Keighley. March 19th, 1929.
S. WALKER, Town Clerk.

West End Hospital for Nervous Diseases.

In-patient Department: Gloucester Gate, Regent's Park, N.W.
Out-patient Department and Secretary's Office: Welbeck Street, W.

The Committee of Management invites applications for the appointment of Two HON. ANÆSTHETISTS. Further particulars should be obtained from the undersigned, to whom it is requested that 12 copies of the application and testimonials may be sent not later than Monday, April 22nd.

J. P. WETENHALL, Secretary.

Royal Isle of Wight County Hospital, Ryde.

A vacancy having occurred in the office of HONORARY SURGEON to the Ear, Nose, and Throat Department, the Election Committee of the Governors will proceed to fill the appointment. Candidates must not be engaged in general practice. Further details may be obtained from the Secretary, to whom applications must be addressed, and should be received not later than Wednesday, April 10th. Canvassing members of the Election Committee will be a disqualification.

A. S. GORDON, Secretary.

Worcester General Infirmary.

JUNIOR RESIDENT MEDICAL OFFICER wanted. Applications from candidates are invited, stating age, qualifications, experience, and whether married or single, with copies of recent testimonials (not more than two), to reach later than April 5th. Salary £120 per annum, inclusive, with board, residence, and washing.

E. J. HOLLAND, Secretary.

Administrative County of East SUFFOLK.

APPOINTMENT OF WOMAN ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from registered woman medical practitioners for the above appointment.

The duties of the post include the Medical Inspection of School Children, Maternity and Child Welfare work, and Clinical and Tuberculosis work. Experience in Refraction is *essential* and the possession of the Diploma in Public Health will be a recommendation. The person appointed will be required to devote the whole of her time to the duties of the office.

The salary attaching to the post will be £600 per annum. A deduction of 5 per cent. for superannuation will be made, and motor car allowance will be paid on the Council's scale for use of the officer's car.

The person appointed will be required to pass a medical examination, and the appointment will be subject to three months' notice on either side.

Applications are to be made upon a form, which can be obtained from the County Medical Officer of Health, County Hall, Ipswich, to whom the completed forms should be returned not later than Monday, April 15th.

County Hall, Ipswich. CECIL OAKES, Clerk of the County Council.
March 25th, 1929.

East Riding County Council.

ASSISTANT TUBERCULOSIS OFFICER.

Applications are invited for the post of Assistant Tuberculosis Officer under the East Riding County Council.

The gentleman appointed will be required to live at the Raywell Sanatorium (64 beds), where he will be Medical Superintendent. He will also be expected to carry out the duties of Clinical Tuberculosis Officer within the County.

The salary is at the rate of £650 per annum, with emoluments valued for superannuation purposes at £100 per annum, subject to the statutory deductions under the Local Government and Other Officers Superannuation Act, 1922. The emoluments are a bungalow, rent, and rates free, also fuel, light, laundry, and garden produce.

Applications, accompanied by not more than three recent testimonials, must be made on prescribed forms, which can be obtained on application, and must reach the undersigned not later than Saturday, April 13th.

(Signed) J. R. PROCTER, Clerk of the Council.
County Hall, Beverley. March, 1929.

The King Edward VII Welsh NATIONAL MEMORIAL ASSOCIATION.

Applications are invited from duly registered medical practitioners (male) for the post of AREA TUBERCULOSIS PHYSICIAN. Salary £500 per annum, rising by annual increments of £20 to £700 per annum (plus Civil Service bonus), with a guaranteed total minimum salary of £750 per annum, together with travelling and subsistence allowances when absent from base.

Applications, stating full qualifications and previous experience, together with copies of three recent testimonials, should reach the undersigned not later than Tuesday, April 2nd.

Memorial Offices, Westgate Street, Cardiff. D. A. POWELL, Principal Medical Officer.

Hampshire County Council.

ASSISTANT COUNTY MEDICAL OFFICER (TEMPORARY).

Applications are invited for the post of Assistant Medical Officer of Health (Temporary). The duties comprise general public health work, including medical inspection of school children in Secondary and Elementary Schools; and work under the Tuberculosis Scheme and the Maternity and Child Welfare Scheme, etc. Salary at the rate of 10 guineas per week, together with travelling and subsistence allowances.

Form of application may be obtained from the County Medical Officer, The Castle, Winchester.

Bootle Borough Hospital.

APPOINTMENT OF HON. DERMATOLOGIST.

Applications are invited for the above vacancy. Candidates are requested to send particulars of their qualifications and experiences, accompanied by testimonials, addressed to the Secretary-Superintendent, Bootle Borough Hospital, Derby Road, near Liverpool, not later than Friday, April 12th.

Tynemouth Union.

ASSISTANT MEDICAL OFFICER (Non-resident).

The Guardians of the Tynemouth Union invite applications for the appointment, for a period of six months, of an Assistant Medical Officer for their Poor Law Institution, Preston Road, North Shields, and for the Children's Homes of the Union.

Salary £300 per annum, inclusive of vaccination and all other fees. The officer appointed will be required to pay to the Common Fund of the Union all fees received by him for Inquests, certifying lunatics, etc., to devote the whole of his time to the duties of the office (which includes the training of Probationer Nurses), to reside in close proximity to the Institution, and to act under the direction of the Medical Officer.

Applicants must be duly registered under the Medical Acts, and be qualified by law to practise in Medicine and Surgery in England and Wales, and the candidate appointed will be required to produce his licences, diplomas, or certificates to the Guardians.

The appointment is subject to the provisions of the Poor Law Officers Superannuation Act, 1896.

Applications must be made on a printed form, which will be sent on receipt of a stamped addressed foolscap envelope, and must be returned to me, accompanied by copies of testimonials as to professional ability and personal character, by the first post on Saturday, the 7th proximo.

By Order,
Guardians' Hall, North Shields. TOM PERCIVAL, Clerk to the Guardians.
March 25th, 1929.

Northampton Education COMMITTEE.

ASSISTANT SCHOOL DENTIST.

Applications are invited for the appointment of a fully qualified Dental Surgeon (man or woman) as Assistant School Dentist. Salary £450 per annum.

Further particulars and forms of application may be obtained from the undersigned, by whom applications should be received by not later than April 12th.

Education Office, 4, St. Giles' St., Northampton. A. C. BOYDE, Director of Education.

Norfolk and Norwich Hospital, NORWICH.

Applications are invited for the posts of:

HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment.

HOUSE SURGEON to the Special Departments (Ear, Nose, and Throat, and Ophthalmic). Salary £120 per annum, with board, residence, and laundry.

Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned not later than Tuesday, April 9th.

FRANK INCH,
March 22nd, 1929. House Gov. & Sec.

Norfolk and Norwich Hospital, NORWICH.

Applications are invited for the post of HOUSE PHYSICIAN. Salary £120 per annum, with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment. Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with testimonials, to the undersigned, not later than Tuesday, *April 15th*.

FRANK INCH,
March 30th, 1929. House Gov. & Sec.

Cassel Hospital for Functional NERVOUS DISORDERS, SWAYLANDS, PENSHURST, KENT.

RESIDENT MEDICAL OFFICER (Male).

Applications are invited for the post of Resident Medical Officer. Candidates must be fully qualified, unmarried, and preference will be given to a man who has had experience in the treatment of nervous disorders. Salary £350, rising, with board, lodging, and laundry. The successful candidate will be expected to commence duty as soon as possible.

Applications should be sent to the Medical Director, Cassel Hospital, Swaylands, Penshurst, Kent.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

The following resident posts will be vacant on May 1st next:

SENIOR HOUSE PHYSICIAN, SENIOR HOUSE SURGEON, and SPECIAL HOUSE SURGEON. Salaries at the rate of £120 per annum.

JUNIOR HOUSE PHYSICIAN and Two JUNIOR HOUSE SURGEONS. Salaries at the rate of £90 per annum.

Board, residence, and laundry.

Appointment held for six months, but holders are eligible for re-appointment for a further term.

Candidates (male) must be fully qualified and registered, and applications (on prescribed form), together with copies of three recent testimonials, should be sent to me on or before the first post on *Monday, April 15th*.

FREDK. W. DREWETT, Director.
March 25th, 1929.

The Royal Hospital, WOLVERHAMPTON. (Incorporated under Charter.)

A RESIDENT MEDICAL OFFICER wanted.

The Hospital contains 240 beds, the usual Special Departments, and is recognized by the various Examining Bodies for a part of the requisite attendance on medical and surgical practice. Candidates must be registered under the Medical Acts. The appointment is for six months, with a salary at the rate of £150 per annum. Board, furnished rooms, and laundry provided.

Duties to commence forthwith.

Applications, with copies of testimonials, to the undersigned.

Wolverhampton. W. H. HARPER, House Gov. & Sec.
March 16th, 1929.

Lincoln County Hospital.

Wanted for May 1st, a JUNIOR HOUSE SURGEON, male, unmarried. Salary at the rate of £150 per annum, rising to £200 per annum at the conclusion of six months' approved service. Board, residence, and washing will also be provided.

Every candidate for the appointment must be registered under the Medical Acts.

Applications, stating age and other particulars, with copies of testimonials (not more than three), are to be sent to the undersigned, from whom further particulars may be obtained.

Lincoln. ARTHUR MOORE, Secretary-Supt.
March 8th, 1929.

Manchester Victoria Memorial JEWISH HOSPITAL, MANCHESTER. (Non-sectarian.)

Applications are invited for the post of SENIOR HOUSE SURGEON (male). The appointment is for one year, the holder being eligible for re-election for a further period of one year. Salary at the rate of £250 per annum, with board, residence, and laundry. Applicants must be prepared to [illegible] 1st. Applications, and experience, with copies of testimonials, to be forwarded to the undersigned not later than April 5th.

FRANK JENNINGS, Superintendent.

The Sheffield Royal Hospital. (340 Beds.)

There is an immediate vacancy for a RESIDENT ANÆSTHETIST (male). The appointment will be for six months and the selected candidate will be eligible for re-appointment or appointment to another office on the Resident Staff. Salary £80 per annum, with board, residence, and laundry. Applications, with copies of testimonials, should be sent as soon as possible to the undersigned.

W. M. BOOTH, Supt. & Secretary.
January 7th, 1929.

North Riding Infirmary, MIDDLESBROUGH. (General Hospital—150 Beds.)

JUNIOR HOUSE SURGEON (male) wanted to commence duties early as possible. Appointment for six months. Salary £150 p.a., with board, residence, and laundry.

Applications, stating age, nationality, and experience, with three recent testimonials (copies), should be delivered to the undersigned forthwith.

CHARLES POSTGATE, Secretary-Supt.

Clayton Hospital, Wakefield.

HOUSE SURGEON required at once. Candidates must be single and legally qualified. Salary £150 per annum, with board, lodging, etc. Applications, enclosing copies of testimonials, should be sent to the undersigned.

HENRY MAW, Gen. Supt. & Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.)*.	**PUBLIC HEALTH** *(continued)*.
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
	COUNTY OF BRECON. *(Probationer Assistant (Female) Medical Officer of Health.)*	

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec. New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec. Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies' Institute.)*	Dr. E. S. MEYERS (Hon Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
March 26th, 1929.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

City of London Hospital for DISEASES OF THE HEART & LUNGS,
Victoria Park, E.2.
(Bus, Tram, and Rail, Cambridge Heath, L. & N.E.R.).

Applications for a post of HOUSE PHYSICIAN (male), with copies of recent testimonials, are invited to be sent to the undersigned by Monday, April 15th.

The appointment will be for six months from May 1st. Salary at the rate of £100 per annum, with board, residence, and laundry provided.

GEORGE WATTS, Secretary.

London Temperance Hospital,
Hampstead Road, N.W.1.

Applications are invited for the post of HOUSE PHYSICIAN which will become vacant on April 15th.

The appointment is for a period of six months at a salary of £100 per annum. Ceteris paribus, preference will be given to total abstainers.

Applications, accompanied by not more than three testimonials, stating qualifications, age, etc., must be received by first post Thursday, April 4th, addressed to the undersigned.

A. C. ADAMS, Secretary.

Hospital of St. John and St. ELIZABETH,
60, Grove End Road, London, N.W.8.

Applications are invited for the post of RESIDENT HOUSE SURGEON (male). The appointment will be for six months from May 1st. Salary at the rate of £75 per annum, with full board. Applications, together with three testimonials, should reach the undersigned not later than April 3rd.

F. DUDLEY HOBBS, B.A., Secretary.

East London Hospital for CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.1.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male). The appointment is for one year from May 1st. Applicants must be duly certified practitioners in Medicine and Surgery. Salary at the rate of £200 per annum, with board, residence, and laundry. Applications, together with testimonials, should be sent to the undersigned not later than April 15th.

W. M. WILCOX, Secretary.

N.B.—The House Surgeon is applying for this post.

Applications are also invited for the resident posts of HOUSE SURGEON and Whole-time CASUALTY OFFICER (male). The appointments are from May 1st for six months. Salary at the rate of £125 per annum, with board, residence, and laundry provided. Applications, together with testimonials, should be sent to the undersigned not later than April 15th.

W. M. WILCOX, Secretary.

N.B.—The candidate for the reciprocity scheme with Barnes Hospital, St. Louis, U.S.A., is selected from previous Residents at the East London Hospital for Children.

The Royal Gwent Hospital, NEWPORT, MON.

There will be a vacancy for a JUNIOR RESIDENT MEDICAL OFFICER on April 9th next. Salary at the rate of £125 per annum, with board, lodging, and laundry.

Applications, stating age and qualifications, with copies of three testimonials, should be sent to the undersigned immediately.

Applications from ladies not entertained.

J. K. MILLWARD, Secretary-Supt.

March 21st, 1929.

The London Female Lock HOSPITAL,
283, Harrow Road, London, W.9.

The Board of Management invite applications for the appointment of HOUSE SURGEON (male or female) at the Female Lock Hospital. Salary at the rate of £150 per annum, with furnished rooms, full board, and washing. Candidates, who must be doubly qualified and duly registered, should send in their applications by 10 a.m. on or before April 8th, accompanied by copies of three recent testimonials, to the Secretary, from whom further particulars can be obtained. The appointment is for six months commencing May 1Cth.

Altrincham General Hospital, CHESHIRE.

HOUSE SURGEON required. Candidates must be fully qualified and registered. Salary £1C5 per annum, with board, residence, and laundry.

The appointment is for six months, subject to re-appointment for a further period of six months if satisfactory.

Applications, stating age and experience, together with copies of recent testimonials, to be sent in not later than April 1Cth to WILLIAM MOODY, Secretary, 31, Market Street, Altrincham, Cheshire.

Bedford County Hospital.

HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing May 1st. Salary £1C5, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Secretary, Medical Staff Committee, not later than the first post Wednesday, April 3rd.

ASSISTANCIES.

Wanted. — Assistant, male, in good-class Practice. Large Industrial Town near Manchester. Small panel. Englishman only. Must be of good appearance, keen, and energetic. Car provided. Salary £300, all found. Good prospects for right man. Fullest particulars.—Address, No. 1827, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, aged 25 to 30, single, for panel and private practice. Write, stating full essential particulars.—Address, No. 1805, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, indoor, about end of April, North Yorkshire. Motorist and one with some experience of G.P. preferred. — For further particulars, address, No. 1826, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant to end of June. Country Practice, North Riding, Yorks. Recently qualified man suitable. — Address, No. 1830, B.M.A. House, Tavistock Square, W.C.1.

Wanted.--Experienced Assistant (married or single). £300 p.a., with accommodation and board. Lady Medical Assistant and Dispenser kept. Usual bond. State height, etc. Send photo.—Address, No. 1809, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — An Assistant with view to early succession. Principal retiring. State available capital. Married man preferred.—Address, No. 1815, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Indoor and Outdoor ASSISTANTS (male); also LOCUM TENENS. Good salaries offered. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted immediately for Industrial Practice in South Wales, young male outdoor ASSISTANT. Salary to commence £250, and all found. Good prospects for suitable man.—Address, No. 1517, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with or without view, by M.B., Ch.B.(Glasg.); 2½ yrs.' Hospital experience (ex H.S. and H.P.). Post-graduate midwifery; 15 months' general practice. Own car. Aged 26.—Address, No 1828, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.B., F.R.C.S.Ed. ASSISTANTSHIP in Practice with scope for surgery. Ex-H.S., R.S.O. Would consider partnership with appointment local Hospital. Experienced operator, general surg. and gynæcology. —No. 1831, B.M.A. House, Tavistock Sq., W.C.1.

Assistantship, with view to Partnership, required from beginning of May by M.B., Ch.B.Glasgow. Englishman, aged 29, Protestant, at present abroad. Practice near sea. N.W. Coast preferred, but not essential. Capital available.—Address, No. 1814, B.M.A. House, Tavistock Square, W.C.1.

Assistantship or Long Locum required by M.R.C.S., L.R.C.P., aged 30, male, single; ex H.S. and H.P. Many testimonials from G.P.'s stating reliability. Five years' experience in all kinds of G.P. Mids. and children speciality. View considered.—No. 1829, B.M.A. House, Tavistock Sq., W.C.1.

Assistantship wanted by Lady M.B., B.Ch., aged 27, 3 years' experience panel and private practice. Free now.—Apply, L. DOWNING, 52, Bath St., City Road, E.C.

Singapore.—Assistant required at once. Contract for two years, renewable. Salary £840 p.a. Passage paid. Applicants should be young and unmarried, with a good all-round knowledge of medicine. Good prospects for suitable man.—Apply, BRITISH MEDICAL BUREAU, 12, Stratford Place, London, W.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted. — Medical Officer for Group of TEA ESTATES in ASSAM. Candidates preferably about 30 or upwards, whose experience and qualifications must bear strictest expert investigation. Four years' agreement. Commencing salary Rs.1,500 a month, rising Rs.50 a month each year, plus Rs.150 a month car allowance throughout. (Rupee equivalent 1s 6d.). Free furnished Bungalow, use of certain servants, first-class passage.—Write, with fullest particulars, to "Z. M. 751," c/o DRACON'S ADVERTISING AGENCY, Fenchurch Avenue, E.C.3.

Wanted, for the Lady Hardinge MEDICAL COLLEGE, NEW DELHI, INDIA, from mid-September, 1929, a MEDICAL WOMAN, with experience in teaching Anatomy, to act for the Professor of that subject during her year's leave. Salary Rs.750 a month, with free furnished house, and free passage to and from India (the rupee is standardised at 1/6). Apply, with testimonials, to the College Principal.

Wanted at once by fully trained Nurse (Doctor's Widow), post as NURSE-ASSISTANT to Doctor or Dentist. — CAPPER, 323, Mansfield Road, Nottingham.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Cambridge Graduate, æt. 36, married, at present employed in India, would consider offers of responsible and remunerative EMPLOYMENT in that country or elsewhere abroad where there is more scope than he has at present. Has extensive experience in general, hospital, service, administrative, tropical, and special (eye) work, and is very well received. Excellent testimonials. Would consider Partnership, but only very small capital available. Could be free at three months' notice after this year. All replies treated confidentially. — Address, No. 1802, B.M.A. House, Tavistock Square, W.C.1.

Dispensers supplied to Doctors at short notice, without fee. Qualified and exper. in priv. and panel prac. Perm. and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 87, Holborn Viaduct House, 12, Holb. Viad., E.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Gerrard 2699, THE DISPENSERS' BUREAU, 145, Shaftesbury Avenue, London, W.C.2.

Doctor required to take charge of MISSION HOSPITAL, CHAOTONG, WEST CHINA.—For particulars apply to Secretary, Rev. W. A. GRIST, 141, Devonshire Road, Forest Hill, S.E.23.

Doctor, practising in Central London, desires MORNING HELP. Suitable for one doing post-graduate work, or retired medical man. Furnished rooms provided at surgery.—Apply, giving all particulars, to No. 1823, B.M.A. House, Tavistock Square, W.C.1.

English Post-Graduate, working for higher qualification, could do Wednesday Evening Surgeries for South London Doctor. Good hospital and private experience. —Address, No. 1812, B.M.A. House, Tavistock Square, W.C.1.

Lady Dispenser - Bookkeeper (Hall), 29, *desires POST with Doctor or* Hospital. Experienced 7 years in last post. All secretarial duties, dressings, etc. Live in or out. Excellent references.—Address, No. 1811, B.M.A. House, Tavistock Square, W.C.1.

Lady Dispenser - Bookkeeper (Hall) desires RE-ENGAGEMENT with Doctor. Experience in private and panel practice. References. — Address, No. 1825, B.M.A. House, Tavistock Square, W.C.1.

Lady Doctor doing Post-graduate work desires to hear of some PART-TIME WORK in London. Ex H.S., ex H.P. Children, Clinical Assistant Ear and Throat.—Address, No. 1813, B.M.A. House, Tavistock Sq., W.C.1.

REPRESENTATIVE WANTED FOR CANNULA,

who knows the line, is well introduced, and understands German.

Offers to FM 4034 ALA, Haasenstein & Vogler, Frankfurt a/M (Germany).

Translating and Abstracting GERMAN Medical and Scientific Literature into English undertaken by Medical Woman with considerable experience. Interview London. — Address, No. 1607, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS.

FOR LOCUM TENENS APPLY TO Mr. PERCIVAL TURNER, Ltd. The oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals. 4, ADAM ST., Strand, London, W.C.2. Teleg.: "Epsomian, Lond." 'Phone: Gerrard 0393

Wanted. — Appointment or LOCUMS. Free mid-April for six months. Good experience G.P., hospital, surgery, and medicine. Abstainer. Good references.—Address, No. 1801, B.M.A. House, Tavistock Sq., W.C.1.

M.B., Ch.B.Glasg., young, energetic, desires post as LOCUM TENENS or TEMP. ASSISTANT, over May and June, in or near Glasgow. Ex H.S., H.P., R.M.O., exp. G.P. and Children's Diseases. Excellent refs.—No. 1816, B.M.A. House, Tavistock Sq., W.C.1.

LOCUM TENENS.
FOR A RELIABLE SUBSTITUTE CONSULT
THE MEDICAL AGENCY.
(WILLIAM H. GRANT.)
WATERGATE HOUSE, 15, YORK BUILDINGS, ADELPHI, W.C.2. *Tel.* { GERRARD 8954 / RIVERSIDE 1250 (*Night Calls*).
Telegrams:
"REASIDE, TUBERCLE, WESTRAND, LONDON"

PARTNERSHIPS.

Wanted.—A third Partner in good-class General Practice on South Coast. Age about 28. Must be well qualified and have held hospital appointment; keen on surgery. Oxford or Cambridge man preferred. 1 5th share to start with, increasing to 1/3rd; 2 years' purchase. Gross receipts last year over £3,000. Plenty of scope for a young energetic man. —Address, No. 1832, B.M.A. House, Tavistock Square, W.C.1.

Partnership.—Wanted, energetic Physician, Hospital experience essential, for Country Practice within 50 miles of London. Share £800 to £1,000, at 2 yrs.' purchase. Large house or small modern cottage avail. Cott. Hosp. —No. 1722, B.M.A. House, Tavistock Sq., W.C.1.

Sheffield District.— PARTNERSHIP required by Englishman, aged 27. (Ex C.O., H.S., H.P., O.H.S.). Good G.P. experience. Capital and car available.—Address, No. 1824, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES.

Wanted by M.D.Cantab., F.R.C.S.Eng., Public School, better-class PRACTICE or PARTNERSHIP, within 100 miles London, or good-class suburb. Ample capital —Address, No. 1505, B.M.A. House, Tavistock Square, W.C.1.

Wanted, in or near London, G.P.; fair panel; income £800—£2,000. Nice house to rent. Fair cash price offered. Strict confidence. No agents.—Address, No. 1627, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—We have innumerable applicants for sound investments in all districts, incomes from £600 to £4,000, with and without panel. Correspondence invited from prospective Vendors. — THE MEDICAL AGENCY (W. H. Grant), Watergate House, 15, York Buildings, Adelphi, W.C.2.

Wanted, Country Practice of about £1,000 p.a., or equivalent half-share, by M.B., B.S.Lond. age 30. Pay £1,000 cash and balance from receipts by agreed instalments.—BEAUMONT, Honing, Worstead, Norfolk.

Wanted, seasonal Spa PRACTICE, PARTNERSHIP, or NUCLEUS. Necessary capital.—Add., No. 1810, B.M.A. House, Tavistock Square, W.C.1

Cheshire Town, near Manchester. —Good-class PRACTICE. Cash receipts 1928, £1,205. Panel 500. Scope for increase. Excellent detached house, 5 bedrooms, garage and large garden, to rent at £85 p.a. Vendor retiring. Premium 1¼ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Co. Durham.—Colliery PRACTICE near Newcastle. Panel over 800. Modern house (freehold), sell or let. 3 bedrooms, h.c. bathrm.; consulting and waiting rm.; garage. House £800. Practice £800. Immed. possession.—No. 1819, B.M.A. House, Tavistock Square, W.C.1

Death Vacancy.—Country Town within one hour of London. £850 p.a. and appointments £300 p.a. Most desirable residence for sale, freehold or on lease. Good educational facilities. Prompt sale essential.—Apply, No. 8444, c/o PERCIVAL TURNER, Ltd., 4, Adam Street, Adelphi, London, W.C.2.

First-class Practice in N. Midlands for sale, held by Vendor 26 years, compact and easily worked. Income £1,600, assisted annually. Panel over 1,800, unlimited ops. Suit two friends. Visits 5/- up. Cons. 2/6. Few mids. £3 3s. up. Excellent modern house, central heating, garden, garage. Efficient assistd. Prem. 2 yrs' pur. House (freehold) 3,000, half on mortg. Banker's refs. required. —No. 1805, B.M.A. House, Tavistock Sq., W.C.1.

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For Sale.—Liverpool.—Practice, established few years, rapidly increasing. Last 12 months £550; panel 700. Excellent central position and exceptional prospects. Prem. £850. House for sale £750. —No. 1818, B.M.A. House, Tavistock Sq., W.C.1.

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Lancashire Town. — Old-estab. PRACTICE. Average cash receipts £1,480. Panel 1,442. Excellent house, 4 bedrooms, good garden and garage, for sale, or would rent on lease at £75 p.a. Premium—Practice—1½ yrs.' purchase, part deferred. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

London, W.—Small mixed-class PRACTICE. Receipts last 12 months nearly £450, panel about 190, increasing. House available, 5 years' lease. Premium £550. Good scope.—Apply, PEACOCK & HADLEY, 19, Craven Street, Strand, W.C.2.

Manchester.—Old-estab. Practice. Average cash receipts £1,480 p.a. Panel 1,422. Good corner house to rent on lease, 6 bedrooms, garage. Plenty of scope. Premium for quick sale—1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester.-Old-estab. Practice. Average cash receipts £2,523. Panel 1,021. Prominent house, 6 bedrooms, garden, and garage. Premium—Practice—1½ yrs.' purchase. A preliminary partnership might be arranged.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Monmouthshire. — Old-estab. PRACTICE, held several years by Vendor. Receipts nearly £2,000 p.a., panel 1,900. Small house, rent £40. Reasonable offer accepted. — Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Manchester. — Good-class Practice (non-panel) in first-rate residential suburb. Average cash receipts £2,165 p.a. Fees 5/- to 21/-. Excellent house to rent on lease. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

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Nucleus, held since August. Earnings small, due to unsuitability of holder, but great scope amongst a cash-paying, large rural population. Price £150. Purchaser requires further £500.—Address, No. 1821, B.M.A. House, Tavistock Square, W.C.1.

Owing to death.—General and Consulting PRACTICE for disposal, mid-Ireland; small panel. Rent of house with garden, £50. Scope for increase. Income now about £1,200.—Address, No. 1822, B.M.A. House, Tavistock Square, W.C.1.

Practice for Sale. — Good-class Country PRACTICE within 20 miles of Manchester. Receipts £1,400, increasing yearly. Good house to let (rent £60), containing 5 bedrooms, 2 entertaining rooms, surgery and waiting rooms, garage. Premium £2,000. —Apply, STOWELL & BAYLEY, Chartered Accountants, 46, Pall Mall, Manchester.

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Queen Anne Street. — Compact Doctor's HOUSE, facing South. Five or 6 beds., 2 bath, 1 or 2 recep., secretary's room, consulting room, and waiting room; h. & c. in most rooms. Lease 26 years. Moderate rent. Price only £2,500.—Apply, Sole Agents, FAREBROTHER, ELLIS & Co., 26, Dover St., W.1.

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West Hartlepool. — Freehold VILLA (vacant) for sale in Stockton Road. Contains surgery, waiting room, and 2 sitting rooms, kitchen, etc., on ground floor, 9 bedrooms, bath, electric light, large garden. Reasonable price. Has been occupied by Doctors for past 25 years.—BELL & SON, Surtees St.

Waiting Room, Surgery, and Dispensing. Has been used as above for the past 2 years.—For further particulars apply "LANDLORD," 65, Erskine Road, Walthamstow, E.17.

United Services Fund.

HEATHERWOOD HOSPITAL, ASCOT.

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from fully qualified medical practitioners (bachelor, not over 30) for the above post.

Candidates must have held some appointment in a General Hospital.

The present Hospital accommodation is 136 beds for the treatment of surgical tuberculosis and other forms of crippledom.

The appointment will be for a period of twelve months and may be extended at the end of that time.

Remuneration is at the rate of £300 per annum, together with residence, board, and laundry.

The officer appointed will be required to devote the whole of his time to the duties of the office, to give anæsthetics, etc., and generally to act under the supervision and direction of the Medical Superintendent.

Applications, stating (1) age, (2) qualifications, (3) experience and appointments held, accompanied by three copies of recent testimonials, should be forwarded to the Secretary, Heatherwood Committee, United Services Fund, 29, Cromwell Road, South Kensington, London, S.W.7, before April 12th.

Further particulars can be supplied on application to the Medical Superintendent, Heatherwood Hospital, Ascot, Berks.

Hull Royal Infirmary.

The Appointing Committee invite applications for the office of HONORARY PHYSICIAN to the Institution.

Applicants must have obtained a Degree in Medicine at one of the Universities of the United Kingdom, be a Fellow or Member of the Royal College of Physicians of London, Edinburgh, or Ireland, and be duly registered under the Medical Acts

Honorary Physicians are appointed for a period not exceeding 20 years, or until attaining 60 years of age, and in accordance with the terms of the Royal Charter. They may not hold any paid appointment to any other Charitable Medical Institution or to a Poor Law Institution.

Applicants are prohibited from personally canvassing, but may send copies of their applications and testimonials to the members of the [illegible] Committee.

" The Chairman, " must be received at than 10 a.m. on

R. J. CARLESS,
March 18th, 1929. House Governor.

Hull Royal Infirmary.

Applications are invited for the post of THIRD HOUSE SURGEON (male), vacant April 15th.

Applicants must be fully qualified. Period of appointment, six months in the first instance. Salary at the rate of £150 per annum, with board and residence.

Applications, together with copies of testimonials, should reach the undersigned on or before Tuesday, April 2nd

R. J. CARLESS,
April 15th, 1929. House Governor

Hull Royal Infirmary.

Applications are invited for the post of HOUSE PHYSICIAN (male), vacant April 19th.

Applicants must be fully qualified. Period of appointment, six months in the first instance. Salary at the rate of £200 per annum, with board and residence.

Applications, together with copies of testimonials, should reach the undersigned on or before Tuesday, April 9th.

R. J. CARLESS,
March 22nd, 1929. House Governor.

Royal Chest Hospital,

City Road, E.C.1.
(Royal Northern Group of Hospitals.)

Applications are invited for the following posts:

RESIDENT MEDICAL OFFICER. Vacant on May 1st. The appointment is for six months, when re-election is required. Salary at the rate of £150 per annum, with board, residence, and laundry.

HOUSE PHYSICIAN. Vacant on May 1st. The appointment is for six months. Salary at the rate of £100 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent on or before April 10th to the undersigned, from whom forms of application, rules, and further particulars can be obtained.

Royal Northern Hospital, London, N.7. GILBERT G. PANTER, Secretary.

The Willesden General Hospital

(Incorporated), London, N.W.10.
(106 Beds.)

The Executive Committee invite applications for the appointment of RESIDENT HOUSE SURGEON (male). Candidates must be duly registered under the Medical Acts, and unmarried.

The appointment is for a period of six months from May 1st (the first three months as Junior House Surgeon, the second three months as Senior House Surgeon). Salary at the rate of £100 per annum.

Fully detailed applications, with copies of testimonials, to be received by the Secretary not later than noon on Thursday, April 4th.

March 18th, 1929.

The Belgrave Hospital for

CHILDREN (Incorporated),
1, Clapham Road, S.W.9.

The Committee of Management invite applications for the post of HOUSE SURGEON and ASSISTANT HOUSE PHYSICIAN which will become vacant on April 30th.

Applicants (men) must be fully qualified and registered. The appointments are for six months, with board, residence, and washing provided.

Salary at the rate of £100 per annum in each case.

Applications, with copies of testimonials, stating age, to be forwarded on or before Thursday, April 4th.

By Order,
THOS. CLAPHAM, Secretary.

The Hospital for Epilepsy and

PARALYSIS, Maida Vale, W.9.

A RESIDENT MEDICAL OFFICER required May 1st; HOUSE PHYSICIAN required May 1st.

Applications are invited for these posts. The salaries are at the rate of £150 and £100 per annum respectively, and the appointments are for six months. Candidates for the post of Resident Medical Officer should state if they are willing to take that of House Physician, and applications, accompanied by copies of three recent testimonials, should reach me by April 4th.

The accommodation at the Hospital does not permit of Women Graduates holding these appointments.

H. W. BURLEIGH,
Secretary and General Supt.

Hospital for Consumption and

DISEASES OF THE CHEST,
Brompton, S.W.3.

The Committee of Management invite applications from duly qualified medical men for the post of JUNIOR HOUSE PHYSICIAN at the SANATORIUM at FRIMLEY. The appointment is for six months dating from June 1st. In the event of a vacancy the Junior House Physician at the expiration of his term of office will be expected to apply for and, if appointed, to hold the post of Senior House Physician. The honorarium is at the rate of £100 per annum, with full board and lodging. Applications, with copies of testimonials, must reach the undersigned not later than Wednesday, April 17th.

Brompton. FREDERICK WOOD,
March 30th, 1929. Secretary.

Hospital for Consumption and

DISEASES OF THE CHEST,
Brompton, S.W.3.

The Committee of Management invite applications for the post of ASSISTANT RESIDENT MEDICAL OFFICER. Candidates must be registered practitioners, and must have held a Resident Hospital appointment for six months. Salary £150 per annum, with board and residence. The post is a Senior Resident appointment and will include the duty of Assistant to the Surgeons to the Hospital. Applications, with testimonials, must reach the undersigned not later than Saturday, April 13th.

Brompton. FREDERICK WOOD,
March 30th, 1929. Secretary.

Victoria Hospital, Blackpool.

(132 Beds.)

ASSISTANT HOUSE SURGEON (male). 12 months. Salary £120 per annum, with residence, board, and washing. Applicants (who must be duly qualified and registered) are requested to send in their applications, stating age, qualifications, and experience, with three recent testimonials, not later than April 5th, and endorsed "Assistant," to—

JOHN HACKING, Hon. Secretary.

Liverpool Heart Hospital.

Applications are invited for the position of HONORARY ASSISTANT PHYSICIAN to the above Hospital. Applications should reach the Secretary, Miss LEWIS, 14, Cook Street, Liverpool, before April 30th.

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EASTER HOLIDAYS.

The above office will be closed on Friday, March 29th, and Monday, April 1st, but will be open on Saturday morning, March 30th, for urgent business from 10 a.m. to 12 noon.

Addenbrooke's Hospital,

CAMBRIDGE.

Applications are invited for the post of HOUSE SURGEON to the Special Department. The appointment will be for six months from April 6th, but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £130 per annum, with board, residence, and laundry. Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned as soon as possible.

W. H. HEAD, Secretary Supt.

Royal Halifax Infirmary.

Wanted, a THIRD HOUSE SURGEON (male, unmarried). Candidates must be doubly qualified and registered. (The Resident Medical Staff consists of Resident Surgical Officer and three House Surgeons.) The appointment is for six months ending October 31st. Probable promotion if satisfactory. Salary £100 per annum, with residence, board, and laundry.

Particulars of duties may be obtained from the undersigned, to whom application, with copies of testimonials, should be sent not later than April 10th.

A. MIDGLEY,
March 25th, 1929. Secretary.

Royal Victoria Hospital,

FOLKESTONE.

The Committee of Management invite applications for the post of JUNIOR RESIDENT MEDICAL OFFICER (female) to commence duty May 1st. Salary attached to the post is £100 per annum, with board and residence. The appointment is for six months, subject to one month's notice on either side. Applications, together with copies of recent testimonials, should be sent to the Secretary-Superintendent, Royal Victoria Hospital, Folkestone, Kent, not later than Friday, April 12th.

Bolingbroke Hospital

(120 Beds.)
Wandsworth Common, S.W.11.

HOUSE PHYSICIAN (male) required. The appointment is for six months, commencing on April 20th next. Salary £120 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before April 9th.

W. S. RANDOLPH BISS,
Secretary-Superintendent.

Connaught Hospital

FOR WALTHAMSTOW, WANSTEAD, AND LEYTON,
Orford Road, Walthamstow, E.17.

RESIDENT HOUSE PHYSICIAN (male) required. Salary £100 per annum.

RESIDENT HOUSE SURGEON (male) required. Salary £100 per annum.

Each appointment to date from May 1st, and to be for a period of six months.

Applications, with three testimonials (3 copies), should be sent to the Secretary, to reach him not later than April 6th

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INFIRMARY, BANGOR.
(A General Hospital.)

HOUSE SURGEON (male) wanted. Must be fully qualified. Salary £200 per annum, with residence, board, and laundry. Special consideration given to candidates experienced in X-ray work and administering Anæsthetics. Duties to commence May 1st. Applications, with two recent testimonials, to reach the Secretary not later than April 4th.

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LONDON, S.W.—Middle-class G.P. *Medium-sized house. Receipts £1,500. Panel 1,150. Premium 1½ years' purchase. House £1,400.*

LONDON, W.—PARTNERSHIP. *Well-established G.P. Receipts over £2,500 p.a. Panel [illegible] for half [illegible] to man [illegible] to 35.*

SOUTH COAST.—Old-established middle-class G.P. *Splendid house, standing in own grounds, with 3 professional rooms, 3 reception rooms, 5 to 6 bedrooms, to be rented at £90 p.a. Receipts nearly £1,300. Panel 900. Premium 1½ years' purchase, plus fittings, etc.*

BEDFORDSHIRE.—PARTNERSHIP with possible view to succession in old-established G.P. *Receipts £1,300. Panel 1,759. Accommodation available. Premium for half share 2 years' purchase. Suitable to experienced man of 30 or over.*

MIDLANDS.—DEATH VACANCY.—*Well established middle and working-class Practice in country district. Receipts approx. £1,200 p.a. Panel 900. House available. Premium 1 year's purchase.*

LONDON, W.11.—*Well-established mixed G.P. in residential working-class locality. Shop-fronted surgery on lease, with living accommodation over if desired. Enormous scope. Growing panel of 160. Receipts over £420. Premium £550, to include lease, drugs, etc.*

LONDON, W.1.—NUCLEUS Lock-up Surgery, with excellent scope for anæsthetics, etc. *Premium £100.*

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KENT.—*Good-class practically non-panel G.P. with scope for surgery. Average receipts £1,250. Premium £1,900 cash or near offer. Excellent house.*

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(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

12, Stratford Place,
Oxford Street, W.1.

Tele. Address: Triform, Wesdo—London.

Telephone: Mayfair {1782 / 1783}

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1. MIDLANDS.—Partnership in Practice £3,800 p.a. in first-rate residential county town. House (5/6 bedrooms) to rent. One-half or one-third share at 2 years' purchase. Partner should have F.R.C.S. degree.

2. SOUTH OF ENGLAND.—Partnership in sound old-established and increasing mixed Practice in country town within 100 miles of London. Share worth £850 to £900 at 2 years' purchase. Partner should be aged about 30, with surgical experience, preferably an F.R.C.S. Excellent Cottage Hospital.

3. SOUTH COAST.—Partnership (with preliminary assistantship) in non-dispensing Practice about £2,400 in favourite watering-place. Panel about 800. House, with 5 bedrooms, etc., to rent One-third share at 2 years' purchase.

4. NORTH WALES. — Country Practice averaging £1,230 p.a in Welsh-speaking district. Panel over 530. Centrally situated house (5 bedrooms). Premium one year's purchase.

5. LONDON, N.—Rapidly increasing Cash and Panel PRACTICE. Cash receipts last year £715. Panel 510. Shop-fronted Surgery. Rent £53. Premium £800.

6 DEATH VACANCY. — Northants. — Country PRACTICE of £1,200 p.a. Panel between 700/800. Large house, with electric light and central heating, for sale

7 SOUTH MIDLANDS.—Partnership (after preliminary assistantship) in old-established Practice in first-rate residential district within 60 miles of London. Small panel. Share of £1,000 or £1,500 at 2 years' purchase. Graduate of Oxford or Cambridge (or London), aged about 30, and fond of surgery.

8 HOME COUNTIES. — Partnership in Practice about £2,800 p.a. in good town about 30 miles from London. Practically no panel and very little midwifery. Suitable house to rent or purchase. Partner should be experienced, and have held Hospital appointments One-third share at 2 years' purchase after preliminary assistantship.

9 SUFFOLK & NORFOLK BORDERS.—PARTNERSHIP (with view to succession) in rapidly increasing Country Practice. Receipts 1928, £1,975. Panel 2,500. One-half share at first at 2 years' purchase. Cottage Hospital

10 S.W. OF ENGLAND.—Partnership (after preliminary assistantship) in Practice of £4,000 p.a. in town with good Hospital Applicant should preferably be English, with London degree (28-35), keen on medicine, and good anæsthetist. One-fourth or one-third share to suitable man at 1½ years' pur.

11 S. WALES. — Easily worked Panel and Contract PRACTICE over 1,000 p.a. in colliery district. Small house (4 bedrooms) to rent. Premium one year's purchase.

12 N. LONDON.—Practice of between £950 and £1,000 p.a. Small panel. No midwifery. Detached corner house (7/8 bedrooms) for sale. Premium—Practice 1½ years' purchase.

13 YORKSHIRE (N.R.).—Partnership (with view to succession) in Practice about £1,000 p.a in small country town. Panel 420. Good rooms available. One-half share at moderate premium. Scope for minor surgery.

14 PEMBROKESHIRE. — Practice about £1,000 p.a. in small town. Panel 361. Well-situated house (7 bedrooms) to rent. Scope for increase. Premium £1,500. Preliminary assistantship if desired.

15 EAST ANGLIA.—Country Practice about £1,470 p.a., easy reach of important town. Panel about 1,000. Nice house (10 bed and dressing rooms), with electric light, etc., for sale. Premium 1½ years' purchase.

16 SOUTH COAST.—Non-dispensing Practice over £1,800 p.a. in residential town. No panel. Very good house in best part.

17 SOUTH OF ENGLAND.—Practice about £900 p.a. in progressive seaport town. No panel or midwifery; but ample scope. Well-situated house to rent. Premium 1½ years' purchase.

18 CHESHIRE.—Partnership in Practice over £5,000 p.a. in better industrial town. Panel 3,700. House, with 7 bed and dressing rooms, for sale or rent. Premium two-fifths share (to include share of book debts) £3,500, part by instalments.

19 WEST END OF LONDON.—Partnership in high-class non-dispensing Practice in the best part. No panel. Share worth £1,500 to £1,750 p.a. for disposal.

20 GLOUCESTERSHIRE. — Partnership (after preliminary assistantship) in Country Practice about £3,600 p.a. Applicant should be aged 28 to 30, and have held resident Hospital appointments. One-sixth share at first at 2 years' purchase.

21 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. No panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

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Practices and Partnerships for Disposal (continued).

22 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. Panel over 1,400. Partner should be good at midwifery. Premium one-third share 2 years' purchase.

23 LONDON, E.—Partnership in exceptionally old-established Practice averaging over £3,500 p.a. Good fees and appointments. Two-fifths share for disposal at 1½ years' purchase, or one-third could be purchased at first, part by instalments. Small house may be bought or rented at a moderate figure.

24 S.E. COAST.—Partnership in steadily increasing Practice about £2,500 p.a. in popular watering-place. Panel 1,800. Convenient house (5 bedrooms), garden, and garage, to rent. Premium one-half share 2 years' purchase.

25 LAKE DISTRICT. — Practice averaging £1,500 p.a. Panel about 500. House purchasable by arrangement. Exceptional educational facilities. Premium £2,000 cash.

26 LIVERPOOL. — Cash and Panel Practice about £865 p.a. in working-class district. Panel over 1,200. Large house to be sold. Great scope. Premium 1½ yrs.' purchase.

27 EAST COAST.—Partnership in Practice in small watering-place. Suitable house available. Share worth about £1,200 at 2 years' purchase.

28 YORKSHIRE (W.R.). — Partnership in Practice nearly £3,300 in colliery district. Panel 3,000. One-half share after a preliminary assistantship.

29 S.E. COAST. — Third Partner required in Practice £3,750 p.a. in favourite summer resort. Panel 3,976. Share up to one-third at 2 years' purchase.

30 N. WALES.—Increasing Country Practice about £1,000 in growing district, with good prospects.

31 S. MIDLANDS.—Practice over £1,700 p.a. in country town 100 miles from London. No panel, appointments, or midwifery. House (5 bedrooms), with garage and garden, for sale. Premium—Practice 1½ yrs ' purchase.

32 MIDLANDS. — Partnership in mixed Practice between £3,600 and £3,700 p.a. in suburb of Cathedral City. Panel over 2,200. Partner should be aged about 30, with Hospital experience, and able to do Surgery. Premium one-half share 2 years' purchase.

33 LONDON, N.—Partnership in Practice £3,400 p.a. in Northern suburb. Panel about 3,200. Incoming Partner must have had experience and be either English or Scotch. Premium one-third share 2 years' purchase.

34 S.W. OF ENGLAND. — Middle and working-class PRACTICE about £2,150 p.a. in seaport town Panel 1,225. Well situated house (6 bed and dressing rooms) to be sold or let. Premium 1½ years' purchase.

35 LANCASHIRE.—Partnership in Practice over £3,700 p.a. in first-rate town. Panel 2,600. House (4 bedrooms) to rent. Premium one-half share 1½ years' purchase.

36 SOUTH OF ENGLAND.—Surgical Partner required (not over 36) with University degree and F.R.C.S. England, in sound Practice in first-rate town with good Hospital. Share of £1,500 p.a. at 2 years' purchase

37 MIDLANDS. — Partnership in Practice £3,375 p.a. in attractive town. Panel 1,000. Well-situated house (5 bedrooms) to rent. Partner must be well qualified, preferably a Surgeon who would have chance of Hospital appointment. One-half share at 2 years' purchase.

38 S. WALES. — Practice averaging £1,627 (about £650 p.a. from panel) in good town. Modern house (6 bed and dressing rooms) for sale or rent. Premium one-half year's purchase.

39 NURSING HOME for Nine Patients in select seaside resort on S.E. Coast. Gross cash receipts average £1,750 p.a. Double-fronted house, with operating theatre. Premium, freehold, goodwill, furniture, about £5,000

40 SOUTH COAST.—Practice about £900 p.a. (including appointments about £155) in favourite watering-place. No panel or midwifery. Suitable house or flat. Premium £1,500.

41 CO. DURHAM. — Practice of £1,460 in growing suburb of seaport town. Panel 640. House (5 bedrooms) on main road to be sold or let. Premium 1½ years' purchase.

42 S. WALES.—Non-dispensing Practice in large seaport town. Receipts for past 3 years averaged £1,573 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,500.

43 GLOUCESTERSHIRE.—Country Practice averaging £535 p.a. Panel 450. Convenient (small) house, and excellent garden, 1 acre. Garage small car. Premium, house and practice, £3,000.

44 KENT. — Practice averaging £1,030 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, practice, £1,500.

45 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first-rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. Premium one-third share 2 years' purchase.

46 LONDON, E.—Rapidly increasing Lock-up PRACTICE in populous district. Receipts 1928, £780. Panel 570. Rent £50. Premium £950.

47 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

48 X-RAY and ELECTRO-THERAPEUTIC PRACTICE in important town. Receipts last year £1,050. Detached house for sale or rent. Premium £1,500.

49 N.W. ENGLAND.—Partnership in Practice about £3,500 p.a. in seaport town. Panel about 2,500. Choice of two houses to rent. Premium one-fourth or one-third share 2 years' purchase.

50 SOUTH MIDLANDS. — Practice about £1,150 p.a. in county town. Panel 485. Good house (7 bedrooms), with garage and garden, for sale. Very good Hospital.

51 GLOUCESTERSHIRE.—Country Practice averaging £654 p.a. (Elevation 600 feet). Near two good towns. Panel 500. Large house, with garden and paddock, for sale. Scope for increase. Premium £800.

52 N. WALES COAST. — Partner required in old-established non-industrial Practice. Receipts about £5,600. Panel over 2,000. Well-equipped modern house to rent. Premium for one-half share £4,000, on easy payments

53 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 13 acres of land for sale. Premium, practice, 1½ years' purchase.

54 LONDON, S.E. — Partnership in well-established Practice of £1,900 p.a. in good residential district. Exceptionally well-built detached house (6 bedrooms) to be rented. One-half share at two years' purchase. Good scope.

55 MIDLANDS.—Country Practice of over £1,000 p.a., within 5 miles of good town. Panel 531. Comfortable and convenient house (5 bedrooms, etc.), with electric light, central heating, and acre garden, for sale. Premium, practice, 1½ years' purchase.

56 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. One-third to two-fifths share at 2 yrs.' pur

57 MIDLANDS. — Practice about £350 p.a. in manufacturing village. Panel 190. House (4 bedrooms, etc.) and one acre of garden. Premium—Practice and house, £2,000.

58 ESSEX. — Practice averaging £1,216 p.a. in outlying district—30 minutes by rail from London. Panel 550 Nice detached house (5 bedrooms) for sale. Premium for practice 1½ years' purchase.

59 MIDLANDS. — Partnership in Practice over £2,000 p.a. in good town. Panel 1,800 Good house (5 bedrooms) available. Partner should be able to undertake major operations. Well-equipped hospital. One-half share for disposal

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2. KENT—COAST TOWN.—Small, but increasing middle and working-class PRACTICE, producing for last 12 months nearly £600. Panel of 560. Visits 3/6 upwards. Not much midwifery at from £3 3s. Double-fronted eight-roomed house, with three-quarters of an acre of garden. Price for freehold £1,400. Premium £900.
3. DEATH VACANCY.—WEST MIDLANDS, CATHEDRAL CITY.—Old-established good mixed Practice, producing for last 12 months about £900, including panel of over 1,000. Fees 5/6 to 10/6. Midwifery from 3 gns. Good house situated in best part of town, with 2 reception, 4 bedrooms, etc. Garden. Available on rent or by purchase; or if single, purchaser could board with widow. Sport of all kinds, and good schools. Offers invited.
4. LONDON, WEST END.—PARTNERSHIP.—A one-fourth or one-third share is for disposal in an old-established good-class non-panel, non-dispensing Practice. Net income of share £1,120. Fees one guinea upwards. Very little midwifery from 31 guineas. Suitable flat available for bachelor, or if married purchaser could choose his own place of residence. Premium for one-fourth share £2,250.
5. PARTNERSHIP.—SOUTH COAST.—In a popular and favourite watering-place, the third share (to commence) of an old-established mixed-class Practice, offering great scope for increase, is for disposal. Cash receipts nearly £1,900 p.a., including panel (increasing) of over 1,150. Visits 3/6 upwards. About 50 cases of midwifery. Eight-roomed house, with garden. Price for freehold £1,450, of which at least £1,000 can be obtained on mortgage. Premium 2 years' purchase.
6. SOUTH OF ENGLAND.—In a pleasant town (pop. 11,000) within 5 miles of favourite watering-place, old-established mixed-class and increasing PRACTICE worth nearly £1,300 last financial year, including transferable appts. and panel of 880. Excellent family residence, standing in its own grounds (tennis court, flower garden, etc.), with ample accommodation. Held at present on lease (2½ years to run) at £90 p.a., and can eventually be bought for £1,700 or less. Premium £2,040, to include drugs, fittings, some furniture, etc.
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8. SOUTH-WEST OF ENGLAND.—PARTNERSHIP.—A one-half share in a very old-established Practice situated in an attractive small town, amidst beautiful surroundings, and within easy reach of the Coast. Gross cash receipts for the past year over £2,900. Panel of 1,218, which, together with appts., brings in about £900 p.a. Moderate expenses. Visits 2/6, plus mileage and medicine 2/6 and 3/6 extra. Very suitable house, with 3 reception, 4 bedrooms, and usual offices. Garden. Price for freehold £750, of which £350 on mortgage. Premium 2 years' purchase.
9. LONDON, WEST.—PARTNERSHIP.—A half share in an old-established mixed general Practice. Average income for the last three years about £4,000. Panel of 3,250. Fees 2/6 to 7/6, visits 3/6 to 10/6, and a few at 21/-. About 30 midwiferies at from 3 to 10 guineas. Convenient house in good position. Held on lease (with no ground rent) with 25 years to run. Price £1,650. Premium £4,000. Must be Scotch or English.
10. CORNISH RIVIERA.—In a small but rapidly growing town (pop. 5,000—6,000) on the Coast, an old-estab. PRACTICE producing last year over £1,000, including appts. and panel of 550 to 600. Opposition weak. Delightful residence, standing in own grounds of 1¾ acres (croquet and tennis lawns, etc.) and eminently suitable for Resident Patients, which Vendor has been in the habit of taking. Contains professional rooms, 4 reception, 9 bedrooms, 2 bathrooms, etc. Water and electric light. Garage. Price for freehold £4,000. Prem. £1,500.
11. LONDON, NORTH.—PARTNERSHIP.—A one-third share, to commence with, in a very old-established mixed general Practice. Income approximately £3,400, including appts. and panel of over 3,000. Surgery fees 2/- upwards, visits 3/- upwards. If unmarried, ingoing Partner could reside with senior; otherwise, suitable house available. Premium 2 years' purchase, half by arrangement.
12. LONDON, SOUTH-WEST.—Within three miles of Charing Cross.—PARTNERSHIP.—A half share, with succession to the whole in about two years, in a very old-established non-panel Practice, held by Vendor 26 years. Steady average income of £2,300. Surgery fees 2/6 and 3/6, visits mainly 5/- and 7/6. Very little midwifery. Good house, in main road, with garden. Held on lease, with nearly 15 years to run, at a rental of only £55 p.a. Premium 2 years' purchase. Very good scope for increase.
13. KENT.—COUNTRY PRACTICE, within six miles of the Coast.—Old-established mixed general Practice. Income for past twelve months £1,672, including appts. about £60, and panel of over 700. Fees 3/6 to 21/-. Not much midwifery 2 to 7 gns. Good house, with 2 reception, 5 bedrooms, etc. Large garden and orchard. Garage for 2 cars. Price for freehold £1,350. Sport of all kinds, and schools within reach. Premium £2,250.
14. PARTNERSHIP.—SOUTH COAST.—In a fashionable watering-place, the two-thirds share is for disposal in a mixed Homœopathic and Allopathic (roughly half and half) good-class non-dispensing, non-panel conection, in which there is a certain amount of surgery, and ingoing partner should be an operating surgeon. Receipts average over £3,600 p.a. Fees up to 10/6. Very little midwifery. Large and suitable maisonette available, with ample accommodation, in excellent position. Garage. Rent, on lease, £250 p.a. Premium for share 1½ years' purchase.
15. PARTNERSHIP.—Within 5 miles North-West of Charing Cross.—The half share of an old-established middle and working-class Practice, averaging about £2,100 p.a., including panel of 1,500. Visits 2/6 to 10/6. House contains, in addition to professional accommodation, 2 reception, 2 bedrooms, bathroom, kitchen, etc. Small garden. Net rental, on lease, about £60 p.a. Premium 2 years' purchase.
16. HAMPSHIRE.—PARTNERSHIP.—Third share of an old-established unopposed Country Practice, in very pretty district within a few miles of a large town, and producing nearly £2,500 p.a., including appointments £130, and panel of 1,520. Visits 5/6 to 21/-. Mids. 2 to 10 gns. Large house (having eight or nine rooms, with garden, etc.), which must be purchased, or ingoing partner could reside in rooms until a smaller one becomes available. Premium 2 years' purchase, half down and balance in 12 or 18 months.
17. KENT.—Old-established Country Practice, situated in very favourite locality within 5 miles of the coast. Income for past 12 months £1,030. Surgery fees 5/6 upwards, visits 5/- to 21/-. Poor Law appt. and panel of about 380. Attractive commodious house, with separate professional rooms. Small garden. Price £1,800. Premium £1,500.
18. HOME COUNTIES.—GROWING COUNTRY DISTRICT.—Old established mainly middle and working-class PRACTICE. Income for the last year £550, with ample scope for increase. Fees 2/6 to 7/6. Little midwifery. Good freehold house, price £1,500, part on mortgage. Sport of all kinds. Knowledge of refractions advantageous. Premium £850.
19. LONDON, NORTH.—Old-established centrally situated mixed general PRACTICE. Income for the immediate past year £3,500, including panel list of 2,200 and appointments about £125. Fees, advice, and medicine 2/6 to 5/-. Visits 5/- to 7/6. Under 50 midwifery cases yearly from 4 to 8 guineas. Assistant and motor are required. Good house can be rented on lease, or freehold would be sold. Premium £6,000, part by arrangement. Long introduction.
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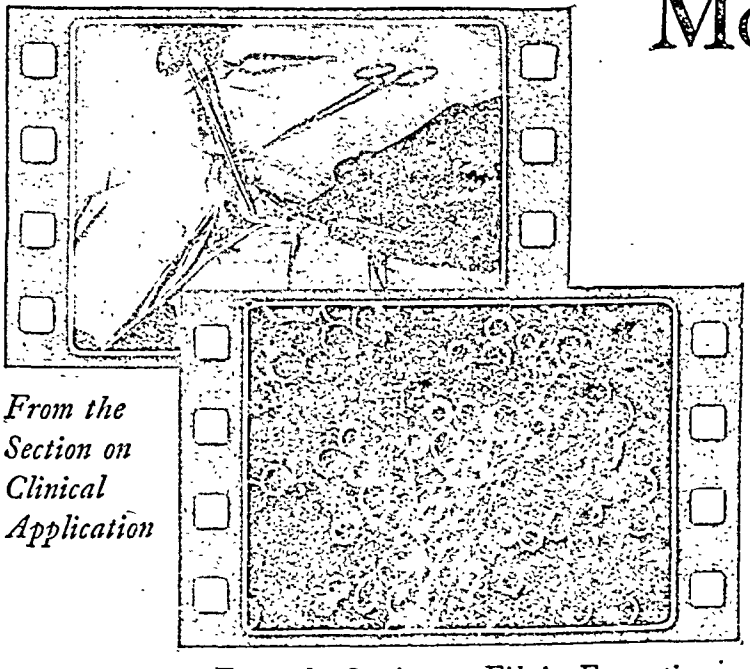

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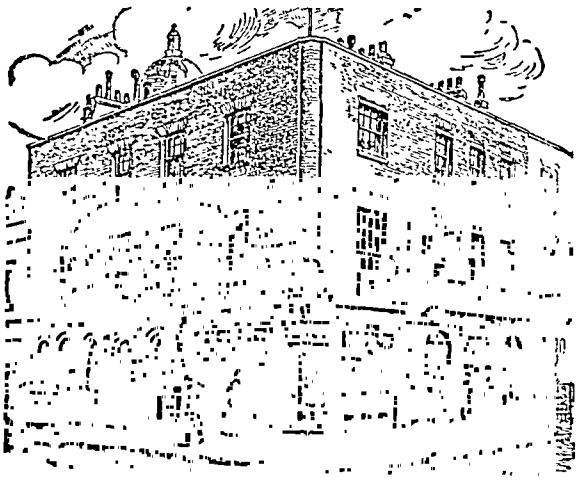

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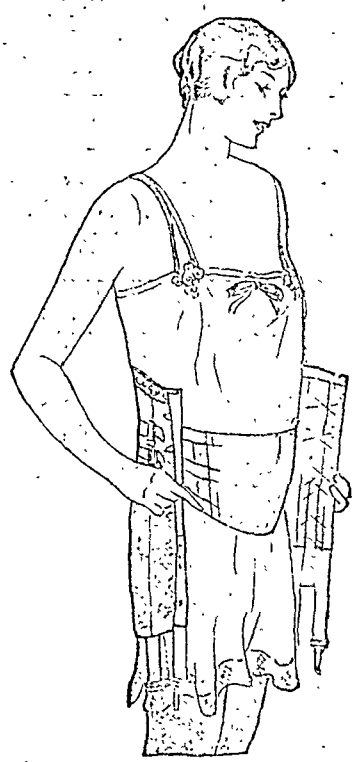

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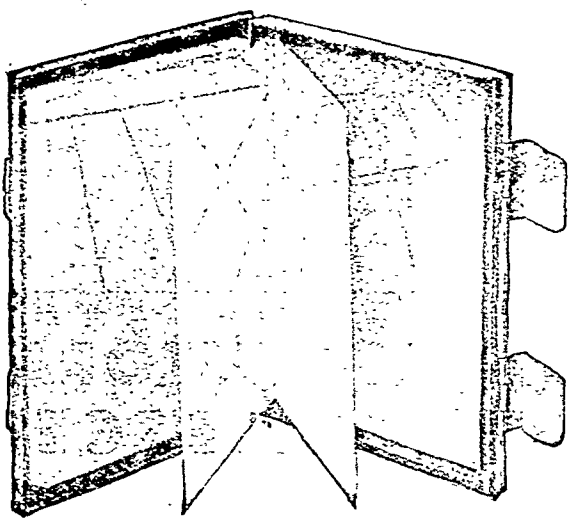

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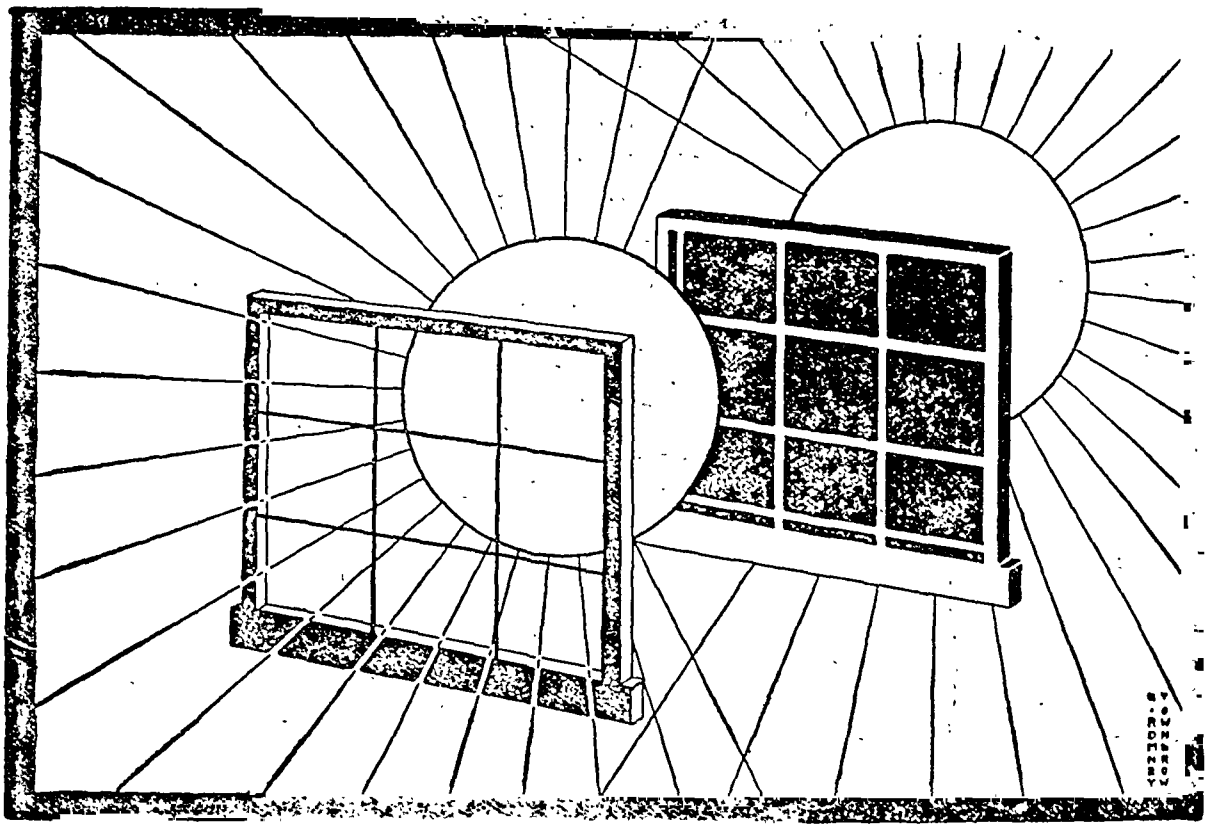

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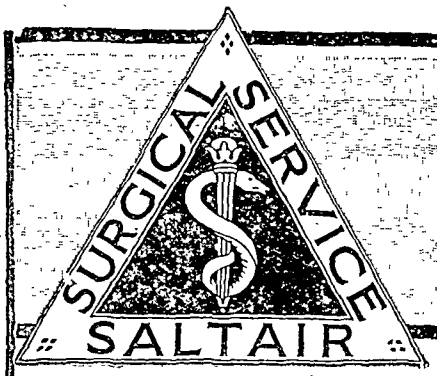

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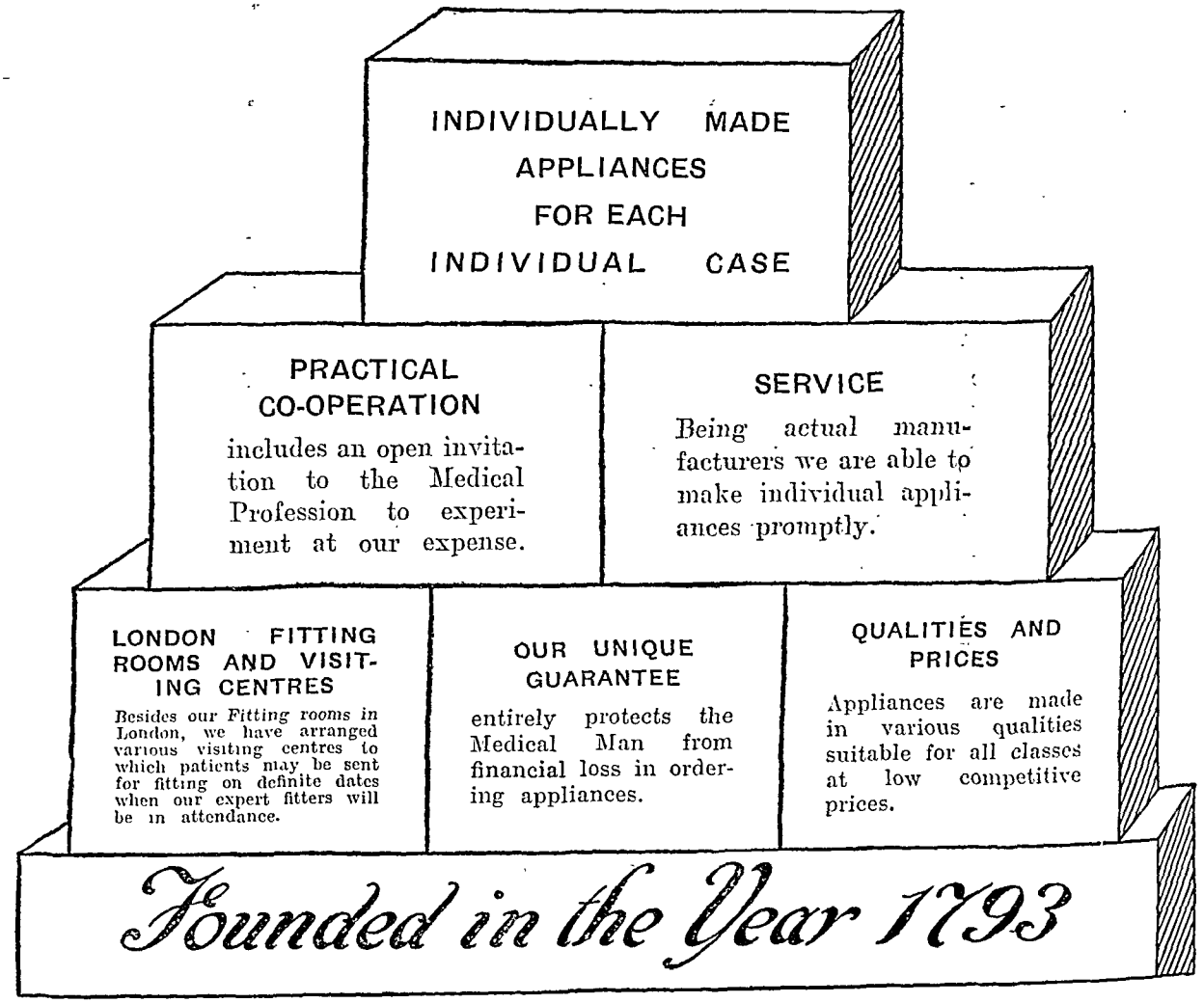

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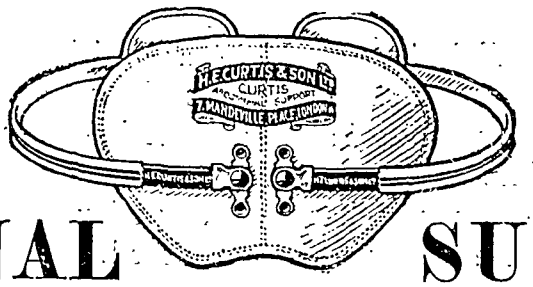

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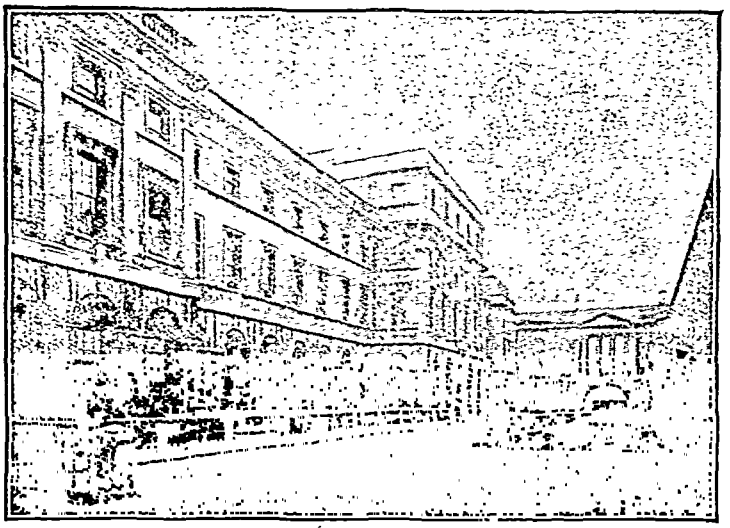

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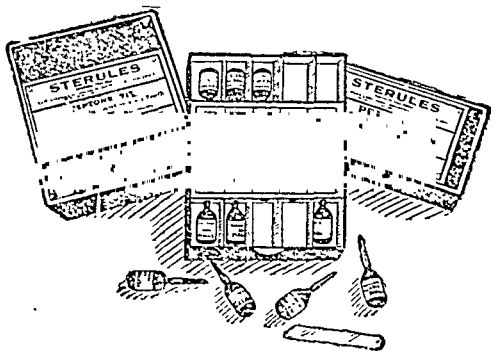

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"In Sanatogen we are offered an ideal combination to combat the wasting effect of chronic or acute illness. In fact, a better cell-reconstituent can hardly be imagined, for the casein and glycerophosphates in combination fulfil every demand for perfect nutrition."

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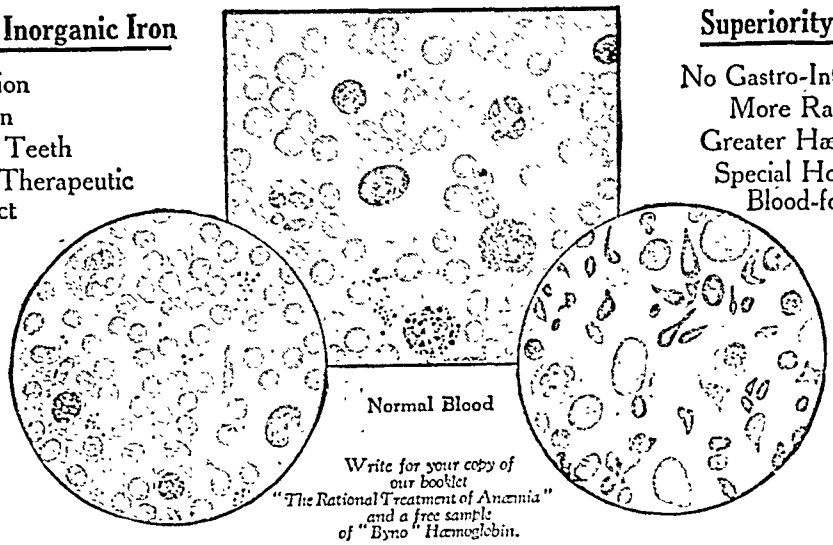

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Normal Blood

Blood in Pernicious Anæmia

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Radio-Malt possesses a delicious flavour, and the fact that it is so readily digested makes it particularly suitable for invalids.

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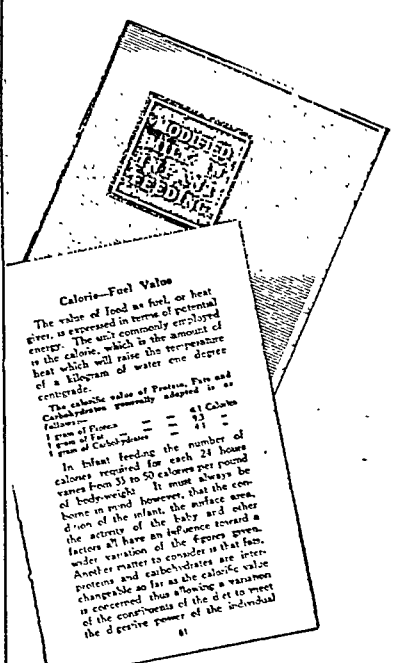

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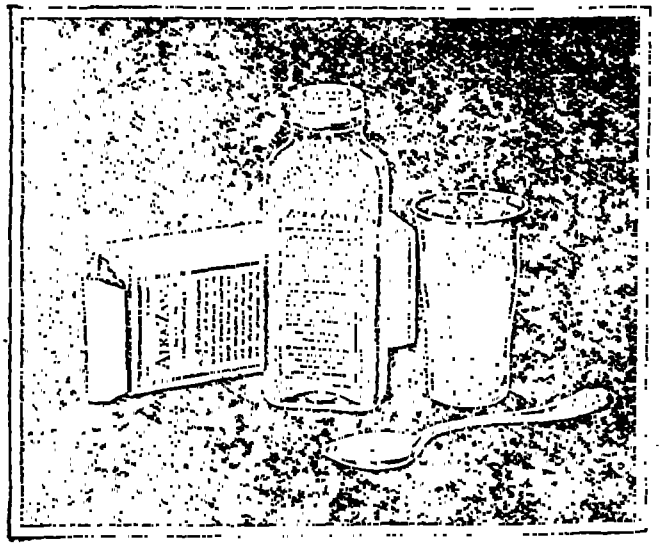

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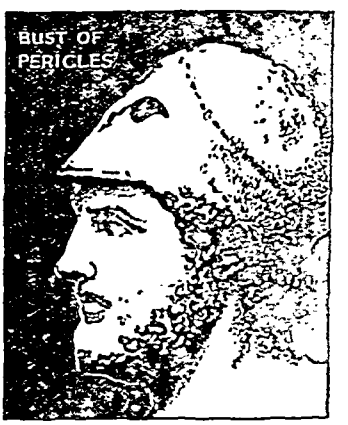

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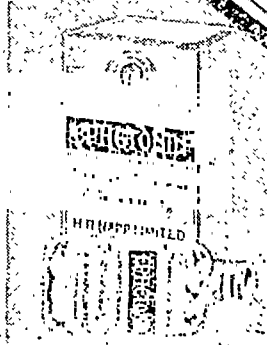

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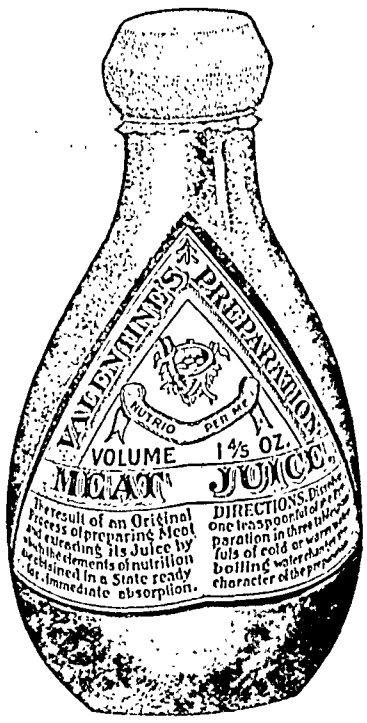
In cases of **Extreme Exhaustion**, at **Critical Times**, in **Wasting Diseases, Low Forms** of **Fever, Cholera Infantum, Diarrhoea, Dysentery, Influenza, Pneumonia** and **Phthisis**, when other Food fails, **Valentine's Meat-Juice** demonstrates it Power to **Sustain** and **Strengthen.**



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by mixing one large heaped teaspoonful to a paste with a little **cold** water, then adding a quarter to a half cupful of **cold** water or, preferably, milk.

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as the heat, besides affecting the flavour, would partially destroy the valuable vitamin content so carefully preserved during manufacture by the use of the latest vacuum plant.

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Important discoveries by eminent immunologists enable The British Drug Houses Limited to offer to members of the medical profession an anti-diphtheritic serum possessing the following properties unique in the history of diphtheria immunisation:—

Concentration of 2,500 units per c.c.
Protein content of less than 10%
Maximum reaction velocity unimpaired

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Super-concentrated and Refined—2,500 units per c.c.
Rubber-capped vials of 4 c.c. containing 10,000 units
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The latest method, which has proved so useful with patients who object to injections, consists of local treatment with Staphylococcus Antivirus. Reports from hospitals and Skin Specialists state that this Antivirus is as efficient or more efficient than subcutaneous inoculations with Vaccine.

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Practitioners who prefer the more orthodox forms of treatment are recommended to use Detoxicated Staphylococcal Vaccine; its special feature is the production of great immunity with little or no reaction. This is achieved by removing all the toxic elements of the germ during the preparation of the Vaccine. Doses up to 50,000 millions are given without malaise.

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To meet the requirements of those who consider that a slight reaction has definite therapeutic value Ordinary Staphylococcal Vaccine is available. It has proved generally successful and is very inexpensive.

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Orchitic
Ovarian
Ovarian Residue
Ovo-Testis
Ovo-Thyroid
Ox Gall
Pancreas
Pancreatin
Parathyroid
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Concentrated Fluid Extract of LIVER

for the treatment of Pernicious and Secondary Anæmia, Banti's Disease, and Acute Aplastic Anæmia.

The Palatable, "Ready to take," Stabilised product, accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in their list of New and Non-Official Remedies.

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Patient now on small amounts of Liver.

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Peptonised Chicken Jelly

(BENGER)

These can be served either in their jelly state with a few biscuits, or dissolved in hot water in "beef-tea" form, making a valuable restorative readily assimilated by weak digestions.

Containing much of the flesh-forming elements of the meat in soluble form, these peptonised preparations are superior in effect to ordinary essences or extracts. Added to soups they considerably increase the nutrient value.

In hermetically sealed glass jars, 2/- and 3/- each.

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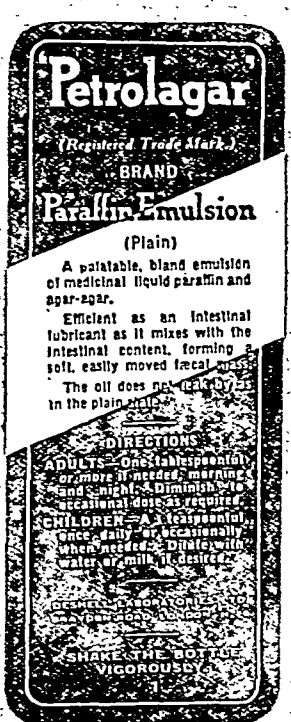

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Bed patients are hardly fit subjects for the old-fashioned drastic purge, yet regular bowel motion must be maintained.

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"Petrolagar" Emulsion provides ease and comfort for your patients by giving them a natural bowel motion with no irritation whatsoever.

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A low red-blood cell count can be produced by the insidious auto-intoxication of bowel origin, as well as by the more obvious causes—haemorrhage, prolonged fever, chronic septic infection, wasting diseases, etc.

A vicious circle is formed, the toxaemia from the bowel impoverishing the blood, which in turn leads to impaired function of the intestinal muscle and more stagnation and toxaemia results.

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Andrews Liver Salt breaks the vicious circle by removing the products of intestinal stasis, purifying the blood and promoting a sense of well-being and energy.

Before prescribing iron, a course of Andrews, the antacid effervescing saline, will be found beneficial.

Dose: ½-3 *teaspoonfuls in a glass of water.*

N.B. *A large size tin will be sent free on request to any member of the medical profession.*

Andrews Liver Salt

SCOTT & TURNER LIMITED, Works and Laboratories at Newcastle-on-Tyne.

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EIGHTH PERIOD—circa 750 B.C. to A.D. c. 404

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TRADE MARK 'TABLOID' BRAND
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Also issued :—

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Bottles of 100, 0·0001 *gm.*, 3/-, *and* 0·001 *gm.*, 10/- *each*

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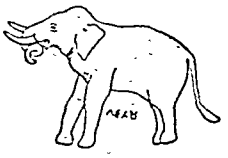
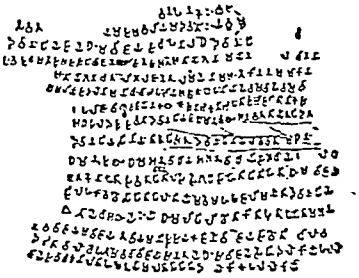


EDICT OF ASOKA, IN WHICH HE EXPRESSES HIS ABHORRENCE OF WAR AND PROCLAIMS HIS IDEAL OF TRUE CONQUEST.—In this edict, which may still be seen carved upon rocks in India, Asoka set before his people new ideals in statesmanship: "The Kalingas were conquered when His Sacred and Gracious Majesty the King had been consecrated eight years. One hundred and fifty thousand persons were thence carried away captive, one hundred thousand were there slain, and many times that number died. . . . . That is a matter of profound sorrow and regret to His Sacred Majesty. . . . . If a hundredth part or the thousandth part were now to suffer the same fate, it would be a matter of regret to His Sacred Majesty. Moreover, should anyone do him wrong, that, too, must be borne with by His Sacred Majesty, so far as it can possibly be borne with. Even upon the forest folk in his dominions His Sacred Majesty looks kindly, and he seeks to make them think aright, for otherwise repentance would come upon His Sacred Majesty, . . . because he desires for all animate beings security, self-control, peace of mind and joyousness."

DATE: c. 250 B.C.



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"RYVITA CRISPBREAD MAKES YOU FIT—AND KEEPS YOU SLIM"

A Lecture
ON
THE DEBILITATED CHILD.*

BY
C. WILFRED VINING, M.D., F.R.C.P.,
ESSOR OF CHILDREN'S DISEASES, LEEDS UNIVERSITY; PHYSICIAN TO THE CHILDREN'S DEPARTMENT, GENERAL INFIRMARY, LEEDS.

are living at a time when prevention of disease and recognition of its earliest signs are being called for no uncertain voice, and those of us who are specially gaged in work amongst children realize only too well difficulties met with in the understanding and interstation of defects in health at an age period when one uld expect the problem to be in its simplest form.

The system in vogue in this country, while it offers erty of the subject and free choice of doctor, has the advantage that it leaves the decision as to whether the ild needs medical attention to the parent rather than to e expert. No doubt the development of the school edical service will do a great deal to remedy this. any abnormalities which we, as experts, recognize as idence of health defect, possibly of a serious nature, are oked upon by parents as part of the natural development the child. Pains in the legs are growing pains, nervous nditions are due to worms, refusal to gain weight proves at the child is wiry and following in his father's footeps, or the child's C3 condition is accepted as evidence a delicate constitution inherited from the mother's side.

I have met with some twenty children with established quired heart disease who had not at any time been der medical treatment. In none of these children had ere been a history of chorea or joint rheumatism, and five of them the most detailed inquiry failed to elicit om the parent evidence of any health disturbance whatever. Personally I refuse to believe that a child can quire valvular disease without there having been some gree of health disturbance during its development. As e who has worked in a large out-patient department for me fifteen years, during eight of which my patients have en children, nothing has impressed me more than the rge number of children who are brought with health fects which are accompanied by no gross physical signs, t whose disabilities are more or less serious, frequently ronic, and most baffling in their refusal to respond to y treatment we can offer in hospital practice.

I have deliberately chosen the title "The debilitated ild" in order to allow myself freedom to discuss the bject from any point of view. I prefer not to use the rd "delicate" because this infers congenital weakness. hile a certain minority of these children are undoubtedly e victims of a bad start in life, I am convinced that e majority acquire ill health for reasons and from causes hich I propose to touch upon in this lecture.

The debilitated child is brought to us for many reasons, d his health abnormalities can be viewed from different gles. The majority of these children are found among e hospital class, though by no means an inconsiderable inority are found amongst the children of the well-to-do. am going to deal with the age period 3 to 12 years—most the cases range between 5 and 10 years—and I can best velop my subject by giving a list of the symptoms presnted by these children and noticed during periods of bservation varying from a few months to several years.

The first perfectly just criticism will be that I am inching together a number of entirely different conditons. My answer is that I am merely stating the actual mptoms of a large group of children whose histories peat themselves with monotonous frequency, and whose ppearance, behaviour, and physical condition seem to dicate that they have some features in common which make it desirable that they should be studied, at least in the first instance, as a group. Can we make any kind of order out of this seeming confusion?

Analysis of the Symptoms of the Debilitated Child.

Numerical frequency of symptoms presented by (A) 300 debilitated children, compared with relative frequency of the symptoms in four arbitrary subgroups—namely: (B) 121 toxic debility or rheumatic type cases, (C) 61 supposed tuberculous cases, (D) 55 cases of "chronic intestinal dyspepsia," and (E) 63 "nervous" children.

	A.	B.	C.	D.	E.
Nervousness	203	68	38	39	63
Loss of appetite	237	86	44	48	42
Wasting or "no gain"	203	74	47	37	45
Tired feelings	164	67	38	30	29
Pallor or "faints"	152	54	30	33	35
Disturbed sleep	147	60	24	26	37
Constipation	145	56	26	31	29
Limb pains	120	58	23	20	29
Headaches	107	49	20	18	20
Threadworms	97	29	20	29	19
Abdominal pain	91	32	15	25	19
Habit spasm	59	16	5	7	31
Bilious attacks	51	22	7	15	7
"Sweating"	50	13	22	9	9
Nocturnal enuresis	48	9	7	9	21
Sore throats	41	27	6	3	5
"Swollen glands"	37	21	6	5	5
Loose stools	33	7	7	12	7
Latent chorea	29	13	2	0	12
Pain in the side	28	12	8	5	3
Depraved appetite	21	8	5	5	3

Without for the moment committing ourselves to an opinion as to the production of these symptoms, we can at least view them as belonging to three main groups: (1) those related to the digestive system and intestinal tract, in which group we would place abdominal pain, constipation, and loss of appetite; (2) those suggesting the presence of a toxaemia—for example, aching limbs, tired feelings, listlessness, and headaches; and (3) those related to disturbances of the nervous structures—namely, nervous irritability, fidgety states, habit spasm, disturbed sleep, nocturnal enuresis, and nervous unrest generally. The children frequently seem to classify themselves in this way, certain symptoms being so prominent that we label this child as an example of *chronic intestinal dyspepsia* (or, as Reginald Miller[1] has designated him, the "intestinal child"); another child, with aching limbs, tired feelings, and want of energy, pointing to the presence of toxaemia, we may label as "toxic debility" or the "rheumatic type"; while a third child we may label "nervous" because of the prominence of the nervous manifestations. The symptoms of another child may suggest the possibility of tubercle, in that wasting, cough, catarrhal bronchial tubes, and sweating are prominent in the history obtained from the parent. I want, however, to make it quite clear that any such grouping of symptoms and children is arbitrary, and is carried out merely to call attention to certain types which present themselves at the clinic. Too much pigeon-holing and classification may lead to failure to appreciate the main underlying defects. We find that nervousness of some degree is common to all groups, that loss of appetite is found as frequently in other groups as it is in the child classified as "intestinal," and that constipation, loss of weight, and sweating are to be found distributed among all types. In order to show this I have compared the four subgroups with the main group as a whole.

The clinical examination also reveals certain physical characteristics which are more or less common to all the

* Abstract of a British Medical Association Lecture delivered to Darlington Division.

groups. The children are underweight, pale, sometimes sallow, and many have dark rings under their eyes. They are usually fidgety, and some show habit spasm, and generally they give the impression of being timid and apprehensive. Their muscular systems are toneless and poorly developed, and this tends to produce stooping and general "flop," which results in an exaggeration of the natural curves of the spine and prominence of the abdomen. In a proportion of the children the abdomen actually is slightly distended. The glands in both triangles of the neck are more easily felt than in a healthy child, and this is specially true of the glands of the posterior triangles. This is not merely a local enlargement, as the axillary glands are nearly always felt to a degree unusual in the healthy child, and sometimes the hyperplasia is very evident. The tonsils are frequently enlarged and sometimes unhealthy in appearance; evidence of adenoids is not uncommon. Needless to say, the degree of physical defect varies from case to case, and in many the degree of physical debility has not reached a stage recognizable by the parent, who may assure us that the child was perfectly well until a week or two previously, when a particular symptom manifested itself.

The Explanation of the Symptoms.

What explanation can be offered for these symptoms? In discussing this I must refer to the subject of diathesis, which has been revived during recent years. The expressions lymphatic, exudative, nervous, rheumatic, and tuberculous have been used from time to time. I doubt whether they have done more than to make confusion worse confounded.

Dr. H. C. Cameron[2] has suggested the division of children into two main groups—namely, the exudative diathesis group, which includes the old scrofula type, and the neuro-arthritic group. He believes that the two types are the result of inherited constitutional peculiarities which make the child react differently to abnormalities of his environment. Cameron regards catarrhal affections generally, glandular enlargements, and the tendency to rheumatic and tuberculous affections as characteristic of the former group, and nervous upsets, cyclical vomiting, vasomotor disturbances, and lack of energy as characteristic of the latter group. My own feeling is that the insistence upon a diathesis as an explanation for the way in which the child responds to infection and environmental stimuli is not without value in some cases, but I doubt whether it is possible in the majority of children to make any such differentiation. I fancy it is better to accept each case on its merits rather than endeavour to judge it in the light of a preconceived theory of diathesis, although it must be confessed that Cameron's "nervous child," with his special liability to metabolic upsets, is very true to life.

The Nervous Child.

Though no one explanation adequately covers all cases, certain facts and probabilities may be admitted. Nervousness is of two main types. There is the unrestrained and more positive type, in which the nervousness is more active and insistent; the children of this type are highly strung, emotional, restless, and mentally alert, though lacking the ability to concentrate; they are specially prone to habit spasm, so-called latent chorea described by Reginald Miller,[3] tired feelings, aching limbs, nocturnal enuresis, bilious attacks, and headaches. In the second and, in my opinion, more common type the child is characterized by irritability of temper, fretfulness, and timidity. I would, however, again emphasize the point that there is no clear line of distinction, the majority of our cases presenting nervous symptoms in all kinds of groupings and in combination with other abnormalities in a way that makes it hopeless to attempt classification. There is, however, no doubt that only in a minority of these children is there an inherited nervous instability, but while symptoms such as habit spasm, bed-wetting, and night terrors may occur in children who by no stretch of the imagination could be called debilitated, it is when the child with the inherited instability become debilitated that these symptoms are acutely developed. But taking nervousness generally, I would say that the large majority of nervous children acquire their nervous instability during life, and that it is among debilitated children that the majority of the nervous cases are to be found.

The Causes of Acquired Nervous Instability.

While agreeing that the environment, in which I have included parental care, bad hygiene, and excessive psychical and physical stimulation, will accentuate the condition, it is my belief that the two chief factors producing nervousness are chronic toxaemias and deficiencies in the diet. The deficiency is usually not in total calories—the debilitated children are not starved children in the true sense of the word—but a relative deficiency in one or more essential constituents, which, acting over a prolonged period, gradually brings about debility and damage of the more delicate nervous structures of the growing child. I have myself pointed out that many of the symptoms of these debilitated children can be legitimately grouped under the heading of rheumatic toxaemia. All authorities are agreed that nervous instability forms an important part of the rheumatic picture, and the question at issue would therefore appear to be this: Is the nervous instability evidence of an inherited diathesis favourable to the development of the rheumatic affection, or of an acquired health defect which may precede by months or years the full development of rheumatism?

The presence of toxaemia is difficult to prove or disprove, but it is not unreasonable to believe that many of these nervous phenomena are caused by toxic irritation. The toxic state may be bacterial or metabolic in origin. Cameron,[5] and recently Osman,[6] have suggested that the cause of many of the nervous phenomena is an acidosis or ketosis, and recommend as treatment the free use of sugar and the reduction of fat in the diet. We find acidosis not infrequently amongst children whose parents are endeavouring to ensure against tuberculosis by forcing on them milk foods and cream, and acidosis may also occur in the child whose diet does not contain excess of fat, the explanation then being that the child possesses an inherited unstable metabolism and a nervous system which are easily influenced by environmental and toxaemic stimuli.

My criticism of this explanation would be this: While agreeing that the immediate states of acidosis can be met by increasing the sugar ration, I would hesitate to believe that the prevention and cure of the debilitated state of which its acidosis exists in the free use of easily assimilated carbohydrate. In the first place, the majority of these children get little but carbohydrate. Though their diet may be short in total calories it is certainly not relatively short in carbohydrate calories. A starvation diet may result in acidosis, and the child with a lost appetite may get his acidosis in this way, but this is merely a vicious circle which may be broken temporarily by the addition of sugar. The prevention and cure of the underlying condition which has led to the formation of the vicious circle is a very different problem. In the second place, acidosis is far more frequently the result of a toxaemia than it is a primary condition, and if we concentrate our attention upon the acidosis we may miss its underlying cause. I have no doubt that Dr. Cameron and Dr. Osman would be the last to insist that carbohydrate is the most important constituent of the child's diet, and any criticism I have put forward is offered rather to emphasize the importance of the other constituents of the diet, specially of the proteids, which of late have been relegated to a less important position than they deserve.

The throat and the alimentary tract suggest themselves as the two important points from which toxaemias may arise. The time has not yet come to define accurately the relationship of unhealthy conditions of the nasopharynx to the debilitated state; it will require a wide statistical survey over a considerable number of years before the final verdict can be given. The problem is, however, of such importance that I am bound to consider it.

Abnormalities of the nasopharynx are not confined to children of the hospital class, but I know of no figures

t give the relative incidence between one class and ier. Such statistics would possibly help in deciding actors at work causing enlargement of tonsils and ids. There are many who would estimate the impor- of the abnormalities of the nasopharynx in this way. rgement of tonsils and adenoids is common to all s. The cause of the enlargement is repeated infec- , to which all are prone. Among those children who lso debilitated or whose environment is defective such ion to infection is likely to result in a greater degree nhealthiness of the nasopharynx, and it is likely that rption of organisms and their toxins will take place readily. Hence the more frequent development of otoms due to septic absorption amongst these children. as been stated that the reason why Eton boys are free rheumatic infection is because 70 per cent. of them had their tonsils and adenoids removed before joining school. During 1922 Kaiser[7] reported from America result of the operation upon the weights of a series of 0 children between the ages of 3 and 15 years. He es:

"They were all urgent cases and presented themselves for opera- because of throat symptoms, and not because of malnutrition. compared with similar children 7 per cent. were overweight, er cent. were of average weight, and 34 per cent. were under- ght. After periods of six to nine months the percentages of e three weight groups were changed so that 50 per cent. of underweight group had attained normal weight."

Obviously diseased tonsils and adenoids do not necessily impair nutrition, but the improvement in the underght group after their removal suggests that they may so. Recently Paterson and Bray[8] in this country have wn that in selected cases removal of nasopharyngeal ection was followed by increase of weight and the aring up of numerous constitutional symptoms, apart om any improvement in the local condition.

I would, however, remind you that there are other sides the problem which require to be set off against these dings and opinions. In the first place, the numerous sturbances and symptoms which may appear in conjuncon with the unhealthy nasopharynx do frequently occur children whose throats show no abnormalities and whose ands at the angle of the jaw are not enlarged. The eumatic affection, including heart lesions, occurs in ildren whose throats have been thoroughly cleared. It not uncommon to find that certain symptoms, such as uresis or bilious attacks, cease immediately after the eration, only to recur again after some months. This in keeping with the peculiar way in which these symtoms will occur for a time in connexion with all kinds psychological stimuli, and certainly one could instance ases in which enuresis started for the first time after the peration; indeed, I need hardly remind you that this peration performed upon a nervous child sometimes accenuates the nervous condition in a most distressing way. would also point to the frequency with which aural disharge follows the operation and to the by no means nfrequent development of enlargement of the cervical lands during the months or years which follow. These nfortunate happenings, and the fact that acute heumatism, and especially chorea, occasionally follow in he wake of the operation, may, of course, be attributed to he stirring up of a germ nest, with resulting dissemina- ion into the local structures or the system generally, and t could be said that the eradication of the germ nest was he lesser of two evils, notwithstanding the results which ollowed. But here again it should be mentioned that cute rheumatic chorea, which all agree is a streptococcal ncephalitis, may undoubtedly follow a shock of any type.

J. H. P. Paton[9] has recently compared children who ave had the operation performed with children who have ot. Both groups of children belong to the professional nd well-to-do class and are pupils attending a large oarding school. He writes:

"It is evident that those subjected to the operation were not nly no better than the rest, but were actually worse in practically every particular with the exception of enlarged cervical lands."

My own personal impressions have been that when the local condition of the throat is obviously unhealthy and the nasopharynx is obstructed, the operation, besides remedying the local condition, does undoubtedly produce good and often striking results in the child's general health. These results, however, are often only temporary, and the symptoms not infrequently return after a few months. I have also seen children whose debilitated state seems to date from the removal of their tonsils and adenoids, and a recent review of cases has increased my belief that the routine removal of the tonsils and adenoids of debilitated children is a mistake and should only be undertaken after a thorough review of the child's condition. I have figures which refer to 100 children who have had their tonsils and adenoids removed and 200 children who have not; both groups belong to the poorer classes of the community, and all of them come under the broad classification of debilitated children. These children have been watched for periods ranging from six months to three years, and the figures relating to the tonsillectomized group only deal with the post-operation period. I find that for each six months period the "*no operation*" group shows an average greater gain of weight than the "operation" group.

Of the 100 tonsillectomized children 23 had had the operation performed previous to their first attendance at my clinic, and in only 29 other cases was it possible to compare the weight gains before and after the operation. In the six months after operation 12 showed a greater gain, 14 showed a lesser gain, and 3 showed an equal gain in weight. Comparing periods of twelve months before and after the operation, 3 showed a greater gain in the year following operation, 7 showed a lesser gain, and 1 showed an equal gain.

A legitimate criticism of my figures would be that the children who ceased to attend after operation would quite likely be those who had so improved in health that further attendance was deemed unnecessary by the parent. I can only say that in a small minority who were looked up and prevailed upon to return for examination the gain in weight did not encourage me to believe that failure to attend was due to return of health. In my opinion the benefits derived from this operation have some relation to the chances of convalescence afterwards, to the type of home to which the child returns, to the state of the child's nutrition at the time, and, lastly, to the efficiency of the mother. This also may be said: anything short of complete enucleation is useless, and should be discouraged. The operation should not be undertaken in cases where the local condition does not warrant it merely on the off-chance that the child's health defect may be improved.

While discussing the influence of the toxaemias the question of tuberculosis must be mentioned. Many of these children are labelled as tuberculous or pre-tuberculous. Some 50 per cent. of them give a positive skin reaction to tuberculin, but I am confident that their debility and their symptoms are not due to tuberculous disease. Watched over a period of years they do not behave like tuberculous cases, and they do not blossom out into frank cases of tuberculosis during adolescence. The age period I am dealing with is particularly free from mortality from tuberculosis, and while risking the criticism of dogmatism I would say that frank tuberculosis arising during adolescence is usually a fresh infection developed from contact with another individual with the disease.

It may very naturally be suggested that a local gland lesion might be sufficient to produce a debilitating influence and toxaemia. This I would very much doubt, as in my experience purely local disease, when obviously present, does not produce either debility or the kind of symptoms we have been discussing.

Digestive Disturbances and Debility.

A proportion of cases of debility with symptoms referable to digestive processes could be classified at once as examples of so-called chronic dyspepsia, and severe cases fall into line with the "mucous disease" described by the late Dr. Eustace Smith.[10] But among all these debilitated children constipation or loose stools—much more frequently the

former—loss of appetite, abdominal pain, threadworms, and mucous discharge occur with considerable frequency, and it is only when these symptoms show themselves prominently in the history and clinical picture that the condition is labelled "dyspepsia." The word "dyspepsia" is unsatisfactory, as it implies local disturbance in the alimentary tract, and tends to direct our attention from the wider and more important basis upon which the debilitated state develops. I may instance in this connexion the symptoms of threadworms. Few fidgety children escape being treated for worms, the reason being that parents have learnt to appreciate how frequently threadworms appear in the stools of such children. The parasites may occur temporarily in the excreta of healthy children, yet their continued presence is an indication of an underlying state of the bowel wall which makes it possible for the worm to establish itself. Exactly similar clinical states are seen in children whose stools are free from worms, but which contain large quantities of mucous material.

We are dealing, I believe, with a constitutional and nutritional disturbance in which all the systems of the body are involved, but in which the alimentary tract and digestive function are more particularly implicated. There is an impairment of the defence mechanism, and a defect both in the secretion of the different digestive juices and in the absorbing powers of the bowel wall. If this view is accepted then, notwithstanding the assertion of the bacteriologist and the pathologist that microbic and toxic absorption from the intestinal tract is unlikely, it is not unreasonable to believe that many of these toxaemias arise within the digestive system.

It is this conception of the debilitated state which leads me to suggest that we are dealing with a health defect which belongs to the group of deficiency diseases. Authority is always emphasizing the importance of a better diet for children, yet when the problems of subnutrition are investigated and discussed the importance of the diet is not always insisted upon to the same degree as the other factors of the environment.

This may be illustrated by the results of a recent investigation undertaken on behalf of the Medical Research Council[11] to ascertain the relationship of defective growth and health of children to poverty, diet, and other environmental factors. The main conclusion arrived at is that the chief factor determining growth and health is maternal efficiency, which, we might assume, would be correlated with good and bad feeding; yet the opinion expressed in the report was that the family diet does not explain discrepancies in nutrition and health between different groups of children. Furthermore, the statement is made in the report that a diet containing 10 to 12 per cent. of protein is well balanced with regard to this essential constituent—a statement which seems to me seriously to impair the value of the conclusions finally arrived at.

A 10 to 12 per cent. protein ration is the recognized adult allowance, though even for an adult this may be insufficient if the source of the protein is largely vegetable. It is also likely that the adult members of the family would consume relatively a greater amount of the available protein, especially of the animal type, leaving to the smaller members of the family an amount of protein far below their minimum requirements, together with that part of the household's food which has always been looked upon as safer and more suitable for small children—namely, the carbohydrate. Protein is indispensable and non-interchangeable. The problem of the adult and the child are entirely different, and all authorities agree that the younger the child the greater the amount and proportion of protein needed for maintenance, repair, and growth. Holt and Fales[12] say that the average adult requires approximately 0.45 gram of protein per lb. of weight, and suggest that it is reasonable to suppose that the child requires 0.45 to 0.68 gram per lb. of weight for maintenance alone, and insist that more is necessary for growth, and that for the child animal protein should be given in preference to vegetable. They quote Gillett, who collected information from the literature up to 1917 with reference to the intake of healthy children between 2 and 15 years, as stating the protein intake to be 1.5 to 1 gram per lb. They also quote Gephart and Camerer, who give the amounts as 1.8 to 1 gram per lb. for children and adolescents.

The observations of Holt and Fales upon a series of healthy children over 1 year indicate that approximately 15 per cent. of the total calories taken are protein calories, and that two-thirds of the protein is of animal origin. They also noted that the younger and more active child took the larger proportion. Crozer Griffith[13] states that 20 to 25 per cent. of diet should be protein and 50 per cent. of it should be of animal origin.

Corry Mann[14] has recently compared the effects of adding certain foods to the basic diet of groups of boys living under identical conditions; his results show that the daily addition of a pint of milk causes greater increase in height and weight than the addition of other foods—for example, casein, butter, etc. Although adding casein instead of a pint of milk meant giving some 300 less calories, yet it appears to be inferred that the greater gain in height and weight when milk was given must be due to other constituents than the protein. Leighton and Clark[15] have shown, however, that the gain in weight and height is much the same, whether whole or separated milk is given, and I suggest that this proves that it is the protein which is the important factor.

Hutchison[16] warns us against the danger of protein underfeeding. He writes that habitual underfeeding with protein is more injurious than underfeeding with fat and carbohydrate, and leads to what he aptly calls threadbare tissues. I am satisfied that the majority of these children do not receive anything like the amount of protein necessary for maintenance, repair, and growth. That protein is not the only deficiency is likely. There is a considerable amount of available evidence suggesting that lack of vitamin A is a factor in lowering resistance to infections (Green and Mellanby's[17] work in this connexion is important), and I would mention the work of McCarrison[18] in connexion with lack of vitamin B.

Treatment.

Prophylaxis should be our first consideration, and the future lies in that direction. The problem of the child's diet is bigger than medicine, but not until the medical profession clearly defines what that diet shall be and how it stands in relation to the child's health shall we get authority to realize that diet stands higher than education and psychology in the full development of the child's mental and physical health. It is useless to expect improvement in health by means of throat operations, artificial sunlight, commercial concentrated vitamins, and psychological clinics, while at the same time the child's tissue cell is seriously handicapped by persistent underfeeding of essential food constituents.

Immediate symptoms may be relieved by sugar, alkalis, laxatives, malt preparations, sedatives, and so forth; convalescent treatment and holidays from home are temporarily useful; attention to the throats of properly selected cases may produce immediate improvement; but all these together cannot remove from our midst the debilitated child while the diet remains persistently unsatisfactory.

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A CRITICAL STUDY OF UNDULANT FEVER.

FROM A SERIES OF SIX CASES IN THE HOSPITAL FOR TROPICAL DISEASES, LONDON.

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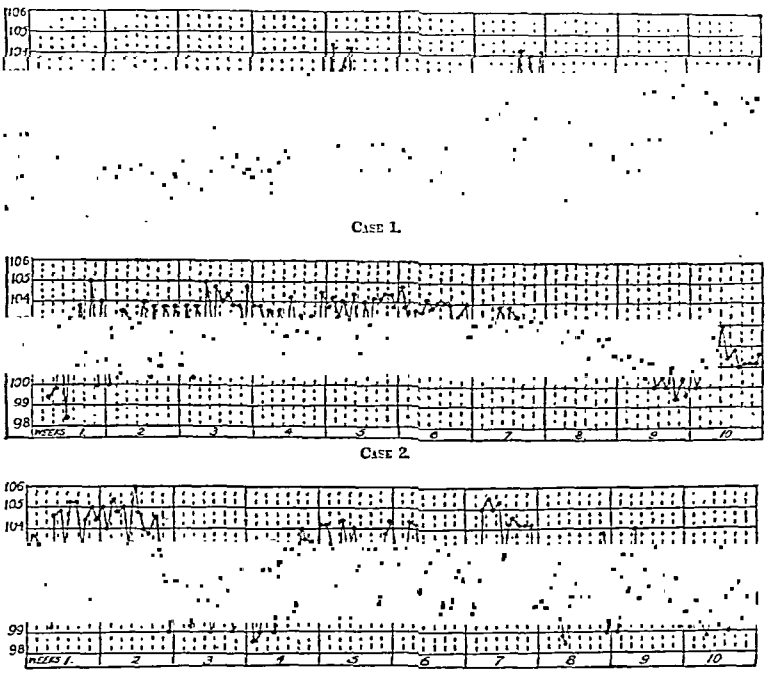
UNDULANT fever (formerly known as Malta fever) is becoming sufficiently rare in practice in England to excite comment whenever it occurs, while the close association, or identity, of *abortus* fever in man and cattle with the classical type of undulant fever is at present attracting universal attention. We therefore consider it an opportune moment to survey a series of cases which have occurred in the practice of this hospital during the last eight years. It shows clearly enough, from the localities from which the patients were derived, the almost universal distribution of undulant fever, for here we have for comparison a series of cases derived from India, East Africa, Peru, and from England itself. No cases, however, have come from the Mediterranean.

There are several points upon which we are at liberty to comment, as can be gathered from the accompanying tables.



CASE 1.

CASE 2.

CASE 5.

Charts in the first ten weeks of the fever in three cases, showing variations in type of temperature.

DIAGNOSIS.

First, as regards the initial diagnosis, it is noteworthy that the impressions recorded were those of typhoid in four cases, malaria in another, and influenza in the sixth. Added to this we might mention that the localization of pain to the margin of the gums and to the eyes in the initial stages of the fever first drew attention to possible defects in these organs. It is fair to state that in making these initial tentative diagnoses there was some justification of a diagnosis of typhoid or malaria in the previous history of the patient. Nevertheless, we can say that all the cases, surveyed as a whole, presented a definite diagnostic syndrome. In this category we include a high initial remittent pyrexia, and it is necessary to emphasize that this may be high (up to 105° F.), resembling in this respect that of true typhoid (see charts). Splenomegaly of a considerable degree was present in every case, and should be considered a prominent factor in making a diagnosis. The intradermal "melitene" reaction of Burnet was tried in three instances and proved to be successful. The skin reaction remained visible for forty-eight hours.

SYMPTOMS.

Arthritic pain was a constant and characteristic feature associated with periarticular effusions which are particularly transient, appearing first in one joint, and then, after a short interval, in a neighbouring one. In addition to the joint pains, the fasciae and bony prominences exposed to the greatest amount of pressure are also affected. We would emphasize that the headache of undulant fever, which is so persistent in the early stages of the infection, has a characteristic of its own. It is not so dull or stuporose as that of typhoid, but it causes intractable insomnia without any appearance of delirium or dulling of the mental faculties. Another characteristic which would assist the practitioner in the differential diagnosis from typhoid is the epistaxis which appears early in the typhoid group, but correspondingly late in the course of undulant fever. It is really part of a general tendency to haemorrhage, as instanced by the bleeding from the gums in three cases, for which the patients had all their teeth removed in the initial stages of the illness. Purpuric eruption resembling that of scurvy appeared in one, and in one particularly protracted case frequent haemorrhages from the urethra were recorded.

Rigors of a subacute character were frequently noted in three cases, with the exacerbation of the fever following upon a comparatively quiescent period. These signs may be taken as affording additional evidence in the differential diagnosis from typhoid, in which they are rare.

The tendency in the later stages of the disease for *Brucella melitensis* to spread by the lymphatic route (a method of spread which is found also in *Br. abortus* in cattle) is one to which hardly sufficient attention has been drawn. There occurs a specific adenitis in this disease (about the fourth month). The glands affected were the cervical group in three, the inguinal set in three, and in two the symptoms were referred to the intra-abdominal glands at the portal fissure, which, if unrecognized, might lead to the suspicion that the patient was suffering from some affection of the gall-bladder. That orchitis may supervene in undulant fever has long been recognized, and it is probably of the same nature as the adenitis already referred to. Testicular pain with some degree of enlargement of the organs themselves was observed in half the number of cases. Profuse and drenching sweats were noted in all. The sweating is universal and occurs mostly at night, necessitating the frequent changing of the bedclothes. A peculiar sour and penetrating odour characterized the sweats in two instances—the "tang" of the odour somewhat resembling that of typhoid to those who are able to appreciate it.

It is hardly necessary for us to comment upon the characters of the temperature charts which are reproduced herewith and which show the curious rhythmical variations. From the figures worked out from our charts the tendency

TABLE I.—*Clinical Symptoms.*

Symptoms.	Case 1.	Case 2.	Case 3.	Case 4.	Case 5.	Case 6.
Fever	+	+	+	+	+	+
Sweats	+	+	+	+	+	++
Arthritis	+	+	+	+	+	+
Spleen	+	+	+	+	+	+
Headache	+	++	+	+	++	+
Adenitis	+	+	−	−	+	−
Eye pains	+	+	+	+	+	+
Photophobia	+	+	−	+	−	−
Sore throat	+	−	−	−	+	−
Haemorrhage:						
1. Epistaxis	+	+	+	+	+	+
2. Gums	−	+	+	+	−	−
3. Urethral	−	+	−	−	−	−
4. Purpura	−	−	+	−	−	−
Testicular pain	−	−	+	+	−	+
Sudaminary odour... ...	+	−	+	−	−	−

is for the maximum* rise of temperature to take place between 6 and 10 p.m. The lowest temperatures on an average are recorded between 10 a.m. and 2 p.m.

SEQUELS.

Amongst the distressing sequels noted were sciatica of a most persistent character lasting for weeks, and once with pain localized to the sacro-iliac joints, possibly brought about by haemorrhage into the joint cavity. Muscular wasting and laxity of the ligaments of the knee and foot causes a considerable degree of disability during convalescence.

CLINICAL PATHOLOGY.

An analysis of the clinical pathology shows that the blood count throughout all the stages of undulant fever is generally normal. No rise in the number of leucocytes was noted in any instance. On the other hand, one case showed definite changes in the red blood corpuscles, and this was due undoubtedly to persistent purpura (Case 3). *Br. melitensis* was isolated by blood culture in four instances, and it is to be noted that the organism can be isolated from the blood stream at any period of the disease up to absolute convalescence, even when the patient's condition would lead one to suspect a septicaemia, and it is probably true that the organism is not actually destroyed in the blood stream, but that the infection "burns itself out." It is to be noted, too, that in order to secure success in blood culture the inoculated medium must be incubated for at least ten days; the same applies to the cultivation from the urine. In one instance success was obtained from a mid-stream specimen which proved to be uncontaminated; on the other hand, no success was obtained with catheter specimens.

TABLE II.—*Pathological.*

	Case 1.	Case 2.	Case 3.	Case 4.	Case 5.	Case 6.
R.B.C.	4,900,000	4,770,000	3,420,000	5,000,000	—	4,000,000
W.B.C.	8,110	7,200	4,400	6,900	6,000	8,600
Hb.	85%	85%	75%	90%	—	80%
Polymorphs ...	48%	—	50%	37%	—	42%
Lymphocytes...	44%	—	42%	50%	—	46%
Mononuclears	7%	—	8%	10%	—	12%
Eosinophils ...	1%	—	0%	3%	—	0%
Parasites ...	Nil	Nil	Nil	Nil	Nil	Nil
Anisocytosis ..	—	—	Anisocytosis	—	—	—
Poikilocytosis	—	—	Poikilocytosis	—	—	—
Blood culture	Positive once only	Positive once only	Positive on two occasions	Negative throughout	Positive once only	Negative throughout
Urine culture	Negative throughout	Negative throughout	P. sitive once only	Negative throughout	Negative throughout	Negative throughout
Agglutinates:						
Br. melitensis	1 in 640	1 in 80	1 in 1,280	1 in 640	1 in 620	1 in 500
B. typhosus	—	—	—	1 in 320	—	—
Br. abortus	—	—	—	1 in 480	—	—

* *Maximum rises:* 2 a.m., 7 per cent.; 6 a.m., 14 per cent.; 10 a.m., 2 per cent.; 2 p.m., 6 per cent.; 6 p.m., 33 per cent.; 10 p.m., 38 per cent.

SEROLOGICAL TESTS.

The agglutination test with dead emulsions of *Br. melitensis* (Mediterranean strain) proved of diagnostic value in every case when performed by the macroscopic method. On each occasion the initial diagnosis was made by this test on Garrow's agglutinometer, which proved to be as reliable and much more expeditious, than the tube method. We would emphasize that the titre of agglutination appears to have no bearing on the prognosis, nor does it indicate in any way the probability of isolation of the organism by blood culture. For instance, in the most severe case of our series (Case 2) the titre of agglutination to *Br. melitensis* never rose above 1 in 80.

TREATMENT.

On the question of treatment it is a matter of regret that we have nothing very positive to record. As regards the efficacy of vaccine we prefer to keep an open mind. As will be seen by Table III, all varieties of vaccines were tried. The effect of stock vaccines made from standardized laboratory cultures of *Br. melitensis* in doses of from 60 to 300 million were compared with those of autogenous vaccines made from organisms isolated from blood culture and with a polyvalent vaccine issued by the Medical Research Council and composed of many strains. We could obtain no evidence that the use of vaccines given over a prolonged period of three months or more in any way modified the course of the disease.

TABLE III.—*Treatment.*

	Vaccines—				Other Treatment.
	Stock.	Autogenous.	Med. Res. Council.*	Bacillus typhosus.	
Case 1 ...	Million. 980	Million. 310	Million. 1,300	Million. —	Rectal arsphenamine 1.8 gm.; N.A.B. 0.3 gm.
Case 2 ...	—	1,275	—	—	—
Case 3 ...	100	900	—	—	N.A.B. 0.6 gm.
Case 4 ...	—	—	—	400	—
Case 5 ...	—	125	—	—	—
Case 6 ...	475	—	—	—	—

* Polyvalent (Douglas).

TABLE IV.—*Miscellaneous.*

	Duration of Illness.	Infecting Agent.	Place of Infection.	Profession of Patient.
Case 1 ...	12 mths.	Traceable to goats carried on board	Indian waters	Ship's engineer
Case 2 ...	15 mths.+	Laboratory cultures of Case 3	London	Pathologist
Case 3 ...	9 mths.	Goat's milk and cream cheese	Lima, Peru	Engineer (civil)
Case 4 ...	5 mths.	? Cow's milk	Kent	Colonel (ret.) farmer
Case 5 ...	4 mths.	Goat's milk	Djbouti, Somaliland	Wife of a planter
Case 6 ...	5 mths.	Goat's milk	Djbouti	Planter

Argochrome, a silver methylene blue compound prepared by Merck's and recommended by Nocht, was tried in one case by rectal enema. Although the methylene blue was absorbed and appeared in the urine, it seemed to have no

beneficial effect at all. Intravenous injections of eusol in doses of 50 c.cm. (double strength in distilled water) was tried in one case, and appeared to have some influence in modifying the fever.

In conclusion we would like to [illegible] edness to Dr. J. T. Duncan of the London [illegible] t Tropical Medicine, and Messrs. F. W. Foste[illegible] for their kind assistance with the laboratory work undertaken in connexion with the above series of cases.

AN IMPROVED DIFFRACTION METHOD FOR DIAGNOSING AND FOLLOWING THE COURSE OF PERNICIOUS AND OTHER ANAEMIAS.*

BY

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Principle of Method.

WHEN a beam of white light is sent through a blood smear it is broken up (diffracted) by the blood cells into the spectral colours. From the distribution of the colours the *mean diameter*, the *degree and quality of anisocytosis*, and the *degree of poikilocytosis* of the red cells can be determined. The application of the method is simpler than the description. No mathematics are required to read Figs. 3 to 11, where the half-circles illustrate the diffraction spectra exactly as they appear on the screen of the apparatus, two at a time, thus facilitating comparison and reading of results. "Diffraction method" and "diffraction micrometer" are suggested as suitable names.†

Need for Method.

The increasing incidence in many countries of Addison's (pernicious) anaemia,[4] together with Minot and Murphy's discovery of the liver treatment,[5] has led to the publication of numerous papers. A curious feature of this literature is the scantiness or absence of numerical data on the diameter of the red blood cells, although the correctness of Hurst's statement,[6] "the most characteristic features of the blood in Addison's anaemia are the anisocytosis and the increase in the average size of the red cells," is at the same time very generally admitted. Red cell measurements evidently are still universally regarded as "research," and not as "routine." This is due to the lack of a suitable method. Direct microscopic measurement,[7] and photographic methods,[8] are manifestly too laborious.

Advantages of Method.

In its present form the advantages of the method are:

1. The only material required is a properly made, unfixed, unstained blood smear. Such smears remain serviceable for years, thus allowing dispatch over long distances, and storage for future reference. Fixed and stained smears are less suitable.

2. The method expresses in tenths of microns the mean diameter of at least one million red cells.

3. The method expresses in tenths of microns the diameter of both the largest and the smallest cells which are present in the smear in considerable number. In other words, it gives the degree and quality of the anisocytosis present. The information thus gained is not sufficient to construct a frequency curve, but ample for practical purposes, as it indicates the essential features of the curve.

4. The method gives the degree of poikilocytosis present in the blood smear.

5. All these determinations together do not take more time than a haemoglobin estimation.

6. The cost of the apparatus is moderate.

7. The method allows the direct comparison of the essential characteristics, mentioned above, of any two blood smears. This is helpful in following the course of a disease. (See Figs. 9 to 11.)

As I am dealing with practical issues only, I shall not go into the controversy about the effect of drying upon the diameter of the cells, nor discuss the problem whether there is such a thing as "the exact diameter" of a red cell.

Theory of Method.

The thin end of a properly made blood smear can be regarded as a diffraction-grating, the cells being opaque and the plasma transparent. A beam of white light passing at right angles through such a smear is diffracted at the edges of the cells, and the resulting light waves, collected by a lens placed behind the blood smear, will produce a series of concentric circular spectra in the focal plane of the lens. The size of these spectra is a function of the diameter of the red cells of the smear, the white cells being too few to count.

For practical purposes only the innermost of the circular spectra need be considered, as being the brightest. The formula expressing the relationship between the various factors, the derivation of which can be found in textbooks on physics, is:

$$d = \frac{1.7\lambda\sqrt{f^2 + r^2}}{r}$$

in which (d) is the diameter of the red cells, (f) the focal distance of the lens used, (r) the radius of the coloured circle in the (innermost) spectrum, and (λ) the corresponding wave-length. The formula shows that the diameter of the cells can be calculated from the radius of any coloured circle, that the diameter of the coloured circles and the diameter of the cells vary inversely, and that a lens with a longer focal distance will produce larger spectra.

So far the matter has been treated as if the elements of the diffraction-grating (the red cells) were all of equal diameter. The diameters of the red cells of a healthy person, of course, follow the curve of normal variation. Therefore, assuming that the mean diameter in such a case is 7.3μ, there will be more cells of this diameter than of any other, but there will also be an ever-decreasing number of cells deviating more and more, in opposite directions, from this mean value. The spectrum produced by the cells measuring 7.3μ will naturally be the brightest, these cells being the most numerous. On this spectrum will be superimposed the weaker spectra belonging to the other, smaller and larger, cells. In Fig. 1 are drawn to scale, as calculated from the formula, the spectra thrown by cells measuring 7.3, 6.7, and 7.9μ. Intermediate cells will, of course, throw intermediate spectra. The drawing shows that all these superimposed spectra will practically not affect the position of the bright yellow circle produced by cells measuring 7.3μ. They will make the whole yellow circle broader, and the superimposed red and green will dilute the colour. This means that the brightest yellow circle will remain the expression of the mean diameter of the red cells, and that from that yellow circle the mean diameter can be calculated (wave-length 0.59μ).

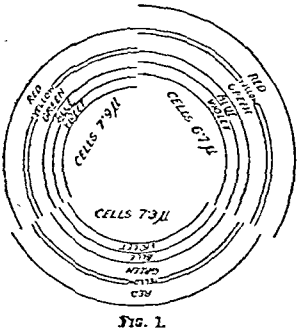

FIG. 1.

From Fig. 1 it is also obvious that the innermost violet circle always is the expression of the largest cells present in a blood smear in sufficient number to produce visible colours, and that similarly the outermost red circle represents the smallest cells which are present in the blood

* Part of the apparatus used in working out the diffraction method was bought by aid of a grant from the Union Government Research Grant Board.

† It has repeatedly been brought to my notice that Thomas Young (1773–1829) employed the identical *principle*, first for the measurement of wool fibres (wool=cotton), and later of red blood cells. I cannot regard this as a reason to call my *apparatus* an etiometer, as Emmons[1] has suggested. When, in 1918, I discovered that bacterial colonies can produce diffraction spectra, I started using this phenomenon for measuring bacteria.[2] From this beginning I developed my diffraction method of measuring red cells[3] in complete ignorance of Thomas Young's work.

smear in similar number. By determining the points where the violet and red colours vanish, and substituting these radii and the corresponding wave-lengths (for red 0.70μ, and for violet 0.40μ) in the formula, both the diameter of the "smallest" and the "largest" cells present in the blood smear *in considerable number* can be calculated.

The method misses the very largest and the very smallest cells, because they are too few to produce a visible effect. For the same reason direct microscopic measurement does not achieve much more in this respect.

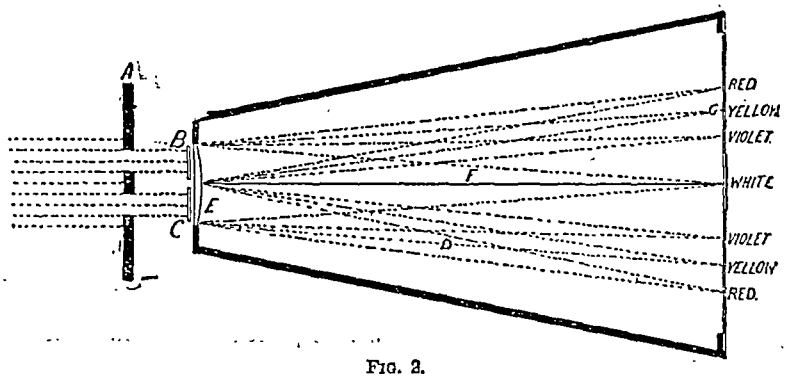

FIG. 2.

The advantages of direct microscopic measurement lie in the construction of a frequency curve. The important features of such a curve are the position of the top and the shape of the curve (narrow or wide, symmetrical or not). From the above it is evident that, generally speaking, the width of the spectrum corresponds to the width of the curve, that the position of the top of the curve is given by the position of the yellow circle, and that the relative positions of the extreme red and innermost violet circle with regard to the yellow circle serve to show whether the curve is symmetrical or not. Healthy people by this method usually show a symmetrical anisocytosis—such as mean diameter 7.3μ, "largest" cells 7.9μ, "smallest" cells 6.7μ.

For estimating the degree of poikilocytosis it must be remembered that the rounder the cells are the better the grating will be. Poikilocytosis thus affects the brilliancy of

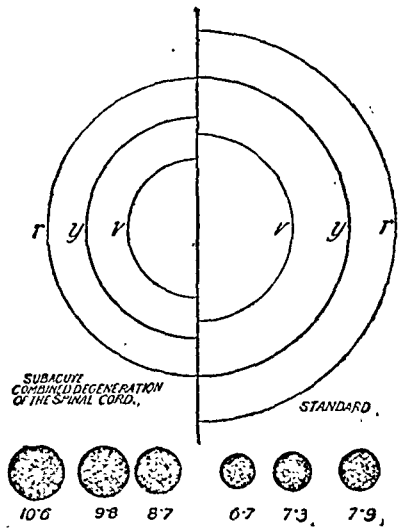

FIG. 3.

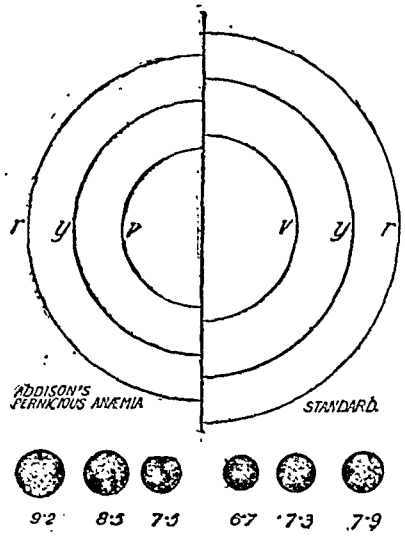

FIG. 4.

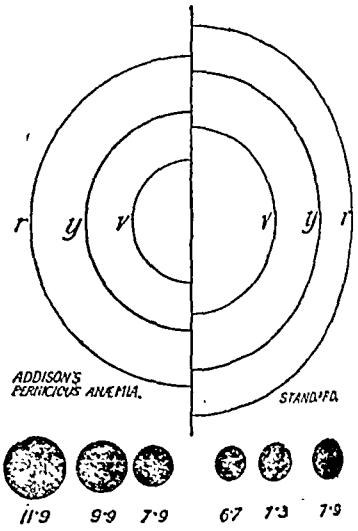

FIG. 5.

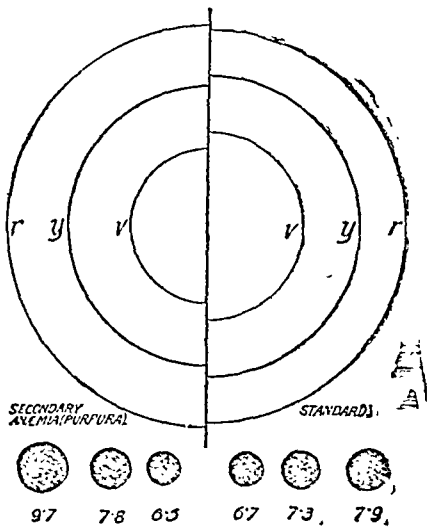

FIG. 6.

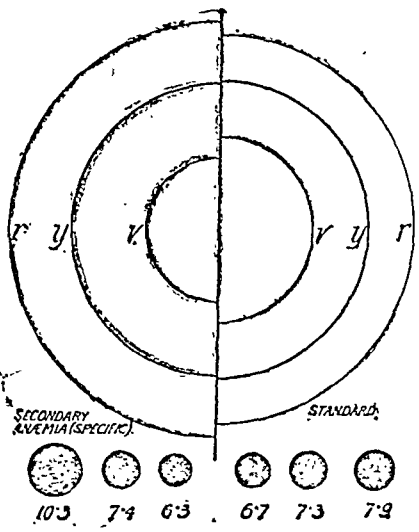

FIG. 7.

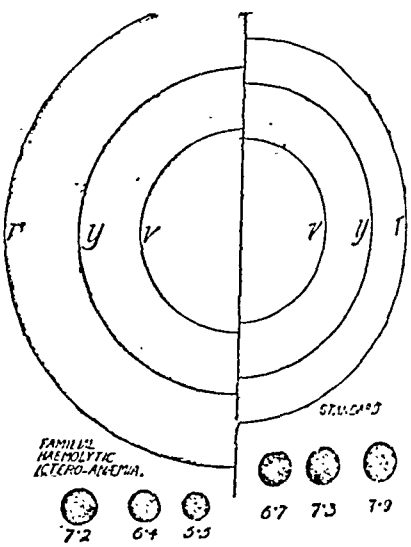

FIG. 8.

FIG. 3.—Typical small spectrum of subacute combined degeneration of spinal cord. Spectrum not proportionally narrower, indicating more anisocytosis than normal, and towards small side (10.6, 9·8, and 8.7μ). No poikilocytosis. Haemoglobin 70 per cent., red cells 3.5 million.

FIG. 4.—Typical small spectrum of an early case of Addison's pernicious anaemia. Little anisocytosis, asymmetrical, towards small side. Some poikilocytosis. Haemoglobin 34 per cent., red cells 2.7 million.

FIG. 5.—Late case of Addison's pernicious anaemia. Small spectrum, very marked anisocytosis, symmetrical. Marked poikilocytosis. Haemoglobin 20 per cent., red cells 3.6 million.

FIGS. 6 AND 7.—Typical broad spectra of secondary anaemia. The heavier the anaemia, the broader the spectrum. Late syphilis often gives a spectrum like Fig. 7. Anisocytosis very marked, asymmetrical, towards large side. Often in such cases poikilocytosis not marked, and mean diameter not much changed.

FIG. 8.—Strikingly large spectrum, diameters of cells very small, as typical for familial haemolytic ictero-anaemia, although cell volume may be large.[9] Little anisocytosis, symmetrical. Poikilocytosis present. Hereditary element traced in abnormally small cells in relatives on father's side, in father, and in brothers and sisters; mother's cells normal. Similar investigation seems indicated in relatives of patients of Addison's pernicious anaemia, to throw light on question of heredity.[10]

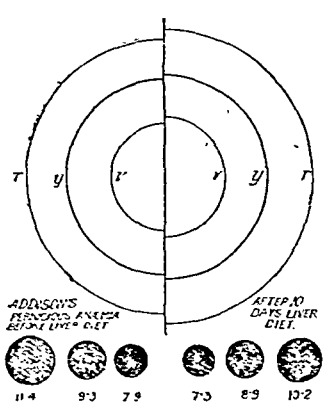

FIG. 9.

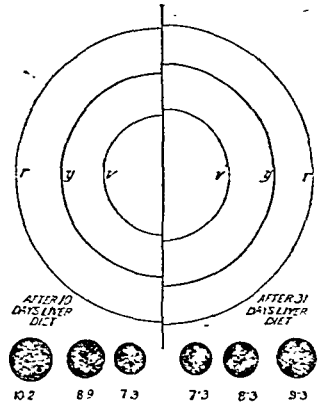

FIG. 10.

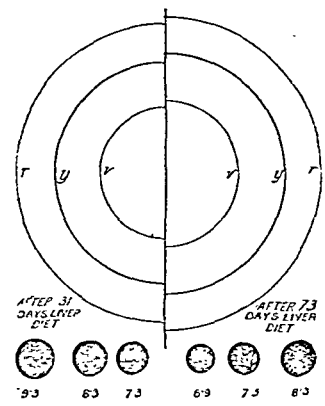

FIG. 11.

FIGS. 9 TO 11.—These three figures illustrate the improvement brought about through liver diet in a patient with Addison's pernicious anaemia. Spectra not compared with standard, but with other smears from the same patient. The haemoglobin rose from 32 to 89 per cent., and the red cells from 1.4 to 5.2 million during the same period.

the colours, and also the number of concentric spectra which become visible round the bright first one. From this the poikilocytosis can readily be estimated, especially as the method permits a direct comparison with a "standard" (Figs. 3 to 11). I need not detail why the method is not absolutely correct. Fair comparison with other methods shows that its advantages outweigh its inexactitudes.

Technique of Method.

A beam, about 6 cm. broad, of parallel light rays, from the sun, or from an artificial source (arc or pointolite) with condenser, is directed towards the apparatus (Fig. 2). Through two square holes, of 1.5 cm., in the screen "A" it reaches the thin ends of blood smears on the microscope slides "B" and "C," which are fixed to the front of the box "D" by clamps. The box is of wood or metal, 25 cm. high and 40 cm. long; the back is a ground glass plate "G," of 25 by 25 cm., with its ground surface towards the light. In front, in the centre, is the lens "E," a simple lens, of 6 cm. diameter and 40 cm. focal length, plano-convex, such as may be bought from an optician for a few shillings. The partition "F" is exactly in the middle, in close apposition to the lens and the ground glass.

It is preferable to have the apparatus in a dark room, and admit the beam through a hole in the wall; if this is not possible other means must be found to exclude all foreign light from the ground glass. It is a help if a disc of black cardboard is pasted over the centre of the ground glass, as the white light which is concentrated there is dazzling, and the centre of the disc can at the same time serve as a starting point for the measurement of radii.

As the partition "F" cuts off one-half of either set of spectra, the ground glass will show two sets of coloured half-circles in spectral colours, separated by a thin black line, the shadow of the partition. Their actual appearance is illustrated by Figs. 3 to 11. The three half-circles in each case represent the position of the extreme red, the bright yellow, and the innermost violet circle of the innermost spectrum, as indicated by the letters "*r*," "*y*," and "*v*."

A "standard" blood smear is obtained by collecting blood smears from "healthy" persons, comparing their diffraction spectra by using them in the apparatus two by two, and picking out one which gives medium values for the radius of the yellow circle, and minimum value for anisocytosis (=broadness of spectrum). It will be found that minor differences in these respects occur between individuals. These differences remain constant for long periods, and perhaps for ever, but intercurrent diseases may at least temporarily affect them. The meaning of these differences, their bearing on blood groups, their pathological significance, and other points in this connexion (day and night changes, effects of exertion), I shall treat in a later paper.

For the chosen standard smear the radii of the yellow, innermost violet, and extreme red circles are then carefully once and for all determined with a pair of compasses. With my lens, which has a focal distance of 40.4 cm., they measure respectively 56, 35, and 73 mm. From these values the formula gives for the mean diameter 7.3μ, for the largest cells 7.9μ, and for the smallest cells 6.7μ.

In determining the radius of the extreme red circle, it must be borne in mind that, as the second spectrum overlaps the first (or innermost) spectrum to a certain extent, the extreme red circle borders on the green circle of the second spectrum. Together these two colours produce a greyish zone, and the extreme red must be localized there where this grey zone ends, and the green appears quite pure. In localizing the innermost violet one must choose the spot where purple fades into yellow.

The standard radii being known, the radii belonging to any blood smear can easily be estimated by direct comparison, as shown by Figs. 3 to 8. Where the differences are small, the direct comparison makes them appear quite obvious, and for large differences an error of a millimetre in estimating the difference is not important. For accurate work compasses are useful. The values obtained for the radii can be converted into cell-diameters by calculation with the formula, but, of course, it saves time if from the formula a table or a curve is prepared from which the cell-diameters belonging to any radius can just be read off.

It is not always necessary to perform measurements and calculations, as often a glance at the spectra gives sufficient information (see Figs. 3 to 8) to make or exclude a particular diagnosis.

Application of Method.

The method has now been used by me on hundreds of smears, and its diagnostic results have been checked by other methods and observations. It has cleared up many difficult cases. In suspected cases of pernicious anaemia where it gave a typical secondary anaemia spectrum further examination of the patient has revealed early malignancy or duodenal ulcer. It has become an essential routine method, and as such has occasionally given a dramatic diagnosis in unsuspected cases of Addison's pernicious anaemia, aplastic anaemia, subacute combined degeneration of the spinal cord, and familial haemolytic ictero-anaemia, which otherwise might easily have escaped notice.

Note.—Figs. 3 to 8 show the differences between the standard and certain typical pathological spectra observed by me. At the bottom of Figs. 3 to 11 the small filled-in black circles represent, drawn to scale, the cells of mean diameter, the "largest"

and the "smallest" cells, as calculated from the radii of the half-circles shown. The diameters of these cells are given in microns.

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LIVER TREATMENT OF PERNICIOUS ANAEMIA:

ITS EFFECT ON THE POLYNUCLEAR LEUCOCYTE COUNT OF COOKE.

BY

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IN the course of routine blood examinations of the patients of this hospital, consisting of the polynuclear count of Cooke and the Schilling haemogram, it occurred to me to investigate the influence of liver treatment on the polynuclear count in a case of pernicious anaemia which was to undergo that treatment.

The polynuclear count of Cooke is simply a modification of the original Arneth count. The original Arneth count was far too complicated, and as a direct result of this we have two modifications in clinical use at the present day: the polynuclear count described by Cooke and Ponder[1] in 1927, which most closely resembles the Arneth count, and the Schilling haemogram,[2] which divides the neutrophil leucocytes into those with one lobe to the nucleus, including in this the myelocyte and the metamyelocyte, and those cells with more than one division to the nucleus. In this study we are only concerned with the polynuclear count. This gives a much more delicate picture of the leucocytes than either the Schilling haemogram or a total white count *plus* an ordinary differential one.[3] The Schilling haemogram does not indicate any abnormality in pernicious anaemia apart from an inconstant lymphocytosis.

In the polynuclear count as described by Cooke and Ponder[1] the percentage of leucocytes with one lobe to the nucleus is multipled by one, the percentage with two lobes by two, and so on up to the percentage with five or more, which is multiplied by five. The numbers obtained added together and divided by 100 give the weighted mean number of lobes of the nucleus per leucocyte. The average number in each group in health is about—

I.	II.	III.	IV.	V.
10	25	47	16	2

This gives a normal weighted mean of 2.75. The average varies slightly from individual to individual and with individual workers. Arneth's mean is normally given as 2.76, and Cooke in 1925[4] gave his normal as 2.70. My own mean, taken from members of the staff who are healthy, is 2.65. The normal mean can fairly definitely be taken as lying between 2.50 and 2.80. The first two groups of the count (I and II) are spoken of as the left-handed columns, and groups III, IV, and V as the right-handed columns. The numbers in the two groups I and II added together constitute the left hand, and III, IV, and V the right hand. I have divided the right hand by the left hand and called this the index of right-handedness (R.H.) in tables. Bushnell and Treuholtz[5] suggested adding together groups I and II and half of group III. This is referred to in the tables as B.T.

Naegeli[6] described a pronounced hypersegmentation of the neutrophil nucleus in pernicious anaemia. Arneth[7] in 1920 described the "Rechtsverschiebung" or shift to the right which accompanies the neutropenia characteristic of pernicious anaemia. Cooke[4] in 1925 showed that in uncomplicated pernicious anaemia there was an increase in the number of cells in groups IV and V and a decrease in groups I and II. In group V are those cells with five or more lobes to the nucleus; in pernicious anaemia we often find cells with seven or eight lobes, and in the case of the macropolycyte[8] there may be ten to fourteen lobes. This means, of course, that the weighted mean and the index of right-handedness are both high. Jedlička and Béranek[9] report the neutrophil picture in 36 cases of pernicious anaemia. There is nearly always leucopenia, although there are cases with neutrophil leucocytosis of long duration. These authors found an increase of the number of cells with more than three lobes to the nucleus, but also a shift to the left—that is, a dissociation of the blood picture. They consider this dissociation of the blood picture to the right as well as to the left a characteristic of pernicious anaemia. However, Arneth[10] has subsequently demonstrated that this dissociation to the right and to the left also occurs in lymphatic leukaemia. Jedlička and Béranek point out that this dissociation is most marked at the height of the disease and may disappear during remission. Arneth had previously suggested that the myelocytes observed by some authors are really erythroblasts, so accounting for a certain number of cells in group I. Krjukoff[11] describes a similar dissociation in sprue—the appearance of myelocytes together with an increase in the number of hypersegmented forms. This will be referred to later. Whitby[12] describes how in two out of four cases treated with liver the relative lymphocytosis disappeared and the differential count became normal apart from the eosinophilia. He did not describe any changes in the neutrophils. Other writers in the *Lancet* inquiry into the effects of liver treatment[13] show usually a return to the normal number of leucocytes, but give no detail of the neutrophil picture.

Cooke gives the following numbers of cells per group in his cases of pernicious anaemia. The respective indices are given in the last three columns.

Case.	Group.					Weighted Mean.	B.T.	R.H.
	I.	II.	III.	IV.	V.			
1	11	24	49	15	1	2.71	53.5	1.5
2	6	20	39	22	11	3.08	45.5	2.5
3	6	27	40	22	5	2.93	47.0	2.3
4	7	20	44	24	5	3.00	47.0	2.7
5	7	16	29	39	9	3.27	37.5	3.5
6	12	31	26	20	8	2.78	59.0	1.1
7	20	31	17	16	16	2.77	53.5	0.9
8	16	22	32	16	14	2.90	54.0	1.4
9	10	15	38	24	13	3.05	45.0	3.0
10	6	20	42	20	12	3.12	47.0	2.1

Of these, Cases 7 and 8 both show a dissociation of the count and Case 6 to a lesser degree. Our case before liver treatment showed—

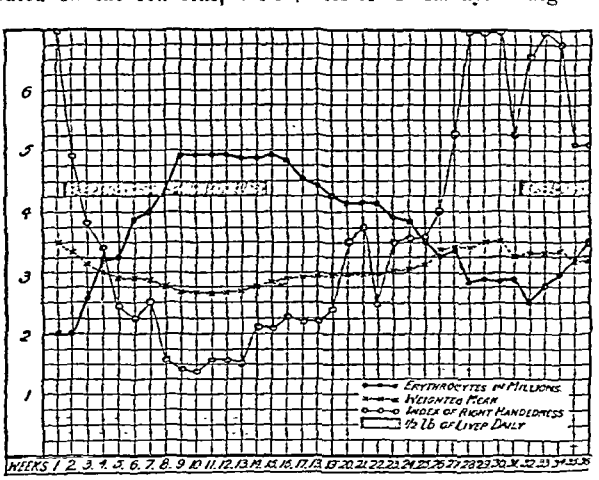
Group I	1
" II	16
" III	33
" IV	32
" V	11
Weighted mean	3.33
B.T.	36.5
R.H.	4.53

Possibly Cases 1, 6, and 7 of Cooke's series had some intercurrent infection or hidden septic focus causing the low weighted mean.

It occurred to me that possibly liver treatment might bring the large number of cells in groups IV and V down to a normal level as the blood returned to normal, and this is precisely what happened. As the red count rose so the weighted mean and right-handed index fell until they reached what was apparently the normal level for the particular individual, and there they remained constant so long as the liver treatment was continued and for some little time afterwards. The two indices then began to rise again as the number of erythrocytes fell, but not quite so rapidly as had happened at the beginning of the liver treatment. When the second course of liver treatment was begun the two indices fell as the erythrocyte count rose. The accompanying chart gives a clear picture of the result. The index of right-handedness shows much more than the weighted mean the change in the polynuclear count, but is obviously too sensitive to change when the numbers in groups I and II are small.

COMMENT.

In the usual clinical descriptions of pernicious anaemia so much interest is concentrated on the red cells, their haemolysis, size, shape, etc., that the leucocytes have come in for very little attention. It seems, however, that the leucocyte changes may in the end produce more convincing indication towards the elucidation of the etiology of the syndrome than has in the past been thought of. A shift to the right of the Arneth or polynuclear count is not common. It is never found in conditions in which there is any infective process at work. The onset of an infective process swings the count across to the left at once, where it stays until the infection subsides. According to Cooke[1] the shift to the left is not so pronounced as it would be in the case uncomplicated by pernicious anaemia. The conditions in which a shift to the right have been described are pernicious anaemia, sprue, and, according to Arneth,[10] lymphatic leukaemia. Dr. Newham of the London School of Tropical Medicine was kind enough to send me some blood films from two well-established cases of sprue. Both these showed a well-marked shift to the right, with the typical blood picture one has learned to associate with pernicious anaemia. Whether *Bothriocephalus latus* anaemia shows a shift to the left or not I am unable to say.



A recent article by Carbonara[11] is extremely interesting, for he found a shift to the right of the Arneth count associated with liver disease. In view of the effect of liver treatment in pernicious anaemia, this work of Carbonara's requires careful investigation and confirmation. If confirmed it certainly would appear to be a link in the chain of evidence. Sprue is looked on by Ashford[15] as a glandular insufficiency on which is superimposed a gastro-intestinal infection with *Monilia psilosis*. However, the more recent work of Lye, Zerfas, and Cornwell[16] has shown that the number of isolations of monilia from stools and gastric contents is no greater in pernicious anaemia than it is in other cases of severe anaemia and gastric achylia. These authors conclude that monilia is unimportant as an etiological factor in either pernicious anaemia or sprue. Elders[17] states that sprue is a deficiency disease, and, after comparing sprue and pernicious anaemia, concludes with the statement that "pernicious anaemia is, like sprue, a deficiency disease, and as such should be curable, or at least amenable to improvement, by well-chosen food." This statement was made at the end of 1924, and how true his words were is seen from the subsequent work of Whipple and the introduction of the Minot-Murphy diet. On the other hand, Newham, Morris, and Manson-Bahr[18] conclude that pernicious anaemia and sprue are two distinct clinical entities, although having several features in common.

Knott[19] found that after liver treatment in pernicious anaemia there was no diminution in the intensity or the nature of the intestinal infection, that the disappearance of the indirect van den Bergh reaction did not necessarily correspond with a reduction in the intestinal infection, and that cases in which a return to a normal blood picture had occurred might still show just as high a bacterial content of the faeces as when in the acutely anaemic stage. In the face of this conflicting evidence, which tends against the infectious etiology of pernicious anaemia, we are driven back on to the theory propounded by Piney[20] that pernicious anaemia can only occur in persons who have a remnant of megaloblastic tissue in the liver—that is, that it is essentially a constitutional disease. This is supported by the frequent familial incidence, and also by the fact that achlorhydria, which is invariably present in pernicious anaemia, also commonly occurs in several members of one family. Naegeli[21] thinks that there is possibly some constitutional weakness or abnormality of the bone marrow, due perhaps to the retention of megaloblasts since childhood. He quotes Schaumann as having observed cases of *Bothriocephalus latus* anaemia which recovered, but some of which later suffered from real cryptogenetic pernicious anaemia. This supports the constitutional origin of the syndrome. Haden[22] looks on pernicious anaemia as due primarily to an inability of the bone marrow to mature red cells, resulting from the lack of some specific substance, and thus would classify it as a deficiency disease, the deficiency not necessarily being hepatic. He concludes by saying: "It is more likely due to a failure of absorption, or an elaboration in the intestinal tract of the specific maturating substance, perhaps resulting from a long-existent achlorhydria."

CONCLUSIONS.

1. A case of pernicious anaemia treated with liver showed an abolition of the marked shift to the right of the polynuclear count as the total blood picture returned to normal. When liver treatment ceased the polynuclear count moved over to the right again, to be brought back by more liver treatment.

2. A plea is made for a closer study of the leucocytes by those clinicians who have large numbers of cases of pernicious anaemia to deal with, in the hope that this study may lead to a better understanding of the syndrome than the study of the erythrocytes has done.

3. At the same time it would be of greater scientific interest if *all* reports of cases of pernicious anaemia contained an account of, in addition to what is called the "typical blood picture" and the achlorhydria, (*a*) the leucocyte picture, including the polynuclear count or the Arneth count, in addition to Schilling's haemogram; (*b*) the icterus index; (*c*) the indirect van den Bergh reaction; (*d*) the Price-Jones curve. The diagnosis of pernicious anaemia is made much more accurate in the presence of (*a*) to (*d*).

My thanks are due to Dr. P. W. Bedford for permission to make use of the clinical material and to Dr. Newham for the blood films from cases of sprue.

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JEJUNAL ULCER ASSOCIATED WITH TESTICULAR PAIN.

BY

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THE following case appears to be worth recording on account of the unusual symptoms.

A man, aged 37, had mumps as a child, but otherwise no illness worthy of note till December, 1915, when he was invalided from the army with dysentery. Shortly after returning to duty he was buried by a shell. He was apparently concussed, and immediately afterwards the thyroid gland was seen to be much enlarged; it gradually became smaller, and now seems to be normal. Shortly after the concussion he began to have attacks of epigastric pain, associated with hunger, about half an hour after meals, and tenderness in the epigastrium to the right of the mid-line. At this time he was having irregular meals and smoked heavily; the pain was relieved by food for about half an hour, and then returned increased, being frequently associated with vomiting. At the beginning the attacks lasted about a week, pain appearing after every meal during this time; there were intervals of two or three months during which he was entirely free from symptoms. The attacks were specially severe during the winter, and were usually accompanied by enlargement of the thyroid gland. They gradually became more frequent and of longer duration.

In July, 1919, he had an attack of unusual severity, and three weeks later, while working in his office, he experienced sudden acute abdominal pain associated with repeated vomiting. An operation was performed for perforated duodenal ulcer, but he was apparently given no instructions as to diet, and he ate what he pleased. He remained well for about two years, after which the symptoms appeared again more acutely, and the pain and tenderness extended across the epigastrium. The stools now showed the presence of occult blood. He was treated for six weeks by dieting, but was not confined to bed. After a short interval the symptoms returned, and in February, 1925, gastro-jejunostomy was performed; following this, he was put on a moderately restricted diet for two months.

Six months later he again had symptoms, but they were not so acute as before the operation; they came on particularly when the weather was cold. The pain became gradually longer in duration, increasing in intensity during the day, independent of meals, and was not now relieved by food. On the other hand, for the first time he started to be wakened by pain between 2 and 3 a.m. This only occurred if he had taken a meal after 7 p.m.

In August, 1926, he first felt a dull aching pain in the testes at the end of the day, when the epigastric pain was most acute. A suspensory bandage gave little, if any, relief. Gradually the pain in the testes became greater, and appeared earlier in the day, together with pain in the loins. He never had these symptoms except when the epigastric pain was present, and there was no abnormality in micturition.

In May, 1928, he was awakened about 3 a.m. by attacks of pain in the testes, so severe as to necessitate injections of morphine. There was general tenderness in the upper abdomen, especially at a point immediately above and to the left of the umbilicus, where a small lump could be felt. It seemed to be fixed to the deeper tissues, and moved with the pulsations of the aorta. Pressure on the lump reproduced the pain in the back and in the testes. The testes themselves were tender, and there was slight hyperalgesia in the loins. The urine was normal, and examination of the uro-genital tract revealed no abnormality. An *x-ray examination* with a barium meal showed a jejunal ulcer in the situation of the tumour. Occult blood was present in the stools. The patient was confined to bed, and treated medically on a strict diet. The pain was rapidly relieved and the tumour gradually disappeared. Since then he has remained on a modified diet, and has become a non-smoker. He has remained free from symptoms, has put on 2 st. in weight, and remarks that he has never felt better in his life.

The two main points of interest in this case are: the association of thyroid enlargement with attacks of epigastric discomfort due to duodenal ulcer, and the pain in the testes and the loins. With regard to this pain, four points may be emphasized. (1) Testicular pain was never present except when there was pain in the epigastrium. (2) Pressure on the tumour produced pain in the testes. (3) Subsidence of the pain, both in the testes and in the epigastrium, coincided with the disappearance of the tumour. (4) The tumour moved with the pulsations of the aorta, to which it appeared to be fixed. The first three of these points suggest that both testicular and epigastric pain had a common origin.

X-ray examination showed that the jejunal ulcer and the tumour were situated just to the left of the mid-line, at the level of the intervertebral disc between the third and fourth lumbar vertebrae. The sympathetic nerve supply, both of the kidneys and the testes, is derived from the twelfth thoracic and first lumbar segments of the cord. These nerves form a plexus in front of the aorta, and branches from this plexus accompany the renal arteries to the kidneys. Branches from the same plexus accompany the spermatic vessels to the testes, and are also distributed to the ureters. Thus the inflammatory mass associated with the ulcer was situated where the sympathetic plexus, in front of the aorta, would be involved and the patient's symptoms suggest that pain can be referred to a viscus through sympathetic nerves. The phenomenon also suggests an explanation for the testicular pain in ureteric colic, other than the one advanced by Mackenzie, that both these structures are supplied by branches of the genito-crural nerve.

Periodic stimulation of the sympathetic plexus by the inflammatory mass might be due to periodic vascular engorgement or to actual traction on the plexus. The latter seems the more likely explanation. The traction could be produced by gastric movement, the site of the ulcer being fixed. If this explanation is correct, the coincidence of the epigastric pain with that in the testes suggests that pain due to an ulcer is associated with movement of the diseased viscus, whether the movement be tonic or peristaltic in origin. The persistent character of the pain suggests an alteration in tone as the more likely explanation.

TRAUMATIC FAT NECROSIS OF THE BREAST

BY

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THE condition of traumatic fat necrosis of the breast was first described in America in 1920 by Lee and *Adair*,[1] who published two cases. They wrote further on the subject in 1922[2] and in 1924,[3] and since then several cases have been described. The first published in this country was by Keynes.[4] Later, Hadfield[5] wrote on the subject.

In these cases, following trauma, there developed in the breast a lump which clinically appeared to be a carcinoma but on microscopic examination areas of fat necrosis only were found, and no evidence of malignant disease was present. Farr[6] was able to produce experimentally the characteristic lesions by pinching with forceps the subcutaneous fat of young pigs. Sections of the injured area showed the typical histological picture of fat necrosis. Farr concluded that in an area of traumatized fat the lipolytic enzyme present in fat and blood is liberated, and acts on the neutral fat, breaking it down into its components—fatty acid and glycerol. These substances form the irritant which gives rise to the foreign body reaction producing the lesions of traumatic fat necrosis. Although trauma seems to be the usual factor in the published cases, Gottesman and Zemansky[7] came across a case in which this cause could be eliminated. Further they analysed 78 cases of non-malignant breasts, and in 14 found some stage or degree of fat necrosis. They concluded that factors other than trauma may explain the phenomenon, and that the escape of fatty material from a dilated duct and its subsequent decomposition plays a part in the cause of this condition.

Professor M. J. Stewart calls the condition subacute panniculitis. He tells me that in his experience it is not uncommon, and he has met with it in the *anterior*

in fat removed from the femoral canal, and in the subcutaneous fat in different situations in the body as well as in the breast. In a paper on xanthema and xanthosis[8] he writes:

"When adipose tissue is involved in a subacute inflammatory process it is not uncommon for aggregations of large, foamy endothelial cells to make their appearance in the interstices of the tissue between the oil droplets. Like foamy cells elsewhere, they are filled with cholesterin fat, and often they may be seen going on to the formation of foamy giant cells. Rarely pure cholesterin crystallizes out, and a remarkable histological picture results, in which foamy cells, giant cells, cholesterin clefts, and foci of necrosis are mixed up together. Similar changes may be met with in the quieter forms of fat necrosis."

That this condition is not so uncommon as supposed is also evidenced by a table published by Lee and Adair[2] in the article already referred to. During the period in which their five cases of fat necrosis occurred they found that, compared with primary breast cancer, the incidence was 1.8 per cent., with operable cases of breast cancer 4.2 per cent., and compared with benign lesions the incidence was 7 per cent.

The following case recently came under my care:

Clinical History of Case.

Mrs. E. A., aged 53, no children. Rather an obese subject. She knocked her right breast two months previously to noticing a lump therein. On examination, there was a nodule about 1½ by 1½ in. in the upper and outer quadrant of her right breast; it was hard and fairly well defined, and could be easily felt with the flat of the hand. The centre of the nodule was attached to the skin, but there was no deep fixity, nor could any enlarged glands be felt in the axilla. The nipple was not retracted, nor was the breast elevated. The diagnosis of early carcinoma of the breast was made, and with this diagnosis two of my colleagues agreed. A radical removal of the breast was carried out. The convalescence was straightforward, and the patient was discharged three weeks later with a soundly healed wound.

Microscopic Examination.

The breast lesion is a subacute inflammatory and necrotic one, without evidence of neoplastic change, and involving the adipose rather than the glandular tissue.

1. In the central portion of the affected area there are several small necrotic patches of irregular outline, as yet free from calcification.

2. Active fibroblastic proliferation is the chief feature of the central area. Intermingled therewith are fat-droplet spaces derived from the original adipose tissue, many of them being of large size from fusion of the contents of disintegrating fat cells. Scattered endothelial cells, lymphocytes, and "foamy" cells (fat- and lipoid-filled phagocytes) are present in small numbers.

3. In the outer zone of the lesion the most notable feature is the accumulation of the same foamy macrophages in large numbers throughout the adipose tissue. They occur in irregular groups and strands, separating the adipose tissue cells from one another, and are associated with slight degrees of fibrosis. The examination of frozen sections shows that they contain both neutral and cholesterol fat, taken up by them from disintegrating fat cells, many of which have their oil vacuoles filled by the products of cell degradation.

4. A few giant cells with "foamy" cytoplasm and up to six or eight nuclei are present here and there throughout the lesion.

5. The scanty gland acini present appear to be involved secondarily in the inflammatory process.

The appearances correspond to those which have been described in America under "traumatic fat necrosis." The lesion differs from the fat necrosis of pancreatitis in being of slow evolution, so that phagocytosis of fat-cell disintegration products and fibroblastic proliferation keep pace with cell destruction. The axillary glands show no pathological changes. The condition is met with in many different sites, but in the breast it is of special importance because of the danger of confounding it with scirrhous carcinoma.

The importance of traumatic fat necrosis from a clinical viewpoint lies in its simulation of carcinoma of the breast; in many of the published cases a radical operation has been carried out, and only later, on microscopic examination, has the true diagnosis been made. The recognition of the condition is therefore important and should be borne in mind, especially in what appears to be an early case of mammary cancer. In arriving at a diagnosis the traumatic nature of the lesion should be remembered, as injury seems to have been the starting point in most of the published cases. It is interesting to note that in three of the five cases of Lee and Adair[2] the disease developed after the giving of saline infusions into the breast. Although patients with carcinoma of the breast frequently state that they have had a knock or blow on the breast, or think the corset may have rubbed them, the exact nature and date of the injury is usually rather indefinite. In cases of fat necrosis, however, the exact trauma is clearly remembered.

The time interval between the injury and the development of the tumour varies from a week or two up to several years. The condition is usually met with during the fourth and fifth decade, and mostly in women with large and fat breasts. The tumour itself, although hard like a cancer, is better defined. The superficial fixity of the tumour to the skin exactly resembles that found in cancer, but deep fixity is not as a rule present. The axillary glands are not enlarged, though this does not help in the differential diagnosis from an early cancer. In a suspected case it will often be necessary to perform a local excision of the tumour for microscopic examination, since the mimicry of early mammary cancer is so close. If the condition is borne in mind, however, and only the lump removed, adequate treatment will have been carried out and an extensive operation obviated.

I am indebted to Professor M. J. Stewart for his advice in the preparation of this article, and for the report on the microscopic examination of the specimen in the case quoted.

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SEVERE HAEMORRHAGE FROM THE RUPTURE OF A CORPUS LUTEUM CYST.

BY

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HAEMORRHAGE into the peritoneal cavity from a ruptured ovarian cyst is met with occasionally. Haemorrhage from a ruptured luteal cyst in a young woman, simulating an ectopic pregnancy, is a rare condition. Edward Moore[1] reviewed the literature in 1922 and could find only fourteen cases recorded, a list of which is given in his paper. Since that time records of several patients suffering from this condition have been published, notably in Germany by Kaboth,[2] Hesselberg,[3] Eick,[4] Schickele,[5] and others. But in the English[6] and American literature little mention has been made of this condition. It has been my good fortune to have been associated with three cases, descriptions of which are given below. As a ruptured ectopic pregnancy is closely simulated, a pre-operative diagnosis is difficult, and in this series the condition was not diagnosed before operation, and afterwards only when portions of the tissue removed had been sectioned and examined microscopically. By careful attention to the history, however, it should be possible to make a diagnosis. The most important points in the history are as follows.

The patient is a young woman, usually single; the average age in the following cases was 24. There is a history of a sudden attack of severe abdominal pain localized to the lower abdomen on the right or left side, depending probably on the ovary affected; this is accompanied by nausea, and occasionally by vomiting. The pain gradually passes off, and subsequently, following some strain producing increased intra-abdominal tension such as straining at stool, the patient has a feeling of faintness or actually does faint. The menstrual history is normal; there is no missed period, and the catastrophe bears no relation to the menstrual flow. On examination the patient is pallid, and sometimes restless and dyspnoeic. The pulse, generally rapid, thin, and running, may be slow. I have seen severe intra-abdominal haemorrhage with a pulse of 76. The temperature is usually subnormal, unless a considerable interval of time has elapsed between the

rupture of the cyst and the examination, when it may be raised. The abdomen moves with respiration, but is tender, especially on palpation of the lower quadrants; there is no rigidity. Per rectum, no mass is palpable, and there is absence of tenderness. Such a syndrome suggests a diagnosis of haemorrhage from a ruptured luteal cyst. The two conditions with which confusion is liable to occur are acute appendicitis and a ruptured ectopic pregnancy. The absence of epigastric pain, vomiting, hypogastric pain, and leucocytosis, combined with a flaccid abdomen, should exclude the former disease, and the absence of the history of a missed period and uterine haemorrhage, although not invalidating a diagnosis of ectopic pregnancy, renders it less probable.

Although the diagnosis may often remain tentative, the treatment must always be the same: immediate laparo-

FIG. 1.—Section of ovary, natural size. Corpus luteum cyst shown with a mass of blood clot in its cavity.

tomy, accompanied if necessary by a blood transfusion, since as soon as the peritoneum has been incised large quantities of blood escape. The operative treatment will not be considered in detail, but one or two points are worthy of further consideration. The abdomen should be opened in the mid-line below the umbilicus, the ovaries felt for, and the cystic one delivered. Should the condition be recognized, oophorectomy is contraindicated and the treatment of choice is to pass a mattress suture through the cyst wall. The blood in the peritoneal cavity should not be mopped out, but should be left, as it is quickly absorbed without producing adhesions, and acts as a slowly given blood transfusion.[6] The convalescence in the cases recorded below was speedy and uneventful. The recognition of this condition is important, and ovaries removed at operations for ectopic pregnancies should be subjected to careful microscopical investigation, especially if the virginity of the subject be called in question. Kaboth suggests that the presence of an ectopic ovum cannot be excluded unless serial sections of the tissue removed are cut and examined. This I do not think necessary; the large mass of blood surrounded by the crumpled yellow ring of luteal tissue forms an unmistakable picture macroscopically, and the histological appearances of a luteal cyst are characteristic and illustrated in Figure 2. It seems that trauma is a factor in causing rupture of the cyst and the consequent haemorrhage. There was a very definite history of this in two of the cases in the present series and also in many of those recorded in the literature. Another point worthy of emphasis is the absence of any definite relation to the menstrual cycle. The condition is more common than a perusal of the literature would lead one to suppose.

CASE I.

A single woman, aged 22, was admitted on March 4th, 1926, complaining of pain in the abdomen. At 9 o'clock that morning there had been an acute attack of abdominal pain localized to the lower abdomen, accompanied by nausea, but no vomiting. During the afternoon the patient fainted while straining at stool. The catamenia were regular. The rupture occurred four days before the period was due.

On examination the temperature was 97.8°, pulse 128, respirations 26. The patient looked ill and was pallid. There was generalized tenderness over the lower abdomen, but rigidity and distension were absent. Per rectum no tenderness or tumour was felt.

Operation (5 p.m.).—On opening the peritoneal cavity two to three pints of blood escaped. The bleeding was found to come from the right ovary, which was removed. The abdomen was closed. The patient made an uninterrupted recovery.

Pathological report on the tissue removed: Ruptured luteal cyst in a very oedematous ovary. There is a comparatively large vessel in the wall of the cyst which has probably given rise to the haemorrhage.

CASE II.

X, aged 31, was seen eighteen months ago. One afternoon, while straining at stool, the patient had a sudden attack of pain in the abdomen and collapsed. The menstrual history was irregular. The periods had been regular till five months before the date of illness, when there was a period of four months' amenorrhœa

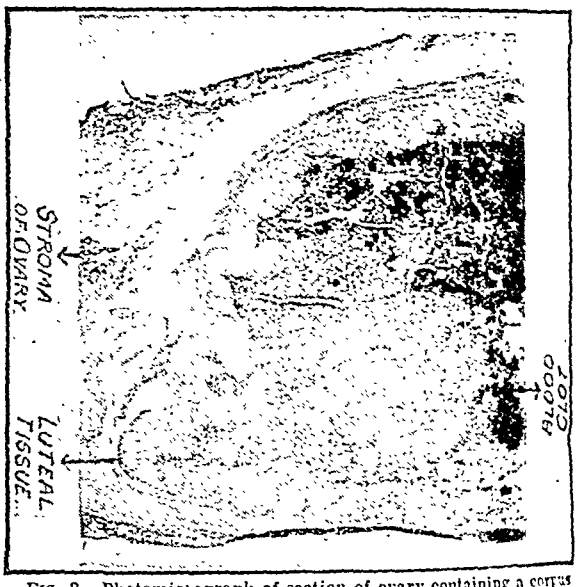

FIG. 2.—Photomicrograph of section of ovary containing a corpus luteum cyst. Yellow ring of luteal tissue surrounding blood clot is demonstrated.

followed by a loss on January 1st, 1926. The rupture occurred the second week in February.

On examination the patient looked ill and was blanched, the abdomen was distended and tender; pulse 140.

Operation.—On opening the peritoneal cavity a very large quantity of blood escaped. The right ovary was thought to be the site of an ectopic pregnancy, and was removed. The abdomen was closed without mopping out any blood.

The convalescence was uninterrupted. One year after the operation the abdomen was opened again for acute appendicitis. There were no adhesions present.

Pathological report on tissue removed: A ruptured luteal cyst of the ovary with haemorrhage around.

CASE III.

A single woman, aged 24, was admitted on March 13th, 1927, complaining of pain in the side. About midday on March 11th the patient had an attack of pain in the lower abdomen. The pain became more severe, and on the following day was accompanied by vomiting. The catamenia were regular. The rupture occurred ten days before the day the period should have started.

On examination the pulse was 120, the temperature 100, respirations 24. The patient was collapsed and waxy in appearance. The abdomen was tender all over, but especially in the iliac fossae; there was no rigidity. Per rectum there was tenderness, but no tumour could be felt.

Operation.—On opening the peritoneal cavity a large quantity of blood escaped. Some of the blood was sucked out with a suction pump, 29½ ounces being removed in this manner; about the same quantity was left in the abdomen. The left ovary was found to be bleeding and was removed. The patient made an uninterrupted recovery.

Pathological report on the tissue removed: A ruptured luteal cyst of the ovary with haemorrhage around.

I desire to express my thanks to the following members of the staff of St. Mary's Hospital: Professor Pannett, Mr. V. Z. Cope and Dr. W. Newcombe; also to Dr. Ling of Keighley, to whom I am indebted.

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TREATMENT OF MIDDLE-EAR SUPPURATION.*

BY

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DISEASES of the middle ear, whether of the dry or suppurative type, tend to run a chronic course unless they are dealt with promptly and energetically. Adequate treatment can be ensured only if the patient is seen regularly; but in hospital practice, where patients are drawn from the working classes, one often finds that the patient's regular attendance can be secured only at the risk of his losing his work.

Dry conditions of the middle ear which have failed to derive benefit from catheterization and massage frequently respond to treatment by intravenous injection of colloid iodine; suppurative otitis media is, however, a far more serious and dangerous type of disease, and failure to treat it adequately has undoubtedly been responsible for a large number of operations on the temporal bone.

I have been able to cure many cases of chronic ear suppuration by the subcutaneous or intramuscular injection of milk boiled for three to ten minutes and injected at body heat. The treatment has two advantages: it is cheap, and it is within the province of the general practitioner. One injection is sometimes sufficient to stop discharge, though in cases with small granulations and a fetid discharge several injections may be necessary. The injections are often followed by severe general symptoms closely resembling those of an attack of influenza. Sometimes there are rigors, and vomiting may occur. Among patients observed under hospital conditions the reaction was found to begin within an hour or two of the injection, reaching its maximum in six to twelve hours, when often the temperature would rise to 103° or 104° F., and then return to normal in about twelve hours. Most of the effects passed off within twenty-four hours, but in view of the fact that there is sometimes pyrexia for two or three days, rest in bed should always be enforced.

When I first instituted this treatment I refrained from giving it to young children; with further experience I have been able to regulate the dosage, so that children may now submit to the treatment without suffering unduly. Treatment is contraindicated in patients with cardiac or renal disease, and the risk of anaphylaxis must always be considered and guarded against. The following is a short outline of a few of the cases treated by this method.

Case 1.—A girl, aged 6, had suffered from fetid discharge of the right ear for four years. She was given an injection of 1 c.cm., to which she had the ordinary general reaction. Two days later the discharge stopped completely. After five days a further 2 c.cm. were injected, again producing a general reaction. The condition appears to have cleared up and the ear is absolutely dry.

Case 2.—A man, aged 20, was admitted to hospital on June 11th, 1928, with a fetid discharge from the right ear, from which he had suffered for seven years. There was a posterior perforation, and small granulations were present; 5 c.cm. of milk were injected, and the temperature rose to 102°. On June 14th there was less discharge, but the fetor continued; 10 c.cm. were injected, and though there was again a general reaction, there was a diminution both in the amount of the discharge and in the fetor following. On June 20th another 10 c.cm. were injected and improvement was sustained. After similar injections on June 24th and July 1st, 4th, and 15th, the patient had rather more severe general reactions, but the discharge stopped. On July 28th the ear was still dry.

Case 3.—A male infant, aged 2, was brought to me with a post-operative sinus leading to the tympanic antrum, and with fetid discharge from the ear. A Schwartze operation had been performed, but during convalescence the patient fell into the Nile, and the operation wound became septic. Healing occurred, but the granulations were indolent and fetid discharge continued to appear from the external meatus. Following a milk injection of 1/2 c.cm. he had a general reaction, but there was a diminution of the discharge and fetor, and the granulations began to heal rapidly. After the third injection there was no discharge or odour from the middle ear.

These cases are in every way typical of a large number I have successfully treated by the method of milk injections. The immediate reaction of patients treated by this method is admittedly unpleasant, but I have no doubt that if its use becomes general there will follow a great reduction in the number of operations performed on the temporal bone. The radical mastoid operation will be resorted to only in cases of cholesteatoma or when intracranial complications are threatened.

* Abstract of a paper read before the Egyptian Branch of the British Medical Association, November 14th, 1928.

SLIPPED EPIPHYSIS OF THE HEAD OF THE FEMUR.

BY

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CONSIDERABLE interest has recently ranged around the problem of separation of the upper epiphysis of the femur, and particularly where the separation has taken place without the aid of trauma. Such a case recently came under my care, the features of which may be interesting to record.

A boy, aged 14 years, was admitted to hospital as an emergency case. He was in great distress, complaining of severe pain in the left hip-joint. Voluntary movement of the left leg was quite impossible, and even to touch the region of the hip-joint caused him to scream. As the boy lay on his back the thigh was slightly flexed and the foot everted. Over the greater trochanter there was quite a marked swelling, extremely tender to touch. The general disturbance was considerable; the boy looked ill; his pulse was 124 and temperature 100.2° F. An *x*-ray photograph of the hip-joint was taken, and it showed a true separation of the upper epiphysis of the femur, the head of the bone remaining in the acetabulum, the neck slipping proximally.

The history of this case prior to coming to hospital is that for some five to six months the boy seemed off colour. His appetite had diminished, and he appeared less energetic than was usual. Five weeks previous to my seeing him he commenced to complain of an aching pain in the left hip-joint, which came and went with the degree of rest he gave it. Occasionally the pain caused him to limp. At midday of the day of admission to hospital he was standing talking with his brother when something suddenly happened to his left hip-joint which caused him to drop upon the ground. From that moment he was unable to move the limb, and the pain he suffered was extreme. There is a very bad history of tuberculosis in his family. On his mother's side eight out of ten have died from the results of bone and joint tuberculosis.

The next features of interest were noticed during the course of his treatment.

The limb was placed in flexion, abducted by the aid of a Thomas splint, and 15 lb. extension applied by means of strapping, this following manipulation under a general anaesthetic. The result was good, and complete relief from pain was at once obtained. In two days the temperature and pulse subsided to normal, and at the end of five days the periarticular swelling and tenderness had gone. On the eighth day I measured the limb, and found it to be over-extended by fully half an inch. The weights were therefore reduced to 8 lb., and on that same night the pulse and temperature again rose. For three days I allowed the reduced weight extension to remain, and each day the swing in the pulse and temperature became greater. No pain, however, had returned. At this point the weights were increased to 12 lb., with the immediate effect of reducing the pulse and temperature to normal. During the next three weeks this amount of extension was allowed to remain, and no abnormal symptoms of any sort were present. To permit of more movement it was then decided to reduce the weight extension to 7 lb., but again disastrous results followed. The temperature and pulse immediately began to swing. After three days the 12 lb. were reapplied, the result being that symptoms again immediately subsided. Although active and voluntary movement was now encouraged, so long as this extension was maintained everything remained normal.

Two weeks later the extension and splinting were removed. Function was good, and all movements were performed without pain. Only in abduction was there some limitation of movement. In spite of this, however, from the moment extension was removed the pulse and temperature again began to swing—the pulse from 80 in the morning to 110 at night, and the temperature from 98° in the morning to 100° at night. After waiting for one week to see if these would subside, and failing to get such a result, it was decided to apply a hip plaster in an abducted position. This was done, and in twelve hours everything returned to normal and has since remained normal.

The principal features of this case are mentioned chiefly because of their etiological significance. All history of

trauma is completely absent, the Wassermann reaction is negative, and, so far as can be ascertained, no endocrine disturbance exists. S. T. Irwin, at a meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland on December 7th, 1928, stated that tubercle was not a causal agent in separation of the upper epiphysis of the femur. In the case described, though it is at present impossible to be dogmatic as to the cause, it seems equally impossible to eliminate the tubercle bacillus as a factor. The strong family tendency to this infection, and the behaviour of the lesion under treatment, are factors too suggestive to be lightly set aside in considering the cause of the condition and its prognosis.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CARCINOMA OF LOWER END OF ILEUM.

THIS case seems worthy of record for the following reasons: (1) the rarity of carcinoma of the ileum; (2) the difficulty of accurate preoperative diagnosis; (3) the difficulty of deciding the nature of the tumour in the small intestine by the naked eye at the time of operation; (4) the apparent absence of recurrence following only local excision of the growth and lateral anastomosis.

History.—The patient, a man aged 45 years, was admitted to the Dunfermline and West Fife Hospital on May 3rd, 1926. For six months prior to admission he had been under observation suffering from indigestion and fullness in the epigastrium, worse after food. During this time he had been very constipated, his bowels only acting with purgatives. His general condition was deteriorating, and he had been losing weight steadily. About three months prior to admission he began to complain of pruritus ani. On several occasions he had been treated for "gastritis," but on none of these had he vomited or suffered acute abdominal pain.

Examination.—The patient was spare and in poor condition. His colour was slightly sallow, and his tongue covered with brown fur. His abdomen was slightly distended, and the abdominal muscles were soft and flabby. Palpation on several occasions revealed tenderness on deep pressure over the right iliac fossa, with maximum tenderness over McBurney's point. No thickening was felt in the right iliac region, and there was no epigastric tenderness. Percussion revealed no abnormality of the liver and spleen. A provisional diagnosis of chronic appendicitis with reflex dyspepsia was made.

Operation.—On May 4th, 1926, the abdomen was opened through a right rectal incision, displacing the rectus inwards. There was a small amount of free fluid in the abdomen. The appendix, foetal in type, and acutely kinked on itself, was removed. Palpation of the duodenum, liver, and gall-bladder revealed nothing abnormal, but within the terminal portion of the ileum, about 3½ in. from the ileo-caecal valve, was felt a round mass about the size of a walnut. The mass was apparently fixed to the posterior wall of the ileum, but there was no dimpling of the serous coat at the site of attachment. The ileum was opened longitudinally, over the site of the tumour, and a small sessile growth evaginated. The growth was excised locally, and the longitudinal incision on the ileum was closed in the transverse axis of the bowel. The whole ileo-caecal region was turned upwards, and the incision on the posterior aspect of ileum, to which the tumour had been attached, was sutured in a similar manner. This suturing narrowed the lumen of the ileum so much that a lateral anastomosis of the ileum to the caecum was made. The after-treatment was uneventful and the patient was discharged on May 14th, 1926.

Histological Examination.—Dr. J. W. Dawson, Royal College of Physicians Laboratory, Edinburgh, reported as follows: "Section shows the presence of a diffusely infiltrating small-celled carcinoma. Further sections show a very marked thickening of serosa and subserosa with tumour cells."

After-History.—On June 4th, 1926, the patient had put on 1 lb. in weight, his bowels moving more regularly than they did prior to operation; pruritus ani had disappeared. On January 18th, 1927, he was again examined. He was still gaining weight, the abdomen was slightly tumid, the liver was not enlarged, and there were no abdominal symptoms. He is now doing full work and has put on 1 st. in weight.

The rarity of carcinoma of the ileum is shown by the following figures from the *Encyclopaedia Medica*: of 1,148 cases of malignant disease of the intestine (large and small) 26 cases occurred in the ileum. W. J. Mayo, in 1912, reported that of 1,498 operations for carcinoma of the gastro-intestinal tract, only 5 were for carcinoma of the ileum. The difficulty of diagnosing the condition accurately before operation is well brought out by Bland-Sutton, who, in *Tumours, Innocent and Malignant*, writes: "Cancer of the ileum gives rise to no signs which render the localization of the disease a matter of certainty." He also draws attention to the difficulty of deciding the nature of the tumour at the time of operation. In this case the diagnosis of a chronic appendix with reflex dyspepsia was made prior to operation, and it was only after the appendix had been removed and the terminal ileum had been palpated that the growth was discovered. At the time of operation there was no evidence of enlarged ileo-caecal or other glands, and the tumour, though sessile and hard, was so well defined that one formed the impression that it was adenomatous. The after-history bears out McK. Craig of Mayo Clinic, who, reviewing 36 cases of cancer of the ileum, wrote that, "although resection of the bowel with associated glands is the operation of choice, yet anastomosis round the lesion results in a high percentage of longevity."

I am indebted to Dr. A. L. S. Tuke for his advice in this case during the operation.

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PREGNANCY ASSOCIATED WITH DIABETES MELLITUS.

WITH reference to the hospital case reported by Dr. Shirley Smith and Mr. Roques in the *Journal* of January 12th (p. 66) the following details of a case treated in the ordinary course of a country general practice may be of interest.

A panel patient, aged 20, arrived at evening surgery on April 12th, 1927, having walked a distance of about a mile up a steep hill. She looked and complained of feeling acutely ill, and gave a history of polyuria, constipation, marked thirst, air-hunger, and rapid loss of weight. Up to five days previously she had been carrying on her duties as a domestic servant. She was sent to bed, and a specimen of urine obtained on the following morning was found to be loaded with sugar; the specific gravity was 1035, and Gerhardt's test was strongly positive.

She was put on a diet consisting mainly of boiled cabbage, butter, eggs, and fish, with as little carbohydrate as we could persuade her to take. On April 13th an injection of 20 units of insulin was given with apparently little benefit; this was followed on April 14th by one of 50 units, and on April 15th by 80 units, with marked improvement in the quantity of sugar excreted. On April 16th 95 units was given, when the urine became sugar-free and Gerhardt's test negative. For the next three days she received 60 units daily, but sugar reappeared, and this was followed by the daily administration of 80 units for five days, which again caused the sugar to disappear. At this stage she was admitted to hospital for examination of the blood sugar content, but insisted on returning home on the fourth day, before a complete test had been performed. From April 30th she had 60 units of insulin daily, and gained steadily in weight, the sugar being diminished in quantity and occasionally absent. The insulin was gradually reduced, and by October she had gained upwards of a stone in weight and was taking 30 units of insulin daily.

She married in February, 1928, and in August gave birth to an apparently healthy, full-time male infant. The morning sickness was troublesome, but otherwise the pregnancy was uneventful, as was also the labour, which lasted less than twelve hours. During the early part of her pregnancy she had 20 units of insulin daily, but this had to be increased to 45 units towards the end of pregnancy; this dose was continued for eighteen days after delivery, when some mild attacks of hypoglycaemia caused us to reduce it to 30 units daily. She nursed her child, as she had an abundant supply of milk, and continues in excellent health, though the sugar is seldom completely absent. Owing to some slight recent loss in weight she has now returned to taking 40 units daily.

This case shows:

1. The successful treatment of a severe diabetic patient in general practice.

2. Agreement with the suggestion of Dr. Shirley Smith and Mr. Roques that the dangers associated with pregnancy and labour in diabetic women no longer exist.

3. Like them we had to increase the amount of insulin during pregnancy.

4. We found no necessity to reduce the amount of insulin until eighteen days after delivery.

5. The successful treatment of this case without the aid of blood sugar estimations.

M. GRAHAM DILL, M.D.,
ALFRED V. DILL, M.D., D.P.H.
Chalford, Glos.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

EGYPTIAN BRANCH.

A MEETING of the Egyptian Branch was held at Kasr-el-Aini Hospital, Cairo, on November 9th, 1928, with Colonel H. C. L. HIME in the chair.

Middle-ear Suppuration.

Dr. HASSAN BEY SHAHEEN, *aural surgeon to the Kasr-el-Aini Hospital*, read a paper, of which an abstract appears in this issue at page 643, on the treatment of middle-ear suppuration by the subcutaneous or intramuscular injection of boiled milk. In the course of the discussion Dr. Shaheen *added that he had used the treatment with good results* in cases of ozaena, acute otitis media, Bell's palsy, and sinusitis. Dr. AZUIZ EL KATTAN, ophthalmic surgeon to Kasr-el-Aini Hospital, commented on the value of this treatment in ophthalmic practice.

Compression Myelitis.

Dr. A. G. BIGGAM showed a case of myelitis in a man, aged 35, resulting from a fall on to the buttocks from a camel. Immediately after the accident there was complete *paralysis in both lower limbs, sensation was widely* affected, and incontinence of the bowel and bladder was present. Motor power, however, had improved rapidly, so that on admission to hospital two months after the accident paresis could be detected only in the calf muscles. Sensation was still widely affected bilaterally in the areas supplied by the fifth lumbar nerve and all the sacral segments. An *x*-ray examination showed the presence of a compression fracture of the body of the first lumbar vertebra, especially in its anterior part. Lipiodol injected by cisternal puncture revealed no obstruction at the seat of the fracture.

Treatment of General Paralysis of the Insane.

Dr. Biggam also showed a case of general paralysis of the insane that had been treated with intravenous injections of typhoid vaccine, with a view to stimulating general reactions similar to those which occur after treatment by induced malaria. Following the first four injections there *was marked reaction, with rigors, sweating, and rise of* temperature to 103° and 104°; but after this no reaction occurred even with large doses of vaccine. The patient derived no benefit from the treatment. Four months later he was readmitted to hospital, and received an intravenous injection of 5 c.cm. of *blood from a patient suffering from* malaria. The first rigor occurred on the fifth day after injection, and parasites were found in the blood. The patient continued to have rigors at irregular intervals until, after the eleventh rigor, quinine was administered. Antisyphilitic treatment was then given, but the patient showed only slight benefit.

Major W. L. FORSYTH contributed a summary of cases of general paralysis treated by induced malaria in one of the county mental hospitals in England. His impression was that the treatment, though in no sense curative, was an advance on those hitherto employed. In a few cases the process of mental deterioration seemed to be retarded, and some patients were able to leave the institution to follow their original employment. In none of the more advanced cases was there any apparent benefit from the treatment. Induced malaria could easily be controlled by intravenous quinine, and the additional course of novarsenobillon given to certain patients appeared to have no advantage. It was disappointing to find that even in cases which improved there was no corresponding amelioration in the Wassermann reaction of the blood or cerebro-spinal fluid.

Therapeutic Use of Brain-flap.

Mr. A. K. HENRY, director of the surgical unit, Kasr-el-Aini Hospital, gave an account of the rare clinical phenomenon of brain-flap, or extensive movements of the brain, synchronous with respiration, which he had studied experimentally with Professor R. Heathcote. The con*dition was apparently* well known to Ambroise Paré, who made certain of his patients with penetrating wounds of the skull which he had treated with tampons expel blood or discharge from between the open dura and the brain by forcing them to breathe out against resistance. He thus used the expiratory or bulging phase of brain-flap in a brain the volume of which had been kept reduced by pressure. Mr. Henry expressed his indebtedness to Professor R. Dobbin, who had given him access to his collection of the writings of old medical authors. He also exhibited some drawings made by Professor Dobbin of an instrument used in 1564 by Paré for opening the skull, which embodied the principles of Souttar's instrument.

Reports of Societies.

URINARY ANTISEPTICS.

At a meeting of the Sections of Urology, Pathology, and Therapeutics of the Royal Society of Medicine on March 21st there was a special discussion on urinary antiseptics. Mr. SWIFT JOLY was in the chair.

Dr. W. LANGDON-BROWN briefly described how the urine might become infected. Many organisms had been grown from the urine, but only a few were of practical importance—*B. coli*, *B. proteus*, streptococci, staphylococci, gonococci, and the tubercle bacillus. The enormous preponderance of *B. coli* infections was shown in a casual collection of cases which he had made from literature: of 437 cases of cystitis 199 grew *B. coli*, 109 of them in pure culture, and of 218 cases of pyelitis 174 grew this organism, 156 *being pure cultures. The problem of sterilization revealed* special difficulties. Was it possible to use an antiseptic strong enough to be germicidal by the time it reached the urine, and yet would not damage the tissues through which it passed? Was it possible to keep the drug in contact *with the urine sufficiently long for it to exert this germi*cidal action? Speaking of intravenous therapy, he said that it was not claimed, even by some enthusiastic supporters of this method, that the benefits were solely due to the direct germicidal action of the injected drug. *Mercurochrome had been most widely used in this direction;* he quoted the experience of workers at the Mayo Clinic that it should be employed intravenously only if emergency demanded it, but that in cases of acute sepsis, when other measures had failed, it merited trial. For oral administration there were few drugs of equal reputation about which so much difference of opinion existed as hexamine. In acute cases it nearly always caused too much irritation to be tolerated, though after a vigorous course of alkalis it might be more successful. He generally gave hexamine now in conjunction with methylene blue, since it seemed much less irritating. Hexyl-resorcinol (caprokol) was the most recent addition to the long list of urinary antiseptics. Very strong claims had been made on its behalf, which, if justified, might be held to be a set-off against its almost prohibitive cost. Acid sodium phosphate was recommended by Hutchison as a method of increasing the acidity, on the ground that it was the natural acidifying agent of the urine; in giving it one must remember that only half of *it was absorbed, the rest being excreted in the urine.* Boric acid appeared to act as a weak antiseptic in both acid and alkaline urine. Copaiba and sandalwood oil sometimes relieved symptoms and diminished the number of organisms in a *B. coli* infection, but it was particularly *after gonococcal cystitis that they appeared to have most* effect. As for vaccines, his impression was that they had never succeeded in rendering the urine sterile, but they might help to reduce toxaemia; they seemed to be more effective in coliform than in coccal infections. Dr. Langdon-Brown finally stated certain questions for discussion.

Dr. CUTHBERT DUKES reported an analysis of 28 cases of catheter cystitis in which the value of urinary antiseptics had been tested. In this disease severe infections, primarily due to pyogenic cocci, ran a chronic course, but mild and uncomplicated cases recovered without treatment in from four to six weeks. The influence of hexyl-resorcinol (caprokol), hexamine, methylene blue, and alkalis on the progress of this type of cystitis had been judged by clinical evidence, by daily quantitative estimations of pus in the urine, and repeated bacteriological examinations. Of "

seven cases treated with hexyl-resorcinol (caprokol) one recovered in thirty days and another in twenty-five days, both mild infections with a good prospect of spontaneous recovery. The remaining five derived no benefit. Of the twelve cases treated with hexamine only one got better more quickly than anticipated, and the other eleven did not benefit in any way. Most of the hexamine patients regarded the treatment as a disagreeable experience, and complained of discomfort, especially when free formaldehyde was present in the urine. In the four cases treated with methylene blue there was no sign of any favourable influence on the progress of the disease. The best results were obtained in the five cases treated with alkalis; they did not exert any antiseptic action in the urine, but they made the patient more comfortable, and might perhaps tend to shorten the natural duration of cystitis. Until some definitely curative remedy had been established the best plan of treating catheter cystitis was to keep the patient on a non-stimulating diet, to give large quantities of water, and to maintain the alkalinity of the urine. This relieved the bladder symptoms and placed the patient in the most favourable position for his own natural recuperative powers to overcome the infection.

Dr. PHILIP HAMILL said that relatively few coccal cases of urinary infection fell to the lot of the ordinary physician; the coliform infections were more common. It must be the experience of them all that they really could not push hexamine and acidification in the early stages, because of the pain produced. He had tried cases on drinking-water alone, and had been satisfied that they cleared up no more slowly than under hexamine. The difficulty was to get the patient to drink when the urine was acid and when there was pain each time the bladder was emptied. It was the value of alkaline treatment that micturition could be rendered painless, and then the patient could accept the advice to drink freely. Methylene blue made the patient more comfortable, but did not appear to diminish the quantity of pus. Hexyl-resorcinol (caprokol) was expensive, but produced comfort fairly soon, and the attainment of comfort was a very important thing. The difficulty with some patients was to swallow capsules as large as those containing this preparation. Was it possible to give a drug which made the urine bactericidal? He described an experiment which suggested that hexyl-resorcinol made the urine strongly bactericidal to *Staphylococcus aureus*, but unfortunately not to the more common organism, *B. coli*.

Mr. F. A. G. JEANS said that the effect of hexamine on a tuberculous kidney was to make it worse. Urotropine was irritating to the kidneys unless something was given to counteract it. Dr. L. P. GARROD described experiments on the rate of growth in an acid and in an alkaline urine. They indicated that the urine must be made strongly acid in order to interfere with the growth of *B. coli*; this was very uncomfortable to the patient. Mr. F. R. FEILDEN had been much impressed by the value of flavine, which he had given continually for the past nine years. It was one of the most powerful urinary antiseptics known; a dilution of 1 in 3,000 was sufficient to inhibit the growth of gonococci. He gave it with alkali because he believed it to be rather more efficient in an alkaline medium. Dr. KINGSTON BARTON said that so long as the urine was alkaline hexamine was of practically no use. The only drug that would bring down the acidity was acid sodium phosphate. From the experience of one of his patients it seemed advisable to give hexamine, not in a big dose at night, but in smaller and more frequent doses as early in the day as possible. Mr. JOHN EVERIDGE said that hexamine was a most valuable drug, and had an additional value if given some time after acid sodium phosphate. Dr. GEORGE GRAHAM was sceptical about the good results of hexamine. They were affirmed by the clinicians, but there did not appear to be pathological evidence. He had never seen a case in which it seemed to do any good whatever. Dr. ELIZABETH LEPPER described certain cases in which she thought hexamine did good.

Mr. SWIFT JOLY, from the chair, remarked that there seemed to be practically no antiseptic of any value at all at the kidney level. The greater part of the work mentioned that evening had been done in cases with organisms flourishing in the bladder. If there was any infection of the kidney, especially a coccal infection, which had continued for more than a few months, it was likely to persist indefinitely, and in time become bilateral, and end by killing the patient.

Dr. LANGDON BROWN said that the discussion had amply borne out his contention that there were few drugs about which so much difference of opinion existed. There was really very little satisfactory evidence of a pathological sort as to the efficiency of the drugs in common use, yet there was clinical evidence that the patients could be made more comfortable by the use of the drugs.

Dr. CUTHBERT DUKES, also in reply, made it plain that his own remarks had had reference only to catheter cystitis. He deprecated massive doses of alkali, which had no real object.

THE DENTAL ASPECTS OF RADIUM TREATMENT.

AT the meeting of the Section of Odontology of the Royal Society of Medicine on March 25th, with Mr. GEORGE NORTHCROFT in the chair, Mr. CYRIL H. HOWKINS of Birmingham read a short paper on the dental aspects of radium treatment.

Mr. Howkins said that radium in dental applications might be utilized in two ways—either by burying the needle, or by holding it in proximity to the growth when direct insertion of it was not possible or was inadvisable. The preliminary measures which dental surgery could undertake to assist radium treatment in malignant disease occurring in or near the buccal cavity included the removal of teeth and general elimination of oral sepsis, the removal of metal fillings, crowns, and bridges, to prevent secondary radiations which might cause necrosis, the removal of sequestrum, and the provision of some apparatus to hold or limit the action of radium, of some form of obturator to replace lost tissues, and possibly of dental splints when there was considerable loss of bone. The main problem for the dental surgeon was to design, prepare, and insert appliances, on the one hand to hold the radium in position, and, on the other, to limit the action of the radium. In either case a consultation with the radiologist was necessary, with an examination of the parts concerned and the taking of impressions. In this way a knowledge of the condition was obtained, and some idea as to the probable form of treatment, the number, size, and position of the needles, and as to the advisability of extractions and treatment of any existing teeth. The decision as to extraction depended upon circumstances. Any doubtful teeth near the growth should be removed at once, but where there were firm sound teeth some distance away, and the gingival margins were clean, he had let them remain because they were of great assistance in retaining an applicator or protector. The impressions, which should be wide ones, were taken in any suitable [illegible] of Paris was preferable—and then the des[illegible] and protecting appliance had to be considered. An applicator to hold needles in the proximity of the growth was so arranged that the needles were about 12 to 15 mm. away, and protection was secured by means of lead to prevent the rays attacking healthy tissues. The needles were inserted into shallow grooves and fastened by thread or wire, or in some cases by hard wax. A detached needle might be lost, with unfortunate results from more than one point of view. The cutting of the grooves should be done in consultation with the radiologist, and the model of the appliance in wax submitted to him for any observations he might make. As the appliance might have to be worn for from two to fourteen days, some form of firm retention was necessary. For this purpose springs, bands on remaining teeth, and upper and lower plates with "blocks" in place of teeth had been used. The material employed might be vulcanite or some form of "base plate"; the lead to protect the parts not to be irradiated must be incorporated or firmly fixed to the material. As the appliances were movable they might be taken out and cleaned when necessary, and immediately reinserted. It was extraordinary how well the patients behaved and how they endured the discomfort. The results had so far proved most satisfactory, and radium treatment in selected cases had opened up a fresh channel in which the dental profession could exercise its ingenuity.

Reviews.

JANET ON GONORRHOEA.

DR. JULES JANET is the oldest and most experienced of all living authorities on the subject of gonorrhoea, and his recent work on the diagnosis and treatment of blennorrhagia[1] cannot fail to be of the greatest interest to all who are called upon to treat venereal disease. His book is essentially a personal one, giving the results of a lifelong study.

The first part is devoted to a general consideration of the subject of gonorrhoea, and furnishes a warning to all who may be inclined to treat this disease lightly and to discount its gravity and danger. The second part deals with diagnosis in men; in it the author insists that the doctor who treats the trouble himself must make a bacteriological examination, and for this reason he supplies a careful morphological and biological study of the gonococcus. Following this comes an account of treatment, starting with abortive treatment by means of argyrol, and continuing with an exposition of the method of lavage with which the name of Janet is so closely associated. In carrying this out he insists on the use of an exact technique, and remarks on the frequency with which the method is wrongly applied. In a later chapter dealing with treatment he utters a necessary note of warning on the limitations of instrumental treatment. Following the apathetic period of treatment before the war came a time when experts in venereal disease attempted to eradicate the gonococcus by means of numerous and ingenious instruments. The urethra was subjected to dilatations, ionization, cauterization, and suction, with in many cases disastrous results. The urethral mucosa is easily damaged, and too often as a result of much instrumentation a gonococcal infection was followed by a chronic traumatic lesion. While recognizing the value of some of these forms of treatment in special cases, Janet declaims against their general use. The third part of his book is devoted to gonorrhoea in women, a disease which is even less satisfactorily treated than male gonorrhoea. In this chapter Janet's chief message is that, on the whole, there is a general tendency to neglect focuses of infection in the region of Skene's tubules and Bartholin's glands.

Among the more interesting of the later chapters are those devoted to infections of both parties in marriage, and to the problem of the marriage of the male who has suffered from chronic gonorrhoea. In describing the former Janet points out that when both parties are infected an immunity is soon established. If, however, a third person has sexual connexion with either of the infected members an acute form of the disease is only too likely to result. Concerning the marriage of a patient who has suffered from chronic gonorrhoea in the past, he is inclined to adopt an optimistic attitude. During recent years many authorities have used the method of spermo-culture as a means of determining whether gonococci are still present. As a result of the investigations of a series of cases, such authorities as Guepin, Lebreton, and Barbillon have stated that as many as 80 per cent. of cases of chronic gonorrhoea show the presence of gonococci in the sperm, and are, therefore, potential carriers of the disease. Janet discusses these astonishingly gloomy results, and points out that if they are to be accepted without qualification it would mean that marriage with a man who had suffered in the past from chronic gonorrhoea would be so dangerous as to be prohibitive. In his experience, although the infection of a bride by her husband is unfortunately no rare event, such a disaster is not as common as the results of spermo-culture would indicate. From his own case-sheets he would estimate the frequency of infection at 3 per cent. rather than at 80. At the present time he sees no means of reducing still further this risk, for there does not exist any method of analysis which can give complete and immediate security to any girl who marries a man who has suffered in the past from a chronic gonococcal discharge. Even a negative spermo-culture furnishes no complete guarantee. At the end of the work is appended a bibliography which covers twenty-seven pages.

It is almost unnecessary to say that the publication of Janet's book is an event in the world of venereal literature. While there are many points on which younger venereologists will differ with him, it is impossible to set aside lightly the opinions of the doyen of experts in gonorrhoea.

[1] *Diagnostic et Traitement de la Blennorragie.* Par Dr. Jules Janet. Paris: Masson et Cie. 1929. (6½ × 10, pp. 536; 143 figures. 60 fr.)

MODERN NEUROLOGY.

IN *Recent Advances in Neurology*[2] Drs. W. RUSSELL BRAIN and E. B. STRAUSS have given a full and satisfactory account of current neurological practice and theory, more particularly from the point of view of British workers. They devote chapters to the circulation of the cerebro-spinal fluid, with notes on the work of Weed, and the use of lipiodol in the diagnosis of spinal block; to intracranial tumours, basing their classification on the well-known work of Cushing, Bailey, and Penfield, and describing the use of ventriculography and the interpretation of ventriculograms; to the visual pathway and its disturbances in intracranial lesions; to the intracranial regulation of the cerebral circulation; to posture and tonus, and the clinical application of the work of Sherrington, Magnus, and other physiologists on the static aspect of muscular activity; to the work of British neurologists, especially Walshe, on paraplegia and hemiplegia; to the cerebellum and the extrapyramidal system; and to miscellaneous therapeutic advances, including an account of the ketogenic treatment of epilepsy. The chapter on Pavlov's work, though interesting, is too brief, and might with advantage include a consideration of the work of Krasnogorski on the development of the conditioned reflexes in children. Perhaps an English translation of Pavlov's book on the activity of the cerebral hemispheres will be published in time to secure adequate discussion in a future edition. The authors give a good account of epidemic encephalitis and the neurotropic viruses, though these are large subjects and difficult to present in compact form. Under miscellaneous therapeutic advances the ketogenic treatment of epilepsy is well set out. Altogether Drs. Russell Brain and Strauss are to be congratulated on a thoroughly creditable presentation of a difficult subject, with a well-balanced discussion of opposing views.

[2] *Recent Advances in Neurology.* By W. Russell Brain, B.M.Oxon., M.R.C.P.Lond., and E. B. Strauss, B.M., B.Ch.Oxon., M.R.C.P.Lond. London: J. and A. Churchill. 1929. (5½ × 8½, pp. xii + 412; 33 figures. 12s. 6d. net.)

A TEXTBOOK OF MEDICINE.

THE development of specialism in medical practice is reflected in the tendency to produce textbooks in which the writing of each section is entrusted to a separate author, the function of the editor being mainly to choose his contributors, in the first instance, and then to ensure uniformity of manner and freedom from overlapping and disproportion of parts. *A Textbook of Medicine*,[3] edited by Dr. J. J. CONYBEARE, has ten such contributors, whose aim appears to have been rather to give an account of knowledge gleaned from many sources, and of the general consensus of opinion regarding their allotted subject, than merely to record personal experience. In addition to the usual subjects treated in textbooks of medicine, this volume of nearly 1,000 pages includes sections on diseases of the skin, diseases of infants, the common cold, and examination for life insurance. Clinical methods and details of laboratory technique have, for the most part, been omitted, and physical signs (in the editor's opinion better learned at the bedside) are described only sketchily. Speaking generally, the subject matter is clearly presented, and due weight is given to recent work. On the other hand, though much of the classification adopted is orthodox, certain exceptions call for comment. Von Jaksch's anaemia, for example, is grouped with diseases of the ductless glands, and no mention is made of the abnormal red and white corpuscles which are among its diagnostic features. The diagnosis of tuberculosis of the mediastinal glands is

[3] *A Textbook of Medicine.* By Various Authors. Edited by J. J. Conybeare, M.C., M.D.Oxon., F.R.C.P. Edinburgh: E. and S. Livingstone. 1929. (Demy 8vo, pp. xiv – 976; 15 figures, 8 plates. 22s. 6d.)

inadequately described, no mention being made of D'Espine's sign. In the section on diseases of the kidney not enough account is given of nephrosis and haemorrhagic nephritis, and the mechanical factor in many cases of chronic pyelitis is insufficiently stressed. The author of the section on respiratory diseases seems to overrate the significance of foreign proteins in the etiology of asthma. It must, however, be emphasized that these criticisms concern points of detail only, and that the book as a whole is, in our opinion, sound and adequately representative of modern views. Dr. Conybeare has himself contributed a great part of the work, and has shown considerable skill as editor in linking up the various sections.

OPHTHALMOLOGY.

A NEW manual of ophthalmology, entitled *The Eye*,[4] has recently appeared from the pen of Dr. C. W. RUTHERFORD of Indianapolis. Its aim is to provide a textbook for the student of medicine and a reference work for the general practitioner. The whole of ophthalmology is gone through systematically, each separate organ of the eye being treated seriatim, and dealt with under the headings of anatomy, clinical examination, and diseases with their appropriate medical and surgical treatment. In the first three chapters the lids, the lacrymal apparatus, and the orbit are considered. A large amount of space is devoted to the various plastic procedures which may be required for one reason or another on the lids; in the section on the lacrymal apparatus repeated probing as a method of treatment is recommended, and when operation is decided upon, excision of the sac is considered the method of choice, it being suggested that drainage operations into the nasal cavity are inadvisable owing to the fear of a spread of infection. There follow sections on the conjunctiva, the cornea, and the sclerotic; two chapters on the ophthalmoscope and the visual fields are interpolated, after which the inner parts of the eye are dealt with—the uveal tract, the retina, intra-ocular tumours, the optic nerve, the vitreous, glaucoma, and the lens. The remainder of the book is occupied by a consideration of the extra-ocular and intra-ocular muscles and refraction, and it concludes with a note on industrial injuries, their compensation and simulation.

On the whole the book follows very closely orthodox lines, and the teaching is essentially safe and sound throughout; while in this way it performs its essential function, it leaves little room for the original or distinctive in its pages. We are inclined to think that its most useful sphere would be as a reference book for the general practitioner; in its pages he will obtain much useful information presented in an easily assimilable form, and he will be guided over many of the pitfalls which ophthalmological cases present in general practice. For the student of general medicine—in this country at least—the volume is too expensive when compared with the other manuals of equal merit which are available. For the ophthalmic specialist, on the other hand, it is not detailed or critical enough, and for his purposes some recent developments in ophthalmological technique (such as, for example, the slit-lamp) have not been fully noticed in its pages. Like most American textbooks, the volume is extremely well produced; it is clearly printed and illustrated throughout.

ETIOLOGY OF PEPTIC ULCER.

REDWITZ and FUSS's pathogenesis of peptic ulcer,[5] which forms the forty-second volume of the New German Surgery edited by Küttner, should prove a useful work of reference in all questions relating to the etiology of that disease. The authors have undertaken the laborious task of bringing together and classifying every factor that can be regarded as being of direct or accessory etiological significance, and this has involved an examination of all the recorded work done on the subject. They have scrutinized the whole of the literature up to the middle of the year 1927, and the publications referred to, more than three thousand in number, form the basis of the work.

In dealing with the numerous etiological factors concerned the authors state very fully and impartially the evidence pointing to the significance of each and any criticism that may be urged against its acceptance. They remark that the enormous amount of work which has hitherto been carried out on the subject of gastric ulcer has not led to the adoption of any generally accepted doctrine, but to various and often contradictory theories, and this has, apparently, been due in large measure to the tendency to seek for some single specific cause, applicable in all cases. Acceptance of the view that a number of factors, variously combined in different cases, are concerned in the etiology is likely to lead to greater unanimity, and an accurate knowledge of all contributory pathological conditions present in individual cases cannot but be of importance in determining the line of treatment. It is not enough to know that a gastric ulcer may take origin in a necrotic patch in the mucous membrane as the result of local arterial obstruction or bacterial or toxic action; of more practical importance is the recognition of the accessory factors which tend to render chronic the ulcer resulting from the primary defect. Inquiry has to be made as to the possible retention of the stomach contents; mechanical conditions leading to deformity of the organ, such as ptosis and stenosis; the presence of altered conditions of the blood, hindering healing of the ulcer, and general circulatory or nervous affections having a like effect; the presence of chronic diffuse gastritis; and the possibility of auto-intoxication from hepatic or renal disorders. Whether an actual local bacterial infection may cause the continuance of an ulcer is, the authors consider, an open question; but the presence of the ulcer itself is recognized as an accessory factor in chronicity, by exposing the subjacent tissue to the action of the gastric juice, and causing irregular secretion, spasm of the pylorus, and irritation of the muscle of the stomach. Finally, a possible hereditary or constitutional predisposition has to be taken into consideration. These and other factors are discussed at length in this book, which affords the means of obtaining a good grounding in a complicated subject.

PHYSICS FOR STUDENTS OF MEDICINE.

PROFESSOR SIDNEY RUSS has produced an attractive hand-book on *Physics for Medical Students*,[6] in which his purpose of presenting the subject with an eye to the student's future preoccupations has been well achieved. Each of the nine chapters deals concisely with one branch of physics, and while the physics of sound occupies only nine pages and that of magnetism only twelve, much more space is allotted to the consideration of such topics as mechanics and current electricity, as being more important in the medical curriculum. The mechanism of muscular action is described and illustrated; it is calculated, for example, that a 10 st. man exerts a pull of some 26 st. with his tendo Achillis in raising himself on his toes, knowledge with which the student will be the better able to apply himself to the treatment of fractures of the lower extremity. The style of the book is clear and free from unnecessary detail, although here and there one finds excursions into trigonometry. The principle of the microscope is dealt with, perhaps, rather too briefly—a few words about the oil-immersion lens and a reference to dark-ground microscopy might have been included. There is an account of blood spectra on page 121, in which it is stated that citrated blood is examined. Specimens for this purpose should, of course, be made up with distilled water, not citrate solution, citrated blood being opaque. A purist might also object to the statement on page 145 that "tubes of force" are "sometimes referred to as lines of force." The book is well printed and the illustrations, which are mainly line drawings, are excellent. On page 109 "distance of distant vision" should, no doubt, read "distance of distinct vision."

[4] *The Eye*. By C. W. Rutherford, M.D., F.A.C.S. New York and London: D. Appleton and Co. 1928. (Roy. 8vo, pp. xxvi + 404; 305 figures, 11 plates. 30s.)

[5] *Die Pathogenese des peptischen Geschwurs des Magens und der oberen Darmabschnitte*. Von Dr. Erich Freiherr v. Redwitz und Dr. Hans Fuss. Neue Deutsche Chirurgie, 42 Band. Stuttgart: F. Enke. 1928. (Roy. 8vo, pp. xiv + 387; 76 figures. M.44.)

[6] *Physics for Medical Students*. By Sidney Russ, D.Sc. Edinburgh: E. and S. Livingstone. 1928. (Demy 8vo, pp. vii + 220; 126 figures. 10s. 6d. net.)

NOTES ON BOOKS.

MR. CHARLES FOX, who is lecturer in educational psychology at the University of Cambridge, has written a volume on *Practical Psychology*,[1] which will be found invaluable to students of education, for whom it is primarily intended. The author expresses the hope, also, that it may have a wider appeal, since although the material has a definite educational bias, it ought to be of use to others who are interested in the practical psychology of the higher mental processes from other standpoints. The course of work here presented has been given for some years to students of education in Cambridge University. All the tests are quantitative, as the course is meant for class use. The book would appear to fill a gap in the literature concerned with experimental psychology.

We are told by Professor WILBUR PARDON BOWEN that kinesiology is the science of bodily movement. The word is not to be found in the *Concise Oxford Dictionary*, and therefore this interpretation is not superfluous, even when *Applied Anatomy and Kinesiology*[2] has reached this, its fourth, edition. This book is doubtless intended principally for the use of teachers of gymnastics and so-called "physical jerks," for much of the information contained in it on anatomy and physiology, as well as many of the illustrations, are to be found in the standard textbooks of physiology or manuals of human anatomy. Nevertheless, there is much in the book to interest trained anatomists, and to remind them of the problems of combined muscular action, but we are surprised to find no reference to the important subject of muscular tone, on the strength and normality of which the maintenance of correct posture in the erect position so much depends. The American Posture League, of whose activities we hear from time to time, is much concerned in encouraging correct posture, and in recommending such appliances of everyday use—for example, chairs and desks—as will enable good posture to be maintained at the least expense of neuro-muscular force. The photographs showing the action of the superficial muscles in the performance of various athletic exercises, such as throwing, putting the shot, etc., are interesting, as well as those of some industrial occupations.

Though Dr. A. C. GARNETT intends his book on *Instinct and Personality*[3] to present and apply an original standpoint in psychology, he has striven to make it comprehensible to the reader who has no special knowledge of the subject with which it is concerned. The writer develops a "hormic" theory of life. He takes the view that the simplest form of living organism is inexplicable in terms of chemistry and physics, and that the process of evolution must be interpreted as a striving toward the individuality which is manifested most clearly in man's conscious nature. The conclusion is finally reached that before animate organisms appeared on this planet, horme, life-force, *élan vital*, or "urge" existed, in some form, in inanimate nature. "This is a stupendous conclusion," Dr. Garnett writes, "and when we remember that matter itself seems to be resolved into something of the nature of 'drive' and organization, it is but a step to the conclusion that even inanimate matter is the creation of what, from the standpoint of our limited experience, we can best describe as universal Horme." It is evident that much thought has been expended in the preparation of this volume, and the author has been quite successful in making his views clear to the educated reader.

We have received the three numbers of the English edition of *Messrs. E. Merck's Annual Report*[10] for 1928. This publication is now issued thrice yearly. The volumes contain reprints of a few short articles on special drugs, but consist chiefly of abstracts of literature relating to the action of drugs. Inspection of the references shows that the great majority are to work that appeared in 1926. The volumes form a very useful reference book for obtaining information about work that has been done recently on drugs, and particularly on new proprietary remedies. Some of the drugs of particular interest of which an account is given are ephedrine, plasmoquine (the new synthetic substitute for quinine), psicaine (the new synthetic local anaesthetic), and thallium acetate, a drug which is used as a depilatory in ringworm. These reports are issued free to members of the medical and pharmaceutical professions on application to the publishers (E. Merck, Chem. Fabrik, Darmstadt).

A second edition, long overdue—the first was published in 1922—of Dr. W. J. TURRELL's book on *The Principles of Electrotherapy and their Practical Application*[11] is now available. So much has been added, so much revised and rewritten, that it is almost a new book, rather than a second edition. Especial attention has been given to the high-frequency currents, the good results following on the treatment of pneumonia by diathermy, and to Jellinek's important work on the causes of death from high-voltage electricity. We reviewed very favourably the first edition, and have an equally good opinion of the second. The author is an original thinker and writer, and his book, in which his own opinions are very much in evidence, is on this account all the more valuable.

[1] *Practical Psychology*. By Charles Fox, M.A. London: Kegan Paul, Trench, Trubner, and Co., Ltd. 1928. (Demy 8vo, pp. xvii + 180; 19 figures. 7s. 6d. net.)

[2] *Applied Anatomy and Kinesiology*. By Wilbur Pardon Bowen, M.S. Fourth edition, thoroughly revised. The Physical Education Series. London: H. Kimpton. 1928. (6 × 9¼, pp. xv + 356; 224 figures. 12s. net.)

[3] *Instinct and Personality*. By A. Campbell Garnett, M.A., Litt.D. London: G. Allen and Unwin, Ltd. 1928. (Demy 8vo, pp. 218. 8s. 6d. net.)

[10] *E. Merck's Annual Report*, 1928, Parts I to III. English edition. Darmstadt: E. Merck. (Demy 8vo, Part I, pp. 152; Part II, pp. 304; Part III, pp. 329-494.)

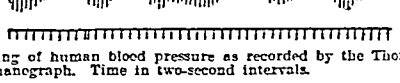
[11] *The Principles of Electrotherapy and their Practical Application*. By W. J. Turrell, D.M., B.Ch., D.M.R. and E. Second edition. Oxford Medical Publications. London: Milford, Oxford University Press. 1929. (Demy 8vo, pp. xvi + 413; 34 figures. 16s. net.)

PREPARATIONS AND APPLIANCES.

AN APPARATUS FOR OBTAINING CONTINUOUS RECORDS OF HUMAN BLOOD PRESSURE.

MR. J. H. THOMPSON, B.Sc. (Department of Physiology, Middlesex Hospital Medical School), writes: Since my preliminary communication[1] appeared the apparatus for recording human blood pressure continuously has been considerably improved in several directions. It is now possible to obtain records for unlimited periods of time without causing the least discomfort to the subject. The instrument is sufficiently sensitive to record accurately the most rapid fluctuations in blood pressure, and is designed to indicate on the recording surface variations of blood pressure in terms of millimetres of mercury. By means of a simple device the results can be magnified or diminished. The improved apparatus consists of a water manometer, one limb of which is of greater diameter than the other, with a reservoir into which the fluid can be emptied at the conclusion of an experiment. A specially constructed glass float already described carries the recording pointer.

In the earlier experiments the apparatus was connected with a sphygmomanometer bag. After a period of five minutes the venous congestion was considerable and much discomfort was experienced by the subject; it was impossible, therefore, to record continuously for a longer time than ten minutes. A special armlet has been devised whereby these untoward effects are eliminated. It consists of two wide strips of aluminium joined by a hinge on one side and by a "throw-over" catch on the other. One strip is perforated by a piece of narrow rubber pressure tubing which is connected to a small rubber bag, about two inches square, resting within the concavity of the metal band. The bag is connected to a T-piece, one limb of which leads to the manometer and the other to a small metal hand pump. The other strip is also perforated with a metal screw-rod, to which is attached a small metal plate suitably padded. The armlet is placed over the elbow so that the bag rests upon the brachial artery, the catch is secured, and the plate screwed until the whole armlet is firmly fixed in position. The bag is then inflated and a record taken. It is found that by using this apparatus no venous congestion occurs, and the veins on the lateral and posterior aspects of the arm (which are not compressed) are sufficient to maintain an adequate venous return. With the arm comfortably supported, subjects are able to give continuous records for over an hour without any discomfort.



Tracing of human blood pressure as recorded by the Thompson sphygmanograph. Time in two-second intervals.

Several precautions must be taken in using the apparatus. It is advisable to place a three-way tap between the inflator and the apparatus, since the slightest leak in the apparatus results in a slow persistent fall on the record. It is almost impossible to obtain inflators which do not leak. It is therefore best to interpolate a three-way tap, so that after the inflation has been done the pump can be eliminated from the pressure system. It is also important that the subject should keep still. It will be readily understood that slight movements of the biceps muscle will cause rises of pressure within the bag. These are easily discriminated by their sharp outline and rapid return to the original base line. But they are apt to spoil a good tracing, and in this laboratory the practice has always been to request the subject to remain perfectly quiet.

It is obviously of value, however, to be able to record blood pressure during movement on the part of the subject—for example, during exercise. In order to make this practicable another armlet has been made for the wrist. It is elliptical in shape and the bag is long and very narrow, to fit the groove between the radius and the flexor carpi radialis tendon. Otherwise its structure is comparable to the brachial armlet. Experiments performed with this wristlet indicate that variations in blood pressure can be recorded equally well, excepting that the individual heart beats are not so large. But the great advantage is that the subject can move about and actually exercise the arm without any mechanical disturbance of the pressure system.

This sphygmanograph is now made in portable form by W. Pitman, c.o. this laboratory. Patents have been applied for.

[1] Thompson, J. H.

British Medical Journal.

SATURDAY, APRIL 6TH, 1929.

THE CHANGED OUTLOOK ON CARDIAC DISEASE.

MANY of those engaged to-day in general practice have a vague feeling that modern research in cardiology, so especially associated with the names of James Mackenzie and Thomas Lewis, has largely revolutionized the teaching about heart disease to which they were accustomed in their student days. To some extent this is true. There has, indeed, been an addition to our knowledge, and, if we may so express it, a subtraction from it. Owing largely to the help of the electro-cardiograph, a knowledge of the contraction of the various chambers of the heart has been obtained which did not exist formerly. Consequently, some order has been introduced into the chaos of cardiac arrhythmias which previously were so jumbled up together and inadequately differentiated that neither the meaning of sinus arrhythmia, which is hardly pathological, nor the relative unimportance of many kinds of extra-systole was in the least understood. Again, though auricular fibrillation may have been dimly recognized under the form of the "mitral pulse" or "delirium cordis," its essential significance was by no means realized. Digitalis, doubtless, was given in such cases, and given with success, yet no one knew that this success was due to the introduction by the drug of a partial heart-block. Though at first it required the string galvanometer to make scientific distinctions between the various arrhythmias, fortunately they can now in most instances be recognized clinically without instrumental methods.

On the other hand, we must subtract from some of our previous knowledge, in particular that which concerned itself with murmurs, for their significance has been much diminished by modern teaching. In medicine, as in religion and politics, there is always a tendency to rush to extremes when any new doctrine is being inculcated, so that some disciples of the new cardiology have been inclined to convey the impression that most murmurs have no importance at all. Certainly in the past a disproportionate amount of study was devoted to murmurs, and whereas previously their meaning was overestimated, it now runs the risk of being unduly minimized. Murmurs are easy to recognize and easy to teach upon, which may account for the great amount of time and learning which has been bestowed upon their origin and transmission from a purely mechanical and acoustic point of view. But the essential change brought about by modern cardiac research is in directing attention to the primary importance of the heart muscle. It must not be supposed that our predecessors were not fully alive to the importance of the heart muscle; thus Laennec, the discoverer of mediate auscultation, spoke of the condition of the myocardium as "the key to cardiac pathology," while William Stokes in 1834 said that no matter what the heart affection may be, "its symptoms mainly depend on the strength or the weakness, the irritability or the paralysis, the anatomic health or disease of the cardiac muscle." But teachers, not unnaturally, have followed the line of least resistance, and have found it easier to give instruction about murmurs, which are there for everyone to hear, than about the myocardium, which, until it is grossly degenerated, may give no evidence of impairment, and may, indeed, cause sudden death in persons who have shown no signs or obvious symptoms of heart disease.

Apical systolic murmurs are now generally believed to be due rather to weakness of the myocardium, perhaps only temporary, which prevents the coaptation of the mitral valve, than to the presence of an organic valvular lesion. We realize now that though the presystolic murmurs of mitral stenosis and the diastolic murmurs of aortic regurgitation indicate the existence of a definite valvular lesion, they provide no definite knowledge as to the strength of the myocardium, and only to a minor extent give a clue to the cause of the lesion. But in any cardiac affection a knowledge of the cause is supremely important, indeed, as the late Professor Huchard used somewhat paradoxically to say, in the case of valvular lesions it is more helpful to know the cause of the lesion than which valve is affected. A structural lesion due to rheumatic fever and its congeners is likely to remain stationary, a fact which may afford ground for a favourable prognosis; on the other hand, a lesion due to syphilis or arterio-sclerosis is likely to be progressive, so that the outlook must necessarily be more unfavourable.

It may be that, apart from the very important knowledge we have gained of cardiac arrhythmias, our diagnosis of cardiac affections has not greatly advanced in the past generation, nor, when once the heart has broken down, have our methods of treatment greatly improved, except in the more scientific administration of digitalis. But considerable advance has been made in the prognosis of cardiac affections. More and more it has come to be realized that in every case of heart disease a knowledge of prognosis is vital. It is not merely a question of estimating the patient's expectation of life, but how effective his life may be made, what sort of occupation he can fill, and what kind of activities, whether physical or intellectual, he can wisely be allowed to follow. Our power to answer questions such as these has certainly much increased of late years. This advance has been brought about largely by the attention that has been directed to the estimation of the strength or weakness of the heart muscle by careful study of the patient's symptoms, and, in particular, by observation of the cardiac response to effort. From a purely prognostic point of view it is recognized that murmurs and their varying changes have much less value than they were thought to have a generation ago.

In former days disease of the heart was held to spell if not the likelihood of sudden death, at least the certainty of a more or less invalid life. We now know that there is an immense difference between an invalid life and a life of restricted activity. There is no question that many patients with heart disease are now allowed, and wisely allowed, to do much more

than they would have been in the past. The modern doctor, armed with additional and more securely based knowledge, unlike his predecessor, endeavours to follow the advice of Plato, who said that the patient should be prevented from nursing his disease to the neglect of his ordinary calling.

THE LOCAL GOVERNMENT ACT.

THE Local Government Bill, 1929, has now received the Royal Assent, and become an Act of Parliament. The corresponding Scottish bill will achieve the same status shortly after Parliament resumes session. Each of these Acts will constitute a far-reaching reformation of local government, and each effects a measure of reform in public health administration not less than that accomplished by the most important previous Acts dealing with these matters. The measure of practical success to be achieved by these reforms depends now upon the methods and efficiency of their administration. This is in the hands of the Ministry of Health and of the councils of county boroughs and of counties in England and Wales, and in those of the corresponding bodies in Scotland. The Scottish Act is even more far-reaching than the English, inasmuch as it affects the administration of education, which the English Act scarcely touches, and alters more widely than that Act the areas of local government.

Though very few of the actual amendments placed on the paper in order to carry out the policy of the British Medical Association have actually been embodied in the Act, the pressure exercised has not been without its effect. The clause empowering the councils of counties and of county boroughs to exercise transferred functions through the appropriate Public Health Acts instead of through the Poor Law has been materially strengthened so as to make it clear that the former method is to be adopted wherever possible. A Ministerial declaration in favour of the co-option on committees, in most cases, of persons of suitable status and experience not themselves members of the appointing councils has been obtained; and it is to be expected that suggestions on these lines will be contained in the circular which it will now be the duty of the Ministry of Health to issue to local government authorities. Owing largely to the efficient and persistent help of Lord Dawson, a new requirement has been secured that councils, before taking action as to the provision of hospital accommodation or deciding on the uses to which it shall be put, shall make such arrangements as they think desirable to consult any body within their area which they consider representative of the governing bodies and of the medical staffs of local voluntary hospitals. None of these things goes as far as the Association would have wished, but each is an important step in the direction desired; and it is a matter of great moment that in every area the medical profession, through the appropriate Division or Branch of the Association, should exert its influence in order to bring about suitable administrative action.

The immediate action required from the councils concerned is the preparation of an administrative scheme for performing the functions transferred to them from the Poor Law guardians. Each council must submit such a scheme to the Minister of Health for his approval before the end of September next; and, on submission, must advertise locally the fact that this has been done and that representations thereon may be made to the Minister within a period of four weeks. Schemes sanctioned will become operative on April 1st, 1930. Draft schemes are already being prepared in a number of areas, and it is clear that any action taken by the medical profession should not be delayed until the publication of a scheme, but should begin at as early a date as is possible. In order to assist in the effective direction of such action the Council of the Association is issuing to each Branch and Division, to medical officers of health, and to medical members of local government authorities and their committees an explanatory memorandum directing attention to the most important points. This memorandum is printed in this week's *Supplement* (p. 77), and the earnest attention of every member of the Association is requested thereto. The three points referred to above—action wherever possible through the appropriate committees and Acts rather than through the Poor Law and the Public Assistance Committee, the co-option of members of the medical profession wherever this can be secured, and the formation of a really representative consultative hospital committee—are those in reference to which the speediest action and greatest pressure are needed. The position and status of transferred district medical officers is also a matter of the very greatest importance, not only to those officers themselves, but to the whole profession in relation to domiciliary services. All these questions have their peculiar difficulties, and it is likely that with regard to some of them it may be necessary to issue some supplementary memorandums of information and advice. Meanwhile it is impossible to overemphasize the importance of the situation and its potentialities; and it is necessary to urge that all concerned in the development of public health services and the relation of the medical profession thereto should realize this, and should, after full consideration, take early and appropriate action.

DOCTOR AND PATIENT.

THERE are many things in the art of medicine which can be learnt by experience only. Nevertheless, the attempt to point out to the senior student or newly qualified practitioner the direction in which some of these things lie, to warn him against mistakes into which he may easily fall, and to help him towards an adjustment of his attitude in relation to various kinds of personality in his prospective patients, is a task well worth doing. Some such task as this has been essayed in a series of lectures delivered within the last few years before students of the Harvard Medical School, and these lectures are now published in a volume entitled *Physician and Patient*,[1] under the editorship of Dr. L. Eugene Emerson. The theme of the lectures is, in general, that it is the patient as well as the disease that requires treatment, and that the patient's mind must be taken into account as well as his body. It is probably the case that the course of training in a medical school, even the clinical instruction and observation in a large hospital, with their necessary insistence on the basic sciences, on laboratory methods, on instrumental aids, and on the observation of physical signs, do not emphasize sufficiently the human relations between doctor and patient and the need for psychological insight and sympathy. In actual practice, of course, these are all-important, even though the fact be recognized that the doctor can never know too much about his patient's physical condition. Unless a student has a character or temperament which permits of the [illegible] development of such relationship and insight [illegible] and unfitted for most branches of the medical [illegible] unless a practitioner does actually cultivate [illegible]

[1] *Physician and Patient: Personal Care.* Edited by [illegible]. Cambridge, Mass.: Harvard University Press. 1929. (5½ × 8, pp. viii + 244. 11s.

never be really successful in his calling. There can be no doubt that these things, along with some others connected with the daily practice of his profession which are not often included in his educational course, ought to be impressed upon the student. Most of the articles in the volume under review must certainly have been, when they were delivered as discourses to a suitable audience, valuable contributions to this end. Each of them contains some noteworthy saying, some wise observation, some narration of interesting and instructive incident. That, however, which may well be said once a year, or even once in a university term, in its appropriate place, will not necessarily be useful, or even tolerable, when read nine times over within a few hours, even if the form be modified. The collection of these lectures in one volume does not make a good book for whatever class of reader it is intended. The last three of the nine essays are somewhat different in character from the rest, and are less good in themselves. They are all by Dr. Alfred Worcester, and are on the care of the aged, the care of the dying, and the attention to personality in sex hygiene. The fact that in the medical care of the very old and of the dying a time comes when all attempts at curative treatment should be abandoned, and attention should be directed solely to comforting and sustaining the patient, in spite of the fact that his friends may still be clamouring for active therapeutic measures with a view to possible recovery or prolongation of life, and that this constitutes a real difficulty at times for the practitioner, is worth setting down; but beyond this the three essays do not seem to contain much of value. To advocate that the treatment of senescence should be elevated into a specialty, and that the absence of a library of books on the subject is a disgrace to the profession, shows a sad lack of judgement and of a sense of proportion. It is to be hoped, too, that the following statement is not true of America, as it is certainly untrue of Great Britain: "The advance of medical science is now furthered only by the discoveries of the specialists. Dazzled by the brilliancy of these, general practitioners have ceased communicating to the profession even the results of their experience. Consequently in their particular fields neither medical science nor the art of practice advances." On the contrary, the advance, surely, is so great as to justify the conclusion of Dr. Thayer's lecture or parable entitled "The Medical Education of Jones: by Smith." "'Doctor,' said one of the boys, 'Have you read *Arrowsmith*?' 'No,' said Jones, 'but I will.' He read it, lay back in his chair, and laughed. 'By Jove,' said he, 'I might almost have written that myself twenty-seven years ago.'"

CREMATION IN ENGLAND.

It is probable that the general adoption of cremation is, to some extent, hampered by the existence of a definite opposition to this method of disposing of the dead; but the greatest obstacle would appear to be a widespread reluctance to think of the matter at all. Many persons, it is true, are prepared to discuss the desirability of cremation, in the abstract; some will even discuss it in concrete terms, so long as present company is excepted. It is, however, a big step from an academic acquiescence in cremation to a willingness and a capacity to leave explicit instructions about the disposal of one's own dead body, a bigger step than most people are at present prepared to take. Nevertheless the number of cremations carried out in the United Kingdom is increasing, though very slowly, and new crematoriums are being established. The council of the Cremation Society of England, in its annual report for 1928, states that in that year the total number of cremations carried out in Great Britain was 3,456, a figure representing an increase of 5.24 per cent. over that for 1927, and of nearly 30 per cent. over the last five years' average. There are now twenty crematoriums in the British Islands, this number including the new buildings at Ipswich and Bristol, one in course of construction at Guernsey, and another at Edinburgh. The provision of crematoriums is being considered by various local authorities and burial boards throughout the country, and though their schemes may not mature immediately the council holds that the very fact that the question is being seriously discussed is evidence that cremation is coming to be regarded as the only practical solution of the problem which arises from the rapidly diminishing space available for burial purposes in and near populous centres. During the year useful propaganda has been carried out at a number of health week exhibitions in co-operation with the Central Council of Health Education, and numerous lectures on behalf of the society have been given to organizations such as the Women's Co-operative and Labour Guilds, adult institutes, and Young People's Fellowship meetings. Though no immediate results are expected from these methods of propaganda, which in the main reach the less well-to-do classes, it is hoped that the education of the masses of the public may help to bring about an alteration of the existing law, or enable the society, by some form of industrial insurance, to bring cremation within the reach of the poorer classes.

THE BROAD TAPEWORM.

THE broad tapeworm of man, *Diphyllobothrium latum*, which is not uncommon in the Scandinavian districts of Europe, has in recent years become naturalized in the Great Lake districts of Canada and the United States owing to immigration of these northern peoples. In some of the lakes a high percentage of fish are now infected, and as these are used extensively for food the dangers of a heavy human infestation would be considerable were it not for the fact that the fish are almost invariably cooked before being eaten. The infection can only be continued through the contamination of the water by the faeces of fish-eating mammals, of which man is the most important. Vergeat,[1] however, has recently found that the fish in certain lakes which have a very small human population on their shores are heavily infected, and the fact that innumerable dogs abound—and it is well known that dogs, cats, and other carnivores, including bears, can harbour the adult parasite—suggests that they are the reservoirs from which the fish become infected. The parasite is long-lived and enormously prolific, producing several millions of eggs daily, and a single person can therefore infect a whole lake and keep it infected for a very considerable time. Moreover, the importance of a single infected human host is increased by the fact that fish, especially pike, can live for long periods, and so maintain the potential infectiousness of a region for years after the departure of the original source. Information as to the longevity of the parasite is in part based on the records obtained from American immigrants before it was known that the parasite had become naturalized; and these must therefore be regarded with some suspicion. However, Professor R. T. Leiper[2] records an experimental infection in himself which persisted for over five years without exhibiting any definite symptoms during most of this time. A remarkable feature of this case was the complete absence of segments in the stool, although eggs were always found when microscopic search was made. This fact is of some importance, as the presence of a tapeworm is always suspected in the first place from the passage of segments. If these are absent the parasite may exist for years without either the patient or his medical attendant suspecting its existence, and so perpetuate the possibilities of infecting the fish in any lake into which the

[1] *Journ. Amer. Med. Assoc.*, February 23rd, 1929.
[2] *Journal of Helminthology*, December, 1928.

faeces may pass. In addition to harbouring the adult tapeworm, man, especially in the East, may also harbour the larval stages of several related species which live as adults in the dog and cat. These larvae occur, among other animals, in frogs, and the parasite is acquired by its definitive host eating the frog. (It has recently been shown by Professor Faust that they will not develop in man when the larva is swallowed.) In human beings the larval stage is generally known as *Sparganum mansoni*, after Sir Patrick Manson, who discovered them in Amoy in 1882. It has always been supposed that man becomes infected by swallowing the first intermediate host—a species of *Cyclops* or water-flea—and consequently functions as a second intermediary. But Dr. Faust suggests another explanation. In some of his cases there was a history of an abscess, to which the patient, after the manner of the country, had applied "split" frogs: a similar practice is in vogue in Indo-China, where ocular sparganosis is common, to relieve severe conjunctivitis. The theory that the larvae, which are present in nearly every frog, actively migrate from the *poultice to the patient is an obvious one, and has actually* been proved to be possible by Dr. Faust. Spargana were placed on the orbit of a dog, and observed to penetrate the conjunctival membranes and cause the development of a severe inflammatory process. Other experiments indicated that the larvae, when introduced aseptically into the musculature, were able to multiply asexually over a period of several months—a phenomenon which may explain the rare and peculiar parasite known as *Sparganum proliferum* very occasionally found in human beings.

A TYPHOID CARRIER ON A SHIP.

In 1927 three separate outbreaks of typhoid fever occurred on a passenger ship making round trips to South America, each of two months' duration. The first outbreak occurred in January, with eight cases, the second in July, with *eleven cases, and the third at the end of the year, with* ten cases. It was decided that as there had been no typhoid in the other ships of the line the source of the outbreak must be looked for in the ship itself or in the members of her crew. An investigation was undertaken accordingly by Dr. J. E. Dinger of Amsterdam, for whom a laboratory, with all necessary equipment and subsidiary preparation and washing-up rooms, was built on board the ship. From his account[1] it would appear that his chief difficulties were occasioned by the constant changes of temperature during the voyage and by the movements of the ship. The scope of his investigation was fortunately limited by the discovery that, though the water supply was common to every part of the ship, all the cases recorded had been fed from the second-class pantry. Water was thus excluded as a cause of the outbreak, and the problem became that of discovering the carrier or carriers. Of the 163 persons on board who had served during all the epidemics, six gave a positive Widal reaction, but none had typhoid bacilli in the stools. Examination was then made of the stools and urine of those who in any of the voyages had come into relation with the second- or third-class passengers, or with the food of those classes. In all, the stools and urines of 256 persons were examined, and a leading hand in the engine room was found to be excreting typhoid bacilli. The first cases of the January outbreak had occurred in the engine room, and this carrier, it was found, had shared a cabin with the very first of those cases. Which of the two infected the other could not be decided. The author does not record whether this carrier gave any history of a previous attack of typhoid fever, but it is evident that he gave a negative Widal reaction. The fact that he had nothing to do with handing the food for the passengers or crew may explain the intermittence of the epidemics. After he was segregated and eventually disembarked there was no further outbreak of typhoid fever on board. Dr. Dinger, as an additional precaution, tightened up the food-handling regulations of the ship, and inoculated the whole of the crew against typhoid. He holds that protective inoculation should be carried out from time to time among the crews of all ships entering tropical harbours.

[1] *Archiv für Schiffs- und Tropen-Hygiene*, January, 1929, p. 37.

"THE HEALTH OF THE NATION."

In our review of Dr. F. E. Fremantle's book on *The Health of the Nation* in the *Journal of* October 15th, 1927 (p. 688), we expressed the opinion that future editions were certain to be required, and suggested to the author some points for notice when revision was needed. It is a pleasure to discover that a second edition[1] has already been necessary, and that some of these suggestions have been adopted. The second edition appears in the handy form of a volume of what the publishers have called the Westminster Library. A few small and quite unnecessary references of a party political character have been deleted. The paragraphs dealing with the registration of deaths now describe the new and not the old procedure, which was obsolete even at the time of publication of the first edition. The effects of the National Health Insurance Act, 1928, are described or noted, and the main relevant effects of the Local Government Bill, 1929, now an Act of Parliament, are referred to. Two small errors in this revision have caught our eye. On page 149 the new short paragraph concerning seamen's insurance is misleading. The great majority of seamen, like other employed persons, have been within the scheme of national health insurance from the beginning. Clause 20 of the Act of 1928 merely extends the scheme to those seamen who are paid, not by wages, but by a share in the profits of the adventure. This is a small but important class who were formerly denied the insurance benefits in so far as they were not strictly employed within the meaning of the Acts. On page 152 a further 3,000 should have been added to the membership of the British Medical Association there given. We are still of the opinion, even more emphatically than when we stated it in our earlier notice, that the scheme of the book almost necessitates a somewhat expanded description of additional treatment benefits (especially dental and *ophthalmic benefits) under the national health insurance* scheme. These are of increasing importance, and their administration is not clearly known. This book is, and no doubt in future editions will continue to be, a trustworthy guide to the subjects with which it deals and for the public for which it is intended.

[1] *The Health of the Nation.* By F. E. Fremantle, M.P., M.D., M.C. (Cantab.). With a foreword by the Right Hon. Neville Chamberlain, M.P., Minister of Health. Second edition. London: P. Allan and Co., Ltd. 1928. (Cr. 8vo, pp. xiv + 208. 3s. 6d. net.)

MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION.

THE Medical Women's International Association, of which Lady Barrett is president, will hold its quinquennial meeting in Paris from April 10th to 15th, and it is expected that representatives from some twenty countries will attend. In addition to the council and general meetings, at which the business of the association is transacted, there will be three scientific sessions on the afternoons of April 11th, 12th, and 13th, which will be open to all medical women, whether members of the association or not. The subjects for discussion are: (1) Sex instruction for children and adolescents (rapporteurs, Mme Montreuil Straus and Dr. Louisa Martindale); (2) Analgesia in midwifery (rapporteurs, Dr. Doris Kunkel and Mme Nechkovitch-Youtchetitch). The programme of social activities includes a reception given by the President of the French Senate at the Palais du Luxembourg and

another by the President of the Municipal Council at the Hôtel de Ville. Special arrangements have also been made to visit the Radium and Pasteur Institutes, as well as several of the most notable hospitals of Paris. The meetings will be held at the International Institute of Intellectual Co-operation (Palais Royal), by permission of the League of Nations. Further particulars may be obtained from the honorary secretary of the Medical Women's International Association, Miss Martindale, M.D., 28, Weymouth Street, London, W.1.

THE MANSON AND CHALMERS MEDALS.

THE Manson Medal, awarded triennially by the Royal Society of Tropical Medicine and Hygiene, is to be presented this year to Sir Ronald Ross. It was founded in memory of Sir Patrick Manson in 1922, and has been awarded to Sir David Bruce and Senator Ettore Marchiafava. Qualifications for the medal are contributions of outstanding merit to knowledge of tropical medicine and hygiene. The Chalmers Medal was founded in 1921 by Mrs. Chalmers in memory of her husband, Dr. Albert J. Chalmers. It is awarded every second year to the younger workers in the field of tropical medicine and hygiene, who must be under 45 years of age on June 1st of the year of award. It is to be presented this year to Major J. A. Sinton, V.C., I.M.S. Previous awards have been to Professor E. Roubaud, Professor Warrington Yorke, and Dr. H. Lyndhurst Duke. Though the Manson Medal was founded in memory of Sir Patrick Manson, its first president, the Royal Society of Tropical Medicine and Hygiene is endeavouring to establish a more substantial memorial in the shape of a permanent home for its activities bearing his name. To this end the Manson House Fund was started, and already subscriptions have brought in between £4,000 and £5,000, while £3,000 has been promised on loan without interest. It is hoped that a sufficient sum will be raised to enable the society to purchase suitable premises for its headquarters.

INFLUENZA.

IN the week ending March 23rd the epidemic of influenza was subsiding in most parts of the country. Notifications of pneumonia fell from 4,897 to 3,578, and deaths from influenza in the great towns of England and Wales from 1,552 to 966. We may reasonably expect that within a few weeks the rate of mortality will again be normal, and the severest recrudescence since the pandemic an unpleasant memory.

SIR WILLIAM PROUT, K.C.M.G., relinquished his appointment as consulting physician to the Colonial Office and the Crown Agents for the Colonies on March 31st. Dr. P. H. Manson-Bahr, D.S.O., has been appointed one of the consulting physicians in London to the Colonial Office and the Crown Agents for the Colonies from April 1st.

THE KING.

SINCE March 2nd two bulletins only have been issued, at intervals of a fortnight, and each has confirmed the general impression that the King is making satisfactory progress towards recovery. During the past month His Majesty has spent many hours in the open, enjoying the sunshine and sea air, and latterly has taken short walks about the grounds of Craigweil House. The bulletin of March 29th mentioned some rheumatism round the right shoulder, and reiterated the need for prolonged abstention from all except essential public duties, but was able to record progressive gains in weight, appetite, and sleep, and steady improvement in bodily and mental vigour.

CHEST SURGERY FROM THE MEDICAL STANDPOINT.

LUMLEIAN LECTURES BY DR. R. A. YOUNG.

THE Lumleian Lectures were delivered to the Royal College of Physicians of London on March 19th, 21st, and 26th by Dr. R. A. Young, C.B.E., senior physician, Middlesex Hospital, and physician, Brompton Consumption Hospital. Dr. Young's general subject was "A medical review of the surgery of the chest," and, remarking on the ancient foundation of these lectures—which dated back to 1581—he said that there was an explicit direction that they were to be on surgery; he felt, therefore, that his choice of a subject was in conformity with the wishes of the pious founders.

BORDERLINES BETWEEN MEDICINE AND SURGERY.

Border areas, said Dr. Young in his first lecture, were usually the scene of strife and conflict, and the zone of separation between medicine and surgery was no exception. Medicine was abstract in the main, dealing with deranged organs and disturbed functions, while surgery was essentially concrete and mechanical, concerned with removal, adjustment, and adaptation. Some of the greatest triumphs of surgery were in the failures of medicine, but, on the other hand, some of the greatest surgical tragedies occurred where surgery had been unwisely or unsuccessfully invoked in medical conditions. This was most emphatically true in surgery of the chest. If this branch of surgery was to advance there must be the closest co-operation between the physician and the surgeon. The surgeon could give the most dramatic assistance to the physician in disease of the lungs, bronchi, mediastinum, and pleura, in cases otherwise grave and even hopeless. What was needed was a better understanding on the part of the physician and the general practitioner of what surgery could do, and, perhaps even more, of what it could not yet achieve. In no branch of science was efficient and co-ordinated team-work more essential, but the physician should be the predominant partner or at least have the casting vote, the surgeon being his coadjutor or agent, not his substitute.

The question arose whether, in future, if specialization advanced to its logical development, diagnosis and treatment might not be concentrated in the hands of one person. The lecturer had an open mind on this subject, but he felt that at present the ideal arrangement was an understanding and critical co-operation between the physician and the surgeon, the team also including, for the successful surgery of chest diseases, the radiologist, the bacteriologist, the haematologist, the physiologist, the biochemist and the anaesthetist.

Briefly tracing the history of thoracic surgery, the lecturer said that the fundamental ideas in this branch of work and some of the earliest achievements stood to the credit of British surgeons, several of whose names, past and present, he mentioned. The reasons why surgery of the chest had developed later than other special applications of surgery included difficulty of access, fear of open pneumothorax, difficulty of collapsing cavities, risk of "mediastinal flutter," and fear of gas embolism. Modern developments in thoracic surgery had been rendered possible by a more accurate appreciation of the mechanics of respiration, improved methods of diagnosis, modifications in anaesthesia, rigorous selection and careful preparation of cases, and refinements in surgical technique.

Improved Methods of Diagnosis.

After some consideration of respiratory physics, the lecturer discussed the present improved methods of diagnosis, saying that diseased conditions within the chest offered some of the most difficult problems to the diagnostician. Fortunately, laboratory and instrumental methods yielded here perhaps even more assistance than in diseases of other systems. After a careful study of the clinical features of the case the first of the special methods to which resort would be made was x rays, the help of which it was difficult to exaggerate. Stereoscopic radiograms especially were sometimes of great value in establishing the depth of the morbid process and its relative

position to other structures. For mediastinal conditions oblique views might afford great assistance, while, especially in regard to abscess, bronchiectasis, and growth, a true or "dead" lateral view might give information of crucial diagnostic importance. The value of radiology in this field has been notably increased by the use of lipiodol, which enabled the bronchi to be mapped out to their finest ramifications. In his own experience he had found this measure of the greatest value in confirming and establishing the diagnosis of bronchiectasis, in determining whether this condition was localized or bilateral, and in distinguishing between it and abscess.

As for other special methods, bronchoscopy had established its value in intrathoracic conditions. Its employment in dealing with foreign bodies was now a commonplace. Thoracoscopy had enabled the conditions within the pleura to be seen clearly after a preliminary pneumothorax, also the situation and relations of new growths of the lung and mediastinum. Biochemical methods might serve an ancillary function, notably with regard to calcium content, blood sugar, blood urea, and other estimations. Complete fixation tests might give information with regard to syphilis, tuberculosis, or hydatid.

Surgery of the chest, the lecturer continued, should in nearly all cases be deliberate and unhurried. Emergency operations were exceptional; almost always there was time for the most meticulous examination, and for all necessary special investigations. The appeal to surgery should be made only after it was clear that medical measures were doomed to failure. On the other hand, in such cases the decision should be made as early as possible, certainly before the patient had become so debilitated that the risk of shock from operation outrode the chances of success. The mortality of these operations was steadily diminishing as surgical technique became more developed and the selection of cases more skilful.

Operative Technique.

The preparations of the patient varied somewhat in the practice of individual surgeons. Most surgeons insisted on rest in bed under careful observation for from seven to ten days before such an operation as thoracoplasty or lobectomy. If there was evidence of catarrhal process or any serious digestive upset, operation was postponed. In marked anaemia blood transfusion might be given, and before any operation in a condition of pulmonary excavation or dilated tubes, the utmost care should be taken to promote expectoration. The problem of anaesthesia in chest diseases was one of special difficulty. In patients with pulmonary tuberculosis it was advisable to employ local or regional anaesthesia when possible, and to use gas and oxygen rather than chloroform or ether for cases where general anaesthesia was essential. The technique of anaesthesia induced and maintained by an expert in the ingenious methods now available was admirable in its orderly and almost perfect adaptation to the needs of the surgeon.

The question of time was of great importance in a thoracic operation; therefore the ingenuity devoted to the production of special instruments for removing the periosteum from the ribs and for expediting other manipulations was very welcome, as were the time-saving details of operative technique developed by surgeons in their practice. After-care, especially in regard to the dressing applied and the degree of pressure exerted by it in cases of thoracoplasty, and the general nursing arrangements required by these patients, was of not less importance than the operation itself.

What was the help that surgery offered in the treatment of chest diseases? It helped by securing rest to the part involved, particularly in disease of one lung; by evacuating abnormal exudates at the right time and in the most effective manner; by removing foreign bodies; by causing the collapse of cavities; by excision or extirpation of growths; by the removal of diseased or damaged lung tissue which was beyond hope of repair; by decompression where intrathoracic pressure relations were disturbed; and by exploratory thoracotomy to discover whether radical surgical measures were practicable in an obscure condition. The lecturer briefly instanced the chief measures designed for these various ends, and spoke at greater length on pulmonary collapse, the basis of artificial pneumothorax treatment, pointing out that the beneficial effects of collapse forms of treatment comprised far more than the mechanical factors, and helped in bringing about the disappearance of the toxaemic features.

Surgery in Pulmonary Tuberculosis.

In his second lecture Dr. R. A. Young dealt with the treatment of severe pulmonary disease, in which, he said, the surgeon and the bronchoscopist seemed destined to take an increasing share. The earlier applications of surgery in pulmonary tuberculosis were directed chiefly to the drainage of cavities and removal of diseased areas of lung. Modern surgical methods were the outcome of the combined experience obtained by surgeons in the treatment of chronic empyema and by physicians in the use of artificial pneumothorax as a therapeutic measure. The decision as to the use of collapse treatment, whether medical or surgical, involved careful consideration of the type, extent, and localization of the disease, the clinical features of the case, and the age, personality, social state, and general condition of the patient, as well as his reaction to ordinary methods. Thorough *x*-ray examination, including the screen, was a very necessary preliminary.

Artificial pneumothorax was now so generally recognized as the routine treatment in certain cases that any detailed account of it was unnecessary. Thoracoplasty was its major equivalent, or, rather, substitute, since it should be remembered that the collapse induced by it was less than that obtained by a complete pneumothorax, though the results in successful cases were of the same type. The lecturer quoted an epigrammatic remark of Claus: "A good pneumothorax is better than thoracoplasty, but a good thoracoplasty is better than a bad pneumothorax." It should not be forgotten, however, that the collapse produced by this operation was permanent, whereas in most cases of pneumothorax treatment the lung could be allowed to re-expand at any time should extension of the disease on the opposite side or other emergency render this necessary. The safe rule was to consider for thoracoplasty all cases which were well suited for artificial pneumothorax but in which that treatment was impossible or had failed. In general, no patients should be submitted to thoracoplasty until the attempt at artificial pneumothorax had been made.

Indications for Collapse Treatment.

The type of case likely to benefit most from collapse treatment was that in which there was more or less extensive disease of slowly progressing type and chronic course in which the signs were clinically unilateral, and in which *x* rays showed very little damage to the opposite lung. For cases in this group thoracoplasty should only be considered if there was definite evidence of some natural tendency towards arrest, or, in other words, only if the processes of fibrosis and contraction predominated over those of caseation and softening. In haemorrhagic cases there were two indications for artificial pneumothorax treatment: (1) as a deliberate treatment in cases of repeated haemorrhage; (2) as an emergency measure in severe haemoptysis endangering life. Thoracoplasty in such cases should only be considered when artificial pneumothorax proved to be impracticable, and then only after a phrenic evulsion had been tried and had failed. Collapse methods were helpful in cases where partial arrest had been achieved by ordinary medical methods, but where the patient was left with cough and expectoration; also in cases with predominantly basic signs in which phrenic evulsion had failed to secure arrest. It was rather a paradox that cases in which spontaneous pneumothorax had occurred in the course of active disease of localized character did not do so well, when the pneumothorax was continued artificially, as ordinary cases of primary artificial pneumothorax.

Contraindications to this treatment might be afforded by either the character and extent of the disease or the general condition and temperament of the patient. When there was extensive active disease in the opposite lung, or laryngeal tuberculosis of the miliary type, or severe

renal tuberculosis, the treatment should not be pursued. In patients with poor physique a[illegible] with any considerable degree of [illegible], or with severe visceroptosis, or with chronic nephritis, again the treatment was contraindicated. In patients over the age of 60 the chances of success with artificial pneumothorax were comparatively small, while for thoracoplasty the age restrictions were more definite, few patients over 45 being suitable, though each case was to be judged on its merits.

The Operation of Thoracoplasty.

Paravertebral thoracoplasty was now established as the standard surgical method of inducing pulmonary collapse. The most important preliminary was to induce the patient to make every effort, immediately before operation, to clear the chest of expectoration. The general preference was for gas and oxygen anaesthesia. Some surgeons preferred the two-stage operation, for which the lecturer expressed his own preference. He had never known a patient decline the second stage, because, as a rule, the first brought sufficient improvement to encourage greater hopes from the completed operation. The amount of rib removed varied with the case. If the operation was carried out in two stages it was usual to resect parts of the lower ribs from the eleventh or tenth to the sixth or fifth at the first stage, and at the second stage to deal with the fifth or fourth to the first. The first rib was, as it were, the peg upon which the others hung.

Post-operative treatment was of as great importance as the operation itself. From numerous statistics it appeared that the immediate post-operative risk had now been reduced in expert hands from more than 10 per cent. to 5 per cent. or less. After the immediate post-operative risks were passed it was important to encourage the patient to re-educate and strengthen the muscles of the shoulder and arm. One remarkable feature about the operation was the comparative slightness of the deformity resulting.

It was usually said that artificial pneumothorax failed in 30 to 40 per cent. of the cases in which it was attempted. The commonest cause of failure was the presence of adhesions, and various attempts had been made to permit increased collapse in such cases. The lecturer briefly touched on these methods, including stretching and cutting.

Abscess and Gangrene of Lung.

Intrapulmonary suppuration resulted from such a variety of causes that it was not surprising to find its causation and treatment a subject of controversy. Abscess and gangrene were often associated, but in gangrene there was a larger degree of putrefactive necrosis and greater fetor, with a larger proportion of anaerobic organisms. A striking feature brought out by some American statistics was the frequency of pulmonary abscess after tonsillectomy, possibly due to aspiration of infective material under anaesthesia. In the acute stage of abscess formation, before the abscess was localized and had become encapsulated, surgical intervention was to be avoided. It was also undesirable, in suspected lung abscess, to use an exploratory needle, which might lead to rupture into the bronchus or pleura or to infection of the cellular tissues. Many successful cases of collapse of the lung induced by artificial pneumothorax were on record, but this was not suitable for deeply seated abscess. It was in subacute and chronic abscesses that some of the most striking results of surgery were to be seen. Surgeons could usually drain the cavity readily by a one-stage pneumotomy if the pleura was adherent at the spot over the abscess exposed by the preliminary thoracotomy. If no adhesions existed the two-stage operation was necessary. Pleural adhesions were induced by stitching the lung to the parietal pleura and inserting a gauze pack; five or six days later, if adequate adhesions had formed, the abscess could be opened and drained.

The lecturer briefly referred to tumours of the lung, drawing attention to the fact that there was one form of malignant growth of the lung in which lobectomy was practicable and had given encouraging results—namely, where the primary growth originated in the lung parenchyma at a distance from the hilum. He then turned to bronchial conditions and concluded with some remarks on bronchiectasis, for which, he said, many forms of surgical treatment had been suggested, and some already discarded. The general results could hardly be regarded as encouraging. The chief suggestions were to drain the cavity by pneumotomy as in abscess (clearly only suitable where there was a single large cavity); ligature of the branch of the pulmonary artery to the affected lobe (of little ultimate value); phrenic evulsion (worth a trial in obscure cases); thoracoplasty (less satisfactory in its results here, on the whole, than in tuberculosis); and lobectomy (not to be lightly recommended on account of its heavy mortality). It was to be hoped that in this condition surgery would be able to render fuller assistance at some time in the future.

ACUTE EMPYEMA.

In his third and concluding lecture Dr. Young dealt with surgery in pleural and mediastinal conditions, remarking that probably the pleura was one of the first parts of the body upon which surgery was successfully practised, while the mediastinum, owing to difficulty of access and complexity and importance of the structures contained, was one of the last to afford a safe field for the surgeon.

The first of the abnormal conditions in the pleura to demand consideration was acute empyema. The principles of modern treatment were clearly stated by Hippocrates, who advised no drainage until the fifteenth day, used irrigation, and recognized the necessity of keeping the wound open until the infection had subsided. Unfortunately, the Hippocratic rules were for many centuries disregarded or forgotten, and until recently the treatment of empyema formed a lamentable chapter in the history of medicine and surgery. One of the most notable advances was marked by the report of the Empyema Commission of the United States Army, consequent upon the experience of the great war. The Commission came to the conclusion, the high average mortality in the military camps notwithstanding, that death should not occur in cases of empyema, other than tuberculous empyema, unless complicated by such conditions as lung abscess and suppurative pericarditis. Graham, a member of the Commission, pointed out the marked difference between empyema due to the streptococcus and that due to the pneumococcus, and suggested that the high mortality in streptococcal cases was the result of applying in their treatment the principles commonly and correctly applied in pneumococcal cases. The most important outcome of the Commission's report was that empyema was not to be regarded as an acute surgical emergency requiring operation as soon as recognized. If there were acute symptoms these could usually be relieved by aspiration until it was clear that the time for operation had arrived, as judged by the examination of the pus and the general condition of the patient. Empyema was not to be regarded as an abscess, which should be opened as soon as recognized, but demanded the most careful investigation of cause, situation, and size. Too early evacuation was dangerous, and led to increased mortality; on the other hand, when frank pus was obtained, delay and inefficient drainage led to chronic empyema, "more easily prevented than cured." Dr. Young explained with great care the difference between streptococcal and pneumococcal cases. In the latter, as there was a walling off at a very early stage, earlier operation was permissible, and, indeed, desirable.

Methods of Treating Empyema.

The lecturer reviewed the procedures of aspiration and of drainage by closed and open methods. Continuous aspiration, often recommended, had its disadvantages; it was capable of giving good results, but it had not established itself for general use. When it had been decided to evacuate an empyema by thoracotomy there was still a choice of procedures. That an empyema could be successfully drained by a tube introduced through a simple intercostal incision was certain, but if the empyema was slow to clear up bone might form around the tube from periosteal irritation, and actually prevent the closure of the sinus after the tube had been withdrawn. The removal of a small piece from one rib ensured better drainage, and seemed rarely to lead to any bone infection. After the

pleura had been opened the routine method was to insert a tube and apply open drainage, with or without irrigation. This, if done at the right time and in the right situation, gave good results in most cases, but in general it was less satisfactory than the more modern method of closed drainage, with some special arrangement for securing negative pressure within the empyema cavity, and, if desired, with means to permit of irrigation. The simpler the apparatus the more likely it was to be effective. Two subsidiary aids to the treatment of empyema after thoracotomy consisted, one in efforts to assist expansion of the collapsed areas of the affected lung in order that it might fill up the pleural space caused by the empyema, the other (less generally accepted), irrigation of the empyema cavity, most generally by Dakin's fluid.

Chronic and Tuberculous Empyemas.

The causes of chronic empyema were too early opening in streptococcal cases, also unduly delayed opening, insufficient or ineffective drainage from incision at wrong spot, entrance of foreign bodies, such as swabs or pieces of drainage tube, formation of bony ring around drainage tube, pocketing, and broncho-pleural fistula. The first essential was *x*-ray examination, with and without lipiodol, to discover the size, character, and direction of the space or sinus and the presence of pocketing, or perhaps the existence of a second undrained empyema. The lecturer discussed various procedures, all of which, he said, however, involved operative manipulation in patients already debilitated by long discharges and diminished vital capacity, and so not to be undertaken lightly.

Pus developing in the pleural cavity in association with pulmonary and pleural tuberculosis was a most troublesome condition, and might be a serious complication. The term "tuberculous empyema" was somewhat loosely applied to a number of conditions, including tuberculous pyothorax, tuberculous pyopneumothorax, and cases of pyopneumothorax due to lung rupture or puncture in which secondary infection had occurred—a most grave condition. The outlook for all such patients, apart from active treatment, was extremely serious. The lecturer quoted some statistics furnished by his colleague Dr. L. S. T. Burrell in which a notably high mortality in cases in which purulent effusion occurred, as compared with those in which the effusion was serous, led Dr. Burrell to aspirate all cases in which there was pus, and to try to get the lung to expand. These purulent effusions in tuberculous disease should never be treated by open drainage, since this could only lead to pneumothorax with permanent external opening. Another method of treating cases with tuberculous effusion was by introducing oil into the pleural cavity; this method of oleothorax was still on trial, but seemed to be of use in selected cases.

Before leaving the subject of the pleura, the lecturer touched on haemothorax, the general principles of the treatment of which had been established by war experience. Operation was unnecessary in cases of uninfected haemothorax of small size. With large effusions, causing dyspnoea or distress, early aspiration was practicable and advisable. Early operation was indicated in large simple haemothorax in a state of massive clot.

Surgery in Mediastinal Conditions.

At present there was only a restricted field for surgery in the mediastinum. The real barrier was the danger of infection of the loose intervening areolar tissue. The superior and anterior mediastinum was exposed by splitting the sternum; the posterior by dividing and shingling the ribs upon one another after certain sections had been removed. Conditions in which the physician might require the surgeon's aid were suppurative mediastinitis, mediastinal tumours and cysts, and mediastinal emphysema. If suppurative mediastinitis had become localized it could be reached by the surgeon and drained. Chronic mediastinal abscesses were usually the result of tuberculous conditions of the mediastinal glands or of the bony walls of the cavity; they were usually to be treated like other "cold" abscesses, by aspirations and injections. Encapsulated tumours and cysts could, as a rule, be removed readily and without undue risk. A large majority of the primary growths in this situation were sarcomatous, and the chances of diagnosis of primary mediastinal malignant growth at a sufficiently early stage to warrant surgery were at present small. The relief afforded by decompression procedures was slight, and not commensurate with the severity of the operation. In rare cases of acute mediastinal emphysema, spreading to produce general subcutaneous emphysema, it might be helpful to make an incision near the jugular fossa and extract effused air by suction.

In conclusion, Dr. Young confessed his optimism with regard to the future of the branches of surgery of which he had been treating. An opened pleura properly safeguarded need now have no greater terrors than an opened peritoneum. Some measures, like paravertebral thoracoplasty, had already evolved to a high degree of scientific and practical adaptation. He hoped for further progress, including improved methods of pneumolysis, and in this hope he was encouraged by having seen phrenic paralysis develop from a relatively ineffective operation into one of wide application and usefulness.

Scotland.

Treatment of Cancer in Glasgow.

THE thirty-eighth annual meeting of the Glasgow Royal Cancer Hospital was held in Glasgow on March 22nd. The report for the past year stated that the ordinary income amounted to £7,668, and the ordinary expenditure to £9,527. Extraordinary income in the form of legacies, etc., had been received amounting to £7,143, with a credit balance of £5,284. Reference was made in the report to the recent gift of £10,000 by Lady Burrell for the purchase of radium. It had been decided by the directors to form a radium institute, and property adjoining the hospital had been purchased for that object. The institute was to be under the supervision of a full-time medical officer, and was to be available for the treatment of patients in Glasgow and the West of Scotland, while it was also hoped that radium could be lent to other hospitals in the neighbourhood. The chairman, Sir John M. MacLeod, stated that it had been decided to appoint a committee of lay representatives of the institutions concerned, which was to act in a purely advisory capacity without executive powers and with no control in the internal action of any of the hospitals. Mr. H. F. L. Fraser, in the course of an address, said it was now definitely established that radium offered hope for a very large percentage of cancer cases. In Britain they had fallen rather seriously behind in the question of radium surgery, for Britain as a whole had been too conservative in the adoption of new remedies. It was necessary that those who used radium should have special accommodation and special skill. The importance of radium had been realized by the Government, who had appointed a scientific research committee to investigate the situation. As a result of the report of this committee, an authoritative statement on the Government's attitude was to be made at an early date. It was to be desired that surgeons on the whole should be interested in the work of radium, so that knowledge of its application should not be left in the hands of one or two men. Co-operation among hospitals with regard to the purchase of radium and its application was also an urgent need, while some arrangement ought to be made whereby the radium in the West of Scotland would be available to all institutions, so that they would not require to buy more radium than was necessary to treat all their cases.

Royal Victoria Hospital Tuberculosis Trust.

The annual meeting of the Royal Victoria Hospital Tuberculosis Trust for the cure and prevention of tuberculosis throughout Scotland was held at Edinburgh on March 20th. The chairman, Sir Ralph Anstruther, said that they were gradually finding as the years went on that tuberculosis had been dealt with more and more satisfactorily. The death rate from all forms of tuberculosis in Scotland during 1887 was 265 per 100,000, while in 1927 it had fallen to 100. The past year was the fortieth anniversary of the foundation of the Victoria Dispensary

for Tuberculosis, and the beginning of the modern campaign against tuberculosis was marked by the establishment of that institution. At the present time tuberculosis dispensaries were to be found all the world over. Following the Victoria Dispensary, the Edinburgh scheme had included the establishment of a sanatorium (the Royal Victoria Hospital), a tuberculosis school, a working colony, a sanatorium colony at Southfield, a tubercle-free dairy, and a chair of tuberculosis in the University of Edinburgh. Three large institutions, constituting the chief factors in the tuberculosis equipment of the Edinburgh Corporation, were transferred by the committee of the Trust to the city of Edinburgh in 1914. Tuberculosis was little understood forty years ago, and one of the most striking advances had been the gradual shifting of the doctor's outlook from the adult or adolescent patient to the child. On account of the universality of infection in childhood, and the possibilities which such infection might involve for the individual and for the community, it was necessary that the advent of tuberculous infection should be watched for, and that appropriate measures should be taken to ensure that the infection became practically innocuous. A practical part had been taken by the committee in a movement which promised much for the Highlands and Islands of Scotland. An important educational mission throughout the whole of Great Britain had recently been undertaken by the National Association for the Prevention of Tuberculosis, and in connexion with this a senior medical officer and three deputy medical commissioners have been appointed to tour the country continuously. The deputy commissioner assigned to Scotland, Dr. Harley Williams, had already covered a large part of the country, and had held over 300 meetings of one kind or another. The research department was admirably equipped, and during the year several important lines of work had been undertaken. The committee desired to appoint two special workers in the research department, and would recommend the department to the consideration of benevolent donors, as it is anxious to obtain £600 per annum for this special purpose.

Work for the Blind in Edinburgh.

The Rev. Dr. Thomas Burns presided at a social meeting attended by the industrial workers of the Royal Blind Asylum, Edinburgh, held in Edinburgh on March 19th. He stated that this asylum was the second institution for the blind to be founded in Great Britain. The Blind Persons Act of 1920 had entrusted the care of these people to local authorities. The Corporation of Edinburgh had accordingly made arrangements with the Royal Blind Asylum by which they contributed an annual sum towards the maintenance of employable blind persons within their area, while the local and education authorities contributed towards the cost of training the workers. The cost of maintaining the ninety trainees at present in the institution was over £2,750 per annum. This Act of 1920, although it had benefited the institutional blind, had, however, done nothing to improve the condition of the aged and infirm blind, or those incapable of work. The question of obtaining after-employment for trainees was being carefully considered by the directors at the present time, and it appeared that new industries for the blind and new outlets for the work produced by them would be the best solution of the problem. The two new industries of cane chair making and quilt making, although satisfactory, were not sufficient by themselves, and still further new outlets must be found. This could best be done by co-operation between the workers and the management, since additional employment could doubtless be secured by putting into practice the ideas of the workers, and adopting them as staple industries of the institution if they proved successful. It was pointed out that in 1913–14 the wage paid to workers in the Royal Blind Asylum amounted to 20s. per week and under, whereas at the present time it was 50s. per week. A comparison was also of interest between the amount contributed to the general funds in 1909–10 and 1919–20, which amounted to £1,468 and £2,814 respectively, being an increase of 91 per cent., while in 1927–28 the increase over 1920 was £5,000, or 177 per cent. The voluntary contributions towards capital expenditure of the new workshops, etc., amounted to £10,576. The institution had never been in a more healthy condition during the long period of its existence, and the directors looked forward with confidence to the future.

Edinburgh Maternity Hospital.

The eighty-fourth annual meeting of the Edinburgh Royal Maternity and Simpson Memorial Hospital was held on March 22nd. The report stated that the total number of cases treated was 3,205, compared with 3,117 in the previous year. Progress had been made in regard to the proposed amalgamation with the Royal Infirmary; committees representing the Royal Infirmary and the hospital had been considering the maternity problem in Edinburgh, and the number of beds which the managers of the Royal Infirmary should be expected to provide in the new buildings, to be erected on the site of George Watson's School, in order to provide for the teaching of medical students and the training of nurses. It was decided that not less than 120 beds should be aimed at, and plans had been prepared which were being considered by a joint subcommittee. The accounts showed a deficit of £1,892, and this had to be withdrawn from reserve. The chairman said that the report emphasized the close connexion which existed between the town council and the Royal Maternity Hospital. Last year a fresh record had been set up in the history of the institution, for the figures represented 40 per cent. of the total births recorded in the city during the year. The ante-natal care of women was one of the great branches of preventive medical science, and the fact that 11,169 visits had been paid by patients during 1928 to the various clinics in connexion with the ante-natal annexe was a sure sign that it had the confidence of the public. He appealed for increased financial support to the hospital, and stated that it would be six or seven years before the amalgamation with the Royal Infirmary could be brought about.

Hospital for Cripples.

A meeting of the general committee and subscribers of the [illegible]tal for Crippled Children was held in t[illegible], Edinburgh, on March 20th. Lord Provost Sir Alexander Stevenson presided. The chairman said that a conference had been held two years ago at which it was clearly shown that an urgent need existed for the provision of a hospital for the treatment of cripples. They could now report that £50,000 had been raised, and this was a tribute both to the zeal of the committee and to the generosity of the people of Scotland. A site had been secured at Fairmilehead, which occupied a commanding position at the crest of a hill, and the building when erected would be one of the landmarks of the city. It was to be a central institution to meet the requirements of the south-eastern area of Scotland, and of the counties of Kinross and Clackmannan, and the western half of Fife. Although a sum of £75,000 was required, he had no doubt that the balance would be forthcoming. The constitution was unanimously adopted.

Perth Royal Infirmary.

The annual meeting of the County and City of Perth Royal Infirmary was held on March 4th. The report showed that the number of patients treated in the institution had been 2,666, while the expenditure during the past year had exceeded the income by £2,436. It was reported that the directors had decided to erect a nurses' home at an estimated cost of £15,000 on a site adjoining the hospital. Bailie Thomas Hunter, J.P., who proposed the adoption of the report, referred to the probability of closer co-operation between the hospital and the local authorities under the proposed new legislation, but expressed the hope of the directors that the institution would not in any way come under State control.

Glasgow Hospital Sunday Fund.

The thirty-fifth annual general meeting of the Glasgow Hospital Sunday Fund was held on March 20th in the Merchants' House, Glasgow. This fund was inaugurated in 1893, and the total sum disbursed since that time amounted to £229,467. As a result of the contributions for 1928 a sum of £9,600 had been divided among the three infirmaries in the city. Dr. James Macfarlane of the

Glasgow Royal Infirmary, presiding at the meeting, stated that the collections had been gradually declining since 1920, those of 1928 having fallen somewhat short of those of the previous year. Bishop Reid of Glasgow pointed out that though it was disappointing to find that the amount subscribed in the past year was down, they were thankful that the number of congregations contributing had increased from 522 to 555, while the number of Sunday schools had increased from 301 to 310.

England and Wales.

Voluntary and Municipal Hospitals under the Local Government Bill.

A MEMORANDUM[1] has been prepared by a special committee of King Edward's Hospital Fund for London, under the chairmanship of Mr. J. H. Whitley, dealing with the position of the voluntary hospitals after the Poor Law infirmaries have been transferred to the county authorities under the Local Government Act. The principle is enunciated that the maximum of efficient medical service cannot be achieved except by co-operation between the voluntary and the municipal hospitals. The committee, however, is of opinion that such co-operation will only be successful in bringing the municipal hospitals to a high standard if there is no interference, direct or indirect, with the voluntary element in the hospital service. Voluntary hospitals have acquired a tradition and prestige which, combined with the free scope they offer to initiative, have attracted to their service men and women of conspicuous ability. Success in creating an efficient and adequate hospital service will not be obtained by converting the voluntary hospitals into official institutions, but by developing municipal hospitals in co-operation with a vigorous voluntary hospital system. The committee suggests that supercession of the voluntary hospitals would represent not only a loss of about 64,000 beds and of contributions amounting to approximately nine million pounds annually, but of the great volume of voluntary work, lay and medical, which accompanies them. Continuous consultation between the authorities responsible respectively for the rate-supported and the voluntary hospitals is now provided for by the new clauses introduced into the Local Government Bill in the House of Lords. The committee proposes further that in each area there should be a standing joint hospitals conference, composed of equal numbers of representatives of the appropriate committee of the county or county borough council, and of the voluntary hospitals, and that this conference should consider which of the hospital needs of the area could best be supplied by the voluntary hospitals and which by the county hospitals. Wherever local circumstances permit, it is held that the appointment to the staffs of municipal hospitals of consultants experienced in voluntary hospital work would help to permeate the municipal hospital service with the spirit of the voluntary hospitals. The committee suggests that while it is impossible to lay down beforehand definite rules differentiating classes of patients and allocating them to different kinds of institutions, the difficulties might well be overcome in each locality by the proposed standing joint hospitals conference, in connexion with its periodical estimates of the hospital needs and hospital accommodation. In the training of nurses and of medical students there are already instances of interchange of facilities between the voluntary hospitals and public institutions; in the opinion of the committee it is highly desirable that there should be a further extension of these facilities, whereby the beds in the public institutions may be made generally available for medical education, both undergraduate and post-graduate.

The Birmingham General Hospital.

The arrangements for the first section of the Hospital Centre at Edgbaston, which is to be the extension of the General and Queen's Hospitals, Birmingham, are making progress, and the schedules for the proposed buildings will shortly be in the hands of the competing architects. As already mentioned in these columns, a site near the University has been offered by Messrs. Cadbury, and the suggestion is that this shall be shared by the two hospitals, which will eventually amalgamate. With this in view, both hospitals have abandoned the idea of extending their present buildings, except that the General Hospital is erecting a temporary ward in its grounds in order to meet the immediate call for more beds. In the annual report of the General Hospital, just received, it is stated that plans have been prepared for the erection of huts to accommodate sixty in-patients, and also for a new casualty department. Reference is made in the report to the loss which the hospital has sustained in the retirement of Professor Gamgee, who, as a mark of appreciation of his thirty-five years' invaluable service, has been elected consulting surgeon and presented with his portrait. The question of beds for paying patients has come forward prominently during the year. Usually there are about thirty patients in the hospital, admitted either on account of accident or for other good reason, who are able and willing to pay the entire cost of their treatment, as well as a fee to the doctor. In order to prevent the exploitation of the hospital and staff, the board is recommending the governors to set aside not more than thirty beds for such patients. Normally the charge is to be at the rate of four guineas per week, but in the case of patients who are able to pay a higher fee, who have been admitted on account of accident or emergency, or because the treatment they required could only be given at the general hospital, the charge is to be at the rate of six guineas per week. In the case of the four-guinea patients members of the medical staff are to be authorized to charge a fee not exceeding the amount payable to the hospital, and in no case greater than twenty guineas; in the case of the six-guinea patients the fee to be paid to the medical staff will be left to the discretion of the physician or surgeon concerned. The results of the Birmingham contributory scheme have exceeded expectations. It was at first considered advisable to lay down income limits to prevent exploitation by members of the scheme; but experience has proved this to be unnecessary, and by an arrangement with the Hospital Saturday Fund the certificates of works delegates are now accepted as proof of inability to pay for treatment privately.

Medical Education at the Royal Free Hospital.

A meeting was held at the London (Royal Free Hospital) School of Medicine for Women on March 21st to discuss the question of providing clinical teaching at the hospital for those who were affected by the recent decision of some medical schools to admit no more women students. Lady Barrett, who presided, said they were faced with the fact that they had to find room for the average number of women (about thirty) to whom these schools had been closed. The completion of the new building at the Royal Free Hospital for the obstetrical and gynaecological unit would set free forty beds, which would be available for general medical and surgical cases, and thus afford opportunities for teaching the extra students. But the hospital could not be asked to support those beds which could be used for private patients. It would be necessary that the beds should be endowed so that their cost to the hospital, about £5,000 a year, could be met. The beds ought to be ready in about three years, which would be the time when the new students would need their clinical instruction. It was very desirable that the medical and surgical facilities for teaching at the Royal Free Hospital should be equally extended with its other branches. If the proposal put forward were adopted there need be no women lacking facilities for a thorough medical education. Dr. Louisa Garrett Anderson said that a medical school for women alone had very great advantages over a co-educational school. Some of the French women doctors who visited the Allies' hospitals in France during the war had been surprised to find English women performing major operations, and had said that such facilities were not available in France, though they had had co-education for many years. Professor Winifred Cullis said she could not imagine the time when the London School of Medicine for Women would not be needed, even if the schools now closed to women were reopened to them. Preliminary measures were

[1] Relations between Voluntary Hospitals and Municipal Hospitals. Memorandum prepared by the Voluntary Hospitals (Local Government Bill) Committee of the King's Fund. March, 1929. George Barber and Son, Ltd., 23, Furnival Street, Holborn, E.C.4. Price 3d. net, 4d. post free.

adopted with a view to obtaining funds to increase the available medical and surgical beds at the Royal Free Hospital, so that no woman student should be debarred from entering the medical profession.

Centenary of King's College, London.

In connexion with the impending centenary celebrations of King's College, London, it is interesting to recall that almost from its inception it has played a large part in the development of medicine and surgery in this country. One of its first faculties was that of medicine; Herbert Mayo, an apostle of the Hunters, Richard Partridge, John Curnow, Bently Todd, who was largely responsible for the foundation of King's College Hospital, William Bowman, whose name is perpetuated in Bowman's capsule, Lionel Beale, and William Rutherford—the names of all these were written early in the pages of its history. Clerk Maxwell, Wheatstone, Daniell (of the Daniell cell), and John Millar Thomson were on the staff of the College when the time of the coming of Lister, and served as an inspiration to the faculty of medicine. Many of our present-day anatomists —Arthur Robinson, now of Edinburgh, Waterston of St. Andrews, J. E. S. Frazer of London, and Barclay-Smith —have been on the staff of the College; Alfred Garrod and W. E. Dixon worked on the pharmacological side. On the staff of the department of physiology have been Gerald Yeo, one of the founders of the Physiological Society, Halliburton, who was one of the first to recognize the importance of chemistry in the advance of medical science, Crookshank, subsequently the first professor of bacteriology in this country, Sir David Ferrier, remembered for his work on the localization of brain function, Sir Charles Martin, director of the Lister Institute, T. J. Brodie, whose clock, power table, and kymograph are in every physiological laboratory, Locke, who first succeeded in keeping the mammalian heart alive outside the body, Rosenheim, famous for his work on cholesterol, and Da Fano, whose work on histological neurology gave him an international reputation. The laboratories have been largely remodelled and extended, but the department of anatomy is still unsatisfactorily housed. In the appeal which has just been issued it is proposed, at a cost of £60,000, to build a new anatomy department in the immediate neighbourhood of the department of physiology.

Conference on Mental Welfare.

A conference on mental welfare will be held under the auspices of the Central Association for Mental Welfare in the Central Hall, Westminster, on April 25th and 26th. The subjects to be discussed are: (1) the effect of the Local Government Act, 1929, on the work of local authorities under the Mental Deficiency Acts; (2) the report of the special investigation carried out by Dr. E. O. Lewis on behalf of the joint committee of the Board of Education and the Board of Control on mental deficiency; (3) the report of the joint committee of the Boards of Education and of Control on mental deficiency, with special reference to educational and administrative problems concerning defective and retarded children; (4) experiments in the education and training of retarded children, with special reference to some of the recommendations of the joint committee. The sessions will continue from 10.30 to 12.30 in the morning and from 2.30 to 5.30 in the afternoon. Tickets, entitling holders to all the sessions, advance copies of the papers, and to the luncheon at the Hotel Metropole on April 26th, can be obtained at the offices of the Central Association for Mental Welfare, 24, Buckingham Palace Road, S.W.1, price £1 1s. Separate tickets for the conference and for the luncheon may be obtained at the cost of 10s. 6d. each.

An Alternative to Vaccination.

Dr. J. M. Ferguson, consulting medical officer to the Burnley Joint Hospital Board, in his report on the work at the Crown Point Small-pox Hospital during the year 1928, makes a number of interesting observations on the epidemic which broke out in the Burnley district in May, 1927. The disease at the onset, although it presented almost all the typical signs of variola major, followed a very different course. Only two of the patients had a temperature higher than 100° F., and in some, though not all of the cases, what little pyrexia there was subsided when the rash was fully developed. Secondary rise of temperature common in the major disease did not occur, pitting of the skin was absent, and there were no deaths. Of the 384 cases studied, 319 were unvaccinated, 65 had been vaccinated in infancy, in one the diagnosis was doubtful, and in another the vaccinal condition was not definitely established. The average age of the 65 patients vaccinated in infancy was over 50, and only two of them were under 21. On the other hand, of the 319 unvaccinated cases, 238 (131 males and 107 females) were under 21. Dr. Ferguson, while recognizing that small-pox is probably assuming a milder form, maintains that it is unwise to regard the danger of an outbreak of a severe epidemic as altogether passed. He makes the suggestion that in view of the poorly vaccinated condition of the town and district it might be well completely to ignore the isolation of minor cases and to allow the outbreak of the disease in its mild form to act as vaccination against variola major. Such a procedure, in his opinion, would not only be less costly than that at present adopted, but would help to render immune to small-pox persons who now decline to be vaccinated.

Ireland.

The Royal College of Surgeons in Ireland.

OWING to the illness of the President, Mr. T. E. Gordon, Mr. J. Atkinson Stoney, Vice-President, presided at the Charter Day dinner of the Royal College of Surgeons in Ireland, which was held recently in the College Hall, Dublin. Replying to the toast of "Prosperity to Ireland," the Governor-General, Mr. James McNeill, said that the Royal College of Surgeons began its corporate existence about a century and a half ago, when surgeons persuaded the Government of that time that surgery and hairdressing could not be efficiently combined. Their predecessors had foresight. Each art required now more knowledge and skill than any one person could be expected to possess. In India, however, he found about thirty-five years ago that the arts were still united, though the combination was dying out. In his time surgery in Western India was made known to the people largely by his countrymen. His first but not his only district surgeon was an Irishman whose skill won respect, and whose personality inspired universal affection. Most of the surgeon-generals in his presidency in his time were Irish surgeons, and when he was sent on duty to the West Indies the first surgeon-general he met was an Irishman. When he took a flat in London some years ago he found a good Irish doctor near him, and when he moved into a house he found in the same street an Irish doctor, who made illness a very pleasurable, though transient, diversion. As regards the general condition of the Service, he thought it was very much like the state of the surgical profession: it was doing wonderfully well in spite of some unfavourable circumstances. It was not only anxious to do better, but it was energetically improving from year to year. A friendly surgeon had recently said that the correct analogy in this respect was not with surgeons but with their patients, the great majority of whom were cheerfully ready to endure anything in the hope of getting well. The small minority were divided into two classes: one class wanted to be made so well by surgery in one day that they could compete in the Tailteann games on the next, while the other class wanted to know why they should be bothered to accept anything so inconvenient as surgery, however ill they had made themselves. The Governor added that his prime object in coming to the Charter Day dinner was to acknowledge what the College had done for Irish surgery, and to express his sincere sympathy with, and respect for, Irish surgeons, who were maintaining the traditions of an honourable profession. Sir William Taylor, proposing the toast of "The Sister College," said that there had been very close association between the College of Surgeons and the College of Physicians for nearly fifty years; both had done a great deal for the profession. Not only had they trained men to practise

their profession throughout the length and breadth of Ireland, but at least 75 per cent. of them were qualified to practise in the various territories of the British Empire. Dr. Winter, President of the Royal College of Physicians of Ireland, responding, said that both Colleges were proud of their traditions and the men that went before them—men who added credit to themselves and lustre to the Irish medical school. He hoped that the Government would in the near future see its way to endow medical research. The toast "Our Guests," was proposed by Sir William De Courcy Wheeler, who coupled with it the names of Mr. William Carrigan, K.C., Mr. E. H. Burne, President of the Incorporated Law Society, and Mr. David Barry, O.B.E.

India.

The Opium Habit.

LIEUT.-COLONEL R. N. CHOPRA, I.M.S., who is professor of pharmacology at Calcutta, has recently contributed a very interesting article on the present position of the opium habit in India.[1] It will be remembered that the Royal Commission on the use of opium in India that reported in 1895 extenuated the use of the drug in that country. Opium was represented as a treasured household remedy used extensively for medicinal, semi-medicinal, and veterinary purposes. Moreover, even opium addiction was represented as being comparatively harmless to Indians, for it was stated that moderate indulgence led to no injurious effects and did not shorten life; but that, on the contrary, it tended to ward off sickness and lessened the discomfort consequent on poor food and gastro-intestinal and malarial disease. Professor Chopra has made an exhaustive study of the consumption of opium in the various regions of India, and also of the cases of 875 opium addicts. His conclusions disagree totally with the comforting conclusions of the Royal Commission. The following are some of his conclusions:

"Our inquiries show that the habit, once formed, cannot be easily abandoned. Nor is it true that Indian addicts generally do not increase the dose and keep to small quantities without ill effects. . . . We failed to find any facts which could substantiate the statement that Indians had a greater degree of tolerance to opium and were less susceptible to its ill effects. . . . The habit once formed is as difficult to break among Indians as among any other people. . . . It [the habit] undoubtedly leads to physical, mental, and moral deterioration, and we have ample proof of it in the series of cases we have studied."

The general conclusion appears to be that the opium habit produces the same effects in Indians as it does in Europeans, and that its non-medical use is as undesirable in the one case as in the other. Professor Chopra proves by his analyses that opium addiction is a strictly localized habit in India. In most districts in India the consumption of opium is less than 4.5 kilos per 10,000 of population, which is the figure given by the Advisory Committee of the League of Nations as the opium requirement for medicinal purposes. On the other hand, a minority of districts show an enormous consumption—for example, six districts in Assam show an average consumption of twenty-five times their medicinal requirements. These figures seem clearly to indicate that there is no universal demand or need amongst the inhabitants of India for opium for non-medicinal purposes, but that opium-eating is a habit confined to certain localities. It is satisfactory to know that the Indian Government is taking steps to try to reduce the opium consumption in those areas where the consumption of opium is more than five times the amount needed for medicinal purposes.

Small-pox in Bihar and Orissa.

In the most recently issued public health report for the province of Bihar and Orissa, Lieut.-Colonel J. A. S. Phillips, the officiating director of public health, refers to the difficulties experienced in securing the vaccination of children as a measure of protection against small-pox, and mentions that among certain classes opposition to vaccination is influenced by religious beliefs. The death rate from small-pox in 1926 and 1927 was 1 per 1,000; this disease occurs in all districts every year, assuming epidemic dimensions at intervals of six or seven years. The period of these cycles suggests that the immunity conferred by primary vaccination is practically exhausted in this term, and since only a small proportion of newly born children are protected each year the number of susceptible children at the end of each cycle is very great. Efforts have been made by officers of the health department, in inspecting vaccination work, to ascertain the proportion of newly born children protected. In one area it is stated that, after allowing for infant deaths, only one-tenth of the remainder are vaccinated annually. A severe and prolonged outbreak of small-pox occurred in 1926 and 1927, accounting in each year for about 34,500 deaths, the death rates in certain districts in 1927 approaching 2 per 1,000 from this disease, while in one town the rate was 5.9 per 1,000. The question of making primary vaccination compulsory throughout the province is now receiving consideration, and while there are apparent financial difficulties Colonel Phillips points out that any additional expenditure involved would be easily justified. As already mentioned the religious beliefs of certain sections of the population constitute another obstacle to progress in this direction. The classes concerned hold that small-pox is a visitation of the goddess Sitala and that it is inexpedient to interfere with her workings.

[1] *Indian Journal of Medical Research*, vol. xvi, No. 2, p. 339.

Child Welfare in Burma.

The medical inspection of schools and school children has been steadily improving in Burma during recent years, but Lieut.-Colonel E. Bisset, director of public health for Burma, states in his report for 1927 that, until a fully organized public health staff is created in each town and district, it will be impossible to give adequate attention to the 350,000 children attending the 5,600 vernacular schools. In the meantime, only the children of the comparatively well-to-do are being cared for systematically for the most part, and these probably require it less than the children of the poorer classes. Medical inspection is compulsory in all Government schools other than vernacular schools, but it is still optional in aided establishments. Complaints have been received from a large number of school medical officers that many parents seem quite apathetic as regards the health of their children, and that advice given is not followed. Thus, at one school, out of 139 cases of defective teeth, only 12 were cured. A measure of improvement has followed the extension of invitations to parents to be present during the inspection of their children, and some medical officers have reported a considerable quickening of interest where this practice has been adopted. At one school the employment of a trained nurse to ensure obedience to the instructions given by the medical officer has proved very effective. Elementary hygiene is now being taught in the schools, and it is hoped that this will result eventually in the appearance of a new generation of parents more intelligent and responsive than their predecessors. Various hygienic improvements have been effected in several schools, but a regrettable feature noticed in many cases was the apparent absence of any facilities for recreation. Colonel Bisset adds that, in view of the importance of organized games and drill in physical, mental, and moral training, it is to be hoped that improvement will follow in this respect also.

Leprosy Survey in Travancore.

With a view to inaugurating a campaign against leprosy in Travancore a health survey party, under the auspices of the Indian Council of the British Empire Leprosy Relief Association, has commenced an investigation in Trivandrum. It is hoped to determine the actual incidence of leprosy in Travancore, where it is believed to have increased by 85 per cent. in the last ten years. Which classes of the population are the most affected will be determined, and a comparative study is being made of the conditions in the leprosy and non-leprosy areas. It is hoped that information of etiological and prophylactic importance will thus be obtained. The introduction of new methods of treatment in the State Leper Asylum and open leprosy clinics will be undertaken. The Travancore Government is assisting the survey party actively, and has given facilities to subordinate officers of the medical department to undergo special training, which will enable them to co-operate more actively in the coming campaign.

Correspondence.

THERAPEUTIC VALUE OF ULTRA-VIOLET LIGHT.

SIR,—In the Medical Research Council's report reference is made to two investigations of the effects of rays from the mercury vapour lamp upon the health of a group of "subnormal" infants and a group of school children in London. The scientific value of these investigations is rightly assessed highly because in both cases "control" groups were studied; when, however, the Council fails to admit as evidence all the other clinical work that has been done on the subject, many clinicians whose experience of ultra-violet light in rickets has made them enthusiastic in favour of it will feel bound to protest. Ascertained scientific facts may be the truth, but that they are not necessarily the whole truth is a matter of medical history.

The Council states that "prolonged researches . . . give no scientific reason at all to suppose that the treatment of rickets is better effected by ultra-violet rays falling on the skin than by direct provision of the necessary food values." But those of us who have worked at light clinics in industrial districts, and who know so well the practical working conditions, will be profoundly unconvinced. We remember the wretched specimens of infants with digestion impaired, unable to tolerate cod-liver oil, and the ignorant, careless, or harassed mothers who could not be depended upon to give it. We remember how often cod-liver oil failed us under those conditions, and how, on the other hand, ultra-violet light effected not only a rapid cure of rickets, but a marked improvement in the general health. I, personally, tried dietetic and hygienic measures in the treatment of hundreds of cases of rickets at Motherwell child welfare centres from 1919 to 1924, and I freely confess that the adverse conditions proved too much for me. From 1924 to 1925 a series of cases which had practically failed under this treatment responded rapidly to ultra-violet light. In 1925 and 1926, when the light clinic was organized, I treated 121 cases, and rapidly achieved satisfactory cure in 95 per cent., as well as astonishing improvement in general health in the vast majority. Of course, I know that all this is not "scientific," but the success achieved was sufficiently remarkable to satisfy all concerned. In Dr. Katherine Gamgee's book on *Artificial Light Treatment of Children*, case histories in rickets are given, showing precisely similar results to mine. The Medical Research Council states that reports submitted from artificial light centres "exhibit much variation of opinion," but if these reports are studied with discrimination, I believe that no appreciable difference of opinion will be found as regards (1) the rapid cure, even under adverse conditions, of the bony lesions in active rickets, and (2) the remarkable improvement obtained in general health in such cases, including improvement in muscle tone and associated activity in waking hours, the disappearance of apathy, fretfulness, and sleeplessness, and the appearance of happiness and well-being.

The reports on the London children quoted by the Council deal with a different class of case altogether, but there is no clear indication of this distinction in the Council's statement. On the basis of these two limited investigations and of current laboratory findings, the Council seems prepared to condemn artificial light centres for rickets as unnecessary and about fifty times more expensive than alternative methods of treatment. In its estimate of cost, it appears to have entirely overlooked the fact that many children can be treated together round the lamps, thereby making the cost per case very low. Huldschinsky stated that "a single quartz lamp rationally employed can cure annually some 1,000 rickety children." But much more serious than any question of cost is the fact that the Council ignores the almost unanimous body of opinion in favour of light treatment of *active rickets*, expressed by clinic workers who have personal experience of it, at any rate, in the industrial districts of the North. It is a gesture which, if successful, would deprive such workers of a therapeutic armament which, in their hands, has been productive of immense benefit to child life, and such a thing at this late stage is unthinkable.—I am, etc.,

Leicester, March 23rd. H. STANLEY BANKS.

COLLES'S FRACTURE.

SIR,—It is to be hoped that the discussion in your columns on the above subject will lead to an improvement in the treatment of this common fracture. I cannot agree, however, with Mr. Bankart in his condemnation of the method of reduction taught us by Sir Robert Jones; personally, I prefer it to the brute force advocated by Mr. Bankart. Preliminary disimpaction is, in my opinion, a most useful manœuvre, which obviates the necessity for great force in recent cases. When the fracture is not seen till two to four weeks have elapsed since the receipt of the injury, reduction is, I admit, impossible without the use of all the force of which the surgeon is capable; a wedge or other support is then a useful aid to the surgeon's hands.

Anatomical perfection is undoubtedly desirable, and should be our aim in all fractures, but every surgeon knows that in many cases small imperfections in the reduction make not the slightest difference to the functional result. The chief difficulty that besets the inexperienced practitioner is to know what minor displacement is of importance, and what he may safely disregard. In Colles's fracture, for instance, slight backward displacement is of no moment, provided there is no backward tilt of the lower fragment. It is entirely unnecessary under such conditions to inflict a second anæsthetic and manipulation on a patient in order to try to achieve anatomical perfection, as advised by Mr. Watson Jones. In the presence of much comminution it may be even unwise to be too ambitious. The older the patient the greater the latitude permissible in this respect. If the fracture had occurred higher up in the shaft, no surgeon would worry about partial backward displacement of the lower fragment provided the fragments lay in parallel planes. When, in a fracture of the Colles's type, the articular facet for the ulna is broken, every effort should be made to obtain absolutely accurate replacement.

In the final paragraph of his remarks Mr. Bankart rather implies that surgeons in charge of fracture clinics deprive house-surgeons and others of their opportunities of setting fractures. I cannot believe this is so. Whether a hospital possesses a fracture clinic or not the fractures must be treated, in the first instance at any rate, by the casualty officers and their assistants. Only after the fracture has been set and a second radiogram taken should the case be seen in the fracture clinic. This clinic should be attended by the casualty officers alternately. If further manipulation is necessary this should be done, if possible, by the officer responsible for the first setting, and only occasionally by the surgeon in charge. The functions of this surgeon, it seems to me, are to supervise generally the treatment of fractures in the hospital; to criticize, advise, and encourage those who have the advantage of seeing the cases shortly after the receipt of the injury—the ideal time for reduction—and whose duty it is to set the fractures; to undertake manipulation or operation only in selected cases; to teach the students attending the clinic; and lastly, to act as controlling liaison officer between the casualty and the massage departments. These are the lines on which we have run the fracture clinic at King's College Hospital, and they are, I submit, the right lines if our chief object is to be achieved—namely, to maintain at as high a standard as possible the routine treatment of the fractures seen in the casualty department of the hospital.—I am, etc.,

London, W.1, March 26th. H. A. T. FAIRBANK.

SIR,—I have read with much interest Mr. Bankart's able article and Sir Robert Jones's criticism of it. Sir Robert says, "the principle which underlies my very simple procedure is extension of the radius, pronation of the lower fragment, and supination of the upper." The patient comes under observation with the fracture firmly impacted, and until this is freed I fail to see how the above can be effected.

The whole matter centres around the question of impaction. Except in the hands of Sir Robert Jones and those who have attained his skill, extension of the radius merely means extension of the wrist-joint, and completely fails in the majority of cases to disimpact the

fracture; if successful, then the pronation of the lower fragment and supination of the upper can be carried out. I have on many occasions endeavoured to follow Sir Robert's instructions, with uniform want of success, hence I agree with Mr. Bankart that to attain disimpaction and subsequent reduction force and leverage are necessary; nor have I seen any injury to nerves or other soft structures.—I am, etc.,

Cooden, March 29th. DOUGLAS DREW.

DIAGNOSIS OF EARLY PREGNANCY.

SIR,—The response to the letter of Professor Johnstone concerning the Zondek-Aschheim test for pregnancy which appeared in your columns on February 9th (p. 264) has been most encouraging. Already some ninety tests have been made, and in such cases in which further clinical reports have been received the diagnosis as established by the test has been confirmed.

Experience has shown, however, that the working of the pregnancy diagnosis station could be made easier and more fruitful if certain matters of detail were improved. Commonly too much, too little, or too stale urine is sent, and often in packages that are too easily broken in transit. The requirements are 2 oz. of fresh morning urine in a chemically clean bottle, enclosed in a package that will withstand the dangers of the journey, and accompanied by the following information: date of last menstrual period; parity; menstrual history; history of any severe medical disturbances.

It would also appear necessary to emphasize the fact that the test cannot be made free of expense; mice have to be bought and kept, and it is to cover the cost of these that a charge of 5s. for private cases and 1s. 6d. for institutional cases is necessary. A postal order should therefore be enclosed in the package.—I am, etc.,

Pregnancy Diagnosis Station, The University, Edinburgh, March 23rd. F. A. E. CREW.

OBSTETRICS IN GENERAL PRACTICE.

SIR,—We general practitioners who read the frequent letters and articles in the *British Medical Journal* on the present state of obstetrics in England, and the maternal mortality rate, must feel ourselves in the position of a "buffer state" which has to take the blows of opposing forces, and still remain standing.

In the one camp the consulting obstetricians demand a maternity service restricted to their ranks, delegating the physiological act of childbirth to the status of a major operation for a pathological condition; on the other side are the public health authorities, who sometimes admit the value of the family doctor as a regular standby, but consider that the ideal would be for the specialist to see every patient in the course of pregnancy and in the early stage of labour.

While the contest wages over his patient head the general practitioner still carries on his maternity work, endeavouring to forestall avoidable dangers scientifically, and, in emergencies, often performing feats of skill single-handed.

Does it ever occur to the obstetric specialists that they only see the beginning and end of a maternity case, and that, usually, only under hospital or nursing home conditions? How cognisant are they of the terrible slum dwellings in which so many decent women have to bear and rear children, and the doctor fights a losing battle to deliver them under aseptic conditions? Have they any idea of the difficulties of conducting a labour in a single room of a slum tenement, where, maybe, both roof and floor are giving way, the one window is hermetically sealed, and the gas fittings are coming away from the wall? Or of working in a one-roomed dwelling where the sewer gas sends its foul emanations into the room, which fact has been reported without success to the landlord and public health authority?

Surely a little thought and study of actual conditions would show that the fault of the continued high mortality rate lies not with the doctors and midwives, but with the housing conditions in which they carry on their faithful work. Would it not be better if, instead of so lightly casting aspersions on the general practitioners of this country, the obstetric consultants and public health authorities united with their other medical colleagues to insist on better housing and the provision of more municipal maternity homes?—I am, etc.,

Oldham, March 23rd. MARY G. CARDWELL, M.D.

THE ART OF SURGERY.

SIR,—In his very kindly review of my book (March 30th, p. 603) your reviewer objects to my description of surgery as an art, on the grounds that the surgeon creates no new moral or spiritual experience, and that the values he learns to perceive are only material values. Now a short time ago I spent a happy hour contemplating the glories of the Venus of Milo in the Louvre, and yet the closest examination failed to reveal any evidence of any moral or spiritual element in its structure, and it appeared to be formed of the most substantial material. It is true that I am not a psycho-analyst, and I was probably blind to the suggestive symbolism underlying its apparently innocent outward form. But what I did perceive was that here some great artist, whose name we shall never know, had seen beneath the surface of what was perhaps some very ordinary human form, and with matchless skill of hand and eye had impressed on a mere block of marble the flowing grace, the lovely poise, the calm yet half-expectant gaze which have made his vision immortal.

It is precisely for this attitude of the artist that I make my plea. I ask my students to realize that diagnosis does not consist in the collection of laboratory reports, but in trying to see beneath the surface both of the patient and of his story; and when I go round the wards I try to impress upon them that somewhere beneath the surface, even in the most ordinary case, there may lie hidden undreamt-of possibilities. It would undoubtedly be of great advantage to all of us if many of the artists of the present day would give up the use of materials altogether and would confine themselves to moral and spiritual experiences; but I trust that future generations of surgeons will realize the essentially artistic nature of their work, and will pursue their calling as one of the greatest of the arts.—I am, etc.,

London, W.1, March 30th. H. S. SOUTTAR.

TONSIL PUNCTURE.

SIR,—We were much interested in the paper by Dr. Ramsay and Mr. Pearce on tonsil puncture published on March 23rd (p. 543). As the authors made a reference to a former publication by one of us, E. Cronin Lowe, and being interested in any advance resulting in a better method of obtaining suitable material for bacteriological examination from likely foci, we feel that this short note may add further thought for your readers.

The method of obtaining suitable organisms by means of tonsil puncture is indeed interesting. It strikes us, however, that the needle in all probability penetrates or may lodge in tonsillar crypts in its course, and therefore the organisms obtained by this method are those found actually in the tonsillar crypts and not necessarily in the tissues surrounding the crypts. We have performed such examinations upon tonsils as a definite routine of general investigation in all cases similar to those mentioned by the authors, our technique being identical in the preparation of the patient, but a straight, right-angled firm platinum wire was used to explore the tonsils for crypts, large and small. On many occasions clinically "normal" tonsils and their fibrotic remains contain crypts, single or multiple, into which such a platinum wire may be pushed, sometimes to a depth of half an inch. From such specimens it has been our invariable practice to emulsify the collected material in approximately two drops of saline solution in a tube with a wide mouth immediately after collection. From such an emulsion approximately one-half is taken from this tube and isolated by the successive streak method upon a blood agar plate. This, after a suitable period of incubation, provides a concise idea of the total organisms present, and the approximate incidence of each. It will probably be agreed that blood agar is a most suitable medium for the organisms which are likely to be present from such a focus to grow upon.

To the remaining emulsion in the wide-mouth tube 5 c.cm. of the patient's blood is added and incubated immediately. On the following day subcultures are made upon blood agar plates, and the further incubation and examination of the resulting cultures, if any, are carried out.

There appears to us to be little doubt that such technique as referred to above is preferable to that laid down by Ramsay and Pearce, since it not infrequently happens that by the "pathogen-selective method" the growth of a presumably pathogenic organism is enhanced, or appears when it is not obtained by the ordinary control method of culture. Again, employment of the direct method of cultivation gives a fair idea of the number of organisms inoculated with the whole blood, and is therefore an index of overplanting or not, which may quite easily be done. Furthermore, the simple method of tonsil crypt culture, as described above, has, in a group of 100 rheumatic cases examined by us recently, shown very similar findings to those of Ramsay and Pearce, in that 20 per cent. were negative pathogen-selective cultures, and 80 per cent. positive by the same method. This, therefore, suggests that there is no evidence of better cultural results obtained from the tonsil puncture method, interesting though it is, than from those obtained by using the simple crypt culture technique.

We have little doubt that this pathogen-selective method, originated by Solis-Cohen, is a definite advance in an attempt to obtain the pathogenic organism or organisms from suspected foci. Theoretically, the method "holds water," and many points could be put forward as to its feasibility, but the time is inopportune. The application of such a method, although encouraging, needs a great deal more study before final conclusions are stated, and since many hundreds of cases falling into definite clinical groups have been examined by such a method by us, we welcome this publication.

Let us not, however, again fall into disrepute on the value of tonsil cultures, as we did over the wholesale extraction of teeth, but rather view the tonsil as one potential area for organisms or their toxins to be absorbed, and at the same time test out fully by similar methods all other potential foci of infection.

We fully agree that the pathogen-selective method is of great importance to our colleagues, for it frequently shows where the focus of infection lies, and therefore calls for conservative or radical treatment. There is little doubt that the time has come for a closer co-operation between the clinical pathologist and his colleagues; and so long as we remember there is truth in both methods of attack, then marked curative therapeutic advance will be made. We hope that many more pathologists will be stimulated to apply this fascinating method of pathogen-selection, but a further warning note should be observed—namely, do not stray too far from the original application of the method—for what appears at the present time to be a valuable and simple technique may, as the result of modifications, become valueless.—We are, etc.,

E. CRONIN LOWE.
HUGH SMITH.

Liverpool, March 27th.

DEEP X RAYS AND THE CELLS OF THE BLOOD.

SIR,—The article in the *British Medical Journal* of March 23rd (p. 542) by Drs. Knott and Watt on "Some effects of deep *x* rays upon the cells of the blood" raises an important point as to the reaction of certain localized infections to radiation treatment.

In their experiments with normal and leukaemic blood *in vitro* they found that irradiation produced complete loss of all phagocytic power in the polymorphs within about thirty-five minutes. If the same blood changes occur *in vivo* it will be necessary to reconsider the question as to why a single dose of *x* rays so often produces a favourable result in cases of boils, carbuncles, and in the early stages of erysipelas.

Recently I was able to abort a boil on the upper lip of a young boy. Lymphangitis, enlarged submaxillary glands, and a high temperature were present, and it appeared as though incision would be inevitable. However, after an application of *x* rays, resolution rapidly followed, and the temperature dropped to normal.

On other occasions I have observed that carbuncles which have resisted ordinary treatment have responded quickly to *x*-ray therapy. Good results have also been reported by Coyle, Ross, Dunham, Richards, Lewis, and Hodges; the last of these published a full account of his results in the *Journal of the American Medical Association*, October 24th, 1925. In this report he states that in moderate-sized carbuncles of the forearm, with lymphangitis extending nearly to the axilla, the pain was relieved and the red lines of lymphangitis had disappeared within eighteen to twenty-four hours following *x*-ray treatment. He found irradiation particularly valuable in large carbuncles which commenced to discharge copiously within twenty-four hours, this being followed by local and general improvement. Hodges suggests that these good results are due to the *x* rays causing a greater activity of the cells and an increase in the phagocytic powers of the blood. The response to the treatment is so rapid that it is probably not due to any action on connective tissue cells.

We have therefore to face two facts. Laboratory experiments *in vitro* prove that the phagocytic powers of the blood are abolished by irradiation, while clinical observations on the living subject suggest (but do not prove) that phagocytic powers are increased. This apparent contradiction should open new fields for research.

First, do localized infections respond well to irradiation because of an increased phagocytic index? Secondly, if the phagocytic index is not increased, what is the mechanism which is responsible for the rapid improvement? Thirdly, will the experiments *in vitro* show the same result with medium voltage therapy as with deep *x* rays, since it is the former which are used with such good results in the treatment of skin infections?

Drs. Knott and Watt suggest that the destructive effect on the blood is due to secondary radiations. With medium voltage *x* rays the proportion of secondary radiations will be much less, and it is possible that the smaller dose may produce a stimulating and not a depressing effect on the phagocytic power of the leukocytes.—I am, etc.,

PAUL CAVE.

London, W.1, March 25th.

THE CIRCULATION UNDER THE SPHYGMOMANOMETER CUFF.

SIR,—In respect of Sir James Barr's second letter (*British Medical Journal*, March 9th, p. 475), I do not think that any further comments are called for from me; it remains that I can only regret that he did not give his consideration to my *argument* and give me the benefit of his criticism. Professor Leonard Hill's letter, on the other hand, has interested me a great deal. It is, however, very difficult in a description, to follow all the details of a complicated apparatus, and I feel that only careful study of the apparatus *in situ* and *in actu* can suffice to do justice to the experiment and the experimenter. I am not clear whether, in all the observations on the frog's web, the web itself is under direct pressure or not. If *not*, then in these the phenomena observed would correspond rather to those witnessed in the segment of the arm distal to the cuff, whereas my main argument regards that which happens in the cuff segment; this is precisely where the importance of direct inspection comes in.

Accepting, on Professor Hill's authority, the essential correspondence of the working of his apparatus with that of the sphygmomanometer, I note that he describes minute the effects of a rising pressure applied to the frog's leg and observed in the web of the foot; it is to these observations that I wish to draw particular attention, as they seem to me to bear out certain conclusions which I have come to, and which are vital to my argument. Let me first state these conclusions as briefly as possible.

1. The primary effect of loading the surface of the cuff segment must be to empty completely, and more or less extensively, the veins of this segment, and so to cut off the escape of a certain bulk of blood via the veins. The absence of any impediment, towards the heart, exacts this conclusion.

2. The subsequent effects of the continued rise of the cuff pressure may be divided into two stages. Stage I, which ends at the point when the cuff pressure becomes equal to the pressure in the brachial artery. When this happens there is complete stasis throughout the trunk and branchings of the brachial artery in the cuff segment. It is to be noted that, the opposing forces being in exact equilibrium, the channels and orifices of the artery are still fully patent, there being no surplus of force to compress them. Stage II, which, beginning with stasis and open channels, ends with the disappearance of the pulse at the wrist. The whole duration of this stage is occupied by a summation of increments of pressure *in excess* of the intra-arterial pressure, which remains a constant. The first, smallest rise destroys the equilibrium present at the end of Stage I, and thence onwards the volume of blood under consideration is in the grip of a rising unopposed pressure, and it begins to move along the line of least resistance—that is, towards the open mouth of the brachial artery at the upper edge of the cuff. The blood, being as it were encompassed by the extravascular surplus pressure, must move *en masse*, and with each rise, however imperceptible in its beginnings this movement may be, there will be some escape of blood from the orifice of the brachial artery and a corresponding emptying of the outlying capillaries and arterioles at the periphery of the blood mass. In the course of time such a process continued would express the whole of the imprisoned blood, for the grip is trying all the time to obliterate the arterial channels, but this cannot take place until the whole of the blood is expelled. It is to be noted particularly that this expression is by a *reversed* flow, and that it is the very force of the retrograde movement which maintains the open door of the arterial channels.

In the course of an ordinary blood-pressure estimation, so brief is the period of Stage II and so slight are the forces engaged (a few millimetres of mercury measuring the effective surplus pressure), it is probable that the naked eye would not recognize any change in calibre of the brachial artery and its chief branchings, even at the conclusion of this stage. But if it were possible to call in the microscope to our aid and bring it to bear on the peripheral capillaries of the isolated blood mass instead of the main trunk—what then?

It is just here that Professor Hill's evidence comes in respecting the minute movements of the blood in the web of the frog's foot, under conditions which reproduce those which the sphygmomanometer imposes. For he shows, in the first place, the presence of an isolated—that is, *imprisoned*—mass of blood; and, secondly, he shows it in process of evacuation by a *reversed* flow; it is this reversed flow which proves the isolation, since it points to closed veins. All this takes place under a rising extravascular pressure. Here are his words, after describing how, under the increasing pressure, first one capillary loop is emptied, then another: "If the pressure be now raised further the flow ceases in more and more capillaries and venules, and finally in all, and in the arterioles." A little further on he says: "During the expression and blanching of the web the flow in the arterioles is reversed." *But this reversed flow is proof positive of open arterial channels*; it would be impossible with an obliterated main artery.

Need I say more? I craved the *visio oculorum* of Bacon—it seems to me that Professor Hill meets my desire.

In conclusion, may I appeal to my colleagues—physiologists and physicians—in the name of *science to look* into this matter, which is and should be entirely impersonal. I am convinced that a sectional obliteration of the trunk of the brachial as at present held and taught is wholly untenable, but my argument may be at fault. Is it too much to ask that it be examined? I would repeat here that the question of the patency of the arteries raises a definite practical issue.—I am, etc.,

London, March 19th. HARRINGTON SAINSBURY.

SIR,—In the discussion on this subject Dr. Harrington Sainsbury, Sir James Barr, and Dr. Leonard Hill do not mention the simplest and surest way of *seeing* by means of the ophthalmoscope what happens to the compressed artery.

If the arterial pulse is produced on the disc by finger pressure, or by the dynamometer of Baillart, the observer will see the arteries collapsed and refilling with blood only when the systolic wave is entering them. By increasing the pressure still more the arteries will be seen to remain collapsed and empty all the time, as the systolic wave will not be able to enter them. The same applies to the retinal veins, but the necessary pressure on the eyeball is, of course, a very slight one. The colloids of the eye are even more incompressible to a certain degree than those of the hand, because they are surrounded by a rigid sclera.

It is, in my opinion, the best proof that the portion of the artery does collapse and remains empty under a pressure locally applied and higher than the systolic one.—I am, etc.,

London, E.1, March 8th. N. PINES, M.B.

EFFECT OF OBSTRUCTED RESPIRATION ON HEART AND LUNGS.

SIR,—The interesting paper by Drs. Crowden and Harris in your issue of March 9th (p. 439) raises several points of importance to the practising radiologist. Their statement that the ideal radiograph of the chest requires an exposure of one-hundredth to one-sixtieth of a second is correct, but this exposure is by no means outside the range of most hospital *x*-ray equipments. At a distance of 30 inches with a 10 kw. transformer and any type of tube it is a comparatively simple procedure to photograph a chest in one-sixtieth of a second. At 2 metres distance it is less easy, and requires a tube capable of standing a very heavy load. There are many such tubes on the market to-day. In both instances, however, it is necessary to use a hard ray, and the resulting picture is by no means ideal.

Experiments, spread over several years at the Royal Chest Hospital, with the object of discovering the ideal chest radiograph, have led to the following conclusions. The ideal chest radiograph should show: (*a*) the heart outlines clearly and sharply; (*b*) the superior vena cava; (*c*) one or both subclavian arteries; and (*d*) the normal interlobar pleura between the right upper and middle lobes. On such a picture it is possible largely to differentiate between the vascular and bronchial markings in the lungs, and, more important still, the earliest focus of tuberculosis will be visible.

A radiograph fulfilling these criteria can be obtained by employing the following technique. The photograph is taken in the erect position at 2 metres distance. The exposure, made during moderate inspiration, is one-twenty-fifth of a second, the voltage 55 kv. effective, and the milliamperage 150 to 160. The tube is of the line focus type.

This technique is also the correct one for obtaining accurate heart measurements; the phase of the cardiac cycle during which the exposure is made causes only a negligible increase in the radiographic size of the heart, which can be checked. The size of the heart can always be checked by comparing its total width with the total width of the chest. The ratio, which is constant in health, is 1 to 1.9 in females and children, and 1 to 2 in males.

Drs. Crowden and Harris are apparently unaware of this factor, known as the heart-lung coefficient, and appear to think that the terms "dilated heart," "peribronchial fibrosis," and "increased hilum shadow" are the unscientific jargon of the radiologist which "may have to be abandoned." These terms have been abandoned for many years by radiologists with "chest" experience. The term "increased hilum shadow" indicates poor technique, for the separate structures forming the hilum are all visible on a good picture. Peribronchial fibrosis is now diagnosed only when it is present, which is rare, except in certain forms of phthisis.

Examination of 8,000 chests in the erect position has not, in the Royal Chest Hospital, been followed by one case of either dizziness or fainting. The ventilation of the authors' *x*-ray room or perhaps an uncomfortable position for their patients in the apparatus may be responsible for the malaise so lightly attributed to the influence of respiration on the circulation.—I am, etc.,

London, W.1, March 12th. PETER KERLEY.

UNIVERSITY OF LONDON PARLIAMENTARY REPRESENTATION.

SIR,—A note in the *Journal* of March 23rd (p. 581) states that three members of the University of London Conservative and Unionist Association executive are prepared to support Dr. E. Graham Little in his independent candidature at the forthcoming General Election. As this statement is inaccurate, perhaps you will allow me to say that the president, fourteen vice-presidents, every one of the eleven members of the executive committee, and the two honorary secretaries of the association, totalling twenty-eight persons, are opposed to the return of Dr. Graham Little, and for the following among other cogent reasons:

1. In 1924 Dr. Little, at the instance of a non-political body of graduates, saw fit to oppose the constitutionally selected candidate, Sir John Rose Bradford, K.C.M.G., since elected President of the Royal College of Physicians of London, and this *after* he had given a written statement that he would support Sir John.

2. In that year he stood as an Independent, was elected as an Independent by the narrow majority of 389 over Sir John Rose Bradford, has sat in the House as an Independent, and must stand again as an Independent.

3. It was as an Independent that he moved the rejection of the Government's University of London Bill, his motion being negatived without a division. This tends to prove as true what appeared in your issue of January 5th, 1929 (*Supplement*, p. 5): "an 'independent M.P.' does not exert much influence in the House. . . . He is ignored by the Whips, and can rarely influence the House . . ." concerning the value of an independent member of the House of Commons.

4. Dr. Graham Little has derided the scheme of Lord Dawson for the co-ordination of medical services on more than one occasion.

5. He has opposed the scheme of the British Medical Association for the same, and when he seconded, at the Representative Meeting at Cardiff in July, 1928, an amendment which had the promise of wrecking the whole scheme, this amendment was lost by an absolutely crushing majority.

It should be known to all medical graduates of the University of London that the Conservative and Unionist Association of the University in general meeting duly summoned has in a manner constitutional selected as the prospective candidate at the forthcoming General Election Sir John Gilbert, K.B.E., B.A., a member of the Senate of the University, and a late chairman of the London County Council, and that this selection carries with it the full support of the Conservative and Unionist Central Office.

It is understood that there will be a Liberal candidate, and probably other independent candidates besides Dr. Little, but the seat cannot be lost to the Conservative party, as asserted by Dr. Little's supporters, but can be regained for the party if all Conservative graduates vote for Sir John Gilbert.—I am, etc.,

W. MCADAM ECCLES,
Chairman, University of London Conservative and Unionist Association.

March 25th.

OPPORTUNITIES FOR MEDICAL WOMEN IN CANADA.

SIR,—In the notice of the meeting of the Medical Women's Federation, in your issue of March 16th (p. 507), I am reported as saying that the opportunities for gynaecological practice in Alberta, Canada, were "very good" for medical women.

I did not say this, but only that those who had started by working in the more remote country districts might later find opportunities in the smaller, but growing, towns. I further suggested that anyone contemplating private practice should first inquire of the secretary, Alberta Medical Association, as to the possibilities before going out.—I am, etc.,

E. M. JOHNSTONE.

West Clandon, March 25th.

Obituary.

A. E. CUMBERBATCH, M.B., F.R.C.S.,

Consulting Aural Surgeon, St. Bartholomew's Hospital.

WE regret to record the death, on March 25th, at the age of 82, of Mr. A. E. Cumberbatch, whose long life was spent almost entirely in the service of medicine. We are indebted to Mr. L. A. Lawrence for the following particulars.

Cumberbatch was a Bart's man, and during his studentship at the hospital won the Kirkes gold medal. In 1870 he obtained the diploma M.R.C.S., and in the following year graduated M.B.Lond.; in 1872 he became F.R.C.S. He held the usual house appointments, and was, I believe, house-surgeon to Sir William Savory, after which he transferred to the dissecting rooms as demonstrator of anatomy. He was well qualified for the post, as he had a most intimate knowledge of this subject. It was a pleasure to be helped by him, and he gave of his best. The little leisure from the "rooms" was spent in helping John Langton, who was in charge of "ears." In 1882 the demonstratorship in ears held by Langton was promoted to a special department and placed under the care of Cumberbatch, who had resigned the "rooms." He was the first man who was not on the medical or surgical staff and yet was placed in full charge of a special department.

He had to do practically all the work himself, but was occasionally helped by someone who took an interest in ears. The department was held in a corner of the large general surgery, partitioned off on ear days. The partitions did not cut off the usual noises of a large surgery. The work was done standing. There were only two lamps and two wash-basins. In this place Cumberbatch contrived to see all the patients and to instruct the few students who came to learn. In after years dressers were added to the department. The new buildings at the hospital brought new vigour to the ear department, and Cumberbatch was given permanent assistance, which enabled him to devote more time to teaching. He resigned the appointment in 1908, and was made consulting aural surgeon and a governor of the hospital. The war brought him back to active work in the ear department. He was also aural surgeon to the National Hospital, Queen Square. His large private practice occupied him very fully till the last few years, when he retired to Sarratt in Hertfordshire, where he died.

Cumberbatch had many hobbies; he played a creditable game of tennis, and was a good billiard player. That lightness of touch which he showed in the dissecting rooms and the operating theatre stood him in good stead here. He loved golf, and was very keen about it till old age got the better. Many stories could be told of him on the links. One of his curious ways was to putt with a driver, and to putt well, too—all due to his deft hands. He was a collector of many things, among them stamps and oriental porcelain; he was somewhat of an authority on both.

Cumberbatch was not a voluminous writer. *Waldham's Surgery* owes something to him. He was one of the founders of the Otological Society of Great Britain and Ireland, and its treasurer at one time, and also its president. He took an active part in the International Otological Congress held in London in 1899.

JOSEPH RODERICK SUTHERLAND, M.B., Ch.B.,

Superintendent, County Orthopaedic Hospital, Stonehouse.

BY the death of Dr. J. R. Sutherland, superintendent of the County Orthopaedic Hospital, Stonehouse, Lanarkshire has lost one of its ablest and best-known physicians. Joseph Roderick Sutherland was educated at the Glasgow High School and later at Glasgow University, where he received his medical education and graduated M.B., Ch.B. in 1905. In 1907 he obtained the diplomas M.R.C.S.Eng. and L.R.C.P.Lond., D.P.H.Camb. in 1912, and B.Sc. (Public Health) Glasgow in 1914. After holding resident posts at the Blackburn Infirmary, the Royal Infirmary, Glasgow, Glasgow Maternity Hospital, the Glasgow Eye Infirmary, and Woodilee Asylum, and a post as assistant bacteriologist to the Corporation of Glasgow, he was in

1912 appointed medical superintendent of the County Sanatorium, Stonehouse. Following a period of war service in France he returned to tuberculosis work, and after a long struggle helped to make the County of Lanark Orthopaedic Hospital one of the foremost institutions of its kind in the country. Sutherland possessed a retentive memory and an alert analytical mind, and his wide and varied knowledge of English literature and art made him a delightful companion. He was a fine yachtsman, and used to spend his vacations exploring the lochs of the West Highlands. His funeral, attended by representatives of all classes of the community, was evidence of the affection and esteem in which he was held.

A colleague writes: The passing of Dr. Joseph Sutherland is a sad event for those whose privilege it was to know him personally. His death, at the comparatively early age of 46, when, it might be said, only half his useful life had been spent, creates a gap in the ranks of the skilled orthopaedic surgeon which it will be difficult to fill. During his tenure of office at Stonehouse, Dr. Sutherland applied himself devotedly to the care of the cripple from surgical tuberculosis, and sometimes from very unpromising human material obtained very good results. He had a genius for "construction," and this was shown in plaster and celluloid work of the highest order. Not infrequently he spent his holidays visiting English and Continental centres in order to keep himself abreast of the times, and he followed the literature closely. Stonehouse was a resort to which fellow workers came to see Sutherland's methods. He was adored by his patients, and relatives put implicit and well-founded faith in him.

The following well-known foreign medical men have recently died: Professor DOMENICO BARDUZZI, formerly director of the clinic of dermatology and syphilology at Siena; Professor DOMENICO MAJOCCHI formerly director of the clinic of dermatology and syphilis at Bologna; Professor ERNESTO TRICOMI, director of the surgical clinic at Bologna, aged 70; Dr. VALENTINO GRANDIS, professor of physiology at Genoa; Professor H. DREESEMANN, a Düsseldorf surgeon; Dr. MAXIMOW, professor of normal anatomy at Chicago and an eminent histologist, aged 54; and Dr. MANUEL QUINTELA, professor of oto-rhino-laryngology in the University of Montevideo, aged 63.

Universities and Colleges.

UNIVERSITY OF LONDON.

COURSE IN MENTAL DEFICIENCY.

A COURSE of lectures for medical practitioners on mental deficiency and other mental conditions closely allied to it, supplemented by a course of clinical instruction, has been arranged by the University Extension Board in co-operation with the Central Association for Mental Welfare. The course is divided into Parts I and II. the first starting on May 27th and closing on June 1st and the second commencing on June 3rd and terminating on June 8th. The whole course may be taken, or the two parts taken separately. There is a registration fee of 10s. 6d.; the fee for the whole course is £5 5s., or £3 3s. for each part. The course is based on the requirements for the University of London diploma in psychological medicine, and is intended for qualified practitioners, more especially for those engaged as school medical officers, certifying officers to local authorities under the Mental Deficiency Acts, or as medical officers of institutions. All communications with reference to the course should be addressed to Miss Evelyn Fox, care of *University Extension* Department, University of London, South Kensington, S.W.7.

UNIVERSITY OF DURHAM.

AT the convocation held on March 22nd the following degrees were conferred:

M.B., B.S.—A. Davis, Katharine M. Girling, J. A. Lennox, D. C. Livingston, W. Mair, J. H. F. Pankhurst, J. H. Pool, J. W. M. Stevenson, H. Wilcox.

UNIVERSITY OF MANCHESTER.

THE following candidates have been approved at the examination indicated:

D.P.H.—*Part II*: A. Anderson, Helen G. M. Bennett, Mary Evans, J. J. O'Reilly, Mary I. Prentice, Marjorie Reekie, Kathleen Sheehan.

UNIVERSITY OF GLASGOW.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—*F. R. Anderson, Ida E. Ashby, P. Barr, Jean M. Barrowman, R. S. P. Begg, R. P. Boyd, W. P. Brown, A. M. Campbell, Ellen J. R. Campbell, L. S. Campbell, D. T. Clark, W. A. Clark, J. S. Craig, T. Dunlop, J. Fairey, R. Forrest, Isobel C. Fraser, P. A. Gallon, W. S. Gardner, Annie R. Greig, T. M. Hamilie, D. L. Henderson, H. W. Laing, J. W. Laird, L. W. Laurenson, R. H. Leishman, D. C. Liddle, J. H. M'Broom, D. R. M'Calman, W. D. C. M'Crorie, J. M'Michael, W. J. M'Neish, Georgina A. M'Nicol, A. F. Maguire, J. L. Mayer, T. R. Murray, A. J. Neirn, Mary S. Nicholson, J. P. O'Hear, Jean B. Parker, T. F. Rodger, †M. M. Scott, J. G. Simon, W. Smith, J. Stewart, J. Taylor, H. R. Weir, *A. T. Wilson, H. Wyers, *†A. M. Willie.

* Distinction in surgery. † Distinction in medicine.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A MEETING of the Royal College of Physicians of London was held on March 25th.

Sir John Rose Bradford, K.C.M.G., C.B., M.D., F.R.S., was re-elected President.

Dr. J. W. Carr was appointed a representative of the College on the Professional Classes Aid Council.

Diplomas in Tropical Medicine and Hygiene and in Ophthalmic Medicine and Surgery were granted jointly with the Royal College of Surgeons to 44 and 25 candidates respectively. (The names of the successful candidates were published in the report of the meeting of the Royal College of Surgeons of England printed in our issue of March 23rd, page 581.)

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—K. Girgis (Section II), D. H. Haler, H. H. Lakin, A. W. Tam.
MEDICINE.—A. Clark, J. M. Connor, R. W. Goldsbrough, R. W. Scanlon.
FORENSIC MEDICINE.—R. W. Goldsbrough, R. K. Nandlal, K. M. Seedat.
MIDWIFERY.—I. M. Idda i V. R. D. Lahammi, J. E. Moody, Z. Risk, A. W. Tam, E. O. Watson.

The diploma of the Society has been granted to Messrs. J. M. Connor, K. Girgis, D. H. Haler, and R. W. Scanlon.

The Services.

DEATHS IN THE SERVICES.

Fleet Surgeon James William Hambly Hawton, R.N. (ret.), died at Plymouth on March 19th, aged 78. After qualifying M.R.C.S. and L.S.A. in 1875, he entered the navy as surgeon on March 31st, 1874, became staff surgeon in 1886, and fleet surgeon in 1894, retiring in the following year. His last ship was H.M.S. *Edgar*, in China, in 1893–95.

Colonel Bernard James Newmarch, C.M.G., C.B.E., Australian Army Medical Corps (ret.), died recently at Sydney, aged 72. He was educated at King's College Hospital, qualifying M.R.C.S.Eng. in 1877, L.R.C.P.Lond. in 1881, and took the F.R.C.S.I. in 1903. After qualifying he held posts as house-surgeon and surgical registrar to King's College Hospital, and as medical superintendent of the Royal Free Hospital. After some ten years in London he went to Australia, and settled at Sydney, where he held the appointments of surgeon to the Sydney Hospital and to the Royal North Shore Hospital at Sydney. He served as a subaltern in the New South Wales contingent in the South African war, and rose to the rank of captain. At the beginning of the great war he was lieutenant-colonel commanding the 1st Field Ambulance of the Australian Army Medical Corps, and came to Europe with that unit. Later he commanded the 1st, and afterwards the 3rd, Australian General Hospital; he was promoted to the rank of colonel in 1917, and served at headquarters in London in 1917–19.

Lieut.-Colonel Thomas Samuel Lloyd-Barrow, R.A.M.C. (ret.), died at Weymouth in February, aged 86. He was born in London, on May 17th, 1842, the son of Inspector-General T. W. Barrow, A.M.D., was educated at St. George's, taking the M.D. at St. Andrews in 1862, and the M.R.C.S. and L.S.A. in 1863, and entered the army as assistant surgeon on March 31st, 1864. In the old regimental days he served in the 23rd Foot, now the Royal Welch Fusiliers, and in the 3rd Dragoon Guards. He became surgeon major on April 23th, 1876, and retired, *with an honorary step, as brigade surgeon*, on April 23rd, 1884. He took the additional name of Lloyd in 1881. He saw his first active service in the Kaffir war of 1851–52, at the early age of 9. He had accompanied his parents to the Cape, and was beleaguered in a frontier fort, garrisoned by the 2nd Foot, the Queen's West Surrey Regiment, with his father, for nine months. He again saw foreign, though not active, service with his father in Canada, in 1859–60. While in the army he served in the Egyptian war of 1882, was present at the battle of Tel-el-Kebir, and received the Egyptian medal and the Khedive's bronze star. He also received the thanks of the general commanding at Gibraltar, and of the director-general, A.M.D., for his services in a cholera epidemic at Gibraltar in 1865. He was a J.P. for Brecknock county. His family have contributed many officers to the A.M.D. and R.A.M.C. Besides his father and himself, his younger brothers, Lieut.-Colonel F. E. Barrow and Colonel H. J. W. Barrow, served in the R.A.M.C., and the last was the father of Major-General H. P. W. Barrow, C.M.G., D.S.O., A.M.S. He married Miss Bevan of Brecon, who in 1911, leaving two sons.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

PARLIAMENT stands adjourned for the Easter recess. Before it rose, on March 27th, the Royal Assent was signified to the Local Government Act, 1929, for England and Wales, and to the Factory and Workshops (Cotton Cloth Factories) Act, as well as a number of Acts confirming provisional orders of the Ministry of Health. When the House of Commons reassembles, on April 15th, Mr. Churchill will introduce his Budget.

The prorogation of Parliament is commonly anticipated about Whitsuntide, and the dissolution will follow without delay.

Local Government (Scotland) Bill.

On March 26th the House of Lords was in committee on the Local Government (Scotland) Bill. Amendments to preserve the autonomy of the smaller burghs were defeated. One of these amendments proposed to raise to the status of a large burgh any burgh which, during the summer months, had a population in excess of 20,000. In resisting this amendment Lord AIRLIE, for the Government, said burghs did not have to provide for summer visitors the benefits of lunacy and mental deficiency services, nor even of public health services, since most epidemics were in the winter. Maternity and child welfare services also were not provided for summer visitors.

Clause 11 provides for the combination of two or more authorities if a district asylum or institution for mental defectives has been provided by a district board of control, whose functions under the bill are transferred to such authorities. Lord AIRLIE moved an amendment which would waive the obligation for combination if the authorities concerned and the General Board of Control for Scotland agreed otherwise. He said this was to meet the case of Paisley, where the parish council, which was also the board of control, had provided an asylum for the burgh of Paisley and for that small portion of Paisley parish which was in the county of Renfrew outside the burgh. The amendment would allow Paisley town council to buy out the interests of Renfrew county council in the asylum and run it exclusively for the burgh. The amendment was accepted.

In Clause 14, which deals with the preparation of administrative schemes by county councils, Lord AIRLIE moved to omit lunatics from the classes of persons for whose maintenance and treatment the scheme might provide by way of poor relief or by virtue of enactments other than the Poor Law Acts. He said that treatment of lunatics was provided under the Lunacy Acts and not under the Poor Law Acts. The House agreed to the deletion.

Clause 35 proposes that, unless the Department of Health otherwise agrees, the county medical officer of health shall become the health officer of any small burgh where that post falls vacant. Lord YOUNGER OF LECKIE moved an amended form of words regarding the appointment of the county medical officer and of the county sanitary inspector when vacancies occurred in similar posts in small burghs. He said it was desirable that the sanitary inspector should be under the orders of the county medical officer of health. Lord SALISBURY resisted the amendment, contending that the Secretary for Scotland should be left a discretion. Lord YOUNGER withdrew his amendment.

After other amendments had been discussed the bill passed through committee.

Treatment of Rheumatic Insured Persons and Children.—Mr. CHAMBERLAIN, replying to Brigadier-General Wright, on March 25th, said that all insured persons in Great Britain (with the almost negligible exception of voluntary contributors with an income exceeding £250 a year) were entitled to medical treatment. Under that benefit insured persons suffering from any form of rheumatism were entitled to receive from insurance practitioners such treatment as the practitioners considered to be proper and necessary, except treatment involving the application of special skill and experience of a degree or kind which general practitioners as a class could not reasonably be expected to possess. Further, if an insured person was a member of an approved society which had adopted additional benefit No. 10, and if that person received treatment as an in-patient of a hospital, the society might make payment towards the cost of his maintenance and treatment. As soon as suitable arrangements could be made under additional benefits Nos. 8 and 16, it would be open to societies to make payment towards the cost of any special form of treatment of rheumatism, either by a registered medical practitioner in accordance with an approved special scheme or through the agency of an approved charitable institution. On the same day Mr. CHAMBERLAIN told Brigadier-General Wright that no complete particulars were available to show what hospital accommodation had been set aside in the last twelve months for the treatment of acute rheumatism among children. For London, the Metropolitan Asylums Board had, during 1928, set aside 38 additional beds in their institutions for the treatment of rheumatic affections among children (including rheumatic fever, acute endocarditis, and chorea). The total number of beds provided by the Board for this purpose was 170 at the beginning of the present month, and they were providing 350 additional beds in buildings now in construction. Accommodation was also provided for children suffering from rheumatism in other hospitals, institutions, and schools for physically defective children recognized by the Board of Education, but the exact number of beds so provided was not available.

Preservation of Infant Life Bill.—This bill, which has already passed the Lords, was read a second time without debate in the House of Commons on March 25th and sent to a standing committee.

Lepers in India.—On March 25th Earl WINTERTON, replying to Sir R. Thomas, stated that the number of persons in India returned as lepers at the census of 1921 was 102,513, but it was probable that the real total was considerably in excess of that. Information was not available on the number of treatment centres now open in India. As public health was a transferred provincial subject, the matter was one for the local Governments and legislative councils. The Indian Council of the British Empire Leprosy Relief Association worked in co-operation with the provincial Governments and voluntary agencies, and in each province the local Governments either supported leper institutions or made a capitation grant to institutions under the administration of the Mission to Lepers. The Secretary for India had a distinguished medical adviser at the India Office, who was closely associated with the new remedy for leprosy.

"Cancer Cures."—Sir KINGSLEY WOOD told Viscount Sandon, on March 25th, that the Cardigan alleged cure for cancer was one of several alleged cancer cures regarding which the Minister of Health had made inquiries through the Departmental Committee on Cancer. No information of scientific value was obtained by those inquiries, and no report had been made dealing with the "cure."

Deaths in Oldchurch Hospital, Romford.—Mr. CHAMBERLAIN, replying on March 25th to Mr. March, said he had seen a report by the medical superintendent of the Oldchurch Hospital, Romford, that nearly a hundred deaths occurred there within three weeks, and that many of the lives might have been saved if it were not for overcrowding. In the report this officer stated that some of the deaths which occurred in February could have been avoided had the guardians taken some notice of his repeated advice with regard to the lack of accommodation. Proposals for the increased accommodation for cases of tuberculosis were submitted by the guardians in August of last year. After consultation with the Essex County Council Mr. Chamberlain had come to the conclusion that the provision of additional wards of the ordinary hospital type was necessary, and the guardians themselves adopted this view in a letter addressed to him on January 14th, when they made proposals for extensions. Arrangements had now been made for the immediate discussion of the necessary plans between the guardians' advisers and his officers. There had been no delay on his part in dealing with any proposals from the guardians.

Deaths due to Gas Poisoning.—Sir P. CUNLIFFE-LISTER, on March 26th, told Mr. Bowerman that his attention had been drawn to the fact that in the past fifteen years deaths due to gas poisoning had increased from 170 to 1,142; since the report of the Committee on Carbon Monoxide in 1921 the situation had been watched and relevant information collected. Of deaths due to gas poisoning, a large proportion were cases of suicide. He thought that a small but experienced committee should review the developments which had taken place since the Pearce Committee sat in 1921, and he proposed to appoint such a committee. Replying to a question by Mr. W. Thorne, Sir P. CUNLIFFE-LISTER said that in 1927 the number of suicides from gas poisoning was 943, and the other deaths from the same cause 150. He proposed to appoint the committee within a reasonable time.

London Lock Hospital.—Asked by Major Astor, on March 28th, what changes of administration he proposed as the result of the report of the committee of inquiry into the London Lock Hospital, Sir KINGSLEY WOOD replied that the hospital was a voluntary institution and responsibility for carrying out the recommendations of the committee rested not with Mr. Chamberlain but with the board of the hospital. Mr. Chamberlain had not yet received specific proposals from the board for its reconstitution, but he understood that it contemplated the inclusion of women on the board in future.

Radium.—Sir KINGSLEY WOOD, replying to Lieutenant Commander Kenworthy, on March 25th, said that the report of the subcommittee of the Committee of Civil Research on Radium and Radium Supplies had been received, and would be published in full shortly. A statement of the intentions of the Government in the matter would be made on the reassembling of Parliament.

Social Hygiene Propaganda.—In an answer given on March 27th to Captain Crookshank, Mr. AMERY said that a grant of £500 had been made to the British Social Hygiene Council to assist in organizing propaganda work in the colonies and elsewhere. The employment of this money was limited to specified services, such as the supply of films and of medical and educational literature. Payments out of the grant were only made to reimburse certified expenditure on these approved services. The grant had not been discussed with the Ministry of Health, which had no responsibility for such work in the colonies.

Notes in Brief.

At the end of 1928 the number of persons insured in Great Britain under the National Health Insurance Act was estimated to be 11,550,000 men and 5,400,000 women. These included 720,000 persons who, having reached 65 years of age, have ceased to be entitled to sickness and disablement benefit.

Mr. Herbert Williams states that, whereas before the war nine-tenths of the glass used in British optical instruments was of foreign manufacture, the same percentage of the glass now so used was British.

Medico-Legal.

ACQUITTAL OF MEDICAL MAN ON MANSLAUGHTER CHARGE.

AT the Central Criminal Court, on March 27th, the jury, without leaving the box, found Dr. Daniel Evans Powell of High Street, Tooting, not guilty on an indictment charging him with the manslaughter of Mrs. Doris Ruth Simmons, and with intent to procure her miscarriage by an instrument or other means.

Mrs. Simmons died in St. James's Hospital on December 13th, and a *post-mortem* examination was made next day by Sir Bernard Spilsbury, in whose opinion an instrument had been used by a skilled person on or about November 23rd, leading to a septic abortion followed by inflammation of the kidneys and general septicaemia.

Dr. Powell, who pleaded not guilty and gave evidence on his own behalf, was defended by Sir Patrick Hastings, K.C., Mr. St. John Hutchinson, and Mr. John Maude. Mr. Eustace Fulton and Mr. Gerald Dodson represented the Director of Public Prosecutions.

Dr. F. J. McCann and Dr. Donald Roy, giving evidence for the defence, expressed the view that the circumstances leading to Mrs. Simmons's death were as consistent with natural causes as with the use of an instrument.

Mr. Justice Hawke, in his summing-up, referred to a complaint made by the defence that Dr. Powell had not been given an opportunity of being represented at the *post-mortem* examination; Sir Bernard Spilsbury's statement suggested to his lordship, however, that the coroner and not the police was responsible for this.

Medical News.

THE PRINCE OF WALES has accepted the invitation of the president, Sir Arthur Stanley, to become patron of the British Hospitals Association.

THE annual meeting of the Royal Medical Benevolent Fund will be held at 11, Chandos Street, W.1, on April 18th at 5 p.m., when the annual report and financial statement will be presented and the officers and committee elected for the current year.

THE following Chadwick Public Lectures have been arranged for this month and next. On Thursday, April 11th, at 5.30 p.m., Dr. J. F. C. Haslam will lecture at the Royal Sanitary Institute on "Health in British Guiana and the West Indies." On Tuesday, April 23rd, at 8 p.m., Mr. C. E. Stromeyer will Lecture at the Institution of Mechanical Engineers on "What health and civilization owe to engineering." On Thursday, May 16th, at 5.15 p.m., at the Royal Society of Arts, Sir Norman Walker will give the Malcolm Morris Memorial Lecture on "The progress of dermatology over 50 years." On Thursday, May 30th, at 5 p.m., Mr. H. V. Taylor will lecture at the Chelsea Physic Garden on "Supplies from the vegetable kingdom and the public health." Admission to these lectures is free and no tickets are required.

DR. HARRY CAMPBELL will give a lecture, under the auspices of the Food Education Society, on "Common errors in diet" on Wednesday, April 10th, at 3 p.m., at 29, Gordon Square, W.C.

A SPECIAL course of lectures and demonstrations in infants' diseases, for medical officers of welfare centres and others, will be held daily from 2 to 5 o'clock at the Infants Hospital, Vincent Square, Westminster, from May 27th to June 9th. The number attending the course will be limited to fifteen, and the fee will be three guineas. Further particulars can be obtained from the secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

THE University College Committee will award in June, 1929, a Bayliss-Starling memorial scholarship of the value of about £120 (with exemption from tuition fees). The scholarship will be tenable for the session October, 1929, to July, 1930; it may be renewed by the College Committee for a second and for a third year in exceptional circumstances. Candidates must be graduates or undergraduates of the University of London or any other university approved by the College Committee for the purpose, and of suitable standing in science or medicine. The scholar will be required to follow a course of study approved by the Jodrell Professor of Physiology involving a training in the principles and methods of research in physiology and/or biochemistry. He will be exempted from tuition fees in following such a course of study, but he will be required to pay a registration fee, the Union Society subscription, and, if required by the College Committee, the cost of special apparatus and materials. Each candidate must submit to the Secretary of University College, Gower Street, W.C.1, on or before May 15th, a statement giving full particulars of his educational career and of his qualifications for entering on a course of training in the principles and methods of research.

THE Hutchinson triennial prize (value £60), open to full students of the London Hospital of not more than ten years' standing since registration as such, will be awarded in 1932 for the best dissertation on remote consequences of fracture of the spinal column. Dissertations must be delivered at the hospital not later than March 31st, 1932, and the award will be made within six months of this date. Further particulars may be obtained from the secretary, London Hospital Medical College, Whitechapel, E.

STEADY increase continues in the membership of the Pathological and Bacteriological Laboratory Assistants' Association, which now numbers over 500, and the annual report for 1927–28 points to a satisfactory extension of its activities in the form of lectures, demonstrations, and examinations. A new branch has been formed in Glasgow and a very successful conference was held at Cambridge last year. The lending library scheme enables members to borrow books at a nominal cost, and the employment bureau has again proved its usefulness, both to members desiring change of post and to employers requiring assistants. After three years as president Professor H. R. Dean has been succeeded by Professor W. W. C. Topley.

AMONG the medical congresses to be held during the year are: the third international congress of medicinal plants at Padua in the second half of June; the triennial congress of the International Society of Surgery at Warsaw, from July 22nd to 25th (further information can be obtained from the secretary, 72, Rue de la Loi, Brussels); the German orthopaedic congress at Munich on September 18th, when the chief subjects for discussion will be coxa vara and the end-results of congenital dislocation of the hip (further information can be obtained from the president, Professor Hoffmann, Karlstrasse 16, Munich); and the annual congress of the Italian Society of Hydrology and Climatology at Spezia from October 4th to 6th, under the presidency of Professor Devoto.

AN international medical congress on balneology and balneotherapeutics will be held in Carlsbad from September 15th to the 21st. Special facilities in connexion with railway travel and passport fees will be available. Further information may be obtained from Dr. Edgar Ganz, Carlsbad, Czechoslovakia.

WE have received the first issue of a new quarterly periodical entitled *Human Biology*, and described as a "record of research," which has been published in Baltimore under the editorial direction of Professor Raymond Pearl. The editorial board consists of distinguished scientists in European countries and Japan, as well as in the United States, and includes Professor Major Greenwood. The outlook of the new journal is indicated by the publication in its opening number of the first of a series of studies of the human constitution in its relation to disease, and articles on racial variations and mental capacity, the sex factor in infant mortality, biological philosophy and medicine, and persistent negro physical features. The journal may be obtained from Messrs. Warwick and York, East Centre Street, Baltimore, Maryland, the advance subscription-price being 5 dollars a year.

THE March issue of the *Deutsche Zeitschrift für Chirurgie* has been dedicated to General Karl Ritter von Seydel, honorary professor in the medical faculty of Munich University and an eminent military surgeon.

THE opening of the tenth Salon des Médecins, which was to have taken place on April 21st (*Journal*, January 26th, p. 183), has been postponed till May 26th. Further information can be obtained from the secretary, Dr. Paul Rabier, 84, Rue Lecourbe, Paris XV^e^.

IN the sixteenth annual report of St. Andrew's Hospital, Dollis Hill, N.W.2, which is under the care of the Sisters of Mercy and the trustees of the Diocese of Westminster, an appeal is made for assistance towards the cost of extension, estimated at £30,000, of which some £7,000 has already been received. Although the normal number of beds is fifty-two, the average number of patients resident daily throughout 1928 was fifty-nine, and many deserving cases had to be refused. A new ward pavilion is in course of erection; it will consist of two wards of twelve beds each and an operating theatre. The building of the nurses' home has also begun; when completed this building will release at least fifteen extra beds in small private rooms in the present hospital. Although there is no out-patients' department, it was necessary to deal with 304 accidents and other urgent cases during the year. Patients are received for treatment in the wards, cubicles, and private rooms without distinction as regards nationality or creed.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, *on receipt of proofs.*

All communications with reference to ADVERTISEMENTS, as well as *orders* for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
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FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

PROLONGED ADMINISTRATION OF CASCARA.

DR. L. J. HOBSON (*Harrogate*) writes: In reply to "Sigmoid's" inquiries (March 23rd, p. 584), I have taken, and also prescribed, cascara, as an extract, for some forty years for habitual constipation, and without any deleterious result at any period of its administration. Quite exceptionally, however, it has been withheld, owing to a history of some griping in its action. Otherwise the first condition insisted upon for its success has been a definite daily dosage of 4 grains in an adult at first, reducing to 3 grains, and in some cases to 2 grains, when this has at length proved a sufficient dose. I always give it in the form of the standardized tabloids, to be taken a few minutes before, and not after, the evening meal, which is the second cardinal condition to ensure a daily action on the morning following.

INCOME TAX.

"PERPLEXED" received from a patient a "gift of £100"; he had had to buy a house, and the cheque was given to assist him, as was explained in the donor's covering letter. Is this liable to income tax?

*** Gifts are not liable to income tax in the hands of the recipient; they are outside the scope of the tax. At the same time we should perhaps point out that if, when the gift was made, the patient in question had received professional attention for which a fee would ordinarily have been charged, but which was cancelled in the special circumstances, then it would seem reasonable for "Perplexed" to return for assessment a corresponding amount, as being in effect included in the £100 gift.

LETTERS, NOTES, ETC.

THE DOCTOR AND CHEMICAL WARFARE.

DR. ARTHUR T. JONES (Mountain Ash) writes with reference to Dr. Humphreys's letter on January 26th (p. 180): With the Covenant of the League of Nations and the Kellogg Pact, warfare of any kind, and especially chemical warfare, ought to be beyond the range of possibility. Such warfare, involving, as stated by Dr. Humphreys, the death of 5,000 in five minutes, is too horrible to contemplate, but poison gas let loose on a civil population or a whole community means nothing short of annihilation. Dr. Humphreys suggests that the British Medical Association should formulate some practical policy to meet the situation and to equip medical practitioners with antidotes for themselves and those in their care; I fear that, far from having an opportunity of exercising their skill or knowledge, they would probably all be huddled among the victims. Surely we should aim at something higher and more rational. If, as medical men, we believe that prevention is better than cure, we should act accordingly. It seems to me quite incongruous that, side by side with laboratories engaged in discovering the cause and cure of cancer and other scourges of mankind, others should be engaged in research designed to invent poison gases for chemical warfare. If there is any duty incumbent on us individually as medical practitioners, and collectively as an Association, it is that we should take the lead in creating public opinion for the prohibition of research in and manufacture of poison gas. Even if we cannot hope to abolish war completely, we should so foster this public opinion as to make it a potent factor in the enactment of international legislation, by which chemical warfare will be condemned as an illegal procedure.

UNUSUAL SYMPTOMS OF PROSTATE ENLARGEMENT.

DR. MARSHALL HAVER (Driffield) writes: Mr. Grey Turner's article of February 9th (p. 233) and "J. C.'s" note of March 23rd (p. 553) prompts me to send the following. Recently I had a very old patient, since dead, with prostate enlargement, who had used the catheter for five years. He often described to me a curious sensation he experienced in the soles of the feet occurring the instant micturition ceased. He had some difficulty in describing the sensation, but likened it to a feather lightly brushing and tickling the soles. The sensation was momentary and invariable, and amused him greatly. I have often wondered what reflex connexion there is between the bladder and the soles of the feet.

"AURIST" writes: I have similar symptoms to those mentioned by "J. C." (March 23rd, p. 584) when my bladder is distended, especially with pale urine of low specific gravity. I get neuralgic pains in the palms of the hands and fingers on urination.

ANAESTHESIA FOR COLLES'S FRACTURE.

DR. E. J. CHAMBERS (Doncaster) writes: I read the article on March 16th (p. 491) with surprise that Mr. Blundell Bankhart thinks so little of gas-oxygen anaesthesia, as carried out with an efficient machine. There is no "luck" about it; nor is there any difficulty in treating a Colles's fracture with the patient anaesthetized by this method, the safety of which is acknowledged by all. A deep chloroform or ether anaesthesia is certainly, in my opinion, subjecting the patient to unjustifiable risk and considerable avoidable discomfort.

QUININE IN INFLUENZA.

DR. A. H. DODD (Bournemouth) writes: During the earlier epidemics of influenza I was particularly sensitive and a frequent victim, necessitating many locums. On the advice of one who had himself been in practice for many years, I tried quinine as a prophylactic. Always afterwards in the late autumn, or at the slightest hint of return of an epidemic, I was in the habit of taking one or two grams of quinine sulphate (preferably sugar-coated pills or uncoated tabloids, both being so easily soluble and reliable) the first thing in the morning on rising, *with a tumbler of hot water.* I went eight years *without another attack*, then had a slight one, followed by another five years' freedom. I used to continue taking the quinine for about four to five months. I have frequently advised others to follow this line, and with great success when persevered with. In one boarding school, at my recommendation, the head mistress gave it to *all, and not* a single case of illness occurred during one of the severe epidemics.

THE USE OF THE TONSILS.

DR. J. MCNAMARA (London, W.) writes: In your issue of *March 23rd* (p. 543) Dr. *Irwin Moore* is quoted as stating that "the general opinion is that after the age of 5 years nearly all tonsils are useless and are in the majority of cases a menace to health." *That the ring of lymphatic tissue including the tonsils, with the lingual and pharyngeal tonsils, which, like a defensive bulwark, surrounds the entrance to the body, is useless after five years is a priori improbable.* I know two children who had their tonsils removed when well over 5 years old. One of these within a year, the other within a few years, developed an irregular rise of temperature, with chests shown by *x*-ray examination to be crowded with enlarged tuberculous glands. I cannot say whether the tuberculous infection of these glands after removal of the tonsils was *post hoc* or *propter hoc*, but the experience is suggestive, and if any readers have had a like experience its publication would be useful.

AN OPTICAL PHENOMENON.

DR. W. F. LLOYD (Windsor) writes: If an object such as an isolated pane of glass against a dull sky, or the disc of the moon, is looked at, first with one eye, and then with both, two changes are observed: the object becomes brighter and also larger. One might expect it to appear brighter, since the brain is receiving twice the amount of stimulation, but why does it seem larger? Is it that the images on the retinae do not quite correspond? In that case one would expect a hazy outline, but the outline seems to be quite definite. In my case the object seems to increase in size about one-twelfth of its diameter.

A DISCLAIMER.

DR. F. M. WALKER (Ayr) writes to state that the recent appearance of his name in a local newspaper in connexion with a case of blood transfusion was without his knowledge or approval.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 49, 50, 51, 52, 53, 55, and 57 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 54 and 55.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 82.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

331. Herpes Zoster and Tuberculosis.

A. WALLGREN (*Acta Paediatrica*, December 22nd, 1928, p. 241) believes that there is an association between herpes zoster, varicella, and tuberculosis. He agrees with other authors that the varicella may, in some cases, give rise to herpes zoster. He finds also that certain internal organs affected by tuberculosis may transmit to the spinal ganglia and their corresponding cutaneous zones a state of irritability which determines a local predisposition to herpes. His conclusions are based on the following clinical observations. On the same day two children, aged 3 and 5 years, in adjoining beds in a small ward reserved for tuberculous children, developed intercostal herpes zoster; in both cases the herpes was localized to the same side as the tuberculous bronchial glands, for which the children were being treated. At the end of a week varicella broke out in the remaining children in the ward who were not immune. It was thought that these two children had been subjected to an infection of varicella on the occasion of a visit to the light clinic, and the period of incubation corresponded with this supposition: the illness presented itself not as varicella, but as herpes zoster. The author suggests that the infective agent was fortified in the already predisposed spinal ganglia. The corresponding cutaneous segment reflected the attack on the spinal ganglia, thus producing a circumscribed eruption of varicella or herpes zoster, which, being provoked by the infective agent (varicella), might be expected to be as contagious as the malady itself. This proved to be the case, seeing that varicella developed in the other children though not in the two original children, who were not affected by the varicella to which their herpes had given rise.

332. Rheumatic Fever.

R. L. LEVY and K. B. TURNER (*Arch. Intern. Med.*, February, 1929, p. 267) present a comparative study, with diagnostic applications, of impaired auriculo-ventricular conduction in rheumatic fever as affording evidence of myocardial involvement. Of 145 cases showing disturbance in auriculo-ventricular conduction, more than half were instances of rheumatic fever; delayed conduction, as shown by the lengthening of the P–R interval, was the most important of these disturbances, and much more common than heart-block. The fact that such prolonged conduction is more frequent in rheumatic fever than in any other disease assists the differential diagnosis, since a prolonged P–R interval or heart-block occurring in a person under the age of 35, who is not syphilitic and who has not taken digitalis, affords presumptive evidence of the presence of rheumatic carditis; in rare instances heart-block may be the first sign of rheumatic fever. In the absence of other criteria the sign may be useful in establishing the rheumatic nature of a cardiac disturbance. The prolongation of conduction may persist and afford evidence of myocardial lesions in rheumatic fever long after the clinical manifestations have subsided. In rheumatic fever such disturbances in auriculo-ventricular conduction are usually transitory, but in arterio-sclerotic and hypertensive heart disease they tend to become permanent. In rheumatic fever the condition is usually accompanied by leucocytosis during the active stages of the disease, a long P–R interval and leucocytosis being signs of active infection of the heart muscle.

333. Purpura Haemorrhagica following Rubella.

T. PITTEN (*Arch. f. Kinderheilk.*, January 25th, 1929, p. 114) remarks that rubella is generally regarded as one of the mildest of all infectious diseases. Most German authorities deny that it has any complications at all, although American, English, and French writers have described numerous sequels, such as nephritis, arthritis, and nervous and psychical changes. Pitten now records the case of a girl, aged 9, in whom symptomatic purpura haemorrhagica occurred directly after the appearance of the rash of rubella, and was characterized by haemorrhage from the nose and mouth with a generalized petechial eruption. The diagnosis of Werlhof's disease was based on a thrombopenia of 120,000, a normal calcium content of the serum; normal coagulation time, a positive Rumpel-Leede sign, and the prolonged bleeding time of forty two minutes. The author adds that thrombopenia and prolonged bleeding time are by themselves such typical symptoms that they alone are sufficient to justify the diagnosis of Werlhof's disease. Rapid and complete recovery occurred without special treatment.

334. Prophylaxis against Whooping-cough.

F. V. BERNUTH (*Münch. med. Woch.*, January 18th, 1929, p. 96) advocates the use of a prophylactic vaccine which is prepared from several strains of the Bordet-Gengou bacillus. Among seventy children inoculated there were only four failures. The inoculations must be given early owing to the long incubation period of the disease—up to five weeks. The duration of the protection is relatively short, and a case is recorded of a child becoming reinfected four and a half months after the inoculation. The contents of six ampullae containing 10 to 100 million bacilli are administered at intervals of three to four days either subcutaneously or intramuscularly; in doubtful cases it is better to give too much rather than too little. As a prophylactic the vaccine is recommended for infirmaries; in practice it should be given to delicate children and infants, and in certain cases it may be employed therapeutically.

335. The Dick Test in the Chinese.

M. Y. DZEN (*Nat. Med. Journ. of China*, December, 1928, p. 362), in view of the fact that during the past two years scarlet fever has been very severe in and around Pekin, performed the Dick test on 646 unselected persons in that city and obtained positive reactions in 46.4 per cent., a figure closely resembling Liu's results obtained in Harbin (47.07 per cent.), though considerably higher than the average percentage obtained by other investigators (37.78). It was also found that the unusually high percentage of positive Dick reactions closely corresponded with the age distribution of scarlet fever patients admitted to the Metropolitan Isolation Hospital, Pekin, during the last ten years.

336. Influence of the Thymus on Blood Pressure.

F. BRANCACCIO (*Studium*, January 20th, 1929, p. 3) reports certain clinical experiences in the administration of endothymin to a dozen patients suffering from various diseases; he found that in every case a marked lowering of blood pressure followed. After giving 1 c.cm. the pulse followed the lowering of the blood pressure, becoming smaller, but after 2 c.cm., while there was a sharp fall of pressure, the pulse became full and frequent. This effect of endothymin was not affected by adrenaline, atropine, pituitrin, or endothyroidin.

Surgery.

337. Large Pyogenic Abscesses of the Lung.

DURING the past few years the subject of large pulmonary abscesses has received much attention, especially as a result of the war and of the epidemics of influenza. F. BEZANÇON and A. JACQUELIN (*Paris Méd.*, February 16th, 1929, p. 167) claim that they should be regarded as a clinical entity, and that x rays and bronchoscopy have shown that this type of abscess is neither so rare nor so fatal as had previously been thought. They recognize three main types: (1) the acute circumscribed, by far the most common; (2) the extensive and chronic, with successive attacks and frequently fatal; and (3) the extensive acute abscess with a tendency to diffuse necrosis, associated with high bacterial virulence, pneumonic in type and very fatal. The first recognizable sign of such an abscess is the expectoration of pus, examination of which is of prognostic value. The physical signs vary, and may indicate a cavity in the lung; sometimes a layer of fluid due to pleural effusion masks the deeper trouble. Often there is only dullness, and sometimes, in the deep central forms, signs are absent. X-ray examination usually shows one large abscess cavity, often partly filled with air; sometimes the cavities are double or multiple. This type of abscess generally clears up in from two to three months. The second or chronic type is distinguished by the failure of medical treatment, a history of repeated attacks of bronchitis, and the insidious onset. The sputum is more frothy and mucous, dyspnoea is more marked, and cough is a more important feature. Radiography shows several abscess cavities, often in cluster formation. Pleural adhesions and contracting fibrous bands are the rule, so that pneumothorax is likely to be ineffective, and thoracotomy must be considered preferable. The general signs of this type are successive attacks of pyrexia, coughing, and increased expectoration, often accompanied by haemoptysis. The patient becomes emaciated slowly, and this variety may be termed pseudo-tuberculous. The third type is rare, a

is usually caused by the pneumobacillus and the streptococcus. Clinically and anatomically it is a massive necrosis of lung tissue, beginning with a pneumonic invasion and followed by necrotic disintegration. The duration of the illness is from five to eight days. As regards the prognosis, pneumococcal abscesses tend to end in spontaneous cure; streptococcal abscesses sometimes clear up remarkably quickly, but at other times lead on to chronicity or necrosis; while Friedländer's pneumobacillus causes the most serious conditions. The authors state that, owing to the chance of spontaneous cure in many cases, only medical remedies should be tried at first, such as eucalyptus or intravenous injections of urotropine. Serotherapy or autogenous vaccinotherapy are sometimes useful, and the thirst cure has given good results. Postural drainage has not been clearly successful in the authors' cases. The indications for surgical methods of treatment are discussed; first, pneumothorax, which, though often unsatisfactory, should be attempted. In certain cases phrenicectomy is useful, and in the chronic form, owing to the gravity and incurable nature of the disease, pneumotomy and thoracoplasty may be advisable.

338. Forage of the Prostate.

LE FUR (*Bull. et Mem. Soc. des Chir. de Paris*, February 1st, 1929, p. 89) gives details of the case of successful treatment of adenoma of the left lobe of the prostate of which a report appeared in the *British Medical Journal* on February 9th (p. 265). Two applications of electro-coagulation, according to the forage method of Luys, supplemented by vaccine therapy for the local and general state of infection, sufficed to effect cure. Le Fur discusses the indications for this line of treatment, of which the advisability turns on anatomical and clinical conditions. It is particularly indicated in cases of small, hard, sclerotic prostates, which include the following types: barred prostates with marked elevation of the vesical neck, due to mucous or muscular folds; atrophy and sclerosis with much vesical residue; and median lobes which form a lid over the neck of the bladder and block it during micturition. This treatment is also indicated for average-sized glands accompanied by urinary retention. Forage is markedly contraindicated in large prostates owing to its insufficiency, the danger of cauterizing through the great thickness of the lobes, the size of the sloughs, and the risks of haemorrhages and infection. Among the clinical indications is the amount of retained urine; Luys considers that a residue of 100 grams justifies forage. Le Fur, pointing out that the amount of troublesome retention varies greatly in different individuals, concludes that the method should be used only in patients with a certain degree of permanent retention, with marked troubles of micturition, and in whom medical and decongestive measures have failed. In advanced age forage is particularly indicated if the lesion is one of the before-mentioned types. Forage causes much less shock in these cases than prostatectomy. This operation is advantageous in young prostatics, since the glands are small and their enucleation is difficult. Other clinical indications for forage are patients with renal insufficiency, or in a bad general condition, and cystotomized patients with old hypogastric fistulas. Two methods of forage may be employed: the endo-urethral, and the suprapubic after cystotomy. All depends on the case; in simple lesions the former is preferable, and in median lobes and sclerotic barred cases the latter. High-frequency currents should be used; if the obstacle does not yield to a maximum of 500 to 600 m.a., resection should be employed. Le Fur emphasizes that forage and prostatectomy are not rival methods, and that each has its own indications.

339. Extra-articular Immobilization of the Hip-joint.

H. C. SCHUMM (*Surg., Gynecol. and Obstet.*, January, 1929, p. 112) describes an ileo-trochanteric strut-graft method for extra-articular immobilization of the hip-joint, which he has used in nine cases with uniformly successful results. The position of choice for fixation is a flexion of 20 degrees and an abduction of 10 degrees. Through a skin and fascial incision, commencing three inches behind and below the anterior superior iliac spine and carried downward over the great trochanter and side of the femur for about seven inches, the fibres of the gluteus medius and minimus are split and retracted so as to expose, without injuring the periosteum, the capsule of the joint and the surface of the ileum overlying it. By means of a 2-inch chisel large anterior and posterior flaps are raised from the great trochanter, each remaining attached to its base, and then with a 1-inch chisel a flap is raised from the ilium. The distance from the base of the ilial flap to the lower end of the trochanteric flaps is measured, and a graft is cut from the femur, beginning half an inch below the trochanter. The upper end of this is pushed up under the ilial flap, while the lower end is bedded in the trochanter, the flaps of which are sutured over it with catgut, and the fascial and skin incision closed. The patient is placed in a bivalved cast for about two months, after which the leg can be massaged daily; at the end of six or eight months all support can be removed, provided there are no *x*-ray or clinical objections. The chances of failure of fusion are minimized; the method has the advantage of simplicity, and requires only one incision. The presence of fistulae need not constitute a contraindication if the fistulous tract can be excluded from the field of operation.

340. Formation of a Gall-stone in the Stump of the Gall-bladder.

T. WALZBERG (*Med. Klinik*, February 1st, 1929, p. 184) refers to the uncertainty as to whether a stone found in the remnant of the gall-bladder after a previous cholecystectomy is a new formation or has been there before and been overlooked at operation. He reports a case in which the stone was certainly a new formation. In 1921 he operated on a woman, aged 62, on account of symptoms pointing to gall-stones. After separating many adhesions the gall-bladder was stripped back to the entrance of the cystic duct into the bile duct and shelled out subperitoneally; there was no spiral bending of the neck but a funnel-shaped widening of the cystic duct; this was cut and tied 1 cm. from the bile-duct, no stone being found in either the gall-bladder or bile-duct. For five years the patient was well, then in 1926 she had severe pain in the gall-bladder area; this recurred in 1928, when jaundice appeared. Since the temperature began to rise, it was decided to operate. A large oval stone 3.5 cm. long by 3 cm. round was found enclosed in a sac resembling the thickened fundus of a gall-bladder and containing a little thin bile. It had a smooth lining and appeared to be a new gall-bladder formed from the funnel-shaped stump of the cystic duct under pressure of the growing stone. It is known that a stone in the bile-duct may cause dilatation of the lumen and thickening of the wall, and it seems as if this had occurred in the stump of the cystic duct. Unfortunately the patient's condition necessitated quick closing of the abdomen; the sac was left behind and was not available for microscopic examination. The patient made a good recovery and has kept well so far.

Therapeutics.

341. Lead Treatment of Cancer.

A. SOILAND, W. E. COSTOLOW, and O. N. MELAND (*Journ. Amer. Med. Assoc.*, January 12th, 1929, p. 104) report the results of lead administration in cancer, a study begun two years ago. Their present technique is to inject 100 to 120 mg. of colloidal lead phosphate intravenously at weekly intervals until three injections have been given, when no more lead is administered for a period of from four to six weeks. No general reactions, except for an occasional chill due to the gelatin, were noted. The late effects occurring a few weeks after the lead had been administered were a sensation of weakness with anaemia and progressive deterioration. The local changes in the malignant tissues are said to be usually slow. The authors consider that irradiation should always be used in combination with the lead, and that the metal increases the sensitiveness to the ray treatment. Lead is considered as only one incident in the treatment, and the general nutrition must be maintained by a well-balanced diet rich in vitamins. Of 31 patients thus treated, 23 are reported as dead, 4 are failing rapidly, and only 4 are in good condition. The authors conclude that though the treatment has a temporary good effect these results are not encouraging, and that, when the expense is also considered, lead therapy does not appear to have solved the cancer problem. LEILA C. KNOX (ibid., p. 106) reports a series of 40 cases in which an attempt was made to give 600 mg. of lead in six to eight weeks, following the method of Blair Bell. This did not prove possible, however, and half the patients received only 350 mg. The combination of lead and *x* rays was found to be more effective against the neoplasm than either used alone. Of the 40 patients, only 8 are living; 4 still show extensive tumours, while the remaining 4 are wholly free from physical signs of the disease. No death could be attributed to the lead. The author believes that in a few cases arrest of the disease may be obtained by the combined administration of lead and *x* rays.

342. The Antiseptic Value of Rivanol Dextrose.

T. C. HILL (*Amer. Journ. Surg.*, January, 1929, p. 67) gives the results of his experiments with rivanol dextrose on rats and rabbits, and finds that there has been marked success in infections of the urinary tract, as, apart from its sterilizing properties, it is able to build up an antiseptic wall between the focus and the general circulation by means of circular infiltrations around the progressing infection. Rivanol,

which, like acriflavine, is a member of the acridine group, is less toxic than its congener, and the soluble hydrochlorate was first used; later its irritating qualities were further reduced by combining two parts of dextrose with one of rivanol lactate. The preparation has shown marked efficiency in the treatment of acute gonorrheal urethritis, thanks to its accompanying analgesic action and relief of symptoms. Definite signs of improvement appeared in cases of pyelitis after irrigation with a 1 in 2,000 dilution of rivanol dextrose. It was also used for irrigation of the urethra and bladder, and three cases of tuberculous cystitis were effectively treated in a similar way. Rivanol dextrose has a great analgesic, antiphlogistic, and secretion-diminishing action in severe forms of cystitis. The anodyne action was especially remarkable in these cases, the inflammatory catarrhal signs improved rapidly, the sclerotic changes diminished, and the bladder capacity increased. It has also been used in the treatment of prostatic infection with some success. The lack of toxicity of this agent permits the employment of large amounts of the diluted solution, and its transparency and non-staining properties enhance its utility.

343. Bismuth in Lupus Erythematosus.

J. NICOLAS, J. LACASSAGNE, and J. ROUSSET (*Paris Méd.*, January 19th, 1929, p. 62), impressed by the good results obtained in the treatment of nodular lupus by bismuth, have been systematically treating all their patients with lupus erythematosus by means of this drug, and publish in detail a list of seventeen who received injections of bismuth salts. Analysis of the results of treatment shows that all the patients received great benefit and many were apparently cured. Relapses followed in a small minority of the cases, but a further course of treatment rapidly cleared up the lesions. The results were nearly always complete at the end of the first series of injections, the symptoms and objective signs abating definitely during the first few doses. The skin usually became normal, except in a few cases where a little redness persisted. A series of twelve intramuscular doses of bismuth hydroxide (1.80 grams in all) was usually given, but one patient received fifteen doses. In addition to the favourable local results there was improvement in the general condition. The authors briefly discuss the etiology of the disease and favour its tuberculous origin. They claim that bismuth should be given in preference to other drugs in the localized and extensive or painful forms, or again in centrifugal erythema, on account of the constancy of its action, of the immediate alleviation without reaction, and of the good terminal results.

Laryngology and Otology.

344. The Visual Fields in Atrophic Rhinitis with Ozaena.

T. MAGNOTTI (*Arch. Ital. di Otol.*, November, 1928, p. 629) has examined a series of thirty cases suffering from atrophic rhinitis with ozaena. He investigated the visual fields with the perimeter for various colours and the fundi by means of the ophthalmoscope. In the majority of these cases the vision was normal for ordinary purposes, and where it was abnormal the error was usually one of refraction. Vision was most acute among the colours for yellow, and next for red: it was reduced most for blue and green. Examination of the visual fields showed that the field was reduced most for white, and that the field for green was often as large as that for red and even for white. The fields were reduced only on the temporal side for white in eight cases, for red in fifteen, and for green in four. The fields were reduced concentrically for white in twenty-two cases, for red in fifteen, and for green in six. The fundus appeared coppery red, with the optic disc more red than usual and its margins not so well defined. It is possible that the brownish tinge in the fundus is due to an affection of the sympathetic nerve supply to the pigment cells of the retina and choroid, and that this is due to an irritation by the nasal disease of branches of the trigeminal nerve. It may be comparable with the discoloration of the skin in cases of Addison's disease.

345. Malignant Tumours of the Nasopharynx.

F. K. HANSEL (*Arch. of Oto-Laryngol.*, January, 1929, p. 12) reviews one hundred and forty reported cases of malignant tumours of the post-nasal space, twelve of which have occurred in his own practice. The tumour is almost always situated in the fossa of Rosenmüller, and tends to invade the Eustachian tube and body of the sphenoid. The mass of the tumour varies, but it may fill the post-nasal space. When the tumour extends outwards into the spheno-maxillary and pterygo-palatine spaces, important structures, particularly the nerves, are involved; of these the sixth is the most commonly affected owing to its low position in the sphenoid fissure. Later the second, third, fourth, and fifth are affected in the same neighbourhood, the fifth being attacked early. The seventh is not involved until the growth has extended back to the stylomastoid foramen. The last four cranial nerves are usually affected together as they pass out of the jugular foramen, but the eighth nerve escapes. The nasal symptoms are obstruction, discharge, foul smell, and haemorrhage, with some bulging of the palate. Deafness and tinnitus may occur when the Eustachian tube is affected. Extranasal symptoms are most marked when the nasal symptoms are absent or slightly marked. The extranasal symptoms are those caused by irritation or destruction of the cranial nerves. The tumours are epitheliomas, sarcomas, or lymphosarcomas. Treatment consists of irradiation, but the results are unsatisfactory.

346. Otogenic Meningitis.

R. MOE (*Norsk Mag. f. Laegevid.*, November, 1928, p. 1908) records his observations on 79 cases of otogenic meningitis which occurred in the oto-rhino-laryngological department of the National Hospital at Oslo during the period 1914 to 1927. In striking contrast with other statistics, most of which give an incidence of 50 per cent., the number of cases of meningitis complicated by labyrinthitis was very small—namely, only 9 (11.4 per cent.). Another peculiarity was the relatively bad prognosis in the female sex, since while 17 patients recovered there were 15 out of 58 men and only 2 out of 21 women. The date of onset of meningitis in cases of acute otitis was as follows: first week, 11 cases; second week, 1 case; third week, 9 cases; fourth week, 14 cases. Treatment was on the usual lines, operations on the labyrinth and incision of the dura mater being very rarely employed. Operations on the labyrinth were usually performed by Ruttin's method as soon as signs of meningeal irritation appeared after labyrinthine symptoms had subsided. The dura was only incised when a cerebral abscess or other subdural accumulation of pus had been found by puncture, the size of the incision being always very small. The only drug used was urotropine, which was given intravenously in a large single dose. No bad effects of a permanent nature on the urinary system were observed from its use. No benefit was ever seen from the use of antistreptococcal serum.

Obstetrics and Gynaecology.

347. Cardiac Disease in Pregnancy.

B. E. HAMILTON and F. S. KELLOGG (*Journ. Amer. Med. Assoc.*, December 22nd, 1928, p. 1942) are convinced that the problem of heart disease complicating pregnancy is not generally understood, and summarize their conclusions which were based on seven years' intensive study of heart diseases in pregnant women at the Boston Lying-in Clinic and in private cases. They classify these cases in three groups. In the first are placed patients with severely injured or disordered hearts. These require very special care, and it is highly desirable to differentiate those who will tolerate pregnancy from those who will not. Patients who have or have had heart failure or a less common complication, such as auricular fibrillation or hypertension, do not tolerate pregnancy well, and are grouped as Class Ia; in these abortion and sterilization, when practicable, are justifiable. Mitral stenosis and acute rheumatic fever (which is rare in pregnant women) also contraindicate pregnancy for cardiac reasons. The second class contains all "possible cardiacs" and those patients believed to have rheumatic or congenital heart disease or other cardiac condition, but who do not show clear signs of injury. In the third class are placed those definitely without heart disease, the majority suffering from cardiac neurosis or neuro-circulatory asthenia. In the second and third classes the heart condition can safely be disregarded so far as pregnancy is concerned. The satisfactory medical control of patients in the first class consists in the observance of three fundamental rules: accurate diagnosis, early recognition, and persistent pre-natal control. Most of the deaths of cardiac patients in pregnancy are due to ordinary congestive heart failure, the causes of which usually are over-exertion and infections, such as colds, influenza, or tonsillitis. If failure occurs early in pregnancy, the latter should be interrupted, and, even if it supervenes in the late months, the continuance of pregnancy is dangerous. Pregnancy should not be allowed to continue if the patient has or has had failure or a dangerous complication. If heart failure occurs despite all precautions, it should be recognized early, relieved, and the patient delivered before it reappears. Caesarean section is the easiest method of delivering a patient with cardiac disease, and skilled anaesthesia is essential. For the latter Kellogg's choice is a single dose of morphine-scopolamine, followed by very careful administration of ether dropped on gauze, or by ether-oxygen vapour.

348. Umbilical Endometrioma.

H. BALTZER (*Zentralbl. f. Gynäk.*, January 12th, 1929, p. 99) remarks that endometrioid tumours of the navel, besides furnishing the most conspicuous difficulties with regard to the various theories which have been advanced concerning the genesis of heterotopic adenomyosis, are not devoid of practical importance in that they may require more extensive treatment than might at first sight appear. He quotes a case recently reported by Vogt in which an endometrioid tumour of the intestine led to ileus, and records a personal case in which laparotomy after removal of an umbilical "endometrioma" showed the presence in the sigmoid colon of an "endometrioma" the size of a hazel-nut, from which radiated cicatricial bands which were judged likely to lead to intestinal obstruction. A woman, aged 40, who had had one child thirteen years previously, had noticed for two months a tumour near the navel which was painful during menstruation, had attained the size of a pear, and exhibited beneath the skin a bluish coloration. A pre-operative diagnosis of umbilical endometrioid tumour was made. The growth was removed extraperitoneally, and subsequent coeliotomy showed, in addition to the tumour of the sigmoid (which was extirpated and found to have microscopical appearances characteristic of "endometrioma"), two small nodules on the posterior abdominal peritoneum and an unruptured corpus luteum cyst of the left ovary.

349. Uterine Prolapse.

J. C. MASSON (*Minnesota Med.*, February, 1929, p. 67), discussing the surgical treatment of uterine prolapse, condemns any routine type of operation as being too radical for some cases and insufficient in others. He classifies cases for operative treatment under four main headings: (1) those in which the function of child-bearing is to be preserved; (2) those in which the production of sterility is contra-indicated; (3) those near or past the menopause; and (4) those in which partial or complete obliteration of the vagina is the best treatment. Much of the necessity for operations in later life could be avoided by earlier and adequate treatment of subinvolution, pelvic infections, and lacerations of the cervix and perineum. Most women date their symptoms from their first confinement. Since the condition is a hernia, the type of operation requires careful consideration according to the extent of the trouble, the size of the associated cystocele, the age and marital state of the patient, and the relative danger of an abdominal or perineal operation. Perineorrhaphy is always essential, while in difficult and recurrent cases obliteration of the vagina may be advisable.

Pathology.

350. Cellular Permeability.

I. H. PAGE (*Amer. Journ. Med. Sci.*, February, 1929, p. 273) discusses two cases of ipsilateral oedema and contralateral jaundice associated with hemiplegia and cardiac decompensation as having a bearing on the mechanism of permeability. At present there is no definite proof of the direct control of permeability by the nervous system, though many experiments have suggested that such a control exists. Various secretions, such as the saliva, seem to be liberated as the result of changes caused by a nervous impulse. Hemiplegia produces vasomotor paralysis or instability, as was evidenced by the trophic changes in the limbs on the right side and the ipsilateral cyanosis noted in one of the cases reported by Page. A paralytic dilatation of the capillaries, resulting from lack of tonic influence of the vasomotor system, may cause active transudation of fluid. According to Landis, this is not due to the dilatation *per se*, but to a change in cell permeability. Local anoxaemia, as a result of deficient oxygenation of the pulmonary blood and increased oxygen consumption due to stagnation of the blood in the capillaries, may be a causative factor of these changes. Meakins has pointed out that two varieties of jaundice occur in circulatory failure: the haemolytic type, in which there is either an excess of the precursors of bile pigments produced in the spleen, or an inability of the liver to transform these into bile pigments; and the obstructive type, where, although the bile pigments are formed and secreted into the bile capillaries, they are prevented from passing into the larger ducts. It is difficult to understand why bile pigments do not enter oedematous tissues. It has been proved that the size of the molecule need not necessarily influence the selective penetration of a substance; therefore size is not the sole reason for the non-penetration. Page suggests that the turgor of the cells, due to the oedema, may in some way hinder the entrance of the pigment, but so many factors require further study that an explanation can at present be only speculative.

351. The Bacteriophage in River Water.

D. BUJANOWSKI (*Centralbl. f. Bakt.*, January 11th, 1929, p. 129) has made some observations on the presence of a bacteriophage in the water of the River Don. He found that if a twenty-four-hour culture of *B. typhosus*, *B. paratyphosus* A or B, or *B. coli* was added to 100 c.cm. of river water so that there were about 5,000 organisms per cubic centimetre, and the water was kept at room temperature in the dark, the bacilli died out in two or three weeks. If, however, the water was sterilized in the autoclave before being inoculated, the organisms remained viable for at least six months. The germicidal action of raw river water on pathogenic bacteria has been frequently observed, and has been ascribed by different workers to the antagonistic effect of the natural water bacteria, to the actinic rays of the sun, or to some other cause. To exclude the first possibility the author filtered the water through a Chamberland candle, and then inoculated it in the usual way. The results were the same as with the crude river water—that is to say, the organisms died out in two to three weeks in the filtered water, whereas in the autoclaved water they survived for months, and actually underwent multiplication. When *B. typhosus* and *B. paratyphosus* A were inoculated into filtered river water to which 1 per cent. of peptone had been added, no visible turbidity developed; the filtrate of these cultures was found to have a lytic effect on broth cultures of these organisms. Plating experiments showed that the lytic effect was due to the presence of a bacteriophage, capable of producing on solid media typical sterile plaques and "bitten" colonies. The author concludes that the water of the Don has a bactericidal effect on the intestinal bacteria; that this effect is due to a bacteriophage; and that this is responsible to some extent for the self-cleansing of the river.

352. Immunization against Diphtheria by Anatoxin.

P. J. MOLONEY, D. T. FRASER, and MLLE C. J. FRASER (*Ann. Inst. Pasteur*, January, 1929, p. 124) find that the intradermal injection of anatoxin, diluted 1 in 20, gives rise in a certain proportion of subjects to a marked local reaction. This reaction, which is due to protein hypersensitiveness, is rarely observed in children under the age of 6; it was positive in 7 per cent. of subjects between 5 and 9, in 29 per cent. between 10 and 19, and in 37 per cent. between 20 and 35 years of age. Using anatoxin in place of heated toxin as a control in the performance of the Schick test, the authors observed the usual four types of reaction. Subjects reacting positively to toxin and negatively to anatoxin are susceptible to diphtheria; those reacting negatively to toxin, and either positively or negatively to anatoxin, are immune to diphtheria; with subjects reacting positively both to toxin and anatoxin it is necessary to examine the antitoxin content of the blood. This was done in 26 cases, and in 22 of them more than one fiftieth of a unit of antitoxin was found, indicating that only 4 of these double positive reactors were susceptible to diphtheria. The authors have used injections of anatoxin for producing active immunity; three doses are recommended, of 0.5 c.cm., 0.5 c.cm., and 1.0 c.cm., at intervals of three weeks. This method appears to succeed in converting Schick positive into a Schick negative reaction in about 80 to 100 per cent. of patients. Persons who react to the intradermal injection of anatoxin must be given smaller doses, otherwise a severe local and constitutional reaction may occur.

353. Toxicity of Manganese in Pulmonary Tuberculosis.

J. V. LAMBEA (*La Med. Ibera*, February 2nd, 1929, p. 13) records the results of his investigations with manganese sulphate in experimental tuberculosis in guinea-pigs and rabbits, as well as in human tuberculosis. He found that the toxic effects of this drug were similar to those of other metals with which he had experimented, such as copper, cerium and cobalt salts, and the double chloride of gold and sodium. Manganese sulphate produced lesions of an irritative and degenerative character in the kidneys, haemorrhage in the lungs, and degeneration of the liver. Tuberculous rabbits were much more sensitive to injections of manganese sulphate than healthy animals, as Lambea had found in his experiments with other metals. Guinea-pigs which had been inoculated with tuberculous virus became worse after injections of manganese. Lastly, tuberculous patients, after intravenous injections of manganese in doses of 5 to 10 mg. complained of a feeling of tightness in the epigastrium, followed by difficulty in breathing or headache and slight and transient pyrexia. These symptoms were doubtless due to the exudative and haemorrhagic changes produced by the metal and the discharge into the circulation of the toxic products. Large doses gave rise to more violent symptoms, including diarrhoea, vomiting, and a sense of anguish. There was a frequent but not constant lymphocytosis. Large doses were liable to produce anisocytosis, poikilocytosis, and polychromatophilia.

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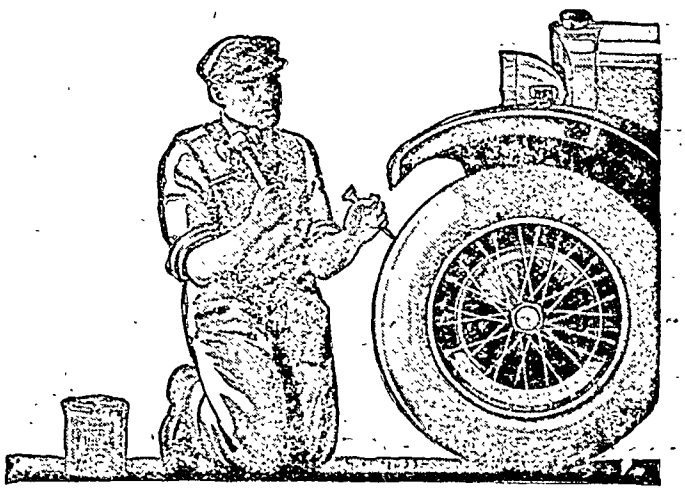

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Off rear 70 lbs. (treated) (air 61° F.)	62 lbs.	62 lbs	60 lbs. (air 61° F.)
Off front 70 lbs. (untreated) (air 64° F.)	Not punctured	70 lbs.	65 lbs. (air 64° F.)
Near rear 70 lbs. (untreated) (air 64° F.)	Not punctured	70 lbs.	65 lbs. (air 64° F.)

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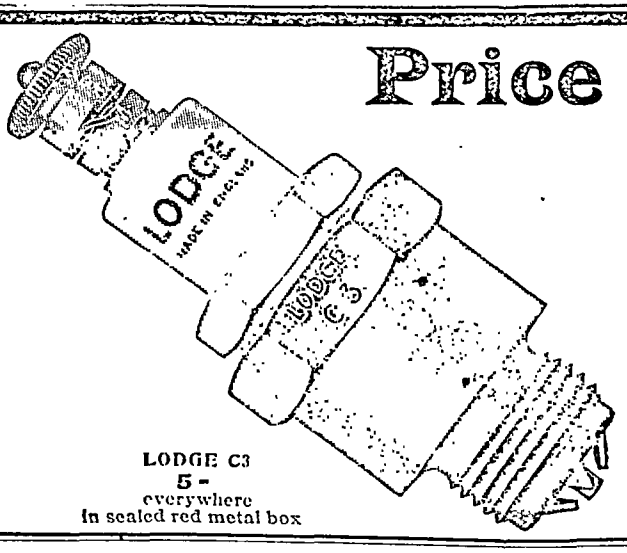

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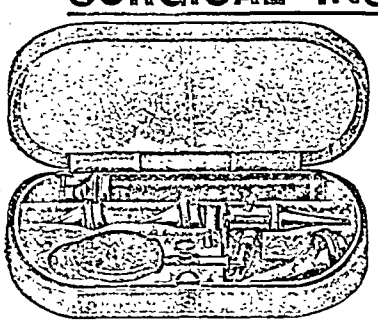

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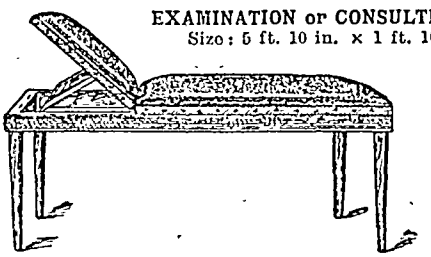

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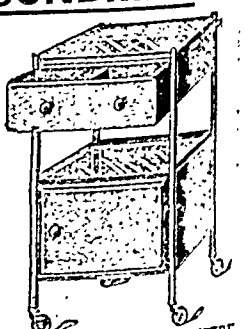

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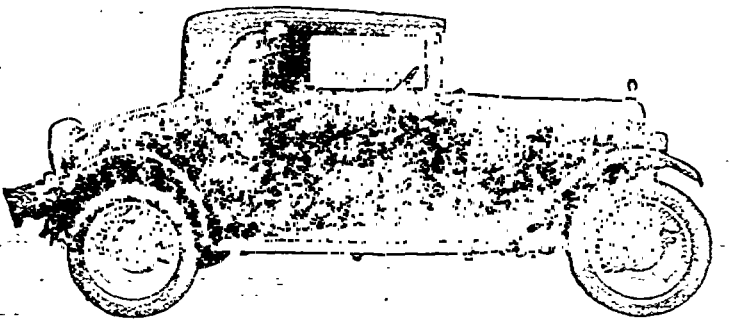

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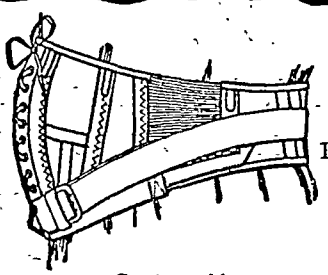

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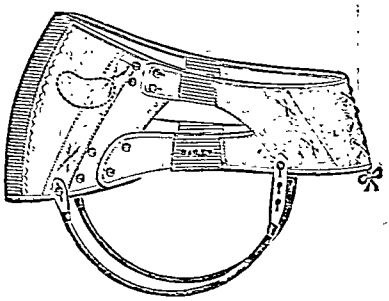


No. 5a BELT (Bailey's Patent) FOR FLOATING KIDNEY.

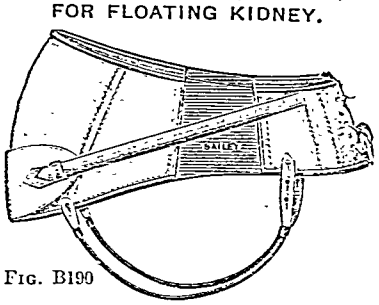
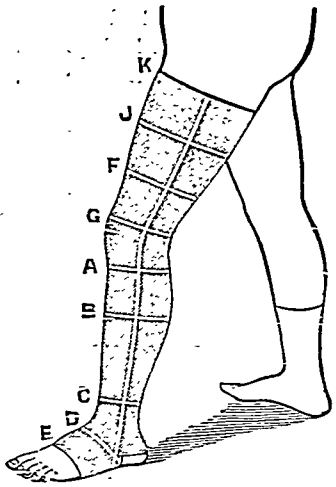


FIG. B190

BELT FOR ENTEROPTOSIS.



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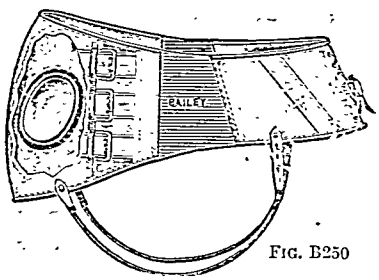

FIG. B250

(Showing Interior of Cup.)

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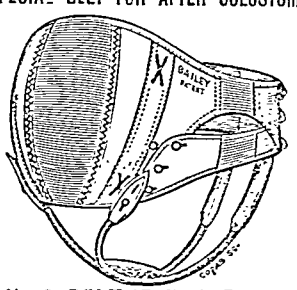

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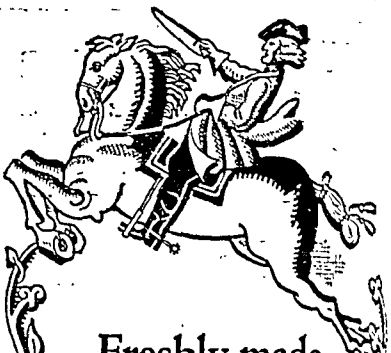

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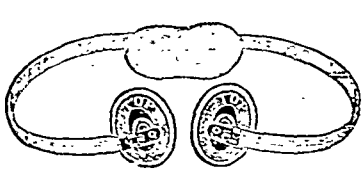

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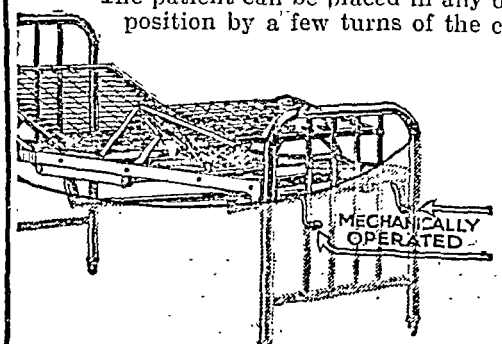

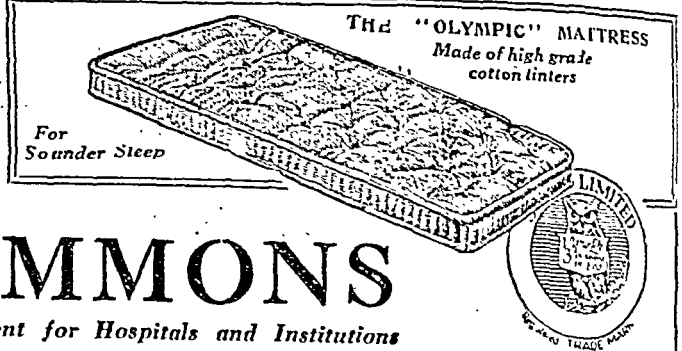

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PRIVATE PATIENTS are received at a weekly charge of TWO GUINEAS and upwards.

Voluntary BOARDERS can now be admitted.—Apply to the MED SUPERINTENDENT

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A Private Home for the care and treatment of a limited number of ladies mentally afflicted. Climate healthy and bracing.

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Vacancy for PERMANENT PATIENT. Large airy room.

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Telephone and Telegrams: Winterbourne 18.

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This registered Hospital for MENTAL DISEASES with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.

Telephone: 163 GATLEY

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This old-established Licensed House offers every advantage that experience can suggest for the care and treatment of mental cases.

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A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental or Nervous cases are received without certificates as *Voluntary Boarders.* Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. Telephone: 10 P.O. Church Stretton

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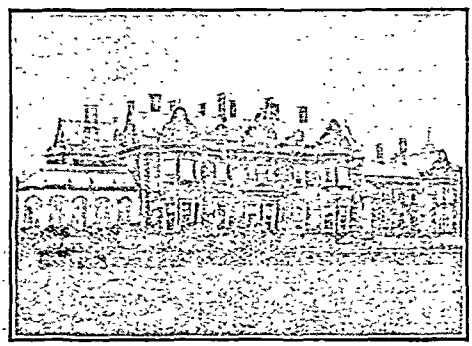

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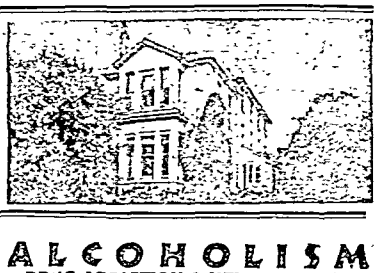

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"The Medical Annual" (1928) selects the SPRINGFIELD METHOD of withdrawal for special description.

This intensive method secures excellent results in four weeks only; was evolved and is conducted at a private nursing home in Hampstead, the address of which is never advertised.

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For the treatment of ALCOHOLISM, Other Drug Habits, Insomnia, Neurasthenia, Functional Nervous Disorders, TROPICAL Ailments, etc.

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Terms moderate. Quiet and pleasant situation. Ladies and Gentlemen admitted for treatment.
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'Phone: Ravensbourne 3622. *Telegrams:* Hare, Beckenham.

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A PRIVATE HOME for Cure of Ladies and Gentlemen suffering from NERVOUS and MENTAL DISEASES. Extensive pleasure grounds. Private suites of Rooms with Special Attendants available. Boarders received without certificates.

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FOR MENTAL DISORDERS,
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FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

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This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical baths, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, an[illegible] to the Hospital from the farm, gardens, and orchards of Moulton is a feature of this branch, and patients are given every facility in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The Seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc

For terms and further particulars apply to the Medical Superintendent (Telephone: No 56 Northampton), who can be seen in London by appointment.

HAYDOCK LODGE,
NEWTON-LE-WILLOWS, LANCASHIRE.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

NEURASTHENIA
BELVOIR NURSING HOME, ASTON-ON-TRENT, DERBY.

Private Nursing Home for Neurasthenia and allied Functional Nervous Disorders, for general Convalescent Cases, and those requiring Electrical Treatment.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes. In addition to the methods of general medicine, Psycho-Therapeutic treatment is used extensively in suitable cases. Certifiable cases are not received. Electrical Treatment, Radiant Heat, X-ray, Ultra-violet Light, and Massage is available in the Nursing Home. Billiards, tennis, etc Fees from 5 to 12 guineas per week. For further particulars apply to—
Dr. E. M. DOUGLAS-MORRIS, ASTON, DERBY. *Telephone*: *Shardlow* 16.
Dr. Douglas-Morris can be seen by appointment in London.

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For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

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Telephone: *Teignmouth* 289.

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HOSPITAL FOR MENTAL DISEASES.

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For terms, etc., apply to the Medical Superintendent.

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in limited number receive every care from experienced qualified nurses in beautiful surroundings at

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Terms from
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A Private Mental Hospital for the Treatment and Care of Mental and Nervous Disorders.

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CHISWICK HOUSE,
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MIDDLESEX.

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A modern country house, 11 miles from Marble Arch, in beautiful and secluded grounds.

Fees are from 10 guineas a week.

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SAINT LUKE'S HOSPITAL
(for Mental Disorders).

Treasurer:
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near Gerrards Cross, Bucks,

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE which has its own private grounds and is entirely separate from the main Hospital.

For terms, etc., apply to—
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7 Barnwood

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For the CARE and TREATMENT of NERVOUS and MENTAL DISORDERS in BOTH SEXES.

Separate accommodation for Voluntary Boarders of the Female Sex. Applications received at the above or at 17, Belmont, Bath, by—
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Medical Superintendent

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(FORMERLY DUFF HOUSE, BANFF.)

The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiograph, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The Climate is mild and the neighbourhood beautiful. Apply: The Secretary,
Telegrams: Castle, Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

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Telegrams: Alleviated, London. Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for the treatment of special and suitable cases adjoin the Institution. There is a seaside branch to which holiday parties are sent during the summer months. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

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Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0883.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
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Terms:

(*a*) £5 a week, but in case of patients with a legal settlement in the County of London a less sum may be charged according to means.
(*b*) £6 6s. a week.

Terms include (with rare exceptions) all forms of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the hospital. Inquiries of EDWARD MAPOTHER, M.D., M.R.C.P., F.R.C.S., Medical Superintendent.

FENSTANTON.

CHRISTCHURCH ROAD,

STREATHAM HILL, S.W.2.

A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Separate accommodation in Mansion for Voluntary Boarders. 12 acres of grounds (See *Medical Directory*, p. 2190.) Apply J. H. EARLS, M.D., Resident Physician. Telephone: *Streatham* 8430.

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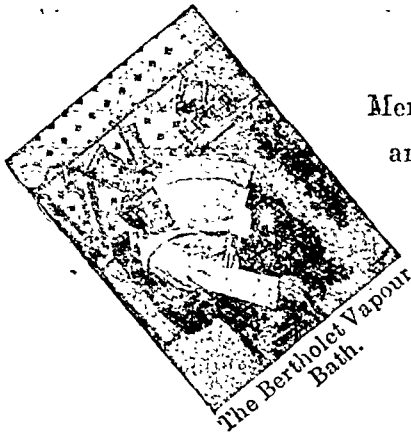

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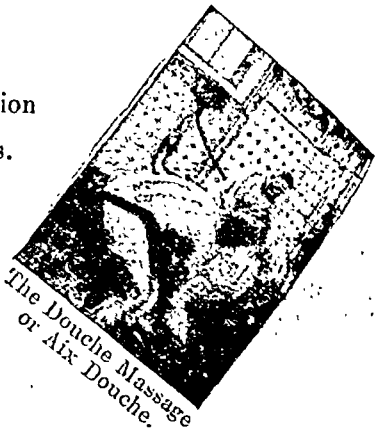

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A Charming and Restful Place.

Saline Thermal Springs

Rich in Carbonic Acid

Quite exceptional cures for cardiac affections, arterial sclerosis, muscular rheumatism, rheumatoid arthritis, gout, bronchial diseases, spinal diseases and female ailments, diseases of the nervous system, shock and exhaustion, reconvalescence, injuries to the bones and joints, etc. All up-to-date treatments.

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Cures can be taken all the year round.

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The administration of the Spa undertakes the transmission of the mineral waters and will also supply information as to where they can be obtained.

The Kurverein supplies informatory publications and all information needed.

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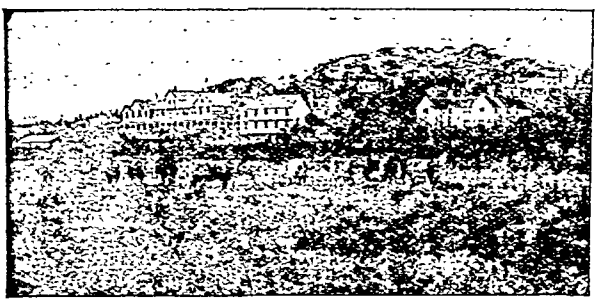

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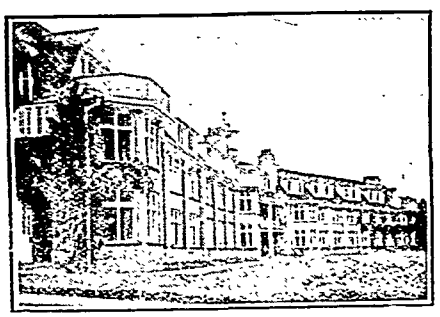
The Sanatorium, Mundesley, Norfolk.

EAST ANGLIAN SANATORIUM.



This Sanatorium was specially built for the treatment of Pulmonary and other forms of Tuberculosis, and is situated on an ideal site facing S.S.E.—very sunny district in the "Constable" Country. Special Treatment by artificial Pneumothorax (X-ray Controlled). Electric lighting throughout, and radiators and wireless in all rooms.

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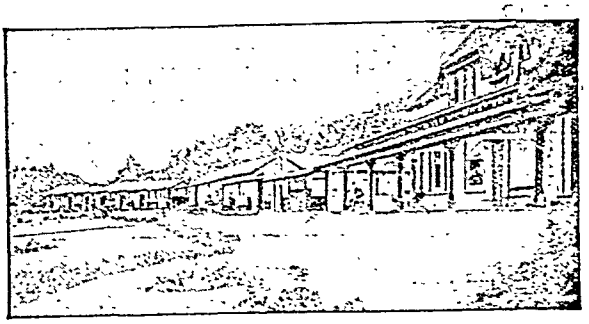
For full particulars, illustrated prospectus, etc., apply to the SECRETARY, East Anglian Sanatorium, Nayland, near Colchester. *Teleph. and Telegrams*: NAYLAND 1.

THE COTSWOLD SANATORIUM



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Full day and night Nursing Staff.
Resident Physicians: ARTHUR H. HOFFMAN, M.D., and G. A. HOFFMAN, M.B.
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For full particulars apply to *The Secretary*, Nordrach-upon-Mendip, Blagdon, Bristol. *Telegrams*: Nordrach, Blagdon. *Telephone*: Blagdon 23.

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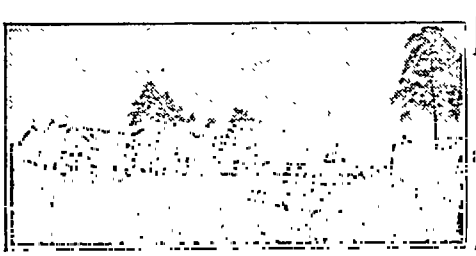

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3. The presentation of a thesis or exercise which is entirely the candidate's own work, and is intended to show that he has had practical experience of the subjects.

The first three months may be spent either in Cambridge, where the Physics is done in the Cavendish Laboratory and the Radiology and Electrology in a specially equipped Department of Radiology, or in London, where the Physics is done in the Laboratories of the Middlesex Hospital and King's College and the Radiology and Electrology is taught at the British Institute of Radiology. These Courses run concurrently in Cambridge and London.

The second three months must be spent in London, where courses of lectures are given at the British Institute of Radiology, and are combined with clinical instruction in the large teaching hospitals.

The third three months may be spent in recognized hospitals in London or elsewhere, the student acting as clinical assistant or in similar capacity.

Further information as to the Courses may be obtained from:

G. STEAD, M.A., Secretary for the Diploma and Lecturer in Physics as applied to Medical Radiology, Cavendish Laboratory Cambridge.

A. E. BARCLAY, O.B.E., M.A., M.D., Lecturer in Radiology, Department of Radiology, Medical School Cambridge.

The Director of the British Institute of Radiology, 32, Welbeck St. London, W.1.

UNIVERSITY OF CAMBRIDGE

Diplomas in (*a*) PUBLIC HEALTH, (*b*) HYGIENE (for foreign graduates), (*c*) TROPICAL MEDICINE AND HYGIENE.

Courses of Instruction in the Subjects of the Examinations commence October 9th, 1929. *Full particulars to be obtained from* Mr. J. E. PURVIS, Public Health Chemical Laboratory, Medical School, Cambridge.

University of Durham College OF MEDICINE, NEWCASTLE-UPON-TYNE

PUBLIC HEALTH LABORATORIES and BACTERIOLOGICAL DEPARTMENT.

Applications are invited for the post of Whole-time ASSISTANT. Applicants must be registered medical practitioners (male), with experience of Public Health Bacteriology and Clinical Pathology. In addition to work in the Public Health Laboratories, the Assistant will be required to take part in teaching.

Appointment will be probationary in the first instance. Commencing salary from £350 to £450 according to experience.

Applications, with copies of three recent testimonials, should be submitted not later than April 12th to the Registrar, University of Durham College of Medicine, Newcastle-upon-Tyne.

Guy's Hospital Dental School.

DIRECTOR OF THE DENTAL PROSTHETIC LABORATORY.

Applications are invited for the above post. *The Director has charge of the Dental Prosthetic and Metallurgical Laboratories, and must* be prepared to give Demonstrations in Dental Metallurgy. Salary £600 per annum. Duties will commence on September 2nd, 1929, and the appointment is for two years, with eligibility for re-appointment

Applications should be sent in, not later than April 30th, to the DEAN, Guy's Hospital Dental School, London Bridge, S.E.1, from whom further particulars may be obtained regarding *the duties* of the post, etc

Manchester Victoria Memorial JEWISH HOSPITAL, CHEETHAM, MANCHESTER.

Applications are invited for the post of JUNIOR HOUSE SURGEON. The appointment is for six months. Salary at the rate of £125 per annum, with board, residence, and laundry. Applications, together with copies of testimonials, to the undersigned not later than April 12th

FRANK JENNINGS, Superintendent.

Royal Medical Benevolent Fund, 11, Chandos Street, Cavendish Square, London, W.1.

The ANNUAL MEETING of the Members of the Royal Medical Benevolent Fund will be held at 5 p.m., on THURSDAY, APRIL 18th, 1929, at 11, Chandos St., Cavendish Sq., London, W.1, when the Annual Report and Financial Statement for the year ended December 31st, 1928, will be presented, and the Officers and Committee for the current year elected

R. M. HANDFIELD-JONES, Hon. Secretary.
E. C. PENNEFATHER Secretary

March 26th, 1929.

The Secretary of State for India

proposes shortly to make a certain number of appointments to permanent COMMISSIONS in His Majesty's INDIAN MEDICAL SERVICE. A selection Committee will meet at the India Office on April 15th to consider applications. Well qualified medical men of European descent (British subjects) who desire to be considered should apply to the Under-Secretary of State for India, Military Department, India Office, London, S.W.1, for forms of application, regulations, and other particulars. Envelopes should be marked on top left corner "Medical Recruitment." The selected candidates will be required to undergo a course of instruction in this country, commencing April 29th next, prior to embarking for India towards the end of the year.

Goculdas Tejpal Hospital, BOMBAY.

APPOINTMENT OF HONORARY SURGEON.

Applications are invited for the above appointment. Goculdas Tejpal Hospital (236 beds) is associated with the Grant Medical College, Bombay, for clinical teaching of undergraduates. The appointment carries an honorarium of Rs.150 per mensem, and will be for a period of five years, subject to termination by three months' notice on either side.

Applications, in duplicate, marked "Honorary Surgeon," stating age, qualifications, and experience, together with copies of three recent testimonials, must be sent so as to reach the undersigned not later than May 15th.

G. T. Hospital, Bombay. F. N. MOOS, M.D.(Lond.), Superintendent.

City of Liverpool.

ASSISTANT CITY BACTERIOLOGIST.

The Health Committee of the Liverpool Corporation require the services of an Assistant City Bacteriologist. The duties will be to carry out the routine bacteriological examination of milk and other foodstuffs, Wassermann Reactions, etc, and perform such other work as may be required, under the direction of the City Bacteriologist.

The salary will be £600 per annum

Candidates, whose age must not exceed 35 years, should be registered medical practitioners having had special experience in bacteriology.

The person appointed shall devote his whole time to the post and will not be allowed to engage in private practice, and all emoluments out of public moneys which may be payable to or received by him will have to be paid to the Corporation. He will be subject to the superannuation provisions of the Liverpool Corporation Act, 1921.

Applications, stating age, qualifications, and experience, accompanied by copies of not more than three recent testimonials, endorsed "Assistant City Bacteriologist," should be sent to the undersigned not later than April 22nd.

Canvassing of members of the City Council is strictly prohibited.

Municipal Offices, Liverpool. WALTER MOON, Town Clerk

March 23rd, 1929.

Hampshire County Council.

ASSISTANT COUNTY MEDICAL OFFICER (TEMPORARY).

Applications are invited for the post of Assistant Medical Officer of Health (Temporary). The duties comprise general public health work, including medical inspection of school children in Secondary and Elementary Schools; and work under the Tuberculosis Scheme and the Maternity and Child Welfare Scheme, etc. Salary at the rate of 10 guineas per week, together with travelling and subsistence allowances.

Form of application may be obtained from the County Medical Officer, The Castle, Winchester.

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam will commence shortly. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

Birmingham Union. SELLY OAK HOSPITAL.

CASUALTY OFFICER (Male).

Applications are invited from fully qualified medical practitioners for the appointment of Casualty Officer (male) at the Selly Oak Hospital, Birmingham.

The present Hospital accommodation is 550 *beds divided into* General Medical, General Surgical, Gynæcological, Obstetrical, Children and Infectious sections. *There is a completely* [illegible] ratory, also X-ray, [illegible] and Sunlight De- [illegible] operations are per- [illegible]

The appointment will be for a period of *six* months in the first instance, but may be extended at the end of that time.

The officer appointed will be required to assist at operations, administer anæsthetics, and undertake casualty work and such other duties as may be assigned to him by the Medical Superintendent, and, should occasion arise, to assist at any of the other Institutions under the control of the Guardians.

The salary attached to the *appointment is at* the rate of £200 per annum, together with full residential emoluments (rations, apartments, laundry, and attendance).

A deduction of 2 per cent. will be made from the salary and value of emoluments under the provisions of the Poor Law Officers Superannuation Act, 1896, and for this purpose the emoluments are valued at £200 per annum.

Further particulars of the appointment may be obtained from the Medical Superintendent, Mr. R. P. STANLEY KELMAN, M.B., F.R.C.S. (Eng and Edin.), at the Selly Oak Hospital.

Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, must be forwarded *so as to reach* me not later than Wednesday, April 17th.

Union Offices, Edmund St., Birmingham, March 28th, 1929. C. P. BEECH, Clerk to the Guardians.

Lancashire County Council.

APPOINTMENT OF ASSISTANT TUBERCULOSIS MEDICAL OFFICER for HIGH CARLEY SANATORIUM, near ULVERSTON.

The Lancashire County Council are prepared to receive applications for the post of Male Assistant Tuberculosis Medical Officer (unmarried) for the High Carley Sanatorium (112 beds). Salary £350, rising by two annual increments of £50 to £450 per annum, together with the following emoluments: board, furnished apartments, fuel, light, and laundry.

Applicants must be registered medical practitioners between 25 and 34 years of age, *and* the person appointed must devote the whole of his time to the duties as defined by the Council. Candidates must have held House appointments for at least *six months* in a General Hospital, and have had special experience in the diagnosis and treatment of Tuberculosis.

The possession of a Diploma in Public Health and *practical experience in X-ray work will* be deemed additional qualifications for the post.

Contributory superannuation scheme is in operation, with medical examination for entrants.

Forms of application, terms of appointment, and list of duties, can be obtained from the undersigned. Closing date, April 29th

All letters must be marked on the outside "Assistant Tuberculosis M.O."

County Offices, Preston. GEORGE ETHERTON, Clerk of the County Council.

City of Nottingham.

ASSISTANT MEDICAL OFFICER (Resident).

The Guardians of the Poor of the City of Nottingham invite applications from gentlemen for the appointment of Resident Assistant Medical Officer at their BAGTHORPE INSTITUTION AND INFIRMARY, for a period of six months certain, subject to renewal. Applicants must be registered medical practitioners.

The Hospital is a separate modernly designed building, comprising four pavilions, and providing accommodation for 760 patients. The staff consists of a Consulting Surgeon, Visiting Medical Officer, and two Resident Assistant Medical Officers. There is opportunity for experience in all departments, such large Medical Surgical, and Midwifery cases, and Bacteriological work. An X-ray apparatus is [illegible]

Salary at the rate of £350 per annum, [illegible] furnished apartments, service, board, laundry, etc.

Applications, giving age and full particulars of experience and [illegible] accompanied by copies of three recent testimonials, [illegible] to be on or before April 9th

Poor Law Offices, Spaniel Row, Nottingham. J. ALLAN BATTERSBY, Clerk to the Guardians.

March 27th, 1929

WEST AFRICAN MEDICAL STAFF

VACANCIES exist for MEDICAL OFFICERS and MEDICAL OFFICERS OF HEALTH in the BRITISH WEST AFRICAN COLONIES.

SALARIES.

Medical Officers receive salaries at the rate of £660 a year, rising by annual increments of £30 to £720 a year, and then on confirmation £720 a year, rising by annual increments of £40 to £960 a year, together with a seniority allowance (payable only in West Africa) at the rate of £72 a year. After three years' service on £960, the salary may be raised to the scale of £1,000 a year, rising by annual increments of £50 to £1,150 a year, together with a seniority allowance at the rate of £100 a year.

Medical Officers of Health receive salary on the above scale beginning at £800 a year, together with seniority allowance of £72 a year. They also draw staff pay at the rate of £150 a year, half of which is payable during leave.

QUARTERS.

Free furnished quarters are provided or an allowance in lieu.

OUTFIT ALLOWANCE.

An outfit allowance of £60 is granted on first appointment.

PASSAGES.

Free first-class passages are provided on first appointment, and when proceeding on or returning from leave.

PENSIONS.

All appointments are pensionable; a minimum service of seven years is required to qualify for a pension. An officer may retire on reaching the age of 50 and may be called upon to retire at the age of 55. Officers of the West African Medical Staff are permitted to retire if they wish with a gratuity of £1,000 or £1,250 after nine or twelve years' approved service respectively, but in that event they receive no pension.

TOURS OF SERVICE AND LEAVE.

A tour of service in West Africa lasts from twelve to eighteen months at the discretion of the Colonial Government, and is followed by leave at the rate of one week for each completed month of residential service. Leave begins on the date of arrival in England.

PROMOTION.

There are good prospects of promotion in the West African Medical Staff.

COURSE OF INSTRUCTION.

Selected candidates are required to attend courses of instruction in tropical medicine and hygiene at either the London School of Hygiene and Tropical Medicine or the Liverpool School of Tropical Medicine or the University of Edinburgh.

Further information regarding the conditions of service, pensions, etc., may be obtained from the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1, to whom applications should also be addressed.

ROYAL AIR FORCE

MEDICAL SERVICE

VACANCIES exist for MEDICAL OFFICERS in the ROYAL AIR FORCE

1. CONDITIONS OF APPOINTMENT

Candidates are selected after interview by a Selection Board.

SHORT SERVICE COMMISSIONS (for THREE YEARS extensible to FIVE) are granted initially.

PERMANENT COMMISSIONS are granted subsequently to suitable officers who are desirous of them. Approximately half the entrants obtain permanent commissions.

CANDIDATES must be of pure European descent, British subjects and the sons of British subjects.

They must be UNDER 28 YEARS OF AGE, and REGISTERED under the Medical Acts in force in the United Kingdom.

Resident hospital appointments held since qualification for twelve months under certain conditions qualify candidates for a year's ANTEDATE of Commission.

Candidates must engage to serve at home and abroad, and to fly as a passenger when required.

2. PAY, PROMOTION, ETC.

The following table shows the current rates of PAY per annum for the various ranks.

IN ADDITION to pay, officers receive quarters, rations and attendance, or are given cash ALLOWANCES in lieu as shown in the table.

MARRIED OFFICERS who have attained the age of 30 YEARS receive either Married Quarters or ALLOWANCES at the MARRIED RATES.

ALLOWANCES to meet the extra cost of living OVERSEAS are given.

Service.	Rank.	Pay.	Allowances.	
			Married.	Single.
On entry	Flying Officer	£411	—	£142
After 2 years on promotion to	Flight Lieut.	£447	£202	£160
Rising by increments after 2 and 4 years to	,, ,, ...	£514	£202	£160
After 10 years' total service on promotion to	Squadron Leader	£534	£202	£171
Rising by increments after 2, 4, 6, 8, and 10 years to	,, ,, ...	£858	£202	£171
By selection to ... ..., ...	Wing Commander	£943	£202	£181
Rising by increments after 2 and 4 years to	,, ,, ...	£1,030	£202	£181
By selection to	Group Captain	£1,201	£277	£252
By selection to	Air Commodore	£1,372	£332	£307
By selection to	Air Vice Marshal	£1,715	£397	£370

GRATUITIES

Short service officers who complete their full period of service on the active list may be granted gratuity as follows on transfer to the reserve:

After 3 completed years ... ... £350.
After 5 completed years ... ... £700.

Permanent officers who are allowed to retire voluntarily before qualifying for retired pay may be granted gratuity as follows:

After 10 but less than 15 years' commissioned service ... ... £1,500.
After 15 or more than 15 years' commissioned service ... ... £2,500.

Full particulars of service, including pensions, are contained in Air Ministry Pamphlet 25, which can be obtained by application, in writing or personally, to the Secretary, Air Ministry (D.M.S.), Adastral House, Kingsway, W.C.2.

[AMENDED ADVERTISEMENT.]

West Middlesex Hospital, ISLEWORTH.

APPOINTMENT OF RESIDENT ASSISTANT MEDICAL SUPERINTENDENT.

The Guardians invite applications for the appointment of Resident Assistant Medical [illegible] tant Medical Officer [illegible] OUSE INSTITUTION [illegible] which are adjacent, [illegible] of either sex, with previous experience in major surgery and of administration in similar Institutions.

Commencing inclusive salary £450 per annum, rising, upon approved service, on April 1st, 1930, and thereafter, annually, by £50, to £600 per annum, together with *residential emoluments* valued for superannuation purposes at £90 per annum. All fees received are to be repaid to the Guardians.

Applications, upon forms to be obtained by forwarding a stamped addressed foolscap envelope, are to be returned to the undersigned before 10 a.m. on Tuesday, April 16th.

Toolands House, 34, *Twickenham Rd.*, Isleworth, Middx. March 28th, 1929.

F. E. HARMSWORTH, Clerk to the *Guardians*.

Preston and County of Lancaster
QUEEN VICTORIA ROYAL INFIRMARY.

APPOINTMENT OF HONORARY ASSISTANT PHYSICIAN.

The Board invite applications for the above mentioned appointment from registered practitioners, who must hold a Degree in Medicine of a British University or be a Licentiate of the Royal College of Physicians of London.

Particulars of the appointment may be obtained from the undersigned.

Applications, stating age, education, training, qualifications, and *experience*, together with copies of testimonials, to be forwarded to the undersigned not later than the 25th instant.

Royal Infirmary, Preston. April 1st, 1929.

JOHN GIBSON, Supt. & Secretary.

Preston and County of Lancaster
QUEEN VICTORIA ROYAL INFIRMARY.

APPOINTMENT OF HONORARY ASSISTANT SURGEON.

The Board invite applications for the above mentioned appointment from registered practitioners, who shall hold a Degree in Surgery of a British University or a Fellowship of the Royal College of Surgeons of England, Edinburgh, or Ireland, or the Membership of the Royal College of Surgeons of England.

Particulars relating to the appointment may be obtained from the undersigned.

Applications, stating age, education, training, qualifications, and experience, together with copies of testimonials, to be forwarded to the undersigned not later than the 25th instant.

Royal Infirmary, Preston. April 1st, 1929.

JOHN GIBSON, Supt. & Secretary.

Victoria Hospital for Children,
Tite Street, Chelsea, S.W.3.

The Committee of Management invite applications for the post of HONORARY PHYSICIAN or SURGEON for Diseases of the Skin.

Candidates must be either (*a*) Fellows or Members of the Royal College of *Physicians* of London and Graduates in Medicine of a University recognized by the General Medical Council, or (*b*) Fellows of the Royal College of Surgeons of England.

Applications, with testimonials, should be sent to the Secretary of the Hospital on or before Friday, April 12th.

By Order,
D. ST. JOHN BAMFORD, Secretary.

Royal Waterloo Hospital for
CHILDREN AND WOMEN,
Waterloo Road, S.E.1.

There will be a vacancy on May 1st for a HOUSE SURGEON (male) at the above Hospital. The appointment is in the first instance for a period of six months. Salary at the rate of £100 per annum, with board and residence. Application, with copies of testimonials, should be forwarded not later than Thursday, April 18th, to the Secretary at the above address, from whom further particulars can be obtained.

Clayton Hospital, Wakefield.

HOUSE SURGEON required at once. Candidates must be single and legally qualified. Salary £150 per annum, with board, lodging, etc. Applications, enclosing copies of testimonials, should be sent to the undersigned.

HENRY MAW, Gen. Supt. & Secretary.

The Queen's Hospital for CHILDREN,
Hackney Road, London, E.2.
Telephones: Bishopgate 6306 & 2534.

The Committee invite applications for the post of SURGEON for the Ear, Nose, and Throat Department.

Attendance required on Monday and Thursday morning for about three hours, commencing at 9.30. Lunch provided and honorarium to cover travelling expenses.

Candidates must be Fellows by examination of the Royal College of Surgeons, England.

Applications, with copies of three recent testimonials, which may be printed or typewritten, should be sent on or before May 6th to the *undersigned*, from whom further particulars may be obtained.

T. GLENTON-KERR, Secretary.

March 25th, 1929.

The Royal Earlswood Institution
REDHILL, SURREY.
(Under Mental Deficiency Acts 1913-27.)

JUNIOR ASSISTANT MEDICAL OFFICER *required*. *Applicants* must be registered practitioners, males, unmarried, and willing to assist in the games and amusements.

The appointment is temporary for six months. Inclusive salary at the rate of £250 per annum, with board, residence, and washing. Good facilities for Post-graduate studies, Classes, and Examinations.

Applications, stating age, religion, and qualifications, with copies of *three testimonials* of recent date, and two references, to be sent on or before April 23rd to the Medical Superintendent at the Institution. *The envelope* to be endorsed "Assistant Medical Officer."

H. STEPHENS, Secretary.

March 26th, 1929.

Ancoats Hospital, Manchester.

RESIDENT SURGICAL OFFICER.

Applications are invited for the post of Resident Surgical Officer, which will become vacant on April 30th next. Appointment for 12 months. Salary £200 per annum, with board, *apartments, and washing*. Candidates holding an F.R.C.S. degree will be *preferred*. Applications, stating age, qualifications, previous experience, etc., *together with copies of* three recent testimonials, to be forwarded to *the undersigned* on or before April 17th next.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Royal Sussex County Hospital,
BRIGHTON. (225 Beds.)

CASUALTY HOUSE SURGEON (male) *required April 27th*. Salary £120 per annum, with board, residence, and laundry. Candidates *must hold* Medical and Surgical qualifications of the British Empire, and be duly registered *under the Medical Acts*. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should be sent immediately to the undersigned.

L. L. W. LANCASTER-GAYE,
Secretary-Superintendent

Altrincham General Hospital,
CHESHIRE.

HOUSE SURGEON required. *Candidates must* be fully qualified and registered. Salary £105 per annum, with board, residence, and laundry.

The appointment is for six months, subject [illegible] a further period of six [illegible] age and experience, together with copies of recent testimonials, to be sent in not later than April 10th to WILLIAM MOODY, Secretary, 51, Market Street, Altrincham, Cheshire.

Bedford County Hospital.

HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing May 1st. Salary £175, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Secretary, Medical Staff Committee, not later than the first post Wednesday, April 10th.

Royal United Hospital, Bath.

Wanted an ASSISTANT HOUSE SURGEON. Salary £100 p.a.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three recent testimonials, must be sent addressed to the Secretary at once.

J. M. SHEPPARD, Secretary.

Hospital for Consumption and
DISEASES OF THE CHEST,
Brompton, S.W.3.

The Committee of Management invite applications from duly qualified medical men for the post of JUNIOR HOUSE PHYSICIAN at the SANATORIUM at FRIMLEY. The appointment is for six months dating from June 1st. In the event of a vacancy the Junior House Physician at the expiration of his term of office will be expected to apply for and, if approved, to hold the post of Senior House Physician. The *honorarium* is at the rate of £100 per annum, *with* full board and lodging. Applications, with copies of testimonials, must reach the *undersigned* not later than Wednesday, April 17th.

FREDERICK WOOD, Secretary.

Brompton. March 30th, 1929.

Hospital for Consumption and
DISEASES OF THE CHEST,
Brompton, S.W.3.

The Committee of Management invite applications for the post of ASSISTANT RESIDENT *MEDICAL OFFICER*. Candidates must be registered practitioners, and must have held a Resident Hospital appointment for six months. Salary £150 per annum, with board and residence. The post is a Senior Resident appointment and will include the duty of Assistant to the Surgeons to the Hospital. Applications, with testimonials, must reach the undersigned not later than Saturday, April 13th.

FREDERICK WOOD, Secretary.

Brompton. March 30th, 1929.

Hospital for Consumption and
DISEASES OF THE CHEST,
Brompton, S.W.3.

The Committee of Management invite applications for the post of HOUSE PHYSICIAN (in which there are three vacancies). The duties include work in the Out-patient Department as well as in the Wards.

Applications, with copies of testimonials, must reach the undersigned not later than Saturday, *April 13th*.

The appointment is for six months, commencing on May 1st, with an honorarium of £50.

FREDERICK WOOD, Secretary.

Brompton. April, 1929.

Salford Royal Hospital.
(263 Beds.)

Applications are invited for the post of RESIDENT SURGICAL OFFICER (male). Salary at the rate of £200 per annum.

The appointment is for a period ending December 31st, 1929, with board and residence, [illegible] registered under the [illegible] which may be obtained from the undersigned, must be delivered without delay.

By Order of the Board,
GEORGE RUDDLE, Gen. Supt. & Secretary.

Salford Royal Hospital, Manchester. April 2nd, 1929.

Royal Hampshire County
HOSPITAL, WINCHESTER.

Applications are invited to fill a vacancy on the staff of this Hospital for an HONORARY PHYSICIAN-IN-ORDINARY. Candidates must be Fellows or Members of one of the Royal Colleges of Physicians of Great Britain and Ireland, or Graduates in Medicine of one of the Universities of Great Britain or Ireland, and must be duly registered.

Applications, with testimonials, not more than three, to be sent to the Secretary not later than April 27th.

Canvassing, direct or indirect, is prohibited.

HERBERT MASLEN, Secretary.

The Miller General Hospital,
Greenwich Road, S.E.10.

CASUALTY OFFICER (male and unmarried) required. There are four other resident [illegible] Salary £150 per annum, with board, residence and laundry. Duties to commence at once.

Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent to the *Secretary* as soon as possible.

March 25th, 1929.

Swansea Hospital
(316 Beds.)

HOUSE SURGEON wanted, gentleman, [illegible] Salary £150, with board, residence, laundry. Duties to commence at once.

Applications, stating age, nationality, [illegible] experience, with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS, Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.)*.	**PUBLIC HEALTH** *(continued)*.
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
	COUNTY OF BRECON. *(Probationer Assistant (Female) Medical Officer of Health.)*	

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec. Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies' Institute.)*	Dr E. S. MEYERS (Hon Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
April 3rd, 1929.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

The Prince of Wales's General Hospital, Tottenham, N.15.

The following resident posts will be vacant on May 1st next:
SENIOR HOUSE PHYSICIAN, SENIOR HOUSE SURGEON, and SPECIAL HOUSE SURGEON. Salaries at the rate of £120 per annum.
JUNIOR HOUSE PHYSICIAN and Two JUNIOR HOUSE SURGEONS. Salaries at the rate of £90 per annum.
Board, residence, and laundry.
Appointment held for six months, but holders are eligible for re-appointment for a further term.
Candidates (male) must be fully qualified and registered, and applications (on prescribed form), together with copies of three recent testimonials, should be sent to me on or before the first post on Monday, April 15th.

FREDK. W. DREWETT, Director.
March 25th, 1929

Derbyshire Royal Infirmary, DERBY.
(General Hospital—338 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN (male).
Candidates must be qualified and registered under the Medical Acts.
The appointment is tenable for 12 months, with a possibility of extension for a further period of 12 months. Salary will be £150 per annum, with apartments, board, etc.
Applications, with copies of not more than five testimonials, to be sent to the undersigned not later than April 19th. Duties will commence on May 1st.

WALTER BANKS, Supt. & Secretary.
March 26th, 1929.

Norfolk and Norwich Hospital, NORWICH.

Applications are invited for the post of HOUSE PHYSICIAN. Salary £120 per annum, with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment. Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned, not later than Tuesday, April 15th.

FRANK INCH, House Gov. & Sec.
March 30th, 1929.

Saint Mark's Hospital for CANCER, FISTULA, AND OTHER DISEASES OF THE RECTUM, City Road, London, E.C.1.

HOUSE SURGEON (male) required. Must be fully qualified. Salary £75 per annum, with board, residence, and laundry. The appointment is for a *minimum* of six months from May 1st next. Applications, with copies of testimonials, must reach the Secretary (from whom further particulars may be obtained) not later than Saturday, April 20th.

Hull Royal Infirmary.

Applications are invited for the post of HOUSE PHYSICIAN (male), vacant April 19th.
Applicants must be fully qualified. Period of appointment, six months in the first instance. Salary at the rate of £200 per annum, with board and residence.
Applications, together with copies of testimonials, should reach the undersigned on or before Tuesday, April 9th.

R. J. CARLESS, House Governor.
March 22nd, 1929.

The London Female Lock HOSPITAL, 283, Harrow Road, London, W.9.

The Board of Management invite applications for the appointment of HOUSE SURGEON (male or female) at the Female Lock Hospital. Salary at the rate of £150 per annum, with furnished rooms, full board, and washing. Candidates, who must be doubly qualified and duly registered, should send in their applications to 10 a.m on or before April 8th, accompanied by copies of three recent testimonials, to the Secretary, from whom further particulars can be obtained. The appointment is for six months commencing May 10th.

West End Hospital for Nervous DISEASES.

In-patient Department: Gloucester Gate, Regent's Park, N.W.
Out-patient Department and Secretary's Office: Welbeck Street, W.

The Committee of Management invites applications for the appointment of Two HON. ANÆSTHETISTS. Further particulars should be obtained from the undersigned, to whom it is requested that 12 copies of the application and testimonials may be sent not later than Monday, April 22nd.

J. P. WETENHALL, Secretary.

Essex County Hospital, COLCHESTER. (160 Beds.)

Wanted in May, a HOUSE SURGEON (male). Salary £175 per annum, with board, washing, and residence in the Hospital. Medical and Surgical qualifications required. Applications, with recent testimonials, to be sent by April 11th, 19[illegible]

ALFRED G. BUCK, Secretary.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
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ASSISTANCIES.

Wanted. — Qualified Assistant, outdoor, single, British, abstainer, Protestant; experienced minor surgery, mids., anæsthetics; colliery district, South Wales. Liberal salary reliable applicant. Sign bond. Interview desirable if arranged, fare and expenses paid.—Address, No. 1913, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, end of April, young, male, English or Scotch, for panel and industrial Practice in S. Yorks. Salary £300, indoor. Usual bond.—Address full particulars to No. 1922, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Lady Assistant, outdoor, experienced in G.P. (panel and private), cyclist. London suburb.—Address, stating essential particulars. No. 1903, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Indoor Assistantship by Lady M.B., Ch.B.Edin., 1925; 2 yrs.' experience general practice, dispensing, and book-keeping. Knowledge of Public Health. Refractions desired. Excellent testimonials.—No. 1923, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately, Indoor and Outdoor ASSISTANTS (male). Good salaries offered. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross St., Manchester.

Wanted.–An outdoor woman ASSISTANT, experienced, for general country Practice—midwifery, panel, and private. Must be a good anæsthetist. Within fifty miles of London.—Address, No. 1908, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted; ex resident preferred; indoor; in an Industrial Practice in a University City, where a standard of careful work is followed. £300 per annum or upwards, according to experience.—No. 1919, B.M.A. House, Tavistock Sq., W.C.1.

Assistant required, outdoor, in large Town in Yorkshire.—For further particulars apply to "B.," c/o of Messrs. R. SUMNER & Co., Ltd., Wholesale Druggists, Liverpool.

Honours M.B., æt. 27, married, four years G.P., good references T.T., wishes ASSISTANTSHIP or OTHER POST, where steady and capable man is wanted.—Address No. 1916, B.M.A. House, Tavistock Square, W.C.1.

Outdoor Assistant (male), part-time, morning and evening. £5 per week. — Address, No. 1911, B.M.A. House, Tavistock Square, W.C.1.

Required at once, a qualified ASSISTANT (male) in an Industrial and general practice in South Wales. Terms: £300 p.a. Furnished room coal, light and attendance. Dispenser kept.—Address, No. 1921, B.M.A. House, Tavistock Square, W.C.1.

Short Assistantship desired by Graduate (Bart's.); 2 years' hospital experience, also G.P. (private and panel). Good references. Free in 3 weeks. Wales or London. —Address, No. 1905, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted, for the Lady Hardinge MEDICAL COLLEGE, NEW DELHI, INDIA, from mid-September, 1929, a MEDICAL WOMAN, with experience in teaching Anatomy, to act for the Professor of that subject during her year's leave. Salary Rs.750 a month, with free furnished house, and free passage to and from India (the rupee is standardised at 1/6). Apply, with testimonials, to the College Principal.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Assistant Matron wanted for June in large Nursing Home in London. Must be fully trained, and of exceptional character and personality. One having had similar experience preferred. — Address, No. 1902, B.M.A. House, Tavistock Square, W.C.1.

Dispensers supplied to Doctors at short notice, without fee. Qualified and exper. in priv. and panel prac. Perm. and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 87, Holborn Viaduct House, 12, Holb. Viad., E.C.1.

Lady would like to assist Doctor in SECRETARIAL capacity for next few months. Efficient typist and capable of working on own initiative. Has previously assisted doctor to compile reference handbook.—Address, No. 1926, B.M.A. House, Tavistock Square, W.C.1.

Required by Anglo-Newfoundland DEVELOPMENT COMPANY LTD., GRAND FALLS, NEWFOUNDLAND, fully qualified Doctor as ASSISTANT to permanent medical staff. Salary 175 dollars per month, plus board and lodging, increasing after one year's service. Age not above 35 and unmarried. Must be prepared to go to Newfoundland immediately. — Apply, Secretary, Anglo-Newfoundland Company Limited, 150, Fleet Street, London.

Translating and Abstracting GERMAN Medical and Scientific Literature into English undertaken by Medical Woman with considerable experience. Interview London. — Address, No. 1607, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS.

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Wanted, Lady Locum for eight days, early in April, for Country Practice. Light work in pleasant district. Car kept. Small remuneration and expenses. — Address, No. 1924, B.M.A. House, Tavistock Sq, W.C.1.

As Locum.—Exper. middle-aged Doctor, had own practice, now doing some 10 locums annually desires further ENGAGEMENTS. Terms 6 gns. p.w. If country, where car used. Good refs.—MEDICUS, c/o Poolaert, 24, Colville Road, Bayswater, W.

Hospitality Locum. — Wanted the 8th April, locum as above for small country practice near London for about 3 weeks. Own car essential. Comfortable house, servants. Extend to wife if desired. Expenses—Address, o. 1901, B.M.A. House, Tavistock Sq. W.C.1.

Locum Tenens and Assistants required, preferably those within easy distance of Lancashire.—For further particulars apply to Messrs. R. SUMNER & Co., Ltd., Wholesale Druggists, Liverpool.

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Wanted by M.B., Ch.B., PARTNERSHIP. Aged 29, single, 5 years' hospital experience, also experience as G.P. Preferably scope for surgery. Share with £1,000 or over. Capital and car available. —Address, No. 1917, B.M.A. House, Tavistock Square, W.C.1.

Cheshire. — Wanted, Partner to take over Practice gradually. Cash receipts £1,700. Small panel, capable of expansion. No night work. Hospitals and specialists available. Excellent opportunity for young man. —No. 1721, B.M.A. House, Tavistock Sq., W.C.1.

Lanc's Town.—Partnership with early succession. Receipts £1,150, excellent scope. Panel about £300. Good insurance appts. Price, half share, 1½ years' purchase, part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Lancs. Seaside Resort.—Partnership with view early succession. Cash receipts last year £1,600. Panel 900. Good house, 4 bedrooms, garden.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Partner wanted in old- established general and Consulting Practice, N.E. England. Must have surgical experience. One-third of £2 850 at 2 years' purchase. Address, No. 1914, B.M.A. House, Tavistock Square, W.C.1.

Partnership wanted by English Graduate, M.Sc., M.B., Ch.B., single, aged 34. Keen on medicine. Used to good-class practice. Special experience in mental diseases, child'ren. Own car. Capital available.—No. 1907, B.M.A. House, Tavistock Sq., W.C.1.

PRACTICES.

Wanted.—A good Practice about £1,500 p.a. within 20 miles of London. Small panel; good fees. Age of detached house with garage essential. To be bought or rented.—Address, No. 1909, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately.—Cash and panel PRACTICE in London, by gentleman who has £3 000 cash available. Can purchase immediately. House to rent if possible.—Please apply to Messrs. PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Wanted to Purchase, a MEDICAL PRACTICE in London, W. or W.5. Necessary capital available. Non-panel.—Address, No. 1906, B.M.A. House, Tavistock Square W.C.1.

Wanted by M.D.Cantab., F.R.C.S.Eng., Public School, better class PRACTICE or PARTNERSHIP, within 100 miles London, or good-class suburb. Ample capital. —Address, No. 1505, B.M.A. House, Tavistock Square, W.C.1.

Wanted, in or near London, G.P.; fair panel; income £800—£2,000. Nice house to rent. Fair cash price offered. Strict confidence. No agents.—Address, No. 1627, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—We have innumerable applicants for sound investments in all districts, incomes from £600 to £4,000, with and without panel. Correspondence invited from prospective Vendors. — THE MEDICAL AGENCY (W. H. Grant), Watergate House, 15, York Buildings, Adelphi, W.C.2

Death Vacancy, Liverpool, populous district. Good house to rent, or sell cheap. Net receipts £350, with excellent scope for increase, panel and private.—Apply MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

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For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2.

Half Share, or Practice, wanted by gentleman aged 30, married, with good Hosp. and G.P. exp. Income £1,000. Good house to rent. Can pay cash. —Address, No. 1910, B.M.A. House, Tavistock Square, W.C.1.

First-class Practice in N. Midlands for sale, held by Vendor 26 years, compact and easily worked. Income £1,600, audited annually. Panel over 1,800, unlimited scope. Suit two friends. Visits 5/- up. Cons. 3/6. Few mids. £3 3s. up. Excellent modern house, central heating, garden, garage. Efficient introd. Prem. 2 yrs.' pur. House (freehold) £3,000, half on mortg. Banker's refs. required. —No. 1803, B.M.A. House, Tavistock Sq., W.C.1.

Lancashire Town. — Old-estab. PRACTICE. Average cash receipts £1,480. Panel 1,442. Excellent house, 4 bedrooms, good garden and garage, for sale, or would rent on lease at £75 p.a. Premium—Practice—1½ yrs.' purchase, part deferred. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

London, E. — Mixed Practice. Panel and appointments £320. Income £850. Shop-fronted corner house, main road, newly decorated. Sale or rent. Great scope. Terms moderate.—Address, No. 1920, B.M.A. House, Tavistock Square, W.C.1.

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HOUSES, CONSULTING ROOMS.

Wanted by Dental Surgeon, SHARE OF DOCTOR'S ROOMS, in 1 time (preferably with a G.P.), in London, W.1 area, just east of Harley Street area. Reasonable rent, with attendance.—Address No. 1915, B.M.A. House, Tavistock Square, W.C.1.

Consulting Room to let, ground floor, front room, medium size, pleasant shop, in Welbeck Street. Rent £150; *with office £200.—Apply, Welbeck 8144; or* address No. 1615, B.M.A. House, Tavistock Square, W.C.1.

Corner House in exceptionally good position for a new practice. £1,650 freehold.—Apply, OWNER, 19, Eastbury Road, Watford.

Cavendish Square (off).—Large Building, let mostly to Medical Men. To be sold to show about 9 per cent. Price £30,000.—JOHNSTON EVANS, F.A.I., 31, Brook Street, W.1. Mayfair 5511.

Doctor's Daughter (20) attending Classes, London, would welcome girl of her own class, similarly engaged, to SHARE excellent ROOMS, Hampstead, for companionship. —Address, No. 1804, B.M.A. House, Tavistock Square, W.C.1.

For Sale, Freehold.—Croydon, residential part.—Well-built CORNER HOUSE suitable for Doctor. Small garden; room for garage.—Address, No. 1620, B.M.A. House, Tavistock Square, W.C.1.

Good Basement Rooms available for general professional use (no machinery). Wimpole St. and neighbourhood. —Langham 5952 or Box 20, SCRIPPS'S, South Molton Street, W.1.

Wanstead, overlooking Park and Golf Links.—Soundly constructed HOUSE, built by owner in 1915, 20, Blake Hall Crescent. Large entrance hall, morning room, 2 reception rooms, 5 bed., bathroom, usual offices. Garage for two cars. Large and well-stocked garden. Additional land if required.—Apply, BAYMAN, Jolnard House, Eastern Avenue, Ilford.

On N.W. Coast. — Splendid HOUSE (to rent on lease about £80 with rates) on sea front, facing S.W.; containing 12 rooms, excellent domestic offices. Good *winter climate*, exceptional educational facilities. There is nucleus of about £200 p.a.; includes small panel, established a little over two years. Vendor leaving on account of bereavement. £200 or near offer wanted for ingoing; would include certain fixtures. Suit semi-retired man wanting comfortable home and some sport (good golf, tennis, fishing, etc.), and yet a little work to do. Mids. and night work refused. —No. 1925, B.M.A. House, Tavistock Sq., W.C.1.

Piccadilly. — Consulting Rooms in Dental Surgeon's office. Exceptionally well equipped and furnished, fitted for Ophthalmic and Sunlight work. Receptionist, service, light, telephone, all inclusive £12 per month.—No. 1804, B.M.A. House, Tavistock Sq., W.C.1.

Royal Victoria and West Hants HOSPITAL, BOURNEMOUTH.
(POOLE ROAD BRANCH—66 Beds.)

HOUSE SURGEON (male, British nationality) required to commence duty end of April. Salary £120 per annum, with board, lodging, and washing. The appointment is tenable for *six months, and candidates must* be registered according to the provisions of the Medical Act. Applications, stating place of birth, with copies of three testimonials, to be sent immediately to the undersigned. Women and married men are ineligible.

GORDON M. SAUL,
March 30th, 1929. Secretary.

Royal Victoria and West Hants HOSPITAL, BOURNEMOUTH.
(BOSCOMBE BRANCH—170 Beds.)

A HOUSE SURGEON (male, British nationality) required to commence duty April 22nd. Salary £120 per annum, with board, lodging, and washing. The appointment is tenable for six months, and candidates must be registered according to the provisions of the Medical Act. Applications, stating place of birth, with copies of three testimonials, to be sent immediately to the undersigned. Women and married men are ineligible.

GORDON M. SAUL,
March 30th, 1929. Secretary.

Manchester Hospital for CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.

Applications are invited for the post of HON. ASSISTANT ANÆSTHETIST at the In-patient Department, Bowdon.
For particulars of duties apply to the Secretary.
Applications, with copies of testimonials, to be sent not later than April 15th to C. W. HUNT, Secretary, Consumption Hospital, Hardman Street, Manchester.

St. John's Hospital, Lewisham, S.E.13.

Applications are invited for the appointment of RESIDENT MALE CASUALTY OFFICER for a term of three months commencing May 1st. Remuneration £100 per annum. The successful applicant will be expected to apply for a House appointment, tenable for three months, commencing August 1st. Applications, with copies of testimonials, to reach the Secretary at the Hospital by April 12th.

St. John's Hospital, Lewisham, S.E.13.

Applications are invited for the appointment of *JUNIOR MALE HOUSE SURGEON* for a period of three months commencing May 1st. Remuneration £100 per annum. The successful applicant will be expected to apply for the Senior House Surgeoncy, tenable for three months from the conclusion of the Junior appointment. Applications, with testimonials, to reach the Secretary at the Hospital by April 12th.

St. John's Hospital, Lewisham, S.E.13.

Applications are invited for the appointment of RESIDENT MEDICAL OFFICER, tenable for 12 months from May 1st, with leave to reapply. Salary £200 per annum. Conditions of appointment may be obtained from the Secretary at the Hospital, by whom applications must be received not later than April 17th.

Surgical Dressers.
TWO REQUIRED
Honorarium of 10/6 weekly, with board, apartments, and laundry. Apply immediately to [illegible]Governor and Secretary, Leicester R[illegible]

Thakeham Union.

MEDICAL OFFICER AND PUBLIC VACCINATOR.

The Guardians invite applications from fully qualified medical practitioners for the appointment of Medical Officer and Public Vaccinator of the No. 1 District (9 parishes with an estimated population of 4,050).

The salary as Medical Officer will be at the rate of £112 per annum and the fees paid in respect of vaccinations are 8/- for each successful case, the appointment of Public Vaccinator being subject to one month's notice on either side.

The appointment (other than that of Public Vaccinator) will be subject to the Provisions of the Poor Law Officers Superannuation Act.

The person appointed will be required to attend at the houses of the outdoor patients, to supply all drugs, medicine, and appliances free (other than anæsthetics and cod-liver oil), and generally conform with the Orders of the Ministry of Health and the Guardians.

Applications, in candidates' own handwriting, stating age, qualifications, and present and previous occupations, and accompanied by copies of recent testimonials, should be sent so as to reach my office without delay.

Canvassing, either directly or indirectly, will be deemed a disqualification.

Storrington, Pulborough, Sussex. April 2nd, 1929.

PERCY AYLING, Clerk to the Guardians.

Nottinghamshire County COUNCIL.

APPOINTMENT OF SCHOOL DENTIST.

Applications are invited for the appointment of a whole-time School Dentist at a salary of £500 per annum, rising after two years' satisfactory service by increments of £25 to a maximum of £550. Travelling expenses will be paid in addition according to the scale approved by the County Council.

Candidates must be fully qualified and registered Dentists, and the person appointed will be required to perform such duties as may be from time to time prescribed by the County Education Committee, and to devote his whole time to the duties of the office. He will be a member of the staff and act under the control and direction of the County Medical Officer of Health, and required to reside in a part of the County to be approved by the Education Committee.

The appointment will be terminable by three months' notice on either side.

Application, on the prescribed form (which may be obtained on application to me), accompanied by copies of not more than three recent testimonials, should be forwarded to The County Medical Officer, Shire Hall, Nottingham, not later than April 10th.

Shire Hall, Nottingham. March 23rd, 1929.

K. TWEEDALE MEABY, Clerk of the County Council.

Stoke and Wolstanton Union.

SECOND ASSISTANT RESIDENT MEDICAL OFFICER (Male).

Applications are invited for the appointment of Second Assistant Resident Medical Officer (male) at the London Road Institution of this Union

Salary £200 per annum, with board and residence. The period of the appointment will be limited to one year in the first instance, subject to termination by one month's notice on either side.

The accommodation at the Institution is approximately 1,154 beds, including 600 hospital beds and 150 in Mental Wards. The Hospital is a recognized Training School for Nurses.

Applications, stating particulars of qualifications or degrees held, the date thereof, when taken, and experience since qualifying, together with copies of three testimonials of recent date, should be delivered to the undersigned not later than first post on Wednesday, April 10th.

Union Offices, Stoke-upon-Trent. April 2nd, 1929.

T. WOOD, Clerk to the Guardians.

Connaught Hospital for WALTHAMSTOW, WANSTEAD, AND LEYTON, Orford Road, Walthamstow, E.17. (100 Beds.)

RESIDENT HOUSE PHYSICIAN (male) required. Salary £100 per annum.

RESIDENT HOUSE SURGEON (male) required. Salary £100 per annum.

Each appointment to date from May 1st, and to be for a period of six months.

Applications, with three testimonials (or copies), should be sent to the Secretary to reach him not later than April 10th.

United Services Fund.

HEATHERWOOD HOSPITAL, ASCOT.

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from fully qualified medical practitioners (bachelor, not over 30) for the above post.

Candidates must have held some appointment in a General Hospital.

The present Hospital accommodation is 136 beds for the treatment of surgical tuberculosis and other forms of crippledom.

The appointment will be for a period of twelve months and may be extended at the end of that time.

Remuneration is at the rate of £300 per annum, together with residence, board, and laundry.

The officer appointed will be required to devote the whole of his time to the duties of the office, to give anæsthetics, etc., and generally to act under the supervision and direction of the M[illegible]

(1) age, (2) qualifications and appointments held, accompanied by three copies of recent testimonials, should be forwarded to the Secretary, Heatherwood Committee, United Services Fund, 29, Cromwell Road, South Kensington, London, S.W.7, before April 12th.

Further particulars can be supplied on application to the Medical Superintendent, Heatherwood Hospital, Ascot, Berks.

Poplar Board of Guardians.

APPOINTMENT OF TWO ASSISTANT MEDICAL OFFICERS.

The Guardians of the above-named Parish hereby give notice that they will, at their meeting to be held on April 24th next, proceed to the appointment of Two Assistant Medical Officers at the ST. ANDREW'S HOSPITAL, Devons Road, Bow, E.3, at a basic salary of £228 per annum, by two instalments to £254, thence by one instalment to £260, together with bonus in accordance with the Civil Service Award, producing at present a total commencing salary of £350, with board, lodging, and washing

The persons appointed will be required to carry out such duties as may be required of them by the Medical Superintendent of the Hospital, or the Guardians.

Special consideration will be given to candidates who hold qualifications and have had experience in up-to-date maternity work.

Form of application may be obtained from the Clerk to the Guardians, 45, Upper North St., Poplar, E.14, and must be returned, with copies of not more than three recent testimonials, not later than first post Monday, April 15th.

By Order,
45, Upper North St., Poplar, E.14.

G. BUTLER, Clerk to the Guardians.

Birmingham Public Health DEPARTMENT.

TUBERCULOSIS SECTION.

Applications are invited for the appointment of an ASSISTANT MEDICAL OFFICER from single male medical practitioners, not over 40 years of age. The duties include both Sanatorium and Dispensary work, and special experience in the treatment of Bone Tuberculosis is essential. Applicants should have been qualified for three years, and it would be a recommendation if a resident General Hospital appointment had been held.

The candidate appointed would be required to pass a medical examination, in connection with the Municipal Superannuation Scheme. The salary offered is at the rate of £450 per annum, together with board, residence, and laundry, estimated for superannuation purposes at £150.

Applications, accompanied by copies of three recent testimonials, stating age, qualifications, and experience, should be received not later than April 13th by the Chief Tuberculosis Medical Officer, 44a, Broad St., Birmingham.

Northampton Education COMMITTEE.

ASSISTANT SCHOOL DENTIST.

Applications are invited for the appointment of a fully qualified Dental Surgeon (man or woman) as Assistant School Dentist. Salary £450 per annum.

Further particulars and forms of application may be obtained from the undersigned, by whom applications should be received by not later than April 12th.

Education Office, 4, St. Giles' St., Northampton.

A. C. BOYDE, Director of Education.

Romford Union,

OLDCHURCH HOSPITAL.

RESIDENT SECOND ASSISTANT MEDICAL OFFICER.

The Guardians of the Romford Union invite applications for the appointment of a Second Assistant Resident Medical Officer (male) at their Oldchurch Hospital, Romford, which has a present accommodation of 550 beds.

Applicants must be single, and preference will be given to one who has held the position of House Surgeon or House Physician in a General Hospital.

The appointment is governed by the regulations laid down in the orders of the Ministry of Health.

The salary will be at the rate of £250 per annum, subject to deductions under the Poor Law Officers Superannuation Act, 1896, and furnished apartments, maid, rations, and laundry.

Forms of application may be obtained from the undersigned upon receipt of a stamped addressed foolscap envelope, and must be returned not later than Monday, April 15th.

By Order,
Union Offices, Romford. March 28th, 1929.

R. H. MASON, Clerk to the Guardians.

County Borough of Bootle.

ASSISTANT SCHOOL MEDICAL OFFICER and ASSISTANT MEDICAL OFFICER OF HEALTH (Woman).

Applications are invited for the appointment of Assistant School Medical Officer and Assistant Medical Officer of Health (woman) at a salary of £600 per annum, rising by £30 annually to a maximum of £750 per annum. Particulars of the duties (which include School Medical Inspection and the conduct of Maternity and Child Welfare Clinics) and forms of application may be obtained from the Medical Officer of Health, Town Hall, Bootle.

Applications, accompanied by copies only of not more than three testimonials, endorsed "Assistant Medical Officer," must be returned to me on or before April 20th.

Canvassing, either directly or indirectly, will disqualify candidates.

Town Hall, Bootle. April 2nd, 1929.

J. SPENCER TUMILTY, Town Clerk.

County of Lanark.

DISTRICT OF THE MIDDLE WARD.

COUNTY ORTHOPÆDIC HOSPITAL, STONEHOUSE. (100 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) at the above Institution. Salary £600, rising to £[illegible] by £50 biennial increments. Free board and lodging will be provided. The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

Candidates must have special experience of the treatment of *non-pulmonary* tuberculosis and of modern orthopædic methods. Experience in operative surgery is also essential.

Applications, stating age, experience, etc., accompanied by copies of not more than three recent testimonials, must be lodged with the Subscriber not later than April 22nd, endorsed "Medical Officer." Canvassing will be a disqualification.

Hamilton. March 28th, 1929.

W. E. WHYTE, District Clerk.

District Infirmary,

ASHTON-UNDER-LYNE.

(General Hospital, 200 Beds, mainly Surgical)

A HOUSE SURGEON (male) required for six months' appointment. Salary at the rate of £160 per annum, with board, residence, and laundry. Preference given to candidates with previous Hospital experience.

The Resident Staff comprises a Resident Surgical Officer and Three House Surgeons.

Applications, with testimonials, to be sent at once to the undersigned.

April 2nd, 1929.

FRANK OLIVER, Gen. Supt. & Secretary.

West Suffolk General Hospital,

BURY ST. EDMUNDS. 108 (Beds.)

Applications are invited for the post of HOUSE SURGEON (male). Duties to commence on May 1st. Salary £150 per annum, with board, residence, and laundry. Candidates must be fully qualified and registered.

Applications, giving particulars of experience and enclosing three recent testimonials, to be sent to the undersigned by April 11th.

March 29th, 1929.

EVA E. HARDWICK, Secretary.

Sheffield Union Hospital.

RESIDENT ASSISTANT MEDICAL OFFICER.

The Guardians of the Poor of the Sheffield Union invite applications for the appointment of a Resident Assistant Medical Officer at the Union Hospital, Firvale, Sheffield. The Hospital is a large separate Institution containing 840 beds, and is equipped in accordance with modern requirements, and facilities are provided for Pathological and Bacteriological work.

The staff at present consists of a Resident Medical Superintendent, a Resident Deputy Medical Superintendent, and five Resident Assistant Medical Officers, a Visiting Physician, a Visiting Surgeon, and a Visiting Radiologist. The Assistant Officer to be appointed will be required to take duty in such parts of the Hospital or at other Institutions under the control of the Board as may be directed.

Applicants must be duly registered under the Medical Acts, and qualified by law to practise Medicine and Surgery in England and Wales.

The appointment will be limited to two years, the salary being at the rate of £250 for the first year, and £300 for the second year, together with residence, rations, and other usual allowances, the salary being subject to the statutory deductions required by the Poor Law Officers Superannuation Act, 1896.

Letters of application, stating age, qualifications, and experience, together with copies of testimonials of recent date as to professional ability and personal character, to be sent to me without delay.

By Order,
LAWRENCE RICHMOND,
Clerk to the Guardians.

Union Offices, West Bar, Sheffield.
March 30th, 1929.

Hampstead General and North-West London Hospital,

Haverstock Hill, N.W.3.

APPOINTMENTS OF CASUALTY MEDICAL OFFICER AND CASUALTY SURGICAL OFFICER.

Applications are invited from registered medical practitioners for the positions of Casualty Medical Officer and Casualty Surgical Officer, vacant on May 1st next, at the Out-patient Department of the Hospital, Bayham Street, Camden Town. The salary for each appointment will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on April 20th next.

Hampstead General and North-West London Hospital,

Haverstock Hill, N.W.3.

APPOINTMENT OF A HOUSE SURGEON.

Applications are invited from unmarried medical men for an appointment of House Surgeon, vacant on May 1st next. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on April 20th next.

Royal Berkshire Hospital.

Applications are invited for the post of MEDICAL REGISTRAR. Candidates must be fully qualified and registered. The elected candidate will be appointed for the period ending on the first Tuesday in March, 1930. The post will be re-advertised annually, the elected candidate being eligible for re-election.

Applications, with not more than three recent testimonials, should be addressed to the Secretary and reach him not later than May 1st. Canvassing by or on behalf of a candidate will disqualify him.

HERMAN BURNEY,
Secretary.

Reading.
April 6th, 1929.

Royal Halifax Infirmary.

Wanted, a THIRD HOUSE SURGEON (male, unmarried [illegible] must be doubly qualified and [illegible] Medical Staff consists [illegible] and three House Surgeons [illegible] is for six months ending October 31st. Probable promotion if satisfactory. Salary £100 per annum, with residence, board, and laundry.

Particulars of duties may be obtained from the undersigned, to whom application, with copies of testimonials, should be sent not later than April 10th.

A. MIDGLEY,
Secretary.

March 25th, 1929.

Gravesend and North Kent Hospital.

JUNIOR HOUSE SURGEON.

The Committee of Management invite applications from fully qualified men for the above post, which affords excellent opportunity for Surgical and general experience, including X-ray and Casualty work.

The post is for twelve months, with possibility of extension for a further six months as Resident Medical Officer.

Salary at following scale, with addition of board, lodging, and washing:

£80 per annum for first six months;
£150 per annum for second six months;
£200 per annum for third six months.

Three weeks' holiday at end of first six months; three weeks' holiday at end of second six months, if appointed Resident Medical Officer.

Applications, with one copy of three recent testimonials, to be sent to the undersigned before April 20th.

The appointment will be vacant on May 1st.

C. E. CHAPMAN,
Secretary.

March 27th, 1929.

Metropolitan Hospital,

Kingsland Road, E.8.

There are vacancies for the following:
(a) SENIOR HOUSE PHYSICIAN;
(b) SENIOR HOUSE SURGEON;
(c) JUNIOR HOUSE PHYSICIAN;
(d) JUNIOR HOUSE SURGEON;
(e) TWO CASUALTY OFFICERS. (Males.)

Salary £100 per annum. Appointments in the first place will be for a period of six months dating from May 1st.

Candidates must possess a registered Medical and Surgical qualification of the United Kingdom.

Applications, with copies of three recent testimonials, and a certificate of ability to administer anæsthetics, should be sent to the undermentioned not later than the first post on Monday, April 15th.

Two members of the resident staff are candidates for the two Senior appointments.

HERBERT F. RUTHERFORD,
Secretary and House Governor.

Warrington Infirmary and Dispensary.

The Board of Management invite applications for the post of HOUSE PHYSICIAN (male, unmarried).

Applicants, who must be of British nationality, must be duly qualified medical practitioners.

Salary £150 per annum, with board, apartments, and laundry.

The post is tenable for 12 months, with probable promotion at the end of that time.

The Hospital has special departments—i.e., Orthopædic, Skin, Aural, Genito-urinary, Gynæcological, etc.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent in at once to the undersigned.

By Order,
HENRY L. BOOT,
Supt. & Secretary.

April 3rd, 1929.

Bolingbroke Hospital

(120 Beds.)
Wandsworth Common, S.W.11.

HOUSE PHYSICIAN (male) required. The appointment is for six months, commencing on April 20th next. Salary £120 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before April 9th.

W. S. RANDOLPH BISS,
Secretary-Superintendent.

Aberdeen Royal Infirmary.

OPHTHALMIC SURGEON.

The Board of Directors invite applications for the following appointment to the Honorary Staff, viz.: JUNIOR ASSISTANT OPHTHALMIC SURGEON.

Each candidate should submit a full statement of his qualifications and experience, and three recent testimonials. Four copies of each should be lodged with the Clerk and Treasurer, Aberdeen Royal Infirmary, 230, Union Street, Aberdeen, not later than April 26th.

Ayr County Hospital.

The Directors invite applications for the post of SENIOR RESIDENT HOUSE SURGEON (male) for period to September 30th. Salary at the rate of £100 per annum, with board and residence. Applications to be lodged with the Secretary, 2, Barns Street, Ayr, at once.

Telephone: Welbeck 2728.
Telegrams: "Ass. Hamo, London."

NURSES

MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

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(In conjunction with the MALE NURSES' ASSOCIATION),
29, York St., Baker St., London, W.1.

Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

ST. LUKE'S HOSPITAL.

FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, *Nottingham Place, London, W.1.*
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 25165.

THE

NEW MENTAL NURSES CO-OPERATION,

139, Edgware Road, Marble Arch, W.

Specially trained Nurses for Mental and Nerve cases. (All Nurses are insured under the Employers Liability Act, 1906.) Apply the Supt.

Telegrams: "Psyconurse, Padd., Lond." *Telephone:* No. 6165 Padd.

C167. PARTNERSHIP.—Large Seaport Town in Cheshire. One-third share. Receipts £2,600 per annum. Panel 3,800.

L101. PRACTICE.—In Lancashire Town, old-established. Doctor retiring. Receipts £1,500 per annum. Panel 1,475. One and a third years' purchase. Rent of house £65.

W200. PRACTICE.—Coast Town, North Wales. Receipts £1,740 per annum. Panel 700. House can be rented.

For further particulars apply to—

R. SUMNER & Co., Ltd.,
Wholesale Druggists,
40, HANOVER ST., LIVERPOOL.

Gloucester County Mental Hospital.

Required, JUNIOR ASSISTANT MEDICAL OFFICER (male). Candidates must be registered medical practitioners and unmarried. Salary £350 per annum, with board, apartments, laundry, and attendance. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909. Apply, with copies of three recent testimonials, to the Medical Superintendent.

Huddersfield Royal Infirmary.

JUNIOR HOUSE SURGEON wanted to commence duty May 1st. Salary £150 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, are invited from qualified and registered gentlemen, and should be addressed to the undersigned at the Infirmary not later than Tuesday, April 16th.

H. E. G. HALL, Secretary.

Birkenhead General Hospital.

(156 Beds.)

Applications are invited for the post of CASUALTY SURGEON (male) at a salary £100, with board and residence, to take up duties immediately.

Applications, stating qualifications, experience, and nationality, with three copies of recent testimonials, to be sent to the Secretary-Superintendent as early as possible.

Liverpool Heart Hospital.

Applications are invited for the position of HONORARY ASSISTANT PHYSICIAN to the above Hospital. Applications should reach the Secretary, Miss LEWIS, 14, Cook Street, Liverpool, before April 30th.

THE MEDICAL AGENCY

(ESTABLISHED BY J. A. REASIDE IN 1893)

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FOR SALE.

HOME COUNTIES.—DEATH VACANCY, situated within one hour's journey from London. Receipts over £1,100 p.a. Panel £450. Large house to be rented or for sale. Premium 1 year's purchase. Excellent educational facilities.

HOME COUNTIES.—NUCLEUS country PRACTICE with excellent scope for development. Receipts approx. £600 p.a. Small but growing panel. House to rent or for sale. Premium £700, or near offer.

LONDON, E.—Well-established working-class G.P., situated on main thoroughfare. Receipts approx. £850. Panel 480. Accommodation to rent. Excellent scope. Premium 1 years' purchase.

LONDON, N.—Non-panel and non-dispensing PRACTICE. Large house. Receipts approximately £1,400. Scope for panel if desired. Premium 1 years' purchase.

KENT.—Good-class practically non-panel G.P. with scope for surgery. Average receipts £1,250. Premium £1,000 cash or near offer. Excellent house.

DORSET.—Excellent NUCLEUS, with splendid scope in the near future. Receipts approx. at the rate of £200 p.a. Good house with large well-developed garden. Premium £1,400 inclusive. Suitable for semi-retired practitioner.

KENT (near London).—Old-established middle-class G.P. Detached house with garden and garage. Average receipts £1,200. Premium £1,200. Premium 2 years' purchase or reasonable offer.

BEDFORDSHIRE.—PARTNERSHIP with possible view to succession in well-established G.P. Receipts £1,300. Panel 1,750. Accommodation available. Premium for half share 2 years' purchase. Suitable to experienced man of 30 or over.

MIDLANDS.—DEATH VACANCY.—Well established middle and working-class Practice in country district. Receipts approx. £1,200 p.a. Panel 900. House available. Premium 1 year's purchase.

If the investment you are seeking is not advertised here, let us know your wants, and we will gladly forward details of others suitable to your requirements.

LONDON, W.1.—NUCLEUS Lock-up Surgery, with excellent scope for anæsthetics, etc. Premium £100.

LONDON, S.E.—Mixed G.P. situated in residential locality, with branch surgery. Excellent house to let on lease. Receipts over £1,200 p.a. Panel 560. Plenty of scope. Premium 1½ years' purchase.

LONDON, W.—PARTNERSHIP. Well established G.P. Receipts over £2,500 p.a. Panel approximately 1,800. Premium for half share 2 years' purchase. Suitable only to man of good address and experience, aged 28 to 35.

SOUTH COAST.—PARTNERSHIP in rapidly growing Seaside Resort. Receipts over £1,200 p.a. Suitable to young energetic man aged about 30. Premium for two-fifths share 2 years' purchase. Excellent scope for all round increase.

SOUTH COAST.—Old-established middle-class G.P. Splendid house, standing in own grounds, with 3 professional rooms, 3 reception rooms, 5 to 6 bedrooms, to be rented at £90 p.a. Receipts nearly £1,300. Panel 900. Premium 1½ years' purchase, plus fittings, etc.

LONDON, W.11.—Well-established mixed G.P. in residential working-class locality. Shop-fronted surgery on lease, with living accommodation over. If desired. Enormous scope. Growing panel of 160. Receipts over £420. Premium £550, to include lease, drugs, etc.

LONDON, S.E.—Well-established G.P. in thickly populated district. Large house held on lease at low rental. Receipts approx. £1,000. Panel 750. Fees 2/6 up. Premium for Practice, furniture, car, drugs, and lease £2,050.

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1. LONDON, S.E.—Mixed-class Cash and Panel PRACTICE. Receipts about £1,200 per annum. Nice house, rent £90, long lease. Vendor going abroad. Premium £2,000.
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3. SOUTH WALES.—*Half Share.*—*Industrial* PRACTICE. Total income £3,500. Convenient house, rent £65. Premium £2,000 on easy terms. District unaffected by industrial depression.
4. KENT (15 miles from Charing Cross).—Old-established Panel and Private PRACTICE. Receipts over £300. Panel 200. Convenient house 30/- weekly, long lease. Excellent opportunity young energetic doctor. Suit lady.
5. LONDON, N.W.—Old-established good-class non-panel PRACTICE. Receipts £1,600. Excellent house, garden, and garage for disposal with practice. Reasonable premium.
6. LONDON, W.—Mixed-class PRACTICE for immediate disposal. Receipts last year nearly £450. Panel nearly 200, increasing. House available. Premium £550. Excell. scope.
7. NEAR NEWCASTLE-ON-TYNE. — Old-estab. mixed PRACTICE. Receipts £750. Panel 700 patients. Good house on lease. Opposition weak. Capable much extension. Premium moderate.
8. KENT COAST.—Cash and Panel PRACTICE. Receipts £700 p.a., incl. panel 420. House on lease, rent £60. Reasonable offer consid. for quick sale. Suit lady or gentleman.
9. WANTED.—ASSISTANTS at once for Practices in London and Provinces. Duties to commence immediately.—Apply, with testimonials, to Messrs PEACOCK & HADLEY, Ltd.

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2. NOTTS COUNTY.—Panel, Colliery, and Private PRACTICE. Receipts about £450. Panel 340. Good house to rent. Garage.
3. LEICESTERSHIRE (near large town).—PARTNERSHIP (with short preliminary assistantship and ultimate succession) in residential and working-class Practice. Receipts average £1,135 p.a. Panel over 1,000. Good house.
4. BIRMINGHAM (Suburb). — Mid-Class PRACTICE. Established 3 years. Receipts £440 to £500 p.a., and scope for increase. Panel 360. Good house, garage, and garden.
5. SURREY (near Country Town). — Mixed middle-class PRACTICE. Established 4 years. Receipts £300 to £400 p.a. Panel 150. Premium £350.
6. DERBYSHIRE.—Better-class Industrial and panel PRACTICE. Receipts about £[illegible]. Reasonable premium. House to rent with option to purchase.
7. NORTH-WEST MIDLANDS — £1,600 p.a. Well established PRACTICE. Panel 1,200. Good scope. Suitable house.
8. MIDLANDS.—PARTNERSHIP. — (One-third share, £700 p.a. guaranteed).—In large Practice in healthy district on borders of nice country. Good house to rent. Garage and garden. Panel 1,950, and ample scope.

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PARTNERSHIPS FOR DISPOSAL.

*No. 8445. WARWICK.—Share worth £1,000 p.a. guaranteed. Mids. 2-10 gns. Visits from 5/-. In general Mixed Practice with Panel. House, 5 bed., etc., and Tennis Lawn, on lease.

„ 8441. HOME COUNTIES.—Hospital Town.—Average £2,800 p.a. Up to 2/5 Share for sale after short assistance, possible early succession. Appts. £90 p.a. Small Panel. Mids. 2 gns. up. Visits 3/6 up. House, 5 bed., etc., to rent.

„ 8437. SUFFOLK.—Now about £2,000 p.a. increasing. 1/2 Share for sale with early succession. Appts. about £60 p.a. Panel 2,500. Mids. 2 gns. up. Visits from 3/6–10/6. Good house, 7 bed., etc., and large garden to rent at £80.

*„ 8435. RESIDENTIAL SUBURB.—1/2 Share of over £700 p.a., early succession. Mids. 3 gns. up. Visits 3/6–7/6. Panel 400. House, 5 bed., etc., and garden, to rent. Prem. 1½ years'.

„ 8434. *SHARE worth about £700 p.a. in General Mixed Country* Practice. Panel and Appointments over £900 p.a. Visits 5/- up. Mids. 2 gns. up. Accom. to be arranged.

„ 8429. LANCASHIRE.—About £3,000 p.a. 1/3–2/5 Share for disposal, *increasing to 1/2.* Appts. over £500 p.a. *Usual Visits 5/6* and 7/6; a few higher. Panel of 450. Scope for surgery desired. Outgoing partner's house available to rent.

No. 8421. *SOUTHERN COUNTY.—Over £16,000 p.a. 1/10 Share for sale,* increasing to 1/5. Mids. 3 gns. up. Visits 5s. to 5 gns. Panel about 7,000. Partner must be F.R.C.S.Eng. and hold University degree. Choice of houses. Central surgery.

„ 8409. *HOME COUNTIES.—£4,500 p.a. 1/4 Share for disposal at* 2 years' purchase. N[illegible] Mids. discouraged. Fees 5 gn[illegible] ith view

„ 8407. SOUTH WEST OF LONDON *to Partnership in Practice of £4,000 p.a. about 2,000.* 1/4 or 1/3 share for disposal at end of year. Premium only 1½ years' purchase. Scope for surgery. Age about 30. Retiring partner's house available.

„ 8378. *SUBURBAN.—Share worth £500 p.a. Visits 5/- up.* Panel about 650. Accom. with vendor if single.

„ 8342. LONDON, S.E.—£1,800 p.a. Cash and panel of 1,845. 1/3 Share for sale. Visits 3/6 up. Very little mids. Small accom. over Surgery.

SPECIAL NOTICE.—**FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants prepared to pay part of purchase money down and balance by instalments over 7 years (on the security of a Life and Sickness Policy). Full particulars on application to Mr. Percival Turner.**

PRACTICES FOR DISPOSAL.

No. 8452. SOMERSET.—Panel and Appts. over £400 p.a. for sale. *Suitable house available. Good scope.*

„ 8451. N. WALES COAST.—About £1,750 p.a. Panel and Appts. about £400 p.a. Mids 2 to 5 gns. Visits 3/6 to £1 11s. 6d. House, 4 bed., etc. Separate Surgery to rent.

„ 8450. *LONDON SUBURB.—About £700 p.a. General Mixed PRACTICE.* Good house available.

„ 8449. SUSSEX.—DEATH VACANCY.—About £2,500 p.a. Well-estab. Country PRACTICE. Fees 2/6 to 10/-. Panel about £280. *House, 7 bed., garage, etc., good garden.* Rent £90. Introduction given.

„ 8448. N. WALES.—DEATH VACANCY.—About £1,000 p.a. Good scope for surgery. Mids. 5 to 10 gns. Visits 7/6 to 10/6. Small panel. House, 4 bed., etc., good garden. Rent £50. Prem. about £1,200, part down.

*„ 8447. [illegible]RACTICE about £800 p.a. Unopposed. [illegible] Panel about 600. Mids. 3–10 gns. 5 bed., etc., good garden, to rent.

„ 8446. KENT.—Average £1,500 p.a. Mids. 2 gns. up. Visits 3/6–7/6. Panel over 1,500. House with ample accom., etc., and large garden to rent.

„ 8444. HOME COUNTIES (Hospital Town).—DEATH VACANCY about £850 p.a. Panel and Appts. £200 p.a. Good house with 9 bed., etc., nice garden. Visits 5/- up. Mids. 3 gns. up.

„ 8439. LINCOLNSHIRE COAST.—Average £2,200 p.a. Old-established Middle and Working Class. Panel about £350. Appts. over £100 p.a. Mids. 1½–3 gns. Visits 4/- to 10/6. Choice of houses to rent at £90 and £40 respectively

„ 8438. YORKSHIRE.—Over £800 p.a. Old-established. Visits 5/- to 10/6. Few Mids. 2–5 gns. Appts. £165 p.a. Panel 250. Good house, 5 bed., etc., and large garden. Price £1,000. *Alternative house to rent.*

„ 8433. NOTTINGHAM.—DEATH VACANCY.—About £850 p.a. excluding Appts. of about £400 p.a., doubtful of transfer. Visits 7/6 up. Mids. refused. Small panel of 157. Large house, 5 bed., etc., good garden, garage, etc. Premium 1½ years or offer.

„ 8432. KENT.—NUCLEUS.—Over £600 p.a. Visits 3/6–15/-. Mids. 3 gns. Panel 450. Excellent scope. House, 4 bed., etc., and large garden to rent. Open to offers.

„ 8428. NEAR SOUTH COAST.—About £1,200 p.a. Urgent Sale. Appts. over £150 p.a. Panel worth about £425 p.a. Visits 3/6 to 12/6, a few higher. Mids. 3 to 7 gns. Good house, 6 bed., etc., large garden. Tennis, etc. Rent £80 p.a.

„ 8430. HOME COUNTIES.—About £1,600 p.a. Visits 5/- to 21/-. Small select panel. Appt. about £100 p.a. Good house, 8 bed., etc., and secluded garden.

„ 8425. SHEFFIELD.—DEATH VACANCY.—About £300 p.a., previously more. *Visits 5/9 up.* No panel or night work. Good house, 6 bed., etc. Tennis. House and practice, £2,500.

„ 8422. LINCOLNSHIRE.—About £1,000 p.a. Appts. over £10 p.a. Visits 3/6 up. Few mids. Panel 675. Good house, 7–8 bedrooms, large garden. Tennis. Prem. £1,300 or offer.

„ 8420. KENT COUNTRY PRACTICE.—About £1,030 p.a. Old estab. Appts. £55 p.a. Visits 5/- to 21/-. Panel nearly 400. Good house with 6 bed., etc. Few mids.

„ 8413. KENT.—About £250 p.a., scope for increase. Mids. 2 gns. up *(discouraged).* Visits 3/6. Panel over £80 p.a. Moderate house to rent £[illegible] p.a. Cottage Hospital

*No. 8412. [illegible] £1,000 p.a. Very little night work. [illegible] 3/6. *Good house and garage;*

„ 8411. [illegible] —About £1,100 p.a. Good class non- about £100 p.a. Mids. at glish patients. Good flat £0 down, balance by three £00.

„ 8410. EAST [illegible] —About £700 p.a. Panel [illegible] raged. Fees from 2/6 to 10/6 with some at 1 and 2 gns. Small house, large garden and garage to rent or sell. Low premium on terms.

„ 8408. HOME COUNTIES.—COUNTRY PRACTICE.—About £1,000 p.a. Panel about 400. Appts. over £50 p.a. Visits 3/6–10/6. House, 5 bed., etc. Extensive grounds.

„ 8402. LONDON, NORTH.—LOCK UP.—Now about £700 p.a. Panel over 500. Mids. 3 gns. Visits 3/6 up. Two rooms. Rent 35/- p.w. inclusive. Premium £500 or offer.

„ 8397. MIDLANDS.—Rapidly increasing NUCLEUS. £6/700 p.a. Mids. from 5 gns. Visits 3/6 to 21/-. Small panel, capable of increase. Excellent house with garage to rent. Premium £750 cash.

„ 8385. *LINCOLNSHIRE COUNTRY.—About £1,250 p.a.* Appts. £65 p.a. Panel worth about £425 p.a. Mids. 3 gns. Visits mostly 5/- and 6/-. Good house available. 6 bed., etc., to rent. *Good garden and tennis courts. Garage. Premium* £1,250

„ 8380. KENT.—Average £1,250 p.a. Mids. 7½ gns. up. Visits 7/6 to 21/-. Non-panel, non-dispensing. Good house, 5 bed., and large garden.

„ 8375. *WESTERN COUNTY.—£6/700 p.a. Unopp. Clubs and Appts.* over £100 p.a. Fees 3/6 to 12/6. Panel about £700 p.a. Good house and garden. House and practice £2,100

„ 8364. LONDON, W.—£7/800 p.a. Appts about £100 p.a. Small Panel. Visits 7/6 up. Little mids. Large house to rent.

„ 8353. *LONDON, S.E.—About £1,000 p.a. Cash and Panel. Fees from* 2/6. Panel 412. Mid. discouraged. Lock-up premises at low rental. Premium £1,000

„ 8343. SOUTH WALES.—Residential. £1,600 p.a. Panel 450. Fees 5/- to 21/-. Unique corner house, 6 bed., etc.

„ 8344. Within 12 miles LONDON, NORTH.—£1,500 p.a. Panel 800. House, 3 recep., 6 bed. Separate Surgery, etc. Over one acre garden

„ 8320. LONDON, S.E.—Nucleus. Lock-up about £216 p.a. Lady Doctor. Visits 3/6 to 5/-. Cons. 2/6 up. Two rooms on ground floor. Rent £65 p.a. Small panel. Premium 1 year's purchase.

„ 8316. LONDON, S.E.—Over 500 p.a. *Cash and Panel PRACTICE.* Panel over 600. Fees 2/6 to 5/-. Separate Surgeries. Good house available.

„ 8283. N. DEVON.—About £350 p.a. Panel 250. Visits 3/6 to 21/-. Mids. 2–10 gns.

„ 8272. DERBYSHIRE.—About £450 p.a. Panel about £100 p.a. Visits 3/6 to 21/-. Mids. 2–5 gns. House, 3 bed., etc., to rent.

„ 8203. AUSTRALIA.—Over £1,500 p.a. Visits 10/6. Mids. 3–4 gns. Panel £1,000. 9-roomed house. Premium £1,000.

„ 8160. WALES.—£1,400 p.a. Visits 7/6 up. Mid. 3–12 gns. Panel 500. Appts. £100 p.a. Semi-detached house. 4 bed., good garden. Scope for surgery

„ 8122. SOUTH COAST.—About £440 p.a. Appts. £200. Opposition slight. Mids. from 3 gns. Visiting fees 5/- up. House with 4 bed., etc., to rent.

NOTE.—*Practices marked with an asterisk have been personally investigated or visited by Mr. Turner.*

Full details of any of the above and many others for disposal not advertised will be sent free to *applicants* stating their requirements, etc., to Mr. PERCIVAL TURNER.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

12, Stratford Place,
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The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

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Telephones: CENTRAL 3925; after Office Hours: RUSHOLME 2549.
Telegrams: "LOCUM, MANCHESTER."

Practices and Partnerships for Disposal. **Full particulars sent free.**

1. HOME COUNTIES.—Partnership in Practice between £4,000 and £5,000 p.a. in first-rate residential town. Panel 1,900. One-fourth share at 2 years' purchase.

2. S. WALES.—Better-class Practice, nearly £2,000 p.a., in important and rapidly growing town. Panel 500. Large house, in own grounds, to rent. Scope for increase. Good Hospital and scope for major Surgery.

3. N. DEVON. — Partner required (after preliminary assistantship) in Practice worth £3,000 p.a. in first-rate country town Panel over 2,100. Well-equipped Hospital. One third share to suitable man at 2 years' purchase.

4. N. WALES.—Very old-established, £1,346 p.a. in small town. Panel 716. House (6 bed and dressing rooms) to rent. Premium 1½ years' purchase.

5 MIDLANDS.—Partnership in Practice £3,800 p.a. in first-rate residential county town. House (5/6 bedrooms) to rent. One-half or one-third share at 2 years' purchase. Partner should have F.R.C.S. degree.

6 SOUTH COAST.—Partnership (with preliminary assistantship) in non-dispensing Practice about £2,400 in favourite watering-place. Panel about 800. House, with 5 bedrooms, etc., to rent One-third share at 2 years' purchase.

7 NORTH WALES. — Country Practice averaging £1,250 p.a in Welsh-speaking district. Panel over 550. Centrally situated house (5 bedrooms). Premium one year's purchase.

8 LONDON, N.—Rapidly increasing Cash and Panel PRACTICE. Cash receipts last year £715. Panel 510. Shop-fronted Surgery. Rent £55. Premium £800.

9 DEATH VACANCY. — Northants. — Country PRACTICE of £1,200 p.a. Panel between 700/800. Large house, with electric light and central heating, for sale.

10 SOUTH MIDLANDS.—Partnership (after preliminary assistantship) in old-established Practice in first-rate residential district within 60 miles of London. Small panel. Share of £1,000 or £1,500 at 2 years' purchase. Graduate of Oxford or Cambridge (or London), aged about 30, and fond of surgery.

11 HOME COUNTIES. — Partnership in Practice about £2,800 p.a. in good town about 50 miles from London. Practically no panel and very little midwifery. Suitable house to rent or purchase. Partner should be experienced, and have held Hospital appointments One-third share at 2 years' purchase after preliminary assistantship.

12 SUFFOLK & NORFOLK BORDERS.—PARTNERSHIP (with view to succession) in rapidly increasing Country Practice. Receipts 1928, £1,975. Panel 2,500. One-half share at first at 2 years' purchase. Cottage Hospital.

13 S.W. OF ENGLAND.—Partnership (after preliminary assistantship) in Practice of £4,000 p.a. in town with good Hospital Applicant should preferably be English, with London degree (23-35), keen on medicine, and good anæsthetist. One-fourth or one-third share to suitable man at 1½ years' pur.

14 S. WALES. — Easily worked Panel and Contract PRACTICE over 1,000 p.a. in colliery district Small house (4 bedrooms) to rent. Premium one year's purchase.

15 N. LONDON.—Practice of between £950 and £1,000 p.a. Small panel. No midwifery. Detached corner house (7/8 bedrooms) for sale. Premium—Practice 1½ years' purchase.

16 YORKSHIRE (N.R.).—Partnership (with view to succession) in Practice about £1,000 p.a in small country town. Panel 420. Good rooms available. One-half share at moderate premium. Scope for minor surgery.

17 PEMBROKESHIRE. — Practice about £1,000 p.a. in small town. Panel 361. Well-situated house (7 bedrooms) to rent. Scope for increase. Premium £1,500. Preliminary assistantship if desired.

18 EAST ANGLIA.—Country Practice about £1,470 p.a., easy reach of important town. Panel about 1,000. Nice house (10 bed and dressing rooms), with electric light, etc., for sale. Premium 1½ years' purchase.

19 SOUTH COAST.—Non-dispensing Practice over £1,800 p.a. in residential town. No panel. Very good house in best part.

20 CHESHIRE.—Partnership in Practice over £5,000 p.a. in better industrial town. Panel 3,700. House, with 7 bed and dressing rooms, for sale or rent. Premium two-fifths share (to include share of book debts) £3,500, part by instalments.

21 WEST END OF LONDON.—Partnership in high-class non-dispensing Practice in the best part. No panel. Share worth £1,500 to £1,750 p.a. for disposal.

22 GLOUCESTERSHIRE. — Partnership (after preliminary assistantship) in Country Practice about £3,600 p.a. Applicant should be aged 28 to 30, and have held resident Hospital appointments. One-sixth share at first at 2 years' purchase.

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Practices and Partnerships for Disposal (continued).

23 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. No panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

24 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. Panel over 1,400. Partner should be good at midwifery. Premium one-third share 2 years' purchase.

25 LONDON, E.—Partnership in exceptionally old-established Practice averaging over £3,500 p.a. Good fees and appointments. Two-fifths share for disposal at 1½ years' purchase, or one-third could be purchased at first, part by instalments. Small house may be bought or rented at a moderate figure.

26 S.E. COAST.—Partnership in steadily increasing Practice about £2,500 p.a. in popular watering-place. Panel 1,800. Convenient house (5 bedrooms), garden, and garage, to rent. Premium one-half share 2 years' purchase.

27 LIVERPOOL. — Cash and Panel Practice about £865 p.a. in working-class district. Panel over 1,200. Large house to be sold. Great scope. Premium 1½ yrs.' purchase.

28 EAST COAST.—Partnership in Practice in small watering-place. Suitable house available. Share worth about £1,200 at 2 years' purchase.

29 YORKSHIRE (W.R.). — Partnership in Practice nearly £3,500 in colliery district. Panel 3,000. One-half share after a preliminary assistantship.

30 S.E. COAST. — Third Partner required in Practice £3,750 p.a. in favourite summer resort. Panel 3,976. Share up to one-third at 2 years' purchase.

31 N. WALES.—Increasing Country Practice about £1,000 in growing district, with good prospects.

32 S. MIDLANDS.—Practice over £1,700 p.a. in country town 100 miles from London. No panel, appointments, or midwifery. House (5 bedrooms), with garage and garden, for sale. Premium—Practice 1½ yrs ' purchase.

33 MIDLANDS. — Partnership in mixed Practice between £3,600 and £3,700 p.a. in suburb of Cathedral City. Panel over 2,200. Partner should be aged about 30, with Hospital experience, and able to do Surgery. Premium one-half share 2 years' purchase.

34 LONDON, N.—Partnership in Practice £3,400 p.a. in Northern suburb. Panel about 3,200. Incoming Partner must have had experience and be either English or Scotch. Premium one-third share 2 years' purchase.

35 LANCASHIRE.—Partnership in Practice over £3,700 p.a. in first-rate town. Panel 2,600. House (4 bedrooms) to rent. Premium one-half share 1½ years' purchase.

36 SOUTH OF ENGLAND.—Surgical Partner required (not over 36) with University degree and F.R.C.S. England, in sound Practice in first-rate town with good Hospital. Share of £1,500 p.a. at 2 years' purchase.

37 MIDLANDS. — Partnership in Practice £3,375 p.a. in attractive town. Panel 1,000. Well-situated house (5 bedrooms) to rent. Partner must be well qualified, preferably a Surgeon who would have chance of Hospital appointment. One-half share at 2 years' purchase.

38 S. WALES. — Practice averaging £1,627 (about £650 p.a. from panel) in good town. Modern house (6 bed and dressing rooms) for sale or rent. Premium one-half year's purchase.

39 SOUTH COAST.—Practice about £900 p.a. (including appointments about £155) in favourite watering-place. No panel or midwifery. Suitable house or flat. Premium £1,500.

40 CO. DURHAM. — Practice of £1,460 in growing suburb of seaport town. Panel 640. House (5 bedrooms) on main road to be sold or let. Premium 1½ years' purchase.

41 S. WALES.—Non-dispensing Practice in large seaport town. Receipts for past 3 years averaged £1,545 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,500.

42 GLOUCESTERSHIRE.—Country Practice averaging £535 p.a. Panel 450. Convenient (small) house, and excellent garden, 1 acre. Garage small car. Premium, house and practice, £3,000.

43 KENT. — Practice averaging £1,030 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, practice, £1,500.

44 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first-rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. Premium one-third share 2 years' purchase.

45 LONDON, E.—Rapidly increasing Lock-up PRACTICE in populous district. Receipts 1928, £780. Panel 570. Rent £50. Premium £950.

46 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

47 X-RAY and ELECTRO-THERAPEUTIC PRACTICE in important town. Receipts last year £1,050. Detached house for sale or rent. Premium £1,500.

48 N.W. ENGLAND.—Partnership in Practice about £3,500 p.a. in seaport town. Panel about 2,500 Choice of two houses to rent. Premium one-fourth or one-third share 2 years' purchase.

49 SOUTH MIDLANDS. — Practice about £1,150 p.a. in county town. Panel 485. Good house (7 bedrooms), with garage and garden, for sale. Very good Hospital.

50 GLOUCESTERSHIRE.—Country Practice averaging £654 p.a. (Elevation 600 feet). Near two good towns. Panel 500. Large house, with garden and paddock, for sale. Scope for increase. Premium £900.

51 N. WALES COAST. — Partner required in old-established non-industrial Practice. Receipts about £5,600. Panel over 2,000. Well-equipped modern house to rent. Premium for one-half share £4,000, on easy payments.

52 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 13 acres of land for sale. Premium, practice, 1½ years' purchase.

53 LONDON, S.E. — Partnership in well-established Practice of £1,900 p.a. in good residential district. Exceptionally well-built detached house (6 bedrooms) to be rented. One-half share at two years' purchase. Good scope.

54 MIDLANDS.—Country Practice of over £900 p.a. within 5 miles of good town. Panel 560. Comfortable and convenient house (5 bedrooms, etc.), with electric light, central heating, and acre garden, for sale. Premium, practice, 1½ years' purchase.

55 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. One-third to two-fifths share at 2 yrs.' pur.

56 MIDLANDS. — Practice about £350 p.a. in manufacturing village. Panel 190. House (4 bedrooms, etc.), and one acre of garden. Premium—Practice and house, £2,000.

57 ESSEX. — Practice averaging £1,216 p.a. in outlying district—30 minutes by rail from London. Panel 550. Nice detached house (5 bedrooms) for sale. Premium for practice 1½ years' purchase.

58 MIDLANDS. — Partnership in Practice over £2,000 p.a. in good town. Panel 1,800 Good house (5 bedrooms) available. Partner should be able to undertake major operations. Well-equipped hospital. One-half share for disposal.

"MEDICAL PARTNERSHIPS, TRANSFERS AND ASSISTANTSHIPS" (BARNARD & STOCKER). *Published by B.M.B., post free 12/6.*

All communications to be addressed to Mr. A. V. STOREY, General Manager.

BOVRIL MEDICAL AGENCY, Ltd.

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Under the personal direction of Dr. J. FIELD HALL and Mr. J. C. NEEDES

who have both had many years' experience as Medical Transfer Agents.

The commission chargeable in respect of any practice or partnership in Great Britain placed exclusively in the hands of this Agency has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being fifty pounds (£50).

No charge is made to Principals for the introduction of Locum Tenens or Assistants.
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1. SOUTH-WEST OF ENGLAND.—Large Thriving Hospital Town.—PARTNERSHIP.—The half or five-ninths share in an old-established better and middle-class non-panel general and surgical Practice can *be acquired by a suitable gentleman possessing the* F.R.C.S. degree. Receipts for the past three years average over £5,000 p.a. Good house, with ample accommodation, at present held on lease with *option* to purchase. Premium 2 years' purchase.
2. SOUTH-WESTERN COUNTY.—LARGE SEAPORT TOWN.—Old-established mixed-class PRACTICE averaging over £3,000 p.a., including panel of 2,100. Visits 3/6 to 10/6; midwifery (discouraged of late) 3 gns. upwards, about 30 cases yearly. Expenses light (Assistant not necessary). House contains professional accommodation, 3 sitting, 6 bedrooms, bathroom, etc. Large garden, garage. Vendor's freehold price £2,800, of which £1,200 *can remain on mortgage, or might* be rented at £96 p.a. Premium 1½ years' purchase, £3,000 down and balance by arrangement.
3. BUCKINGHAMSHIRE.—Country PRACTICE, situated in delightful district within 50 miles of London.—*Old-established mixed general* Practice, producing a steady average income of £2,000 p.a. Panel brings in about £700 p.a. Moderate expenses. Fees from 2/6 to 21/-. Under 30 midwifery cases yearly. *Exceptionally nice and* well-situated house, with 2 reception, 6 bedrooms, etc.; separate entrance to professional rooms. Large garden, with tennis court. *Price for freehold £1,500. Hunting, golf, and other sport.* Premium £3,000.
4. HOME COUNTY.—Within 40 miles of London.—In small Village (with large surrounding population) in pleasant district, old-established *mixed and increasing* PRACTICE, worth last year *nearly £3,600*, including Union and Vaccination over £100, and panel producing over £1,150. Railway station in place. House contains surgery and waiting rooms (separate entrance), 2 reception, 4 bedrooms, bathroom, etc., large garden. Gas, electric light available. Price for freehold £2,500, part mortgage. Premium 1½ years' purchase. Good society, sport, etc. Vendor keeps an Assistant, but investment would admirably admit of taking a partner later on, as houses available.
5. DEATH VACANCY.—NORTHANTS.—Country district, near large town.—Mixed-class PRACTICE, producing about £1,200 p.a., including panel of 300. Fees 3/6 to 10/6, with medicine extra. *Midwifery 2 to 5 guineas, about 20 cases yearly. Excellent* well-built house, with 3 reception, 10 bedrooms, etc. Garden, garage. Price for freehold £2,500, £1,500 of which on mortgage. Hunting, *shooting*, fishing, etc. Schools within reach. *Premium one year's* purchase, or near offer.
6. KENT.—COAST TOWN.—Small, but increasing middle and working-class PRACTICE, producing for last 12 months nearly £600. Panel of 560. *Visits 3/6 upwards. Not much midwifery at from £3 3s.* Double-fronted eight-roomed house, with three-quarters of an acre of garden. Price for freehold £1,400. Premium £900.
7. *DEATH VACANCY—WEST MIDLANDS, CATHEDRAL CITY.—Old-*established good mixed Practice, producing for last 12 months about £900, including panel of over 1,000. Fees 3/6 to 10/6. Midwifery from 3 gns. Good house situated in best part of town, with 2 reception, 4 bedrooms, etc. Garden. Available on rent or by purchase; or if single, purchaser could board with widow. Sport of all kinds, and good schools. Offers invited.
8. LONDON, WEST END.—PARTNERSHIP.—A one-fourth or one-third share is for disposal in an old-established good-class non-panel, non-dispensing Practice. Net income of share £1,120. Fees one guinea upwards. Very little midwifery from 31 guineas. *Suitable flat* available for bachelor, or if married purchaser could choose his own place of residence. Premium for one-fourth share £2,250.
9. PARTNERSHIP.—SOUTH COAST.—In a popular and favourite watering-place, the third share (to commence) of an *old-established* mixed-class Practice, *offering great* scope for increase, is for disposal. Cash receipts nearly £1,900 p.a., including panel (increasing) of over 1,150. Visits 3/6 upwards. About 30 cases of midwifery. Eight-roomed house, with garden. Price for freehold £1,450, of which at least £1,000 can be obtained on mortgage. Premium 2 years' purchase.
10. SOUTH OF ENGLAND.—*In a pleasant town (pop. 11,000) within* 5 miles of favourite watering-place, old-established mixed-class and increasing PRACTICE worth nearly £1,300 last financial year, including transferable appts. and panel of 880. Excellent family *residence, standing in its own grounds (tennis court, flower garden,* etc.), with ample accommodation. Held at present on lease (2½ years *to run) at £90 p.a., and can eventually be bought for £1,700 or less.* Premium £2,040, to include drugs, fittings, some furniture, etc.
11. PARTNERSHIP.—SOUTH OF ENGLAND.—The two-fifths share (producing an income of at least £1,300 p.a.) can be acquired by a suitable gentleman in an old-established connection situated in an attractive town near the sea. Appts. and panel held. Visits 5/- upwards, medicine extra. Very little midwifery. Nice house available, held on short lease, but can be purchased. *Excellent educational facilities, and sport of all kinds. Premium 2 years' purchase.*
12. SOUTH-WEST OF ENGLAND.—PARTNERSHIP.—A one half share in a very old-established Practice situated in an attractive small town, amidst beautiful surroundings, and within easy reach of the coast. *Gross cash receipts for the past year over £2,900.* Panel of 1,218, which, together with appts., brings in about £900 p.a. Moderate expenses. Visits 2/6, plus mileage and medicine 2/6 and 3/6 extra. *Very suitable house, with 3 reception, 4 bedrooms, and usual* offices. Garden. Price for freehold £750, of which £350 on mortgage. Premium 2 years' purchase.
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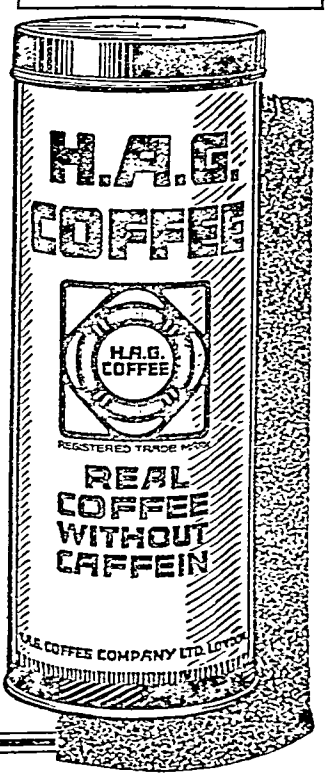

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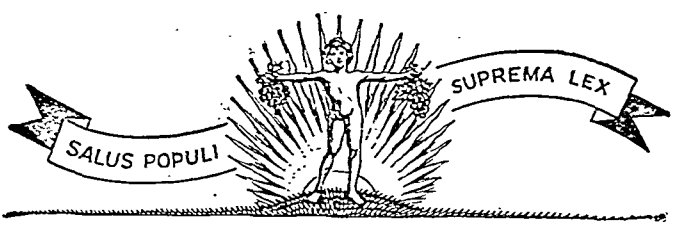

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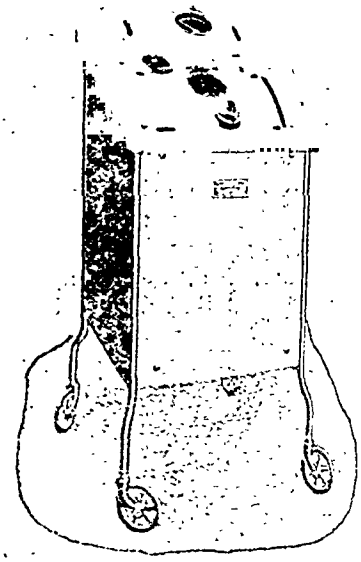

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A group of medical men have agreed, on completion and equipment of the Clinic, to take leases of consulting rooms and other premises in the building.

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While there will be suites of rooms to meet the wishes of the wealthy classes, there will also be rooms where the total charges made will be based on a scale to accommodate patients with moderate means.

It is further intended that the fees quoted for accommodation in this Nursing Home shall so far as possible be inclusive. No gratuities to the staff will be permitted.

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In order to secure close co-operation with the Medical Profession, there will be a Committee of Medical Consultants, who will act in an honorary advisory capacity to the Board of Directors.

It is intended that a representative of the medical group should be invited to join the Board after allotment.

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Receipts based upon 85 per cent. occupancy, which is considered conservative by medical advisers, rents, sundry fees, etc.	£133,000
Outgoings, viz., expenses of Clinic and Nursing Home, mortgage interest and premium on endowment policies for redemption of mortgage	87,600
Estimated net income available for dividend (subject to income tax and reserve)	£35,400

equivalent to 20 per cent. on an issued capital of £175,000.

The maturity of the endowment policies in twenty-five years will redeem out of profits £180,000 of the capital cost of the building, and after that time the Company's revenue will be relieved of the mortgage interest charge and premiums on the policies, together amounting to £15,300 per annum.

The minimum subscription on which the Company may proceed to allotment is as fixed by the Company's Articles of Association 7 Shares, but as the whole of the shares now offered for subscription have been underwritten under Contract (9) below the Directors will proceed to allotment on the closing of the list.

The Articles of Association provide as follows:—

The qualification of a Director shall be the holding of 100 shares in the Company. Any Director requiring a qualification may act before acquiring his qualification, but shall, if he accepts office, be bound to become the registered holder of the same within two months after his appointment, failing which he shall vacate office.

The Directors shall be paid out of the funds of the Company by way of remuneration for their services such sum as after paying and providing for Income Tax (but not Supertax) in respect of such remuneration according to the rate for the time being current will secure to the Chairman a net sum at the rate of £500 per annum, and to each other Director a net sum at the rate of £350 per annum. The Directors' remuneration aforesaid shall be deemed to accrue *de die in diem*. The Directors shall also be paid out of the funds of the Company by way of further remuneration for their services such further sum or sums as shall from time to time be determined by the Company in General Meeting, and such further remuneration shall be divided among them in such proportions and manner as the Directors by agreement may determine, and in default of such determination equally between them. In addition to the aforesaid remuneration the Directors shall be paid such reasonable travelling, hotel, and other expenses as they may incur in going to, attending, and returning from meetings of the Board, or of Committees of the Board, or General Meetings of the Company, or which they may otherwise incur in or about the business of the Company.

If any Director shall go or reside abroad on the Company's business or otherwise perform services, including service on a Committee of Directors, and whether of a temporary or continuing nature, for which, in the opinion of the Board, his ordinary remuneration as a Director may be inadequate, the Board may arrange with such Director for such special remuneration for the said services, either by way of salary, commission, or the payment of a stated sum of money or otherwise as they shall think fit, such special remuneration to be of such amount and to be payable during any period or periods, and to be in addition to any remuneration to which such Director would be entitled under the provisions of the last preceding Article, or otherwise as the Directors in their absolute discretion think fit.

The Directors may from time to time appoint one or more of their body to be a Managing Director or Managing Directors of the Company at such remuneration, either by way of salary, or commission on or participation in profits, or by any or all of these modes, as the Directors may determine, and either for a fixed term, or without any limitation as to the period for which he is or they are to hold such office, and may, subject to the terms of any contract between him or them and the Company, from time to time remove or dismiss him or them from office, and appoint another or others in his or their place or places.

The Directors may give to any officer or other person employed by the Company a commission on the profits of any particular business or transaction or a share in the general profits of the Company, such commission or share of profits to be treated as part of the working expenses of the Company.

A Director may hold any other office or place of profit in the Company in conjunction with his Directorship, and may be appointed thereto upon such terms as to remuneration, tenure of office and otherwise as may be arranged by the Directors, and a Director of the Company may be or become a Director of any company promoted by this Company or in which this Company may be interested as Vendor, Shareholder or otherwise, and no such Director shall be accountable for any benefits received as Director or member of such company.

The following Contracts have been entered into:—

(1) Memorandum of Terms, dated 11th May, 1925, between Colonel Edward Blount, C.B.E., of 23, Queen Anne Street, Cavendish Square, London, on behalf of the Right Honourable Thomas Evelyn Baron Howard de Walden and Seaford of 37, Belgrave Square, in the County of London, and F. G. Minter, of Ferry Works, Putney, providing for the grant of a Lease by Lord Howard de Walden of the site above referred to at the before mentioned annual net rental. Such Memorandum of Terms also provides as a condition of the grant of such lease that the proposed Lessee shall erect and construct the works mentioned in such Agreement to the satisfaction of the said Colonel Blount.

Lord Howard de Walden has through the said Colonel Blount signified his willingness to allow the Company to erect and construct in lieu of such works the building proposed to be erected and constructed by the Company as above mentioned subject to the said Colonel Blount first approving the final drawings and specifications.

(2) Dated 10th November, 1926, Memorandum of Transfer of the above Terms (endorsed thereon) from the said F. G. Minter to Major Arthur Frederick Vigor.

(3) Dated 28th April, 1927, Letter from the said Major Arthur Frederick Vigor to Christopher William Lucas.

(4) Dated 15th March, 1929, between Gerald Edmonds Compston of the first part, Alfred Ernest Webster of the second part and Major Arthur Frederick Vigor of the third part.

(5) Dated 8th April, 1929, between Christopher William Lucas, of 8, Manor House, Marylebone Road, London, and Major Arthur Frederick Vigor, of 57, Queen's Road, St. John's Wood, London, N.W., of the one part, and the Company of the other part, for the sale to the Company by them of the benefit of the Memorandum of Terms (No. 1 above) in consideration of the payment by the Company of £11,000, as to £7,250 to Christopher William Lucas (of which £3,500 is stated to have been expended for rent or otherwise in connection with the said Memorandum of Terms), and as to £3,750 to Major Arthur Frederick Vigor. The Company are also to indemnify such Vendors in respect of rent and outgoings as from the 11th October, 1928.

(6) Dated 8th April, 1929, between the Company of the one part and Humphreys Limited of the other part.

(7) Dated 8th April, 1929, between the Company of the one part and Robert Hugh Spencer of 2, Park Mansions, St. John's Wood, N.W., of the other part, providing for the grant to him or his approved nominees, on the completion and equipment of the building proposed to be erected and constructed by the Company, of a lease or leases (for the then unexpired residue of the term of 99 years (less one day) from the 6th July, 1926, in consideration of the payment to the Company of a premium of £60,000 and an aggregate annual rental of £750) of 30 consulting rooms, part of such building together with the use of waiting rooms and other premises in connection therewith and other amenities usual in the subletting of consulting rooms, including the provision of laboratories at a reasonable rent and for a term to be agreed.

(8) Dated 8th April, 1929, between Townsend and Ridsdel Limited of the one part and the Company of the other part, whereby the Company agrees to pay to Townsend and Ridsdel Limited a fee of £4,500 in consideration of the services of the latter in connection with the formation and incorporation of the Company and negotiating the arrangements with Messrs. Humphreys Ltd. and the Equity and Law Life Assurance Society.

(9) Dated 8th April, 1929, between the Salisbury Trust Limited of the one part and the Company of the other part, whereby the former agrees to subscribe or find responsible subscribers for the above issue of 175,000 shares for an underwriting and overriding commission payable by the Company of 3 per cent. and 1 per cent. respectively on the nominal amount of such shares.

Various sub-underwriting agreements have been entered into to which the Company is not a party.

(10) Dated 8th April, 1929, between the Company of the one part and the Salisbury Trust Limited of the other part, whereby such Trust agrees (*a*) to supervise and attend to the advertising, circulation and distribution of this Prospectus and to make all necessary arrangements with bankers, brokers and others for dealing with this issue in consideration of the payment by the Company to such Trust of a fee of one thousand guineas, and (*b*) to bear and pay the preliminary expenses of the Company down to the first general allotment of the Company's shares (excepting underwriting and overriding commission, brokerage and *ad valorem* duty on the sale to the Company and the fee payable under contract (8) above), in consideration of the payment by the Company to such Trust of the sum of £10,000.

(11) Dated 26th March, 1929, leter from the Equity and Law Life Assurance Society to the Company, providing for the advance by the Insurance Company as above mentioned.

(12) Dated 8th April, 1929, letter addressed by the Company to the Equity and Law Life Assurance Society accepting the terms of the last-mentioned letter.

(13) Dated 8th April, 1929, between the Company and Allan Hepworth for the appointment of the latter as Managing Director during construction of the Building and preliminary organisation period up to the date of opening at a fee of £1,500 and thereafter upon terms to be agreed.

Captain H. S. M. Harrison-Wallace, one of the Directors, is a Director of Townsend & Ridsdel, Ltd., and holds one share in that Company out of an issued capital of 5,000 shares of £1 each, and is also entitled to a participation of 6 per cent. in the net annual profits of Townsend & Ridsdel, Ltd.

The following Directors have respectively sub-underwritten Shares of this issue as follows:—Mr. Allan Hepworth 1,000 shares, Mr. B. H. Binder 500 shares, and Captain Harrison-Wallace 500 shares, each receiving therefor a commission of 3 per cent.

The preliminary expenses (excluding underwriting and overriding commission brokerage and *ad valorem* duty on the sale to the Company and the fees payable under Contracts (8) and (10) above) are estimated at £10,000.

A copy of the Memorandum of Association of the Company, with the names, addresses and descriptions of the signatories, is printed on the back and forms part of the Prospectus.

A brokerage of 3*d.* per share will be paid on all shares allotted in respect of public applications bearing the stamp of any Broker, Banker or other authorised Agent.

Applications for Shares should be made on the Form accompanying this Prospectus and forwarded with the amount payable on application to the Bankers, Lloyds Bank Limited, 20, King William Street, London, E.C., or any Branch of the Bank. If no allotment is made the application moneys will be returned in full, and where partial allotment is made the surplus application moneys will be credited in reduction of the amount payable on allotment, and any excess returned to the applicant.

Interest at the rate of 10 per cent. per annum may be charged on instalments in arrear, and failure to pay any instalment when due will render the shares and the previous payments liable to forfeiture.

Copies of the Memorandum and Articles of Association and of the above-mentioned Contracts can be inspected at the offices of the Solicitors to the Company at any time during business hours on the days on which the subscription list remains open.

Prospectuses and Forms of Application can be obtained at the registered office of the Company or from its Bankers, Brokers, or Solicitors.

Dated 8th April, 1929.

This Application Form may be used.

FORM OF APPLICATION FOR SHARES.

To the Directors of THE LONDON CLINIC & NURSING HOME LIMITED,

GENTLEMEN, 411-19, SALISBURY HOUSE, LONDON WALL, E.C.2.

Having paid to your Bankers the sum of £....., being a deposit of 2s. 6d. per Share payable on application for..... Shares of £1 each in the above-named Company, I/we request you to allot to me/us that number of Shares and agree to accept the same or any less number that you may allot to me/us upon the terms of the Company's Prospectus, as filed with the Registrar of Joint Stock Companies, and the Memorandum and Articles of Association of the Company, and I/we undertake to pay the sum of 7s. 6d. per Share on Allotment, and the balance as provided by the said Prospectus, and authorise you to place my/our name(s) on the Register of Members of the Company in respect of the Shares allotted to me us.

PLEASE WRITE DISTINCTLY

Usual Signature .....

Surname (in Block Letters) .....

Christian Name(s) .....

Address (in full) .....

Date ..... *Profession or Occupation* .....

(A Lady should state whether she is a Spinster, Married Woman or Widow).

This form must be filled up and sent with remittance to Lloyds Bank Ltd., 20, King William Street, London, E.C.3, or to any of its Branches.

Cheques should be made payable to "The London Clinic and Nursing Home Limited," or "Bearer" and crossed "Not Negotiable." If altered from "Order" to "Bearer" the alteration should be signed by the Drawer.

HOUSE PURCHASE

The House Purchase Scheme of the Medical Sickness, Annuity, & Life Assurance Society, Ltd., enables you to purchase Your Own House by easy instalments.

Up to 80% of the Purchase Price lent on approved houses.

Interest 5½%

Repayment over 10, 15, or 20 years by an Endowment Assurance Policy.

Cost of survey and mortgage deed borne by the Society.

For fuller particulars apply to the Manager and Secretary.

The MEDICAL SICKNESS, ANNUITY, & LIFE ASSURANCE SOCIETY, Ltd.

300, HIGH HOLBORN, LONDON, W.C.1.

Ask for Leaflet "B 16."

THE CIVIL SERVICE CO-OPERATIVE TRUST, LIMITED.

Directors:
Sir HENRY J. GIBSON, K.C.B. (Chairman), late Comptroller and Auditor General.
D. H. BOGGIS-ROLFE. Major L. Sr. JOHN COLLEY. A. CARSON ROBERTS. J. CLIFFORD ROWE, J.P. Mrs. A. SAMSON.
Auditor: Sir GILBERT GARNSEY, K.B.E. (Public Auditor, appointed under the Industrial and Provident Societies Act, 1893).
Bankers: BARCLAYS BANK, LIMITED.

You are invited to become a Shareholder of this Investment Trust. As its title implies, it was formed with the particular view of providing a sound medium for the investment of the savings of Civil Servants, but there is no restriction of class, and any person may become a Member. A number of Medical Practitioners are Members.

This Trust possesses a Board of Directors which should give the Members complete confidence that there is no unsound treatment or waste of funds. It includes men of experience and distinction in finance, in the special work of Investment Trusts, the investigation of securities and accounts, and the advising of Companies, Trustees and individual investors upon their investments.

The Civil Service is represented by three men who have held the leading posts in the audit and supervision of our National, Local Government, and National Insurance accounts respectively.

As in the case of any good scheme for combined investment, the Trust provides for a good return and the prospect of an increasingly high yield with a degree of safety not obtainable by direct investment. The funds are invested in a large number and great variety of securities. The individual Shareholder, therefore, in respect of his one small holding is effecting a sort of insurance by spreading his risks over a large number of concerns.

No deduction of Income Tax is made from the dividends. Hence Shareholders are freed from the trouble and the risk of loss connected with tax reclaims. Shareholders liable to make Income Tax returns must of course disclose these dividends.

The Shares of the Trust are all of one class and of 2s. denomination with 1d. a share entrance fee. The smallest subscription allowed is of 10 shares, costing £1 0s. 10d., and the largest of 2,000 shares, costing £208 6s. 8d. Any sum between these two limits may be subscribed at the same rate in units of £1 0s. 10d. (10 shares), until the entrance fee is raised. Investment at the minimum rate is still available. Shares rank for dividend as from the first day of the month following the date on which they are allotted.

The Board is prepared to facilitate the sale of any shares of which a Member may desire to dispose so that the seller may, so far as practicable, benefit by any enhanced value.

The Trust was registered October, 1928, and did not start active existence until 25th January, 1929, since when it has had no blank day in the matter of subscriptions.

THIS APPLICATION FORM MAY BE USED. (15)

To the Directors of **THE CIVIL SERVICE CO-OPERATIVE TRUST, LIMITED,**
341, WINCHESTER HOUSE, LONDON, E.C.2.

I, the undersigned, hereby apply for.....Shares of 2s. each in the above-named Trust, subject to the Rules of the Trust. I enclose a remittance for £.....:.....s.....d., being payment in full for such Shares, together with an entrance fee of 1d. per Share, and I agree to hold the same or any lesser number which you may allot me.

FULL NAME..... *(in block letters)*

ADDRESS.....

Description of Occupation..... *Date*..... *Usual Signature*.....

97th Annual Meeting

British Medical Association

MANCHESTER

JULY 22nd to JULY 26th, 1929, inclusive.

THE

ANNUAL EXHIBITION

OF

SURGICAL INSTRUMENTS and APPLIANCES,
DRUGS, FOODS, BOOKS, Etc.,

will be held in the

City Exhibition Hall, Deansgate, Manchester

EXHIBITION HOURS

Mon., July	22nd.	2 p.m. to 6 p.m.
Tues., ,,	23rd.	9 a.m. to 6 p.m.
Wed., ,,	24th.	9 a.m. to 6 p.m.
Thurs., ,,	25th.	9 a.m. to 6 p.m.
Fri., ,,	26th.	9 a.m. to 6 p.m.

FORMAL OPENING BY PRESIDENT-ELECT

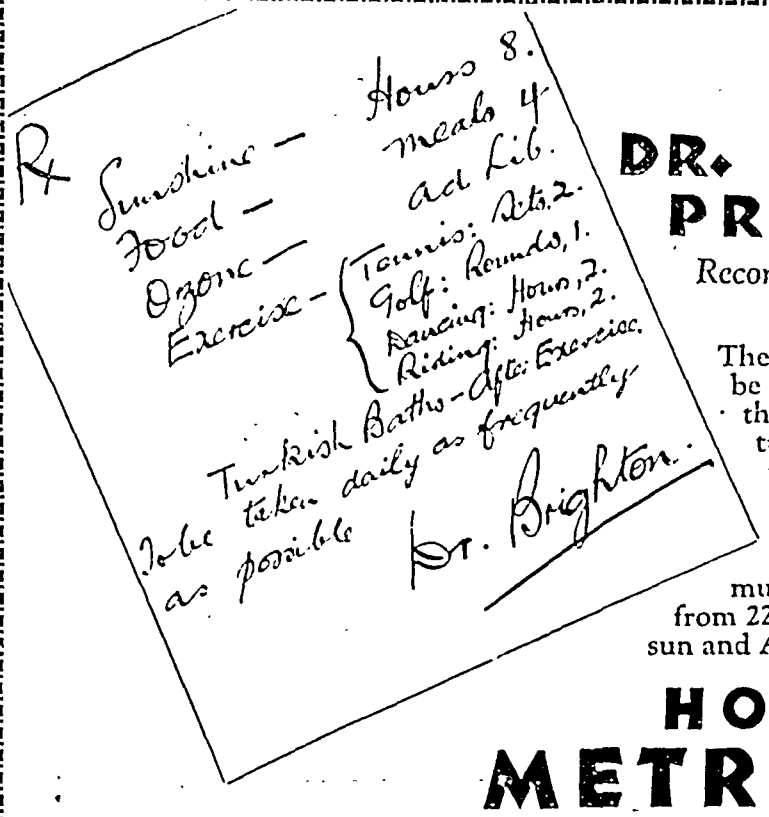
The Exhibition will be formally opened by the President-Elect, accompanied by other Officers of the Association and the Members of the Representative Body, on Tuesday, July 23rd, at 9 a.m.

Reception Room and Information Bureau.

The Reception Room and Information Bureau will also be situated in the CITY EXHIBITION HALL, where all Members will register their attendance at the Meeting, obtain all tickets for functions, and receive information in connection with the Meeting.

Plan of Exhibition, with full particulars, now available.

Apply, L. FERRIS-SCOTT, F.C.A., *Financial Secretary and Business Manager*, British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1.



DR. BRIGHTON'S PRESCRIPTION

Recommended for recuperation after Winter's illness

The conditions of this prescription can be fulfilled admirably whilst staying at the Metropole, Brighton. In the Restaurants may be obtained the best of well cooked food. There is a tennis court in the grounds with a professional in attendance. Dancing. Turkish Baths in the Hotel. Minimum inclusive rate for one week's stay from 22/6 per day (excluding Easter, Whitsun and August Bank Holiday)

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The Gordon Hotels Ltd
Managing Director Francis Towle

X-RAY AND ELECTRO-MEDICAL APPARATUS

Expert opinion given on Radiographic and Electro-Therapeutic Installations to Medical Practitioners, Hospitals, Municipal Authorities, etc.

Full particulars and catalogues on application.

The "SOLUS" Electrical Co.

X-Ray Specialists

100, JUDD STREET,
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'Phone: Terminus 5361 (2 lines)

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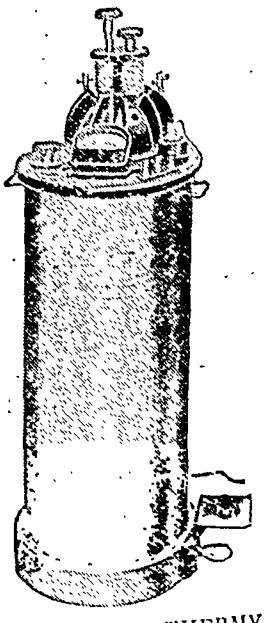
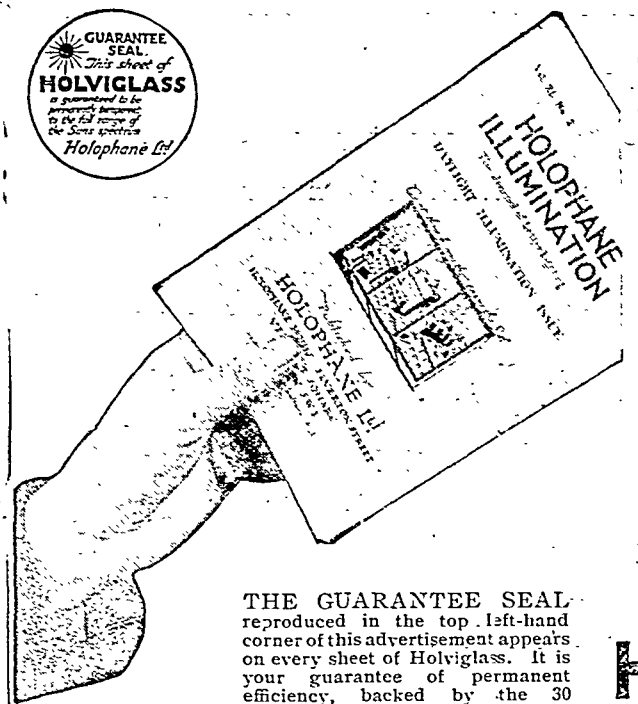


"SOLUS" DIATHERMY



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THE

TRUTH ABOUT ULTRA-VIOLET RAY GLASS

is fully explained in the "Daylight Illumination" issue of *Holophane Illumination*, a free copy of which is offered to every reader of this paper.

In this issue the whole subject is fully discussed and a detailed description given of HOLVIGLASS, the new and improved ultra-violet ray glass which is sold under a *definite guarantee of permanence.*

Write for your copy *to-day* (sent free and post free).

HOLOPHANE LTD., 63 ELVERTON ST.
VINCENT SQUARE, LONDON, S.W.1.

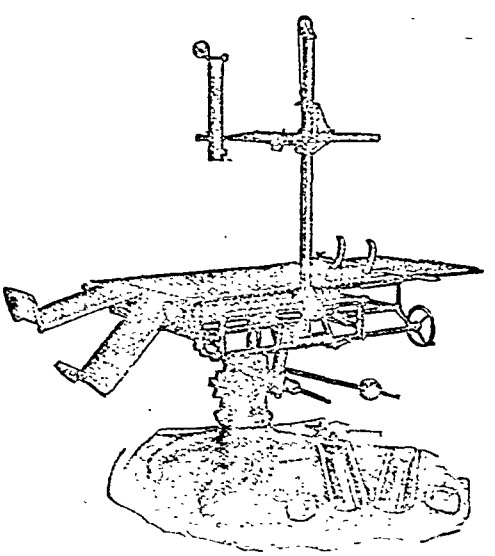
Glaze with

HOLVIGLASS

"health as well as light"

X-RAY UROLOGICAL TABLE

KING'S COLLEGE HOSPITAL PATTERN



This Table combines the essential features of a Urological Examination Chair, Operating Table and Radiological Couch, and, moreover, permits of Radiography in both the A.P. and lateral positions without moving the patient.

Full particulars on request

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Sub-Office: 72 WIGMORE STREET, LONDON, W.1
Representatives in the provinces and abroad.

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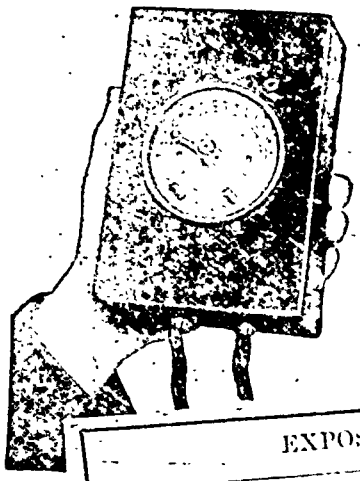
Without previous experience— you can make your own Radiograms!



THERE are uses for X-rays in almost every practice. No longer need the medical man be without. The "METALIX-PORTABLE" is within the reach of every practitioner, and successful radiograms can be taken without fuss or bother. Nor are the advantages of X-ray diagnosis confined to the consulting room alone. Wherever there is electric light—there you can use the "METALIX-PORTABLE."

EXPOSURE TABLE.

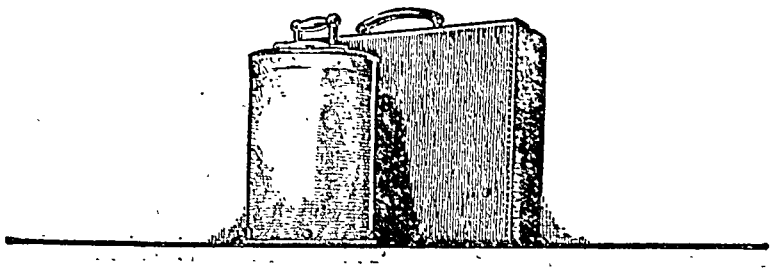
Subject.	Intensifying Screens.	
	None.	Two Screens.
Hand	2 secs.	—
Elbow	3 ,,	—
Foot	4 ,,	1 sec.
Tibia	5 ,,	1 ,,
Shoulder Joint	9 ,,	1½ secs.
Cervical Vertebræ ...	9 ,,	1½ ,,
Knee Joint	—	1½ ,,
Skull (lateral)	—	6 ,,
Hip and Pelvis	—	6 ,,
Chest	—	1 ,,
Teeth (extra-oral) ...	—	3 secs.
Teeth (intra-oral) ...	1 sec.	—

When not in use the "METALIX-PORTABLE" stows away to form two convenient packages. The work of erection takes only two minutes, whilst the control is of the simplest possible form.

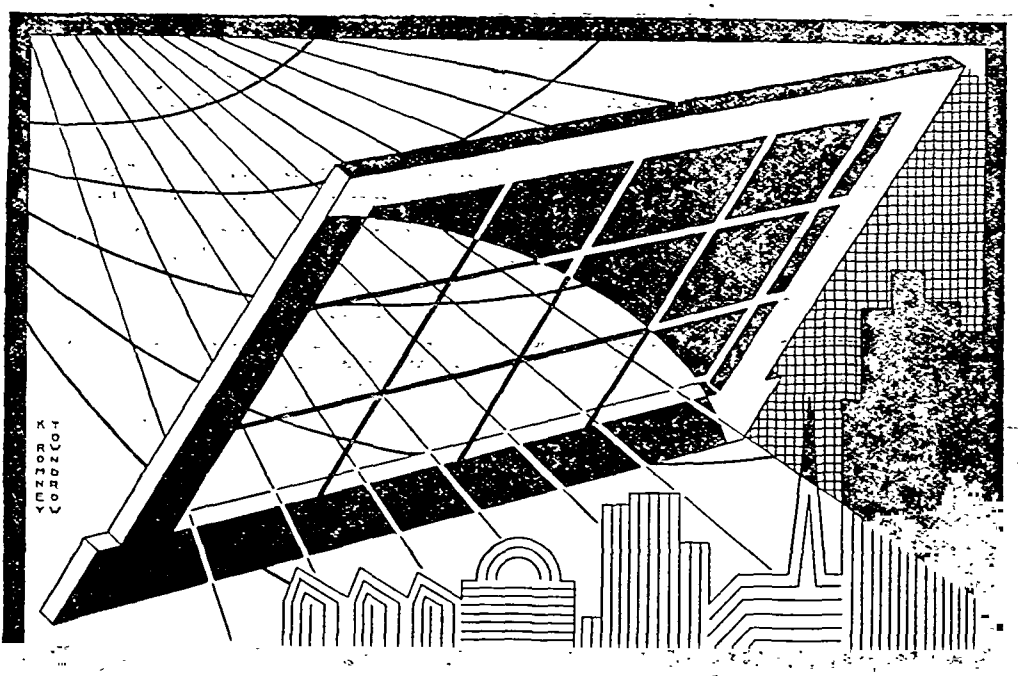
There are no dangers due to exposure to unwanted radiation, and whilst in operation the apparatus is absolutely shockproof. A postcard will bring you full particulars, or we will gladly arrange a demonstration.

PHILIPS

METALIX-PORTABLE



PHILIPS LAMPS LTD. (X-RAY DEPT.), PHILIPS HOUSE, 145, CHARING CROSS ROAD, LONDON, W.C.2



HEALTH THROUGH TOWN WINDOWS

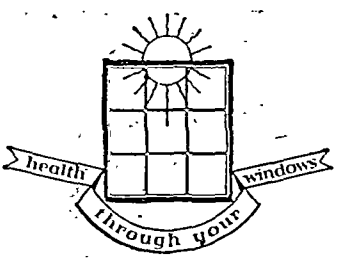
Does the smoke pall shut out the ultra-violet rays?

It has been said that glass which admits the ultra-violet rays is of little use in towns since the effective rays are stopped by the pall of smoke which hangs over all industrial areas.

The regular records now being taken of the measurements of ultra-violet light in certain cities, provide convincing evidence of the presence of biologically active ultra-violet rays in sufficient proportion to be of the utmost value to the health of the town dweller.

The "Vita" Glass window offers a practical method of utilising the smaller amount of ultra-violet light available in towns. It is being used in smoky cities with marked beneficial effects to those who live and work indoors.

Some important data, collected from recent research work relative to smoke and ultra-violet energy has been published by the "Vita" Glass Marketing Board. A copy of this pamplet, entitled "Are the Ultra-violet Rays Present in Towns?" will be sent to any medical man on request. Write to the "VITA" GLASS MARKETING BOARD, 9, Aldwych House, London, W.C.2.



"Vita" Glass is obtainable from local Glass Merchants, Plumbers, Glaziers or Builders.

"Vita" is the registered Trade Mark of Pilkington Brothers, Limited, St. Helens.

V. 155

WYLEYS LIMITED WHOLESALE DRUGGISTS **COVENTRY** Established 1750.

ELIXIR BROMO-VALERIAN CO.

Free from any disagreeable taste or odour.

Each fluid drachm (4 c.c.) contains:

Strontii Bromidi	5 gr.	Tinct. Adonis Vernalis	5 m.
Tinct. Valer. Deodorat.	10 m.	Tinct. Visci Alb.	5 m.

Useful for functional nervous affections, particularly in controlling epileptic seizures.

PRICE 5/- lb.

FULL LISTS ON APPLICATION.

ANTISEPTIC CREAM
(Hewlett's).

An emollient healing cream for BLEPHARITIS, ACNE, ECZEMA, and all abrasions and irritation of the Skin.

Its soothing and healing properties are most marked.

In enamelled collapsible tubes, 18s. doz., or 1-oz. pots, labelled only "The ointment to be used as directed," 10s. 6d. doz.

In bulk, 5-oz., 10-oz., 22-oz., 40-oz., 4½ lb. & 7½ lb. pots, 5s. 6d. lb.

Introduced and Prepared only by

C. J. HEWLETT & SON, Ltd., 35 to 42, Charlotte Street, London, E.C.2.

Visit Our STAND No. 5 AT THE FIFTH INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY, TAVISTOCK SQUARE, **MAY 6th–10th.**

BY APPOINTMENT TO H.M. THE KING

"CHAMPAGNE OF ENGLAND"

Gaymer's CYDER

GAYMER'S WAS FIRST SHOWN AT THE BRITISH MEDICAL ASSOCIATION EXHIBITION OF 1898.

WM. GAYMER & SON, LTD., ATTLEBOROUGH, NORFOLK.

Prescribed in numerous cases *of nervous and heart disorders, also rheumatic conditions, etc.*

The active substances of the extracts from cone bearing pine trees (Pinus silvestris, Abies alba, Pinus montana) is found in an oily substance commonly known as pine oil.

Novopine Sparkling Pine Bath Tablets contain this oil in a convenient form and an effervescence is introduced to facilitate successful solution in the bath. Their therapeutic value lies in their action on skin, lungs, and heart. For, in addition to the direct action through the pores of the skin, the ozonic aroma given off is automatically inhaled during the taking of a hot bath.

Besides their general cleansing and health-giving properties, they have been found especially beneficial as a remedy against nervous heart diseases and kindred disorders.

Samples on request from Natural Products Ltd., 40, Furnival Street, E.C.4.

Novopine
Sparkling Pine Bath Tablets

PHYSIOLOGICAL TREATMENT OF CONSTIPATION

Total extract of the glands of the intestine Biliary Extract-Agar-Agar-Selected Lactic Ferments

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LABORATOIRES RÉUNIS LOBICA, 11, Rue Torricelli, PARIS

ACKERMAN-LAURANCE

"Brut-Royal"

"may be recommended with every confidence. By reason of its very low content of sugar it is specially suitable for persons with a rheumatic or gouty tendency."

(Vide Report: Institute of Hygiene, Feb. 1927)

"Dry-Royal"

is a wine equal in quality but slightly sweeter.

Obtainable everywhere

Per bottle	9/-
Per half-bottle	4/9
Per quarter-bottle	2/6

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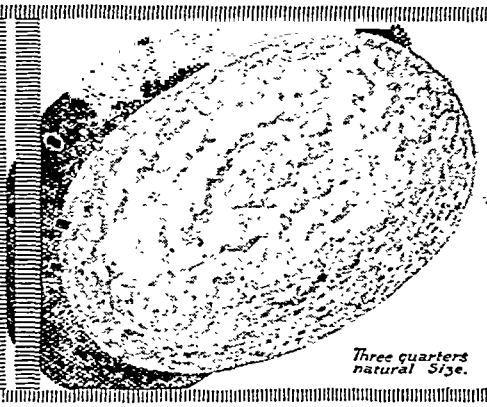
A useful attachment for Telephone, holding Memo Block, sent post free on application.



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SALVITAE is the key whereby the physician may control elimination and alkalinization, thus dealing fundamentally and effectively with Intestinal Subinfection, Toxæmia, Acidosis, Uricacidæmia, Constipation, and a large number of disorders characterized by, and more or less dependent upon, faulty metabolism, imperfect elimination, and disturbances of the acid-base equilibrium of the body.

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"The Standard Mineralizing Tonic"

—combines the nutritive action of the Chemical Foods Calcium, Sodium, Potassium, Iron, Manganese, and Phosphorus, with the dynamic properties of Quinine and Strychnine

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POST-INFLUENZAL DEPRESSION

is partly a direct effect of Influenzal Toxins, but is largely due to Toxæmia arising from the debilitated digestive tract.

KAYLENE-OL prevents Intestinal Toxæmia —thus shortens convalescence and enables the patients to resist secondary infection.

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Mistol consists of menthol, eucalyptol, and camphor carefully combined in proportions recommended by leading nose and throat specialists. A specially prepared petroleum base keeps the soothing, healing ingredients in direct contact with the mucous membrane for a considerable length of time. Moreover, it prevents it being easily washed away by the natural secretions.

Mistol and the Mistol Dropper are a real advance in nose and throat therapy. With head tilted back, the patient should let Mistol drop into each nostril until it is felt to be running into the back of the throat. Unlike douches, Mistol avoids any possibility of sinus trouble. It is manifestly superior to salves which do not reach all parts of the mucous membrane.

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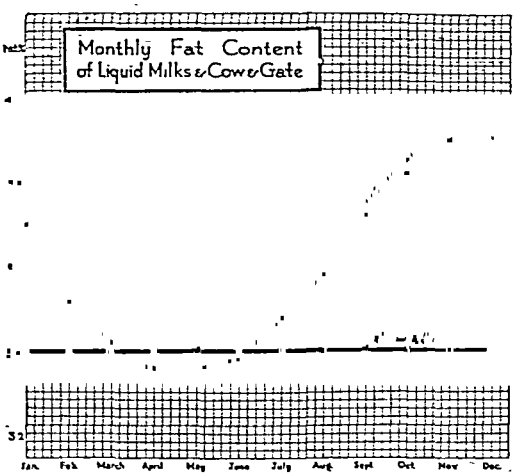

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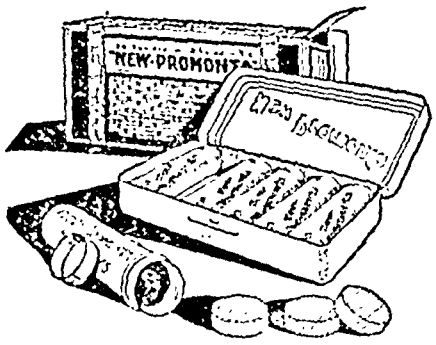

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Successful Treatment of Hyperchlorhydria

"Alocol" is a triumph of colloidal therapy, because it is completely free from the marked disadvantages associated with the usual alkaline medicaments.

Take bicarbonate of soda as an example. When in the stomach it is transformed into sodium chloride—the very product which goes to the formation of hydrochloric acid. To combat hyperacidity by such means is to create a vicious circle.

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"Alocol" leaves intact the acid reaction of the gastric juice and its normal digestive and bactericidal functions. It is the remedy *par excellence* for hyperchlorhydria. The absorbent, healing, and sedative properties of "Alocol" also prove of the greatest value in successful treatment of the more serious manifestations, such as gastrectasis, gastrelcosis, pyloric and duodenal ulcers, infective enteritis, etc.

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M 218

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In the **Treatment** of **Weak Babies**, in the **Gastric** and **Enteric Troubles** of **Infants** and in the **Wasting** and **Febrile Diseases** of **Children**, the **Ease** of **Assimilation** and **Power** of **Valentine's Meat-Juice** to **Sustain** and **Strengthen** has been **Demonstrated** in

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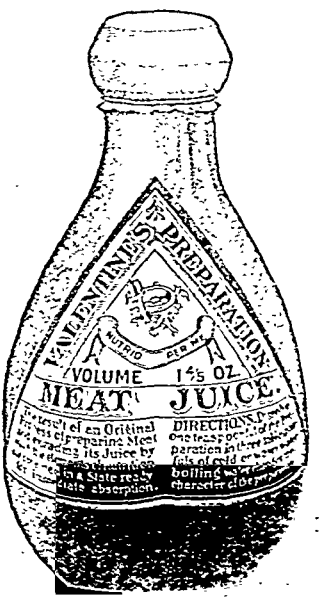

The quickness and power with which **Valentine's Meat-Juice** acts, the manner in which it adapts itself to and quiets the irritable stomach, its agreeable taste, ease of administration and entire assimilation recommend it to physician and patient.

Physicians are invited to send for Clinical Reports.

For sale by European and American Chemists and Druggists.

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JB85

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(D.28). I placed my wife on Bemax who is suffering from auto intoxication. There was very marked improvement after about a week. F.R.C.S.

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Bemax is now established as the B vitamin food. Over 27,000 members of the medical profession are taking Bemax themselves or prescribing it for their patients, with excellent results. The diseases for which medical men are prescribing Bemax are Constipation, Intestinal Toxaemia, Debility, Neurasthenia, Rheumatism, Gastric disturbances and all forms of skin disease. In fact, any ailment due to B-vitamin deficiency. If you have not tried Bemax, a free full size tin will be sent you on receipt of your professional card.

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Recent Laboratory Work in Connection with Lysolats

The searching tests to which the solid form of lysol has been subjected have confirmed the favourable medical opinion of the bactericidal value of Lysolats.

Experiments have been carried out under the Rideal-Walker and Martin-Chick technique by such authorities as the Royal Institute of Public Health Laboratories, London, the Pathological Laboratories, Harley Street, W., and the Clinical Research Laboratories, Adelphi, W.C.

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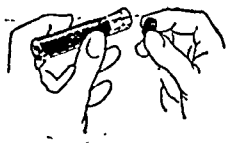
It has been determined that a 1 per cent. solution of Lysolats will arrest the development of most pathogenic organisms in 2 seconds and will completely destroy them within 40 to 50 seconds.

A comparative test in different dilutions of Lysolat and Carbolic Acid on the following organisms—B. Pyocyaneus, B. Bang, B. Typhosus, B. Coli, B. Pneumococci, B. Staphylococci—shows that the bactericidal power of Lysolats is 20 times more efficient than that of ordinary Carbolic Acid.

Lysolats
PATENT 118667 (LYSOL TABLETS)



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Many doctors now use Lysolats when washing their hands. One tablet rubbed between the palms with plenty of water is a valuable safeguard.

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Lysolats are packed in handy tins which are particularly suitable for carrying in the satchel. The tins contain 40 and 80 tablets (at 1/3 and 2/- respectively). There are also tins of 1,000 tablets.

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LIVER EXTRACT B.D.H.

The administration of Liver Extract is to-day recognised as the routine treatment of pernicious anæmia. This new treatment is yielding very satisfactory results and is giving 'inestimable relief.'

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Physicians have been quick to appreciate the value of this simple method of treating a disease which has hitherto been regarded as incurable.

Liver Extract B.D.H. is a freely-running powder of such concentration that a very small bulk is equivalent in therapeutic value to ½ lb. of fresh raw liver.

The potency of Liver Extract B.D.H. is remarkable; a typical clinical report on a case under treatment shows a rise in the blood count from 890,000 to 3,960,000 within one month.

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KNOWN AS

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containing the benzyl and cinnamic radicals characteristic of benzyl-cinnamic ester in the form of benzyl alcohol and ethyl cinnamate presented in olive oil

IN THE TREATMENT OF TUBERCULOSIS

This treatment, entirely without danger, is suitable for application by any Medical Practitioner. It has yielded noteworthy results in the treatment of Cutaneous, Pulmonary, and Genito-urinary Tuberculosis, Tuberculous Mucous Membranes, and Tuberculous Lymphatic Glands. 1 c.c. ampoules supplied in boxes of twelve.

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This nourishing and sustaining food drink is helpful to nursing or expectant mothers

NOT only hundreds, but literally thousands of cases are recorded in which this well-known preparation — Horlick's Malted Milk — has proved its efficiency as a body-building food.

It is particularly valuable as an addition to the diet of the expectant and nursing mother. For Horlick's is a perfectly balanced food containing fat, proteins and soluble carbohydrates combined together in correct nutritive ratio. It is prepared from fresh, full-cream cows' milk, selected wheat and malted barley — and, during manufacture, is partially predigested to ensure easy assimilation.

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Outstanding advantages of HOVIS

Of all kinds of bread consumed to-day, HOVIS is richest in Vitamin B, which encourages growth and increase of weight. Bulk for bulk it supplies a greater amount of nourishment.

HOVIS combines all the benefits of white flour with 25 per cent. of the wheat germ, the part richest in the vitamin, added.

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The great value of HOVIS is that it contains all the elements of a complete food; it is universally liked, and containing no bran is easily absorbed.

It is also most economical, the quantity necessary to furnish sufficient nourishment being very small.

Were HOVIS to form a part of everybody's daily diet the nation would undoubtedly be better nourished.

HOVIS

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We invite you to put your most difficult cases of infant feeding on to Humanised Trufood in the sure knowledge, we feel, that you will be highly satisfied with the result.

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PROPHYLACTIC and CURATIVE.

Immunisation should be commenced in susceptible patients now. In treatment the initial dose is determined by the

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VICHY-CELESTINS

And the other State Springs of Vichy
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FERMENTATIVE DYSPEPSIA.

When the secretion is vitiated in quality, and the motricity of the stomach weakens, that organ dilates, and the gastric stagnation allows the micro-organisms of many ferments to develop. Quite a series of acids are then to be met with (butyric, lactic, acetic, etc.), which not only irritate the mucosa, but further, after their passage into the intestine, become absorbed by the lymphatics and swept into the circulation. **Vichy-Celestins**, by its slightly stimulating action, clears out the stomach, and this avoids stagnation and consequent fermentation. As, in addition to doing this, it modifies stomachal metabolism, the secretions return little by little to their normal physiological condition.

CAUTION.—Each bottle from the STATE SPRINGS bears a neck label with the word "VICHY-ETAT" and the name of the SOLE AGENTS:

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Vitamins have gone beyond the experimental stage. Modern research work has demonstrated the vital necessity for the various vitamins against anti-infective processes, rachitic conditions, and deficiency diseases, and in providing for the human system a very necessary adjunct in the maintenance of good health. Vitamalt is the only preparation of its kind which is guaranteed to contain vitamins A, B1, B2, C, and D, and it has been demonstrated that Vitamalt assists the metabolic processes, promoting normal development of bone and tissue, and ensuring correct assimilation of calcium. In Vitamalt, vitamins are incorporated in the proportion which science has indicated as the most suitable for average conditions.

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Caprokol treatment ensures hours of continuous sleep (unbroken by the necessity for frequent micturition), cessation of pain, and subsidence of fever. The patient's appetite increases, and, as the suffering decreases, the general health rapidly improves.

The final result of Caprokol therapy, in practically every case, is the complete disinfection of the urinary tract and restoration to normal health.

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NOVOCAIN

The Original Preparation
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The Safest Local Anæsthetic for all Surgical Cases.

Ample supplies of Novocain are available for the use of Surgeons at all the chief Hospitals. Specify "Novocain" for your next operation.

Does not contain Cocaine, and does not come under the Dangerous Drugs Act.

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For the treatment of GLAUCOMA according to Dr. Carl Hamburger (Berlin).

GLAUCOSAN.
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Intestinal Disinfection

ALLERGIC CONDITIONS & PROTEIN SENSITISATION

MUCH attention has of late been directed to states in which the subject has become sensitised to some substance, and on exposure to the same substance reacts in a characteristic manner.

The substances which may sensitise are very varied (*e.g.*, animal dandruff and hairs, plant pollens and hairs, animal and vegetable proteins of foods, bacteria and their products) and the reaction may take the form of epileptic attacks, fainting fits, skin eruptions, asthma, etc.

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For intestinal disinfection, use KEROL CAPSULES (keratin-coated); they contain 3 minims of Kerol. One to three capsules may be given three or four times a day after meals.

Please send for Literature and Samples, which will be sent free to any member of the Medical Profession.

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SOLUTION of IRON and ARSENIC.

Specially prepared for hypodermic or intramuscular injection. It is a valuable antiperiodic.
Particularly indicated in Lymphadenoma, Lymphatic Leukæmia, Secondary Anæmia following malaria, and where gastric conditions do not allow oral administration of iron.
In 1-oz. bottles and in sterilettes (1 c.cm.—approximately 17 min.). The sterilettes are supplied in boxes of 12.

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(Shadow Meal)

A Specially Prepared Barium Meal for X-Ray Diagnosis

These illustrations are reproductions of the actual work of an eminent London radiologist who employs "Umbrose" Shadow Meal as a matter of routine.

Fully descriptive literature on "Umbrose" will be gladly sent on request.

The high degree of opacity of "Umbrose" ensures perfect shadow definition on the X-Ray plate. Other notable advantages of this meal are its freedom from toxicity, exceptional fineness, palatability, and the fact that it may be simply and quickly prepared in the X-ray room.

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No. 1 contains 2 oz. $BaSO_4$
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WRIGHT'S LYSOL

BRITISH MADE :: :: BRITISH OWNED

A handy graduated measure is provided with every bottle.

All your patients need know about Lysol is the name "Wright's"

If they get Wright's, they are getting a pure, highly refined Lysol—a British made product by a British owned firm who have enjoyed an unblemished reputation with the Medical Profession since 1852.

Wright's Lysol is analytically controlled by the Rideal-Walker test, and in proper dilution gives certain results. Independent laboratory tests prove its superior grade, strength, and purity. It does not irritate or roughen membranes.

For your patients' protection, tell them always to insist on "Wright's" Lysol—made by the makers of the world famed *Wright's Coal Tar Soap.*

Strects 65.

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"A.B." Insulin was the first British Insulin available for use by the Medical Profession and after almost five years retains its reputation as the Insulin which can be relied on to give consistently satisfactory results. The supremacy of "A.B." Insulin is due entirely to the stringently high standards of purity, therapeutic efficiency and stability self-imposed by its manufacturers.

"A.B." Insulin connotes:

Uniformity of unitage.
Full potency and stability in all climates.
Purity and complete sterility.
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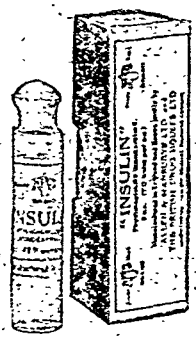

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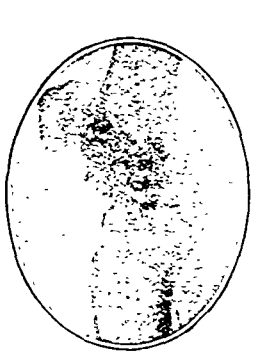

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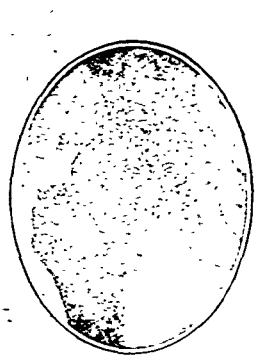

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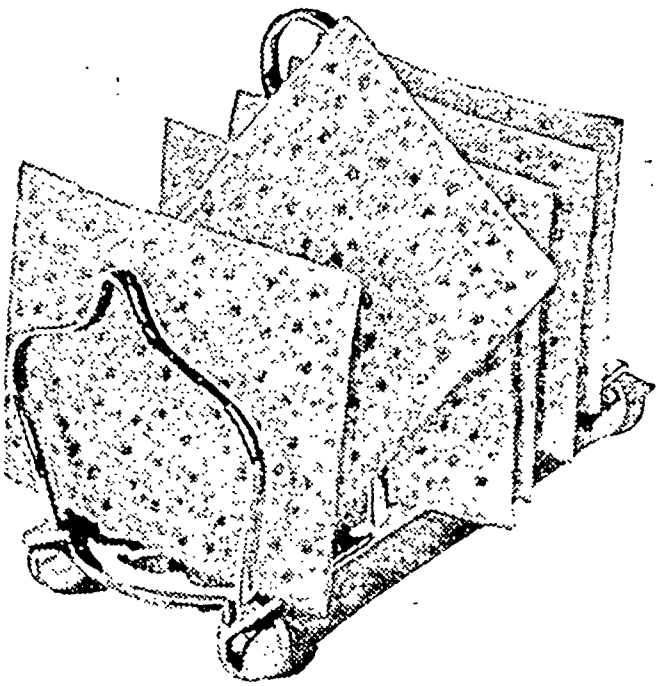

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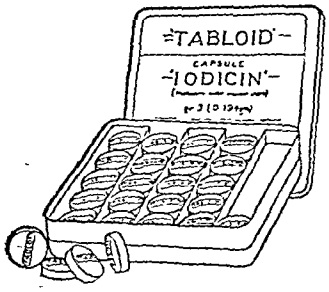

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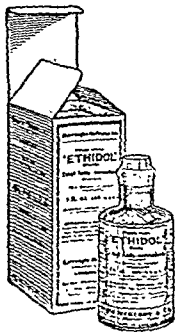

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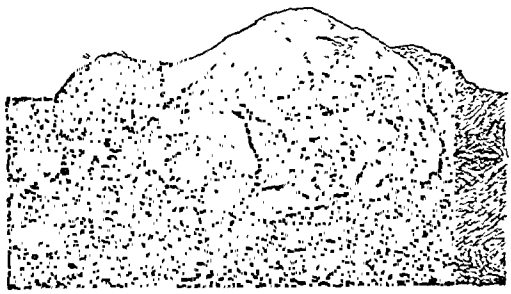

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A Post-Graduate Lecture
ON
THE TREATMENT OF CANCER OF THE RECTUM WITH RADIUM.

DELIVERED AT ST. MARK'S HOSPITAL
BY
SIR CHARLES GORDON-WATSON, K.B.E., C.M.G., F.R.C.S.,
SURGEON TO ST. BARTHOLOMEW'S HOSPITAL AND TO ST. MARK'S HOSPITAL FOR DISEASES OF THE RECTUM.

RADIUM IN SURGERY.

THE publicity that has been given to radium treatment by the recent cancer conference has resulted in a sudden awakening on the part of the public and the profession to the work that has been done and is going on quietly in a scientific spirit of research. There is some danger that a sudden wave of enthusiasm may result in the indiscriminate distribution and use of a dangerous surgical weapon if supplied to and employed by workers who have not studied the subject and are not able to employ it on a research basis. There is at present no general agreement or standardization as to dosage or methods of application. Distant therapy with a larger volume of radium has barely commenced in this country, and the supply of radium has not at the present time allowed a great many workers to try out the comparative merits of emanation seeds and radium needles. In short, there is some danger that the treatment of cancer with radium may be dragged from the nursery before its time.

RADIUM IN CANCER OF THE RECTUM.

Progress in the results of operative treatment of cancer of the rectum has been so great in the last ten years that we can now speak confidently of a probable cure in an early case when the patient is a good subject for operation. Unfortunately the great majority of cases reach the surgeon when the operable stage is past.

For many years attempts have been made to cure such cases by radiation, either by deep x-ray therapy or by the insertion of a tube containing some 50 mg. of radium into the lumen of the growth. In sporadic instances growths have been destroyed on these lines. As far back as 1910 I was associated with a case which was cured in this way by Dr. Finzi, and the patient remained free from rectal trouble until his death some ten years later from another cause. Such a result as this was found to be quite exceptional. In many instances severe burns resulted and the sufferings of the patients were increased rather than relieved.

Early in 1925 I visited the clinic of Dr. Neumann in Brussels and was much impressed with his results in the treatment of carcinoma of the rectum by needling the growth after free exposure from behind, and I at once set to work to follow his technique. In November, 1927, I reported my results of needling by open operation to the Sub-Section of Proctology at the Royal Society of Medicine, and gave an analysis of the first fifteen cases. I was able to show that both operable and inoperable growths can in some instances be destroyed completely and without risks of radium burns, and that the patients can be restored to apparent sound health provided that they submit to colostomy. I showed two cases of apparent cure up to date. Since that time I have gained further experience by the open operation from the perineum, having treated over thirty cases by this method, with some very encouraging results.

More recently I have embarked on intra-abdominal treatment of high rectal growths, and I have treated a series of cases by implantation of radium needles and also platinum or gold filtered radon seeds both into the growth and into the areas of lymphatic spread in the meso-rectum and meso-sigmoid. After the introduction of radium, colostomy is performed, but the bowel is not usually opened until the needles are removed a week later. When seeds are used they are not removed, and the colostomy can be opened at any time.

In some instances I have irradiated growths both from above and, later on, from below at a second operation, employing seeds screened with 0.5 mm. platinum either through the skin of the perineum directed by a finger in the rectum or through the lumen of the bowel, and also per vaginam.

In the more recent cases of low growths submitted to the open operation from the perineum I have attacked the glandular areas from the abdomen at the time of the colostomy, using seeds when available, and otherwise needles. In one instance of a small growth I inserted seeds directly into a low-lying growth without performing colostomy, and secured complete regression of the tumour.

All but one of the open perineal operations have been submitted to colostomy, and in only one case treated by the abdominal route has colostomy been avoided. This patient was shown quite recently at the Royal Society of Medicine, and the notes of the case are worthy of record. The following is the history of the case.

A postman, aged 44, was admitted with an annular growth at the junction of the pelvic and perineal portions of the rectum, which was fixed to the base of the bladder and to the sacrum. The abdomen was opened and the growth barraged with nine needles containing a total of 20.5 mg. left in position for 115 hours (2,357 mg. hours). The pelvic colon was fixed outside the abdomen in preparation for colostomy. The patient, however, with the help of a liberal supply of paraffin, continued to evacuate his motions with comfort per anum after the radium was removed, so that the opening of the colostomy was postponed, and in the end was never carried out.

The patient returned to work soon after discharge from hospital and has remained in uninterrupted good health since (for over a year). Sigmoidoscopy shows a narrowed lumen but no evidence of growth.

The Perineal Operation.

The technique of the perineal operation consists, in brief, of removal of the coccyx, division of the raphé at the junction of the levatores ani, and free exposure of the ampulla of the rectum. The lines of lymphatic spread along the superior, middle, and inferior haemorrhoidal arteries are barraged, and subsequently the growth is uniformly needled, so that all parts of the growth receive as far as possible uniform radiation of not less than 1 mg. per c.cm. In the female the anterior portion of the growth is barraged through the posterior vaginal wall. The time factor is usually ten days, and from 30 to 60 mg. of radium are employed according to the size of the growth. The wound is packed with flavine gauze and kept moist by the Carrel-Dakin method, the skin wound being temporarily closed until the radium is removed. The wound is slow to heal, and usually takes about six weeks to close. Reaction is usually slight, but occasionally in feeble individuals a heavy irradiation is followed by extreme weakness, loss of appetite, and vomiting—symptoms which soon subside after removal of the radium.

In advanced cases very little change can be noted in the size of the growth under six to eight weeks, and the most marked changes occur in the third and fourth months, but usually after a short period of increased secretion of mucus the local symptoms are relieved and haemorrhage and tenesmus are checked. The most striking feature in these cases is that as soon as the immediate effects of the operation and radiation have passed off the general condition of the patient improves rapidly, and even when no marked diminution can be noted in the size of the growth the patient recognizes that his condition has improved enormously.

In some cases when the perineal barrage has failed to act on all portions of the growth I have used a 50-mg. heavily screened platinum tube in the lumen of the rectum as a supplement to needling. This has been inserted into a slot cut in a solid lead rod enclosed in rubber tubing so that its action is limited to the area requiring treatment, and other portions of the lumen are protected.

Irradiation Prior to Operation.

There can be no doubt that in some instances an inoperable case can be rendered operable by the preliminary use of radium. In May, 1926, I used radium for a growth of the anterior half of the rectum which was adherent to the uterus and had perforated into the vagina. In February, 1927, the perforation had closed, the growth was much reduced in size and was no longer fixed to the uterus, and

the general condition of the patient had improved enormously. In March, 1927, I excised the rectum, and the patient is alive and well to-day.

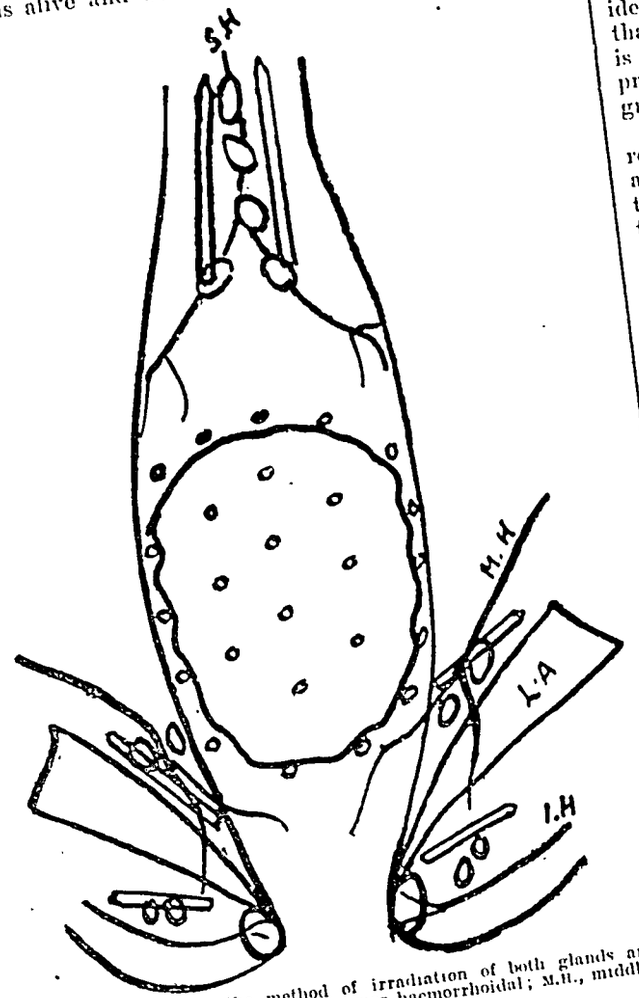

FIG. 1.—Shows the method of irradiation of both glands and growth from behind. S.H., Superior haemorrhoidal; M.H., middle; I.H., inferior; L.A., levator ani.

In several instances I have inserted radium per abdomen at the time of colostomy to attack the glandular areas prior to perineal excision for an operable growth.

Radium for Recurrence.

In the past a local recurrence of carcinoma following excision of the rectum has seldom been amenable to successful surgery. In some instances favourable response to deep x rays has been noted, but these results have been of a temporary nature. I have been able to treat a few of these patients quite effectively with needles combined with external radiation on Columbia paste. No patient has been under observation long enough to express an opinion as to cure, but results so far have been much more encouraging than could have been anticipated.

THE RELATIVE VALUES OF SURGERY AND IRRADIATION.

I do not think that any of us who are in the habit of operating on cancer of the rectum have any doubt in our minds that we can cure cancer of the rectum in the early stages (except in the very young) by means of surgery, provided that the patient will submit to colostomy and can survive the radical operation. If early diagnosis was the rule instead of the exception the surgical results of radical cure would stand comparison with those of cancer in any other region of the body. The reason for this confidence is that, save in exceptional circumstances—for example, in very young subjects—glandular and visceral metastasis occurs late in the disease.

Radical surgery for cancer of the rectum may be criticized on the score of mutilation in that a colostomy is essential and a reproach to surgery. Although I do not regard a well-managed colostomy as a great handicap in life—and I can produce many professional and business men, who follow their avocations with little hindrance, to support this view—I do feel that when we see what can be done with the tongue, for example, we ought to explore the field of radium to the utmost in an endeavour to supplant radical surgery.

I have on many occasions expressed my views as to the ideal surgical treatment of rectal cancer, and I still hold that colostomy followed by the modern perineal excision is the best procedure for all mobile growths in the rectum proper, reserving the abdomino-perineal operation for growths at or above the recto-sigmoidal angle.

The time may come—it may even be within measurable reach—when we shall have such certain control of the action of radium that we shall be able to say, as it can at the present time, I believe, be said of many cancers of the tongue and cervix: "This case, though suitable for a radical surgical operation, can be cured with greater certainty, with less risk, and—greatest boon of all, if it comes—without any permanent disability, with radium."

Until we are in a position to measure the action of radium with some accuracy, to be able to say with confidence that a given dose of radium administered in a given way for a given time will produce a certain result, we are, I think, in duty bound to advise radical surgery, mutilating though it is, in preference to radium for the operable case. Where, however, as sometimes happens, the growth is operable, but the patient is considered unsuitable for radical surgery on other grounds, then I believe radium holds out great prospects of cure, and should always be employed when available.

It is quite possible that in the near future rectal irradiation may be so regulated as to offer as high a percentage of cures, *in early cases*, as by operation and with less risk, and in a certain number without the inconvenience of colostomy. For the inoperable case, provided that there is no secondary perirectal sepsis, invasion of the bladder, or metastasis in the liver, radium should certainly be recommended.

In recent years experience with radium in the treatment of carcinoma of the tongue has produced such remarkable

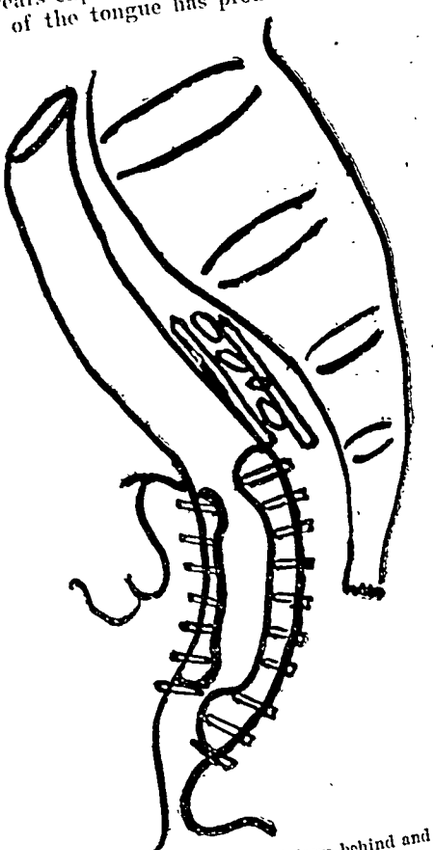

FIG. 2.—Shows needles employed from behind and per vaginam.

results that those who practise radium therapy have for some time past ceased to excise the tongue. Carcinoma of the cervix uteri stands on the same footing, and, judging by the results which are now being obtained with radium in the treatment of cancer of the breast, it will not be long

before those surgeons who have access to, and experience with, radium will cease to amputate the breast. I hope to see the time when the same can be said of excision of the rectum.

When passing in review the results of my work with radium during the last four years I do not doubt that, with increasing experience, we shall be able to cure year by year a higher percentage of inoperable cases, and I am satisfied that with judicious selection of cases we can assist those who have passed beyond the hope of cure by alleviating their symptoms and prolonging their lives.

CONSTRUCTIVE EPIDEMIOLOGY.

BY

SIR RONALD ROSS, K.C.B., K.C.M.G., F.R.S.,

DIRECTOR-IN-CHIEF, ROSS INSTITUTE AND HOSPITAL FOR TROPICAL DISEASES, PUTNEY HEATH, S.W.

THE services of medical men, pathologists, and parasitologists are required for investigating the nature of any disease, whether it occurs in isolated cases or in epidemics; but mathematicians are needed to examine the cause and *progress of the latter—just as any skilled observers may* trace the path of a planet, but careful mathematical computations must be made into the forces concerned in its movement. Such computations may be either deductive (*a posteriori*), or constructive (*a priori*). By the former we seek to deduce the laws from the observed facts; in the latter we assume what we suppose are the laws, and then try to verify them by inquiring whether they explain all the facts.

Twelve years ago the Royal Society published a paper by me on the *a priori* analysis of "happenings" including epidemics,[7] and gave me a grant to enable me to acquire the valuable help of Miss Hilda P. Hudson, with whom I continued the paper to a second and third part; but though the paper received the attention of such distinguished mathematical students as M. Greenwood[8] and A. J. Lotka,[6 11 14] few medical writers appear to have noticed it, and some recent books on epidemiology do not mention it. Yet Greenwood said of it when the first part was published:

> "Modern researches fall into two classes. On the one hand those directly or indirectly inspired by the epoch-making discoveries of Professor Karl Pearson in the theory of mathematical statistics; on the other, the independent investigations of Sir Ronald Ross."

I should therefore like an opportunity to recall the attention of the profession to a subject which I hope will ultimately be of considerable service to it.

First, I should say that in 1904 I read a paper at the St. Louis Congress in America on the cognate subject of the random-scatter of individuals, such as men or mosquitos or any other living creatures issuing from a centre outwards in all possible directions. Not being a mathematician I could not solve the problem accurately; but I ascertained that most of the individuals would probably die fairly close to the point from which they started (*British Medical Journal*, May 13th, 1906). The problem was afterwards taken up and accurately solved by Pearson and Blakeman.[2]

A few years later, when writing a report on malaria in Mauritius for the Government of that colony,[3] at a time when few people understood the mosquito theory regarding the carriage of that or of other diseases, I thought it advisable to indicate mathematically how such diseases might increase or diminish with changes in the local numbers of the insects, however caused. My demonstration was rhetorical rather than rigid (Sections 11, 12, and 13), and was made on the theoretical assumptions that those numbers remain constant for the period under survey, and that every person concerned receives about the same number of mosquito bites in a month. Then, if the number of bites is large enough, the proportion of infected persons in a locality will rise; if it is small enough, the number of infected persons will fall; but if it stands at a certain figure, the total number of infected persons should also remain fixed. I called this fixed condition "static malaria."[12]

By assuming certain constants (which have never been properly investigated) I calculated that the proportion of infected persons to the whole population of a locality should remain fixed if the proportion of carrying *Anopheles* to each person is about $\frac{40}{1-m}$ during one month, where m is the proportion of infected persons to the whole population at the beginning of the inquiry. Thus if m is very small to begin with, the number of *Anopheles* may still be up to about 40 per head of the human population during one month without any change taking place. That is, a locality should probably remain almost free of malaria, although there are as many as 40 mosquitos of a suitable malaria-carrying kind during one month to each human individual in the locality. If the number of *Anopheles* rises over about 40 to each human being in the area under consideration, and if there are by chance any suitable cases of malaria at all in the area, introduced by immigration or in transit, then the number of local cases is likely to begin to increase until it reaches a fixed limit depending on the average number of mosquitos per human being. We can form a rough estimate of that fixed limit (if my assumed constants are nearly right) by obtaining the value of m from the equation above—namely,

$$a=\frac{40}{1-m},$$

that is, from

$$m=1-\frac{40}{a}$$

where a denotes the number of *Anopheles* to each person *in the locality during one month*. Thus if $a=40$, $m=0$, as already stated; but if $a=60$, m will probably rise to a limit of 1/3—meaning that one-third of the whole population will ultimately become infected with malaria if the number of *Anopheles* keeps at that figure, other conditions remaining the same. If $a=80$, half the entire population will probably become infected in time; and if a becomes very large, m will nearly equal unity—that is, almost the entire population—as often happens. Of course, m is not supposed to be capable of having negative values, which would be meaningless.

The principal point indicated by this calculation is that a comparatively small rise in the number of *Anopheles* per man, as the rise from 40 to 60 during one whole month, might nevertheless suffice to send up the malaria rate in a locality from zero to about one-third of the whole human population; which would amount to a serious outbreak. A rise from 40 to 80 *Anopheles* per man per month should ultimately increase the malaria rate from zero to half the population—which would constitute a grave epidemic. Yet such variations in the numbers of one kind of mosquito (only) would probably pass quite unnoticed even by educated residents, and also might possibly be masked by an abundance of other kinds which have nothing to do with malaria. It would be difficult or impossible to establish or even to estimate by observation alone any such a law of correlation between the number of the cases and the number of the carriers concerned.

It may be asked how exactly I computed the number 40 mentioned in the equations given above. It is a convenient integer representing the decimal fraction 39.61, which equals $4\times4\times4\times3\times0.2063$. I conjectured that not more than a quarter of any mosquitos present succeed in biting human beings (about half the number of mosquitos are males, which do not bite at all). Only a quarter of these will succeed in biting a second time, as required by the law of mosquito transmission. Only about one-third will live long enough (about one week) to mature the malaria parasites within them; and only about a quarter of the human cases of malaria will contain the sexual forms of the parasites required for mosquito transmission, at any given moment when a mosquito happens to bite. The fraction 0.2063 was, I calculated, the proportion of human cases of malaria which remain infected for a month when half the cases recover every quarter.

These figures may be inaccurate, and probably are so; but the main object of the inquiry is, not to calculate the exact point at which static malaria commences, but to

show that there must be some such point when the new cases exactly balance the recoveries.

Of course, in practice, the number of *Anophcles* and of the bites given by them are sure to vary with rainfall and temperature—that is, with season; but this must be understood to be the case; and the simple equations given do not pretend to contain any more than a first approximation towards the facts. The mathematical method possesses the advantage of showing, not only the elements which contribute to a result, but also how and how much each element does so—a thing which can seldom be expressed in words alone without much circumlocution.

This work, first given in my report on the prevention of malaria in Mauritius,[3] was repeated and improved in Sections 26, 27, 28 (pp. 151–164) of my book[4,5]. The former was examined mathematically by H. Waite (*Biometrica*, vol. vii, No. 4, October, 1910); but his argument contained a flaw which I pointed out to Professor Karl Pearson, though Waite endorsed my work. Section 28 of my book just mentioned leads to a problem of repeated operations (iteration), but I did not solve it until 1918 (see my paper[10]).

A second edition of my book was required early in 1911, and I determined to add a fuller treatment of this mathematical study in a final addendum to the work. This constituted Section 66 of the second edition.[5] This section consists of thirty-five pages, which contain nineteen subheadings and fourteen sub-subheadings. It continued the theme much more exactly, and referred not only to malaria but to similar happenings. The section was called "Theory of Happenings." The problem before me was as follows: Suppose that some kind of event happens in every unit of time to a given proportion of a population, while at the same time the same population is undergoing constant changes due to births, deaths, immigration, and emigration, at one rate for the affected and at another rate for the unaffected, what will be the numbers of the affected and the unaffected portions of the population respectively at the end of the period considered? Also, suppose that some of the affected portion are constantly reverting in unit of time, then again what will be the numbers of the affected and the unaffected groups at the end of a given period covering t units of time?

These problems led to two simultaneous equations in the finite calculus. The equations were solved and integrated by that calculus, and the solutions were examined in detail. As well known, the finite calculus possesses the advantage that the unit of time taken may be large or small. When it is infinitesimal the finite calculus merges into the infinitesimal calculus, as shown in subsection (7, ii) and the following paragraphs. I also dealt with happenings that were repeated in the same individuals, and went on to examine metaxenous (or heteroxenous) diseases—that is, diseases which are common to two kinds of hosts. The rest of the paper deals with many details, and confirms my previous quantitative studies of malaria in the same book, and also gives some calculated constants; then it goes on to deal with the infinitesimal treatment of the subject. The integrations were obtained and are given; but of course I should like to have dealt with the theme even more copiously than I have done. Unfortunately the paper contains many misprints and omissions, and the author himself finds considerable difficulty in understanding parts of it.*

Some years later I thought it advisable to submit the same investigation to the Royal Society in the form of the infinitesimal calculus only. Not being so hard pressed for time, I was able to develop the subject considerably, and to introduce a special section for the kind of happenings which are connected especially with infectious diseases—*namely, happenings which do not fall at a constant rate on a population, but one in which every infected person tends to infect a given number of healthy persons in his turn.* What would be the respective numbers of the affected and the unaffected groups of the population in this case? Here also I was able to solve and to integrate the differential equations in twenty-six pages containing seven subheadings and twenty-five sub-subheadings; but of course both papers require some mathematical knowledge.

* We are preparing corrected "pulls" of Section 66, and will be glad to supply copies on application.

The Royal Society published the paper[7] in full, and was also kind enough to suggest Dr. Hilda P. Hudson as an expert mathematician to help me. Next year we brought out two succeeding parts of the same paper[9] containing twenty-eight pages, six subheadings, and twenty sub-subheadings. Errata for Part I are corrected at the beginning of Part II.

All the equations must of course be examined from many points of view, and, though we could not consider different diseases in detail, we hoped that our paper would enable more precise studies to be made in the future. Unfortunately Dr. Hudson was called away for war work, and we have not touched the subject again until quite recently. We are now beginning to consolidate and summarize our previous studies and to develop them by means of the finite calculus, the infinitesimal calculus, and by the use of integral equations.

I should add that my paper[7] demonstrated that the sick-to-healthy communication of infectious diseases and the exhaustion of susceptible persons were enough to explain the rise and fall of the characteristic bell-shaped curves of most epidemics—a point on which some doubt was being thrown at that time.

My bibliography contains references to several works, some of which have been examined by Lotka, but all of which I have not read at present. They seem to reach their conclusions by dropping various constants, which, of course, always renders equations more simple but diminishes their general applicability, epidemics of many diseases being modified by small factors which are often overlooked.

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THE RELATION BETWEEN RECURRENT ALBUMINURIA, CHRONIC NEPHRITIS, AND TOXAEMIA OF PREGNANCY.

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THE renal disorders associated with pregnancy have been described as "chronic nephritis," in which the renal disease is the primary fault, and "pregnancy toxaemia," in which the renal disease is entirely secondary to the toxaemia, and as a rule no overlapping has been allowed between these two groups. It has generally been assumed that a patient with pregnancy toxaemia recovers her full kidney function soon after the toxaemia ceases—that is, at the termination of pregnancy, and it follows, therefore, that chronic nephritis should not occur as a result of pregnancy toxaemia. It has also generally been stated that there is no special liability for albuminuria to recur with subsequent pregnancies.

The biochemical counterpart of the belief that albuminuria occurring during pregnancy is due either to pre-existing renal disease or to an acute toxaemia in a patient with previously healthy kidneys is evidenced by the continued efforts to find some biochemical test to distinguish the "nephritic" from the "pregnancy toxaemia," and of recent years a very large number of such tests have been put forward.

Clinicians are continually faced with the difficulty of putting cases into one or other of these hard-and-fast classes, and biochemists have consistently admitted the uselessness of their tests in classifying the borderline cases. Is it not possible that the fault lies, not with our clinical observations or chemical tests, but with our arbitrary classification of all cases into "nephritic" and "pregnancy toxaemia" types—two watertight compartments in which no overlapping is allowed? Is it not also possible that the belief that "pregnancy toxaemia" does not give rise to chronic nephritis is also false? Surely we have had sufficient experience of the completely unsatisfactory position to which these beliefs have led us to examine what evidence there may be for changing them.

First with regard to the question of *chronic nephritis* resulting from pregnancy toxaemia. Recently several observers have published series of cases showing that chronic nephritis does sometimes follow as the result of an attack of pregnancy toxaemia. Caldwell and Lyle[1] found the incidence to be 8 per cent. after eclampsia. Gibson[2] found definite evidence of chronic nephritis in 4 out of 14 patients who had had eclampsia some years previously; and of 12 patients who had suffered from "pre-eclamptic toxaemia," chronic nephritis was found subsequently in 2. In all these patients, Gibson points out, there was nothing to suggest any renal disease antedating the toxaemia. He quotes Koblanck, who found that 6.5 per cent. of patients had chronic nephritis as a result of pregnancy toxaemia. Harris[3] found 3 out of 27 eclamptics had chronic nephritis when examined one year after delivery, and the same observer found that 60 per cent. of patients who had suffered from "pre-eclamptic toxaemia" showed definite signs of chronic nephritis when examined one year afterwards. In none of these cases was there any history of renal disease before the pregnancy. James Young[4] has recently given the incidence of chronic nephritis as 3 per cent. following eclampsia, and 8 per cent. *following* "albuminuria."

These series are surely of more value than the unsupported statements that chronic nephritis does not occur, and, in spite of the frequency with which such statements are made, as far as I am aware there is no published series in support of them. It is sometimes argued that the patients who showed signs of chronic nephritis afterwards were really suffering from chronic nephritis before their pregnancy, but in a series which I published recently[5] care was taken to exclude all cases in which there was any suspicion of pre-existing renal disease. In a group of 37 such patients who had albuminuria with their pregnancy, 14 per cent. were found to have undoubted signs of chronic nephritis when examined at long periods after delivery.

We must therefore admit the possibility of chronic nephritis as a result of pregnancy toxaemia, and it follows that because a patient may be found to have chronic nephritis after a pregnancy with albuminuria she was not necessarily suffering from "nephritic" as opposed to "pregnancy toxaemia" during her pregnancy. She may have been suffering from either, or indeed from both.

The question of the frequency with which albuminuria recurs with subsequent pregnancies has also received attention of late, and here again we are forced to modify views that have held sway for a very long time.

James Young[6] has published a series in which 31 per cent. recurred, and if macerated foetus, abortion, or accidental haemorrhage (in the absence of albuminuria) are considered as signs of toxaemia, the incidence of recurrence in his series reached 44 per cent. More recently the same writer[4] has published a larger series with a recurrence rate of 57 per cent. Included in such series may be a certain number of cases of definite chronic nephritis, which will, of course, show a recurrence rate of 100 per cent. In a series of 28 cases which I published[5] recurrent albuminuria was noted in 19. In 21 cases there was every reason to believe that the patients were perfectly healthy before their first pregnancy with albuminuria, and in this group 12 (57 per cent.) had albuminuria with a subsequent pregnancy. All these patients were free from obvious signs of renal disease in the intervals between pregnancies.

As far as I am aware there are no published series in support of the statement so commonly made that albuminuria of pregnancy seldom recurs.

We are therefore justified in modifying two time-honoured misconceptions about pregnancy toxaemia. We must admit, first, that pregnancy toxaemia sometimes causes definite chronic nephritis (probably in something like 10 per cent. of cases); and secondly, that of all patients who suffer from pregnancy toxaemia and who are apparently free from renal disease afterwards, something like 50 per cent. have albuminuria with subsequent pregnancies.

If these clinical facts are admitted, we are in a better position to consider the difficulty which arises when we try to place all cases of albuminuria occurring during pregnancy into one of two pathological groups. That these two groups—*the "nephritic" and the "pregnancy toxaemia"*—exist is very probable, and the evidence for regarding the kidney damage in the latter group as secondary has been admirably stated and defended by James Young. But the difficulty is that we have four clinical types and only two pathological groups to contain them.

The four clinical types are as follows:

1. Patients with chronic nephritis preceding the pregnancy. These patients, of course, continue with signs of renal deficiency after pregnancy. They form the "nephritic" group.
2. Patients presumably healthy before pregnancy who develop albuminuria during pregnancy, but in whom all signs and symptoms of renal disease disappear after delivery, and do not recur with a subsequent pregnancy.
3. Patients presumably healthy before pregnancy who develop albuminuria during pregnancy, and in whom all signs and symptoms of renal disease disappear after delivery, but recur regularly with subsequent pregnancies.
4. Patients presumably healthy before pregnancy who develop albuminuria during pregnancy, but in whom all the signs and symptoms of renal disease persist permanently after delivery. (These patients are really members of the second group, who, as a result of their first pregnancy toxaemia, develop chronic nephritis, and thereafter become members of the first group. It is not therefore necessary to introduce a new pathological class to explain this group of cases.)

It is the cases in the third group that cause so much difficulty in classification, since although they are apparently healthy in the intervals between their pregnancies, yet they fairly consistently show recurrence of the albuminuria with every succeeding pregnancy. If these cases were rare we might explain their occurrence as the result of chance, but when we realize that they form about half of all the cases of albuminuria, it is quite obvious that something more than chance is operating in favour of recurrence.

There is manifestly some difference between those cases in which the albuminuria recurs with succeeding pregnancies, and those in which subsequent pregnancies are quite normal.

James Young has suggested that this difference is due to some unknown factor, some *inherent idiosyncrasy* to pregnancy, in the former group. He suggests that these patients are really (as opposed to "apparently") free from all renal defect in the intervals between pregnancies, and looks upon every attack of albuminuria with pregnancy in such patients as a primary toxaemia. If this is the case it is difficult to explain why many of these patients do not start this sequence of abnormal pregnancies until late in their child-bearing life. If the peculiar fault is inborn, one would not expect a series of albuminuric pregnancies to be preceded by a series of normal pregnancies in any particular patient. In the series which I published[5] it was pointed out that amongst patients with recurrent albuminuria the first abnormal pregnancy occurred after one or more normal pregnancies in 40 per cent. of cases. In many cases, therefore, we have evidence that this tendency to recurrence is not inborn but acquired.

What is the nature of this "predisposition," and how is it acquired?

The first attack of albuminuria, *if the patient is previously healthy*, we must look upon as being due to "pregnancy toxaemia," regarding the kidney damage as purely secondary. If the patient is fortunate this secondary kidney damage recovers completely, and the patient then embarks on a second pregnancy. For this patient to get a second attack of albuminuria she must be extremely unlucky (since the chance of a 3 per cent. risk of toxaemia sufficiently severe to cause symptoms occurring on two occasions is less than one in a thousand). Yet we know that half of the women who apparently recover completely from their first attack of albuminuria with pregnancy actually do have recurrence. Both these types—those who have a recurrence and those who do not—seem to start off in the same way, and in their first albuminuria are indistinguishable from one another. We have seen that the assumption of an inherent idiosyncrasy on the part of one patient causes certain difficulties in explaining recurrent albuminuria occurring after previous normal pregnancies, and, furthermore, since both these types of patient are identical in their behaviour during their first albuminuria, it is difficult to see that one can have an idiosyncrasy that is not shared by the other.

Is it not better to assume that both these patients are previously healthy women—that both have been unfortunate in striking a 3 per cent. chance of "toxaemia"? So far they are identical, but beyond this each runs a different course. In the one the secondary renal disorder *recovers completely*, leaving the patient free to have a perfectly normal pregnancy next time. In the other the renal damage does not clear up completely, but persists in an amount insufficient to cause symptoms until the onset of the next pregnancy. In other words, this acquired predisposition to albuminuria is simply a low-grade renal insufficiency. The disease is an "occult nephritis," demonstrable only by the most delicate test of renal function that we possess, and that test is pregnancy.

Further evidence in support of this standpoint is obtained from the following series of cases, which occurred in the practice of the Guy's Hospital Obstetric Department, and I am indebted to the obstetric surgeons at that hospital for permission to publish these figures.

Fifty-one patients were studied during at least two pregnancies, the first being associated with albuminuria. Of these, four were suffering from chronic nephritis before their first pregnancy with albuminuria, and will not be considered further.

This leaves 47 patients, all of whom were presumably perfectly healthy before their first attack of albuminuria. They were considered healthy on the following grounds: medical history, urine examination, cardio-vascular examination, and occasionally on the results of biochemical tests. No patient was considered healthy unless there was positive evidence of the absence of albuminuria, and of other signs, at the beginning of pregnancy.

Of these 47 patients, signs and symptoms of chronic nephritis persisted for a year or longer after labour in 6 cases—that is, definite chronic nephritis developed in 13 per cent. Amongst these 6 cases the average time between when the albuminuria was first noted and when pregnancy was terminated was nine weeks.

This leaves 41 patients, none of whom showed any signs or symptoms of renal disease in the intervals between successive pregnancies. They have been divided up as follows: Twenty-seven patients in whom the first albuminuric pregnancy was terminated either by induction or spontaneously within three weeks of the time that albuminuria was first noted; albuminuria recurred with the next pregnancy in 11, giving a recurrence rate for this class of 40 per cent. Fourteen patients in whom the first albuminuric pregnancy was terminated either by induction or spontaneously at some time later than three weeks after the albuminuria was first noted; albuminuria recurred with the next pregnancy in 10, giving a recurrence rate for this class of 70 per cent.

In this series it is seen that the duration of the albuminuria with the first abnormal pregnancy was strikingly long in those patients who subsequently developed frank chronic nephritis, and the deduction is that a prolonged toxaemia is more likely to cause permanent damage in a previously healthy kidney than is one that lasts only for a short time. This point was brought out in the series which I previously published where it was shown that the average duration of the albuminuria was greater in those patients who subsequently developed chronic nephritis than in those who did not. It has also been noted in a slightly different way by Harris and by James Young. Both these writers noticed a higher incidence of chronic nephritis following albuminuria without convulsions than following eclampsia, and both accept the explanation that although the "toxaemia" in cases of eclampsia is very severe, it is often only of relatively short duration.

It is by studying the last two classes that we have an insight into the etiology of recurrent albuminuria. All patients in both these classes were healthy before their first albuminuria—all were free from obvious stigmata of renal disease between their pregnancies—yet some were "predisposed" to albuminuria with subsequent pregnancies, while others were not. The important point brought out by these two classes is that it shows that the incidence of this "predisposition" is influenced by the duration of the first "toxaemia."

In other words, the etiology of the "predisposition" to recurrent albuminuria is similar to that of frank chronic nephritis in these cases. This is further evidence that the "predisposition" is in fact merely another term for chronic nephritis. If the predisposition is inherent, or inborn, or independent of the first attack of toxaemia, it is difficult to see how early induction of labour in a first attack can influence the probability of a subsequent attack, yet the figures quoted show that this influence is quite definite.

We can thus regard all first attacks of albuminuria in previously healthy patients as due to a primary toxaemia—any renal insufficiency being purely secondary. Of these such patients one will suffer such marked kidney damage that she will continue to show signs and symptoms of chronic nephritis so long as she lives. Of the remaining nine patients, all of whom are apparently healthy in the intervals between pregnancies, only four have really recovered their kidney function completely. These four subsequently have normal pregnancies. The other five show a recurrence of the albuminuria fairly consistently with all subsequent pregnancies, because although their kidneys are not sufficiently damaged as the result of their first toxaemia to show signs in the ordinary way, yet, when put to the strain of pregnancy, they show signs of insufficiency. They are, in fact, permanently suffering from "occult nephritis."

As an objection to this view James Young suggests that these patients with recurrent albuminuria conform to the "toxaemic" type clinically, rather than to the "nephritic" type. As far as biochemical observations are concerned the same criticism has been used.

My own experience is that these cases conform accurately to neither type; rather have they some things in common with both types. Thus in cases of recurrent albuminuria it is quite common for the foetus to be macerated and for the albuminuria to take a long time to clear up in the puerperium. These characteristics are rather suggestive of a "nephritic" element. On the other hand, such a patient may actually develop eclampsia, which we accept as evidence of "toxaemia." The chemical estimations in the blood and urine are usually indecisive in such cases.

We can only explain all this conflicting evidence—clinical, etiological, and chemical—by assuming that these patients with recurrent albuminuria are really suffering from both "toxaemic" and "nephritic" albuminuria at the same time. The toxaemic element is supplied every time by the pregnancy (and this may be a "normal" pregnancy in the sense that there is not sufficient toxaemia to cause albuminuria in a patient with healthy kidneys), and the "nephritic" element is supplied every time by the occult nephritis which has resulted from the first "toxaemic" pregnancy.

The objection that it is difficult to see how kidney damage that can pass undetected by all our tests of renal function can yet be a serious factor during pregnancy, is merely another example of the unreliability of our renal function tests; and in the face of evidence there can be

no fundamental objection to regarding pregnancy as the most delicate test of renal function that we possess.

The value of this view of the etiology of albuminuria is twofold. In the first place it gives us a working basis for trying to improve our results. If the recurrent albuminuria is really caused by an occult nephritis due to the first toxaemic pregnancy, plus a subliminal toxaemia due to the present pregnancy, it is by paying more attention to the first toxaemia that we may hope to prevent the occult nephritis, and so avoid at least one important factor tending to cause recurrence subsequently. It has been shown that the length of time the initial toxaemia lasts is of considerable importance in the causation of this occult nephritis; but that this is not the whole question is obvious from the fact that, even when it lasts for only three weeks or less, the recurrence rate is still 40 per cent. We must study carefully these initial attacks of toxaemia to try and discover other factors which tend to cause occult nephritis if we hope further to reduce the incidence of recurrent albuminuria. In the second place this view enables us to explain the difficulty that is so frequently encountered of placing certain cases of albuminuria into one of the two pathological groups, either by clinical or by chemical tests. Many cases belong to both groups at the same time, and we should not be surprised, therefore, when we are unable to class a particular case as either "nephritic" or "toxaemic."

A chronic nephritic who becomes pregnant is suffering from albuminuria which is almost entirely "nephritic" in origin, only a very small element being "toxaemic." At the other extreme is the healthy patient who develops albuminuria during pregnancy. She is suffering from "toxaemia" with no primary "nephritic" element. Between these two extremes come all shades of combinations of the two elements, and many of the recurrent albuminurias can be regarded as a fairly equal mixture of the two pathological processes.

CONCLUSIONS.

Toxaemia of pregnancy can be regarded as the cause of all first attacks of pregnancy albuminuria in previously healthy patients. The renal damage in these cases is purely secondary to the toxaemia.

As a result of this toxaemia a certain proportion (about 10 per cent.) develop frank chronic nephritis, and bear the stigmata of this disease, whether or not they become pregnant again.

A further proportion (about 40 per cent.) recover their kidney function completely after delivery, and subsequently have normal pregnancies without albuminuria.

The remainder (about 50 per cent.) recover their kidney function only so far as to be free from signs of renal disease in the intervals between pregnancies. If they subsequently become pregnant they suffer with recurrent albuminuria.

Recurrent albuminuria may be looked upon as due partly to a subliminal pregnancy toxaemia, and partly to a pre-existing occult nephritis caused by the first toxaemic pregnancy.

Pregnancy itself is the most delicate test of renal function that we possess.

If this view is accepted the difficulties of placing certain cases of albuminuria into one of two pathological groups are easily understood. Many cases of albuminuria of pregnancy are due to a mixture of both the "nephritic" and the "toxaemic" elements.

Although the incidence of chronic nephritis and of recurrent albuminuria can be favourably influenced by earlier induction of labour in the first attack of toxaemia, this measure by no means solves all the difficulties. We have still to find out the other important factors in the first attack of toxaemia which tend to produce permanent renal damage.

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CAUSES OF SPINAL COMPRESSION.

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THE following four cases of spinal compression seem worthy of record in view of their etiology and symptomatology; thus in the third and fourth cases tuberculosis and syphilis gave rise to the condition—a comparatively infrequent occurrence. The clinical histories of the patients are given below.

CASE I.

A boy, aged 12, first began to complain of weakness of the legs and difficulty in walking in March, 1927. This was followed in April by increasing stiffness of the legs, until he was confined to bed and was unable to walk. The patient had also noticed that for eight months he had been slowly losing the sense of feeling in the legs. The previous medical and family histories were uneventful.

On examination (January 7th, 1928) the patient was found to be quite normal mentally, and no gross abnormality was noticed as affecting the cranial nerves, or the motor or sensory systems in regard to the arms. The lower limbs showed a tendency to involuntary flexion when handled; there was weakness, increase of tone, and very marked loss of power in both legs. The knee and tendo Achillis jerks were markedly exaggerated; the plantar responses were extensor and Oppenheim's reflex was present; the superficial abdominal reflexes were absent; and ankle and patella clonus were present. Sensation to light touch was impaired to the level of the fourth rib, and to a three-inch brush to the level of the umbilicus; heat and cold perception was affected over a similar area. The joint and vibration senses were impaired over the lower limbs. The fundi were normal. No changes were noticed in the other systems.

The Wassermann reactions of the blood and cerebro-spinal fluid were negative, as was also an *x*-ray examination of the spine. The Queckenstedt test showed a complete block, while the fluid removed from the cisterna magna and the lumbar region gave evidence of stasis of the cerebro-spinal fluid when examined chemically.

Lipiodol injected into the cisterna magna came to rest at the level of the second dorsal vertebra, and was crescentic in shape. A laminectomy revealed the presence of an extradural tumour at the level of the third dorsal vertebra. This was removed; the patient made an uneventful recovery, and is now able to walk about in a normal fashion. The tumour on section proved to be an endothelioma.

CASE II.

A woman, aged 53, first began to be ill with a dull aching pain at the lower part of the spine six years ago. Two years ago this pain grew worse, and tended to pass round the lower part of the abdomen, and down the legs to the knees. Six months ago the legs grew weak, and tactile sensation began to diminish. The patient became unable to walk.

On examination on January 24th, 1928, the patient was found to be quite normal mentally; there was no gross abnormality affecting the cranial nerves, and the motor and sensory systems in the arms were not involved. The legs showed loss of power and a slight increase of tone, but no wasting; the knee and tendo Achillis jerks were sluggish, there was no ankle clonus, and the plantar response was extensor on both sides. There was loss of sensation to pain, touch, heat, and cold to the level of the umbilicus. The fundi were normal, and the other systems showed no changes. The blood count was quite normal, and the Wassermann reactions of the blood and the cerebro-spinal fluid were negative. An *x*-ray examination showed some osteo-arthritis of the dorsal spine. The Queckenstedt test revealed a partial block, while examination of the fluid removed from the cisterna magna and lumbar regions gave evidence of stasis.

Lipiodol injected at the cisterna magna came to rest at the level of the eleventh dorsal vertebra. A laminectomy revealed the presence of an intramedullary tumour at the level of the eleventh dorsal vertebra. Removal was impracticable, so the dura was incised to effect a spinal decompression. The patient is now having *x*-ray treatment, and shows slight improvement.

CASE III.

A man, aged 27, first complained in May, 1928, of loss of the use of the right leg, followed in two or three days by loss of the use of the left leg. About fourteen days later the paralysis became complete, with total anaesthesia to the level of the umbilicus. The patient had suffered from Pott's disease since the age of 5.

On examination (June 16th, 1928) he was found to be thin, and to have clubbing of the fingers; the spine showed marked kyphosis and lordosis, but there was no tenderness on pressure on any part. The nervous system showed the following changes. The legs were flaccidly paralysed, with loss of power and tone; the knee and tendo Achillis jerks were just present; the plantar response was extensor on both sides; there was no ankle clonus, and the superficial abdominal reflexes were absent. There was loss of sensation to pin and brush *to eight inches above the umbilicus, with a* tendency to harlequin distribution. No gross changes were noticed in any other system, apart from the deformity of the chest due to the spinal changes.

An *x*-ray examination of the spine showed old Pott's disease, with angular curvature in the mid-dorsal region, as a result of which the thoracic cavity was shortened and distorted. The Wassermann reactions of the blood and cerebro-spinal fluid were negative. The cerebro-spinal fluid taken from the lumbar region showed xanthochromia; the cells numbered 2.3 per c.mm., all being lymphocytes. Protein was present to the amount of 880 mg. per 100 c.cm.; the chloride figure was 720 mg. per 100 c.cm., and the sugar 0.05 per cent. No tubercle bacilli or other organisms were seen.

A laminectomy was performed. This revealed at the level of the fourth to the seventh dorsal vertebrae a reddish-blue, thickened, nodular dura, which enclosed the cord in a collar. The cord was non-pulsatile, and could not be isolated. Some thick, greyish pus exuded from this tissue, and a section of it showed tuberculous granulation tissue. Tubercle bacilli could not be demonstrated in the pus or in the tissue. The patient was discharged unrelieved.

CASE IV.

A man, aged 61, first noticed about eighteen months ago that his right leg was becoming weak. This change slowly developed in the left leg, and four months afterwards stiffness slowly came on; the patient states that his legs tended to jerk up. He added that *six months previously he had a girdle pain at the level of the* umbilicus, and that he was unable to appreciate heat and cold in the legs.

On examination, on April 30th, 1928, the nervous system showed the following changes. The cranial nerves were unaffected, but there was marked wasting of the arms and weakness of the small muscles of the hands, with some slight inco-ordination in the finger-nose tests; the reflexes were sluggish. The trapezius muscles and the sterno-mastoids were very wasted. The legs showed a tendency to a "mass reflex"; the feet exhibited pes cavus, and there was loss of power, marked wasting, and increase of tone. The knee and tendo Achillis jerks were sluggish; there was no ankle clonus; the plantar response was extensor; and Oppenheim's reflex was present. The superficial abdominal reflexes were absent. Sensation to pin and brush was impaired over an area extending from six inches above the nipple and down the inner side of both arms, involving all the fingers, but sparing the thumbs. The Wassermann reaction of the blood was positive in a 1 in 45 dilution, and weakly positive in the case of the cerebro-spinal fluid; this fluid contained 6.6 cells per c.mm.—all lymphocytes; chemical examination of the fluid obtained from the cisterna magna and lumbar regions gave evidence of stasis.

Lipiodol injected at the cisterna magna lodged chiefly in the cervical region. The patient was treated with antisyphilitic measures, but died in about three weeks.

A necropsy revealed the presence of syphilitic aortitis and an extradural cyst at the level of the third to the fifth cervical vertebrae. The cyst was about three-quarters of an inch in diameter, and contained brownish material; the corresponding area of the cord was softened. A section of the cyst showed that it was a gumma undergoing degeneration. The spinal cord below this level showed degeneration due to compression by the cyst.

The points of interest in these cases are the following:

1. In three of the cases (Nos. I, III, and IV) the first abnormality noticed was impairment of the motor system occurring much earlier than sensory involvement.

2. In cases Nos. I and III pain was never reported, while in Case II the pain complained of for six years was probably due to the osteo-arthritis, and only latterly was attributable to the tumour.

3. It is also of interest to note that when pain was complained of it was not felt at the level of the tumour, and was probably due to stretching of the sensory tracts in the cord.

4. Another point of interest was the occurrence of pain in Case II, which was an intramedullary tumour.

I am indebted to Dr. D. E. Core for permission to publish these cases, and to Mr. G. Jefferson for operative details.

CONGENITAL RETROPERITONEAL HERNIA

BY

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RETROPERITONEAL hernia is an uncommon condition. Moynihan and Dobson have dealt with the various forms and their method of origin in their valuable and exhaustive work *Retroperitoneal Hernia*. The case here described does not conform to any of the types noted therein. It was obviously a congenital hernia, comparable in many ways to a left duodenal hernia as described by them.

A farm labourer, aged 66, had suffered for years from occasional attacks of abdominal discomfort, which he described as "indigestion," and could usually attribute it to certain foods, especially pastry, after the ingestion of which he would get epigastric discomfort, lasting from a few hours to one or two days.

In January, 1921, he was admitted into the Dorset County Hospital with, apparently, symptoms pointing to acute appendicitis; the surgeon's notes state that the appendix was inflamed, and was removed; there is no mention of any other abnormal condition in the abdominal cavity having been noticed.

On January 29th, 1926, at 10 p.m., he was admitted into the same hospital under my care, suffering from intestinal obstruction; he gave the following history. On January 27th he awoke quite fit, had his usual breakfast, enjoyed the usual action of his bowels, went as usual to his work in the fields, returned home for his midday meal, at which he ate peas, returned to his work, got "indigestion," which he attributed to the peas, and was so uncomfortable that he returned home and went to bed. On January 28th, at 2 a.m., he vomited; this relieved him somewhat. His medical attendant saw him and treated him. The discomfort continued; notwithstanding the use of aperients, his bowels did not act. The condition remained the same on the 29th; at 7.30 p.m. he vomited some "brown, nasty-smelling stuff"; he was sent into hospital.

On admission his temperature was 97.5° F., pulse 104, respirations 24; he had little abdominal pain, but was uncomfortable. His face was quite placid, and even cheerful during conversation; his heart and lungs were normal; his abdomen was a little "*en garde*"; although slight, it was quite definitely so; the abdomen was a little prominent, chiefly in the umbilical and hypogastric region; it did not move with respiration; there was no peristaltic movement to be seen or felt, nor was anything to be seen or felt at any of the hernial orifices; the rectum was, on examination, found to be empty, and the prostate was enlarged. An enema was given, and was returned clear.

In spite of his slight symptoms an immediate laparotomy was performed at 11 p.m. He was given ether by the open method. A catheter drew off 20 oz. of normal urine. The abdominal cavity was opened by a left paramedian incision; the edges of the incision were well retracted; no bowel came into view, but a large, flat, tense, elastic swelling, with the great omentum spread over it, was in contact with the anterior abdominal wall. On pushing upwards the great omentum there was exposed to view a large, smooth, shiny sac wall, in which distended coils of intestine could be seen tightly packed. On exploring the lower portion of this it was found to extend into the pelvis, reaching to the level of the promontory of the sacrum. The fingers could be passed behind the sac round its lower convex surface; following the sac upwards anteriorly it was found that the transverse mesocolon was arching over it and deeply indenting it. There was only a small portion of the terminal ileum free in the general peritoneal cavity, and this, together with the caecum and the ascending and descending colons, was collapsed; along the large bowel were small scybala at intervals. Coursing in the front wall of the sac from below upwards, and slightly to the right, were three small long blood vessels. Evidently the whole, or practically the whole, of the small intestines and the mesentery were packed away in the sac.

A hole was made in the front wall of the sac, in a bloodless area, and the intestines popped out; these were not greatly distended, and were only slightly congested. Five different portions of gut, which had evidently been nipped by the transverse mesocolon, acting as a constricting band, showed marks of this pressure in linear chocolate-coloured discolorations; each mark was about an eighth to a quarter of an inch wide, and varied from one to three inches in length; in no case was the viability of the bowel impaired. The constricting mesocolon could now be felt to be quite free from the sac wall, it being possible to sweep the finger under it from one side to the other of the three-inch area. The constricting band having been loosened and the bowel released, the toilet of the wound was completed, and the patient returned to his bed.

On recovering from the anaesthetic he began to complain of increasing pain in his right chest. Notwithstanding appropriate treatment, his breathing became more and more laboured and

quickened; he had crepitations at his right base, and he died in twenty-four hours. A limited *post-mortem* examination only was allowed.

Post-mortem Findings.

The lower lobe of his right lung was found to be in a state of acute congestive engorgement.

Commencing at the ileo-caecal junction the collapsed ileum was traced proximally. A length of 1½ feet of collapsed ileum lay free in the peritoneal cavity between the lower right side of the sac and the collapsed caecum, and then passed through an aperture into the hernial sac; this aperture admitted two fingers, was situated on the right side of the sac, and faced to the right; it was at the level of the third lumbar vertebra; through it passed only this *one piece of bowel. The rest of the small intestine and the* mesentery had been all contained in the sac. The entering piece of bowel into the sac was found to consist of the uppermost part of the jejunum; the duodeno-jejunal flexure had not emerged into the general peritoneal cavity as usual, but had been, or rather its peritoneal covering had been, involved in the upper anterior sac wall; for a distance of two inches it was part of the wall, and then gradually became freer and freer, until it finally emerged free into the interior of the sac. About this level the transverse mesocolon arched horizontally over the sac; a finger could be easily passed under this, between it and the sac wall, and swept from side to side, a distance of three inches; it had a free, rounded, thickish edge; it looked like, and had acted as, a band constricting the sac—*the more distended the sac, the greater the constriction.* The fingers in the sac, passed upwards beyond the level of the duodeno-jejunal flexure (in the wall of the sac), showed that the sac cavity extended upwards behind the pancreas, which, like the duodeno-jejunal flexure, was an integral portion of the anterior sac wall in this region; at the upper margin of the pancreas the sac cavity ended, the peritoneal covering of the posterior surface of the pancreas fusing with that of the posterior abdominal wall. When the hernial sac was removed for preservation as a specimen, the duodenal flexure and a portion of the pancreas had to be removed also. In the developing pancreas, when it is completely covered with peritoneum, and after it has completed its rotation to its final position, the posterior surface of the pancreas, with its peritoneal covering, lies against the posterior abdominal wall covered by its peritoneum; normally these two layers fuse together, and the intervening space is obliterated; in this case, for a distance of three inches across its middle, fusion had only taken place at the upper border, the remaining unobliterated space going to make part of the hernial sac.

Tracing the anterior wall of the sac downwards it extended as low as the promontory of the sacrum, where, after curving round its contents, it passed upwards, lying on the posterior abdominal wall and its covering peritoneum, *until it reached the* mesentery, to which, half an inch from its base of attachment, it was fused in a very definite thickened white line of fusion. The mesentery had a smaller line of attachment than usual; the margins of the sac were spread out on each side to the sides of the spinal column; the inner surface of the sac was smooth and shiny; the posterior abdominal wall, covered by its peritoneum, was the posterior wall of the hernia.

Remarks.

Thus the small intestine with its mesentery was not, as is normally the case, free in the general peritoneal cavity, but was confined in a space at the back of the abdomen. It would appear that through an error in development an adventitious fold of peritoneum extended down from the duodeno-jejunal flexure and became fused below to the peritoneum covering the inferior leaf of the mesentery. The small intestine, mesentery, and posterior abdominal wall had their usual peritoneal covering; this space was a closed cavity, except for the aperture giving exit to the ileum; the duodeno-jejunal flexure, instead of emerging from behind the peritoneum into the general peritoneal cavity, emerged into this compartment. The posterior wall was a fixture, and could not expand, the anterior wall could, and did so, in every direction except at its upper end; but here the pressure of its contained bowel kept open the space between the left central portion of the pancreas and the corresponding portion of the posterior abdominal wall, each being covered with its own layer of peritoneum. These normally fuse together. *In this region, also, the* normal development of the transverse mesocolon was interfered with, it remained in its central portion as a bridge passing over the sac.

For sixty-six years *the small bowel had functioned satis*factorily, enabling the patient to carry on his arduous duties without any great disability; but, finally, an indiscretion in diet had fired the mine and converted the potential *stricture into an actual one, and a vicious circle* was set up between an ever-increasing distension of the sac and an ever-increasing pressure of the bridge.

TWO CASES OF OVARIOTOMY I OVER 70 YEARS OF AG

BY

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OWING to the comparative rarity of the operation of ovariotomy in women over 70 years of age the following two cases which were under my care in the "unit" beds of the new obstetric hospital, University College Hospital, seem worthy of publication. Including the 10 cases published by Dr. H. R. Spencer[1] in 1923, 147 such cases of ovariotomy had been recorded up to that date. Since then the records of the following 8 cases have been found in the literature. For assistance in this search I am indebted to Mr. Malkin, the second assistant on the obstetric unit.

In the following list I have not included the 4 cases of malignant ovarian tumours in women over 70 years of age found among 13,259 cases admitted to the University Hospital, Philadelphia,[2] for it is not stated whether they were operation or *post-mortem* specimens.

Cases found in the Literature since 1923.

Tixier, L., and Pollosson, E.: *Gynécol. et Obstét.*, 1925, tome xi, observation vii. Mme M., aged 73. Right ovariotomy, February, 1924.

Moulonguet-Doléris, P.: *Gynécol. et Obstét.*, 1924, tome ix, observation v. Patient aged 70. Hysterectomy and ovariotomy; serous cyst of left ovary.

Reynes, H.: *Marseille-méd.*, 1924, lxi. Patient aged 74. Laparotomy; recovery.

Koucky, J. D.: *Annals of Surgery*, 1925, lxxxi. Mentions one ovarian dermoid occurring in the decade 70–79.

Pribram, E. E.: *Zeit. f. Geburtsch. u. Gynak*, 1924–25, lxxxviii. Three cases. (1) Frau Th. L., aged 70. Left ovariotomy, 1921. (2) Frau L. W., aged 70. Left ovariotomy, 1920. (3) Patient aged 70. Ovariotomy. (These three cases do not appear in Dr. Spencer's "extra cases.")

Isbruch: *Zentralbl. f. Gynak.*, 1926. Frau L. F., aged 70. Right ovarian dermoid removed together with uterus and left appendages, December, 1923. (This case is also mentioned by R. Mayer: *Zentralbl. f. Gynak.*, 1925.)

The Author's Cases.

CASE I.

E. S., aged 75. A married woman who had had seven children, the last confinement being at 39 years of age, was transferred from the surgical wards of University College Hospital to the New Obstetric Hospital on August 6th, 1926. There had been no miscarriages, and the menopause occurred at 50 years of age.

She complained of constant pain in the lower part of the abdomen for the past week. The pain first began at night, waking her up, and had recently been steadily increasing in severity. Up to five months before admission micturition had been normal, but during the last few months urine had frequently been passed involuntarily in small quantities.

The abdomen was distended, resonant to percussion in the flanks, but dull in the umbilical and hypogastric zones. A tender cystic tumour could be felt *rising out of the pelvis and* reaching to 1½ inches above the umbilicus. No fluid thrill could be obtained.

On vaginal examination it was found that the cervix had been pulled up to a high level, and the pelvis felt empty. The diagnosis of twisted ovarian cyst was made and ovariotomy recommended.

The patient, who was a cheerful and intelligent woman, asked for time to consider if it was "worth it" at her age, and to consult her husband; but the pain increased, and she soon decided to undergo the operation.

On August 10th ovariotomy was performed under chloroform anaesthesia. Some little difficulty was experienced owing to *the friable nature of the pedicle, but the operation was com*pleted in twenty minutes, the cyst being removed intact. Contrary to my usual custom, I used catgut in suturing the abdominal wall (I was trying catgut on a series of cases at that time)—continuous for the peritoneum and three sections of continuous suture for the fascia. The skin was united by clips and an anchored dressing fixed by deep "through-and-through" silkworm-gut sutures.

On he specimen consisted of the left tube and mesosalpinx, together with an ovarian cystadenoma measuring 8 by 9 by 8 inches, which contained 4 pints 10 ounces of dark-coloured fluid. The cyst wall was mostly thin, but in one moderately large area the wall was heavily infiltrated with blood and measured 1 inch in thickness. The remains of broken-down septa could be seen on the inner surface of the cyst, but there were no papillomata.

The microscopic sections are of very little interest, and show chiefly fibrous tissue infiltrated with blood.

The patient made an uninterrupted recovery, the temperature never rising above 99.2°.

Without borrowing too much from the above-mentioned article by Dr. Spencer, it may be of interest that this case is similar in several points to some of those he mentions. Thus he points out that malignancy is rare (4 per cent.); that the cheerful woman who is not too fat is a good subject for operation despite her age; that no time should be wasted at the operation; and that the after-care is very important, for there is a liability to chest complications and mental disturbance in these old women.

CASE II.

J. W., a widow, aged 71, had never been pregnant. She passed through the menopause when 48 years of age. She was first seen in the medical out-patient department because she had had pain in the small of the back for three days. Some five and a *half weeks previously* she had had an attack of diarrhoea lasting for sixteen days. The importance of this symptom will be realized. Usually her bowels were opened regularly.

When the physician made his examination he found a "lump" on rectal examination. I was asked to examine the case, and made the following note: "Sigmoid colon palpable and tender. Uterus rather large for patient's age. In close apposition to its right lateral border is a semi-solid tumour not quite as large as a tennis ball. High up in the posterior fornix is a solid wedge-shaped mass. No evidence of carcinoma of the breast or of the stomach. No ascites. On rectal examination no rectal growth can be felt."

The diagnosis of ovarian cyst—possibly a dermoid—was made and ovariotomy advised.

On August 25th I opened the abdomen and found a right ovarian tumour, the size of an orange, embedded in adhesions. The adhesions were separated and the cyst—which on section proved to be a dermoid—removed. Further exploration revealed the real cause of the trouble. High up in the rectum was a carcinoma. It would have been out of reach to rectal examination, but was probably the "wedge" described in the "present state." Unfortunately the growth was inoperable, as it had become adherent to, and had invaded, an adjacent coil of small intestine. There were no obstructive symptoms and no distension of the bowel. Colostomy was not performed.

The operation took thirty minutes; the abdominal wall being closed as in Case I, except that interrupted sutures were used for the fascia.

The great interest of this case to me is the mistake—by which I hope to profit—which I made in diagnosis. In the first place I suspected that the tumour was a dermoid from the peculiar consistency which one associates with these tumours when examined bimanually. Now I should have realized that it was unlikely that a dermoid would suddenly begin to give trouble at 71 years of age, and I should have paid more attention to the one attack of diarrhoea. Then, although no rectal carcinoma could be reached by the examining finger, the sigmoidoscope might have revealed the real trouble. One other point of interest is that dermoids form less than 2 per cent. of ovarian tumours removed after 70 years of age (Spencer, loc cit.).

The further history of the case is as follows:

Recovery from the operation was fairly satisfactory. The wound healed by first intention, but the patient began to feel abdominal pain some ten days after the operation. Flatulence became a troublesome symptom, her appetite failed, and her general condition deteriorated. Some time afterwards she was admitted to the surgical wards and colostomy was performed.

REFERENCES.

1 *British Medical Journal*, April 7th, 1923, p. 582. 2 Norris, C. C., and Vogt, M. E.: *Amer. Journ. Obstet. and Gynecol.*, 1925, vol. 10.

A NEW DAYLIGHT LAMP FOR ACTINOTHERAPY AND GENERAL ILLUMINATION.

BY

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THE principal sources of radiation which are employed in actinotherapy are natural sunlight, arc lamps, mercury vapour lamps, and incandescent tungsten filament lamps. Solar radiation, compared with that from any other source of light, has the greatest luminous efficiency. The distribution of the spectral intensity of sunlight is variable, and hitherto no artificial source of light has been comparable to the sun either in relative intensity or in the nature of the rays emitted. The lamp which is described has been designed to produce a balance of visible and ultra-violet rays comparable to that of sunlight in relative intensity of radiation and in biological action.

Solar radiation, as it reaches the earth at sea-level, emits a number of waves of light extending from 2,900 A.U. in the ultra-violet region to 30,000 A.U. in the infra-red *region*. The energy distribution may be summarized as in the following table, which approximately indicates the percentage energy in selected regions of the spectrum.

TABLE I.

Ultra-violet Region:		
2,900-4,500 A.U.	= 12%	= 12% total energy.
Visible Region:		
4,500-5,500 A.U.	= 20%	= 51% total energy.
5,500-6,700 A.U.	= 17%	
6,700-8,000 A.U.	= 14%	
Infra-red Region:		
8,000-14,000 A.U.	= 25%	= 37% total energy.
Over 14,000 A.U.	= 12%	

The absorption of ultra-violet rays by the layer of ozone situated some thirty miles high produces a very rapid fall in the intensity of rays shorter than 3,000 A.U. and limits the solar spectrum under best conditions to *approximately* 2,900 A.U. Coblentz has pointed out that it is difficult to make an exact radiometric comparison between the radiations from the sun and those from other sources of light, because all the sources are at different temperatures and have different types of emission spectra. The experiments carried out by Professor L. Hill have shown that the high intensity of rays from 3,500 to 2,900 A.U. present in sunlight produces biological action and affects the living skin in the same way as the shorter ultra-violet rays of weaker relative intensity emitted by the usual artificial sources of light.

The incandescent tungsten filament gas-filled lamps emit a "continuous band" type of spectrum similar to sunlight, but have a greater relative proportion of red and orange rays, and the *ultra-violet* rays are limited to 3,500 A.U. They are efficient for visible ray therapy, but do not produce erythema action on the normal skin, this effect being mainly due to rays shorter than 3,100 A.U. Mercury vapour lamps made of quartz emit ultra-violet rays as short as 2,200 A.U.; they are of great intensity in the green, blue, and violet portions of the visible spectrum, and 60 per cent. of their total energy is due to ultra-violet rays. The great intensity of erythema-producing rays present restricts the use of these lamps. Dosage must be carefully controlled, and the specialized technique of "short ray" therapy should be employed. A vitreosil screen or a mercury vapour lamp made of frosted vitreosil instead of quartz cuts out all rays shorter than 2,500 A.U. and reduces the intensity of the ultra-violet rays from 3,500 A.U. to 2,500 A.U. to about one-tenth. At a distance of 30 inches the minimal erythema dose is produced by a quartz mercury vapour lamp in three to five minutes; with a frosted vitreosil lamp the same intensity of erythema is produced in forty-five to sixty minutes. The mercury vapour lamp is a cold lamp and does not contain visible red rays or any great intensity of visible heat rays, but by the combination of tungsten filament lamps and the vitreosil mercury vapour lamp a source of light rich in heat, visible, and long ultra-violet rays is produced. The effects produced are similar to the biological action of sunlight.

COMPONENTS OF THE LAMP.

The lamp which has been constructed consists of (1) a frosted vitreosil mercury vapour tube, 4 feet long, of the Hewittic vacuum type; (2) a series of tungsten filament gas-filled lamps of low voltage; (3) a selective glass filter for ultra-violet rays shorter than 2,500 A.U. (See Fig. 1.) The vitreosil mercury vapour tube is automatic in starting; it can be placed in any position, either horizontal or vertical, and it is completely silent. A direct or alternating electric supply of 3.5 to 7 amperes and 150 to 250 volts is necessary, making a kilowatt output of 0.7 to 1.5 approximately. The spectrophotographic examination of the lamp shows that ultra-violet rays up to 2,500 A.U. are emitted. The intensity of radiation from 3,850 A.U. is greatly reduced compared with that emitted by the quartz mercury vapour lamp running at 3.5 amperes. In the visible region of the spectrum the lamp is rich in green, blue, and violet rays, but is almost entirely deficient of red visible light. The tungsten filament lamps are incandescent gas-filled lamps of 12-volt and 48-watt capacity. A number of these lamps are connected in series. Spectroscopic examination of this source of light shows that it is rich in infra-red, red, orange, and yellow rays, and emits ultra-violet rays to 3,300 A.U. The intensity of red and orange visible light is relatively in excess of the blue and violet light present.

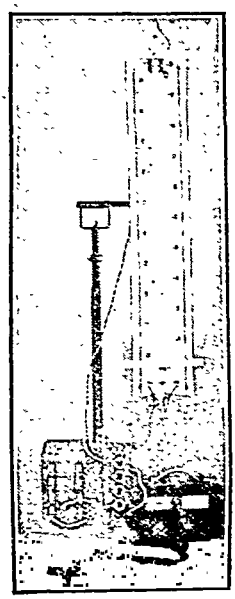

FIG. 1.—New daylight lamp

By the combination of a suitable number of tungsten filament lamps and the vitreosil mercury vapour tube a daylight effect can be produced, by which objects appear to have the same colour as in daylight. The excess of blue and violet rays in the mercury vapour tube is compensated by means of the greater proportion of red and yellow rays emitted by tungsten filament lamps. At a voltage of 210 D.C., eighteen 12-volt and 48-watt tungsten filament lamps connected in series and combined with the vitreosil mercury vapour tube, running at 3.5 amperes, gives a white, comfortably warm, and regularly diffused natural light. The ultra-violet screen is a sheet of glass (sanalux 2 mm. thick) 3 ft. 11 in. by 9 in., which filters off all rays from 2,900 to 2,500 A.U. Photographs taken by means of the rays of this lamp compare favourably with those taken in daylight.

By means of a Griffith's cadmium photo-electric cell T. C. Angus has measured the intensity of ultra-violet rays emitted by this source of light. His observations are recorded in the following table.

TABLE II.

Distance from photo-electric cell to lamps=48 cm. Figures in chart indicate the time in seconds taken to discharge gold-leaf electroscope.

	No Vita Glass Screen.	With Vita Glass Screen =7,200–2,800.
Atmospheric quartz M.V.L. (3.5 amps.) ...	Immediate	27.1
Frosted vitreosil lamp (3.5 amps.)	160.0	1,185.0
New daylight lamp, vitreosil tube and visible light (3.5 amps.). Only 9 in. of lamp tested	29.9	276.0

The results of his experiments indicate (1) that the intensity of ultra-violet rays up to 2,900 A.U. is reduced to one-tenth of that emitted by the quartz mercury vapour lamp, and (2) that the ultra-violet rays from 2,900 to 2,500 A.U. increase the photo-electric effect nine to ten times.

BIOLOGICAL ACTION.

1. *Erythema Production.*—The minimal erythema dose produced by the lamp without the ultra-violet glass screen (using all rays as short as 2,500 A.U.) is 45 to 60 minutes at a distance of 30 inches. With the ultra-violet glass screen it is possible that at 30 inches an erythema could be produced after several hours' exposure.

2. *Action on Infusoria.*—The lethal time for infusoria at a distance of 30 inches was 40 minutes when exposed to unfiltered rays extending to 2,500 A.U., and 120 minutes when exposed through the ultra-violet glass filter to rays extending to 2,900 A.U.

3. *Action on Bacteria.*—A surface culture of staphylococci exposed on a melted agar plate to the source of light was killed in 15 minutes at a distance of 30 inches (rays 7,200 to 2,500 A.U.). Using a sanalux glass screen to filter off rays from 2,900 to 2,500 A.U. lethal action was observed after 150 minutes' exposure. No destruction of bacteria occurred after 2½ hours' exposure through a window-glass screen transmitting rays from 7,200 to 3,300 A.U.

4. *Action on the Haemo-bactericidal Power.*—The hair of the back of a rabbit was removed by means of a depilatory, and the animal was exposed to the rays of the lamp for 2½ hours at a distance of 30 inches. Samples of blood were collected before and after irradiation, and the bactericidal properties of the blood samples before and after irradiation were tested in the usual way. The bactericidal power of the shed defibrinated blood tested *in vitro* had increased after irradiation, in a similar way to the response which occurs after exposure of the skin to sunlight and other artificial sources of ultra-violet rays.

FIG. 2.—Photograph of spectra. 1a, The sun filtered through Br and I screen to show ultra-violet rays. 1b, The sun's spectrum. 2, Quartz mercury vapour lamp. 3, Glass mercury vapour lamp. 4, Incandescent glass tungsten filament lamps. 5, Vitreosil mercury vapour tube and tungsten filament lamps. 6, Vitreosil mercury vapour tube, tungsten filament lamps, and special ultra-violet screen to cut off rays from 2,900 to 2,500 A.U.

SUMMARY.

This lamp affords a useful source of artificial light which can be used for actinotherapy or for general purposes of illumination. Without the sanalux glass filter ultra-violet rays as far as 2,500 A.U. are emitted, which are low in intensity and slowly produce erythema after 45 to 60 minutes' exposure of the normal white skin. Infra-red, visible, and long ultra-violet rays of a constant intensity are transmitted and comfortably warm the body. The total current consumption is 7.5 amperes. The lamp is easily manipulated, requires no attention, and can be tilted to any angle which may be necessary for treatment. It will make an excellent "bed cradle" lamp for treatment of ambulatory cases.

The glass filter cuts off all rays shorter than 2,900 A.U., and the lamp can in this way be utilized as a safe type of artificial light for general use. It is comparable to the solar radiation, and prolonged exposures can be applied

without dangers of injury to the eye or production of rapid erythema. The nature of the light is similar to daylight, and all objects appear in their natural colours. For this reason the lamp should be of practical use in photography and for general purposes of illumination. The spectroscopic examination and the biological investigations which have been described show that this lamp transmits rays of therapeutic value, and is in many respects "artificial sunlight." The lamp is manufactured by the Hewittic Electrical Company, Ltd., Horsham, Surrey.

THE INFLUENCE OF MOVEMENT ON THE TRUNK OF THE HUMAN BODY.

(NOTES ON PHYSIOLOGY AS SHOWN BY A STUDY OF SCOLIOSIS.)

BY

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In a study of the possible movements of individual vertebrae and the vertebral column as a whole, made prior to 1911, it was found that rotation of the trunk by means of the upper extremities was followed by rotation of the lumbar vertebrae in one direction and of the dorsal vertebrae in the opposite direction. This discovery of an apparent paradox led to an avid study of the influence of movement on the vertebral column. The study was undertaken in the hope that some light might be thrown on the subject of pathological scoliosis. In this brief paper will be shown what has been learned of the physiological in the study of the pathological.

The word "scoliosis" is taken from the Greek, and signifies twisted. It means more. At the time these studies were begun it was felt that there were two types of pathological scoliosis—namely, "functional" scoliosis and organic scoliosis. The first was characterized by lateral deviation of the spine and rotation of individual vertebrae without apparent change in their internal architecture. The second was characterized in addition by distinct bony change.

As years have passed it has become more common to accentuate the fact that scoliosis may be physiological or pathological. Of physiological scoliosis it may be said that the trunk assumes this position many times each day. Physiological scoliosis is due to posture, and in it there is never any change in the architecture of the individual vertebrae. Whenever the trunk is rotated or bent to the side a certain definite roll of the component parts of the trunk takes place. This roll forms a picture which is known as physiological scoliosis, and is the counterpart of pathological scoliosis. Every attitude is either one of strain or non-strain. Thus it is felt that physiological scoliosis may be the forerunner of pathological scoliosis.

The complex picture which is known as scoliosis, when analysed, is shown to be represented by a lateral deviation of the spine, or by lateral deviations of the spine. A posterior prominence of the ribs of one side is also seen—indeed, the rib wall seems often to become crushed in towards the spinal column. It is so flattened that frequently the posterior promiuence becomes razor-like. On the opposite side the thoracic wall is broadened, and there is an anterior protuberance of the ribs. There is, indeed, a flattening of the ribs and a diminution of the thoracic cavity on one side, with a flanging out of the ribs and a corresponding increase of the thoracic cavity on the other side. The spinal column is usually curved in the dorsal region, the curve being convex towards the side on which the ribs are flattened. There are compensatory curves, usually in the cervical and lumbar region. The formation of these compensatory curves may depend on the laws of gravity.

This picture, known as scoliosis, is the same either in physiological scoliosis or in pathological scoliosis, with the difference that from physiological scoliosis, which is due to movement, there is a return to the so-called normal, or passive, position, while from pathological scoliosis there is no return to the normal. In physiological scoliosis there is never change in the architecture of individual vertebrae, whereas in pathological scoliosis change is common.

Many endeavours have been made to use our knowledge of physiological scoliosis in order to treat pathological scoliosis. Superimposing physiological scoliosis of a reverse character on a pathological scoliosis already existing was practised. These endeavours were not successful because pathological scoliosis is always greater than physiological scoliosis, and it is impossible to change the greater by the lesser.

One of the most interesting physiological facts brought out in these studies of scoliosis was that rotation and lateralization (side-bending) both cause scoliosis of exactly the same character. The same picture is seen in either of these movements—indeed, it is impossible to turn the trunk as a whole without the occurrence of a certain definite order of movement of its component parts. It is also impossible to lateralize the trunk, or bend it to the side, without a certain definite order of movement of the individual parts taking place. The turning of the trunk to one side causes exactly the same change as the bending of the trunk to the same side.

LITERATURE.

Forbes: *New York Med. Journ.*, July, 1912; *Canadian Med. Journ.*, November, 1912; *Amer. Journ. of Orthopedic Surgery*, July, 1913; *British Medical Journal*, August, 1913; *Surg., Gynecol. and Obstet.*, April, 1914; *Amer. Orthopedic Journ.*, 1914; *Canadian Med. Journ.*, July, 1920; *Journ. of Bone and Joint Surg.*, July, 1922; *Canadian Med. Assoc. Journ.*, March, 1923; Feiss: *Amer. Journ. of Orthopedic Surgery*, 1908-9; *Cleveland Med. Journ.*, 1908.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

MONILIASIS AND TUBERCULOSIS.

In 1914 a young woman was under my care with chronic bronchitis and asthma, from which she had suffered for several months. She was not doing well, and I sent her to a chest hospital, where her condition was diagnosed as tuberculosis. For domestic reasons, however, she refused to enter an institution, and I was enabled to make a number of careful examinations of her sputum. I did not find tubercle bacilli, but yeast cells were constantly present. Mouth contamination was excluded by the fact that all the sputa I examined were fresh, and from each one I picked out portions from the pellets. Fermentation reactions proved that the yeast cells were maltose, non-saccharose fermenting monilia—in fact, the thrush fungus. After prolonged treatment with alkalis, potassium iodide, and adrenaline, the patient recovered, and has been in good health since. In the case of this patient and other similar cases I did not attach importance to the presence of yeast cells, and assumed some other cause for the bronchial catarrh, until I read some papers by Colonel E. P. Marett of Jersey. In an examination of the sputa of a number of cases of suspected tuberculosis he found that 40 per cent. contained blastomycetes, 40 per cent. blastomycetes and tubercle bacilli, and 20 per cent. tubercle bacilli without blastomycetes. His experience suggested, furthermore, that the first class, if left untreated, soon passed into the second, a damaged lung being particularly susceptible to tuberculous infection, and that the outlook for the second class was less hopeful than for the class of pure tubercle bacillus infection. This latter class, he maintains, should be treated apart from the second in order that double infections might be avoided; the outlook for the second class may be improved by the immediate treatment of the curable blastomycetic infection; and the first class can be cured by means of alkalis, potassium iodide, and blastomycetic vaccines. I think it probable that Colonel Marett has brought to light a truth unsuspected by his predecessors—that chronic blastomycetic bronchial catarrhs occur frequently, and that they are the commonest precursors of tuberculosis in this country. The system of treatment he has devised is within the reach of everybody; its application cannot fail to secure greater efficiency in the treatment of tuberculosis and to diminish the frequency of the disease.

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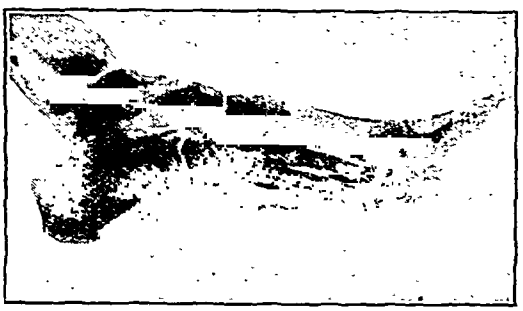
KÖHLER'S DISEASE OF THE SECOND METATARSO-PHALANGEAL JOINT.

THE following case is recorded on account of its rarity. Whether the rarity is real or is due to cases being overlooked is uncertain. The clinical condition bears a superficial resemblance to osteo-arthritis, and it is probable that some cases are labelled as such where no *x*-ray examination has been made.

A woman, aged 20, complained of pain and swelling of the second metatarso-phalangeal joint of the left foot. Discomfort in the joint, not amounting to actual pain, was first noticed

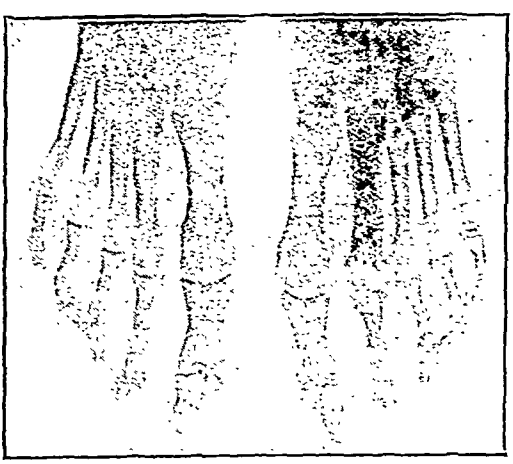


while playing hockey about four years ago, and had been present intermittently since then. During the fortnight before examination the joint had been red and swollen, and walking was distinctly painful.

On examination no crepitus was found, but the head of the metatarsal was felt to be enlarged. There was no limitation of movement. *X*-ray examination revealed the following abnormalities:

1. The whole length of the second metatarsal bone showed marked sclerosis. Its girth was increased by cortical proliferation, but no periostitis was present.
2. The metatarsal head, instead of having a smooth convex outline, was ragged and concave.
3. The base of the first phalanx, instead of having a smooth concave outline, was ragged and convex.
4. The concavity of the metatarsal head was deeper than the convexity of the base of the first phalanx, so that the joint space was widened. The width was slightly greater towards the outer side of the joint.
5. No true osteo-arthritic changes were present.

The disease occurs between the ages of 10 and 18; it is more common in females than in males, and in the right foot than in the left. It may be followed in later life by osteo-arthritic changes.



In regard to etiology, many theories have been advanced, but no settled conclusions are possible at present. Some Continental authors describe an aseptic epiphyseal necrosis with obliteration of the vessels of the periosteum and of the articular capsule. They believe that such changes only result from a series of mechanical insults in which the head of the second metatarsal, owing to its important weight-bearing function, is peculiarly exposed. There is a certain similarity in its radiological appearance with Perthes's disease of the hip-joint. In each case the joint surfaces are irregular, the joint space is widened, and there is increased girth due to new bone formation. Secondary osteo-arthritic changes may occur in both diseases. Whether or not this similarity points to a common etiological factor remains to be proved.

In Köhler's *Röntgenology* will be found a full description and bibliography of the condition.

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Reports of Societies.

RETENTION OF URINE.

AT a meeting of the Brighton and Sussex Medico-Chirurgical Society, on April 4th, with the president, Mr. GEOFFREY BATE, in the chair, Mr. H. J. MCCURRICH read a paper entitled "Retention of urine."

Mr. McCurrich said that retention of urine, one of the most distressing conditions, might be overlooked, or diagnosed as present when it was really absent. The former error was due to misinterpreting the symptom of overflow due to retention of urine. The second mistake arose from a failure to diagnose suppression of urine; a catheter would clear up the difficulty, and should always be used before a diagnosis of incontinence was made. The lecturer added that he had once seen a patient who had been placed in seclusion as a case of mania. The real trouble was uraemia and retention of urine, due to an enlarged prostate. The man's retention of urine with overflow had been mistaken for incontinence. In partial retention of urine, residual urine remained after micturition, and its amount indicated the degree of obstruction or the weakness of the bladder.

The Historical Aspect.

Retention of urine had occupied the attention of medical practitioners for centuries. Read, in 1588, gave a good description of caruncle, which was the name for stricture; he appeared to consider it a form of new growth, and remarked that Galen used to pluck it forth with iron instruments. He did not dilate the stricture, but passed vegetable stalks through it, and took steps to reduce the congestion. If he could not get a stalk to traverse the stricture he used a lead sound, and, if that failed, a silver or gold one. Wax candles or bougies were used to apply medicaments to the stricture. Ambroise Paré, surgeon to King Henry III of France and Poland, issued in 1579 a work on surgery, which comprised a large range of subjects, including that of retention of urine, or suppression, for these two terms were used synonymously, though Paré stated that in some cases no urine was in the bladder, and therefore a catheter would not help. In the midst of accurate observations, Paré introduced statements that showed that he was a believer in "humours" and in such vital properties of organs as "*attractum*" and "sympathy." He also held the view that seasons affected these matters, and that the best season in which to treat a stricture was the spring. There was no mention of enlargement of the prostate in Paré's writings. Hart, in 1625, in his *Anatomy of Urines*, described the diagnosis of complaints by persons to whom the urine of patients was brought, but whom they had never seen. Hart jeered at them, and asked what would be sent to these persons if retention of urine existed. He gave a disastrous instance of the folly of this procedure. Record, in 1547, in the *Urinal of Physic*, gave various herbal preparations for the treatment of stricture. He mentioned one delightful homœopathic remedy for the treatment of stone which consisted of obtaining a stone passed by a human being, grinding it up with water, and drinking the mixture so prepared. Johann Scultetus, in the *Chirurgorum Armamentarium*, translated by E. B., and published in 1674, quoted from Celsus an excellent account of catheterization. Christopher Brandon Trye of Gloucester, in 1774, had described [illegible] tion at the internal meatus, [illegible]

bladder, and enlargement of the prostate. He described the palliative treatment of an enlarged prostate, a condition which he regarded as invariably fatal, and stated, "It is a melancholy case, but happily does not often occur till that advanced period of life which naturally leads to the grave." He used to inject oil under pressure into the urethra in cases of stricture, through which he could often pass a bougie subsequently. He also invented a vacuum pump with a receptacle for extracting the urine in cases of atony. He mentioned the recent introduction of caoutchouc or flexible gum elastic catheters from Paris. In 1778 Alexander Reid of Chelsea wrote a work called *An Enquiry into the Merits of Operations Used in Obstinate Suppression of Urine.* He advised strongly the method of puncture per rectum practised by Flurant of Lyons. Percival Pott, in 1778, described the reflex retention of urine in such conditions as fistula in ano.

Etiology of Retention.

Mr. McC[illegible] stated that the causes of retention might be [illegible]

Males.

1. Newborn.
   - (*a*) Meatus stuck together by a little dried blood or secretion.
   - (*b*) Pinhole meatus.
   - (*c*) Phimosis.
   - (*d*) Congenital membrane in posterior urethra.
2. Young Adults.
   - (*a*) Acute urethritis, prostatitis, or prostatic abscess.
   - (*b*) Reflex spasm due to inflammation elsewhere—for example, appendicitis, ischio-rectal abscess, etc.
   - (*c*) Trauma locally or to reflex arc.
   - (*d*) Overdistension of bladder.
   - (*e*) Functional or hysterical causes.
   - (*f*) Organic nervous diseases.
   - (*g*) Stone.
3. Middle Life.
   - (*a*) Urethral stricture.
   - (*b*) Tabes dorsalis.
   - (*c*) Causes under 2.
4. Old Age.
   - (*a*) Enlarged prostate.
   - (*b*) Atony.
   - (*c*) Causes under 2 and 3.

Females.

- (*a*) Urethritis.
- (*b*) Retroverted uterus enlarged by fibroids or pregnancy.
- (*c*) Prolapse of urethral mucous membrane.
- (*d*) Caruncle.
- (*e*) Hysteria.
- (*f*) Nervous diseases.

Hamilton Bailey had described the causes of retention according to age, the ages given being those of Shakespeare's seven.

Treatment of Retention.

Mr. McCurrich said that it was a popular but erroneous lay idea that the bladder would burst; actually, if the obstruction occurred at the neck of the bladder, overflow took place after a certain degree of distension. If the obstruction was in the urethra, extravasation and fistulae occurred. Prolonged distension of the bladder led to dilatation of the ureters and pelves of the kidneys, and uraemia. The speaker said that before attempting to examine and relieve a case of retention of urine one ought to have an idea of the history of the case and the probable cause. This was important, because in suspected stricture instruments of small diameter must be used, whereas in enlargement of the prostate it was safer to use large instruments; there was less risk of bleeding from the congested gland with these. Soft rubber and metal instruments were sterilized by boiling; gum elastic and silk web instruments were sterilized by exposure to formalin vapour. Dr. Galt, pathologist to the Royal Sussex County Hospital, had recently tested the efficacy of this method as used in the portable glass tube with a formalin tablet in the perforated container in the cork, and found that this method of sterilization was quite satisfactory. External urethrotomy, apart from puncture for the relief of retention, dated from the early part of the nineteenth century, and in this country was associated with the names of Guthrie and Syme, and later Wheelhouse.

Mr. McCurrich remarked that the disadvantage of Wheelhouse's operation was that great difficulty might be experienced in finding the way through the stricture when the urethra in front of it was opened. He had therefore devised the following operation. The patient was anaesthetized spinally and placed in the lithotomy position. The bladder was opened suprapubically by a small incision, into which a finger was introduced; along this a sound was passed into the internal urinary meatus and through the prostatic urethra. Another sound was passed through the external urinary meatus along the anterior urethra. The tips of the sounds were then only separated by the stricture, and a perineal incision on to the tops of the sounds divided it. The tips of the sounds were exposed; the anterior one was rotated to extrude its tip. Each end of a piece of rubber tubing about the size of a No. 12 catheter was tied on to the sounds, a long window being cut close to the end of the one tied to the posterior sound. The sounds were withdrawn by the way they entered, and the tube was drawn in with them, so that it traversed the urethra and bladder. Each end of the tube was secured by a safety pin, so that however restless and uraemic the patient was there was little risk of his extracting the tube. Each day the tube might be moved to and fro by means of the pin at each end; in this way the urethritis associated with an indwelling catheter was diminished. The tube might be left in for as long as a week. The subsequent treatment and dilatation were the same as for a Wheelhouse operation. Mr. McCurrich had performed this operation first in 1925, and had performed it twice since. The fact that the tube traversed the suprapubic wound did not delay healing.

FUNCTIONAL NERVOUS DISORDERS IN THE SERVICES.

AT the meeting of the Services Section of the Royal Society of Medicine (the new name of the former War Section, *adopted subject to the approval of the Society's* Council) on April 8th a discussion took place on functional nervous disorders in the services. Lieut.-General Sir MATTHEW FELL presided.

Colonel J. C. KENNEDY opened the discussion with some observations on the incidence of hysteria in the army. He said that it was not surprising that many men should have broken down under the strain of their experiences in war, but under normal conditions one was not accustomed to look upon hysteria as a factor of much importance in the male subject. It had, however, gradually been borne in upon him that hysteria did exist to quite an appreciable extent. The incidence was distinctly increasing in the army. In 1927 there were 126 admissions for hysteria, a ratio of 0.7 per 1,000 strength, comparing with a ratio of 0.4 in 1921, and an average ratio of 0.1 for the five years before the great war. Combining with the figures for hysteria those for all diseases of the nervous system, for neurasthenia, for epilepsy, for mental disease, and for disordered action of the heart, it appeared that the incidence of nervous disorders rose in 1921, and although it showed a tendency to fall in subsequent years, it still remained at considerably above the pre-war level. Some idea of the clinical types and etiological factors of hysteria during peace-time conditions was obtained by an analysis of 177 cases made during the eighteen months from January, 1927. In a few cases the diagnosis was uncertain or open to criticism for various reasons. Eliminating these, there were 164 in which the diagnosis of hysteria seemed justified. In 82 of these fits or convulsions were the predominant symptom. The great majority of these patients were admitted to hospital for observation as to the nature of a "fit." Analysis of this group showed evidence of a relationship between incidence and length of service. Of the 82 cases, 32 had had less than one, and 52 less than two years' service. In a group of 10 other cases tremor or spasm was the prominent feature, and again in 19 there were marked paralysis, disturbances of sensation, and aphonia. A considerable

proportion—43—of the total number showed mental symptoms and amnesia, and here again the majority of the cases occurred in the first two or three years of service. Finally, there was a group of 10 cases which had occurred in Aden in association with some cases of neuritis which were at first thought to be beri-beri. The analysis of these 164 cases supported the generally accepted view that the basic factor in the etiology of hysteria was a constitutional or inherent instability of the nervous system. From the service point of view the speaker thought the definition by Osler and McCrae was very apt: "For practical purposes, the physician may think of hysteria as an unconscious mechanism, utilized to protect or remove the individual from a disagreeable, undesirable, or threatening situation." The manner in which these cases were disposed of was recorded in 151 cases: 113 men were returned to duty, and 38 were found unfit for military service. The speaker emphasized that the hysterical condition might be superimposed upon an organic lesion, wound, or toxic condition; hysteria should not be officially diagnosed as such if associated with any organic disorder, as such a diagnosis was unjust to the patient, and created trouble in finally disposing of the case. The decision as to whether the hysterical person should be retained in the service or not depended on a collective consideration of the length of service, the evidence of previous history, and the effect of treatment. Treatment, apart from general considerations of health and the application of electro-therapy, took the form of counter-suggestion or persuasion. A patient not easily amenable to persuasion might require prolonged treatment, and in view of the liability to recurrence, ceased to be an economical proposition for the army under peace-time conditions. At the same time, the principle that no man should be discharged from the service for a curable disability until he was cured, even though he would never make an efficient soldier, was one that the medical authorities would like to see carried out; and, as a matter of fact, the question of specialist psycho-therapeutic treatment had been receiving attention.

Surgeon Rear-Admiral E. T. MEAGHER, R.N., urged that medical officers concerned with the admission of candidates to the service should devote attention to, and make a record of, the mentality of the candidate. Observation should also be made of the recruit during his first year of service to see whether he exhibited any significant behaviour characteristics. In the navy and in seafaring life generally the conditions tended to raise the resistance to hysteria. Hysteria was more frequently exhibited by the less educated classes, and he could not recall having seen a case of pure hysteria in an officer. In the diagnosis of hysteria it was very necessary to make sure that organic disease did not coexist, and the same discretion must be used in neurasthenia. From the naval records there appeared to be little difference in the incidence of the psychoneuroses on comparing the pre-war period with the present; the ratio of psychoneuroses in the navy was 2.6 per 1,000 in 1912 and 2.5 in 1925. The ratio for hysteria, however, had shown some advance, possibly because the medical officer now was more aware of its existence, or because of the increased emotional tendency of the present generation, fostered by the cinema habit and the picture paper.

Squadron Leader M. L. BURTON, R.A.F., said that in peace time the flying branch of the R.A.F. was subject to stresses in excess of those incurred by the other services, and therefore the question of whether an officer possessed a stable and flexible nervous control became of more importance. There had been a more or less steady decrease in the psychoneuroses in the service since 1921. Among the officers, during the past three years, a very much higher percentage of cases had occurred in those who, for various reasons, were not called upon to undertake flying duties. This was explained by the fact that many of these officers had previously been engaged on full flying duty, that they were often older men with heavy responsibilities, and were more likely than the very young men to have intercurrent domestic and private worry, and that in the case of many of them the preliminary medical examination had been less strict than for those intended for the flying branch. In the assessment of candidates for the flying branch account was taken, first, of the personal history, with special reference to any nervous symptom; secondly, of the family history, as to the incidence of any nervous or mental trouble; thirdly, as to the constitutional mental make-up of the candidate, based upon his demeanour during examination and his proficiency in occupations and sports; and, finally, in the absence of any more effective tests, of the results of certain physical examinations, such as the behaviour of the respiratory and cardio-vascular centres under stress, the systolic and diastolic pressures, the pulse, and the deep reflexes as indicating muscular control. As regards the efficiency of these tests, the speaker said that it was significant that a very small proportion of officers in the flying branch broke down, even under conditions of severe stress. With regard to treatment, only selected cases of psychoneurosis of emotional origin could be treated successfully in the service, owing to the time involved. Cases might be patched up, but were liable to recurrence under strain. The speaker pleaded for a common nomenclature for use in the services.

Dr. ALDREN TURNER, speaking as a member of the War Office Medical Board, said that from the cases which came before the Board it was difficult to obtain a trustworthy idea of the incidence of functional nervous disease; for although the patients were numerous, they were usually of a special character, and were brought before the Board for a particular purpose. He thought, however, that hysteria, as illustrated by the usual stigmata of paralyses and fits, was rare. Many conditions upon the borderline of the psychoneuroses might be correctly placed among the minor psychoses and anxiety conditions. There had been opportunities of seeing in young officers cases of fits certified as epileptic developing in special circumstances of mental strain and overwork, and probably to some extent aggravated by personal habits or climatic conditions. Seizures which owed something to this last cause might cease when the officer returned home from abroad. The question arose whether these cases should be placed in the same category as continuing epilepsy, or whether they did not belong to a special class of epilepsy having a psychogenic origin, and should be treated as a temporary disability. The existence of such a group of epilepsies could not be disregarded. In civil practice it had to be recognized that patients exhibited seizures clinically indistinguishable from ordinary epilepsy, as reactions to situations of a purely psychical nature. Many such cases might result from an inability to adjust to special or unusual conditions, and indicated an instability in the mental and nervous make-up. He subdivided into three groups the outstanding functional nervous disorders observed amongst officers as neurasthenia: (1) purely debilitated or nervously exhausted cases; (2) cases showing evidence of anxiety, accompanied by characteristic physical signs; (3) the post-concussional syndrome. There was no definite dividing line, but if the origin of the nervous breakdown were inquired into, evidence permitting of some such subdivision would probably be forthcoming. Reference had been made to a considerable increase of functional nervous disorder, particularly neurasthenia, in the army from 1921. It was difficult to dissociate this fact from the strain of war service, with consequent weakening of nervous and mental resistance. Experience at the Board had proved that a number of officers who in 1914–18 suffered from some temporary form of functional breakdown had a predisposition to relapse under any special strain, such as an infection, a trauma, or even ordinary service peace-time risks.

Sir MATTHEW FELL said that as an administrative officer he was very glad that this subject had been ventilated. It was one of the most difficult to deal with, whether from the point of view of recruiting, invalidity, or attributability. He was prepared to take up the question of inter-service terminology. The Army adhered to the last edition (1918) of the *Nomenclature of Diseases* of the Royal College of Physicians, in which classification there was nothing intermediate between hysteria and psychasthenia, so that, as Colonel Kennedy had said, it was difficult to place the psychoneuroses. If the R.A.F. could produce graduations which were not printed in the nomenclature there was no reason why the army should not accept them.

A MATERNITY SERVICE.

AT a meeting of the Edinburgh Obstetrical Society held on March 15th, with the president, Dr. HAIG FERGUSON, in the chair, Dr. JAMES YOUNG read a paper on "A scheme of maternity service co-ordinating ante-natal, domiciliary, and hospital treatment."

Dr. Young said it was now generally agreed that the high maternal mortality and morbidity rates were dependent primarily on the inadequacy of the machinery of present-day midwifery. The present medical service was wasteful of lives and health because the duties of general practice were incompatible with satisfactory midwifery. The annual death rate among mothers in England and Wales was about 5 per 1,000 live births. This implied the deaths of about 3,000 women every year, and, on a moderate estimate, at least 30,000 more women annually suffered more or less lasting damage from child-bearing and childbirth. The best possible results were found where the service was conducted by midwives with doctors available for the emergencies. The proved advantages of such a combination were seen in the practice of the Queen Victoria Jubilee Institute nurses in England and Wales and in the outdoor practice of the large maternity hospitals, where the death rate was very low. An ideal practice in these regards was the East End Maternity Hospital in London, where for many years the death rate in a total of about 2,000 unselected cases treated annually was under 1 in 1,000—that is, about one-fifth of that obtaining over the rest of the community. On analysis the low death rate in these hospital practices was found in the fact that they were managed by self-contained units each serving its own district in which the normal cases were conducted physiologically by midwives and in which the ante-natal supervision and the management of the abnormal cases were dealt with by the doctors belonging to the service. In this way there was a continuity of supervision and control of the ante-natal, the domiciliary, and the hospital treatment of the patients, and of the personnel responsible for the services. The system made for a physiological management of the 90 per cent. or thereby of normal cases, and for an early discovery and efficient treatment of abnormalities.

Dr. Young believed that an adequate maternity service was possible only if planned on a national basis, having as its object a co-ordination of the activities of the midwife, the doctor, the national health insurance, and the local authorities, which at present were unrelated and often overlapped. This service should work in conjunction with voluntary agencies, such as hospitals, and should include (1) a midwife for every labouring woman, (2) ante-natal supervision in every case, (3) a medical service for complications, and (4) the hospital. Pending a national service much might be done if local authorities undertook to make provision for their own needs. It was important to relieve doctors in busy general practice of the duties of midwifery, and the doctor personnel of the service should consist largely of general practitioners selected because of their special experience and training and of a comparatively small number of specialists. Dr. Young thought that in every area the "unit" system should be aimed at as far as possible, for, by ensuring continuity of treatment and responsibility, it would lead reciprocally, on the one hand, to an elevation of the standard of domiciliary practice, and, on the other, to prevention of the tragedies of the present-day maternity hospitals. The fact that all cases were under the control of the unit from the beginning meant that there was no vitiation of the hospital environment by the introduction of women with passages infected before admission by the injudicious management of some outside attendant over whose methods the hospital had no control. In this way the atmosphere of the hospital was kept secure for clean midwifery. In the East End Maternity Hospital in London, whose practice was based on this system, sepsis had been practically eliminated for many years. On the other hand, infection of the normal case was one of the outstanding disadvantages of the present-day maternity hospitals, which opened their doors to clean and unclean alike. The recent report of the Scottish Board of Health on Maternal Mortality referred to the high death rate in maternity institutions in Aberdeen due to this contagion, and other writers—for example, Janet Campbell—had commented on the same thing. In the Edinburgh Royal Maternity Hospital there had been 72 cases of puerperal sepsis with 5 deaths amongst normal spontaneous deliveries in four years. Dr. Young referred to the complexity of the segregation problems which faced every such mixed hospital, and raised the question whether, under the present unsatisfactory conditions of maternity practice, it might not be desirable to abolish the large mixed hospital and, in such districts, to have two kinds of hospital, the one for "booked" and clean cases—that is, those under the supervision of the hospital—and the other for the infected or suspect cases. Dr. Young believed that the "suspect" cases (for example, the unsuccessful forceps case, the case of placenta praevia plugged before admission, and abortions) raised even greater segregation difficulties than the frankly septic case, and that the tragedies of the hospital sprang chiefly from it.

Dr. E. FARQUHAR MURRAY (Newcastle) read a complementary paper on "The future of obstetrics, with special reference to the development of a maternity service," which is printed this week at page 691.

LUMBAR SYMPATHECTOMY.

A MEETING of the Section of Anatomy and Physiology of the Royal Academy of Medicine in Ireland was held on March 8th, with the president, Dr. W. FEARON, in the chair. Professor T. H. MILROY read a paper on the effects of lumbar sympathectomy on skeletal muscle and on cutaneous vascular adjustments.

Professor Milroy, describing experimental work, stated that the left lumbar sympathetic cord, between the vertebral column and the median border of the psoas muscle, in the dog was exposed in the usual way by the retroperitoneal route. The large ganglion behind the diaphragm was lifted up, a section made just above, and the cord freed from before backwards by clean section (without stretching) of the rami. The cord was then divided below the last lumbar ganglion and removed. The cutaneous vascular changes could be easily followed by observing the surface temperature changes in the cushion pad of the foot by the use of very small surface copper constant and thermo-couples. The couples, opposing one another, applied to the cushion pads of the two feet, and any difference in the surface temperature was noted before the experiment. This examination was made some days before the operation under different conditions of environmental temperature and exercise. During the operation any temperature changes could be readily detected—for example, those produced by the handling and initial section, and those which occurred subsequent to the operation. A slight fall in temperature followed the initial section, but this was succeeded by a gradual slow rise in temperature in the pad on the side of the incision. The higher temperature on the operated side was observable for very long periods after the operation, unless both pads had been cooled down greatly by exposure to cold. Even when there was no temperature difference between the two sides on any particular occasion, the absence of the normal cutaneous vascular adjustments on the side deprived of sympathetic control could be readily detected in the following way. If the hind leg on the operated side was warmed up to 35° C. for three minutes, the warm dry coverings were then removed, and both limbs were exposed to the room temperature (8°-12° C.) in a basement, the pad temperature on the warmed operated side remained much higher than on the other side for at least six minutes, and frequently for a quarter of an hour. When the normal limb was tested in the same way the surface temperature of the warm pad rapidly fell, so that within less than a minute it was normal or subnormal. Subsequently a slight rise in temperature, due to increased blood flow, was observable. The lack of vascular adjustment on the operated side had been quite distinct for three months after the operation, and in the case of a boy, in whom lumbar sympathectomy had been performed two years previously for spastic paralysis, the delay in adjustment was just as evident. Changes in skeletal muscle tone on the sympathectomized side were much more difficult to detect; no difference in gait on the two sides could be detected.

There was the same resistance to bending, and also approximately the same firmness of muscles of the two sides. When, however, the dog was kept lying quietly on its back with the hind limbs gently supported, there was frequently observed, on carefully withdrawing the support, less evidence of a locking tonus during the fall in the sympathectomized than in the normal animal. Testing by Lapicque's method, the chronaxie values were approximately the same on the two sides for the same muscle. The tone of the muscles on the sympathectomized side could be as readily raised by strychnine as on the normal side. As regards chemical changes, so far as the main components which play a part in the contractile mechanism were concerned, no distinct difference could be made out between the muscles of the two sides. The water, glycogen, pyrophosphate, and hexose-phosphate percentages were approximately the same when identical muscles of the two sides were compared. Lactic acid production occurred in the same way and to the same degree on the two sides. As a rule the phosphocreatine (phosphagen) in the operated side musculature was slightly lower and the reaction more alkaline.

Urea Equilibrium in the Kidney.

Professor J. M. O'CONNOR read a communication on the demonstration of a urea equilibrium in the kidney, on behalf of Dr. E. J. Conway, Mr. Moriarty, and himself. It was shown that a theory of the secretion of urine put forward by one of the authors involved a reabsorption of urea from the kidney into the blood, if the concentration in the blood of another substance excreted by the kidney was considerably increased. A trial arrangement for the purposes of the experiment was described, and tests and controls were reported, which showed that on an increase in the sulphate concentration of the blood, urea was taken up by the blood from the kidney.

TORSION OF THE GALL-BLADDER.

AT a meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland, on March 22nd, with Mr. R. A. STONEY in the chair, Mr. H. MEADE showed a case of torsion of the gall-bladder.

Mr. Meade said he had only been able to discover twenty-three cases of this condition in the literature. The clinical details in his case were as follows.

On October 26th, 1928, he had been called by Dr. H. Byrne in consultation to see a woman, aged 36, with an "acute abdomen." She had had no previous illness of any kind. On the day before he saw her she had had an attack of severe pain in the right hypochondrium while at lunch. It was so intense that she sent for Dr. Byrne, but when he arrived the pain had passed away. He examined her, with negative results; the abdomen was perfectly soft, and was not tender. There was a return of the pain the same night, but it had shifted down into the lower abdomen. When Dr. Byrne arrived the pain had again vanished, and the findings were negative. She was free from pain during the rest of the night, but in the morning the pain recurred in the right lower quadrant of the abdomen. When Dr. Byrne examined her for the third time he found that the abdomen was rigid and tender, especially over the appendicular region; the patient's temperature was normal, and her pulse 80.

Mr. Meade saw her three hours later. She was somewhat flushed in appearance, and had a temperature of 99° F. and pulse 100. Her heart and lungs were normal. The abdomen was not distended, but it did not move with respiration; on palpation it was rigid everywhere, but most markedly over the appendicular region, where she complained of the pain. Pressure over the descending colon caused acute pain, referred to the appendicular region. She was passing flatus, and was not constipated. The diagnosis of acute appendicitis was made, and she was transferred to St. Vincent's Hospital, Dublin, where Mr. Meade operated on her that evening.

A McBurney muscle-splitting incision was used, and on opening the peritoneum some brownish fluid escaped, similar to the fluid occurring with an ovarian tumour with a twisted pedicle. Both the appendix and caecum showed signs of peritonitis, but as the symptoms were more acute than the condition showed, and on account of the brownish fluid, the abdomen was opened again in the mid-line. The pelvis was found to be normal, with the exception of about four ounces of brownish fluid. The incision was enlarged, and the gall-bladder was seen to be moderately distended; it was soft to the touch, but as black as ink owing to its being rotated three times on the cystic duct, from right to left. The gall-bladder was gangrenous, including the beginning of the cystic duct. The mesentery, which was about one inch long, was clamped and divided. Mr. Meade then clamped the cystic duct, removed the gall-bladder, and tied the duct and the mesentery. He excised the appendix, fixed the caecum, and closed the abdomen, placing a drain through the first incision up to the liver. The patient made an uninterrupted recovery.

The PRESIDENT stated that he had never come across a case similar to the one described by Mr. Meade, and did not remember ever having noticed, either on the operating table or in the dissecting room, a gall-bladder with a torsion of this kind. He thought that as a general rule diagnosis would be impossible. Mr. H. STOKES said he had seen cases in which there had been two or three torsions before the actual obstruction occurred.

MILK MIXTURES IN INFANT FEEDING.

AT a meeting of the London Jewish Hospital Medical Society, on March 14th, Dr. BERNARD MYERS read a paper on infant feeding.

Dr. Myers said that general experience strongly favoured breast-feeding; should this source diminish, and the usual methods of stimulation of breasts fail to produce sufficient supply, the best plan was to give supplementary feeds of a milk mixture after each breast feed. When, however, the mother's milk secretion had almost ceased, and more especially if it worried her, it was better to give a milk mixture at once if a suitable wet-nurse was not obtainable. The milk mixture that the speaker favoured consisted of certified milk, water, and lactose, and never had any cream added; the omission of cream was due to the fact that the fat and protein of cow's milk was never quite so digestible as that of human milk. He believed in giving 1.5 per cent., and, later, 2.5 or 3 per cent., of fat in a milk mixture, but never more, lest dyspepsia should result. He never advised boiling or even pasteurizing a certified milk mixture, since it should be absolutely safe with ordinary precautions, and did not risk the spoiling of the vitamins. If certified or Grade A milk was not obtainable, it was safer to have the milk just boiled, and to allow it to cool very quickly. When the milk could not be digested, and curds formed in the stools, citrate of soda placed in each bottle was most useful. When the milk supply was not satisfactory it was better to use a good dried milk, of which there were many brands on the market. Condensed milk as a routine was unsatisfactory, though the speaker said he had used it in several cases of premature twins for a few weeks only with good results. In his opinion it was a good plan to give all babies, but especially partly or wholly weaned ones, malt and cod-liver oil from the sixth week onwards, and orange juice night and morning. Protein milk, and also lactic acid milk, had their uses in dealing with fermentation troubles in the intestine, but he did not think it a good plan to use these foods for too long. Some babies who had hypersecretion of the gastric juice did well with small doses of sodium bicarbonate after each bottle, or added to the last part of it. Dr. Myers thought that the proper time to wean breast-fed babies was 9 months, since the only cases of rickets in babies so fed that he had seen occurred in children which had been suckled for more than a year. If a baby gained from four to eight ounces weekly, took sufficient food and digested it; if it had one to three healthy motions daily, slept well, and developed normally; if it had a healthy skin and good general nutrition—the baby was all right, and there was no need to worry. If illness supervened the nutrition soon suffered.

Sterility.

Dr. M. MARCUS contributed some observations on sterility as seen in general practice. He placed the cases of sterility seen by the general practitioner in four groups: (1) those with no abnormality; (2) those with irregular menstruation; (3) those with some pelvic abnormality; and (4) those with obesity or some endocrine disorder. He cited a number of cases in each group, and showed how frequently women were treated at different hospitals by operation and other means, without the husband having been examined. In many cases the sterility was due to the male, sometimes from previous disease, such as gonorrhoea, at other times from no known cause—idiopathic azoöspermia. Dr. Marcus described the various methods of obtaining specimens of the semen, including puncture of the testicle, and indicated the precautions necessary for preserving the specimens for microscopical examination. He stressed the importance of occasionally imparting instruction to patients on the physiology of marriage, and the need for facilities, in connexion with hospital gynaecological departments, for the investigation and treatment of male sterility.

Reviews.

PRINCIPLES OF CLINICAL PATHOLOGY IN PRACTICE.

CLINICIANS may be roughly divided into two groups according to their attitude to the pathologist; there are those who would confine him to his laboratory and only suffer him to issue reports therefrom, and there are those who would entice him to the bedside and encourage him to assist in the elucidation of the problems that arise there. Dr. BOURNE and Dr. STONE belong apparently to the first group, but, realizing that it is nowadays impossible for the practitioner to assess for himself the value of many special investigations, they have, in *The Principles of Clinical Pathology in Practice*,[1] put out a guide which shall enable all to know when and why laboratory investigations should be undertaken and what the answers mean. Whether bottled fruit is really the equal of the ripe fruit off the tree is a question each must decide for himself; but all will agree that it is often a very welcome and perhaps sometimes an indispensable substitute; and there is certainly room for a book that deals with laboratory investigations, as this one does, primarily from the clinical point of view.

The book is divided into eight parts, each dealing with one group of disease or one system—for example, specific infections, blood diseases, gastro-intestinal system; and these parts are subdivided into chapters dealing with individual diseases or organs. Each subject is introduced with a paragraph headed "general considerations," which gives a short account of the general pathology of the disease on which the laboratory investigations are based; these are then enumerated and the information they give is explained. The authors' task is no easy one, for laboratory investigations do not lend themselves readily to an answer of "yes" or "no" in their clinical interpretation; they merely provide facts that have to be fitted in with other facts elicited by other methods. To get over this difficulty the authors have included a good deal of clinical detail that is not ordinarily found in books on clinical pathology, and they have thereby achieved a considerable amount of success. As is inevitable under conditions which demand some degree of precision, there is a good deal of bare statement that will by no means meet with universal agreement from pathologists; but on the whole the general reader probably gains from being left undisturbed by an insistence on the rather numerous exceptions which, though they may be held to prove the rule, cannot be conveniently fitted into the authors' scheme. The general usefulness of the advice on therapeutics is more open to doubt. The art of specific therapy is rather too delicate for the bottling process, and it is probable that anyone who is not himself experienced in it had better apply at first to someone else who is. For example, to say that though specific therapy in erysipelas is generally considered to have little influence on the course of the disease, it is probably wise to use it if specific therapy is to do any good at all each case must be dealt with according to the individual conditions, and though it may be successfully treated with stock vaccine it cannot possibly be treated with stock advice.

The last chapter deals in an attractive and stimulating way with allergy and allergic diseases. This is not really clinical pathology at all, but nevertheless it forms a fitting conclusion to a book that will provide many clinical workers with much information they would otherwise find it hard to come by. An appendix gives some useful notes about the collection of specimens; it would be well to add that the wisest plan of all is to communicate first with the pathologist and ask how he likes it done. Two things we hope to see altered, for widely different reasons, in another edition. The recognition of the *Bacillus anthracis* in the vesicles of an anthrax pustule is certainly *not* a procedure that requires a properly equipped laboratory; a slide, a bottle of stain, and a microscope are all the apparatus required, and to wait for more is to lose time that may make the difference between life and death. In former days we used to talk in plain English of "cutting a section," modern fashion speaks of a "biopsy"; the authors' phrase "biopsical examination" is an ugly tautology that should not be allowed to survive.

[1] *The Principles of Clinical Pathology in Practice.* By Geoffrey Bourne, M.D.Lond., M.R.C.P., and Kenneth Stone, M.D.Oxon., M.R.C.P. Oxford Medical Publications. London: Milford, Oxford University Press. 1929. (Demy 8vo, pp. x + 392; 10 figures. 10s. net.)

THE FUEL OF LIFE.

THIS has been called the Mechanical Age. Certainly there is an inclination to assess the progress of man by his ability to invent machines to carry on his struggle for existence. We feel at home with engines. The vocabulary of mechanics and dynamics creeps easily into our general conversation. There is no more certain way of persuading the man in the street—or, should we rather write, the man in his car?—to take an objective interest in his own body than by inciting him to compare its parts and their functions with those, say, of an internal combustion engine. In *The Fuel of Life*,[2] therefore, Professor J. J. R. MACLEOD has chosen a title which will at once attract interest and convey a definite meaning. A generation which displays greater concern for the fluctuations of the petrol market than for the price of bread may be expected to have definite ideas about the properties of fuel. Lest these reflections might mislead the reader, we should hasten to add that Professor Macleod's book is not a popular exposition of physiology written in the form of a topical allegory. Rather is it a learned and critical discussion of a restricted metabolic problem which invites the serious consideration of the author's colleagues in physiology. At the same time the title conveys its general appeal with intent. Professor Macleod has developed his argument with a simplicity and clarity of description which seeks to make it understandable not only to the academic physiologist, but to that larger audience whose concern is with the practical application of the principles of physiology to the care and repair of health.

The author is not, as a matter of fact, concerned with the mechanics of the animal machine, but with the special problem of the chemical nature of the fuel which yields the energy for vital activities. In the plant it is generally agreed that the three chief nutrient materials—protein, carbohydrate, and fat—are freely converted into one another. In the animal economy, on the other hand, a body of evidence has accumulated in favour of the view that fat is not converted into carbohydrate, although, of course, the reverse process is a fact of universal experience. Since both fat and carbohydrate are undeniable sources of energy, it follows that these two materials must follow independent metabolic routes. How decided has this opinion become is witnessed by the words of Graham Lusk, that great student of nutrition, who has written "one by one the bulwarks of the doctrine of the conversion of fat into glucose have been shattered, and it may now be relegated to the realm of scientific superstition."

Professor Macleod brings the whole subject under renewed scrutiny. As a result he concludes that the defences have, in fact, withstood the assaults rather well. Indeed, he is persuaded that the attack has served only to betray the inherent weakness of the attackers' position. He urges that much of the experimental evidence upon which has been built the case against the conversion of carbohydrate into fat does, when re-interpreted in the light of modern knowledge of metabolism, actually establish the thesis that glycogen must arise from fat under a variety of conditions. This argument involves a review of much of the author's own laboratory, upon such subjects as the work, together with many recent contributions, chiefly from respiratory exchange in starvation, in spontaneous and in experimental pancreatic diabetes, the changes in metabolism under the influence of insulin, adrenaline, and phloridzin, and in isolated tissues. In particular, Professor Macleod insists upon the fallacy of the prevalent assumption that the tissues of a diabetic animal are unable to metabolize sugar. This assumption is entirely without direct proof. A final chapter discusses the possible positions of

[2] *The Fuel of Life.* By John James Rickard Macleod, M.B., LL.D., D.Sc., F.R.S. Princeton: Princeton University Press; London: Milford, Oxford University Press. 1928. (Med. 8vo, pp. ix + 147; 12 tables. 11s. 6d. net.)

acetaldehyde, dihydroxyacetone, and other hypothetical substances of unknown structure in the catabolic path of carbohydrate.

It is not for the reviewer to sit in judgement upon the evidence in the case, even were his verdict to have the weight of authority. Sufficient is it to affirm that the argument has been conducted with discretion, power, and a wide knowledge of the problem.

SINUS THROMBOPHLEBITIS.

GENERAL sepsis originating in suppurative disease of the middle ear is one of the most important complications of otitis media. It is especially so because of its frequency and the difficulty of diagnosis, and because the appropriate treatment can in many cases avert a fatal issue with complete restoration to health. Its importance, therefore, justifies the lordly volume entitled *Sinus Thrombophlebitis*,[3] in which Dr. ALFRED BRAUN of New York has given a complete account of the subject. The actual principles of surgical treatment in the established condition have not perhaps made any fundamental advance since the late eighties; but in knowledge of its pathology, and in the clinical studies which have shown the way to its early diagnosis, there has been great progress; and, as effective treatment is closely dependent on these, the surgery of this condition has thus advanced *pari passu* with pathology and diagnosis. A large part of the book is devoted to the development and anatomy of the venous sinuses. This contains many important points of surgical anatomy, which escape attention in ordinary anatomical textbooks, or at any rate their importance is not emphasized. Anatomical connexions and variations here play an essential part in the pathological conditions when disease occurs, and this aspect receives proper notice. Of the chapters relating to pathology, symptoms, and diagnosis, and finally to treatment, it is only necessary to say that the whole matter is presented in an exhaustive fashion; the essentials are studied minutely, while the extremes, both of theory and practice, to which this form of disease is peculiarly subject, are handled with brevity and moderation. Every surgeon who devotes his attention to the ear or the head and neck in particular should be grateful to Dr. Braun for this magnificent volume.

A PRIMER FOR DIABETICS.

A Patient's Manual of Diabetes,[4] by Dr. HERBERT MOXON, is primarily intended for the information of the patient suffering from diabetes, and is based on a course of lectures to nurses delivered at the Perth Hospital, Western Australia. The author's aim is to give the patient a mental picture of his disease which will never be forgotten. With this object in view there are two chapters describing respectively "How the human engine works in health" and "How it works in diabetes." The physiological and pathological facts are set out in simple terms, so that if a patient is really interested (and no doubt some are) he may be better able to grasp what insulin can do for him, and why he must, even with insulin, keep strictly to a prescribed diet. The author next gives a short description of the symptoms and complications of diabetes, followed by three chapters on the principles of diabetic dietetics. In these chapters Dr. Moxon recommends chiefly the rules laid down by R. D. Lawrence, G. A. Harrison, and H. MacLean. The book includes also instructions for the administration of insulin and for urine testing. As a whole the book is well arranged and the instructions are clear and concise. Dr. Moxon appears to adhere to the method of a preliminary starvation of his patients, a plan which many authorities now consider unnecessary and even inadvisable. He gives expression to a grave warning on the dangers of pregnancy for a diabetic woman, even if treated with insulin. Yet it seems likely that an increasing number of women will pass safely through the dangers of childbirth, in spite of diabetes, provided insulin is scientifically employed. But these are minor criticisms; the book is written on sound lines and will prove helpful to those for whom it is intended.

[3] *Sinus Thrombophlebitis: Inflammatory Diseases of the Venous Sinuses of the Dura Mater.* By Alfred Braun, M.D. New York: P. B. Hoeber, Inc.: London: Milford, Oxford University Press. 1929. (Imp. 8vo. pp. xii + 269; 111 figures. £2 12s. 6d. net.)

[4] *A Patient's Manual of Diabetes.* By Herbert W. Moxon, M.R.C.S., L.R.C.P. London: H. K. Lewis and Co., Ltd. 1929. (Cr. 8vo. pp. xii + 132. 5s. net.)

BLOOD EXAMINATIONS.

DR. D. WARSAMY has produced in *Examen du Sang*[5] a comprehensive guide-book to the numerous laboratory methods which may be used to determine the histological, chemical, and serological constitution of the blood in health and disease. In the 472 pages there is much information that will be useful to the clinical pathologist. The arrangement of the book is awkward, involving much repetition and overlapping; it is a pity that the author has felt moved to include descriptions of methods and apparatus (with figures) which are now only of slight historical interest, and not employed in modern laboratories. Several methods for the estimation of haemoglobin are described, but Haldane's modification of Gower's haemoglobinometer, much used in this country, is not mentioned. The direction for the enumeration of platelets is scanty and the technique is not sufficiently detailed; there is no notice of the influence of operations or of splenectomy on the platelet count. The use of the word "monocyte" as a synonym for "red cell" is possibly an error. There is no mention of the presence of polychromasia in healthy blood, and no reference to the "reticulocytes" so much noted nowadays in connexion with the liver treatment of pernicious anaemia. The statement that in pernicious anaemia dwarf ("nains") cells predominate is, of course, not correct. In this account of the polymorphonuclear leucocyte Dr. Warsamy makes no mention of Arneth's classification of the nuclei, or of Schilling's haemogram. Under the section of microbiology there is much description and technical detail (for example, preparation of media), which belongs to textbooks of bacteriology.

THE TREATMENT OF THE CRIMINAL.

IN the *Journal* of September 22nd, 1928, there was an obituary notice of Dr. ALBERT WILSON, who was the author of a number of books and papers bearing on the subject of criminology and some of the psychological aspects of medicine. During the great war, though past the age of 60 years, he served with the French Red Cross, and issued some papers relating to military medicine and surgery. Two days before his death he had finished correcting the final proofs of a further volume, which has now been published under the title of *The Child of Circumstance: the Mystery of the Unborn*.[6] In addition to the author's preface, it contains a short notice of the life and work of Dr. Wilson, and two "forewords," one by the Rev. Dr. R. J. Campbell, and the other by Dr. J. S. Bolton, professor of mental diseases in Leeds University. Dr. Wilson's own statement of his book is that "the aim is to deal with the criminal from a scientific point of view, to ask what he is and why he is." It can scarcely be claimed, even by those to whom the personality of the author made the strongest appeal, that the result is commensurate with the aim. In the obituary notice above referred to we said that his first book "though readable and provocative of thought, and revealing deep sympathy with social misfits, inclined somewhat towards dogmatic statements on matters insusceptible of proof." The same phrase can truthfully be applied to his last book. It may perhaps be best described in Dr. Campbell's words as "a presentation of kindly and instructive recollections of past events and scenes in a varied professional career," and it is certainly, as Dr. Bolton says, "a work inspired by earnest and lofty motives." It is, however, very miscellaneous and disconnected. It contains a number of studies of individual criminals and delinquents, and of cases of double or multiple personality, some of which came under the personal observation of the author, but others of which

[5] *Examen du Sang.* Par Dr. D. Warsamy. Paris: E. Le François. 1928. (6½ × 10, pp. viii + 472; 44 figures, 2 plates. 50 fr.)

[6] *The Child of Circumstance: the Mystery of the Unborn.* By Albert Wilson, M.D.Ed. London: J. Bale, Sons and Danielsson, Ltd. 1928. (Demy 8vo, pp. xx + 420; 67 illustrations. 15s. net.)

are the staple cases of medical literature. There are chapters of some interest dealing with penal methods in Holland, Belgium, France, Germany, Spain, and America, both North and South. In addition, there are remarks, either collected into specific chapters, or scattered throughout a number of chapters, on sex and brain physiology, on heredity, on normal and abnormal psychology, on Freud and psycho-analysis, on the virtues of capital punishment and flogging, on Elizabeth Fry and John Howard, and, delightfully but quite inconsequentially, on Quakerism and on Lord Lister, of whom the author was a pupil, and to whom, as "my beloved chief," the book is dedicated. Throughout several of these sections one cannot escape the suspicion, often amounting to a conviction, that the facts given would not survive legal cross-examination or strictly scientific research; and it is certain that Dr. William McDougall and others would repudiate the views and ideas and teaching with which they are credited. It must be admitted, then, that the book is unreliable as a guide to the subjects with which it deals, but substantial parts of it are useful and interesting, and the whole is obviously the work of "a man of very generous instincts, whose innumerable acts of kindness were done in the most unobtrusive and self-effacing manner."

ANNALS OF MEDICAL HISTORY.

WITH the January number the first volume of the new series of the *Annals of Medical History*[7] begins. It is somewhat smaller in size and will in future be issued six instead of four times a year. The cover bears the portrait of Nicolaas Tulp (1593-1674), burgomaster of Amsterdam and lecturer on anatomy, in which capacity he lives in Rembrandt's famous picture of the "Anatomical Lecture"; he is referred to in an appreciation of the medical profession and the divine origin of medicine by Professor H. Burger, also of Amsterdam, who displays a remarkable and gratifying acquaintance with the works of British writers. The frontispiece represents William Cheselden (1688–1752), whom Mr. Mortimer Woolf mentions in "Some Personalities of the Hunterian Epoch," his presidential address to the Hunterian Society of London in 1927. Two fine addresses delivered in connexion with the tercentenary of the publication of Harvey's *De Motu Cordis* occupy rather less than half this instalment; the first, by Dr. Alfred E. Cohn of New York, was given on "The Development of the Harvean Circulation" before the Harvean Society of New York; the second, by Dr. E. B. Krumbhaar of Philadelphia, is based on the tercentenary exhibit of Harveiana by the College of Physicians of Philadelphia on March 22nd and 23rd, 1928, and deals with some biographical matters pertaining to the discovery of the circulation of the blood. The list of these possessions shows how rich the Philadelphia College is in Harvey relics, largely due to the activities and help of the late Dr. Weir Mitchell. In memory of William Potter, who for thirty years was president of the Board of Trustees of Jefferson Medical College, an annual lecture has been established, the first of which was delivered in Philadelphia on April 25th of last year by Sir StClair Thomson. Taking as his subject the strenuous life of a physician in the eighteenth century, this former president of the Medical Society of London discourses pleasantly on its founder, John Coakley Lettsom, and includes, among other well-executed illustrations, a map of Pennsylvania showing the districts called Lettsom and Fothergill. Dr. Burton Chance of Philadelphia gives an account, based on personal knowledge, of Squier Littell (1803–86), now almost forgotten, but deserving a better fate as one of the founders of ophthalmology in America. The activities of Martin Lister (1638–1712), zoologist, physician to Queen Anne, and a benefactor to the Ashmolean Museum at Oxford, are described by Mr. S. Wood, who appends extracts of medical interest from Lister's "Journey to Paris in 1698." After a scholarly editorial on ancient herbals there are a number of reviews of books, which, as usual, are well worth reading.

[7] *Annals of Medical History.* New Series, Vol. I, No. 1, January, 1929. Edited by Francis R. Packard, M.D. New York: P. B. Hoeber, Inc.; London: Baillière, Tindall and Cox. 1929. (Imp. 8vo, pp. 125; illustrated. Subscription in Great Britain £2 5s. per volume of six numbers.)

NOTES ON BOOKS.

DR. ARCHIBALD MALLOCH, who was inspired, like many others, by the late Sir William Osler with a devotional spirit for medical history and is now librarian of the Academy of Medicine, New York, gave a tercentenary address on *William Harvey*[8] to a joint meeting of the Harvard Medical Society and the Boston Medical History Club, held at the Peter Bent Brigham Hospital, with Professor Harvey Cushing in the chair. Reprinted from the *American Journal of Surgery*, this well-written and (as would be expected from Paul B. Hoeber's publications) appropriately illustrated address tells the story of Harvey's life and work, giving a human touch by a short account of his eccentricities. While paying a tribute to Sir D'Arcy Power's standard life and the late Sir Norman Moore's notice in the *Dictionary of National Biography*, Dr. Malloch has performed the now difficult task of adding something new to this much celebrated subject; he shows that Wilhelm Fitzer of Frankfurt, who published the original edition in 1628 of the *Exercitatio Anatomica de Motu Cordis*, was an Englishman, and raises the possibility that the poor paper on which the first edition was printed was a result of the Thirty Years War. The address is most conscientiously documented.

The 1929 edition of the *Yearbook of the Universities of the Empire*,[9] edited by T. S. STERLING, M.A., and published for the Universities Bureau of the British Empire, in form and contents closely resembles the issues of previous years. It comprises concise summaries from the calendars of seventy British universities, eliminating strictly local matters, and presenting information of more general interest. In relation to each university it gives an account of its curriculum, degrees, diplomas, fees, residential accommodation, libraries, and museums, and publishes a complete staff directory. Appendixes include guides to the conditions governing admission to various professions and careers; lists of university scholarships, fellowships, and grants for research; lists of professional schools, of the universities of the United Kingdom, and the distribution of subjects in which these universities severally may be said to specialize; lists of centres of research outside the universities; and a statement as to the conditions of admission of students from abroad into universities of the United Kingdom. A further appendix records the titles of theses accepted for the doctorate degree.

The forty-fifth annual issue of the *Year-Book of the Scientific and Learned Societies of Great Britain and Ireland*[10] comprises a record of the work done in science, literature, and art during the session 1927–28 by numerous societies and Government institutions. In form it resembles its predecessors, giving in relation to each learned society or institution a list of its officials, publications, and meetings, followed by a list of lectures and papers read before the society in the course of the session. In the section on medicine are included lists of papers issued by the Ministry of Health, the Medical Research Council, the British Medical Association, and the various medical societies. The publishers announce that in the next issue of the *Year-Book* they intend to mention only papers which, having been printed, have become available for reference.

Pleasantly written and with many illustrative examples to emphasize the conclusions, Dr. E. MARION COX's volume in the Mental Handicaps Series, edited by Dr. T. B. Hyslop, deals with *Mental Handicaps in Literature*.[11] The lets and hindrances which may obstruct the literary creative mind in its attempts at self-expression include, of course, bad heredity, alcohol and narcotics, the toxins of disease, poverty or riches, the mental atmosphere of the period, and writing for the daily press. Heredity, it is pointed out, is chiefly concerned in the transmission of a nervous state that may manifest itself in various forms of hypersensitiveness; some of these are definitely neuropathic, but others enable the poet, painter, or musician to achieve success. The frequent use of any narcotic or stimulant brings about in the long run a greater or less degree of physical deterioration of body and mind, but under medical control Dr. Cox admits that their use may be beneficial. With regard to the possibility that the toxaemia of chronic tuberculosis may stimulate literary brilliancy a caution is thrown ou

[8] *William Harvey.* By Archibald Malloch, M.D.McGill, M.R.C.P.Lond. New York: P. B. Hoeber, Inc.; London: Milford, Oxford University Press. 1929. (Post 8vo, pp. xi + 103; 10 plates, 3 figures. 7s. 6d. net.)

[9] *The Yearbook of the Universities of the Empire, 1929.* Edited by T. S. Sterling, M.A. London: G. Bell and Sons, Ltd. 1929. (Cr. 8vo, pp. xiv + 852. 7s. 6d. net.)

[10] *The Year-Book of the Scientific and Learned Societies of Great Britain and Ireland.* Forty-fifth annual issue. London: C. Griffin and Co., Ltd. 1929. (Demy 8vo, pp. vii + 420. 10s. net.)

[11] *Mental Handicaps in Literature.* By Edwin Marion Cox, M.D. With a foreword by Theo. B. Hyslop, M.D. London: Baillière, Tindall and Cox. 1929. (Fcap. 8vo, pp. xi + 93. 3s. 6d. net.)

that this is unlikely to counterbalance the handicap in other directions. Dr. Hyslop provides a scholarly and philosophical foreword.

The campaign to eat more eggs has found a capable exponent in Mr. JAMES GATECLIFF, who has written a pamphlet entitled *Eggs: A Treatise on their Food Value*,[12] "dedicated to the housewives of England." Dr. G. Clark Trotter, who contributes a preface, points out that under the Sale of Food Order (1921) it is no offence to label foreign eggs with the word "English" so long as the words "fresh" or "new-laid" are omitted. He suggests that some cases of egg idiosyncrasy may perhaps be explained by the fact that the subjects have seldom or never had a really new-laid egg. The pamphlet contains sections on the food value of eggs, on the differences between British and imported eggs, and on methods of testing eggs for age. Mr. Gatecliff is anxious to free England from the "foreign yolk," and believes that an egg (English new-laid) a day will keep the doctor away.

[12] *Eggs: A Treatise on their Food Value.* By James Gatecliff, B.B.C. Lecturer. Birchington, Kent: James Gatecliff. Price 6d.

PREPARATIONS AND APPLIANCES.

BACILLUS ACIDOPHILUS THERAPY.

MULFORD acidophilus bacillus blocks are designed to provide a palatable and portable method for carrying out *B. acidophilus* therapy.

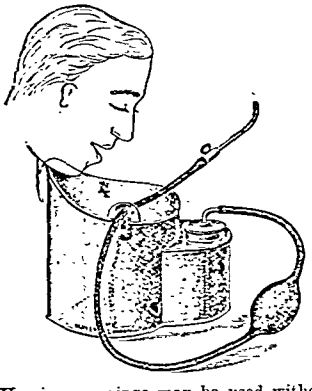
The object of this therapy is to suppress the growth of undesirable and toxic micro-organisms in the colon by encouraging the growth of the harmless *B. acidophilus*. Metchnikoff first drew general attention to the virtues of sour milk therapy, and subsequent research has shown that the beneficial effects of this treatment depend on the establishment of *B. acidophilus* as the dominant organism in the colonic flora.

Each block contains 150 billion living acidophilus bacilli of the Y type at the time of preparation, and it is estimated that at the expiration date marked on the packages 10 billion will still be viable. The blocks are made up with agar, and contain a certain quantity of milk sugar. They are coated with chocolate to prevent desiccation and to render them palatable. The dose recommended is 2 to 4 blocks a day for an adult. This treatment should be supplemented with lactose, which can be taken pure, or can be obtained from milk or fruits.

The makers (H. K. Mulford Company Ltd.) claim that their preparation constitutes the most convenient, attractive, palatable, and economical way of taking the acidophilus treatment.

A LAVAGE APPLIANCE.

Mr. Hugh E. Jones (Liverpool) writes: Unless a gravity douche-can is used, lavage of the accessory sinuses requires the patient, the nurse, and the surgeon between them to hold a syringe, and two more or less clumsy vessels—namely, the lotion vessel and the receiver.



The apparatus here illustrated is an attempt to overcome these difficulties by combining the lotion holder and the receiver in one appliance. The can is held by the patient, and the surgeon or nurse has both hands free to control the cannula and the syringe, which is securely held to the can by its detachable fastener. An assistant is not required, and, if necessary, the patient, by placing the can on the table, is able to perform the lavage unaided and in comparative comfort. If preferred the Higginson syringe may be used without the clip, which is detachable. The apparatus, which in the illustration is shown proportionately too large, can be used equally well for lavage of the eyes, ears, or any other part of the body. It has been made for me by Messrs. Mayer and Phelps.

ACETYL CHOLINE.

Acécoline is a French preparation of acetyl-choline hydrochloride which is marketed in this country by the Anglo-French Drug Co., Ltd. Acetyl choline is an extremely powerful stimulant of the parasympathetic system. A dose of one-thousandth of a milligram given intravenously in cats produces a measurable fall of blood pressure. The drug produces little or no action when given by the mouth, and the action when given intravenously is far too violent to be safe; therefore it is recommended for subcutaneous or intramuscular administration. The dose recommended is 20 to 200 mg. The effect of the drug in animals is to produce a very powerful but transient stimulation of the parasympathetic system. The reason for the transient action is that the drug is destroyed after contact with the blood for a few seconds. The vendors recommend acécoline for use in a large variety of conditions, including hypertension and a condition they term hyporagotonia

THE ORGANIZATION OF A MATERNITY SERVICE.*

BY

E. FARQUHAR MURRAY, M.D., F.R.C.S.,

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THE problems of maternity provide the greatest possible scope for organized preventive medicine. By means of an adequate maternity service many of the deaths and much invalidism resulting from the so-called "physiological process" of childbirth could be avoided.

The main criticism of the present system is that essential services are not available for many patients of the industrial class. The service rendered by a maternity hospital to such patients may be taken as an index of the essential requirements. It provides the following: (1) ante-natal supervision; (2) during the confinement, which takes place under the supervision of a midwife, clean surroundings, and an abundance of surgical dressings and lotions; (3) a doctor, who is on call to assist delivery, to repair lacerations, or to deal with complications; (4) good nursing; (5) post-natal supervision; (6) consultant services. Patients who have neither hospital facilities nor the means of obtaining the necessary assistance must be provided for, and it is for them that a maternity service should be organized.

Good nursing, the first essential of an efficient service, will never be obtained so long as handywomen are tolerated. Many patients cannot afford to pay for the services of a midwife as well as a doctor. In some districts the midwives are idle while handywomen flourish, and in others there are no midwives. For this state of affairs the profession is not to blame. The majority of patients would prefer to be under the care of a doctor, and we believe, and impress on our students, that medical supervision is necessary. As it is, many doctors working with handywomen are having a demand made on their time and energy for a most inadequate reward. Some doctors, indeed, refuse to attend a case unless a midwife is engaged as well, but it must be difficult to make this an inflexible rule. There are disadvantages to the patient both when the doctor works with a handywoman and when the midwife works on her own. In the former case the patient is denied trained nursing, and in the latter proper supervision. Midwives—either individually or as a team—should work in co-operation with a doctor; it is absurd to regard their book of rules as a substitute for medical supervision.

A maternity nursing service should be organized under direct medical supervision, and trained nursing should be placed at the disposal of a doctor whose patient is unable to make the necessary provision herself; the present almost independent position of midwives is not to the public welfare. As a temporary measure in teaching centres the pupil midwives, who are under the supervision of a trained midwife, might be brought into the service. By this means doctors would have nursing assistance and pupil midwives would gain experience, part of which the Central Midwives Board might very well allow to count for their qualification.

The Essentials of Maternity Care.

The following help would be given to the profession: (1) Urine specimens would be tested and visits paid to the patients to ensure that they were carrying out the rules of hygiene during the ante-natal period. (2) During the course of labour intelligent messages would be sent when a doctor's services were required, whether to assist the delivery, to deal with complications, or, should delivery have taken place during his absence, to repair lacerations. (3) Efficient nursing during the puerperium. (4) Additional service in cases of emergency, or for the relief of a nurse who has been without sleep for an unreasonable period, or for providing special nursing—as, for example, may be required in the after-care of lacerations which were threatening to become septic.

Such a nursing service would be a boon to the patients, to the profession, and to the midwives themselves. It would

* A paper read before the Edinburgh Obstetrical Society, March 13th, 1929.

guarantee to the latter constant employment, and almost certainly a better remuneration than they have at present. Under the supervision of a sister midwife it would ensure the maintenance of accurate temperature charts, and thus lead to the earlier recognition of the onset of inflammatory processes. The nurses would report the presence of a temperature to the sister midwife, who would at once inform the doctor. The present system of allowing a midwife full charge (subject to her rules) is fundamentally wrong, and it will never be righted until there is properly organized medical supervision of this branch of nursing.

Surgical dressings and lotions, available in good-class practice and in maternity hospitals, are often scant or absent in industrial practice. Such dressings should be supplied to the poorest patients free of charge; to others, according to their means, for part or the whole of the cost. The appropriate dressings would be accouchement sheets, wool, binder, diapers, and towels. A special package consisting of a pair of sheets might be available for use during the puerperium. The dressings would be sterilized, and the nurse would be responsible for any that should be returned.

Ante-natal Supervision.

The value of this ante-natal care cannot be overestimated. It is one of the blots on the present system that a number of women with the most flagrant pelvic contractions and obvious malpresentations are often well advanced in labour before the abnormalities are recognized, or that renal complications, readily detectable in the course of routine ante-natal examination, should be allowed to develop until the patient is admitted to a maternity hospital in a moribund condition. Ante-natal care, the very essence of intelligent midwifery, must be available for every pregnant woman, and clinics at which such care can be given are required above all by the doctor in industrial practice. Ante-natal examinations take more time than the busy doctor can spare during his ordinary consulting hours, and, in any case, prospective mothers would prefer not to take their place in a waiting room filled with patients of both sexes. The alternative of conducting the examination in a working-class dwelling is hardly better. The existing ante-natal centres provide examination rooms, with nurses in attendance, for a type of investigation about which women are very sensitive; the examination in the vast majority of cases is abdominal, but women know that a vaginal examination may be made. There is privacy, and only one sex is present.

The Function of the General Practitioner.

The staffing of the centres is so far variable. Specialists and whole-time officers figure prominently, and both have done invaluable work. Ante-natal care is, however, the business of the general practitioner. Child-bearing is responsible for much ill health, and it is well known how pre-existing constitutional disease may influence the pregnant state. Those who are responsible for the medical care of potential mothers and are engaged in obstetric practice should also be responsible for their welfare during all the phases of maternity. Doctors who practise in the area and are called in by the midwives should, as soon as it can be arranged, be on the staff of the ante-natal centres. If valuable clinical experience provided by the centres is absorbed by specialists and whole-time officers it will be seriously detrimental to the efficiency of those engaged in general practice. Doctors, moreover, have hitherto been denied supervision of cases attended by midwives unless the midwife has called them in. Now that ante-natal centres are being established there is a tendency for whole-time officers and specialists to deal directly with the midwives, this again excluding the doctors from their proper place in maternity work.

In every area, however, there are many doctors who are keen and competent to do the work of the centres. Their appointment might be made contingent on the possession of some agreed qualification—for example, a diploma in obstetrics, or evidence of post-graduate study, or of a period of residence in a maternity hospital. There is no valid reason why the clinics should not be conducted by several doctors working on a time-table of attendance and a suitable system of reliefs. Whole-time officers may very properly be in charge when, for geographical reasons, it is not possible to obtain the necessary medical supervision locally, or during periods of epidemic when doctors are overwhelmed with urgent work.

Details of Organization.

An organized maternity service for the industrial class would work somewhat as follows: (1) Each woman would select one of the doctors on the obstetric panel and would enter her name at the nursing centre. (2) The doctor selected would interview the patient in his consulting room, investigate any complaint, and instruct her in the ante-natal routine; (3) the nursing service would arrange for the routine urine testing and health visits. (4) The ante-natal examination would be made either at the patient's house or at a centre; in the former instance the nursing service would co-operate. (5) Patients would have indicated before the onset of labour if they wished the doctor to be present at the confinement or merely be on call if required; in the former instance the doctor would receive accurate reports from the midwife, and in the latter he might not be required at all. (6) Certain routine visits would be paid during the puerperium. (7) The total demand made on a doctor would in many cases consist merely of a few routine visits, and if more active assistance were required, especially at night, his expenditure of time and energy would be reduced to a minimum.

The practical side of midwifery must be as highly organized as possible. Handywomen are responsible for many false calls, hurried labours, and much bad nursing. They must be abolished and the maximum of trained nursing assistance placed at the disposal of the profession. Consultant services should be available during the whole of pregnancy and the puerperium for patients who cannot afford a private consultation. It has been arranged that women who have midwives to attend them can have the services of a medical practitioner at all stages; there is no reason why consultant services should not be available also. Expert opinions in puerperal pyrexia can be obtained in many areas and on ante-natal conditions in others, but so far no provision has been made to give doctors expert assistance during labour. In large industrial areas an emergency service should be organized. This would provide at short notice a nurse, blankets, hot-water bottles, transfusion apparatus, solutions, and, if necessary, a specialist. There are many conditions in which, instead of rushing a shocked and collapsed patient to hospital for nursing and specialist aid, the specialist and nurse should be rushed to the patient. The failure of many of the smaller hospitals to provide beds for maternity cases often forces doctors to deal with major surgical problems in unsuitable surroundings, or to lose much valuable time by sending their patients on a long journey to a maternity hospital.

General Conclusions.

The cost of many of these suggestions can be met without making any, or, at most, only reasonable, demands on the State or the approved societies. The majority of patients under discussion try to meet the expenses incurred by means of a maternity benefit. This benefit is paid with equal readiness in successful cases, in cases in which the child is stillborn, or in which the mother dies of puerperal sepsis. Such a reward may be called a maternity benefit, but it certainly does not benefit maternity. A benefit to be of any real value should stipulate and make provision for medical supervision and nursing.

Criticism is always rife when suggestions are made that all is not well with the present system. Women have been delivered, and have made excellent recoveries, in the most squalid surroundings and without any medical attention. This is a commonplace, otherwise the nation would have disappeared long ago. The profession cannot allow the continued high mortality and morbidity rate to become a commonplace; it is a dread reality. If, as a profession, we allow the public to believe that a handywoman can provide adequate nursing service, or that we approve of the independent action of midwives, any efforts to improve the maternity service will be futile.

British Medical Journal.

SATURDAY, APRIL 13TH, 1929.

RECURRENT TOXAEMIAS OF PREGNANCY.

OUR ignorance of the toxaemias of pregnancy is shown by the fact that there is at present no general agreement as to their classification. All workers, indeed, concur in differentiating pernicious vomiting, acute hepatic atrophy of pregnancy, and eclampsia; but the cases in which albuminuria, unaccompanied by convulsions, appears during the later months of pregnancy are the despair of the systematist, and are likely to remain so until more definite insight into their etiology has been gained.

Stander, in the elaborate monograph on the toxaemias of pregnancy which constitutes the current number of *Medicine*, recognizes, in addition to the three above-mentioned types of toxaemia, "low reserve kidney," nephritis complicating pregnancy, and pre-eclampsia. Though some purists may object to the application of the term "pre-eclampsia" to a state in which convulsions do not necessarily develop, the term has its value in keeping before our minds a potential danger. A patient in the later stages of pregnancy, showing a high grade of albuminuria, a raised blood pressure, headache, nausea, epigastric pain, and visual disturbances, is to the experienced obstetrician a potential eclamptic even though no fits develop. Convulsions are no doubt impressive, but they are merely a symptom and not the disease. It is, however, in the remaining types—"low reserve kidney" and nephritis complicating pregnancy—that we meet with real difficulty, both in our classification and in the management of cases. According to Stander the low reserve kidney, or pregnancy nephropathy, is characterized by moderate albuminuria and a temporary rise in blood pressure, without change in the blood chemistry, appearing during the later months of pregnancy. The condition may or may not recur in subsequent pregnancies, but, if it does, it is not usually more severe than in the first pregnancy and leaves no permanent renal damage. In nephritis complicating pregnancy, on the other hand, symptoms appear earlier, the blood pressure is higher, and the amount of albumin present in the urine is greater in each successive pregnancy. An appreciable rise in the non-protein nitrogen of the blood may occur, and permanent renal damage may result. Stander believes that these nephritic cases can probably be subdivided further into two groups, in one of which the renal lesion antedates the pregnancy and is due to some other cause, while in the other "repeated pregnancies may have played a role in the development of the nephritis." It will be noted that the differentiation of the "low reserve kidney" from pre-eclampsia is by no means sharp, and it is permissible to suggest that the former may be merely a mild grade of the latter. It will also be remarked that the question of permanent renal damage arising directly out of pregnancy *qua se*, as distinct from the aggravation of an existing nephritis by supervening pregnancy, is left undetermined

Dr. James Young has recently discussed in our columns (January 19th, p. 91) the obstetric histories of eclamptics and albuminuria, and has shown that, contrary to current teaching, toxaemic conditions tend to recur in subsequent gestations. Eclampsia, pre-eclampsia, and the "low reserve kidney" of Stander are apparently conditions characterized by a well-marked tendency to recurrence. This finding is of obvious practical significance, since it indicates the necessity of especially careful ante-natal supervision in the subsequent pregnancies of patients who have once suffered from a pregnancy toxaemia; the gravest of all the toxaemias of late pregnancy—eclampsia—is itself not infrequently recurrent. A further problem studied by Young is whether the reappearance of albumin in the urine in a second pregnancy is purely secondary to a recurrent toxaemia, or the expression of a chronic renal defect aggravated by each succeeding pregnancy. In his view the reappearance of albuminuria is the direct result of the recurrence of the toxaemia, and is not due to persistence of the original renal damage caused by the first toxaemic pregnancy. Though this question may at first sight appear to be of merely theoretical interest, it is actually of very great practical importance, since the possible risk of permanent damage to the kidney must affect the medical attendant's views as to the advisability of further pregnancies and as to the necessity of early induction of labour. Young's opinion is based on the observation, confirmed by Dr. Jessie Sym in her study of the renal function and cardio-vascular system in 139 patients who had suffered from eclampsia or albuminuria, that a recurrent attack of albuminuria differs in no essential from the primary attack. In Jessie Sym's series a diagnosis of chronic renal disease was considered to be justifiable in 3 per cent. of the post-eclamptics and in 8 per cent. of the post-albuminurics. When we consider that it is not improbable that in some of these patients renal disease may have been present before the toxaemia, since chronic nephritis may give rise to no obvious symptoms, it would seem that the toxaemias of pregnancy rarely produce permanent renal damage.

In our present issue (p. 674) Mr. G. F. Gibberd emphasizes the frequency with which pregnancy albuminurias recur, and finds in this recurrence evidence of an "occult nephritis" persisting from the first pregnancy, but only demonstrable by "the most delicate test of renal function which we possess"—that is, by another pregnancy. That pregnancy aggravates any existing renal damage is generally acknowledged, but if we admit that grades of renal damage exist which cannot be detected until submitted to the test of pregnancy, it may be argued that even primiparae who develop albuminuria during pregnancy have in reality been suffering from a pre-existing occult nephritis. Until we know more of the underlying conditions which produce the toxaemias of pregnancy it would seem as rational to assume that they tend to recur in the same individual as to postulate the existence of an occult nephritis in those cases only revealed by the occurrence of pregnancy. The only evidence we have of the possibility of such a condition is supplied by the work of Professor F. J. Browne on oxalate nephritis in rabbits.

Meanwhile it is important for the practitioner to recognize that, contrary to time-honoured beliefs, toxaemia frequently recurs in successive pregnancies, and that in some cases permanent renal damage may result. More information would appear to be needed as to the frequency of such damage. Above all, we need more exact data as to the relationship of permanent damage to the duration of the toxaemia if patients are to be saved from this untoward result by a timely induction.

MEDICAL SCHOOLS AND HOSPITALS.

MEMBERS of the medical profession of Melbourne, especially those engaged in university work, have for many years expressed their dissatisfaction with the situation they had inherited from their fathers. They found many separate and conflicting interests. The hospitals were scattered haphazard about the city, with no relation to present-day needs. The university medical school was disjointed in its parts, and totally unrelated to the hospitals where its students received their clinical instruction. In these circumstances it was generally felt that the Melbourne problem ought to be approached from the broadest possible point of view. The Government of the State of Victoria accordingly sent out three representatives in 1927 upon a mission of inquiry to study conditions in other countries. Their report was unanimously in favour of a complete reorganization scheme whereby medical schools and hospitals and institutions for research would be combined at a common centre. We have already noticed this joint report,[1] and now at page 700 this week we give a summary of the independent observations of Professor R. J. A. Berry which were published a year later. They are in full agreement with those of the joint report signed by himself and his two colleagues, but their range is wider, since Professor Berry visited and commented upon British institutions and conditions as well as Canadian and American.

The idea of unity of design and working of medical school and hospital is no new one to us. We have an old tradition of their essential unity. The several London medical schools are each part and parcel of the hospital with which they are connected and from which they sprang and received their name, at least as far as clinical teaching and the later subjects of the curriculum are concerned. Any separation in these respects is inconceivable. That such symbiosis is a mutual benefit is certain. There is usually more than this unity between school and hospital, for all the laboratory equipment, both for the preliminary sciences, anatomy and physiology, pathology and research, is as a rule within the hospital precincts or in their immediate neighbourhood. That this is felt as the natural and practical arrangement, one that has grown up with time, is perhaps due to the conveniently moderate size of each of these medical centres. Other problems come into play where a whole university school is involved, and particularly where this school is superimposed upon long-existing clinical institutions. In a university centre the number of the students may be so great as to make concentration difficult, especially in an old city. Yet these difficulties have been overcome, Professor Berry assures us, on the other side of the Atlantic by the erection of vast buildings towering up into the sky, the many radiating arms of the central block carrying all the ancillary departments, which have direct access to the core, which is the hospital; and the hospital in its turn has direct contact with every research department. It is a great conception, and a gigantic reproduction, on symmetrical lines, of any one of the several London medical schools. This is what he and his colleagues would like to see in Melbourne. It is certain that where there is a university medical school in any city there should be direct connexion between it and any hospital or other clinical institution within the area which is suitable for clinical teaching; but there may be some question as to whether all these institutes can conveniently, and with equal advantage to the patients, be accommodated at some one strategic site, instead of being scattered throughout the city. The University of London, for instance, allows the first-year's course of study to be taken at a school of university rank which is not strictly a medical school, and more than one of the London medical schools conducts the first two years' study at a place apart from the hospital with which it is associated; and these arrangements are not unsuccessful.

Professor Berry's observations upon hospital policy are of equal interest. He criticizes the traditional idea of the British voluntary hospital as an institution for the poor only, and dislikes hospitals under bureaucratic control. He finds his ideal in the self-supporting hospitals of Canada and the United States, where all the patients pay or are paid for, and where the work of the medical staff receives its proper and natural recognition. We in this country are on the eve of great changes in our hospital arrangements. The Local Government Act of 1929 opens a new outlook upon hospital administration. The old-time Poor Law infirmaries will now pass into the control of more modern and as a rule larger statutory authorities. These bodies have already had wide experience of administration, though that of county councils in some spheres of public health has been much less than that of county boroughs, or even, in some cases, of their own county districts; and in neither case, apart from mental hospitals and hospitals for infectious diseases, have they had much experience in the management of hospitals of a general kind. The credit of the voluntary hospitals is to-day higher than it has ever been, and that credit is by general consent deserved. We may hope that when these two parties, both of high honour and estate, and both vitally concerned with hospital administration, meet, as they must meet, to discuss their mutual relations, they will have in mind no consideration other than the common advantage.

[1] *British Medical Journal*, November 12th, 1927, p. 892.

RADIUM POLICY.

CAREFUL readers of our Parliamentary Notes will have observed during the past five months a succession of brief statements by Ministers in reply to questions in the House of Commons on the subject of radium. As far back as November 19th Sir Kingsley Wood, Parliamentary Secretary to the Ministry of Health, said that the radium requirements of this country in relation to possible sources of supply were under consideration by a subcommittee of the Committee of Civil Research; he hoped that its report would be presented shortly. This stock answer was repeated, with slight variations, by the Minister of Health or his deputy on several occasions. Thus Mr. Chamberlain, on February 7th, said that the Government would consider the whole question of the purchase of radium when the subcommittee of the Committee of Civil Research which was looking into the matter had reported. Then, on February 27th, Mr. Locker Lampson, Under Secretary of State for Foreig Affairs, said that the Government was expecting receive in a few weeks' time a report on the radiu requirements of the country and the possible sour of supply; and that until this report had been con sidered the Government could not judge whether to ask the League of Nations to institute an inquiry into the conditions of production and sale of radium. On March 25th Sir Kingsley Wood said that the committee's report had been received, and would be published in full very shortly. He added that the intentions of the Government in the matter would be

made known immediately on the reassembly of Parliament after the Easter recess.

These not very illuminating replies are all that the medical profession and the House of Commons have been vouchsafed on a question of great importance to medicine and the public. Rumour speaks of an intention to set up a public authority for the purpose of holding and distributing radium for medical and other purposes. To what extent responsible medical advice is being sought and taken in this matter has not yet been divulged. The production and the State purchase of radium may be problems of economic and political rather than of medical concern; but its accurate preparation and screening for clinical use is a combined problem of physics and medicine, and the distribution of the element and its emanations is essentially a problem depending for its successful solution on the advice of those members of the medical profession who are fully aware of the most recent physical, clinical, and pathological work bearing on radium, and who have considerable experience in its application. Any scheme of distribution will succeed or fail according to whether it has or has not behind it the approval and support of the medical profession, through whom alone treatment by radium can be administered.

So far as we are aware, the personnel of the radium subcommittee of the Committee of Civil Research has not been publicly announced. It may or may not contain medical representatives; it may or may not have consulted with those members of our profession who are best fitted to express opinions on the medical aspects of the subject under investigation. Yet on the strength of this subcommittee's report the Government is understood to be preparing a policy which the Prime Minister will announce in the House of Commons soon after Parliament reassembles on April 15th. There will be room for serious misgivings if the announcement of any policy is concerned with questions other than those of the sources of supply and methods of purchase. Fortunately there are now representatives of medicine and surgery in both Houses, and we rely on them, in the first instance, to take steps to safeguard the position.

THE ORIGINS OF SCIENTIFIC THOUGHT.

THERE is no more extraordinary phase in the history of thought than that exhibited by the rationalizing tendency of early Greek philosophy. The process by which these ancient thinkers came to realize that the world in which they lived worked according to reasonable and discoverable laws represents the period of gestation of science. The subject will always be of interest to the student of human beginnings. Professor Léon Robin, in *Greek Thought and the Origins of the Scientific Spirit*,[1] has essayed to cover again the area so admirably treated by Professor John Burnet in his well-known *Early Greek Philosophy*. The two books are somewhat similar in design, but that of Professor Robin has the great advantage of following the theme throughout Greek history instead of stopping short with the better-known thinkers of the fourth century B.C. There are two chief obstacles to the tracing of the early history of scientific thought. First is the fact that the Greek man of science is not completely distinguished from the philosopher, in the sense that he has for his object the *logos* rather than the *pragma*, the intelligible rather than the fact. His gaze is bent on eternal forms and turned away from matter. Thus the Greeks tended to excel rather in what they held to be the changeless verities of mathematics than in those "servile activities" which we nowadays elicit by the simple processes of observation and experiment. To understand Greek science we must therefore seek to understand the mental processes of the Greeks. The study is essentially psychological. In this matter Professor Robin is a reliable and useful guide. The second difficulty arises from the extremely broken character of the record, especially that of the earliest period. We have, for the most part, to depend upon fragments and quotations by later writers. There is one group of early scientific authors, however, of whom we have extensive survivals. These are the medical writers, who have left large remains in the so-called "Hippocratic Collection." Thus, for instance, the *Sacred Disease* and the *Airs, Waters, and Places* present us with a most important philosophical standpoint which is very different from that of the work *On Generation*, that accords with the "Pneumatic" school, or, again, from the Heracletian treatise *On Diet*. The Hippocratic Collection contains, in fact, the earliest complete scientific works that we possess. It is thus, in our opinion, a very grave oversight of Professor Robin that he passes these important and interesting works with scarcely a mention. Aristotle has fared better than Hippocrates at Professor Robin's hands. He has, however, provided us with but little reference to the great biological achievements of "the philosopher." Thus, Professor Robin's work gives the impression of looking at science from the outside and never entering into the spirit which moves it. His work is essentially a discussion of the impact of science on philosophy. Now this impact depends on scientific achievement, and the scientific control of nature in antiquity was relatively insignificant. Thus the science that really influenced the thought of antiquity was neither experimental nor mathematical nor biological science, but rather observational astronomy. This led to the view that the life of man is subject to the revolutions of the stars, and that his soul alone is free. With such a conception in men's minds there arose the philosophical schools that became so popular in the later Greek period—Stoicism, Neo-Platonism, Scepticism, and the rest. It is in the treatment of these rather than in the early period that Professor Robin is at his best.

[1] *Greek Thought and the Origins of the Scientific Spirit*. By Léon Robin, Professor at the Faculty of Letters of the University of Paris. Translated by M. R. Dobie. The History of Civilization. Edited by C. K. Ogden. London: Kegan Paul, Trench, Trubner and Co., Ltd.; New York: A. Knopf. 1928. (6 × 9¼, pp. xx + 409; 1 map. 21s. net.)

STANDARDIZATION OF THERAPEUTIC AND DIETETIC PREPARATIONS.

THE third annual report of the pharmacological laboratories of the Pharmaceutical Society contains an interesting account of the way this useful institution is developing. The department was established to provide impartial tests of substances coming or likely to come within the scope of the Therapeutic Substances Act. This work is steadily increasing, and in the year under review 156 samples were examined, as against 126 in the preceding year. The chief substances investigated were pituitary extract, digitalis, squills, and ergot. In pursuance of the idea of providing biological tests for the activity of important drugs, a nutrition department was opened for the purpose of determining the vitamin content of cod-liver oil. The work in this respect was not very great, but a big demand developed for the testing of the vitamin content of food products, and the laboratory decided to accept such substances. As a result the department has examined 184 samples for the vitamin content, as against only 43 in the preceding year. The laboratory, in doing this work, is undoubtedly performing a very useful public service. There is always a tendency for the optimism of commercial enterprise to carry the claims made for their products beyond the limit of demonstrable fact. As long as firms could not obtain any measurement of the vitamin content of their preparations without going to the great expense of establishing a special laboratory for such determinations, it was difficult

to criticize them when they claimed for their preparations merits that biological tests did not support. Now, however, that it is possible for any firm to acquire this information a much higher standard of accuracy can reasonably be demanded. This, of course, will be all to the advantage of firms which have advertised their products with a sense of responsibility. An investigation of particular interest to the public health was the determination of the vitamin content of margarine. The production of this preparation with a vitamin content equivalent to that of butter is obviously an important step towards the prevention of rickets among the poorest sections of the population. The medical profession has reason to be grateful to the Pharmaceutical Society for the work its laboratory is doing in helping to promote a high standard of quality in drugs and food products.

COOKERY AND CHARACTER.

To judge from a recent correspondence in the *Times*, many English persons prefer French cooking to that of their own country, and we are not altogether disposed to cavil at their judgement. Almost the best that has been said by a stranger on behalf of English food is that it conceals sterling worth behind an unprepossessing exterior. It is a pleasing pastime to correlate the character of a people with its national dishes, though the question remains whether the sturdy independence of English character, the solid English virtues, are the products of the roast beef of old England or vice versa. What, in fact, is the true causality sequence underlying the aphorism "Mann ist was er isst"? Is it English Puritanism, an austere uneasiness at associating pleasure with the fulfilment of an appetite, that has determined what foreigners regard as the monotony and unpalatability of English food? The Englishman, it has been said, will not take a walk for the pleasure of walking, but only in pursuit of a bird, a beast, or a golf ball; equally he will not eat to enjoy an aesthetic experience, but only to appease hunger or for health's sake. It is possible, however, that the simplicity and lack of variety of English food may be explained by the fact that since the year 1066 no invader has landed on these shores. Soldiers have been great missionaries of culinary practice; wherever they went they insisted on having their accustomed fare, and they taught the women of the invaded country the art of preparing it. Thus, whatever else may have been the outcome of a war in past centuries, the nation's culinary repertoire was enriched with new recipes, which were handed down with more or less change through generations of housewives. This may account, in part at least, for the multitudinous elements that compose the French cuisine. Culinary modes, brought in turn by Englishmen, Germans, and the soldiers of many other nations, have been blended to form a new style of cookery, a French style, as varied yet as individual and homogeneous as the race that has been produced in England by the blending of Saxon, Norman, and Celt. The case of America is said to be somewhat similar. Invaded throughout the nineteenth century by hordes of immigrants from many lands, it has evolved an eclectic kitchen which ranks second only to that of France. The effect upon the evolution of American cookery of the laws restricting immigration is a subject of real disquiet among serious epicures. Fortunately there are many in this country who are concerned at least as much with the appetizing quality of food as with its vitamin content, and there is some solace in the reflection that it was the most English of essayists, Charles Lamb, who wrote: "I am no Quaker at my food. I confess I am not indifferent to the kinds of it. Those unctuous morsels . . . were not made to be received with dispassionate services. I hate a man who swallows it affecting not to know what he is eating. I suspect his taste in higher matters."

PATHOLOGICAL MUSEUM AT THE MANCHESTER MEETING.

THE Pathological Museum which is being organized in connexion with the Annual Meeting of the British Medical Association in Manchester next July will be arranged under the following heads: (1) Exhibits bearing on discussions and papers to the various Sections. (2) Specimens and illustrations relating to any recent research work. (3) Instruments relating to clinical diagnosis and pathological investigation. (4) Individual specimens of special interest, or a series illustrating some special subject. (5) Any exhibits of general interest. The organizing committee desires to enlist the co-operation of all willing to provide material. The museum will occupy a central position in the same building as that in which the sectional work of the meeting will take place, and will be easy of access. Every care will be taken of the specimens, and the contents of the museum will be insured. It is hoped to make arrangements whereby exhibitors may have an opportunity of demonstrating their specimens. In order to facilitate arrangements intending exhibitors are asked to give notice of their intention at the earliest possible date. The secretaries of the Museum Committee are Dr. William Susman and Dr. H. L. Sheehan, Department of Pathology, Manchester University.

MANKIND AND POLITICAL ARITHMETIC.

IN view of the demonstrable failure of a number of eminent and exceedingly well-qualified men in times past, from Sir William Petty downwards, to forecast correctly the growth of national or world population and the conditions of human existence at future periods, it is not necessary to take too seriously similar speculations on such matters, even though they are now based on more exact statistical data. Nevertheless, a concise and convenient volume entitled *The Shadow of the World's Future*,[1] by Sir George Knibbs, well known for many years as statistician to the Commonwealth of Australia, is worthy of attention. The impending tragedy intended to be indicated by the title is this: that "if the population of the world continues to increase at the present rate of 1 per cent. per annum it will within two centuries exceed the maximum which the earth can support and feed." Even those of us who may remain sceptical and unalarmed in the face of this proposition must admit that the problem of population (or, perhaps better, the problems of populations) is very important, and is now in many parts of the world giving rise to questions which have immediately to be faced. In fact, such questions are attracting widespread attention, and it is perhaps as well that an international conference met in Geneva in 1927 to discuss them, and that an international union, with its headquarters in Paris, has been formed to promote the scientific investigation of various aspects of the subject. Sir George Knibbs holds that "the population question is of the first order of importance for every person who has an interest in his country's future, or in his children and children's children"; and that "the difficulties of the near future relate specially to food supplies and to economic organization," and "are of a character which does not give any ground for the hope that they will automatically adjust themselves." In the earlier two-thirds of his book he gives a large number of statistics, and statistical tables, of a kind not to be found at all, or at least so conveniently, elsewhere. All these are worthy of examination, though no doubt many of them require the critical examination and comment of other statisticians. The latter part of the book is devoted to more general propositions or considerations, and some of these are important and valuable, whatever be the truth of the figures previously

[1] *The Shadow of the World's Future*. By Sir George Handley Knibbs, C.M.G., F.R.A.S. London: E. Benn, Ltd. 1928. (Demy 8vo, pp. 132. 10s. 6d. net.)

given or of the deductions drawn therefrom. The main factors reviewed in these later chapters are indicated by three of their titles: "The migration of populations," "International economics and migration," "World population and nationalism." The contention is that the population problem is not merely an economist's problem, but the greatest of all political questions; and the nature of the conditions to be considered in its solution may be discovered in the following quotations. "World conditions are such that the rights of all peoples will have to be equitably considered if the world desires peace. This involves the admixture of peoples who have attained to very different degrees of culture or civilization, and it is full of difficulty." "It will be necessary for all peoples to realize that effective occupation is the only safeguard ultimately of their rights. Dense and expanding populations will be compelled to challenge cases of ineffective occupation, and that will be one of the great problems of the very near future." "Spirit is a limiting factor to the growth of the human race," and "a more humble life physically with a deeper regard for the higher issues is a *sine qua non* if it be desired to see the earth covered with contented peoples whose well-being is assured and whose living is a disclosure of generous attitude and noble purpose."

HICKMAN MEMORIAL FUND.

A LETTER from the organizing committee of the Hickman Memorial Fund appeared in our issue of December 8th last (p. 1065), following a number of earlier references to the same subject. A committee meeting of the fund was held on March 27th, with Lord Dawson in the chair, when the possibility of fulfilling all the objectives of the appeal was fully discussed. It was decided that the fund was as yet inadequate to restore Hickman's tombstone, to provide a memorial tablet for Bromfield Parish Church, to present a portrait to the Royal Society of Medicine, and to found a Hickman Medal for original work of merit in anaesthesia. Subscriptions already received will be sufficient to deal with the three former, but not for the medal. It was felt by the committee that in no better way can the object of this appeal succeed both in honouring Hickman's name and in serving a useful purpose than by stimulating research for new anaesthetics and methods, in which it must be admitted British anaesthetists have for some decades rather followed than initiated. The appeal will therefore not be closed for the present, in the hope that some who have forgotten or overlooked the matter, or have not appreciated its practical as well as historical importance, and others who may feel that they are indebted to anaesthesia, may yet give it their support. A list of subscribers will be published when the fund is closed. Mr. V. Warren Low, F.R.C.S. (76, Harley Street, W.1), is the honorary treasurer.

OCCUPATIONAL DISEASES.

THE fourth congress of the Permanent International Committee on Occupational Diseases was held in Lyons at the close of last week under the presidency of Professor Etienne Martin. It may be remarked that in one respect a difficulty presents itself to-day which did not trouble Rammazini—one of the pioneers in this field—who wrote a book in the eighteenth century on the diseases of industrial workers. Interchange of views and experience was easy at that time, when Latin was the universal language of science; at Lyons, however, representatives of eighteen different countries were met to pool their information, and the aid of skilled translators had to be invoked. The three main subjects discussed were the silicoses and pneumoconioses, cataract of industrial origin, and the relation between the endocrine organs and the industrial toxaemias. Professor E. L. Collis of Cardiff opened the first discussion, and was supported by Drs. A. Mavrogordato and L. G. Irvine of Johannesburg. Many speakers followed, but the principal conclusion reached was a rather negative one, considerable doubt being thrown upon the possibility of diagnosing dust diseases by means of *x* rays. Professor Rollet of Lyons opened a discussion on industrial cataract, and Professor Ferrannini of Cagliari introduced the topic of the relation between the endocrine glands and industry. Among other papers may be mentioned one on the infection of farm workers by *B. abortus*, contributed by Dr. Theodore Thompson. In addition to medical practitioners, representatives of employers and workpeople were also present and joined in the debates. The British Government was represented by Dr. J. C. Bridge of the Home Office and Dr. S. W. Fisher of the Department of Mines. The social side of the programme was well arranged, and included a visit to the glass works of Givors, receptions by the Mayor of Lyons and the Lyons Chamber of Commerce, and a dinner at the Faculty of Medicine, when eloquent speeches were made by Professor Martin, Professor Devoto of Milan, Sir Thomas Oliver, and others. It was decided that the next congress should be held at Geneva in the summer of 1931, as an acknowledgement of Dr. Carozzi's valuable work in connexion with this year's meeting at Lyons.

THE INSURANCE PRACTITIONER'S HANDBOOK.

THE third edition of the well-known book entitled *Medical Insurance Practice*,[1] by Mr. R. W. Harris and Mr. Leonard Shoeten Sack, has now been published by the British Medical Association, with the approval of the National Insurance Defence Trust. The reason for the changed auspices under which the volume is issued is stated by Dr. H. G. Dain in a foreword: "The Insurance Acts Committee is so convinced of the usefulness of this book of reference that it has gladly acceded to the request of the authors to take over the publication of this third edition in the anticipation that by so doing it can be produced in a form and at a price that will tempt every insurance doctor and lay administrator to possess a copy. The possession of the book will lead to its regular use, and its regular use when new points or difficulties crop up will greatly promote smooth working and save much time and correspondence." The reason is good and sufficient, and the desired result should be forthcoming, for the book, in price, in format, in arrangement, in clearness, and in accuracy, is all that could be desired. It contains everything that it is necessary for an insurance practitioner to know, and almost everything that it is essential for the most responsible administrator (whether an official of an approved society or an official or member of an Insurance Committee) to know with regard to medical benefit. Indeed, it may be that in respect of some portion of its appendixes it contains even more than they need to know. The revision for this edition has been done by the authors, and it has been done with extraordinary care and (as far as a critical perusal has been able to discover) with absolute accuracy. No one in possession of this book should have any real difficulty in referring to the particular point on which he seeks information or elucidation, and no such person need hesitate to place complete reliance upon the statements and explanations which he finds—unless, indeed, the facts have altered since the date of publication, and, in any such event, there is no doubt that a fourth edition will bring matters up to date. All the omissions—and there are a good many—from this edition have been judiciously made, an account of all the most recent alterations of

[1] *Medical Insurance Practice.* By R. W. Harris, late Assistant Secretary in the Ministry of Health, and Leonard Shoeten Sack of the Middle Temple, barrister-at-law. Third edition. London: British Medical Association. 1929. (Cr. 8vo, pp. xv + 368. 3s.)

procedure has been incorporated, and wherever there has seemed the least possibility of this being advisable, even the clear statements of earlier editions have been made yet more clear. On one point only should we desire an additional note, and this is on a matter which is unessential. In dealing with "Records of illness" reference is made to the departmental committee of 1920 which dealt with the question of the form of record, and in Appendix 12 some extracts from the report of that committee are given. It should perhaps be mentioned that with regard to the recommendation that a record of all attendances and visits should be required, several members who agreed to this recommendation have since stated that, as the result of actual experience, they are no longer of the same opinion; and the Conference of Representatives of Local Medical and Panel Committees has on several occasions expressed the opinion that this requirement is unnecessary and may even be harmful. In their preface to the first edition of the book the authors said: "This book is addressed to the busy general practitioner. While excluding matters too remote to be of interest to him, we have endeavoured to avoid leaving unanswered any question arising in his daily insurance work on which he is likely to seek information." Seven years have established its reputation as a full and reliable safeguard and help. It should be in the possession of every insurance practitioner, and should "be brought to the notice of the younger men as they come into practice."

CO-OPERATION BETWEEN VOLUNTARY AND MUNICIPAL HOSPITALS.

IN the correspondence columns of the *Times* of April 10th Mr. Leonard L. Cohen, honorary secretary of King Edward's Hospital Fund for London, discusses some points in regard to the future of voluntary hospitals which were raised by Dr. C. E. S. Flemming in a letter published by that newspaper on April 6th. Referring to Section 13 of the Local Government Act, 1929, Mr. Cohen states that "the Special Committee of King Edward's Hospital Fund for London, appointed by H.R.H. the Prince of Wales, which is considering the relations between voluntary hospitals and municipal hospitals under the Act, is taking definite steps with a view to establishing an organization in the London area for the purpose of consultation with the London County Council. Immediate steps are also being taken by the British Hospitals Association to establish similar organizations outside London." The wording of Section 13 of the new Act is as follows: "The council of every county and county borough shall, when making provision for hospital accommodation in discharge of the functions transferred to them under this part of this Act, consult such committee or other body as they consider to represent both the governing bodies and the medical and surgical staffs of the voluntary hospitals providing services in or for the benefit of the county or county borough, as to the accommodation to be provided and as to the purposes for which it is to be used."

BRITISH CONGRESS OF OBSTETRICS AND GYNAECOLOGY.

THE seventh British Congress of Obstetrics and Gynaecology will be held in Dublin from April 24th to 26th, under the presidency of Dr. Gibbon FitzGibbon. The constituent societies are: the Sections of Obstetrics and Gynaecology of the Royal Society of Medicine and the Royal Academy of Medicine in Ireland; the Edinburgh Obstetrical Society; the N[illegible] Midland, and Glasgow Obstetrical and [illegible]; and the Ulster Medical Society. A discussion will be held on the management of cases of pelvic disproportion, and communications will be read on various gynaecological and obstetrical subjects. Among those who are contributing papers are Professor Polak of New York and Professor Adler of Vienna. In connexion with the congress an exhibition of pathological specimens is being arranged, and the congress dinner will be held on April 25th at the Royal College of Surgeons, St. Stephen's Green. The honorary secretaries are Dr. Bethel Solomons and Dr. Gerald Tierney.

GARTON PRIZE AND MEDAL.

THE Garton Prize and Medal has been instituted by the Grand Council of the British Empire Cancer Campaign with the object of promoting research into the nature, causes, prevention, and treatment of cancer. A medal, together with an honorarium of £500, will be awarded early in 1932 to the person or group of persons who shall submit the essay embodying the results of original investigations which, in the opinion of the judges appointed by the council, is the best contribution towards the early diagnosis of cancer. In the event of several dissertations of sufficient merit being submitted the prize may be divided or additional awards made. The prize will be reserved if no dissertation of sufficient merit is received. Candidates, who may be of either sex, must be British subjects domiciled in the British Empire or Dominions and not at the time members of the Grand Council of the Campaign. Dissertations must be printed or typewritten in English, and embody results of original investigations carried out, wholly or in part, during the three years immediately preceding the year in which the prize is awarded. They are to be delivered not later than December 31st, 1931. Further particulars may be obtained from the Secretary British Empire Cancer Campaign, 19, Berkeley Street London, W.1.

ETIOLOGY OF RHEUMATIC HEART DISEASE.

WE print in the *Supplement* this week (p. 93) an interim report on investigations into the etiology of rheumatic heart disease in the counties of Gloucester, Somerset, and Wilts, carried out under the auspices of the British Medical Association and the Medical Research Council. Although many replies were received by the committee, it is thought that other practitioners in this area may have under observation cases which answer to the definition given in the report, and the hope is expressed that these will send in clinical notes accordingly. The investigation will be continued until the beginning of October, 1930, when the data will be analysed and the final report published.

DEATH OF SIR ANTHONY BOWLBY.

WE have to announce with deep regret the death of Sir Anthony Bowlby, Bt., K.C.B., K.C.M.G., K.C.V.O. Honorary Surgeon to the King, Past-President of the Royal College of Surgeons of England, and consulting surgeon to St. Bartholomew's Hospital. Throughout the whole period of the war Sir Anthony Bowlby did invaluable work for the Army Medical Service as advisory consulting surgeon to H.M. Forces in France. A memoir, with portrait, will appear in our next issue.

SIR NORMAN WALKER will give an address on "Medical education and qualification in the United States" on Monday, April 22nd, at 5 p.m., in the Fore Hall of the University of Glasgow. The chair will be taken by Sir Donald MacAlister, Bt., Principal of the University and President of the General Medical Council.

THE British Orthopaedic Association has awarded the Robert Jones Medal and Association Prize for 1928 to Mr. E. P. Brockman for his essay on "Club-foot (congenital talipes equino-varus)."

SCIENTIFIC MEDICINE IN CHINA.

[FROM AN OCCASIONAL CORRESPONDENT.]

AMID all the political welter attending the effort of China to awake and show that she is a nation and not merely an anarchical combination of provinces, there are elements which indicate that she is really reviving. Returned students from Europe and America have been for years regarded as the curse of the country; they could not fit themselves in, and in many cases had an unsettling influence on all around them. But now that the Nationalist Government at Nanking has weathered various storms, and has been recognized by the Great Powers, there is more official stability than for many years past. Barristers, engineers, doctors, and other professional men are rallying and are combining to further collective progress. In the realm of medicine this progress is taking the form of the establishment of a ministry of health under a progressive lay official, Mr. Hsueh Tu-Pi, who while Minister of the Interior gave much encouragement to health work; his Vice-Minister is Dr. Liu Jui-Heng, a well-known surgeon from the staff of the Rockefeller College in Pekin. The new Ministry has already taken one important step by inviting Sir Arthur Newsholme and Drs. Rajchman and Victor G. Heiser to form an international advisory council to it.

Conditions in China are so different that a blind attempt to follow the health administrations of England, the United States, and Japan without any appreciation of underlying local principles would probably end in failure. However, they possess the many advantages of a late start, and the authorities are well alive to all the experiences we in England have gained since our public health work began in 1848.

Possible Lines of Development.

Consideration is being given, on as practical lines as possible, to the following proposals. (1) The registration of all medical schools, with full details of buildings equipment, number of students and teachers, and curricula. (2) The registration of medical graduates, and the guaranteeing of their accepting the ethics of the profession. (3) Formation of a general medical council from members of the leading medical schools and institutions. (4) Publication of an official medical register. (5) Publication of a Chinese pharmacopoeia. (6) Provision of a separate register of dentists, pharmacists, and nurses.

In Shanghai, where there are more than one hundred foreign doctors of all nations, who have set up in practice without producing credentials, the Chinese Commissioner of Health of Greater Shanghai is getting into touch with the British Commissioner of Health of the Foreign Municipality with a view to abolishing, by registration, the abuses now prevalent in the International Settlement. If this can be done in Shanghai, other treaty ports will follow suit, and the movement should spread to other large cities. Moreover, the indiscriminate sale of adulterated and impure drugs without the special trade marks and trade names of reputable firms is being taken in hand, as well as the charging of a high registration fee for secret remedies; efforts are being made to secure the adoption, in the case of imported drugs, of the same standard as in the country of origin.

Since the war ministries of health have been established in various countries, as, for example, in the kingdom of the Serbs, Croats, and Slovenes, and in Turkey. The success of these ministries has been due to their establishment of an administrative policy in conformity with modern medical knowledge and the actual needs of the country. Turkey has recently passed a law pertaining to patent medicines; sponsored by the ministers of hygiene, justice, and finance, it deals with all medicines sold, whether manufactured in Turkey or imported from abroad.

Medical Research.

As is well known, the twentieth century has seen Japan forging rapidly ahead in scientific medicine. Since Kitasato discovered *B. pestis*, Takamine, Noguchi, Hata, and many others have greatly contributed to the cause of research, and Japan's geographical proximity to China has not been without an emulative effect on the medical men of the latter country. Another incentive in this direction has emanated from the Pekin Union Medical College, which owes much to the munificence of John D. Rockefeller and also to his Foundation Trustees in New York; these have been careful to send out teachers of outstanding qualifications, such as Dr. Ten Broeck, a pathologist and bacteriologist, and Dr. J. B. Grant, professor of public health. Dr. Grant, who was born in China, has been at the back of community health work directed by Chinese medical officers of health working under the municipalities of different towns. The majority, probably all, of these doctors have specialized in public hygiene at Pekin, so that the movement which has been steadily spreading during the past half-dozen years is now finding its feet, and is on sound lines.

The Chinese people are unhampered by caste customs and prejudices; it is remarkable, as the writer well knows from experience, how the inhabitants of inland towns and villages will submit themselves to hypodermic injections of vaccines and antiserums in time of epidemics such as plague or diphtheria. China offers a wonderful field for research, riddled as it is by tuberculosis and parasitic diseases, many of which have, as yet, undiscovered extra-corporeal hosts.

Some Definite Achievements.

It may interest the profession at home to know some of the lines on which the medical world of Young China is at work.

Dr. M. Y. DZEN has been investigating the assertions, made by Zoeller and other workers, that in the yellow races the positive Dick test reactors, in scarlet fever, number only 8 per cent., a percentage which is much lower than that in the case of the white peoples. Reporting on a large number of cases, he found positive reactions in 46.4 per cent. of unselected persons, and the age relation resembled that of the incidence of scarlet fever. Two children who had a definite history of scarlet fever respectively one and four years previously showed strong positive Dick reactions.

Dr. Zau Zung-Daw has been working on the intravenous injection of calcium chloride in the treatment of acute epididymitis, which occurs as a complication in about 25 per cent. of cases of posterior gonorrhoeal urethritis. The pain of epididymitis is intense, and the rapidly destructive process frequently ends with obliteration of the tubules or vas deferens, with azoospermia and sterility. Treatment to be of any use must be early and effective. Dr. Zau's results in sixty-five cases indicate that the intravenous injection of calcium chloride is a safe procedure, provided that care is taken to avoid extravasation of the solution into the perivascular tissue. It is also efficacious in the treatment of acute prostatitis and arthritis. The almost instant arrest of the process following the injection renders this treatment especially desirable, and it has the advantage over other forms that the patient need not be kept in bed, so that its safety and efficacy would seem to justify its more extensive use.

There is at Pekin a National Epidemic Prevention Bureau from the laboratories of which a large number of vaccines and antiserums are sent all over the country. Dr. E. T. H. Tsen is the director, and is most assiduous in the collection of reports as to the action of the bureau's products. Rabies is widespread in China, and the deaths from it are tragically dramatic. Since 1923 Dr. Tsen has been preparing and issuing phenolized rabies vaccine, which remains potent for four months, so that it can be dispatched long distances to remote provinces. In 1928 there were sent out 252 sets of this vaccine, and only one death followed its use. All this spells progress.

In the north, in Manchuria, Dr. Wu Lien-Teh, director of the plague service, has with his staff continued his researches into the epidemiology of plague, which in that region usually tends to assume the pneumonic form. Dr. Wu is also editor of the *National Medical Journal of China*, which is the organ of the unofficial National Medical Association and never lacks contributors, most of whose articles are written in excellent English.

It is interesting from the foregoing to note the spread of modern medicine in this ancient country, which has written records of a civilization dating from 1,500 years before the Christian era. One can often read of the Westernization of the Far East and the introduction to it of our civilization, but much of this is materialistic, the outcome of a mechanical age. Empiric medicine has long held sway in China, and while there are points in its favour, it has been practised by ignorant natives, too often with disastrous results to their patients.

The steady growth of medical science and investigation by educated foreign-trained Chinese graduates is a feature that merits the encouragement, the deeper interest, and the helping hand of our own well-ordered profession.

MEDICAL SCHOOLS AND HOSPITALS.

AN AUSTRALIAN SURVEY.

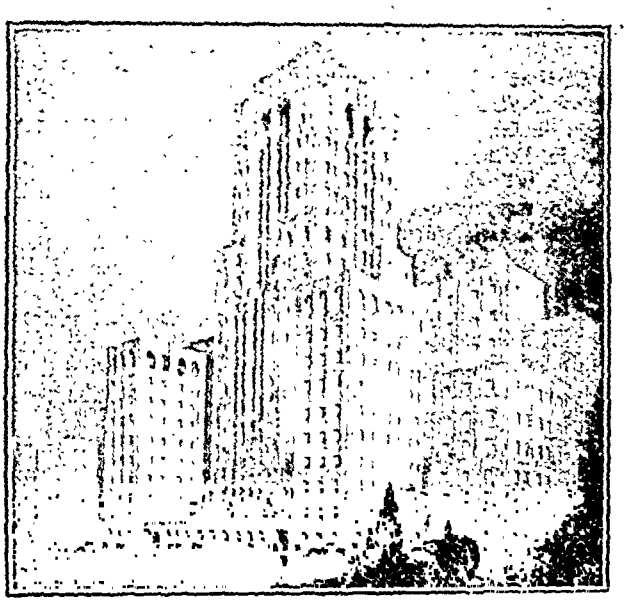
DURING the past two or three years there has been much questioning in the State of Victoria on the future of the Melbourne Medical School and its relation to the hospitals for clinical instruction. We reviewed in our issue of November 12th, 1927 (p. 892), a report of three representatives of the State who had been sent upon a mission of inquiry to the United States of America and Canada to investigate related conditions in those countries. This report has now been issued for general information, and there is bound up with it a further report by Professor R. J. A. Berry,[1] who formerly held the chair of anatomy in the University of Melbourne, and who was a member of the mission of inquiry.

He states that the war impressed upon all medical administrators the necessity for co-operation, the great value of the research hospital, and the vital importance of the medical centre devoted to community health. Yet in Melbourne to-day he finds a medical position that is the product and relic of mid-Victorian ideas. Medical education is carried out in a medical school that is detached from the clinical hospitals, and the several departments of the school are unrelated. The University has no control, direct or indirect, on the clinical hospitals; these have no common objective, and merely function as isolated and competitive units.

During his tour Professor Berry investigated 21 of the leading university medical schools of Canada, the United States, and Great Britain, and some 115 institutions and hospitals. He gives a lucid and vivacious account of his observations. He maintains that everywhere he finds a change in the ideas that inspire hospital treatment and medical education. The objective of all medical effort is the patient. This conception demands unity of purpose, concentration of effort, and a constant investigation of the laws of health as well as the processes of disease. It is now universally recognized that medical research is an integral part of medical treatment, and consequently the modern idea requires the concentration on the one spot of all branches of medicine.

The examples Professor Berry gives of the vast equipment of certain of the Canadian and American medical centres are enough to arouse envy in the heart of many readers. But despite economic adversity, which he says is delaying advance in these islands, he finds concentration schemes in being in Aberdeen and Birmingham, and developments of pathological departments in the older universities of Oxford and Cambridge, which are practical proof of the community spirit in medicine. A change, also, he finds in building arrangements; there is concentration rather than dispersion. Instead of spreading the hospital building over a vast area the tendency in America is to build it up into the sky, and a picture (reproduced herewith) is given of the New York State Psychiatric Institute and Hospital, which shows that it vies with the sky-scrapers. He indicates that this is not a mere fashion, but the expression of a real purpose. Hospital and school of medical and allied sciences are brought together in the one building.

"Anatomists and physiologists, pathologists and research fellows generally, may walk from their laboratories into the wards. The clinicians have all the medical scientific departments absolutely at hand, which means that the full resources of medicine are at the service of every patient, irrespective of his means. Such a combination is stimulating in the highest degree to every medical officer in the associated departments, whilst the benefits to the patient are incalculable, and cannot be attained in their entirety in any other way."



New York State Psychiatric Institute and Hospital.

Professor Berry has something to say on hospital policy. Brought up in this country, where the voluntary hospital is the pivot of hospital work, he finds other methods elsewhere which he believes to be better. He suggests that it is a mistake to look upon the hospital as a place for the treatment of the poor. He prefers the American practice, based upon the idea that a hospital should be for all.

"American medical and hospital administrators have clearly recognized the justice of this contention. It is to-day the bounden duty of medicine to give every type of patient access to its hospitals, for only there can medicine give its best; but the labourer is worthy of his hire, and it is illogical in the extreme to suppose that, because the British type of voluntary hospital was based on gratuitous service by all concerned, that this more modern duty of medicine can be maintained on the same basis. In other words, if all classes of patients are to be admitted to our great hospitals, then the medical staff must be paid for their services. It is to the credit of the Americans that they have not only recognized the truth of this principle, but have had the courage to put it into practice, and in every one of the great university hospitals visited by me in Canada and the United States I found every member of the staff of both medical school and hospital was paid, and well paid, for their services."

His opinion, based on personal observation, is that under the new methods "the hospitals become self-supporting and entirely free from that bureaucratic control feared by the more ardent supporters of the British voluntary system." He quotes the revenue of a Canadian medical centre at Toronto for 1926. The income received was as follows:

	£
Receipts from patients	148,875
Endowments and subscriptions	16,075
Miscellaneous receipts	3,030
Allowances from the city of Toronto for indigent patients	22,300
Allowances from province of Ontario	15,749
Allowance from outside townships	4,621
From Federal and Provincial Governments for the treatment of venereal disease	2,300
	£213,000

This sum covered the attendance of 65,136 out-patients and 12,698 in-patients.

The problem before the Faculty of Medicine in Melbourne has been defined by Professor Berry in a letter published in the *British Medical Journal* of November 26th, 1927: "The Melbourne problem is, then, that which now everywhere confronts medicine: the seeking of the best combination of research, teaching, hospital, and laboratory in the cause of the national health—that is, the elimination of disease by study, research, and co-operative effort."

[1] *Report on the Hospital-Medical School Problems of the State of Victoria.* By Professor R. J. A. Berry, M.D. Melbourne, Victoria: H. J. Green, Government Printer. 1928. Pp. 39. Price 1s. 6d.

Nova et Vetera.

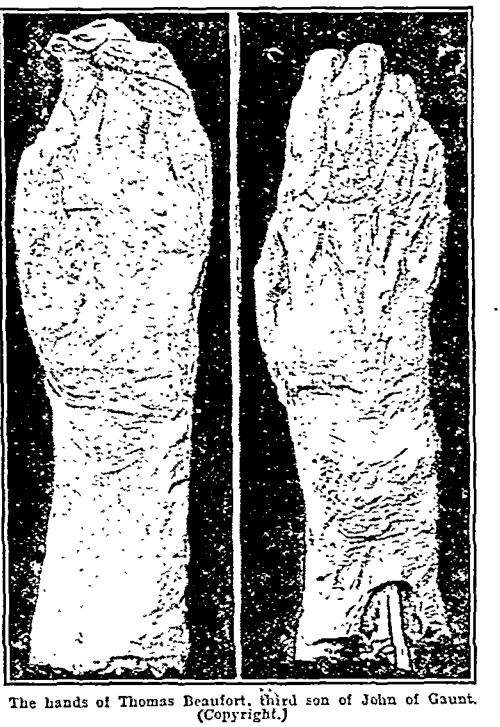
THE HANDS OF THOMAS BEAUFORT, THIRD SON OF JOHN OF GAUNT.

AMONG the relics of historical interest in the Museum of the Royal College of Surgeons are two hands, said to be those of Thomas Beaufort, the third son of John of Gaunt, Duke of Lancaster, who died in 1427. The strange story of how they were discovered and came to be preserved in the Museum is one of more than ordinary interest.

Thomas Beaufort was the third son of John of Gaunt by his third wife, Lady Catherine Swynford. He won fame as a soldier and also held distinguished offices under the Crown during the fifteenth century. He was half-brother to Henry IV, and was created Earl of Dorset, Duke of Exeter, and Knight of the Garter. In 1407 he was made captain of Calais, and shortly after was appointed admiral of the northern and western seas for life, and on the accession of Henry V was made lieutenant of Aquitaine.

In 1415 he accompanied Henry V on the invasion of France, commanded the rearguard at the battle of Agincourt, and took part in other important engagements. He captured Evreux, showing great courage and bravery, was prominent at the siege of Rouen, and was eventually made captain of that city. After a long campaign in the coast towns of Normandy he returned to England upon the death of Henry V in 1422, and jointly with his brother Henry, Cardinal Bishop of Winchester, was appointed by Parliament to take charge of the royal infant Henry VI.

Thomas Beaufort died at his Manor of Greenwich at the age of 52, on January 1st, 1427, and by his will (given in Dugdale) he directed that he should be buried in the Abbey of St. Edmund's Bury, near his wife, who had predeceased him, at the entrance to the Chapel of Our Lady, close to the wall. Here, according to the record, his body was found 350 years later, "as perfect and entire as at the time of his death."



The hands of Thomas Beaufort, third son of John of Gaunt. (Copyright.)

The next part of the story, which tells of the discovery of the body, is related in a communication made to the Royal Society by Dr. Charles Collignon, professor of anatomy at Cambridge, on June 25th, 1772. It is entitled "Some account of a body lately found in uncommon Preservation under the Ruins of the Abbey at St. Edmund's Bury, Suffolk, with some reflections on the subject." The professor states that,

"In the month of February last, some workmen, digging among the ruins of this Abbey, discovered a leaden coffin supposed from some circumstances to contain the remains of Thomas Beaufort, Duke of Exeter.

"As it certainly was buried before the dissolution of the Abbey, it must have been there two or three hundred years. It was found near the wall on the left-hand side of the Choir of the Chapel of the Blessed Virgin, not enclosed in a vault, but covered over with common earth. Mr. Thomas Cullum, a surgeon, says the body was enclosed in a leaden coffin surrounding it very close, so that you might easily distinguish the head and feet. It was wrapped round with two or three large layers of cere-cloth, so exactly applied to the parts that the piece which covered the face retained the exact impression of the eyes and nose."

After giving an account of the internal organs as he found them, the professor observes that

"the hands retain the nails, and the cere-cloth, which was of considerable weight, was doubtless put on hot. Might not the cere-cloth, impregnated perhaps with gums or resins, thus excluding the air, have accounted for the preservation of the body?"

Cere-cloth, in which the bodies of the dead were often wrapped before burial during the Middle Ages, was a coarsely woven material prepared by dipping it into melted wax, that had been impregnated with myrrh, cinnamon, and other preservative spices. Fabyan, in 1494, alludes to "Ye corps to be seryd and anoynted with ryche and precyose bawmys," and Murray gives the following quotation from a work printed in 1557: "Ceere them [the bodies] in three score foldo of ceered cloths."

It was not until the middle of the last century that further light was thrown on the subject, by the discovery of a manuscript purporting to have been written by one Joseph Pater of Bury St. Edmunds, at the time when the remains were found. According to this document:

"On the 20th of February, 1772, some labourers employed in breaking up part of the old abbey church discovered a leaden coffin which contained an embalmed body as perfect as at the time of its death; the features and lineaments of the face were perfect, which were covered with a mask of embalming materials. The very colour of the eyes distinguishable; the hairs of the head brown, intermixed with some grey ones; the nails fast upon the fingers and toes as when living; stature of the body about six feet tall and genteelly formed.

"The labourers, for the sake of the lead (which they sold to Mr. Faye, plummer in this town, for about 15s.), stript the body of its coffin and threw it promiscuously amongst the rubbish. From the place of its interment it was soon found to be the remains of Thomas Beaufort, third son of John of Gaunt, Duke of Lancaster.

"He was a great benefactor to this church, died at East Greenwich in 1427, in the 5th year of King Henry ye Sixth, and was interred in this Abbey near his duchess as he had by his will directed. On the 24th of February following, the mangled remains were enclosed in an oak coffin and buried about eight feet deep, close to the north side of the north-east pillar which formerly assisted to support the Abbey belfry."

The writer concludes by stating:

"Before its re-interment the body was mangled and cut . . . by Thomas Gery Cullum, a young surgeon in this town. The skull he sawed in pieces . . . his arms chopped off below the elbows and taken away. The crucifix, supposed to be a very valuable one, is missing. It is believed the body of the Duchess was found (within about a foot of the Duke's) on the 24th of February.

"Every sensible and humane mind reflects with horror at the shocking and wanton inhumanity with which the princely remains of the grandson of the victorious King Edward the Third have been treated and 345 years after his death.

"One of the arms the said Cullum confesses to have in spirits."

This account corresponds to some extent to that given by Professor Collignon, who had evidently been informed of the circumstances by Mr. Cullum.

Thomas Ghery Cullum, the surgeon mentioned in the manuscript and also by the professor, was the younger son of a Suffolk baronet of that name, and on the death of his brother succeeded to the title and relinquished medical practice. Apparently he kept one of the hands he had sawn off and for a time the other disappeared, but, according to Jeaffreson, it came into the possession of a showman, who exhibited it about the country at the fairs he visited. It eventually became the property of John Hunter, who may have bought it from the showman, for it found a place in his great anatomical collection and was among the specimens in his museum when the former was purchased by the Government after Hunter's death in 1793. The other hand, which had been retained by Sir Thomas Ghery Cullum, was presented by him to the College of Surgeons in 1814. In this curious way the two

hands of Thomas Beaufort, after being separated for forty-two years, came together again.

The hands even now, after a period of five hundred years, are in a remarkable state of preservation. They have apparently been kept with care, and are finely formed with long tapering fingers and small nails (now missing).

The total length of the right hand taken from the back is 10½ inches (26.55 cm.), and the length of the hand alone, measuring from the line joining the styloid process of the ulna and radius to the tip of the middle finger, $7\frac{5}{16}$ inches (18.55 cm.). The diameter from median to lateral metacarpal is $2\frac{3}{4}$ inches (7 cm.). Allowing for shrinkage in the process of time, the hands are below the average in size for a man. It is noticeable, however, that the wrists are strong and well knit, as might be expected in those of a good swordsman and great warrior such as Thomas Beaufort, Duke of Exeter.

Thanks are due to the Conservator, Sir Arthur Keith, for kind permission to reproduce the photograph of the hands taken by Mr. Stewart.

C. J. S. Thompson, M.B.E.

MEDICAL MEMBERS OF LOCAL PUBLIC BODIES.

SCOTLAND.

In reply to a request made in the *British Medical Journal* last year for the names of medical practitioners who are members of local authorities or their subsidiary public bodies in Great Britain many replies were received, and lists of names were published on December 8th, 1923 (p. 1057), December 29th (p. 1190), and February 16th (p. 314). The information thus received related principally to England and Wales, only a few names being reported from Scottish authorities. Further details have since been received in this last respect, and it is now possible to publish a more complete list of names. Special interest attaches to it in view of the pending disappearance of education authorities and parish councils, their duties being taken over by county councils and the town councils of the larger boroughs.

County Councils.

Argyll.—Dr. J. C. Boyd, Dunoon.
Bute.—Dr. J. H. Paul, Millport.
Clackmannan.—Dr. E. E. Dyer.
East Lothian.—Dr. W. C. McEwan, Prestonpans.
Inverness.—Major A. D. Mackinnon, C.M.G., Kyleakin, Skye.
Lanark.—Dr. John Reid, Forth; Dr. J. Rogerson, Dalserf.
Midlothian.—Dr. W. Young, West Calder.
Orkney.—Dr. W. A. Sinclair, Kirkwall.
Peebles.—Dr. J. R. Jeffrey.
Renfrew.—Dr. J. M. Smeaton, Barrhead.
Ross and Cromarty.—Dr. D. J. Macrae, Lochalsh.
West Lothian.—Dr. J. Keay, Bangour; Dr. A. S. Kelso, Broxburn; Dr. S. G. Ogilvy, Fauldhouse.
Wigtownshire.—Dr. D. Matthews, Glenluce; Dr. E. Shaw, Wigtown.

Town Councils.

Arbroath.—Dr. W. J. Dewar.
Ayr.—Dr. A. A. Young.
Banff.—Dr. J. H. Stephen.
Berrie.—Dr. Chas. Aymer.
Buckie.—Dr. G. Hendry.
Burghead.—Dr. W. D. Sutherland.
Dumfries.—Dr. G. R. Livingstone.
Dunoon.—Dr. J. W. Hill.
Edinburgh.—Dr. T. G. Nasmyth; Dr. G. F. Barbour Simpson.
Ellon.—Dr. W. Sinclair.
Forfar.—Dr. J. A. Lowson (Provost).
Fort William.—Dr. T. L. Brander.
Glasgow.—Dr. Jas. Dunlop, Shettleston; Dr. Jas. Dunlop, Dennistoun; Dr. R. Forgan; Dr. S. H. Bennett.
Jedburgh.—Dr. J. Hamilton Hume.
Kelso.—Dr. A. D. Fleming.
Kingussie.—Dr. F. Savy.
Kintore.—Dr. H. R. Vernon.
Kirkintilloch.—Dr. A. D. Cowan.
Laurencekirk.—Dr. J. C. M. Matheson.
Leslie.—Dr. A. R. Wight (Provost).
Lockerbie.—Dr. G. H. Sinclair.
Maybole.—Dr. W. P. Sandilands.
New Galloway.—Dr. J. Cowan (Provost).
Paisley.—Dr. W. H. Gibson.
Sanquhar.—Dr. J. K. Dunlop.
Stonehaven.—Dr. Chas. Burns (Provost).
Tain.—Dr. E. K. Mackenzie.
Thurso.—Dr. A. Asher (Provost).
Whithorn.—Dr. J. G. McWhirter.
Wigtown.—Dr. E. Shaw (Provost); Dr. W. Lilico.

Parish Councils.

Cleland (Lanarkshire).—Dr. A. Wright, Salsburgh.
Cromdale (Morayshire).—Dr. W. H. M. Barclay, Grantown-on-Spey.
Dallas (Morayshire).—Dr. R. Douglas, Elgin.
Kilchoman (Argyllshire).—Dr. D. MacLachlan, Islay.
Tain (Ross-shire).—Dr. E. K. Mackenzie, Tain.
Yetholm (Roxburghshire).—Dr. A. Rodger, Yetholm.

Education Authorities.

Aberdeenshire.—Dr. A. Hendry, Ballater.
Ayrshire.—Dr. W. P. Sandilands, Maybole.
Berwickshire.—Dr. J. Cairns, Duns; Dr. F. O. Taylor, Coldingham.
Caithness.—Dr. A. Asher, Thurso; Dr. J. R. Kennedy, Dunbeath.
Dumfriesshire.—Dr. W. Park, Moffat.
East Lothian.—Dr. D. R. Macdonald (Chairman).
Fifeshire.—Dr. E. E. Morrison, St. Andrews.
Kincardineshire.—Dr. W. Sinclair, Nigg.
Midlothian.—Dr. W. Young, West Calder.
Morayshire.—Dr. T. H. W. Alexander, Elgin; Dr. J. Bruce, Forres.
Orkney.—Dr. Wm. Park, Kirkwall.
Perthshire.—Dr. G. F. Barbour, Pitlochry; Dr. R. Stirling, Perth.
Ross and Cromarty.—Dr. J. Broadfoot, Dingwall; Dr. D. Johnstone, Cromarty; Dr. D. Wallace, Ullapool.
Selkirkshire.—Dr. E. M. Tyrrell, Galashiels.
Stirlingshire.—Dr. C. E. Blair, Kilsyth.
Sutherlandshire.—Dr. E. A. C. Beard, Armadale; Dr. J. D. MacRae, Bonar Bridge.
West Lothian.—Dr. Wm. Anderson, Armadale.
Wigtownshire.—Dr. D. Matthews, Glenluce; Dr. E. Shaw, Wigtown.
Edinburgh (Burgh).—Dr. W. G. Sym.

BRITISH EMPIRE CANCER CAMPAIGN.

The Marquess of Reading presided at the quarterly meeting of the Grand Council of the British Empire Cancer Campaign held on April 8th, when the following grants were made: £3,500 to the Cancer Research Department of the Middlesex Hospital, £650 for cancer research work at St. Mark's Hospital, London, £80 for cancer research work being carried out by Dr. J. C. Mottram at the London Radium Institute; and a sum of £50 for special investigations to be made at the Cancer Hospital, London, under a scheme submitted by Dr. E. L. Kennaway.

The newly formed Cancer Research Centre in the North of Ireland was invited to become an affiliated body of the Campaign, and congratulations were extended to the recently organized New Zealand Branch of the Campaign, which was inaugurated during the visit to Wellington by Mr. W. Sampson Handley. It was reported that the New Zealand Branch had been established under the patronage of the Governor-General and a representative committee has been appointed, the Prime Minister of the Dominion having promised Government support for the movement.

A summary of the recommendations made by the Committee of the International Conference, held last July, was submitted and the Council passed the recommendations to the Investigation Committee of the Campaign to take action in initiating executive action on the proposals. The report makes important suggestions for the continued investigations upon many lines of work reported on at the conference, and the committee stresses the necessity for the institution of standardized records of results of patients treated by radium and x rays. It urges that the British Empire Cancer Campaign, in collaboration with the Medical Research Council and the Ministry of Health, should invite all institutions using radium and x rays to utilize an agreed form of record.

The Council received the final reports on the subject of the Garton Prize and Medal for promoting investigations into the nature, causes, prevention, and treatment of cancer, to which reference is made elsewhere this week (p. 698).

It was announced that the midsummer ball would be held on June 5th this year, under the patronage of the Duke and Duchess of York and the presidentship of Lord and Lady Reading, and that Lady Bland-Sutton had undertaken the chairmanship of the Ball Committee.

England and Wales.

Dinner to Lord Moynihan.

THE University of London Medical Graduates Society will give a complimentary dinner to Lord and Lady Moynihan of Leeds at the Hotel Metropole, King Street, Leeds, on Friday, April 19th, at 7.15 for 7.30 p.m. The chair will be taken by the president, Sir StClair Thomson. Any medical graduates of the University of London who desire to be present should apply at once to Dr. Rhoda Adamson, 24, Park Square, Leeds, who is acting as local honorary secretary. The price of the dinner will be half a guinea (exclusive of wines), which should be sent with the application for a dinner ticket.

Public Cleansing in London.

The report of an Investigation into the Public Cleansing Service in the Administrative County of London, by Mr. J. C. Dawes, has lately been issued.[1] This report, made on the instructions of the Minister of Health, gives for the first time a clear and exhaustive account of the public cleansing service of London, by which it is to be understood the arrangements for dealing with the huge quantities of house and other refuse which have to be collected in the metropolitan area, the cleansing of streets, and the many ancillary services. The great sanitary and economic problems which this service presents are examined in detail, and special consideration is given to the refuse dumps which disfigure some districts outside the metropolis. Mr. Dawes alone is responsible for the report and for the opinions expressed therein. It contains a large number of facts and many illustrations, and a number of tables giving details of this important sanitary service. Of special interest to those responsible for the local government of London are the conclusions at which Mr. Dawes has arrived as the result of his investigation, and his suggestions for the future organization of public cleansing work in London. He is of opinion that, from the technical standpoint, the existing system under which there are twenty-nine separate cleansing authorities for London has not proved a success, and that a satisfactory service for what is really one compact area can be provided only by centralized arrangements under a special body representative of all the sanitary authorities. He considers also that it would be well that some, at any rate, of the districts outside the metropolis should be included in any joint scheme that may be devised. As regards the present service, Mr. Dawes finds that the arrangements for refuse collection are defective in important respects—for instance, the scattering of dust during loading, and the use of vehicles of obsolete design. Some methods of disposal come in for severe criticism, the practice of indiscriminate dumping in particular being strongly condemned. It is stated in the foreword that any proposals on the lines suggested in the report for centralizing this service need to be considered in the light of the prevailing organization of local government, and also in relation to other services, and that the Minister has decided to appoint a representative committee to consider the question of giving effect to the report. Further reference to this important document will appear in an early issue of the *Journal*.

Ancoats Hospital, Manchester.

When Ancoats Hospital was founded in 1828 the institution was more aptly designated a "dispensary." In the hundred years that have elapsed there have been many changes in the clinical organization of this institution, consequent on increasing size and closer association with the university; structural additions were made in 1888, 1900, 1915, and 1921. In view of its centenary special reference is made to this expansion and the future possibilities in the current annual report of the medical board, of which Mr. Arnold Renshaw is chairman. Good results have followed the establishment of a new out-patient clinic in genito-urinary surgery, and a cancer clinic is now available for the study of inoperable cases and new methods of treatment. Owing to the long waiting list it is only possible to admit the more serious cases to the wards; this necessitates many minor operations being performed in the out-patient department. The chairman comments on the valuable educational facilities made available by Ancoats Hospital, and expresses the hope that in future it will take a still greater share in undergraduate and post-graduate study. He looks forward to the time when there will be a larger proportion of graduates from the Manchester medical school holding resident appointments or associating themselves otherwise with the clinical work of the hospital. He comments finally on the greater burden which the coming extension of the scope of the municipal health services will place upon the voluntary hospitals, requiring them to devote themselves more intensively to specialization in research and treatment.

[1] H.M. Stationery Office, price 15s.

Treloar Cripples' Hospital, Alton.

On April 5th the trustees of the Lord Mayor Treloar Cripples' Hospital and College entertained members of the honorary medical board at dinner to meet the Lord Mayor and Sheriffs of London. The dinner was held, by permission of the Master and Wardens of the Barbers' Company, at Barbers' Hall, in Monkwell Street. Lieut.-Colonel Frederick Lawson was in the chair, and the other trustees present were the Lord Mayor, Miss Florence Treloar, and Mr. T. J. Harrowing. The speeches included many tributes to the pioneer work by Sir William Treloar for crippled children, to the hospitality of the Barbers' Company and its former associations with surgery, and to the inspiring enthusiasm of Sir Henry Gauvain, medical superintendent of the Hospital and College at Alton. The toast of "The Lord Mayor and Corporation of the City of London" was submitted by Sir Alfred Robbins, and responded to by the Lord Mayor, Sir Kynaston Studd. In proposing "The health of the honorary medical board," the chairman said that this was the twenty-first anniversary of the foundation of the hospital, and that during its existence 5,000 patients had been cared for with a mortality of only 2 per cent.; in 95 per cent. of cases surgical tuberculosis had been arrested at Alton. Mr. O. L. Addison, chairman of the executive committee of the honorary medical board, in his reply, spoke of the revolution in the out-patient surgical departments of children's hospitals in recent years, thanks to the work of the Treloar Hospital and its example. Sir James Berry, in proposing "The health of the trustees," contrasted the treatment of hip disease nowadays with the pitiable state of affairs fifty years ago, when he was a surgical dresser at Bart's. Mr. Leonard Denny (Master of the Barbers' Company), at the request of the chairman, pointed out, one by one, some of the treasures preserved in the Hall, which was built in 1640 by Inigo Jones on the site of a much earlier Barber-Surgeons' Hall. Holbein's famous picture of Henry VIII granting his Charter to the Barbers and Surgeons was in full view of all; and the Master showed the cup given by Henry VIII, and other pieces of priceless plate.

Scotland.

Maternal Mortality work in Edinburgh.

THE annual meeting of the Edinburgh Hospital for Women and Children and the Elsie Inglis Memorial Hospital was held at Edinburgh on March 21st. Mrs. Chalmers Watson, C.B.E., M.D., presided. It was stated that the ordinary income for the year amounted to £11,466, which showed a slight increase over that of the previous year, while the expenditure had increased to £12,866. Dr. J. Parlane Kinloch of the Scottish Department of Health said that those working in the hospital were engaged on the central problem of their national health. Out of every 1,000 births each year in Scotland seven women died, and the greater part of that maternal mortality was preventable. These figures did not take into account the great mass of disablement and disease which was experienced by the mothers who survived. The hospital was making a beginning with the work, and that work would extend. He stated that there were three ways of preventing maternal mortality. T[illegible]preventive midwifery, an

increasingly adequate midwifery nursing service, and better medical research into some of the problems on which they were working.

Physical Defectives in Glasgow Schools.

At a meeting of Glasgow Education Committee on April 4th, a report was presented by the authority's medical officer and the visiting surgeon to the Royal Hospital for Sick Children, dealing with orthopaedic cases examined by them in the schools for physical defectives. The report stated that 164 children suffering from various defects and deformities had been examined, and that all of these required continuous supervision during the whole of their school life in order to correct or prevent deformities. None of the cases required residence in hospital for more than two or three weeks at a time, and the opinion was expressed that closer co-operation between hospitals, patients, and parents would prove of permanent benefit to the children. It was agreed at the same meeting to appoint a special committee in view of the reports received from the Scottish Department of Health indicating marked improvement in the health and physique of school children who had received an addition of milk to their ordinary diet. A member of the Education Authority stated that it had been calculated that the supply of half a pint of milk daily throughout the children's school life would result in an increase of four inches in height and of fifteen pounds in weight. The authority's powers were, however, limited, and food could be given only to necessitous children. It was suggested that school milk clubs should be formed to enable the children to defray the cost of this extra milk, which would amount to fourpence a week for each child, and arrangements were made for experts to address the teachers and scholars on the subject.

East Fortune Sanatorium.

The sixth annual report of the East Fortune Sanatorium for Tuberculosis has just been issued. This sanatorium is maintained jointly by the south-eastern counties of Scotland for cases of tuberculosis occurring within their area. During the year 1928, 113 cases of lung disease were admitted, of which 86, or 76 per cent., had the disease in an advanced stage, while only one patient could be regarded as an early case. Thirty-nine patients were admitted suffering from disease of the bones, joints, and abdomen, and of these 20, or 51 per cent., had disease of an advanced type, while in only 3 could the disease be regarded as in an early stage. The advanced stage of the disease naturally necessitated long periods of residence. The number of admissions had, however, been decreasing for the last three years, in which the figures had been respectively 284, 218, and 193, while the number of discharges had similarly fallen, the figures being 252, 187, and 165. The numbers in residence, however, remained approximately the same on account of the lengthening in the average period of residence. While in 1926 the average period of residence of those discharged during the year was 197 days, in 1928 the average term of residence had risen to 472 days.

Scottish Blind Women.

The Thomas Burns Home for Blind Women, Alfred Place, Edinburgh, was opened on March 26th by the Countess of Haddington. The Rev. Thomas Burns, chairman of the directors of the Edinburgh Royal Blind Asylum and School, said that the institution's first home for blind women was on a small scale, and was opened in 1825 in the buildings of the institution at the south corner of Hill Street and Nicolson Street, and this had served its purpose for fifty years. When the West Craigmillar buildings were opened in 1876, part of these buildings were set aside for use as a women's home, but the directors had decided, more than ten years ago, to provide a separate and larger home. In November, 1926, an anonymous gift of £1,000 for a new home was received by the directors, and this was followed by several other donations of considerable amounts. The new home provided accommodation for sixty women, and forty-two were now in residence. The total cost, which included furnishings and the laying out of the grounds, was £18,500, of which approximately £7,600 had been provided by the local authorities and the State. Sir Leslie Mackenzie said that for a generation Dr. Burns had been a personality in the city life of Edinburgh. He had made it his special task that the problem of the blind in Scotland should be solved on Scottish lines. He considered that Dr. Burns deserved the honour of having the institution named after him, and he wished also to pay a tribute to the interest taken by the local authorities and the civil service in the treatment of the blind. A large portrait of Dr. Burns was presented to the home.

Falkirk Infirmary.

At the annual meeting of subscribers to Falkirk and District Infirmary it was reported that the ordinary income for the past year had amounted to £9,569, an increase over that of the previous year of £354, while the total expenditure for the year had been £7,637, or £336 less than in 1927. Dr. John Young, chairman of the board of managers, presided, and made a statement with regard to the progress that was being made in relation to the provision of the new infirmary for East Stirlingshire. The net amount raised for this purpose up to December 31st, 1928, had been £54,427, and accordingly operations in connexion with the erection of a first section of the new infirmary had been undertaken, and early completion was expected. The chairman further stated that in the new infirmary provision was to be made on a modified scale for the reception of paying patients, and the experiment of this policy would be looked forward to with interest.

Ireland.

A New Hospital for County Armagh.

A LETTER has been addressed by the Ministry of Home Affairs, Northern Ireland, to the Armagh County Council, in which the Minister stated that as the present county infirmary building was out of date and the surroundings unsuitable, it was thought inadvisable to spend money on alterations, but that a new building would be a more economical proposition eventually. The question was not one of so many more beds, as presumably sixty would be sufficient—unless child welfare and maternity, etc., were to be added; but there must be better accommodation for the *x*-ray department, on which over £600 had been spent; for the house-surgeon, who used the boardroom at present; for the matron and nurses, who had now no place to retire when off duty; and for the extern department. With regard to the last-named, there was only seating accommodation in the entrance passage for about six people, and even then there was inconvenient crowding. A proper operating theatre was required and a separate place for accident cases. If the surgeon's residence were used for some of these purposes a new house would have to be built for him in the yard, as the ground at the back fell away steeply from the buildings. With regard to district hospitals, the existence of these would not do away with the necessity for the skilled treatment of serious surgical cases in the county infirmary. Of course, these could be treated in Belfast, but probably they could be as efficiently and more conveniently treated in the county infirmary if a modern building were erected. The county council contributes £3,000 per annum to the present institution. Under the Local Government Act (Northern Ireland), 1923, there appears to be power to erect a county infirmary on a new site and to expend on it "such sum as the Council think fit."

Medical Certification of Insured Persons in the Irish Free State.

The National Health Commission, in a letter addressed to medical certifiers, has referred to its circular letters of September 15th and December 14th last on the subject of the proposed alteration of the basis for the distribution of the funds available for medical certification. Following an interview between the Minister for Local Government and Public Health and representatives of the medical profession, it has been decided to postpone the introduction of the proposed change from the dispensary to the county basis pending further consideration by the Minister of

questions concerning national health insurance as a whole. After consultation with the Minister for Finance, the Commission has, however, decided that the extra cost of administration entailed by the retention in certain certification areas of the dispensary district as the unit of distribution of the Medical Certification Fund cannot be allowed to remain a charge on State Funds. The amount involved—namely, £800 per annum—will, therefore, without prejudice to the larger question which awaits the Minister's decision, be deducted meanwhile from the moneys made available for medical certification. As, however, the county boroughs and urban districts of over 10,000 inhabitants have not been affected by the Commissioners' proposals, it is not intended to charge any of the £800 against the moneys applicable to these areas, but to recover the entire amount from areas outside the county boroughs and urban districts referred to. This will mean a reduction this year of 2.65 per cent. approximately in the respective dispensary pools. The Commission states that it is proposed to bring this arrangement into operation as from January 1st, 1929.

Correspondence.

COLLES'S FRACTURE.

SIR,—There are a few points in the discussion on this subject to which I think it necessary to refer. One writer objects to the method of reduction practised by Sir Robert Jones. This must be the method he and I learnt from our lamented friend Mr. Hugh Owen Thomas, which is simple, successful, and, moreover, requires no anaesthetic. The pain of reduction lasts only a few seconds, and its disappearance is followed by complete relief. I had the privilege of demonstrating this mode of reduction at the Royal Society of Medicine (Surgical Section, November 8th, 1910) during a paper by Sir Robert Jones on fractures in the neighbourhood of joints, which was published in the *Proceedings* of December, 1910, with reference also to the *Proceedings* of 1908 (Surgical Section, p. 221).

One of the difficulties in the treatment of Colles's fracture is to prevent return of deformity even after skilful reduction. This is best effected by using splints of sheet metal, twisted in the direction of pronation and lipped at the lower end, so as to catch the hand and lower fragment of the radius in the one case, and the lower end of the ulna in the other. At the very beginning of his own use of the "twisted splints" in Colles's fracture in this way Mr. H. O. Thomas put up my own forearm in them, with the effect of at once preventing supination and further pronation and producing a feeling of security. This is the greatest advance in the splinting of Colles's fracture. The bandaging must, however, be quite slack, and to keep the splints from slipping my practice has been to apply sticking-plaster, folded with the sticky side out, between the padded splint and the forearm. Otherwise union in the fracture may be delayed by the "anaemia of pressure." This precaution of avoiding tight bandaging was a constant principle in Mr. H. O. Thomas's practice, and his care, skill, and judgement can be known only to those who saw him at work. Along with this slack bandaging the forearm may be allowed to hang without sling, as some swelling is no detriment, but permits nutritive juices to pervade the seat of fracture and hasten union.

The only "impaction" that can occur is the unreduced rotation of the lower radial fragment, producing pain by the abnormal stretching of the extensor tendons in the rotated and displaced fragment. The absence of real impaction was explained by the late Professor Gordon of Belfast in his *Treatise on Fractures of the Lower End of the Radius* (Churchill, 1875), where he also explains the occurrence of Colles's fracture by "cross-breaking strain." This I proved as soon as I got the book in February, 1876, by making the fracture artificially in several dead bodies in the dissecting room of the Liverpool School of Medicine. Gordon's book contains the most exact account I know of Colles's fracture and of the mechanism of its cause.

I have never used the contrivance known as "Gordon's splint," though we had several specimens in the splint room of University College Hospital during my residence there in 1869 and 1870. Nor have I felt any disposition to use Carr's splint, which does not come up to my idea of what is wanted; in fact, no splinting can compare in efficacy with the "twisted splints" of sheet metal above referred to.—I am, etc.,

Liverpool, April 7th. RUSHTON PARKER.

SIR,—My old house-surgeon Mr. A. S. B. Bankart will, I feel sure, forgive me if I suggest that his criticism in your issue of March 16th (p. 491) of Messrs. Grasby and Trick's paper is somewhat lacking in generosity. Such reports by men, when dressers in fracture departments, can only be for good and may do something to dispel many popular illusions with regard to prognosis. The chief of the department is to be congratulated on having inspired and permitted the investigation. It must be admitted that the authors exposed themselves to criticism in that they drew broad deductions from a number of cases far too small to be of the slightest statistical value; yet, even if generalizations are admissible, I find myself absolutely unable to appreciate the argument put forward by Mr. Bankart.

As a member of the committee which drafted the British Medical Association's report of 1912 I am unlikely to minimize the importance of absolute restitution of alignment; it must, however, be admitted that in some cases of Colles's fracture in elderly and infirm women a bad result is preferable to the risk which a general anaesthetic would entail: further, it is not uncommon in my experience to fail to reduce the deformity completely by manipulation under a general anaesthetic, even with the aid of a wedge; in such cases comminution or constitutional defects not infrequently contraindicate open reduction. I must admit that I have never mastered the Jones technique. The method I teach and attempt to carry out myself is disimpaction by extension in dorsiflexion followed by adduction with palmar flexion.

After reading Messrs. Grasby and Trick's paper carefully a second time, I fail to see what grounds Mr. Bankart finds in it for his conclusion—that "at a great London teaching hospital a Colles's fracture is never properly reduced." Nor can I agree that "the usual results of the methods of treatment at present adopted" are invariably unsatisfactory. Surely Mr. Bankart cannot believe that his first statement can with truth be made of any hospital, and least of all with regard to the hospital where he received his early training and to which he is indebted for much of his success. His paper would endeavour to show that general surgeons know nothing of the treatment of Colles's fracture, and that orthopaedic surgeons know everything. I dislike these antitheses and antagonisms: we are all working in the same field for the advancement of knowledge, and such gibes contrast ill with a recent tribute to Arbuthnot Lane's contributions to orthopaedics by an orthopaedic surgeon.[1]

When reading Mr. Bankart's paper I felt that the application of extreme force which he advocates is dangerous, as I have seen the median nerve injured when apparently the force used was not unusual: but while preparing this note I find that this is dealt with by others in your issue of March 30th, so that further comment is unnecessary. Everyone knows how fallacious is a general impression of results, as was shown by the findings of the British Medical Association's Committee on Fractures referred to above. One cannot help thinking that if Mr. Bankart would look up his own cases after at least a two years' interval, he would find that his preconceived ideas did not entirely coincide with the results obtained. As a fact, it is up to Mr. Bankart to show a very high percentage of good results, for I gather that besides regarding Colles's as one of the easiest fractures to treat, Mr. Bankart is of opinion that it is always possible and in the patient's best interests to reduce the deformity. I rejoice to read that Mr. Bankart did at least carry away from Guy's one good principle—which is that, provided deformity is reduced, the particular type of splint or other retentive apparatus used is of relatively little importance; or conversely, if the displacement is not corrected,

[1] W. H. Trethowan, *Lancet*, January 5th, 1929, p. 50.

no apparatus can be expected to do this. It can only maintain the reduction when once obtained, and in a Colles's fracture the fragments once put into normal alignment impinge on one another so freely that very little more than firm support is needed.

I have read Messrs. Edwards and Clayton's paper with much pleasure and advantage, but cannot agree with Mr. W. A. Cochrane's comments on this in the *British Medical Journal* of March 9th (p. 477) as to the frequency of displacement of the lower end of the ulna. I find that my failures do not show this deformity, which hitherto I have not met with as a marked feature of this accident. I attribute most of my own bad results to secondary arthritis of the wrist or inferior radio-ulnar joint; this is caused by altered mechanics either due to defective restitution or to involvement of a joint surface by the fracture. But as I have not reviewed my results this must be taken as a mere impression, and therefore of little value.—I am, etc.,

London, April 6th. C. H. FAGGE.

SIR,—Those who, like myself, have for long considered the present methods of reducing Colles's fracture to be somewhat inadequate, should be grateful to Mr. Bankart for daring to blaze a new trail. His assumption that to disimpact a fracture impacted by force requires almost as great force to reduce it, is strictly logical, and no amount of argument to the contrary can affect it.

That some few specialists (and, of course, Sir Robert himself) have gained the knack of applying the requisite force by Jones's method is undoubted, but what of the general practitioner who is called upon to treat the majority of these cases? Needless to say, his results are usually no better than those published at the opening of this discussion—perhaps often very much worse. He does not see enough of these cases to enable him to acquire the knack of using Jones's method to its proper advantage. He needs a more direct method, and I think Mr. Bankart has pointed the way.

After all, Mr. Bankart's method is only another way of applying Sir Robert Jones's two forces, and to those who would hesitate to apply what may seem uncontrolled force over an orthopaedic wedge, in the manner of Mr. Bankart, the use of a modified Thomas's wrench may appeal.

By means of a Thomas's wrench the forces used by Sir Robert Jones are increased many times, and there is little danger of sudden strains on tendon or nerve.

It is the opinion of most surgeons, I think, that once the majority of these fractures are properly reduced they almost take care of themselves. The reduction is the vital point, and no amount of splinting in fancy positions, massage, or other accessories (the refuge of the inexpert fracture surgeon) will give a good result if the reduction is not anatomically correct.

It must not be forgotten, too, that in patients of advanced years the joints are quite ready to become the seat of osteo-arthritis, without the additional burden of an anatomical defect, however slight.—I am, etc.,

London, N.W., April 2nd. A. W. BAYLEY.

TREATMENT OF FRACTURES.

SIR,—Using the instances of Colles's and Pott's fractures, the treatment of bony injuries is being discussed in your columns in interesting fashion; old arguments are being reopened and new ones advanced.

The treatment of all fractures aims at re-establishment of bony continuity and restoration of function, while the methods and appliances employed are legion. Experience of many thousands of fracture cases at a base hospital in France convinced me of the truth reiterated by Mr. Ollerenshaw that the one essential to successful results is "continual supervision under one control." I would go further and say that the type of traction employed, the method of fixation, or the mobilization of the limb during fixation are utterly secondary to continuity of supervision. When in charge of a surgical division I had the duty of supervising some 450 beds for fractured femur cases; I refrained from formulating a routine technique of treatment, but with the help of the consulting surgeon managed to get my staff immobilized, and even obtained specialist status for them. Each had his own devices for treatment, but careful analysis of the results showed nothing to choose between the different groups of cases: for example, an average shortening of under 1 cm. was obtained in 500 cases treated in divers ways.

My chief object, however, in writing this letter is to draw attention to the work of Dr. Lorenz Böhler of the Umfalspital, Vienna, in the treatment of fractures. A period of post-graduate study there, recently, convinced me of the outstanding excellence of his results, and I feel that his methods should be better known here. The hospital is purely an accident hospital, specialized for this, and, I believe, financed by a group of insurance companies. The principle of treatment by Böhler is not new, being the fixation of the fracture in such a way as to allow of voluntary movement of the limb above and below the site of fracture; the methods employed, however, appear to me together to constitute a definite advance in treatment. They are: (1) The employment of local anaesthesia (2 per cent. novocain, 20 to 40 c.cm.) in the reduction of recent fractures, with almost dramatic effect, and the remarkable advantage that the patient can and does assist the manipulator in reduction. (2) Pin or ice tongs traction is used in conjunction with plaster and metal splints. (3) Internal fixation by operation is avoided, and, excepting only in fractures of the olecranon and patella, has not been used within the last three years. (4) Reduction is effected under extension and counter-extension of the limb—as, for example, in the germane instance of Colles's fracture—the flexed elbow was fixed by a band of webbing, while extension was applied temporarily to the palm and fingers by a mastisol bandage, the reduction of the impaction deformity being carried out by the surgeon in a supination-pronation manœuvre as described by Sir Robert Jones on March 30th (p. 619); a dorsal plaster splint extending to the knuckles allowed movement of the thumb and fingers and of the elbow.

Pott's and other ankle-joint fractures are similarly dealt with, fixation being effected by a plaster cast applied directly to the skin on the flexor aspect, carefully moulded to the joint, and carried to the heads of the metatarsals; to this are added circular bandages in which is incorporated a metal stirrup extending to 2 in. beyond the heel, and on which the patient is encouraged to walk on the third day. I have had the opportunity of using the method in two stout elderly women, with gratifying results: they were discharged from hospital at the end of a week, and both were fully able to perform household duties six weeks after the fracture. The greatest stress is laid on accuracy of reduction; "wet" films are taken through the moist plaster, and if apposition is unsatisfactory the process of reduction is repeated—the local anaesthesia lasts for about two hours. (5) Compound fractures are regarded as "urgents," and are operated upon, again under local anaesthesia, within two hours of admission; débridement, reduction, obliteration of dead spaces, and closure are effected, but no buried sutures (catgut) are used, the skin only being sutured; a window in the plaster allows of inspection and dressing. The results of these technical measures bear out what experience taught one in France—namely, that early excision and closure obviate suppuration; that immobilization at the site of fracture is the most important factor in overcoming suppuration when this is established; and that plates, screws, pins, and sutures are foreign bodies which tend to impair resistance and impede repair: their sole virtue is in their ability to effect immobilization of the fragments, and, since this can be achieved by other means, they should be discarded.

While in Vienna I was allowed to examine some sixty out-patients in Böhler's clinic, during the course of a routine inspection by the surgeon. Critical examination failed to reveal one result which could be regarded as indifferent by ordinary standards, while the number of amputations in case records was enviably small. I omit to mention that a massage or orthopaedic department does not exist at this hospital, the method used obviating the necessity for such a department.

Böhler's treatise on the treatment of fractures has been translated into English, or rather American, and is now in print; unfortunately, I have not yet got the name of

the publisher. In the meantime, those interested in the local anaesthesia technique will find a paper by Böhler on the methods of analgesia in the treatment of fractures in the March number of *Ars Medici*, published by the American Medical Association of Vienna.—I am, etc.,

Sunderland, March 29th. W. GRANT WAUGH.

THE INTRACUTANEOUS TUBERCULIN TEST.

SIR,—It is a pleasure to find, in Dr. Camac Wilkinson's further communication on the above subject, in your issue of March 30th (p. 621), that, while we may differ as to the use of certain words, our views on the more fundamental questions are not very far apart.

Like me, Dr. Wilkinson appears to hold the orthodox view that the tuberculin reaction is a specific allergic inflammatory condition. Why he should object to my using the expression "plaque of oedema" to describe the infiltrated part of the inflamed area I cannot imagine. Adami and McCrae, in their *Textbook of Pathology*, stated, under the heading of "inflammatory oedema," that "all acute inflammation is accompanied by a local increased passage of fluid out of the vessels," and my own sections of early allergic areas in tuberculous infection confirm this.

As to my selection of the third day as the best date for "reading" the reactions for comparative purposes, this date was chosen on the grounds of average measurements of reactions at different time-periods after the introduction of the tuberculin; and these measurements showed clearly that the third day was, on the whole, the best date for the purpose. Some authorities advocate a still earlier "reading." Dr. Ritter, for instance, in the *Handbuch der Tuberkulose* of Brauer, Schroeder, and Blumenfeld, expresses his views as follows: "Die Reaktion tritt nach 5–6 Stunden ein, erreicht nach 48 Stunden ihren Höhepunkt, um nach 2–3 Tagen wieder zu verschwinden." Dr. Wilkinson is quite right in saying that the induration "may persist for weeks." In my own case, it persisted for six weeks; but I do not contemplate undergoing a course of tuberculin treatment on that account.

I agree with Dr. Wilkinson, too, as to the interest attaching to *post-mortem* observations in this connexion. Burghardt found tuberculous lesions in 92 per cent. of cadavers of patients dying from "all causes" between the ages of 20 and 90 years; and Nägeli recorded a slightly higher percentage. These findings accord well with my 90 per cent. of "positives" to 1 in 1,000 tuberculin in healthy adult males.

In my opinion it is well to distinguish between the tuberculous infections which are consistent with health and those so extensive as to cause tuberculous disease. I admit that the borderline may be difficult to define, but I am not in favour of regarding the majority of our adult population as suffering from tuberculosis merely because about 90 per cent. are demonstrably infected with the tubercle bacillus.

Dr. Camac Wilkinson must forgive me if I forgo the pleasure of studying with him the histories of his cases. I can well believe that they are, as he says, "numberless," if he has accepted as his criterion of diagnosis a positive reaction to the intracutaneous tuberculin test.—I am, etc.,

Cardiff, April 5th. S. LYLE CUMMINS.

DENTAL CARIES AND VITAMIN D.

SIR,—I have read with great interest the correspondence arising out of the article by Mrs. Mellanby and Dr. Pattison on the association of dental caries with vitamin D deficiency published in the *British Medical Journal* of December 15th, 1928 (p. 1079), and venture to offer a few observations on the incidence of dental caries, the dietary, and the dental habits of two of the immigrant Asiatic races of British Malaya—the Chinese, and the Southern Indians or Tamils.

These races present a sharp contrast in their respective tendencies to dental decay. Among Tamils dental caries is rare, and the majority preserve a full set of excellent teeth into late middle age. Few have need of dental attention, and still fewer ever get any. On the other hand, the immigrant Chinese population suffers badly from caries of the teeth, and there are few towns, however small, where a Chinese dentist does not flourish. The following figures indicate the amount of dental caries in two comparable groups of adult coolies, Indian and Chinese, taken without selection from labour forces of the Kuala Pilah district of Negri Sembilan.

	Number Examined.	Number with Caries.	Number of Teeth Carious.
Chinese	100	43	163
Indians	100	6	7

These figures probably give a fair index of the prevalence of dental decay in the general coolie population.

The dietary of these races is essentially traditional, and does not depend appreciably on the local market produce. There is surprisingly little individual and diurnal variation. Both dietaries tend to be monotonous and unbalanced, but the Tamil diet is much poorer than that of the Chinese. In general it may be said that a Chinese coolie spends twice as much on food as a Tamil in similar employment. The diet of the former consists largely of polished rice, supplemented by a liberal daily consumption of vegetables fried in ground-nut oil. The Chinese are the vegetable gardeners of the peninsula, and are alive to the dietetic as well as the economic value of garden produce. Dried fish is a common addition, and pork, preferably fat, is added as often as means will permit—usually from once to four or five times weekly. Parboiled rice, which forms the basis of the Indian diet, is mixed with either dholl (husked and split pulses, chiefly the chick pea), maize, or dried fish, and flavoured with such curry stuffs as coriander, cardamoms, turmeric, and tamarind. Fresh vegetables, far from being the important item they form in the Chinese dietary, are included sparingly once every two to four days. Coconut oil is the only fat commonly used by coolies. Milk, butter, and eggs have no place in either Chinese or Tamil coolie diets.

The presence in the Chinese dietary of an abundance of green vegetables would appear to ensure a sufficiency of vitamins A and D. Most Chinese coolies work stripped to the waist for eight or more hours a day exposed to powerful solar irradiation in tin mines or on jungle clearings, so that deficiency of vitamin D is extremely unlikely. Moreover, the symptoms of vitamin D deficiency—rickets and osteomalacia—are rare in Chinese of the coolie class, while the relatively high degree of resistance to bacterial infection with the rarity of keratomalacia testifies to the general adequacy of vitamin A in their diet.

The Indian diet is a poor source of vitamins A and D, and although insolation is sufficient to prevent the appearance of symptoms of vitamin D deficiency, vitamin A starvation is far from uncommon. Keratomalacia is frequently seen, and in general the Tamil coolie puts up a poor fight against bacterial infection. This was well shown in the influenza pandemic of 1918, when the mortality of Indians employed on rubber estates of Negri Sembilan was 88.3 per thousand of estate Indian population, compared with a 20.4 mortality in estate Chinese.

Among these races, and in so far as vitamins A and D are concerned, there would thus seem to be no grounds for regarding dental caries as an avitaminosis. If vitamins have anything to do with the question it is possible that the anti-beri-beri vitamin B (which is shown by the distribution of beri-beri in these races to be commonly deficient in the Chinese diet, but never deficient in the Tamil diet) is also the caries-preventive factor.

A more likely explanation is the difference of dental habit and hygiene. Most Tamils clean their teeth in the early morning by chewing a small piece of charcoal into a fine pulp, which is rubbed with a finger over the surface of the teeth. The grinding of the charcoal by the molar teeth scours the biting surface, and cleans and polishes them by an efficient natural method. This is followed by a thorough mouth lavage, which is repeated after meals. Throughout the day the Tamil habitually chews the tough and fibrous areca nut, wrapped in a betel leaf, and mixed with a paste prepared from burnt cockle shells. This practice provides exercise for his teeth and jaws, and is

probably an important factor in the maintenance of his strong healthy teeth. Some Indians adopt the Sikh practice of biting a piece of the stem of a species of briar, and of scrubbing the teeth with the resulting brush-like end. Sikhs are accustomed to use the stem of the shrub Sinyonya (*Memecylon caeruleum*). This shrub has an acid juice which leaves a pleasant tingling sensation on the tongue and gums, and is reputed to have some value as an oral antiseptic and deodorant. Many other trees and shrubs have been adopted for this purpose, the most important being the marcosa and banyan trees.

So far as my observations go, Chinese coolies rarely clean their teeth, with the result that soft carbohydrate food collects in the pits and crevices, and initiates the development of dental caries. The comparatively few coolies who pay any attention to oral hygiene do so in a perfunctory fashion with a cheap toothbrush and water. The two factors which seemed to be most concerned in the maintenance of the Tamil's vigorous teeth—cleanliness and hard use—are both conspicuously absent.—I am, etc.,

J. W. FIELD,
Malayan Medical Service.

Kuala Pilah, March 2nd.

SIR,—In his letter of February 2nd (p. 225) Dr. J. Sim Wallace refers to the high incidence of dental caries among the children of Australia and New Zealand, where "sunshine is specially abundant, and the irradiation of ergosterol in the skin is amply provided for." The same objection has occurred to those of us in South Africa who have been thinking over the recent developments of the subject. Bright sunlight is available almost every day of the year to irradiate our skin and the food we eat. It is difficult to believe that there can be any deficiency of vitamin D, especially when we find that rickets is almost unheard of. In spite of this, however, dental caries is unfortunately only too common; in the opinion of some authorities the incidence is at least as great as, if not greater than, in England. Moreover, it is not confined to the European; although the fine teeth of the Bantu are proverbial, investigation has shown that dental caries is by no means uncommon, even among the native children, whose life in the kraal might almost be described as a perpetual sun bath.—I am, etc.,

F. WILLIAM FOX, D.Sc.

Biochemical Department,
South African Institute for Medical Research,
Johannesburg, March 13th.

PROTEIN THERAPY IN PUERPERAL INSANITY.

SIR,—The report by Dr. Vivian Barkin in the *British Medical Journal* of January 12th (p. 67) on the treatment of puerperal insanity by injections of T.A.B. vaccine confirms work which has been carried on in Victoria for the last five years. Dr. P. A. Lalor injected patients suffering from puerperal insanity with vaccines containing 100 million streptococci, 100 million *B. coli*, and 600 million staphylococci in each cubic centimetre. An initial dose of 0.5 c.cm. was given, and the dose increased by 0.3 c.cm. every four days till 1.5 c.cm. had been given in a dose. The injections were given subcutaneously. After an interval of a month, another series of double strength was given. The result has been extremely satisfactory in certain cases. The majority of patients with puerperal mania recover without difficulty by the usual methods of treatment, but a certain number remain in a stage of mental enfeeblement and do not seem to give any prospect of further improvement. Such patients should not be allowed to remain as chronic inmates of asylums without a trial of the vaccine therapy just outlined. In all, twenty cases have been treated; of these fifteen have improved sufficiently to leave the hospital and have since remained out with their friends. Some of them had been in the hospital upwards of three years, and had been considered chronic mentally enfeebled patients.

I regret that I am unable to give the exact statistics. The study was carried out by Dr. Lalor, who died in 1927, and was unable to complete his work, but I am personally satisfied that sufficiently good results have been obtained to show that all cases of post-puerperal mental enfeeblement should be given at least two courses of vaccine injections.—I am, etc.,

JOHN K. ADEY, M.B., B.S.Melb.,
Medical Superintendent, Sunbury Hospital for Insane.

Victoria, Australia, Feb. 24th.

LOCAL ANAESTHESIA IN OPERATIONS FOR HAEMORRHOIDS.

SIR,—Dr. P. Kennedy Murphy, in his letter of March 23rd (p. 574) on local anaesthesia in operations for haemorrhoids, speaks very favourably of this method and the uniformly good results obtained by him. He is not in favour of stretching the sphincter ani in the majority of cases, since he finds that it may cause pain, bruising, and damage to the sphincter. He is not in favour of a tube being inserted, as it is liable to cause severe pain.

As stated in my article, I invariably perform dilatation of the sphincter, but I have never met the disadvantages mentioned by him. I think they are all due, not to the method itself, but rather to the way it is performed, and that malhandling and the unnecessary force used are responsible for these complications. Very little force is required to paralyse the sphincter—especially with local anaesthesia; if loss of control follows, too much force was used at the time.

In conjunction with dilatation I use a tube wrapped round with a piece of gauze thickly smeared with antipyrine in vaseline, and orders are given to remove it as soon as the patient complains of any discomfort. Should it cause pain it is easily removed, but if retained it helps the passage of flatus and tends to prevent swelling and haemorrhage.

Dr. Murphy favours "ligature" for removing piles in most cases, which, as stated by him, is advocated by many proctologists in this country. As against "ligature," my contention is that (unless the piles are cut away) considerable masses of devitalized tissue are often left to slough off into the rectum—a far from aseptic receptacle; I hold that, in comparison with other techniques in use for the removal of pedunculated tumours situated elsewhere, this method seems somewhat unsurgical. (As a rule a cervical polypus is not left to slough off into the vagina after its pedicle has been ligatured.) When a pile has been cut off, with a ligature there is always a fear of it slipping.

As for suturing, my submission is that, all things being equal, where and whenever possible, a wound surgically closed is safer than if we rely solely upon the natural process of elimination and cicatrization.

Removal of large piles together with suturing is the best safeguard against sepsis and haemorrhage. There does not seem to be much difference, as regards drainage, between suture or ligature. Healing after suture is rapid; in normal cases the patients are up and about in a week. Infection of any kind is exceedingly rare.—I am, etc.,

T. HENRY TREVES BARBER.

London, S.W.7, March 23rd.

THE EARLY HISTORY OF PERCUSSION.

SIR,—John G. Crosse, or Cross (1790-1850), a Norwich surgeon who had received his training at St. George's Hospital under Brodie, wrote, in 1815, a brief work entitled *Sketches of the Medical Schools in Paris*, in which he gives an account of his experiences in the Parisian hospitals during the winter of 1814-15. He describes in an entertaining way various cases which came under his observation, such as Dupuytren's success in trepanation of the skull for a cerebral abscess (p. 102). Sir Norman Moore, in his life of Crosse in the *Dictionary of National Biography*, has referred to other interesting observations in Crosse's book, but no one appears to have directed attention to a most illuminating passage on percussion. It will be recalled that it was not until 1808 that Corvisart had resurrected Auenbrugger's thesis on percussion.

"I seldom entered the medical wards of the French hospitals," Crosse writes (p. 202), "without seeing the *percussion*

de la poitrine (as it was termed) put in practice, in order to learn the nature, situation, and extent of diseases of the chest. I could not ascertain, then or since, how far it deserves the confidence which French physicians place in it; but most of them hold it in high estimation as a diagnostic mark of the different diseases of the thoracic viscera."

In a footnote after "*poitrine*" Cresse explains rather naively, and with the tacit assumption that all his readers would be uninformed, just what is meant by percussion.

"The operation," he says, "is merely striking different parts of the thorax with the hand and judging from the sound that is produced, of the nature, situation and extent of the disease affecting the viscera within. It is unnecessary to say much about it here because so much concerning it may be found in some French books. Le Baron Corvisart has been at the trouble to translate a book on the subject (Auenbrugger's *Nouvelle méthode pour reconnaitre les maladies internes de la poitrine, par la percussion*, etc. . . .) which has greatly served to bring it into fashion."

That Cresse, who had just come from the medical schools of Dublin and London, should have been unfamiliar with percussion in 1814 suggests that the practice had not at that time found its way to the English clinics. It would be interesting to learn when, and by whom, it came to be first practised in England. Cresse's rather cautious commendation of percussion could scarcely have inspired confidence in its usefulness.—I am, etc.,

Magdalen College, Oxford, March 19th. J. F. FULTON.

UNIVERSITY OF LONDON PARLIAMENTARY REPRESENTATION.

SIR,—During the last five years Mr. McAdam Eccles has tried conclusions with me in three University contests, and has been soundly beaten in them all, the last occasion being his own candidature for a seat upon the Senate in 1927, when the University of London Graduates' Association, of which I am president, promoted the candidature of Mr. Walter Spencer, who won the seat, and by so doing, it is understood, eliminated the promising prospect of Mr. Eccles being nominated by the executive of the University of London Conservative and Unionist Association as the official Conservative candidate to oppose my re-election at the next election. Mr. Eccles's rancour at these successive defeats seems to have assumed the proportions of a personal vendetta against myself, which I do not intend to pursue in your columns, nor will you wish me to do so, but there are certain statements made in Mr. Eccles's letter upon which I would ask you to allow me to comment.

Mr. Eccles declares that the paragraph which you published in your issue of March 23rd is "inaccurate," but does not specify in what respect it is to be corrected. Perhaps you will therefore permit me to say that Sir Philip Magnus, late president; Dr. Sidney Phillips, late treasurer; Sir Edward Stern, late vice-president; Dr. G. T. Moody, late vice-president; Dr. Leonard West, late member of the executive, of the University of London Conservative and Unionist Association, are supporting my re-election to Parliament. The "inaccuracy" reproved by Mr. Eccles would seem to be confined to the description of these gentlemen as members of the executive, upon which they were included in February, 1929, but from which they were apparently removed subsequently to their signifying their support of myself—a removal which was not made public. For one not in Mr. Eccles's confidence it is obviously a little difficult to follow the kaleidoscopic changes in the personnel of his executive. But Mr. Eccles in turn is inaccurate in his statement made in your columns that his "fourteen" vice-presidents are united in opposing my re-election. The current list of officers of the University of London Conservative and Unionist Association still contains amongst its "fourteen vice-presidents" the names of Professor W. E. Dixon, F.R.S., and Dr. M. O. Forster, F.R.S., both of whom have authorized the inclusion of their names in my Executive Election Committee. As Mr. Eccles seems to control the executive of the University of London Conservative and Unionist Association, doubtless these names will also be removed in due course.

It is impossible to consider in detail all the five "cogent reasons" which Mr. Eccles gives for his executive's opposition to myself. I would select three only, which are, however, typical of his methods of controversy.

1. As a Conservative I gave my adhesion to the nomination of Sir John Rose Bradford as the official Conservative candidate at the by-election in 1924 *before* the announcement was made that the Labour Government at that time in office had appointed a departmental committee upon London University, which from its reference and personnel foreshadowed an attempt to impose upon the University the recommendations of the Haldane Commission. That announcement obviously altered the position entirely; I had consistently opposed, Sir John Rose Bradford had as consistently supported, the Haldane recommendations. I took the view that for the representation of the University, University considerations superseded party considerations. The University of London Graduates' Association took that view also, and subsequently nominated me (as they are doing now) as an Independent to contest the seat upon the University issue, which remained the principal issue throughout the election.

2. Mr. Eccles seriously asserts that his association is recommending the University electorate to unseat me in Parliament because I have "derided the scheme of Lord Dawson for the co-ordination of medical services on more than one occasion." Was there ever a more absurd "*non sequitur*"? This, his fourth, "cogent reason," is obviously an afterthought; my earliest reference, at no time derisory, to the "Dawson scheme" is made in a letter to the *British Medical Journal* of July 7th, 1928; but Mr. Eccles, in a recent letter to the *Times*, declares that his executive had resolved to oppose my re-election as early as February, 1926. The "Dawson scheme" for the co-ordination of medical services really means a scheme of co-ordination put forward, not by Lord Dawson, but by a consultative council under his chairmanship which reported in 1920, since which time it has remained a dead letter. At that date the voluntary hospitals appeared to be heading for bankruptcy; a special parliamentary grant of half a million sterling was required to save them from ruin. My views on the co-ordination of medical services differ from the recommendations of that council, principally in the role I would now assign to the voluntary hospitals, which have made such a marvellous recovery in the past nine years; at the date of the Dawson report it would probably have been imprudent to have suggested that the voluntary hospitals should be given the more commanding position which I think they ought to enjoy. But there is no antagonism between Lord Dawson and myself upon this subject; the contrary is the case, for we have acted in common in the defence of the voluntary hospitals both on the platform and in Parliament.

3. Mr. Eccles's fifth "cogent reason" is similarly anachronistic; his executive could not have been influenced, in 1926, by action taken by me in 1928. Moreover, that action is misrepresented by him; the motion seconded by me was to "refer the matter [of hospital services] back to the Council for further consideration." Why this harmless request should be a "cogent reason" for unseating me in Parliament surely calls for some explanation from Mr. Eccles.

Medical graduates of London University supported me strongly in 1924 for Parliament, and in 1925 for the Senatorial representation of graduates in medicine; since then I have put in five years' further work for the medical profession in the House of Commons, where I am the only doctor in active hospital and private practice, and able, therefore, to keep in touch with current medical opinion. The medical profession has too few representatives in Parliament to be likely to wish to unseat a sitting member of their own calling in favour of Mr. Eccles's nominee, whose lifework has been spent, not in the service of medicine, nor in the service of medical graduates, but in the service of the London County Council and of the Roman Catholic Education Council, and whose only connexion with the University is that he represents the London County Council on the present Senate—an office which he must vacate immediately, as London County Council representation upon the Senate ceases when the new statutes come into operation in May.

The attempt to make University representation a strictly party question, as Mr. Eccles is doing, is surely the best means of ultimately destroying University franchise altogether.

The action now taken by Mr. Eccles's executive conflicts with the expressed wish of the Central Conservative Office; in March, 1928, the chairman of the party, Mr. J. C. C. Davidson, wrote to the president of the University of London Conservative and Unionist Association protesting as strongly as he could against the nomination of another Conservative candidate to oppose my re-election. That Mr. Eccles's executive is now forcing the hand of the Central Conservative Office into adopting the executive's selection does not alter the general opinion, voiced by the Central Office, as to the unwisdom from a party point of view of thus wantonly splitting the Conservative vote. It was because of this action, in direct disregard of a plain expression of the wishes of the Central Office, that Sir Philip Magnus, Dr. Sidney Phillips, and other members of the executive, some of whom I have named above, have withdrawn from that body, and are warmly supporting my re-election. Mr. Eccles, in pursuance of a personal quarrel, has succeeded in hopelessly dividing the Conservative Association, a predominant section of which is to be found upon a preliminary list of my supporters containing nearly 3,000 names, which I shall shortly circulate to electors. It is perhaps not very hopeful for Mr. Eccles's appeal to medical graduates to support his nominee that more than one-fifth of the voters in this preliminary list are medical graduates.—I am, etc.,

London, W.1, April 8th. E. GRAHAM LITTLE.

MEDICAL TREATMENT AND THE APOTHECARIES ACT OF 1815.

SIR,—With reference to the recent proposed action by the Society of Apothecaries of London to recover a penalty against an unqualified practitioner, it may not be generally known that this society possesses an absolute legal right, by virtue of the Apothecaries Act, 1815, to prohibit the prescribing and dispensing of medicines by unqualified persons. The society still sues such persons from time to time. It has been judicially decided that a person acts and practises as an apothecary who professes to judge of internal disease by its symptoms and applies himself to cure that disease by medicine.

The Apothecaries Act, 1815, is a great landmark in the history of the medical profession. Prior to the passing of this Act medical education and training of practitioners were not compulsory by law, and consequently, although many held degrees or diplomas, a larger number possessed no such qualifications. After the Apothecaries Act became law no person was permitted to practise as an apothecary in England and Wales without the licence of the society, unless he had been in practice before the Act. At the same time, the privileges of the Universities and the Royal Colleges were preserved by the Act.

The Medical Act, 1858, under which all medical practitioners are now registered, does not prohibit unqualified practice *per se*. The preamble to this Act states that it was passed to enable persons requiring medical aid to distinguish qualified from unqualified persons. The Act merely prohibits the use of certain titles, such as physician, surgeon, doctor or bachelor of medicine, and also defines the term "legally qualified medical practitioner."

The Society of Apothecaries, in the first half of the nineteenth century, did much for the education of the general practitioner by instituting examinations and courses of training. About the year 1850 a preliminary examination in arts was imposed on all the society's licentiates, some ten years before the General Medical Council made such a requirement obligatory on all medical students.

It is interesting to note that the *Medical Register* of 1873 contained the names of some thirty survivors whose legal right to registration rested on the basis of being in practice prior to August 1st, 1815, the date on which the Apothecaries Act became law.—I am, etc.,

R. B. F. FRAZER, L.R.C.P. and S.Ed.,
London, N.W., March 23rd. Barrister-at-law.

ERRORS IN DOSAGE.

SIR,—The recent case, as reported in the daily press, where fatal poisoning occurred through an overdose of thallium acetate occasioned by a misreading of the position of the decimal point would seem to imply that the metric system in prescription writing afforded greater chances of error than the apothecary's system. This recent case, however, had a complete parallel some months ago, where death from an anaesthetic occurred through the drachm symbol (ʒ) being mistaken for the ounce (℥). Neither system can therefore be considered fool-proof, the minimal error in the first being tenfold and in the second eightfold. Both instances, however, provide a strong argument for the more extensive use of tablet or ampoule medication where a new, relatively unfamiliar, or potent drug is concerned. It is obvious that here the possibilities of error on the dispenser's part are reduced to a minimum, the variation in dosage between the various tablets of a given substance as issued by the majority of drug houses being small, and a patient who was instructed to take ten tablets, say (instead of one) three times a day would certainly raise a query.

It would be a thankless task to attempt to wean the average patient from "the bottle" as far as familiar complaints and their equally familiar remedies are concerned, but now that so many valuable new preparations are being placed on the market in tablet form, which is both safe, convenient, and cheap, physicians would do themselves a valuable service in broadcasting the idea that "every tablet is not necessarily aspirin." I enclose my card, and am, etc.,

London, S.W.5, April 8th. G. H. M.

*** The note in our medico-legal column this week (p. 712) indicates that the error in the thallium acetate case arose not from misreading a decimal point on the prescription, but from the misplacement of a decimal point in the course of converting from one system of measurement to another.

Obituary.

R. L. MACKENZIE WALLIS, M.A., M.D.,

Lecturer in Chemical Pathology, University of London; late Chemical Pathologist, St. Bartholomew's Hospital.

DR. ROBERT LAUDER MACKENZIE WALLIS, who died on April 1st after a short illness, at the early age of 43, was at school in Cambridge, and afterwards graduated B.A. from Downing College, taking a first class in the Natural Sciences Tripos. He studied advanced physiology for Part II of the Tripos, and after leaving Cambridge he was appointed lecturer in chemical physiology at University College, Cardiff. In the autumn of 1911 he came to London to work in the laboratory of chemical pathology at St. Bartholomew's Hospital, and was appointed demonstrator in chemical pathology in 1912. He succeeded Sir Archibald Garrod as lecturer in chemical pathology in 1919, and was later appointed chemical pathologist to the hospital.

Mackenzie Wallis had a real interest in clinical work, an interest which was illustrated on an occasion when a physician asked his assistance as a chemical pathologist in the investigation of a patient in hospital suffering from glycosuria. Wallis was unqualified at the time, and was not known to have any knowledge of clinical medicine, but he recognized the condition as one of bronzed diabetes by the facies, and was the first to make the correct diagnosis in a patient who had already passed through several hands. From the comparative isolation of his laboratory, although fully occupied with routine work and original research, he pursued his clinical studies with such assiduity that he obtained the diploma of L.M.S.S.A. in 1913, and in 1919 he graduated M.D.Camb., and was awarded the Horton-Smith Prize for his thesis.

In the war he held a commission as temporary captain R.A.M.C., and was sent on service to India, where he served on the staff of the 34th General Welsh Hospital at Deolali. His great ability was recognized by the Government of India, and he was afterwards seconded for special

service in the Parel Laboratory, Bombay. Although pressed by the Government at the close of the war to continue his work in Bombay he chose to return to St. Bartholomew's Hospital, where he once again became absorbed in his work.

He was a man of tireless energy and great originality of thought. An example of the imagination that he infused into his research is shown by his idea of sulphaemoglobinaemia as due to bacillary action, an idea which led to his discovery of the nitrosobacillus in the saliva and faeces of persons suffering from this disease. His mastery of technical detail is illustrated by his modification of Folin and Wu's method of blood sugar estimation, as a result of which the analysis can now be made with drops of blood obtained by finger-prick in place of veni-puncture. He was the first to show by blood sugar curves that the glycosuria of pregnancy is due to overaction of the pituitary gland, and he was the first to demonstrate an increase of diastase in the urine in some forms of kidney disease occurring in pregnancy. The variety of his interest and the wideness of his knowledge is evident in his papers on metabolism in the insane, on protein hypersensitivity in the diagnosis and treatment of a special group of epilepties, and numerous contributions on gastro-intestinal disease. By his co-workers he will be best remembered for his interest in diseases of the pancreas and his critical appreciation of the value of chemico-pathological methods in their diagnosis.

His friends will always remember the self-sacrificing help in their work and difficulties that he was ever ready to give them; his industry and courage—a courage which never left him even in a grave illness from which he recovered—was an example to them, as was his enthusiasm an inspiration. He leaves a widow and three children.

Dr. LUCY ELEANOR SMITH, who died on March 23rd, was one of the first two women graduates of Queen's College, Cork, obtaining the degrees M.B., B.Ch., B.A.O. in 1898; she proceeded M.D. in 1902 and received the D.P.H. of the Royal Colleges of Physicians and Surgeons of Ireland. Among the appointments she had held were those of physician for thirty years to the City and County Lying-in Hospital, Cork; examiner for the Central Board of Midwifery in Ireland; and visiting physician to the Home for Protestant Incurables, Cork. She was also visiting physician to the prison for women in Cork up to the time of the establishment of the Irish Free State. Dr. Smith took an active interest in the progress of the British Medical Association, of which she had been a member for thirty years; she was president of the Munster Branch in 1909, a representative in 1910, a member of the Branch Council from 1911 to 1928, and an accredited correspondent of the *British Medical Journal*. She was the pioneer woman doctor in Cork, and in spite of considerable opposition won her way to an outstanding position, associating herself particularly with maternity and child welfare work. Her death is mourned by many colleagues and friends, attracted no less by her personal character than by her distinguished achievements and valued services.

Dr. REGINALD INGLIS DOUGLAS who died recently was born in 1879, and received his medical education at the University of Durham and St. Bartholomew's Hospital. He obtained the diplomas M.R.C.S., L.R.C.P. in 1904; in 1906 he graduated M.B., B.S.Durham, and two years later he became D.P.H. He held house appointments at St. Bartholomew's Hospital, St. Luke's Hospital, and the Metropolitan Hospital, and in 1908 commenced practice in Rome among the British colony. In the following year he organized the British relief expedition to assist the victims of the Messina earthquake, and was awarded the Order of the Crown of Italy. At the outbreak of war he joined the British Red Cross in France, and subsequently received a commission in the R.A.M.C. In 1916 he went to Gallipoli, where he stayed until the evacuation, after which he served in Italy. With the termination of the war he was appointed medical officer to the Ministry of Pensions at Newcastle-on-Tyne, and in 1922 he began to practise in Bedford, becoming also medical officer to the prison there. Dr. Douglas was a member of the British Medical Association. He leaves a widow, two sons, and a daughter.

Dr. JOHN CLARKE FENWICK, who died at his home in Winnipeg, Manitoba, on March 2nd, at the age of 68, was a native of Durham. He received his medical education at the University of Durham and at the Royal College of Surgeons of Edinburgh, where in 1887 he was awarded the Jenner medal for surgical operations. In 1891 he obtained the diplomas L.R.C.P., L.R.C.S.Ed. and L.R.F.P.S.Glas. In 1911, after practising for some years in Sunderland, Dr. Fenwick went to Canada, where he established himself in Winnipeg, and became one of the directors of the Victoria Hospital, and carried on the largest workmen's compensation practice in the province. He is survived by one son. Mr. Alexander Gibson, F.R.C.S., writes from Winnipeg: "The passing of John Clarke Fenwick has left a gap which will be hard to fill. He was one of those whose virtues do not lie on the surface. The thought of his personal advantage never weighed for a moment against his scrupulous adherence to what he considered to be right. His somewhat brusque and direct manner made him not always popular, but precisely for such qualities as these, combined with his fearless determination to pursue what he considered the right path, was he respected and admired by those with whom he came most closely in contact. To the end of his life he continued to read and to study, and within a few days of his death he discussed with the writer medical subjects of a controversial character, in which he showed a knowledge of the latest work."

Dr. FRANK RANDOLPH SEAGER, who died on March 5th, completed his medical education at Edinburgh and Glasgow in 1899, obtaining the diplomas L.R.C.P. and L.R.C.S.Ed., and L.R.F.P.S.Glas. After holding the appointments of house-physician at the Edinburgh Royal Infirmary and house-surgeon at the Burton-on-Trent Infirmary he went out to Turkish Arabia, where he was honorary physician to H.B.M. consulate at Basrah. In 1911 he settled in Warrington, and for sixteen years was engaged in an ever-growing practice, combining a talent for accurate diagnosis with a remarkable power of reading character, and unflinching devotion to duty. In 1927 health conditions necessitated his removing to a more congenial climate, and he took over a country practice at Wolston near Coventry, where he improved until the recent epidemic of influenza overtaxed his strength and led to his death. He leaves a wife, a son, and a daughter.

Dr. THOMAS CARLYLE BEATTY, who died at Clacton-on-Sea on March 25th, was born at Seaham, Durham, in 1850. He received his medical education at the Universities of Aberdeen, Edinburgh, and Durham, taking the diplomas L.R.C.P., L.R.C.S.Ed. in 1873 and the L.S.A. in 1874; in 1879 he obtained the F.R.C.S.Ed., and in 1895 the M.D. of St. Andrews. After many years' professional work on the Italian Riviera, where he was physician to the Stabilimento Idropatico ed ellettrico Sella, he returned to England and built up a large practice at Clacton-on-Sea. When war broke out Dr. Beatty, though in his sixty-fifth year, was appointed honorary anaesthetist to the Middlesex Hospital, Clacton, and throughout the war he carried out the duties of this post with devotion and often at great risk to himself. By his sympathy and unselfish personality he won the deep esteem of all his patients, and he will be greatly missed in the district where he practised for so many years. He is survived by a widow and three daughters.

Dr. RICHARD HEDDEN, who died on March 28th, at his residence in Bideford, at the age of 68, received his medical education at Guy's Hospital; he obtained the diploma L.S.A. in 1905, and the M.R.C.S., L.R.C.P. in 1896. From 1899 to 1919 he practised in Honiton, after which he retired to Bideford, where he gave active support to the local hospital, serving as a member of its committee, and holding the post of honorary treasurer since 1924; he was also honorary secretary of the Bideford Nursing

Association and honorary secretary and treasurer for the maternity work. Dr. Hedden was a member of the British Medical Association and was a member of the Executive Committee of the Barnstaple Division from 1923 to 1928; he was also a member of the Devonshire Association. He was married twice and his second wife survives him.

Dr. JAMES MCHUGH, who died on March 31st after a few days' illness, received his medical education at Liverpool, where he was awarded the Derby Exhibition in Medicine. He graduated M.B., Ch.B. in 1927 with first-class honours and distinctions in medicine and surgery; in the same year he obtained the diplomas M.R.C.S., L.R.C.P. He spent twelve months as a resident at the Liverpool Royal Infirmary, first as a house-surgeon and then house-physician, after which he became assistant to Dr. Rowlands of Waterloo six months ago. A colleague writes: McHugh's death brought to a close prematurely a career which promised to be of brilliant and faithful service to the community and his profession. By a wide circle of friends he will be missed as a loyal colleague, a charming personality, and a faithful friend.

The following well-known foreign medical men have recently died: Professor OTTO HERMES, formerly director of the surgical department of the Rudolf Virchow Hospital, Berlin; Professor EDUARD MÜLLER, director of the medical polyclinic at Marburg, aged 52; Dr. WILHELM WIECHOWSKI, professor of pharmacology at Prague; Dr. PIERRE KOVINDJY, a Paris physiotherapist; Professor LASSER, formerly head of the medical department of the Würtemberg War Office and author of numerous works on epidemiology and neurology, aged 69; Dr. ALBERT FREIHERR VON SCHRENCK-NOTZING, a writer on hypnotism, aged 67; Dr. HUGO SALUS, a gynaecologist and lyric poet of Prague; and Dr. J. W. H. JOHNSSON of Copenhagen, author of several studies on the history of medicine, aged 60.

Medico-Legal.

POISONING BY THALLIUM ACETATE.

ON April 8th a London coroner's jury returned a verdict of death from poison accidentally administered in the case of three brothers, aged respectively 10, 7, and 5 years, who had been treated for ringworm of the scalp by the internal administration of thallium acetate at a hospital.

The value of this drug in the treatment of tinea capitis, based on its property of producing a total, though temporary, alopecia, was first recognized early in the present century by Sabouraud, but it was not until 1918, when Professor R. E. Cicero discovered that by carefully assessing its dosage in terms of body weight he was able to prevent the severe toxic symptoms occasionally attending its administration, that the employment of thallium acetate became at all general. The dose recommended by Cicero, of 8 milligrams per kilogram of body weight with a maximal dose for any patient, however heavy, of 0.3 gram, has been found by dermatologists generally to produce satisfactory results, and it is clear from the evidence at the inquest that the doses actually ordered for the three boys fell well within these limits. On chemical analysis, however, it was found that each dose of the solution administered contained 5.6 times as much thallium acetate as was ordered in the prescription, a blunder which arose not from any carelessness in the actual dispensing, but from the fact that the hospital pharmacist had made a mathematical error in converting the amounts of the prescription from the metric to the apothecaries' measure.

In a rider to its verdict the jury expressed the view that there should be a better system at the hospital for the checking of weights and measures. But such a system can be applied effectively only in an institution, and the position of the pharmacist in private practice, who must frequently make calculations in converting from one numerical symbolism to another, is in no way affected. The coroner stated in his summing-up that thallium acetate being a Continental drug its dosage had been worked out on the decimal system. But the need would appear to be for the adoption in the case of all prescriptions of a uniform system of pharmaceutical measurement and symbols. At present, error may arise not only as a result of arithmetical miscalculation, but from the existence of symbols similar in appearance but very different in meaning. The symbol gr., for example, in apothecaries' measure, representing the grain, is commonly used in prescriptions written on the metric system to represent gram. It is, however, only in Britain and in the British Empire that such confusion is likely to arise, and this tragic case provides a further reason for the supersession of the apothecaries' system of measurement by the decimal system adopted practically universally on the Continent and in America.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE annual service at Westminster Abbey will be held on Presentation Day, May 8th, at 5.30 p.m.

A course of six lectures on dietetics will be given by Professor S. J. Cowell at St. Thomas's Hospital on May 2nd, 9th, 16th, 23rd, 30th, and June 6th at 5 p.m.

Professor A. J. Hall (Sheffield) will give two lectures at University College on some of the sequels of epidemic encephalitis (lethargica), with lantern and cinematograph illustrations, on May 3rd and 10th at 4 p.m.

Three lectures on drug-like actions of some food constituents will be given by Professor E. Mellanby at University College on April 29th, 30th, and May 1st at 5.15 p.m.

A course of two lectures will be given by Dr. J. J. R. Macleod, F.R.S., Regius Professor of Physiology in the University of Aberdeen, on the physiology of glycogen, at the London Hospital Medical College on May 16th and 17th at 5.30 p.m.

Two lectures on the psychology of dementia will be given at University College on May 29th and 30th, at 5.30 p.m., by Dr. E. D. Wiersma, Professor of Psychiatry and Neurology in the University of Groningen.

Dr. A. Brachet, Prosecteur and Professor of Anatomy in the University of Brussels, will give three lectures on experimental embryology at University College on May 28th, 29th, and 31st at 5.30 p.m.

UNIVERSITY OF BIRMINGHAM.

Post-Graduate Demonstrations.

A COURSE of post-graduate demonstrations will be given at the General Hospital, Birmingham, on Tuesdays, and at the Queen's Hospital, Birmingham, on Fridays, from 3.30 to 5 p.m., from April to July, commencing on April 23rd at the General Hospital and on April 26th at the Queen's Hospital. The course will be given by members of the medical and surgical staffs, and will include demonstrations on medical, surgical, and gynaecological cases, nervous diseases, ophthalmic cases, diseases of ear, nose and throat, radiology, venereal diseases, children's diseases, etc. Particulars may be obtained from the clerk to the Clinical Board, the University, Edmund Street, Birmingham.

Lectures.

The William Withering Memorial Lectures, open to all members of the medical profession, will be delivered in the large theatre of the medical school at 4.30 p.m. on Wednesdays, April 24th, May 1st and 8th, and June 19th and 26th, by Dr. Charles Singer, who has chosen for his subject "Epochs of medical history."

Dr. Matthew B. Ray will deliver a lecture on the spa treatment of chronic non-tuberculous arthritis at 4 o'clock on Thursday, May 16th, in the Medical Lecture Theatre (Edmund Street Buildings).

The Ingleby Lectures will be delivered on May 23rd and 30th at 4 o'clock in the Medical Lecture Theatre by Dr. H. Charles Cameron, whose subject will be "Some types of septic infection in the newly born."

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT the monthly business meeting of the College, held on April 5th, the following candidates, nominated on January 4th, for the Fellowship were unanimously elected by ballot: Nicholas M. Cummins, Robert C. Cummins, and Robert E. Steen.

The following, having passed the Final Conjoint Examination, were admitted to the Licences in Medicine and Midwifery: A. P. Dolan, Mary A. Kealy, A. Mejias.

A letter was read from the Registrar of the University of Capetown inviting the College to nominate delegates to the celebration of the centenary of the South African College in October. The nomination was left in the hands of the President.

The Services.

AUXILIARY R.A.M.C. FUNDS.

THE annual meeting of the members of the Auxiliary R.A.M.C. Funds will be held at 11, Chandos Street, W.1, at 2.30 p.m., on Friday, April 26th, when the annual report and financial statement for the year ended December 31st, 1928, will be presented and the officers and committee for the current year elected.

Medical News.

IN celebration of the completion of its new building in Broad Street, Holborn, the Royal Westminster Ophthalmic Hospital will hold a Festival Dinner at the May Fair Hotel on Thursday, May 2nd, with Lord Ashfield in the chair.

AT a meeting of the Eugenics Society on Wednesday, April 24th, at the rooms of the Royal Society, Burlington House, Piccadilly, Mr. C. J. Bond, F.R.C.S., will lecture on hemilateral asymmetry in animals and man, and its relation to cross-breeding. The chair will be taken at 5.15 p.m. by the president, Sir Bernard Mallet. Visitors are welcome.

A NEW series of public debates will be held at the London School of Economics this year, in aid of King Edward's Hospital Fund for London. Particulars can be obtained from the Secretary of the Fund, 7, Walbrook, E.C.4.

AT a meeting of the Royal Society of Arts on Wednesday, April 17th, at 8 p.m., at the Society's House in John Street, Adelphi, Mr. F. E. Lamplough, M.A., will read a paper on the properties and applications of vitaglass, illustrated by demonstrations. Professor Leonard Hill, F.R.S., will take the chair.

THE Fellowship of Medicine announces that there will be a series of eight lecture-demonstrations at the London School of Hygiene and Tropical Medicine on Tuesday and Thursday afternoons at 2 p.m. from April 9th until May 2nd. A two weeks' course for the general practitioner will be held daily from April 15th to 25th at the London Temperance Hospital from 4.30 to 5.30 p.m. On successive Wednesdays, at 5.15 p.m., from April 10th to May 1st, a series of lecture-demonstrations on light and heat therapy will be given at the Royal Free Hospital; at the Royal Waterloo Hospital there will be a course in medicine, surgery, and gynaecology from April 15th to May 3rd, occupying the greater portion of each day. From April 15th to May 10th the West End Hospital for Nervous Diseases will give a series of daily lecture-demonstrations, illustrated by cases, at 5 p.m.; minimum entry, ten. The Fellowship of Medicine proposes to hold its first evening course for the M.R.C.P. diploma from May 7th to June 28th. Lectures will be given on Tuesdays and Fridays at 8.30 at the Medical Society of London by well-known authorities on diseases of the brain, nervous system, heart, blood, alimentary system, spleen, and biochemical methods. Fees, 10s. 6d. per lecture or £5 5s. for the complete course of sixteen lectures. Application should be made to the secretary of the Fellowship, 1, Wimpole Street, W.1, for further information about this course; detailed syllabuses of the various other special courses can also be obtained, and information about the general courses available at hospitals affiliated to the Fellowship.

THE Baylis-Starling Memorial Scholarship, founded in commemoration of Professor Sir William Maddock Bayliss and Professor Ernest Henry Starling, has an annual value of about £120, with exemption from tuition fees, and is tenable at University College, London. The scholar will be required to follow a course of study approved by the Jodrell Professor of Physiology involving a training in the principles of, and methods of research in, physiology and biochemistry. Candidates must send their applications to the secretary of University College not later than May 15th.

THE High Commissioner for the Union of South Africa has received from his Government an intimation that, pending the establishment of reciprocity with the United Kingdom, persons holding British degrees or qualifications in dentistry or pharmacy who were not born or domiciled in South Africa are not eligible for registration or entitled to practise in the Union.

A POST-GRADUATE course on the radiological diagnosis of various pulmonary diseases including tuberculosis will be held at Strasbourg from June 24th to 30th. In addition to lectures and demonstrations various sanatoriums will be visited. The course is limited to fifteen persons, and early application should therefore be made to Dr. E. Vaucher, 8, Quai Finkwiller, Strasbourg. The fee is 300 fr., and a certificate will be obtainable at the conclusion of the course.

A POST-GRADUATE course in French in venereology and dermatology will be held at Strasbourg, from October 7th to November 16th, under the directorship of Professor L. M. Pautrier. The course will include lectures, clinical instruction, and pathological demonstrations; various therapeutical procedures will be illustrated. During the same period a series of twenty lectures will be given on the principal laboratory methods and the general pathological anatomy of dermatoses, with individual tuition. The fee for each course is 300 fr. Further information may be obtained from Dr. Roederer, Dermatological Clinic, Civil Hospital, Strasbourg.

THE Association of French-speaking Gynaecologists and Obstetricians will hold its ninth congress at Brussels from October 3rd to 5th, when papers will be read on the relations between the hypophysis and the female sexual organs, myomectomy during and apart from pregnancy, and indications for and technique of sterilization in women.

AT the congress of French-speaking dermatologists and syphiligraphists to be held at the Hôpital St. Louis, Paris, next July a medal and bust will be presented to the president, Dr. Sabouraud, who is retiring from the hospital staff at the end of the year. Subscribers of 100 francs and over, which should be sent to the treasurer, Dr. Maurice Pignot, 2, Rue de Grébauval, Paris, will receive a bronze replica of the medal.

THE twentieth French Congress of Medicine will be held at Montpellier on October 15th under the presidency of Professor Vedel, when the following subjects will be discussed: etiology, pathogenesis, and physiopathology of scarlet fever, introduced by Cantacuzène of Bucarest, P. Teissier, Coste, Sacquepée, and Liégois of Paris; arterial hypotension, introduced by Lian and Blondel of Paris; treatment of anaemia, introduced by E. Hedon and Jeanbrau of Montpellier, Lambin of Louvain, and J. Carles of Bordeaux. Further information can be obtained from the general secretary, Professor Rimbaud, Rue Levat 1, Montpellier.

THE sixteenth Congress of the German Dermatological Society will be held from August 5th to the 7th at Königsberg, when the following subjects will be discussed: investigation of [illegible] introduced by Professor Köhler of [illegible] Siemens of Munich; prognosis and treatment of congenital syphilis, introduced by Professor Hoffmann of Bonn; and determination of the cure of gonorrhoea, introduced by Professor Jadassohn of Breslau. Further information can be obtained from Professor W. Scholtz, Univ. Hautklinik, Königsberg.

A COMMITTEE composed of Professors Borst, Doederlein, Romberg, and Sauerbruch has awarded the Sofia A. Vordhoff-Jung prize for the best work on the etiology of cancer to Professor Katsusaburo Yamagiwa of Tokio University.

DR. WILLIAM B. H. MASSIAH has been appointed a member of the Legislative Council of the Island of Barbados.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9961, 9962, 9963,* and *9964* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
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MEDICAL SECRETARY, *Mediscera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*, telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

INCOME TAX.

Cash Basis and Book Debts.

"MEDICUS" has completed his first year in a new practice, and has been informed by the inspector of taxes that his declaration of profits must be based on the book debts rather than on cash receipts—that is, that he must add to the amount of his cash receipts in his first year the amount of debts due but unpaid at the end of that year.

*** Income tax is payable on the amount of the profits earned, whether they have been gathered in as cash or are still outstanding. The inspector's attitude is therefore correct, with one rather important qualification. The addition to the cash

debts should be that amount of the outstanding debts which will probably be recovered. "Medicus" should therefore scrutinize carefully the list of debts and deduct from the total any sums which he considers he will have to forgo on specific items.

LETTERS, NOTES, ETC.

TREATMENT OF HAEMOPTYSIS: CORRECTION.

WE regret that, through misreading of the manuscript, a somewhat serious error appeared in Professor Ascoli's note on the treatment of haemoptysis published at page 549 of the *Journal* of March 23rd. The concentration of adrenaline which must be used (see line 9) is a 1 per *thousand* solution, not, as printed, 1 per cent. This is *followed* by 2 c.cm. of water to wash the adrenaline along the bronchial surfaces.

TREATMENT OF INFLUENZA.

DR. H. J. CLUTTERBUCK (Llanelly) writes: In answer to Dr. Tressie Pires's inquiry about the effectual dose of the compound powders of aspirin 5 grains, phenacetin 2½ grains, pulv. doveri c excipient 2½ grains for children in influenza and many other febrile conditions (March 30th, p. 628), I think I was one of the first to use this compound, and I received very valuable advice from Sir Archdall Reid of Southsea. I give the powder as follows. For children between the ages of 2 and 5 I break one tablet, consisting of the above doses, into four parts, and administer one part every two hours, the last one always being given in spite of any marked improvement in the condition, which is almost without exception. In children from 5 to 12 years I break the tablet into three parts and give one every two hours. For those over the age of 12 the dose is the same as for the adult. Sir Archdall Reid, in a letter to me dated June 10th, 1921, wrote: "I have not given such big doses as you have, but I dare say you are right." He advised me to try them in measles and mumps. I did so and got, as he said, amazing results. I have seen very few cases of measles in the last ten years; those that I did see cleared up in a few days. I saw a patient last week with a temperature of 104.6° and pulse 130. I gave him two tablets at once, and one every two hours until he had had five altogether. Twenty-four hours afterwards the temperature was 100.4°; thirty-six hours afterwards it was normal. The most interesting thing to me is that many of these cases develop a form of pustular herpes labialis, showing that the pneumococcus is not far away. Sir James Kingston Fowler used to say that herpes labialis was a pneumococcal infection, and in my opinion these tablets have saved many patients from pneumonia.

DR. A. DINGWALL KENNEDY (Wick) writes: I have read with great interest the letters by Dr. Garry Simpson (March 2nd, p. 430), Dr. W. Bastian (March 9th, p. 486), and Dr. Tressie Pires (March 30th, p. 628), relating the beneficial results which almost invariably followed the giving of aspirin, phenacetin, and pulv. ipecac. co. Without doubt this powder may well be regarded as a specific if given early in a case of typical influenza. It has only one drawback: the pulv. ipecac. co. is not always well borne, and not a few patients feel sick after it. For over twenty years I have employed the following powder, with equally good result, in all those cases of influenza which came early (within the first few days) under my care: aspirin 10 grains, phenacetin 2 grains. Twelve powders are sent, one to be taken every four hours. If given the first day the temperature usually fell to normal within twenty-four hours. In spite of the lack of the opiate, the pains in the head, back, and limbs were relieved by the first powder. Two grains seems a small dose for phenacetin, but it is sufficient to accentuate, if not actually render effective, the action of the aspirin. In all cases of sore throat of the rheumatic type it is equally effective, and even in cases of rheumatic fever, where tolerance to the salicylates is becoming exhausted, I have found this powder act well. In these cases, however, the addition of Dover's powder is often required. In all my experience of prescribing many thousands of these powders I have not yet come across a single case in which the heart would appear to suffer in the slightest degree from the aspirin. My cases include many patients whose hearts have already suffered the worst that rheumatic fever can inflict in the way of valvular defects. In children I give doses according to age, but for infants of 2 or 3 years I prefer sodium salicylate with sodium bicarbonate; of each 3 to 5 grains.

TREATMENT OF EMPYEMA.

DR. J. R. KEITH (Southsea) writes: With regard to the treatment of empyema I should like to mention a method of treatment which is not so well known as it should be. In the book *Clinical Memoranda for General Practitioners*, by Dr. A. T. Braud and myself, it is stated that in the treatment of post-empyema sinus Klapp's suction glass will be found to be of yeoman service. We recorded the case of a woman who had been operated upon for empyema, following an attack of acute croupous pneumonia. A profuse discharge, accompanied by a high evening temperature, continued for several weeks, in spite of treatment, which included the use of bismuth paste. On the application, however, of a Klapp's suction glass twice daily for five minutes at a time, the situation changed dramatically, the wound being completely healed and the temperature reduced to normal in three weeks. This glass or glasses generally seem to be called in this country "Bier's cups," but from information supplied to us in 1907 by F. A. Eschbaum, manufacturer of surgical instruments at Bonn-on-the-Rhine, we were led to believe that the chief merit of inventing them belonged to R. Klapp, assistant to Auguste Bier, professor of surgery at Bonn before his removal to Berlin, and who was afterwards head of the surgical clinic in urology at Griefswald University.

EOSINOPHILIA IN INSULIN THERAPY.

DR. R. CHALMERS (Darlington) writes: As a corollary to the interesting observation of Drs. Lawrence and Buckley of the occurrence of eosinophilia in insulin therapy (March 30th, p. 597), one would expect evidence from time to time of this spasmophilia tendency to occur in such cases. This has been shown to occur by one observer, who found that the convulsions which appear in the hypoglycaemic reactions following on overdosage with insulin are of the nature of tetany, and can be removed by calcium chloride and parathyroid extract, although this does not affect the low blood sugar.

LONGEVITY.

DR. H. F. BASSANO (Ventnor, I.W.) writes: I should be interested to hear if any of your readers can beat the following records taken from my death certificate book. The entries are consecutive, and date from October 26th, 1927, to April 6th, 1929. The deaths are registered in the Ventnor district only. You will observe that of eighteen deaths the average age is over 80. I venture to think this must be almost unique.

Sex.	Cause of Death.	Age.	Sex.	Cause of Death.	Age.
F	Cardiac	91	F	Carcinoma	83
F	Carcinoma	94	F	Cardiac	78
F	Cerebral haemorrhage	76	F	Cardiac	82
F	Chronic nephritis	72	F	Carcinoma	93
M	Cardiac	58	F	Carcinoma	85
F	Cardiac	81	F	Influenzal bronchitis	76
M	Cardiac	81	F	Cardiac	83
F	Cardiac	76	M	Influenzal bronchitis	83
F	Cerebral thrombosis	77	F	Cardiac	72

UNUSUAL SYMPTOMS OF PROSTATE ENLARGEMENT.

DR. E. B. FFENNELL (Walton-by-Clevedon) writes: In reply to "J. C.'s" inquiry of March 23rd (p. 584), and the notes by Dr. M. Haver and "Aurist" (April 6th, p. 670), though never having had prostatic enlargement, I have noticed for at least forty years that putting my hands in cold water caused a desire to micturate; I have, however, never felt the palmar reflex mentioned.

FATAL LARYNGEAL OBSTRUCTION BY A FISH.

DR. N. A. DYCE SHARP (Nigeria) writes: A few days ago a native woman was catching fish in the river with a basket net, and while transferring the small fry from the net she put one between her lips, her hands being full. The fish apparently gave a jump, and a moment later the woman was seen to fall, struggling to get her breath. Her friends at once opened her mouth and endeavoured to remove the obstruction; they failed, and after five minutes all her convulsive movements ceased. The body was at once brought to the mortuary, with a request for a necropsy; only afterwards did I discover that this was designed to determine whether she was a witch herself or whether she was bewitched, and here I failed! On removing the larynx and as much of the pharynx as possible, I found a small fish, 3½ in. long, wedged firmly down the trachea, with the snout lying transversely between the vocal cords. Minute spines on the dorsal surface and at the border of the gills effectually prevented its extraction upwards, and, indeed, the tail had already been pulled off by the victim's friends. As the width of its head was about 23 mm. and the breadth about 17 mm., the larynx was most completely and exactly occluded. This is well shown in the preserved specimen, which was fixed in an alcoholic solution of perchloride of mercury. A smaller or a larger fish could not have caused so complete an obstruction.

MERITS OF ANTISEPTIC SURGERY.

DR. J. V. DUHIG (Brisbane) writes: I would like to suggest that the holders of the copyright of Lister's *Collected Papers* should publish them in a cheap and handy form in a single volume. The papers are as important a contribution to human thought and achievement as the work of Harvey, Newton, Pasteur, and Einstein, and should be easily available. Compared with Lister's results "aseptic" surgery is a failure; it is the invention of a German much inferior to Lister, and has become a very expensive fetish. Lister could operate with complete confidence of success on acute and chronic abscess, bones, joints, tuberculous abscess of bones, and compound comminuted fractures in a cowshed at the expense of a bottle of carbolic acid. Many young surgeons do not know these facts, and it is time they had the information.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 54, 55, 56, 57, 60, 61, and 62 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 58 and 59.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 95.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

354. Percutaneous Immunization against Diphtheria.

E. LOWENSTEIN (*Wien. klin. Woch.*, February 14th, 1929, p. 193) considers that the immunity produced by the injection of a mixture of toxin and antitoxin, as advocated by some workers, is due to the response of the organism to the toxin, which is slowly liberated, and is therefore not devoid of risk. Another defect of this method appears to be that the immunity is directed against the toxins rather than against the diphtheria bacilli. Löwenstein therefore prepared a detoxicated vaccine by killing unfiltered broth cultures of diphtheria bacilli with formol; he tested its toxicity by subcutaneous injections into guinea-pigs, and found it harmless. Since in both tuberculosis and syphilis extensive lesions in the skin generally appear to protect the internal organs, he attempted to immunize guinea-pigs against diphtheria by rubbing 50 to 300 lethal doses of diphtheria toxin into the shaved skin on two occasions; eight weeks later the subcutaneous injection of a double lethal dose produced no effect, showing that guinea-pigs could be immunized by this means. It was next demonstrated that guinea-pigs could likewise be immunized by inunction with an ointment of detoxicated broth culture through the unbroken skin. The method was then applied to 400 Schick-positive children admitted to a children's home; as a result 70 per cent. became Schick-negative. Estimations of the antitoxin titre of the blood showed that this continued to increase for some months after cessation of the inunction. Löwenstein points out, however, that the value of the Schick test and the antitoxin content of the blood should not be overrated, because they are not a measure of the whole defensive mechanism of the body. By the ultimate test—the morbidity figures in the children subjected to one, two, or three inunctions at fortnightly intervals—the method proved very satisfactory, none of the children treated contracting the disease in spite of the introduction of several infected cases into the home. He concludes that the power of the skin to produce antitoxin in response to inunction has been under-estimated, and recommends that the method should for the present be used in children's residential homes, and should then be applied to immunizing children after the first year of life, as it is effective, simple, and safe.

355. The Clinical Aspects of Venous Pressure.

J. C. PLA (*Anal. de la Fac. de Med.*, November and December, 1928, p. 800), who records his observations in 203 patients aged from 8 to 80, comes to the following conclusions. The normal venous pressure at the bend of the elbow is about 12½ cm. in men, 11 cm. in women, and 7½ cm. in children; it may be affected by various physiological factors, such as effort, digestion, or emotion, which raise it moderately. Certain positions of the head, such as lateral flexion, also increase the venous pressure up to 4 cm. in the opposite arm to that towards which flexion is made. In the normal condition the venous tension in the lower limbs in the saphenous vein at the ankle is less than that in the upper limbs, the average tension being 6 cm. In compensated valvular disease the venous pressure does not undergo any change, but in failing compensation it rises sometimes to a considerable height; when [illegible] hepato-jugular reflux compression [illegible] crease of the venous tension is cat [illegible] of the lower limbs the venous tension falls considerably in the saphenous vein, and sometimes may reach zero. The tension in the saphenous vein is increased in varicosity; when this is due to an abdominal tumour the tension may rise to three times the normal height. In chronic affections of the respiratory system the presence of venous hypertension is often the first sign of the effect of the lung condition on the right heart. In obvious or latent compression of the venous trunks, changes in the venous tension may be a sign of considerable value in diagnosis, as is seen in cases of cervical ribs and mediastinal compression. In spinal anaesthesia the venous tension falls, and this fall may be independent of variations of the arterial pressure. In some therapeutic procedures, such as haemoclasic shock or the administration of amyl nitrite, the venous tension undergoes interesting changes. In haemoclasic shock it falls early, sometimes to a considerable degree, while amyl nitrite, on the other hand, raises it. Changes in the venous pressure in cardiac failure may be of prognostic value, as follows. When the venous pressure remains raised in spite of energetic treatment of the asystole the prognosis is bad. When the venous tension falls and the normal figure is reached the prognosis is favourable.

356. Heart Murmurs.

SINCE innocent precordial murmurs are frequently interpreted as being indicative of cardiac disease, J. H. GIBBES (*Amer. Heart Journ.*, February, 1929, p. 305) has made a special study of such murmurs in 1,166 consecutive cases. The following classification was adopted: organic murmurs, which included those indicative of organic change in the valves; those caused by disease of the aortic arch, those indicating a persistence of embryonic openings between the cardiac chambers; and accidental murmurs, which were independent of structural valvular changes, of congenital heart disease, or of abnormality in the aortic arch. The last were subdivided into intra-cardiac and extra-cardiac, which were clearly demonstrated as being dependent on some phase of respiration. Murmurs were detected in 166 of the cases, of which 127 (75 per cent.) were accidental, thus emphasizing the very great care necessary in diagnosis. Accidental murmurs were noted twice as frequently in females as in males. These murmurs may occur at any age, but were more frequent during the third decade. All the accidental murmurs were systolic, and were most often heard at the base of the heart. In contrast with organic murmurs the transmission of accidental ones is relatively rare. Cardiac hypertrophy is a necessary part of organic heart disease, and was noted in only 11 of the accidental murmurs; in every case the hypertrophy was independent of the murmur. Accentuation of the pulmonary second sound was heard in accidental murmurs of the inorganic type, but not with other types. There was a great preponderance of cardio-respiratory murmurs over accidental ones of other types. Gibbes adds that accidental murmurs are most frequently heard in patients below their optimum weight, and are practically unrelated to the blood pressure and pulse rate. He maintains that other evidence than that afforded by a murmur must be found before a heart is assumed to be diseased.

357. Paratyphoid Fever.

D. HERDERSCHEE (*Nederl. Tijdschr. v. Geneesk.*, January 12th, 1929, p. 132) records observations on 120 cases of paratyphoid fever admitted to the Wilhelmina Hospital, Amsterdam, in the period 1918 to 1926 inclusive, during which 1,560 cases of typhoid fever were admitted. The proportion of children affected was considerably higher than in typhoid fever, 37 (30 per cent.) being below the age of 10 and 83 above; this compares with 303 (19 per cent.) below 10, and 1,257 above, in the case of typhoid. As regards sex, 56 per cent. of the typhoid patients were males, as compared with 52 per cent. of the paratyphoid patients. Only one of the paratyphoid patients died—death being due to broncho-pneumonia following appendicitis in convalescence—as compared with a mortality of 15.4 per cent. in the typhoid patients. No instances of perforation or peritonitis occurred among the paratyphoid cases and only one of intestinal haemorrhage, whereas perforative peritonitis was noted in 2.1 per cent. of the typhoid cases and intestinal haemorrhage in 8.6 per cent. The febrile period was also shorter than in typhoid fever. No examples of thrombosis were seen in patients under the age of 10, among either the typhoid or paratyphoid cases. Above that age thrombosis occurred in about 4 per cent. of each disease. There was only one relapse among the paratyphoid cases, whereas 11 per cent. of the typhoid patients had relapses. There was no difference as regards the incidence of the other symptoms.

358. Cicatricial Sequels of Visceral Syphilis.

GOUGEROT (*Paris Méd.*, March 2nd, 1929, p. 209) draws attention to the comparative frequency of recurrences of nervous symptoms after the apparent cure of syphilitic conditions. Residual visceral sclerosis causing persistence of the anginal pain is, he thinks, more widely recognized than, for instance, the recrudescence of tabetic pains in a patient whose syphilis has become inactive, such pains being the result of congestion in the sclerosed areas which is brought on by gastro-intestinal disturbance or other causes. He reports two cases. A woman, aged 43, first attended hospital for major epileptic attacks which had lasted five years. The Wassermann reaction was positive, and intensive antisyphilitic treatment resulted in the cessation of attacks in four months. She remained free from attacks, except for six, which followed various possible

exciting causes such as alcoholic excess, intercurrent illness, or the antisyphilitic treatments by injection, until five years later, when very frequent attacks recommenced in spite of steady improvement in the Wassermann reaction, and continued until her death in a street accident. A man, aged 36, first showed signs of neurosyphilis (optic neuritis without tabes) fourteen years after the probable primary infection. Active treatment was given and the Wassermann reaction became negative, but four years later he had a first attack of Jacksonian epilepsy. Treatment was continued and the Wassermann reaction remained negative, but in another two years' time symptoms of general paralysis appeared; malarial treatment produced a clinical cure, confirmed by examination of the cerebro-spinal fluid. The next year the Jacksonian epilepsy recurred, and attacks have followed almost daily since then. Gougerot considers that such epileptic relapses are due to irritative lesions of a non-specific nature, and are in fact the result of cicatricial relics which antisyphilitic measures are powerless to remove. He stresses the importance of gastro-intestinal disturbances as capable of producing congestion in the cicatricial areas.

359. An Epidemic of Trichinosis.

E. P. MCDONALD and K. C. WADDELL (*Journ. Amer. Med. Assoc.*, February 9th, 1929, p. 449) record an epidemic of 43 cases which occurred at Albany, New York, following the consumption of diseased pork. The ages of the patients ranged from 3 to 42; 31 (88 per cent.) showed eosinophilia of 41 per cent. or less, 4 (11 per cent.) showed no increase of eosinophils, and in 8 no blood counts were made. In patients with a concurrent infection such as pneumonia there was no eosinophilia. Although patients with cerebral symptoms and signs may show the parasites in the spinal fluid, these are not consistently present. There is no specific remedy, but drastic catharsis is beneficial in the early stage, since it aids in ridding the intestinal tract of parasites. The blood sugar was low in all the patients, which may be explained either by impairment of glycogen due to the presence of myositis or to increase of sugar consumption through involvement of the muscles.

360. Laryngeal Diphtheria complicated by Thymus Hypertrophy.

F. SCHWENTKER (*Arch. of Pediat.*, December, 1928, p. 733) records a fatal case of laryngeal diphtheria treated by antitoxin and intubation, the infection being complicated by an enlarged thymus. Cultures of the throat yielded Klebs-Loeffler bacilli, and at the necropsy slight diphtherial necrosis was detected in the throat and larynx. The thymus was found closely overlying the trachea; it was much larger than normal and weighed 22 grams. The other organs were normal, except for a cyst in the right ovary. Schwentker has been unable to find a similar case in the literature.

Surgery.

361. Acute Haematogenous Infection of the Kidney.

W. LINDER (*Amer. Journ. Surg.*, February, 1929, p. 175) is convinced that this infection is generally carried to the renal cortex by the blood stream, the staphylococcus being the most frequent causative factor and the streptococcus ranking second. Acute unilateral haematogenous infection of the kidney occurs as a result of the blocking of the minute blood vessels of the renal cortex by microbic emboli, the resistance of this organ being lowered by some anatomical anomaly or an increased functional demand, as in pregnancy, which causes the glomeruli to fail to function. The progress of the disease and its severity depend on the resistance of the individual. Mild cases may be treated palliatively with rest in bed, the forcing of fluids, and the administration of urotropine, though frequently a second attack occurs and necessitates surgical treatment. The surgical procedure depends on the extent of suppuration and the location of the lesions, and also on the condition of the other kidney. In the fulminating types prompt nephrectomy affords the only chance of cure; nephrotomy is not successful. Where there are small cortical or subcapsular abscesses decapsulation has been practised with excellent results, and should be the operation of choice where the condition of the second kidney is doubtful. Release from its encasement and proper drainage will often cure this type of kidney infection. When suppuration has extended through the capsule of the kidney into the fatty tissues, causing a perinephritic abscess, the establishment of drainage will often effect a cure. Linder emphasizes the importance of early diagnosis and treatment, since delay may cause sepsis and involvement of the other kidney. It is invariably found that some mild or severe infection, such as influenza, tonsillitis, pharyngitis, a boil, or a carbuncle, has antedated the kidney infection. The symptoms of this condition are nausea and vomiting, with fever ranging from 102° to 105° F., a rapid pulse, severe prostration, with pain and tenderness in in the abdomen, most often the right half. Pressure at the costo-vertebral angle will elicit exquisite tenderness in early cases, but later, when the capsule has perforated by extension of the suppuration, the tenderness disappears. Urine examination may reveal nothing abnormal. The disease is most prevalent in the third and fourth decades of life.

362. Primary Carcinoma of the Appendix.

J. SELINGER (*Annals of Surgery*, February, 1929, p. 276) reports 34 cases of carcinoma of the appendix operated on during the past eight years. The average age of the patients was 34, the majority of cases being in the third decade of life; 82.4 per cent. were females. In every case the operation was undertaken on a diagnosis other than carcinoma, and this condition was never suspected prior to operation. In all cases the growth was primary in the appendix; in 28 it was situated at the tip, in 5 at the base, and in one midway between tip and base. Of the 5 cases in which it affected the base, one showed penetration of the serosa, and in one there was a metastasis in the meso-appendix; they were all of the columnar-cell type, or gelatinous adeno-carcinoma, which may occur at any age and is nearly always benign. The author remarks that it has been said that these carcinoids result from proliferation of the intranervous argentaffin cells of the neurocrine type which pile up in the nerve fibres, finally rupture their sheaths, and infiltrate the intestinal tissue of the neuroma and then that of the submucosa. In this form of carcinoma there are no signs or symptoms of sufficient distinction to warrant a pre-operative diagnosis, and the surgeon is usually surprised when the pathologist reports that the appendix removed shows a carcinoma or carcinoid at the tip.

363. Delayed Traumatic Intracranial Haemorrhage.

E. M. HAMMES (*Minnesota Med.*, February, 1929, p. 86) believes that delayed traumatic intracranial haemorrhage is more common than is usually thought. He recognizes two large groups, the first including cases in which the hemorrhage occurs within the cerebral substance, and which are classified as traumatic late apoplexy. In the second group the haemorrhagic lesion is extracortical; it may be either extradural and due to a ruptured meningeal artery, or intradural, when it is usually of venous origin and gives rise to a true chronic subdural haematoma. In the traumatic late apoplexies the time interval between the trauma and the delayed cerebral symptoms varies from several hours to days and even months; the interval in the subdural haematomas is usually longer than in the extradural type. Hammes gives details of several cases, and warns that with a history of even slight head injury, when there are subsequent cerebral manifestations, the possibility of such delayed haemorrhage must be seriously considered. The clinical course is fairly typical, the symptoms being rapidly increasing intracranial pressure, indicated by severe headache and drowsiness; brachycardia; vomiting; localized muscular twitchings; Jacksonian convulsions; and incomplete hemiplegia, more marked in one extremity. The spinal fluid in uncomplicated cases is under increased pressure; it is clear and contains no evidence of blood. Repeated lumbar punctures are of definite therapeutic value and will frequently tide over an emergency, giving opportunity for further investigation. Decompression is required as soon as the diagnosis is made and localizing symptoms have become manifest.

364. Haemorrhoidectomy.

W. F. BURROWS and E. C. BURROWS (*Med. Journ. and Record*, February 20th, 1929, p. 216) point out that underlying the symptoms of pain, discomfort, discharge, itching, bleeding, or prolapse, which a haemorrhoidectomy should aim at eliminating, are in many instances the tight anal canal and constipation or incomplete evacuation. A less radical operation than the one usually employed is described, giving a minimum of trauma and an easy convalescence. The bowel is completely emptied by castor oil on the night of the second day before the operation, and on a restricted diet bowel movement is controlled until the second or third post-operative day, when an enema is given. Under gas and oxygen anaesthesia the sphincter is stretched and each mass of haemorrhoids is drawn downward without putting tension upon the mucosa above. The base is clamped parallel to the anal canal on each side of the median line posteriorly, and the mucosa is drawn into the clamps from the lateral walls as far as this can be effected easily. After cutting away the clamped tissue the blood supply is cut off by ligatures, and the tissue is brought together with two or three locked No. 1 catgut sutures. The clamp is loosened and tabs are removed, the area being closed by continuing the original suture. In

cases where the anal canal is contracted it is best to stretch the sphincter muscles only moderately, and then through an analscope to cut the external sphincter in the posterior median line. The authors found that there were no recurrences after this modified technique, and the resulting unobstructed rectum rectifies many cases of constipation with incomplete bowel emptying.

365. Pneumococcal Peritonitis.

According to D. C. ELKIN (*Arch. of Surg.*, February, 1929, p. 745) pneumococcal peritonitis develops as a secondary complication of pneumonia or appears as a primary infection. It is comparatively rare and has a high mortality rate, more than 50 per cent. of cases ending fatally. The primary variety occurs most frequently in young girls, and it is suggested that it is due to the passage of bacteria through the Fallopian tubes to the pelvis. It does sometimes, however, occur in boys and men, but it is possible that these cases are really secondary to an undiscovered focus elsewhere in the body, clinical evidence being strongly in favour of a genital theory of infection. Secondary peritonitis develops from embolic implantation of the pneumococci which are present in the blood stream of a patient suffering from pneumonia, and are passed by direct extension through the diaphragm to the abdominal cavity. The infection is generally evident in the upper part of the abdomen and on the side adjacent to the affected lung. The prognosis depends on the severity of the infection and the individual susceptibility rather than on any form of treatment. Recovery in the secondary cases is rare, as patients develop septicaemia from an overwhelming peritonitis, though in less severe cases the infection may be walled off by the protective mechanism of a plastic exudate. If the peritoneum is only locally involved recovery after drainage will usually ensue, but not if there is diffuse peritoneal involvement.

366. Remote Results of Fractures of the Femur.

R. BESTELMEYER (*Deut. Zeit. f. Chir.*, March, 1929, p. 240) investigated the results of treatment of 95 cases of fracture of the femur due to gunshot wounds received in the world war. His conclusions were as follows. (1) The end-results were unfavourable. The most striking facts were the extraordinary frequency of damage to the knee-joint (80.9 per cent.); the frequency of chronic osteitis (25 per cent.); the *marked shortening of the limb (4.8 per cent.)*; and the diminished power of earning a livelihood (58 per cent.). Damage to the hip-joint, which was noted in 19.1 per cent., was much less important. Damage to the ankle-joint could always be avoided by careful treatment. (2) The view of Franz that German surgeons employed primary amputation too seldom in fractures of the femur was confirmed by the investigation of Bestelmeyer, who saw many cases which would have done better with this operation. (3) No opinion could be expressed as to the value of individual methods of treatment because most of the wounded had been treated in different hospitals and by different medical officers with a variety of methods. (4) In order to obtain better results in future Bestelmeyer adopts the suggestion of Franz that *fractures of the femur should be treated in special hospitals* behind the front, and that the frequent change from one hospital to another should as far as possible be prevented. In most of Bestelmeyer's cases this frequent transfer had occurred, with prejudicial effects to the patient.

367. Amoebic Abscess of the Lung.

A. PELLE and LE BARON (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, February 18th, 1929, p. 235) record a case of an amoebic pulmonary abscess, and point out that amoebiasis is not unusual. It is becoming more and more frequent in reports from various clinics, because it has increased since the war, especially among young soldiers who are stationed in Morocco or Syria. Sometimes there are intestinal symptoms, and *occasionally liver or lung complications*; the development of the condition often simulates a tuberculous condition of the lung, which can only be eliminated by frequent examinations of the sputum. The typical symptoms are the cough, a more or less acute pain in the chest, and a chocolate-coloured sputum in which amoebae may be seen microscopically. Radiological examination shows extensive shadows with well-defined outlines. If neglected the patient will die, but the intensive administration of emetine quickly arrests the development of the disease. This treatment may be combined with pneumothorax, which obviates any danger of a severe haemorrhage and promotes healing of the abscess.

368. Adenoma simulating Prostatic Enlargement.

L. PHÉLIP (*Lyon Méd.*, February 3rd, 1929, p. 130) records the case of a man, aged 32, examined on account of incontinence of urine; prostatic hypertrophy was suspected, but on rectal examination no enlargement was felt. On catheterization after micturition 80 grams of residual urine was obtained. Cystoscopy revealed some oedema at the urethral opening, which had a gaping appearance. Immediate improvement followed diathermy of the neck of the bladder, though the residual urine remained as much as 30 grams. The patient returned five years later with recurrence of the symptoms, and cystoscopy now showed at the neck of the bladder a small object which impeded the opening and shutting of the urethral orifice. This was removed, and histological examination of the fragments showed adenomatous tissue with no sign of malignancy; the patient made a good recovery with disappearance of the residual urine. Phélip remarks that he has operated in another similar case by the suprapubic route with the same final result, but recovery was less rapid. He adds that such cases are of interest as showing that a considerable amount of residual urine may exist where no palpable prostatic enlargement can be found.

369. Chordoma of the Maxilla.

S. RUBASCHOW (*Zentralbl. f. Chir.*, January 19th, 1929, p. 137) reports a case of tumour in a child, twenty-four hours old, projecting from and covering the mouth; it was attached by a thin pedicle to the alveolar margin at the middle of the upper jaw. On microscopic examination the tumour was recognized as a chordoma. The report is accompanied by a drawing and photograph of the tumour, but the dimensions are not given.

Therapeutics.

370. Treatment of Nephritis and Nephrosis with Oedema.

IN the treatment of nephritis and nephrosis with oedema the aim of E. G. BANNICK and N. M. KEITH (*Journ. Amer. Med. Assoc.*, December 22nd, 1928, p. 1944) has been to employ measures that induce the excessive amount of the tissue fluid to start travelling toward the blood, to be ultimately excreted by the kidney; they discuss such treatment in 100 cases, which were arranged in five groups: acute diffuse glomerulonephritis; acute renal insufficiency; subacute or chronic glomerulo-nephritis; chronic nephrosis; and chronic nephrosis of the mixed type. The treatment of each group is fully described, but, generally speaking, the method found most satisfactory was the combined use of suitable diets with low salt and fluid contents, and one or more of the various diuretics. The diet should provide sufficient calories and the amount of protein be adjusted to meet the conditions. When azotaemia exists reduction to a daily intake of 40 grams of protein may be necessary, while in cases of nephrosis adequate, but not excessive, amounts are advisable. The best combination of diuretics was found to be ammonium nitrate and organic mercury compounds. Xanthine preparations such as theophyllin-ethyl-endiamine, given by the mouth in doses of 0.6 to 1 gram, were also effective. The diuretic period continues for two to six weeks, and the loss of fluid may amount to 80 lb. During this time there is often an immediate tendency to gain in weight. This tendency to retain fluid and salts after rapid fluid loss emphasizes the importance of a low salt and water intake in preventing rapid accumulation of fluid in resistant cases of oedema. Elimination of the oedema seems to benefit the whole organism, often permitting patients to live normal lives and to build up resistance to infections. Future treatment when the patient is free from oedema must be considered. The tolerance for water and salts must be gauged, and, if it is low, the diet must be continued indefinitely; in resistant cases periodic prolonged treatment with diuretics may also be necessary. Foci of infection should be eradicated. Exact diagnosis is important. In acute renal lesions recovery is often complete. In most cases of chronic nephrosis the disease can be arrested and the patient enjoy comparatively good health. Death usually results from an infection rather than renal insufficiency. Arrest of subacute or chronic glomerulo-nephritis is rare; most cases run a progressively downward course, and death is usually due to renal insufficiency.

371. Gold Salts in Chronic Rheumatism.

J. FORESTIER (*Bull. et Mém. Soc. Med. des Hôp. de Paris*, March 11th, 1929, p. 323) explains how, in 1928, his attention was drawn to the fact that it might be possible to treat some cases of chronic rheumatism with certain preparations of gold which have been used with success in the treatment of tuberculosis. In 1914 Moellgaard pointed out that gold thiosulphate had a specific action on the tubercle bacillus and tuberculous tissues. His preparation (sanocrysin) has been found of definite value in some cases of pulmonary tuberculosis. There is a similarity between the clinical course of some cases of chronic rheumatism and cases of tuberculosis—particularly the continuous fever, the general condition of the patient with anaemia and leucocytosis—and it was therefore thought possible that the gold preparations used for

tuberculosis might be of value in cases of rheumatism. Gold thiosulphate was therefore tried, and also a preparation of sodium aurothioproponal sulphonate. This substance is a white powder, soluble in water, which can be injected intramuscularly and is easily absorbed and very slightly toxic. This preparation has been tried in cases of chronic polyarticular rheumatism with thickened synovial membrane. The dosage used in these cases was 25 cg. of allochrysine given intramuscularly at intervals of five to seven days; 11 women and 4 men were treated during a period of ten months: 5 benefited markedly, justifying a hope of permanent cure; 5 others were definitely improved and continue to make slow progress; 2 more had insufficient injection to show much improvement; and 3 other cases could not be traced. In no cases have the symptoms been aggravated, and the improvement has been manifested both in the local and general condition of the patients. In cases of rheumatism of the joints the thickening of the synovial membrane and the fluid have markedly decreased or disappeared altogether, with considerable relief of pain, especially on movement. It appears, therefore, that this method of treatment is of definite value in cases of severe arthritis deformans.

372. Insulin in Primary Wasting.

P. RUSSO (*Studium*, February 20th, 1929, p. 64) recommends insulin as a good therapeutic agent for states of wasting which are not due to serious organic disease and records ten cases so treated. The appetite always increased and there was gain in weight. Not only was more food taken at a meal, but an addition to the number of meals was welcomed by the patients. With the increase of appetite and weight went a feeling of well-being, and the general condition was notably improved. In one case the patient had suffered for many years with functional disturbance of the gastro-intestinal canal. After one month's treatment with insulin not only did she put on weight, but this particular trouble entirely disappeared. Small doses only are needed to determine the increase in body weight and the general improvement. It is not necessary, as in cases of diabetes, to limit the intake of carbohydrate, and therefore all food can safely be increased according to the patient's appetite. The dosage varied, but, as a rule, 5 to 10 units were given at the beginning, and 20 to 25, with a maximum of 30, at the end of the treatment. The injections may be intramuscular or subcutaneous, and are made ten minutes before a meal containing an adequate amount of carbohydrate in the form of cereals, approximately 2 grams for every unit of insulin. The treatment is continued for about three weeks.

373. Therapeutic Uses of Bacterial Filtrates.

G. BUCHANAN (*Journ. Med. Assoc. of South Africa*, January 26th, 1929, p. 37) records results obtained with bacterial filtrates, as introduced by Besredka, in the treatment of several pyogenic infections. The filtrates were made from cultures killed by heat after incubation for ten days; they were found to exert an attenuating and inhibitory action on bacteria and a non-toxic action so far as animal inoculation was concerned, but they produced severe protein shock when injected into human beings, and consequently are considered unsuitable for subcutaneous administration. Their mode of application was by wet gauze dressings in skin infections, irrigations of septic wounds, and by spraying or as a mouth-wash in nose and mouth conditions. Since they were used successfully in chronic suppurative conditions in which other treatment had failed, the method was tried in some acute pyogenic infections and severe injuries. Notes of cases are given in which the local application of filtrates proved efficacious where other treatments had previously failed, including cases of septic indolent ulcer, chronic suppuration, boils, sycosis, erysipelas, nasopharyngitis, suppurative perichondritis, pansinusitis, acute osteomyelitis, wounds, compound fracture, pyorrhoea, stomatitis, and suppurating tuberculous cervical glands. Besides arresting septic processes, bacterial filtrates appear to stimulate the development of healthy granulating tissue. Buchanan considers that the cases recorded point to an undoubted therapeutic value in pyogenic infections.

374. Treatment of Arthritis.

F. C. HALL (*New Eng. Journ. Med.*, February 21st, 1929, p. 369) reports the results of treatment in 89 cases of arthritis averaging five years in duration; no focal infection was discovered and only appeared to be a possible factor in six. In twelve cases the arthritis was of the atrophic type, and treatment aimed at improving the general health and correcting any abnormality, such as fatigue, dietary or endocrine deficiencies, constipation, and bad body mechanics. The general measures adopted were: rest in a recumbent position which lasted from a few hours more than usual to confinement to bed for several days or weeks; a diet high in vitamins and salts and sufficient in calories; sunshine; and exercise according to the patient's condition. Most of the patients were found to have some dietary or endocrine deficiency; correction of this relieved the fatigue and improved the arthritis. Hall recommends a daily diet of one quart of milk, extra butter and cheese, two eggs, lettuce, spinach, cabbage or beans, and plenty of fruit, with whole white bread, whole-grain cereals, and cod-liver oil, with the addition of calcium lactate to supplement any insufficiency of calcium in the milk and green vegetables. On these lines he obtained in 59 cases arrest of the disease, or such marked improvement that arrest appeared certain; while 25 did fairly well. Such general measures are held to be so important as to constitute a prerequisite to any high degree of success in treating arthritis. W. M. BARTLETT and E. SUNESON (ibid., p. 375) remark that the salts of ortho-iodoxy-benzoic acid do not cure arthritis, though the ammonium salt, when injected intravenously in large doses, relieves the pain and muscle spasm. They advocate active motion of the joints, regardless of the pain and muscle spasm, together with vigorous and deep muscle massage.

Disease in Childhood.

375. Chronic High Blood Pressure in Children.

E. FAERBER (*Monats. f. Kinderheilk.*, January, 1929, p. 148) considers that blood pressure estimations in children have not received as much attention as they deserve because unless repeated observations are made the values obtained may be influenced by so many nervous and other physiological factors as to be unreliable. It is generally acknowledged, however, that the blood pressure gradually rises from birth to puberty with increase in age, weight, and height, the average value in infancy being 80 to 85 mm. of mercury and 110 to 115 mm. at puberty. Low pressures have been observed in scarlet fever, diphtheria, tuberculosis, lymphatism, asthma, and diabetes. Transient rises in blood pressure occur in neuropathic children, in dyspnoea, and in acute nephritis. The author has hitherto only observed a continued and marked hypertonia in the rare cases of chronic interstitial nephritis. Of one case, however, occurring in a boy aged 12, ultimately diagnosed as orthostatic albuminuria, which Faerber had under observation for two and a half years, he records the following: (1) onset of illness with cerebral symptoms (choked disc, vomiting, headache) which, however, subsequently subsided without further evidence of increased intracranial pressure; (2) continuous raised blood pressure (170 to 190 mm. for one year), retinitis, albuminuria; (3) gradual disappearance of symptoms, fall in blood pressure to 125, discs becoming normal. Renal function tests throughout showed that there was no renal insufficiency and that the albuminuria was of the orthostatic type. In view of these observations and the records of others, ophthalmologists and physicians, Faerber considers that the term hypertonic retinitis should be substituted for albuminuric retinitis. He suggests that further records reveal that cases of chronic interstitial nephritis in children are preceded by comparatively transient symptomless periods of raised blood pressure, and that, conversely, the ultimate prognosis in the case described may not be so good as the present condition might lead one to anticipate.

376. A Clinical Study of Enuresis.

A. BLEYER (*Amer. Journ. Dis. Child.*, November, 1928, p. 989) presents his observations on 129 boys and 123 girls, extending over a period of three years. He concludes that certain factors, such as enlarged or diseased tonsils and adenoids, the male prepuce, vaginitis, pyelitis, a neurotic constitution, and lack of discipline, commonly held accountable for enuresis, have no such etiological relationship. He defines this condition as a disturbance of micturition, in which the physiological control of the brain is blocked by stronger stimuli which have to do with the nervous mechanism of the bladder; this loss of physiological control does not appear to lie in the brain. In the treatment of the condition he discusses the physiology of micturition and gives prominence to Young's discovery that the opening of the sphincter of the bladder is not an act of inhibition, but is brought about by the muscles of the trigone. There is some evidence that the innervation of the trigone is more or less independent of that of the bladder. The author finds that atropine is a specific remedy and claims cure with it in 80 per cent. of his cases. The dosage should be as near the margin of overdosage indicated by mydriasis and flushing as possible. He recommends a solution of only 0.25 grain to the ounce, so as to permit of a closer adjustment of the drug to the individual need. He also advocates massage of the bladder, which is performed by inserting the finger into the rectum and touching the trigone; the pressure should be light and need not be continued for more than a moment.

377. Prognosis of Tuberculosis in Children.

G. J. HUET (*Nederl. Tijdschr. v. Geneesk.*, December 15th, 1928, p. 615) states that, apart from cases of "open" tuberculosis, the prognosis of tuberculosis in children is not unfavourable, as is shown by the following statistics. Of 271 children who had been treated in the Hoog-Blaricum Sanatorium at Amsterdam in the period 1912-18, it was found that 67.9 per cent. were in a satisfactory and 23.7 per cent. in an unsatisfactory condition, while only 8.4 per cent. had died. Similarly, Laird found that among 107 children twelve years after their discharge from the Nopenning Sanatorium, Minnesota, 72 per cent. were in a good and 13 per cent. in a bad condition, and 7.5 per cent. were dead. Poelchau found that 93.4 per cent. of the children discharged from a sanatorium at Charlottenburg showed no marked signs eight years later. Huet has recently investigated the condition of 1,257 children treated at the Hoog-Blaricum Sanatorium between 1919 and 1926. He found that the best results had been obtained in patients with peritonitis and pleurisy, of whom 100 and 93.8 per cent. respectively were in good condition in 1928. On the other hand, 84.5 per cent. of the cases of progressive tuberculosis terminated fatally.

Obstetrics and Gynaecology.

378. Tubal Pregnancy simulating Strangulated Hernia.

C. HEITZER (*Zentralbl. f. Chir.*, February 23rd, 1929, p. 461) describes a case of extrauterine pregnancy in which the symptoms caused a diagnosis of strangulated hernia to be made. A woman, while trying to lift a heavy weight, collapsed suddenly with severe pain in the lower abdomen, and noticed for the first time a swelling in the right groin. There was also slight haemorrhage from the vulva; the last regular menstrual period had occurred fifty-three days previously. The patient improved so rapidly with rest in bed that on the third day she returned to work, but the pain returned; an unsuccessful attempt to reduce the "hernia" was made. On admission to hospital she reported that there had been no passage of faeces nor flatus for two days; hiccup was present, but no vomiting. In the right groin there was a smooth, tense, irreducible swelling as large as an egg; it was not very tender, and appeared to be an incarcerated hernia. On opening the hernial sac it was found to be filled with blood-clot, but contained no bowel. Next day the patient was very collapsed and much more anaemic; the pain persisted, and the abdominal wall was rather tense and very tender. There was dullness in the left hypochondrium and above the pubes. Hiccup and slight bleeding from the vulva continued. The uterus was enlarged and somewhat soft, the posterior vaginal fornix being obliterated. The increasing abdominal tenderness and the genital haemorrhage led to a suspicion of extrauterine pregnancy, and a laparotomy revealed a ruptured left tubal pregnancy. The true pelvis contained blood-clot and a small amount of fluid blood. The left tube was resected, the blood-clot was removed, and the abdomen was closed. Progress was uneventful until two weeks after the laparotomy, when thrombosis of both internal saphenous veins occurred; a fortnight later the patient was discharged cured.

379. The Vomiting of Pregnancy.

J. P. GARDINER (*Journ. Amer. Med. Assoc.*, December 22nd, 1928, p. 1937) considers that the vomiting of pregnancy is a self-limiting disease, and that [illegible] with it are different from those of ot[illegible]is, an involuntary muscle, acts in accordance with the law of involuntary muscles—that is, independently of central control. It is well known that a relationship exists between the genital and intestinal tracts: thus menstruation stimulates the intestines, causing looseness of the bowels. The time of greatest activity of the chorion corresponds with the time of the greatest frequency of the vomiting. Gardiner believes that a protective substance from the zygote influences the genital organs and, penetrating to the intestinal tract, reduces the activity of the intestines (in order to protect the ovum) to such an extent as to simulate partial or complete intestinal obstruction; this in turn gives rise to reverse peristalsis, thus causing the nausea and vomiting. The human being, because of her upright position, is the only mammal subject to the vomiting of pregnancy. Experiments have shown that the pathological changes in this disease differ little from those of inanition or starvation, and the immediate cause of death is probably exhaustion. Treatment is considered under three heads: the limiting of the vomiting, supportive treatment, and the induction of abortion. The vomiting is limited by two methods. In one the genital and intestinal tracts are separated as far as possible, and for this the inverted ventral method is recommended, the patient lying face downward as much as practicable with the shoulders above the level of the buttocks; in the other the sensitiveness of the intestines is reduced by the use of sedatives. The necessity of food other than carbohydrate for the support of the organism seems less urgent than was formerly believed. As regards dextrose and other injections, Gardiner believes that enteroclysis is safer, and a more rational guide to the amount necessary than intravenous injection or hypodermoclysis. If induction of labour becomes necessary the method adopted depends on the dilatability of the cervix and the size of the foetus.

380. Avertin Anaesthesia in Gynaecology.

M. RODECURT (*Narkose und Anaesthesie*, February 15th, 1929, p. 39) records his observations on 130 abdominal and 20 vaginal operations performed under avertin anaesthesia at the Carlsruhe gynaecological clinic. The total dosage ranged from 12 to 12.6 grams of avertin, which was given by rectal injection. Rodecurt's conclusions are as follows. Avertin anaesthesia represents a considerable advance, its chief value consisting in the avoidance of psychical shock. The amount of ether subsequently required is considerably smaller; post-operative vomiting, post-anaesthetic bronchitis, and pneumonia are decidedly rarer than after other anaesthetics. The long subsequent sleep helps to diminish the pain following the operation. The patients themselves are very pleased with the method. Their amnesia usually extends back to the time of the rectal injection, so that they scarcely remember even the addition of ether. The dangers are very slight if complete anaesthesia is avoided and avertin is regarded merely as the basal narcotic.

381. Diathermy in Female Gonorrhoea.

P. PEDICONI (*Urol. and Cut. Rev.*, February, 1929, p. 75) states that clinically it has been shown that there is always a remarkable diminution or cessation of the gonorrhoeal discharge from the urethra on the supervention of fever. The discharge reappears on cessation of the fever only to disappear again when it returns. This clinical observation confirms the statement that the gonococcus is thermolabile not only *in vitro* but also *in vivo*. It is therefore logical to attack it by the application of heat. Pediconi has recently treated numerous cases of subacute and chronic gonorrhoea in women by diathermy with good results. The following precautions, however, are necessary: (1) It must be absolutely certain that the patient is not pregnant. (2) The treatment should be started with short sessions and moderate dosage. Pediconi begins with 1½ amperes for fifteen minutes and gradually increases the amperage to 3 with a duration of forty-five minutes. (3) The metallic plate must be perfectly in contact with the sacrum and pubis to avoid burning. As a rule the patient does not complain of any pain during the application, but there is only a feeling of more or less intense heat in the organs through which the current is passing. Complete recovery usually follows ten applications.

382. Dermoid Cyst of the Ovary.

VILLARD and R. LABRY (*Lyon Méd.*, February 17th, 1929, p. 185) record a case in which at operation a large ovarian cyst was found containing sebaceous material and hair, and the rather less usual finding of a mandibular arch with three rudimentary teeth and one completely formed tooth. Before the operation the tumour was extremely mobile and could be pushed easily from one flank of the patient to the other without any impulse being communicated to the uterus. This mobility was due to the presence of a long pedicle (20 cm.), which was twisted one and a half times. An *x*-ray examination before the operation revealed nothing within the shadow of the tumour except a very faint curvilinear shadow, which was hardly noticeable. It is questioned whether the lack of definition was due to the constitution of the embryonic material or to the coincident presence of sebaceous material.

383. The Alkaline Reserve in Gynaecological Operations.

C. G. GARCÍA and O. F. DIAZ (*Arch. de med., cir. y esp.*, February 23rd, 1929, p. 249) studied the alkaline reserve by van Slyke's method in thirty gynaecological operations with the following result. As a general rule there was a low alkaline figure after the operation, possibly due to the toxic action of the anaesthetic on the liver. Of twenty-eight patients who had been anaesthetized with ether sixteen showed acidosis. In two cases in which chloroform was employed the alkaline reserve was fairly low, and the same result was found in four in whom spinal anaesthesia had been used.

Pathology.

334. Variations in the Cardiac Measurements.

D. SCHERF and E. ZDANSKY (*Wien. Arch. f. Innere Med.*, January 20th, 1929, p. 399) have made numerous orthodiagraphic measurements of the human heart after intravenous injections of atropine and of adrenaline and inhalations of amyl nitrite. They find that in normal persons changes occur in the systolic and diastolic cardiac diameters under the influence of paroxysmal tachycardia and the administration of atropine, adrenaline, or amyl nitrite. The intravenous injection of 0.002 gram of atropine was found to increase the frequency of the heart's action and to diminish the systolic and diastolic cardiac diameters. This reduction in volume was always more obvious as tachycardia increased. In one woman an existent tachycardia, due to paroxysmal attacks of auricular flutter, trebled the flow of blood into the auricle, but the cardiac diameters were reduced only to the extent of 12 per cent. After the intravenous injection of 0.05 cm.³ of a 1 in 1,000 solution of adrenaline a reduction in the volume of the heart was observed in half the cases. No enlargement of the heart was ever detected, although on one occasion the blood pressure rose to 210 mm. of mercury. The absence of change in the cardiac diameters thus demonstrated indicated that the positive inotropic action of adrenaline outweighed the cardio-dilator effect of the rise in blood pressure. In certain cases the reduction in the cardiac diameters was found to persist, together with a diminution in the excursions of the cardiac borders, which was connected probably with a diminution of cardiac output. After the inhalation of amyl nitrite the cardiac diameters were very definitely reduced, though less than would have been expected theoretically on the basis of the sum total of diminution in effective power. In all cases the reduction in frequency of systole was parallel with the diminution in heart volume; this averaged only 10 per cent. On one occasion this diminution amounted to a systolic reduction of 13.5 per cent. in the original breadth of the curves. Any actual change in the volume of the cardiac output could not be deduced from the curves.

385. Bacteriology of Otitis Media.

J. H. FISHER (*Journ. Infec. Dis.*, January, 1929, p. 33) has made a bacteriological study of 46 cases of acute otitis media, with or without accompanying *mastoiditis*. In 4 cases the lesions were bilateral. Cultures taken from the ear or the mastoid revealed the presence of *Streptococcus haemolyticus* in 74 per cent., of staphylococci in 16 per cent., and of pneumococci in 6 per cent. In 32 of the 37 cases in which *Strep. haemolyticus* was found this organism was present in pure culture. An attempt was made to reproduce otitis media in rabbits with fifteen strains of the streptococci and pneumococci recovered from the human patients. In each experiment three rabbits were employed. The first rabbit, on the day prior to inoculation, had its nasal passages swabbed with a 50 per cent. aqueous solution of phenol; the second rabbit was treated similarly; the third rabbit received no preliminary preparation. Twenty-four hours later the first and the third rabbits were given an intranasal inoculation of 1 c.cm. of a twenty-four-hour Huntoon's dextrose broth culture of the organism to be tested, 0.5 c.cm. being delivered into each nostril. The second rabbit received no culture. The effect of the phenol swabbing was to set up an acute inflammatory reaction, lasting for about two days. None of the rabbits of the second or third series, which received swabbing alone or culture alone, died. On the other hand, of 15 of the rabbits that were swabbed with phenol and subsequently inoculated with culture, 11 died; of these, 10 had been inoculated with *Strep. haemolyticus*, and one with a pneumococcus. At the necropsies on these animals acute purulent paranasal sinusitis and acute otitis media were found in every instance; in some of the animals pleurisy, empyema, lobular pneumonia, lung abscesses, pericarditis, and septicaemia were also present. Judging by the staining characteristics of the cells, it appeared that the exudate in the paranasal sinuses was older than that in the middle ear. This observation, among others, leads the author to the conclusion that otitis media is not a blood-borne infection, but is due to direct extension from the nasal passages.

386. The Reticulo-endothelial System in Chronic Metallic Poisoning.

G. BIANCHINI (*Haemato'ogica*, Fasc. I, 1929, p. 33) found that in spite of prolonged administration by the mouth to rabbits and guinea-pigs of the salts of mercury, arsenic, and copper, he was unable to obtain a haematological picture indicating each of these intoxications. Leucocytosis was always constant at the onset, and lymphocytosis, though characteristic of lead poisoning, was also found in poisoning by the compounds and vapour of mercury; monocytosis was present in lead, mercury, and arsenical poisoning, while eosinophilia was of inconstant appearance in copper poisoning. None of these findings, therefore, could be regarded as specific. On the other hand, the reticulo-endothelial system was definitely modified in its structure and composition as the result of poisoning by *lead*, mercury perchloride, and arsenic; less decidedly so by the vapours of mercury; and hardly at all by copper sulphate, even when its action was prolonged. The reaction was shown by an increase in the surface of the syncytium, and by the detachment and mobilization of its elements. This indicates that even inorganic poisons after introduction into the system in a state of solution become fixed in the mesenchyma in a colloidal form. Bianchini thinks that these modifications should be regarded as the morphological expression of acquired organic resistance.

387. Bacterial Flora of the Vagina during Pregnancy.

G. V. SEGRE (*Giorn. di Batteriol. e Immunol.*, January, 1929, p. 26) has examined the vaginal flora of 100 gravid women. Material for examination was taken from the vaginal wall by means of a platinum loop introduced through a speculum. Direct smears were made, and numerous tubes of culture media were inoculated; these were incubated under both aerobic and anaerobic conditions. In the case of 37 women in the first three months of pregnancy, Döderlein's bacillus was found in 20, staphylococci in 4, unidentified micrococci in 8, *B. mycoides* in 5, monilia in 8, and saccharomyces in 8. Döderlein's bacillus was found in 10 out of 24 women in the fourth to the sixth month of pregnancy, Gram-positive cocci in 8, Gram-positive diplococci in 4, *B. mycoides* in 5, monilia in 3, and saccharomyces in 4. Döderlein's bacillus was found in 7 out of 39 women in the seventh to the ninth month of pregnancy, staphylococci in 5, unidentified Gram-positive cocci in 12, diplococci in 5, *B. mycoides* in 6, monilia in 7, and saccharomyces in 8. From the clinical point of view the women could be placed in three groups: (1) The genital organs appeared to be perfectly healthy; the predominant organisms in this group were Döderlein's bacillus, Gram-positive micrococci, streptobacilli, and *B. mycoides*. (2) There was moderate leucorrhoea without lesions of importance; in this group the commonest organisms were Döderlein's bacillus, Gram-positive cocci, *B. mycoides*, saccharomyces, and monilia. (3) There was vaginitis, often with lesions of the cervix, and abundant discharge; in this group Döderlein's bacillus was never found, the commonest organisms being diplococci, staphylococci, and *B. mycoides*. It is to be noted that Döderlein's bacillus was rather less frequent in the second group than in the first. It would appear, therefore, that this organism is commoner in the early months of pregnancy than during the later, and commoner in healthy than in diseased conditions.

388. The Reversion of Rough to Smooth Pneumococci.

H. A. REIMANN (*Journ. Exper. Med.*, February, 1929, p. 237) finds that if a smooth strain of pneumococcus is grown in broth containing its specific type antiserum rough colonies appear after a few transfers. Some of these rough colonies give off daughter colonies, which are indistinguishable morphologically from the original smooth colonies, but which nevertheless in their serological behaviour and in their absence of pathogenicity to mice are similar to the rough variants. The importance of these "colonially" smooth but antigenically rough variants is that if they were encountered in the sputum they would almost certainly be classified in Group IV. By inoculating mice with these variants, or with the real rough variants, together with killed pneumococci of Types I, II, or III, it was found that a reversion to the original smooth form sometimes occurred. Occasionally a transformation was observed into a smooth form of a type different from that from which the rough variant was originally derived.

389. Buccal Vaccination of Mice with B. typhi murium.

K. KUMAGAI and A. MOTOMURA (*C. R. Soc. de Biologie*, February 22nd, 1929, p. 493) find that, for mice of 8 to 15 grams in weight, a dose of 0.001 mg. of a culture of *B. typhi murium* is uniformly fatal when given by the mouth. Attempts were made to vaccinate mice against this organism by the buccal route, forty mice being used. The daily dose of vaccine was 4 to 5 mg. (of presumably killed bacilli), the duration of the vaccinating process was 30 to 80 days, and the total dose of vaccine given was between 120 and 400 mg. At the end of these periods the mice were tested with different doses of living organisms. Though the number inoculated with each dose is not stated, it appears that all animals which received by the mouth a dose of 0.001 mg. survived. As this dose was uniformly fatal to unprotected mice the authors conclude that it is possible to produce immunity against mouse typhoid by the oral administration of vaccine.

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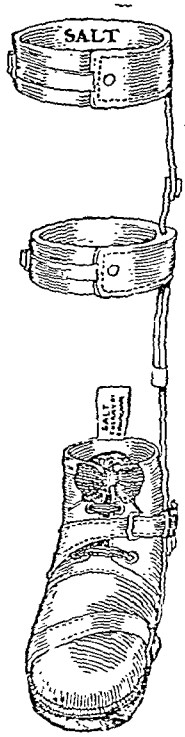

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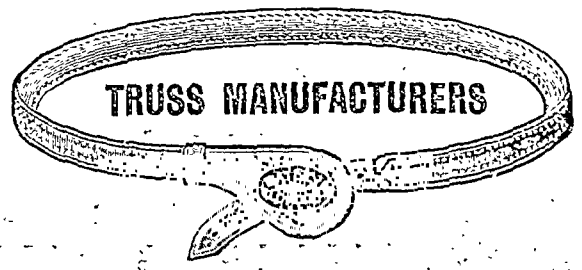

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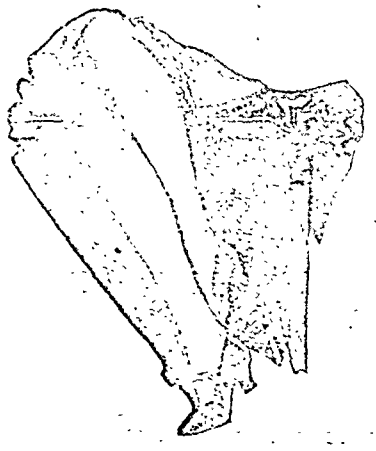

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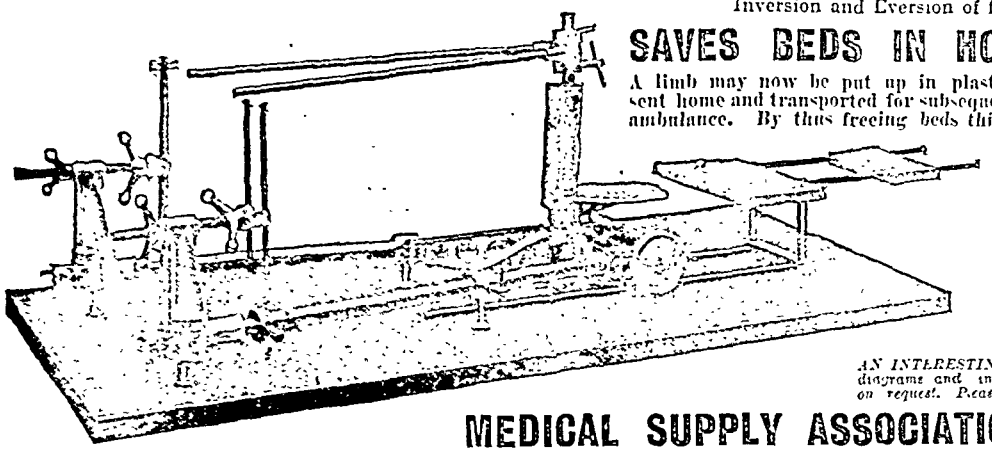

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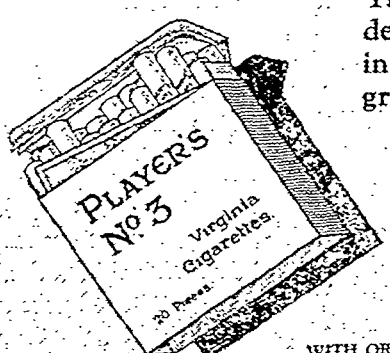

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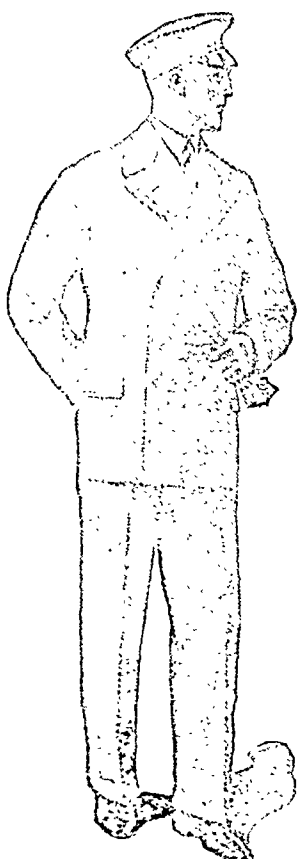

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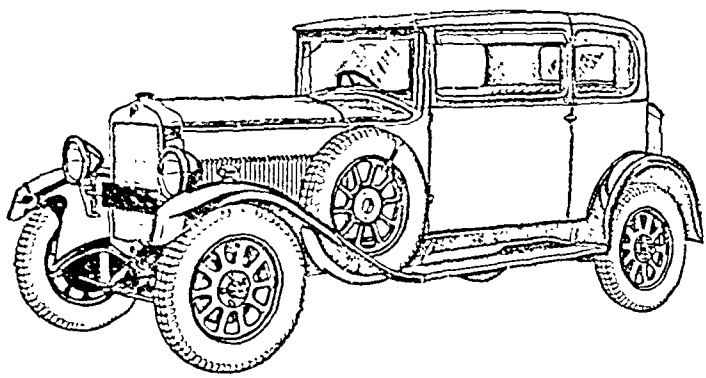

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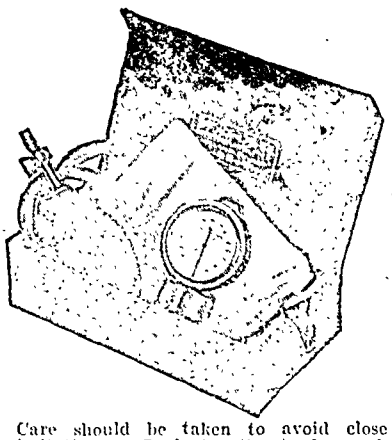

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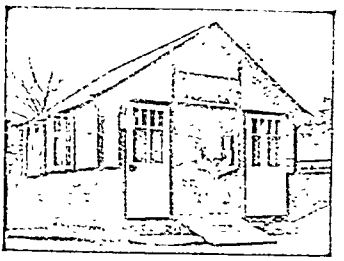

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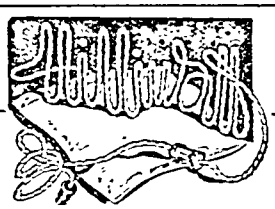

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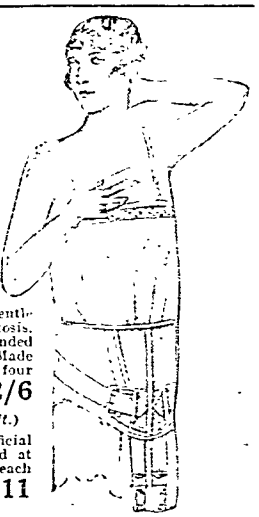

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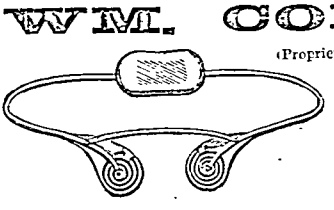

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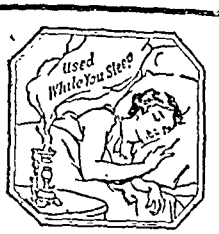

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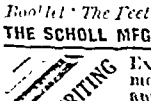

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Near BEDFORD. (Phone 3417.)

FOR MENTAL AND NERVOUS CASES.

Physicians: DAVID AND CEDRIC W. BOWER. *Ordinary Terms, Five Guineas per week.* (Including Separate Bedrooms where suitable.) Interviews in London by appointment.

THE MOAT HOUSE,

TAMWORTH, STAFFS.

Established 1816. For the TREATMENT of a few LADIES suffering from NERVOUS and MENTAL DISORDERS. Voluntary patients received. For terms apply to Proprietor and Licensee: Dr. LOWSON. Tel.: 108 Tamworth.

Preston Deanery Hall, Northampton.

(3¼ miles from L.M.S. Station.)

This DIETETIC ESTABLISHMENT is equipped for the complete investigation and treatment of patients on rational lines. Own X-ray and Laboratory. Biochemical investigation is made a special feature.

Resident Biochemist, Masseurs and Masseuses, Hydro- and Electro-therapeutics, Fasting on Scientific Principles. The staff are specially qualified to deal with the errors of Metabolism, and provision is made for the treatment of Tropical Diseases.

Further particulars from the Secretary, Preston Deanery Hall, Northampton.

Tel.: Hardingstone 6

"CAREWELL HOUSE" NURSING HOME,

443, FULHAM ROAD, S.W.10

(Close Redcliffe Gardens).

A Home of kindly care for those you care for. Vacancies for permanent bedridden and aged, inoperable. Spacious sunfilled rooms from £2 10s to £5 5s. weekly, inclusive of good food and skilled nursing night and day. 'Phone Kensington 2388, or write *Sister-in-Charge*. No restrictions re visiting.

BOREATTON PARK,

BASCHURCH, SALOP.

A first-class Country Mansion especially adapted for the reception of a limited number of ladies and gentlemen mentally affected.

For particulars, apply Dr. SANKEY.

BROOKE HOUSE,

CLAPTON, LONDON, E.5.

Telephone: Clissold 1648.

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of p[illegible]th voluntary and patie[illegible] received. For further [illegible] GERALD JOHNSTON and Dr. ERNEST ROLLINS, Resident Physicians.

HOME FOR FEEBLE-MINDED.

BRUNTON HOUSE, LANCASTER.

This well-appointed private establishment overlooks Morecambe Bay, and possesses extensive gardens and grounds, with tennis and croquet lawns. Varied scholastic and manual instruction. Individual attention given by experienced staff under Lady Matron. For terms, apply, Dr W. H. COUPLAND, Med. Supt.

CITY OF LONDON MENTAL HOSPITAL, DARTFORD, KENT.

PRIVATE PATIENTS are received at a weekly charge of TWO GUINEAS and upwards.

Voluntary BOARDERS can now be admitted.—Apply to the MED SUPERINTENDENT.

Tel & Telegrams. "Haynes, Brentwood, 45."

Littleton Hall, Brentwood, Essex.

Large grounds, 400 ft. above sea. HOME for Ladies Mentally afflicted. Voluntary Boarders received. Stations: Brentwood and Shenfield 1 mile. Liverp'l St. 26 min.—Apply, Dr. HAYNES.

THE RESIDENTIAL TREATMENT OF ALCOHOLISM & DRUG ADDICTION

RENDLESHAM HALL

(Postal Address)—WOODBRIDGE, SUFFOLK.

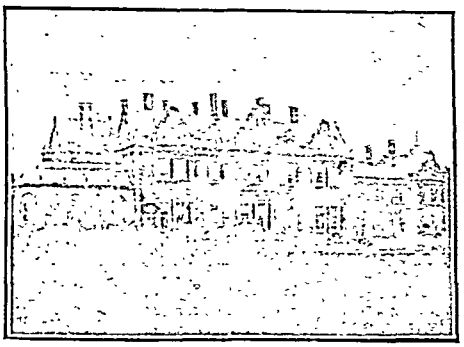
Rendlesham Hall, which is open to receive patients, is essentially a Sanatorium. Its daily life and routine are that of an ordinary comfortable holiday or health resort, or of a large country house. Each patient has all the privileges of a guest consistent with the prescribed medical treatment.

Rendlesham Hall has 45 bedrooms, and about 450 acres of gardens and park. It has also a private nine-hole golf course, tennis and croquet lawns, and bowling green.

Illustrated Booklet, giving particulars as to terms, etc., can be had on application to the

RESIDENT MEDICAL SUPERINTENDENT.

Telegrams and Telephone: Wickham Market 16.



RENDLESHAM HALL

To those desiring to be near London—

The Mansion, Beckenham Park, Beckenham,

as carried on for the last twenty years, is available. Booklet and particulars from the Resident Medical Superintendent.

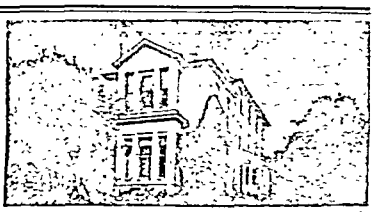
Telephone: RAVENSBOURNE 0648. *Telegrams:* NOROTORIUM, BECKENHAM.

Proprietors: The Norwood Sanatorium, Limited.

ALCOHOLISM, DRUG HABIT, AND NEURASTHENIA.

BAY MOUNT, PAIGNTON.

(ESTABLISHED 1922). *'Phone:* PAIGNTON 5110.



This small comfortable Home is charmingly situated in secluded gardens overlooking Torbay. Ladies and Gentlemen treated with a view to a rapid and permanent cure by modern methods, which give excellent results. Ample amusement, billiards, wireless, golf, tennis, etc. Winter sunshine. Moderate inclusive terms. Prospectus, report, etc, from—

STANFORD PARK, M.B., CH.B., Res. Med. Supt., Bay Mount, Paignton.

ALCOHOL AND DRUGS

"The Medical Annual" (1923) selects the SPRINGFIELD METHOD of withdrawal for special description.

This intensive method secures excellent results in four weeks only; was evolved and is conducted at a private nursing home in Hampstead, the address of which is never advertised.

Apply Medical Superintendent, 21, Cleveland Square, W.2. Langham 1643.

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(Also private address to secure secrecy.) Telephone: 158.

Beautiful large Residential Home, with 50 acres of park land, attached to R.C. Convent, and under the care of the Sisters. Established 1899. Most successful MEDICAL and PSYCHOLOGICAL TREATMENT for LADIES. Every home comfort, and bright happy social amusements. Splendid results proved by the numbers of former patients who return to the Home for holiday visits. *Medical Superintendent:* JOHN H. REID, B.A., M.D., D.P.H.

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DALRYMPLE HOUSE, RICKMANSWORTH, HERTS.

For the treatment of GENTLEMEN under the Act and privately. Estab. 1883 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded grounds on the bank of the River Colne. Full-sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by. For particulars apply to—

F. S. D. HOGG, M.R.C.S., &c., Resident Medical Supt. Telephone: 16 RICKMANSWORTH.

WOODLANDS PARK

GREAT MISSENDEN, BUCKS.

550 feet above sea-level on Southern Chilterns. 90 acres, Gardens, Woods, and Park.

FOR REST AFTER OPERATION or ILLNESS, CARDIAC and NERVOUS DISEASES, or PERMANENT INVALIDS.

Fees from 8 guineas.

Telephone: 91 Gt. Missenden. *Apply:* C. W. J. BRASHER, M.D.

ALCOHOLISM

DRUG ADDICTION & NEURASTHENIA

CALDECOTE HALL, NUNEATON.

At this beautifully situated country mansion residential Treatment of the above afflictions is carried out on the most modern scientific principles, both physical and psychological, under the supervision of the Res. Med. Supt. Dr. A. E. Carver, M.D., D.P.M. Fees Moderate.

Further particulars from the Central Sec., 40, Marsham Street, London, S.W.1.

In cases of urgency 'phone NUNEATON 241.

THE HARE NURSING HOME.

As founded and established by the late Dr. FRANCIS HARE, author of "Alcoholism," etc.

For the treatment of ALCOHOLISM, Other Drug Habits, Insomnia, Neurasthenia, Functional Nervous Disorders, TROPICAL Ailments, etc.

"OAKLANDS," 15, THE AVENUE, BECKENHAM, KENT.

Terms moderate. Quiet and pleasant situation. Ladies and Gentlemen admitted for treatment.

For prospectus write or 'phone: WALTER E. MASTENS, M.D., M.R.C.S., D.P.H., Res. Med. Supt.

'Phone: Ravensbourne 3622. *Telegrams:* Hare, Beckenham.

WYE HOUSE, BUXTON.

For the treatment of Ladies and Gentlemen mentally afflicted. Voluntary Boarders received. Situated 1,200 ft. above sea-level, facing S.; 14 acres of grounds.—For terms, apply to the Resident Medical Superintendent, W. W. HORTON, M.D. Nat. Tel. 130.

NEURASTHENIA ALCOHOL DRUGS

R.M.O., 2, Wilbury Road, HOVE.

ST. ANDREW'S HOSPITAL
FOR MENTAL DISORDERS,
NORTHAMPTON

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most *modern* treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged *immersion bath, Vichy* Douche, Scotch Douche, Electrical baths, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a *Department for* Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The Seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. *On the North-West side of the Estate a mile of sea coast forms the boundary.* Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone: No 56 Northampton), who can be seen in London by appointment.

NEURASTHENIA
BELVOIR NURSING HOME, ASTON-ON-TRENT, DERBY.

Private Nursing Home for Neurasthenia and allied Functional Nervous Disorders, for general Convalescent Cases, and those requiring Electrical Treatment.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes In addition to the methods of general medicine, Psycho-Therapeutic treatment is used extensively in suitable cases. Certifiable cases are not received. Electrical Treatment, Radiant Heat, X-ray, Ultra-violet Light, and Massage is available in the Nursing Home. Billiards, tennis, etc Fees from 5 to 12 guineas per week. For further particulars apply to—
DR. E. M. DOUGLAS-MORRIS, ASTON, DERBY. *Telephone*: Shardlow 16.
Dr Douglas-Morris can be seen by appointment in London.

THE COPPICE, NOTTINGHAM.
HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.

For terms, etc., apply to the Medical Superintendent.

COURT HALL, KENTON, EXETER,
SOUTH DEVON.

For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

Resident Physicians: BERTHA M. MULES, M.D., B.S.; ANNIE S. MULES, M.R.C.S., L.R.C.P.
Telephone: Teignmouth 289.

HAYDOCK LODGE,
NEWTON-LE-WILLOWS, LANCASHIRE.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and out-door recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

ARRESTED DEVELOPMENT, EPILEPSY, ETC.

MISS EDGLEY, A.R.R.C., and MISS BRYANT can receive limited number backward children. Professional care and home life in charming house and grounds at foot of Quantocks.

CHEDDON HOUSE
TAUNTON

CHISWICK HOUSE.

A Private Mental Hospital for the Treatment and Care of Mental and Nervous Disorders.

Now removed to:

CHISWICK HOUSE,
PINNER,
MIDDLESEX.

Telephone: PINNER 234.

A modern country house, 11 miles from Marble Arch, in beautiful and secluded grounds.

Fees are from 10 guineas a week.

Voluntary Patients received for treatment.

DOUGLAS MACAULAY, M.D., D.P.M.

SAINT LUKE'S HOSPITAL
(for Mental Disorders).

Treasurer:
The Rt. Hon. LORD BLANESBURGH, G.B.E.

WELDERS HOUSE,
near Gerrards Cross, Bucks,

situated in extensive grounds, amid beautiful country and within easy distance from London, receives a few LADIES requiring treatment for mild Nervous and Mental Disorders.

Apply, Chief Physician, Office of the Hospital, 19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

BARNWOOD HOUSE,
GLOUCESTER.

A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Resident Supt.
Telephone: No. 7 Barnwood.

BAILBROOK HOUSE,
BATH.

A PRIVATE HOME for the care and treatment of persons with mental and nervous disorders.

Voluntary Boarders received in the Villas. Large Mansion on outskirts of Bath, with 20 acres of grounds (see *Medical Directory*, page 2134).

For terms apply to SAMUEL J. GILFILLAN, O.B.E., M.B., C.M.Edin.; Resident Physician.
Telephone No.: Batheaston 8189.

RUTHIN CASTLE

(FORMERLY DUFF HOUSE, BANFF.)

The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, *X-rays*, Electrocardiograph, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The Climate is mild and the neighbourhood beautiful.

Telegrams: Castle, Ruthin. Telephone: 66, Ruthin.

Apply: The Secretary, Ruthin Castle, North Wales.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

BETHLEM ROYAL HOSPITAL, LAMBETH ROAD, S.E.1.

(For the reception and treatment of cases of nervous and mental disease.) Tel.: Reliance 2182.

President: Colonel and Alderman Sir CHARLES CHEERS WAKEFIELD, Bart., C.B.E.
Treasurer: Sir LIONEL FAUDEL-PHILLIPS, Bart.
PHYSICIAN SUPERINTENDENT: J. G. PORTER PHILLIPS, M.D., F.R.C.P. Assisted by Physicians, a Pathologist, and a staff of Visiting Consultants.

Patients of the EDUCATED CLASSES, IN A PRESUMABLY CURABLE CONDITION, are eligible for admission. With a view to the early treatment of eligible cases VOLUNTARY OR UNCERTIFIED patients are admitted. PATIENTS WHO CAN CONTRIBUTE THREE GUINEAS WEEKLY TOWARDS THE COST OF MAINTENANCE MAY BE RECEIVED AS VACANCIES ARISE. Treatment is carried out on the most modern principles. In connection with this Hospital there is a Convalescent Home on the Surrey hills at Witley.
For further particulars apply to the PHYSICIAN SUPERINTENDENT.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: Alleviated, London. Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for the treatment of special and suitable cases adjoin the Institution. There is a seaside branch to which holiday parties are sent during the summer months. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.
Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0988.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "Psycholia, London." Telephone: Rodney 4731—4732.

FOR THE TREATMENT OF MENTAL DISORDERS.

Completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Croquet, Squash Racquets, and all indoor Amusements, including Wireless and other Concerts. Occupational Therapy. Daily services in the Chapel.
Senior Physician: Dr. HUBERT J. NORMAN; assisted by three Medical Officers, also resident. An illustrated Prospectus, giving full particulars and terms, may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON. — A CONVALESCENT BRANCH OF THE ABOVE.

PLYMPTON HOUSE,

PLYMPTON, S. DEVON.

This old-established Licensed House offers every advantage that experience can suggest for the care and treatment of mental cases.
For terms, etc., apply to the Resident Physicians: Dr. ALFRED TURNER, Dr. J. C. NIXON. Telephone: No. 2 Plympton.

STRETTON HOUSE,

Church Stretton, Shropshire.

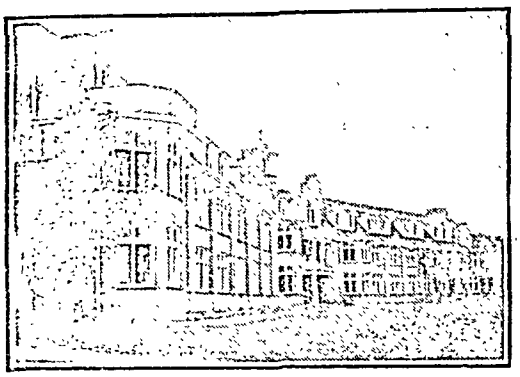
A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous allied disorders of Habit. All types of cases are received Voluntary Boarders. Bracing hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. Telephone: 10 P.O. Church Stretton.

THE GRANGE,

near ROTHERHAM.

A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house with beautiful grounds and park, 5 miles from Sheffield. Station, Grange Lane, G.C. Railway, Sheffield. Telephone: No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S.

EAST ANGLIAN SANATORIUM.



This Sanatorium was specially built for the treatment of Pulmonary and other forms of Tuberculosis, and is situated on an ideal site facing S.S.E.—very sunny district in the "Constable" Country. Special Treatment by artificial Pneumothorax (X-ray Controlled). Electric lighting throughout, and radiators and wireless in all rooms.

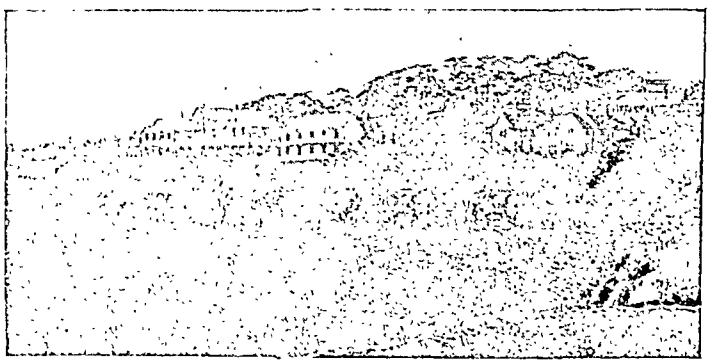
TERMS: From 4 to 8 guineas per week.

On the estate of 330 acres there is ample opportunity for training in General Farming, Poultry Farming, Angora Rabbit Breeding, Gardening, etc., and various Handicrafts.

Med. Supt.: Dr. Jane Walker;
Asst. Med. Supt.: Dr. Eleanor Soltau; and other Medical Officers.

For full particulars, illustrated prospectus, etc., apply to the SECRETARY, East Anglian Sanatorium, Nayland, near Colchester. *Teleph. and Telegrams*: NAYLAND 1.

MUNDESLEY SANATORIUM



Specially built for the treatment of Pulmonary and other forms of Tuberculosis. Aspect S.S.W., on a carefully chosen site. Pure bracing air. High sunshine record. Heliotherapy. Arc-light treatment. One mile from the coast. Electric light throughout. X-ray installation. Full day and night Nursing Staff. Wireless (head-phones) throughout.

Resident Physicians:
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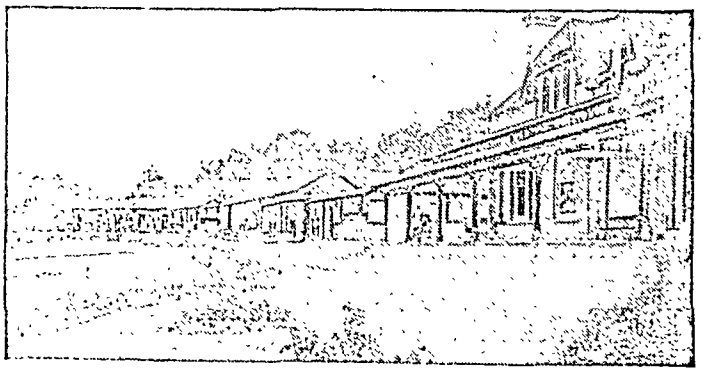
L. WHITTAKER SHARP, M.B.(Camb.).
ANDREW J. MORLAND, M.B.(Lond.).

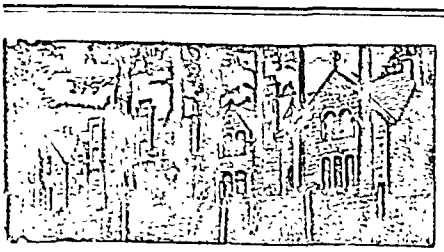
Apply, Mr. D. C. FORD, Secretary,
The Sanatorium, Mundesley, Norfolk.

THE COTSWOLD SANATORIUM



Specially built in 1893 on the Cotswold Hills, seven miles from Cheltenham, for the treatment of Pulmonary and all other forms of Tuberculosis on Nordrach lines. Aspect S.S.W., sheltered from North and East, elevation 800 feet. Pure bracing air. Special Treatment by artificial Pneumothorax (X-ray controlled), Tuberculins, and Ultra-Violet Rays is available, when necessary, without extra charge. X-ray plant. Electric light. Radiators, hot and cold basins, and Wireless in all rooms.

Full day and night Nursing Staff.
Resident Physicians: ARTHUR H. HOFFMAN, M.D., and G. A. HOFFMAN, M.B.
Inclusive Terms: From 5 to 7 guineas per week.
Apply: The Secretary, The Cotswold Sanatorium, Cranham, Gloucester.
Telephone: 41 WITCOMBE. *Telegrams*: "HOFFMAN, BIRDLIP."



KINGUSSIE, N.B.

THE GRAMPIAN SANATORIUM.

Situated in the upper Speyside district of Inverness-shire. One of the highest inhabited districts in Britain—"The Switzerland of the British Isles." Bracing and dry mountain climate. Well-sheltered Sanatorium specially built for the Open-air Treatment of Tuberculosis. Opened in 1901. Elevation 860 ft. above sea-level. Electric light throughout buildings and in rest shelters. Central heating. Fully equipped X-ray Plant. All forms of treatment available, including Artificial Pneumothorax, and Ultra-Violet Rays for surgical cases of Tuberculosis.

MEDICAL SUPT.: FELIX SAVY, M.B., Ch.B *For particulars apply to the Secretary.*
Terms: £4 6s. 8d. to £6 6s. per week inclusive, no extras.

PENDYFFRYN HALL SANATORIUM

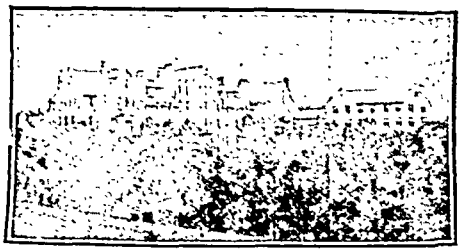
PENMAENMAWR.

Established 1900 for the treatment of Tuberculosis. Miles of carefully graduated walks through pine-clad hills, with sea and mountain views. Modern treatment, including SANOCRYSIN, ARTIFICIAL PNEUMOTHORAX, etc. X-ray plant, electric light, central heating, wireless. Full day and night nursing staff. On L.M.S. Main Line to Holyhead, 4¼ hours from London. Resident Physicians: Dennison Pickering, M.D.(Cantab.), F. W. Godbey, M.D., D.P.H.; Matron: Miss N. Rennardson, S.R.N.

For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 20.)

TOR-NA-DEE SANATORIUM

MURTLE DEESIDE ABERDEENSHIRE.



Medical Director: David Lawson, M.D., F.R.S.E.

FULLY EQUIPPED WITH EVERY MODERN APPLIANCE FOR THE DIAGNOSIS AND TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.

Physician Superintendent - J. M. JOHNSTON, M.B., D.P.H., etc.
Full particulars and Prospectus on application to the Secretary.
Inclusive Terms: SEVEN GUINEAS A WEEK.

SELBRIGG SANATORIUM, HOLT, NORFOLK.
Telephone: HOLT 12.

Adjoining KELLING SANATORIUM

FOR THE TREATMENT OF TUBERCULOSIS.
On Pine-wooded heights above Cromer and Sheringham. Dry, Warm Climate. Maximum Sunshine. Completely Sheltered.
Terms: From 6 guineas weekly.
Further information and illustrated booklet from:
J. I. W. MORRIS, M.R.C.S.(Eng.), L.R.C.P.(Lond.),
Medical Superintendent, Kelling Sanatorium.

VALE OF CLWYD SANATORIUM.

This Sanatorium is established for the treatment of TUBERCULOSIS of the LUNGS and the PLEURAL CAVITIES. It is situated in the midst of a large area of park-land at a height of 450 feet above sea-level, on the south-west slopes of mountains rising to over 1,800 feet, which protect it from north and east winds and provide many miles of graduated walks with magnificent views. Average rainfall 29.57 per annum. Full day and night nursing staffs. X-ray plant. Every facility for Artificial Pneumothorax, and for operations on the chest. Electric lighting. Central heating. Home farm. Clean milk from T.T. Herd. For particulars apply to Med. Supt., H. Morriston Davies, M.D., M.Ch Cantab., F.R.C.S., Llanbedr Hall, Ruthin, N. Wales.

SMEDLEY'S

Unrivalled suites of Baths for Ladies and Gentlemen, including Turkish and Russian Baths, Aix and Vichy Douches, Massage and Plombières Treatment, an Electric Installation for Baths and other Medical purposes, Dowsing Radiant Heat, D'Arsonval High Frequency, Diathermy, Nauheim Baths, etc. Special provision for invalids. Milk from our farm. Large Winter Garden. Night Attendance. Rooms well ventilated and all bedrooms warmed in Winter. A large Staff (upwards of 60) of trained Male and Female Nurses, Masseurs, and Attendants.
Telegrams: "SMEDLEY'S, MATLOCK." 'Phone: No. 17.
For Prospectus and full information please write MANAGER, M.J

GREAT BRITAIN'S GREATEST HYDRO
Resident Physicians
G. C. R. HARBINSON, M.B., B.Ch., B.A.O. (R.U.I.),
R. McCLELLAND, M.D., C.M.(Edin.).

MATLOCK

SHAFTESBURY HOUSE,

FORMBY-BY-THE-SEA, nr. LIVERPOOL.

For the care and treatment of a limited number of Ladies and Gentlemen suffering from NERVOUS or MENTAL breakdown. Voluntary Boarders received. Psycho-therapy in suitable cases if desired. Terms moderate. Apply, RESIDENT PHYSICIAN. Tel.: No. 8 Formby.

THE BRITISH SANATORIUM, MONTANA sur/Sierre,

SWITZERLAND.

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Hilary Roche,
M.D. (Melb.), M.R.C.P. (Lond.), Tuberculous Diseases Diploma (Wales); Formerly H.P., Brompton Hospital, Medical Supt., Palace Sanatorium, Montana.

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Unsurpassed situation, 600 ft. above sea-level, high sunshine record, own farm. Resident Medical Officer. Male cases only.
Inclusive weekly terms 50/-.
Special preferential arrangements for a few private cases at 4 guineas.
Artificial Pneumothorax, etc.

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Physicians in attendance.
IDEAL HEALTH RESORT.
Electric Light, Central Heating, Electric Lift, three Billiard Tables, Ball Room, Winter Garden, Swimming Bath, Hard and Grass Tennis Courts, Badminton, Croquet Lawn, Golf Course. Prospectus from Manager. 'Phone: Peebles 2.

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The best place in the Southern Alps for convalescence, especially after Influenza or operation, or for Chronic Ailments (Heart, Kidney, Nerve, Blood, Glandular, Respiratory, Digestive). Wonderful Alpine climate, Southern exposure. All modern methods of treatment. Municipal Cure-establishments. Private Sanatoria. About 100 Hotels & Pensions. Season: Mid-Feb. to May & Autumn (Grape-cures). *Write for prospectus to the* SECRETARY KURVERWALTUNG, MERAN

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Every kind of Massage. Ultra-violet Light.
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High Frequency. Electric Lift.
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Resident Physician: W. JOHNSON SMYTH, M.D.

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Appointments may be arranged by ringing Park 5644 when Treatment Room is closed.

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A Private Home for the care and treatment of a limited number of ladies mentally afflicted. Climate healthy and bracing.
Medical Superintendent: Dr. McCLINTOCK.

THE LONDON HOSPITAL MEDICAL COLLEGE.

(University of London.)

ADVANCED MEDICINE.

A Course of Post-Graduate Instructions in Advanced Medicine suitable for candidates preparing for the M.D., M.R.C.P. Examinations will begin on Monday, April 29th.

The Course will comprise the examination of selected cases in the Wards, Ward Demonstrations, and instruction in Applied Physiology, Morbid Anatomy, Clinical Pathology, and Pathological Chemistry.

Further particulars may be obtained on application to the Dean, Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., London Hospital Medical College, Mile End, E.

CHELTENHAM COLLEGE.

Twelve Scholarships and Exhibitions (not open to members of College or Junior School). These include five of £80 (increased to £100 for special merit); "James of Hereford" Scholarship of £35 for boys born or brought up in Herefordshire. Also R.A.M.C. Scholarship of £50 (preference to sons of Fallen Officers). Awards made for all-round excellence, or special proficiency in any main subject, including Music. Preliminary Examination (at Candidates' own Schools), Monday and Tuesday, May 13th and 14th, 1929. Final Examination (at Cheltenham), Wednesday and Thursday, May 22nd and 23rd, 1929.

Apply BURSAR, Cheltenham College.

TAUNTON SCHOOL, TAUNTON.

A PUBLIC SCHOOL FOR BOYS.

Boys are regularly prepared for the First M.B. Examination, University Scholarships in Chemistry, Biology, etc.

S[illegible] offered for the teaching of [illegible] any, and Zoology.

N[illegible] containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1925. Prospectus from Head Master.

Royal College of Surgeons of ENGLAND.

ELECTION OF EXAMINERS UNDER THE CONJOINT EXAMINING BOARD OF ENGLAND.

Notice is hereby given that the Council in June next will proceed to the election of three Examiners in Anatomy, two Examiners in Physiology, four Examiners in Midwifery, two Examiners for the Diploma in Public Health, two Examiners for the Diploma in Tropical Medicine and Hygiene, three Examiners for the Diploma in Ophthalmic Medicine and Surgery, one Examiner for the Diploma in Psychological Medicine, and three Examiners for the Diploma in Laryngology and Otology.

The present Examiners are re-eligible except one Examiner in Physiology, two Examiners in Midwifery, one Examiner for Part I of the Examination for the Diploma in Public Health, and one Examiner for Part II of the Examination for the Diploma in Laryngology and Otology.

In the case of the Examinerships in Anatomy and Midwifery, candidates must be Fellows or Members of the College.

Candidates must make written application to the Secretary on or before Tuesday, the 30th instant.

S. FORREST COWELL,
April 13th, 1929. Secretary.

Royal College of Surgeons of ENGLAND.

BOARD OF EXAMINERS IN DENTAL SURGERY.

Notice is hereby given that the Council in June will proceed to the election of eight members of the Surgical Section of the Board of Examiners in Dental Surgery.

The Examiners will be required to examine candidates in General Anatomy and Physiology, and in General Surgery and Pathology.

Fellows of the College desirous of becoming candidates for the office must make application in writing to the Secretary on or before Tuesday, the 30th instant.

S. FORREST COWELL,
April 13th, 1929. Secretary.

Croxley Green, Herts. — Lady wishes to get into touch with London Doctors with a view to taking one or two CONVALESCENT PATIENTS for rest and recuperation in her PRIVATE HOUSE; half mile from Rickmansworth Station (Met.). Lovely country surroundings. Local Practitioners' refs. —No. 2131, B.M.A. House, Tavistock Sq., W.C.1.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

(University of London.)

Bacteriology and Immunology.

One year's Course of Study for the Diploma in Bacteriology, beginning in October.

Epidemiology and Vital Statistics.

Special Courses of not less than three months.

Tropical Medicine and Hygiene.

Two Courses yearly, each of 20 weeks, commencing on September 30th, 1929, and February 3rd, 1930.

Diploma in Public Health.

A Course of Study, covering a period of twelve calendar months, beginning in October, 1929.

Enquiries for syllabuses, etc., should be addressed to the Secretary, Endsleigh Gardens, London, W.C.1.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.

(University of London.)

ADVANCED MEDICINE COURSE.

A REVISION COURSE in Clinical Medicine, Morbid Anatom[illegible] plied Biochemistry and [illegible] for M.D. and M.R.C.P. [illegible] given in the Medical School and the Wards of the Hospitals. It will commence on Tuesday, May 14th, 1929, and will last eight weeks.

A similar Course will be given in October, November, and December, 1929.

A Course in Advanced Surgery will also be given, and will commence on March 4th, 1929.

Further particulars and the syllabus of the Course may be obtained on application to the Dean (H. WILLOUGHBY LYLE, M.D., F.R.C.S.), King's College Hospital Medical School, London, S.E.5.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL).

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 7th, and for the Diploma in Tropical Hygiene on January 12th and April 26th. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

Royal College of Surgeons of ENGLAND.

BOARD OF EXAMINERS IN ANATOMY AND PHYSIOLOGY FOR THE FELLOWSHIP.

Notice is hereby given that the Council in June next will proceed to the election of four Examiners in Anatomy and four Examiners in Physiology.

The present Examiners are re-eligible except two Examiners in Anatomy and one Examiner in Physiology.

Candidates for the Examinership in Anatomy must be Fellows of the College. Candidature for the Examinership in Physiology is unrestricted.

Candidates must make written application to the Secretary on or before Tuesday, the 30th instant.

S. FORREST COWELL,
April 13th, 1929. Secretary.

Royal College of Surgeons of ENGLAND.

ELECTION TO COURT OF EXAMINERS.

Notice is hereby given that the Council on May 9th next will proceed to the election of a Member of the Court of Examiners in the vacancy occasioned by the retirement of Sir Cuthbert S. Wallace.

Fellows of the College desirous of becoming candidates for the office must make application in writing to the Secretary on or before Tuesday, the 30th instant.

S. FORREST COWELL,
April 13th, 1929. Secretary.

NORTH-EAST LONDON POST-GRADUATE COLLEGE,

PRINCE OF WALES'S GENERAL HOSPITAL, N.15.

The Practice of the Hospital is limited to Medical Practitioners. Particulars from T. H. C. BENIANS, F.R.C.S., Dean.

THE ROYAL DENTAL HOSPITAL OF LONDON SCHOOL OF DENTAL SURGERY.

(University of London),
Leicester Square, London, W.C.

SESSIONS COMMENCE MAY AND OCTOBER.

Students are admitted for the curriculum for the B.D.S. Degree and the L.D.S. Diploma.

PRE-MEDICAL EXAMINATION.

Classes are held during the Winter and Summer Sessions, and are open to Students who have not yet commenced their professional study.

DENTAL MECHANICS.

Pupils may join at the commencement of either the May or October Sessions for the training in Dental Mechanics specified in the curriculum.

HOSPITAL PRACTICE.

The School is thoroughly equipped. The Clinic of the Hospital is unrivalled.

Write for further particulars and School Calendar to the DEAN.

LONDON HOSPITAL MEDICAL COLLEGE AND DENTAL SCHOOL.

(University of London.)

The SUMMER SESSION will open on MONDAY, APRIL 29th.

The MEDICAL COLLEGE and DENTAL SCHOOL of the LONDON HOSPITAL are fully equipped to meet modern requirements. The Hospital contains 834 beds, and is the largest General Hospital in England.

SCHOLARSHIPS and PRIZES. — Entrance Scholarships are offered in Science. Entrance Scholarships are also offered in Anatomy and Physiology and Pathology to Students of the Universities of Oxford and Cambridge. Numerous Prizes are awarded in all subjects of the curricula.

A Prospectus giving full particulars may be obtained from the Dean, Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Mile End, E.1.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital pr[illegible] Midwifery, and Obstetri[illegible] Midwives and Monthly Nurses in accordance with C.M.B. regulations.

PRIVATE WARDS for paying patients.

AN IDEAL PREPARATORY SCHOOL FOR BOYS.

KINGWELL HALL, Timsbury, near BATH. Grounds of 240 acres, between Bath and Wells; 600 ft. above sea; the air bracing, very beneficial to delicate boys. Games (cricket, football, hockey, tennis, golf) and physical training. A fine open-air swimming bath. Particular attention given to health, food, and rest. Four Public School Scholarships in last two years. Prospectus on application. — Headmaster: SYDNEY L. ALLAN, M.A (Oxon.)

ABERDEEN MEDICAL SCHOOL.

A COURSE OF POST-GRADUATE STUDY on Medicine will be held at Aberdeen Royal Infirmary from April 23rd to June 27th, on Tuesdays and Thursdays, at 3.15 p.m.

A Syllabus of the Lectures and Demonstrations may be had on application to the Secretary, The University, Aberdeen.

A REALLY GOOD SCHOOL FOR GIRLS. REASONABLE INCLUSIVE FEES.

MARLBOROUGH COLLEGE,

Tytherington Hall, nr. Macclesfield.

Sound Education. Upper and Lower Schools. Preparation, when desired, for all University Entrance Examinations. Particulars from Sec.

Special Terms to Medical Men.

St. Bartholomew's Medical COLLEGE.

SENIOR CURATOR OF THE MUSEUM.

Applications are invited for the post of Senior Curator of the Museum, particulars of which can be obtained from the DEAN of the Medical College, St. Bartholomew's Hospital, E.C.1, to whom applications should be sent before April 30th.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION

1, Wimpole Street, London, W.1. Telephone: Mayfair 2236.

M.R.C.P. (Evening COURSE, May 7th to June 28th, 1929.)

In order to meet demand of several practitioners it is proposed to give a course for the July M.R.C.P. examination. Time 8.30 p.m. Fee 10s. 6d. a lecture or £6 6s. for the course of sixteen.

Subjects will include lectures on Diseases of the Brain, Nervous System, Heart, Blood, Kidneys, Alimentary System, Spleen, as well as modern biochemical methods. Well-known authorities have kindly consented to give the lectures.

For further information apply to the Fellowship of Medicine.

Post-Graduate Teaching, West London Hospital.

CONTINUOUS INSTRUCTION. CLINICAL WORK IN ALL DEPARTMENTS. CLINICAL ASSISTANTSHIPS. SPECIAL ANNUAL MEMBERSHIP TERMS FOR GENERAL PRACTITIONERS. ANÆSTHETIC COURSE.

COURSES MAY BE COMMENCED AT ANY TIME.

Prospectus from Sir Henry Simson, K.C.V.O., Dean, West London Hospital, Hammersmith, W.6.

UNIVERSITY EXAMINATION POSTAL INSTITUTION

17, RED LION SQ., LONDON, W.C.1.
(FOUNDED IN 1882.)

Principal: Mr. E. S. WEYMOUTH, M.A. (Lond.). POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS.

SOME SUCCESSES:

M.D.(Lond.), 1921-28 (9 Gold Medallists during 1913-28)		309
M.S.(Lond.), 1901-28 (including 4 Gold Medallists)		20
M.B.,B.S.(Lond.), (Completed Exam.)	*Final* 1906-28	237
F.R.C.S.(Eng.), (1906-28)	*Primary*	149
	Final	135
M.R.C.P.(Lond.),	1914-28	152
D.P.H. (Various) (Completed Exam.)	1906-28	280
F.R.C.S.(Edin.),	1918-28	39
M.R.C.S., L.R.C.P. (Completed Exam.)	*Final* 1910-28	402
M.D.(Dur.) (Practitioners)	1906-28	36

M.D. Various. By Thesis. Numerous successes.

Preparation for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.

M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.). Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

Medical Prospectus (48 pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes for the higher Medical Examinations. Courses for the Special Diplomas. Opening theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

HIGHER MEDICAL QUALIFICATIONS

Are you desirous of obtaining one of the special higher qualifications?

Diploma in Psychological Medicine.
Diploma in Ophthalmology.
Diploma in Radiology.
Diploma in Laryngology, Otology, and Rhinology.
Diploma in Tuberculosis.
Diploma in Bacteriology.
Diploma in Public Health.
Diploma in Tropical Medicine.
All Higher Medical and Surgical Degrees and Diplomas.

You can qualify for any of the above by our Courses of Combined Postal & Practical Courses.

Write at once stating your requirements to the Secretary,
MEDICAL CORRESPONDENCE COLLEGE,
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From Specialist Tutors, in conformity with the Regulations of the various Universities. Apply for particulars and free booklet, "Hints on Writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

DIPLOMA IN PUBLIC HEALTH, &c.

THE ROYAL INSTITUTE OF PUBLIC HEALTH.

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Principal and Director of the Laboratories: Colonel Sir WILLIAM SMITH, M.D., D.Sc., LL.D., F.R.S.Ed., Barrister-at-Law

Assistant Director of Bacteriological Laboratories: E. GOODWIN HAWLINSON, M.D., D.P.H.Oxon.

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The Course of Instruction can be commenced at any time.

The Principal will be pleased to interview intending candidates for the purpose of advice.

Further particulars can be obtained from the Secretary, 37, Russell Square, W.C.1.
Telephone: MUSEUM 0766.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and, in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

STAMMERING, CLEFT PALATE SPEECH, LISPING, &c. Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

F.R.C.S.(Edin.).

Prep. Classes and Museum Demons. for next Fellowship Exam will commence shortly. Correspondence course for Sept. and later exams. should begin now. Particulars, Mr. H. C. ORRIN, F.R.C.S., at Surgeons' Hall, Edinburgh.

Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims.
Chemistry, Physics, and Biology Labs.
MANCHESTER TUTORIAL COLLEGE,
327, Oxford Road, Manchester.

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam. will commence shortly. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

BRITISH EMPIRE CANCER CAMPAIGN

announces that a Prize, consisting of a Medal, together with an honorarium of £500, will be awarded to the person, or group of persons, submitting the Essay embodying the results of original investigations which, in the opinion of the Judges appointed by the Grand Council of the British Empire Cancer Campaign, is the best contribution towards the EARLY DIAGNOSIS OF CANCER.

Candidates, who may be of either sex, must be British subjects domiciled in the British Empire or Dominions. All Essays must be delivered at the offices of the British Empire Cancer Campaign not later than December 31st, 1931. A copy of the complete rules and regulations relating to the Prize can be obtained on application to the

Secretary, The British Empire Cancer Campaign, 19, Berkeley Street, London, W.1.

UNIVERSITY OF CAMBRIDGE

Diplomas in (*a*) PUBLIC HEALTH, (*b*) HYGIENE (for foreign graduates), (*c*) TROPICAL MEDICINE AND HYGIENE.

Courses of Instruction in the Subjects of the Examinations commence October 9th, 1929. Full particulars to be obtained from Mr. J. E. PURVIS, Public Health Chemical Laboratory, Medical School, Cambridge.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to **The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5,** for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics. For further particulars, fees, etc., apply to the Secretary.

The Bayliss-Starling Memorial SCHOLARSHIP.

(Founded in 1929 to commemorate Professor Sir William Maddock Bayliss and Professor Ernest Henry Starling.)

This Scholarship, of the annual value of about £120 (with exemption from tuition fees), tenable at UNIVERSITY COLLEGE, LONDON, may be awarded by the University College Committee.

Candidates must be Graduates of the University of London or any other University approved by the College Committee for the purpose, or Undergraduates of the University of London or any other University approved as aforesaid of suitable standing in Science or in Medicine.

The Scholar will be required to follow a course of study approved by the Jodrell Professor of Physiology involving a training in the principles of, and methods of research in, Physiology and Biochemistry.

Each candidate should make application, giving full particulars of his or her academic career and qualifications for entering on the prescribed course of study, and the names and addresses of not more than three referees, so as to reach the undersigned (from whom copies of the Regulations may be obtained) not later than Wednesday, May 15th.

University College, London. C. O. G. DOUIE, Secretary.

Ear and Throat Hospital, BIRMINGHAM.

THIRD HOUSE SURGEON wanted (non-resident). Must be qualified and with clinical experience. Appointment for six months. Salary at the rate of £150 per annum, with lunch five weekdays. Duties to commence May 1st.

Applications and testimonials to be forwarded on or before April 24th to the undersigned.

April, 1929. S. G. GREW, Secretary.

Aberdeen Royal Infirmary.

OPHTHALMIC SURGEON.

The Board of Directors invite applications for the following appointment to the Honorary Staff, viz.: JUNIOR ASSISTANT OPHTHALMIC SURGEON.

Each candidate should submit a full statement of his qualifications and experience, and three recent testimonials. Four copies of each should be lodged with the Clerk and Treasurer, Aberdeen Royal Infirmary, 230, Union Street, Aberdeen, not later than April 20th.

County Council of Middlesex.

THE COUNTY (TUBERCULOSIS) SANATORIUM, HAREFIELD, MIDDLESEX.

THIRD ASSISTANT RESIDENT MEDICAL OFFICER.

The County Council invite applications for the post of Third Assistant Resident Medical Officer (male) at the above Institution at a salary of £400 per annum (no bonus), with board, lodging, and laundry.

Candidates must be registered medical practitioners, not over 35 years of age, unmarried, and of British [illegible] must have held resident [illegible] Practical experience in [illegible] catment of [illegible] the induction of artificial [illegible] will be an additional

The officer appointed will be required to devote his whole time to the duties of the post, and to contribute to the County Council's Superannuation Fund. For the latter purpose he will be required to pass such medical examination as the County Council may direct.

The appointment is terminable by one month's notice on either side.

Applications, stating (1) name, (2) age, (3) experience, accompanied by copies of not more than three recent testimonials, must be received by the undersigned not later than Saturday, April 27th.

Canvassing is prohibited.

Guildhall, Westminster, S.W.1. April 5th, 1929. ERNEST S. W. HART, Clerk of the County Council.

Derbyshire County Council.

BRETBY HALL ORTHOPAEDIC HOSPITAL.

RESIDENT MEDICAL SUPERINTENDENT.

Applications are invited for the position of Resident Medical Superintendent (Male) at the Bretby Hall [illegible] near Burton-on-Trent. The [illegible] include the visiting of the various Orthopaedic Clinics which serve the Hospital.

Candidates must have had administrative and orthopaedic experience.

The Officer appointed will be required to devote the whole of his time to the duties of his office, and private practice will not be allowed.

The appointment will be terminable by three months' notice in writing on either side.

The salary will be at the rate of £750 per annum, rising to £850 per annum by annual increments of £25, together with board and lodging and the necessary travelling expenses.

Applications must be sent to the undersigned, together with copies of not more than three recent testimonials, not later than April 27th.

W. M. ASH, County Medical Officer of Health.

New County Offices, Derby, April 8th, 1929.

Samaritan Free Hospital for WOMEN, Marylebone Road, N.W.1.

Applications are invited for the post of HOUSE SURGEON for a period of six months, commencing on May 13th next. Salary at the rate of £100 per annum, with board, lodging, and washing. Previous experience as House Surgeon essential.

Applications, stating age, accompanied by copies only of testimonials, must reach the Secretary at the Hospital on or before Tuesday noon, April 30th.

G. H. HAWKINS, Secretary.

Nottinghamshire County Council

APPOINTMENT OF ASSISTANT SCHOOL MEDICAL OFFICER (male).

Applications are invited for the appointment of a whole-time Assistant School Medical Officer at a salary of £600 per annum, with travelling expenses in addition according to the scale approved by the County Council.

Candidates must be fully qualified and registered medical practitioners of at least three years' standing, with a Diploma of Public Health, and in addition must have recent experience in the administration of anæsthetics for dental operations (chiefly Nitrous Oxide), practical knowledge of carrying out refractions and of the special examination of children for Mental Deficiency.

The person appointed will be a Member of the Staff and act under the control and direction of the County Medical Officer of Health, and will be required to reside in a part of the County to be approved by the Education Committee.

The appointment will be terminable by three months' notice on either side.

Applications on the prescribed form (which may be obtained on application to me), accompanied by copies of not more than three recent testimonials, should be forwarded to County Medical Officer, Shire Hall, Nottingham, not later than April 27th.

Shire Hall, Nottingham. April, 1929. K. TWEEDALE MEABY, Clerk of the County Council.

City and County of Bristol.

MATERNITY AND CHILD WELFARE DEPARTMENT.

WOMAN ASSISTANT MEDICAL OFFICER.

The Bristol Health Committee invite applications from duly qualified women practitioners for the appointment of Assistant Medical Officer in the Maternity and Child Welfare Department.

The officer appointed will be required to assist in the Maternity and Child Welfare under the direction of the Medical Officer in charge of that Department, and to devote the whole of her time to her duties and not engage in private practice. Special consideration will be given to the candidate with experience in Obstetrics or Maternity and Child Welfare work. The appointment will be subject to one month's notice on either side, and to the provisions of the Local Government and Other Officers Superannuation Act, 1922, for which purpose the candidate will be required to pass a medical examination.

Salary will be £600 per annum.

Applications must be made on a prescribed form, which may be obtained from the undersigned, and must be delivered at the undermentioned offices not later than Monday, April 29th. Envelopes should be endorsed "Assistant Medical Officer."

Canvassing members of the Council, either directly or indirectly, will disqualify.

Public Health Offices, 40, Prince St., Bristol. R. A. ASKINS, M.D., Medical Officer of Health. April 8th, 1929.

Kent and Canterbury Hospital, CANTERBURY. (120 Beds.)

RESIDENT MEDICAL OFFICER (male) required to commence duties on May 6th. Nine months' appointment. Salary £125 per annum.

Applications, stating age, qualifications, and experience, and enclosing copies of testimonials, should be forwarded to the undersigned immediately.

W. T. SOUTHWOOD, Secretary.

County Borough of Southend-on-Sea.

ASSISTANT MEDICAL OFFICER (WOMAN).

Applications are invited for appointment as Woman Assistant Medical Officer in the Public Health Department. The Officer appointed will be required to assist the Medical Officer of Health, who is also the School Medical Officer, in the general work of the Public Health Department, and her main duties will be in connection with the School Medical Service, the inspection of Midwives and of Nursing Homes, and the Venereal Diseases Treatment Centre.

Salary £500 per annum, increasing annually by £25 to a maximum of £700 per annum, together with an additional allowance at the rate of £50 per annum as from the date on which the Ministry of Health sanctions the appointment as Medical Officer of the Corporation's Venereal Diseases Treatment Centre.

The appointment is a designated post under the Local Government and Other Officers Superannuation Act.

Applications on forms to be obtained from the Medical Officer of Health, Public Health Offices, Southend-on-Sea, should be returned to him with copies of three recent testimonials on or before Saturday, May 4th.

H. J. WORWOOD,
Town Clerk's Office, Town Clerk.
Southend-on-Sea.
April 10th, 1929.

Administrative County of East Suffolk.

APPOINTMENT OF WOMAN ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from registered women medical practitioners for the above appointment.

The duties of the post include the Medical Inspection of School Children, Maternity and Child Welfare Work, and Clinical and Tuberculosis Work; experience in refraction is essential, and the possession of the Diploma in Public Health will be a recommendation. The person appointed will be required to devote the whole of her time to the duties of the office.

The salary attaching to the post will be £600 per annum. A deduction of 5 per cent. for superannuation will be made, and motor car allowance will be paid on the Council's scale for use of the officer's car.

The person appointed will be required to pass a medical examination, and the appointment will be subject to three months' notice on either side.

Applications are to be made upon a form, which can be obtained from the County Medical Officer of Health, County Hall, Ipswich, to whom the completed forms should be returned not later than Monday, April 22nd.

CECIL OAKES,
County Hall, Clerk of the County Council,
Ipswich, April 6th, 1929.

The Royal Earlswood Institution

REDHILL, SURREY.
(Under Mental Deficiency Acts 1913-27.)

JUNIOR ASSISTANT MEDICAL OFFICER required. Applicants must be registered practitioners, males, unmarried, and willing to assist in the games and amusements.

The appointment is temporary for six months. Inclusive salary at the rate of £250 per annum, with board, residence, and washing. Good facilities for Post-graduate studies, Classes, and Examinations.

Applications, stating age, religion, and qualifications, with copies of three testimonials of recent date, and two references, to be sent on or before April 23rd to the Medical Superintendent at the Institution. The envelope to be endorsed "Assistant Medical Officer."

H. STEPHENS,
March 26th, 1929. Secretary.

Metropolitan Asylums Board.

The Board invite applications for appointment as JUNIOR ASSISTANT MEDICAL OFFICER in their Children's Service for duty at QUEEN MARY'S HOSPITAL FOR CHILDREN, CARSHALTON, SURREY. A considerable proportion of the cases received are of an orthopædic nature. Number of beds 900. Salary £500 per annum. The candidate appointed will be required to reside in the Hospital and to pay for board, lodging, and washing at the rate fixed from time to time. At present the rate is £130 per annum. There is no accommodation for a married officer.

Application to be made not later than 10 a.m. on Friday, April 19th, on form obtainable from the Clerk, Metropolitan Asylums Board, Victoria Embankment, London, E.C.4, by forwarding stamped addressed foolscap envelope.

ALLAN POWELL, Clerk to the Board.

Bethnal Green Hospital,

LONDON, E.2.

ASSISTANT MEDICAL OFFICER.

Applications are invited for the appointment of an Assistant Medical Officer at the above Hospital, at an inclusive salary of £350 per annum, with furnished apartments, board, and washing.

The Hospital is a recognized Training School for Nurses, has accommodation for 650 patients, and possesses x-ray apparatus, and a fully equipped laboratory. The medical staff consists of eight medical men, a visiting Dental Surgeon, a Consulting General Surgeon, and Consulting Specialists for certain diseases.

Candidates must possess both medical and surgical qualifications, be duly registered, and have held previous hospital appointments. The candidate appointed will be required to devote the whole of his time to the duties of the office, as assigned by the Medical Superintendent, which duties include such outdoor medical work as may be necessary.

Applications must be made upon forms which are obtainable from the undersigned and which must be completed and returned not later than Saturday, April 27th, 1929.

C. FAULKNER JONES,
Administrative Offices, Clerk to the Board.
Bishop's Road, Bethnal Green, E.2.
April 6th, 1929.

City of Westminster.

ST. STEPHEN'S HOSPITAL.

FOURTH ASSISTANT MEDICAL OFFICER.

The Guardians require a Fourth Assistant Medical Officer (male) for their Hospital, 369, Fulham Road, S.W.10.

Remuneration £300 per annum, with board, residence, and washing.

Candidates must have had experience in the administration of anæsthetics, and will be required to take part in the teaching and instruction of the Nursing Staff.

Further particulars of the duties may be obtained upon personal application to the Medical Superintendent at the Hospital any day between 12 noon and 1.30 p.m., or forms of application may be obtained on forwarding him a stamped addressed envelope.

Forms of application must be returned to the Medical Superintendent not later than Wednesday, April 24th, 1929.

W. J. LICKLEY,
Clerk to the Guardians.

County Borough of Bootle.

ASSISTANT SCHOOL MEDICAL OFFICER and ASSISTANT MEDICAL OFFICER OF HEALTH (Woman).

Applications are invited for the appointment of Assistant School Medical Officer and Assistant Medical Officer of Health (woman) at a salary of £600 per annum, rising by £30 annually to a maximum of £750 per annum. Particulars of the duties (which include School Medical Inspection and the conduct of Maternity and Child Welfare Clinics) and forms of application may be obtained from the Medical Officer of Health, Town Hall, Bootle.

Applications, accompanied by copies only of not more than three testimonials, endorsed "Assistant Medical Officer," must be returned to me on or before April 20th.

Canvassing, either directly or indirectly, will disqualify candidates.

Town Hall, J. SPENCER TUMILTY,
Bootle Town Clerk.
April 2nd, 1929.

Saint Mark's Hospital for CANCER, FISTULA, AND OTHER DISEASES OF THE RECTUM, City Road, London, E.C.1.

HOUSE SURGEON (male) required. Must be fully qualified. Salary £75 per annum, with board, residence, and laundry. The appointment is for a minimum of six months from May 1st next. Applications, with copies of testimonials, must reach the Secretary (from whom further particulars may be obtained) not later than Saturday, April 20th.

Victoria Hospital, Blackpool.

(132 Beds.)

HOUSE SURGEON (Second), male, 12 months. Salary £120 per annum, with residence, board, and washing. Applicants (who must be duly qualified and registered) are requested to send in their applications, stating age, qualifications, and experience, with three recent testimonials, not later than April 19th, and endorsed "House Surgeon," to—

JOHN HACKING, Hon. Secretary.

City of Liverpool.

ASSISTANT CITY BACTERIOLOGIST.

The Health Committee of the Liverpool Corporation require the services of an Assistant City Bacteriologist. The duties will be to carry out the routine bacteriological examination of milk and other food-stuffs, Wassermann Reactions, etc., and perform such other work as may be required, under the direction of the City Bacteriologist.

The salary will be £600 per annum.

Candidates, whose age must not exceed 35 years, should be registered medical practitioners having had special experience in bacteriology.

The person appointed shall devote his whole time to the post and will not be allowed to engage in private practice, and all emoluments out of public monies which may be payable to, or received by him will have to be paid to the Corporation. He will be subject to the superannuation provisions of the Liverpool Corporation Act, 1921.

Applications, stating age, qualifications, and experience, accompanied by copies of not more than three recent testimonials, endorsed "Assistant City Bacteriologist," should be sent to the undersigned not later than April 22nd.

Canvassing of members of the City Council is strictly prohibited.

Municipal Offices, WALTER MOON,
Liverpool. Town Clerk.
March 23rd, 1929.

Wolverhampton Poor Law Institution.

Applications from gentlemen fully qualified are invited for the following appointments:

SENIOR RESIDENT MEDICAL OFFICER (preferably with experience in a like Institution). Salary at the rate of £600 per annum.

JUNIOR RESIDENT ASSISTANT. Salary at the rate of £200 (plus £50 in respect of duties at the Cottage Homes).

Apartments, board, attendance, etc., are provided.

The main Institution has accommodation for 1,250 (including 300 Hospital and 200 Mental beds).

At this juncture no undertaking can be given for a definite period, or continuation, of service.

Applications, stating qualifications and experience, and accompanied by copies of recent testimonials, to be sent to—

Wolverhampton. A. G. ALDRIDGE,
April 6th, 1929. Clerk to the Guardians.

Ancoats Hospital, Manchester.

RESIDENT SURGICAL OFFICER.

Applications are invited for the post of Resident Surgical Officer, which will become vacant on April 30th next. Appointment for 12 months. Salary £200 per annum, with board, apartments, and washing. Candidates holding an F.R.C.S. degree will be preferred. Applications, stating age, qualifications, previous experience, etc., together with copies of three recent testimonials, to be forwarded to the undersigned on or before April 17th next.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Blackburn and East Lancashire Royal Infirmary

FOURTH HOUSE SURGEON (male) required for Casualty Department etc., at a salary of £130 per annum, with board residence, laundry, etc., the appointment to be for six months.

The Hospital contains 240 beds, with X-ray, Massage, V.D., Eye, Ear, Nose and Throat Departments, Pathological Laboratory, etc. There is no outside work.

Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent at once to the undersigned.

Royal Infirmary, NATHAN A. SMITH,
Blackburn Gen. Supt. & Secretary.

Royal Alexandra Hospital for SICK CHILDREN, BRIGHTON.

(100 Beds.)

HOUSE PHYSICIAN (Male) required. Salary at the rate of £100 per annum with board, lodging, and washing. Good experience. Expected to take charge of Pathological Laboratory and carry out minor investigations on behalf of the Hospital. No canvassing allowed.

The successful candidate will be expected to commence his duties at once.

Applications in writing, with testimonials, must be sent to—

April 4th, 1929. A. F. GRAVES, Secretary.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(Address included.)

Sixpence should be added if replies to a box number are to be posted.

All advertisements must be received not later than first post Tuesday previous to date of publication.

ASSISTANCIES.

Wanted for the beginning of May for about a year, or longer if suitable, a full-time English male ASSISTANT for a large mixed Practice on the borders of Middlesex. Experience in Ear, Nose, and Throat, and minor Surgery desirable. Salary £500, plus car allowance, given to suitable man.—Address, with particulars, No 2110, B.M.A. House, Tavistock Square, W.C.1.

Wanted, in May, qualified ASSISTANT or JUNIOR PARTNER (male), English or Scotch, in unopposed Country Practice in Norfolk. Interview desirable. Usual bond. Particulars.—Address, No. 2112, B.M.A. House, Tavistock Square, W.C.1.

Wanted, almost immediately, an outdoor ASSISTANT in an industrial district in North Staffs, bordering on an agricultural area. Salary £350 or upwards, according to exper., with light, attendance, etc. —No 2208. B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately. — ASSISTANT (male), for branch Nucleus. Salary £350, all found, good permanent prospects for right man. — Address, No. 2124, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Indoor and Outdoor ASSISTANTS (male) Good salaries offered State full particulars —BRITISH MEDICAL BUREAU, 33, Cross St., Manchester.

Wanted. — Assistant, indoor, young, male, Scotch preferred, general and panel. Practice in large town in N.W. Midlands, with good Hospital, principal on staff. Excellent opportunity for post-graduate study, very few mids. Particulars.—Address, No 2129, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, British, Protestant, with view, if mutually satisfactory, for a nice middle, working, and panel practice, Camberwell, London. Live in at Surgery £300 per annum. State age, height, experience, when disengaged. Photo if possible. —No 2142, B.M.A. House, Tavistock Sq., W.C.1

Wanted. — Assistant, single, used to panel and private practice. Salary £300 p.a., and board.—Address, No. 2204, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male or female. Panel, private, and works Practice. Splendid experience for beginner, but work easy. Full particulars.—Address, No 2205, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, keen and energetic, in good-class non-dispensing private and panel Practice. £360 p.a., with rooms and attendance. Car provided. Good prospects for right man.—Address, No 2136, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, male, single, for Liverpool Practice. Salary to commence £360, with furnished rooms, coal, and gas. Scotsman preferred. Every encouragement to suitable man. — Address, No. 2202, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, early May, in private and panel Practice in Hertfordshire. British, able to drive small car. Abstainer, with some exper. pref. Salary commencing £250 indoor. Full particulars.—No. 2150, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, male, single, British, Protestant, experience necessary. Salary £250 to £300 p.a. Near London.—Address, No. 2146, B.M.A. House, Tavistock Square, W.C.1.

Wanted.-Indoor Assistant, male, immediately for General Practice in North-East Seaport Town. Some exper. G.P. and Res. appts. pref: Motorist. Salary £250 p.a. Photo (returnable) with all essen. partics.—No. 2201, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.--Experienced Assistant (outdoor). Salary £400. Car provided. *Golf, tennis,* etc., available. East Anglia.—Address, No. 2138, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Ex House Surgeon as outdoor ASSISTANT. Good mixed Practice in Yorkshire. Time for reading. £400 per annum.—Address, No. 2144, B.M.A. House, Tavistock Square, W.C.1.

Wanted, a Welsh - speaking ASSISTANT in a mixed Practice, North Wales. References, with experience, and essential particulars. Liberal salary to suitable applicant.—Address, No. 2149, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Lady Assistant (outdoor). Midwifery, Panel, and Private Practice, near Manchester. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, an Assistant in a Mining district in Glamorgan. Usual bond. Salary £300 per annum, with rooms, light, and attendance.—Address, stating age, references, etc., No. 2118, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by M.B., Ch.B., *single, Scotch,* abstainer. Over 5 years' good experience in private, panel, and industrial practices. Excellent testimonials. Own car. Now free in London.—Address, No. 2126, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistantship or L.T. by an Indian; experienced; in or out London. Free last week in April.—Address, No. 2105, B.M.A. House, Tavistock Sq., W.C.1.

Wanted by Woman M.B., B.Ch., B.A.O., ASSISTANTSHIP, preferably outdoor. Experienced private and panel practice. — Address, No. 2139, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted for Private and Panel Practice, seaside health resort, Lancashire. £240, with half midwifery fees. Work light, all found. — Address, No. 2134, B.M.A. House, Tavistock Square, W.C.1.

Assistant required, male, industrial and panel Practice, N. London. Must be abstainer. £300 p.a., with rooms, light, and attendance. Scotch preferred, under 30. Would suit newly qualified man.—Address, No. 2206, B.M.A. House, Tavistock Square, W.C.1.

Assistant required at once, with early prospects of Partnership in a Cash, Panel, and General Practice in Midland Town. Exceptional *opportunity.*—Address, stating age, experience, and other essential particulars, No. 2117, B.M.A. House, Tavistock Sq., W.C.1.

Assistant required for Panel and Cash Practice within one mile of City. Part-time at first, with *slight additional* income. —Address, No. 2102, B.M.A. House, Tavistock Square, W.C.1.

North Wales. — Two Assistants *wanted,* Welsh-speaking.—Send full particulars to "MEDICAL," 40, Hamilton Street, Hoole, Chester.

Part-time Assistant (male), required to relieve principal twice weekly from 2 p.m. Work light. Remuneration good. Would suit Post-*graduate* student. London — Address, No. 2122, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted, for the Lady Hardinge MEDICAL COLLEGE, NEW DELHI, INDIA, from mid-September, 1929, a MEDICAL WOMAN, with experience in teaching Anatomy, to act for the Professor of that subject during her year's leave. Salary Rs.750 a month, with free furnished house, and free passage to and from India (the rupee is standardised at 1/6). Apply, with testimonials, to the College Principal.

A Lady Dispenser-Bookkeeper *supplied* immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Chief Medical Officer required in NORTHERN RHODESIA by the ROAN ANTELOPE COPPER MINES, Ltd. Must be first-class Surgeon, with experience in tropical hygiene and in touch with modern clinical practice, and a man of outstanding *personality* and ability. Proposed salary £2,000 per annum with prospects.—Apply, by letter, to the Secretary, Selection Trust Building, Mason's Avenue, London, E.C.2, giving particulars of training and experience, and enclosing copies of testimonials and references.
April 9th, 1929.

Dispensers supplied to Doctors at short notice, without fee. Qualified and exper. in priv. and panel prac. Perm. and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 87, Holborn Viaduct House, 12, Holb. Viad., E.C.1.

Doctor recommends as RECEPTIONIST (medical or dental), or COMPANION, to travel with convalescent patient, English lady; active and cheerful; accustomed to old people; fluent French; domesticated.—G. K., 86, West End Lane, N.W.6.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Gerrard 2699, THE DISPENSERS' BUREAU, 145, Shaftesbury Avenue, London, W.C.2.

Fully qualified Nurse (Acting Matron) required for Nursing Home starting in Farnborough, Hants. Salary guaranteed.—Address, stating experience, references, giving full particulars, No. 2205, B.M.A. House, Tavistock Square, W.C.1.

Lady Dispenser requires Post with Doctor or Institution. Disengaged. Hall certificate. Age 26 years.—Address, "E. F.," 103, Dover Road, Folkestone, Kent.

Medical. — The Church of Scotland FOREIGN MISSION COMMITTEE require a fully qualified male Doctor as MEDICAL MISSIONARY (permanent or temporary) for their MISSION HOSPITAL at BLANTYRE, NYASALAND.—For particulars apply to the Secretary of the Foreign Mission Committee, 22, Queen Street, Edinburgh.

Pathological and Bacteriological LABORATORY ASSISTANTS ASSOCIATION [illegible] ...ologists requir... LABORATORY ...mmunicate with H. GOODING, Hon. Sec., "Moelfre," 10, Holbeck Grove, Victoria Park, Manchester. No fees.

Ship Surgeon required for Cable Company. Salary £500 p.a., all found. Two years' engagement. Must be British nationality and have held hospital appts., and under 30 years of age.—Apply (personally preferred) to BOVRIL MEDICAL AGENCY, 10/15, Bedford Street, W.C.2.

The Charterhouse Typewriting BUREAU, 18-21, Charterhouse Square, E.C.1.—Typewriting, Duplicating, and Translations of all descriptions. Medical work a speciality. Testimonials typed and returned same day. Very mod. terms. Clerkenwell 6672.

Translating and Abstracting GERMAN Medical and Scientific Literature into English undertaken by Medical Woman with considerable experience. Interview London. — Address, No. 1607, B.M.A. House, Tavistock Square, W.C.1.

Well qualified University Graduate is FREE DAILY from 1 to 6 p.m. Would run afternoon surgery, or do institutional work.—Address, No. 2127, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS.

FOR LOCUM TENENS APPLY TO Mr. PERCIVAL TURNER, Ltd. The oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals. 4, ADAM ST., Strand, London, W.C.2. Teleg.: "Epsomian, Lond." Phone: Gerrard 0399

As Locum.—Exper. middle-aged Doctor, had own practice, now doing some 10 locums annually, desires further ENGAGEMENTS. Terms 6 gns. p.w. If country, where car used. Good refs.—MEDICUS, c/o Pochaert, 24, Colville Road, Bayswater, W.

M.D., married, desires HOSPITALITY LOCUM for whole or part of August. Any locality, but seaside or bracing hilly district preferred.—Address, No. 2152 B.M.A. House, Tavistock Square, W.C.1.

Practitioner with wide experience as G.P., is willing to undertake LOCUM appointments. Abstainer. Reduced terms if work light.—Address, No. 2114, B.M.A. House, Tavistock Square, W.C.1.

LOCUM TENENS.
FOR A RELIABLE SUBSTITUTE CONSULT
THE MEDICAL AGENCY.
(WILLIAM H. GRANT.)
WATERGATE HOUSE, 15, YORK BUILDINGS, ADELPHI, W.C.2. Tel. GERRARD 8954, RIVERSIDE 1254 (Night Calls).
Telegrams: "REASIDE, TUBERCLE, WESTRAND, LONDON."

PARTNERSHIPS.

Wanted by M.Ch., Partnership in London, Home Counties, or South Coast. Advertiser has been eight years on Honorary Surgical Staff of General Hospital, and in addition has extensive experience of General Practice. Chance of Hospital appointment appreciated. Share worth about £2,000 required. No agents.—Address, No. 2135, B.M.A. House, Tavistock Square, W.C.1.

Wanted in May, Partnership with preliminary Assistantship. Coast [illegible] Ch.B. Glas., apital avail[illegible], Tavistock Square, W.C.1.

Lancs Seaside Resort.—Partnership, with view early succession. Cash receipts last year £1,600. Panel 900. Good house, 4 bedrooms, garden.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Partner wanted for Country Practice, Home County. £1,000 to £1,200 at 2 years' purchase, great scope. Cottage Hospital. Charming house and garden, rent £100. Hospital experience essential. Married Physician preferred. — Address, No. 2137, B.M.A. House, Tavistock Square, W.C.1

Partner required in good-class Practice. Graduate with experience wanted. Half share of about £3,500 for disposal. — Address, No. 2108, B.M.A. House, Tavistock Square, W.C.1.

Partner wanted, with view to early Succession in small good class Practice near London. Share value £350 to be sold at first. Good scope for increase.—Address, No. 2143 B.M.A. House, Tavistock Square, W.C.1.

Pathologist (Cavendish Square district) requires PARTNER for developments. — Address, No. 2116, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES.

Wanted. — A good Practice about £1,500 p.a., within 20 miles of London. Small panel, good fees. A good detached house with garage essential. To be bought or rented.—Address, No. 2106, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.D.Cantab., F.R.C.S.Eng., Public School, better-class PRACTICE or PARTNERSHIP, within 100 miles London, or good class suburb. Ample capital.—Address, No. 1505, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—We have innumerable applicants for sound investments in all districts, incomes from £600 to £4,000, with and without panel. Correspondence invited from prospective Vendors. — THE MEDICAL AGENCY (W. H. Grant), Watergate House, 15, York Buildings, Adelphi, W.C.2

Wanted to purchase immediately, good Cash and Panel PRACTICE, panel over 1,500, annual income over £1,500. Sufficient capital. No agents.—Add., No. 2104, B.M.A. House, Tavistock Sq., W.C.1.

Wanted to Purchase, a Medical PRACTICE in London, W.5 or W.5 Necessary capital available No agents.—Address, No. 1906, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Practice, £800–£1,500, in London suburbs with easy access to town. Nice house. Capital available.—Address, No. 2121, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately.—Cash and Panel PRACTICE in London, by gentleman who has £3 000 cash available. Can purchase immediately. House to rent if possible.—Please apply to Messrs. PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Wanted.—Small Panel PRACTICE, or ASSISTANTSHIP with view to [illegible] experien[illegible] £250 down, bal. given.—Address [illegible] Tavistock Square, W.C.1.

Beds.—Old-established Practice Receipts about £600 p.a., small panel. Nice house, with large garden, etc., rent £80. Premium £700, or near offer.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven St., Strand, W.C.2.

Bradford, Yorks.—Old-established mixed PRACTICE to sale. Panel and appoint ment £518. Average receipts £1,350 per annum. Excellent modern house with garage, etc., for sale with the practice. Practice, one-and-a-half years' purchase.—Address, No. 2130, B.M.A. House, Tavistock Square, W.C.1.

Cheshire.—Small Practice (panel 250), some private, in densely populated area. Detached house with garden to rent. Premium £150, including drugs. Excellent scope. Address, No. 2145, B.M.A House, Tavistock Square, W.C.1.

Death Vacancy, Lancs town. —Good house in excellent situation, rent £60. Receipts over £600, great scope for increase. Panel about £300. Offers desired.—MANCHESTER MEDICAL & SCHOLASTIC ASSN., 6, Brown Street.

Death Vacancy.—350, Luton Rd., Chatham, Kent.—Old-estab. PRACTICE. Comfortable house to be sold or let with Practice, furnished or unfurnished. Garage, stabling, and small pretty garden. Details on applic.—No. 2111, B.M.A. House, Tavistock Sq., W.C.1.

For immediate Disposal.—Near Newcastle-on-Tyne.—Old-established PRACTICE. Panel 1,050. Income about £1,200. Some appts. besides. D.P.H. advantage. Good house and garage, sell or rent. Vendor retiring. —No. 2115, B.M.A. House, Tavistock Sq., W.C.1.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised Inform. free on applic.—4, Adam St., W.C.2.

For Sale. — Flourishing Industrial PRACTICE in South-West Lancashire. Principal retiring. Income £1,500. Premium 1½ years' purchase, part by easy instalments. —Address, No. 2101, B.M.A. House, Tavistock Square, W.C.1.

For Sale. — Birmingham. — PRACTICE, established few years. Small house, suit bachelor. Receipts £800. Panel 1,000. Great scope. Premium £1,200; house and contents £600.—Address, No. 2107, B.M.A. House, Tavistock Square, W.C.1.

Glos. — Unopposed. — About £1,270 p.a. Panel 1,100. Mids. 2 to 8 gns. Visits 5/6 to 21/-. Easily worked. Small house, large garden, and lawn. Premium, house and Practice, £2,700, or £2,500 cash for quick sale.—Apply, No. 8455, c/o PERCIVAL TURNER, Ltd., 4, Adam Street, Strand, W.C.2.

For Sale, as going concern, MENTAL NURSING HOME, within three miles County Town; Home Counties, sunny aspect. Good house and grounds of 17 acres. Reason for sale, death of proprietor. Principals and Solicitors only.—Apply, HOWLETT, WHITEHEAD & THOMAS, Solicitors, King Street, Maidstone.

Hants.—Half Share. — Well-established Cash and Panel PRACTICE. Receipts last year nearly £1,000, including panel 900, increasing. Good scope. Offers invited.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Half Share, or Practice, wanted by gentleman aged 30, married, with good Hosp. and G.P. exp. Income about £1,000. Good house to rent. Can pay cash. —Address, No. 1910, B.M.A. House, Tavistock Square, W.C.1.

London, N.W.—Developing district. Income £1,800. Sublet £130. Panel 2 050, growing. Cons. 2 6, 3/6. Visits 3/6, 5/-. Fees mld. £3 3s. up. Compact. Fine detached house, spec. built, £2 000. Practice 1½ yrs. Full records, audited b-s. Bankers re s. req'd. No agents. —No. 2148 B.M.A. House, Tavistock Sq. W.C.1.

London.—Working and middle-class Cash PRACTICE, estab. 1½ years. Past year £460, including panel, increasing; enormous scope. Excel. opp rtunity. Moderate inclusive prem. Good reason for transfer.—Add., No. 2123, B.M.A. House, Tavistock Square, W.C.1.

Lancashire Town. — Old-estab. PRACTICE. Average cash receipts £1,480. Panel 1,442. Excellent house, 4 bedrooms, good garden and garage, for sale, or would rent on lease at £65 p.a. Premium—Practice 1½ yrs.' purchase, part deferred. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Lancs Town.—Sound old-estab. middle and working-class PRACTICE. Cash receipts last year £1,855 Panel over 1,500. Excellent detached house, garden, and garage. Vendor retiring. Premium—Practice—1½ years' purchase. House £1,500, part on mortgage, or may be let on lease with option to purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

London, E. — Cash and Panel PRACTICE Receipts last year at rate of £850, panel 500. Nice corner house, rent £80 p.a., lease Premium £1,200, or near offer.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Lancs Town, near Manchester.— Average cash receipts £994. Panel 1,330. Good house to rent in main street, 4 bedrooms, 2 reception rooms, garage. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Monmouthshire. — For Sale, THIRD SHARE in panel and private PRACTICE of £2,700. Pleasant district Option to purchase half share in three years. Premium 1½ years' purchase. Reliable Locums and Assistants required. — GRIFFITHS MEDICAL AGENCY, Tredegar Chambers, Newport, Mon.

Midlands (75 miles London), unopposed Country PRACTICE, old-estab., income about £1,100, appointments £120, panel 470. Compact house, good garden, garage, stables, etc. House (freehold) £1 250. Premium—Practice—1½ yrs.' purchase. Good hunting, golf, and pretty country.—Address, No. 2109, B.M.A. House, Tavistock Sq., W.C.1.

Manchester. — Good-class Practice (non-panel) in first-rate residential suburb. Average cash receipts £2,165 p.a. Fees 5/- to 21/-. Excellent house to rent on lease. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester. — Working-class PRACTICE. Average cash receipts £1,100. Panel 944. Scope. Good house in main road, 3 bedrooms, garage, etc. To rent on lease. Premium £1,375.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester, populous district. Receipts £700; panel over 600, great scope. Good house, garage, £64. Appointment £100, transferable. Price 1½ years' purchase, part deferred.—MANCHESTER MEDICAL AND SCHOLASTIC ASSN., 6, Brown Street.

Nursing Home for Disposal.—Excellently equipped premises. Accommodation for 21 cases—Surgical, Medical, or Midwifery. Operating Theatre, up to date. One acre of garden. Situate 20 mins. of West End. Vendor retiring will either sell or let furnished as it stands.—For full details, apply to PERCIVAL TURNER, Ltd., 4, Adam Street, Strand, W.C.2.

North Wales.—Two Industrial PRACTICES for sale. Houses, garages, electric light, gardens, etc.—"MEDICAL," 40, Hamilton Street, Hoole, Chester.

Nucleus, suitable for man or woman, in Seaside Industrial Town. Splendid opening. House for sale, 4 bedrooms, three reception rooms, bathroom, etc. Medical residence for 17 years. Inclusive price £1,050. —No. 2115, B.M.A. House, Tavistock Sq., W.C.1.

N. Wales—Old-established, in lovely district. Nice house, garden, lawn, garage, rent £70. Receipts £1,700; panel 800, appointments £200 Price £1,600 or near offer, part deferred. Golf, tennis.—MANCHESTER MEDICAL & SCHOLASTIC ASSN., 6, Brown Street.

Nucleus, held by woman since October, in splendid growing district. Owner marrying and entering partnership. Suitable house, rent £50. Price £75.—Address, No. 2141 B.M.A. House, Tavistock Square, W.C.1.

North Wales.—Share worth £700 per year net. Suitable for young man either single or married. Panel and private. Price £1,000, half by instalments.—Address, No. 2147, B.M.A. House, Tavistock Square, W.C.1.

Practice for Sale. — Good-class Country PRACTICE within 20 miles of Manchester. Receipts £1,400, increasing yearly. Good house to let (rent £60), containing 5 bedrooms, 2 entertaining rooms, surgery and waiting rooms, garage. Premium £2,000. —Apply, STOWELL & BAYLEY, Chartered Accountants, 46, Pall Mall, Manchester.

Practice, residential district, Surrey, within 25 miles London, doing £2 per day, and panel £120 extra, rapidly increasing. Premium £900. — Address, No. 2120, B.M.A. House, Tavistock Square, W.C.1.

South Devon Coast Town. Well-established PRACTICE for sale. Receipts average £800 (1928 £867). Panel 380. Work light. Midwifery 10 cases p.a. One appointment. House, 4 bedrooms, garden, tennis court, orchard, garage, 2 cars, on lease £90 p.a. Cottage Hospital. Price, to include drugs and surgery fittings, £1,400 cash.—Address, No. 2133, B.M.A. House, Tavistock Square, W.C.1.

Sale, well-established, increasing PRACTICE in West London, within 4 miles of Hyde Park Corner. Receipts £900, panel 750. Roomy house, with sep. surg. and garage on long lease £90 p.a. Price, 2 yrs.' purch.—No. 2128, B.M.A. House, Tavistock Sq., W.C.1.

To Purchasers. — Do not buy without expert assistance. With 40 yrs.' experience Mr PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Gerrard 0399. Telegrams: "Epsomian, London."

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Corner House in exceptionally good position for a new practice. £1,650 freehold.—Apply, OWNER, 19, Eastbury Road, Watford

Consulting Rooms to be Let. Harley Street and district. Whole or part-time. Lists sent on application.—ELGOOD & Co., 10, Henrietta Street, W.1. Mayfair 5659.

Devon.—To be sold with immediate possession, extremely well-built modern Country RESIDENCE, together with secondary residence and cottage near. Fairly wooded. Beautifully timbered. Meadow, pasture, and orchard. Land if desired. Very low rents.—KNOWLMAN, Rhoidol, *Wellington, Som.*

For Sale, Freehold.—Croydon, residential part.—Well-built CORNER HOUSE suitable for Doctor. Small garden; room for garage.—Address, No. 1629, B.M.A. House, Tavistock Square, W.C.1.

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For Sale, in centre of rapidly growing Village, 20 miles London, DETACHED HOUSE, 4 bed., 2 recep., kit., scul., bath, surgery. Phone, Co.'s water, gas, electric, re-decorated. Garage, tennis lawn, gardens, 4 acres land. Pop. 1921, 1,232, since more than doubled. Good opening for Doctor. No other Doctor within 3½ miles. Freehold £2,500. —Apply, HARPER, London Colney, St. Albans, Herts.

French Médecin Commandant wishes to send to England, for the SUMMER HOLIDAYS, his Daughter, aged 15. Would welcome in EXCHANGE a Boy about 13. Medical family preferred.—Apply to Dr. BLOCH, 6, Pl. Grangier, Dijon.

For Medical Women.—Part-time LET, *afternoons only, of small light* nicely furnished CONSULTING ROOM, ground floor, New Cavendish Street.—Address, No. 2103, B.M.A. House, Tavistock Square, W.C.1.

IDEAL FLAT FOR DOCTOR'S PRACTICE.

Ground Floor Flat, with separate entrance and spacious Hall. Two minutes from Hyde Park. Highest social residential quarter, overlooking two acres private gardens. Electricity available for all purposes at only one halfpenny per unit. Lighting, heating, cooking, and Electrical Treatment. Hot water thermostatically controlled, always at 170 degrees. Spacious reception rooms, 5/6 bedrooms, bathrooms, 3 lavs., kitchen, and store. —Apply, RADNOR TRUST, 14, Waterloo Place. Telephone: Regent 1655.

Lady (French), having own furniture, would like to meet one or two Medical Men who would guarantee the house, or rooms, acting as COOK-HOUSEKEEPER, taking all responsibility. Highest refs.—Add., No. 2207, B.M.A. House, Tavistock Sq., W.C.1.

Harrogate. — Ideally arranged and situated RESIDENCE for Medical Practitioner or Specialist, consisting of 2 consulting rooms, 3 reception rooms, 6 bedrooms, dressing room, bathroom, usual offices, laboratory, etc. Garage Freehold. £3,750.—Apply, MORPHET & MORPHET, F.A.I., Estate Agents, Harrogate.

Three large Rooms to Let, with electric and surgical fittings, in busy main road, facing station and bus stops. Suit either Doctor or Dentist.—Apply, 238, Mile End Road, London.

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An Ideal Doctor's Car, 1928 15 h.p. "Armstrong Siddeley" LANDAULETTE, chauffeur driven, in excellent condition, tyres as new, has run only 5,000 miles. £245.—LANDON, 12a, Fulham Road, S.W.3. Kensington 0822.

For Sale.—Hanovia Alpine SUN LAMP, normal suspension model, A.C.230 v., complete with quartz burner, counter weight and pulley. Purchased eighteen months ago.—Apply to Dr. BARLOW, 4, High Street, Skipton, Yorks.

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Medical Men requiring DISTINCTIVE DRESS can secure Perfect fitting Clothes of Exceptional Value. Finest quality Materials. Best workmanship only.

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JACKET & VEST in black or grey), £5 5s.
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THE IDEAL Suit for ALL Sporting Purposes.
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Vols. I and II of the BRITISH MEDICAL JOURNAL for 1927 and 1928 can be had, price 2s. 6d., by parcel post 2s. 10d. each.

Remittances must accompany all orders. Apply at the office, B.M.A. House, Tavistock Square, W.C.1.

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INCOME TAX EXPERT

(late Inspector of Taxes) will assist you to avail yourself of special facilities provided for the Medical Profession relating to Income Tax.

For further particulars write or call.—C. G. C. KILNER, 17, George St., Baker St., W.C. ('Phone: Welbeck 2012).

Riley 12 h.p. Wentworth Coupé, 1928 model, in absolutely new condition, finished Brown. Only run by owner 11,000 miles. Cost £395. Tax paid for year. Bargain. £220.—ROBBIN'S GARAGE, Rugby.

1927 16 h.p. "Sunbeam" Coachbuilt SALOON. A very smart car and in perfect order. £385.—LANDON, 12a, Fulham Road, S.W.3. Kensington 0822.

LONDON MISSIONARY SOCIETY EXHIBITION AND PAGEANT, Town Hall, Leeds.

APRIL 10th—20th.

In the Medical Section of the above there will be an Exhibit of Modern Hospital Equipment and Pharmaceutical Products by CHAS. F. THACKRAY, Leeds. This should prove of great interest, especially to those connected with Medical Missions.

APPOINTMENTS.—Contd.

Bradford Royal Infirmary.

HONORARY PHYSICIAN—Open Appointment.

The Board of Management, at their Meeting on May 3rd, will proceed to the election of an Honorary Physician to fill the vacancy caused by the death of Dr. Wm. Wrangham.

The successful candidate will be required to practise as a Consulting Physician.

Applications, with certificate of registration, and copies of not more than three recent testimonials, should reach the Secretary-Superintendent not later than the first post on April 25th.

J. J. BARRON,
April 9th, 1929. Secretary-Supt.

New Sussex Hospital for Women AND CHILDREN, WINDLESHAM ROAD, BRIGHTON.

Applications are invited from fully qualified medical women for the following posts:

(1) HOUSE SURGEON. Previous resident appointment essential.

(2) HOUSE PHYSICIAN, with experience in Clinical Pathology.

Honorarium for each at the rate of £50 per annum.

Duties to begin on May 4th.

Applications, with copies of three recent testimonials, should reach the Secretary on or before April 22nd.

Peamount Sanatorium, Newcastle, CO. DUBLIN.

RESIDENT MEDICAL SUPERINTENDENT.

The Committee of Management of Peamount Sanatorium invi[te] [ap]plications for the position of Resident [Medical Superintendent] at Peamount. Salar[y] [to be] increasing to £700 per annum, together with furnished residence, fire, and light.

Sanatorium experience and D.P.H. essential.

Applications, giving qualifications and copy of last three testimonials, to be sent to the Secretary, Peamount Sanatorium, 9, Ely Place, Dublin.

Royal Halifax Infirmary.

Wanted, a THIRD HOUSE SURGEON (male, unmarried). Candidates must be doubly qualified and registered. (The Resident Medical Staff consists of Resident Surgical Officer and three House Surgeons.) The appointment is for six months ending October 31st. Probable promotion if satisfactory. Salary £100 per annum, with residence, board, and laundry.

Particulars of duties may be obtained from the undersigned, to whom application, with copies of testimonials, should be sent not later than April 17th.

A. MIDGLEY,
April 10th. 1929 Secretary.

The Royal Gwent Hospital, NEWPORT, MON.

There is a vacancy for a JUNIOR RESIDENT MEDICAL OFFICER. Salary at the rate of £125 per annum, with board, lodging, and laundry.

Applications, stating age and qualifications, with copies of three testimonials, to be sent to the undersigned immediately.

Applications from ladies not entertained.

J. K. MILLWARD,
April 9th, 1929. Secretary-Supt.

Cameron Hospital, WEST HARTLEPOOL.

HOUSE SURGEON required to commence duty at once. Salary £150 per annum, with board, etc. Applications, together with copies of three testimonials, to be sent to the undersigned immediately.

H. WOODHALL, Secretary.

Lowestoft and North Suffolk HOSPITAL.

HOUSE SURGEON (male) preferably with knowledge of X-ray. Salary £120 p.a., with board, residence, and laundry.

Applications, with copies of three recent testimonials, to the Honorary Medical Supt.

Willesden Urban District COUNCIL.

HEALTH DEPARTMENT.

APPOINTMENT OF DENTIST.

The Willesden Urban District Council require the services of a Dentist.

The duties attached to this post include the Dental Inspection and Treatment of School Children and the Dental Inspection and Treatment of Expectant and Nursing Mothers, and Children under 5 years of age, and such other duties as the Council or Medical Officer of Health may require to be undertaken.

The Dentists work under the administrative control of the Medical Officer of Health.

The appointment is terminable by a month's notice on either side, and is subject to the Council's Regulations concerning Officers of the Council, and to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The successful applicant will be required to pass a medical examination.

Candidates must possess a registrable qualification in Dentistry, and devote their whole time to the duties of the office.

Commencing salary £402 10s., rising by four annual increments to £517 10s., with Civil Service Bonus in addition, which Bonus fluctuates according to the rise or fall in the cost of living, revision being made every six months, namely March 1st and September 1st. At the present time the commencing salary and bonus is at the rate of £550 11s. 6d. per annum.

Travelling expenses within the district paid by the Council.

Application forms may be obtained on application by letter (enclosing stamped addressed foolscap envelope) to the Medical Officer of Health, Health Department, 54, Winchester Avenue, Kilburn, N.W.6, and should be returned to him duly filled in by applicant, together with copies of three testimonials, not later than 9 a.m. on Friday, April 26th.

All communications to be marked "Dentist."

E. A. PRATT,
Town Hall, Clerk to the
Dyne Road, Kilburn, Council.
N.W.6.
April, 1929.

Derbyshire Education Committee

ASSISTANT SCHOOL MEDICAL OFFICER.

The Derbyshire Education Committee require the services of an Assistant School Medical Officer at a salary of £600, rising by annual increments of £25 to £700 per annum.

Candidates must be skilled refractionists and must have held the post of House Surgeon in an Eye Hospital or the Eye Department of a General Hospital for a period of not less than six months. In addition to eye work, the duties will include medical inspection of school children.

The officer appointed will not be allowed to engage in private or consulting practice, but will be required to devote his whole time to the duties of the office under the direction of the School Medical Officer.

Forms of application may be obtained from the undersigned, to whom they should be returned completed, together with copies of not more than three recent testimonials, on or before April 27th, endorsed "Assistant School Medical Officer."

The appointment will be determinable by three months' notice on either side.

W. M. ASH,
New County Offices, School Medical Officer.
Derby.
April 8th, 1929.

[AMENDED ADVERTISEMENT.]

Metropolitan Borough of BETHNAL GREEN.

MEDICAL OFFICER OF HEALTH.

The Bethnal Green Borough Council invite applications from persons, preferably between the ages of 30 and 45 years, for the appointment of Medical Officer of Health at a commencing salary of £1,100 per annum, rising by annual increments of £50 on approved service to a maximum salary of £1,200 per annum, inclusive of all services of any kind whatever.

Candidates must possess the qualifications prescribed by the Public Health (London) Act, 1891, and the Sanitary Officers Order, 1926. The [appointment will be subject to the approval of the candidate to medical examination, Act, By-laws, and Standing Orders of the Council.

Applications must be on forms obtained from me, and returned so as to reach me at the Town Hall, Bethnal Green, London, E.2, by noon on Tuesday, April 23rd.

Canvassing will disqualify a candidate.

DAVID J. KEEP, Town Clerk.

Sheffield Union.

NETHER EDGE HOSPITAL.

HOUSE PHYSICIAN (Lady).

The Guardians invite applications from duly qualified ladies for the appointment of Resident House Physician at their Nether Edge Hospital. The Hospital [has] 550 patients, and [is] for 32 patien[ts] in addition, set aside for tuberculous patients.

The lady appointed will be required to act under the direction of the Medical Superintendent of the Guardians' Hospitals, and to take duty at the pre-natal clinic of the Sheffield Corporation at such times and for such periods as may be arranged or approved by the Medical Superintendent.

The appointment will be for one year, at a salary at the rate of £150 per annum, with the usual residential allowances.

Applications, stating age, professional qualifications, and experience, and accompanied by copies of not more than three recent testimonials, must be sent to the undersigned by not later than April 20th.

LAWRENCE RICHMOND,
Union Offices, Clerk to the Guardians.
West Bar,
Sheffield April 10th, 1929.

City of Birmingham Mental HOSPITAL.

The Committee of Visitors invite applications from duly qualified and registered male (unmarried) candidates for the post of full-time JUNIOR ASSISTANT MEDICAL OFFICER at the City Mental Hospital. The commencing salary will be £350 per annum, plus emoluments valued at £80 per annum for the purposes of the Asylums Officers Superannuation Act, 1909. Subject to twelve months' satisfactory service an increase of £50 will be granted at the end of that period.

The appointment will be terminable by three months' notice on either side, and the selected candidate will be required to join the Asylums Officers Superannuation Scheme.

Candidates should be under 35 years of age.

Applications, accompanied by copies of three recent testimonials, marked "Junior Assistant Medical Officer," should be addressed to the Chief Medical Officer, City Mental Hospital, Rubery Hill, Birmingham, so as to be received by him not later than April 30th.

F. H. C. WILTSHIRE,
Council House, Clerk to the Committee
Birmingham. of Visitors.

The Sheffield Royal Hospital. (340 Beds.)

HOUSE PHYSICIAN (Male).
RESIDENT ANÆSTHETIST (Male).

Applications are invited for the above posts. The selected candidate for House Physician will be expected to take up residence in the Hospital on May 1st and carry out the duties of Assistant House Surgeon till August 1st, when he will be appointed a House Physician. The selected candidate for Resident Anæsthetist will be eligible during and at the end of the six months for appointment to another office on the resident staff. Salaries £80 per annum, with board, residence, and laundry. Applicants should send copies of testimonials, and state preparedness to accept the other post.

W. H. BOOTH,
April 8th, 1929. Supt. & Secretary.

Stroud General Hospital, STROUD, GLOS.

HOUSE SURGEON, male, required to commence duty on May 20th. Salary £120 per annum, with board, lodging, and washing. The appointment is tenable for six months, but application may be made for an extension of this period. Candidates must be registered according to the provisions of the Medical Act. Preference will be given to applicants with a special knowledge of eye work.

Applications, stating age, nationality, etc., together with copies of three recent testimonials, to reach the undersigned not later than May 4th.

C. FORD SPENCER, Secretary.

University of Birmingham.

APPOINTMENT OF ASSISTANT LECTURER IN PHYSIOLOGICAL DEPARTMENT.

Applications are invited for the post of Assistant Lecturer in Physiology. Stipend £300 per annum. Four copies of application, with testimonials, must be sent on or before May 31st to the undersigned, from whom further particulars may be obtained.

C. G. BURTON,
The University, Secretary.
Edmund St.,
Birmingham. April, 1929.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

The following resident posts will be vacant on May 1st next:

SENIOR HOUSE PHYSICIAN, SENIOR HOUSE SURGEON, and SPECIAL HOUSE SURGEON. Salaries at the rate of £120 per annum.

JUNIOR HOUSE PHYSICIAN and Two JUNIOR HOUSE SURGEONS. Salaries at the rate of £90 per annum.

Board, residence, and laundry.

Appointment held for six months, but holders are eligible for re-appointment for a further term.

Candidates (male) must be fully qualified and registered, and applications (on prescribed form), together with copies of three recent testimonials, should be sent to me on or before the first post on Monday, April 15th.

FREDK. W. DREWETT,
March 25th, 1929. Director.

The Queen's Hospital for CHILDREN,

Hackney Road, London, E.2.
Telephones: Bishopgate 6305 & 2534.

The Committee invite applications for the post of SURGEON for the Ear, Nose, and Throat Department.

Attendance required on Monday and Thursday morning for about three hours, commencing at 9.30. Lunch provided and honorarium to cover travelling expenses.

Candidates must be Fellows by examination of the Royal College of Surgeons, England.

Applications, with copies of three recent testimonials, which may be printed or typewritten, should be sent on or before May 6th to the undersigned, from whom further particulars may be obtained.

T. GLENTON-KERR,
March 25th, 1929. Secretary.

Birmingham & Midland Eye HOSPITAL, Church St., BIRMINGHAM.

Applications are invited for the post of SURGICAL REGISTRAR to this Hospital.

Candidates must have had not less than two years' experience in Ophthalmic work, and should have held a resident post in an Ophthalmic Hospital for at least one year.

Appointment will be for one year with eligibility for re-appointment.

Applications, together with copies of testimonials, must be received not later than first post on Friday, May 10th.

Particulars of salary, duties, etc., can be had from the undersigned, to whom applications should be addressed.

C. A. MASON, General Superintendent.

Derbyshire Royal Infirmary, DERBY.

(General Hospital—338 Beds.)

Applications are invited for the *post of* HOUSE PHYSICIAN (male).

Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for 12 months, with a possibility of extension for a further period of 12 months. Salary will be £150 per annum, with *apartments, board, etc.*

Applications, with copies of not more than five testimonials, to be sent to the undersigned not later than April 19th. Duties will commence on May 1st.

WALTER BANKS,
March 26th, 1929. Supt. & Secretary.

Bristol Homœopathic Hospital (Bruce Melville Wills Memorial)

The Board of Management invite applications for the appointment of RESIDENT MEDICAL *OFFICER* at a salary of £100 per annum, with board, laundry, residence, etc., in the Hospital.

Good surgical and general experience.

Candidates *must be registered* under the Medical Acts, and produce testimonials of good personal character and ability.

Applications should be *forwarded with* three copies of recent testimonials, addressed to the undersigned, not later than the 18th instant.

Applicants should state the earliest date they could *commence duties*, if appointed.

H. HUNTER (Lt.-Colonel), Secretary.

Jersey General Hospital.

APPOINTMENT OF VISITING PHYSICIAN AND RADIOLOGIST.

Applications are invited for a Visiting Physician with experience in Radiology.

Honorarium at the *rate* of £150 per annum.

Candidates to send in applications, giving qualifications and experience.

Private practice allowed.

PHILIP BEUZEVAL, Secretary.

PROSPECTIVE PURCHASERS

OF PRACTICES

and those seeking

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12, Stratford Place, Oxford St., London,

or its Northern Branch at

33, Cross Street, Manchester,

or its Newcastle Branch at

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Those requiring additional

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(Limited by Guarantee)

B.M.A. House, Tavistock Sq., London, W.C.1.

Manchester Royal Infirmary.

CENTRAL BRANCH, ROBY STREET, MANCHESTER.

JUNIOR HOUSE SURGEON (Lady).

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment.

Applicants must be registered and hold a Medical and Surgical qualification.

The appointment is subject to one *month's* notice, in writing, from or to the Board, and is tenable for an indefinite period from May 12th. Commencing salary £100 per annum, together with board and allowance for laundry.

Applicants must state age and qualifications, and send twelve copies of their application and testimonials to the *undersigned* by Wednesday, April 24th.

By Order,
FRANK G. HAZELL, Gen. Supt. & Sec.

The Royal Hospital, WOLVERHAMPTON. (240 Beds.)

(Incorporated under Charter.)

CASUALTY OFFICER and RESIDENT ANÆSTHETIST (male) required. Duties to commence forthwith, and will include *Casualty work and* administration of anæsthetics.

The Hospital *contains* 240 beds, and includes the usual special *departments, and* is recognized by the various Examining Bodies for a part of the requisite *attendance* on Medical and Surgical Practice.

Candidates must be registered under the Medical Acts, and unmarried.

The appointment is for six months, with *eligibility for further* appointment for six months as House Surgeon to In-patients.

Salary at the rate of £125 per *annum*. Board, furnished rooms, and laundry *provided*.

Applications, with copies of testimonials, to be forwarded to the undersigned

W. H. HARPER,
April 8th, 1929. House Gov. & Secretary.

Royal Aberdeen Hospital for SICK CHILDREN.

The Board have resolved to appoint TWO HONORARY ASSISTANT SURGEONS to commence duty *in May*. Applications, along with one copy of *testimonials*, must be lodged with the Hon. Secretary, Mr. A. S. R. BRUCE, 12, Dee Street, Aberdeen, on or before Saturday, April 20th.

Aberdeen, April 3rd, 1929.

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South Coast. — Half Share of about £900 p.a. Panel 900. Visits 3/6 up. Premium £750 or offer.—No. 8456.

Co. Durham. — Half Share of about £2,800 p.a. Panel 2,600. Appts. £300 p.a. Mids. from 30/-. Visits 2/6 to 7/-. House, 5 bed., etc.—No. 8453.

N. Wales Coast.—About £1,750 p.a. Panel and appts. about £400 p.a. Mids. 2 to 5 gns. Visits 3/6 to 31/6. House, 4 bed., etc. Separate surgery.—No. 8451.

London Suburb. — About £700 p.a. General mixed PRACTICE. Good house available.—No. 8450.

Sussex.—Death Vacancy.—About £1,800 p.a. Country PRACTICE. Fees 2/6 to 10/-. Panel about £280. House, 7 bed., etc., garage, good garden. Introduction given. —No. 8449.

N. Wales.—Death Vacancy.—About £1,000 p.a. Surgical scope. Mids. 5 to 10 gns. Visits 7/6 to 10/6. Small panel. House, 4 bed., etc., to rent. Good garden. Part premium down.—No. 8448.

Kent. — Average £1,500 p.a. Mids. 2 *gns.* up. Visits 3/6 to 7/6. Panel over 1,300. Large house and garden to *rent.*—No. 8446.

Warwickshire. — £1,000 share guaranteed. Mids. 2 to 10 gns. Panel 2,500. Visits 3/6 up. House, 5 bed., etc., large garden, to rent.—No. 8445.

Beds.—Death Vacancy.—About £850 p.a. Panel and appts. £300 p.a. Visits 5/- up. Mids. 3 gns. up. House, 9 beds., etc.—No. 8444.

Home Counties.—Aver. £2,800 p.a. Up to 2/5 share for sale, short Assistantcy, possible early succession. Appts. £90 p.a. Small panel. Visits 3/6 up. Mids. 2 gns. up. House, 5 bed., etc., to rent.—No. 8441.

Lincolnshire Coast. — Average £2,300 p.a. Old-estab. middle and working-class. Panel about £350 p.a. Appts. over £100 p.a. Mids. 1½ to 3 gns. Visits 4/- to 10/6. Choice of houses to rent.—No. 8439.

Eastern Counties.—Share about £700 p.a. Visits 5/- up. Panel and appts. over £900 p.a. Mids. 2 gns. up.—No. 8434.

S.W. England. — £4,000 p.a. Up to 1/3 share, preliminary assistancy. Panel about 2,000. Surgical scope. Prem. only 1½ years' pur. House available.—No. 8407.

Lancs. Coast.—About £3,000 p.a. 1/3 to 2/5 share. Appts. over £500 p.a. Visits 5/- and 7/6. Panel 450. Scope for surgery. House to rent.—No. 8429.

Nr. S. Coast.—About £1,300 p.a. Visits 3/6 to 12/6. Panel about £425 p.a. Mids. 3 to 7 gns. House, 6 bed., etc., to rent. Tennis.—No. 8428.

Southern County.—Over £16,000 p.a. One-tenth share for sale, increasing to 1/5. Mids. 3 gns. up. Visits 5/- to 5 gns. Panel about 7,000. Must be F.R.C.S.Eng., and hold University degree.—No. 8421.

Kent.—Country Practice.—About £1,030 p.a. Old-estab. Visits 5/- up. Panel nearly 400. Appts. £55 p.a. Good house, with 6 bed., etc.—No. 8420.

SPECIAL NOTICE.

FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants prepared to pay part of purchase money down and balance by instalments over 7 years (on the security of a Life and Sickness Policy). *Full* particulars on application to Mr. Percival Turner.

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KENT (near London).—Old-established middle-class G.P. Prominently situated detached house with garden and garage. Average receipts £1,200. Panel approx. 1,300. Excellent scope for all-round experienced man. Premium 2 years' purchase or near reasonable offer.

MIDLANDS.—PARTNERSHIP in old-established country Practice with excellent house to rent. Receipts approx. £4,000 p.a. Panel 2,700. Fees 3 6 up. Suitable to well-qualified man about 30 years of age. Premium for quarter share 2 years' purchase.

SOUTH COAST.—Old-established middle class G.P. situated in charming locality. Splendid house, standing in own grounds, with 3 professional rooms, 3 reception rooms, 5-6 bedrooms, to be rented on lease at £90 p.a. Receipts nearly £1,300. Panel 900. Various appointments. Premium for practice 1½ years' purchase, plus certain fittings, etc. Note: Possible partnership with another practice at an early date.

HOME COUNTIES.—DEATH VACANCY, situated within one hours' journey from London. Receipts over £1,100 p.a. Panel £450. Large house to be rented or for sale. Premium 1 year's purchase. Excellent educational facilities.

HOME COUNTIES.—NUCLEUS country PRACTICE with excellent scope for development. Receipts approx. £600 p.a. Small but growing panel. House to rent or for sale. Premium £700, or near offer.

If the investment you are seeking is not advertised here, let us know your wants, and we will gladly forward details of others suitable to your requirements.

LONDON, N.—Non-panel and non-dispensing PRACTICE. Large house. Receipts approximately £1,400. Scope for panel if desired. Premium 1½ years' purchase.

KENT—Good [illegible] with scope for surgery. Average [illegible] near offer. Excellent house. [illegible] Good scope in the near future. Premium £1,400 inclusive. Suitable for semi-retired practitioner.

DOI [illegible] Good house with large well-developed garden.

SOUTH COAST.—PARTNERSHIP in rapidly growing Seaside Resort. Receipts over £1,200 p.a. Suitable to young energetic man aged about 30. Premium for two-fifths share 2 years' purchase. Excellent scope for all-round increase.

BEDFORDSHIRE.—PARTNERSHIP with possible view to succession in old-established G.P. Receipts £1,300. Panel 1,759. Accommodation available. Premium for half share 2 years' purchase. Suitable to experienced man of 30 or over.

MIDLANDS.—DEATH VACANCY.—Well-established middle and working-class Practice in country district. Receipts approx. £1,200 p.a. Panel 900. House available. Premium 1 year's purchase.

LONDON, S.E.—Mixed G.P. situated in residential locality, with branch surgery. Excellent house to let on lease. Receipts over £1,200 p.a. Panel 560. Plenty of scope. Premium 1½ years' purchase.

LONDON, W.—PARTNERSHIP. Well-established G.P. Receipts over £2,500 p.a. Panel approximately 1,800. Premium for half share 2 years' purchase. Suitable only to man of good address and experience, aged 28 to 35.

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4. MIDLANDS.—NUCLEUS in middle-class Practice. Receipts £600 to £700 p.a. Panel 118, and rapidly increasing. Good house to rent or for sale. Garage.
5. LEICESTERSHIRE (near large Town).—PARTNERSHIP (with short preliminary assistantship and ultimate succession) in residential and working-class Practice. Receipts average £1,135 p.a. Panel over 1,000. Good house.
6. BIRMINGHAM (Suburb).—Middle-class PRACTICE. Established 3 years. Receipts £440 to £500 p.a., and scope for increase. Panel 360. Good house, garage, and garden.
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British Medical Bureau

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(FOUNDED 1880.)

12, Stratford Place, Oxford Street, W.1.

Tele. Address: Triform, Wesdo—London.

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The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads:—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence.

Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

ASSISTANTS AND LOCUMTENENTS.

Assistants and Locumtenents can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out.

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Medical Men wishing to receive Resident Patients should enrol their names on the books of the British Medical Bureau. A large number of Patients are placed yearly through this medium.

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The British Medical Bureau has its own staff of fully qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Books & Accounts, etc.

Practices and Partnerships for Disposal. Full particulars sent free.

1 DEATH VACANCY.—NORTHUMBERLAND.—PRACTICE £425 p.a in pleasantly situated country town, easy distance of Newcastle. Panel 70 (not encouraged). Eight-roomed house, with large garden, to be let. Good schools.

2 EAST COAST. — Partnership in Practice over £2,000 p.a. in small rapidly growing popular watering-place. Panel 700 Partner should be aged 25 to 30, single, with English qualifications, and have held Hospital appointment. Preliminary assistantship. One-third share at 2 years' purchase.

3 SOUTH MIDLANDS.—Partnership in unopposed Practice £2,650 p.a. in small country town surrounded by beautiful country. Panel about 1,200. Modern house (4 bedrooms), electric light, etc., for sale. Excellent cottage hospital. Premium one-half share 2 years' purchase.

4 MIDLANDS.—Practice averaging £1,100 p.a in manufacturing town. No panel. Large well-built house to rent. Premium £1,500.

5 LANCASHIRE.—Practice of about £2,000 in semi-rural district, easy distance of several good towns. Panel returns about £540 p.a. Nice house (6 bedrooms), with garage and garden.

6 MONMOUTHSHIRE. — Practice between £1,400 and £1,500 (£1,100 from panel and contract work) in progressive area. Modern six-roomed house, with garden, to rent. Small cottage hospital. Premium one year's purchase, part by instalments if desired.

7 EAST LONDON.—Practice over £700 in populous district. Panel nearly 500, rapidly increasing. Shop-fronted house for sale or rent. Premium 1½ years'-purchase.

8 HOME COUNTIES.—Partnership in Practice between £4,000 and £5,000 p.a. in first-rate residential town. Panel 1,900. One-fourth share at 2 years' purchase.

9 S. WALES.—Better-class Practice, nearly £2,000 p.a., in important and rapidly growing town. Panel 500. Large house, in own grounds, to rent. Scope for increase. Good Hospital and scope for major Surgery.

10 N. DEVON. — Partner required (after preliminary assistantship) in Practice worth £3,000 p.a. in first-rate country town Panel over 2,100. Well-equipped Hospital. One-third share to suitable man at 2 years' purchase.

11 N. WALES.—Very old-established, £1,346 p.a. in small town. Panel 716. House (6 bed and dressing rooms) to rent. Premium 1½ years' purchase.

12 MIDLANDS.—Partnership in Practice £3,800 p.a. in first-rate residential county town. House (5/6 bedrooms) to rent. One-half or one-third share at 2 years' purchase. Partner should have F.R.C.S. degree.

13 SOUTH COAST.—Partnership (with preliminary assistantship) in non-dispensing Practice about £2,400 in favourite watering-place. Panel about 800. House, with 5 bedrooms, etc., to rent One-third share at 2 years' purchase.

14 LONDON, N.—Rapidly increasing Cash and Panel PRACTICE. Cash receipts last year £715. Panel 510. Shop-fronted Surgery. Rent £55. Premium £800.

15 DEATH VACANCY. — Northants. — Country PRACTICE of £1,200 p.a. Panel between 700/800. Large house, with electric light and central heating, for sale.

16 SOUTH MIDLANDS.—Partnership (after preliminary assistantship) in old-established Practice in first-rate residential district within 60 miles of London. Small panel. Share of £1,000 or £1,500 at 2 years' purchase. Graduate of Oxford or Cambridge (or London), aged about 30, and fond of surgery.

17 HOME COUNTIES. — Partnership in Practice about £2,800 p.a. in good town about 30 miles from London. Practically no panel and very little midwifery. Suitable house to rent or purchase. Partner should be experienced, and have held Hospital appointments One-third share at 2 years' purchase after preliminary assistantship.

18 CORNWALL. — Partnership (after preliminary assistantship) in Practice of £4,000 p.a. in town with good Hospital. Applicant should preferably be English, with London degree (28-35), keen on medicine, and good anæsthetist. One-fourth or one-third share to suitable man at 1½ years' pur.

19 S. WALES. — Easily worked Panel and Contract PRACTICE over 1,000 p.a. in colliery district. Small house (4 bedrooms) to rent. Premium one year's purchase.

20 N. LONDON.—Practice of between £950 and £1,000 p.a. Small panel. No midwifery. Detached corner house (7/8 bedrooms) for sale. Premium—Practice 1½ years' purchase.

21 YORKSHIRE (N.R.).—Partnership (with view to succession) in Practice about £1,000 p.a in small country town. Panel 420. Good rooms available. One-half share at moderate premium. Scope for minor surgery.

22 PEMBROKESHIRE. — Practice about £1,000 p.a. in small town. Panel 361. Well-situated house (7 bedrooms) to rent. Scope for increase. Premium £1,500. Preliminary assistantship if desired.

British Medical Bureau

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Practices and Partnerships for Disposal (continued).

23 EAST ANGLIA.—Country Practice about £1,470 p.a., easy reach of important town. Panel about 1,000. Nice house (10 bed and dressing rooms), with electric light, etc., for sale. Premium 1½ years' purchase.

24 SOUTH COAST.—Non-dispensing Practice over £1,800 p.a. in residential town. No panel. Very good house in best part.

25 WEST END OF LONDON.—Partnership in high-class non-dispensing Practice in the best part. No panel. Share worth £1,300 to £1,730 p.a. for disposal.

26 GLOUCESTERSHIRE. — Partnership (after preliminary assistantship) in Country Practice about £3,600 p.a. Applicant should be aged 28 to 30, and have held resident Hospital appointments. One-sixth share at first at 2 years' purchase.

27 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. No panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

28 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. Panel over 1,400. Partner should be good at midwifery. Premium one-half share 2 years' purchase.

29 LONDON, E.—Partnership in exceptionally old-established Practice averaging over £3,500 p.a. Good fees and appointments. Two-fifths share for disposal at 1½ years' purchase, or one-third could be purchased at first, part by instalments. Small house may be bought or rented at a moderate figure.

30 S.E. COAST.—Partnership in steadily increasing Practice about £2,500 p.a. in popular watering-place. Panel 1,800. Convenient house (5 bedrooms), garden, and garage, to rent. Premium one-half share 2 years' purchase.

31 LIVERPOOL. — Cash and Panel Practice about £865 p.a. in working-class district. Panel over 1,200. Large house to be sold or let. Great scope. Prem. 1½ yrs.' pur.

32 YORKSHIRE (W.R.). — Partnership in Practice nearly £3,300 in colliery district. Panel 3,000. One-half share after a preliminary assistantship.

33 S.E. COAST. — Third Partner required in Practice £3,750 p.a. in favourite summer resort. Panel 3,976. Share up to one-third at 2 years' purchase.

34 N. WALES.—Increasing Country Practice about £1,000 in growing district, with good prospects.

35 S. MIDLANDS.—Practice over £1,700 p.a. In country town 100 miles from London. No panel, appointments, or midwifery. House (5 bedrooms), with garage and garden, for sale. Premium—Practice 1½ yrs.' purchase.

36 MIDLANDS. — Partnership in mixed Practice between £3,600 and £3,700 p.a. in suburb of Cathedral City. Panel over 2,200. Partner should be aged about 30, with Hospital experience, and able to do Surgery. Premium one-half share 2 years' purchase.

37 LONDON, N.—Partnership in Practice £3,400 p.a. in Northern suburb. Panel about 3,200. Incoming Partner must have had experience and be either English or Scotch. Premium one-third share 2 years' purchase.

38 LANCASHIRE.—Partnership in Practice over £3,700 p.a. in first-rate town. Panel 2,600. House (4 bedrooms) to rent. Premium one-half share 1½ years' purchase.

39 SOUTH OF ENGLAND.—Surgical Partner required (not over 36) with University degree and F.R.C.S. England, in sound Practice in first-rate town with good Hospital. Share of £1,500 p.a. at 2 years' purchase.

40 MIDLANDS. — Partnership in Practice £3,375 p.a. in attractive town. Panel 1,000. Well-situated house (5 bedrooms) to rent. Partner must be well qualified, preferably a Surgeon who would have chance of Hospital appointment. One-half share at 2 years' purchase.

41 S. WALES. — Practice averaging £1,627 (about £650 p.a. from panel) in good town. Modern house (6 bed and dressing rooms) for sale or rent. Premium one-half year's purchase.

42 SOUTH COAST.—Practice about £900 p.a. (including appointments about £155) in favourite watering-place. No panel or midwifery. Suitable house or flat. Premium £1,500.

43 CO. DURHAM. — Practice of £1,460 in growing suburb of seaport town. Panel 646. House (5 bedrooms) on main road to be sold or let. Premium 1½ years' purchase.

44 S. WALES.—Non-dispensing Practice in large seaport town. Receipts for past 3 years averaged £1,543 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,500.

45 GLOUCESTERSHIRE.—Country Practice averaging £535 p.a. Panel 450. Convenient (small) house, and excellent garden, 1 acre. Garage small car. Premium, house and practice, £3,000.

46 KENT. — Practice averaging £1,030 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, practice, £1,500.

47 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first-rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. Premium one-third share 2 years' purchase.

48 LONDON, E.—Rapidly increasing Lock-up PRACTICE in populous district. Receipts 1928, £780. Panel 670. Rent £50. Premium £950.

49 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

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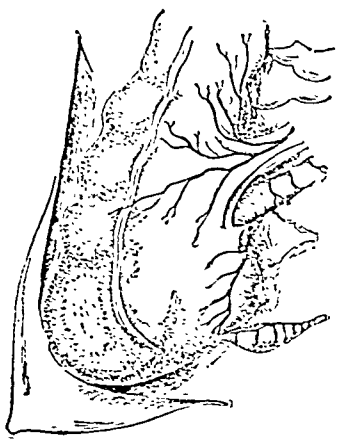

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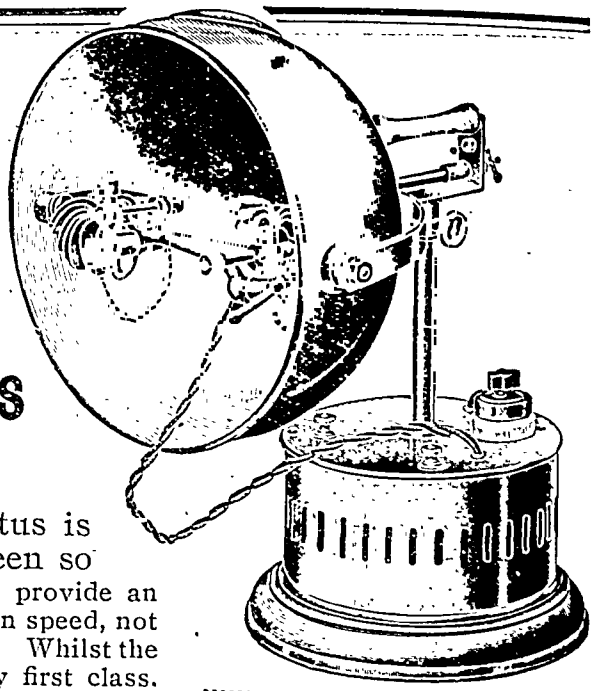

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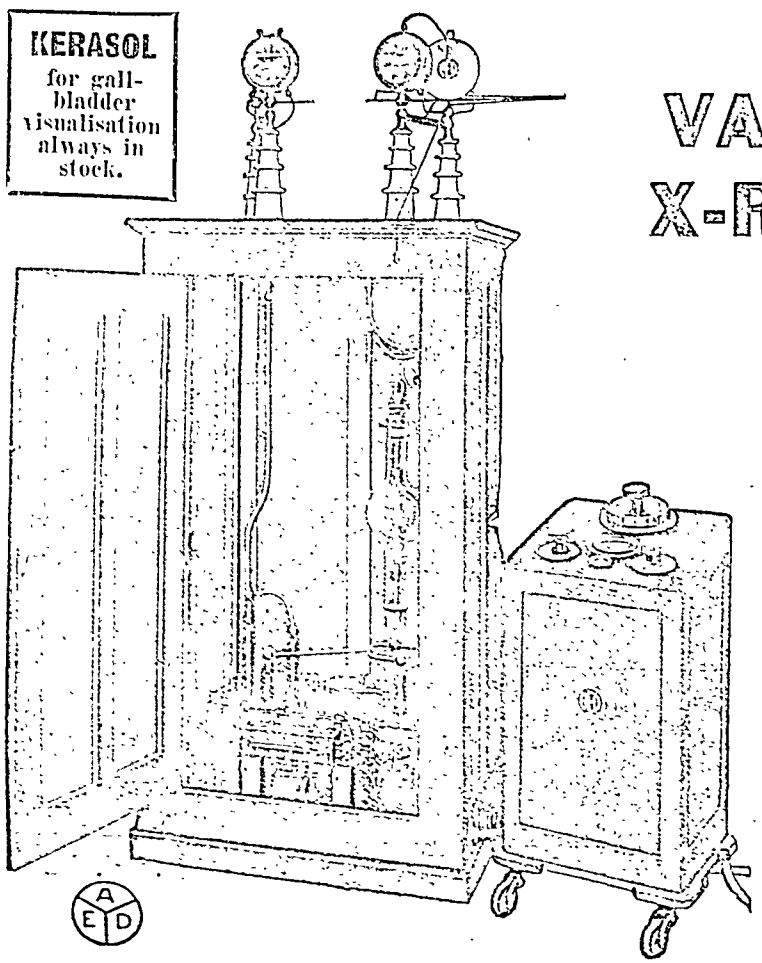

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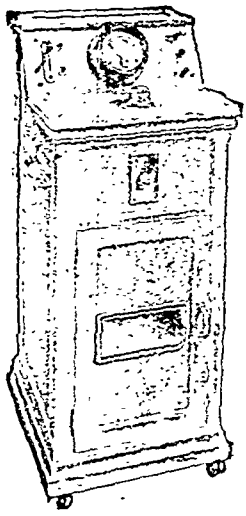

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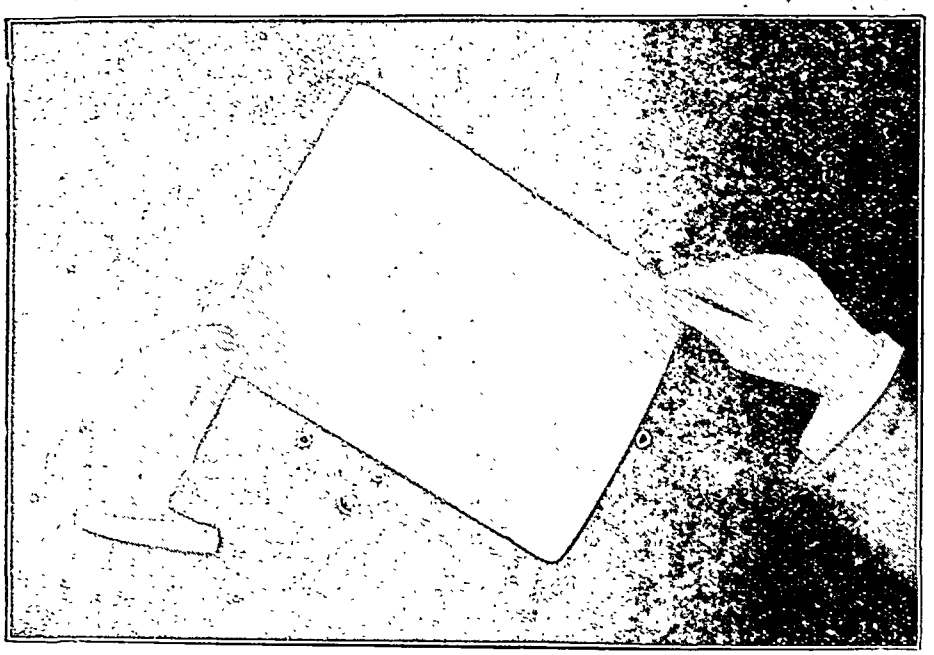

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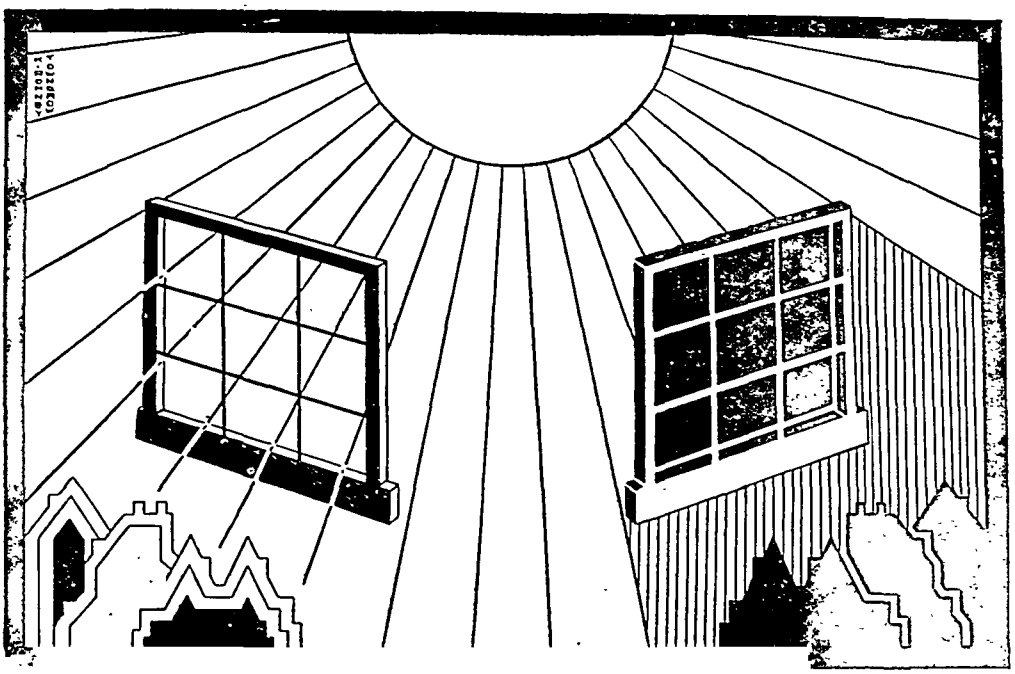

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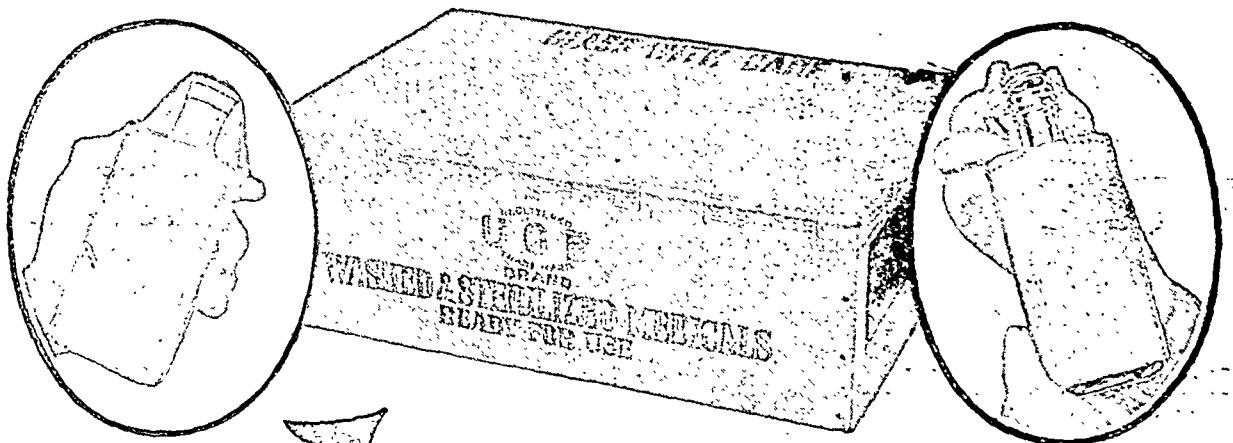

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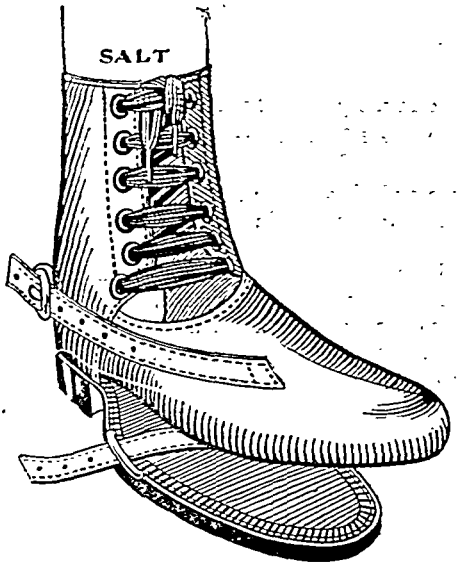

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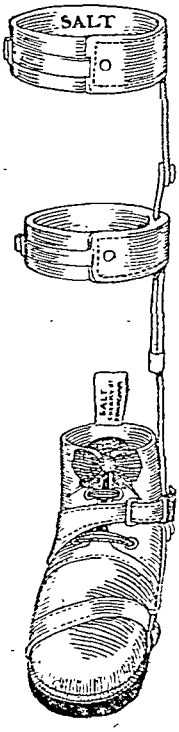

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ESTABLISHED 1793.

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BELLE VUE SPA

TREFRIW, NORTH WALES

(Railway Station Llanrwst and Trefriw)

Telephone—LLANRWST 60. Telegraphic Address—"BELLEVUE, TREFRIW."

AMBULATORY TREATMENT LTD.

THE establishment is at Trefriw village and occupies a sheltered fold of the western slopes of the Conway Valley, about 15 miles from Llandudno and 5 from Bettws-y-Coed. Its terraces and windows command the pleasant contours of the river and the hills.

Although on the fringe of the central mountain mass of Wales, its rainfall is no greater than that of London, and its climate is far milder. It is protected from all the colder winds; in winter there is rarely any frost or snow. Here, the facilities of an up-to-date nursing home have been combined with the comfort and cuisine of a charming country hotel, and a complete equipment has been assembled for the treatment of affections of the bones and joints by progressive modern methods.

The Spa is remarkable, amongst all other Spas both at home and abroad, for the strength and purity of its iron springs. The geological conditions are peculiar. The waters percolate from a mountain tarn a thousand feet above, and pass through deposits of pyrites embedded in the hills which shelter Belle Vue on the west. By taking advantage of ancient tunnellings left by a forgotten generation of miners, and only recently brought to light, it has been possible to tap the iron waters at their source, a considerable depth below the surface of the mountain side. They issue from the pyrite beds in a state of complete purity, the iron salts being entirely in that ferrous form appreciated by the physician and the pharmacist. They are secured before there has been any opportunity for oxidation to occur from exposure to the air, and oxidation is still further retarded by the presence of minute amounts of Sulphurous Oxide. For these reasons there is no contamination by admixture with even traces of ferric salts whose irritant and astringent properties are undesirable in waters intended for internal use.

The Chalybeate spring provides a ferrous water which is not only absolute in its purity, but unique in its concentration. It contains more than 3 per cent. of anhydrous ferrous sulphate. The equivalent of a Blaud's pill is to be found in less than one ounce. It affords a means of applying a natural iron therapy in which the dose of iron can be closely regulated. The patient need not imbibe a large volume of water in addition unless it should seem desirable for him to do so.

The method is proving invaluable in the secondary anæmias of rheumatic conditions; also in chlorosis, chronic septic anæmia, the anæmias which follow acute infection, and those resistant forms peculiar to protracted illness and chronic disease.

The Iron Springs at Trefriw are much stronger than any other pure ferrous waters in the British Isles. They are, in fact, twenty times as strong as the next in series. Abroad the strongest pure ferrous waters are at Ronneby, in Sweden; but these are only one-fifth as strong as those of Belle Vue Spa.

Many medical men have written about the curative properties of these ferrous waters in the early cases of arthritic origin, so-called rheumatism.

From my own observation I find that patients treated by my manipulative extension method derive great benefit, not only from drinking the waters as an addition to the extension cure, but also by the beautiful air, and last, but not least, the incentive to improve the blood supply by walking amongst the beautiful country surrounding Trefriw.

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Telephone—LANGHAM 1510.

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Often debtors do not pay because of the way they are approached for a settlement. A bullying manner, or too curt a letter, will not only make a Client seek new Professional attendance—he will also forbear paying as long as possible.

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Dear Sir,

As regards the enclosed, I should have paid long ago had it not been for what I consider the very unprofessional procedure meted out to me.

I now enclose my cheque.

Yours faithfully,

BRITISH MEDICAL PROTECTION SOCIETY

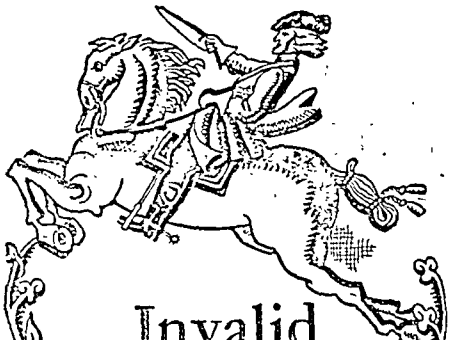
'Phone: MUSEUM 4228.

(B.M.P.S., Ltd.)

ESTABLISHED 1891.

Secretary: N. RUTHERFORD WATSON.

4, MARGARET STREET, CAVENDISH SQUARE, LONDON, W.1



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A handy graduated measure is provided with every bottle.

"LYSOL"—Your patients must always qualify the word.

To ask merely for "Lysol" is dangerous, for they may be given an inferior Lysol that will actually do far more harm than good. Tell them, for their own safety, to insist on *Wright's* Lysol. It gives sure results—always. It is perfectly pure, non-caustic, and causes no irritation.

British owned and made under the strict Rideal-Walker control test by the makers of the world-renowned Wright's Coal Tar Soap—Producers of Disinfectants for over sixty years.

Tell your patients to say "Wright's" before saying "Lysol." That way lies certain safety and protection.

BRITISH MADE - - BRITISH OWNED

Streets 60

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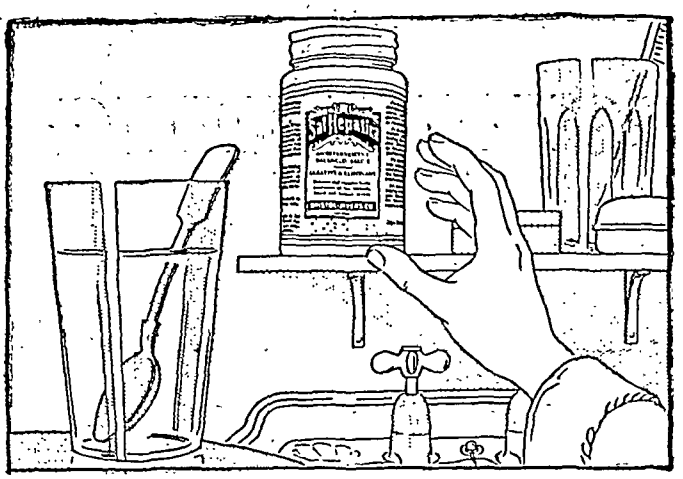

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Diabetes, rheumatism, gout, sciatica, lumbago, neuritis and many other similar diseases have been found to have their origin in auto-intoxication, which gives rise to acidosis. ¶ The speedy and thorough evacuations induced by Sal Hepatica expel all auto-intoxicants from the system, while the blood and urine is rendered alkaline. ¶ Sal Hepatica stimulates the biliary flow, thereby relieving hepatic congestion, and restores the daily habit of defecation by natural means. It is non-habit-forming, non-irritant and entirely painless in its action. Sal Hepatica is only advertised to the medical profession.

Sal Hepatica

the proved medicinal saline laxative and cholagogue.

¶ Sal Hepatica contains sodium sulphate, sodium phosphate, sodium chloride and lithia citrate in an effervescent medium.

Samples for clinical trial will be forwarded on request to duly qualified members of the medical profession on application to

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CANCER OF THE GREATER CURVATURE OF THE STOMACH.

Typical Case.

Operation: Gastric Resection.

D E aged 60 years.

Technique of Anæsthesia: Local infiltration and anterior splanchnic. A transverse infiltration across both recti was made, using 150 c.c. of a 0.5 per cent. Novocain-Adrenaline solution. The abdomen was opened with perfect negative pressure, and a large tumour in the great curvature presented in the incision. The lesser omentum was infiltrated with Novocain-Adrenaline solution and divided. After a thorough examination of the liver, which revealed no signs of metastasis, it was decided that the case was probably operable. The retroperitoneal space, which was exposed after dividing the gastro-hepatic omentum, was carefully infiltrated with Novocain-Adrenaline solution. The duodenum was then divided between clamps beyond Hartmann's lines. This manœuvre was also painless. The jejunum was anastomosed to the lower portion of the gastric incision, the remainder of which was closed with linen. The patient's pulse was 74 at the completion of the operation, with no change in his colour or general condition except that he was tired. The operation required one hour and thirty minutes. His recovery was uneventful.

—Extract from PRACTICAL LOCAL ANÆSTHESIA (Farr).

(Full technique of this and one hundred other operations under Local Anæsthesia will be found in the above work published by Henry Kimpton, 263, High Holborn, London, W.C.1.)

THE SAFEST LOCAL ANÆSTHETIC.

Ample supplies of Novocain are available for the use of Surgeons at all the chief Hospitals. Specify "Novocain" for your next operation.

Does not contain Cocaine, and does not come under the Dangerous Drugs Act.

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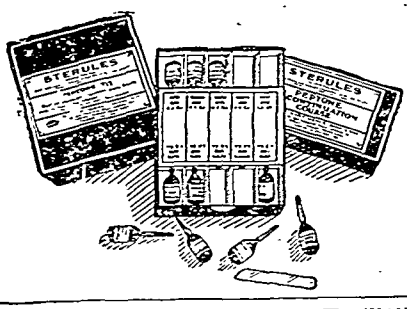

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Also employed with success in hay fever, associated skin affections, angio-neurotic œdema, cyclic vomiting, periodic diarrhœa, and the migraine-epilepsy syndrome; in short, to such conditions as exhibit an anaphylactic character or sensitisation.

Graded Series of 10 Sterules, 7/6. Continuation Course of 6 Sterules—per box, 6/6—for intravenous and intramuscular use; please state which is desired.

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Over thirty-six separate poisons have been found in the intestinal tract in cases of alimentary toxemia. These consist of bile acids and alkaline wastes secreted by the intestinal mucous membrane, in addition to a variety of bacterial ptomaines and toxins.

Nujol is a highly active solvent. If it be shaken with a watery solution of indol, more than half the indol is quickly taken up. Nujol readily dissolves these waste and poisonous substances, many of which are more soluble in liquid petrolatum than in water.

Thus Nujol, which is not absorbable, takes up a very considerable portion of toxins found present in the intestinal tract and prevents their absorption into the body. The brownish colour of Nujol as seen in the stool is due to the substances which it holds in solution.

Laxatives which liquefy the intestinal contents and provoke anti-peristalsis, frequently increase the absorption of intestinal toxins. Nujol not only dissolves and removes intestinal toxins, some of which are highly active poisons even in minute quantities, but also by speeding up the intestinal rate of flow it prevents their formation. Effective in all types of constipation.

Nujol

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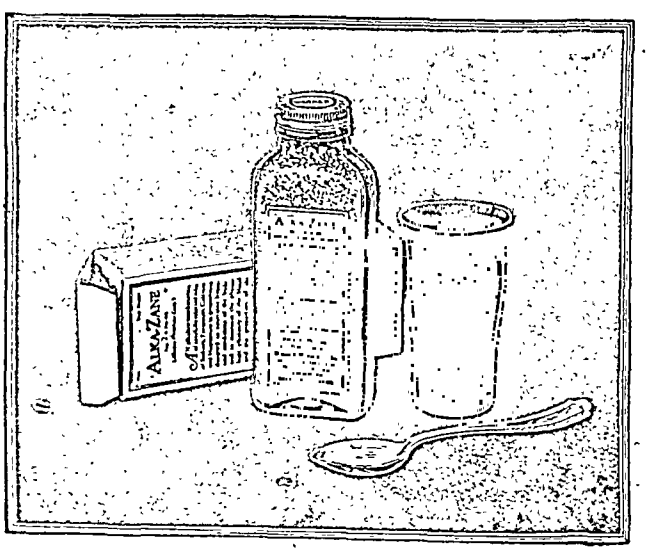
Rational Alkaline Medication



A pleasant, effervescent granular preparation composed of carefully selected salts of Sodium, Potassium, Calcium and Magnesium in physiologically correct proportions.

must be adapted to the physiological requirements of the human organism, in order to neutralize excess acid products and restore alkaline balance, without the risk of intoxication.
A trial will promptly convince you of the value of Alka-Zane as antacid, diuretic, and to restore normal alkalinity, in gouty and rheumatic conditions, gastric or intestinal hyperacidity, and in certain skin diseases.

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Prepared by WILLIAM R. WARNER & CO., INC.,
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A Valuable Sedative Antiseptic and Healing Ointment.

UNG. SEDRESOL is a combination of the products obtained by the destructive distillation of the wood and bark of the *Betula alba* in combination with Oxide of Zinc and Antiseptics.

It is specially indicated in Eczema, Psoriasis, Erysipelas, Shingles, Erythema, Seborrhœa, Dermatitis, Pruritus Ani and Vulvæ, and in Inflammations and Eruptions of the Skin and in Burns and Scalds.

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¼-lb. Jars, 1/8 each; ½-lb. Jars 3/- each; 1-lb. Jars, 5/9 each; 2-lb. Jars, 11/- each; 4-lb. Jars, 21/- each. (*Empty Jars allowed for on return.*)

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A pure superfatted soap for the skin containing the same medication as Ung. Sedresol.
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CREAM OF MAGNESIA

A valuable antacid suitable for treatment of all digestive disorders arising from acidity. While restoring the gastric conditions to normal, it effectively prevents the formation of free acid; at the same time it exercises a gentle laxative action. Regesan Cream of Magnesia may be prescribed in all cases where antacid treatment is indicated.

PRICE 1/3 PER BOTTLE

FULL-SIZE TRIAL SAMPLE FREE ON APPLICATION BY POST-CARD TO BOOTS THE CHEMISTS, STATION ST., NOTTINGHAM.

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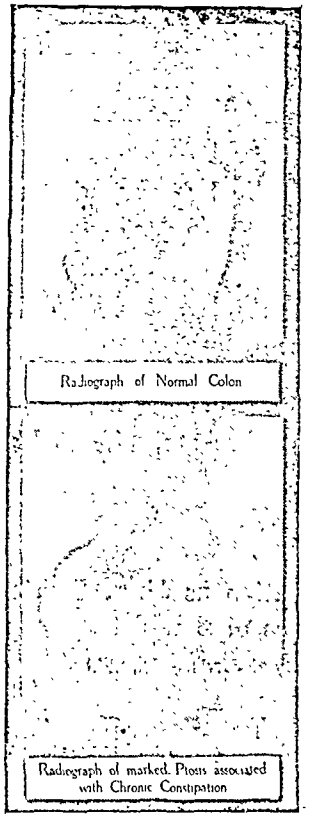

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Radiograph of marked Ptosis associated with Chronic Constipation

Intestinal stasis, according to a world-famous surgeon, "is the cause of all the diseases which we have acquired as the result of civilization."

"CHRISMOL"
Liquid Paraffin

For the Rational Treatment of Constipation and Stasis by Lubrication.

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The Ideal Lubricant

Unirritating and universally applicable.
Does not interfere with digestion or absorption.
Effectively overcomes mechanical friction from hardened fæces.
Does not cause griping or gaseous distension.
Continued use does not produce "habit," lead to chronic gastro-intestinal catarrh or lose its effect as purgatives are liable to do.

Perfectly pure and innocuous.

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Viscosity determined at body-temperature to produce maximum lubricating effect.

Tasteless, colourless, odourless.

Descriptive literature and a clinical trial sample will be sent post free to members of the medical profession.

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As a diet preparatory to surgical operation "Ovaltine" possesses unique advantages. It tends to keep the metabolism of the patient as nearly normal as possible. It also avoids a long period of starvation prior to operation, consequent irritation of the stomach by the gastric flow, and predisposition to greater irritation from the anæsthetic.

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In the usual processes of post-operative feeding by easy stages, from sips of water to the regular diet, "Ovaltine," by reason of its delightful palatability, ready digestibility, and high nourishing power, is ideally adapted.

A liberal supply for clinical trial sent free on request.

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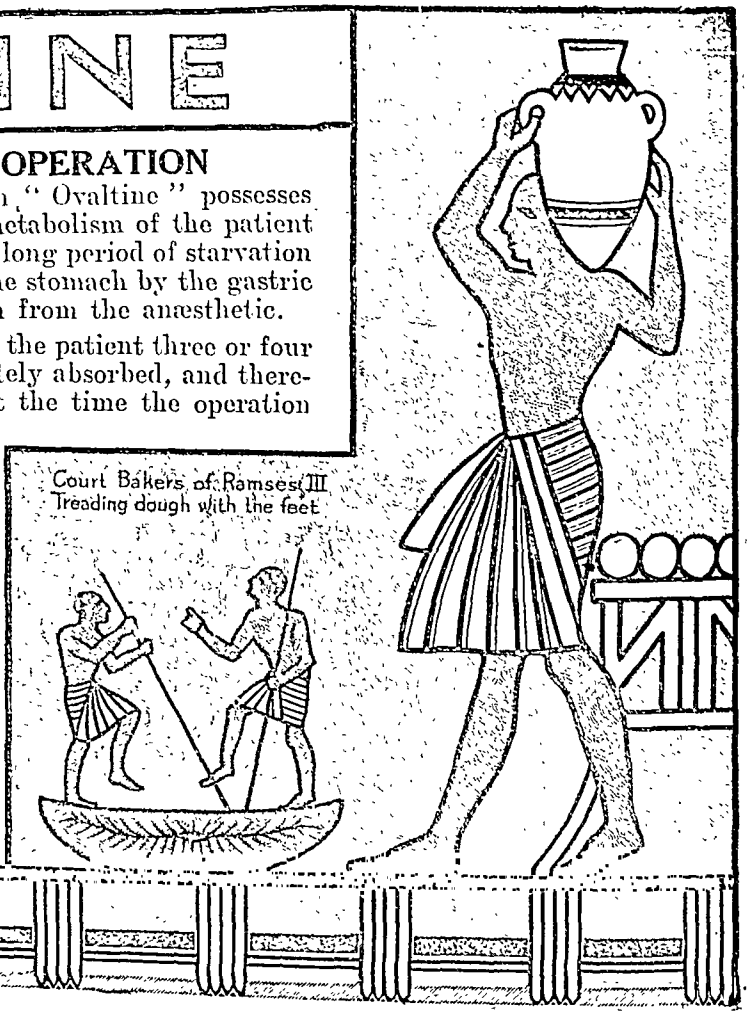

Court Bakers of Ramses III Treading dough with the feet

BRAND'S ESSENCE OF BEEF for INVALIDS

has enjoyed the confidence of the medical profession for over 90 years. A nourishing stimulant that demands the least amount of energy in the process of assimilation and increases the means of defence by raising the powers of resistance.

Mark it in your memo book

Brand's Essences are scientifically prepared, in jelly form, from the finest English meats, and contain upwards of eleven per cent. of proteid. The nourishing and stimulating properties are IMMEDIATELY ABSORBED, without residue, in the alimentary canal. No time is lost in process of assimilation. No work entailed by the digestive organs. Absolutely pure. Contains no gelatine, colouring, or preservatives. Good for young and old alike.

BRAND'S ESSENCE OF CHICKEN contains the same nourishing and stimulating properties as Brand's Essence of Beef, and for over 90 years has been recommended by the medical profession when required by prevailing conditions.

Sold by Chemists Everywhere.

Prepared by

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INCREASE of IMMUNISING POWERS chiefly in CHRONIC INFECTIONS, and in DISEASES of ALLERGIC DISTURBANCE.

Indications

TUBERCULOSIS of the LUNGS, BONES and JOINTS.

A CLINICAL SAMPLE ON REQUEST

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'PANOPEPTON'

Lean Beef—the entire group of nitrogenous substances, those natively soluble and those rendered soluble by physiological hydrolysis, amino-acids, and polypeptids, with the natural savoury extractives and minerals:

Entire Wheat Grain—the peculiar complex of nitrogenous substances, those naturally soluble and those rendered soluble by physiological hydrolysis, amino-acids, and polypeptids, the farinaceous substance converted into dextrin and maltose, and with the associated savoury constituents and minerals.

Of the beef nothing is excluded but the indigestible connective tissue and lipoid. Of the wheat nothing is excluded but the insoluble inert cellulose and silica of the shell of the grain.

'Panopepton' is of a uniform standardized composition; it is highly agreeable; requires no preparation. It is a potent restorative and emergency food in serious straits; a fortunate recourse for the invalid.

Supplied in 12-oz. bottles.

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MISTOL and the Mistol Dropper are a real advance in nose and throat therapy. Menthol, eucalyptol, and camphor are combined in a specially prepared petroleum base, which keeps these soothing and healing ingredients in direct contact with the mucous membrane for a considerable length of time.

Unlike douches, Mistol avoids any possibility of sinus trouble. With head tilted back, the patient should let Mistol drop into each nostril until it is felt to be running into the back of the throat. It is manifestly superior to salves which do not reach all parts of the mucous membrane.

Especially efficacious in coughs and colds, simple, congestive, and catarrhal rhinitis, hoarseness, bronchitis, and laryngitis.

Sold in original sealed cartons containing a—

Mistol
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Two-ounce Bottle and Mistol Dropper.

Made by Nujol Laboratories

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The Standard Bismuth Preparation for the treatment of **Syphilis** and other **spirochætal diseases.** Bismuth has largely replaced mercury as an adjunct to Arsenobenzol Therapy. Consisting of a suspension of specially prepared, finely divided, pure Bismuth metal in a 5% glucose solution. Bismostab (Boots) is **non-irritant, highly concentrated, sterile, and ready for use.**

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Ung. Renaglandin and Ung. Renaglandin Anaesthetic . . Invaluable in Hæmorrhoids—Styptic.

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PROMPT and proper diagnosis of kidney conditions is necessary in cases of Bright's disease and all types of renal disorders. In nine cases out of ten the administration of a specific capable of producing real results in compensating for the loss of kidney function is also necessary.

For more than a quarter of a century Nephritin has been a sheet anchor to physicians in treating such disorders. Nephritin Tablets induce a marked increase in nitrogenous waste elimination. They reactivate the cells of the kidney, increase urinary secretion, and induce a greater output of urea.

Given in sufficient dosage these tablets produce marked results, and restoration to normal is quickly stimulated. They are invaluable also as a prophylactic in renal complications of infectious diseases and during pregnancy. The tablets are composed of the hormones of the normal kidney as they appear in nature—absolutely unaltered.

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DIURETIC RE-ZYME TABLETS
Manufactured by
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A marked Reduction in the fit incidence follows the use of

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ACCORDING to the reports of Clinical Investigators freedom from attacks is secured with comparatively small doses, and even during prolonged administration disagreeable and deleterious by-effects have been but rarely observed

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The confidence of the MEDICAL PROFESSION.

Benger's Food has gained its unique position not by extravagant or sensational advertising but by the constant recommendation of medical men and women. To-day it is universally used not only at home but throughout the world. Few foods have so enjoyed the approbation of the Medical Profession for over 40 years.

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"routine food in all cases of dyspepsia and disordered digestion."

"used for invalids and all gastric cases."

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"very largely used for Influenza in all its forms."

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"invaluable for cancer of the throat."

"cancer of the stomach—doing well on Benger's Food."

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"very beneficial for man of greatly advanced years."

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A Physician's Sample will be sent post free to any member of the Medical Profession making application to the Proprietors—

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Benger's Food, in sealed tins, is on sale throughout the world by Chemists, etc.

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BENGER'S Food

REGD. TRADE MARK.

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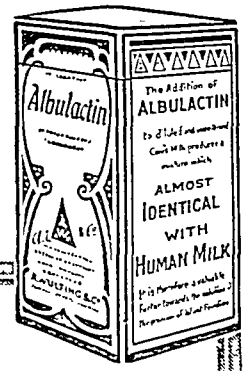

The Pale and Weakly Child . . .

Particularly the type in which a definite pathology cannot be demonstrated, generally responds well to calcium therapy in the form of Kalzana. For instance, a recent clinical report states:

> *"I gave Kalzana to a child with peculiar symptoms of apathy, listlessness, etc. There has been a marked improvement—she sleeps better, and takes her food with some appetite."*

The clinical results produced by Kalzana are equally satisfactory in diseases of children amenable to calcium medication, especially in tubercular disease, and the type of malnutrition associated with acute infectious disorders.

Kalzana is a definite chemical combination of calcium-lactate and sodium-lactate in the form of a double salt. The special virtue of the product is due to the action of the sodium in raising the blood alkalinity to the extent necessary to secure the adequate retention of the calcium constituent. Therefore Kalzana therapy means calcium retention. It is used in over 200 British Hospitals and Sanatoria, including many leading Children's Hospitals.

Dispensed by Chemists in air-tight packets containing 50 and 100 tablets.

Kalzana

THE LIME FOOD

Precision in Infant Feeding

Every requirement needed to provide a correctly balanced infant's food is supplied by properly modified cow's milk and Albulactin. The all-important proteid and lactalbumin percentages are exactly correct, and *always* within the control of the physician; an important consideration when the food has to be adapted to the peculiar digestive capacities of individual infants.

Albulactin is pure lactalbumin—the vital proteid of human milk—supplied in the form of an impalpable powder. It is quite simple to prepare, and may be prescribed with confidence in all cases of artificial feeding, from the premature weakling to the normal healthy infant.

The British Medical Journal says:

> *"There appears to be every reason to expect this preparation to prove of great value in the 'hand feeding' of infants."*

Supplied in bottles at 1/9, 3/6 and 7/-

Albulactin

Made by A. WULFING & CO., Amsterdam, Holland.

Supplies for your own dispensing, and for Hospitals, Sanatoria, etc., are available on special terms. Adequate samples for clinical trial sent with pleasure upon request.

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Wulfing

Diet in debility

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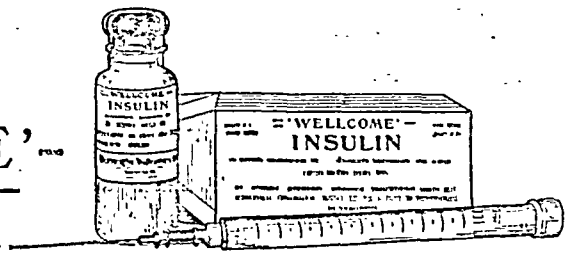

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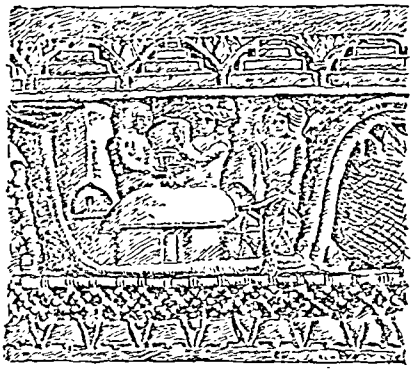
COTTAGES DEPICTED IN ANCIENT INDIAN SCULPTURES. The cottage, of which the front is here shown, is entered by double doors, the room on either side being lighted by a window. At the left is seen the gable end of a second dwelling, having two windows, one in the gable and a second beneath it. The houses are apparently built of sun-baked clay. Three or four similar cottages, belonging to different members of the same family, appear to have been built round a quadrangle. In the scene, a woman stands in the quadrangle holding a basket into which a measure of grain is being poured by a merchant whose assistant stands outside with two baskets slung on a pole. The earliest Indian houses were built of wood, and many were still so constructed at the time of the sculptured scenes here reproduced. All later Indian architecture is derived from these early buildings, a study of which is necessary if we are to understand subsequent architectural manifestations. In the complex forms of decoration of the stone-built palaces of a later period we see constantly repeated certain structural details of the first dwellings of wood, bamboo and thatch. The "Horse-shoe" window, for example, was derived from the bent bamboo of thatched roofs of the type illustrated in the gable end of the cottage on the left. Three-storied houses or palaces also are depicted in the same sculptures, but 70 to 80 per cent. of the inhabitants of early India dwelt in cottages.



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Some Points ON THE ETIOLOGY, PROGNOSIS, AND TREATMENT OF GRAVES'S DISEASE.*

WITH PARTICULAR REFERENCE TO THE ADRENAL GLANDS AND THE VALUE OF READ'S FORMULA.

BY

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IT is not my intention to attempt to deal fully with the several aspects of Graves's disease, but rather to touch on certain points in etiology, prognosis, and treatment which in my opinion are worthy of some consideration.

The subject is one of which our knowledge is steadily growing, and about which there is much variation in opinion and practice. This is as it should be, for there is plenty of scope for trial and observation in many directions in this disorder at the present time, but little excuse for dogmatic assertions or rule-of-thumb procedures.

ETIOLOGY.

A tenet which has materially delayed advance in our understanding of Graves's disease is that hyperthyroidism is a sufficient explanation. The conception is a simple one, and suggests a simple remedy. If the symptoms and effects are due to hyperthyroidism, let us cripple the thyroid in some way or other, and necessarily the symptoms must abate. Such a simple conception, entrenched as it is in the textbooks by the use of Graves's disease and hyperthyroidism as synonymous terms, we know now is untenable, and must be modified in various ways. The discovery and preparation of a product of thyroid activity—thyro-iodin or thyroxin—led to its being regarded as the peccant substance to excess of which the symptoms are due, but Williamson and Pearse[1] have shown that disturbance of the iodo-colloid function has only an indirect relation to the thyro-toxicosis. These workers have demonstrated that the thyroid gland has two distinct functional activities—one the production of thyro-iodin, the other of a secretion—and that it is this latter which is directly related to the thyro-toxicosis of Graves's disease. Even so, the question we must answer before we can approach the preventive medicine of Graves's disease or remain satisfied with its present treatment is: "Why is the secretory activity enhanced?" When the correct answer to that question is provided the present methods of treatment, directed towards *destroying the activity of the gland by local means*, will be a subject chiefly of historical interest. I do not wish to attempt to belittle the present-day value of such methods, but I feel that it should be our aim to minimize the need for their employment, which will assuredly be attained when we can explain the overproduction of thyroid secretion. This part of the field of etiology is, then, well worthy of exploration, and one likely to yield results of the greatest practical value.

Stimulation of Thyroid Activity.

It is generally agreed now that the thyroid reacts to toxic factors, as well as to sympathetic stimulation, by increasing its functional activity. Another stimulus arises from the sex glands in the female, probably from the uterus, for there is slight but noticeable enlargement of the gland at puberty, during pregnancy, and even during menstruation in many subjects; whilst with the termination of the climacteric the opposite is prone to occur, the gland shrinking and perhaps becoming so insufficient as to permit of the development of myxoedema. Perhaps this extra duty of the thyroid in the female may explain the greater incidence of Graves's disease in women, especially during the child-bearing period.

Despite the careful work of McCarrison and others, the conception of the thyroid as an antitoxic gland was long in gaining credence, though it seems now to be acknowledged. I believe this activity to be of great importance in the etiology of Graves's disease. Like others, I have been especially impressed with the frequency of tonsillar sepsis in my experience. This has led me to make particular inquiry and investigation into the point in my last 50 cases of Graves's disease. In 22, or 44 per cent., I obtained a definite spontaneous history of severe recurrent sore throats or quinsies. In 8 of these (16 per cent.) an attack occurred while the patients were in the wards. It must be emphasized that simple sore throats were disregarded in these figures, and only severe and recurrent tonsillitis or quinsies were considered.

Stimulation of the thyroid gland by toxins, either acting alone or in combination with other exciting influences, seems to me to be among the most important causes of thyro-toxicosis or Graves's disease. It is tempting to suppose that the effect of local sepsis, such as that of the tonsils, is to create a demand for the iodo-colloid secretion, but that by this demand the whole gland is stimulated, the true secretion being also increased. It is this excess of true secretion which provides the symptoms of Graves's disease. Bearing upon these points it must not, however, be forgotten that hyperplasia of the secretory tissue of the thyroid seems to hold in check the development of iodo-colloid, for removal of some of the hyperplastic tissue is followed by a re-accumulation of iodo-colloid in the alveolar spaces (Williamson and Pearse).

The Adrenals in Graves's Disease.

The part played by the adrenal glands in Graves's disease cannot be ignored, but is not easy to assess. Psychical causes, such as worry, excitement, mental stress, and fright, have long been recognized as precursors. Moreover, the clinical picture of the disease is the very presentment of fear—the starting eyes, the flushing, the tachycardia, the tremor, even the diarrhoea and the hyperglycaemia, together delineate the features of fear. But fear and the preparation for fight or flight we believe to be intimately connected with activity of the adrenal gland, the hormone of the medulla of which hurries up the heart, braces up the blood vessels, and mobilizes sugar for immediate effort (Cannon). When Graves's disease begins abruptly, following a period of excitement and alarm such as a motor accident, it is difficult to exclude the adrenals in its production, for the increase of adrenaline which arises, by stimulating the sympathetic system, must provoke also increased thyroid secretion. During the war one saw many examples of men who, after exposure to danger, presented a picture which during time of peace one had been accustomed to recognize as mild Graves's disease, for they showed tremor, tachycardia, flushing, slight staring of the eyes, with retraction of the upper lids and visible sclerotics below them. In most instances these symptoms subsided quite quickly, being gone in a few hours or days, but occasionally true Graves's disease followed and persisted. There was, I believe, a notable increase in Graves's disease in London during the war period, which has been ascribed to the air raids (Langdon-Brown). If we accept the modern physiological explanation of the reaction to fear, the prominent part played by the suprarenals in the inception of Graves's disease in these cases can hardly be denied.

A more difficult question is as to how long this adrenal activity persists, and how far it contributes to the picture of the developed disease, for it must not be forgotten that administration of thyroid alone in excessive doses is capable of producing nearly all the symptoms. Yet it is reasonable to infer that with overaction of the thyroid there is accompanying overaction of the adrenals, for thyroid secretion stimulates the sympathetic, which in turn stimulates the adrenals. Assuming that my contention is right that suprarenal activity precedes that of the thyroid in response to psychical disturbances in certain cases of Graves's disease, it is easy to see how a vicious circle may be set up. The outpouring of adrenaline stimulates the sympathetic, which in turn stimulates the thyroid and the suprarenal itself, whilst the increased thyroid secretion for its part stimulates the adrenals still more.

[3563]

*Read before the Hampstead Division of the British Medical Association, March 14th.

Experimental Study of the Suprarenal Gland.

There are several interesting observations and experiments which bear upon this problem. W. Cramer[2] points out that the suprarenal gland is unusual in that its own secretion stimulates it to further activity through the intermediation of the sympathetic, a process which, unchecked, would inevitably lead to exhaustion of the gland. He finds that injection of adrenaline or of whole adrenals in a mouse produces characteristic changes in the adrenal medulla, which he believes effect a control of the gland. The changes in the gland are an apparent hyperplasia of the deeper part of the cortex, at the expense of the medulla. *Hedinger and Herring*[4] found enlargement of the suprarenal cortex as the result of prolonged feeding with thyroid. Possibly, as Cramer suggests, an explanation of Graves's disease is to be found in a breakdown of this controlling mechanism.

The experiments of Marine and Baumann[5] are especially suggestive. After suprarenalectomy, or after freezing the adrenal cortex with ethyl chloride in rabbits, they found that 38 per cent. (of 31 rabbits) showed markedly increased heat production (which corresponds to a raised basal metabolic rate) for months, loss of weight, and "a picture resembling the exophthalmos-complex of exophthalmic goitre." These results did not occur if the thyroid gland was previously removed—an observation strongly indicating a controlling action of the suprarenal cortex against thyroid secretion and activity in Graves's disease.

McCarrison has shown that inanition provokes hypertrophy of the suprarenal cortex. May not this hypertrophy be a protective mechanism to control metabolic activity by opposing the thyroid? Jaffe[6] has shown that suprarenalectomy causes rapid enlargement of the thymus, and we know that thymic hyperplasia is a constant accompaniment of Graves's disease. Marine states that thyroidectomy hastens involution of the thymus, whilst suprarenalectomy delays it.

Shapiro[7] has given a glycerin extract of ox suprarenal cortex in cases of Graves's disease, and records considerable benefit, especially upon the asthenia, dysmenorrhoea, diarrhoea, nutrition, heat production, tachycardia, and blood pressure. He believes that the suprarenal cortex exerts an inhibitory or regulating control over the thyroid, and that its functional insufficiency plays a fundamental part in the development of Graves's disease. He points out that suprarenal cortical injury and Graves's disease have many features in common, for both show increased metabolism and sometimes thyroid hyperplasia, lymphoid hypertrophy, including that of the thymus, asthenia, increased sexual activity, hypersensitiveness to toxins and drugs, and increased pigmentation. Marine's work on the high metabolic rate after excision of the suprarenals is not entirely confirmed by Swift,[8] and Bornstein and Holm,[9] who found a diminished ventilation of the lungs, to which they attribute it.

Lucas, Obregia[10] has treated Graves's disease with glycerin extract of whole suprarenal glands of sheep, pigs, calves. He records rapid amelioration of the condition, and states that all the patients have recovered. With adrenaline given by the mouth he obtained improvement, but this was less pronounced than with the whole gland.

A clinical feature of interest in regard to the suprarenal cortex being a possible factor in Graves's disease is the pigmentation. In Addison's disease the pigmentation is generally regarded as due to cortical rather than to medullary defect, and a somewhat similar pigmentation is common in Graves's disease. Feeding of birds with thyroid, on the other hand, causes disappearance of pigment.

To sum up the etiological part of my remarks there is, I think, good reason to believe that:

1. Hyperthyroidism is an incomplete definition of Graves's disease.
2. An important provoking antecedent is local sepsis, especially of the tonsils.
3. The suprarenal glands play an important part in the etiology and clinical manifestations.
4. There is a good deal of evidence to show that suprarenal cortex exerts a controlling influence on thyroid secretion, and that its failure to control is an important factor.

PROGNOSIS.

Estimation of the severity of a case and a forecast of its probable outcome is based best on the assessment of many factors, and should not, in my opinion, depend entirely on the basal metabolic rate. The degree of tachycardia, the pulse pressure, the cardiac rhythm, the severity of nervous symptoms, the degree of general weakness, the existence or not of diarrhoea are all factors of great importance. The age of the patient is another pertinent consideration, for with the intervention of the menopause amelioration is to be expected. Occupying a prominent, perhaps the most prominent, position is the value of the basal metabolic rate, but it should be taken in conjunction with other features, and should not be used as a direct index of severity as though it possessed mathematical accuracy. The plan of deciding upon the treatment, whether operative or non-operative, by the reading of the basal metabolic rate alone is one which is less often adhered to than formerly, for it is recognized that slight variations in the records alter the final estimation exceedingly, that errors in technique are easily committed, that slight psychical disturbances profoundly modify the result, and considerable fluctuation may occur within a comparatively short period. If, however, we can disabuse our minds from regarding the rate of basal metabolism as an unfailing signal owning mathematical exactness, it remains an index of great value. A serious drawback to its use is the difficulty of estimation, considerable practice being needed to obtain accurate and comparable readings; indeed, the necessary apparatus has found its way into the armoury of few practitioners in this country. Some simple formula would be valuable if it approached the basal metabolic rate estimation in the degree of its accuracy.

Read's Formula.

A formula introduced by Read is not difficult to work with. It is as follows:

$$\tfrac{3}{4}(\text{P.R.} + \tfrac{3}{4}\,\text{P.P.}) - 72$$

where P.R. is the pulse rate, and P.P. the pulse pressure. Taking a normal patient with, say, a pulse rate of 72 and the pulse pressure of 40 the sum is thus:

$$\tfrac{3}{4}(72 + 30) - 72, \text{ which is equal to } +3.$$

To test the degree to which Read's formula approximates to the basal metabolic rate Dr. T. C. Hunt, recently of the St. Mary's Hospital Medical Unit, has compared the two in a limited number of cases: 54 were examined in all, but of these 4 were rejected, the basal metabolic rate being regarded as unreliable in view of excitement, nervousness, or other cause. Of the remaining 50, in 27, or 54 per cent., the two agreed within 10; in other words, they gave results which for practical purposes may be considered as equal. In only 3, or 6 per cent., did Read's formula give a result higher than the basal metabolic rate by over 10. (This agreed with the opinion of Eason, who states that Read's formula agrees with the basal metabolic rate in 50 per cent. of cases.) In 6, or 12 per cent., Read's figure was between 10 and 20 less than the basal metabolic rate; in 8, or 16 per cent., between 20 and 30 less; and in 6, or 12 per cent., it was more than 30 less. These last 6 were all cases with high basal metabolic rates, the average value being + 73.

Dr. Hunt draws the following conclusions:

1. Read's formula will very seldom give appreciably too high an estimate of the basal metabolic rate, but often gives slightly lower figures.
2. A very marked discrepancy suggests an error in technique.
3. The basal metabolic rate in very bad cases is probably fairly considerably higher than Read's formula suggests.
4. Iodine treatment appears to improve the circulatory system as shown by Read's formula more definitely and more permanently than it improves the basal metabolic rate, which does not appear to be reduced for long by the comparatively small doses given (up to 20 minims of Lugol's solution daily). With this exception Read's formula has shown improvement with treatment exactly parallel with that shown by the basal metabolic rate.
5. Read's formula should be applied under basal conditions, but does not seem to vary so much as the basal metabolic rate from food or other external factors. In some cases it is quite impossible to gauge the latter accurately.

Within limits it would seem that the figure obtained by this formula is an accurate guide to progress, and differs widely from the basal metabolic rate figure only in the severest cases. It has a particular field of usefulness when for some reason estimation of the basal metabolic rate is not practicable.

TREATMENT.

The psychical and toxic factors in the causation of Graves's disease suggest at once two lines of treatment. The value of rest and freedom from mental excitement is too well known to need emphasis here. Removal of a focus of sepsis is also clearly indicated if the importance of such in the etiology be conceded. Unfortunately these two lines of treatment are in part antagonistic, for such an operation as tonsillectomy, for example, in an adult who has had repeated quinsies is no light one, and cannot be undertaken in a case of severe Graves's disease without anxiety. It finds its chief place in early cases, or those in which the thyro-toxicosis is slight. The question of focal sepsis should be borne in mind whenever an early case is encountered, or at a stage when the full clinical picture is still lacking. Its detection and consideration at this stage may be of great value as a preventive measure.

The modern treatment by administration of iodine, especially in the form of the French tincture or of Lugol's solution, has largely replaced earlier drug treatment. There can be no doubt of its potency, for within a very short time definite improvement is obvious in many cases, whilst the thyroid gland can be felt to become firmer. Unfortunately there is less certainty about the permanence of the good effect. Most English, German, and American observers hold that prolonged treatment is unsuccessful. Many French authorities, however, are of the contrary opinion. Thus Dautrebande,[11] Labbé,[12] and Boudreau[13] state that iodine must be administered over many months, with gradually increasing dosage up to 0.5 or 0.6 gram of metallic iodine, given five or six times daily. These are truly heroic doses compared with the 2 to 10 minims of Lugol's solution, three times daily, customarily employed in this country. The rationale of iodine treatment is ambiguous, and, indeed, iodine would appear definitely to be contra-indicated if it were true that Graves's disease is hyperthyroidism, and that its toxicosis is caused by excess of thyroxin. The recognition, however, that the thyro-toxicosis is related to excess of other secretion, and not to that of the iodo-colloid substance, suggests another explanation. May it not be that administration of iodine relieves or assists the thyroid in its reaction to toxins, and thus indirectly, by lessening its functional activity, reduces the output of the secretion which causes the thyro-toxicosis? In view of the unsatisfactory experience of others I have treated only a few patients by persistent and prolonged iodine therapy. The chief results have been gain in weight and lessened excitability and tremor, but there has been little beneficial effect upon the basal metabolic rate or the cardio-vascular symptoms. It must be confessed, however, that I have not yet had the temerity to use the large doses so forcibly recommended by some French writers.

About symptomatic treatment I shall not particularize as I have little new to advance. There are many occasions for such measures during the course of the disease. A mixture containing digitalis and bromide is, of course, one which has been very generally employed to combat the tachycardia and fibrillation, and to procure sleep and reduce the mental excitement. My belief is that digitalis should be used only with great caution in Graves's disease, for in this condition it may do serious harm.

There remain to be considered the two destructive procedures, which are used to cripple the over-activity of the thyroid gland—namely, *x*-ray therapy and operative procedures. There is no doubt that both may produce great amelioration of the symptoms, and may hasten recovery, though I think that in neither is one justified in using the word "cure." In a disease in which, under medical treatment, the tendency of the majority is slow progress in the direction of recovery, it is difficult to compute the precise value of surgical treatment unless its effects are immediately or rapidly curative. Nor is it easy to find any agreed statement as to which cases are considered by surgeons particularly suitable for surgical treatment. There are many who regard all cases as suitable, except during an acute phase; there are others who are disinclined to operate at all. It must be acknowledged, however, that the tendency in recent years has been more and more towards operation, and the operative mortality has fallen in expert hands to a very low figure. On the other hand, *x*-ray treatment has become somewhat less favoured since it has been recognized that its effects cannot be controlled with precision, and that it interferes seriously with subsequent operative procedures. The common practice of preceding operation by a course of treatment by physical and mental rest, and by the administration of iodine, has certainly lessened the danger of surgical intervention. At my hospital we have no enthusiasts for surgical treatment, and it is seldom employed on my patients. In mild cases it seems to me to be unnecessary, and in very severe cases too dangerous, while of the intervening cases improvement by medical treatment is what one is accustomed to expect. In patients near the menopause, also, relief before long is to be anticipated. Perhaps I am influenced by the belief that surgical treatment for this disease is only treatment of a secondary condition, and that our chief hope lies in being able to discover and treat the primary causes. In the meantime, surgical treatment, though it may represent only a temporary phase, has undoubtedly a sphere of usefulness. To employ it as a routine measure is, I believe, irrational, but when medical treatment fails or falters it shortens the period of invalidism, which is so serious a consideration in many patients that it more than counterbalances the added risk.

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THE IMPORTANCE OF POST-NATAL MATERNAL CARE.

COMPRISING A REVIEW OF THE ORGANIZATION AND WORK OF THE POST-NATAL CLINIC OF THE EDINBURGH ROYAL MATERNITY HOSPITAL.*

BY

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It is the common experience of those whose work is concerned with the treatment of diseases peculiar to women that parturition is ultimately responsible for a considerable proportion of the disability with which they have to deal. The importance of childbirth in this regard is reflected in the large number of gynaecological patients who refer their complaint to a previous pregnancy or labour. It is an obvious corollary that the degree of skill and care with which the process of childbirth is conducted is an important factor in a woman's subsequent well-being. The prophylaxis of future invalidism, however, requires from the accoucheur not only that pregnancy and labour be so managed as to reduce to a minimum the incidence of trauma and infection, but also such careful supervision of the patient's convalescence as will best assist the processes of involution and repair and restore a maximum degree of bodily efficiency.

Whereas the claims of the expectant mother have of recent years attracted, and rightly so, a full measure of consideration, the need for a similar attitude of guidance and

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watchful care during the weeks which follow delivery has scarcely received from obstetric teachers and writers the emphasis it deserves. It is with the object of directing attention to this important aspect of our obstetric responsibilities that I have chosen post-natal care as the subject of this address.

After the crisis of labour, with its major issues of life and death, has been successfully passed, the weeks which follow are apt to constitute a period of anti-climax in which watchfulness naturally tends to relax, to the extent occasionally that the patient is finally dismissed with or without a single examination after the conventional fortnight has elapsed. It is to be remembered that a minimum *period of six weeks* must always pass before the return of the pelvic organs to their normal condition is accomplished and recovery can be considered complete. Moreover, examination in a large series of women six to eight weeks after confinement has shown that even after a normal delivery, and in spite of negative examination findings at the conclusion of the lying-in period, various pathological *processes* may develop later, as the result of which recovery is short of perfect. It would appear desirable, accordingly, to extend the supervision of our puerperal patients so as to cover the period during which the development of such late complications remains a possibility.

The management of the more immediate convalescence after confinement has become so standardized that it is only necessary in passing to re-emphasize certain important principles. These comprise essentially the maintenance of asepsis, the establishment of lactation, and insistence on an adequate period of rest in bed, with simple bed exercises and frequent change of posture so as to relieve congestement of pelvic veins and ensure adequate drainage. For those who can afford it massage is beneficial, both in virtue of its general stimulating effect, and also in making good the loss of muscular tone produced by the forced inactivity of the latter weeks of pregnancy and the lying-in period.

As a routine a vaginal examination should be made about a fortnight after delivery. At this time the condition of the perineum, cervix, uterus, and appendages is investigated. Injuries are inspected and the state of healing noted. If the uterus is found to be *retroverted it* is a simple matter to replace it at this time; in such a case the patient is instructed to report in a week for re-examination. If the displacement has recurred it is again corrected and a pessary introduced, otherwise a period of three weeks is allowed to elapse before a further examination is made.

When the patient is discharged she is given general advice in regard to the immediate future of her infant and herself, in addition, she is instructed in *simple graded* exercises devised to restore tone to the overstretched muscles of the abdomen and pelvic floor. Abdominal exercises of the Muller type, combined with the use of a properly fitting corset, have been found to be of much value in preventing or arresting the development of visceroptosis to which the feeble over-stretched condition of the abdominal musculature predisposes during the weeks which follow delivery. Exercises to strengthen the muscles of the perineum and pelvic floor are similarly useful in cases in which the musculo-fascial tissues round the vaginal entrance have been over-stretched at the time of delivery.

Even when the patient's condition a fortnight after delivery is satisfactory it is a wise *precaution to encourage* her to submit to re-examination at a *later date*. Two years ago, in the Edinburgh Royal Maternity Hospital, a weekly post-natal clinic was organized for the purpose of supervising the patient's progress after she left hospital, guiding and advising during the difficult weeks of convalescence, treating in their earliest stages such sequelae of parturition as might manifest themselves after the conclusion of the lying-in period, and, in short, *ensuring that* the patient's return to health should be as *uninterrupted* and complete as possible. Every patient is instructed to attend the post-natal clinic on at least two occasions before she leaves hospital. The first revisit is made, as a rule, within two weeks, and the second about ten or twelve days after delivery. In certain cases, however, more frequent or more prolonged attendance at the post-natal clinic may be advised.

During the past two years rather more than 2,000 patients have reported for re-examination. This represents about 60 per cent. of the total number of in-patients treated by the hospital during the same period of time. Various factors have combined to prevent the "follow-up" being more complete. About 15 per cent. of the patients lived too far from hospital to permit of subsequent attendance; nearly 10 per cent. were unmarried and disappeared at once after leaving hospital; the remaining 15 per cent. could not be persuaded that the probable benefit of further examination and advice would amply repay the little inconvenience occasioned.

An analysis of these cases shows that in approximately 1,400, or 70 per cent. of the total number, the patient's general health was satisfactory, and on examination it was found that parturition had not in any way impaired the efficiency of the pelvic organs. To this number should probably be added the majority of those patients who failed to report. In the remaining 30 per cent. abnormalities of different types and degrees of importance were present. It is a measure of the importance of post-natal work that in almost one case in three special advice or treatment was called for.

RETROVERSION.

Probably the commonest, as it was one of the most important, of the abnormal conditions encountered was backward displacement of the uterus. This lesion was met with in 18 per cent. of the patients who reported to the post-natal clinic. It is noteworthy in this connexion that at the time of discharge from hospital the uterus was found to be retroverted in not more than 8 per cent. of cases, a finding which would indicate that this displacement is most likely to occur during the third or fourth weeks after delivery rather than during the lying-in period. There was in addition a small number of cases in which at the first revisit to hospital the uterus was found to be in a normal position, but in which at a subsequent examination backward displacement was found to have occurred.

An investigation into the factors which might predispose to puerperal retroversion showed that subinvolution was present in a large proportion of the cases examined, and was probably the most important individual cause of the condition. While this is so, it is probably also true that retroversion of itself exerts an adverse influence on involution, for in most cases correction of the displacement was quickly followed by diminution in the size of the uterus and disappearance of persistent red vaginal discharge. Neither multiparity nor difficult labour appeared of itself *to be of etiological importance* unless at the same time there was impairment and relaxation of the lower uterine supports, with consequent descent of the uterus; the association of retroversion and partial prolapse of the uterus was not uncommon. Early rising and hard work too soon after confinement probably operate in the same way, and explain the greater frequency of retroversion in the hospital class of patient. An important and unexpected observation in this connexion was that in cases delivered by Caesarean section the incidence of retroversion, in spite of a longer period of recumbency, was relatively much lower than in those delivered per vaginam. It was found, finally, that where retroversion had been known to exist before or during pregnancy there was a pronounced tendency for the displacement to recur after delivery.

The symptoms which puerperal retroversion may produce are difficult to define. Low sacral backache, general pelvic discomfort, and prolonged lochia rubra were present in most cases. But the condition is so often associated with other pelvic abnormalities, the result of injury or infection, that it is not easy to differentiate the symptoms produced by the retro-displacement itself from those to which other accompanying conditions may give rise. The persistence of red vaginal discharge, however, was noted so frequently in this group of cases as to be almost pathognomonic of retroversion in the late puerperium. It is probably true that such bleeding is often in large part due to an associated subinvolution, but the frequency with which it subsides so soon as the position of the uterus is

corrected and without other treatment would suggest that a mechanical factor incidental to retroversion is also involved.

Reference has already been made to the treatment of puerperal retroversion when it is discovered at the conclusion of the lying-in period. Similarly, when the displacement is first noted six weeks after delivery an attempt is made to correct it and retain the uterus in normal position by means of a Hodge pessary. As a rule the uterus can be brought forward without difficulty, although in a few cases a general anaesthetic is needed. After an interval of six weeks the pessary is withdrawn and the patient asked to attend for re-examination in a further three weeks' time. If the uterus is found to have remained in good position the patient is discharged, but advised to report should pelvic symptoms of any kind appear. If, however, the displacement has recurred pessary treatment is continued for six months.

In the majority of the cases observed the end-results of pessary treatment were in a high degree satisfactory. In a small number deficiency of the pelvic floor, tenderness in the vaginal vault, or fixation of the uterus made pessary treatment unsuitable, and in a few cases the uterus tended to retrovert as soon as the pessary was withdrawn. But in rather more than 80 per cent. of the cases which were followed up symptoms were relieved and the uterus remained in good position after the support had been removed. The earlier the displacement was discovered the easier did its correction prove to be and the less its liability to recur. On the other hand, the symptoms to which retroversion in its early stages gives rise are often so slight and indefinite that unless a routine examination is made six or eight weeks after confinement the condition must frequently remain undiagnosed until such time as its cure by non-operative methods becomes unlikely.

LACERATION OF THE CERVIX.

Laceration of the cervix, associated as a rule with eversion of the edges of the tear and localized surface infection, was found in a relatively large number of cases.* In primiparous patients, apart from the superficial fissuring which is the inevitable legacy of every first labour, injury to the cervix was found in approximately 15 per cent. of the cases examined.

As a cause of trauma of this nature difficult instrumental delivery predominates, and the most serious variety of cervical injury was found in the "failed forceps" type of case, in which failure to deliver had been due to incomplete cervical dilatation. Short of this, the lesion was found in almost every case in which complete dilatation and effacement of the cervix had not occurred spontaneously: it was present, for example, in cases in which, because of maternal or foetal distress, forceps had been applied while as yet a thin rim of cervix could still be felt. Similarly, where an attempt had been made to complete the dilatation of the cervix manually or by drawing the head down into it by forceps, laceration was the common result. On the other hand it is noteworthy that in cases in which delivery had been spontaneous, cervical injury was found in 8 per cent. of cases. In a small number of these labour had been precipitate; in a considerable proportion, however, the membranes had ruptured prematurely, and it is probable that the consequent long dry first stage of labour with dilatation of the cervix by the hard head in place of the soft bag of waters was responsible. In other cases it is possible that a constitutional friability of the cervical tissues may have predisposed to injury. The lesion was not appreciably more common in elderly patients nor did undue size of the child appear of itself to be a factor of importance.

With the immediate dangers of cervical laceration—haemorrhage and acute inflammatory invasion of the pelvic cellular tissue—this paper is not concerned. On the other hand, the eversion and subsequent infection of exposed cervical mucosa, which is so apt to interfere with healing, especially in the transverse or deep stellate type of laceration, constitutes an important puerperal lesion. It is possible at this stage to observe the early development of a condition which later may cause more or less serious ill health. Furthermore, the association of subinvolution and recent cervicitis was so frequently noted as to suggest that the process of involution may be adversely influenced by a focal infection of this type.

The immediate repair of laceration of the cervix at the time of delivery has obvious advantages. On the other hand, the increased risk of sepsis involved unless a perfect aseptic technique is assured makes the procedure inadvisable in ordinary domestic conditions. While this is so, much can be done in the later puerperium to prevent or diminish subsequent disability by controlling the tendency to eversion and by the eradication of infection before the deeper tissues of the cervix become involved.

In the series of cases under review douching, tamponage, and local applications of different types have been employed. The actual cautery, the use of which does not necessitate a general anaesthetic, has proved an effective therapeutic agent not only in suppressing infection but also in reducing eversion by reason of the cicatrization which it produces. Short of this the application once weekly of a 10 per cent. solution of silver nitrate has produced satisfactory results. In a few cases of extensive injury a plastic repair with excision of infected tissue was recommended.

SUBINVOLUTION.

Subinvolution was found with considerable frequency in the series of cases under review. In approximately 12 per cent. of those who reported to the post-natal clinic there was persistence of lochia rubra as late as the sixth or eighth week after delivery, and on examination evidence of defective involution was found. In a considerable proportion labour had been difficult and instrumental, and the adverse influence which puerperal infection, not necessarily of a major type, commonly exerts on involution of the uterus was evidenced by the frequency with which the earlier convalescence of many cases in this group had been complicated in this way. Attention has also been directed to the etiological relationship to subinvolution which retroversion and cervical infection appear to possess. The persistence of lochia rubra until the third or fourth week after confinement appeared occasionally to result from such interference with the pelvic circulation as severe constipation may produce, suitable purgation being quickly followed by cessation of haemorrhagic discharge. Only in a small number of cases could the condition be attributed to retention of fragments of placenta or membranes.

The importance of normal lactation in promoting involution was demonstrated in a convincing manner by the findings in a comparative series of two hundred cases, one hundred of whom nursed their children and one hundred did not. The duration of the red lochial discharge in the former ceased on the average on the ninth day post partum, whereas in the latter it continued until the eighteenth day after delivery.

The treatment of subinvolution was directed in the first place to the correction of such accompanying conditions as retroversion, cervicitis, constipation, or retained products of conception. Where the condition was associated with a residual pelvic infection a course of douching and vaginal tamponage was commonly employed. The administration of quinine and of ergot in some form proved a useful adjuvant in stimulating involution and in controlling persistent vaginal bleeding, although in a few cases this was so obstinate as to require curettage.

BACKACHE.

Backache proved to be a much less common disability during the weeks which follow confinement than one had anticipated. Although every patient was directly questioned in regard to it, not more than 8 per cent. of those who attended the post-natal clinic complained of discomfort of this type. Where uterine displacement, cervicitis, or other pelvic abnormality appeared to be responsible the pain was almost invariably referred to the sacral region. It was, however, only in a relatively small number

* Multiparous patients have been omitted from this analysis as the possibility of the cervix having been injured in a previous labour could not be excluded.

of cases that backache could be related to a visceral lesion. For the most part puerperal backache is of the lumbar or lumbo-sacral or sacro-iliac variety, and would appear more often to be an orthopaedic disability than an indication of gynaecological disturbance. In the majority of cases discomfort had been present for several weeks before delivery, and its origin is probably to be found in the exaggerated lordosis incident to the latter period of gestation; after the patient begins to go about the complaint may be further aggravated by faulty posture and by weakness and general relaxation of the abdominal parietes. There is considerable risk of this condition developing into a troublesome chronic disability, and from the outset treatment should be directed towards the correction of faulty posture, instruction in appropriate exercises, and the employment of a suitable brace or corset.

Apart from such relatively commonplace obstetric sequelae as those which have been considered there is an important group of cases which necessarily demands a prolonged period of supervision and treatment after delivery; such, in particular, as those in which pregnancy has been complicated by hydatidiform mole, heart disease, venereal disease, or albuminuric toxaemia. In post-eclamptic and albuminuric patients, for example, persistence of high blood pressure and albuminuria were found in more than 30 per cent. of cases, and necessitated special advice in regard to diet and in other directions.

Finally, there have been many cases in which debility, anaemia, constipation, dysuria, difficulties in regard to lactation, and other similar conditions, have called for simple advice and treatment.

There are essentially two considerations on which a plea may be based for a closer and more prolonged follow-up study of our obstetrical cases than is usually thought necessary. In the first place, the instructional value of routine examination some six or eight weeks after delivery is difficult to exaggerate. In retrospect such an investigation throws light and guidance on the conduct of labour, and, indeed, on the whole process of childbirth. It discloses the manner in which the general bodily functions have withstood or been impaired by pregnancy and parturition, and illustrates the effect on the reproductive organs which different types of labour, normal or abnormal, may exert.

Of more immediate practical value, however, than the "audit" of our work which the post-natal clinic provides *is the scope which it offers in an important field of preventive medicine.* It directs attention to certain conditions in their early stages which otherwise may remain untreated until such permanent structural changes have occurred that cure by non-operative measures becomes unlikely. In its relationship to the patient's future well-being it is complementary to, and rivals in importance, the more routine supervision and examination before delivery. No department of practical medicine would appear to provide a better opportunity of recognizing the early signs of disease and of treating them with such gratifying results.

The extent to which such a scheme of obstetrical after-care as I have outlined can be applied in general practice conditions is not easy to define. There are certain obvious difficulties, such as that of adding to duties for which remuneration is already seriously insufficient, and more, perhaps, the natural diffidence of patients to submit to what they may consider unnecessary examination. Furthermore, the incidence of post-partum morbidity is naturally lower in domestic than in institutional practice, which is so largely concerned with abnormal midwifery, and it may be claimed that the need for prolonged supervision after delivery is correspondingly less urgent in the former than in the latter. It is unfortunately true, however, that such conditions as retroversion, cervicitis, and backache may develop despite the most conscientious supervision during pregnancy and the most careful conduct of labour, and, in view of the impaired health to which such sequelae of childbirth may later give rise, a policy of after-care, even if it is restricted to the investigation and treatment of persistent vaginal bleeding, leucorrhoea, and backache, must necessarily help us to discharge more effectively and more completely the responsibilities we are privileged to exercise.

VARIATIONS IN THE INCIDENCE OF PNEUMOCOCCAL INFECTION IN THE NASAL ACCESSORY SINUSES OF CHILDREN.

BY

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PNEUMOCOCCAL infections in children began to attract my attention last summer, when I remarked that an unusually large number of the nasal accessory sinuses I examined were reported thus infected. I have turned up all such cases in my private file since the end of 1919, and found record of 1,002 patients, of whom 242 were under 15 years of age. In 52 adults a subsequent re-examination was made, so that for the present purpose there are 1,054 "cases," comprising 3,011 sinus explorations.

The technique employed throughout was that evolved twenty years ago by my father, Dr. P. Watson-Williams. Briefly, a cannula is introduced into the sinus, a small volume of sterile water is syringed in, withdrawn, and examined microscopically and bacteriologically. The sinuses generally examined were the maxillary antra and the sphenoidal; less commonly the posterior ethmoidal cells. The antrum is approached not from below through the inferior meatus, but from above through the middle, a method of great value in dealing with small children. It is comparatively rarely necessary to examine the posterior sinuses of children, especially young children. Six of the patients were under 3 years of age; the age distribution of the whole series was as follows:

TABLE I.

Age.	Patients.	Antra	Sphenoids.	Ethmoids.	Sinuses.
Years. 0–1 ...	21	41	—	—	41
5–9 ...	67	129	4	1	134
10–14 ...	154	286	41	5	332
Children ...	242	456	45	6	507
Adults ...	812	1,557	815	132	2,504
	1,054	2,013	860	138	3,011

Arranging this material in years, and expressing the incidence of pneumococcal infection as a percentage (whether of children or of sinuses examined), it was at once clear that my impression had been correct—that is, that during 1928 a very considerable rise had occurred in the rate. Further, a period of similar high incidence had passed unnoticed in 1923–24, with a much lower rate of infection before and after it. Ignoring 1922, the recorded observations for which year are too few for inference, and grouping together other years in which the incidence was closely similar, the rise and fall is seen to be from 0 to over 10 per cent., as shown in Table II.

There has been no conscious difference in technique, nor in the selection of cases for examination, to explain these variations. In order to test whether accident affected the rather small numbers involved, a similar analysis was made of the figures for "all cases," the results of which are given above. Allowing for the difference in the average number of examinations per child patient (2.1) and per adult (3.3), children form for each year so small a part of the whole that the figures for "all cases" are practically those for adults. It is seen that the incidence of pneumococcal infection for all cases shows a variation—less, it is true, *in its absolute but as great in its relative extent*, and occurring in approximately the same periods as for children. We may deduce that some definite factor operates to cause this variation, though whether this is climatic, epidemiological, or otherwise I am not competent to suggest. The incidence, however, of this infection is not solely of rhinological interest. *A priori* it might be supposed that an individual who harboured living pneumococci

in his sinuses ran a definite risk of developing a more serious form of the infection. In actual fact, 7 of the 83 patients (2 children, 5 adults) have had proved pneumococcal or lobar pneumonia, and there are possibly more, as the significance of the association has hitherto not been

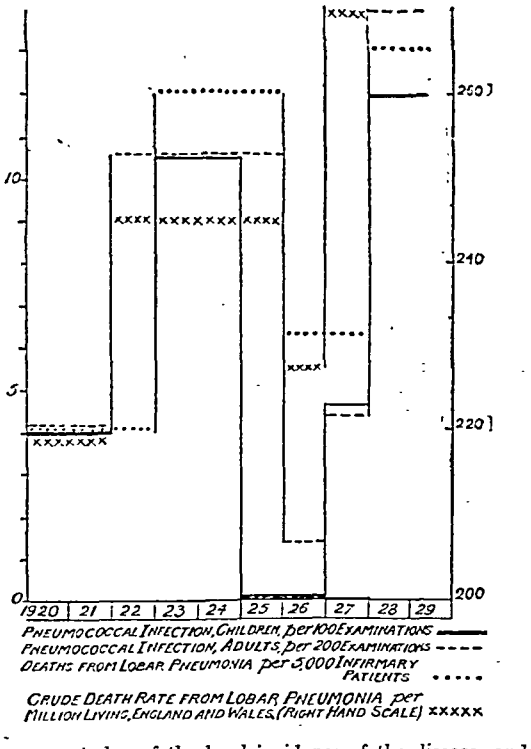
TABLE II.

Year.	Children.			All Cases.		Lobar Pneumonia at Necropsy per 10,000 Infirmary Patients.	Crude Death rate from Lobar Pneumonia per Million Living England and Wales.
	Examinations.	Pneumococcal Infection.		Examinations.	Pneumococcal Infections per 100 Examinations.		
		Per 100 Children.	Per 100 Examinations.				
1920	51	...	...	145	...	...	220
1921	75	5.7	4.0	326	2.1	8.2	
1922	6	...	...	165	...	...	
1923	28	...	...	235	...	...	246
1924	47	15.0	10.6	343	5.3	21.1	
1925	32	...	...	385	...	...	
1926	37	0	0	288	0.7	...	223
1927	63	...	...	368	2.2	12.5	270
1928-29*	163	16.3	12.0	611	7.0	26.4	

* Fourteen months.

appreciated nor have special inquiries been directed to the point, two cases of pneumococcal meningitis and one of pneumococcal mastoid disease also are recorded.

By the kindness of Dr. A. D. Fraser I have been able to obtain the figures for lobar pneumonia from the *post-mortem* indexes of the Bristol Royal Infirmary. Treating



these as an index of the local incidence of the disease, and the Registrar-General's returns as a national index, we see that there has recently been a close association between the incidence of pneumococcal infection of the sinuses and that of pneumonia. All four sets of figures show a low value for 1920–21, a high value for 1923–24, a low value for 1926, and a subsequent rise. We appear now to be in a period of high incidence of pneumococcal infection; certainly the local figures for lobar pneumonia are high, and I feel tempted to predict that 1928 and 1929 will eventually show high national incidence. At least with local figures, the rise and fall of sinus pneumococcal infection tends to precede that of pneumonia; and it will be interesting to observe in the future whether variation in the nasal sinus infections (and particularly in children, in whom it seems to be greater and to appear rather earlier than in adults) forms a reliable guide to forecast the trend of mortality from lobar pneumonia. The accompanying graph illustrates the association recorded in the last ten years.

CONFUSIONAL INSANITY WITH EMPYEMA OF THE SPHENOIDAL SINUS.

BY

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(*With Special Plate.*)

THE association of a sphenoidal sinusitis with definite macroscopic change and microbic invasion of the pituitary gland in a case of insanity is described below, and is illustrated by sketches and photomicrographs; its importance to psychiatry is emphasized by a consideration of pituitary-hypothalamic metabolic disorders in 69 cases of insanity in which a sphenoidal sinusitis had been demonstrated clinically.

A man, aged 51, died four months after admission to hospital. His early history was indefinite, but there was concussion at the age of 26. The first onset of mental disorder occurred when he was 31; from this he recovered, but relapsed again ten years later. He was suffering from confusional insanity, was talkative, disorientated, and maniacal. He had auditory hallucinations, bilateral otitis media, bilateral ptosis, and his blood pressure was 210. The Wassermann and Widal reactions were negative. Three days before death he developed epileptiform fits, after sixty-eight of which he died in status epilepticus.

Post-mortem Examination (seventy-five minutes after death; the tissues as removed were immediately placed in fresh Kaiserling solution).—There were slight superficial haemorrhages in the pia arachnoid, the largest being over the left fronto-parietal area. The cerebro-spinal fluid was slightly blood-stained in the posterior cisterns only. The dural surface of the base of the skull was clear and shiny. There was pus in the pharynx, which could be traced to the left sphenoidal ostium. The sphenoidal sinus was literally full of yellowish pus, the cavity being a large one and almost surrounding the pituitary gland. The pituitary contained large masses of colloid. There was a mucous polypus in the left antrum. The right lung was adherent to the chest wall; there was some perihepatitis, perisplenitis, and a well-marked hydronephrosis.

EXPLANATION OF THE FIGURES.

Fig. 1 is a sketch of the sinus (actual size), and illustrates the following:

(*a*) Empyema of the sinus. Thick, glairy, yellow pus was attached firmly to the posterior inferior wall, from which it extended to and through the ostium. The sketch gives a poor idea of the actual amount originally present, fixation having caused a very marked shrinkage, and handling of the specimen the detachment of a quantity of smaller particles.

(*b*) The pituitary fossa with its contained gland projects into, and is almost surrounded by, the cavity of the sinus. The importance of this anatomical relationship is obvious by inspection of Figs. 1 and 2. It has already been emphasized that actual bone does not offer so much resistance to the spread of organisms as might be supposed, this function being the property of, first, the sinus membrane, and, secondly, the dural periosteum on the other side of the bone. Hence we really have a condition in which the most important endocrine gland of the human body is suspended in a bath of pus.

(*c*) Macroscopic abnormality of the pituitary gland is evidenced by the abnormal appearance, which is irregular, and does not show the normal colour difference between the anterior and

posterior lobes, the anterior usually having a uniform reddish colour and being of loose texture, whilst the posterior part is firmer and considerably paler but uniform. The dividing line between the two lobes should be very narrow and distinct. In the present instance the pars intermedia is swollen, and contains masses of colloid. (In another case this colloid material has been shown to be associated with the presence of micro-organisms[2]; and in yet another case of our series, as yet unpublished, an enormous mass of colloid, almost as big as the pituitary gland itself, was found. The case was one of severe epilepsy, and the patient, who had recovered, was without fits for nearly a year before death.) The irregularity of the capsule and occurrence of adventitious fibrous tissue should also be noted.

Fig. 2 is a diagrammatic sketch superimposed upon the sinus to show the close relationship of the infected sinus and pituitary to that part of the brain concerned with various metabolic processes[3] (and which is often acutely involved in lethargic encephalitis). As the path of secretion is toward the brain stem it is obvious that toxic bacterial products in pituitary infections also find their way into this most important region of the brain, actual organisms having been demonstrated in the pituitary stalk of our case M. L.[1]

Fig. 3 is a photograph of the sinus membrane (Gram's stain). In the upper part of the figure can be seen ciliated epithelium, whilst the long, well-formed chains of a diplococcal streptococcus are below the surface. Although there was considerable pus in the sinus there seemed to be very little leucocytic reaction in the membrane, a point which must be emphasized, as it has an important bearing on the finding of the organisms still deeper in the tissues—either the organism seen was "non-pyogenic" or the biological immunity reaction by leucocytic inhibition was suspended. No other organisms were found in the sinus membrane. It has been said by an eminent histologist that granules in the tissues should never be taken for micro-organisms unless surrounded by cellular reaction. In the present instance undoubted streptococci are seen without even a lymphocytic reaction of any magnitude; *post-mortem* invasion can certainly be definitely excluded. This figure and all the remaining figures are direct reproductions from untouched photomicrographs.

Figs. 4 and 5 show the streptococcal chains in the submucosa and adjacent to the bone surface (black). Note especially that the morphological appearance of these still undoubted streptococci is now becoming less typical. The chain formation is distinct, but the size, shape, and spacing of the stainable part of the organism is distinctly irregular as contrasted with the diplococcal streptococcus nearer the surface.

Fig. 6 is a minute canal in the bone in which streptococcal chains are viewed "end on," the chain characteristic being verified by *the microscopical examination of successive horizontal fields.*

Fig. 7 shows streptococci in the vessel wall of the anterior pituitary, the arrows indicating a vertical and a horizontal chain respectively.

Fig. 8 shows the organisms adjacent to the eosinophile cells of the pituitary, the latter recognizable as large dark masses.

Fig. 9 shows small granules, in rows in the wall of the cavernous sinus, which are at least suggestive of their being partly digested streptococcal chains.

Fig. 10 is a vessel from the hypothalamus (stained by Gram's stain) showing granules in its wall, the significance of which, however, is as yet doubtful. The large dark mass consists of mucinoid material, which probably indicates a degenerative lesion of the nervous tissue in that region.

Fig. 11 is another vessel of the mid-brain showing a large collection of granules of varying sizes in its accompanying lymphatic space.

Fig. 12 shows a mass of spirochaetes, not syphilitic, but of the oral type, in the centre of a small lymphatic nodule adjacent to the upper part of the internal carotid, which was removed through the skull with the sphenoid block. Its interest lies in the fact that it clearly demonstrates the distance that a septic extension may proceed when the organisms are relatively avirulent and of the type usually regarded as non-pathogenic. Its *proximity* to the internal carotid may, given the assumption of a toxic or septic spread along the artery, explain the mental symptoms of confusion, since such spread would affect chiefly the cortical layer of the brain.

COMMENT.

The clinical picture suggested by the case is therefore that of a man having had an accident to the skull followed by infection, the nature of which remained obscure for years. Mental disorder was sufficiently marked to necessitate certification five, ten, and twenty-five years afterwards. The later finding of empyema of the sphenoidal sinus and otitis media strongly suggests that there had been an insidious chronic infective process of long duration involving both. We know from anatomical considerations that the carotid artery is in intimate relation both with the middle ear and the sphenoidal sinus.[4] From this it is obvious that the lymphatics accompanying the carotid would at least occasionally contain deleterious toxic products, and perhaps even on occasion organisms; such a condition, by an assumption of further distal spread by the wave-like arterial pulsation along the course of the carotid, would account for the cortical haemorrhages, especially that over the left fronto-parietal area, and also explain the mental confusion. The pituitary involvement renders impairment of the pituitary-hypothalamic region of the brain a logical conclusion. In view of the hydronephrosis one must consider uraemia in connexion with the status epilepticus, but it is noteworthy that in our collection of specimens with gross involvement of the sphenoidal sinus and pituitary most of them were epileptics, suggesting a more intimate relation between the status epilepticus and mid-brain disorder—in this case through the medium of an infected sphenoidal sinus.

A consideration of this case naturally suggests that pituitary disturbances should regularly occur when the infective process affects the tissues deeper than the membrane on the roof of the sphenoidal sinus. Well-marked cases showing such disturbance are often met with in general practice, and Ferreri[5] quotes a case with typical pituitary symptoms and early acromegalic signs which improved following drainage of the sphenoidal sinus. In such cases the pathological effects of the sinusitis presumably do not influence nervous tissue beyond the pituitary. It is not at all improbable, however, that in some cases there is a further extension to the brain stem via the pituitary stalk. The pituitary may not be affected in quite the same way as in the above cases, but a toxic disturbance of the pituitary secretion occurs leading to symptoms of hypofunction (with consequent overaction of other endocrine glands) rather than the more commonly recognized hypersecretion following irritation by tumour. In mental hospital cases there probably occur phases of hypersecretion and hyposecretion due to variations in the infection and resistance, leading to a disturbed balance of endocrine gland functions, which is a well-recognized feature of mental disease.

Gigantism, acromegaly, and dystrophia adiposo-genitalis are often recognized as occurring in mental hospitals;[6] but of much more importance in the present consideration are the *minor* changes which may occur due to dysfunction of the pituitary gland and the sympathetic centre of the brain with which it acts in various metabolic functions. The demonstration of such minor pituitary disturbances in mental hospital patients is difficult for several reasons. The co-operation of the patient is often wanting; the history, even from the patient's relatives, is deficient; the mental attitude itself of the patient demands such attention and study that minor endocrine signs and symptoms, though noticed, do not usually find their proper place in the clinical picture of the case; and also characters which we usually associate with pituitary disturbances are limited to those due to an irritation by a tumour of the pituitary rather than a toxic disturbance of its secretion.

Table I, collected from Schafer, gives various functions of the pituitary; Table II, from various sources, gives the nerve centres of the hypothalamus. These should be *studied* in conjunction with Tables III and IV, in which the symptoms of pituitary-hypothalamic dysfunction have been tabulated in 69 cases of insanity in which a pyogenic infection was clinically demonstrated in the sphenoidal sinus by Mr. W. Stirk Adams. The clinical symptoms were collected with the aid of Dr. T. C. Graves, Dr. Elizabeth Selkirk, and Dr. C. W. Forsyth, superintendents of the Birmingham mental hospitals. These tables afford evidence of the coexistence of metabolic disorder and mental disorder, the one often improving parallel with the other. It is also a matter of common experience that nearly every case of insanity where the pathological processes concerned are active, shows metabolic defects[3]; these are referable to the pituitary and hypothalamus acting as an endocrine nervous centre. It should be noted that, although the symptoms of refusal of food, delusions of poisoning, and abnormal hunger are at least partly referable to a disordered condition of the intestinal tract, they do afford *some* evidence for a coexisting disturbance of the function of the pituitary-hypothalamic region. It is therefore evident that a sphenoidal sinusitis may in certain circumstances affect the pituitary-hypothalamic region of the brain even although no *macroscopic* perforation of the pituitary fossa is present, such as occurred in the case M. L.[1]; this is supported by the comparison of symptoms and mental improvement which occurred subsequent to treatment following the demonstration of a pyogenic infection of the sphenoidal sinus in the 69 cases *investigated*.

F. A. PICKWORTH: CONFUSIONAL INSANITY WITH EMPYEMA OF THE SPHENOIDAL SINUS.

FIG. 1.

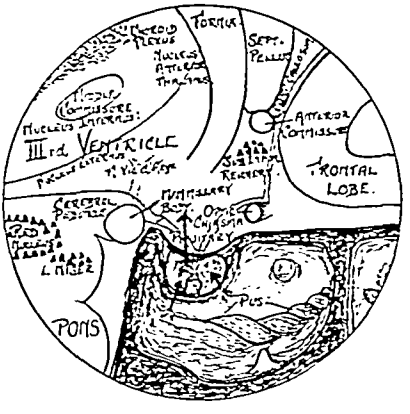

FIG. 2.

FIG. 3.

FIG. 4.

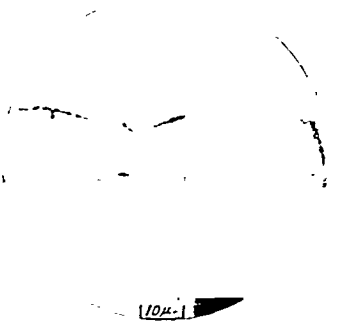

FIG. 5.

FIG. 6.

F. A. PICKWORTH: CONFUSIONAL INSANITY WITH EMPYEMA OF THE SPHENOIDAL SINUS.

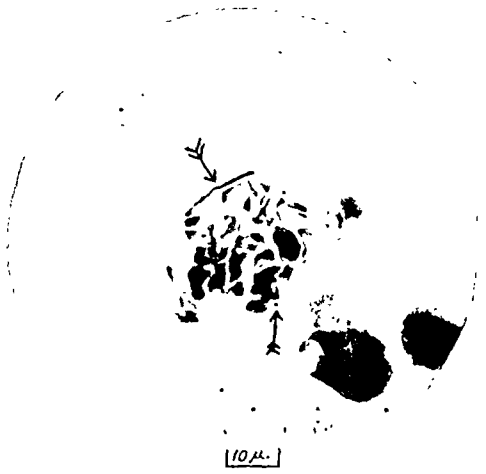

FIG. 7.

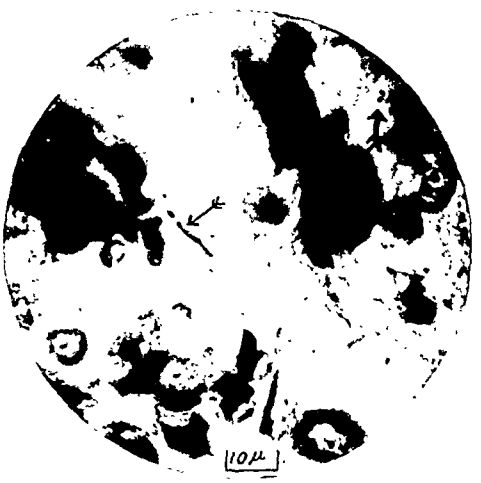

FIG. 8.

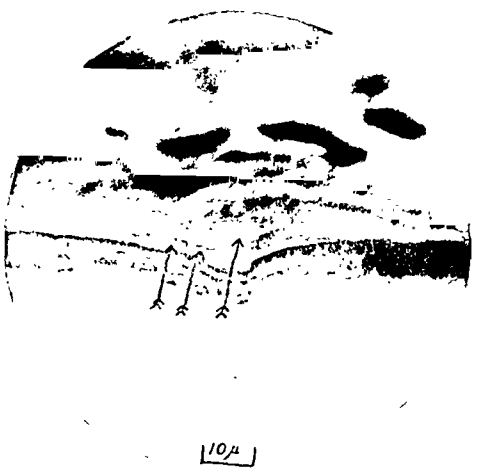

FIG. 9.

FIG. 10

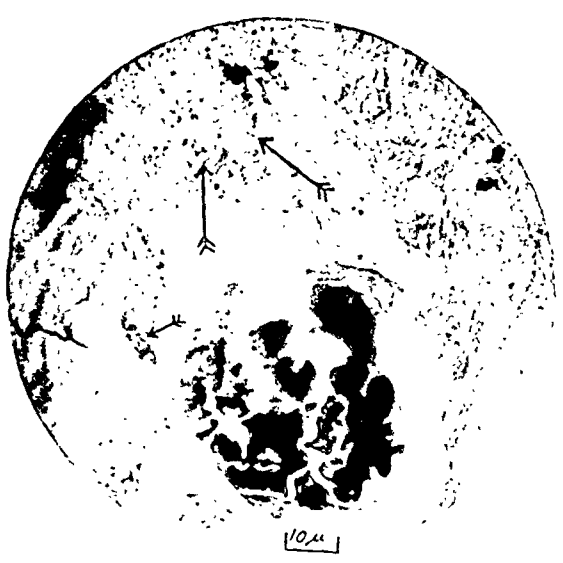

FIG. 11.

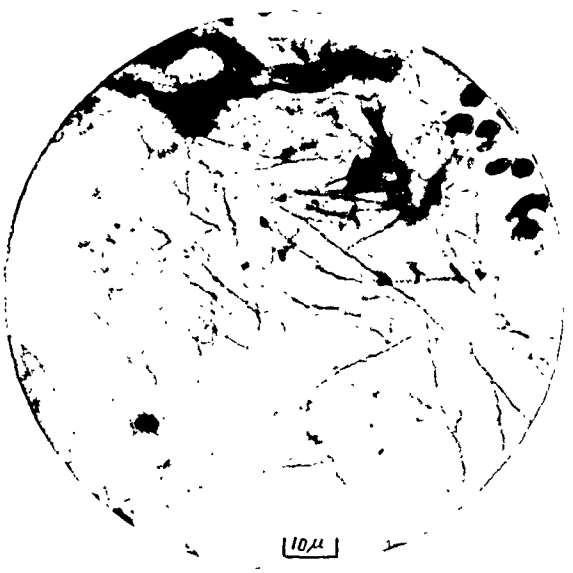

FIG 12.

TABLE I.—*Pituitary Gland Function.* (From Schafer.)

Absent.	Deficient.	Excessive.	Injection of Extract.
Anencephalics	Dwarfs	Skeletal overgrowth	
Paralysis C.N.S.	Hibernation		
Somnolence	Drowsiness		
Lethargy	Lethargy	Mental depression and stupor	
Loss of muscle tone	(Lassitude)		
Metabolic depression	Lowered basal metabolism		Increased basal metabolism.
Subnormal temperature	Low temperature		Rise in temperature.
Respiratory failure	(Sub-breathing)		
Rapid loss of weight	Fat storage		Stops water diuresis
Refusal of food	(Alimentary dysfunction)	Inordinate appetite	Alimentary stimulation.
Polyuria or oliguria	Polyuria	Polydipsia and polyuria	Glycosuria.
	Atrophy of endocrines, sex characteristics, and functions	Coarsening of features	Nitrogen retention phosphorus and calcium increased
	Skin and hair feminine	Excessive hair	Prevents experimental oedema.

TABLE II.—*Nerve Centres of the Hypothalamus.*

Control the smooth muscles of: Eye, bladder, uterus, blood vessels, ? stomach, ? small intestine. Also: Striped skeletal muscle (involuntary), plastic muscle tonus.

Control the secretion of: Sweat, saliva, tears, urine, pancreatic secretion, ? gastric secretion, ? cerebro-spinal fluid.

Control the metabolism of: Sugar, protein, water, temperature, fat, trophic skin, sex-gland activity, sleep, mineral salts of the body fluids, ? acid-base equilibrium, ? digestion.

Symptoms of dysfunction: Glycosuria, albuminuria, polydipsia, pyrexia, subnormal temperature, obesity, sudden loss or gain of weight, *amenorrhoea, impotence, insomnia,* drowsiness, apathy, trophic ulcers, *abnormal hunger, catalepsy, marasmus,* hyperidrosis, salivation, seborrhoea, lacrymation, polyuria, constipation, polypnoea, retention of urine, ? achlorhydria, ? cyanosis, ? dilatation of stomach, ? dilatation of small intestine, ? sudden lassitude, ? hypochondria.

Pathological changes occur in: Diabetes insipidus, dystrophia adiposo-genitalis, narcolepsy, Graves's disease, encephalitis lethargica, Parkinsonism, ? some forms of epilepsy, ? some forms of mental disease.

TABLE III.—*Clinical Symptoms, possibly Referable to Pituitary Hypothalamic Disturbance, in 69 Cases of Insanity with Pus in Sphenoidal Sinus.*

A. PITUITARY-HYPOTHALAMIC DYSFUNCTION.

Symptoms.	Before Treatment.				After Treatment or Recovery.			
	0	+	++	+++	0	+	++	+++
Cyanosis	22	5	16	26	44	23	2	0
Pallor	19	5	15	30	45	21	3	0
Oedema	41	5	16	7	60	7	2	0
Stupor	31	8	13	17	54	12	3	0
Drowsiness	32	9	13	15	54	11	4	0
Refusal of food	36	2	12	19	64	3	1	1
Delusions of poisoning	48	2	4	15	67	1	1	0
Abnormal hunger ...	61	3	2	0	68	0	0	1
Constipation	6	3	20	40	33	31	2	3
Sub-breathers	3	20	22	24	21	34	13	0
Coarsening of face ...	48	8	11	2				
Variations of weight ...	31	17	16	5				

Other Common Symptoms—Vasomotor defect; subnormal temperature; gross fattening; asthenia (suprarenal); thyroid (excess and deficit); retrogression of sex characteristics.

0=Absent or normal. +=Slight. ++=Moderate. +++=Very marked symptoms.

TABLE IV.
B. MENTAL DISORDER, ETC.

Symptoms.	Before Treatment.				After Treatment or Recovery.			
	0	+	++	+++	0	+	++	+++
Mental disorder... ...	0	4	11	54	22	25	13	8
Confusion	11	7	12	39	43	15	7	4
Apathy	20	12	20	17	47	13	7	2
Catalepsy	48	4	11	6	64	3	2	0
Insomnia	19	5	6	39	42	22	4	1
Headache	17	6	12	34	48	15	2	4
Naughtiness	54	3	2	10	57	6	3	3
Fear processes	29	6	14	17	41	8	6	2
Influenza	30	4	19	16				
Family history	31	27	12	3				

Mental Classification.

Dementia praecox	25	Epileptic	4
Confusional	14	Mania	2
Imbecile	3	Melancholic	14
Paranoia	3	Alternating mania, melancholic	4

0=Absent or normal. +=Slight. ++=Moderate. +++=Very marked symptoms.

My thanks are due to Dr. J. M. Mackenzie for kindly showing me the case and for the clinical notes, and to the Medical Research Council for incidental help from Mr. A. T. Rennie, my laboratory assistant.

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WOUNDS OF THE HEART.

A STUDY OF THREE CASES.

BY

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WOUNDS of the heart have been recorded from classical times, and though they were then regarded as being invariably fatal, it is now well recognized that the heart is an organ which is able to tolerate mechanical interference reasonably well. Not only have wounds of the myocardium been successfully sutured,[1] branches of the coronary arteries ligated,[2] and foreign bodies extracted,[3] but in more recent years even the cavities of the heart have been explored in the hope of alleviating the mechanical handicap of a stenosis of the valve leaflets.[4]

TYPES OF FATAL CARDIAC INJURY.

While this is true, yet in war many combatants must die instantaneously from the immediate effect of wounds of the heart. In these days such injuries as result from the use of bullets, shrapnel, fragments of high explosive shells, and the like, are probably a more frequent cause of immediate cardiac arrest than statistics would indicate. Death, when it occurs instantaneously, is the result of a number of factors, notable amongst which must be the extent and severity of the lesion produced in the heart. The momentum of such missiles may be very great and the damage to the heart may be beyond all hope of repair. Sudden gross destruction with gaping lacerations of a wide area of ventricle or auricle is incompatible with life. Even a large proportion of the wounded in whom the damage is less severe must die before surgical aid can be made available, and in these shock and haemorrhage may be profound. Others, again, may survive a matter of minutes to hours, and die from the effect of the accumulation of blood within the pericardium. Blood leaking from a wound of

* Working under the Medical Research Council.

the heart muscle into the pericardial sac may raise the intrapericardial tension to a level approaching that in the great veins. The work of the heart is then greatly embarrassed by a decrease in the venous return, the systolic arterial pressure falls, and death results largely from mechanical causes. Such cases are eminently suited for surgical intervention. The risk of sepsis, secondary haemorrhage, and shock all tend to increase the death rate amongst those who survive the initial stages of the injury.

SURVIVAL AFTER HEART INJURY.

There remain to be considered those patients who survive the immediate effects of the wound, and in whom a bullet or other foreign body lies embedded in the myocardium for months or years. In such cases it is probable that the original injury was relatively slight, and that the missile, by acting as a plug, effectively checked any severe haemorrhage. It is the purpose of the following notes to record the effect on cardiac function of the presence of a foreign body retained in the heart muscle for a number of years. Three such have come under observation, and it was possible in two of the patients to study their cardiac functions thirteen years after the original injury, the foreign body being still *in situ*.

Similar cases have been mentioned from time to time in the literature. Apparently the first recorded observation of such a condition was made on the heart of a wild animal when, about the year 1600, J. C. Weber[5] described the finding of a bullet firmly encapsulated in the heart of a stag. A similar incident has been reported by Grainger.[6] "The animal was remarkably fat and healthy in condition," and had been wounded in the heart apparently some years before death, for the bullet was contained in a cyst in the substance of the muscle. That such a state is compatible with a long life is an old observation. Croly[7] mentions a Napoleonic veteran who was wounded in 1812 and lived for fifty-two years with a round bullet embedded within the pericardium. Delorme[8] quotes a case in which a bullet was found encysted in the wall of the right ventricle twenty years after wounding; the patient died of pneumonia. During the war years many similar cases came under observation, and, by the more general use of *x* rays, bullets and other foreign bodies have frequently been localized in the heart muscle. Vacquez and Bordet in 1918 were able to collect eight reported cases in which foreign bodies were situated in the heart and had not been extracted. A total of thirty-eight cases of war wounds of the heart came to their notice, and of these nineteen required surgical intervention on account of symptoms such as pain or dyspnoea attributable to the presence of the projectile.[9] Vance[10] has recorded three interesting cases of bullet wounds of the heart in which death resulted at a later date, and was not the result of the cardiac damage. In one of these the remarkable feature was the encapsulation of the bullet in the wall of the right ventricle with healed scars of the right auricle and lung demonstrating the route pursued by the missile in reaching its resting place. This man had been shot in the chest at least three years previously.

The older statistics[11] on the distribution of injuries to the heart show a much higher proportion in favour of the ventricles as compared with the auricles. The anatomical relation of the chambers of the heart is often considered a sufficient explanation of this fact, the ventricles presenting a larger surface to external injury. Moreover, the auricle walls are of finer texture and, being less substantial than those of the ventricles, suffer more severe damage from the lodgement of a missile. Greater laceration is to be expected in such tissue, and immediate death more probable. Statistics have been largely compiled from those cases surviving the initial injury. Mention is made of only four specimens of wounds of the auricle in the War Office collection of hearts,[12] whereas a great variety of wounds of the ventricle is shown in fourteen other specimens. In some of these the projectile had passed through the ventricles in its flight, in others it had embedded itself in the muscle, the degree of damage varying greatly. Sepsis was a fairly common complication in the specimens collected. Interesting observations on the localization of projectiles in the heart have been made by radiological examination. In a few instances the missile has perforated the muscular walls and remained free within a cavity of the heart. Whirling movements of the foreign body have been observed on screen examination; as though it were buffeted from side to side by the currents of blood within the chambers of the heart. Embolic phenomena have occurred on more than one occasion in such circumstances.[13]

While in certain cases surgical intervention for the extraction of a foreign body may be imperative, yet this is a procedure not to be undertaken lightly. If symptoms be in abeyance, then such objects as bullets or fragments of shell may well be permitted to remain innocent tenants of "the chief and most noble organ of the body."

CASE I.

A. R., now aged 35, was first seen on February 25th, 1928. He was wounded in France on August 18th, 1916. While standing in the trench he received a sharp knock on the back and then felt a sudden twinge in the region of the heart. He fell forward, but rose immediately, and after the application of a field dressing to the wound in the back he was able, a few minutes later, to walk a mile in comfort to the nearest dressing station. Later

FIG. 1.—Case I. X-ray photograph (6-foot plate) showing the presence of a spherical ball of shrapnel lying within the pericardium and dimpling into the ventricular muscle near the apex.

the same day he began to suffer pain in the region of the heart, and was transported to hospital at Etaples, being under the care of Dr. Nathan Raw. He was transferred to England, and was a patient in several hospitals. The question of operation was considered, but a surgeon consultant, who saw him in April, 1917, discouraged the suggestion and told the patient that no one could

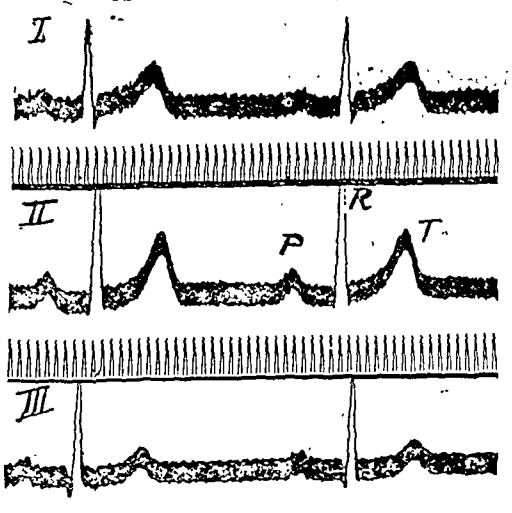

FIG. 2.—Case I. Electro-cardiogram showing the presence of normal sinus rhythm. The T waves are upright and well formed in all leads. The time-marker records 28.57 vibrations per second. 1 cm. deflection equals 1 millivolt.

guarantee him to be as physically fit without the bullet as he was with it. He was discharged on May 17th, 1917, and returned to civil life and his former occupation—a grocer's assistant. This man has been under observation for a year and has complained of no symptoms. He had had no previous illnesses of any importance, and had always been healthy.

Examination revealed a well-built, muscular man, 5 ft. 4½ in. in height and 10 st. 4 lb. in weight. There was a healed scar in the right interscapular region. The heart was not enlarged,

the apex being in the fifth space 0.5 cm. within the mid-clavicular line. The heart sounds were pure in character. The pulse was regular in rate, 64 per minute, and of good volume. The lungs were healthy, and no evidence of disease was detected. The skeletal muscles were rather flabby.

Seen again in February, 1929, he admitted that since the occurrence of the wound he had avoided all strenuous exercise, though he felt able for work, and could enjoy a round of golf without fatigue. He could play a game of football, but did not feel justified in making it a habit on account of the effort involved. He believed lack of training to be the cause of a bursting feeling in the head which he occasionally experienced after a game of football.

X-ray examination revealed the presence of a spherical ball of shrapnel lying within the pericardium and dimpling into the surface of the left ventricle above the apex (Fig. 1). Screen examination showed that it moved in a transverse direction with each cardiac contraction. A radiogram taken a year after the first examination demonstrated that the missile was in exactly the same position and had not "wandered." An electro-cardiogram taken on two occasions revealed no significant changes (Fig. 2). His vital capacity was 3,050 c.cm., being 73.8 per cent. of normal for his surface area.

CASE II.

J. B., aged 35, was seen in February, 1929. While serving in France he was wounded in the right foot at Hill 60 in 1915. After

FIG. 3.—Case II. *x*-ray photograph (stereoscopic view) showing the presence of two fragments of metal (A and B) within the chest. "A" lies in the hilus of the lung; "B" is smaller and is embedded not far from the apex in the posterior wall of the left ventricle.

treatment he rejoined his unit and was again wounded in July, 1916. He was hit in the chest, fell to the ground, and was rendered unconscious for some minutes. After being in hospital at Abbeville for fourteen days he was transferred to England, and was *x*-rayed twice at various hospitals. He experienced sharp stinging pains in the chest about this time, but is unable to recall any other symptoms. These soon cleared up and he returned again to France in October, 1916. He began to notice pain in the region of his heart, and on the march was more easily fatigued. After a further period of hospital treatment in France and England he was discharged from the army in June, 1917, and returned to his old employment—that of a mechanic.

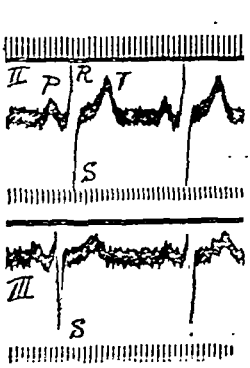

FIG. 4.—Case II. Electro-cardiogram showing the presence of normal sinus rhythm with a left ventricular preponderance. The T waves are upright in all leads. Time-marker and standardization as in Fig. 2.

In 1923 he began to have stomach trouble, and this has incapacitated him from time to time. He states that dyspnœa is only produced by sudden exertion. He lives in a top flat and has to climb four flights of stairs at least twice a day. A slight but definite degree of breathlessness is produced by this amount of exertion. He does not feel as able as formerly to lift heavy weights at his work, is sometimes dizzy, and has occasional pain over the eyes.

Physical examination disclosed a rather undernourished pale individual. His height was 5 ft. 7½ in., and weight 9 st. 8½ lb. The heart was regular in rate and not enlarged. The apex was 0.5 cm. within the mid-clavicular line. The sounds were pure and no murmurs were heard. The pulse rate after fifteen minutes' rest was 75. Blood pressure readings were 128 systolic, 94 diastolic. There was no evidence of disease elsewhere.

During the course of a routine examination a radiogram of the chest (Fig. 3) showed the presence of a fragment of metal buried in the left lung and another smaller piece in the wall of the left ventricle. It was noted on screen examination that with each heart beat the latter fragment moved to and fro in a transverse direction. Stereoscopic radiograms demonstrated that the fragment was embedded near the posterior aspect of the left ventricle. Another fragment was found in the left lung near the hilus. An electro-cardiogram (Fig. 4) showed the presence of normal sinus rhythm with a left ventricular preponderance. The vital capacity test gave a reading of 3,825 c.cm., being 92.7 per cent. of normal for his surface area.

CASE III.

This patient was a German soldier, aged 23, who died of a fat embolus in France on November 22nd, 1918, as a result of gunshot

FIG. 5.—Case III. Showing the heart, with a small block of tissue cut away to expose a fragment of metal embedded in the posterior wall. The thickened and adherent pericardium can also be seen. The missile is marked by the arrow.

wounds of the left leg and left arm. A *post-mortem* examination was performed the following day. The body was well developed. There was a large open wound across the middle and outer aspects of the left thigh with a transverse fracture of the shaft of the femur above the condyles. The ends of the bone were bathed in an abscess cavity. The left humerus was fractured just above the elbow-joint. There was also an entry wound over the spine of the fifth left lumbar vertebra, which was fractured. There was some extravasation of blood into the retroperitoneal tissue.

Besides these recent wounds, examination showed the presence of a well-healed scar of a wound sustained on a former occasion. It was situated behind the left posterior axillary line. The lower border of the eighth left rib was chipped. The inferior part of the pleural sac was obliterated, and the lung was firmly adherent to the chest wall and pericardium. The posterior surface of the heart was adherent to the pericardium. A fragment of high explosive shell was lodged in the muscle of the left ventricle, just below the transverse vein. It did not penetrate the whole thickness of the muscle. There was nothing else abnormal noted in the heart or other organs. The accompanying photograph (Fig. 5) shows the missile *in situ*.

The *post-mortem* evidence in this case indicated that the heart wound was obtained some time previous to the wounds which were the immediate cause of the man's death.

These cases are of interest in that they substantiate the view that the presence of foreign bodies embedded in certain sites of the heart muscle is compatible with an active and vigorous life. Just as a foreign body situated elsewhere in the body may give rise to no symptoms, so also may a small piece of metal in the myocardium be of no apparent disadvantage to its owner. This may be of

some importance from a medico-legal point of view. It also suggests that the immediate extraction of a foreign body from the heart is not always justifiable unless symptoms are urgent.

SUMMARY OF CLINICAL FINDINGS.

The electro-cardiograms show that the spread of the excitation wave through the heart muscle is not significantly altered in its course or time relations in these cases. It is well known that after infarction of the heart muscle certain changes may occur in the electro-cardiogram particularly affecting the form of the T waves. These alterations are more frequently observed when the lower part and apex of the left ventricle are involved in the infarcted area. The T deflection is said[14] to show a certain sequence of changes in shape and direction, gradually returning to normal as healing in the muscle takes place. It is possible that shortly after the injury sustained by the heart in the above cases, some deformity of the T wave might have been observed. After a lapse of years no abnormalities are to be detected in the T waves of these patients, even in the presence of inert metal buried not far from the apex. Apparently but few cases with retained missiles have presented themselves for electro-cardiographic examination. Lea[15] has recorded one instance in a young soldier with a fragment of shell embedded near the apex of the heart, in whom complete heart-block was present. In the single electro-cardiogram published the T waves were upright and of normal form. In the case of Jones[16] the T waves were inverted in lead 2 thirteen weeks after the injury. The left ventricular preponderance observed in Case ii of this series is not considered of much significance. The heart was not found enlarged or displaced by clinical or *x*-ray examination. Pericardial adhesions over the posterior surface of the heart might possibly account for this change.

The vital capacity test indicates that these men suffered from no diminution in ability to take a full deep breath. The test has been used to some extent as a measure of physical fitness, and has proved of value in following the course of heart disease. The fact that the result obtained in Case i was a little lower than might be expected is probably attributable to his voluntary abstention from most forms of physical exercise. The man was flabby and in poor physical training. In Case ii the high reading recorded indicates that, so far as this test is concerned, there was no impairment of his respiratory powers.

In Case iii it is assumed that, after obtaining a heart wound, this man was sufficiently fit to rejoin a front line regiment. Any cardiac disability under such circumstances is extremely unlikely. The man survived a heart wound, and must have led a vigorous life thereafter, ultimately to succumb to the effects of a compound fracture of the femur.

CONCLUSIONS.

1. Foreign bodies such as bullets, shrapnel, or fragments of shells may remain buried in the myocardium for years without the production of symptoms.

2. Two cases are described in which missiles were found embedded in the muscle of the left ventricle of the heart by *x*-ray examination thirteen years after wounding.

3. Both men are in good health and fit for active work at the present time, the foreign bodies being *in situ*.

4. The electro-cardiograms presented no significant alterations in the form of the T waves or other deflections.

5. In the third case, at *post-mortem* examination, a fragment of shell was found buried in the left ventricle. It was not related to the death of the patient.

My thanks are due to Professor D. Murray Lyon, who kindly placed Cases ii and iii at my disposal. The *x*-ray photographs were taken in the radiological department of the Royal Infirmary, and I am indebted to Dr. Woodburn Morison for the reduced prints. Case i was kindly sent to me for examination by Dr. S. Lapetz, to whom I am indebted.

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THE TREATMENT OF NEPHRITIS.*

BY

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THOUGH nothing as dramatic as insulin, or as specific as liver extract in pernicious anaemia, has yet been applied to the treatment of nephritis, great advances have been made within recent years; and there comes a time when, with the gradual accumulation of new facts and theories, it is useful to review our knowledge of a subject, and bring our plan of campaign as far as possible up to date.

The more important functions of the kidney are: (1) The regulation of salt and water metabolism and the osmotic pressure of the blood. (2) The excretion of certain end-products of metabolism, especially from protein, and of other substances not required by the body. (3) The maintenance (with the help of other apparatus) of the acid-base equilibrium of the body. The first of these functions is represented clinically in the amount and specific gravity of the urine, and in the occurrence of oedema. With regard to the second function we have in the estimation of the non-protein nitrogen of the blood a delicate and important test, and one which is often most helpful in treatment and prognosis. It must be remembered that the normal kidney can, and will, excrete protein when required to do so—as, for instance, injected proteins, or haemoglobin when liberated from its normal position in the red cell.

The following classification of nephritis, based on that of Christian,[1] will be adopted in this paper.

1. Acute nephritis (oedematous, haemorrhagic, recurrent).
2. Subacute nephritis with oedema.
3. Chronic nephritis (*a*) with oedema; (*b*) without oedema; (*c*) vascular hypertension progressing into nephritis.

ACUTE NEPHRITIS.

Nearly every case of acute nephritis, whether oedematous or haemorrhagic, is a sequel of an acute infection, most commonly a throat infection, which it usually follows after an interval of ten to fourteen days. Scarlatinal nephritis, which in all cases is a sequel of a streptococcal tonsillitis, is no exception.

There are two factors at work in the production of acute nephritis: (1) the specific factor which causes the renal damage; (2) the factor of functional overstrain which determines the amount of the damage. Animal experiment[2] is quite clear on this point, for whatever the poison used—some of the recent work has been done with scarlet fever streptococcus endotoxin[3]—the amount of damage done by a given dose depends on the functional strain thrown on the kidney; in other words, on the amount of protein and salt in the diet. This applies not only to rabbits, whose normal protein intake is low, but also to animals normally carnivorous. A further point which stands out from the experimental work[4 5] is that fresh vegetables in the diet are not merely neutral in effect, but appear to have a positive influence in limiting the degree of renal damage.

The treatment of acute nephritis must therefore consist in the prevention of functional overstrain during the stage

* Abridged from an address given before the Sheffield Medico-Chirurgical Society, January 24th, 1929.

of acute renal damage, and the elimination of any existing source of further infection when the acute stage is over. The handling of the acute stage is therefore largely dietetic. The fluid intake is restricted wherever there is oedema, for if the kidney is retaining water it is obviously useless to give more water and so increase the oedema. Flushing out the kidneys is not only unnecessary and undesirable, but also impossible. The same principle applies to the treatment of the transitory anuria, which sometimes lasts for a day or two in the initial phases. If, as Volhard[6] suggests, this is due to a slowing down of the glomerular circulation brought about by congestion and oedema of the kidney, the condition is far more likely to be relieved by restriction of fluid, which will reduce the oedema, than by the administration of fluid, which will increase it. Cases of anuria in acute nephritis which I have treated by strict limitation of fluid intake have responded to their thirst by the recommencement of urinary secretion. For the rest, the diet should consist almost entirely of carbohydrate, with a minimum of salt and with a daily portion of fresh vegetable food. A limited allowance of milk is probably desirable, its small protein and salt content being compensated for by its value as a food in other ways. Milk as the sole or main article of diet in acute nephritis is, however, very far from ideal. These principles are represented in the diet sheet below:

Breakfast: Milk, cereals, tomatoes, bread or toast, marmalade.
Dinner Potatoes, green vegetables, Yorkshire pudding, milk pudding.
Tea Bread or toast with jam, plain fruit cake.
Supper Biscuits or bread, salad.
No salt or butter. Total daily allowance of milk 3/4 pint; other fluids 3/4 pint (water and fruit juice).

One cannot pass over the acute stage of acute nephritis without considering the treatment of convulsions. These are practically indistinguishable from eclamptic fits, and are presumably of the same origin. True uraemia is exceedingly rare in acute nephritis, though the only certain distinguishing test is the blood non-protein nitrogen. Following Volhard,[7] who believes that these convulsions are due to cerebral oedema, I have practised lumbar puncture in their treatment with success. Convulsions may add to the immediate gravity of the situation, but are usually relieved at once by lumbar puncture and have no effect whatever on the eventual prognosis.

By the end of a few weeks of dietetic treatment most cases will be free from oedema and haematuria, and there may or may not be some albumin remaining in the urine. If the patient is discharged at this stage he will either gradually recover entirely or develop subacute nephritis, or he will return very shortly with recurrent acute nephritis—a serious disease which in a certain number of cases again becomes subacute or chronic in type. These recurrent cases will, in my experience, all be found to have the same focus of sepsis which caused the first attack. The treatment of acute nephritis is therefore quite incomplete unless the septic foci have been thoroughly eradicated. To confirm this view I have been through the records of eighty-four cases of acute nephritis and have been able to follow up and re-examine fifty-four of them. The results are briefly given in the accompanying table.

Acute Nephritis.

	No of Cases.	No. Cured.	Percentage Cured.	Error.
Group I. No septic focus found ..	28	21	75	±20
Group II. Septic focus still present	12	3	25	±25
Group III. Septic foci found and removed	14	14	100	—

In the first group I found no obvious sepsis present on re-examination, but my search for it consisted merely of inspection of the tonsils and an inquiry into history of colds, sore throats, etc., and several cases of septic foci are probably included in this group. In the rest of this group the septic factor causing the original attack of nephritis was probably of a temporary or transient nature; 75 per cent. of these cases were well, and by this I mean that they had had no further attacks of nephritis, and had on re-examination no albuminuria or casts, no oedema, and no rise of blood pressure. Of the remainder, five have had between one and seven further attacks of nephritis, others have albuminuria or oedema still, with headache, malaise, and similar symptoms. In all cases it is at least a year since discharge, and although this is a short period, nephritis which is going to recur does so, in my experience, within six months (usually much less) of the initial attack.

The next group of cases all had obvious sepsis on re-examination, usually in the tonsils. They show a recovery rate of only 25 per cent. Of the rest, two are dead (one from subacute nephritis, the other from uraemia), the others show oedema, albuminuria, or both, or have had recurrent attacks.

Most of the patients in the third group were treated by tonsillectomy, and though the group includes four patients who had previously had two, three, or four attacks of nephritis, all are well to-day. It must be emphasized that but for this treatment these cases would have belonged to Group II, with the worst recovery rate of any.

The final column of "error" is based on the statistical formula $P \pm 3\ (0.6745)\sqrt{(Pq/n)}$; where P = proportion of successes, q = proportion of failures, and n = number of cases.

Subacute Nephritis with Oedema.

This oedematous type, known to older authors as the large white kidney, and now sometimes called nephrosis, is typically unaccompanied by cardio-vascular or retinal changes, or by nitrogen retention, and in many cases there are no casts in the urine. It arises insidiously and has only three essential features—namely, oedema, albuminuria, and oliguria. Sometimes, however, such conditions as raised blood pressure and nitrogen retention occur later in the disease, or are present from the first, perhaps because the nephrotic syndrome has been secondary to a true nephritis.

Before dealing further with the disease it is necessary to consider a few theories of oedema. The capillary wall may be looked upon as a semi-permeable membrane separating the blood from the lymph. Salts—that is, crystalloids—pass through the membrane, but not colloids such as the plasma proteins. An increase of intracapillary pressure (such as occurs in heart disease) will cause more fluid to leave the vessel, and hence will produce oedema; a reduction of plasma protein, by reducing the osmotic pressure within the vessel, will act in the same way. Such a reduction in plasma protein occurs in nephrosis owing to the prolonged action of a pronounced albuminuria. The effect of loss of fluid into the tissues will be to cause the kidney to excrete less water. Hence oedema and oliguria may both be dependent on albuminuria; and, remembering that the normal kidney can excrete protein, we see that the disease may be due to an error of metabolism whereby serum albumin can no longer perform its proper functions in the body, and is therefore excreted, just as sugar is excreted by the normal kidney in diabetes. This, briefly, is Epstein's theory of nephrosis,[8 9] and he has, in fact, lately named the disease "diabetes albuminuricus." Other interesting facts pointing to the general metabolic nature of the disease are the increase of lipoid substances in the plasma and elsewhere and the extraordinary tolerance of nephrotic patients to doses of thyroxin which would be sufficient to poison a severe case of myxoedema. The changes in the kidney are of a degenerative rather than an inflammatory nature (hence the term "nephrosis"), and may be secondary to the prolonged albuminuria. This has, in fact, recently been confirmed by the observations of Jungman,[10] who removed a portion of kidney from an early case and found it to be normal.

The present treatment, on which some of the cases, even after months of invalidism, may recover, apparently completely, is as follows:

1. The diet should be rich in protein and very low in fat.
2. Thyroxin should be given in large doses by the mouth, and, if necessary, intravenously. Epstein has given as much as 10 mg. intravenously.
3. Diuretics, such as ammonium chloride, calcium (possibly in conjunction with parathormone), and novarsurol,[11] have been used with some success.
4. Blood transfusion is rational, and useful as a temporary measure.

5. The removal or treatment of any obvious focus of sepsis is as important as in acute nephritis. I have seen one case in which the surgical drainage of an empyema was followed in six weeks by disappearance of albuminuria and oedema.

CHRONIC NEPHRITIS.

Chronic nephritis is a disease unlikely ever to become curable, though prevention may some day be within our power. The type with oedema is rare, and is a mixture of the previous and following types.

In the non-oedematous case there is nitrogen retention and high blood pressure, but no difficulty in water excretion. The indications in treatment are, therefore, restriction of activities and a low protein diet; but there is no need to reduce the fluid intake, and it is wrong to attempt to reduce the blood pressure by drugs, even if permanent reduction were possible. The high blood pressure exists to keep an adequate circulation through the diseased cerebral or renal vessels. It is surprising how often the onset of uraemic symptoms may be traced to a failure of the heart to keep up the high pressure. As the pressure falls the renal function becomes inadequate, and the patient dies of uraemia before he has time to die of heart failure. In all such cases the indication is to treat the heart and raise the blood pressure again; I have recently used pituitrin for this purpose, I think with some success.

URAEMIA.

In relation to the treatment of uraemia the following points are worth noting. (1) Patients with true uraemia occasionally recover temporarily and lead a more or less comfortable life for a few years. (2) Lumbar puncture is useful in convulsions, even in true uraemia. (3) Intravenous injection of glucose solution is probably more effective treatment than the older method of injecting saline. (4) Since the respiratory type of uraemia (so-called "renal asthma") is due to a true acidosis brought about by failure of the kidney to maintain the acid-base equilibrium, treatment by two-hourly administration of alkaline sodium phosphate in 30-grain doses, as suggested by Meakins and Davies,[12] is a rational procedure.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

HEROIN AFTER ABDOMINAL OPERATIONS.

THE interesting article by Mr. A. E. Mortimer Woolf, on March 16th (p. 499), tempts me to record an experience of my own.

A woman, aged 29, and in other respects perfectly healthy, was operated on by Mr. Geoffrey Bate for a twisted left ovarian cyst on March 22nd, 1928, at 9.30 a.m. Before the operation she received a hypodermic injection of 1/6 grain morphine and 1/180 grain atropine. No difficulties were encountered either with the operation or with the anaesthetic, which was administered by Mr. C. N. Chadborn.

At 3.30 p.m., as the patient complained of some pain, she was given, hypodermically, 1/12 grain heroin hydrochloride. The matron of the nursing home, feeling tired herself, sat down in an armchair after giving the injection of heroin, intending to rest in the patient's room. Half an hour later, hearing the patient grunt, she rose from her chair, and found her cyanosed and comatose, with complete cessation of respiration. Artificial respiration was started at once, oxygen freely given, and 1/20 grain of strychnine was injected hypodermically. When seen by me fifteen minutes later the pupils were small, but reacted to light, the corneae were insensitive, the respirations nine per minute, and the pulse good. Half an hour later the patient had come round completely.

There cannot, I think, be any doubt but that had the patient been alone in the room at the time, as might well have happened, she would have been found dead. The symptoms of poisoning were attributed at the time to an *idiosyncrasy, and I do not think were in any way* connected with the operation six hours earlier.

Personally I agree entirely with what Mr. Mortimer Woolf writes as to the dosage of heroin, 1/12 grain of which is nearly always an adequate dose, although the tendency in recent years appears to favour 1/6 grain.

Hove. DONALD HALL, M.D., F.R.C.P.

AN UNUSUAL CASE OF ECLAMPSIA.

THE case of eclampsia reported below may be of interest for the following reasons: (1) the strictness of the antenatal care throughout; (2) the unusual delay between the confinement and the onset of the fits; and (3) the large number of fits.

The patient, who was 26 years of age, came up for first examination in the twenty-fourth week of pregnancy. Her history revealed nothing of interest, though she had nursed two patients of mine with mild scarlet fever a year previously. She was a well-built country woman, and her urine was free from abnormalities. She was asked to report at monthly intervals.

At the next attendance (thirtieth week) there was a slight cloud of albumin in the urine. She was put on a modified protein-free diet and advised more rest, and told to report in a fortnight. This time the albumin had increased, and there was slight oedema of the feet. Blood pressure 150/110; fundi normal.

She was put on a strict milk diet and confined to bed. The following week the albumin decreased and the blood pressure was 140/90. The diet was maintained with the addition of carbohydrates, and she was allowed up for two or three hours in the afternoon. The next week the albumin increased again, and she was ordered back to bed, where she remained until her confinement, which took place a fortnight before full term. She had a remarkably easy labour, lasting only four hours, and was delivered at 7 a.m. on December 16th, 1928, of a healthy female child weighing 4 lb. 8 oz. The next three days were uneventful. She felt very well and the temperature and pulse were normal. She was still on a milk diet. Without any warning, at 5 a.m. on the morning of the fourth day after labour, she had her first fit. In all she had twenty-three severe fits.

She was removed five miles in an ambulance to the War Memorial Hospital, Melton Mowbray. Before removal she was given 2/3 grain of morphine sulphate hypodermically in two separate doses. On admission her stomach and colon were washed out with sodium bicarbonate; 2 oz. of castor oil were left in the stomach, and she had 2½ drachms of chloral hydrate, in 30-grain doses every two hours, per rectum. Venesection was performed and 15 oz. of blood withdrawn; 1/50 grain of nitroglycerin was given hypodermically. She was catheterized every eight hours. She had at six-hourly intervals 1½ pints, 1½ pints, and 1 pint of saline subcutaneously.

The urine at first was solid with albumin, but this has diminished every day. Her recovery has been uninterrupted. At no time has the fundus oculi been other than normal.

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Melton Mowbray.

A COLOSSAL OVARIAN CYST.

THE following extraordinary case seems of sufficient interest to warrant recording.

A married woman was sent into hospital by Dr. Milburn of Kingston with a diagnosis of ovarian cyst. The patient stated that she had had a swelling for five years, but since Christmas it had increased to such an extent that she could hardly get about. She suffered little or no pain, no trouble with micturition, but much constipation.

On examination, I found that she was 4 ft. 10 in. in height, and her abdomen measured 56½ in. at the level of the umbilicus. There was no swelling of the lower extremities, her heart and lungs were fairly normal, but she looked like bursting at any moment. On February 2nd, under novocain, I made a small incision to the right of the navel and soon came upon the thickened wall of the cyst. I inserted a De Pezzer's self-retaining catheter with a clamp on the end, and had the fluid drawn off gradually at the rate of one gallon every two hours. Had I removed the whole cyst at one operation I feel sure she would have succumbed. On February 3rd the pulse, which had been rapid and somewhat irregular, had recovered, so I decided to operate. By a mid-line incision I removed the cyst, which was adherent over the whole surface of the abdominal cavity, and very thick-walled and multilocular, and non-malignant.

The thick brown fluid was very carefully measured, and amounted to 55½ pints. The patient made an uninterrupted recovery and left the hospital in eighteen days.

It seems very strange in these days that anyone should develop such a huge swelling without seeking medical advice. The amount is surely a "record" for so small a woman.

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Reports of Societies.

THE PSYCHOPATHOLOGY OF ANXIETY.

A joint meeting of the Psychiatric Section of the Royal Society of Medicine and the British Psychological Society was held on April 9th to discuss the psychopathology of anxiety.

Dr. ERNEST JONES, opening, said that in psychopathology the term "morbid anxiety" was widely employed to designate a particular collection of phenomena, one which could be distinguished from those grouped under the name of fear. At least two factors served to make this distinction. The first was disproportion between external stimulus and response. In pronounced cases this was very evident—for example, in the claustrophobic distress induced by mere presence in a closed room, and, indeed, acute attacks of anxiety often occurred when it was impossible to ascertain any external stimulus of danger whatever. The second feature was disharmony between bodily and mental manifestations. As a result of general experience one allotted a certain degree of bodily disturbance to a certain degree of mental apprehension, and then noted that this proportion was in many cases deranged. This was easy to observe in extreme cases—for example, where a patient displayed extensive bodily disturbance of the kind associated with fear (dryness of the mouth, sweating, polyuria, and so on) and yet was very little aware of conscious fear. The greater prominence of bodily manifestations in cases of morbid anxiety as compared with those of normal fear was certainly very striking, and could not fail to arouse the impression of a thwarted instinct, as though some impediment to the usual expression forced the instinct to find an outlet in the bodily direction to a greater extent than would otherwise have happened. With regard to the pathology of the condition, the speaker thought the innumerable pre-Freudian hypotheses had now been discarded. Freud's first contribution to the problem was made on a purely physical basis. Studying the anxiety syndrome isolated in "neurasthenia" by Hecker, Freud separated it altogether from this disorder, and showed that it had a distinct and characteristic pathogenesis. The anxiety neurosis occurred whenever undue sexual excitation was combined with deficient opportunity for discharge. He laid stress on the element of frustration which was common to all the situations in which this neurosis arose, so that the anxiety could be described as what was found in frustrated libido. Freud assumed that in sexual excitation certain chemical substances were generated or liberated, and that when these could not be dissipated along their accustomed paths anxiety arose. The physiological basis of anxiety was generated from the physiological basis of libido by some unknown process of chemical transformation. Freud had refused to generalize from this finding, and he did not maintain that all anxiety had this source, only the morbid anxiety of the psychoneuroses. With the view that this morbid anxiety not merely arose in consequence of the repression of the libido, but was actually derived from it by some process of transformation, the speaker had at various times expressed disagreement, on the ground that there was insufficient evidence to justify postulating a process at such variance with the biological theory of instincts. He had suggested that the morbid anxiety was a perverted manifestation of the fear instinct, which, in the case of neurotic conflicts, had been stimulated to activity as a protection against the threatening libido. In his latest volume Freud had fully accepted this view, and abandoned his previous more complicated one. One was thus brought back to the simple conflict between ego and libido, in the course of which the former responded by developing a reaction of fear. Freud had further suggested that the developed dread sometimes found in situations of real danger was derived, not from the repressed libido that was directed towards external objects, as happened in the psychoneuroses, but from the narcissistic part of the libido that was attached to the ego. The speaker had applied this suggestion to the understanding of war neuroses, and had put forward the view, confirmed by others, that the only men who suffered from war shock were those whose libido, organized on a homosexual-narcissistic basis, was so attached to the ego as to become stimulated when the latter was threatened—that is, in situations of real danger. The mechanism of real anxiety in such situations was more complicated than might at first appear, and the speaker gave reasons for his description of the condition as a narcissistic neurosis, and fortified this conclusion by considerations drawn from allied fields. It was known that anxiety arose in relation to the over-development of a libidinal cathexis. The curious thing was that this could happen either from direct erotic excitation or from the opposite of this—namely, a threat to the libidinal organization. Apparently a threat caused a libidinal investment at the point threatened, as though the libido protected itself by increasing its strength. The speaker discussed the sense in which this relative excess of libido could be conceived as a danger, and entered into speculations concerning the function of the resulting morbid anxiety. He also instanced Freud's suggestion that many of the most characteristic features of anxiety would appear to be copied or perhaps even derived from the event of birth itself, in which bold and far-fetched suggestion Freud had been anticipated by Erasmus Darwin.

Dr. H. YELLOWLEES offered some considerations on the matter with special reference to the psychoses. The present conception of morbid anxiety, he said, was due to Freud, who was the first to unify its protean manifestations and to demonstrate them as the syndrome of the morbid condition. His theories and those of his followers as to the causation of anxiety states seemed to the speaker to require only intelligent and unprejudiced first-hand study to be accepted as sound by any reasonable physician. They were confirmed by clinical experience, and formed a reliable basis for effective treatment. The role of morbid anxiety in the psychoneuroses was obviously of very great importance. It played some part in practically all of them, a leading part in most, and in many it was actually the entire illness. The general opinion among many leading writers appeared to be that evolutional melancholia was the only psychosis in which anxiety played anything like a prominent part, but here it did so almost invariably. Other writers, however, held the view that anxiety might merge into other psychoses as well. The views of the analytical school were that anxiety might appear as a symptom of any form of psychosis, though it was most prominent in climacteric melancholia and the alcoholic conditions, especially delirium tremens. The speaker believed these views to be mistaken ones, and he thought it was not very hard to show where the misunderstanding had arisen. The word "anxiety" did not mean the same thing to the different schools. Freud gave the word as a psychological term and had every right to attach his own meaning to it. Freud gave an astonishing variety of detailed symptoms which he enumerated as possible manifestations of morbid anxiety, but in spite of this he offered a picture of something which, with a little care, and after a little experience, was not really hard to recognize, and that something, the present speaker submitted, was one with which the true psychosis had little or nothing to do. The morbidly anxious patient exaggerated mere possibilities, and used them as pegs on which to attach his anxiety. But it was a fallacy to think that any extension of this mechanism would lead to the delusions and dreads of the melancholic. Situations which would put a normal person in suspense left the psychotic unmoved. He had not found any psychotic whose symptoms were affected by bombing in air raids; in fact, he knew of no better aid in differentiating neurosis and psychosis than the effect of an air raid. He suggested that one would look in vain for the anxiety syndrome among psychotics. In the psychoses the role of anxiety, properly so-called, was a very subsidiary one. Borderline cases existed, but were not often to be found.

Dr. BERNARD HART said that the transformation of libido into anxiety was conceivable chemically, but as a biological conception it ceased to be intelligible. The conception that anxiety was a reaction of the ego, a striving to

protect itself against libido, was very fruitful, simply because it brought the conception of anxiety immediately into relationship with fear and dread, to which it was obviously closely allied. Fear was the reaction of the ego to external danger, and anxiety was a reaction to internal stress. In both cases the ego was protecting itself. It was more illuminating, however, to say that the essence of the reaction was not so much this protection as the failure of an adequate protection. If the response to external danger was completely adapted fear was not evoked, and if the response to internal stress was completely adapted there was no anxiety. The speaker regarded anxiety and dread as identical in essential mechanism, as in both of them the ego was failing to master a situation. The essential characters of anxiety were apprehension, tension, and unrest, and these were clearly discernible in evolutional melancholia and in some of the acute alcoholic and other psychoses.

Dr. R. D. GILLESPIE referred to the difficulty arising from the wide range of meanings attached to anxiety. The term should be used only when there was a definite consciousness of fear, though even that would not be sufficient. There was a very definite condition of mental malaise or tension which might be more or less conscious, but so big as to be practically unknown to the subject. It would be better if this condition were given a term implying mental pain. States such as this were the outcome of conflict.

Dr. W. H. B. STODDART disagreed with Dr. Yellowlees that anxiety was a characteristic of all the neuroses, since many obsessional patients never showed the anxiety reaction. Why did the patient with evolutional melancholia exhibit apprehensiveness so frequently? It was when repression of the sexual instinct became greater with the advance of life that anxiety came into play. Such cases were much relieved by potassium bromide, which he regarded as an anaphrodisiac, diminishing the degree of libido, whether conscious or unconscious.

In some further discussion Dr. J. A. HADFIELD pointed out that there seemed to be an intimate connexion between anxiety states and disorder of the adrenals. Dr. KUBIE of New York thought it useful to distinguish between anxiety as a cause and anxiety as a symptom. The absence or relative infrequency of anxiety from the psychoses still left the problem as to what was the role of anxiety in the preliminary situation. Dr. T. A. Ross described an interesting case with anxiety symptoms, which was not one of sex repression, and could be traced back to childish terrors.

Dr. WILLIAM BROWN, speaking of shell-shock cases, said that sex repression might have caused disturbance in some of these, but in others the disturbance seemed to be adequately explained in terms of the instinct of self-preservation. Dr. Brown protested against the use of the term "libido," in relation to sex, as if it were something which could be repressed and had its own energy. Often it was a manifestation of the lack of the power of an individual to assert himself as he would like to do.

PAIN IN RELATION TO THE UPPER URINARY TRACT.

A MEETING of the London Association of Medical Women's Federation was held on March 26th, at the British Medical Association House, Tavistock Square, with Miss HUXLEY in the chair. Miss E. C. LEWIS gave an address on pain in relation to lesions of the upper urinary tract.

Miss LEWIS said that there were three varieties of abdominal pain caused by lesions of the kidney and ureter: colic; pain in the loin and mid-axillary region, due to lesions of the parenchyma; and pain at the outer edge of the rectus abdominis, at the umbilical level, caused by distension of the pelvis. Colic in its most severe form was caused by a stone in the renal pelvis or ureter. Some writers had thought that it was due to tension of the kidney capsule, others that it was a spasm of the unstriped muscle. Legueu's work on pyeloscopy seemed to support the view that there would be painful and vigorous contractions behind an obstruction, just as in the alimentary canal; oddly enough, stones in the calyces did not cause pain. Renal colic, however, did not always indicate the presence of a stone; similar attacks, though usually less severe, were caused by the passage of other foreign bodies, such as blood clots from a malignant growth, debris from a tuberculous kidney, or "showers" of crystals; also by irregular spasms in acute pyelitis and ureteritis, in Dietl's crises, and in crises of nervous origin. The differential diagnosis included biliary and appendicular colics, and those of intestinal and pancreatic origin. The radiation of urinary colic was fairly characteristic. The other varieties of pain were more difficult to diagnose; they were often not particularly characteristic of the kidney, and gave no help in distinguishing the different kinds of renal lesion. A heavy aching pain, often accompanied by tenderness, was associated with large kidney stones and with ureteric stones impacted above a stricture, or with those too large, or lying too obliquely, to be passed on; in these cases the patient was often unable to lie on the affected side. There were exacerbations due to superimposed attacks of pyelonephritis. A stone impacted in the lower end of the ureter caused vesical pain and frequency. In hydronephrosis, which was merely the evidence of obstruction to the outflow of the kidney, there was aching pain from distension of the pelvis and parenchyma and, in large tumours, from dragging on the nerves of the pedicle and surrounding structures. Often the smaller distensions were the most painful. A great number of movable and dropped kidneys were symptomless and required no treatment, others gave varying manifestations, nervous, or referable to the digestive system, including the curious one of jaundice when the affected kidney was on the right side. Some of these kidneys caused renal obstruction and infection, with either aching or colicky pain.

Tuberculosis and malignant growths were almost negligible in differential diagnosis, the former because the slight aching in the loin was overshadowed by the bladder picture, and the latter because pain did not occur by itself, but was a late symptom, haematuria being the early one. The simple acute infections were perhaps the most difficult to diagnose and deal with. The milder ones might be painless; often there was tenderness without pain. In more severe cases pain and tenderness in the loin, accompanied by fever, were the dominating features. In the fulminating cases the picture was more that of an acute abdomen.

Spasms, strictures, and kinks of the ureter, Miss Lewis said, had received more attention in America than in this country; according to Hunner they gave rise to protean manifestations. The pain, when present, was felt in the lower abdominal quadrant, since the lesion was generally situated in the last few inches of the ureter. There might be tenderness where it crossed the brim of the pelvis, and also below the broad ligament. The pain was apt to be intermittent; some patients were only troubled at night, some by day, others in the early morning. There might be a free interval lasting for months. In 75 per cent. the picture was that of bladder irritability. The accompanying kidney manifestations were those of the distention and infections caused by the obstruction. Unfortunately, examination of the urine was not always helpful, since it was said to be normal in 30 per cent. of these cases.

In the differential diagnosis of the chronic types of pain, lesions of the upper digestive tract need not be considered, since here there was no relation of pain to the taking of food. Acute perinephritis began just like acute renal infection, but the urine contained no pus, and kidney function was unimpaired. An inflamed gall-bladder was usually tender to pressure beneath the costal margin during deep inspiration. The pain of an appendix was rather more lateral than that of the ureter, and did not radiate in the same way. A lesion low enough in the ureter to simulate one in the uterine appendages would cause frequency. Calcified mesenteric glands must be remembered, and also radiation along the lower dorsal nerves, secondary to spinal or thoracic diseases.

ACUTE INTUSSUSCEPTION IN INFANTS.

A MEETING of the Devon and Exeter Medico-Chirurgical Society was held at the Royal Devon and Exeter Hospital on March 28th, with the president, Dr. COHEN, in the chair. A paper was read by Dr. J. DOUGLAS MURRAY based on eight cases of acute intussusception in infants.

Dr. Murray said that the cases occurred during a period of thirteen months; all the patients were males, healthy and robust, between the ages of 3 and 22 months. In six cases the children were less than 12 months old, and these were all breast-fed, with the exception of one child, who was being weaned during the week previous to the onset of the acute symptoms. The speaker called attention to the fact that information as to the ordinary feed of the infant was rarely forthcoming in the notes of hospital cases, owing to the acuteness of the condition and the desire to remedy it as soon as possible after the child's admission. In the six cases of children less than 12 months old careful inquiries as to diet were made at the time of the child's admission, and dietetic errors or alterations were proved to exist in each instance, in spite of the mother's statement that the child was breast-fed. Dr. Murray mentioned that inquiries by Fitzwilliams into the seasonal incidence of the disease had revealed the fact that the maximum number of cases occurred in March and December, and that there was a steady decline in the incidence of this condition during the summer and early autumn months, when epidemic diarrhœa was most rampant. Moreover, the majority of cases of epidemic diarrhœa occurred in children who were artificially fed, whereas acute intussusceptions affected for the most part healthy breast-fed children; there seemed, therefore, to be no justification for regarding acute enteritis as a predisposing cause of acute intussusception. Dr. Murray mentioned that two of his patients had died, each with hyperpyrexia; in each of these cases, and in these two cases only, could the intussusception be felt per rectum. Recovery had followed in the remaining six cases, which occurred in two children, each of whom had three intussusceptions during the period of thirteen months; there was never less than four months' interval between one intussusception and the next. In each instance treatment was by laparotomy, with manipulative reduction of the intussusception. The non-operative treatment of this condition was discussed, and it was mentioned that uncertainty as to whether complete reduction of the intussusception had been effected seemed to be an insuperable drawback to this line of treatment. Finally, Dr. Murray dealt with the etiology of the condition, and stated that he regarded hypertrophy of the lymphoid tissue in the lower end of the ileum, consequent upon intestinal irritation produced by some error in diet, as the chief cause of acute intussusception in infants.

The PRESIDENT mentioned two cases of which he had had personal experience. In the first the stools passed immediately after reduction contained a stub of asparagus; in the second the last portion could not be reduced, and had to be opened up; an inflamed appendix containing pus was found inside. Mr. CANDLER said that in his opinion an elongated mesentery was the primary cause, and that dietetic errors provided the stimulus. As regards diagnosis, he emphasized the importance of emptiness in the right iliac fossa, and remarked that in some cases the lump could not be felt without an anæsthetic because it was high up under the liver or lower ribs. Under an anæsthetic, however, the hand could be pushed up higher and the lump be palpated. Mr. LOCK drew attention to the lessened incidence of acute intussusception. Mr. WAYLAND SMITH thought that if a change of diet or a dietary indiscretion was the cause of intussusception one would expect a much higher percentage of cases. He agreed with Mr. Candler that the underlying condition which made an ileo-cæcal intussusception possible was a congenitally long mesentery.

Dr. MURRAY, in his reply, agreed that the cause of intussusception was a moot point, and that the most probable etiological factor was an error of diet in children with an abnormally long mesentery. He thought that the "signe de dance" was of doubtful value.

Reviews.

PROGRESS IN PSYCHIATRY.

DR. HENRY DEVINE'S *Recent Advances in Psychiatry*[1] forms a noteworthy addition to this well-known series. An author of a textbook of psychiatry is faced with numerous difficulties. The aspects of the subject are so many that it is little wonder that many authors prefer to keep their eyes closed to some of them and thus contrive to impart to their subject a superficial aspect of simplicity by the process of omitting from their reckoning all views which are not in conformity with their own, and which would therefore destroy the unity of outlook which they strive to attain. Many writers also who desire to be comprehensive content themselves with the enumeration of a multitude of theories without attempting to construct from them any sort of synthetic unity of outlook.

It is Dr. Devine's unique contribution to this subject, that he is not only widely comprehensive in his survey, but that he has sought for a common factor in each of the numerous theories advanced towards a fuller comprehension of mental disease, and has succeeded in devising from them a synthetic formulation. In a chapter devoted to psychogenesis in the psychoses this method of approach is clearly shown. The author here contrasts two types of delirious condition—one a fever delirium, a reaction to an infective agent, and the other a psychogenetic delirium occasioned by psychic trauma. He points out that although the important etiological factor in the fever delirium is undoubtedly the morbid organic state, yet the form and content of the delirium itself requires to be studied in its relationship to the emotional undercurrents of the patient's life. On the other hand, in the psychogenetic case, organic factors have also to be reckoned with, in the exhaustion and toxæmia and insomnia associated with prolonged anxiety, and thus the treatment must be both physiological and psychological, although the illness was excited by a psychic experience. The student must not fail to realize, says Dr. Devine, that he is dealing with neither a physical nor a mental disease, but rather with a condition which can only be thoroughly understood and adequately treated when both physical and mental causal relations are taken into account. Psychic and physical explanations only represent different aspects of the same reality.

Dr. Devine impresses on his readers the necessity of keeping in mind that the psychoses, like normal reactions, are the product of a number of mutually interrelated factors, both psychic and organic, and he demonstrates the various relationships which exist between disordered states of mind and such factors as a psychopathic heredity, metabolic disturbances, organic diseases, obscure infections, endocrine disorders, and morbid changes in the cells of the brain. Under the heading "Cerebral Inferiority" the author considers patients who are the subject of an inferiority of those very functions on which the integrity of the personality depends, and indicates the practical corollaries of Bolton's findings with regard to the deficient durability of the cortical neurons. In dealing with the causation of mental disease he points out that even where a whole group of cases can be attributed to a common pathogenic agent, there does not exist any direct, immediate, and invariable relation between cause and effect. General paralysis is instanced as only one of the many possible effects of the infection of the organism by the syphilitic virus, and general paralysis itself shows a great variability in respect to form, course, and outcome.

The author has divided his subject matter into five parts. Preceding these is an excellent introductory chapter dealing with the fundamentals of psychiatry. Part I is devoted to the consideration of toxic, infective, and somatic factors in the causation of the psychoses; Part II to the effects of somatic disease in psychotic subjects and a section on shock therapy and one on malarial therapy

[1] *Recent Advances in Psychiatry.* By Henry Devine, O.B.E., M.D., F.R.C.P. London: J. and A. Churchill. 1929. (5 × 8½, pp. 340. 12s. 6d. net.)

in general paralysis; Part III is concerned with the behaviour of the organism in mental disorders, and in this part the haemoclastic crisis, basal metabolism, and carbohydrate metabolism in the psychoses are dealt with. Biopsychic types are considered in Part IV, and the relationship of physique with psychological type is demonstrated. The contents of the concluding part include the psychopathic "unconscious," and psychotherapy in the psychoses.

There is a wealth of information to be had from these pages, skilfully presented and closely analysed. Needless to say, Dr. Devine has an exact knowledge of all the recent publications of any importance on his subject; and the bibliographical references provide all that is required. The book is one which we can heartily commend to the student, general practitioner, and specialist alike.

SURGICAL DIAGNOSIS.

A NEWCOMER to the well-filled ranks of surgical textbooks, Mr. C. E. SHATTOCK's *Handbook of Surgical Diagnosis*[2] is arranged under the headings of diseases, the diagnostic points of each being then given. Despite the fact that a very economical style of composition is used throughout, the book runs to nearly 700 pages—an indication of the thoroughness with which the subject has been handled. In systematic textbooks, with few exceptions, the matter is divided into diseases, followed by an account of the signs and symptoms produced, but as the order has to be reversed in practice it might appear that a textbook of diagnosis should start with signs and symptoms and lead up to diseases; the clear, concise, tabulated style adopted in this book to a large extent overcomes this difficulty by rendering the various signs and symptoms very ready of reference. Modern methods of diagnosis are well represented, although not to the exclusion of older clinical methods, but we could find no reference to ventriculography in the diagnosis of intracranial lesions. The neurologist will scarcely agree that "cerebral neoplasm gives a history of slow, steady progress for months or years without any period of improvement," in view of the fact that the clinical picture produced by such cases is so largely determined by the varying degree of surrounding vascular change. Illustrations are limited to radiograms, taken, for the most part, from McKendrick and Whittaker's *X-Ray Atlas*. Few authors realize how much radiographic detail is lost during process reproduction; such radiograms as those on pages 321 and 279, while probably excellent in the originals, have too little contrast to be of much value after reproduction. On the other hand, the photographs in the gastric and urinary sections are admirable. The book is one which the student will find of value, especially in his final year.

Books that have been established for long periods of time, provided always that each edition is efficiently revised, tend to develop a mellowness which is often absent in newer publications, and such is the character of the late Sir ALFRED PEARCE GOULD's *Elements of Surgical Diagnosis*,[3] revised by his son, Mr. ERIC PEARCE GOULD. It is forty-four years since this work first appeared, but the present edition is none the less quite up to date, references (perhaps rather too brief in view of their increasing importance) having been made to cholecystography and the use of lipiodol as aids to diagnosis. The classification of the matter in regions rather than under individual diseases is the best that could be adopted in a book intended to help the student to discover the nature of the lesion from the signs and symptoms presented by the patient. This arrangement makes the book a very readable one, especially as the author has steered clear of the tendency to prolixity, which this method of approach so often encourages. It is refreshing to find a large number of experiential paragraphs, which are missing from the ordinary textbook, as, for example, in the chapter upon head injuries: "The surgeon is more likely to overlook fractures that exist than to diagnose the injury wrongly when they are not present"—a salutary reminder to the novice. Omissions are few, but there appears to be no reference to Froyne's syndrome or to the use of ventriculography, a method of diagnosis meriting some notice, even if of limited application. The illustrations are restricted to half-tone reproductions of radiograms, and on the whole are well chosen; some, however, have fared badly during reproduction, and are on too small a scale to be of much value. The book runs to 730 pages, and the general get-up and type are good. The seventh edition is worthy of even greater success than has attended the previous issues.

[2] *Handbook of Surgical Diagnosis.* By Clement E. Shattock, M.D., M.S.Lond., F.R.C.S. Edinburgh: E. and S. Livingstone. 1929. (Cr. 8vo, pp. viii + 673; 78 figures. 15s. net.)

[3] *Elements of Surgical Diagnosis.* By Sir Alfred Pearce Gould, K.C.V.O., C.B.E., M.S. Seventh edition, revised by Eric Pearce Gould, M.D., M.Ch.Oxon., F.R.C.S.Eng. London: Cassell and Co., Ltd. 1928. (Pott 8vo, pp. xv + 730; illustrated. 12s. 6d. net.)

GERMAN MONOGRAPHS ON TREATMENT.

MID-EUROPEAN medical textbooks are tending more and more to take the form of single-topic handbooks. The practitioner's guide to metabolic disorders[4] by Professor RICHTER of Berlin, in a series entitled "Monographs on treatment," is a good example of this. It is considerably better printed and produced than many Continental books we have read. Also the translation into English is easier than that of the average German manual. There are chapters on the treatment of diabetes mellitus, gout, obesity, metabolic anomalies, and diabetes insipidus. Throughout the instructions are given in clear, dogmatic, tabulated paragraphs, and many charts and diet lists appear. The notes on the treatment of diabetes mellitus include a note on synthalin, which has a place in the regulation of diabetes in middle life. The great value of spa treatment as a prophylactic against diabetes in the "tired business man" type is stressed, and recommended in established cases of obese, constipated, gouty, and melancholic varieties of mild diabetes in later life. Balneological treatment, with precise instructions about the various German cures, is likewise fully considered in the chapters on obesity and gout. A new preparation, "lipolysin," recalling "fibrolysin," is mentioned in the treatment of obesity of endocrine origin. But beyond this there is nothing new in the book, and indeed it has no pretensions beyond its title. But it is well worth perusal by English-speaking clinicians. Acknowledgements are made to van Noorden, and to Professor Umber, the well-known Berlin authority on metabolism.

A similar volume to the above is one on remedial measures against blood loss[5] by Professor CLAIRMONT of Zürich, and Professor von den Velden and Professor Wolff, both of Berlin, who are the general editors of the whole series, have assisted. This book is, of course, mainly concerned with the indications and technique of blood transfusion. Two methods, neither of them new, are fully described and illustrated. Failing blood transfusion the authors recommend saline infusion, and of this they give the rationale and methods fully. The book is quite up to the high standard of the series, but all the information it contains is readily obtainable in similar English publications.

CHEMISTRY OF POISONS.

AUTENRIETH's *Laboratory Manual for the Detection of Poisons and Powerful Drugs*[6] is a compendium of information on the chemical properties and reactions of poisons. Toxicology, as a branch of chemistry, is founded on exact science, but its practice is an art which requires long and laborious effort for mastery. Although no book can take the place of practical experience, it must be recognized that practical experience cannot be gained without the help of books; the number that may be needed will be more or fewer according to their several characters. Autenrieth's will help to diminish the number; it is the most generally

[4] *Wie Soll der Arzt in der Praxis Stoffwechselkrankheiten behandeln?* Von Professor Dr. P. F. Richter. Therapie in Einzeldarstellungen. Leipzig: G. Thieme. 1928. (5½ × 8½, pp. 78. M.3.60.)

[5] *Die Bekämpfung des Blutverlustes durch Transfusion und Gefässfüllung.* Von Professor Dr. P. Clairmont, Professor R. von den Velden, Dr. med. et phil. Wolff. Therapie in Einzeldarstellungen. Leipzig: G. Thieme. 1928. (5½ × 8½, pp. 78; 5 figures. M.3.60.)

[6] *Laboratory Manual for the Detection of Poisons and Powerful Drugs.* By Dr. Wilhelm Autenrieth. Authorized translation by William H. Warren, Ph.D. Sixth American edition from the fifth German edition, completely revised, with extensive additions. London: J. and A. Churchill. 1928. (Med. 8vo, pp. xxvi + 628; 60 figures. 30s.)

useful that we have seen. It provides the toxicologist with abundant help for the occasions when he needs a change of method, or must have recourse to an alternative reaction for the detection of the poison sought. A poison dispersed in the fluids or tissues of an animal body may present difficulties to the toxicologist that have never occurred in other encounters with the poison. Thus with certain of the rarer poisons, particularly those of ill-defined characteristics, it is not always easy to determine how they may be isolated and recognized; and, in cases when no more is known of such a substance than has been described by workers who have studied it in its original purity, it is evident that a wide gap remains to be bridged by the manual of toxicology. It is in this respect that the volume before us appears to excel, for it provides a copious fund of information from which the worker may draw to enable him successfully to accomplish his purpose. Many books on toxicology have been written since the first edition of Taylor's. Not many of these possessed an added merit apart from the description of newer substances. Autenrieth's book not only brings the subject up to date, but is likely to be regarded as a landmark in the literature of the subject.

GUY'S HOSPITAL REPORTS.

WITH its first quarterly instalment for this year the *Guy's Hospital Reports*[1] enters on its seventy-ninth volume, and shows the admirable vigour that has made this far the longest lived series of hospital reports. Dr. A. A. OSMAN, working with the aid of a grant from the Medical Research Council, continues his studies in Bright's disease by recording some observations on the incidence and diagnosis of the various forms of acute nephritis, based on an analysis of 388 cases admitted to Guy's Hospital from 1900 to 1927 inclusive. Of the three forms of acute nephritis—haemorrhagic, diffuse, and tubal (nephrosis)—the two first are equally frequent and both commoner than the third, and all three are more often due to tonsillitis and acute infections of the upper respiratory passages than to any other cause. In a further article, "Some problems concerning the etiology of acute nephritis," he pays special attention to the importance of the "soil," observes that scarlet fever is certainly not the most common cause of acute nephritis now, and, while admitting that the hypothesis is not absolutely proved, argues that acidosis is an important, if not an essential, disposing factor. In his report of a case of hydatid of the kidney, Mr. R. P. Rowlands points out the difficulties of diagnosis from hypernephroma. Dr. G. W. Rake writes on encephalo-myelitis as a complication of varicella, a subject of great interest both in connexion with the relation of herpes zoster and chicken-pox, and with post-vaccinal encephalitis. Dysphagia due to pharyngeal paralysis is discussed by Mr. W. M. Mollison, who records thirteen cases. Dr. R. D. Gillespie gives an account of the investigation into the symptoms and signs of fatigue and exhaustion which he carried out at the Phipps Psychiatric Clinic, Baltimore, when McCunn Research Scholar in Physiology of Glasgow University. In an article rich in references to the literature Dr. Robert Donaldson, the recently elected Sir William Dunn Professor of Pathology, records a case of haemochromatosis complicated by primary carcinoma of the liver. This is followed by the report of a case of haemochromatosis under the care of Dr. Hugh Barber of Derby, with a note on the microscopical appearances by Dr. G. W. Nicholson. Visualization of the bile ducts after an opaque meal in two cases at the New Lodge Clinic is described by Drs. J. F. Venables and P. J. Briggs with the help of good radiograms. In some notes on peptic digestion Dr. F. A. Knott emphasizes the efficiency of milk as an antacid, and shows the negligible influence of such acid fluids as lemon juice and vinegar on peptic digestion. On the basis of cases at Addenbrooke's Hospital, Cambridge, Mr. W. H. Bowen discusses the etiology of appendicitis; he concludes that stagnation in the appendix is very important, that a stercolith or blocking of the lumen probably determines a fulminating attack, that in an appendix disposed to inflammation intestinal infection is prone to cause an attack, and, in view of Hurst and Knott's work, that achlorhydria is an important disposing factor. Dr. Maurice Campbell, writing from the cardiographic department, follows up previous work by giving his results on the vital capacity of forty cardiac patients who had been long under his observation.

[1] *Guy's Hospital Reports*. Vol. 79 (Vol. 9, fourth series), No. 1, January, 1929. Edited by Arthur F. Hurst, M.D. London: The *Lancet*, Limited. 1929. (6 × 9¾, pp. 126; 15 figures. Annual subscription, £2 2s.; single numbers, 12s. 6d. net.)

NOTES ON BOOKS.

"A MANUAL of tropical diseases and their care for nurses" would perhaps better describe the handy volume entitled *Tropical Nursing*,[8] by Dr. A. L. GREGG. The author has in a striking manner brought together into small compass the salient points of all the commoner tropical diseases—definition, cause, diagnosis, treatment, and nursing. Such a book is a new departure and will fill a much-felt want. In preparing for future editions, which will doubtless soon be needed, one would like to see the text carefully scrutinized for some ambiguities in phraseology, for essential details lacking here and there, and for a few minor inaccuracies. As examples, "Milk and butter should be stored in an ice-chest." How stored when no ice available? "Drink large quantities of fluid." When? In blackwater fever, "on no account sponge the patient's body unless hyperpyrexia occurs and the temperature exceeds 107° F." This statement needs some modification. To include gonorrhoeal proctitis and haemorrhoids as causes of dysentery is misleading. These, however, are minor blemishes that can easily be corrected in the course of revision.

The volume on *General Medicine*[9] of the Practical Medicine Series (1928) consists of five parts. In the survey of recent work on infectious diseases, which, as in previous years (see *Journal*, February 12th, 1927, p. 292), is undertaken by Dr. George H. Weaver, assisted by Dr. T. T. Crooks, the writers emphasize the number and importance of infectious diseases originating from animals. Diseases of the chest, excepting the heart, but including tuberculosis, are discussed by Dr. Lawrason Brown. Dr. William D. Stroud deals with diseases of the heart and blood vessels and diseases of the kidneys, and Dr. Ralph C. Brown reviews the recent literature on diseases of the digestive system and metabolism.

Dr. TINDAL'S *Gleanings from General Practice*[10] is an attempt by a practitioner who had to enter medical life when still little more than a boy, to assist younger men with "tips" learnt from experience or taught by colleagues. He instils into the young practitioner the duties of self-discipline, the habit of observation, and the right conduct of professional relationship. Hints on some general principles in medical treatment, and on the care of children and the aged, are followed by notes on cookery, on sick-room administration, and on useful remedies. There is very little that is new in the book or unobtainable from other sources, and some of the suggestions in treatment seem open to question. Is it, for example, "undoubtedly a good plan in every routine case of sickness to begin by ordering the patient to take a dose of laxative medicine"? and to advise patients to take this before sending for the doctor may be thought in some cases to be courting disaster.

A second edition of *Tuberculosis and How to Combat It: A Book for the Patient*,[11] by Dr. F. M. POTTENGER of Monrovia, California, originally brought out in 1921, and then noticed in these columns (1921, ii, 799), has not undergone much change. A new chapter entitled "The Will to Get Well" briefly insists that this attitude of mind makes it easier to bear the restrictions and self-denial necessary to attain benefit and cure, and remarks that without this help from the patient the guidance of the ablest physician may fail to prevent a simple case of tuberculosis from drifting into an incurable condition. As is pointed out in the chapter on the importance of treating early tuberculosis seriously, it is neglected tuberculosis that kills. Speaking from twenty-five years' experience in the treatment by sun baths, the author says that, as there are times when this is contraindicated, it ought not to be employed except under medical supervision. Clearly written, this book is a trustworthy guide to the tuberculous.

[8] *Tropical Nursing: A Handbook for Nurses and others going Abroad*. By A. L. Gregg, M.D., M.Ch., D.T.M. and H. With a foreword by the Hon. Sir Arthur Stanley, G.B.E. London: Cassell and Co., Ltd. 1929. (Fcap. 8vo, pp. xi + 199; 11 figures. 6s. net.)

[9] *General Medicine*. The Practical Medicine Series. Chicago: The Year Book Publishers. 1928. (Cr. 8vo, pp. 832; 72 figures. 3 dollars.)

[10] *Gleanings from General Practice*. By David Tindal, M.D., F.R.F.P.S. London: Baillière, Tindall and Cox. 1929. (Cr. 8vo, pp. x + 209; 3 figures. 6s. net.)

[11] *Tuberculosis and How to Combat It: A Book for the Patient*. By Francis M. Pottenger, M.D., LL.D., F.A.C.P. Second edition. London: H. Kimpton. 1929. (5½ × 8, pp. 275. 10s. 6d. net.)

British Medical Journal.

SATURDAY, APRIL 20TH, 1929.

DEFECTIVE PUBLIC CLEANSING IN THE LONDON AREA.

"COMPLAINTS have been made from time to time with regard to the disposal of refuse from London. In 1925 a deputation from the London County Council urged upon the Minister, among other matters 'the need for investigation by the Ministry of Health of the question of the disposal of house and other refuse.'" When so august a body as the London County Council becomes complainant to the Ministry of Health one is prepared to discover grave occasion; but not even the exalted powers that moved and were invoked will prepare the reader for a document at once so important and so disquieting as that which has resulted from the Minister's direction to Mr. J. C. Dawes to report on the general question of public cleansing in London.[1]

It is an axiom of physiology that only when the eliminative functions are adequately performed can the life of an organism be regarded as healthy. Accumulation of the end-products of metabolic activity is poisonous to the tissues in which they originate, and excretory defects are inevitably followed by a debasement of all other vital processes. This law is not limited to the animal economy; it operates also in a community of human beings—a military camp, a settled society, a town, a village; it may, indeed, be said to constitute the principle underlying the practice of hygiene. The art or habit of communal cleanliness has been very slowly evolved, and when attained is apt to be held insecurely. Mr. Dawes's report is a revelation of sanitary failure such as in these times we are little prepared to receive. That the system of public cleansing administered by the metropolitan borough councils is expensive, costing the ratepayers of London, as it does, some £2,200,000 a year, will cause little surprise. But though the long-suffering public is prepared to submit to exactions which are the price of efficient service, we are mistaken if it will tolerate a conjunction of high charges and bad service, particularly in matters in which its civic pride is deeply involved. London, proud of the healthiness it has secured for itself, and of its acknowledged place as the most hygienic city in the world, will be shocked at the shortcomings of the sanitary administration on which it has relied to safeguard the great health interests with which it has identified itself. "It cannot be too strongly emphasized," states Mr. Dawes, "that the cleansing service in any borough or district can be administered with certainty of economy only where there is in operation a complete and reliable costing system, designed to isolate uneconomic methods." Yet so unsatisfactory is the control of the collection and disposal of refuse that "the vital economic matter of detailed unit costing is not practised in any of the twenty-nine boroughs." "On the numerous boundary roads between boroughs refuse collection vehicles belonging to two different authorities are regularly to be seen engaged on precisely the same kind of work on different sides of the same road." "No borough within whose area another borough has erected disposal works has itself a disposal plant, so that we have the position of one borough regularly sending refuse into an adjoining area for disposal while the local council forwards the whole of its own refuse into some other local authority's area for disposal, probably a considerable distance outside its own borders."

Perhaps the most startling revelations in the report concern the festering masses of muck which have been permitted to grow into gigantic heaps along the banks of the lower Thames. These heaps arise from the indefensible and unhygienic practice of dumping the crude refuse of London on the river bank. One alone of such heaps measures some three-quarters of a mile in length, perhaps a third of a mile in width, already at one point 90 feet in height, and is extending rapidly in the direction of the Tilbury Road and the Beacontree Housing Estate. On this dump "about 150 men are regularly employed; there are ten steam-driven cranes for unloading refuse and ten locomotives to haul the loaded trucks to the tipping faces; probably a thousand or more tons of house and trade refuse, street debris, and other materials are daily dumped indiscriminately on them. . . . A scarred and fissured surface extending inwards for a considerable depth from the tipping face is evidence of extensive and deep-seated fire which frequently—one might almost say regularly—reaches up to the surface and envelops the great malodorous mass in a characteristically evil-smelling cloud of smoke." "From my inspections," says Mr. Dawes, "I am satisfied that these and all the large uncovered riverside dumps are extensive fly-feeding belts, and there is evidence to show that the amount of rat infestation is very great. . . . I do not hesitate to say that the reeking masses at South Hornchurch taken together comprise the worst refuse dump in Britain and by far the biggest. . . . Once detached and separated from a populated area, they now constitute a disfiguring and damaging environment to a rapidly developing district, and the case against continuance on the present lines appears to me to be overwhelming when viewed from the standpoint of public health."

It seems incredible that such things should be within the area of Greater London, and that the outward drive of its expanding population should carry the homes of its working people into a vortex of such foulness as surely never before in the history of the world has been permitted to accumulate. It is a strange reflection that there exists apparently no public authority whose duty it is and whose powers are competent to prevent or remedy the evils of these vast dumps. Not only, then, are there defects in the sanitary services locally administered, but there actually exists no central authority responsible for tackling the sanitary problems of Greater London as a whole, of which refuse disposal is only one.

Mr. Dawes's remedy, if we correctly understand him, is the creation of an *ad hoc* authority representative of the vast number of local sanitary authorities which in the aggregate go to the making of Greater London. The water needs of London have been similarly met by the creation of the Metropolitan Water Board. Electricity, transport, police, are analogously dealt with. Problems relating to other health services such as main drainage and sewage disposal, and the control and co-ordination of the public hospitals when Poor Law institutions pass to the administration of county councils, are pressing for statesmanlike consideration and constructive solution. They are not strictly medical problems; they are problems of local government. But if evils such as

[1] Ministry of Health. *Report of an Investigation into the Public Cleansing Service in the Administrative County of London.* By J. C. Dawes, O.B.E., M.I.Mech.E. London: H.M. Stationery Office, or through any bookseller. 1929. 15s. net.

those exhibited in the report under consideration are to be overcome, if fundamental public health requirements are to be met, then a reconsideration of the problem of the local government of London, however gigantic may be the task, will have to be undertaken. It is certain that a public health scandal such as that disclosed in Mr. Dawes's report cannot be permitted to continue.

LOCAL GOVERNMENT ADMINISTRATION.

THE Ministry of Health has now issued to the councils of local government areas a circular which directs their attention to the Local Government Act, 1929.[1] The circular is in general terms, and is to be followed by others dealing in a more detailed manner with special points of administration. The Minister of Health begins by emphasizing the importance and far-reaching character of the changes which the Act effects, and enumerates the outstanding defects of the system of local government which it is designed to remedy. These are, in the main, the existence of local authorities with areas and functions overlapping one another and so giving rise to waste and inefficiency; the burden on country districts of roads whose use is largely for heavy traffic for places beyond their boundaries; the rigidity of those boundaries; the inequitable incidence of rates, especially on agriculture and industry; the chaotic relation between national and local contributions to local expenditure. Certain of the main principles underlying provisions of the Act—such as the enlargement of areas and the spreading of charge, and the assignment of functions and work to the most effective authorities—are then stated.

The later paragraphs deal in somewhat greater detail with four very important administrative points: (1) the new organization of Poor Law and public health work; (2) the co-option of experienced persons on committees and subcommittees; (3) the support of the work of voluntary associations (mainly those connected with maternity and child welfare, mental defectives, the blind, and, in Wales, the treatment of tuberculosis); (4) consultation with local bodies representative of the governing bodies of voluntary hospitals and their medical and surgical staffs. The third of these points is of considerable moment, and bids fair to give rise to relatively complicated negotiations and calculations which may have serious effects on the work done in some localities. No doubt the paragraphs of the circular in this section will have the anxious consideration of those more particularly concerned. The other three points are those which are dealt with mainly also in the "Memorandum with reference to Administrative Schemes" which has now been circulated by the Council to Branches and Divisions of the British Medical Association, to medical officers of health, and to others, and which was published in the *Supplement* of April 6th last (p. 77). There are no serious discrepancies between the views enunciated in the two documents, but this does not lessen the need for vigilance and appropriate action on the part of the medical profession in connexion with the preparation of administrative schemes by the councils of counties and of county boroughs. The Ministry's circular and the Council's memorandum alike point out that local authorities are required, in preparing their schemes for carrying out the work transferred to them from the Poor Law guardians, to have regard to securing that any assistance which can lawfully be provided otherwise than through the Poor Law, but by virtue of the Public Health and other similar Acts, shall be so provided; but while the memorandum urges that this course should be taken at once and wherever possible, the circular rather stresses the reasons why it has not been made mandatory. The Ministry's circular is clearly favourable to the exercise by councils of their powers of co-option, but seems to stress unduly the need for the presence of women on committees (a need with which the councils of authorities are already quite familiar) and the advantage of including on certain committees some of those who have had experience as guardians of the poor (which is obvious), while making mention only of the general powers of co-option which enable local authorities to appoint men or women who are not members of the councils on their Public Health Committees, and on any subcommittees appointed by those committees or by their Mental Deficiency Committees. The desirability of securing representation of the medical profession on such committees or subcommittees is not mentioned, and must therefore be pressed by the profession in each area.

The concluding paragraphs of the Ministry's circular are concerned with the co-ordination of hospital provision and use, and with the consultations which must be held before any scheme is decided upon. It is well to note the statement that "Mr. Chamberlain cannot but attribute the greatest importance to the proper carrying out of this section"—that is, Section 13. "In making the necessary institutional provision for the health of the people it is imperative that local authorities should establish the most cordial relations with, and should make the fullest use of the accumulated skill and experience of, the medical profession in regard to hospitals." It is even more gratifying to read the very important and significant final sentence: "It is the confident hope and expectation of the Minister that as procedure under Section 13 becomes established and regular, it may lead to wider arrangements for the fullest consultation between the local authority and the medical profession, not merely in regard to institutional accommodation and its use, but also in regard to those numerous developments in the health provision of the people which are implicit in the new organization laid down by the Act." The prospect so envisaged makes it all the more important that careful and well-considered steps should at once be taken towards the establishment of suitable consultative and advisory bodies in the several areas.

In connexion with the earlier and more general part of the circular, we may mention here a recently issued booklet, *Relief for the Ratepayer*,[2] by Sir Kingsley Wood. This is an admirably clear and effective exposition (of course from the Government's standpoint) of the general effects of the Local Government Act, 1929, which will be of interest and value to many who are not concerned wholly or primarily with its relation to public health. As Mr. Chamberlain says in an introduction: "In its working, local government touches the daily lives of men and women more frequently, its results are felt more quickly, its inconsistencies and injustices as well as its benefits are perceived more acutely, than the slower and more remote influences on national politics." It is important, therefore, for all to understand the changes which are now imminent in this sphere, and (as the Prime Minister says in a short foreword to Sir Kingsley Wood's exposition of the Act) to realize that the country "has within its grasp a powerful instrument for the promotion of the national well-being."

[1] Ministry of Health. General Circular on the Local Government Act, 1929. H.M. Stationery Office. Price 3d. net.

[2] *Relief for the Ratepayer: An Explanation of the Local Government Act, 1929.* By the Right Hon. Sir Kingsley Wood, M.P., Parliamentary Secretary to the Ministry of Health. With an introduction by the Right Hon. Neville Chamberlain, M.P., Minister of Health, and a foreword by the Right Hon. Stanley Baldwin, Prime Minister. London: Ernest Benn, Ltd. 1929. (Cr. 8vo. pp. 126. 1s. 6d. net.)

RADIUM POLICY.

THE report of the Radium Subcommittee of the Committee of Civil Research has just been issued as a Parliamentary Paper.[1] From this we learn that the subcommittee was appointed on July 7th, 1928, and that its reference was "to examine the radium requirements of Great Britain in relation to the present sources of supply, and to submit recommendations." Its constitution was as follows: Lord Rayleigh (chairman), the President of the Royal Society, the Chief Economic Adviser to the Government, the Master-General of the Ordnance, the Director of the Geological Survey of India, the Chief Medical Officer of the Ministry of Health (Sir George Newman), the Secretary of the Medical Research Council (Sir Walter Fletcher), the Government Chemist, the Secretary of the Department of Scientific and Industrial Research, together with assistant secretaries of the Department of Health for Scotland, the Colonial Office, and the Ministry of Health. The report bears date March 7th, 1929, and is divided into nine sections. The first section describes the procedure adopted during the inquiry; the second discusses the new importance of radium in medical treatment; the third describes the existing supply of radium available for medical treatment in Great Britain and the methods adopted for its distribution; the fourth estimates the amount of radium at present required for medical purposes, and the fifth the relatively very small amounts required for the Fighting Services and for physical research; the sixth indicates the sources of radium production throughout the world, and the seventh discusses the cost of production and the price of radium. The eighth section outlines a proposed organization for the distribution of a central stock of radium for medical purposes, and the ninth summarizes the subcommittee's conclusions and recommendations. This eagerly awaited report is a document of great medical interest and importance, of which we shall publish a full account next week: we can only give now, while going to press, an outline of the final section.

The subcommittee's conclusions, in brief, are as follows. Knowledge of the properties of radium for the treatment of cancer and of the technique of its application has advanced very rapidly in recent years, and an increasing amount of radium is likely to be required for medical purposes in Great Britain. The Government's stock which is available for these purposes is 2.2 grams, while the amount belonging to hospitals and private practitioners is estimated at about 22.7 grams, making a total of nearly 25 grams. To meet present needs some 50 grams in all are required (that is, an immediate addition of about 24 grams to the existing national stock), but owing to lack of trained personnel and the inadequacy of existing hospital accommodation probably no more than 20 additional grams could be effectively absorbed for medical purposes by the end of 1930. Full advantage can be obtained from a given quantity of radium only when it is constantly in application—namely, when it is transferred from one patient to another with a minimum of delay—and such conditions are only to be found in centres with the necessary specialist personnel, technical equipment, and available beds. There is at present no common policy between the hospitals in acquiring radium, existing private stocks having been acquired for particular localities without reference to the needs of the country as a whole. A central stock of radium and some systematic method for its distribution are urgently needed. At present the Belgian Congo is the only source from which additional supplies for medical purposes are obtainable in any quantity. With adequate organization it should be possible to purchase radium at substantially less than the existing market price.

In the light of these findings and conclusions the subcommittee recommends that steps should be taken at once to acquire by instalments 20 additional grams of radium element for medical purposes; that a body entitled the National Radium Trustees should be appointed to hold the funds provided by Parliament or otherwise, and to purchase therewith and hold radium for use by a body of experts to be called the Radium Commission. The Trustees should consist of the Lord President of the Council, the Minister of Health, the Secretary of State for Scotland, the Presidents of the Royal Society, the Royal College of Physicians of London, the Royal College of Surgeons of England, the Royal Society of Medicine, and the British Medical Association, and the Chairman of the Central Liaison Committee of Voluntary Hospitals in Scotland, with two members to be co-opted later, if so desired, by the Trustees. The Radium Commission appointed by the Trustees should consist of a chairman (of distinguished public position, but not necessarily a member of the medical profession) nominated by the Trustees; four other persons nominated by the Trustees; and four representatives nominated, one each by the Minister of Health, the Secretary for Scotland, the Medical Research Council, and the Department of Scientific and Industrial Research. The powers and duties of the Commission should be "to deal with the custody, distribution, and use of all radium held by the Trustees, having regard to the advancement of knowledge, the treatment of the sick, and economy of use; and, in particular, to consider and approve plans submitted to them for the use of radium for the purposes of medical treatment and research, and to make the necessary arrangements for the supply of radium for such uses." Lastly, the subcommittee recommends that the Radium Commission should arrange with the National Physical Laboratory for the custody of the radium put at the disposal of the Commission by the Trustees when this is not actually in use for medical purposes, its preparation in form for use, and its recovery from such preparation on return from loan. In the body of its report the subcommittee records its conviction that the success or failure of this scheme, if adopted, will turn largely on the personnel chosen to form the Radium Commission, which should be composed of the best available experts in the several sciences underlying radium therapy, its membership being such as would enable it to work harmoniously both with the medical profession and with the Government departments concerned.

It will be seen from our Parliamentary Notes this week that on April 16th the Chancellor of the Exchequer said that the Government accepted the financial recommendations of the subcommittee. The purchase of 20 additional grams of radium before 1930 would cost about £200,000, of which the Government would contribute up to a maximum of £100,000, on the basis of £1 for every £1 privately subscribed. Mr. Churchill indicated that the Government had not yet decided upon the precise form of the holding and distributing bodies which would be set up to control the use of the 20 grams. He said that the subcommittee's recommendations on the subject of organization had been accepted in principle, but "the precise form of the organization will remain open to further discussion." The Government has been well advised to defer making any declaration of policy on this part of the report. It is clearly of great importance that the personnel of the Commission should be such as to inspire confidence both within the medical profession (on whose members will fall the task of working the proposed scheme) and among the general public (which is asked, directly by its benefactions and indirectly by taxation, to pay for it) that the radium purchased will be distributed to the best advantage.

[1] Cmd. 3303. H.M. Stationery Office. 1929. 6d. net.

A CONSERVATIVE BUDGET.

FINANCIAL policy has been the dominant factor in statecraft for the past decade, and practicability in terms of monetary resources the touchstone by which other policies have been brought to the test. It follows that a Budget produced on the eve of a General Election must exhibit with more than ordinary clearness traces of its political parentage. Mr. Churchill's well-earned reputation for independence of mind and courage has always created special interest in the unfolding of his financial proposals—an interest heightened this year by the probable effects on election prospects and by the current belief that this will be his last Budget. As is inevitably the case, he is accused of giving weight to considerations of electioneering strategy rather than of industrial policy. This, however, is an aspect of the question with which we have no concern. The annual Budget statement is not infrequently regarded as a long and comparatively prosy prelude to the brief announcements of forthcoming fiscal changes with which the statement closes. But the review of trade conditions, industrial progress or retrogression, national indebtedness, and other important factors in the health of the body politic will repay study. A Chancellor of the Exchequer has unique sources of information and advice, and his considered weighing up of indications of the future trend of events has special value. This is particularly the case with the present Budget, in view of the fact that Mr. Churchill was in a position to review the results of five years' practical study of national problems, and also because the nature and scope of the financial arrangements proposed necessarily indicate the means of approach towards the solution of other problems not mainly, or at any rate not exclusively, financial in their nature. Making appropriate allowance for the optimism natural in the circumstances, Mr. Churchill's review is distinctly encouraging. Increases in savings of the small investor class, decline in cost of living while money wages are being maintained, the transfer of purchasing power from the consumption of alcoholic liquors to the purchase of commodities or pleasures more conducive to physical and mental well-being, the improvement in the balance of trade, the rise in bankers' deposits, and other signs of increasing prosperity were touched on, and the conclusion is drawn that "the saving and consuming power of the people have maintained a steady advance." The road to industrial recovery proves arduous, and is encumbered by obstacles foreseen and unforeseen. All parties are alike desirous of arriving at the goal as quickly and with as little suffering as possible, but the methods of progress put forward vary considerably. The Labour party suggests that progress would be more rapid if some sections of the community would make greater sacrifices and put a more strenuous shoulder to the wheel, the Liberal party suggests that the time has come for some exceptional effort to reach the brow of the hill. Mr. Churchill's Budget makes it clear that the Conservative party regards the task as one to be achieved by slow and uncomfortable stages, lightened here and there by minor adjustments of the burden to be carried or by the removal of hampering restrictions, but incapable of rapid attainment by heroic measures. The financial proposals as a whole are clearly based on that assumption. They include one or two surprises, and will cause disappointment in some quarters. The most noticeable single proposal is the abolition of the tea duty, which absorbs over half of the margin of estimated income over estimated expenditure. There are, of course, many advantages in making a clean sweep of a particular tax instead of reducing it, including the greater convenience to traders and the financial saving that results from the scrapping of the machinery of collection; but the repeal of that tax has made a heavy inroad on the total amount available for remission. The financial readjustments in connexion with the brewing and distilling trade are somewhat complicated. On the one hand, these trades are to be required to pay over sufficient additional tax to compensate for the benefits they will receive under the de-rating scheme; on the other hand, a reduction in liquor licences payable by publicans and beerhouse keepers is given to an extent which will cost the Exchequer about twice as much as will be gained from the brewers and distillers. Seeing that most licensed houses are owned by the brewing companies, it is probable that a substantial part of the licence relief will sooner or later operate to benefit the brewers as landlords of the property. Time alone can show how these adjustments will work out, but at the moment the necessity for the changes is not very clear. The agricultural interest is benefited by the expediting of the de-rating proposals by six months, and agricultural land will now be freed from the burden of local rates as from April instead of October of this year. The railway companies are dealt with somewhat ingeniously; they are to be relieved of the Railway Passengers Duty on condition that the capitalized value of that relief is expended on improving their equipment, and in that way is passed on in part to industry generally. The amount expended on roads is to be increased, and other minor changes are made with a view to assisting various branches of industry—for example, the herring fishery trade is to be assisted by the reduction of harbour dues. The income-tax payer is left unrelieved. Mr. Churchill pointed out that this year the effect of the increased family allowances given last year will be felt to the full extent for the first time, and that he could not give further relief. The facts of the case bear him out only too clearly. Income tax now yields such enormous sums as compared with pre-war years that any substantial reduction would cost the Exchequer an amount which would be prohibitive. The income-tax payer's patience is passing into an adage, and he will have to continue to wait, with such shreds of hope as he can contrive to retain, until the weight of the war burdens has been perceptibly lightened or the recovery of industrial prosperity brings into view new harvests for the reaping of some enterprising and ingenious Chancellor. The 1929 Budget is no epoch-making or sensational document; it strikes us rather as an attempt to deal with the immediate necessities of the national position in a practical manner, and to provide opportunity for trade recovery in the future, not by speculative or heroic measures, but by giving as far as possible a fair field for individual effort and by distributing relief from taxation as widely as the circumstances permit. If caution be necessary in national finance—and history has several chapters on that lesson—then within the limits set by the facts of the situation Mr. Churchill seems to have grappled with his problems in a manner which deserves its full measure of praise.

LOOKING AT THE STOMACH.

SINCE the traditional case of Alexis St. Martin there have been attempts to make gastroscopy easy for the practitioner and for the patient, but it is doubtful whether the results obtained have justified the discomforts inflicted or the dangers involved. A simplified technique has been described in a recent pamphlet[1] by William Sternberg of Berlin, who uses a specially modified form of cystoscope and claims originality for his method, principally in respect of the position adopted by the patient. Anaesthesia is not recommended, general anaesthesia being, in his view, dangerous, and local anaesthesia demanding complicated apparatus and adding to the risk of the whole procedure. The use of sedatives such as morphine is condemned. Following the

[1] *Technique and Method of Use of Sternberg's Gastroscopy and Gastroscopic Treatment.* By William Sternberg, Berlin. London: John Bale, Sons and Danielsson, Ltd. 1929. (6 × 9½, pp. 19; 7 figures. 3s. 6d. net.)

usual preparations, which include attention to the hygiene of the mouth, washing out the stomach, and, to prevent steaming of the optical lenses, adjusting the temperature of the apparatus and the surroundings, the patient adopts the knee-elbow position, which, according to Sternberg, allows the maximum freedom of movement and enables the pylorus to be brought quickly into focus, and the gastroscope is passed. The exact technique of passing the instrument is set out in detail, but, as with most difficult manœuvres, it is probable that an actual demonstration would be easier to follow than a written description. Once the instrument is passed the patient is allowed to change his position in almost any way, the examiner following closely so as to bring various portions of the stomach into view. Finally, air, which has been introduced for the necessary distension of the stomach, is removed by means of a special two-way stopcock incorporated in the apparatus, and the tube is withdrawn by the patient again assuming the knee-elbow position and attempting to straighten his back, whereupon "the instrument practically drops out spontaneously." Sternberg has passed the instrument on one of his patients about 500 times in the course of four years to demonstrate a pyloric ulcer, but he emphasizes that he does not apply his operation to "patients" who are specially trained and paid for the purpose. This pamphlet gives a very clear idea of how the interior of the stomach may be visualized, but many reading it will wonder whether there is much to be gained by the procedure, and, in view of the condemnation of anaesthesia, whether there is any significance in the statement on page 7 that "it is . . . easier to perform gastroscopy on women and children than on vigorous men."

HARVARD UNIVERSITY CANCER CAMPAIGN.

THE sixteenth annual report of the Collis P. Huntington Memorial Hospital for Cancer Research and of the laboratories of the Cancer Commission of Harvard University covers the year ending June 30th, 1928. There was a fall in the number of new cases from 1,753 to 1,725; such a reduction has been anticipated for some time in view of the fact that other institutions for dealing with cancer cases are coming into existence in Boston. Mention is made in the present report of the collaboration of Dr. Mueller with Dr. W. E. Gye, both at Harvard and also in London. Although no complete agreement was reached with regard to the bearing of the data obtained by these joint experiments, a detailed report is to be issued later by Dr. Mueller. A number of interesting and important facts have been defined which, it is believed, will have a bearing on the whole subject of filterable viruses. Dr. Duane has been studying in Cambridge, Massachusetts, as well as at the Huntington Hospital, the accurate measurement of x rays for therapeutic purposes. A research assistant has been appointed under him to make a detailed study of the physical and chemical changes brought about in living tissues and chemical substances by exposure to x rays. A new and more powerful apparatus for the production of high voltage x rays has been designed by Dr. Duane and constructed. From November, 1927, to August, 1928, the treatment of cancer by the injection of colloidal lead was investigated, four beds in the research wards of the Massachusetts General Hospital having been set aside for this purpose; a final report has not been issued yet. The diagnosis service for the State Department of Health continued as in previous years, 2,519 specimens being examined, in addition to 824 specimens for the Huntington Hospital. In April, 1928, a cancer campaign was arranged under the auspices of the American Society for the Control of Cancer, the Massachusetts Medical Society, and the State Department of Public Health; in this the staff of the Huntington Memorial Hospital co-operated actively.

VACCINATION FOR BRITISH VISITORS TO FRANCE.

IT was announced in London on Tuesday, April 16th, that in consequence of the present outbreak of severe small-pox in England (referred to at page 742) the French Government, in application of the clauses of the Franco-British Convention of 1926 dealing with certain contagious diseases, had issued an administrative order requiring all passengers from British ports arriving in France after midday on April 18th either to produce a statement signed by a medical practitioner that they had been vaccinated within the past two months, or to be vaccinated on landing. On April 17th the British Embassy in Paris handed a note to the French Foreign Office urging that the order be suspended pending further consideration of the matter and consultation between the two Governments. At a meeting of the French Cabinet held on the same day M. Loucheur, Minister of Labour, stated that he had decided to accede to the British request, and that the British and French health authorities would meet forthwith and confer as to the best precautionary measures to be taken. He further stated that the suspended order had been issued by the local authorities of the Channel ports, acting under Article 42 of the International Sanitary Convention, and without previous reference to him. This is the situation as we go to press. The French Government has acted wisely in suspending a hastily conceived order, and it is likely that the health authorities of the two countries will speedily agree upon the most effective measures for preventing the spread of the present epidemic to France.

INTERNATIONAL SOCIETY OF SURGERY.

THE eighth Triennial Congress of the International Society of Surgery will be held in Warsaw from July 22nd to 25th, 1929. The subjects for discussion are the causes and mechanism of post-operative embolism, the results of resection of the stomach for gastric and duodenal ulcer, the treatment of exophthalmic goitre, and the reparative surgery of the hip-joint. The society has chartered a liner of the Compagnie Générale Transatlantique for the use of members; this will leave Zeebrugge on July 12th, and after calling at Ymuiden, Copenhagen, Riga, Helsingfors, Stockholm, and the Island of Gothland, will arrive at Dantzig on July 21st. Warsaw is within eight hours' railway journey from Dantzig. Messrs. Thomas Cook and Son are arranging inclusive terms for the stay in Warsaw and for the journey from London for those members who do not wish to join the preliminary cruise, with an extension to Vienna, Budapest, Prague, and Leipzig after the congress for those who desire it. As the hotel accommodation is limited early booking is desirable. The British delegate is Mr. J. E. H. Roberts (26, Harley Street, W.1), with whom intending participants should communicate.

ART EXHIBITION AT THE MANCHESTER MEETING.

BY the kindness of the Salford Corporation, it has been made possible to arrange for an art exhibition to be held at the Salford Art Gallery in Peel Park during the Annual Meeting of the British Medical Association in Manchester next July. It is proposed that this exhibition should consist of works of art (painting, sculpture, china, etc.) belonging to or executed by members of the profession, or having especially medical interest or association; and the Executive Committee will be glad to hear at an early date from any member willing to lend, or influence the loan of, any such work of art. The Salford Corporation has undertaken the insurance and transport free of cost to the lender, the only condition being that objects lent must be left on view for two months. All communications on this subject should be addressed to the Chairman, Local Entertainments Committee, B.M.A. Annual Meeting, 33, Cross Street, Manchester.

OPHTHALMOLOGICAL CONGRESS.

THE annual congress of the Ophthalmological Society of the United Kingdom was held in London, at the House of the Royal Society of Medicine, from April 11th to 13th, under the presidency of Mr. CHARLES HOWARD USHER. Each morning was devoted to short papers, about twelve of which were read and discussed, and there were two set discussions. A clinical meeting was held at the Royal Westminster Ophthalmic Hospital, and the congress concluded with a visit to the National Physical Laboratory. Concurrently with the congress an exhibition of ophthalmological instruments and apparatus was open at the House of the Royal Society of Medicine, and an interesting museum of historical and other exhibits was also arranged.

Ocular Tuberculosis.

A well-sustained discussion took place on the subject of ocular tuberculosis. Sir ARNOLD LAWSON, in opening, pointed out that this was essentially a surgical condition, and it was extremely uncommon to find it in relation with pulmonary phthisis. Infection might be extraocular or intraocular, and the former either primary or secondary. He used the word "primary," at the same time doubting whether tuberculosis of the conjunctiva could ever properly be so termed, but the diagnosis of this so-called primary condition could give rise to no confusion. The association of tuberculosis with interstitial keratitis might occur either as a mixed infection or as a pure tuberculous infection, but the former was much more common than the latter. The treatment of ocular tuberculosis had to be considered from two points of view: general and local. The general treatment included treatment on general constitutional lines, tuberculin, and phototherapy. Treatment by tuberculin had engaged much attention and brought out many differences of opinion. From his personal observation he was absolutely certain as to the value of this treatment, but care had to be taken that the case was suitable for its employment at all, for it was a dangerous remedy, and the proper manner of its employment, as to strength and frequency of dosage, was very important. On all these points the ophthalmic surgeon needed the advice of an expert physician. As to phototherapy, he could speak of its value with children, though not so positively with adults, but treatment must be carried out on closely supervised lines. In unskilled hands it was a dangerous method. The recent pronouncement of the Medical Research Council was based on the lack of evidence to support any claim for phototherapy to effect something which could not be effected by other less artificial means. The speaker thought the inference a little unjust, for he had never known phototherapy claimed as a means of treatment which would supersede good food, exercise, fresh air, and so forth; it was admittedly only a further addition to the resources of treatment.

Dr. R. A. YOUNG offered some observations on the diagnosis and treatment of tuberculosis in general, with only incidental reference to eye conditions. He expressed a good deal of scepticism with regard to the information to be obtained by specific tuberculin and serological tests. His own practice was to rely largely on clinical findings. As for phototherapy in treatment, he was convinced that where there was active or smouldering lung tuberculosis artificial sunlight could do harm. It could produce very much the effect of an overdose of tuberculin. On the other hand, he had witnessed its great effectiveness in the treatment of surgical tuberculosis. He had also used, though not for ocular cases, sodium morrhuate; sometimes this seemed to help, but at other times he thought it could do harm.

Mr. S. BROWNING, in speaking of the treatment of tuberculosis of the conjunctiva, mentioned that he had used bovine tuberculin almost as frequently as human tuberculin in eye conditions during the past fifteen years. He spoke of the difficulty of the diagnosis of intraocular tuberculosis, which depended on a tentative clinical diagnosis, backed up by bacteriological tests, and finally decided by a sort of trial and error treatment. While questioning as to how far one was justified in calling an eye condition tuberculosis because it improved under tuberculin, he had little doubt as to the value of tuberculin in the treatment of eye conditions which for one reason or another might be given the tuberculosis label.

Mr. A. L. WHITEHEAD expressed the belief that many cases with vitreous haemorrhages were of a tuberculous nature. He had had cases in which these haemorrhages preceded by some months any evidence of tuberculous infection. With regard to phototherapy, he thought it tragic to go to a clinic and find children sitting around the lamp, some of them getting badly burned, while others were receiving no benefit at all. Every case had a suitable dose, and it was an essential preliminary of treatment that that dose must be found for it.

Mr. W. S. DUKE-ELDER said that if ocular tuberculosis was of a surgical type a good response might be expected from ultra-violet radiation. He gave some account of three years' experience at the clinic at Moorfields, where light treatment was combined with tuberculin administration. In thirty-three cases in which there was reasonable certainty that the condition inside the eye was tuberculosis the result of the combined treatment was that in 85 per cent. of cases the eye became quiet after an average of five months' treatment; in 6 per cent. it was very much improved, and in 9 per cent. the disease was still active. Among the quiet cases there had been 18 per cent. of relapses, but these were readily controlled by a fresh course of treatment.

Dr. GEORGE MACKAY of Edinburgh was of opinion that the use of tuberculin ointment was well worth a trial as a substitute for the continued use of subcutaneous injections.

Minor Eye Injuries in Industry.

A report on the subject of minor eye injuries in industry, the economic loss they occasioned, and the means of their prevention, was brought forward by Mr. B. CRIDLAND of Wolverhampton. He showed statistics suggesting that, in spite of increased insistence on protection, the number of these cases was multiplying. Little information up to the present had been forthcoming as to the economic effect on industry of these minor accidents. Some attempt to answer the question in a limited area had lately been made by a subcommittee of the Council of British Ophthalmologists. Reports of minor accidents involving less disablement than a week had been collected from the casualty and out-patient departments of hospitals situated in certain special areas. The information related only to 426 cases. Rather more than half of these cases were in workers whose occupation involved exposure to very small flying particles (such as workers at grindstones), where the risk of serious injury was not great, the lesion almost always being a very small foreign body on the cornea. About a quarter of the total number were found in occupations involving exposure to chips of metal, and here there was risk of serious injury. The remainder consisted of a miscellaneous collection of occupations, the accidents being mostly foreign bodies on the cornea, with a certain number of abrasions and burns. Information as to protection was obtained in 406 of the cases. In 70 per cent. protection was not provided; in 19 per cent. it was provided but not used, and in 11 per cent. protection—goggles, machine-guards, etc.—was in use, but was evidently ill-fitting or inefficient. Some idea of the time lost was obtained: 371 of these cases involved a loss of from one to two hours; 48 of from two to eight hours, and 7 of from eight to forty-eight hours. The total working time lost in the 426 cases was 992 hours, or 124 days of eight hours each. There were three lines of prevention: mechanical guarding, education of the workmen, and reconditioning of the machinery so as to get rid of the flying particles. Goggles which were well fitting gave 100 per cent. protection.

The ensuing discussion turned upon the provision of protective appliances, several of which were exhibited in the museum. One speaker said that, after seeing the suggested goggles, he had every sympathy with the workman who decided to do without them and take the risk. Another suggested a vizor in light alloy, similar to the chain vizor used in the war, but of less heavy metal, and it was stated that one industrial firm at Bristol had provided for its

men a vizor made of black silk gauze, and that it was rather surprising how effectively this material intercepted foreign bodies.

Among other events of the congress programme were a discussion on heterophoria, opened by Mr. E. MADDOX and Mr. C. GOULDEN; a demonstration by Miss IDA MANN of the phylogenetic value of the lower retinal field; and a lecture by Mr. G. F. ALEXANDER, on the great antiquity of removal of cataract from the eye, and suggestions on the instrumentation of cataract operations.

Scotland.

Central Liaison Committee for Voluntary Hospitals.

THE Secretary of State for Scotland has appointed a committee, consisting of Lord Mackenzie (chairman), Mr. Charles F. Henderson, Provost Alexander M. MacEwen, Mr. James Macfarlane, Dr. D. J. Mackintosh, Major-General James Thomson, A.M.S.(ret.), Ex-Provost James Thomson, and Sir David Wallace, F.R.C.S.Ed., with the following terms of reference:

> To be for the period to March 31st, 1932, the Central Liaison Committee for Voluntary Hospitals in Scotland to act in liaison between the Department of Health and the Regional Committees of Voluntary Hospitals in Scotland, to assist in keeping the department in touch with voluntary hospital opinion, and, in the development of hospital services in Scotland, to foster co-operation between the voluntary hospitals and the local authorities in each region.

The minute of appointment formally reconstitutes the committee that was set up at the meeting between the Secretary of State and representatives of the Scottish voluntary hospitals in December, 1927. During negotiations on the hospital clauses of the Local Government (Scotland) Bill the committee suggested to the Secretary of State that the Liaison Committee would be strengthened for its work in conserving the voluntary system and promoting co-operation through the changes which will follow on the passage of the bill if its constitution and status were more exactly defined. The minute incorporates the committee's suggestions. The present members will hold office for three years, and future appointments will be made by the Secretary of State on the nomination of the Voluntary Hospital Regional Committees. The voluntary hospitals have set up regional committees in each of the five regions, with centres at Edinburgh, Glasgow, Aberdeen, Dundee, and Inverness.

Sir David Wallace is a director of the Royal Infirmary and other hospitals in Edinburgh, and chairman of the South-Eastern Regional Committee; Mr. James Macfarlane is chairman of the Glasgow Royal Infirmary and chairman of the Western Regional Committee, and Dr. D. J. Mackintosh, medical superintendent of the Glasgow Western Infirmary, and Ex-Provost Thomson, director of the Stirling Royal Infirmary, are also members of the Western Regional Committee; Major-General Thomson is a director of the Aberdeen Royal Infirmary and a member of the North-Eastern Regional Committee; Mr. C. F. Henderson is a director of the Dundee Royal Infirmary and a member of the Eastern Regional Committee; and Provost MacEwen is chairman of the Northern Infirmary, Inverness. Lord Mackenzie was chairman of the Hospital Services (Scotland) Committee which reported in 1926.

Report of the Scottish Board of Health.

The tenth annual report of the Scottish Board of Health, dealing with the year 1928, has just been issued. This is the last year in which a report will be submitted by the Board of Health, whose functions have now been taken over by the Department of Health. The report therefore includes a reference to some of the important developments that have taken place during the ten years of the Board's existence. The Board was instituted in 1919 as a combination of the Local Government Board for Scotland, the National Health Insurance Commission, the Highlands and Islands Medical Service Board, and the medical sections transferred from several other departments. The most urgent problem that confronted the Board on its appointment was in relation to housing, building having to a great extent been held up during the war. A majority of local authorities, in co-operation with the State, which offered subsidies, initiated building schemes whereby over 100,000 houses were erected for the working classes. In addition, about 2,000 houses have been built each year by private enterprise. These new houses afford a standard of comfort far in advance of that attainable in the smaller, more crowded, and less sanitary buildings of the past. The clearance of slum areas was a cognate task for which a Treasury grant to cover loss has been available to local authorities since 1923. The number of houses dealt with in this way has exceeded 14,000. Dundee, in consequence of a gift of £130,000 by Mr. Robert Fleming for the purpose of purchasing sites and rebuilding houses condemned as insanitary, has enjoyed special facilities for slum clearance.

Public Health Services.

The health of mothers and children has received sustained attention in recent years. The maternity and child welfare service, started during the war, has made great progress, and still continues to develop and demonstrate its usefulness over the whole of Scotland. The care of children in health and in sickness is covered by this service until they have reached the age of 5, when they pass to the supervision of the school medical service. The usefulness of the measures undertaken, which include home visitation by health visitors, provision of ante-natal centres, child welfare centres, and skilled midwifery service with institutional treatment when required, has been proved by the continued fall in the infantile mortality rate and in the death rate of children under 5 years of age. In Scotland there are roughly 350,000 children between the ages of 1 and 5 years, and it has been a common observation of school medical officers that a large proportion of the disabilities found in school children are discovered in those just entering school. Medical inspection and treatment of school children were in operation before the war, but the present system has only developed since the year 1919. There are approximately 825,000 pupils in the State-aided schools of Scotland, and in practically all areas these children are inspected at least three times during their school life. The Board has welcomed the recent movement to take children from the congestion of the towns, and protect them from the dangers of the streets and roads, by establishing and extending playing fields, and further recommends the provision of more adequate recreation facilities for persons of all ages. It makes reference to an investigation into the nutrition of school children carried out in the past two years by funds provided by the Empire Marketing Board. The investigation showed that milk is an invaluable food for growing children, and that those who received an extra ration increased in weight and height with special rapidity. After leaving school the majority of children come under the national health insurance scheme, which in Scotland includes 1,751,200 persons. The amount of money spent annually on various benefits to insured persons was nearly £4,000,000. Surpluses, disclosed by valuations of societies made within the past ten years by the Government valuer, have been made available for additional benefits, the greater portion having been spent on ophthalmic and dental benefits. Arising out of the industrial position of the year 1926 and subsequently, the heavy claims on national health insurance funds have caused grave concern, and until results of the third valuation, at present in progress, are known it will not be possible to forecast how far additional benefits will continue to be available. Among recent developments in the insurance scheme has been the contributory pensions scheme, which came into operation in 1926 and 1928; 1,774,100 persons have been insured for the purposes of contributory pensions, and the total number of beneficiaries is now over 173,000. The Highlands and Islands medical service scheme had brought within the reach of all persons in isolated areas the services of medical practitioners at modified fees, and a special development of the last few years had been the establishment of a surgical service for Lewis and Harris, Orkney, and Shetland.

Problems of Hospital Accommodation.

The report points out, in regard to the treatment of disease, that there still exists a shortage of hospital beds for the country as a whole, estimated in 1925 to amount to 3,600 beds. A movement to secure co-operation in hospital services has developed strongly in the last few years. The voluntary hospitals have set up area committees in each of the five hospital regions of Scotland to survey the needs of the areas, and, at the request of the Secretary of State for Scotland, a voluntary hospitals liaison committee has been appointed to act between the area committees and the central department. In Aberdeen a scheme for co-ordinating the poor law and public health services has been carried through with great success, the way having thus been cleared for co-operation between the public authorities, the medical profession, the university, and the voluntary hospitals. In Glasgow, Stirling, and Falkirk, also, promising experiments in co-operation between public authorities and voluntary hospitals are being carried out.

Infectious Diseases.

Compulsory notification of infectious diseases has been in operation in Scotland for about thirty years, and in the same period a movement for the establishment of hospitals for infectious diseases has matured. During the past ten years there has been no decided diminution in the number of cases of scarlet fever, although the disease has become milder and the death rate has fallen. In the same period cases of diphtheria have, on the whole, increased, but with a marked reduction in the proportion of deaths. In both of these diseases 75 per cent. of cases have been treated in hospitals. Enteric fever has shown an extraordinary fall to one-tenth of the previous number of cases, and an even more striking reduction in the number of deaths. The death rate from pneumonia has shown no decrease in recent years, but local authorities have recently opened their hospitals to more than 5,000 cases each year. Measles and whooping-cough have shown a diminution in the death rate for the past ten years.

Developments in Health Legislation.

In 1920 the Blind Persons Act placed on local authorities the duty of making arrangements for promoting the welfare of blind persons, and generally approved schemes were provided for carrying out such services through voluntary agencies. As a result the number of untrained employable blind persons has been steadily reduced, and nearly all blind children are being educated. Old age pensions have become payable to blind persons at the age of 50. With regard to general sanitation, considerable developments have taken place in the last ten years. The majority of burghs and townships were provided with considerable water supplies and drainage systems in the thirty or forty years before the Board took up office, but a provision in the Local Government (Scotland) Bill enables county councils to contribute towards the cost of water and drainage in villages and other places where sufficient money cannot be raised by assessment. Within the past few years great public cleansing services have been reviewed in many cities, and well-understood rules are now in operation to prevent nuisance to those who live in the vicinity of refuse dumps. Great interest is being manifested by the public in matters relating to diet and food, and food shops are tending to grow more attractive and more cleanly. In 1923 a uniform standard of meat inspection was established by the Board, and in 1925 the Preservatives Regulations were framed to deal with the addition of chemical substances to foods. The Milk and Dairies (Scotland) Act, which came into operation in 1925, provides control over milk to ensure that it should be clean and wholesome, and every dairy cow in Scotland is now examined by a veterinary inspector at least once a year, in some burghs even every month.

The report refers especially to the services rendered by Sir Leslie Mackenzie, M.D., who has now retired, and mentions particularly the measures initiated by him for the treatment of tuberculosis, the medical inspection and treatment of school children, and the care and supervision of mothers and young children.

Church of Scotland Deaconess Hospital.

The annual meeting of the Church of Scotland Deaconess Hospital was held in Edinburgh on March 22nd. The annual report showed that the number of out-patients had increased greatly in recent years, and the board hoped to acquire during 1929 a site adjoining the hospital for the erection of a building to enable them to treat a much larger number of such patients than the 6,893 who had received treatment during 1928. The number of patients treated in the wards during 1928 was 640, and the income during the year amounted to £6,031, with an expenditure of £5,899, which left a surplus on the year's working of £231. The chairman said that all institutions of that kind had their ups and downs, but few institutions could record such a small number of downs as the Deaconess Hospital, of which the reports had been almost uniformly reports of progress.

Ireland.

Medical Matters in the Dail.

IN connexion with the discussions on the estimates for local government and public health, most of the medical members of the Dail made contributions. Sir James Craig, M.D. (Dublin University), said that there ought to be a Minister, or at least a Parliamentary Secretary of Public Health, who had had a medical training. He was not finding fault with the present Minister, but there was no doubt that the sanitary condition of the country was unsatisfactory—in parts of the small towns and villages the conditions were deplorable, and they could have no stronger proof of this than in the fact that in one area there were seventy cases of enteric fever. He had never suggested that good sanitation would prevent small-pox, but enteric fever and diphtheria, the two infectious fevers now prevalent, were eminently diseases brought about by bad sanitation and bad water supply. What, he asked, was the use of sending medical inspectors to inspect conditions for which they could do no good? They would make no progress in the sanitary conditions of the country until they had appointed county medical officers of health, who would alone be responsible for that class of work. He would like to know what progress had been made in the medical inspection and treatment of school children, which was absolutely necessary if they were to have a first-class adult population. He had spoken before about the insanitary condition of the schools, which was a disgrace to the country. It would have been a godsend if these schools instead of the country mansions had been blown up, because they would have been replaced by proper buildings. Dr. O'Dowd (Roscommon) drew the attention of the Minister to the outbreak of typhoid fever in Carrick-on-Shannon, county Leitrim. Dr. O'Dowd stated that the water supply for the town was drawn from the River Shannon near the same spot where the sewage of the town entered the river. It was true that the water was filtered, but analysis showed that it was polluted. He appealed to the Minister of Local Government and Public Health to see that such towns as Carrick-on-Shannon were provided with proper water and sewerage systems. He also urged that a scheme of compulsory inoculation against typhoid fever should be enforced immediately in any district from which a case came. Dr. T. Hennessy (Dublin City, South), replying to a deputy from Mayo who urged on the grounds of economy that the dispensary doctors should be made to do all public health work in the Free State, said that it would be impossible for the dispensary doctors to carry out the duties of whole-time medical officers of health. Apart from any special training and administrative experience, the dispensary doctor, who was a part-time medical officer, was mostly dependent on his private practice, and if he rigorously discharged the duties of a medical officer of health it would bring him into frequent conflict with perhaps some of his best clients. Dr. Hennessy readily admitted that the Minister and the Department of Public Health did an immense amount of work for the promotion of public health administration in the Free State, especially when the ill-advised opposition they met with from some of the local authorities was borne in mind.

He objected to the position given to the Irish language in making medical appointments in the Free State. Dr. Tubridy (Galway), Dr. Ward (Monaghan), and Dr. White (Waterford) also took part in the discussion.

Lectures at Trinity College, Dublin.

The Mary Louisa Prentice Montgomery Lecture in Ophthalmology will be given this year by Mr. Louis E. J. Werner, M.B., D.O.M.S., in the School of Physic of Dublin University, on Thursday, April 25th, at 5 o'clock. His subject will be "The slit-lamp in clinical practice." A short course of lectures on anaesthetics will be given this term for medical students in their final year by Dr. T. P. C. Kirkpatrick, the University lecturer in anaesthetics. This course is intended to supplement the theoretical and practical instruction which is given at the clinical hospital. Arrangements have been completed for the holding of the usual three weeks' post-graduate course from September 16th to October 5th. As in former years, practitioners attending the course will be able to live in college chambers as far as possible.

Health Schemes in County Louth.

The Free State Local Government Department has sanctioned provision being made for the ophthalmic treatment of school children in County Louth. Under this scheme the Board has appointed Dr. Connolly to attend children who are recommended by the school nurses as needing treatment of the eyes. Hospital treatment also will be afforded, and a scheme for dental benefit is being arranged. It is proposed that dentists should visit the towns of Ardee, Drogheda, and Dundalk under the scheme, and that the children of poor parents should be attended free. The further use of ultra-violet ray treatment for patients who have left hospital is also being dealt with; and, on the recommendation of Dr. Musgrave, the Board has decided that in cases where the patients require further treatment, and are unable to pay the cost of rail or bus to the Ardee Hospital, the matron of that institution should be empowered to advance the necessary money. A feature of this scheme is that the hospital proper will be left available for more urgent cases.

England and Wales.

Proposed Clinic for Rheumatic Diseases at Brighton.

A MEETING of the medical practitioners in Brighton and Hove was held on April 3rd to discuss the need of a local clinic for the treatment of rheumatic diseases. Dr. George Morgan (chairman of the Brighton Division of the British Medical Association) was in the chair. Dr. J. Stanley Ellis, who opened the discussion, emphasized the growing interest in rheumatic disease as a cause of industrial inefficiency, and pointed out that the present efforts to reduce the increasing sick benefit expenditure and the appalling waste of time due to rheumatic disability were wholly inadequate. Early treatment was essential, since 80 per cent. of cases could be cured or much improved if efficiently treated within the first six months. The best way to secure early treatment was by local rheumatic treatment centres founded on the lines laid down by the Ministry of Health. The "arthritis unit" work could be done at the existing hospitals, and some in-patient accommodation be also provided locally; the electro- and hydrotherapeutic treatments needed specially designed institutions. Dr. Ellis said there was every inducement to start such a centre at Brighton with its many facilities. At present at the local hospitals only about 15 per cent. of patients were cured or returned to full work, whereas by a special clinic at least 40 per cent. ought to be cured and a further 30 per cent. enabled to do their ordinary duties for nine months to a year before requiring further treatment. Dr. M. B. Ray, honorary secretary of the National Campaign against Rheumatic Diseases, explained that this society was a development of the British Committee on Rheumatism, which was a purely provisional committee instituted nearly four years ago by the International Society of Medical Hydrology. At the wish and with the assistance of the latter body, the "Campaign" had now been launched as an independent organization, and it was intended to include in its membership representatives of all the various friendly and other societies and associations, both of employers and employees, who were especially interested in seeking to diminish the toll of sickness levied by the prevalence of these most distressing maladies. The campaign having been designed to support and co-ordinate measures against rheumatic diseases, its ideals could best be realized by educating medical opinion as to the necessity for early diagnosis and systematic treatment and by teaching the public to demand increased provision for treatment and research. The kind of treatment afforded in a centre or clinic comprised: the employment of heat, cold, and movement, in water vapour and hot air—locally and generally applied; manipulation and exercises, alone or in combination with heat, by the hand, or by douches or whirling water; radiation—as from heat, light, and the invisible rays; electricity—as constant current to resolve exudations and promote nutrition, as interrupted current to cause movement of muscle fibre, and as high-frequency current (diathermy) to raise the temperature of deep-seated parts. The clinic or centre should be in close association with a fully equipped hospital department, where patients could be sent for complete investigation and diagnosis. In such a hospital department or "arthritis unit," if a focus of infection had been discovered it would be removed, if deemed advisable. The bacteriological and biochemical investigation of each case sent there by the clinic would be undertaken before the patient was returned for treatment. Any necessary orthopaedic surgery would be provided at the "arthritis unit." In the first instance, all patients who desired to avail themselves of the treatment facilities would present themselves at the clinic or centre, which acted as a clearing house, the patients being directed to the form and place of treatment best suited to their needs. Dr. Ray thought that the establishment of a "rheumatic clinic" on these lines in Brighton would be a most valuable addition to the resources at present in existence for the combating of rheumatic diseases; there were facilities for the employment of sea water for therapeutic purposes. Dr. Duncan Forbes (medical officer of health, Brighton) emphasized the "arthritis unit" as being of the first importance, since by careful study of each patient by a team of medical experts, septic foci could be discovered in 70 per cent. of all cases. He hoped that the "arthritis unit" would be established at the Royal Sussex County Hospital, where all the necessary equipment for team work was already provided. He advised the establishment by the municipalities of a physical treatment centre which would compare favourably with those already at work in the various spas. Brighton would enhance its reputation as a health resort. The discussion was continued by Drs. Greenyer and Copeman, Sir Hubert Bond, and Dr. Parry, and it was resolved, finally:

> That this meeting of members of the medical profession in Brighton and Hove is of the opinion that facilities for the formation of a rheumatic clinic in Brighton would not only be of direct benefit to the residents in the County Borough and surrounding area, but would also be found to attract desirable visitors to the town.

It was agreed to send a deputation, consisting of Drs. Morgan, Broadbent, Parry, Edmonds, and Ellis, to the Brighton Town Council.

An Outbreak of Imported Small-pox.

The Chief Medical Officer of the Ministry of Health (Sir George Newman) reports that the facts of this outbreak, so far as ascertainable on April 12th, are as follows:

"The Anchor Line s.s. *Tuscania* left Bombay on March 14th after a stay at Bombay of a week or more. It is stated that the crew and passengers numbered some 900 to 1,000. Some 200 of the passengers left the liner at Marseilles on March 27th and travelled direct to London or elsewhere; the majority, however, remained on board the ship bound for Liverpool. At Marseilles an able-bodied seaman was landed on March 27th and died that day in hospital from small-pox. His condition had not been diagnosed on the ship, but was ascertained only when he arrived in hospital at Marseilles.

s far as our information goes, he had been ill from March 5th, and on the following day it appears that another member f the crew fell ill, though he was not landed at Marseilles, nor as he diagnosed as suffering from small-pox. He was removed o hospital on arrival at Liverpool on April 1st, and three or our 'contact' persons with this second patient were also moved to hospital. It should be added that when the hipping authorities learned at Marseilles that they had to deal ith small-pox infection on the *Tuscania* they obtained vaccine mph at Marseilles, and the ship's doctor undertook the nerous task of vaccinating, or revaccinating, the passengers nd crew. On arrival at Liverpool some 650 passengers disembarked, and information was sent by the Liverpool port uthorities to the districts to which they were stated to be roceeding. Several passengers subsequently proceeded on the *uscania* to Glasgow, where the crew were also disembarked. he authorities at Liverpool also informed the local authorities f the destination (as far as known) of the 200 persons who left he ship at Marseilles and travelled overland.

"On receipt of the information thus provided, the central nd local health departments in this country have proceeded in he ordinary way in regard to notification, isolation, disinfecon, etc., and are keeping as far as possible the various contact' persons under supervision. It is, however, obvious hat it is inevitable that if a number of persons, apparently ealthy at the time of disembarkation, leave a ship that has een infected with such a disease as small-pox, it is probable hat there will be a number of secondary cases of infection, rovided that such persons had not been adequately vaccinated efore their contact with the infection. There is, however, no use whatever for alarm in regard to this unfortunate incident. he average number of cases of small-pox of mild degree notified n England and Wales per week during the last three months as been about 250. To this prevalence of mild small-pox must ow be added a certain number of cases of small-pox of severe egree. Up to the present some 35 cases of this imported nfection have been notified in London and elsewhere, among hich persons there have been up to date five deaths.

"The means of the prevention of small-pox, whether of mild r severe degree, is the same—namely, vaccination. There can, f course, be no assurance as yet that the 'contact' persons ho were on board the *Tuscania* during its period of small-pox nfection will escape the disease, for they may have become nfected before being vaccinated on the ship. They may or ay not escape. But if they had been previously vaccinated or indeed were vaccinated on the ship) the *probability* is reatly in favour either of their entire escape from this malady r of their attack being less severe than if they had not been accinated at all. In any case, it must be added that an nvaccinated community is an unprotected community, as an nvaccinated person is an unprotected person."

Post-graduate Instruction in the University of Leeds.

A comprehensive series of post-graduate courses during May, June, and July has been arranged by the Faculty f Medicine of the University of Leeds. Commencing on May 1st, three series, each of six lectures, will be given on Wednesday afternoons. Dr. H. W. Davies will deal with cidosis, alkalosis, and ketosis, at the School of Medicine; Mr. A. Richardson will discuss emergency surgery, in the General Infirmary; and Professor W. H. Maxwell Telling will lecture on diseases of the ductless glands, also n the General Infirmary. The minimum number for ach class is ten. An intensive general course of clinical nstruction and lectures will begin on Monday, July 1st, t the General Infirmary and the School of Medicine, and will occupy the whole day. Professors Jamieson, McSwiney, McLeod, and Maxwell Telling will be in charge of their espective subjects, and other lecturers and demonstrators nclude Mr. Dobson, Dr. Veale, Mr. Oldfield, Dr. Cooper, Dr. Polson, and Dr. Anderson, who will deal with fevers. he fee for this course is five guineas, and the maximum umber that can be accepted is twenty-four, so that early pplication is necessary to ensure participation. Further nformation can be obtained from the Dean of the Faculty f Medicine, the School of Medicine, Thoresby Place, eeds.

Queen's Hospital, Birmingham.

The eighty-eighth yearly meeting of the Governors of he Queen's Hospital, Birmingham, was held on April 9th, hen the annual report and statement of accounts were dopted. Sir Charles Hyde, president of the hospital, ommented on the good progress made by the contributory cheme, and hoped that it would give valuable assistance n meeting a total deficiency in the hospital accounts of nearly £17,000. No fewer than ten beds had been endowed already by the efforts of students of the university. He called attention to the fact that there had been a considerable increase in the number of casualties treated last year. Mr. T. Oliver Lee, the honorary treasurer, announced that the extensions of the hospital had now been in use for two or three months, and that, consequently, in 1929 and subsequent years, there would be an increase in expenditure of between £12,000 and £14,000. Mr. A. W. Nuthall, F.R.C.S., spoke of the need for obtaining adequate supplies of radium for Birmingham as a whole. Dr. Purslow, chairman of the house committee, outlined the position of the Queen's Hospital under the contributory scheme and its associated organization, the Birmingham Hospital Saturday Fund. He said that the Queen's Hospital had abandoned the ticket system in 1875, and might claim, therefore, to be one of the pioneers in this respect. The hospital had, consequently, suffered through lack of subscriptions in comparison with hospitals that used tickets, and the contributory scheme had to meet this strain. He approved the scheme, however, and hoped that when the present difficulties were surmounted a financial grant might be obtainable which would be proportionate to the work carried on.

Correspondence.

THE LEUCOCYTES IN PERNICIOUS ANAEMIA.

SIR,—Dr. G. W. T. H. FLEMING, in his interesting paper published in your issue of April 6th, pleads for a closer study of the leucocyte in all patients suffering from pernicious anaemia. He refers more particularly to the deviation from the normal in the "polynuclear count," a change characterized by a shift to the right. This remarkable and significant variation in the blood is an essential characteristic of Addison's anaemia, and is one means of differentiating this disease from all other forms of anaemia, with the exception of sprue, and possibly that found in those infected with the *Dibothriocephalus latus*, and in lymphatic leukaemia.

The importance of such a finding is worthy of emphasis, since, up to the present, one fails to find any reference to it in the textbooks of medicine. Dr. Fleming gives the credit for the recognition of this characteristic change in the polynuclear count to Naegeli, 1919, and Arneth, 1920, and in so doing he has inadvertently overlooked the fact that this right-handed drift was first described by Dr. W. E. Cooke, in *The Arneth Count*, pages 18 and 19, published in 1914. It was there pointed out that, not only was this finding of diagnostic value, but that it necessitated a reconsideration of the fundamental etiology of this fascinating disease.—I am, etc.,

JOHN HAY.

Liverpool, April 15th.

SIR,—Dr. G. W. T. H. Fleming (April 6th, p. 638) has indeed done a most useful work in calling attention to the changes in the nuclear picture of the neutrophiles during the development of a remission of the disease. He seems to me, however, to have slighted the haemogram of Schilling more than is really justifiable. Schilling does not include all neutrophiles with *single, undivided nuclei* in one class (myelocytes and metamyelocytes), but differentiates them as myelocytes, young metamyelocytes, and metamyelocytes with band-like nuclei. Normally some 4 per cent. of the leucocytes are "band forms," whereas neither myelocytes nor young forms are found in health.

Dr. Fleming says that "the Schilling haemogram does not indicate any abnormality in pernicious anaemia apart from an inconstant lymphocytosis." My own findings do not quite bear out this statement; I have always found the percentage of band forms reduced, while a few young forms and even myelocytes are present. Surely the inclusion of all neutrophiles with unlobed nuclei in Class I of the polynuclear count must fail to give a clear insight into such a leftward shift as that shown by the haemogram.

It is, of course, essential that both the polynuclear count and the Schilling haemogram should be investigated in every case, but I can see no reason to suppose that either can justifiably be regarded as the more important.

May I also confirm Arneth's statement that there is a shift to the right in lymphatic leukaemia, although I do not know whether this is invariably so? At the same time there is almost always a general immaturity in Class I. of the polynuclear count. Similarly, in some, perhaps all, cases of Hodgkin's disease there is a shift both to the left and to the right, although this usually becomes less noticeable after *x*-ray treatment.—I am, etc.,

Maldon, Essex, April 6th. A. PINEY.

DEEP X RAYS AND THE CELLS OF THE BLOOD.

SIR,—Drs. Knott and Watt raise many important issues in their interesting preliminary note of their work on opsonic indices in radiated patients (March 23rd, p. 542). Much clinical work, however, showing the benefit of radiation in many acute and chronic septic conditions—work often confirmed fully by bactericidal blood tests—has shown that only in a very restricted sense is their statement to be accepted that "actively septic patients, leukaemic or otherwise, are not usually favourable subjects for irradiation."

Dr. Cave has pointed out (April 6th, p. 664) that, particularly in some acute skin infections, many good results have been obtained. But many other deeper acute and chronic infections have been successfully treated by radiotherapy. The report of Heidenhain and Fried (*Langenbeck's Arch. f. Chir.*, 1924, pp. 624–665) shows about a 75 per cent. rapid and excellent result in a series of 243 cases of such conditions as acute inflammatory glands of the neck and groin, acute mastitis, cellulitis of various regions, post-operative pneumonia, and parametritis; and these clinical results were confirmed by a series of bactericidal blood tests, which showed the beneficial effect of *x* rays on the patient as evidenced by the inhibited growth of stock and, more particularly, autogenous cultures.

Such bactericidal tests may be better than opsonic estimations for estimating the effect of radiation on septic conditions. But, apart from this point, the work of Heidenhain and Fried has shown clearly that radiation, to be successful in acute septic conditions, must not only be very closely watched twice daily in its effect, but must be very carefully applied *in doses about 20 per cent. of the mild skin dose*. Larger doses will not lead to the desired effect, and may even be dangerous.

The experience of many can confirm these results. It is not primarily a matter of the *quality* of the radiation used, as Dr. Cave suggests, but of the *quantity* absorbed, in comparison with some standard such as the skin dose, that is of importance to the result. For example, Berven, in his just published report on the "Treatment of tumours at Radiumhemmet" (*Acta Radiol.*, 1929, vol. x, p. 1), says that in ulcerated tumours "we have had great use of a resorbent Roentgen ray treatment prior to the radium treatment." A sixth to an eighth of a skin dose (high voltage) makes a great improvement in some days in the condition of cases of very septic cancer of the lip, and the subsequent radium treatment is facilitated.

I have had similar results in septic cancer cases; also with many non-malignant infections. If small but adequate doses are used, Dr. Knott and Dr. Watt's statement will be found to be far from a complete summary of the recently opened-up subject of the effect of radiation in acute and chronic infections.—I am, etc.,

London, W.1, April 12th. J. H. DOUGLAS WEBSTER.

DOSAGE OF THALLIUM ACETATE.

SIR,—Thallium acetate has been in use in the schools of the Brighton guardians for about eighteen months. The calculation for determining the right dose was rather complicated, involving the conversion of weights from the English system into the metric system and back again. On one occasion an overdose, fortunately not severe, occurred as the result of a mistake in the calculation. I then tried to find a simpler calculation. I found that *the weight of the child in pounds divided by 18 equals the dose of thallium in grains*. As an additional safeguard the weight of the child is put on the top of the prescription so that the dispenser can check the calculation. In view of the recent unfortunate disaster in London I thought perhaps that this simpler calculation might be useful to others, who may be alarmed at the risk of a mistake in estimating the dose.—I am, etc.,

Hove, Sussex, April 10th. H. J. MCCURRICH.

SIR,—There have been so many mistakes and discrepancies in the press reports on the inquest on the three boys who died from an overdose of thallium acetate that I would like to state the plain facts of the case. The strength of the solution should have been 7.8 mg. per fluid drachm, and was based on a prescription handed to the hospital dispenser about two years ago. The prescription was written in the hospital pharmacopoeia, and it has always been understood that the solution sent up from the dispensary would be that strength. Acting on this assumption, the correct volume of the medicine was measured out so that each child should receive a dose of 8.5 mg. per kilo of body weight. Unfortunately, the solution was not correct; a decimal point had been misplaced and each child received ten times too much—instead of 8.5 mg., 85 mg. per kilo were actually given.

A further point which was not made clear was that on analysis the solution from the small bottle "B" was only 5.6 times, and not 10 times, too strong. This is accounted for by the fact that after the children had received their medicine from the larger bottle "A," only about one ounce of the solution was left in the bottle, and on being returned to the dispensary it was emptied out into the smaller bottle "B," which already contained about one ounce of the solution left over from a previous occasion, and which was, of course, the correct strength.

One further remark I would like to make. In one paper I was reported to have admitted that one of the patients to whom I had administered the same medicine had afterwards gone off into a "trance." What I really said was that in all the series of cases we had treated only one reported having slight transient pains, and these did not occur until a week had elapsed after taking the medicine.—I am, etc.,

J. M. SPENCER SCOVELL, M.D., Ch.B.Ed.

London, W.1, April 15th.

THERAPEUTIC VALUE OF ULTRA-VIOLET LIGHT.

SIR,—In the introduction to the recently issued annual report of the Medical Research Council certain general comments with regard to light treatment are made. As these remarks are only in the general introduction it would be helpful to have an authoritative answer to the following question: Had the comments on light treatment been submitted for approval to the Medical Research Council's Committee on the Biological Actions of Light? If the answer is in the negative further observations are unnecessary.—I am, etc.,

London, W.1, April 12th. C. B. HEALD.

ESTIMATION OF HEPATIC EFFICIENCY.

SIR,—I hope you will kindly allow me to comment on the letter on the above subject in your issue of March 30th (p. 621), which referred to my report on Roch's test, recently published.

1. Your correspondent does not state how the results he quotes were interpreted as an answer to the question set.

2. No experiments seem to have been made on healthy subjects as controls for the results obtained with patients.

3. My experience with Roch's test on myself and other three healthy subjects gave positive results, and as similar results were obtained with patients having unhealthy livers this was regarded as proof that the elimination of salicylic acid in the urine is a normal result after its ingestion, whether the liver was diseased or healthy.

4. Your correspondent's positive results cannot therefore be accepted as proof that the liver's antitoxic function was disturbed in any single case, nor can much be inferred from the negative results, except that probably they arose from incomplete extraction of the salicylic acid, as was proved in my experiments.

These results need not be more fully analysed, but as a whole I consider they confirm the conclusion reached in my article—namely, that Roch's test is of no value in diagnosing disease of the liver.—I am, etc.,

London, E.1, April 12th. W. RALSTON.

THE CIRCULATION UNDER THE SPHYGMOMANOMETER CUFF.

SIR,—Dr. Harrington Sainsbury can be assured that the method used by me on the frog is the same in principle as that of the sphygmomanometer, and Mr. N. Pines confirms, as stated in his letter, for the eye viewed by the ophthalmoscope exactly what I see under the microscope in the case of the tongue or web of the frog. Dr. Sainsbury, I think, leaves out of account the difference of pressure in systole and diastole. As the compression is increased the flow becomes slower and pulsatile; next the flow only occurs during systole and ceases during diastole of the heart; finally the flow in the vessels stops and the blood is squeezed out, the direction of flow being reversed in the artery. Before the final cessation of the flow in systole the artery shuts up in diastole and opens at the height of systole enough to let a few corpuscles through.

When the pressure in the cuff of the sphygmomanometer is maintained, say, at 40 mm. of mercury, and rises to that pressure in the big veins below the cuff, it must be borne in mind that this pressure only pertains in the wider connexions between the arteries and veins. Owing to the increased resistance to flow as the pressure in the cuff rises, the circulation stops in capillaries where the frictional resistance is greater; the pressure is then not fully transmitted to these. If the middle portion of the frog's tongue be compressed by my apparatus the conditions are exactly equivalent to those pertaining when the cuff is applied to the arm.—I am, etc.,

National Institute for Medical Research, Hampstead, N.W., April 9th. LEONARD HILL.

THE ART OF SURGERY.

SIR,—The criticism of Mr. Souttar's claim for surgery as being essentially an art on the ground that it is not necessarily associated with any moral, spiritual, and, I might add, emotional experience, is, I think, right. The true aim of art is the expression of beauty in its physical, moral, spiritual, and emotional aspects. It may be difficult to define beauty, but its effects upon those who come within its reach are none the less genuinely felt. Mr. Souttar himself experienced them when engaged in contemplating the Venus of Milo. No one, however enthusiastic a surgeon he may be, is justified in claiming that witnessing an operation, in all its stages, however dexterously and beautifully performed, is capable of awakening in the spectator, or in the operator himself, feelings even remotely comparable with those produced by literature, music, painting, sculpture, and architecture. Surgery, moreover, is hardly a constructive activity, and as such it cannot be called an art in the sense in which those human achievements I have mentioned are arts. Plastic and orthopaedic surgery, for instance, which are practically the only constructive portions of a surgeon's work, however much they may and do serve a useful purpose, cannot by any stretch of imagination be called beautiful in their results, except in so far as those results appeal to our perverted sense of true beauty in its application to surgical practice. No one denies that art forms part of surgery, but its scope is limited; all great art is essentially creative, which surgery is not, and never can be. It is not through any fault of Mr. Souttar's that his achievements, high as they are, cannot come up to the level reached by workers in other realms of art. The reason lies solely in the limited artistic values of the materials at his disposal, whereby the fullest expression of his obviously very artistic nature is unavoidably and irretrievably curtailed.—I am, etc.,

Greenhithe, April 7th. D. W. STANDLEY.

THE TREATMENT OF ACUTE OTITIS AT PUBLIC SCHOOLS.

SIR,—There is a circumstantial story going the round just now, which I will repeat for whatever it may be worth, because it points the moral of something I have to say later. It is said that an otologist was recently summoned to a public school and found there four boys with five acute suppurating mastoid antra between them; he operated at once upon all four. All the patients had had acute otitis media; on none of them had a paracentesis tympani been performed.

Now what I can vouch for. Last term my eldest son developed scarlet fever at his public school. (Incidentally his mother found out he was ill at a half-term visit, when he had already had symptoms for thirty-six hours—naturally, an epidemic followed). The next day I visited him and learnt that he had left-sided earache. I saw the school doctor and urged the importance of paracentesis. He agreed enthusiastically and promised to have it done if the drum should bulge. I went down a week later, and discovered for the first time that the drum had been allowed to rupture two days after my first visit. I offered no reproaches: I wish now that I had made myself unpleasant, for, soon after, a right otitis developed, and that, too, was allowed to take its own time in rupturing through the drum. An acute mastoiditis supervened necessitating a midnight operation and, of course, a prolonged convalescence.

I am moved to ask two special branches of the profession certain questions. I ask the otologists, Is early paracentesis the proper treatment for acute suppurating otitis media? Does it lead to speedier recovery, less chance of deafness, greatly diminished liability to acute mastoiditis? If the answers are affirmative, I ask the Medical Officers of Schools Association what they have to say on these topics, which seem to me to be of some importance to them.

I have been in private practice for twenty-two years, and have never yet met with an acute mastoid case; largely luck, no doubt, but partly, I think, because I believe in the surgical drainage of abscesses behind the tympanum. As I am only concerned to protect boys and girls in the future, I take leave to sign myself only by my degree of—

April 15th. M.D.

THE ORGANIZATION OF A MATERNITY SERVICE.

SIR,—With reference to Dr. Farquhar Murray's interesting article in the *Journal* for April 13th (p. 691), I would like to mention that the Bristol Health Committee has instituted a scheme whereby any medical practitioner in Bristol can secure the services of a member of a panel of obstetric specialists whom he may wish to call in to a case of difficult labour. The Health Committee undertakes to be responsible for payment if the patient cannot afford the necessary fee. This scheme, which has only been in working for a few months, has shown results which promise to be of great value. May I state that I am in full agreement with Dr. Farquhar Murray's views in regard to handywomen.—I am, etc.,

R. A. ASKINS, M.D.,
Bristol, April 16th. Medical Officer of Health.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

WHEN the House of Commons reassembled, on April 15th, after the Easter recess, Mr. CHURCHILL introduced the Budget for 1929–30. He drew attention to a decrease in the excise duties on beer and the customs duties on wine, and asserted that these resulted from a change in the national habits, which was an embarrassment to the Exchequer, but not a misfortune to the nation. The returns from the spirit duties had only been kept up by the exceptionally cold weather in the early part of this year. He proposed the total and final abolition of the tea duty from April 22nd, including the duty on tea grown outside the Empire. He proposed no remission of the duties on cocoa and coffee in this Budget, and no changes in the taxes on sugar and petrol, nor in the income tax, supertax, and death duties. Slight adjustments were proposed in the licence duties on brewers, distillers, and tobacco manufacturers, but no increase is to be charged in the present duties where the output of spirits on which the duty is calculated is for methylation or use in arts or manufacture. It is proposed to allow certain holders of off-licences to sell spirits by the half-bottle. Reductions are proposed in the licences for some classes of motor-propelled goods vehicles, and some motor cycles, but not on passenger motor cars.

Mr. CHURCHILL announced, on March 16th, that the present Parliament would in any event end before Whitsuntide. The

general anticipation is that a prorogation about May 8th will be immediately followed by a dissolution and by the general election campaign.

Lord Moynihan took his seat in the House of Lords on April 17th. He was introduced by Lord Dawson of Penn and Lord Illingworth.

Radium.

Dr. VERNON DAVIES, on April 16th, asked the Prime Minister what action the Government proposed to take on the report of the subcommittee of the Committee of Civil Research on Radium.

Mr. Churchill's Statement.

Mr. CHURCHILL, who replied, said: In view of the importance of the matter and the public interest attracted by it, the Government arranged for the immediate publication of the report. It will be seen that the report deals with the national requirements for radium in medical treatment, in the Fighting Services, and for the purposes of physical research; and with the possibilities of developing new sources of supply. Further, in a full statement as to the use of radium in medical treatment, the subcommittee has indicated that a great volume of avoidable distress and suffering persists simply because the radium required for the treatment of cancer is not available; and that the acquisition of further supplies should encourage the wider development of the highest skill in its use and the allocation of more hospital beds to the treatment of suitable cases. The subcommittee expresses the opinion that in order to meet the requirements of England and Wales, and of Scotland, 20 grams of radium, in addition to the stocks already available or likely to be available shortly, for general medical use, should be acquired within a specified period—namely, before the end of 1930.

The subcommittee recommends that the necessary sum, estimated at £200,000, should be raised by a public appeal, to which the Government should contribute pound for pound within that maximum sum. The subcommittee also proposes the setting up of an organization consisting, first, of a body to hold the funds and purchase and hold the radium, and, secondly, of a body to distribute the radium and secure its full use in the manner best adapted to further the advancement of knowledge and the treatment of the sick. As regards the recommendations of the subcommittee on the subject of the organization, these have been accepted in principle by the Government, but the precise form of the organization will remain open to further discussion. The Government has accepted the financial recommendation of the subcommittee, and will be prepared to contribute from public funds, up to a maximum of £100,000, to the extent of £1 for every £1 of private subscription for the purchase of additional radium. The Government confidently expects that there will be no difficulty in raising, in a very short space of time, the funds necessary to provide this invaluable addition to the national resources for battling with one of the most formidable maladies known to us.

Mr. RAMSAY MACDONALD asked if the Government had considered the effect of this announcement on the price of radium, and if it proposed to take any steps to safeguard itself in that matter. Mr. CHURCHILL: I understand that all that is dealt with in the committee's report. The House is entitled to the report and therefore publicity is unavoidable, but I do not apprehend any serious evil consequences.

Commander BELLAIRS asked if the report dealt with the international aspects of radium, and if it made any recommendation concerning the matter before the League of Nations, especially with regard to the Belgian monopoly. Mr. CHURCHILL said that he must confess that, like Commander Bellairs, he was looking forward to studying the report.

Lieut.-Commander KENWORTHY asked if the right hon. gentleman was aware that every time the Government had gone into the market to purchase radium the price had been raised against it, and if he would consider the suggestion of Commander Bellairs and advise the Foreign Office to examine into the matter of international action. Mr. CHURCHILL said that he understood, though he did not speak with first-hand knowledge, that this matter was fully discussed in the report. Replying to Dr. VERNON DAVIES, who asked if there would be an opportunity to discuss the report, Mr. CHURCHILL said that it did not seem to him that the House was going to have much opportunity for further discussion.

Sir R. THOMAS asked if the report dealt with the potential supply of radium in Australia. Mr. CHURCHILL: That is covered by the statement that I have not yet been able to study the report. Mr. R. MORRISON asked if it would not be necessary for the Government to have a supplementary estimate. Mr. CHURCHILL replied that whatever was right and necessary would certainly be done. Mr. W. THORNE asked what was the approximate cost of an ounce of radium. Mr. CHURCHILL replied that he was sorry that he did not happen to have that information. Mr. THORNE: Is the right hon. gentleman aware that the cost is about £400,000 per ounce?

On April 15th Dr. VERNON DAVIES asked a question on the same subject. Sir KINGSLEY WOOD said that the report of the subcommittee of the Committee of Civil Research would be published. The question whether the report should be brought before the League of Nations would be considered.

Small-pox.

Dr. FREMANTLE asked, on April 15th, the number of passengers landed from the s.s. *Tuscania* which recently arrived at Liverpool from Bombay; whether passengers and crew were under observation; what number of cases of small-pox had occurred among them; the number and vaccination history of the cases that had died; and whether any cases of small-pox had been notified from contacts with passengers and crew. In reply, Sir KINGSLEY WOOD referred Dr. Fremantle to the statement on the case which had been issued by the Ministry of Health and is published at page 742 this week. At present the Minister of Health was not in a position to make any further statement.

Mr. T. JOHNSTON asked the Secretary for Scotland whether he was aware that a member of the crew of the *Tuscania* was discharged at Marseilles; whether subsequently a wireless message was received from Marseilles intimating that the man had died of small-pox; whether on arrival at Liverpool the other members of the crew were taken to hospital for small-pox; whether on arrival at Glasgow, and before fumigation or disinfection of the ship, an engineer, along with twenty-three cases of chickens and seven barrels of ducks, was transferred to the s.s. *Caledonia*, which sailed for New York on April 7th; whether the Transport Workers' Union informed the ports' medical authorities of the transfer of the engineer and the foodstuffs from the infected ship prior to the sailing of the *Caledonia*; why nothing was done to prohibit this proceeding; if forty bags of flour had since been transferred from the infected vessel to the s.s. *California*, and whether the Secretary of State could assure the House that all proper steps were being taken to prevent a spread of the infection. Sir J. GILMOUR, in reply, said that he had been unable to obtain information on the detailed matters referred to. He was making inquiries and would communicate the result to Mr. Johnston after these had been completed. He was satisfied that all reasonable steps were being taken by the competent authorities in Scotland to deal with the position and to protect the interests of the public.

Universities and Colleges.

UNIVERSITY OF LONDON.

UNIVERSITY COLLEGE.

THE annual dinner of the Fellows of University College, London, will be held at the College on Tuesday, April 30th, at 7.15 for 7.30 p.m., in commemoration of the laying of the first stone of the College buildings by H.R.H. the Duke of Sussex on April 30th, 1827. Professor F. W. Oliver, M.A., D.Sc., F.R.S., elected a Fellow in 1886, will preside.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council meeting was held on April 11th, when the President, Lord Moynihan, was in the chair.

The secretary reported the death of Sir Anthony Alfred Bowlby, Bt., past President and past Member of the Council. The following vote of condolence was passed:

> The Council hereby express their deep regret at the death of Sir Anthony Bowlby, and their very sincere sympathy with Lady Bowlby and the members of her family in their bereavement. The Council also desire to express their grateful sense of the many services rendered to the College by Sir Anthony Bowlby during the twenty-four years he served as a Member of the Council, and especially to record their appreciative recognition of the distinction and ability with which he fulfilled the duties of President during his three years of office. The Council feel that the College has lost one of its most illustrious Fellows, who will long be remembered for his eminence as a teacher of clinical surgery, his conspicuous services during the South African and Great Wars, and for the zeal and ability which he brought to bear in the discharge of many duties undertaken by him on behalf of the State and the medical profession.

The honorary Gold Medal of the College was awarded to Sir George Makins, G.C.M.G., C.B., LL.D., in recognition of his valuable services to the College, more especially in arranging and describing the series of drawings in the Army Medical War Collection.

Sir D'Arcy Power was appointed honorary Librarian of the College in recognition of his services in re-editing Plarr's *Lives of the Fellows* and of his distinguished position as a bibliographer.

The Jacksonian Prize for 1928 was not awarded. The subject for the Jacksonian Prize for the year 1930 is "The pathology of ovarian cysts and its bearing on their treatment."

The vacancy in the Court of Examiners occasioned by the expiration of Sir Cuthbert Wallace's term of office on May 8th next will be filled up at the next meeting of the Council.

The following Members of twenty years' standing were elected to the Fellowship: Comyns Berkeley, M.D., M.Chir., obstetric and gynaecological surgeon to the Middlesex Hospital; William Blair Bell, M.D., B.S., obstetric and gynaecological surgeon to Liverpool Royal Infirmary.

On the recommendation of the Museum Committee it was decided to devote Lord Beaverbrook's grant of £1,000 to tissue culture research.

Obituary.

SIR ANTHONY ALFRED BOWLBY, BT., K.C.B., K.C.M.G., K.C.V.O.,

Honorary Surgeon to the King; Past-President of the Royal College of Surgeons of England; Consulting Surgeon to St. Bartholomew's Hospital.

As briefly announced in our last issue, Sir Anthony Bowlby, the eminent surgeon, died on April 7th at Stoney Cross, in the New Forest, at the age of 73, after a short illness.

Anthony Alfred Bowlby, third son of Thomas William Bowlby, was born on May 10th, 1855. His father first practised as a solicitor in London, and later was special correspondent of the *Times* at Berlin and in China, where he died in 1860 as the result of ill treatment from the Chinese, who took him prisoner after the capture of Tientsin. From Durham School Anthony Bowlby went to study medicine at St. Bartholomew's Hospital, and distinguished himself both at work and at games. He became M.R.C.S. and L.S.A. in 1879, and after winning the Brackenbury scholarship in surgery and serving as house-surgeon to Sir Thomas Smith, was admitted F.R.C.S. in 1881. His next appointment at St. Bartholomew's was that of curator of the museum, where he spent laborious days in completing the catalogue of pathological and anatomical specimens begun many years before by Sir James Paget. This early work in the museum and the post-*mortem* room laid the foundations for Bowlby's *Surgical Pathology and Morbid Anatomy*, a textbook highly popular with students, which first appeared in 1887 and reached its seventh edition in 1920, with Sir Frederick Andrewes as joint author. In 1882 Bowlby was awarded the Jacksonian prize of the Royal College of Surgeons for his dissertation on "Wounds and other injuries of nerves, their symptoms, pathology, and treatment"; in 1886 he won the Astley Cooper triennial prize for his essay on "The surgical treatment of diseases and injuries of nerves"; and in the following year he was Hunterian Professor. In 1891, after serving for seven years as surgical registrar, he was elected assistant surgeon to St. Bartholomew's, and became full surgeon in 1903. Bowlby was an excellent teacher with a clear crisp direct style, and his clinical lectures on surgery, no less than his informal talks to dressers in the wards, were valued by generations of students. On his retirement from the post of senior surgeon and his election to the consulting staff in 1920, he was presented by his colleagues and pupils with a portrait of himself in recognition of his services to the hospital and medical school and of the appreciation felt by all Bart's men for his distinguished work for military surgery. He was also for many years surgeon to the Alexandra Hospital for Hip Disease in Queen Square, Bloomsbury, and to the Foundling Hospital.

SIR ANTHONY BOWLBY, BT.

Soon after the beginning of the South African war Bowlby went out with the Portland Hospital as senior surgeon in charge, and threw himself with characteristic zeal and vigour into the administrative and surgical work of that war hospital, which was first established at Rondebosch near Capetown, and later moved up to Bloemfontein. For these services he was awarded the C.M.G. Some of his South African experiences were printed in these columns; and he gave a fuller account of them in a book entitled *A Civilian War Hospital*. After holding for some years the post of surgeon to King Edward's Household, he was appointed Surgeon in Ordinary to King George on his accession to the throne, and received the honour of knighthood in 1911. When the British Red Cross Society was founded in 1905 Bowlby was one of the three surgeons chosen by Queen Alexandra to act on the council; thenceforward until his death he was a greatly valued member of its executive committee, his knowledge of military surgery and administration enabling him to forward the society's work in many directions.

The outbreak of war in August, 1914, gave him further and wider opportunities for serving his country. He was soon at G.H.Q. in France, and was made advisory consulting surgeon to the B.E.F., with the temporary rank of major-general A.M.S. No plan formed in the early days of the war was more fruitful of good than that which led to the appointment of distinguished members of the staffs of civilian hospitals to be consulting physicians and surgeons with the armies oversea, and later for each military command in the United Kingdom. Passing constantly to and fro among the medical units they carried the experiences of one to the other, so that they were able to advise the chief administrative medical officers as to the means that should be taken to prevent disease or anticipate infection, and to afford opportunities for efficient treatment at the earliest possible moment. Experiences were collected and compared, meetings of the medical officers of an army were held for discussion, and the consultants of all the armies met together, until finally opinion on some problem or set of problems could be crystallized into a memorandum which was issued from G.H.Q. for information and guidance to the medical officers of each army. In all this Sir Anthony Bowlby took a leading part, his personality and habit of mind suiting him exactly for the work that had to be done. He was a familiar and welcome figure at every casualty clearing station, and often visited the field ambulances. In the words of a Territorial medical officer, "There was no more truly respected man than he at the Front. His excellent advice was always at our service, he never failed to be encouraging, and though his position in the medical service was so senior he often constituted himself a humble assistant of the junior." He was five times mentioned in dispatches, created K.C.M.G. in 1915, K.C.V.O. in 1916, C.B. in 1918, and K.C.B. in 1919. The Government of the United States awarded him the American Distinguished Service Medal.

In 1915 Sir Anthony Bowlby gave the Bradshaw Lecture before the Royal College of Surgeons, on "Wounds in war,"

and in 1919 the Hunterian Oration, on "British military surgery in the time of Hunter and in the great war." In the following year he was elected President of the College in succession to Sir George Makins, his colleague in France throughout the war, and held office until 1923, when he was created a baronet. Among the other civilian distinctions that fell to his lot were the honorary fellowship of the American College of Surgeons, and the honorary degree of D.C.L. of the University of Durham. He was for very many years a member of the British Medical Association, and often showed his friendship for the Association and its *Journal*. At the Annual Meeting in 1891 at Bournemouth he was secretary of the Section of Surgery, and at the London Meeting in 1895 he was vice-president of the Section of Pathology and Bacteriology. In the arrangements for the special clinical and scientific meeting held by the Association in London after the armistice he took an active part, and presided over the discussion on wound shock. He was for some time a member of the Metropolitan Counties Branch Council, and in 1922–23 was a valued member of the Arrangements Committee at headquarters.

The funeral service, on April 10th, was held very appropriately in the Church of St. Bartholomew-the-Great, West Smithfield, and the large congregation included leading representatives of the public institutions and bodies with which he had been associated, and many former colleagues and pupils.

We are indebted to Sir WILMOT HERRINGHAM for the following appreciation:

Bowlby and I were of almost exactly the same age—he was about three weeks the younger—but he was my senior at St. Bartholomew's, since I had gone to Oxford before coming up to town. We rose, therefore, through the various grades more or less together. When I was demonstrator he was surgical registrar, and when I was medical registrar he was already assistant surgeon. About 1895 I became assistant physician (the "physician in reversion" of Harvey's time), and I then joined him as joint treasurer of the school, and began to take an active part in school politics. The school was in low water at that time, and the yearly income was very much lower than it had been ten or twenty years before. But a younger generation was coming on, and we made it our policy first to improve the teaching in every possible way, and secondly, to make the junior appointments better than they had been, even though this should involve some loss to ourselves as seniors. Bowlby himself had long pursued the same aims, and had gained a great reputation as a teacher among the students. As he rose to the higher ranks he held steadily to the same policy, and was one of the most unselfish and devoted servants that the school has ever had.

Two great changes took place in our time. The first was the abolition of the share system, and the payment by definite rates for the work done. This was the consequence and the condition of a grant from Government, given, I think, at that time by the Board of Education. The second, which came later, was the closer connexion of the school with the University. To both of these changes Bowlby lent an active support. The second was a remarkable instance of his sagacity, for he had no connexion with the University, which at that time was highly unpopular in the schools. He foresaw that it would raise the academic status of the school, and that was enough.

In the middle of this movement he and I went out to the war. There he was attached to G.H.Q. and had, as his main duty, the supervision of the clearing stations. They were a formation organized since the Boer war, and as yet untried in practice. No one knew exactly what their task would be. The stationary conditions of the war in France settled the question for that front. The dreadful nature of the injuries required immediate surgical aid, and the clearing stations became first-class hospitals, where surgery of the most advanced and daring kind was made possible first by provision of the necessary equipment, and later by the drafting of every available surgeon, sometimes, I am afraid, even to the detriment of the base, to the seat of fighting at the time. The clearing stations never, of course, took the place of the base. They did, however, the work necessary at the moment, the immediate repair of injuries which must otherwise have proved fatal before the patient could reach the base. It is not more than the truth to say that in this development Bowlby was the guiding spirit.

Perhaps I may be allowed a few words of personal tribute. Bowlby and I worked together for forty years. During the whole of that time I will not say that we never differed, but we never differed on serious points, and our friendship never was interrupted for a moment. We lived together in France for four years and a half, and I am sure that during the whole of that time we never said a cross word to one another. I remember the only time that I ever saw Bowlby really depressed. It was when the 5th Army were being forced back in 1918. The news grew worse and worse, and at last one Monday we received orders to prepare to fall back. We were then quartered at Hesdin. That night we sat over the fire and I think we were both very nearly crying. The next morning we were told to await further orders, and on Wednesday we were ordered to stay where we were.

Bowlby was the best collector of news I ever knew. Every night he brought back stories of the fights, statistics of losses, and the gossip of the front. Our companionship at the front was one of the most interesting episodes of my life.

Sir FREDERICK ANDREWES writes:

Sir Anthony Bowlby was, first and foremost, a surgeon, but he was also, as his writings testify, a good pathologist. It might be said that with him surgery and pathology were one subject, and that he was a good surgeon because he was a good pathologist. His knowledge of pathology, moreover, was not mere book knowledge, but was the fruit of his own observation and research. His opportunities had been great, for he had been trained in the school of surgical pathology at St. Bartholomew's Hospital started by Stanley and carried on by Paget and Savory, and in place of the dissecting rooms it was the museum and the post-mortem table which led him to the hospital staff. As curator of the museum he had to examine the material from the operating theatres, and thus laid the foundation of his accurate knowledge of morbid histology. On relinquishing his post in the museum he became surgical registrar (there was but one in those days), and, as such, he performed all the surgical post-mortems at the hospital. It was of these exceptional opportunities that Bowlby took full advantage, and it is not too much to say that upon these he built much of his surgical success.

While others knew him chiefly as a surgeon, I was associated with him mainly on the pathological side, and this association lasted for more than forty years. I was a student at St. Bartholomew's when Bowlby was surgical registrar, and I can well recall the benefit I derived from his teaching. He was a born teacher, and no trouble was too great for him to take where the welfare of the students was concerned. It was he, I believe, who instituted the weekly demonstrations on the surgical post-mortem specimens which had been obtained during the preceding week, and it was he, in conjunction with the late Sir Norman Moore, then medical registrar, who instituted the systematic teaching of morbid histology in the hospital. The class was held in the physiological laboratory every Friday at 4.15 p.m., and it so continued, though afterwards in other hands, for nearly forty years. Four students, of whom I was one for several sessions, were appointed as "cutters." We cut with an old-fashioned freezing microtome, stained the sections, and gave them out to the students in clove oil. We cut a great deal more material than was ever given out to the class, and we learned proportionally more. Bowlby would come to go over our sections with us once a week, apart from the class teaching, and I well remember how highly we valued these demonstrations. It was about this time that Bowlby produced his little book on *Surgical Pathology*, characteristically dedicated to the students of St. Bartholomew's Hospital. The feature in this work upon which he always laid special stress was its "clinical" character. It taught the student just the sort of pathology which helped him in his surgical work; it was pathology and surgery in one, and that was

perhaps the reason for the book's success, for it has had a much longer life than most works of the sort. Although Bowlby had to seek the help of coadjutors in the later editions, he always strove to maintain the clinical character of the book unaltered. It was largely owing to Bowlby's prescience that Kanthack was appointed as whole-time pathologist at St. Bartholomew's in 1893; he it was who proposed the change and carried it in the face of a good deal of opposition; it was a new departure, for no hospital in London then had a pathological specialist on its staff.

As a pathologist Bowlby, trained as he had been in the old school, was naturally a morbid anatomist and histologist, but during his career as a surgeon he witnessed the steady development of clinical pathology and bacteriology, witnessed it with his eyes wide open, and was ready to take full clinical advantage of all that it had to offer. For he never became a fossil, and those who came into contact with him during the last and greatest work of his life, during the war, saw clearly how greatly his success in organizing the treatment of the wounded was based on his readiness to accept new pathological ideas.

SIR CUTHBERT WALLACE writes:

I first remember Bowlby at a time when I was a commencing student and he had his feet on the ladder up which he climbed so far. I remember him in his home at Maida Vale, and also as a keen and energetic climber of the Swiss mountains in company with his friend Stedman. He seemed a long way above myself, and I often turned to him for advice. In the autumn of 1899 he asked me to join the staff of the Portland Hospital, and with him I sailed from Liverpool in the *Majestic*. We worked together, at first at Rondebosch and later at Bloemfontein, until the hospital was broken up in July, 1900. It was during this time that I first became aware of his power of dealing with difficult situations and smoothing out differences. It is remarkable that he had this faculty, as he was a man of very definite opinions, whether they were right or wrong. It was this downright attitude of mind that made him a successful teacher. During the years that followed the Boer war our friendship continued, and I was often a guest in his home in Manchester Square.

In May, 1915, I was handed over to him at St. Omer to be introduced to my new duties. He remained at General Headquarters, and, in addition, looked after the 2nd Army, while I was attached to the 1st Army. There then began a period of close companionship and consultation which lasted till the end of the war. With the establishment of additional armies new consultants were appointed, and Bowlby became a superconsultant and general adviser at the front. His work entailed a life spent in a motor car, traversing great distances, over roads which were not first-rate. It was a matter of surprise and admiration how he stood up to the strain in all weathers and in all seasons. He was always cheerful, always welcome, and always full of news. He was constantly on the look out to circulate knowledge, and to think out and suggest administrative adjustments. Often after a strenuous day he would sit down and indite memoranda and reports. The wounded man owed him a lot.

Bowlby had a conservative turn of mind. On the other hand, if he was once convinced that any project was good he would push it with all his might. He was a good man to have on your side, if you could persuade him to join you. Another striking attribute was his power of extracting the essence of a subject and his ability to disregard inessentials. He was a counsellor who almost invariably strove for peace. He was a good friend, and many will miss him.

Lieutenant-General Sir ARTHUR SLOGGETT, who was Director-General A.M.S. from 1914 to 1918, sends the following tribute:

I first met Bowlby when he was in charge of the Portland Hospital during the South African war. There he did very good work indeed, and from that time began his connexion with the British Red Cross Society. When the European war broke out I was extremely anxious to obtain his services as consulting surgeon in France. My desires were fulfilled; I made him consulting surgeon for the whole of the front line, and my friend Sir George Makins was consulting surgeon for the whole of the lines of communication. Bowlby was of the very greatest help to me throughout the war. When I first went to France the relations between the R.A.M.C. and the civilian surgeons in the Red Cross organization were by no means free from friction. I met the situation by giving all the medical officers rank, so that they became, as it were, one family. The possibilities of quarrel thus disappeared, the whole service worked together as one, and it was, to use Bowlby's own frequent words, "a very happy show." In securing this most essential condition for the efficiency of the service at the front I owed much to Bowlby himself. Behind his somewhat gruff exterior he had admirable qualities of tact and a great wisdom in dealing with men. At our headquarters, which were first at St. Omer and afterwards at the village of Hesdin, in the Pas-de-Calais, we worked together in the most intimate way, and in all our association, official and personal, then and afterwards, in times of great exigency and in times of waiting, we never developed any disagreement.

Bowlby's surgical skill was, of course, of a very high order. He was immensely painstaking in everything he did, and he possessed enormous vitality and physical strength. He could take on a vast amount of work and carry it through without visible signs of fatigue. He often amazed me by his untiring energy. I was always an "early bird" myself, but here was Bowlby very often up and "on the warpath" in front of me, going his rounds of inspection. One interest we had in common was a love of cricket. I have been a member of the M.C.C. for the best part of half a century, and one of my pleasures was to get seats for Bowlby at Lord's on the occasion of the big matches. I do not know that he had ever played very much cricket himself, but he had a keen appreciation of the game. He played the game of life in the same clean way. One other personal association which I treasure was his armistice dinners. It was his custom every year since the war to give a dinner on November 11th to all the leading surgeons who were at the front with him. I never missed attending one of those gatherings. Alas, that there should be no more of them!

I may add that the King had a great regard for his honorary surgeon. In his visits to the front His Majesty would inquire after Bowlby with a turn of speech which showed his affection for the man. That was a feeling, indeed, which any who really knew him must have shared. He was a man's man, with a chest of iron and a heart of gold.

Major-General Sir S. G. GUISE-MOORES writes:

It was in the South African war of 1900–2, when Sir Anthony Bowlby had surgical charge of the Portland Hospital, that I first came across him. Then not again until after a long interval—in 1915 during the great war. He was at the time the advisory consulting surgeon to the British Expeditionary Force in France. Both he and Sir Wilmot Herringham came as consultants to the Belgian Enteric Hospital for civilians at Malassise, near St. Omer, of which I was the officer commanding. Sir Wilmot, as consulting physician to the British Expeditionary Force, visited it regularly, and brought Sir Anthony Bowlby with him as occasion demanded, for at times there were important surgical cases on our hands requiring an expert opinion. But it was when director of medical services of the 2nd Army that, apart from his reputation as a surgeon, I learnt to value and appreciate the man himself, his qualities of mind and heart, and his strong and virile personality. He had been known to follow, by his presence, wounded from the field ambulance, advance and main dressing stations, to the clearing stations, and, when the spirit prompted him, to go right up to the regimental aid posts. At the clearing stations he was a frequent visitor, and soon became the prime mover in regularizing improvements in surgical procedure and technique, in relation to the treatment of wounds at the front. He was also the promoter of harmonious co-operation between the military and civilian elements, which contributed so much to the efficiency of the growing number of the elaborate clearing stations that lay behind the lines. We always looked

forward to his timely visits to D.M.S. headquarters; for he was the most sensible of optimists, and the most loyal of colleagues; a breezy wave of confidence seemed to usher him into its portals. His decisions were formed on sound reasoning, but if by any chance he afterwards found that error had crept in, he was the first to recognize and acknowledge it.

He was on the staff of Osborne House, and of late years it has been my good fortune to welcome him on his week-end visits. This fuller intimacy enabled one to recognize the many-sided facets to his character, his singleness of purpose, and his set duty, to help others, particularly the ex-soldier, in surmounting the uphills of life. The thought, time, and labour he gave for the betterment of the fighting man in the war will ever be gratefully remembered. It is possible that Sir Anthony counted the years of his army service in South Africa and France as among the happiest in a career full of honour. There is no doubt that from the start he had implanted in his being the seeds of an administrator, and that these fructified in full measure in an atmosphere so suited to his abilities and so congenial to his temperament.

[The photograph of Sir Anthony Bowlby reproduced at page 747 is by Elliott and Fry, London.]

SAMUEL HERBERT BURTON, M.B., F.R.C.S.,

Consulting Surgeon to the Norfolk and Norwich Hospital, and the Norfolk and Norwich Eye Infirmary.

WE regret to announce the death of Mr. S. H. Burton in his seventy-sixth year, at his residence in Norwich, on March 30th.

Samuel Herbert Burton received his medical education at University College Hospital, graduating M.B., B.S.Lond., with honours in medicine and midwifery in 1876, in which year also he obtained the diploma M.R.C.S.; in 1881 he became F.R.C.S. by examination. After holding the posts of house-surgeon, house-physician, surgical registrar, demonstrator of pathology, and assistant in the obstetrical and ophthalmological departments at University College Hospital, he was appointed house-surgeon to the Norfolk and Norwich Hospital in 1878. Ten years later he became assistant surgeon, in 1898 full surgeon, and in 1919 consulting surgeon. His administrative ability was recognized by his election as chairman of the Board of Management in 1923. In addition to these appointments he was consulting surgeon to the Jenny Lind Hospital for Children, and surgeon to the Eye Infirmary; until his death he was chairman of the Infirmary committee.

Mr. Burton was a member of the British Medical Association for many years; he was vice-president of the Section of Surgery at the annual meeting in 1900 at Ipswich, and in 1909 held office as chairman of the Norwich Division. He was a justice of the peace for Norwich. He was in active practice until within a short time of his death, and had a distinguished reputation as an operator and accoucheur. In February he had a severe attack of influenza and pneumonia, but recovered sufficiently to resume work. A little later, however, following a relapse, he died after a short illness. He is survived by his widow, two sons, and two daughters.

A colleague writes: It is a high tribute to his professional success to say that Burton was not only a first-class general practitioner but also a hospital surgeon of exceptional ability. The combination is rare in these days of specialism, and those who maintain that every consultant should have had experience of general practice would find in Burton's career a strong argument in support of that contention. The thorough grounding in the science of surgery which his early appointments gave him enabled him to take full advantage of the large and varied clinical experience which his hospital and private practice afforded. But he owed as much to his personal qualities as he did to his training. Careful and painstaking in forming an opinion, firm in holding it, temperate in expressing it, always ready to listen to the views of others, an indefatigable worker — it is little wonder that his influence with his colleagues and the hold he had over his patients were great, and that the members of the hospital boards on which he served always listened to him with attention and confidence. Few men have seen more of the frailties of mankind; few have gained a deeper knowledge of human nature; yet he was never cynical, and he never forgot that his patient was first of all a human being. The Norfolk and Norwich Hospital owes him a great debt. Its interests to him were paramount, and he served it well and skilfully, both as a surgeon and as an administrator. It can be truthfully said of him that he was one of those who "were honoured in their generation."

The sudden death of Dr. WILLIAM LOUIS BYHAM, on March 19th, at his residence in Sunbury-on-Thames, caused a painful shock to his many friends. He had been actively engaged in professional duties during the day, but about 11 p.m. he suddenly collapsed and died. Dr. Byham joined St. Thomas's Hospital as a medical student in 1879, and obtained the diplomas L.R.C.P., L.R.C.S.Ed., L.R.F.P.S.Glas. in 1886; he then spent three years as a medical officer on board ship, visiting China, Japan, South Africa, and the West Indies. After this he practised at Spalding for seven years, and subsequently at Sunbury-on-Thames. In 1907 he was appointed medical officer of health to the Sunbury Council in succession to Dr. Palgrave, and he was also medical officer to the Staines Union, the Post Office, the Meropolitan Water Board, and the Sunbury Orphanage. During the war he was medical officer to the large depot of the R.A.S.C. at Kempton Park, and did much work for local members of the profession who were called up for duty with the Forces. He leaves a widow, a son, and a daughter. A colleague writes: Byham was a man of unusually good physique, and in his earlier life was known in Rugby circles as a stalwart forward; he was also a good cricketer, and an all-round sportsman. Although a very busy man during recent years, he was never too much occupied to listen to the story of the poorest patients, and his thoughtful cheery manner endeared him to all with whom he came in contact. The funeral service, on March 23rd, was largely attended by sorrowing friends of all ages, and was remarkable for the many beautiful wreaths.

The death of Alderman Dr. ARTHUR WILSON CHAPMAN, J.P., of Manchester, has removed one of the best-known figures in the public life, both medical and civic, of that city. Dr. Chapman was born in Birmingham in 1862, and went to Manchester as a boy. He was educated at St. Margaret's and the Grammar School, and graduated M.B., C.M. at Aberdeen University in 1886. Shortly afterwards he became immersed in general practice in Manchester, and rapidly built up a wide connexion, mainly in an industrial district. This, however, could not absorb all his energies, and in 1901 he was elected to the city council, becoming alderman in 1915. Here he interested himself in public health and infant welfare work, and more particularly in the tramway service, which he always spoke of as his chief hobby. In the medical world, among other offices, he held those of chairman of the Manchester Division of the British Medical Association for seven years; chairman of the Manchester Medical and Panel Committees for eleven years; and council representative on the Manchester Insurance Committee for fifteen years. In his student days he was well known as a Rugby football player, and a boxer above the average; in later years he was interested in lacrosse, becoming president of the North of England Lacrosse Association and other clubs. A journalist of no mean ability, a pronounced "family man," a lover of animals, his interests could scarcely have been wider, and in all his contacts with life Arthur Chapman earned and received not only the esteem but also the very real affection of all who knew him. To his intimates, and to them only, it was known that the latter years of his life were passed under the handicap of illness severe enough to have crippled any lesser man; but this was faced with courage and cheerfulness, and his zeal for work and service lasted to the end. The local profession has lost a great friend.

Medical News.

THE centenary of the Zoological Society of London will be celebrated on Monday, April 29th. A commemorative meeting will be held at 5 p.m. in the great hall of University College, followed by a dinner in the Gardens of the Society in Regent's Park.

THE annual luncheon of the Irish Medical Schools' and Graduates' Association will be held at the Queen's Hotel, Piccadilly, Manchester, on Wednesday, July 24th, at 1 o'clock sharp. Tickets, price 4s., may be obtained from the honorary secretary for the provinces, Dr. Falkland L. Cary, 67, King's Road, Harrogate. All Irish graduates, whether members of the association or not, are invited to attend the luncheon. The honorary secretary requests that applications for tickets may be sent to him as early as possible before the date of the meeting.

THE twelfth and last of the annual series of Sims Woodhead Lectures in connection with the People's League of Health Travelling Scholarship will be delivered to-day (Friday, April 19th) at 6 p.m., at 11, Chandos Street, Cavendish Square, W., by Dr. C. C. Worster-Drought, on the subject of decay and disease, natural and premature.

AT the next meeting of the Royal Sanitary Institute, to be held on Friday, April 26th, at 3 p.m., in the City Hall, Cardiff, discussions will take place on the new Local Government Act, on town planning, and on the proposed reconstruction, widening, and lowering of Cardiff Bridge.

THE annual meeting of the Medical Mission Auxiliary of the Church Missionary Society will be held in the Central Hall, Westminster, S.W., on Wednesday, May 1st, at 7.15 p.m. Tickets of admission may be obtained from the Superintendent, Loan Department, Church Missionary Society, Salisbury Court, E.C.4. A small number of reserved seats at 1s. each are available.

A DISCUSSION on the sterilization of the unfit will be opened by Lord Riddell at a meeting of the Medico-Legal Society, at 11, Chandos Street, W.1, on April 25th, at 8.30 p.m.

THE annual general meeting of the Tavistock Square Clinic for Functional Nervous Disorders will be held in the form of a luncheon party at the Hotel Russell, Russell Square, W.C.1, on Monday, May 6th, at 1.10 p.m.; Sir F. J. Willis will preside. The honorary director, Dr. H. Crichton-Miller, and the treasurer will present brief reports, and plans for the extension of the work of the clinic will be discussed.

THE Dr. Jessie Macgregor prize for medical science will be awarded next July to the applicant who presents the best record of original work in the science of medicine. This work may be unpublished or published, but in the latter contingency must not have been published earlier than three years before the month of July, 1929. The prize is of the value of £75, and is open to women who have graduated in medicine in the University of Edinburgh, or have taken the triple qualification, and who will have previously studied medicine for at least one year in Edinburgh. The successful applicant shall within three months of the award deliver a lecture to the medical profession in Edinburgh on the subject for which the prize has been awarded. Applications, marked "Dr. Jessie Macgregor prize in medical science," must reach the Convener of Trustees, Royal College of Physicians of Edinburgh, not later than May 31st.

LORD DAWSON OF PENN will distribute the prizes and certificates to students of the London Hospital Medical College (University of London) on Friday, June 28th.

THE first course for the M.R.C.P. diploma organized by the Fellowship of Medicine will extend from May 7th to June 28th, and consists of sixteen lectures by well-known authorities on Tuesdays and Fridays, at 8.30 p.m., in the lecture hall of the Medical Society of London, 11, Chandos Street, Cavendish Square. Two courses are now in progress: one in medicine, surgery, and gynaecology, at the Royal Waterloo Hospital, will conclude on May 4th, and the other in neurology, at the West End Hospital for Nervous Diseases, and consisting of lecture-demonstrations at 5 p.m. each day, will finish on May 10th. A comprehensive course begins on April 29th in diseases of the throat, nose, and ear at the Central London Throat, Nose, and Ear Hospital, and continues for three weeks. Starting also on April 29th is a month's course in psychological medicine at the Maudsley Hospital. From May 6th to June 1st a course in venereal diseases will be conducted at the London Lock Hospital. From May 2nd to June 1st the London School of Dermatology will hold a special course consisting of clinical instruction and formal lectures. Practical pathological demonstrations can be arranged if desired. From May 27th to June 8th an afternoon course, under the direction of Dr. Eric Pritchard, will be held at the Infants Hospital. Detailed syllabuses of the foregoing courses, information relating to the general course of work at the various London general and special hospitals, and copies of the *Post-Graduate Medical Journal* may be obtained from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

THE Central Midwives Board for England and Wales met on April 4th, with Sir Francis Champneys in the chair. The standing committee reported that it had appointed the following to be members of the Approvals Subcommittee: Miss A. Davies, Miss E. M. Doubleday, Dr. J. S. Fairbairn, Miss E. E. Greaves, Dr. R. A. Lyster, Miss A. A. I. Pollard, and Mrs. E. Richmond. Approval for the year ending March 31st, 1930, was given to the list of examiners, the list of lecturers and institutions where lectures may be delivered, and the list of institutions, homes, and midwives at which, or under whom, midwives may be trained.

As announced in our advertisement columns, applications are invited for the Dickinson Pathology Scholarship and for the Dickinson Travelling Fellowship in Medicine. Candidates for the former, value £75, must have received their full course of instruction in pathology, medicine, and surgery at the University of Manchester and the Manchester Royal Infirmary. The Travelling Fellowship is of the value of £300, and candidates must have taken out the full course of clinical instruction required by their examining bodies in the Manchester Royal Infirmary and the University of Manchester. The scholarships are both tenable for one year. Full particulars and a copy of the regulations may be obtained from Mr. F. G. Hazell, secretary to the trustees, Manchester Royal Infirmary, to whom applications must be sent by May 2nd.

THE issue of *Medizinische Klinik* for March 28th is dedicated to the memory of the distinguished Viennese surgeon, Theodor Billroth, on the occasion of the celebration of the centenary of his birth on April 26th, 1829, and contains articles on him by Professor G. Lotheissen, and also Drs. I. Fischer and K. Feri of Vienna and Professor W. Körte of Berlin.

THE March issue of *The Mission Hospital*, published by the Church Missionary Society, London, is devoted to maternity and child welfare, and contains accounts of the progress being made in this respect under the auspices of the society in different parts of the world, including China and Southern and Central Africa.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

LORD LISTER.

"J. S. R." asks if any reader can tell him where he could obtain a small bust of the late Lord Lister.

INCOME TAX.

Succession followed by Introduction.

"H. D. O." sold his practice as from December 31st, 1928, but remained acting, according to the agreement for sale, as assistant to the purchaser during the following three months. What adjustment can he claim, and what is his liability—if any—for the year 1929–30?

*** We assume that the practice was a "sole" practice. Our correspondent can have his liability for the year ended

April 5th, 1929, reduced to the amount of his earnings for that year—for example, three-fourths of the 1928 profits *plus* the "assistant" earnings for the last three months—but is liable, on the other hand, to have the assessment for the year to April 5th, 1928, adjusted, if the Revenue desire it, to the amount of the earnings for that year. As regards 1929-30, he will apparently have ceased his connexion with the practice, and will not be liable to an assessment for proceeds thereof—cash receipts coming to hand after December 31st, 1928, represent the harvesting of income the liability for which has been accounted for as it was being earned.

Expenses of Research incurred by Lecturer.

"CH.M." holds a University appointment; the regulations provide that he "shall be expected to engage in higher study and research." The research programme was apparently discussed with the Dean of the Faculty, and definite instructions were given by him as to the work to be done and places to be visited for that purpose. "Ch.M." incurred expenses amounting to £54 in carrying out those instructions, and has had the deduction of that amount from his assessable emoluments refused after a personal appeal to the General Commissioners.

*** *In our opinion this is a borderline case, and we are not* clear that "Ch.M.'s" claim is well founded in law, especially as it is not shown that the Dean has the legal right of prescribing precisely what work is to be done without the volition of the lecturer. Expenses wholly, exclusively, and necessarily incurred in fulfilling the condition attached to the appointment would be allowable, but other purposes are also served—which makes the "exclusively" an awkward stipulation—and it is possible that "Ch.M." might have adopted some less expensive means of research. The technical points mentioned by "Ch.M." we do not regard as of much moment; an appeal cannot be made to the Special Commissioners, as that body is alternative to the General Commissioners, and not a superior tribunal, and the only steps "Ch.M." can take now for the year in question is by way of appeal to the High Court on the point of law. He might be well advised to protect his right to do so by paying one guinea to the Clerk to the Commissioners with a request for a statement of the case. When he receives the case he can better decide whether it will be worth his while to incur further expense in the matter.

Motor Expenses Exceed Allowance.

"H. A. C." has to have a car for use in connexion with his work as district tuberculosis officer. He receives an allowance at the rate of 5d. per mile but, owing in the main to rather frequent renewals of his car, his actual expenses, including depreciation, loss on exchange, etc., have been in excess of the amount so calculated. Can he claim to deduct that excess for income tax purposes?

*** *He will* have to prove that the excess was expended out of his salary wholly, exclusively, and necessarily in the performance of his duties. In effect this implies that the 5d. per mile allowance is inadequate; the special and apparently rather unfortunate circumstances of his case are difficult to introduce in view of the word "necessarily," and we cannot but consider his chance of success in proving that inadequacy to be somewhat *slight*.

LETTERS, NOTES, ETC.

PUBLIC HEALTH CONGRESS IN ZÜRICH.

DR. E. W. HOPE and DR. T. N. KELYNACK (honorary secretaries, Royal Institute of Public Health, 37, Russell Square, W.C.1) write: The preliminary programme for the 1929 Zürich Conference of the Royal Institute of Public Health, May 15th to 20th, has now been issued and a copy can be forwarded on request. We are assured of the most cordial welcome by the Swiss National Government, the authorities of the canton, city, and the University of Zürich, and by the leaders of the medical school of Zürich. Invitations have also been received to visit various health stations in Switzerland. The Government gives a concession of 50 per cent. on the State railway; free transportation will be provided on the Rhaetian Railway (Chur to Davos and on the railways Chur to Arosa, Sierre to Montana, and Aigle to Leysin. The local authorities at each of these well-known centres are most anxious to welcome as many members of the congress as possible. We are further assured by the Czechoslovak Minister, Mr. Jan Masaryk, of a hospitable reception for those who may find time after the congress to extend their journey to the two great Czechoslovak spas of Carlsbad and Marienbad. In order to complete arrangements for the comfort of members of the congress desiring to participate in the extensions, it is essential that we should know immediately which of the visits members will desire to take. Particulars regarding the extensions and the routes to be traversed, together with information as to the expenses to members of the congress, will be forwarded on application; non-members may accompany members, but will not be able to enjoy all the special privileges. The inclusive cost of the visit to the congress at Zürich will range from £10 4s. 6d. for the short sea route, second-class travel on the Continent and hotel accommodation, to £12 12s. 6d. for first-class travel throughout and hotel accommodation. Full particulars regarding the different extended journeys available after the conference, together with a list of the various hotels in Zürich, are available on demand, and it is earnestly requested that all who propose to attend the conference will communicate with us as soon as possible.

POISONING FROM EXHAUST FUMES.

"M.D., B.S." (London, W.1) writes: The recent fatal accident that arose from the driver of a public motor vehicle being momentarily overcome by drowsiness makes one wonder what precautions are taken, and what authority, if any, is responsible for their enforcement, to protect drivers, and through them, their passengers and other road users, from conditions leading to such accidents. The average *doctor* is a motorist of necessity, and many of us know only too well how almost hypnotic may be the effect of long driving on a tired brain and how easy it is to be overcome by momentary sleep, even in an open car with the wind blowing freely round the screen. If engine fumes are added, how intensely might this drowsiness be increased! In some motor buses, as I can personally testify, engine fumes may be markedly noticeable even to a passenger seated by an open window. How much more potent must they be in an ill-ventilated cabin, where the engine "breather" may be situated immediately below the driver's feet! Our factories and workshops are subject to strict inspection for the sake of the health of the employees. Is there any inspection of the conditions under which a bus driver works—conditions which may concern not only his own health, but also the safety of his passengers and other road users? If so, why does one hear, at least in some provincial districts, of men driving for three and four consecutive "long days," with only four hours' sleep between? Why does one hear of these men staggering from their driving cabins and clinging to some support at the roadside while they breathe in fresh air to relieve the uncontrollable drowsiness and giddiness which attacks them, and of others who have to "go sick" with gastro-intestinal attacks and other symptoms referable to exhaust gas poisoning? Perhaps some readers of the *Journal* may be able to mention cases they have treated of exhaust gas poisoning in public vehicle drivers.

PAINFUL SHOULDER.

"PODAGRA," continuing this discussion, which began with Mr. P. B. Roth's letter on December 22nd, 1928 (p. 1156), writes: Being one of the many elderly fellow-sufferers, I quite agree with "T. F." (March 16th, p. 534) as to the improbability of it being due to synovitis, there being no obvious signs of inflammation in the shoulder-joint. I could not raise my elbow, which was trying this side of the Atlantic; as to getting my hand into my trousers pocket, that I must admit has always been an inherent difficulty, for I keep my small change there. I also have the pain and occasional tenderness over the insertion of the deltoid, but it should be remembered that the insertions of the teres major, latissimus dorsi, and pectoralis major are in the bicipital groove, which is immediately above and beneath the deltoid. The action of this group of muscles is to rotate the humerus inwards and bring it to the side; now if, owing to the sudden contraction of this group of muscles, any of the fibres are torn, together with their sensory nerve endings (muscle spindles), a traumatic fibrositis is set up, similar to lumbago. The treatment I am undergoing, after subjecting the painful area to radiant heat, is forcible extension, advocated by Romer years ago. After half a dozen sittings my movement has been considerably increased and the pain lessened.

ANAESTHESIA FOR COLLES'S FRACTURE.

DR. WILLIAM HAIG (Crieff, Perthshire) writes: In his letter in the *Journal* of April 13th (p. 705) Mr. G. H. Fagge says "it must, however, be admitted that in some cases of Colles's fracture in elderly and infirm women a bad result is preferable to the risk which a general anaesthetic would entail." I wonder if he has considered the use of "twilight sleep" as a substitute for the general anaesthetic. In two such cases recently—both women over 70—I injected a sterile solution of tabloid hyoscine compound B and left to continue my visits elsewhere; when I returned, on each occasion within a couple of hours, I found the patient sufficiently anaesthetized and relaxed to enable me to set the fracture satisfactorily.

CAUTION.

ON April 3rd, 1926 (p. 640), and again on August 27th, 1927 (p. 372), the *British Medical Journal* cautioned readers against begging letters from a Mrs. [illegible] rom recent information received it appears [illegible] is continuing to write to members of the [illegible] and they are strongly advised to forward such begging letters to the secretary of the Charity Organization Society, Denison House, Vauxhall Bridge Road, London, S.W.1.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 45, 47, 48, 49, 52, 53, and 54 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *151*.

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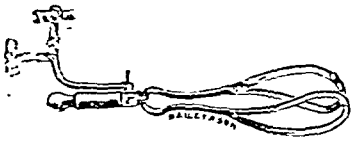
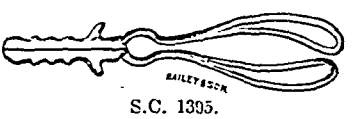
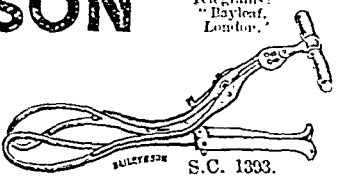


S.C. 1390. **Neville's Axis Traction Forceps,** with Metal Handles, £2 7s. 6d. Stainless £4 14s. 6d.

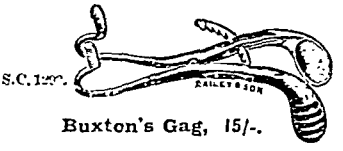


S.C. 1395. **Anderson's Midwifery Forceps** £1 10s. Stainless £3 3s.



S.C. 1393. **Milne-Murray Axis Traction Forceps,** with removable Traction Rods, £2 18s. 6d. Stainless £5 5s.

S.C. 1288. **Mason's Mouth Gag,** with Racket or Sliding Action, 17/6.



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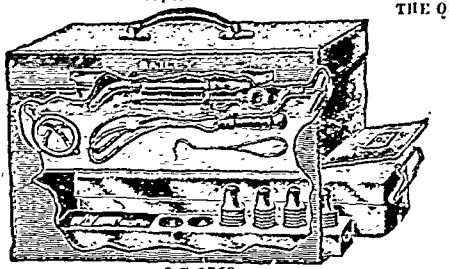

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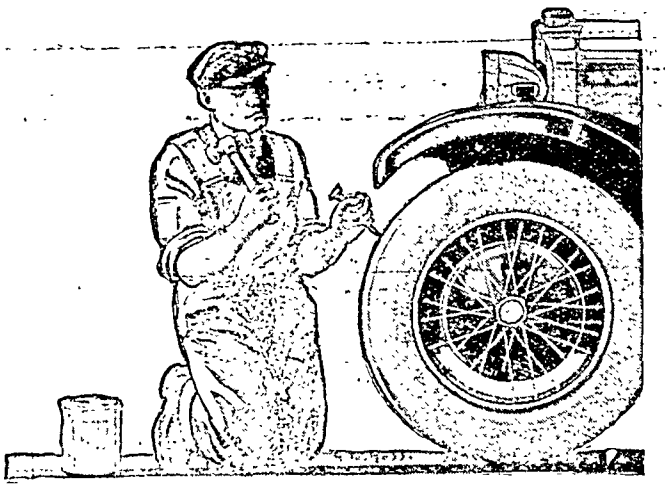

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Off front 70 lbs. (untreated) (air 64° F.)	Not punctured	70 lbs.	65 lbs. (air 64° F.)
Near rear 70 lbs. (untreated) (air 64° F.)	Not punctured	70 lbs.	65 lbs. (air 64° F.)

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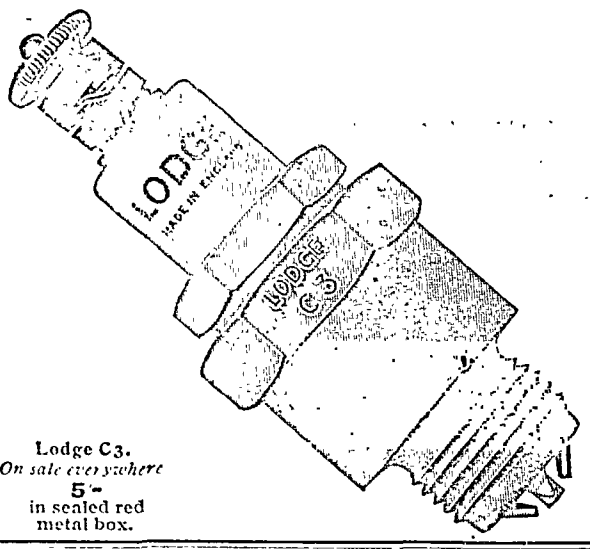

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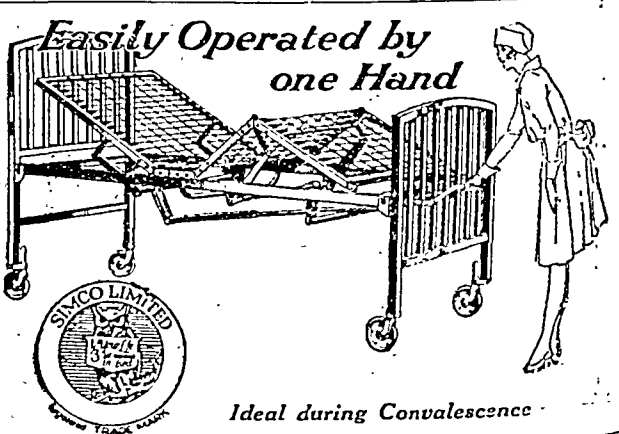

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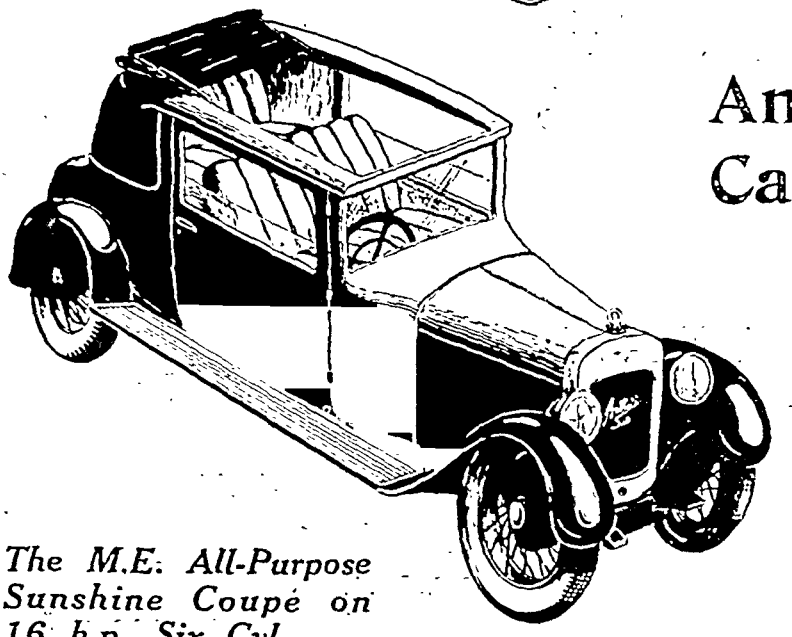

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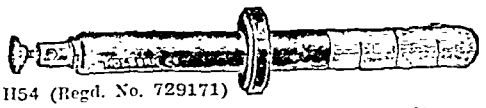

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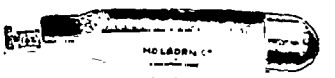

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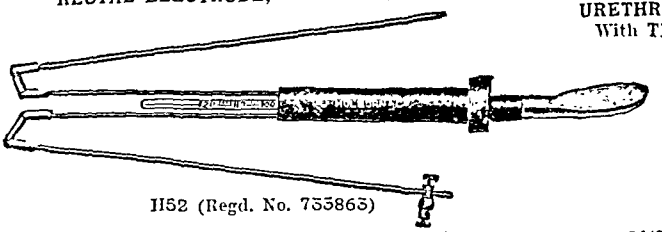

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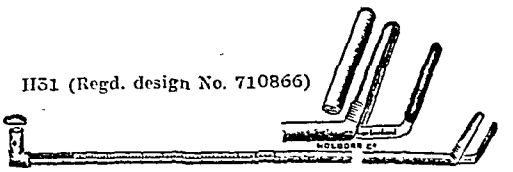

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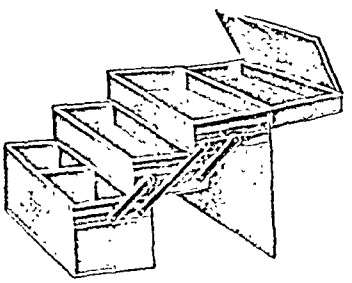

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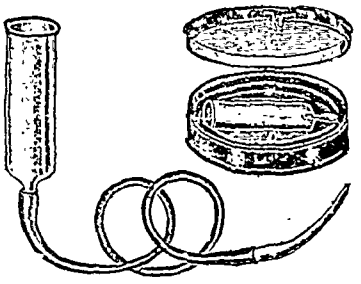

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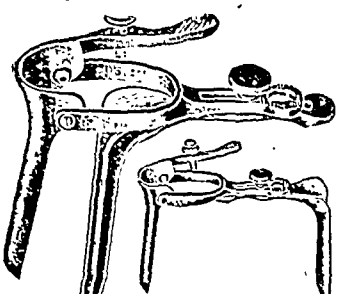

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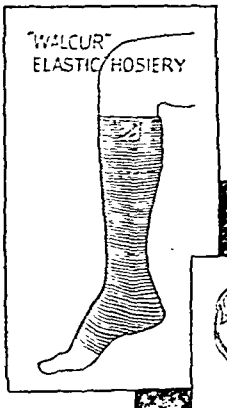

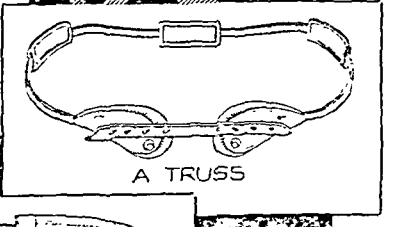

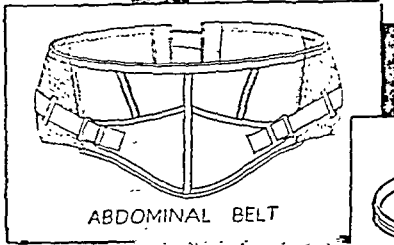

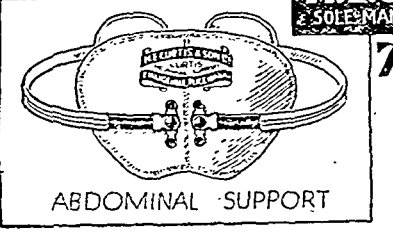

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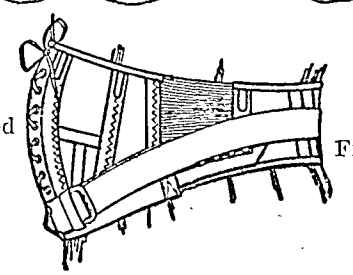

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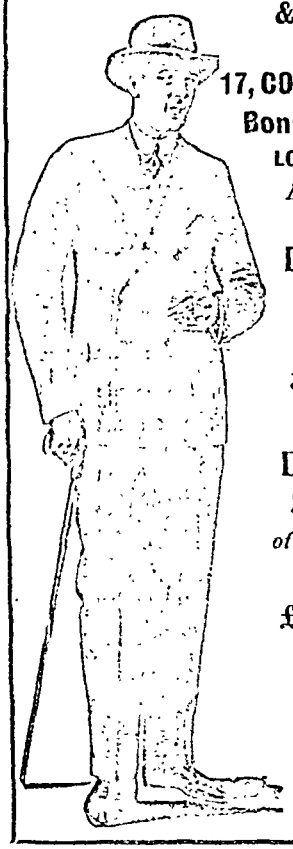

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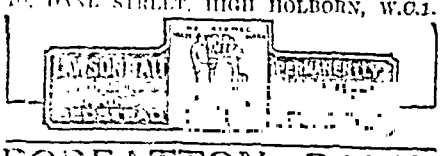

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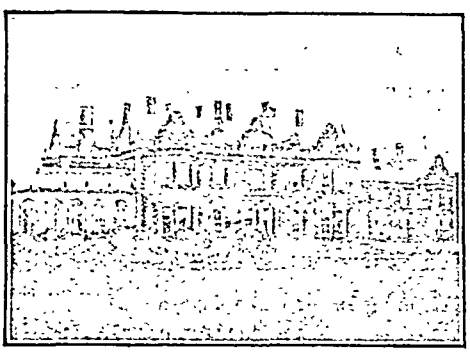

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FOR MENTAL DISORDERS,
NORTHAMPTON

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. *Private rooms with special nurses, male or female, in the* Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

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This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical baths, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment It also contains Laboratories for biochemical, bacteriological, and pathological research.

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Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy *is a feature of this branch, and patients are given every facility* for occupying themselves in farming, gardening, and fruit-growing.

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The Seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, *at Llanfairfechan*, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

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Private Nursing Home for Neurasthenia and allied Functional Nervous Disorders, for general Convalescent Cases, and those requiring Electrical Treatment.

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Terms include (with rare exceptions) all forms of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the hospital. Inquiries of EDW[illegible], M.R.C.P., F.R.C.S., M[illegible].

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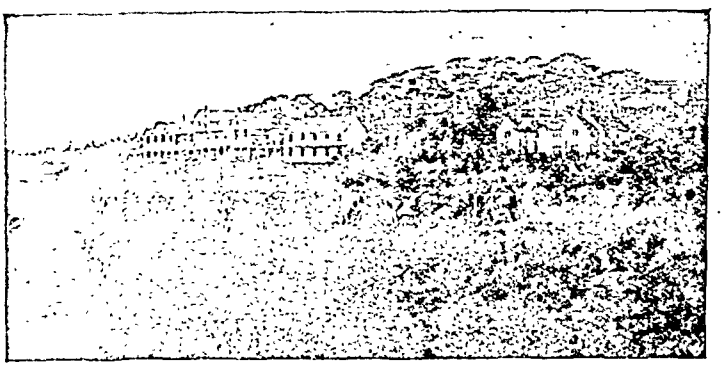

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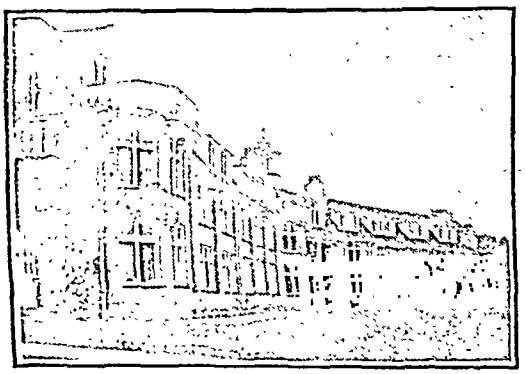

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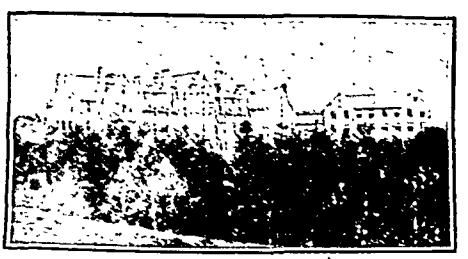

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	SUBJECT.
APRIL 25th. Sir ALMROTH E. WRIGHT, M.D., F.R.S. (Principal of the Institute).	"The Experimental Method in Medicine."
MAY 2nd. Prof. C. A. ARIËN KAPPERS (Prof. Comparative Neurology, University of Amsterdam).	"The Phylogenetic Development of the Protopathic and Epicritic Centres in the Central Nervous System."
MAY 9th. EDGAR DOUGLAS ADRIAN, M.D., F.R.S. (University Lecturer in Physiology, Cambridge).	"The Nervous Mechanism of Sensation and Movement."
MAY 16th. Prof. P. T. G. HOLDAY, F.R.C.V.S., F.R.S.E. (Principal, Royal Veterinary College).	"The Value of Research into Animal Diseases as an Aid to the Study of the Diseases of Man."
MAY 23rd. Prof. W. W. C. TOPLEY, M.D. (Prof. Bact. & Immunology, London School Tropical Medicine & Hygiene).	"The Natural Acquirement of Immunity."
MAY 30th. Prof. F. W. TWORT, F.R.S. (Superintendent, The Brown Institution) (University of London).	"The Position of Ultra-microscopic Viruses in the Living World."
JUNE 6th. Prof. WILLIAM BULLOCH, M.D., F.R.S. (Prof. of Bacteriology, London Hospital).	"The History of Bacteriology."
JUNE 13th. Prof. J. A. GUNN, M.D. (Prof. of Pharmacology, University of Oxford).	"Variations in Susceptibility to Drugs and Toxins."

These Lectures are open to all Members of the Medical Profession and to all Students in Medical Schools without fee.

F.R.C.S. (Edin.).

The TUTORIAL CLASS for the next Examination will commence shortly. Correspondence tuition if desired. — For particulars apply FRED. GRAHAM, M.D., F.R.C.S.Ed., Surgeons' Hall, Edinburgh.

All Saints' Hospital (For Genito-URINARY DISEASES), 43/55, Vauxhall Bridge Road, S.W.1.

DEMONSTRATIONS IN CYSTOSCOPY are held as follows:
Wednesdays ... Mr. Cooke ... 1.30 p.m.
Thursdays ... Mr. Atwater ... 1.30 p.m.
Saturdays ... Mr. Longhurst ... 1.30 p.m.
Special cases and tuition by arrangement.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to **The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5,** for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics. For further particulars, fees, etc., apply to the Secretary.

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam. will commence shortly. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

UNIVERSITY EXAMINATION POSTAL INSTITUTION
17, RED LION SQ., LONDON, W.C.1.
(FOUNDED IN 1882.)

Principal: Mr. E. S. WEYMOUTH, M.A.(Lond.).
POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS.

SOME SUCCESSES:

M.D.(Lond.), 1901-28 (9 Gold Medallists during 1913-28)		309
M.S.(Lond.), 1901-28 (including 4 Gold Medallists)		20
M.B.,B.S.(Lond.), *Final* 1906-28 (Completed Exam.)		237
F.R.C.S.(Eng.), (1906-28)	*Primary*	149
	Final	135
M.R.C.P.(Lond.), 1914-28		152
D.P.H. (Various) 1906-28 (Completed Exam.)		280
F.R.C.S.(Edin.), 1918-28		39
M.R.C.S., L.R.C.P. *Final* 1910-28 (Completed Exam.)		402
M.D.(Dur.) (Practitioners) 1906-28		36
M.D. Various. By Thesis. Numerous successes.		

Preparation for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.

M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.). Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

Medical Prospectus (48 pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medic* ... nurses, and Oral Classe ... higher Medical Exam ... the higher Surgical ... for the Special Diploma Examinations. Refresher Course. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

THE LONDON HOSPITAL MEDICAL COLLEGE.
(University of London.)

ADVANCED MEDICINE.

A Course of Post-Graduate Instructions in Advanced Medicine suitable for candidates preparing for the M.D., M.R.C.P. Examinations will begin on Monday, April 29th.

The Course will comprise the examination of selected cases in the Wards, Ward Demonstrations, and instruction in Applied Physiology, Morbid Anatomy, Clinical Pathology, and Pathological Chemistry.

Further particulars may be obtained on application to the Dean, Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., London Hospital Medical College, Mile End, E.

A REALLY GOOD SCHOOL FOR GIRLS.
REASONABLE INCLUSIVE FEES.
MARLBOROUGH COLLEGE,
Tytherington Hall, nr. Macclesfield.

Sound Education. Upper and Lower Schools. Preparation, when desired, for all University Entrance Examinations. Particulars from Sec.
Special Terms to Medical Men.

St. Bartholomew's Medical COLLEGE.

SENIOR CURATOR OF THE MUSEUM.

Applications are invited for the post of Senior Curator of the Museum, particulars of which can be obtained from the DEAN of the Medical College, St. Bartholomew's Hospital, E.C.1, to whom applications should be sent before April 30th.

THE LONDON SCHOOL OF DERMATOLOGY.

ST. JOHN'S HOSPITAL for DISEASES of the SKIN

LEICESTER SQUARE, W.C.2

SUMMER LECTURES, 1929, at 5 p.m.

Date.	Day.	Subject.	Lecturer.
May 2	Thurs.	The Sarcoids and Lupus Pernio	Dr. A. M. H. Gray.
„ 3	Fri.	Differential Diagnosis of some Common Skin Diseases ...	Dr. A. C. Roxburgh.
„ 6	Mon.	Drug Eruptions	Dr. H. Haldin-Davis.
„ 7	Tues.	Alopecia Areata and Vitiligo	Dr. H. W. Barber.
„ 9	Thurs.	Animal Parasites	Dr. S. E. Dore.
„ 10	Fri.	Skin Diseases due to Protein Sensitisation	Dr. G. B. Dowling.
„ 13	Mon.	Napkin Area Eruptions in Infants	Dr. J. E. M. Wigley.
„ 14	Tues.	Treatment of Syphilis ...	Dr. H. MacCormac.
May 16	Thurs.	Pathology Demonstration ...	Dr. H. C. Burford.
„ 17	Fri.		
„ 20	Mon.	WHITSUNTIDE.	
„ 21	Tues.		
„ 23	Thurs.	Leprosy	Dr. J. M. H. MacLeod.
„ 24	Fri.	Alopecia	Dr. Knowsley Sibley.
„ 27	Mon.	Streptococcal Infections of the Skin	Dr. J. A. Drake.
„ 28	Tues.	The Nervous System in Relation to Skin Diseases	Dr. W. N. Goldsmith.
„ 30	Thurs.	Skin Diseases of Animals transmissible to Man ...	Dr. W. J. O'Donovan.
„ 31	Fri.	Bullous Eruptions	Dr. W. Griffith.

The Fee for the Course is **One Guinea**, which includes attendance on the practice of the Hospital, payable in advance to the Secretary of the Hospital, or to the Fellowship of Medicine at 1, Wimpole Street, W.1.

Registered Medical Students admitted free to the Lectures only.

A Course of 12 Lessons in Practical Pathology of the Skin will also be given. Fee **£4 4s.**

A. C. ROXBURGH, M.D., *Dean.*

Instruction and Demonstrations are given daily in the Out-Patient Department, as follows:—

Monday	2 p.m.	...	...	...	...	...	Dr. Griffith.	Thurs.	2 p.m.	...	...	...	...	...	Dr. Sibley.
	6 p.m.	...	...	...	...	...	Dr. Dore.		6 p.m.	...	...	...	...	...	Dr. Goldsmith.
Tuesday	2 p.m.	...	...	...	...	...	Dr. Goldsmith.	Friday	2 p.m.	...	...	...	...	...	Dr. Roxburgh.
	6 p.m.	...	...	...	...	...	Dr. Wigley.		6 p.m.	...	...	...	...	...	Dr. Dowling.
Wed.	2 p.m.	...	...	...	...	...	Dr. Dowling.	Saturday	2 p.m.	...	...	...	...	...	The Medical Registrar.
	6 p.m.	...	...	...	...	...	Dr. Wigley.								

EDINBURGH POST-GRADUATE COURSES IN MEDICINE

IN CONNECTION WITH THE UNIVERSITY AND ROYAL COLLEGES, 1929.

POST-GRADUATE COURSES will be held this year from July 15th to August 10th, and August 12th to September 7th inclusive, and will comprise:

(1) A GENERAL PRACTITIONERS' COURSE. (2) A GENERAL SURGICAL COURSE.

The composite fee for each Course will be £10 10s. for the four weeks, or £6 6s. for either the first or second fortnight.

(3) A COURSE IN OBSTETRICS AND GYNÆCOLOGY AND DISEASES OF CHILDREN, from July 15th to August 10th.

In addition to the above, the following *Special Courses* have been arranged: Fee £10 10s.

SUMMER TERM.

SURGICAL PATHOLOGY.—Mr. Wade, F.R.C.S.Ed., and others. May 14th. Fee: £4 4s.
OPHTHALMOSCOPY.—Drs. Graham and Ligertwood. May 6th. 12 Meetings, thrice weekly. Fee: £5 5s.
CLINICAL MEDICINE.—Medical Staff of Royal Infirmary. During May. Fee: £3 3s.

SUMMER, AUTUMN, AND SPRING TERMS.

CLINICAL SURGERY.—Surgical Staff of Royal Infirmary. Fee £3 3s.
DISEASES OF EAR, NOSE, AND THROAT.—Staff of Ear, Nose, and Throat Department, Royal Infirmary. Minimum number 5. Fee: £10 10s.
VENEREAL DISEASES.—Mr. Lees, F.R.C.S.Ed., Ward 5a, Royal Infirmary. Minimum number 5. Fee: £10 10s.
DISEASES OF EAR, NOSE, AND THROAT.—Dr. Douglas Guthrie. This class will meet twice weekly at the Ear and Throat Dispensary, Cambridge [Street. Fee: £4 4s.
RADIOLOGY.—Dr. Woodburn Morison and Assistants. Royal Infirmary. Fee: £2 2s.

DURING THE PERIOD OF THE GENERAL COURSES (AUGUST-SEPTEMBER).

EXAMINATION OF THE BLOOD.—Dr. Alex. Goodall. Fee: £3 3s. VACCINE THERAPY.—Dr. A. Nimmo Smith. Fee: £3 3s.
MEDICAL CHEMISTRY.—Dr. C. P. Stewart. Fee: £4 4s
X-RAY PHYSICS AND ELECTRO-TECHNICS.—Mr. C. Norman Kemp, B.Sc., A.I.C. Fee: £3 3s.

Further particulars may be had on application to the Hon. Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION

No. 1, Wimpole Street, London, W.1. *Telephone: MAYFAIR 2236*

M.R.C.P. EVENING COURSE, May 7th to June 28th, 1929.

Sixteen Lectures on Diseases of the Brain, Nervous System, Heart, Blood, Kidneys, Alimentary System, Spleen, Biochemical Methods. Well-known authorities participating. Time 8.30 p.m. Fees 10/6 a lecture, or £6 6s. entire Course. Apply for detailed syllabus.

Post-Graduate Teaching, West London Hospital.

CONTINUOUS INSTRUCTION. CLINICAL WORK IN ALL DEPARTMENTS. CLINICAL ASSISTANTSHIPS. SPECIAL ANNUAL MEMBERSHIP TERMS FOR GENERAL PRACTITIONERS. ANÆSTHETIC COURSE.

COURSES MAY BE COMMENCED AT ANY TIME.

Prospectus from Sir Henry Simson, K.C.V.O., Dean, West London Hospital, Hammersmith, W.6.

UNIVERSITY OF LONDON.

A Course of Three Lectures on "*Drug-like Actions of Some Food Constituents*" will be given by Prof. E. MELLANBY, M.D., F.R.C.P., F.R.S., Professor of Pharmacology in the University of Sheffield, and Physician, Sheffield Royal Infirmary, at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on APRIL 29th and 30th, and MAY 1st, at 5.15 p.m. At the first lecture the chair will be taken by Prof. J. A. GUNN, M.D., D.Sc., Professor of Pharmacology in the University of Oxford. Lantern illustrations.

A Course of Six Lectures on "*Special Sense Physiology*" will be given by Mr. R. J. LYTHGOE at UNIVERSITY COLLEGE, LONDON, on THURSDAYS, MAY 2nd, 9th, 16th, 23rd, 30th, and JUNE 6th, at 5 p.m.

A Course of Six Lectures on "*Dietetics*" will be given by Prof. S. J. COWELL, B.A., M.B., B.Ch.(Cantab.), Professor of Dietetics in the University, at ST. THOMAS'S HOSPITAL (Albert Embankment, S.E.1), on THURSDAYS, MAY 2nd, 9th, 16th, 23rd, 30th, and JUNE 6th, at 5 p.m. At the Inaugural Lecture of the Course the chair will be taken by the Hon. Sir ARTHUR STANLEY, G.B.E., C.B., M.V.O., Treasurer of St. Thomas's Hospital.

A Course of Two Lectures on "*Some of the Sequels of Epidemic Encephalitis (Lethargica)*" will be given by Prof. ARTHUR J. HALL, M.A., M.D., D.Sc., F.R.C.P., Professor of Medicine in the University of Sheffield, at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on FRIDAYS, MAY 3rd and 10th, at 4 p.m. At the first lecture the chair will be taken by Prof. T. R. ELLIOTT, C.B.E., D.S.O., F.R.S., Professor of Medicine in the University. Lantern and cinematograph illustrations.

Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

UNIVERSITY OF LONDON.
KING'S COLLEGE.

PRIMARY F.R.C.S.

A Revision Course in Anatomy and Physiology, in preparation for the June Examination, will commence on May 1st, under the direction of:

Anatomy.—Professor D. M. BLAIR.

Physiology.—D. H. DE SOUZA, M.D., D.Sc., F.R.C.P.

Fees: Anatomy, five guineas; Physiology, five guineas.

Applications to be admitted to the Course should be addressed to the Dean of the Medical Faculty (Professor R. J. S. MCDOWALL), King's College, Strand, W.C.2.

UNIVERSITY OF CAMBRIDGE

Diplomas in (*a*) PUBLIC HEALTH, (*b*) [illegible] (for foreign graduates), (*c*) TROPICAL MEDICINE AND HYGIENE.

Courses of Instruction in the Subjects of the [illegible] October 9th, 1929.

[illegible] obtainable from Mr. J. E. [illegible] Chemical Laboratory, [illegible] Cambridge.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-[illegible] treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

"Remarkable success in the education and treatment [illegible] other speech defects."—"Times."

[illegible] and precise logical principles."—"Lancet."

[illegible] scientifically correct and perfectly [illegible]."—"Guy's Hospital Gazette."

STAMMERING, CLEFT PALATE SPEECH, LISPING, &c. Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

F.R.C.S.(Edin.).

Prep. Classes and Museum Demons. for next Fellowship Exam. will commence shortly. Correspondence course for [illegible] and later exams. should begin now. Particulars, Mr H. C. ORRIN, F.R.C.S., at Surgeons' Hall, Edinburgh.

Society of Apothecaries of LONDON

MASTERY OF MIDWIFERY.

The next Examination will take place on Tuesday, May 21st, and following days. For regulations apply to—

FRANK HAYDON, Secretary.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For information, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

University of Birmingham.
(Faculty of Medicine.)

WILLIAM WITHERING MEMORIAL LECTURESHIP.

A COURSE OF FIVE LECTURES
ON
"*EPOCHS OF MEDICAL HISTORY*"
will be delivered by
CHARLES SINGER, M.A., M.D., D.Litt., F.R.C.P., in the Large Theatre of the Medical School Buildings, Edmund Street,
on the following dates at 4.30 p.m., viz.:
WEDNESDAYS, April 24th, May 1st and 8th, June 19th and 26th, 1929.

SYNOPSIS OF THE COURSE.

Lecture 1.—Wednesday, April 24th, "Ancient Medicine."

Lecture 2.—Wednesday, May 1st, "Medieval Medicine."

Lecture 3.—Wednesday, May 8th, "Medicine and the Revival of Learning."

Lecture 4.—Wednesday, June 19th, "The Modern Spirit in Medicine" (1).

Lecture 5.—Wednesday, June 26th, "The Modern Spirit in Medicine" (2).

Members of the Medical Profession are invited to attend.

J. C. BRASH, M.A., M.D., Dean.

University of Birmingham.
(Faculty of Medicine.)

CLINICAL BOARD.

POST-GRADUATE DEMONSTRATIONS, 1929.

A Course of Post-Graduate Demonstrations will be given at the General Hospital, Birmingham, on Tuesdays from 3.30 to 5 p.m., and at the Queen's Hospital, Birmingham, on Fridays, 3.30 to 5 p.m., April to July, 1929, commencing on April 23rd at the General Hospital and on April 26th at the Queen's Hospital. The Course will be given by Members of the Medical and Surgical Staffs and will include Demonstrations on Medical, Surgical, and Gynæcological Cases; Nervous Diseases; Ophthalmic Cases; Diseases of Ear, Nose, and Throat; Radiology; Venereal Diseases; Children's Diseases, etc.

(*Two of the Demonstrations on Tuesdays will be given at the Children's Hospital, Ladywood Road, Birmingham.*)

Medical Practitioners may obtain detailed Time-Tables of Demonstrations at each Hospital, and Ticket of Admission, on payment of the Fee for the Course, £2 2s 0d. *Cheques made payable to "The University of Birmingham," should be sent to the Clerk to the Clinical Board, The University, Edmund St., Birmingham.*

University of Birmingham.

APPOINTMENT OF ASSISTANT LECTURER IN PHYSIOLOGICAL DEPARTMENT.

Applications are invited for the post of Assistant Lecturer in Physiology. Stipend £300 per annum. Four copies of application, *with testimonials*, must be sent on or before May 31st to the undersigned, from whom further particulars may be obtained.

The University, Edmund St., Birmingham. April 1929.

C. G. BURTON, Secretary.

Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims.
Chemistry, Physics, and Biology Labs.
MANCHESTER TUTORIAL COLLEGE,
327, Oxford Road, Manchester.

LONDON HOSPITAL,
Whitechapel, E.

A vacancy occurs at the London Hospital in the post of GYNÆCOLOGICAL FIRST ASSISTANT and OBSTETRIC TUTOR. The salary offered is £300 a year for the dual post. Applications, with testimonials, from candidates medically qualified, are invited, and should be sent to the House Governor not later than Saturday, May 11th.

E. W. MORRIS, House Governor.

West Suffolk General Hospital,
BURY ST. EDMUNDS.
(108 Beds.)

Applications are invited for the post of HOUSE SURGEON, which will be vacant on May 1st. Salary £150 per annum, with board, residence, and laundry. Candidates must be *fully registered and qualified*.

Applications, giving particulars of experience, and enclosing three recent testimonials, to be sent to the undersigned.

E. E. HARDWICKE, *Secretary.*

April 16th, 1929.

M.D. THESIS
(Camb., Edin., Glasg., Durh., &c.)
SKILLED COACHING, GUIDANCE, and ADVICE.
From Specialist Tutors, in conformity with the Regulations of the various Universities.
Apply for particulars and free booklet, "Hints on Writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

Church Missionary Society.

THE ANNUAL MEETING of the MEDICAL MISSION AUXILIARY OF THE C.M.S. will be held in the CENTRAL HALL, WESTMINSTER, at 7.15 p.m., on Wednesday, May 1st, 1929.

The Chair will be taken by TOM JAYS, Esq., M.R.C.S., L.R.C.P. (Principal of Livingstone College), and the Speakers will be:

H. T. HOLLAND, Esq., C.I.E., M.B., F.R.C.S.Edin. (Baluchistan).

Rev. W. WILSON CASH, D.S.O. (Gen. Secretary, C.M.S.).

NORMAN E. COOK, M.B., B.S.Lond., D.T.M. & H. (Recruit).

Tickets of admission may be obtained from the Superintendent, Loan Department, Church Missionary Society, Salisbury Square, E.C.4. There will be a small number of reserved seats at 1/- each.

St. Mary's Hospital, Institute OF PATHOLOGY AND RESEARCH.

Principal: Sir ALMROTH E. WRIGHT.

Applications are invited from qualified medical practitioners for a RESEARCH STUDENTSHIP. This will be tenable for six months, and may be renewed for second period of six months.

The Institute comprises the following departments: Anatomy and Embryology, Physiology, Pathology, Chemical Pathology, Clinical Bacteriology, Systematic Bacteriology, and Immunology.

The student, who will receive an honorarium at the rate of £200 per annum, may elect to carry out his researches in any one of these departments, and would be required to work under the direction of the head of the department concerned.

Preference will be given to old St. Mary's Students.

For further particulars apply to the Secretary, Institute of Pathology and Research, St. Mary's Hospital, Paddington, W.2, to whom applications must be sent not later than April 30th.

The Royal Infirmary of EDINBURGH.

SECRETARY AND TREASURER.

The Managers invite applications for this post which will be vacant at the close of the current year. Priority of consideration will be given to candidates having some knowledge of law and also of accounting.

The commencing salary will not be less than £900 per annum, and the successful candidate will be required to attend daily from September 2nd next, and to take over full responsibility on January 1st, 1930. A note of the principal duties of the joint offices can be obtained on application to the Superintendent. Candidates, who must state their age and give full particulars of their business training and experience, are requested to forward, by May 15th, twenty eight copies of their letter of application, together with recent testimonials (not exceeding four in number) to the Superintendent, Royal Infirmary, Edinburgh.

April 10th, 1929

County Borough of Newport, Mon.

The Committee for the Care of the Mentally Defective is [illegible] for the appointment of a [illegible] with experience in [illegible], to take charge of Mental Deficiency [illegible] supervision, perform ascertainment, supervision and other duties, and act generally under the direction of the Supervising Medical Officer. Ability to play the piano, and knowledge of physical drill, games, and exercises desirable. Salary £250 a year. Appointment terminable by three months' notice on either side.

Applications, endorsed "Female Supervisor," stating age, qualifications, previous experience, whether married or single, and copies of three testimonials, to be sent to the undersigned on or before May 1st.

O. TREHARNE MORGAN, Town Clerk.

Newport, Mon.

April 15th, 1929.

Manchester Royal Infirmary.

THE DICKINSON SCHOLARSHIPS.

RESEARCH TRAVELLING SCHOLARSHIP IN MEDICINE.

The Trustees invite applications for the Dickinson Research Travelling Scholarship in Medicine.

The Scholarship is of the value of £300, tenable for one year. Candidates must be University Graduates who have taken out the full course of Clinical Instruction required by their examining bodies in the Manchester Royal Infirmary and the University of Manchester, and have carried distinction in so doing. They may apply for the Scholarship within any period of years after qualification as may be approved by the Trustees.

A copy of the Regulations governing the Scholarship can be obtained from the undersigned, to whom six copies of application should be sent not later than Thursday, May 2nd.

FRANK G. HAZELL,
Secretary to the Trustees, Manchester Royal Infirmary.

Manchester Royal Infirmary.

THE DICKINSON SCHOLARSHIPS.

PATHOLOGY SCHOLARSHIP.

The Trustees invite applications for the Dickinson Pathology Scholarship.

The Scholarship is of the value of £75, tenable for one year. Candidates must be University Graduates who have received their full course of instruction in Pathology, Medicine, and Surgery at the University of Manchester and the Manchester Royal Infirmary.

A copy of the Regulations governing the Scholarship can be obtained from the undersigned, to whom six copies of application should be sent not later than Thursday, May 2nd.

FRANK G. HAZELL,
Secretary to the Trustees, Manchester Royal Infirmary.

Manchester Royal Infirmary.

FIRST ASSISTANT IN THE CLINICAL LABORATORY.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which is non-resident, and is tenable for twelve months; the holder is eligible for re-election.

Salary £350 per annum. Candidates must be *duly qualified and registered; they must* state age and send twelve copies of their application and testimonials to the undersigned by Wednesday, May 8th.

The appointment is to commence on Monday, June 3rd.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.

Sheffield Union.

NETHER EDGE HOSPITAL.

HOUSE PHYSICIAN (Lady).

The Guardians invite applications from duly qualified ladies for the appointment of Resident House Physician at their Nether Edge Hospital. The Hospital has accommodation for 550 patients, and includes a Maternity Department for 52 patients. Special accommodation is, in addition, set aside for tuberculous patients.

The lady appointed will be required to act under the direction of the Medical Superintendent of the Guardians' Hospitals, and to take duty at the pre-natal clinic of the Sheffield Corporation at such times and for such periods as may be arranged or approved by the Medical Superintendent.

The appointment will be for one year, at a salary at the rate of £150 per annum, with the usual residential allowances.

Applications, stating age, professional qualifications, and experience, and accompanied by copies of not more than three recent testimonials, must be sent to the undersigned by not later than April 20th

Union Offices, West Bar, *Sheffield April 10th 1929*
LAWRENCE RICHMOND,
Clerk to the Guardians.

Elizabeth Garrett Anderson HOSPITAL, Euston Road.

Wanted, fully qualified medical women for the *following posts*:

JUNIOR ASSISTANT OBSTETRICIAN;
ASSISTANT RADIOLOGIST.

An honorarium of £100 per annum attaches to the latter post. *Applications, with testimonials,* should be sent to the Secretary before the 29th *instant*

IMOGEN H. MURPHY, Secretary.

Woolwich Union.

THIRD ASSISTANT MEDICAL OFFICER.

A Third Assistant Medical Officer (male) is required at the PLUMSTEAD AND DISTRICT HOSPITAL, Plumstead High Street, S.E.18.

Candidates must be doubly qualified and registered.

The gentleman appointed must have held resident Hospital appointments and have experience in the administration of anæsthetics. He will be required to carry out *such duties* as may be assigned to him by the Medical Superintendent, and, should occasion arise, to assist at any of the other establishments under the control of the Guardians.

Salary £300 per annum, rising £25 annually to £350 per annum, with residence and rations, subject to deductions under the Poor Law Officers Superannuation Act.

Further particulars of the appointment may be obtained by *personal application* to the Medical Superintendent between the hours of 10 a.m. and 1 p.m., *or by letter.*

Applications, upon forms to be obtained from my office, as under, upon receipt of a stamped, addressed, foolscap envelope, or by personal application, must be returned to me not later than April 29th.

The appointment will be made by the Guardians at their meeting on May 16th. The gentlemen selected to *appear before the* Guardians will be notified, and if they have not had an interview with the Medical Superintendent they will be expected to call on him before that date.

By Order,
Union Offices, Plumstead High St., S.E.18.
ARTHUR HOLDER,
Clerk to the Guardians.
April 15th, 1929.

Liverpool Port Sanitary AUTHORITY.

ASSISTANT PORT MEDICAL OFFICER.

The Corporation of the City of Liverpool, as Port Sanitary Authority, require the services of an Assistant to the Medical Officer of Health, whose duties will be in connection with the Tidal Inspection of Vessels, the Medical Inspection of Aliens, and such other duties as may from time to time be assigned to him.

The salary will commence at £700 per annum, increasing to £800 per annum by annual increments of £50.

Candidates must possess a registrable Medical and Surgical qualification, and should hold a Diploma in Public Health, and their age must not exceed 35 years.

The person appointed will require to devote whole-time service to the duties specified, and will be subject to the Superannuation provisions of the Liverpool Corporation Act, 1921.

Canvassing of members of the Council is strictly prohibited.

Applications, stating age, qualifications, and past experience, accompanied by copies of recent testimonials, should be addressed to the Chairman of the Port Sanitary and Hospitals Committee, under cover to the undersigned, and delivered not later than May 6th.

Envelopes to be endorsed "Assistant Port *Medical Officer.*"

Municipal Buildings, Liverpool, W.
WALTER MOON,
Town Clerk.
April 10th, 1929.

Nottinghamshire County Council

APPOINTMENT OF ASSISTANT SCHOOL MEDICAL OFFICER (male).

Applications are invited for the appointment of a whole-time Assistant School Medical Officer at a salary of £600 per annum, with travel*ling expenses in addition according to the scale* approved by the County Council.

Candidates must be fully qualified and registered medical practitioners of at least three years' standing, with a Diploma of Public Health, and in addition must have recent experience in the administration of anæsthetics for dental operations (chiefly Nitrous Oxide), practical knowledge of carrying out refractions and of the special examination of children for Mental Deficiency.

The person appointed will be a Member of the Staff and act under the control and direction of the County Medical Officer of Health, and will be required to reside in a part of the County to be approved by the Education Committee

The appointment will be terminable by three months' notice on either side.

Applications on the prescribed form (which may be obtained on application to me), accompanied by copies of not more than three recent testimonials, should be forwarded to County Medical Officer, Shire Hall, Nottingham, not *later than April 27th.*

Shire Hall, Nottingham.
K. TWEEDALE MEABY,
Clerk of the County Council.
April, 1929.

Parish of Newcastle-upon-Tyne.

WINGROVE HOSPITAL AND POOR LAW INSTITUTION.

DEPUTY MEDICAL SUPERINTENDENT.

The Guardians of the Parish of Newcastle-upon-Tyne require the services of a Deputy Medical Superintendent (male) at their Wingrove Hospital, Newcastle-upon-Tyne, which appointment includes that of Assistant Medical Officer at the Poor Law Institution, adjoining, under separate administration. Salary for the combined offices is at the rate of £400 per annum, together with furnished *apartments,* rations, and washing, and subject to the provisions of the Superannuation Acts.

The Wingrove Hospital contains 650 beds, is a training school for nurses, and comprises mental, midwifery, venereal, tubercular, surgical, and general wards, together with *X-ray* and *Sunlight* departments.

Form of application may be obtained from the *undersigned upon* receipt of a foolscap stamped addressed envelope, and applications will only be considered on these forms duly completed and received by me not later than Thursday, the 25th instant.

Canvassing the Guardians, directly or indirectly, will disqualify.

127, Pilgrim St., *Newcastle-upon-Tyne.*
GLADSTONE WALKER,
Clerk to the Guardians.
April 9th, 1929.

Derbyshire Education Committee

ASSISTANT SCHOOL MEDICAL OFFICER.

The Derbyshire Education Committee require the services of an Assistant School Medical Officer at a salary of £600, rising by annual *increments* of £25 to £700 per annum.

Candidates must be skilled refractionists and must have held the post of House Surgeon in an Eye Hospital or the Eye Department of a General Hospital for a period of not less than six months. In addition to eye work, the duties will include medical inspection of school children.

The officer appointed will not be allowed to engage in private or consulting practice, but will be required to devote his whole time to the duties of the office under the direction of the School Medical Officer.

Forms of application may be obtained from the undersigned, to whom they should be returned completed, together with copies of not more than three recent testimonials, on or before April 27th, endorsed "*Assistant School Medical* Officer."

The appointment will be determinable by three *months'* notice on either side.

New County Offices, Derby.
W. M ASH,
School Medical Officer.
April 8th, 1929

Bedfordshire County Council.

ASSISTANT MEDICAL OFFICER (RESIDENT).

Applications are invited for the post of a male Assistant Tuberculosis Officer (Resident) at the Bedfordshire Sanatorium, near Bedford.

The officer appointed will be under the direction of the County Medical Officer of Health, and *will be required to take* part in the medical inspection of school children, etc.

Applicants must be single, registered medical *practitioners,* and have had experience in Tuberculosis work; experience in the medical inspection of school children, and the possession of a Diploma in Public Health, are also desirable. The officer appointed will be required to devote the whole of his time to the duties assigned to him, and not to engage in private practice.

Salary £450 per annum, together with board, residence, laundry, and a travelling allowance of £100 per annum, free use of garage, etc.

Further particulars can be obtained from the County Medical Officer, Shire Hall, Bedford.

Applications, stating age, qualifications, and previous experience, *accompanied by copies* of three recent testimonials, and endorsed "Assistant Medical Officer (Resident)" should be sent to the undersigned not later than Tuesday, April 30th.

Shire Hall, Bedford.
J. B. GRAHAM,
Clerk of the County Council.
April 15th, 1929.

Parish of St. John, Hampstead.

The Guardians of the above Parish require a JUNIOR RESIDENT ASSISTANT MEDICAL OFFICER at their NEW END HOSPITAL, to start duties on June 1st. Appointment six months, renewable at option of the Guardians. Salary £200 per annum, with board, lodging, and washing. Further *particulars* can be obtained from the Medical Superintendent. Applications to be sent to my office on or before 10 a.m., Thursday, May 2nd.

Guardians' Offices, New End, Hampstead.
H. WESTBURY PRESTON,
Clerk to the Guardians.

County Council of Middlesex.

THE COUNTY (TUBERCULOSIS) SANATORIUM, HARLEFIELD, MIDDLESEX.

THIRD ASSISTANT RESIDENT MEDICAL OFFICER.

The County Council invite applications for the post of Third Assistant Resident Medical Officer (male) at the above Institution at a salary of £400 per annum (no bonus), with *board, lodging,* and laundry.

Candidates must be registered medical practitioners, not over 35 years of age, unmarried, and of British nationality. They must have held resident hospital appointments. Practical experience in the diagnosis and treatment of tuberculosis (including the induction of artificial pneumothorax) will be an additional qualification.

The officer appointed will be required to devote his whole time to the duties of the post, and to contribute to the County Council's Superannuation Fund. For the latter purpose he will be required to pass such medical examination as the County Council may direct.

The appointment is terminable by one month's notice on either side.

Applications, stating (1) name, (2) age, (3) experience, accompanied by copies of not more than three recent testimonials, must be received by the undersigned not later than Saturday, April 27th.

Canvassing is prohibited.

Guildhall, Westminster, S.W.1. April 5th, 1929. ERNEST S. W. HART, Clerk of the County Council.

City and County of Kingston-upon-Hull.

ASSISTANT MEDICAL OFFICER OF HEALTH.

The Corporation of Hull invite applications from medical men and unmarried or widowed medical women, under the age of 40 years and of not less than three years' standing in their profession, for the post of Assistant Medical Officer of Health.

Salary £600 per annum, rising by annual increments of £25 to £700.

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The successful candidate will be required to devote the whole of his or her time to the duties of the office, which consists mainly of work in the Maternity and Child Welfare Department, the School Medical Service and the Tuberculosis Department but may also include duty in connection with other of the Health Services of the City of Hull.

Candidates should have had special experience in Maternity and Tuberculosis work.

A [illegible] application may be obtained from the undersigned and must be returned to him, duly completed on an envelope endorsed "Medical Officer of Health"), together with [illegible] recent testimonials, not later than [illegible] must post on Monday, May 6th to the Department.

W. ALLEN DALEY, Medical Officer of Health.

Guildhall, Hull.

Chester Education Committee.

CITY AND COUNTY SCHOOL FOR GIRLS.

WOMAN DOCTOR required to undertake medical inspection of girls on approximately three days at beginning and end of each school term—i.e., about eighteen days per annum. Salary 60 guineas per annum. Applications (for which no forms is provided), stating age, experience, and qualifications, together with copies of not more than three recent testimonials, to be sent to the Secretary to the Education Committee, Town Hall, Chester, by Saturday, May 4th. Canvassing will disqualify.

Town Hall, Chester. April 16th, 1929. J. H. DICKSON, Town Clerk.

City of Norwich Mental Hospital.

JUNIOR ASSISTANT MEDICAL OFFICER required, age not exceeding 35 years. Some laboratory work, increasing as time goes on, will be included in the duties. Gross salary £550 p.a., with an additional £50 p.a. to the holder of a Diploma in Psychological Medicine. Pending the provision of accommodation on the Hospital Estate, the gentleman or lady appointed will be provided with a sitting room, but required to live out and to pay as nearly as possible cost price for meals taken at the Hospital. Applications, giving details of experience and enclosing copies (no originals) of three recent testimonials, to be addressed to the Medical Superintendent, Hellesdon Hospital, Norwich.

Bristol Education Committee.

ASSISTANT SCHOOL MEDICAL OFFICER.

The Committee invite applications for a Whole-time Assistant School Medical Officer. Age not exceeding 40 years. Salary £600 per annum. The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The duties will consist of examination of children in the Committee's Secondary, Elementary, and Special Schools, treatment in School Clinics, and such other duties as may be allocated.

Special consideration will be given to candidates who are competent to administer such anæsthetics as are required in dental practice, but this qualification is not essential.

The successful candidate will work under the direction of the School Medical Officer.

Applications, which must be on a form provided for this purpose, should be accompanied by not more than three recent testimonials, and must be received by the undersigned not later than *Monday, May 6th.* Envelopes should be endorsed "Assistant School Medical Officer."

Canvassing will disqualify.

Guildhall, Bristol. April 15th, 1929. W. LUDFORD FREEMAN, Director of Education.

Derbyshire County Council.

BRETBY HALL ORTHOPAEDIC HOSPITAL.

RESIDENT MEDICAL SUPERINTENDENT.

Applications are invited for the position of Resident Medical Superintendent (Male) at the Bretby Hall Orthopaedic Hospital, near Burton-on-Trent. The Officer's duties will include the visiting of the various Orthopaedic Clinics which serve the Hospital.

Candidates must have had administrative and orthopaedic experience.

The Officer appointed will be required to devote the whole of his time to the duties of his office, and private practice will not be allowed.

The appointment will be terminable by three months' notice in writing on either side.

The salary will be at the rate of £750 per annum, rising to £850 per annum by annual increments of £25, together with board and lodging and the necessary travelling expenses.

Applications must be sent to the undersigned, together with copies of not more than three recent testimonials, not later than April 27th.

W. M. ASH, County Medical Officer of Health.

New County Offices, Derby, *April 8th,* 1929.

County Borough of St. Helens.

ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited for the post of Assistant Medical Officer of Health (male).

The duties mainly include those of Resident Medical Officer at the Council's Tuberculosis Sanatorium (about half-time), but also include the conduct of maternity and child welfare clinics, school medical inspection, and other public health work as required.

Candidates must have special experience in the diagnosis and treatment of Tuberculosis, and the possession of a Diploma in Public Health is desirable.

Salary £450 per annum, with board-residence, subject to a 5 per cent. deduction for purposes of the Council's Superannuation Scheme under the Local Government and Other Officers Superannuation Act, 1922.

Forms of application may be obtained from the Medical Officer of Health, Town Hall, St. Helens, and completed application, accompanied by copies of not more than three recent testimonials, should reach him not later than Monday, May 6th.

Town Hall, St. Helens. April 15th, 1929. FRANK HAUXWELL, Medical Officer of Health.

South Shields Poor Law Union.

FEMALE ASSISTANT (RESIDENT) MEDICAL OFFICER.

Female Assistant (Resident) Medical Officer wanted for the HARTON POOR LAW INSTITUTION and CLEADON CHILDREN'S HOMES.

Salary at the rate of £300, rising by annual increments of £10, £20, and £20 respectively, to a maximum of £350, together with rations, furnished apartments, and attendance.

The appointment will be determinable on any date by one calendar month's notice on either side, and be subject to the provisions of the Poor Law Officers Superannuation Act, 1896.

Applications (upon forms to be obtained from the undersigned) should be delivered here by 10 a.m. on Wednesday, the 24th instant.

Poor Law Offices, South Shields. April 10th, 1929. J. W. COULSON, Clerk to the Guardians.

Derby Union.

SECOND RESIDENT MEDICAL OFFICER.

Applications are invited for the appointment of Second Medical Officer (male) of the Guardians' Institution and Infirmary, which is a Major Training School for Nurses (a new Hospital of 350 beds is nearing completion). Salary at the rate of £250 per annum, with residential allowances.

Two months' notice of resignation to be given to date from the Board meeting next after the receipt of the resignation.

The appointment will be subject to the sanction of the Ministry of Health and to the provisions of the Poor Law Officers Superannuation Act, 1896.

Applications, with particulars of age, previous career, qualifications, diplomas; and certificates held, together with copies of three recent testimonials, must be sent in on or before Friday, May 3rd.

Poor Law Offices, Derby. RALPH GRANTHAM, Clerk to the Guardians.

Hull Royal Infirmary.

The Appointing Committee invite applications for the office of HONORARY PHYSICIAN to the Institution.

Applicants must have obtained a degree in Medicine at one of the Universities of the United Kingdom, be a Fellow or Member of the Royal College of Physicians of London, Edinburgh, or Ireland, and be duly registered under the Medical Acts.

Honorary Physicians are appointed for a period not exceeding 20 years, or until attaining 60 years of age and in accordance with the terms of the Royal Charter.

Applicants are prohibited from personally canvassing, but may send copies of their applications and testimonials to the members of the Appointing Committee.

Applications should be addressed to the Chairman of the Managing Committee.

April 16th, 1929. R. J. CARLESS, House Governor.

London Temperance Hospital, Hampstead Road, N.W.1.

Applications are invited for the post of SURGICAL REGISTRAR, which will become vacant on May 8th. The appointment is open to qualified men and women, and is for a period of one year. Honorarium 40 guineas. Ceteris paribus, preference will be given to total abstainers.

Applications, accompanied by not more than three testimonials, to be addressed to the Secretary by May 2nd.

Queen Charlotte's Maternity HOSPITAL, Marylebone Road, N.W.1.

RESIDENT ANÆSTHETIST required to commence duty on or about May 1st.

Applicants must be registered. Appointment for six months. Salary at the rate of £80 per annum, with board, residence, and washing allowance (4/- weekly).

Copies (not originals) of not more than three testimonials will be received by the Secretary up to April 29th.

ARTHUR WATTS, Secretary.

Bedford County Hospital.

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing at once. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Secretary, Medical Staff Committee, not later than the first post Wednesday, April 24th.

Cornelia & East Dorset Hospital, POOLE.

The Committee of Management invite applications for the post of HOUSE SURGEON (male).

Salary £150 per annum, together with *board, residence, and laundry.* The successful candidate will be required to commence duty at once.

Applications, with copies of testimonials, to be sent to the undersigned.

E. S. FOLEY, Secretary.

Liverpool Stanley Hospital.

Wanted, male HOUSE PHYSICIAN for May 1st. Salary at the rate of £100 per annum, with board, laundry, etc. Engagement for a period of five months.

Candidates must be on the *Medical Register* and applications, with copies of three recent testimonials, should be lodged with the undersigned on or before April 24th.

E. W. OSBORN, Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
	COUNTY OF BRECON. *(Probationer Assistant (Female) Medical Officer of Health.)*	

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Societies' Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies' Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
April 17th, 1929.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Bradford Royal Infirmary.

Wanted for June 1st
HOUSE PHYSICIAN (male).
TWO HOUSE SURGEONS (male).
Candidates must be single and legally qualified. Salary £150 per annum, with board, residence, and washing.
There are 215 beds and six resident officers.
Applications stating age, qualifications, and previous experience (if any), with copies of recent testimonials, to be received by the undersigned not later than April 23rd.

J. J. BARRON, Secretary-Supt.

Wolverhampton and Midland COUNTIES EYE INFIRMARY.

HOUSE SURGEON wanted. It is essential that candidates must possess a knowledge of refraction work. Duties to commence about May 15th. There are 50 beds for In-patients, and large Out-patient Department. Salary £100 a year, with furnished apartments, board, and laundry. Gentlemen applying should state age, and send copies of three recent testimonials, to reach the Secretary not later than April 25rd.

EUSTACE LEES, Secretary.

April 6th, 1929.

Samaritan Free Hospital for WOMEN, Marylebone Road, N.W.1.

Applications are invited for the post of HOUSE SURGEON for a period of six months, commencing on May 13th next. Salary at the rate of £100 per annum, with board, lodging, and washing. Previous experience as House Surgeon essential.
Applications, stating age, accompanied by copies only of testimonials, must reach the Secretary at the Hospital on or before Tuesday noon, April 30th.

G. H. HAWKINS, Secretary.

Bradford Royal Infirmary.

HONORARY PHYSICIAN—Open Appointment.

The Board of Management, at their Meeting on May 3rd, will proceed to the election of an Honorary Physician to fill the vacancy caused by the death of Dr. Wm. Wrangham.
The successful candidate will be required to practise as a Consulting Physician.
Applications, with certificate of registration, and copies of not more than three recent testimonials, *should reach the Secretary-Superintendent* not later than the first post on April 23rd.

J. J. BARRON, Secretary-Supt.

April 9th, 1929.

Ear and Throat Hospital, BIRMINGHAM.

THIRD HOUSE SURGEON wanted (non-resident). Must be qualified and with clinical experience. Appointment for six months. Salary at the rate of £150 per annum, with lunch five weekdays. Duties to commence May 1st.
Applications and testimonials to be forwarded on or before April 24th to the undersigned.

S. G. GREW, Secretary.

April, 1929.

Jersey General Hospital.

APPOINTMENT OF VISITING PHYSICIAN AND RADIOLOGIST.

Applications are invited for a Visiting Physician with experience in Radiology.
Honorarium at the rate of £150 per annum.
Candidates to send in applications, giving age, qualifications, and experience.
Private practice allowed.

PHILIP BEUZEVAL, Secretary.

West Bromwich and District GENERAL HOSPITAL.

APPOINTMENT OF HONORARY OPHTHALMIC SURGEONS AND HONORARY ANÆSTHETISTS.

The Committee of Selection will on Monday, May 6th, proceed to the appointment of the following, viz.:
(1) Two Honorary Ophthalmic Surgeons who will each be required to attend to Out-patients one morning a week, and to the In-patients admitted under them, and
details of these given on request.
) send their applications and testimonials, and evidence of their degree or diploma, to the Honorary Secretary, ERIC BACHE, Esq., LL.B., Lombard House, West Bromwich, on or before May 2nd
The By-laws provide "That every honorary surgeon shall be a Fellow or Member of a Royal College of Surgeons in the United Kingdom or a Graduate in Surgery of a British University and that appointments shall be for a period not exceeding five years."

By Order,
F. I. HANCOCK, Secretary-Supt.

Bristol Royal Infirmary.

Applications are invited for the following two vacancies:
1. HONORARY MEDICAL REGISTRAR.
2. HONORARY REGISTRAR to the Ear, Nose, and Throat Department.

Candidates, who must be duly qualified and registered, to send in their applications to the undersigned, together with copies of not more than four testimonials, on or before May 18th.

ELLIS C. SMITH, F.C.I.S., Secretary & House Governor.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(Address included.)

Sixpence should be added if replies to a box number are to be posted.

All advertisements must be received not later than first post Tuesday previous to date of publication.

ASSISTANCIES.

Wanted, an Assistant in a Colliery Practice in Glamorgan. An ex House Surgeon preferred. Welsh desirable, but not essential. Salary to commence at £350 per annum, with rooms and attendance. May lead to a permanency.—Address, stating age, references, etc., 2317, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Qualified Assistant, outdoor, single, British, abstainer, Protestant; experienced minor surgery, mids., anæsthetics; colliery district, South Wales. Liberal salary reliable applicant. Sign bond. Interview desirable if arranged, fare and expenses paid.—Address, No. 2309, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, with several years' exper. of private and panel practice, to take charge of Practice in a Lancashire industrial centre; partnership later. Good opening for right man. Comfortable house. Parties. —No. 2338, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, male, keen and energetic, in good-class non-dispensing private and panel Practice. £360 p.a. with rooms and attendance. Car provided. Good prospects for right man.—Address, No. 2350, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, male, for General Practice in West Yorkshire. Total abstainer preferred. Salary £350 to £420 p.a., according to qualifications and experience. Outdoor. — Address, No. 2331, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, single, for West Riding Practice, midwifery. Ex H.S. or H.P. preferred. Should be willing to stay two or three years. Xmas performed if available. Car provided. Resident. Salary £400.—Address, No. 2327, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, age under 30. English or Scotch, for practice 50 miles London. Salary £350 per annum. Keen and energetic.—Add., No. 2342, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant for Practice in Monmouthshire. Hospital or district. Must be able to drive car. Motor, driving etc. and other essential particulars. Should be good.—Address, No. 2346, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Assistant, male, indoor. Experience unnecessary. Smart newly qualified man, cyclist. Apply stating reading, sports, etc. Large panel, Midlands.—Address, No. 2333, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, indoor ASSISTANT, with view. Some experience necessary. Preferably 25 to 30. Commencing salary £250. Pleasant seaside resort. Write — Address, No. 2304, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Indoor ASSISTANTS (male). Good salaries offered. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross St., Manchester.

Wanted, in May, outdoor ASSISTANT, male, single, British, for general and panel Practice, S. Yorkshire Colliery dist. Small car provided. State age, height, exper., and other essen. parties. Usual bond.—No. 2344, B.M.A. House, Tavistock Sq., W.C.1.

Wanted at once, Assistant, male or female. Work light. Panel and private Birmingham district. No previous experience required. Must cycle. — Address, No. 2332, B.M.A. House, Tavistock Square, W.C.1.

Wanted, a Welsh - speaking ASSISTANT in a mixed Practice, North Wales. References, with experience, and essential particulars. Liberal salary to suitable applicant.—Address, No. 2149, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted, for Practice in Country Village, with Colliery (Notts). Particulars and photo. — Address, No. 2306, B.M.A. House, Tavistock Square, W.C.1.

Assistants or Locum Tenens.— Doctors immediately available for the foregoing, of good address, experience, and of British birth, are invited to call upon THE MEDICAL AGENCY, Watergate House, 15, York Buildings, Adelphi, W.C.2.

Lady Assistant wanted. Furnished house and attendance, work light. Nice district, good Lancashire Town. Send photo. State essential particulars.—Add., No. 2305, B.M.A. House, Tavistock Sq., W.C.1.

Lady Assistant, experience G.P., English or Scotch. £250, outdoor. London suburb.—Address, No. 2347, B.M.A. House, Tavistock Square, W.C.1.

Woman Assistant wanted for working-class Practice in North London, Scotch preferred. State experience, age, and height. — Address, No. 2340, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted by Indian M.R.C.S., L.R.C.P., CHARGE of BRANCH SURGERY or LONG LOCUM. Exper. 3 yrs. G.P. in Eng. Pref. Lond. Capable independent charge. Active, well-received. Free month hence. Refs. —No. 2323, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Dispenser, gentlewoman, for Doctor's surgery, Willesden district. Hall certificate. Afternoons free. No work Thursday evenings or Sundays. Salary £2. State age and full particulars.—Address, No. 2341, B.M.A. House, Tavistock Sq., W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

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April 9th, 1929.

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Locum required immediately for the ROYAL LIVERPOOL BABIES' HOSPITAL, WOOLTON. Applications, together with copies of testimonials, to be sent to the Chairman of the Hospital, c/o The Child Welfare Association, 9, Copperas Hill, Liverpool.

Married Medical Couple would like to meet similar couple with view to INTERCHANGE of either partner as LOCUM for summer holidays. Two to three weeks.—Address, No. 2313, B.M.A. House, Tavistock Square, W.C.1.

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Wanted for May, 1930, by M.A.Camb., M.R.C.S., L.R.C.P., PARTNERSHIP of about £800 p.a. in London Suburban non-dispensing Practice. Bachelor, aged 26. Seven years experience in general practice.—Address, No. 2329, B.M.A. House, Tavistock Square, W.C.1.

Partner wanted in sound industrial Practice, S. Wales. Sobriety essential. Excellent opportunity to suitable man.—Address, No. 2345, B.M.A. House, Tavistock Square, W.C.1.

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Partner wanted in old-established general and Consulting Practice, N.E. England. Must have surgical experience. One-third of £2,850 at 2 years' purchase.—Address, 2324, B.M.A. House, Tavistock Square, W.C.1.

Partner required in good-class Practice. Graduate with experience wanted. Half share of about £3,500 for disposal. — Address, No. 2108, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES.

Wanted.—Practice or Partnership from £1,000 up. Glasgow Graduate. Six years' town experience. Capital available. Scotland preferred.—Address, No. 2316, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Good-class Practice or PARTNERSHIP in town on, or near, coast of Southern, South-Western, or South-Eastern county. Advertiser has ample capital and higher qualifications. Strict confidence. Private advertisement. — Address, No. 2322, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Large well-estab. non-panel PRACTICE within 100 miles London (main line). Income not less £2,500. A suitable house at rental desired in first instance. Advertiser is free to negotiate. Capital available. — Address, No. 2314, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — A good Practice about £1,500 p.a., within 20 miles of London. Small panel, good fees. A good detached house with garage essential. To be bought or rented.—Address, No. 2106, B.M.A. House, Tavistock Square, W.C.1.

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Ophthalmic portion of Ophthalmic and Aural PRACTICE in Cathedral City. Ophthalmic receipts £1,070. Hospital appointment. Appointment £150. Cheap flat, suit bachelor. Excellent prospects. 1½ years' purchase.—Address, No 2329 B.M.A. House, Tavistock Square, W.C.1.

Practice for Sale. — Good-class Country PRACTICE within 20 miles of Manchester. Receipts £1,400, increasing yearly. Good house to let (rent £60), containing 5 bedrooms, 2 entertaining rooms, surgery and waiting rooms, garage. Premium £2,000 —Apply, STOWELL & BAYLEY, Chartered Accountants, 46, Pall Mall, Manchester.

Practice for Sale, Manchester district. Audited receipts over £1,550. Panel about 1,170. Good house, lease or sell. Thickly populated district, splendid scope.—Address, No. 2307, B.M.A. House, Tavistock Square, W.C.1.

Practice, residential district, Surrey, within 25 miles London, doing £2 per day, and panel £120 extra, rapidly increasing. Premium £900. — Address, No. 2129, B.M.A. House, Tavistock Square, W.C.1.

Panel Part of General Practice for sale at early date, approximately £700 p.a. Further private work by arrangement. London area.—Address, No. 2321, B.M.A. House, Tavistock Square, W.C.1.

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To Purchasers. — Do not buy without expert assistance. With 40 yrs.' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Gerrard 0399. Telegrams: "Epsomian, London."

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Consulting and Waiting Room [illegible] to Let, furnished, Ground floor. Front. [illegible] Electric light. Use of station and [illegible] May next.—Apply, 22, Manor Road, [illegible], S.E.

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Commodious Important Residence, now used as Nursing Home, for disposal. 18 patients' rooms, 5 bathrooms, 4 sitting rooms, theatre, sterilizing room. Good kitchen, housekeeper's room, etc. Passenger lift. Central heating. Independent hot water. Ground rent £120 per annum. Direct lease 33 years.—Price and further particulars from the Agents: MAPLE & Co., Ltd., Tottenham Court Road, W.1.

Consulting Rooms to Let.—Harley Street and district. Whole or part-time. Lists sent on application.—ELGOOD & Co., 10, Henrietta Street, W.1. Mayfair 5659.

For Sale by Private Treaty, in a large Lincolnshire Village, an excellent brick and slated DOCTOR'S RESIDENCE, with a good garden, together with an old-established DOCTOR'S PRACTICE, which is capable of being extended, and a good opening for an energetic young doctor.
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Well furnished Consulting Room to Let *in* Weymouth Street. Mornings from 10 to 1. £120 per annum. Plate, telephone, lighting, and heating included.—Add., No. 2342, B.M.A. House, Tavistock Sq., W.C.1.

APPOINTMENTS.—Contd.

Gravesend and North Kent HOSPITAL.

JUNIOR HOUSE SURGEON.

The Committee of Management invite applications from fully qualified men for the above post, which affords excellent opportunity for Surgical and general experience, including X-ray and Casualty work.
The post is for twelve months, with possibility of extension for a further six months as Resident Medical Officer.
Salary at following scale, with addition of board, lodging, and washing:
£80 per annum for first six months;
£150 per annum for second six months;
£200 per annum for third six months.
Three weeks' holiday at end of first six months; three weeks' holiday at end of second six months, if appointed Resident Medical Officer.
Applications, with one copy of three recent testimonials, to be sent to the undersigned before April 23rd.
The appointment will be vacant on May 1st.
C. E. CHAPMAN,
March 27th, 1929. Secretary.

Victoria Hospital, Burnley.
Wanted, a HOUSE SURGEON (male). Appointment for six months. Salary £125 per annum, with board, etc. Particulars of appointment can be had from the Hon. Secretary, to whom applications must be sent not later than *Friday*, April 26th, endorsed "House Surgeon."
7, Grimshaw St., Burnley. F. A. HARGREAVES, Hon. Secretary.

The Northern Infirmary, INVERNESS.
Applications are invited for the post of PATHOLOGIST and BACTERIOLOGIST to the above Institution. Salary £700 per annum. Appointment to be a whole-time one and to be terminable on three months' notice.
Candidates must be fully qualified and registered.
Applications, stating age, qualifications, etc., to be lodged with the Hon. Secretary not later than 8th proximo.

Assistant Medical Officer (male) wanted at FIFE & KINROSS DISTRICT ASYLUM, CUPAR-FIFE. Applicants must be unmarried and duly qualified medical practitioners. Previous experience in Asylum work a recommendation. Salary £300 to £350 according to experience, with board, lodgings, and laundry. The appointment is subject to deductions under the 1909 Asylum Officers Superannuation Act. Apply, in writing, giving full particulars, to the Medical Superintendent.

Hove Hospital (Carr-Burton MEMORIAL), Sackville Road, HOVE.
A RESIDENT MEDICAL OFFICER (male) is required, who must be unmarried and under 40 years of age. The Hospital contains 24 beds.
The appointment affords excellent opportunity for surgical experience and time for reading.
Salary £150 per annum, with board, apartments, and laundry. Candidates should state when they could take over the duties. Expenses not exceeding one guinea will be paid to any applicant invited to attend for interview.
Applications must be received by April 30th, addressed to the General Secretary, Brighton, Hove & Preston Dispensary, 113, Queens Road, Brighton.

Manchester Victoria Memorial JEWISH HOSPITAL, MANCHESTER.

APPOINTMENT OF GYNÆCOLOGICAL SURGEON.

A new office of Honorary Gynæcological Surgeon is being created at the above Institution, and applications are invited for such post. Applications, in duplicate, marked "Honorary Gynæcological Surgeon," stating age, qualifications, and experience, together with copies of at least three testimonials, to be addressed to the Chairman not later than May 6th.

Farringdon General Dispensary, Holborn Circus, E.C.4.
Applications are invited for the post of PHYSICIAN in charge of the Department for the Treatment of Diseases of Children. Applicants must be duly qualified practitioners, prepared to attend the Department on Saturday mornings at a time to be arranged.
Applications, with copies of two recent testimonials, must reach the Farringdon General Dispensary, 17, Bartlett's Buildings, Holborn Circus, E.C.4, not later than April 30th.
B. A. COCKLE, Hon. Secretary.

Royal Liverpool Babies' HOSPITAL, WOOLTON.
Required for the above Hospital, RESIDENT MEDICAL OFFICER. The appointment to be for a period of six months. Salary at the rate of £90 per annum. Applications, with copies of testimonials, to be sent to the Chairman of the Hospital, c/o The Child Welfare Association, 9, Copperas Hill, Liverpool, at or before 12 noon on Tuesday, April 30th.

Hospital of St. John and ST. ELIZABETH, 60, Grove End Road, N.W.8.
Applications are invited for the post of RESIDENT HOUSE PHYSICIAN (male). The appointment will be for six months from June 1st. Salary at the rate of £100 per annum, with full board. Applications, together with three testimonials, should reach the undersigned not later than May 1st.
F. DUDLEY HOBBS, B.A., Secretary.

The Royal Gwent Hospital, NEWPORT, MON.
There is a vacancy for a JUNIOR RESIDENT MEDICAL OFFICER. Salary at the rate of £[illegible] per annum, with board, lodging, and laundry.
Applications, stating age and qualifications, with copies of three testimonials, to be sent to the undersigned immediately.
Applications from ladies not entertained.
J. K. MILLWARD,
April 9th, 1929. Secretary-Supt.

Cardiff Royal Infirmary.
OPHTHALMIC HOUSE SURGEON wanted immediately. The post is open to ladies. Candidates should have a knowledge of refraction.
Salary at the rate of £75 per annum, with board, etc. The appointment is for six months.
Applications, with copies of recent testimonials, should be sent immediately to the undersigned.
R. ARMSTRONG,
April 15th, 1929. Medical Supt.

Central London Throat, Nose, AND EAR HOSPITAL, Gray's Inn Road, W.C.1.

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There will be a vacancy for a Second Resident House Surgeon to enter on duty June 1st. Remuneration at the rate of £[illegible] per annum. Applications, with copies of [illegible] more than three testimonials, should be sent to the undersigned on or before May 4th.
JOHN H. YOUNG, Secretary-Supt.

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The Royal Infirmary,
SUNDERLAND.

APPOINTMENT OF HON. PHYSICIAN.

The Board of Management invite applications for the appointment of an Honorary Physician. Candidates for the office shall be a Doctor in Medicine of some British or Irish University, or a Fellow or Member of a Royal College of Physicians, and be registered according to the Medical Act.

The Hospital has 283 beds (including 22 Pay Beds), Pathological, X ray, Massage and Electro-therapeutic Departments, etc. There is no one resident in the district who practises as a Consulting Physician, and candidates are asked to state whether if appointed, they would be prepared to practise as a Consulting Physician and not as a General Practitioner.

Copy of rules may be obtained from the undersigned, by whom all applications, stating age, and giving full particulars of qualifications and experience, must be received by not later than May 2nd.

Canvassing will be considered a disqualification, but candidates shall be at liberty to send to each member of the Board of Management copies of their applications and testimonials.

S. C. FRYERS,
House Governor and Secretary.

The Cancer Hospital (Free)
(Incorporated under the Royal Charter),
Fulham Road, London, S.W.3.

The Committee are prepared to receive applications for the post of HOUSE SURGEON. Salary, at the rate of £100 per annum.

The appointment is for six months and subject to rules, a copy of which may be obtained from the Secretary.

Previous experience as a House Surgeon is indispensable.

Applications, with three (copies only) testimonials, to be sent to the undersigned not later than the first post on Monday, April 29th.

J. COURTNEY BUCHANAN, Secretary.

Royal National Orthopædic
HOSPITAL.

SURGICAL REGISTRAR.

The Committee invite applications for the appointment of a Surgical Registrar (male)

Honorarium £105 per annum. The appointment will be made in the first instance up to October 31st, and will be renewable for a further twelve months on the recommendation of the Medical Board.

Applications, with copies of three recent testimonials, should reach the Secretary, 234, Great Portland Street, London, W.1, not later than May 10th.

Birmingham & Midland Eye
HOSPITAL, Church St., BIRMINGHAM.

Applications are invited for the post of SURGICAL REGISTRAR to this Hospital.

Candidates must have had not less than two years' experience in Ophthalmic work, and should have held a resident post in an Ophthalmic Hospital for at least one year

Appointment will be for one year with eligibility for re-appointment.

Applications, together with copies of testimonials, must be received not later than first post on Friday, May 10th.

Particulars of salary, duties, etc., can be had from the undersigned, to whom applications should be addressed.

C. A. MASON, General Superintendent.

Miller General Hospital,
Greenwich Road, S.E.10.

OUT-PATIENT OFFICER (male and unmarried) required to see Medical and Surgical cases. Attendance daily (except Sunday) from 9 to 1; Tuesdays and Fridays 9 to 5. Salary £150 per annum, and lunch. The appointment is for six months from May 1st next. Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent as soon as possible to the Secretary.

April 8th, 1929.

The Royal Hospital,
WOLVERHAMPTON. (240 Beds.)
(Incorporated under Charter.)

CASUALTY OFFICER and RESIDENT ANÆSTHETIST (male) required. Duties to commence forthwith, and will include Casualty work and administration of anæsthetics.

The Hospital contains 240 beds, and includes the usual special departments, and is recognized by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical Practice.

Candidates must be registered under the Medical Acts, and unmarried.

The appointment is for six months, with eligibility for further appointment for six months as House Surgeon to In-patients.

Salary at the rate of £125 per annum. Board, furnished rooms, and laundry provided.

Applications, with copies of testimonials, to be forwarded to the undersigned

W. H. HARPER,
April 8th, 1929. House Gov. & Secretary.

The Royal Hospital,
WOLVERHAMPTON.
(Incorporated under Charter.)

A RESIDENT MEDICAL OFFICER wanted.

The Hospital contains 240 beds, the usual special departments, and is recognized by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical Practice.

Candidates must be registered under the Medical Acts.

The appointment is for six months, with a salary at the rate of £150 per annum. Board, furnished rooms, and laundry provided.

Duties to commence forthwith.

Applications, with copies of testimonials, to the undersigned.

W. H. HARPER,
Wolverhampton. House Governor &
April 15th, 1929. Secretary.

Queen's Hospital for Children,
Hackney Road, London, E.2.

HOUSE PHYSICIAN required on May 7th. Six months' appointment. Salary £100 a year, with board, residence, and washing. Preference given to candidates who have previously held resident appointments.

Applications must be made on forms to be obtained from the Secretary, and must be sent in, with not more than four testimonials, on or before April 29th.

T. CLENTON KERR,
April 2nd, 1929. Secretary.

Queen's Hospital for Children,
Hackney Road, London, E.2.

CASUALTY OFFICER required on May 20th. Six months' appointment. Salary £100 a year, with board, residence, and washing. Preference given to candidates who have previously held resident appointments. Applications must be made on forms to be obtained from the Secretary, and must be sent in, with copies of not more than four testimonials, on or before April 29th.

T. CLENTON KERR,
April 2nd, 1929. Secretary.

Birkenhead General Hospital.
(156 Beds.)

Applications are invited for the post of CASUALTY SURGEON (male) at once, salary £100, with board and residence, to take up duties immediately.

Applications, stating qualifications, experience, and nationality, with three copies of recent testimonials, to be sent to the Secretary-Superintendent as early as possible.

Darlington General Hospital.
(120 Beds.)

Wanted, SENIOR HOUSE SURGEON, male, unmarried, fully qualified and registered, British. Salary £150 per annum, board, residence, etc. Applications, stating experience, qualifications, with copies of two recent testimonials, to be sent to me forthwith.

G. H. SHARPE, Hon. Secretary.

Royal Sussex County Hospital,
BRIGHTON.

Notice is hereby given that a Meeting of the Elective Committee will be held in the Board Room at the Hospital on Wednesday, June 5th, at 12.15 p.m. for the purpose of electing—

THREE HONORARY MEDICAL CLINICAL ASSISTANTS and an HONORARY CLINICAL ASSISTANT TO THE DENTAL DEPARTMENT, and such Elective Committee is hereby convened accordingly.

Applications are invited for the first-named offices from gentlemen who are Fellows or Members of the Royal College of Physicians of London, Edinburgh, or Dublin, or Graduates in Medicine of one of the Universities of the British Empire, and who are duly registered under the Medical Acts. (Particulars of the revised duties attached to these appointments can be obtained from the undersigned.)

Candidates for the last-named office must hold a registrable Degree or Diploma in Dentistry, and be duly registered under the Medical or Dentists Acts.

Applications, with proof of the above-named qualifications, must reach the Secretary-Supt. at the Hospital before 12 noon on May 21st.

By Order of the Board of Management,
L. L. W. LANCASTER-GAVE,
Secretary-Supt.

Evelina Hospital for Children,
Southwark, S.E.1.

The Committee of Management requires a HOUSE SURGEON (male) for seven months, from May 12th (during first three months duty in Casualty and Out-patient Department). Salary £120 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, to the undersigned at the Hospital, before April 25th. Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates must attend Committee of Management. Date of meeting will be notified by the undersigned, from whom rules and other particulars relating to the post must be obtained.

By Order of the Committee of Management,
H. C. S. SMITH,
April 9th, 1929. Secretary-Supt.

Evelina Hospital, Southwark,
S.E.

The Committee of Management invite applications for the post of PHYSICIAN to Out-patients (Honorary) (attendance Monday and Thursday afternoons at 2 p.m.). Candidates must be Graduates in Medicine in a recognized University and M.R.C.P.Lond., or shall obtain that Diploma. He must not be engaged in General Practice. Applications, with copies of four testimonials, to be addressed to Secretary, at the Hospital, before 29th inst. Candidates must call on the Members of the Honorary Medical Staff, whose names, also the Standing Orders relating to the post, will be furnished by the undersigned.

By Order of Committee of Management,
H. C. S. SMITH,
April 10th, 1929. Secretary-Supt.

Royal United Hospital, Bath.

Wanted at once, HOUSE PHYSICIAN and ASSISTANT HOUSE SURGEON. Salaries £120 and £100 per annum respectively.

The appointments will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three testimonials, must be sent addressed to the Secretary.

J. M. SHEPPARD, F.C.I.S., Secretary.

The General Hospital,
BIRMINGHAM.

Applications are invited for the following resident appointment from May 15th:

HOUSE PHYSICIAN. Salary £70 p.a.

Applications, giving full details of qualifications, and accompanied by testimonials (if desired), should reach the undersigned by April 30th.

A. H. LEANEY, House Governor.

The Queen's Hospital for CHILDREN,

Hackney Road, London, E.2.
Telephones: Bishopsgate 6305 & 2554.

The Committee invite applications for the post of SURGEON for the Ear, Nose, and Throat Department.

Attendance required on Monday and Thursday morning for about three hours, commencing at 9.30. Lunch provided and honorarium to cover travelling expenses.

Candidates must be Fellows by examination of the Royal College of Surgeons, England.

Applications, with copies of three recent testimonials, which may be printed or typewritten, should be sent on or before May 6th to the undersigned, from whom further particulars may be obtained.

T. GLENTON-KERR,
March 25th, 1929. Secretary.

Winsley Sanatorium,

Near BATH.

The Governors invite applications for the appointment of a whole-time ASSISTANT RESIDENT MEDICAL OFFICER (male). Salary £250, with apartments, board, laundry, etc.

The appointment will be made for a period of twelve months (subject, however, to termination during such period by one calendar month's notice on either side).

Forms of application and particulars of duties can be obtained from the undersigned, to whom all applications should be addressed, accompanied by not more than three recent testimonials, not later than April 27th.

T. A. W. CARLISLE,
Winsley Sanatorium, Secretary.
Near Bath. April 5th, 1929.

Woolwich and District War MEMORIAL HOSPITAL,

Shooters Hill, London, S.E.18.
(General Hospital. 112 Beds.)

The Appointments Committee invite applications for appointment as HOUSE SURGEON. An honorarium of £125 per annum will be paid in respect of such appointment, which will be for a period of six months as from May 13th, 1929.

Applications, accompanied by copies of not more than three recent testimonials, are invited from suitably qualified candidates, and should be addressed to the Secretary-Superintendent, Woolwich and District War Hospital, Shooters Hill, London, S.E.18, to reach him not later than Wednesday morning, May 1st.

Walsall General Hospital.

The Committee invite applications (from men) for the post of JUNIOR HOUSE SURGEON. Salary £100 per annum.

Candidates, who must be registered under the Medical Acts, must have had experience in the administration of Anæsthetics, and produce three recent testimonials. The appointment will be for six months.

The Hospital contains 100 beds, and is equipped in all Special Departments.

Applications must be received by the undersigned not later than first post Monday, April 29th.

WALTER TRANCOMBE,
April 10th, 1929. Secretary.

Stroud General Hospital,

STROUD, GLOS.

HOUSE SURGEON, male, required to commence duty on May 20th. Salary £120 per annum, with board, lodging, and washing. The appointment is tenable for six months, but application may be made for an extension of this period. Candidates must be registered according to the provisions of the Medical Act. Preference will be given to applicants with a special knowledge of eye work.

Applications, stating age, nationality, etc., together with copies of three recent testimonials, to reach the undersigned not later than May 4th.

C. FORD SPENCER, Secretary.

The London Female Lock HOSPITAL,

263, Harrow Road, W.9. (Founded 1746.)

HON. OBSTETRIC SURGEON.

The Board of Management invite applications for the above appointment. Candidates, who may be of either sex, must be Fellows of the Royal College of Surgeons of England.

Applications, enclosing copies of not more than three testimonials, should be lodged with the undersigned on or before Monday, May 6th. The appointment will be made at a Special Court of the Governors in May.

By Order of the Board,
H. J. EASON,
April 9th, 1929. Secretary.

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19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

City of Birmingham Mental HOSPITAL.

The Committee of Visitors invite applications from duly qualified and registered single medical men under 35 years of age for the post of full-time JUNIOR ASSISTANT MEDICAL OFFICER at the City Mental Hospital. Preference will be given to candidates who have held a resident appointment in a general hospital.

The commencing salary will be £350 per annum, together with emoluments (board, residence, and laundry). Subject to twelve months' satisfactory service an increase of £50 will be granted at the end of that period. The appointment will be terminable by three months' notice on either side, and the selected candidate will be required to join the Asylums Officers' Superannuation Scheme.

Applications, accompanied by copies of three recent testimonials, should be marked "Junior Assistant Medical Officer," and addressed to the Chief Medical Officer, City Mental Hospital, Rubery Hill, Birmingham, so as to be received by him not later than April 30th.

F. H. C. WILTSHIRE,
Council House, Birmingham. Clerk to the Committee of Visitors.

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Eastern Suburb.—About £1,10 p.a. Panel about £250. Visits 4/ House, 5 bed., etc.—No. 8458.

South Coast. — Half Share o about £900 p.a. Panel 900. Visits 3/ up. Premium £750 or offer.—No. 8456.

Co. Durham. — Half Share o about £2,800 p.a. Panel 2,600. Appt £300 p.a. Mids from 30/-. Visits 2/6 to 7/ House, 5 bed., etc.—No. 8453.

N. Wales Coast.—About £1,75 p.a. Panel and appts. about £400 p. Mids. 2 to 5 gns Visits 3/6 to 31/6. Hous 4 bed., etc. Separate surgery.—No. 8451.

London Suburb. — About £70 p.a. General mixed PRACTICE. Goo house available.—No. 8450.

Sussex.—Death Vacancy.—Abou £1,800 p.a. Country. Fees 2/6 to 10/ Panel about £280. House, 7 bed., etc garage, good garden. Intro. given.—No 844

N. Wales.—Death Vacancy.— About £1,000 p.a. Surgical scope. Mid 5 to 10 gns. Visits 7/6 to 10/6. Small panc House, 4 bed., etc., to rent. Good garde Part premium down.—No. 8448.

Kent. — Average £1,500 p.a Mids. 2 gns. up. Visits 3/6 to 7/ Panel over 1,300. Large house and garden rent.—No. 8446.

Warwickshire. — £1,000 shar guaranteed. Mids. 2 to 10 gns. Par 2,500. Visits 3/6 up. House, 5 bed., etc large garden, to rent.—No. 8445.

Beds.—Death Vacancy.—Abou £850 p.a. Panel and appts. £300 p. Visits 5/- up. Mids. 3 gns. up. House, 9 bed etc.—No. 8444.

Home Counties.—Aver. £2,80 p.a. Up to 2/5 share for sale, short Assi ancy, possible early succession. Appts. £9 p.a. Small panel. Visits 3/6 up. Mids. 2 gn up. House, 5 bed., etc., to rent.—No. 8441.

Lincolnshire Coast. — Averag £2,300 p.a. Old-estab. middle and wor ing-class. Panel about £350 p.a. Appts. ov £100 p.a. Mids. 1½ to 3 gns. Visits 4/- 10/6. Choice of houses to rent.—No. 8439.

Eastern Counties.—Share abou £700 p.a. Visits 5/- up. Panel a appts. over £900 p.a. Mids. 2 gns. up.—No. 843

Lancs. Coast.—About £3,000 p. 1/3 to 2/5 share. Appts. over £500 p. Visits 5/- and 7/6. Panel 450. Scope surgery. House to rent.—No. 8429.

Southern County.—Over £16,0 p.a. One-tenth share for sale, increas to 1/5. Mids. 3 gns. up. Visits 5/- to 5 g Panel about 7,000. Must be F.R.C.S.Eng., a hold University degree.—No. 8421.

Kent.—Country Practice.—Abo £1,050 p.a. Old-estab. Visits 5/- Panel nearly 400. Appts. £55 p.a. Good ho with 6 bed., etc.—No. 8420.

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LONDON, E.—PARTNERSHIP in Industrial Practice. Receipts average over £3,500 p.a. Panel over 1,000. Premium for 1/3rd share, with view to larger share, 1½ years' purchase, cash; 2 years' purchase if part of purchase price remains.

LANCS.—Old-established middle-class PRACTICE in manufacturing town. Receipts over £4,250. Panel 2,600. House (corner) for sale at £1,100. Premium for Practice 1½ years' purchase, payable part down and balance as arranged.

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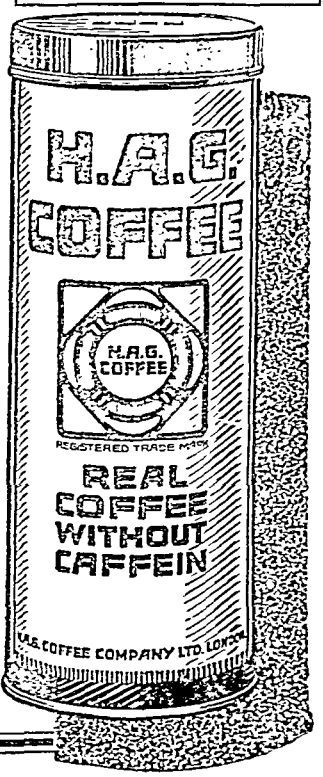

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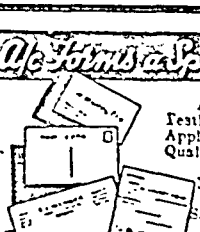

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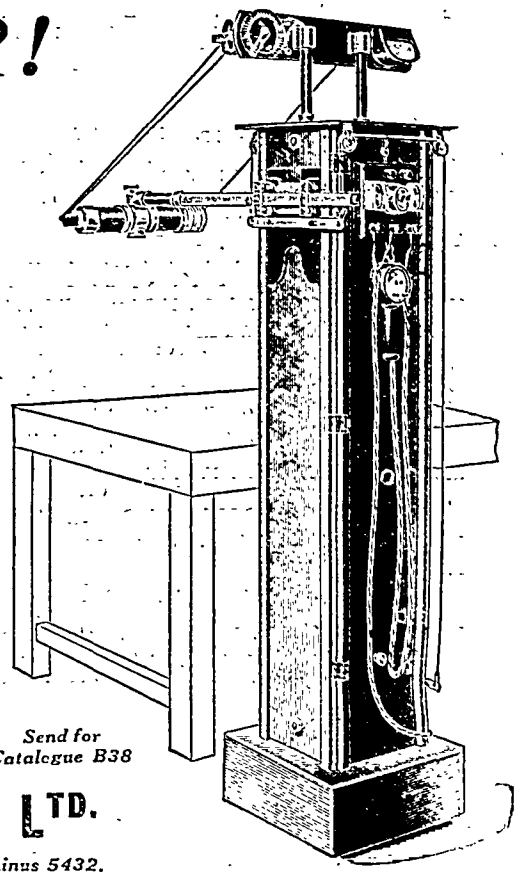

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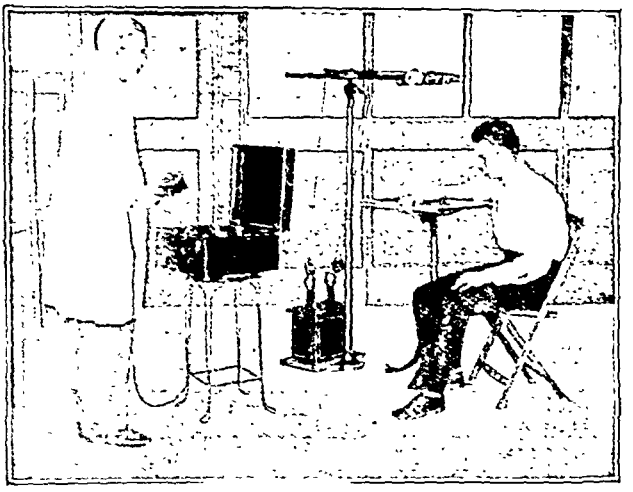

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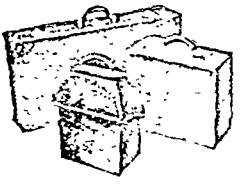

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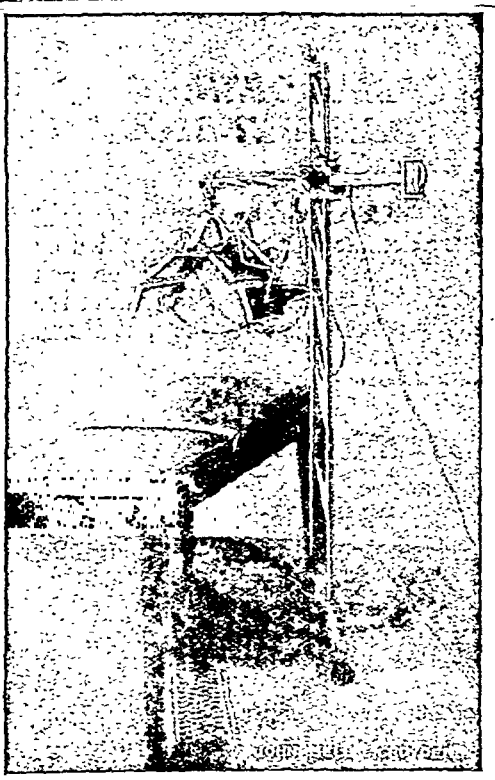

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97th Annual Meeting

British Medical Association

MANCHESTER

JULY 22nd to JULY 26th, 1929, inclusive.

THE

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OF

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will be held in the

City Exhibition Hall, Deansgate, Manchester

EXHIBITION HOURS

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Tues., „	23rd.	9 a.m. to 6 p.m.
Wed., „	24th.	9 a.m. to 6 p.m.
Thurs., „	25th.	9 a.m. to 6 p.m.
Fri., „	26th.	9 a.m. to 6 p.m.

FORMAL OPENING BY PRESIDENT-ELECT

The Exhibition will be formally opened by the President-Elect, accompanied by other Officers of the Association and the Members of the Representative Body, on Tuesday, July 23rd, at 9 a.m.

Reception Room and Information Bureau.

The Reception Room and Information Bureau will also be situated in the CITY EXHIBITION HALL, where all Members will register their attendance at the Meeting, obtain all tickets for functions, and receive information in connection with the Meeting.

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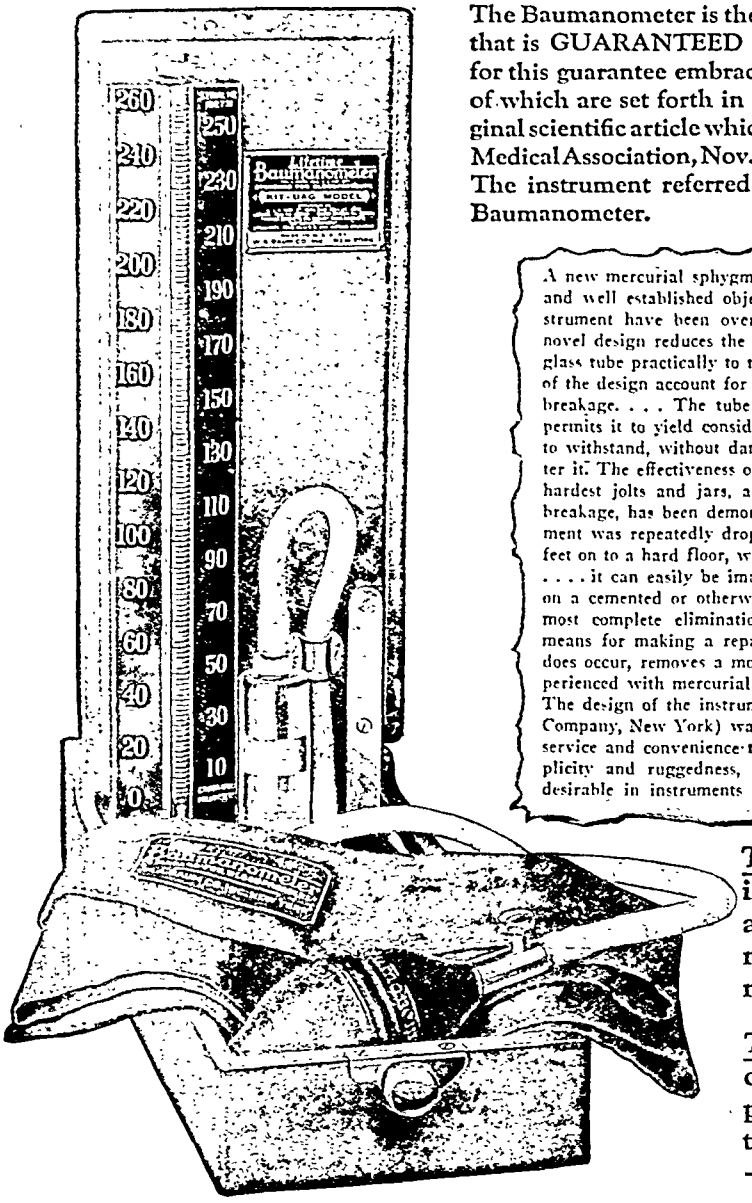
—*its TRUE significance*



The Baumanometer is the only instrument in all of the world that is GUARANTEED against glass breakage. The *reason* for this guarantee embraces certain facts, the more important of which are set forth in the following excerpts from an original scientific article which appeared in the Journal American Medical Association, Nov. 20, 1926, Vol. 87, pp. 1742 and 1743. The instrument referred to, of course, is the new Lifetime Baumanometer.

> A new mercurial sphygmomanometer in which several important and well established objections to this type of bloodpressure instrument have been overcome has been developed recently. Its novel design reduces the possibility of accidental breakage of the glass tube practically to the vanishing point . . . Several features of the design account for the almost complete elimination of glass breakage. . . . The tube is held in a resilient mounting which permits it to yield considerably to side and end thrusts and thus to withstand, without damage, shocks that would otherwise shatter it. The effectiveness of this unique mounting in absorbing the hardest jolts and jars, and thus protecting the glass tube from breakage, has been demonstrated. A completely assembled instrument was repeatedly dropped in all positions from a height of 4 feet on to a hard floor, without injury to the tube in any instance. . . . . it can easily be imagined what would have been the effect on a cemented or otherwise rigidly mounted tube. . . . . The almost complete elimination of glass breakage, and the simple means for making a repair in the rare case in which breakage does occur, removes a most exasperating difficulty heretofore experienced with mercurial sphygmomanometers. . . .
> The design of the instrument shown (made by the W. A. Baum Company, New York) was developed along the lines of maximum service and convenience to the user, without the sacrifice of simplicity and ruggedness, which experience has shown to be so desirable in instruments of this character.

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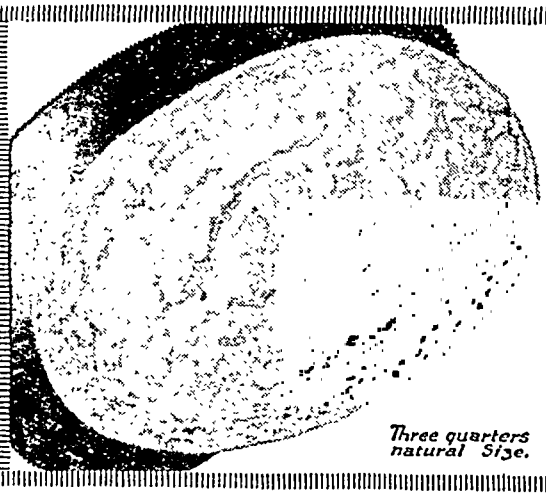

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M 230

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Pyridine, 0.05 per cent. maximum.
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PATENT 118667 (LYSOL TABLETS)

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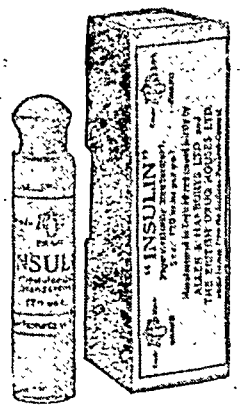

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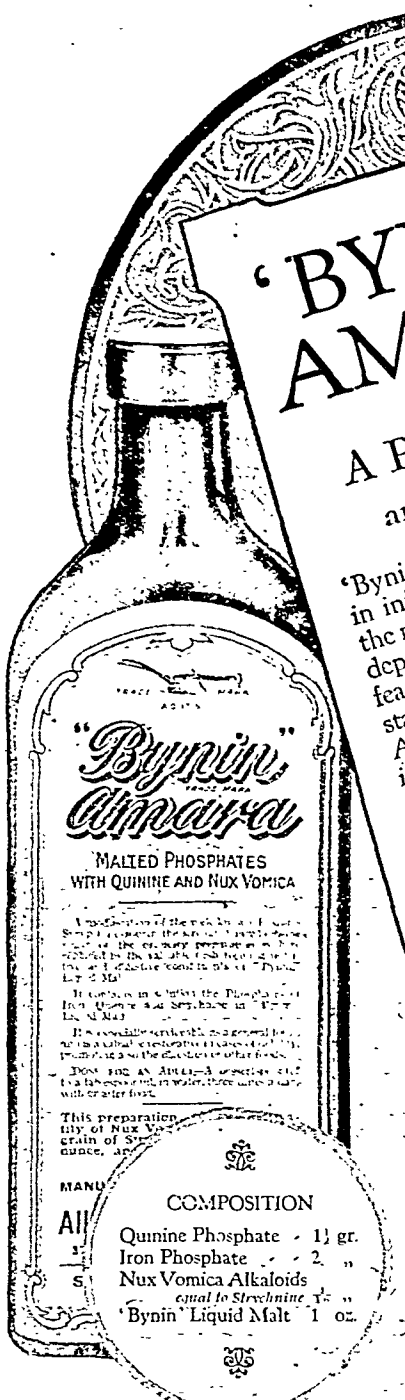

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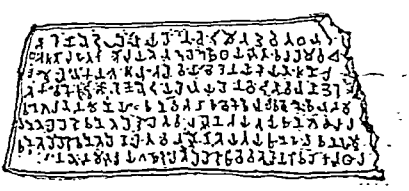

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A British Medical Association Lecture

ON

SEDATIVES IN LABOUR, PARTICULARLY "TWILIGHT SLEEP."

DELIVERED BEFORE THE LEICESTER AND RUTLAND DIVISION

BY

JOHN S. FAIRBAIRN, M.A., B.M.OXON., F.R.C.P., F.R.C.S.,

CONSULTING OBSTETRIC PHYSICIAN, ST. THOMAS'S HOSPITAL, LONDON.

SOME preliminary observations are necessary to emphasize the important part played by sedatives in modern obstetric practice by removing influences inhibiting uterine action.

The chief characteristic of present-day midwifery as compared with that of a generation ago is its permeation with the ideals of preventive medicine, with the preservation of normal function in all systems of the body, as its primary aim. In midwifery our aim must likewise be to secure the normal throughout the processes of reproduction, in pregnancy, labour, lying-in, and lactation, and all interference with or substitution for normal function must be regarded as a failure to attain that end. In accordance with this principle success in obstetric practice will be measured by the proportion of natural pregnancies and labours obtained without disability in mother or child.

Suppose that by careful ante-natal supervision the various discoverable causes of disordered function in labour have, so far as possible, been eliminated—the misfits, malpresentations, malpositions, and such-like—and the physically well-developed and healthy woman, in whom no abnormality, general or obstetric, is found, is alone under consideration, can we be certain that she will have a normal labour and deliver herself without artificial aid? We cannot, and why? Because there may be some failure of the natural powers—particularly of the final expulsive powers—usually the failure to overcome the last obstacle to the birth, the resistance of the muscular pillars at the outlet. Hence the frequency of the low forceps operation, particularly in young and healthy primiparae, in whom fatigue is readily produced by the longer labour. The failure here is generally ascribed to the resistance of the soft parts—a factor undoubtedly—but, with the uterus working strongly and good expulsive efforts, the soft parts would give; in other words, relative weakness of the expulsive powers occurs. No hard-working, self-respecting uterus will be checked for long by soft parts. The failure of function is the non-development of the strong final contractions that are normally excited by the distension of the vagina and outlet.

The possible causes of even these minor failures to complete natural parturition and how they may be removed or circumvented must be thought out by all who approach midwifery in the proper attitude of mind. Those who continue without further thought to fall back on a substitute for the natural powers are living in the mechanical era (of which more anon) and are not imbued with modern ideas. Commonly the reasons are fatigue and weariness of the patient together with the inhibiting effects on uterine action of mental states, such as fear and anxiety, and the elimination of these inhibiting influences by sedatives is an important part of the management of labour.

FREQUENCY OF ARTIFICIAL AID.

Why has assistance in labour become so common that it has been stated that parturition is "pathologic" rather than "physiologic" in the women of to-day? Artificial delivery is more frequent among the more educated and leisured classes. The woman inured to hardship delivers herself easily and is up and about in a short time, for she can submit to conditions impossible to her more imaginative and sensitive sisters. Why are the women, especially of the more leisured classes, to-day less capable of reproducing their species than their great-grandmothers, in whose days forceps delivery occurred in but a fraction of the cases in which it is now practised?

The attitude of the medical profession has undoubtedly played an important part, for medicine as a whole, and obstetrics with it, has passed through a phase in which substitutes for nature have been developed and perfected—for example, the strong biceps of the accoucheur instead of the uterine muscle, artificial feeding instead of breast-feeding, and the excessive resort to Caesarean section. Also the relief of pain is expected from childhood onwards, for the extraction of a tooth or other minor surgical procedure, and women to-day feel the right to expect from their doctors the relief in labour that chloroform and the forceps can give. Many practitioners, indeed, advocate what they term the "humanitarian" indication for forceps delivery, and it is on that ground that the one who acknowledged to a forceps rate of 100 per cent., "if I am there in time," could be justified. Certainly the rate is five or six times greater in family than in hospital practice. There has thus come about a change in the mental attitude of the women themselves; they are not prepared to do without the artificial relief that the doctor can give, and have not confidence enough in their unaided efforts, and, in the conditions in which family practice is conducted, the pressure on the doctor to give his aid is often too strong to be resisted.

MAINTENANCE OF NATURAL FUNCTION.

Although the securing of natural function in parturition is a more difficult problem than it was, our object must be to find an answer to the question, How can we circumvent the social and psychical changes that have come with advances in medicine and with the changed attitude of mind in which the reproductive function is approached by the women of to-day?

The problem may be stated in terms of the physiology of labour. There are certain factors that augment uterine action—for example, the reflex effects of the dilatation of the cervix, the distension of the vagina, and the stretching of the perineum by the foetal head; and certain inhibitory factors—distension of bladder and bowel, fatigue and emotional states, together with the loss of the augmenting effects by the diminished reflex response that comes with anaesthesia and other means of lessening sensitiveness to pain. The question thus resolves itself into considering how far the good results of anaesthesia, analgesia, and sedatives generally can be obtained with the least loss of augmentor reflex response. Further, it must be our object to lessen pain and distress and avoid the more protracted recovery that may follow any severe nervous strain.

Recognizing that the factors mentioned are largely psychical, something can be done by educating the pregnant woman, and encouraging her to regard herself as better able to perform a natural function than her granddam, and as well able as the hardier woman of the working classes; also by explaining what she has to do herself and when she can get relief. Every one of us must acknowledge the value of the first-class midwife in keeping up her patient's confidence and encouraging her to make the most of her own powers. Something can be done in ante-natal and intra-natal management in this direction.

SEDATIVES.

To come to our subject, the use of sedatives. You all use them to some extent, and it does not matter in what form, but my own preference is for morphine, occasionally combined with a sleeping draught, such as a bromide and chloral mixture. A sedative may be indicated early in labour when the onset of the true rhythmic pains is delayed, and the woman is worried and fatigued by short, sharp pains that appear to do no good, or by a period, perhaps a day or more, of "niggling" pains, before the long, steady, and useful contractions are established. Also when the patient is tiring any time before the os is fully dilated and the head low in the pelvis. If she is left alone she may lose self-control, weep and throw herself about, and later become played out, and her uterus will not function properly. A hypodermic injection of morphine should be given when she is tiring, and before she is tired; the rest and comparative relief will enable her to regain her self-control, and uterine action will return with fresh strength after a period of rest. The relief to the patient also brings relief from the insistent pressure of distracted relatives that is so trying in domiciliary midwifery.

Punch, always a keen critic of the frailties of the day, hit it off in that delightful picture of the doctor assuring the prospective and overwrought father that in all his midwifery experience he had not yet lost a father.

Another indication for the use of a sedative is what is called rigidity of the os. Commonly it is spasmodic, organic rigidity being very rare, and is most often met with in nervous, highly strung, but perfectly healthy primiparae. This rigidity is not to be considered as a specific condition of the cervix, for it is merely the expression of poor or erratic uterine action; with good contractions there will be good dilatation, with poor contractions poor dilatation. Rigidity frequently accompanies the cases already described in which the pains are short and sharp and without rhythm, sometimes termed "colicky" action. The rigid os is to be regarded as a sign of disordered uterine action, and of the kind that yields to an opiate or other sedative.

Whenever there are signs of commencing fatigue, loss of control, and irregular uterine action, a liberal dose of some sedative should be given and repeated if need be. Practically all our emergency cases of delayed labour sent into hospital for immediate delivery—in many of which premature efforts at instrumental delivery have been made—are given morphine (1/4 or 1/3 grain), and it is surprising how many of those without gross mechanical difficulties will deliver themselves after four or five hours' sleep—and sometimes catch us out by performing an unlooked-for "B.B.A." My experience of this type of case in hospital and of cases seen outside that take on a fresh aspect after a few hours' sleep has made me feel that enough use is not made of a sedative sufficient to secure for the patient a rest before resort is made to artificial delivery. If the head is near the outlet it is too late to secure rest, and simpler to try first an injection of pituitrin as a stimulant to uterine action, and if not successful in a quarter of an hour to deliver by the forceps. Also, morphine at this stage is liable to result in the foetus being born narcotized.

Twilight Sleep.

The morphine-hyoscine narcosis, or "twilight sleep" (Gauss), must be regarded neither as an anaesthetic nor an analgesic, for its aim is the production of amnesia of the events throughout labour. Its success is complete if the mother awakes from sleep or drowsiness following her delivery without any recollection of what she has been through, and if neither she nor her infant shows any ill effect from the narcosis. Dulling of pain to some degree is usually obtained, but the real objective is to abolish the memory of the recurrent pains, and thereby their psychical effects. The patient may groan during uterine contractions, wake up and perhaps raise her head and shoulders from the bed, exhibit the facial expressions of pain, and even complain bitterly and emphatically, but will sink back into a recumbent position and drowsy state when the contraction passes off, and no mental impression that can be recalled will remain. The successful induction of amnesic narcosis removes almost entirely the inhibitions of uterine action of emotional and psychical origin, greatly lessens fatigue, and increases the chances of rapid recovery without the nervous exhaustion that may follow a painful and trying experience in a sensitive subject.

It may be said that labour in such circumstances is not physiological, and it is true to the extent that drugging of a patient in this way diminishes the reflex response to those stimuli augmenting the strength of the contractions; but, on the other hand, it represents the attempt to remove those factors interfering with good expulsive power that the circumstances of our modern social life have brought about. Its use will be justified if the cases in which the narcosis is adopted are limited to those in which the avoidance of fatigue and the exclusion of inhibitory factors will give greater benefit than the disadvantages of lessening reflex response.

Method.

It is best to begin as soon as rhythmical labour pains are definitely established and cause distress. Some would have a degree of dilatation of the os to a size admitting one or two fingers, but examinations for the purpose of determining the amount of dilatation are not advisable. As will be explained later, it is, however, nearly always possible to begin induction after labour has been in progress some time by starting with light chloroform anaesthesia.

It is very important that the usual preliminaries preparatory to labour, particularly a thorough emptying of the bowels, should be got over before induction of the narcosis is begun, in order to lessen disturbance of the patient. Isolation and quietude for the patient are essential, to exclude so far as possible all external stimuli. She should be shaded from the light, her ears plugged with wool, and disturbed as little as close watching of her condition and the necessary attentions will allow.

The dosage is best described by taking a standard one and suggesting modification in one or other direction in certain conditions. The usual initial dose is 1/4 grain of morphine with 1/150 grain of hyoscine, followed at hourly intervals by 1/450 grain of hyoscine. The morphine is rarely increased beyond 1/4 grain, and is repeated only in special circumstances and in smaller quantity, but the hyoscine may be increased to 1/100 grain for the initial dose, or more often to 1/300 grain for the second dose if the response to the usual initial dose is insufficient. The general rules for determining the best dosage in the individual case may be stated thus. The standard dose should be increased in first labours and for big women of strong physique, and for imaginative, oversensitive, and nervous patients. Morphine 1/6 grain and hyoscine 1/450 grain will suffice for multiparae, for women of a small or frail build, and for those of an easy-going unimaginative type. If begun early in labour, and the patient is a big, strong primigravida intolerant of pain, the first dose should be morphine 1/4 grain and hyoscine 1/100 grain, the frequency of the injections and dosage of hyoscine afterwards being determined by the effect obtained. Idiosyncrasy to hyoscine must be watched for, and the subsequent injections lessened if need be.

The standard time for the subsequent injections of hyoscine is, roughly, at hourly intervals, but in practice the frequency is determined by the effect produced, the memory test being adopted as an index of the amnesic state. The time of the second injection may be anticipated if the response to the first is feeble, but, generally speaking, it is better to keep to the 1/450 grain at shortened intervals rather than increase the amount to 1/300 grain, unless very little effect has been obtained from the first dose.

The memory test is carried out by taking some fairly common object that will not greatly tax the patient's muddled intelligence to recognize, showing it to her, and asking what it is. An hour or so later she may be roused, and asked what she was shown. If she has no recollection of it, the object is produced and the question repeated. If the object presented to her brings back no glimmer of its previous presentation, amnesia is complete. The test is not reliable; often women are able, by an effort at the time, to remember objects previously shown, but are found to have lost all memory of the events in the labour after it is over. Also repeated rousing for this purpose is an interruption to the narcotic state. The test should not be begun till after the second or third injection, and, so far as possible, should be carried out when the patient is disturbed for some other reason—for example, for a drink, a hypodermic injection, to pass water, or have a catheter passed. Also, if any attention of this kind of a sufficiently distinctive character is repeated, the opportunity can be taken to see if the memory of the previous occasion remains.

With further experience the need for repeating the hyoscine injections can be largely determined by noticing whether the patient is fully under the influence of the drug and by watching for signs of overdosage. When fully narcotized she should be drowsy, dosing between pains, but wakened up by them, and relapsing at once into drowsiness again. Should she show no evidence of disturbance during the pains no further injections should be given until some effect becomes noticeable. Usually, after the second or third injection, an interval of two or more hours may be allowed before the next one, provided quietness and drowsiness continue.

Flushing of the face and dilatation of the pupils are usually present early and are not necessarily indications of overdosage. The pulse and respiration rate should be

carefully observed, as any marked alteration either in the direction of slowing or quickening is an indication for ceasing administration for a time. With overdosage the pulse rate is *increased and the respiration rate slowed*, and therefore a watch should be kept on any disturbance of the ratio between the two. Usually there is at first some slowing of the pulse rate, probably from the previous excitement and subsequent quietude. When once the pulse rate has settled down, however, it should not alter greatly.

Unfortunately patients are very variable in their response to hyoscine; most of them conform to the type described - sleepy or drowsy between pains but roused by them. Some, however, may remain awake and yet be found afterwards to have complete amnesia, and others may become restless and troublesome. There is always considerable mental confusion, but unless it is associated with excitement and difficulty in controlling the patient, it is not an indication for interfering with the injections. Some degree of restlessness is usual in the early stage, before the complete effect of the drugs is obtained, but *in occasional instances it may become very troublesome.* It is an indication of overdosage with hyoscine, and may require further administration to be discontinued. A watch must be kept on the bladder, and if the patient is unable to empty it voluntarily the catheter must be passed. Thirst is always well marked and leads to frequent drinks being given. Food, usually liquid, must be given in all lengthy cases.

It will be clear from this general account of its administration that the amnesic narcosis calls for the continuous observation of the patient by a skilled nurse and constant attention by the practitioner in charge. The patient may appear quiet and yet wake up suddenly and, in her mental confusion, get up and wander about and do strange things—for example, hide herself or try to escape. No bowls of poisonous lotion should be left within easy reach, for thirst may drive her to sample the first fluid that comes to hand. Also to get good results calls for experience in the method.

There are *sundry modifications that make its partial* use easier to those with little experience of it. Its effects are most valuable in the first stage of labour. In the second stage when the stronger expulsive pains and the distension of the outlet are likely to rouse the patient, resulting in her reconstructing the whole labour and making the induction a failure, it is often easier to fall back on a light general anaesthesia, especially once the outlet begins to gape and birth is imminent. If that is done, it may not be "twilight sleep," but amnesia is secured. Also, if the injections have been discontinued or the patient is *out of control, chloroform* anaesthesia may be induced—just sufficient to allow of a full examination being made—and if the os is not fully dilated or the head not deep in the pelvic cavity, another injection of morphine—a small dose, say 1/8 grain—may be given which will take effect before the general anaesthesia is recovered from.

The great objection to the routine adoption of this form of narcosis in labour is, to my mind, its undoubted effect in lessening the expulsive contractions of the uterus and voluntary bearing-down efforts, and thereby increasing the number of low forceps operations. The effect on the child —which appears to be almost entirely due to morphine—is of minor moment, as, though born apnoeic and disinclined to breathe, if left alone respiration will be established in a short time. The injection of pituitrin 1/2 c.cm. (that is, up to 5 units) will reduce the number of forceps deliveries, but leave them still above the average, as we found when the method was tried out in a series of cases not specially selected as suitable. The effects on the third stage are not noticeable. Hence my view is that both a careful selection of cases should be made and strict adherence to Gauss's method left to those with long experience of it.

Selection of Cases.

It is valuable for all patients in whom a long and tedious labour may be anticipated, particularly cases of slight disproportion between the head and pelvis, when a long time for moulding is essential. Many of these cases would be of the kind designated as "trial" labours, and in them it is undoubtedly of great service in lessening fatigue; as soon as the head is well down further administration of hyoscine may be stopped and, if the patient *delivers herself*, a little chloroform given during the birth of the head. If delivery by forceps is required, anaesthesia is necessary. It is also useful in cardiac cases that have been under ante-natal treatment for decompensation, by lessening fatigue and strain during labour.

Apart from cases in which there is a cause or clear reason for avoiding fatigue, this method is adopted occasionally for cases in *which the temperament or excitable* state of the patient, especially if associated with a slow and erratic onset of labour, suggests it. It is often asked for by women who have either had a trying experience in a previous labour or have a great dread of what is before them and are without confidence in their unaided powers of going through it. It is always advisable in a medical school to select cases of this type now and then for instructional purposes, so as to keep nurses and students acquainted with the method.

SUMMARY.

Fatigue is of the mind as well as of the body, and is *hastened and aggravated by continued pain without relief*, by fear, and by loss of self-control, and is a potent factor in the production of inertia and other disorders of uterine *function.*

With experience on the part of doctors and nurses, success in obtaining amnesia will be attained in nearly *three-quarters of the cases, and some relief in the* remainder. A great saving of nervous strain is undoubtedly effected by this form of narcosis, but if carried through to the end it has the *fatal objection of increasing* intervention in labour. For that reason, save in a few special cases, such as I have indicated, I prefer to use morphine, *with or without a sleeping draught, or the single initial injection of morphine and hyoscine as and when it seems* to be required.

It will be clear that much patient study and observation is required before a solution is reached of the problem of how the relief of the pains of labour and the avoidance of fatigue and nervous strain can be secured without interfering with normal function. Much more must be done in exploring the causes of failure to complete a *natural function among physically well-formed women*, and so long as the artificial substitute of the forceps is acquiesced in, so long will obstetric practice fail to become *saturated with the principles of preventive medicine.*

EPIDEMIOLOGICAL OBSERVATIONS ON HOOKWORM INFECTION.

DISCUSSION OF THE QUESTION OF IMMUNITY AND SPECIFIC REACTIONS OF THE HOST IN HELMINTHIC INFECTION.*

BY

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At the invitation of the Government of the Argentine, two years ago, I had, together with Dr. Roberto Dios and Juan Zuccarini, the opportunity of studying the hookworm question in the northern departments of the province of Corrientes, immediately adjacent to Paraguay. The Argentine is in general practically free from endemic hookworm infection, *although the frontier* between it and Paraguay are heavily infested with the worms, especially *Necator americanus.* According to Soper (1925) Necator seems to have *been introduced from* the north by African negroes; Paraguay was infested with the same parasite apparently only fifty to sixty years ago by Brazilian negro soldiers. *Ancylostoma duodenale* has apparently a much longer history in South and Central America, and either was brought over by the Spaniards or, as suggested by Soper (1927), is indigenous to the Indian race. In Paraguay and North Corrientes, however, only 5 to 6 per cent. of the expelled human hookworms belong to this species.

* Being a lecture delivered, under the auspices of the University of London, at the London School of Hygiene and Tropical Medicine on March 12th, 1929.

In the north of Corrientes we found not only that practically 100 per cent. of the rural population was infested with hookworms, but that egg count (by Stoll's method) revealed an unusually high degree of egg output, corresponding to an average of approximately 430 hookworms per person—so far as such estimates can be exact.

I cannot discuss here the details of our results. The most striking fact was that, in contrast to nearly all the other hookworm-infested countries, we found everywhere in North Corrientes an average egg production about two or three times as high in children and young adolescents of both sexes as in persons over the age of 20 (see Table I).

TABLE I.—*Average Output of Hookworm Eggs per gram of Mushy Stool per Person from 396 Inhabitants of North Corrientes.*

Ages (Years).	Males.		Females.		Total.	
	No.	Hookworm Eggs.	No.	Hookworm Eggs.	No.	Hookworm Eggs (Hookworms).
3 to 10	96	4,316	47	5,757	143	4,816 (ca. 330)
11 to 20 ...	127	5,949	48	9,350	175	6,885 (ca. 550)
21 to over 50 ...	47	1,965	31	2,437	78	2,152 (ca. 170)
3 to over 50 ...	270	4,637 (ca. 380)	126	6,313 (ca. 510)	396	5,206 (ca. 430)

The figures in brackets are rough estimates of the number of hookworms present.

Among the latter group we found no cases with more than approximately 800 hookworms, although they may occur occasionally (see Fig. 1). But, even if we omit the

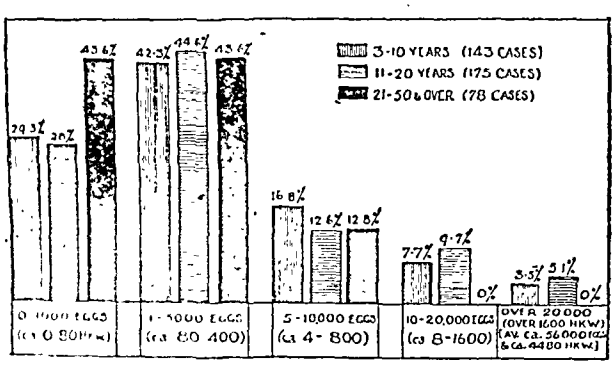

FIG. 1.—The same material as in Table I, arranged according to the output of hookworm eggs in relation to age groups.

unusually high infections with over 1,600 hookworms occurring in some of the young people, the degree of infection drops very decidedly after the twentieth year (see Fig. 2).

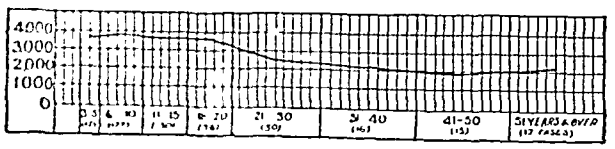

FIG. 2.—The same material, less 13 cases each with an output of more than 20,000 hookworm eggs per gram of faeces (equivalent to over 1,600 worms).

It may seem strange that, in contrast to our findings in Corrientes, the degree of infection among adults examined by Soper in Paraguay was three or four times as high as among children. The latter, however, were living under the hygienic conditions of a splendid orphan asylum, which precluded new infections, and we can corroborate the statements of Mhaskar and of Chandler that, under such conditions, the number of hookworms diminishes rapidly even in a few months. Indeed, when Soper was making his excellent and very careful examinations, he could not have known of Chandler's observations on this rapid "hookworm loss": observations which are absolutely in contrast to the previous statements of Smillie. If Chandler's observations are confirmed, many of the previous statistics will be practically useless in so far as they are based on the examination, not of the general population, but of prisoners, orphans, and so on.

While North Corrientes, like Paraguay, may be one of the most heavily hookworm-infested countries of the world, the clinical damage among the population is apparently much less in evidence than that reported from other Necator countries (such as Brazil) having a much lighter infection. This is probably because of the better standard of life, especially the better nutrition, of the Corrientes people (they consume a great deal of meat), which makes them more tolerant to their parasites than is the case with the Brazilian peasants, who, according to Smillie, are badly nourished and much overworked. That malaria, so frequent in many hookworm-infested countries, seems to be practically absent among the population of North Corrientes is doubtless another important factor in their favour, and perhaps the admixture of much Indian blood also increases their tolerance.

At any rate, the people of Corrientes in general give one the impression of being healthy, intelligent, and lively. In spite of their intense hookworm infection, their average haemoglobin rate, measured with the same individual instrument, was almost the same as among the healthy members of our institute at Hamburg, being 81.7 for the males and 74.6 for the females on the old scale of Sahli. Among the children and young adolescents of North Corrientes it is true there occur very heavy and even deadly cases of hookworm anaemia. On the other hand, only about 10 to 15 per cent. of the young people showed a loss of 10 units or more of the Sahli scale, the tolerance of the older ones being so remarkably high that the boys—but not the girls—between the ages of 10 and 20 could, without any average loss of haemoglobin, stand an infection with approximately 160 to 240 hookworms, although 100 Necator or less is considered in other countries as the limit. Moreover, the body size and weight of the school children corresponded closely to those of hookworm-free districts, such as Buenos Aires and Paris.

Surely, one can feel weak and miserable enough even without anaemia or any other objective symptoms of illness—a fact apparently also true of many hookworm cases. Nevertheless, one becomes more and more convinced, I think, that in the past the damage caused by a slight hookworm infection in native populations has often been overestimated, at least as far as Necator is concerned; *Ancylostoma duodenale* is doubtless by far the more dangerous parasite.

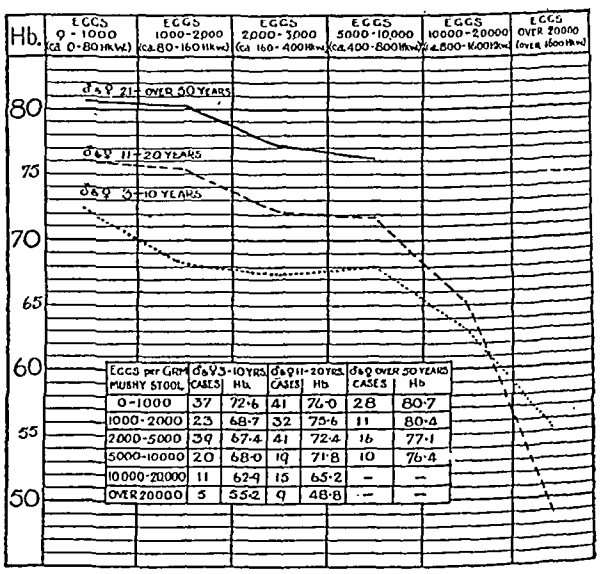

FIG. 3.—The average haemoglobin index (old Sahli scale) in 357 persons in North Corrientes, arranged according to the output of hookworm eggs.

Figure 3 shows in the vertical columns the haemoglobin value, according to the old Sahli scale (with about 80 for the normal blood of an adult); the horizontal divisions correspond to the "egg output," and therefore approximately to the number of hookworms present.

In contrast to the less tolerant children (up to 10 years), the adolescents from 11 to 20, as well as the adults, tolerate about 80 to 160 hookworms without an appreciable loss of haemoglobin. An egg production corresponding approximately to 160 to 400 hookworms is associated in all the age groups with an average haemoglobin loss of about 4 to 5 points; but it is remarkable that it is not higher in an infection with about 400 to 800 worms, the curve falling decidedly only above this limit.

The fact that the figures of Smillie from Brazil and of Carr from Mexico show the same tendency as found in Corrientes seems to justify the hypothesis, indicated by Smillie, that the host infected with a certain number of hookworms insufficient to overwhelm its resistance acquires the faculty of compensating in some way for the blood damage. Some of our preliminary experiments seemed to point to the formation of antibodies against haemolytic substances produced by the parasite.

As is well known, a haemolytic substance has been extracted from Ancylostoma by various workers; and my collaborator Dr. Kikuth found it several times in quite high concentration in the Ringer solution in which living *Ancylostoma caninum* had been kept at body temperature for some days, although for some unknown reason the haemolysin was not always present. The substance, not being destroyed by boiling, is apparently not of an albuminous nature; this fact, however (as will be discussed later), would not exclude our haemolysin from still acting as a "true antigen" producing antihaemolysin. But this possibility is apparently not realized, since the serum of our Ancylostoma dogs did not fix the haemolytic principle more than does normal blood serum. Moreover, the erythrocytes of the infected animals were destroyed by the haemolysin to the same degree as those of normal ones. Whether the haemolytic substance is active only *in vitro* remains to be investigated. However, according to de Langen and Djamil there is no evidence of chronic haemolysis in hookworm disease; apart from the intestinal bleedings there is apparently only toxic damage to the haemopoietic organs. If this view is correct, our haemoglobin curves from Corrientes, etc., would indicate only that the bone marrow can adapt itself, to a certain extent, to this chronic intoxication.

The literature concerning other specific helminthic products has increased so greatly that I can point out only some of the more important facts.

The precipitin reaction, and especially the complement-fixation test, are of some practical value for the diagnosis of Echinococcus and Bilharzia infections. Often the complement-fixation reaction is present also in patients harbouring *Ascaris lumbricoides*, and we found it positive in experimental animals repeatedly injected with Ringer's solution containing the products discharged *in vitro* by this parasite. The fact that after the removal of the Echinococcus cyst the complement-fixation test soon becomes negative, while, on the other hand, the "Casoni reaction" of the skin remains positive for a very long time (possibly for ever), seems to indicate that the two reactions are of a different nature, although they may be produced by the same worm products.

The active principle of the fluid from Echinococcus cysts causing the "Casoni reaction," like the antigen of other cutaneous reactions, is not of an albuminous or lipoid nature, because, as shown in 1926 by Lemaire and Thiodet, it passes through a dialysing membrane. According to the recent excellent paper of W. Jadassohn and our own experiments, this holds good also for the Ascaris substance, which provokes an itching urticaria-like swelling with an erythematous areola when put in superficial scarifications of a reacting skin. This substance, present not only in the body of Ascaris, but also in its secretions discharged *in vitro*, is absolutely stable against boiling. On the other hand, the volatile substances of Ascaris are unable to provoke such a skin reaction. As shown by Coventry and Taliaferro, and confirmed among others by W. Jadassohn and my collaborator Dr. Kikuth, the "Prausnitz-Kuestner reaction" is positive—that is to say, the sensitiveness is transferred with an intradermal injection of the serum from a reacting person to the injected area of the skin of a normal individual. Moreover, our experiments confirm Jadassohn's statements that the sensitizing property of this serum can be destroyed by adding a certain quantity of our thermostable Ascaris substance and that the latter becomes ineffective with the serum of a reacting person. In other words, the "antigen" and the "antibody" fix each other, and therefore, according to von Pirquet and others, the reaction is of the "allergic" type.

From the clinical point of view it will be advisable to suspect an Ascaris infection in cases of urticaria, and perhaps also in cases of asthma or other "anaphylactic symptoms," as will be discussed later. Furthermore, a Strongyloides infection is often associated with a peculiar type of urticarial eruption. In chronic infections with the parasite the skin can become so highly hypersensitive that even the extremely small quantity of "antigen" secreted by a single filariform larva can provoke an intense reaction; because, if a larva is wandering in the subcutaneous tissue of such a person, its way is marked by a quickly progressing urticarial streak. Spontaneous urticarial eruptions occur occasionally in nearly all my European cases chronically infected with Strongyloides; and these eruptions, being confined only to the buttocks and their vicinity, are of considerable diagnostic value. I think they are caused by filariform Strongyloides larvae developing in faecal particles, which even with apparent cleanliness can still adhere to the anus; it is clear that such larvae will enter the skin of these parts, which, in consequence of the repeated invasions, must become more and more "locally sensitized," as did the skin of my own forearm after many laboratory infections of my hand. The daily morning bath not being a sufficient prophylactic, washing must be repeated at least every evening; "Heliobrom-Teichgräber" mitigates the violent nocturnal itching. The constant reinfection with these larvae may contribute also to the remarkable persistency of a Strongyloides infection, lasting in one of my patients for twenty-six years; he has the honour, I think, of holding the "world record."

Although antigens provoking a more or less specific skin reaction may be present in every helminthic parasite the practical value of the method must not be overestimated. For example, we do not know how far a positive reaction to Ascaris antigen is specific in its nature; even if it were so, it would perhaps take some time for the skin of the host to become sensitized; on the other hand, the skin may stay sensitized long after the expulsion of the parasite, as shown by the Casoni reaction. Furthermore, one has to consider individual factors, and the skin of different races may not react in the same manner to helminthic antigens. It is important also in our test to take into account "group reactions." For example, the Strongyloides antigen is a very reliable diagnostic aid in chronic Strongyloides cases, and did not give a positive reaction if the person was infected only by Ascaris. On the other hand, the skin of Strongyloides carriers has reacted in my experiments not only to the Strongyloides antigen, but also to the antigen of Ascaris, and even to that of Trichinella, and of Echinococcus, although a former infection with the two latter parasites was very improbable.

At any rate, I think that at present the skin reaction has a practical value in helminthic diagnosis only for infections not easily detected in any other way. For the diagnosis of Echinococcus it is apparently superior to the complement-fixation test, and according to a recent publication of Fairley (1927) is very promising for the detection of Bilharzia; how the fallacy of the cutaneous method can be avoided in clinical use is also discussed in his valuable paper.

Instead of injecting worm extracts into the skin I prefer to introduce into a superficial scarification a trace of a powder prepared from the dried body of the parasite. This "Full-Antigen," as I call it in contrast to extracts, is very effective, can be kept for a long time, and is handy for clinical use. It may be advisable to heat the antigen powder to 100° C. to evaporate its volatile components, which are possibly associated with the "anaphylactic symptoms" that have in a few cases followed the skin reaction with Ascaris antigen.

As already discussed, the volatile substances of the Ascaris body, chemically determined so carefully by Flury, cannot provoke the skin reaction. Yet it is very difficult to understand how substances other than volatile can be involved in the frequent cases in which merely entering a laboratory where horse Ascaris has been dissected is sufficient to cause urticaria, erythema, asthma, and other anaphylactic symptoms. The same holds good, perhaps, for those cases in which the mere presence of a horse provokes

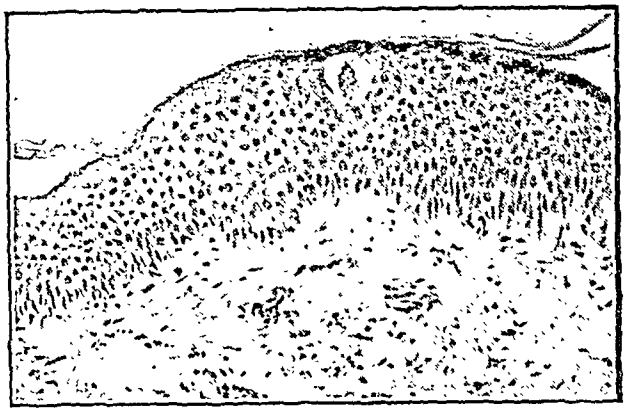

FIG. 4.—Section of skin with a larva of *Uncinaria stenocephala* under the stratum corneum. (Photograph × 150.)

such attacks. At any rate, our own experiments are not in favour of the assumption that in these cases the air may contain sprayed droplets of Ascaris fluid.

As found recently by Dr. Borchardt of our institute, some volatile aldehydes of the fatty acids (prepared in our laboratories by Dr. Oesterlin), which according to Flury are contained also in the body of Ascaris, produce in the cat a marked eosinophilia; on the other hand, the Ascaris tissue loses this faculty after boiling. We do not know if these volatile substances can provoke anaphylactic symptoms in experimental animals, but, at all events, eosinophilia is very closely associated with anaphylaxis. The erythema, urticaria, asthma, and other general symptoms, so often accompanying the perforation of the skin by the Guinea worm, and attributable, according to Fairley's classical investigations, to secretions discharged by the parasite, clinically resemble an anaphylactic shock. They, like other "allergic stages," are cut short promptly by adrenaline, as shown by Fairley. It would be interesting to try adrenaline in the Calabar swellings of *Filaria loa* infection, in which the very high eosinophilia is, I think, suggestive of an "allergic" nature. It is remarkable that the symptoms of anaphylactic shock occur not only after the rupture of an Echinococcus cyst, but, according to W. Jadassohn, even after merely touching the scratched skin with body fluid of the horse Ascaris. Further, according to Kellaway, a general narcosis not only prevents the anaphylactic shock in Echinococcus patients, but often inhibits also the development of the Casoni reaction—an observation suggesting that the skin reaction may be controlled by the nervous system. (The same seemed to be the case in our experiments in which the cutaneous reaction was negative in an area of skin previously injected with adrenaline; but the exudation involved in blister formation after a burn with hot water equally failed on such a treated area.)

The eosinophilia, so characteristic of helminthic infections, may be connected with the defence of the host against the toxic worm products, but, according to Sandground, hardly with immunity against the parasite itself. Indeed, our knowledge about such an immunity in helminthic diseases is very scanty. The fact that when many parasites of the same species are present the individual worms do not attain their usual size—as in the liver infected by many *Clonorchis sinensis*—suggests that the metabolic products of a parasite can prevent the normal development of its companions. This may be one of the reasons why in some helminthic infections hyperparasitism

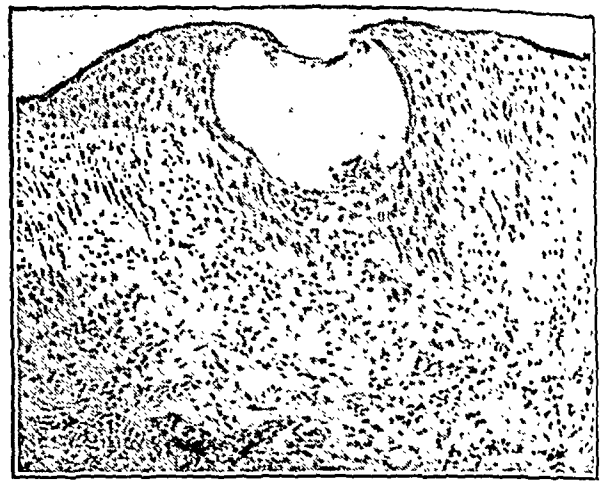

FIG. 5.—Section of the larval tract further backwards than Fig. 4 (Photograph × 150.) The pressure of the accumulating fluid has progressively enlarged the tract with flattening of the lining epithelial cells.

is possible only to a limited extent, as pointed out for *Filaria bancrofti* by Sir Patrick Manson, and found true also for *Taenia solium*, Schistosomum, and other parasites.

The immunity against hyperparasitism is comparable to a certain degree with the "*immunitas non sterilisans*" of Ehrlich, as seen in lues and other microparasitic infections; but the experiments of Gordon and Blacklock with the fly larva, *Cordylobia anthropophaga*, prove that in metazoan parasites also we have to consider an immunity persisting after the parasite's removal. The recent experiments of Sandground with *Strongyloides stercoralis* in the dog suggest that such a type of immunity can occur also in nematode infections, and I agree with Yokogawa that the very low susceptibility to *Toxocara canis* of dogs more than a year old is also a consequence of the prenatal infection of practically all our puppies, and not merely an "age resistance," as Martin has suggested in the case of swine Ascaris. But it is very difficult to exclude an "age resistance" in such cases, as is lately apparent from Herrick's experiments with hookworm larvae fed to dogs of different ages, although some of his experiments seem to indicate the presence of an "acquired immunity" in hookworm-infected dogs.

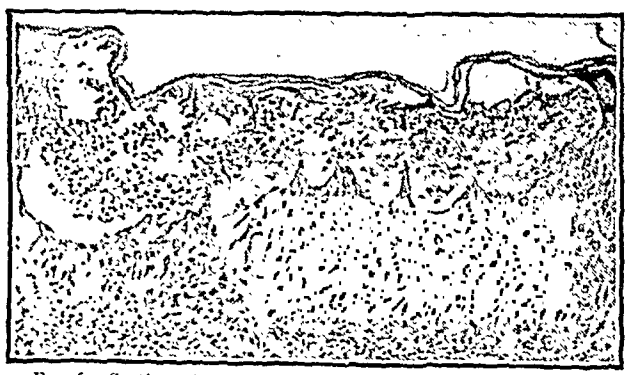

FIG. 6.—Section of another portion of the infected skin. (Photograph × 150.) Leucocytes progressing under the corneal layer; the continuity of the epithelial cells has been rent asunder by the tension of accumulating fluid.

According to Ohiro, by feeding with the parasite, immunity against *Toxocara canis* can be obtained in the dog. However, our similar experiments with *Ascaris lumbricoides* and rabbits were not conclusive, and Martin reports that his experiments with Ascaris extracts injected into pigs were negative.

The experiments of Hiraishi, who succeeded in infecting his pigs with human Ascaris only when their food did not contain vitamin A, suggests that deficient nutrition may diminish the host's natural resistance against the parasites. These findings are in accordance with recent experiments by Sollazzo in Claus Schilling's laboratory, which indicate that the natural resistance of pigeons against *Trypanosoma brucei* can be broken down by deficiency of vitamin B or by starvation. Moreover, one of my dogs, apparently immune to hookworms after repeated infections, became susceptible again when deprived of vitamin A; but, of course, such a single experiment cannot be considered conclusive.

The suggestion that the blood serum may be involved in the protection of the host against the parasite could be demonstrated neither in the case of Cordylobia immunity nor, according to Sandground, in the acquired immunity of the dog against Strongyloides; while in my own experiments the filariform Strongyloides larvae were agglomerated by normal as well as by specific serum. A "local tissue immunity" in Besredka's sense is apparently present in the skin previously infested by Cordylobia; possibly it is also found in the tissue of the intestine protecting it against parasites entering the mucosa (as Strongyloides does), and according to Holppli also feeding on its tissue (as hookworms do, or Ascaris and related forms). But the experiments of Herrick and Allen Scott, showing that a certain percentage of hookworm larvae in dogs do not even begin to feed on the tissue, but remain undeveloped for a long time in the intestine, are not in favour of this assumption. In addition, the bile secretion may have a "specific" influence, and some observations suggest that parasites can react to volatile substances. These are so highly characteristic for every species that the dog, for example, can distinguish by means of them not only the species, but actually the individual.

On the other hand, the experiments of Steiner and others with plant nematodes, and the behaviour of the various Strongyloides strains, tend to show that a parasite can adapt itself to the biochemical conditions of a new host; that such an adaptation precedes morphological changes is evident, the Ascaris of the man and the morphologically identical form in the pig being a suggestive example. But in spite of the fact that the biochemical processes of host and parasite seem to influence each other in many ways, there is so far no evidence of the production by the parasite of "antiferments" against the peptic ferments of the host. In any case, the Ascaris experiments of Weinland do not constitute such evidence, since, according to F. Einstein, Ascaris is protected against digestion by the impermeability of its cuticle.

Finally, some further remarks on hookworm epidemiology. As the "age resistance" to hookworm infection is so pronounced in dogs, one might expect the human child to be more liable than the adult. In nearly all the hookworm countries, however, the percentage of infected children is much lower than that of the adults. But the defaecation habits of primitively living people have such a decisive influence in hookworm epidemiology that the relatively low infection of the children may be merely a consequence of the use of defaecation places less contaminated with excrement (and therefore with infected larvae) than are the places frequented by the adults. As it is practically impossible to decide to what extent such habits may influence the hookworm statistics in different countries, we must be very careful in drawing general conclusions from any given material. Therefore the following deductions may, perhaps, not be conclusive.

So far as I know, apart from North Corrientes, an infection of young people higher than that of adults has been reported only from Mexico, by Carr, and from the rural population of Alabama, by Smillie and Augustine. In Alabama, however, the hookworm diminution after the fourteenth year of life is explained by the fact that shoes are used only after this age; in North Corrientes and Mexico, however, such differences between the habits of younger people and adults were not noted.

It is quite remarkable that just in North Corrientes and Mexico (*where, in contrast to the other hookworm* countries, the infection spontaneously decreases in the adults) the infection of the younger individuals reaches so high a degree as reported from nowhere else, a fact which suggests that the reduction of infection in the adults may be caused by an "acquired immunity" in consequence of the high and continuous infection during earlier life. Herrick points out that the epidemiological observations of Sawyer, Hill, and Dochter are also in favour of the assumption that, under the influence of a continuous hookworm infection, a certain degree of immunity against further infections is developed, especially when the former infection has been a high one. That the same seems to hold good for the hookworm-infected dog has already been noted.

The question of the varying susceptibility to hookworm infection in different races is of great economic importance. According to a very important paper by Smillie and Augustine, the *negro children in Alabama are much* less infected with Necator than are the children of the white farmers, and this in spite of the fact that they live practically under the same conditions. The authors suggest that since the epidermis of the negro children is thicker than that of the whites it is not so easily perforated by the hookworm larvae. The same, I think, may hold good perhaps for the skin of other coloured races. That the skin structure can influence the degree of hookworm infection is proved by the experiments of Looss and myself, which show that the tender skin of young individuals is more easily infected than is that of older persons.

Another clinical observation suggests a higher mechanical resistance of the negro epidermis against hookworm larvae than obtains in Europeans. Kirby-Smith, Dove, and White have described from Florida and its vicinity a type of "creeping eruption" clinically resembling the skin affection caused by the migration of a Gastrophilus larva. In the Florida cases, instead of a fly larva, the larva of *Ancylostoma brasiliense* of the dog was found in the epidermis. However, this species of hookworm larva may also find difficulties in boring into the negro skin, because the affection, although very common in the skin of whites, is practically absent in negroes.

About two and a half years ago the same affection developed on the forearm of an assistant and myself after some skin-penetration experiments with the larvae of the dog hookworm *Uncinaria stenocephala*. As this species is found also in European dogs, one has to consider the possibility of such skin infection in Europe. On the other hand, according to White and Dove in contrast to *Ancylostoma brasiliense*, the larva of *Ancylostoma caninum*, so common in most countries, is not involved in "creeping eruptions." This evidently is true also of the larvae of the human species. I have studied the normal course of the affection in my own skin, and although bacterial activity cannot be excluded, of course, I think that the essential cause of the peculiar pathological changes is a toxic secretion of the larva, small as this may be.

TUBERCULOSIS IN CHILDHOOD.*

BY

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THE high incidence of tuberculosis in childhood, its characteristic forms which differentiate it so markedly from the consumption of adults, the inevitable fatal prognosis of some types and, with correct treatment, the favourable outlook of others, make the subject of considerable interest and of the utmost importance. Reference to the Registrar-General's annual report for 1926 gives ample evidence of the frequency of tuberculosis in children. In that year tuberculosis was responsible for 8.3 per cent. of the total deaths in England and Wales, whilst 14.5 per cent. of all the deaths from tuberculosis occurred in children under the age of 15.

The susceptibility to the tubercle bacillus is not spread evenly over all the years of childhood. The disease is uncommon during the first eight months of life; but thereafter the liability to infection rapidly increases, reaching its height at the age of 2 years. From then onwards the body gradually acquires a certain degree of immunity. The lack of resistance to tubercle at an early age accounts for the marked difference of the life-history of the disease in children and in adults; in the young child it rapidly assumes a generalized and fatal form, whereas phthisis, the more characteristic adult type, is rarely seen in childhood. As the child grows older the lymphatic system comes to play a more important part. The lymphatic glands act as a powerful second line of

* A paper read to the North London Medical Society, March 8th, 1929.

defence, and are usually successful in holding up the infection. This leads to the second common form of the disease, glandular tuberculosis, which is much more frequently seen in childhood than in later life, when the function of the lymphatic system tends to be superseded by the whole defensive mechanism of the body.

When the bronchial or abdominal glands become tuberculous the disease may remain latent, and if left undisturbed it may finally heal. Meanwhile, however, these infected glands are a continuous menace, and are easily rendered active by some additional infection or lowering of the resistance. The infection then no longer remains confined to the glands, but spreads to neighbouring structures or bursts into the blood stream. Even in adult life the onset of consumption can often be traced to an original latent infection during childhood.

The Path of Infection.

Three varieties of tubercle bacilli are known—the human, the bovine, and the avian; the last of these, however, is so rarely the origin of infection that it need not concern us any further. Much has been written on the relative preponderance of human and bovine infections, but beyond indicating the nature of prophylactic measures, a differentiation is of no great practical value. Certainly there is no evidence that one is more virulent than the other. Whatever the relative proportions of the two varieties may be in tuberculous children, it has long been established that the infection is either acquired through drinking tuberculous cow's milk or through continuous close contact with an adult suffering from the disease—in other words, either by oral ingestion or by inhalation.

The exact route taken by the tubercle bacillus has been the subject of much discussion. Calmette believes that inhalation plays a small part, and that both in thoracic and in abdominal tuberculosis the bacilli enter through the mucous membrane of the throat or of the alimentary tract. This is in direct opposition to Ghon, who, by very careful microscopic examination, claims to be able to demonstrate a minute focus of tuberculosis in the lung in every case where corresponding caseous glands are found at the hilum. This minute lesion in the lung is thought to be the primary seat of invasion through inhalation. It is often so small that without a microscope it would certainly be missed, and in many cases healing has progressed so far that only a small scar remains.

Analogous primary foci of invasion are held to exist in the tonsils and the intestines, but in these situations also the lesion has become healed, or is so minute that its identification is often impossible and caseous enlargement of the glands draining these areas is the only obvious sign of tuberculosis. The disease may, in fact, spread back from such infected glands to the lungs and intestines, or ulcerate through into the general blood stream. In infancy the infection spreads easily to neighbouring organs, and is liable to take on the extremely fatal form of generalized septicaemia. In early childhood the glands become severely affected, and it is only when the barrier they form is broken down that adjacent structures are involved. Even then the disease may remain localized and recovery may follow.

Much has been done in England, by proper sterilization of milk and regular inspection of cattle, to eliminate the bovine source of infection, but the human source of infection is far more difficult to eradicate. Unless the utmost precautions are taken, a child brought up and nourished in tuberculous surroundings can hardly fail to become infected through his food, through kissing, or by inhalation of an atmosphere which must necessarily from time to time become charged with the germs.

Prophylaxis.

The surest way of stamping out the disease would be to remove all children of tuberculous parents from their homes to the country during the first year of life, but as in most cases this course is impracticable we are left with less satisfactory methods of prevention, of which the following are the most important. Tuberculous mothers should not breast-feed their infants, and the greatest care must be taken in the preparation of food so as not to contaminate it with unwashed hands, or by coughing or sneezing. The child's feeding utensils must be washed and kept apart from those of the rest of the household. The infected person must only spit into a special antiseptic receptacle, and must never kiss or breathe on the child. Windows must always be kept open; the child should be in the fresh air as much as possible, and should sleep on a balcony. If possible, the whole family should move to the country. The value of oral administration of attenuated live cultures of tubercle bacilli, as advocated by Calmette, has yet to be confirmed. Grade A tuberculin-tested cow's milk is guaranteed free from tuberculous infection, but if the milk supply is suspected, scalding, boiling, or pasteurization renders it safe.

Various tests have been devised to detect the presence of tuberculosis. The most valuable is the von Pirquet test, performed by the inoculation of Koch's old tuberculin into the scarified skin. This, when a tuberculous lesion is present, produces a circumscribed red wheal in about twenty-four to forty-eight hours. The Mantoux test is more reliable, but is virtually the same as the von Pirquet, except that the solution is injected intradermally. The test depends on the hypersensitiveness of the patient, or otherwise, to tubercle bacilli or their extracts. This allergic state is best seen in the skin, where a local reaction occurs as part of the body's defensive mechanism when these specific bacterial products are injected into people who have previously been sensitized to them. A mere passing tuberculous infection is sufficient to provoke this hypersensitiveness. It follows, therefore, that nearly all adults, and many children by the age of 10, will give positive Mantoux reactions, and the value of the test as an indication of activity is seriously limited. The reaction, furthermore, is positive whether the foci of infection are active, latent, or healed, and the test is therefore of greater diagnostic value in very young children, who are less likely to have old tuberculous lesions present. An additional disadvantage is that the reaction is often negative in the final stages of generalized tuberculosis and in tuberculous meningitis.

A hard-and-fast demarcation of the various forms in which the disease is found in childhood is not always possible; for instance, the association of hilum glands and abdominal tuberculosis is not uncommon, and any form may terminate in tuberculous meningitis.

Generalized Tuberculosis.

Generalized tuberculosis closely resembles ordinary marasmus, and is often difficult to recognize in infants. The temperature remains normal or subnormal, and only shows an irregular pyrexia a few weeks before death. In some cases vomiting is troublesome; in others, with extensive lesions in the lungs, there is persistent cough, rapid breathing, pallor, and generally cyanosis. A mild bronchitis is the only pulmonary sign, and the spleen is generally enlarged. Death results from progressive debility, lung disease, or meningitis.

In early childhood the manifestations are equally obscure and the symptoms generalized and indefinite. Peevishness, indigestion, loss of appetite, wasting, languor, and sleeplessness are the usual complaints; but the irregular pyrexia, marked pallor, and cachectic appearance of the child soon indicate a graver illness than the first mild symptoms suggested. Later, the occurrence of severe symptoms in the lungs, brain, or abdomen often helps to clear up the diagnosis. Generalized tuberculosis can be the cause of persistent high temperature for many weeks, and the diagnosis may present difficulty until meningitis appears as a terminal event.

The presence of an enlarged spleen or the discovery of other foci of tuberculous infection, such as tuberculous epididymitis and tuberculous dactylitis, is a great help in the diagnosis of such an obscure case. The discovery of small shotty glands at the outer border of the pectoralis major muscle on each side is sometimes an indication of tuberculosis when there is no other explanation of their presence. Ophthalmoscopic examination of the fundi should never be omitted, and the discovery of choroidal tubercle may often give the final clue. All these signs are, however,

often absent, and the child may finally die without the condition having been suspected. Once tuberculosis has become generalized no treatment is of any avail, and the patient can only be kept as comfortable as possible.

THORACIC TUBERCULOSIS.

Tuberculous Bronchitis.

Repeated mild attacks of bronchitis may be the earliest signs of tuberculosis, but since, clinically, they differ in no way from ordinary bronchitis, their true significance usually passes unnoticed. It is only when the disease is anticipated by reason of the child's tuberculous surroundings, or when on rare occasions tubercle bacilli are discovered in the sputum, that active treatment can be undertaken at this early stage.

Miliary Tuberculosis of the Lung.

When the infection reaches the blood stream multiple small tuberculous foci are formed in both lungs during the process of general dissemination throughout the body. Miliary tuberculosis is invariably fatal. At first the diagnosis may prove very puzzling, and the condition be taken for influenza or bronchitis, but the increasing pallor, progressive wasting, dyspnoea, and cough eventually give the clue. Irregular pyrexia, generally higher than in bronchitis or influenza, is present, and may remain for several weeks, leading to a suspicion of typhoid fever; enlargement of the spleen further enhances this similarity. An *x*-ray film of the chest is a great help in the diagnosis, and shows a general mottling of both lungs. Symptoms of tuberculosis elsewhere in the body may supervene, and the illness often terminates in meningitis.

Tuberculous Broncho-pneumonia.

This may arise without any previous pulmonary infection, but more frequently follows a simple broncho-pneumonia, particularly in association with measles or whooping-cough. This stirs up a latent tuberculous infection harmlessly situated in a caseous bronchial gland, and causes it to spread into a neighbouring bronchus. The illness generally terminates fatally in a few weeks, but may sometimes be prolonged for several months.

Tuberculosis is suspected in a case of broncho-pneumonia which fails to clear up after several weeks, the patient meanwhile becoming progressively emaciated, paler, and more languid. Persistent rapid breathing and irregular or continued pyrexia are additional indications. Temporary improvement is sometimes a striking feature, and may give rise to false hopes of recovery. Involvement of the pleura is common, and loculated serous effusions or small empyemata are formed. Examination of such pleural effusions may occasionally reveal the presence of tubercle bacilli, and these must also be sought for in the sputum. Children seldom expectorate, but sputum can often be obtained by touching the back of the throat with a piece of gauze wrapped round the end of a pair of forceps. A reflex cough is excited and the sputum is caught on the swab. Should these two examinations prove fruitless the search may be directed to the stools, or to a stomach wash-out for any tubercle bacilli that may have been swallowed. The discovery of chronic tuberculous lesions elsewhere may prove useful. The presence of opaque fluffy shadows in an *x*-ray picture of the lungs gives the deciding evidence. At times all methods of examination are inconclusive; the true nature of a persistent broncho-pneumonia with splenic enlargement, continued pyrexia, and progressive emaciation is then left in doubt, since the condition is quite compatible with either tuberculous or pneumococcal infection.

No treatment is likely to meet with success, but, in older children, in the rare event of the lesion being confined to one side, collapse of the affected lung by artificial pneumothorax may occasionally arrest the disease.

Pulmonary Phthisis.

Chronic consumption of the adult type is rare in children, and when it occurs the cavities often do not follow the same distribution as in adults, being principally situated near the hilum or at the base of the lungs. Haemoptysis is a rare event in an advanced stage of the disease, when tubercle bacilli may also be present in the sputum. A diagnosis of phthisis is undoubtedly too frequently made in children, areas of pulmonary fibrosis and unresolved pneumonia at a lung apex being wrongly interpreted as tuberculous. Such common symptoms of chronic indigestion as wasting, sweating, and evening rise of temperature may also cause confusion. Haemoptysis in childhood should never suggest tuberculosis. It is usually associated with adenoids or is a sign of advanced heart disease.

Tuberculosis of the Bronchial Glands.

The bronchial glands are more often the site of chronic tuberculous disease in childhood than any other region of the body. Children thus affected are not very ill, but are nevertheless potentially tuberculous. Minor maladies or debilitating diseases easily awaken this dormant tuberculous infection. It spreads back into the lungs, giving rise to serious consequences. The caseous contents of the glands may even burst directly into a bronchus or pass into the blood stream.

Such symptoms as arise from quiescent tuberculous bronchial glands are vague and indefinite. The child has a poor appetite and does not gain weight; his general development suffers, he loses his vigour, and becomes easily tired. The temperature is constantly a few degrees above normal and periodically may be considerably raised. There is a hoarse irritating cough, which is often paroxysmal in character and somewhat reminiscent of whooping-cough. It may, in fact, follow this infection without interruption, and the persistence of a spasmodic cough long after the whoop has disappeared points to the possible complication of enlarged bronchial glands. The glands may become so large in infants that their pressure on the trachea actually embarrasses the breathing, producing snuffles or stridor.

Several physical signs are said to be diagnostic of mediastinal glands, but in my experience they are all untrustworthy. It is true that submanubrial and paravertebral dullness may be present, but the glands need to be very large before either of these signs is elicited. D'Espine's sign and Eustace Smith's sign are of no great value since they can often be elicited in normal children. In every case a radiogram must be made, but even that will not show whether the glandular enlargement is due to tuberculous or to some simple catarrhal infection.

Prognosis and Treatment.

Immediately the condition is suspected and has been confirmed by *x*-ray examination and a positive Mantoux test, the child must be sent to the country or seaside, where he should remain continuously in the open air. Sun baths or irradiation with ultra-violet light, a nourishing diet, and tonics are also important items in the treatment. This must be continued until all symptoms have disappeared, the normal weight is restored, and the temperature remains normal. Septic tonsils require removal when the general condition has improved. Deep *x*-ray therapy in the hands of experts is sometimes strikingly successful in cases which are slow in reacting to other lines of treatment.

ABDOMINAL TUBERCULOSIS.

Tuberculosis confined to the abdomen is one of the commonest forms in children and is the most amenable to treatment. The infection is generally bovine through contaminated milk, and reaches the abdomen and mesenteric glands through the intestines. Several clinical varieties exist, and can be enumerated as follows.

1. *Tuberculous Ascites.*—The peritoneum and mesenteric glands are both infected with tubercle, which produces a gradually increased accumulation of fluid in the abdominal cavity. This may lie free in the abdomen or be loculated by the presence of adhesions.

2. *Tabes Mesenterica.*—The infection is confined to the abdominal glands, which become caseous or calcified. They may give rise to symptoms, or remain quiescent and be found unexpectedly at operation or post mortem.

3. *Adhesive Peritonitis.*—In this condition there is little or no free fluid present. Matting of the mesentery and omentum occurs, and adhesions are formed between the coils of intestines.

4. *Tuberculous Ulceration of the Bowels.*—This is generally secondary to pulmonary disease, resulting from the swallowing of infected sputum. In children it can occur as a primary infection, and is then usually associated with severe involvement of the mesenteric glands. In either case diarrhoea is the most striking symptom.

5. *Intestinal Obstruction.*—This may result from ulceration of bowel, or from kinking and narrowing of its lumen through peritoneal adhesions.

6. *Acute Peritonitis.*—This is simulated occasionally when an intestinal ulcer perforates into the surrounding adhesions, or when a tuberculous gland breaks down completely or becomes infected with other organisms.

Clinical Manifestations.

The symptoms depend largely on the part first and most severely affected, but generally they are gradual and insidious. The child's strength is noticed to be failing; he is pale and thin, feverish at night, and the abdomen is progressively enlarging. The appetite is capricious, the stools are often unhealthy, and there may be alternating constipation and diarrhoea. Attacks of colic are not uncommon, and when associated with vomiting may be mistaken for subacute appendicitis. In those cases which simulate acute peritonitis the onset of symptoms is very abrupt, with high temperature, vomiting, acute abdominal pain, and generalized tenderness and rigidity. When the acute inflammation is principally confined to the ileo-caecal glands, this tenderness and rigidity is localized to the right iliac fossa, and the condition closely resembles acute appendicitis. The adhesive type may so constrict the intestines and interfere with their normal movements that partial obstruction results; the intestinal coils stand out in relief under the abdominal wall, and peristalsis may be seen. In certain mild cases there are repeated feverish attacks at intervals of a few months, and little else is noticed at the time except slight abdominal distension. Enlarged glands or tuberculous masses, sometimes mistaken for the liver, can usually be felt in the abdomen at some period of the disease, but these may be masked by the presence of ascites. When suppuration occurs the abscess always tends to point at the umbilicus.

The outlook is certainly favourable in the absence of any severe tuberculosis elsewhere, and patients who have received prompt and energetic treatment recover completely. No case should be despaired of, since the disease rarely proves fatal, and then only in very feeble children. The infection is more dangerous in infants, in whom it is apt to spread beyond the abdomen.

Treatment.

The patients must live in the open air day and night, and remain flat in bed so long as ascites continues, the temperature is raised, or there are any other symptoms present. The general resistance is increased by giving as much nourishment as possible without upsetting the digestion. Milk, cream, eggs, butter, plasmon, raw meat juice, and raw meat sandwiches should all be included in the diet; but if they are not tolerated, and cause flatulence and curdled stools, fats must be restricted and milk may require peptonizing. Starchy foods are contraindicated, and if the appetite is poor or the digestion weak, alcohol in the form of brandy or brandy egg-flip should be given. Cod-liver oil is valuable, but cannot be added to the diet unless the stools are normal and there is no diarrhoea.

A belladonna and glycerin liniment (1 to 4) applied to the abdomen on lint is helpful in easing pain. Various applications are also said to be useful in the treatment of the peritoneal disease, but, with the possible exception of 5 per cent. ointment (10 per cent.) and mercury ointment (½ strength), they are of little value.

Irradiation of the abdomen by natural sunlight or ultra-violet rays is undoubtedly beneficial. If the ascites continues to increase, its removal may become necessary by means of a small trocar and cannula or Southey's tubes; but the best method of drainage is through a fairly long incision under general anaesthesia. Surgical removal of tuberculous abdominal glands is an unsuccessful procedure when there are any considerable number, and in adhesive tuberculous peritonitis surgery is positively dangerous and liable to liberate the contents of the bowel into the abdominal cavity. It is equally unwise to interfere with a tuberculous abscess until it is actually on the point of bursting through the umbilicus.

Tuberculosis of the Ear.

Chronic discharge from the ear in children is more commonly due to tuberculous infections than is usually supposed. Any aural discharge in a suspected case of tuberculosis should be examined, since the chance discovery of tubercle bacilli may just give the required confirmatory evidence. There are few subjective symptoms, and the ear continues to discharge profusely, despite ordinary methods of treatment. The lymphatic glands in the vicinity of the mastoid soon become infected and finally break down. In addition, there may be facial palsy as a result of involvement of the facial nerve as it passes through the middle ear. In the treatment efforts are made to eradicate the disease completely by surgical means, but this is often unsuccessful and the outlook is generally unfavourable.

Tuberculous Meningitis.

No disease in the whole of paediatrics can appear in so many unexpected ways as tuberculous meningitis and lead to such confusion. The illness has no classical picture, and such physical signs as do appear often arise so late that they give no help towards an early diagnosis. Little reliance should be placed on Koenig's sign, as it is very inconstant and its absence in no way precludes the presence of tuberculous meningitis. Severe headache, persistent vomiting, prolonged pyrexia, gradual change of temperament, drowsiness, or a sudden fit followed by unconsciousness are all possible modes of onset. Should any of these occur after infancy and have no other explanation, tuberculous meningitis should always be borne in mind. Two physical signs that I have found most useful in a doubtful case are enlargement of the spleen and a unilateral extensor response. The ultimate diagnosis will, however, depend upon examination of the cerebro-spinal fluid, and, once established, the prognosis is invariably fatal.

Conclusion.

Let me emphasize once again the importance of prophylaxis. The prevention of contact with human sources of infection, the proper sterilization of milk, the maintenance of a high standard of general bodily health, and the provision of adequate country or seaside convalescence after any severe infection are the best safeguards we can give a child against tuberculosis.

CERTAIN ASPECTS OF THE DIAGNOSIS AND TREATMENT OF DIABETES.*

BY

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In the past the identification of a reducing substance in the urine sufficed for the diagnosis of diabetes. Varying degrees of severity were recognized, but anyone presenting a urine which reduced Fehling's solution was regarded as suffering from diabetes of greater or lesser severity. That parturient women and nursing mothers frequently showed sugar in the urine was early recognized, but it was some time before it was realized that this sugar was lactose and that its presence lacked any particular significance. Later it was discovered that the urine of certain persons otherwise in normal health contained pentose, which reduces Fehling's solution in the same manner as glucose. For the diagnosis of diabetes it was then deemed only necessary to demonstrate that the reducing substance in the urine was neither lactose nor pentose, the former being readily excluded by the yeast fermentation test with which it gives a negative result, the latter by Bial's reaction.

*A paper read before the South Staffordshire Division of the British Medical Association at Walsall on March 21st, 1929.

the diagnosis of diabetes thus came to depend upon the demonstration of glucose in the urine. All patients consistently showing glucose in the urine on an ordinary diet were regarded as diabetics.

TYPES OF BLOOD SUGAR CURVE.

It was long ago shown that the glycosuria of diabetes is dependent upon the presence of an unusually high percentage of sugar in the blood; in the absence of any easy means of examining the blood sugar level, however, it was not possible to apply this knowledge to the differentiation of the various types of glycosuria. With the invention of quick and simple means for measuring the blood sugar, such as those devised by MacLean, Folin, Benedict, and many others, it became feasible to estimate the blood sugar clinically, and it then became apparent that the percentage of sugar in the blood is subject to fluctuations according to the stage of digestion. In normal persons the blood sugar between three and four hours after a meal falls to a level of somewhere between 80 and 120 mg. per cent., which may be known as the fasting level. On the ingestion of food, particularly of starchy food, it rises rapidly to from 180 to 200 mg. per cent., and then falls rapidly again, reaching the original fasting level in between one and a half and two and a half hours.

In diabetics the behaviour of the blood sugar is quite different. In the first place, even after a prolonged fast, the level is usually much above the normal fasting level. On the ingestion of food it rises rapidly to a level far above that ever attained in normal persons, and stays up. It is this persistence of a high blood sugar after the ingestion of food which characterizes the diabetic—in other words, it is the shape and not the height attained by the blood sugar curve which is diagnostic of diabetes. In partially treated cases the fasting level of the blood sugar may be normal, and even after the ingestion of glucose it may rise only just above the level to be expected in a normal person; but having risen, there it stays, thus making clear the diagnosis of diabetes.

The blood sugar in normal persons can hardly be made to rise above from 180 to 200 mg. per cent. If it be induced to do so sugar is excreted in the urine. The blood sugar level at which sugar is excreted in the urine is known as the "renal threshold" for glucose. In some persons otherwise quite normal this renal threshold may be lower than usual, their condition, which is without clinical significance, being usually known as "leaky kidney" or "renal glycosuria." Yet another type of glycosuria which must be distinguished from true diabetes is found in some persons in whom, after the ingestion of sugar, the blood sugar rises steeply to an abnormal level, but thereafter falls to the fasting level in the normal time. This is a comparatively rare condition, and its significance is obscure; in view of the fact, however, that persons in whom it is found often pass acetone in the urine it would seem to indicate a definite disturbance in carbohydrate metabolism and to demand a careful observation of the patient.

It is obvious, then, that the mere presence of sugar in the urine cannot be looked upon as establishing a diagnosis of diabetes. An examination of the fasting blood sugar, taken from three to four hours after the last meal, is also necessary. If this shows a high blood sugar the diagnosis is more or less complete; if the blood sugar is at, or not much above, the normal level, a glucose tolerance estimation and a blood sugar curve can hardly fail to establish the diagnosis one way or the other. Further evidence must be sought in the presence or absence of the ketone bodies, acetone and diacetic acid. Their presence along with sugar is strongly indicative of the existence of true diabetes; in their absence diabetes, even if present, is probably of a mild type. The presence of acetone in large amount is a danger signal; the presence of diacetic acid in any amount is a call for instant and vigorous treatment.

PROBLEMS IN THE TREATMENT OF DIABETES.

Everyone who has seen more than one case must recognize that diabetes varies enormously in severity. It is a commonplace that it is severe in the young and that the later in life it develops the more benign it becomes. The presence or absence of the ketone bodies serves as some indication of severity or benignity. Much information can also be derived from the appearance of the patient. The young or middle-aged patient, showing a dirty tongue, complaining of polyuria and thirst, and showing signs of recent loss of weight, is obviously in a more dangerous state than the elderly, apple-faced, and obese individual, boasting of a hearty appetite, and in whose urine sugar has been discovered by chance only. In the former class the indications for immediate and vigorous treatment are obvious; in the latter it must be decided how far one is justified in meddling with a regime upon which the patient feels perfectly well. The existence of pruritus, neuritis, or ocular or cardiac trouble of any sort is a distinct indication for treatment; if, in the absence of these conditions, patients choose to go their own way, they should always be warned of the danger of gangrene.

Treatment of diabetes has practically only one object in view—namely, to reduce the work of the islet cells of the pancreas to a level with which they can cope. The islet cells seem to be peculiar among the cells of the body in that they are only just up to their work. The amount of overloading which they will sustain without collapse is limited. In these latter years it has become the custom to sing the praises of a carbohydrate diet and to attribute all sorts of ills to the proteins, especially to those of "red" meat. In America, where food fads flourish to an extent even greater than in this country, and where the inhabitants are in the habit of stoking up, especially at breakfast, on farinaceous foods of all sorts, diabetes is rapidly on the increase; its heavy incidence among the *rice and sweetmeat-eating Bengalis is well known*. My own observations would lead me to believe that it is also on the increase in this country, a fact which may be correlated with the demand, attested by the butchers throughout the land, for smaller joints.

How readily a normal pancreas will collapse it is difficult to say; many diabetics show a history of diabetes in the family; in others the onset may follow on an acute illness; in many cases no predisposing cause is to be found. Such sporadic cases are usually severe, and may be due, as suggested by Cammidge, to the inheritance of the diabetic tendency as a recessive, in which case a family history would be difficult to obtain.

In children, no matter how it occurs, the condition is always dangerous and difficult to treat; in young adults surprisingly good results may be obtained once the load is removed from the pancreas by means of insulin and diet. In all cases except the mildest, such as occur in the elderly, it is advisable to have recourse to insulin early in treatment, but in many cases in youngish persons the islet cells of the pancreas may regain their powers to such an extent that the dose of insulin may later be progressively reduced and sometimes dispensed with altogether.

Only recently diet was our sheet anchor in the treatment of diabetes; it still remains a vastly important factor, but we are coming to rely more and more upon insulin, even in mild cases. Until lately it was my custom to fast patients until they were sugar-free, and then to try to build up a diet on which they would remain free without the use of insulin. If possible I liked to send them out on diet alone. My present procedure is still much the same, but I no longer hesitate to use insulin early if there is the slightest difficulty about building up a suitable diet without it. In the case of patients who do not baulk at the thought of insulin, which most do until they have had experience of it, I encourage its use even if their case can be controlled without it, as by its use a greater laxity of diet becomes permissible, with a corresponding increase in the comfort of the patient.

The Administration of Insulin.

Patients should always be taught to administer their own insulin, or, at any rate, to have it administered by someone, be it nurse or relative, constantly about their persons. To this rule there is no exception. Insulin must be given within twenty minutes of the commencement of a meal, and always before the same meals. It is impossible for a practitioner to attend his diabetic patients once or twice daily always in the same relationship to meals, and the custom of administering a dose at any odd time during the

day cannot be too strongly condemned. Once the ice has been broken patients usually administer their own insulin without trouble. For both men and women the abdominal wall makes an admirable site for the before breakfast dose; men usually prefer to give doses during the day into the leg below the knee, while women usually select the thigh. In all these sites it is possible to steady the skin with one hand and to give the injection with the other. Patients should be instructed to keep their syringes in spirit and to wash them out with tap water before and after use. This latter point is of importance, as traces of spirit in the syringe will irritate the skin and may even cause ulceration. An intelligent patient can arrange matters so that the administration of insulin even three times daily makes but little difference to the enjoyment of life; there are many such who lead active lives at business or participate vigorously in sports, both in spite and because of three doses of insulin daily.

In all but the simplest cases the determination of the suitable insulin dosage is a matter of some difficulty, and cannot be made without careful watching of the patient. On the whole it may be said that it is better to give too much than too little: hypoglycaemia is something of a bugbear, and the symptoms should be explained to the patient, who should be warned to carry a few lumps of sugar at all times, and to suck a lump if troubled by feelings of giddiness. I have seen two patients rendered unconscious by hypoglycaemia; one of them received 80 units of insulin on the assumption that the condition was coma, but both made perfect recoveries and suffered no ill effects. Most cases of hypoglycaemia will respond readily to a hypodermic injection of 1 c.cm. of adrenaline followed by sugar by the mouth as consciousness returns. It is seldom, if ever, necessary to give sugar intravenously in such cases. Mild hypoglycaemia symptoms are common in patients on a sufficient insulin dosage, but usually pass off without treatment. In its mildest form hypoglycaemia is shown by flushing of the face, giddiness, and a feeling of lightheadedness. As it proceeds there may be inco-ordination and incoherence of speech, and later unconsciousness.

From time to time cases may be met with which prove resistant to insulin. This resistance may be of a high degree, so that even with large doses it may be difficult or even impossible to keep down the blood sugar level. Such a condition developing in an elderly diabetic without apparent cause is usually an indication of the development of some constitutional disorder such as cancer or tuberculosis; it may occur acutely in diabetics suffering from severe infections such as erysipelas, or it may occur from no apparent cause in diabetics who have apparently been doing well for some time. In one such case at necropsy I found such islets as remained in the pancreas engorged to the point of destruction with blood—an apparent apoplexy of the islets. In all such cases the outlook is grave in the extreme. Other milder cases may show a fluctuating response to insulin, so that with the patient on a fixed diet the same dose of insulin may at one time fail to control the blood sugar, and at another may produce hypoglycaemia. Such a condition usually indicates the presence of a focus of active sepsis, and is an indication for a careful examination of such possible sites as the tonsils, teeth, accessory sinuses, appendix, and gall-bladder. Eradication of the focus of sepsis has the happiest results.

Diabetic Coma.

The menace of coma perpetually hangs over the head of the diabetic patient and of his doctor. Apart, however, from the cases referred to above, which for some reason or other become insulin-resistant, it may be said that the onset of coma is indicative of gross carelessness either on the part of the patient or the doctor. So far as subjective symptoms are concerned it may fall on the patient with as little warning as a thunderbolt, but acetone will have been present in the breath and ketone bodies in the urine for weeks beforehand. Cases have been reported in which there was no acetonuria, but it is difficult to believe that the coma was diabetic. Coma is unusual in patients who are taking anything like a sufficient insulin dosage, but it may occur when the dose in insufficient, and in these circumstances there is always some doubt as to whether the unconsciousness is due to diabetes or to insulin hypoglycaemia. The presence of sugar and ketone bodies in the urine is strong evidence in favour of coma. A high blood sugar in conjunction with ketone bodies in the urine makes the diagnosis to all intents and purposes certain. Where means of investigating the blood sugar and urine are not available it is possible to make a fairly certain diagnosis on the history and the clinical appearance. Patients in advanced hypoglycaemia show a moist skin, flushed face, and a bounding pulse; their respiration is deep, but not stertorous. Patients in coma show a dry skin, a pale face, and a weak pulse; in the later stages their respiration is usually stertorous, and the Babinski reflex may be plantar in type. In addition, for those who can smell it, there is the odour of acetone—the odour of sanctity of the hagiologists. The management of coma demands constant care and attention. The enemies to be combated are hyperglycaemia, acetonaemia, and heart failure. Insulin is the first requisite, and should be given at once in a dose of from 80 to 100 units. It is my custom to combine it with sugar by the mouth with a view to combating the acetonaemia. Since there is already excess of sugar in the blood this may seem irrational, but it works well in practice. It was formerly our custom to treat coma with large doses of sodium bicarbonate given by the mouth. In a small series of cases treated with and without the alkali at the Royal Hospital we found, however, that those not given the bicarbonate did best; and in view of this and of certain experimental evidence that excess of alkali interferes with the metabolism of carbohydrate, we have discontinued its use in large doses. In cases in which, as often occurs, the blood is thick and viscous, intravenous injection of saline is indicated. There is some evidence that in coma there is a diminution of the chlorides in the blood, and having this in mind, and with a view to bringing about a dilution of the blood by osmosis from the tissues, we have lately been trying the effect of the injection of a solution containing 2 per cent. sodium chloride and 5 per cent. sodium bicarbonate. It is too early yet to report on this measure.

After the initial dose of insulin further doses must be controlled by the blood sugar; usually a further 40 units or so is required within about two hours, and thereafter not more than 10 units hourly. I have found no benefit in the administration of the immense doses advocated by some authors. Next to giving insulin the most important step is to get the bowels open, and to this end enemata should be continued until a good result has been obtained. The state of the heart will demand attention, and in most cases the hypodermic injection of camphor in oil will be indicated early in the course of the condition. The patient must be kept warm with hot-water bottles, and large amounts of fluid, preferably water, must be administered—if possible by the mouth, but otherwise by the rectum or subcutaneously.

By these means it will be possible in most cases of coma, except in those dependent upon the existence of some acute infection, to reduce the blood sugar to normal and to free the urine from acetone. Even when this result has been brought about, however, the issue may be fatal; cases occur in which unconsciousness persists and death results in spite of a normal blood sugar and a urine free of acetone. The diabetic once in coma cannot be regarded as out of the wood until he has been conscious for several days and showing a normal blood sugar and urine. I have known patients admitted to hospital in coma to relapse twice, the second time fatally.

Diabetes Complicated by Sepsis.

The existence of any septic condition, whether it be an acute infection, a carbuncle, or a limb affected by "wet" gangrene, complicates the management of a diabetic case and facilitates the onset of coma. In such cases it is of primary importance to get the urine free of acetone and to keep it so. To this end there must be no restriction of the carbohydrate in the diet; a liberal amount must be taken and balanced by sufficient doses of insulin. It is usually desirable for the patient to take between 80 and 100 grams of carbohydrate daily, the form being immaterial. In very severe infections glucose water or fruit juice may be the most convenient form; Benger's food is usually well

rated, and in milder conditions the bulk of the carbohydrate may be taken as bread. The following skeleton t, which may be modified to suit the particular case, is use at the Royal Hospital.

leat, fish, poultry, eggs, clear soup, bovril, broth, cabbage, liflower, lettuce, endive, tomato, grape fruit, asparagus, mushms, sea-kale, cucumber, chicory, spinach, celery (*as desired*). 'ea, coffee, and unsweetened lemon juice in water (*as desired*).

Compulsory Ration.

unger's food made with milk ..... half pints during the day.
. units of insulin are to be taken before each half-pint of ager's food.
Bread .. ounces during the day, with meals. Butter as ired.
If specially ordered) *Jam or preserve*—half an ounce with ad, at a meal.
A further .. units of insulin is to be taken before ..... the daily meals, one of which must be the one at which the n is taken (if ordered).
Total daily insulin dosage ..... units.
Carbohydrate approximately ..... grams.

CARE OF DIABETICS BEFORE AND AFTER OPERATION.

In operations upon diabetic patients it is a matter of e utmost importance to avoid ketosis. For a clean eration, such as an interval appendix or radical cure a hernia in a well-controlled diabetic, few special preutions are necessary. Where, however, there is sepsis, in the case of amputation of an extremity for wet angrene or the excision of a carbuncle, it is well, if ssible, to delay the operation until the diabetes has to me extent been controlled. The following procedure, bject of course to modification to suit the individual se, is the routine at the Royal Hospital.

1 Three days prior to operation increase the carbohydrate ntent of the diet to at least 100 grams.
2. Operate early in day.
3. Three hours before operation give carbohydrate content of sual breakfast *plus* 10 grams of glucose. Give usual morning nsulin at same time.
4. Simple enema one and a half hours before operation.
5. *Immediately before operation give 10 to 20 units of insulin.*
6. On returning to ward give 30 to 40 grams of glucose as 0 per cent. solution in saline, rectally, with 20 to 30 units of nsulin.
7. Two hours after operation take blood specimen and give lucose or insulin according to result.

The diet in early days after operation should be liquid nd soft, and should largely consist of carbohydrate until he temperature is normal and manifestations of toxaemia ave disappeared. The total calories should not exceed naintenance diet during the period of active healing.

In conclusion, I would insist that the successful treatment of diabetes demands the whole-hearted co-operation of the patient. He must have an intelligent appreciation of the condition from which he is suffering, and time spent in explaining this to him is time well spent by his medical attendant.

COLLES'S FRACTURE:

AN EFFICIENT AND ECONOMICAL METHOD OF SPLINTING.

BY

W. MITCHELL SMITH, M.D., C.M.,

HONORARY ORTHOPAEDIC SURGEON, CRIPPLES' HOSPITAL, STOKE-ON-TRENT.

THE cost of after-care (massage, physiotherapy, and electrotherapy) in the treatment of fractures has been mounting up in recent years to an alarming extent. The time has come for the surgeon who prescribes this treatment—often as a matter of routine—to consider whether this expense is justified, or whether equally good, or even better, results might not be obtained by well-considered splinting.

Efficient splinting should ensure complete immobilization of the fragments after reduction, and, in the case of the Colles's fracture, fixation of the hand in such a position that the patient is able to use it as soon as the damage to the soft tissues begins to subside. Jones's and Carr's splints are the two most commonly used. The former provides the more perfect fixation of the fragments; the latter the better position from which to start re-education. I find that the best features of both splints can be combined in a carefully applied plaster case.

The treatment of a Colles's fracture may be divided into three stages: (*a*) reduction of the fracture; (*b*) splinting; (*c*) after-care.

A. *Reduction of the Fracture.*

Reduction of the fracture under an anaesthetic can generally be easily obtained by steady traction on the hand and manipulation of the fragments into position by the thumb and forefinger. If more force is required the well-known manipulation of Sir Robert Jones provides all that is necessary; but as little force should be used as possible. Complete reduction is indicated by the restoration of the radial curve, as described by Sir Robert Jones, and of the correct relationship of the styloid processes.

B. *Splinting.*

A roll of stockinette is run up the arm, extending from the knuckles to the elbow. Over this a light plaster case is applied. With the thumb and forefinger of one hand the surgeon holds the fragments of the radius in the corrected position, and with the other hand holds the wrist in about 15 degrees of dorsiflexion and slight ulnar deviation while the plaster sets. It is essential that the plaster should be closely moulded to the dorsum of the wrist and that the angle of dorsiflexion should be exactly opposite the joint. To prevent rubbing the skin, the plaster should extend, glove fashion, half-way up the metacarpals, and should allow full palmar flexion of the metacarpo-phalangeal joints. (Figs. 1 and 2.)

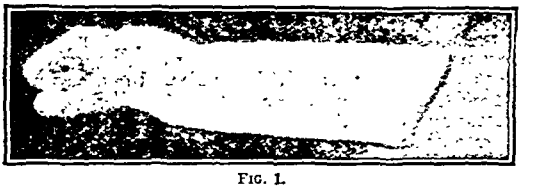


FIG. 1.

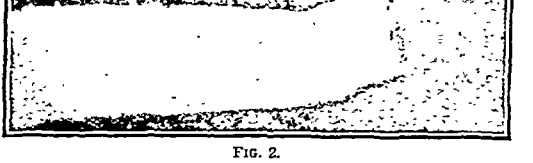


FIG. 2.

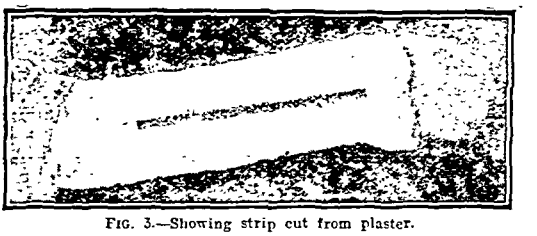


FIG. 3.—Showing strip cut from plaster.

The occurrence of pain and swelling of the fingers may be avoided by cutting out from the back of the plaster, before it sets, and from the underlying stockinette, a strip about half an inch wide, leaving a bridge at the top and the bottom (Fig. 3). A radiogram to confirm the correction should be taken through the plaster.

C. *After-care.*

As soon as he recovers from the anaesthetic the patient is encouraged to use his fingers and gradually to develop the use of his hand. In a week or ten days he is able to do anything within the limits imposed by a cock-up splint. The plaster case is removed at the end of a month, by which time bony union has generally taken place, and as

the patient has already been using his hand freely for two or three weeks no further treatment is required.

I have been treating Colles's fractures by this method for the past three or four years with uniformly good results and with considerable saving in the cost of treatment.

HYPERSPLENISM AND HYPOSPLENISM AND SPLENECTOMY.

BY

F. PARKES WEBER, M.D., F.R.C.P.

APART from the results of traumatism and the exceedingly rare primary malignant neoplasms and some of the primary (or "predominant") tuberculous and other chronic infectious (parasitic) conditions of the spleen, the indications and counterindications for splenectomy will doubtless be more definitely formulated when more is known about the various functions of the organ in question. In regard to *the functional activity of the spleen it will probably* become more and more convenient to speak of "hypersplenism" and "hyposplenism"—by analogy with the terms "hyperthyroidism" and "hypothyroidism," "hyperpituitarism" and "hypopituitarism." It will probably also be found that there are various forms of hypersplenism and hyposplenism corresponding to involvement of the various functions of the spleen (and reticulo-endothelial system), apart from the now well-recognized function of the spleen as a blood reservoir (Barcroft, etc.).

In cases of harmful (not compensatory) hypersplenism splenectomy or some effective depressor of splenic function (radium, *x* rays, and other as yet undiscovered means) will be indicated. At present splenectomy is not rarely (sometimes with excellent result) performed for conditions, such as congenital haemolytic jaundice, thrombocytopenic purpura haemorrhagica, and the Gaucher type of splenomegaly, where there is more or less clinical evidence of hypersplenism. For cases of hyposplenism some effective activator of the spleen and reticulo-endothelial system will have to be searched out.

In regard to splenic infections it should be remembered that, though one of the functions of the spleen, as of the tonsils, is to resist and "hold up" infections, the spleen sometimes, like the tonsils, may become so overwhelmed as itself to constitute a harmful focus of infection—a state of affairs for which splenectomy may constitute a rational part of the treatment. In some such cases the bulk and altered consistence of the enlarged spleen may themselves become a source of danger for the individual (possibility of rupture from relatively slight traumata).

Under infectious and parasitic splenomegalies, besides the relatively transitory enlargements due to the ordinary acute febrile infections, one would place the more chronic ones due to malaria, syphilis, tuberculosis, hydatid cysts, kala-azar, schistosomiasis (one form of "Egyptian splenomegaly"), the problematic splenic "mycoses," and perhaps certain other cases that have been clinically labelled as "Banti's disease."

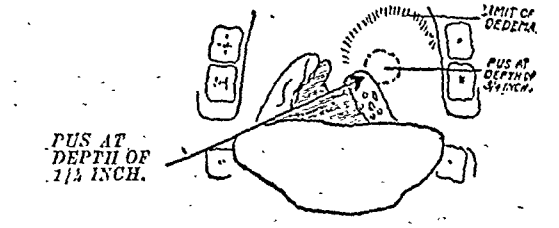
Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE ANATOMICAL METHOD OF OPENING QUINSY.

NOT everyone has been satisfied with the old method of opening quinsy by cutting into the soft palate. The oedema present often makes it difficult to find the pus, and more than one cut may be necessary. On the other hand, immediate enucleation is so drastic a form of treatment as to appear unnecessary as well as risky. Both of these extremes can be avoided by opening the abscess in the right way.

A quinsy is a collection of pus in the supratonsillar fossa. It forms because of inflammatory adhesions at the normal orifice of the fossa. As pus accumulates the palate bu... and is further swollen by oedema. In order to evacuate t... pus it is only necessary to break down the adhesions b... introducing a pair of sinus forceps with closed blades in... the supratonsillar fossa in the direction shown by the ar... in the diagram. The point of insertion is immediat...



under the arch formed by the anterior and posterior faucial pillars on the same side. A slight push is needed. As soon as they have penetrated the abscess the blades are widely opened, the adhesions are broken down, and pus pours out.

There are many advantages in this method:

1. It is simple, certain, easy, and only one instrument is required.
2. Trismus is no obstacle.
3. There is no pain beyond pressure from the forceps points.
4. There is hardly any bleeding because nothing is cut.
5. The abscess is freely drained by its natural outlet.
6. The tonsils can be enucleated without risk at a later date.
7. There is no unnecessary mutilation of mobile parts.
8. No anaesthetic is necessary, either local or general.

London, W. H. MORTIMER WHARRY, F.R.C.S.

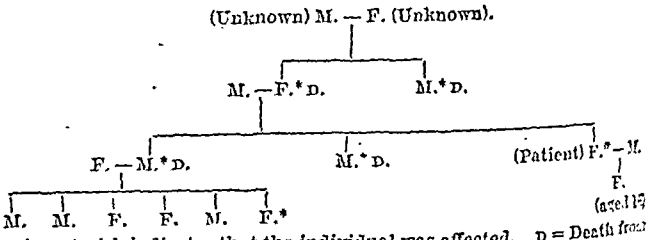
HEREDITARY ANGIO-NEUROTIC OEDEMA.

THAT heredity plays an important part in the causation of Quincke's disease is well established, and numerous authors have reported genealogies. The hereditary form would seem to be of a much more severe type than the comparatively common acquired cases, and this is illustrated by the cases of Griffith,[1] where both father and daughter died of acute oedema of the larynx. J. R. and T. R. Crowder[2] report five generations of a family, and 63 known descendants 27 inherited it; of these, 14 died as a direct result. Although a number of cases are on record, the hereditary form would appear to be of sufficient rarity in the individual experience to justify a case report.

A woman, aged 55, was referred to me on account of angio-neurotic oedema of lifelong duration; the disease was of the cutaneous type, and there was a complete absence of any of the puzzling attacks of abdominal colic due to intestinal oedema. The attacks occurred every two or three weeks, and the reason that advice was sought was the alarming increase in severity and frequency of the laryngeal involvement; the areas of oedema were peculiar in the absence of itching. Physical examination revealed little apart from a slight degree of dermatographia, much less than is usually seen in the common variety of case.

The patient was considerably apprehensive as to the outcome of the disease, as her mother and her only two brothers died of it in an effort to avert the family tragedy the patient was desensitized by a course of peptone in small doses, and she was instructed to ingest half a grain of ephedrine sulphate at the first warning of an attack. Up to the time of writing the results have been most happy.

The following is the genealogical tree.



An asterisk indicates that the individual was affected. D = Death from oedema of the larynx. M. = Male. F. = Female.

ERNEST BULMER, M.D.,
Assistant Physician, General Hospital, Birmingham.

[1] Griffith: *British Medical Journal*, 1902, i, 1470.
[2] Crowder, J. R. and T. R.: *Arch. Int. Med.*, 1917, 20, 840.

Reports of Societies.

DISSEMINATED ENCEPHALO-MYELITIS.

At a meeting of the Section of Neurology of the Royal Society of Medicine, on April 11th, the subject of disseminated encephalo-myelitis was discussed, with Mr. DONALD ARMOUR in the chair.

Dr. W. J. ADIE said that the incidence of acute disseminated encephalo-myelitis had recently assumed almost epidemic proportions. He gave an account of the clinical features of the diffuse and disseminated forms, and suggested a number of questions for discussion, in particular as to the relation of acute disseminated encephalo-myelitis to disseminated sclerosis. Was disseminated sclerosis also caused by a filter-passing virus? Was it caused by the same virus that produced all the other diseases of this group in which the white matter was mainly affected? His own opinion was that disseminated sclerosis was probably due to a virus belonging to the same group, but that there was not evidence to prove that it was the same virus. He mentioned several instances in which retrobulbar neuritis had been followed by other symptoms of disseminated sclerosis after a period of several years.

Dr. J. G. GREENFIELD dealt with the histological similarities of encephalitis, diffuse myelitis, and acute disseminated encephalo-myelitis, such as occurred after vaccination, measles, and so forth. These diseases all had certain points of similarity to disseminated sclerosis, but histologically they were more related to one another than to that condition. He described two fatal cases in men, seen within the last month, of myelitis coming on after an attack of influenza, both of them being associated with a lesion, so far as he could tell, histologically identical with post-vaccinal encephalo-myelitis. He thought that these cases, with other accumulated data, indicated that in these diseases there was evidence of some toxin present in the nervous system, which was stimulated to activity when the onset of some febrile disease lowered the patient's resistance.

Dr. GEORGE RIDDOCH pleaded for an open mind about the whole situation. In the recent epidemic of influenza he had been greatly puzzled by the multifarious character of the neurological sequelae. He brought forward fourteen cases with a typical influenzal story which had gross neurological manifestations; how to classify them he did not know. None of the patients died. The cerebro-spinal fluid was examined in several and no abnormalities were found. He could not determine the meaning of this heterogeneous group of neurological disorders. The only position for the clinician to take up was to obtain all the help he could from the histologist and pathologist, and to keep an open mind on the problem.

Dr. GORDON HOLMES referred to the occurrence of this disease in previous epidemics, though of limited extent. There was a very definite outbreak of diffuse myelitis and diffuse encephalo-myelitis in the winter of 1905. During the war, in the winter of 1917–18, he saw among the troops a number of cases of a similar disorder. These cases certainly ran a very characteristic course. A certain proportion of them went in a step-like manner, new attacks of the disease occurring after an interval of weeks or months. He had frequently seen remarkable instances of recovery, but many cases, on the other hand, did not recover.

Dr. C. P. SYMONDS, referring to Dr. Adie's remark about the association of retrobulbar neuritis with disseminated sclerosis, said he had seen an instance in which twenty-four years had elapsed between the attack of retrobulbar neuritis, first in one eye and then in the other, and subsequent symptoms typical of disseminated sclerosis. He was sceptical as to the distinction between neuromyelitis optica and disseminated sclerosis. He thought that there were grounds, on both the clinical and the pathological side, for doubting whether the distinction was a true one.

Dr. W. R. BRAIN, after describing some cases, said that the difficulties of classification could only be solved by close co-operation between pathologists and clinicians. One possibility was that the differences in the response shown by the individual to neuromyelitis optica and to disseminated sclerosis might be due to differences of immunity. It was possible that in myelitis the patient received a large dose of virus, and either died or developed complete immunity, whereas in disseminated sclerosis the immunity might be incomplete, with the result that the disease pursued its characteristic course of remissions and relapses.

Dr. PARKES WEBER made a remark about a nervous symptom which had been observed in connexion with influenza and which, he thought, had some bearing on the subject. A middle-aged man was recovering from influenzal broncho-pneumonia when he suddenly developed incontinence of faeces. The sphincter was completely paralysed. This was the first case the speaker had seen of paralysis of the anus following, or being connected with, influenza. This man, under treatment, gradually recovered. A colleague who saw this case with the speaker went to Hamburg, and from there he had written within the last few days stating that he had seen another man suffering from influenza with complete paralysis of the rectum; this case had terminated fatally.

PATHOLOGY OF CERVICITIS.

A MEETING of the North of England Gynaecological and Obstetrical Society was held in Liverpool on March 15th, with the president, Dr. G. W. FITZGERALD (Manchester), in the chair. Dr. K. V. BAILEY read a paper on the pathology of cervicitis.

Dr. K. V. Bailey said he had examined 650 specimens of the cervix uteri with a twofold object: (1) to ascertain the precise pathology of the so-called cervical erosion, and (2) with a thorough knowledge of this pathology as a basis to inquire into the problem of the inception of cervical cancer. He considered that there were two types of pathology of cervicitis. (1) The relatively unimportant and rare condition of congenital erosion was seen in the nulliparous and presumably non-infected cervix. Moench and Reel had described this condition, and considered it due to anomalous growth of the mucous membrane lining the cervical canal. In the speaker's series this type showed definite inflammatory reaction, and, therefore, there was no reason to distinguish it from the inflammatory type. (2) The large group of inflammatory erosions. Dr. Bailey believed that the life-history of this condition fell into four distinct stages. Stage 1: The primary effects of irritation. This stage was characterized microscopically by the stripping off bodily of the squamous epithelium at the level of its lowermost cells by large and small blood cells, and the inflammatory exudate as a whole. Stage 2: Epithelial reaction to inflammatory irritation. This was the stage of proliferation and repair; microscopically the evidences of inflammatory reaction were definitely lessened. The surface exudate was less, and intimately associated with the new surface epithelial covering, which was identical with, and derived from, the columnar epithelium lining the cervical canal. Stage 3: Replacement of columnar by squamous epithelium on the surface of the affected area. In this stage the squamous epithelium grew over the affected area by new cells arising from the basal layer of the nearest unaffected squamous epithelium; it extended upwards towards the adjacent columnar epithelial surface, and lifted the single layer upwards in a lever fashion, thereby gradually replacing it. In this stage the tissues immediately beneath the columnar epithelial layers were greatly rarefied. Stage 4: Ultimate healing. This stage was characterized by the presence of dilated gland spaces situated beneath the new covering, the result of mechanical blocking of their ducts by the squamous cells. Pseudo-malignant appearances resulted from irregular down-growths of squamous cells, especially in connexion with the mouths of dil gland spaces. Dr. Bailey had found forty-two examples his series of a true ulcerative erosion of the cervix which was pathologically akin to the condition already described. The affected area was depressed with overhanging epithelial edges in immediate contact, and a smooth granular depressed base coated with chronic exudative material. It was a condition relatively common in association with the damaged and hypertrophied cervix usually removed during the operation for uterine prolapse.

The speaker suggested that from the pathological standpoint the term "erosion" was erroneous. He suggested that the group of cases known as erosion ("papillary," "follicular," etc.) should be called "peri-orbicular cervicitis"; that true ulceration of the cervix should be termed "ulcerative cervicitis"; and that infection limited to the cervical glands should be called "glandular cervicitis."

Rupture of the Caesarean Scar.

Professor Blair Bell (Liverpool) showed a specimen of a uterus with the scar of a Caesarean wound. This specimen had been obtained at the post-mortem examination of a patient who died a few hours after an emergency Caesarean section. It demonstrated clearly the result of the procedure advocated by the exhibitor, and described by him in the *Journal of Obstetrics and Gynaecology of the British Empire*, 1925, xxxii, p. 727. The strong, heaped muscular scar, the absence of catgut on the peritoneal and mucosal surfaces, and the complete apposition of the parts were revealed. The speaker said that the question of rupture of the Caesarean scar had often been discussed, and cases had been admitted to the Royal Infirmary in the last few years of both rupture and impending rupture. He knew of no case of his own in which such conditions had supervened. It was, of course, obvious that infection in a scar might be responsible for imperfect union, but he was convinced that the method of suture was of paramount importance, whether in clean or infected scars. An unpunctured, accurately apposed mucosa, and wide muscular union, as shown in the specimen, must be of importance. Furthermore, the absence of suture material projecting on the peritoneal surface removed or reduced a constant source of omental and intestinal adhesions.

The PRESIDENT stressed the necessity for accurate apposition of the edges of the scar. He said that his method of suture was similar to that of Professor Blair Bell, except that he did not use the mattress suture. A patient of his had had a temperature after an emergency Caesarean section. She did not report on her next pregnancy, but delivered herself normally. In the third pregnancy the scar ruptured.

Miss IVENS (Liverpool) said that she avoided the endometrium in sewing up these scars, and used two layers of catgut, the last layer taking a large portion of uterine muscle. She had had an opportunity of studying one of the scars five weeks after Caesarean section. The patient had fibroids, and since conditions were not suitable for hysterectomy at the time of the Caesarean section the uterus was removed five weeks later. The uterus showed that the scar was thicker than the rest of the uterine wall, and, microscopically, its track could be traced by a line of giant cells. Professor BLAIR BELL replied that a badly sewn wound was more likely to rupture afterwards, even in the absence of infection.

Fibromyoma Invaded by Adenocarcinoma.

Professor BLAIR BELL showed a specimen of a fibromyoma invaded by adenocarcinoma of unknown origin in a single woman, aged 47. Eight months previously she had had an operation in another city at which the appendix, right appendage, and a rectal polyp were removed. Since then she had had attacks of very severe pain in the right buttock, which shot down the leg; on examination a fibroid uterus was discovered. At operation a complete hysterectomy with left salpingo-oöphorectomy was performed, and a tumour, densely adherent to the rectum and uterus, was removed. Convalescence was uninterrupted, but the patient continued to complain of severe pain in the lower part of the back. Sigmoidoscopy, by Professor R. E. Kelly, revealed an annular constriction of the rectum, fixed to the left wall of the pelvis. The lumen, which admitted the little finger, was lined by normal mucosa. Professor Blair Bell had been informed that the patient later had a colostomy for intestinal obstruction, and eventually died of uraemia. Sections of the tumour adherent to the rectum and uterus showed it to be composed of ordinary fibromyomatous tissue. No malignant tissue was discovered in the area of attachment to the uterus or elsewhere. It was not possible on histological or other evidence to assert definitely that the malignant development in the fibromyoma was secondary to cancer of the rectum, but this appeared probable, and it was unfortunate that no section was made of the rectal polyp.

Mr. STACEY (Sheffield) said he had seen a case where adenocarcinoma developed in an area of the sigmoid which had been the seat of diverticulitis. Professor BLAIR BELL considered that the invasion of this tumour had probably been along the lines of the adhesions.

Ruptured Papillary Ovarian Tumour.

Professor BLAIR BELL showed a single woman, aged 35, who, eighteen months previously, had had the left ovary removed by Dr. Leith Murray; it was the seat of a growth similar to that he now described. It appeared malignant macroscopically, but on section was proved to be innocent. There were two pints of fluid evacuated from the abdomen due to rupture of the upper pole of the tumour previous to operation; the fluid was not bloodstained. In January, 1929, the patient was admitted to a medical ward with abdominal swelling, dyspnoea on exertion, swelling of the ankles, and loss of weight. One and a half pints of fluid were aspirated from the right pleural cavity, but there was no evidence of tuberculosis. A week afterwards eight pints of fluid were withdrawn from the abdomen by paracentesis. Eleven days later she was submitted to laparotomy under spinal anaesthesia, and two pints of thick, straw-coloured fluid were evacuated. The growth of the right ovary was slightly adherent posteriorly, and the uterus was displaced to the left. It was not removed, owing to the condition of the patient. There were bands running over the growth, which had the appearance of adherent intestine and omentum. The growth was also cystic in several places; its general appearance, however, was that of a friable, soft, solid, malignant tumour. Histologically it was a papillary adenoma.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.

A MEETING of the Aberdeen Medico-Chirurgical Society was held on April 4th, with the president, Professor Low, in the chair. A demonstration of clinical cases, with lantern illustrations, was given by members of the staff of the Royal Aberdeen Hospital for Sick Children. Dr. JOHN CRAIG showed a case of coeliac disease in a girl aged 6½, there being a history of diarrhoea for several years, with the passage of large loose pultaceous stools. She had been fed as an infant continuously on a proprietary food. The appearances of the case were classical—infantilism, large abdomen, thin flabby limbs, wasted buttocks, with the usual quaint introspective mentality and squeaky voice. Skiagrams showed many transverse striations of the ends of the long bones. Dr. Craig discussed the diagnosis and treatment, mentioned rickets and tetany as complications, and outlined the latest views on the etiology and pathology of the condition. He then submitted a case of Hirschsprung's disease in a girl aged 6, and showed a girl, aged 7, who had had repeated attacks of unexplained pyrexia. A mass of abdominal glands was discovered, and at operation these were seen to be caseo-purulent tuberculous glands. Removal resulted in the cessation of the febrile attacks. He exhibited skiagrams and a pathological specimen of a case of pyloric stenosis, and a unusual type of bone lesions in congenital syphilis—the pseudo-tuberculous type with caries and no attempt at repair. Dr. H. Ross SOUPER described the appearances and course of a case of acute suppurative frontal sinusitis in a girl aged 1[illegible]. There was marked swelling of both eyelids and bilateral pto[illegible] ptosis, and a fluctuating swelling was present in the mid-line of the forehead. A skiagram showed well-marked opacity of both frontal sinuses, with necrosis of the supraorbital ridge. At the operation pus was found superficial to the frontal bone, both frontal sinuses were filled with pus, and abscess cavities extended through the roof of both orbits. Part of the frontal bone was necrosed, and removal exposed the dura mater. Free drainage was established, but the patient died next day. [illegible] haemolytic staphylococcus was isolated from the pus. Dr. Souper also described a case of lateral and cavernous sinus thrombosis in a boy, aged 3, who, on admission, had a temperature of 100.2° F. and slight left otorrhoea, but no definite external signs of mastoiditis. Two days later oedema of the left eyelid appeared, followed by oedema of the right eyelid on the next day. The temperature rose to 103°, and a polymorphonuclear leucocytosis of 43,000 was present. At operation

necrosis of the mastoid cells was found; the lateral sinus was seen to be covered with granulations, and contained a clot, which was removed. The patient received antistreptococcal serum, but died the following day. Dr. Souper discussed a series of 22 cases of tuberculous mastoiditis in children. He said that the condition occurred between the first and third years of life, was insidious in onset, and the facial nerve was often involved. The ear discharge was curdy and flaky, and multiple perforations were often present; early glandular involvement occurred, and the pre-auricular glands were especially implicated. Dr. J. F. CHRISTIE illustrated with lantern slides a case of ecthyma which, he said, was really a deeper form of streptococcal impetigo, although sometimes a deep tuberculous focus was concerned in the etiology. The children were usually in poor condition, and the buttocks, thighs, and legs were most commonly affected. The best application was a 1 per cent. solution of silver nitrate or 1 in 2,000 solution of mercuric chloride. In the present instance the child made a good recovery, but returned to hospital three weeks later with broncho-pneumonia. Six weeks after convalescence the patient was readmitted and died of generalized tuberculosis. Dr. Christie also described a case of pemphigus vulgaris in a boy, aged 3, who had suffered from chicken-pox three months previously. Typical bullae appeared on the arms, backs of the hands, genitals, and adjacent parts of the thighs. The bullae came out in crops without much rise in temperature, and with no itching. A polymorphonuclear leucocytosis was present with 7 per cent. eosinophils. Condy baths were prescribed, and an ointment containing hydrarg. ammon. and ichthyol was applied. Increasing drop doses of Fowler's solution were given by the mouth. There was no improvement after a month, and quinine sulphate was then given. Later, on withdrawing serum from what appeared a sterile bulla, an almost pure culture of a haemolytic streptococcus was found. Antistreptococcal serum was then injected, a total of five doses being given at seven days' interval. Bullae still continued to form, with slight rises in temperature, but at the end of five weeks the child was considerably better, and left the hospital with no signs of any skin affection. Dr. WILLIAM BROWN showed lantern slides of two cases of erythroedema polyneuritis ("pink disease"), illustrating the change in temperament and expression: the swelling of the face and the high colour of cheeks and nose; the presence of stomatitis; the desquamation of hands and feet, with tenderness; and the characteristic attitude in bed; with contrast slides of the children during the attack and on recovery. The two chief indications of the disease were the look of "misery" and the colour of the hands and feet. Both patients were admitted with a history of change of temperament and of depraved appetite, sweating, and redness and coldness of the extremities. One child was in hospital for four months, and the other for two months. Both were treated with a diet rich in vitamin B, in addition to general tonic treatment. Marmite was given in large doses. One patient improved rapidly on receiving ultra-violet rays: calcium was given to both. Mention was made of the similarity, in some respects, between this disease and beri-beri and pellagra, especially the last. Professor Low thanked the speakers on behalf of the society, and expressed special appreciation of the excellent series of lantern slides with which Dr. William Brown had illustrated the cases described.

AT a meeting of the Society for the Study of Inebriety on April 9th, Dr. J. D. ROLLESTON opened a discussion on alcohol in therapeutics. After a brief historical introduction, in which he showed that from the earliest times the medical profession had been by no mean unanimous on the subject, Dr. Rolleston said that a remarkable decline had taken place within the last thirty years in the therapeutic use of alcohol. This was best illustrated by the fall in the alcohol bill in various hospitals; it was also exemplified by the practice of individual physicians, and the small place which alcohol now occupied in textbooks of medicine. The low esteem in which alcohol was held as a therapeutic agent in the United States was shown by the fact that only a minority of practitioners applied for a licence in those States in which the right to prescribe alcohol was granted, and some of these were said to use it for illicit purposes. Dr. Rolleston added that the conditions in which alcohol was still chiefly employed were pneumonia, enteric fever, diphtheria and other acute infections, diabetes, heart disease, tuberculosis, senility, and inoperable cancer, but it did not appear to be indispensable in any of them. The experience at the Western Hospital, of which he was medical superintendent, had shown that in an annual population of 5,000 patients the consumption of alcohol could be almost abolished without any injurious effects. The factors chiefly responsible for the undeserved esteem which alcohol still enjoyed as a therapeutic agent appeared to be tradition rather than scientific evidence, extra-medical influences, and personal considerations.

Reviews.

ASTHMA.

DURING the last few years more books have been written on asthma than on any other medical subject. Though this shows a welcome revival of interest in the subject, it is disappointing to find how little that is really new is added to our knowledge of the pathogenesis or treatment of the disease. Dr. VIKTOR GRIMM, who is already well known as the author of the most complete modern monograph on asthma, has attempted to answer the extremely difficult but very important question, Which climatic factors are of importance for asthmatics?[1] He has analysed the replies received from 600 doctors and asthmatic patients to whom he put the question, and has amplified the results in the light of his experience as physician at Bad Reichenhall and of a review of the ancient and modern literature in all languages. The book is divided into two parts, in which the "climate of the dwelling" and "external climate" are respectively discussed. In the former, sensitization to the stuffing of pillows and other articles of furniture, to animal emanations, and house dust is the most important factor. Dr. Grimm comes to the conclusion that a carefully taken history is more likely to lead to the discovery of the active allergens than the use of skin tests. He emphasizes the remarkable manner in which the allergic state varies with the time of day and the season, with age, menstruation, infections, and diet, and his experience shows that the effect of desensitization is unfortunately only temporary. In discussing external climate Dr. Grimm pays great attention to such factors as temperature, moisture, altitude, wind, and the electrical condition of the air, in addition to the factors dependent on sensitization. The one definite fact which emerges from his observations is the remarkably favourable influence of mountain air. Asthma is almost unknown among the permanent inhabitants of the Engadine and Davos, and quite 90 per cent. of asthmatics rapidly become completely well in the mountains. This does not depend upon the purity of the atmosphere or the absence of emanations to which the individual is sensitive, but upon some profound biochemical change in the individual's blood which is caused by altitude.

In his book on asthma[2] Dr. LUDWIG HOFBAUER of Vienna gives a fairly adequate account of the subject. It is, however, curious to find that he regards the narrowing of the bronchi in the attack and their widening after injection of adrenaline as dependent on vasomotor and not broncho-motor changes, being apparently unaware of the experiments of Brodie and Dixon, which showed that the relief obtained with adrenaline was due to stimulation of the broncho-dilator sympathetic fibres. The chief interest in the book lies in an admirable description of the anatomy and physiology of the nose and bronchi and their bearing on the prevention and treatment of asthma. For many years Dr. Hofbauer has obtained excellent results by means of respiratory exercises, the importance of nasal instead of mouth, and diaphragmatic instead of thoracic breathing being specially emphasized. At the present time, when many physicians are apt to concentrate their attention too much on the sensitization factor, and rhinologists on operative and antiseptic treatment, it is useful to have the value of a quite different and very simple treatment emphasized. Though in other hands it is hardly likely to give such remarkable results, there are few asthmatics who would not benefit by the regular use of Dr. Hofbauer's breathing exercises. His advice to avoid baths and to sleep with the window closed would hardly suit English patients, and his fear of arterio-sclerosis resulting from the frequent use of adrenaline is doubtless due to the gross overdose (1/2 to 1 c.cm.) which he recommends.

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[1] *Welche Klimafaktoren sind für den Asthmatiker von Wichtigkeit?* Von Dr. Viktor Grimm. Veroffentlichungen aus dem Gebiete der Medizinalverwaltung, xxvi Band, 5 Heft. Berlin: R. Schoetz. 1928. (Med. 8vo, pp. 283. M.12.60.)

[2] *Asthma.* Von Privatdozent Dr. Ludwig Hofbauer. Wien: J. Springer. 1928. (6½ × 9½, pp. vii – 156; 58 figures. R.M.10.80.)

PEMPHIGUS.

PEMPHIGUS is essentially one of the "grandes dermatoses," as the French designate the more serious diseases of the skin. The clinical characteristics are so clearly marked and easily recognized that it has attracted the attention of dermatologists from the very beginning. The latest monograph[3] by Professor SABRAZÈS and Dr. TORLAIS, although it cannot be said to solve the problems of etiology and pathology set by this baffling condition, is well worth reading by all who are interested in it. The authors have based their work on seven cases of their own, which are related in detailed exactitude, but perhaps the most valuable part of the monograph is to be found in the discussion of the various views held, and the researches carried out, by other observers. In the pathology of the disease one of the most striking observations mentioned—not perhaps quite new, but certainly not widely recognized—is that the fluid drawn from the typical bullae contains no less than 10 per cent. of protein, a proportion greater than that found in the fluid of cardiac or renal oedema, or even in the actual serum of the blood. The authors have come to the conclusion that the time-honoured classification of pemphigus into the *vulgaris*, *foliaceus*, and *vegetans* groups is quite irrational, inasmuch as these are all variations of the same disease. They go even further than that, for they also include the well-known dermatitis herpetiformis and Brocq's chronic polymorphic dermatitis as members of the pemphigus group. They regard pemphigus as essentially a microbic affection, not necessarily due always to the same microbe, and they are inclined to think that the characteristic bullae owe their formation to some inherent peculiarity of the patient's skin, causing it to react in this particular way. Those patients who are unfortunate enough to possess this peculiarity in the highest degree suffer from the congenital condition known as epidermolysis bullosa; those in whom it is not so pronounced may acquire pemphigus later in life, and in these the vulnerability of the skin is shown by the presence of Nikolsky's sign. This is a fascinating theory, but cannot be accepted without further investigation. It depends on the assumption that Nikolsky's sign is always congenital and that it cannot be acquired.

THE FUNDUS OCULI.

IT is always a pleasure to take note of the work of one who is a pioneer; and when his work is of solid merit, has been compiled with considerable pains and care, and is, in addition, of no small artistic merit, the pleasure becomes correspondingly greater. It is with such feelings that we introduce the volume of *Photographs of the Fundus Oculi*[4] which has been compiled by Dr. BEDELL of New York.

In the ordinary course of events, in order to obtain a pictorial record of changes in the fundus, paintings have to be done by hand—a laborious process, both for the artist and the patient, and, since the surgeon rarely has the ability or the time to attend to the matter himself, frequently attended with results that leave much to be desired from the point of view of scientific accuracy. A process of photography would seem to be the obvious solution of the difficulty, but the adaptation of a technique applicable to the interior of the living eye has been beset with difficulties. The pioneers in this work have been Wolfe, Thorner, Salomonson, Dimmer, and Nordenson; and from these, especially the last, Bedell has drawn his inspiration. The photographs were taken with the Nordenson camera of Zeiss, in which the source of illumination employed is the carbon arc (what effect of discomfort it has upon the patient we are not told). Its use results in the complete destruction of the film at the spots where the light is focused, and hence two circles of white (representing the two carbon poles) appear on each photograph. The effect of this is undoubtedly annoying, but it can only be got rid of at the expense of a blurred image. Colour photography, of course, is out of the question, because of the length of the exposure and the intensity of the light which would be required. In such a photograph all the details of the fundus are rendered very evident. Blood, whether in a vessel or appearing as a haemorrhage, is black, or nearly so; yellow material, as in a fresh exudate, varies with the depth of the mass, the thicker the deposit the whiter it appears; pale yellow becomes lighter on a background of contrast; and white is of varying intensity, depending on the background upon which it is found. In this way details can be reproduced with meticulous exactitude, and not the least valuable result of the method is that the progress of a lesion in the fundus, whether for better or for worse, can be followed by records which permit of no cavil. In addition, the possibility of taking stereoscopic photographs allows of a very accurate perception of depth. Is a disc, for example, cupped, or (what is more important) is the cupping progressive? Is a "mass" in the fundus raised, or (what is more important still) is the "mass" growing? If questions such as these can be answered unhesitatingly, then the method, even despite its obvious complexity and expense, is fully justified. One interesting point the stereoscopic camera in Bedell's hands seems to have brought out is that "holes" at the macula are relatively common without any other ocular injury; moreover, a depressed, dark macula is frequent in certain types of uveitis, in circulatory disturbances, and in spontaneous retinal detachment in addition to the classical form following injury. From the medico-legal standpoint this is of some importance.

To appreciate all the clinical points which these photographs demonstrate it is necessary to consult the atlas itself. Altogether it is a most extensive compilation, unique of its kind in the literature of the world, and likely long to remain so. It contains 95 plates, 324 single photographs, and 272 stereo-photographs, each selected with care to represent some one or other point of interest. It is a monument to the enthusiasm and industry as well as to the clinical acumen of its compiler; and it is of the nature of a triumph for its American publishers.

DELINQUENCY IN TWINS.

VERBRECHEN ALS SCHICKSAL[5] (or delinquency as destiny) is a monograph by Professor JOHANNES LANGE of Munich, dealing with delinquency occurring in twins, in which he endeavours to determine whether heredity or environment is the preponderating causal factor. Identical or uniovular twins are alike in appearance, and the author endeavours to show that their reactions and nervous disorders are likewise similar. In his notes we find instances of two boy twins living some distance apart, who both fell sick at the same time and were operated on for appendicitis, and also of two who were petty swindlers and simultaneously became bald, fat, and diabetic. Finally, the author lays down that, in twins, concordance in life's events is due to similar hereditary factors, whilst discordance implies their absence. From prison records he has collected thirty pairs of twins, thirteen uniovular, and seventeen binovular, one of whom at least in each case had been convicted. In ten cases among the thirteen uniovular twins, the partner had also been convicted (concordance); but among the seventeen binovular twins, this had only happened in two cases, and in these two cases other causal factors were clearly traced, thus reducing the number to fifteen, in which only one of each twin pair had been convicted (discordance). Concentrating his attention on the ten cases of uniovular twins, Professor Lange gives full records, extending over fifty pages, demonstrating their concordance in body and behaviour. The hereditary factor in criminality is suggested from the observation that 77 per cent. concordance occurs in uniovular as against 12 per cent. in binovular twins. The author estimates the other convicted brothers of uniovular twins as about 1 in 4, of binovular as 1 in 8.5, and quotes Viernstein's observations in Straubing prison on the ordinary convicted brothers of prisoners as 1 in 12. He holds that if criminality is a compulsory

[3] *Le Pemphigus.* Par les Drs. J. Sabrazès et J. Torlais. Paris: G. Doin. 1929. (Roy. 8vo, pp. 80; 10 figures. 15 fr.)

[4] *Photographs of the Fundus Oculi.* By Arthur J. Bedell, M.D. Philadelphia: F. A. Davis Company. 1929. (7½ × 10½, pp. 317; 95 plates, 324 pictures, and 272 stereoscopic photographs. 25 dollars.)

[5] *Verbrechen als Schicksal.* Von Professor Dr. Johannes Lange. Leipzig: G. Thieme. 1929. (6½ × 10, pp. 96; 5 figures. M.7.)

matter, the result of laws we cannot withstand, there is no right to punish in the narrow sense. Security of the community is the aim of punishment, although not realized in the means. He advocates improved after-care, and, more pressing still, restriction of alcohol; early recognition of delinquents through better criminal study; and prophylaxis through genetic measures in preventing individuals with active criminal heredity from being born. The Bavarian research is a sound start, but deeper and wider knowledge is needed for its completion.

PREVENTION OF TUBERCULOSIS.

In his book *Some Methods for the Prevention of Tuberculosis*[6] Dr. W. BOLTON TOMSON has assembled and presented, in a manner likely to interest the public administrator no less than the medical practitioner, an account of some of the tuberculosis schemes operating in Europe and America. Holding that many of the schemes built up in England have failed to realize the results anticipated at their inception, and that progress in the eradication of tuberculosis is practically at a standstill, he analyses the general principles underlying methods which have been successful, and suggests how in this country they might be translated into effective action. In the main, the principle animating the chief organizations in France, Belgium, Switzerland, Norway, Sweden, and America has been *dépistage*—namely, the separation of the possible *victim* from the source of *infection*. Of this kind are the Grancher Association, established in France in 1903 for the protection of children against tuberculosis, and the *Placement Familial des Tout-Petits* founded in 1920 to deal from birth with children in danger of contracting the infection. In England, on the other hand, the view underlying many tuberculosis schemes is that it is possible, by raising the bodily resistance against the disease and by diminishing the intensity and size of the infecting dose, to prevent not infection but its consequences. The value of the English view, with its corollary that repeated small doses of infection, far from being harmful, may actually confer immunity, has been demonstrated, Dr. Tomson believes, by the results obtained in our tuberculosis village settlements. In the Papworth Colony, for example, not one of the 140 children born of tuberculous parents since its foundation in 1916 has suffered from any form of tuberculosis, and at Preston Hall a similar record has been established since its reorganization in 1925. The advantage of the settlement to the patient is that he can live a sheltered life, working when he can and resting when he should. The patients, says Dr. Tomson, "are no longer a misery to themselves or a danger to others. They beget children that grow up strong and well, untainted and unaffected by the disease from which their parents suffer." Moreover, as the Papworth records show, a settlement can be made to become self-supporting. Dr. Tomson's conclusion is that, however admirable may be the work of organizations carrying out the principles of *dépistage*, the village settlement, by rendering possible the successful immunization of children born of tuberculous parents, affords the best hope of eradicating the disease.

BACTERIOLOGY.

PROFESSOR DIBLE has accomplished a difficult task in his book *Recent Advances in Bacteriology*.[7] To give a judicial summary of "advances" in any subject is far from easy, but when the subject is one which is still showing a youthful exuberance of growth the task of choice and rejection is particularly difficult. The author has avoided the mistake of giving a mere catalogue of other people's opinions. He has made the story interesting and readable to everyone, even when talking about the streptococci, or the bacteriophage, or B.C.G., or recent laboratory work in connexion with infectious diseases. These are the main subjects dealt with in this volume, and the reader is presented with a very comprehensive account of what has been accomplished in the field of bacteriology during the years from the commencement of the war to the year 1928.

One of the most important points to notice about any book of bacteriology is for whom it is intended. Dr. CURTIS HILLIARD'S *Textbook of Bacteriology and its Applications*[8] is a good account of the general science of bacteriology written for students of science, but not for medical students. Even public health questions such as water and food analysis are not dealt with sufficiently thoroughly for students preparing for the D.P.H.; but for general science students it would be a useful book, well written, accurate, and convenient in size.

NOTES ON BOOKS.

THE *Correct Lines of Dietetic Therapy*,[9] by Professor FRITZ RABE, represents a real attempt to discuss dietetic therapy on sound and scientific lines. In such a work it is, of course, neither possible nor even desirable for the author entirely to avoid controversial ground; when, however, Professor Rabe enters debatable territory his remarks are characterized by moderation and soundness of outlook. This is especially well illustrated in the section dealing with nephritis, which shows evidence of wide knowledge and careful thought. Constipation, the happy hunting ground of the commercial publicist, is dismissed in a few paragraphs. It is unfortunate that there are so few books in English that cover so concisely and effectively a similar range of subject.

In a volume on *The New Psychology of the Unconscious*[10] Dr. C. W. VALENTINE, professor of education in the University of Birmingham, aims to give a concise exposition of his subject, and to indicate what he believes to be fairly well established and what is still speculative theory or hasty generalization in the new teaching. He also aims to bring the main doctrines into line with "orthodox" psychology, and to show how they may be regarded as unfamiliar examples of recognized fundamental laws of the mind. This book is a revision of *Dreams and the Unconscious*, published in 1921.

In *How to Stain the Nervous System*[11] Mr. J. ANDERSON has produced a very useful little book. Descriptions of so many of the more modern methods are scattered through foreign journals that it is quite hopeless, for example, for a junior medical officer in a mental hospital to reach them. This small book gives him all he wants to begin with. It would have been an advantage to have given Dieterle's method of staining spirochaetes in the nervous system, as Jahnel's method takes such a long time to carry through.

The popularity of Dr. A. E. HERTZLER'S monograph on *The Technic of Local Anesthesia*[12] is evidenced by the fact that a fourth edition has been called for within three years of the appearance of the third edition. The aim of the author has been, as he says, not to show what operations can be performed under local anaesthesia, but in what operations it is to be preferred. He exhibits no particular bias towards the particular form of anaesthesia he is describing, and quite readily agrees that in certain patients general anaesthesia would be best. In fact, he approaches each case with an open mind, and prescribes the anaesthetic he considers most suitable just as he would prescribe any other drug; he does not hesitate to use combined local and general anaesthesia where indicated. His descriptions of technique are clear and very readable; they are supported by many well-chosen illustrations beautifully reproduced on paper suitable for this purpose. The book can be confidently recommended to those interested in local anaesthesia.

The twenty-first volume of the *Bulletin of the Ophthalmological Society of Egypt* comprises the proceedings of this society during its twenty-fifth session. Reports are included of the annual meeting in Cairo in March, 1928, and of the International Ophthalmological Conference at Scheveningen, Holland, in July, 1927. Dr. M. A. El Bakly contributes some clinical notes based on a visit to Vienna. Short illustrated articles on ophthalmological subjects compose the bulk of the volume

[6] *Some Methods for the Prevention of Tuberculosis.* By W. Bolton Tomson, M.D. London: Baillière, Tindall and Cox. 1929. (Demy 8vo, pp. ix + 148; illustrated. 6s.)

[7] *Recent Advances in Bacteriology.* By J. Henry Dible, M.B.Glas., M.R.C.P. London; J. and A. Churchill. 1928. (5½ × 8½, pp. vii + 363; 22 figures. 12s. 6d. net.)

[8] *A Textbook of Bacteriology and its Applications.* By Curtis M. Hilliard. London and New York: Ginn and Co., Ltd. 1928. (Demy 8vo, pp. ix + 329; 59 figures. 12s. 6d. net.)

[9] *Richtlinien diätetischer Therapie.* Von Professor Dr Fritz Rabe. Therapie in Einzeldarstellungen. Leipzig: G. Thieme. 1928. (5½ × 8½, pp. 110. M.4.60.)

[10] *The New Psychology of the Unconscious.* By C. W. Valentine, M.A.Cantab., D.Phil.St. Andrews. London: Christophers. 1929. (Cr. 8vo, pp. xiv + 162. 4s. 6d.)

[11] *How to Stain the Nervous System.* By J. Anderson. With an introduction by J. G. Greenfield, B.Sc., M.D., F.R.C.P. Edinburgh: E. and S. Livingstone. 1929. (Cr. 8vo, pp. x + 139. 5s. net.)

[12] *The Technic of Local Anesthesia.* By Arthur E. Hertzler, M.D., Ph.D., LL.D., F.A.C.S. Fourth edition. London: H. Kimpton. 1928. (7 × 10½, pp. 281; 146 figures. 25s. net.)

SUPPLY AND DISTRIBUTION OF RADIUM.

THE SUBCOMMITTEE'S REPORT.

IN last week's issue (p. 736) we were able to give only an outline of the conclusions and recommendations contained in the report of the Radium Subcommittee of the Committee of Civil Research,[1] which was published as we were going to press. We return to the subject this week because we believe that this report, which embodies a detailed account of the existing supply of radium available for medical treatment in Great Britain, a consideration of the possibilities afforded by existing and potential sources of radium production, an estimate of the amount of radium at present required for medical purposes in England, Scotland, and Wales, and a proposed scheme for the purchase and distribution of a central stock of radium for medical purposes, is a document of the deepest concern to the medical profession. Its recommendations, if adopted, will determine the method by which the bulk of the radium used in this country for medical purposes will be bought and administered for many years to come.

Radium in Medical Treatment.

Following a brief account of its procedure during the inquiry, the subcommittee makes a balanced statement of the importance which in recent years radium has acquired in medical practice. With the elaboration of methods for the radium treatment of cancer of almost every region of the body except the stomach, there has occurred a transformation of the modes adopted for its application, above all in regard to the time of exposure, the quantity of radium to be employed, the position to be selected for it, and the so-called surgery of access. The subcommittee reaffirms the view now generally held that radium will, in increasing measure, replace excisional surgery in the treatment of cancer, and that already cancer of the uterus may be treated as effectively with radium as by operation. The amount of radium now available, though greater than it was in 1926, is still inadequate to cope even with the most pressing needs. There exists, moreover, a lamentable shortage of highly trained radium surgeons, and a corresponding shortage of available hospital beds. Remedy of these deficiencies, the subcommittee believes, will follow the acquisition and general availability of an adequate supply of radium. Whereas the best radium practice in Great Britain is as good as that in any country, it must be conceded that Sweden and France, in large measure owing to the interest displayed by their Governments, have made the greater contribution to the stock of existing knowledge in regard to the treatment of cancer with radium.

Estimated Amount of Radium Available for Medical Treatment.

Since 1919 approximately 2.4 grams of radium element recovered from surplus sources of war material has been entrusted by the Government to the Medical Research Council, and by it distributed on loan to hospitals conducting approved schemes of research in radium therapy. Apart from one fraction which has been allocated solely for experimental work, and one which is retained at the Middlesex Hospital as a source of supply of radium emanation (radon), the bulk of the radium thus lent has been used mainly, though not exclusively, for purposes of treatment. The task of estimating the amount of radium available for medical purposes held by institutions and private medical practitioners was complicated by three main difficulties. Hospitals holding a given amount may have added to it in the interval between the publication of two successive annual reports; some hospitals may possess radium of which the subcommittee failed to obtain information; and there may be untraced stocks held by private medical practitioners. With these reservations the subcommittee estimates that, held at present by institutions and practitioners in England and Wales, there are 9.531 grams of radium, which within the next three months will almost certainly be increased to 20.567 grams, and that in Scotland the existing stock of 1.136 grams will, in the same period, be increased to 2.136 grams. Of the amount in England and Wales it is estimated that London will hold 10.767 grams—that is, more than one-half of the total.

[1] Cmd. 3303. H.M. Stationery Office. 1929. Price 6d. net.

The Economic Use of Radium.

The fullest use of radium can be ensured only when there is a sufficient series of patients with the same disease at the institution where the treatment is administered and it is possible to transfer the appropriate applicators rapidly from one patient to another. Not only are such conditions rare in general hospitals admitting cases of all types, but even when a group of hospitals shares a stock of radium its transfer from one to the other must necessarily involve some loss of time. It follows, therefore, that the available radium can be used economically only if in each area radium treatment is concentrated in specialized centres large enough to obtain an adequate supply of patients. In existing circumstances it is possible to calculate the extent to which full use is being made of radium supplies by working out for each hospital the average period during which known quantities of radium are employed in proportion to the total period for which it is available. At the Metropolitan Asylums Board centre for the treatment of cancer of the womb it is calculated, given a steady flow of patients, that the radium might be used for about 70 per cent. of the available time.

Present Requirements.

In Great Britain, from all sources, Governmental and private, the total available radium is approximately 24.9 grams. Of this amount 22.7 grams, or—excluding the Beit gift of 4 grams, the future distribution of which is not at present known—18.7 grams are distributed unevenly over England and Wales, and 2.2 grams are held in Scotland. Of the 18.7 in England and Wales, 12.6 grams are in London, and 6.1 are distributed in the provinces. Assuming that the supply in London were enough for its population of eight millions, then for the provinces, with a population of about thirty millions, the amount required would be at least 24 grams. Calculating on this basis the present radium requirements of England and Wales would be 36 grams or, making due allowance for its probable share of the Beit gift, at least 15 grams more than it holds at present. This calculation taken by itself is, however, quite misleading; it is made on a population basis without allowing for the fact that many cases from the provinces are now treated in London, and that a certain number would continue to be sent to London even if provincial sources were adequate. It is made, moreover, on the untenable assumption that the present requirements of London hospitals are being adequately met. Finally, it makes no allowance for the rapid and continuing progress in the development of radium surgery, and assumes that requirements are in a static condition. For these reasons the subcommittee believes that 20 grams would be a conservative estimate of the present radium deficit in England and Wales, and, calculating in a similar manner, 4 grams in Scotland. If, however, large additions were made immediately to the existing radium supplies great difficulty would be experienced in finding surgeons and hospital beds in adequate numbers to use them; the subcommittee therefore recommends the adoption of a programme which aims at securing a net increase of 20 grams of radium to be available for medical purposes at the end of 1930. Purchases on this scale would give sufficient opportunities for the necessary provision of adequate numbers of trained staff and of beds available for patients treated for cancer with radium.

The Sources of Radium Production.

At present the main source of radium production is Belgium, where 30 or 40 grams of radium element (approximately the amount of the world's present annual consumption) were produced in 1928 from ore mined in the Belgian Congo. The chairman of the subcommittee (Lord Rayleigh, F.R.S.) is satisfied that there is no justification for the view that Belgium holds large reserves of ore. At Oolen, where the Congo ore is worked up, he was shown stock amounting to about fifty tons, and was told that if the factory was not always in full activity it was because the ore did not come in fast enough. Originally, moreover, the ore was

rich that ten tons would yield a gram of radium: now about thirty or forty tons were necessary to produce this amount. Should prospecting fail to discover a richer ore a shortage of radium supply will have to be contemplated eventually. American carnotite ores come second as a potential source of radium, but though radium cannot be extracted from carnotite profitably by the present methods, the United States Bureau of Mines has recently developed a process by which it claims that it may obtain exceptionally high extraction of radium at costs considerably lower than those of existing processes. The subcommittee thinks it improbable that any of the ores mined in Cornwall are abundant enough to yield radium in sufficient quantities to compete commercially with the ores from the Belgian Congo. Canada, Australia, South Africa, India, Ceylon, and Tanganyika, though containing radio-active deposits, are not likely at present to add appreciably to the world's radium supply. Other sources of supply of minor importance are Czechoslovakia, Madagascar, Portugal, and Russia.

The Cost of Production.

Complex problems are involved in estimating the cost of production of radium. Prospecting is usually prolonged and expensive; the estimates of available tonnage in any given mine are of necessity highly speculative, and the estimation of price must be largely guesswork. Until a mine is actually worked out it is impossible to calculate whether any real profit has been made; indeed, a company may sell its product at apparently a high profit, only to find in the end that it has been working at a net loss. The cost of extracting radium is high in relation to the cost of the ore, and owing to uncertainties of demand, and more recently to uncertainties about the delivery of the ore, it has not been found possible to keep the works in constant operation. Factors determining the retail price are the cost of the containers, which are frequently of platinum, and the constantly developing technique in radiotherapy, which necessitates modifications in the form in which radium is to be made up by the manufacturers. Finally, radium is produced only as a by-product of companies engaged in some other form of mining, and it is difficult to determine the profit which is theoretically attributable to each of the company's products. The subcommittee reproduces a calculation made by the United States Bureau of Mines of the cost in August, 1915, of providing 1 gram of radium from low-grade carnotite ore containing about 3 per cent. uranium oxide. The cost of production was £7,752, which, conditions being equal, may be assumed to be considerably lower than the cost of producing an equivalent amount of radium to-day. From this survey of the sources of radium production the subcommittee concludes that if it is decided to make immediately any considerable addition to the stock of radium in this country the only means of doing so is by purchase from the Belgian producers. It holds, however, that if arrangements could be made for purchases to be effected through a single agency it would be possible to buy for substantially lower than the present retail price of £12 a milligram.

RECOMMENDATIONS.

The Need for Co-ordination.

No common policy exists at the present time among the hospitals for the acquisition or use of radium. Institutions buy when and where they can, with the result that stocks have been acquired for particular localities without reference to the needs of the country as a whole. Competitive buying helps to maintain the present high market price of radium; it leads, moreover, to the employment of radium in institutions inadequately equipped with the necessary specialized personnel and other requirements to ensure efficiency. In the subcommittee's view research and treatment by radium must continue for many years to be intimately associated, and any institution that desires to undertake this work efficiently must have an adequate stock of radium, up-to-date *x*-ray installations, facilities for first-class surgery, experienced and highly trained personnel, a fully equipped pathological laboratory, a physics department, and a library—conditions obtaining in some large hospitals and institutions, but generally unattainable except in organized centres.

To deal with the problem of irregular and unco-ordinated distribution of radium as between one area and another, with the difficulties of institutions possessing inadequate supplies, and with the mobilization of radium to the best advantage, the subcommittee proposes not complete centralization, but a form of organization in which the principles of a centralized and of a decentralized system are so adjusted as to give the best results in the various and varying circumstances which will have to be met. It recommends, therefore, that an organization should be established forthwith by the Government for the better distribution of radium in this country, and should be entrusted with the 20 grams of radium which the Government should aim at acquiring at the end of 1930. The necessary organization could be achieved in two ways: the Government might acquire the amount of radium that is needed and entrust its distribution to a Government committee appointed by the appropriate Minister or Ministers, more or less on the same lines as that of the existing Radiology Committee of the Medical Research Council; or it might decide to constitute trustees, in whom the radium bought with the moneys provided by Parliament or otherwise would be vested, and who would appoint an expert body charged with the duty of distribution.

The Proposed Organization.

Of these alternatives the subcommittee prefers the second, and proposes that the Government should constitute a body, entitled the National Radium Trustees, to act as a holding body of the funds provided by Parliament or otherwise, and authorized to purchase therewith and hold radium for the use of a body of experts, a Radium Commission, with functions analogous to those hitherto performed by the Radiological Committee of the Medical Research Council in relation to the radium now held by the Council for research purposes. It recommends, furthermore, that the trustees should be empowered to act as buying agents for the hospitals and other institutions in this country, and for Dominion and Colonial Governments. The Trustees should comprise the following persons:

> The Lord President of the Council (who would naturally be the chairman), the Minister of Health, the Secretary of State for Scotland (as the Head of the Department of Health for Scotland), the President of the Royal Society, the President of the Royal College of Physicians of London, the President of the Royal College of Surgeons of England, the Chairman of the Central Liaison Committee of Voluntary Hospitals in Scotland, the President of the Royal Society of Medicine, and the President of the British Medical Association,

with power to co-opt not more than two additional members. The first duty of this body would be to appoint the Radium Commission, with the following powers and duties:

> "Generally to deal with the custody, distribution, and use of all radium held by the trustees, having regard to the advancement of knowledge, the treatment of the sick, and economy of use; and, in particular, to consider and approve plans submitted to them for the use of radium for the purposes of medical treatment and research, and to make the necessary arrangements for the supply of radium for such uses."

The subcommittee recognizes that the success or failure of its scheme will turn largely on the personnel selected to form the Radium Commission, which, in its view, should be composed not of representatives of particular institutions or interests, but of the best available experts of the several sciences underlying radium therapy; moreover, it must be so constituted as to ensure that it will work in harmonious relations both with the medical profession and with the Government departments concerned. The subcommittee recommends accordingly that the Commission should consist (in addition to the chairman, who should be a distinguished public man but not necessarily a member of the medical profession, and should be nominated by the National Radium Trustees) of eight persons. Of these, four should be nominated by the National Radium Trustees, and one each respectively by the Minister of Health, the Secretary for Scotland, the Medical Research Council, and the Department of Scientific and Industrial Research. The subcommittee suggests that members of the Radium Commission should be appointed in the first instance for a period of four years, and should be eligible for reappointment after an interval of one year, but that the chairman should be eligible for immediate reappointment. It suggests that the nomination of a member by the Department of Scientific

and Industrial Research would constitute a valuable initial link between the Commission and the National Physical Laboratory, which is administered by that Department. The subcommittee further suggests that at an early stage arrangements should be made by the Radium Commission with the National Physical Laboratory for (*a*) the custody of the radium put at the disposal of the Commission by the National Radium Trustees when such radium is not actually in use for medical purposes, (*b*) its preparation in form for use, and (*c*) its recovery from such preparation on return from loan.

It is not anticipated that the annual expenditure on the preparation and recovery of radium or the administrative expenses of the Radium Commission will amount to a substantial sum in relation to the initial cost of purchasing the proposed quantity of radium. Arrangements might not unreasonably be made to secure a set-off to the cost of these services, to be defrayed by a small charge made for the loan of radium by the Commission to institutions. Finally, it is argued that progress throughout the country will be greatly promoted by the free communication of *information as between all the working centres*, and that one of the important functions of the Radium Commission may prove to be the collection and publication of methods and results of radium therapy for the country as a whole.

Provision of the Funds Required.

Discussing the manner in which funds for the purchase of the 20 grams of radium needed immediately might be obtained, the subcommittee favours the following method:

> The money might be furnished in part by the Government and in part by the public. If this course were adopted, the best plan would probably be a public appeal, in which the Government would undertake to contribute pound for pound up to some maximum sum to be determined.

The subcommittee has no doubt that in this way immediate success would be assured, and the £200,000 required could be raised without difficulty. An appeal on these lines from the Government to the public would, in its opinion, secure the £200,000; if not, it would still be possible for the Government at a later stage to furnish some subsidy to stimulate contributions from the public.

> "In making any appeal the Government should make it clear that they did not suggest that all gifts for the purchase of radium should henceforth be placed at the disposal of the National Radium Trustees. The need on the part of the larger institutions to have their own supplies would still continue, and some donors will naturally prefer to equip in this respect particular institutions. There can be no doubt, however, that the most urgent need at the moment is the creation of a distributing organization and the placing at its disposal of an adequate supply of radium for loan or hire to institutions and research workers as and when they require it."

As reported in our last issue, the Chancellor of the Exchequer announced, on April 16th, that the Government accepted the financial recommendations of the subcommittee—in other words, that the Government would contribute up to a maximum of £100,000 on the basis of £1 for every £1 privately subscribed. Mr. Churchill added that the subcommittee's recommendations on the subject of organization had been accepted by the Government in principle, but that the precise form of the organization would remain open to further discussion.

ROYAL MEDICAL BENEVOLENT FUND.

STEADY progress is being made in its beneficent work by the Royal Medical Benevolent Fund, and the report of a very successful year was presented to the annual meeting on April 18th. The increase in subscriptions and donations amounted to £1,032, bringing the total revenue from this source up to £8,623. In its annual report for 1928 the committee placed on record its appreciation of the work done by the honorary local secretaries of the Fund, through whose efforts many new subscribers have been obtained, and also of the co-operation of the British Medical Association. A total sum of £1,667 was received through the Association last year—£800 being an allocation from the Charities Committee, and the remainder earmarked subscriptions sent through the Association or the *British Medical Journal*—an advance of £396 on the previous year. The increased income has enabled the committee to help a greater number of applicants, and also to give larger grants, but in very many cases the amount of the relief is still far from adequate to meet the needs of the case. During last year 485 grants were made, amounting to £8,772, either to medical practitioners who, through old age or illness, were unable to work, to widows of medical men who had been left penniless, and frequently with children to educate, or to daughters of medical men who were too old or otherwise unable to support themselves. In some cases the committee has been called upon to help widows and daughters whose incomes have been lost through unfortunate investments or other causes, but more frequently it has had to assist ladies who have struggled to support themselves by teaching, needlework, or even domestic service until they have become unable to work any longer. Approximately £500 has been expended in the education of orphans, but this branch of the work is mainly undertaken by the Ladies' Guild. An appeal through the medical press for contributions towards children's summer holidays met with a fair response, as a result of which a number of orphans of medical men benefited by a country holiday, and a renewed appeal is to be made this year. The number of annuitants on the Fund, all of them over 60 years old, is now 179, and the total amount paid in annuities last year was £4,816.

Sir Thomas Barlow, who once again presided over the annual meeting, spoke of the great loss which the Fund had suffered through the death of its honorary secretary, Dr. Newton Pitt. Dr. Pitt's work, he said, had always been so quietly and modestly done that many of those who subscribed to the Fund, or who benefited from it, were altogether unaware of the personality and the labour of the man who guided its fortunes with such zeal and wisdom. During the fifteen years that he was its secretary Dr. Pitt devoted a part of every day he was in London to the Fund's requirements, and to all applicants and others he consistently showed the greatest courtesy and kindness. The Fund was fortunate, said Sir Thomas Barlow, in finding so good a successor to Dr. Pitt as Sir Percy Sargent, who was well acquainted with the needs of the Fund and had already done a great deal of work on its behalf. Sir Thomas went on to say how much the committee appreciated the work of the Ladies' Guild. Not only did these ladies look after the needs of wives and families in such matters as clothing, education, and occupation, but they brought into the distressed home a breath of fresh air, and found a way out of very many practical difficulties. The financial results, Sir Thomas thought, had been very satisfactory. The Fund had received yeoman help from the British Medical Association, and in addition to the large accession of revenue from this source, the committee had the advantage of Dr. C. O. Hawthorne, representing the Association, as a member who had rendered great help, which his colleagues highly appreciated.

Sir Charters Symonds, the treasurer, in presenting the statement of accounts, pointed out that, although in the grant department £2,000 more had been distributed than in the previous year, yet the extra cost was only £50—another instance of the economy with which the Fund was administered. In connexion with the annuities the committee had found it possible at last to make six annuities of £100 each. Hitherto the maximum annuity has been £40; these increased annuities had been made possible largely as the result of a bequest of the late Dr. Alexander Lawrence, and it was hoped to increase their number during 1929. To be able to give a larger annuity had long been a cherished hope of Dr. Newton Pitt, and it was some satisfaction to feel that this step was taken by the committee some little time before Dr. Pitt's death.

On the motion of Dr. Hawthorne, Sir Thomas Barlow was re-elected president, Sir Charters Symonds treasurer, and Sir Percy Sargent and Mr. R. M. Handfield-Jones were made joint honorary secretaries. Twenty-two additional vice-presidents were also elected.

British Medical Journal.

SATURDAY, APRIL 27TH, 1929.

THE CARE OF MENTALLY DEFICIENT CHILDREN.

THE long promised and patiently awaited report of the Joint Committee of the Board of Education and the Board of Control on Mental Deficiency[1] was published last Saturday. Even so, it is published only in part. That portion of the report which deals with adult defectives is still mysteriously withheld. Neither delay nor withholding is the fault of the joint committee themselves; indeed, in a prefatory note they mildly protest that the "proper sequence and right perspective" of their report has been damaged thereby, as well as its "coherence and force." In the public interest it is necessary to press for, even to insist upon, the early publication of the missing Part III. It would be very valuable at the present time, when schemes involving the care of adult mental defectives are being considered by local authorities in connexion with the Local Government Act; and no individual, however advantageously placed, should be able to keep from the public the considered opinions of a body of persons pre-eminently competent to influence and guide those interested in the subject with which they deal.

Incomplete as it is, the report is extraordinarily interesting and full of valuable suggestions, pointing not merely to the eradication of imperfections of detail in our present system of dealing with mentally defective children, but to a radical revision of the system itself. After describing the nature of mental defect and reviewing the present legislative and administrative arrangements for the care of mentally defective children, both educational and other, the committee gives an account of the special investigation into the incidence of mental deficiency in six selected and representative areas by Dr. E. O. Lewis, whose detailed and invaluable report forms Part IV of the committee's publication. They find that the total number of mentally defective persons in England and Wales is over 300,000; that this incidence figure of some 8.5 per 1,000 population is approximately twice as great as that given by the Royal Commission on the Feeble-minded in 1908; that the incidence of all grades of defect in urban areas is 6.7 per 1,000, as compared with 10.5 in rural areas; that after all allowances have been made there has been some definite increase in the incidence of mental deficiency during the past twenty years, and that this is connected intimately with other important social problems. The committee then suggests a scheme for the future allocation of responsibility for children between local education, mental deficiency, and other authorities, and for the educational provision to be made, and they wisely include in this scheme the large marginal group of educationally retarded children not now described as mentally defective in the narrow sense. No doubt, as is the case with most reports of Governmental committees, many people will be content to read only the chapter summarizing the conclusions and recommendations, and for those who have only a very general interest in the subject this, together with the chapter on the nature of mental defect, may suffice; but the whole report is so authoritative, so well thought out, and so well expressed, that the whole of it is to be commended to the consideration of teachers, medical officers, social workers, and administrators alike.

The system proposed by the committee can be described here only in outline. Assuming, as is now generally agreed to be desirable, that the age of compulsory school attendance will be from 5 years of age to 15, and that there will be an educational break and review of attainment and capacity at 11 years of age with a wide variety of educational opportunity thereafter, it is proposed that there shall be no differentiation in these age limits as between normal and mentally defective or retarded children. It is proposed, too, that there shall be no need to "certify" children as mentally defective before they can be sent to a "special" school, but that all children and schools alike should be retained within the normal public elementary education sphere, provision being made, both before and after 11 years of age, for groups of children of varying educational capacity. There would have to be some degree of compulsion so that an education authority could secure the attendance of a child at the school or class most suitable for his requirements, and the need for certification would remain in the case of those children who were found to be "uneducable" (say, with a mental ratio under 50 or 55), or who were so socially as well as educationally defective as to require the care of the mental deficiency authority. For children of the lowest type occupation centres rather than schools would be provided unless they were sent to residential institutions; and it is not contemplated that local education authorities would as a rule set up separate schools or departments for the younger retarded children (whether feeble-minded, dull, or backward) except in the largest towns; but at the age of 11 years or so such children would be transferred to schools or classes where their education and training would be specially adapted to their needs along the lines followed in the best of our existing special schools. This would be a part of the general reorganization of post-primary education which is contemplated in the near future. This outline scheme is worked out in detail in chapter viii of the report, and a clear diagram of what is intended is given. The suggested educational provision for three age groups and for three grades of mental ratio is shown, and the respective spheres of the local education authority and the local mental deficiency authority are indicated.

There are a good many difficulties in the working out of this plan, but, if the plan itself be approved, they are not insurmountable. Some conspicuous merits of the plan will be evident to those who are familiar, whether as administrators or as teachers, with the working of existing arrangements. They are clearly brought out in the report, which contains also a number of minor but very valuable suggestions for improving these arrangements and more effectively carrying out what no doubt Parliament intended to be done by its Education Acts and Mental Deficiency Acts. The report is certain to be the subject of much discussion by persons interested and expert in the subjects with which it deals, as at the conference under the auspices of the Central Association for Mental Welfare at the moment taking place. The existence of the joint committee has from time to time been made the official excuse for discouraging action on the part of local authorities, and it is to be hoped that now that this part of its report has been published

[1] London: H.M. Stationery Office. 1929. 5s. net.

speedy progress may be made by Government departments and local councils in making provision for the most appropriate instruction and care for feeble-minded, mentally retarded, and socially defective children.

THE CURABILITY OF ASTHMA.

No disease offers more interesting problems for solution than asthma, and none has been the subject of more intensive study during the last few years. Numerous papers and books have been published on asthma in England, America, and on the Continent, and it is one of the subjects chosen by the Section of Medicine for the Annual Meeting of the British Medical Association to be held in Manchester next July. Several asthma clinics have been established in America and Canada, and a journal for asthmatic patients is published in Germany and one for sufferers from hay fever in America. This widespread activity in the investigation of the asthma problem has certainly led to a great increase in our knowledge of its pathogenesis, but this knowledge is still very incomplete, and it is doubtful whether any corresponding advance in the treatment of the condition has resulted. There appear to be as many uncured asthmatics in Great Britain to-day as at any previous period, and the numerous so-called cures of the present time seem to be little more effective than those which were announced with equal enthusiasm twenty-five years ago. In one particular alone is the lot of the asthmatic infinitely better than it was formerly, and that is in the treatment of the attack itself; the irritating and often ineffective powders and inhalations of the past are no longer required since the discovery in 1904 by Dr. Bryan Melland of the immediate and complete relief which follows the injection of adrenaline. We cannot, however, feel satisfied until means are found of permanently preventing the attacks, and so rendering the use of adrenaline superfluous.

Asthma has been defined as the reaction of an over-excitable bronchial nervous system to blood-borne irritants and to peripheral and psychical stimuli. During the last few years much has been learnt about the factors concerned in setting the asthma centre into activity, but unfortunately little is still known about the cause of the constitutional and often inherited condition which manifests itself in an irritable bronchial nervous system. It is true that the less frequently attacks occur the less tendency there is for attacks to be produced by stimuli which were at one time operative. To this extent treatment directed to the removal of the exciting causes also favourably influences the constitutional basis of the disease. But the latter remains, though less active, and a man who has once had asthma remains liable to it for the rest of his life, even if he is free from attacks for ten or twenty years. A true "cure" of asthma would therefore consist in the eradication of the factors upon which the actual excitability of the bronchial centre depends. Dr. Oriel, working in the asthma clinic founded by the Asthma Research Council in conjunction with the Medical Research Committee at Guy's Hospital, has obtained some evidence of a biochemical basis for the condition, and there is reason to hope that work on these lines may lead to an effective means of overcoming the constitutional basis of asthma. The dietetic treatment long advocated by Dr. Adam of Glasgow probably acts by correcting these biochemical abnormalities.

The remarkable effect of residence in the Alps, emphasized in the recent book by Dr. Grimm on the effect of climate on asthma (reviewed at page 769), is probably also due to the influence of altitude on the biochemistry of the blood. The benefit derived from a visit to the Alps is experienced very rapidly by nearly all asthmatics. Though a relapse generally occurs sooner or later on returning home after a short stay, most asthmatic children can be permanently cured by a prolonged residence in the mountains, even when every attempt to procure relief by diet, desensitization, and nasal treatment at home has failed. The improvement which sometimes follows such diverse forms of treatment as diathermy, ultra-violet rays, x rays, and the various methods of inducing so-called protein shock is probably due to some influence which diminishes the excitability of the bronchial nervous system, but unfortunately the benefit obtained is only temporary, and the treatment tends to become less effective on repetition.

The striking difference of opinion as to the curability of asthma which our correspondence columns have recently revealed is due mainly to differences in the use of the word "cure." Most physicians of experience have seen many asthmatics who have been "cured" repeatedly by those who pin their faith on single methods of treatment, whether this is directed to desensitization, nasal cauterization, or any of the innumerable other "cures" for asthma, each of which has its enthusiastic advocates. It is obvious that a patient with cat-asthma will get relief if he avoids cats; this was shown by Hyde Salter sixty years ago, and it does not require the modern methods of skin tests to discover it; but the patient is not cured, as he still has an irritable bronchial nervous system, which is liable at any time to respond to other chemical, reflex, or psychical stimuli. In the same way the asthmatic who is told that he is sensitive to feathers and will be cured by using a kapok pillow rarely remains free from attacks for long. He may even develop a hypersensitiveness to the mould which Storm van Leeuwen has shown is apt to develop on kapok, and it is interesting to note that in countries in which kapok pillows are habitually used it is as fashionable to recommend feather stuffing for the pillows of asthmatics as the reverse is in England.

The remarkable diversity in the methods of treatment which have been said to cure asthma is an indication that the only satisfactory way of dealing with the condition is to have every case as thoroughly investigated as possible for the various chemical, reflex, and psychological factors which may irritate the bronchial centre. By means of a well-taken history it is generally possible to discover whether an individual is sensitive to bacterial toxins, animal emanations, foods, pollen, or other chemical substances. The value of skin tests as a means of confirming suspicion aroused by the history has unfortunately proved disappointing in the hands of many observers. The source of bacterial toxins may be found in an infection of the bronchi themselves, the tonsils, nose, teeth, and alimentary tract. Among reflex causes the nose is the most important, but the stomach, rectum, and even the genital organs, require consideration. Lastly, there is no doubt that an individual with the asthmatic constitution may develop attacks as a direct result of psychological disturbances, and no case can be regarded as completely examined without attention being paid to this factor. Such an investigation is always worth undertaking, as the treatment based upon the results obtained is at least likely to remove some of the chief causes of

acks in the individual concerned. But until more known about the nature of the underlying constitutional abnormality anything in the nature of a genuine re will continue to be a very unusual occurrence.

It is clear from what has been said that the need ll remains for much further research into the oblem of asthma. The non-medical sufferers from thma, who found themselves no better after trying most every known asthma "cure," were well advised hen they inaugurated the Asthma Research Council, cause it is only by a broad scheme of research into ery aspect of the problem that a satisfactory solution re will continue to be a very unusual occurrence.

CHILDREN AND THE FOUNDLING HOSPITAL SITE.

VER since the Foundling Hospital site was bought by ie Foundling Estates Ltd. in November, 1926, there as been a feeling among the majority of the public hat the children of London had a moral claim upon his piece of land, which had been dedicated to the use f children for the past 200 years. It was no doubt a part due to this feeling that various building chemes, including that for transferring Covent Garden Iarket and that for a national theatre and opera ouse, were abandoned, and the original suggestion or hotels, luxury flats, etc., on the site also fell hrough. Hopes were high when the Board of Ianagement of the Great Ormond Street Hospital for ick Children entered into negotiations with the syndiate which had bought the site. The proposal was hat the public should have the use of the greater part f the grounds as a park and playground for children, vhile on about four acres of the north portion a new hildren's hospital should be built. Money, it was tated in a letter to the *Times* last November, was the ole obstacle to the realization of these plans, and a ast-minute appeal was made, but without response. Vhere the matter stood until it was announced last veek that Lord Rothermere was paying a deposit to ecure the Foundling site until June, 1931. According o the published reports (exact details have not yet been issued) there is a condition attached to this generous action—namely, that the entire site shall be used as a children's park, subject to the reservation that for one month in the year this park shall be placed at the disposal of the British Boy Scouts Association for a camping ground. The Board of Management of the Great Ormond Street Hospital for Sick Children are hoping that Lord Rothermere may be induced to see that the claims of this hospital for a portion of the Foundling Hospital site are at least equal in importance to the necessity of a playground for the children in the immediate vicinity. The present Children's Hospital has been built up piecemeal from its small beginnings in 1852, and is in a somewhat airless and sunless situation. Compared with similar institutions abroad it is hopelessly out of date, and does a magnificent work in very difficult circumstances. Foreign visitors still flock to take advantage of the wonderful clinical material which it offers, but they have to visit provincial cities, such as Birmingham and Glasgow, to find a children's hospital built in the style to which they are accustomed in their own country. The opportunity of erecting a modern hospital for the treatment of children's diseases in the richest city of the world on a site which has all the advantages of centrality and accessibility is one which every lover of children must hope will not be allowed to slip away. The Great Ormond Street Hospital serves not only Greater London, but draws patients from all over the country, and even from foreign parts. If the children have a moral claim on the Foundling site, what could be better than that the sick child and the well child should both enjoy this great open space? That the Great Ormond Street Hospital does serve all the children of this country is illustrated by Sir James Barrie's most charming and generous gift of all the rights in *Peter Pan* for the use of the hospital. This will mean a welcome addition to its annual income amounting to at least £2,000, and all the children who flock to greet their hero every Christmastide will be helping to support a worthy institution. What could be a more fitting sequel to Sir James Barrie's gift than that others should follow Peter's lead, and enable the board to put up a modern building on the Foundling site?

RADIUM POLICY.

We publish this week at page 772 a full account of the report by the Radium Subcommittee of the Committee of Civil Research on the radium requirements of Great Britain in relation to the present sources of supply. It may be assumed that the Government, having already accepted in principle the subcommittee's recommendations on the subject of organization, will immediately set up a body of Trustees to hold the funds provided by Parliament and otherwise and to purchase therewith radium for distribution by an administrative body of experts to be known as Commissioners. Four of the nine National Radium Trustees whom the subcommittee proposes should be appointed in the first instance are medical men of the highest standing—the Presidents respectively of the Royal College of Physicians of London, the Royal College of Surgeons of England, the Royal Society of Medicine, and the British Medical Association. The holders of these offices at the present time are Sir John Rose Bradford, Lord Moynihan, Lord Dawson, and Sir Ewen Maclean. Through them the opinion of the medical profession will be expressed in the nomination by the Trustees of five out of the nine Radium Commissioners whom the subcommittee recommends should be appointed to take general charge of the radium held by the Trustees and to make all arrangements for its distribution. The constitution and personnel of the Radium Commission are clearly matters of the utmost importance for the successful working of a national scheme. In the subcommittee's view this body should be composed of "the best available experts in the several sciences underlying radium therapy." All will agree that such experts are indispensable, but we cannot insist too strongly on the need for full medical representation also, and in particular for the inclusion of men familiar with the use of radium in medical practice. This point is implicit in the letter by Mr. Souttar printed at page 787, and we may hope that it is being borne in mind by the Government while the details of organization still remain, if not fluid, at least unsolidified.

HELMINTHIC INFECTIONS.

We are privileged to print elsewhere in our columns this week (p. 755) a lecture on some epidemiological and serological aspects of helminthic infections by Professor F. Fülleborn of the Tropical Institute at Hamburg. Professor Fülleborn is one of the foremost of Continental parasitologists, and his work on helminthology has won the appreciation of scientists in all parts of the world. The subject on which he speaks with such authority is a most important one to an empire such as ours, controlling as we do vast tracts of tropical and semi-tropical country. Hookworm

disease, it is true, has not the spectacular appeal of the great killing diseases such as malaria, tuberculosis, and syphilis, but the parasites do cause a definite amount of debility, anaemia, loss of weight, and lethargy, which have a definite economic effect on the patient. Moreover, they predispose to other infections, and in conjunction with slight attacks of such diseases as malaria or with malnutrition—in themselves perhaps not very harmful—a serious condition is produced and a considerable mortality results. When it is borne in mind that at least two-thirds of all the inhabitants of tropical and subtropical countries harbour these parasites, it is obvious that ankylostomiasis is one of the most important of imperial diseases, causing, directly or indirectly, much economic loss, sickness, and even death. In India alone it is estimated that 45 million wage earners are infected, with a loss in wage-earning power of over Rs500 million yearly. This is only an isolated example, which could be multiplied indefinitely from Africa, America, and the East generally. Other parasites are equally prevalent, and some of these are mentioned in Professor Fülleborn's paper. Ascaris is even commoner than hookworm in many parts, and it is not by any means confined to warm countries. While hookworm principally affects older children and adults, ascaris is found in infants even more frequently than in their elders. Its pathogenic properties are not yet well understood, but they are probably considerable. Man, where parasites are concerned, is intimately interested in the forms in lower animals, as the paper indicates, and the intense irritation caused by the wandering of foreign parasites in his skin, described by Professor Fülleborn, is a problem which more particularly concerns white people in the tropics. The helminthic parasites are amongst the oldest known causes of disease, but the modern study of bacteriology and protozoology has tended to eclipse their continued importance. Professor Fülleborn's paper is accordingly a timely reminder not only that disease is international, but that the older known and comparatively gross causes must not be overlooked in these days of the excessively minute.

MEDICAL ASPECTS OF A POLITICAL PROGRAMME.

We are not concerned with the speech with which the Prime Minister opened the Conservative General Election campaign last week in its party political aspects; but the speech contained references to matters in which the medical profession is greatly interested—factory legislation, slum clearance, education, and the health of mothers and children—and these statements are, of course, of considerable importance. The position with regard to the Factory Bill is highly unsatisfactory. It is a departmental bill, prepared by the Home Office, and was introduced in the first instance under the last Labour Government. It consolidates and amends factory legislation in a way which, on the whole, is desired by the medical profession in the interests of public health. Repeated pledges to pass it into law during particular parliamentary sessions have been broken, and though the Prime Minister now renews this pledge in the form that the bill "will be one of the first of the measures we shall pass in the new Government," recent history cannot be forgotten, and there is no statement as to whether the bill will cover the wider field that was originally intended or will assume the truncated form which is apparently more acceptable to the present Home Secretary. Committees of the British Medical Association and of the Society of Medical Officers of Health have jointly made considered recommendations to the Home Office with regard to certain proposals contained in the bill, and it will probably be necessary to press these again at an early date upon whatever Government is in power after next month's election. It was at the autumn dinner of the British Medical Association in 1927 that Mr. Chamberlain first made the announcement that the Government, considering that their housing programme had made sufficiently satisfactory progress, would shortly devote themselves to the clearance or reconditioning of slum areas, many of which had remained unaffected by the provision of new houses. Mr. Baldwin now says that this "will be a task to which the new Government will devote the whole of its strength and mind after the election." This is satisfactory so long as it is understood that "reconditioning" means more than mere cleansing, decoration, structural repair, and minor sanitary improvements. The Prime Minister claimed more for the education record of the Government than will probably be allowed by those most interested in that sphere of communal activity. There is, indeed, a general impression that in this sphere there has, on the whole, been a lack of encouragement and a damping down of progress during the past few years. It is to be hoped that Mr. Baldwin's words indicate a real desire to move forward with greater rapidity on lines which are generally agreed upon. On the subjects of maternity and child welfare the Prime Minister's statement was of peculiar importance and interest. It is gratifying to note that public health in several spheres is to be a matter of somewhat special regard. The care of children between the ages of 1 and 5 years was referred to thus: "One of our first acts will be to form a strong committee of inquiry into this whole subject to advise us what would be the best way of treating it." If and when such advisory committee is appointed it will be important to secure proper medical representation thereupon, and especially among its personnel some who have had experience of general family practice. With regard to maternity Mr. Baldwin said: "We have come to the conclusion that maternity benefit under the National Health Insurance Act is not at present being expended to the best advantage. Proposals are therefore under our consideration for making available to insured women and to the uninsured wives of insured men proper medical and midwifery services during pregnancy and childbirth, in addition to providing some cash payment on confinement." This will be heartily welcomed by the British Medical Association. It will be remembered that both before the Royal Commission on National Health Insurance and, more recently, before the Departmental Committee on the Training and Employment of Midwives, the Association has given evidence to the same effect. In the Annual Report of the Council, Appendix IV, printed in last week's *Supplement*, an admirable statement of the position and of certain general proposals will be found under the subheading of "The Ideal Midwifery Service" (p. 124). Recently, too, the Council sanctioned the appointment of a special subcommittee to formulate a detailed scheme for a maternity service in connexion with the national health insurance system on the lines laid down in the evidence referred to. This action was very opportune, and it is hoped that even by the time the Representative Body of the Association meets in Manchester in July the profession may have before it such a scheme prepared on the initiative of the profession itself. This may prove very helpful to whatever Government may then be in power, and will certainly provide a basis for the criticism of any Government proposals in this important and urgent matter.

THE STATUS OF THE RADIOLOGIST.

In a special hospital issue of the *Journal of the American Medical Association* published on March 30th, there appear a number of papers discussing, among other things, "Radiology as a medical specialty" and "The status of radiology in America." It is quite clear from the statements made that the same problems confront radiology in the United States as in Great Britain. In brief, the main points are those which concern lay radiologists, the hospital position, the status of the trained medical radiologist—is

he a mere technician or a medical consultant?—and the prospects and future position of radiology and radiologists. Technique has been made so simple by the improvement in apparatus and tubes that the younger generation are unable to visualize the difficulties of the pioneers. Anyone with average intelligence and dexterity can, in a very short time, be taught how to produce good films of various conditions. It is unfortunate that the public generally, many medical practitioners, and even a number of consultants, still consider that the "picture" is all that is required, and are not prepared to look upon the radiologist as a consultant; they hold, in short, that it is the pictures which are paid for, and not the opinion. The competition of hospitals, and the status of the medical radiologists attached to them, are becoming increasingly important. No hospital now, cottage or otherwise, considers itself properly equipped without an *x*-ray department, but whether a duly qualified radiologist is in charge of the department is often a secondary consideration. There is also a definite tendency among the lay members of hospital committees to authorize payment for *x*-ray work done in the institution—in fact, to make money out of the *x*-ray work. None of these things are for the good of either the public or the medical profession. The profession, if united, could in a very short time considerably improve matters. It is in the interests of the profession that *x*-ray work should be in the hands of duly qualified and specially trained medical men and women, and that the status of such specialists should be exactly the same as that of others who devote themselves to special work. No lay radiographers should work in hospitals or in private practice except under expert medical control. If this was the rule, as it should be, the status of those devoting themselves to a most difficult branch of medical practice would become higher, the standard of radiography would improve, and this work would attract more of the best students than it does at present.

SECURITY OF TENURE IN PUBLIC POSTS.

THE Minister of Health received last week a deputation from the National Association of Local Government Officers and the National Union of Public Employees, in regard to the position arising as a result of the recent decision of Mr. Justice McCardie in the case of Brown *v.* Dagenham Urban District Council, which was discussed in a leading article in the *Journal* of March 9th (p. 461). The deputation was introduced by Sir Herbert Nield and Mr. Wills, who drew attention to the fact that the purport of the decision was that certain local government officers were liable to dismissal without notice or reason given, even in the case of an appointment that had been made upon condition that its termination should be subject to a specified notice. The Minister said that he appreciated the serious results of the decision, which he accepted, of course, as a correct interpretation of the law. While he agreed that the matter could not be left where it was, he pointed out that legislation would be required to alter the present position, and it was obviously impossible for him either to introduce legislation in the present Parliament or to give at the moment any pledge binding on a future Government. In the circumstances it seemed to him that the best course would be to refer the matter to the Royal Commission on Local Government for their examination, and he undertook that this should be done at once. The British Medical Association is in close touch with the National Association of Local Government Officers on this matter, and deferred asking the Minister to receive a deputation until the result of the previously arranged deputation was known. The views of the British Medical Association have been placed before the Minister, and further developments will be followed.

VACCINATION FOR BRITISH VISITORS TO FRANCE.

ON April 20th there took place at Calais the conference announced in our last issue (p. 738), between representatives of the French and British Governments, to discuss the precautionary measures that should be adopted in view of the occurrence of cases of small-pox in certain British ships and the fact that other cases were under treatment in Great Britain. In relation to the ships arriving from the Far East it was decided to apply, on the sole responsibility of the French Government, the measures prescribed by the International Convention of June 26th, 1926; this action has already resulted in the tracing of the alleged case of small-pox in the *Mashobra* and the isolation of cases at the quarantine station at Frioul. To deal with ships coming from British territory where small-pox patients from India have been landed and are now under treatment, the French Government has requested the British Government to secure the medical examination, before they disembark, of all passengers leaving England for the Continent. By the Convention of 1926 the French Government may also keep under observation unvaccinated persons coming from territory in which there is an epidemic, even though they arrive in ships which have had no case of small-pox on board. To this end the French Government has decided that from April 21st until further notice all passengers landing in France, except those possessing a vaccination certificate not less than ten days and not more than five years old, will be required to fill up a sanitary passport, to be obtained en route, and will be kept under observation in France for fourteen days if necessary. Passengers from England to whom these passports have been issued must supply the French authorities with a statement of their addresses and movements during the first two weeks of their stay in France. They are required to report themselves to the health authorities or mairie of each place they visit, and not to leave any place within fourteen days except with the permission of the authorities. The mere vaccination of passengers before they disembark is not considered an adequate measure of protection, since it will not prevent the disease from appearing in, or spreading from, persons in whom it is already in a state of incubation. The mayor of Le Havre's decision to enforce locally the original instruction that passengers from England must either produce a certificate of vaccination within the past two months or be vaccinated before landing has resulted in a considerable fall in the number of passengers entering France by this route.

STRANGEWAYS MEMORIAL FUND.

SOME two years ago a fund was inaugurated in memory of Dr. T. S. P. Strangeways of Cambridge, who died on December 22nd, 1926.[1] In the opinion of the official members of the committee the time has now come when this fund should be vested in trustees under a deed, and a meeting of the committee (at the rooms of the Royal Society of Medicine, 1, Wimpole Street, W.) will be called for May 16th, at 5 p.m., to give instructions to the treasurers. The deed must provide for the judicious use of the fund during the next fourteen or fifteen years to secure the education of the four younger children (the three elder having graduated with honours since the fund was first administered, and having begun their careers). Donations have been very generous, but have not quite reached the figure calculated in the appeal. Anyone who has not yet paid in an intended subscription should send a cheque at once to Lloyds Bank, Cambridge, crossed "a/c Strangeways Memorial Fund," or a cheque drawn in the same way may be sent to Sir Humphry Rolleston, Bt., K.C.B., Southfield, Trumpington Road, Cambridge.

[1] *British Medical Journal*, February 12th, 1927, p. 283.

YEAST AND PUFFERY.

THE old pharmaceutical term for yeast was *Faex medicinalis*. We are reminded of this rather unpleasant name for a useful substance by some highly objectionable advertisements of a proprietary brand of yeast that have been appearing lately in popular American and Canadian journals which circulate also in this country. Each of the florid advertisements we have seen (and we have seen far too many) occupies a whole page of the periodical, and includes what purport to be signed testimonials from medical men in Europe or the United States. Each panegyric adjoins a portrait of the person to whom it is attributed, with a few fulsome words about him by way of introduction. A sketch map of Europe at the bottom of one of these advertisements bears the following legend:

> FAMOUS EUROPEAN M.D.'S CITE YEAST BENEFITS.
> London, Paris, Berlin, Vienna, Copenhagen . . . What would you give for a health prescription from leaders in these great medical centers? . . . They give you, here, the benefit of their experience!

It is indeed, in the words of Hamlet, "a kind of yesty collection." We must deplore the fact that the owners of a proprietary article have thus made use of the names of members of the British medical profession. It is scarcely credible that the medical men whose names have been used in this way have been parties to it, and we hope, therefore, that we may have an opportunity of publishing their disclaimer.

THREE lectures on drug-like actions of some food constituents will be delivered by Professor E. Mellanby at University College, Gower Street, W.C.1, on Monday, Tuesday, and Wednesday next at 5.15 p.m. Dr. J. A. Gunn, professor of pharmacology in the University of Oxford, will preside at the first lecture. Professor S. J. Cowell will deliver the inaugural lecture of his course of six lectures on dietetics at St. Thomas's Hospital, S.E.1, on Thursday, May 2nd, at 5 p.m., when the chair will be taken by Sir Arthur Stanley, treasurer of the hospital. The other lectures will be delivered on succeeding Thursdays at the same hour. Professor T. R. Elliott will take the chair at the first of two lectures on some of the sequels of epidemic encephalitis lethargica, to be delivered at University College, Gower Street, by Dr. A. J. Hall, professor of medicine in the University of Sheffield, on Friday next at 4 p.m.; the second lecture will be delivered on May 10th. Admission to all the lectures is free.

THE KING.

THE bulletin published on April 15th said that His Majesty continued to make satisfactory progress, and the rheumatism of the right shoulder was yielding to treatment. A week later, on St. George's Eve, the King himself addressed from Craigweil House a message to his people, which has caused universal gratification. The publication of this personal message is generally, and very naturally, regarded as meaning that the King is convalescent, and that his complete recovery is now only a matter of time and reasonable care. Our profession will especially value His Majesty's words of gratitude for "the wonderful skill and devotion" of the medical men and nurses whose care has brought him back from danger.

FIFTH INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY.

As previously announced, the fifth International Congress of Military Medicine and Pharmacy is being held this year in London from May 6th to 11th; its meetings will take place in the Great Hall of the British Medical Association, the Board Room of the British Dental Association, and the Lecture Hall of the Pharmaceutical Society of Great Britain. Official delegates have been appointed by the following countries: Albania, Argentine Republic, Australia, Bechuanaland Protectorate, Belgium, Canada, Chili, Czechoslovakia, Cuba, Denmark, Ecuador, Egypt, Estonia, France, Greece, Hungary, India, Irish Free State, Italy, Japan, Lettonia, Netherlands and Netherlands East Indies, New Zealand, Nicaragua, Norway, Persia, Peru, Poland, Rumania, Salvador, Siam, Spain, Sweden, Switzerland, United States of America, Uruguaya, and also by the League of Red Cross Societies and the International Committee of the Red Cross. Some 800 foreign delegates and members, including 300 ladies, will attend the congress; the total number attending will be approximately 1,100, and the membership list is now closed.

The congress will be inaugurated by Sir Laming Worthington Evans, Bt., Secretary of State for War, who will also open the exhibition of service medical equipment, drugs, dressings, and surgical instruments in the House of the British Medical Association. The subjects to be discussed are as follows:

1. Evacuation of sick and wounded by air and water. The role of the medical service in combined operations. Reporting countries: Great Britain and France.
2. Tropical fevers of short duration. Reporting countries: *Great Britain and the Netherlands.*
3. Injuries to blood vessels and their sequels. Reporting countries: Great Britain and Belgium.
4. Physical and chemical analysis of the glass and rubber articles employed by the medical services. Reporting countries: Great Britain and Spain.
5. The standard of dental and physical fitness in the various military services. Reporting countries: Great Britain and Cuba.

The following official visits are being arranged. At Aldershot demonstrations will be given at the R.A.M.C. Training Centre, the School of Hygiene, the Cambridge Hospital, the Dental Centre, and various R.A.S.C. establishments. The barracks will be shown, and there will be a display of physical drill. An excursion will be made to Portsmouth, where members of the congress will be shown over H.M.S. *Hood*, the *Victory*, the Submarine Depot, and Haslar Hospital; a demonstration of the method of removing the sick to and from battleships will be given. The Lord Mayor and Corporation of Portsmouth will entertain the visitors to luncheon. During a visit to Halton members will be shown over the R.A.F. hospital, barracks, and workshops, and ambulance airplanes.

The Prince of Wales will receive the principal official delegates, and an official dinner will be given to them, followed by a reception at Lancaster House for all members of the congress. A banquet will be given by the Lord Mayor and Corporation of the City of London. There will be receptions by the Royal College of Physicians, the Royal College of Surgeons, the Royal Army Medical College, and by Dr. Henry S. Wellcome at the Wellcome Historical Medical Museum. The Society of Apothecaries, the British Dental Association, and the Pharmaceutical Society of Great Britain will entertain members of the congress.

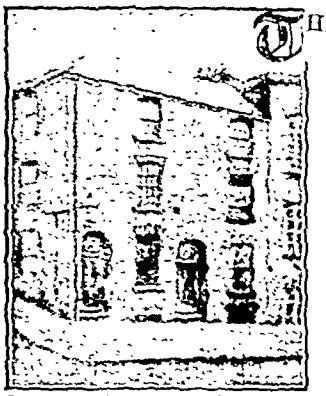
Facilities for inspecting the Tower of London, Hampton Court, and the various London museums will be afforded, and visits to the Royal Mint are being arranged. The interests of ladies are being well provided for. The executive committee of the Forum Club, Grosvenor Place, has invited ladies attending the congress to a reception on May 10th, and a visit will be made to Ham House, on the invitation of the Earl of Dysart. A visit to the Guildhall has been arranged, followed by receptions by the Grocers' and Drapers' Companies; receptions will also be given by the Institut Français du Royaume Uni for French ladies, and by the British Italian League at the Ladies' Army and Navy Club for Italian members of the congress.

NINETY-SEVENTH ANNUAL MEETING

of the

British Medical Association,

MANCHESTER, 1929.



THE PUBLIC INFIRMARY IN MANCHESTER, 1752.

THE ninety-seventh Annual Meeting of the British Medical Association will be held in Manchester next summer under the presidency of Mr. Arthur H. Burgess, F.R.C.S., Professor of Clinical Surgery in the University of Manchester, who will deliver his address to the Association on the evening of Tuesday, July 23rd. The sectional meetings for scientific and clinical work will be held, as usual, on the three following days, the morning sessions being given up to discussions and the reading of papers, and the afternoons to demonstrations. The Annual Representative Meeting, for the transaction of medico-political business, will begin on the previous Friday, July 19th, at 9.30 a.m. Preliminary notes of the subjects for discussion in the nineteen Scientific Sections are published in the *Supplement* this week, together with the names of the officers of Sections, and further details of the arrangements for the Annual Meeting will appear from time to time in later issues. The sectional meetings will be held for the most part in the buildings of the University. During the week, and in particular on the last day of the meeting (Saturday, July 27th), there will be excursions to places of interest in the North-West of England. We publish below the third of a series of descriptive and historical notes on Manchester and neighbourhood written for the occasion by Dr. E. M. Brockbank. The first article appeared on December 1st, 1928 (p. 1003), and the second on January 26th, 1929 (p. 167).

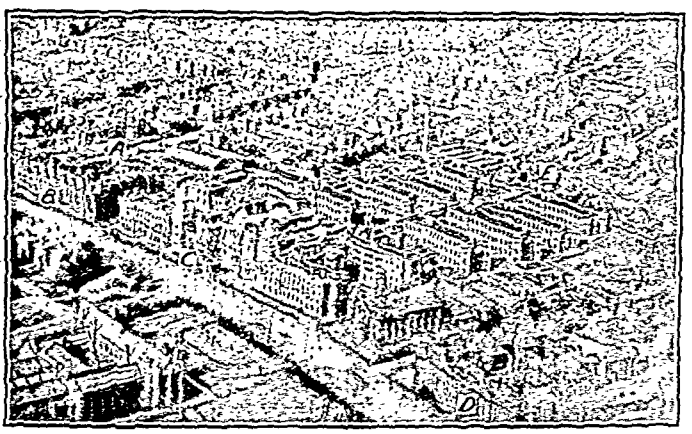
THE HOSPITALS OF MANCHESTER AND SALFORD.

VOLUNTARY HOSPITALS.

THERE are fifteen voluntary hospitals in Manchester and one in Salford, with approximately 2,500 beds in all. In Manchester the Royal Infirmary, Ancoats Hospital, the Jewish Hospital, and in Salford the Royal Hospital, are general hospitals, the remaining twelve being devoted to one or other special form of disease. Two of the special hospitals, those for diseases of the eye and of children, have the Royal patronage.

According to the report of the local Medical Charities Fund the ordinary annual expenditure of these sixteen hospitals is about £350,000, and the ordinary income is about £320,000—a deficit of £30,000 per annum. Some hospitals work at a loss, others are able to keep within their income. This, like that of all voluntary hospitals, comes from subscriptions and donations, interest on investments, collections from various sources, contributions from patients according to means to pay, payments from approved societies and local authorities (*tuberculosis and venereal disease*), etc. As in other towns, the number of subscribers is comparatively few, and the names of most of them are to be seen on several of the hospital lists.

All the hospitals suffer from want of beds, which is the natural result of the growth of the population and of the great increase in the treatment of disease by surgery, especially of appendicitis, gastric and duodenal ulcer, and ear disease. Nearly all the voluntary hospitals have hundreds of patients awaiting admission for treatment, the latest exacting demand being for investigation of glycosuria and its treatment by insulin. Furthermore, the modern methods of laboratory diagnosis and of physical and electrical treatment require an amount of space undreamed of by architects even of this century.



AN AERIAL VIEW OF MANCHESTER.
A, Radium Institute. *B*, Royal Eye Hospital. *C*, Royal Infirmary. *D*, St. Mary's Hospitals. *E*, Christie Cancer Hospital.

The heavy waiting lists are due to the very large number of cases sent from outside the two cities. The cost per bed in hospitals has trebled since August 4th, 1914, and for a variety of reasons, an important one being the above-mentioned methods of diagnosis and treatment and the cost of special food—for example, for the treatment of glycosuria. Two large collecting organizations help matters materially in the neighbourhood.

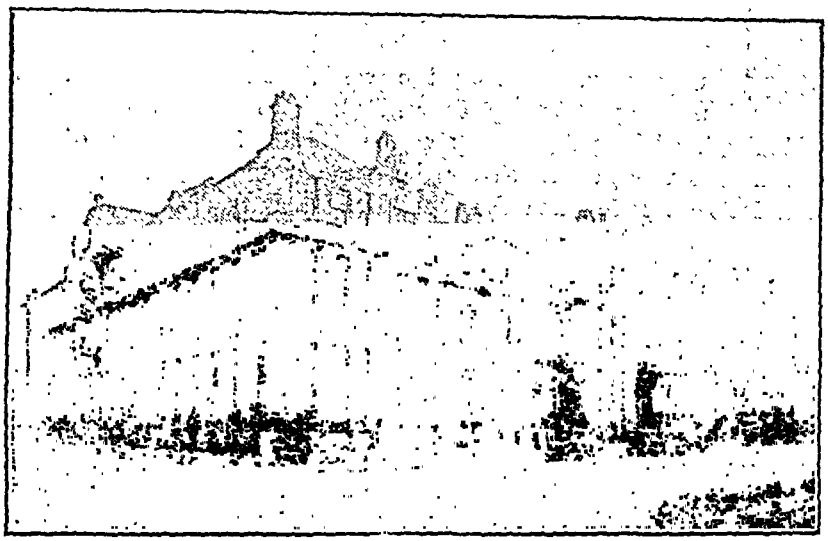
1. *The Manchester and Salford Medical Charities Fund*, formerly known as the Hospital Sunday Fund, collects and annually distributes about £40,000 among the hospitals and a few dispensaries and allied treatment centres; the amount allocated to each institution being calculated on the number of beds and patients, and work done, generally speaking. In addition to collections in places of worship in the two towns

and the neighbouring towns on one Sunday in the year, this fund organizes the Alexandra Rose Day collection, and receives the collections of the students on Shrove Tuesday, and of various sports and entertainments efforts.

2. *The Hospital Saturday Fund*, on the other hand, collects weekly contributions from the workpeople of Manchester and Salford and district in aid of local hospitals and to support its three fine convalescent homes at the seaside. Its annual income has risen to £40,000, and its scheme is to divide equally between hospitals and its convalescent homes up to £20,000 of its income, and 85 and 15 per cent. respectively of any income above £20,000. Until quite recently the amount collected by this fund was only about £20,000, which compared very unfavourably with the sums found by the working classes in some other towns in 1927, which are set out in the accompanying table.

Town.	Total Ordinary Expenditure.	Total Ordinary Income.	Workpeople's Contributions.
	£	£	£
Birmingham ...	275,501	263,100	48,741
Glasgow	375,454	359,502	85,805
Leeds	132,653	115,398	39,867
Leicester	79,295	86,202	27,384
Newcastle	124,471	120,643	46,716
Sheffield	135,476	133,881	87,399
Sunderland	51,762	52,701	28,160
Liverpool	217,576	213,743	16,378
Manchester	350,000	320,000	20,000

The organization for collecting the workpeople's contributions in Manchester and Salford is much more efficient now than it used to be, and with proper representatives on the committees of the recipient hospitals there is a better prospect of this fund becoming as worthy of our district as that of Sheffield is of its neighbourhood. It would be interesting to hear the experience of hospitals receiving so much workmen's support on the admission of patients: whether a right is claimed for treatment by subscribers irrespective of the urgency of their ailments as compared with the urgency of the ailments of the non-subscribing voluntary hospital patient.



Photograph by] SALFORD ROYAL HOSPITAL. *[Allied Newspapers, Ltd.*

Manchester Royal Infirmary.

The Manchester Royal Infirmary is the premier hospital in the district, both in length of service to the sick and in its extent. The small "cottage" in Garden Street, in which it began its life, is still standing, almost in unchanged state, in a wilderness of modern buildings which tower over a narrow canyon of a street still, in name, reminiscent of horticulture in bygone days. Its staff was one matron, one maidservant, one porter (an unruly one too), with 75 in-patients in the first year. From this garden plot, with various transplantations and graftings, has grown the present Royal Infirmary with its 750 beds, 23 resident medical staff, 233 nurses, 21 porters, 141 domestic servants, and 8 administrators; and its 13,000 in-patients.

It was founded by Charles White, a remarkable gynaecological surgeon, who, in 1773, said nearly all that matters about the nature of puerperal fever, and the means to be taken in its prevention—three-quarters of a century before Semmelweis said much the same. White published other original matter which is referred to in other writings. Medical students were admitted to the hospital in 1758 as apprentices, and this was the beginning of our present medical school.

The main building of the present Royal Infirmary is situated one and a half miles from the site of the building in Piccadilly, which was the centre of the clinical interest of the last meeting of the Association in Manchester in 1902. The land on which it stands was provided by the Whitworth trustees through the University, and was the most suitable space large enough not only for doubling the accommodation provided at Piccadilly for patients, and for the modern laboratory means of diagnosis and treatment, but also for the needs of the large number of medical students who attend there.

It is built on the pavilion plan, with eleven blocks for patients—four for medical and seven for surgical cases—with, in all, approximately 600 beds. Much opposition was made to removal from the centre of the town, where it had as fine a site as any hospital could wish for, and where it was before the eyes of the public and of all potential subscribers and benefactors; and it was only on condition that a central branch hospital should be erected close to the old site to deal with the numerous accident cases that the trustees consented to the main hospital being put on the south side of the town, somewhat remote from the scene of its 150 years' activities. Accordingly its Central Branch Hospital, with accommodation for 60 in-patients as well as for dealing with accidents, was built in Roby Street, close to London Road Station, within 300 yards of the Piccadilly site.

Ever since 1758 medical students have received their undergraduate clinical instruction (except in midwifery and, this century, in fevers) at the Royal Infirmary. Women students are admitted for their training. Whilst all the undergraduate teaching is carried out at the Royal Infirmary, most of the other hospitals take part in the postgraduate teaching which is arranged by the University.

The Barnes Convalescent Hospital at Cheadle, Cheshire, with 132 beds, affords a great relief to the overworked parent institution, inasmuch as suitable surgical cases can safely be removed there by ambulance after operation before they are fit for treatment at home.

A fourth hospital belonging to the Royal Infirmary trustees is the Cheadle Royal Mental Hospital. It provides accommodation in two large main buildings and several villas for 300 patients, and stands in its own grounds of two hundred acres. All patients pay according to their accommodation, and any surplus of income over expenditure is invested in further improving the hospital and in caring for the needs of the patients.

The Royal Infirmary has suffered for some years from want of space for its nurses and domestic staff, but it is actively meeting this need by building a new nurses' home in York Place, a quiet backwater off the main road, and in immediate contact with the present Infirmary grounds.

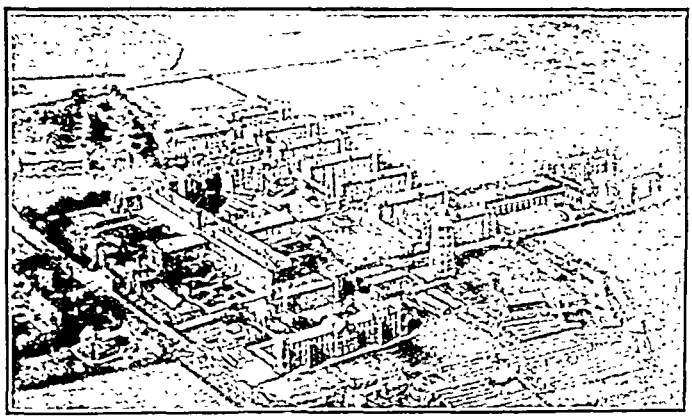
Adjoining the Royal Infirmary, and all on a plot of land about 400 yards square, are the St. Mary's and the Royal Eye Hospitals, the Christie Cancer Home, and the public health and pathological laboratories of the University.

St. Mary's Hospitals for Women and Children (281 beds).—This is the next oldest charitable foundation in the town, the hospitals being founded in 1790 by Charles White and the three Jacobite surgeons—the Halls, father and two sons. Charles White, like many another strong man, liked his own way, and when he could not get it in a quarrel with the trustees of the Manchester Infirmary in 1790, with his followers he crossed his Rubicon—the Irwell in this case. But, instead of advancing on the enemy, he retreated into Salford, and there founded

a rival hospital called the Lying-in Charity, which eventually developed into the present St. Mary's Hospitals. The seceders took a private house, and began attending for the delivery of poor women at their own habitations and for giving them advice and supplying them with medicines. The hospital met a need, moving from time to time to larger premises, and finally amalgamated with the rival Southern Maternity Hospital. In its two fine buildings it now carries out the good work which arose out of an ill breeze. The maternity work of the hospitals, practical and educational, is carried out in the Whitworth Street Hospital. The High Street Branch, adjoining the Royal Infirmary, was the result of the absorption of the rival Southern Hospital, which a large sum of money from Mr. Manasseh Gledhill induced. It is reserved for gynaecological work and for diseases of children.

The Royal Eye Hospital (148 beds) has over a hundred years of work to its credit. It adjoins the Royal Infirmary with a private doorway between the grounds of the hospitals. By arrangement, all eye cases going to the Infirmary that require in-patient treatment are dealt with in the Eye Hospital, and the Infirmary takes over suitable cases from it for in-patient treatment.

Ancoats Hospital, in about the most thickly populated and most unhealthy part of Manchester, was founded in 1827. It is in the centre of a district in which are some of the largest and finest cotton mills of the world, and many engineering works, and it struggles manfully with its heavy accident and general work. A handicap in the matter of financial support is the fact that it is not on any main road where it can be seen by potential subscribers; but in spite of this it is well supported by employers and others, and its income is well up to, if not above, expenditure. Several generous benefactors have provided funds for necessary extensions and for a fine convalescent home in Cheshire. Special attention is paid to orthopaedic surgery in its children's ward.



WITHINGTON POOR LAW HOSPITAL, WITH PAYING WARDS IN THE FOREGROUND.

The Victoria Memorial Jewish Hospital (62 beds) is situated in a quarter of the town in which many Polish and Russian Jews live, and, whilst it specially meets the needs of its own race, is non-sectarian and admits patients of any creed. It is the youngest of our general hospitals, having been founded as recently as 1904.

Salford Royal Hospital has just completed its hundred years of work. It is well situated in a thickly populated district on the broad highway to the North and on a good open site. The extent of its work can hardly be fully gauged even by its handsome frontage, for it has 263 beds in wards out of view from the main road. It is the only voluntary hospital for a town of 250,000 inhabitants, whilst Manchester, for three times the population, has fifteen, a fact which shows how closely the two towns are associated in common interests. The Manchester hospitals receive many Salford patients. A genito-urinary department is a special feature of Salford Royal's general service.

The Royal Children's Hospital, Pendlebury (220 beds), thus best known, is another hundred-year-old institution. The busy out-patient department is in a congested district of Manchester, but all cases needing in-patient treatment are sent to its fine hospital four miles out of town to the north, and in what is at present an open district. Town-planning schemes are, however, likely to close in on it, but in its breezy situation it cannot be harmed to any great extent.

The Ear Hospital (24 beds) has been in existence for seventy-five years. It is situated a mile to the south of the centre of the town, and is rather out of sight. It sadly needs funds for the building of premises more worthy of the work it does than those it now occupies.

The St. John's Hospital for Diseases of the Ear (11 beds) is of much more recent foundation. It is in St. John Street, in the centre of the town.

The Northern Hospital for Women and Children (73 beds) carries out its work in a thickly populated quarter of the town much favoured by the Jewish race of hospital class. Its present accommodation is inadequate for the needs of the hospital, and plans are prepared and subscriptions being sought for a new building to be erected on land a mile further to the north of the present institution.

The Manchester Babies' Hospital (80 cots), founded but fifteen years ago, is the infant charity of the town. It well meets a great need, and is thriving on adequate financial sustenance. The Manchester Corporation fosters 30 of its 80 cots.

The Hospital for Diseases of the Skin (54 beds) was founded in 1884 to take over the out-patient treatment of diseases of the skin from the Manchester and Salford Lock and Skin Diseases Hospital, founded in 1818. It has ever been an advancing institution. In 1901 it opened a department for treatment by Finsen light and x rays, being the first hospital in England, after the London Hospital, to do so. Its present handsome building in the centre of the town was opened in 1906. About 10,000 new patients, with over 70,000 attendances, are seen yearly from all over the neighbouring districts.

St. Luke's Hospital (39 beds) is the present representative of the hospital from which the above-mentioned hospital developed for diseases of the skin. It is an approved institution under the Public Health Regulations (1916), and is the chief hospital for the treatment of venereal diseases in the district. The general hospitals of the towns also have special venereal diseases clinics under the same regulations.

The Hospital for Consumption and Diseases of the Throat and Chest (155 beds) was at the date of its foundation (1875) one of the few hospitals in England devoted to the treatment of consumption. It has an out-patient department in the centre of the town, a hospital at Bowdon, Cheshire, and the Crossley Sanatorium at Delamere, Cheshire. It has a working agreement with the Manchester Corporation for the treatment of tuberculosis. Some of the honorary staff receive remuneration for this public health work.

The Christie Cancer Home (34 beds) and the *Radium Institute* (2 beds) work closely together in the treatment of malignant disease, and there is a prospect of amalgamation of the two institutions, with full recognition of the generosity of the late Sir Edward Holt in making the Radium Institute possible.

The Dental Hospital is situated close to the University, with which it is closely affiliated for teaching purposes. It has no beds, but a large out-patient department at which over 12,000 persons attend yearly.

Two small but very valuable hospitals, not supported by voluntary subscriptions, may be referred to.

The Gaskell Memorial Home, which was established in memory of the daughters of Mrs. Gaskell the novelist, and which provides nursing home accommodation at a cost of 3 guineas a week.

The Stretford Practitioners' Hospital, for the care of patients of moderate means, is administered by the local profession on lines approved by the British Medical Association. Though it has been in existence only a few years, it is extending its successful activities as rapidly as income will allow.

Lack of space prevents reference to other institutions situated away from the town; these will be noticed in the *Book of Manchester*.

THE CORPORATIONS' HOSPITALS.

The medical officers of health of the two towns have large hospital accommodation under their supervision for infectious and tuberculous diseases. In Manchester there are:

1. *Monsall Hospital* (600 beds) for infectious diseases, and *Clayton Vale* (60 beds) for small-pox.
2. *Baguley Sanatorium* (330 beds) for intermediate and advanced pulmonary tuberculosis.

3. *Abergele Sanatorium*, with at present 50 beds for adults and 10 for children in early stages of tuberculosis. Plans are prepared for extension to accommodate 210 more patients with pulmonary or non-pulmonary tuberculosis.

4. *Crossley Sanatorium, Delamere.* By arrangement with the Manchester Hospital for Consumption 80 beds are retained for pulmonary tuberculosis.

Other non-pulmonary tuberculosis cases are sent to special hospitals at Oswestry, Frimley, and Barrowmore (in all about 200 beds).

In Salford there are:

" " " *pital* (300 beds); 224 of the beds are for and 66 for advanced pulmonary tuberculosis.

2. A small-pox hospital at Prestwich with 44 beds.

3. *Nab Cop Sanatorium*, Marple (120 beds), for early tuberculosis.

4. A municipal maternity home and babies' hospital, with 10 beds for mothers and 18 cots for babies.

UNION HOSPITALS.

The large union hospitals play a very important part in our modern life. They have all the modern facilities for scientific laboratory diagnosis, for electrical, artificial light, sunlight, and massage treatments, and in addition to their permanent staff are visited by consultants for all special ailments, who receive honoraria varying in amount according to the work done by them. The Manchester hospitals have wards in which paying patients are treated and visited by practitioners of their own choice, and for whose payment they are responsible. These beds meet a great need, and are well occupied, especially for surgical work.

At the *Crumpsall Infirmary* a whole pavilion of six wards (100 beds and 60 cots) is devoted to maternity, ante-natal, and post-natal work, in which over 1,000 births are dealt with annually. In addition to provision for massage and electrical treatment a new wing, opened in 1927, has three operating theatres, two of which, with the anaesthetizing room, are lined by vitrolite. The daylight from the domed ceilings enters from the north; artificial light is provided by a scialitique lamp in No. 1 theatre, and a "no shado" lamp in No. 2 theatre. No. 3 theatre has dark panelling for its walls, and dark blinds to its windows, so as to be utilizable as a dark theatre for special cases. The flooring in all the theatres is of rubber, and the equipment generally is of the most modern description. The three theatres are arranged around a vestibule at the end of the building, and large doors give easy access from one to the other or to the vestibule.

At *Booth Hall* a special feature is the provision which is made for the treatment of children with heart disease.

In Salford 1,000 beds are not enough to meet the demands of the Poor Law hospital patients, and further accommodation is to be provided.

PAYING PATIENTS.

The need for beds in hospitals fully equipped for all modern methods of investigation and treatment is being more and more felt in England. Their success has long been demonstrated in America. It seems rather anomalous that the hospital class of patient should be better provided for in this way than those who subscribe to the hospital, and can afford to pay moderately or even well for a similar proper investigation of their ailments. In Manchester the following hospitals are meeting, with a greater or lesser number of beds, such needs of the better-class patient: the Royal Eye, St. Mary's, Ancoats, Consumption, Salford Royal, the Northern, and the Radium Institute.

MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION.

SECOND QUINQUENNIAL CONGRESS.

THE second quinquennial congress of the Medical Women's International Association was held in Paris from April 10th to 15th, and was attended by some 270 medical women, representing the following countries: Austria, Belgium, Bolivia, Canada, Denmark, France, Germany, Great Britain, Hungary, India, Italy, Japan, Norway, Poland, Spain, Sweden, Switzerland, United States, and Jugo-Slavia.

During the course of the congress the delegates visited various hospitals and institutions, including the Clinique Baudelocque (Maternité), the Hôpital de la Salpêtrière, the Institut Pasteur, and the Institut du Radium de l'Université de Paris. Ceremonies of welcome and hospitality included a reception at the house of Madame Thuillier-Landry, a banquet given by the National Association of French Medical Women, a reception at the Palais du Luxembourg by M. Paul Doumer, president of the Senate, and at the Hôtel de Ville by M. Georges Lemarchand, president of the Municipal Council. By permission of the League of Nations all the meetings were held at the International Institute of Intellectual Co-operation. Great Britain was represented by thirty-five medical women from all parts of England and Scotland, and the very large attendance of French medical women bore witness alike to the progress of the Association Française des Femmes Médecins and to the increase of medical women in France during the last generation. When the association met in London in 1924 Lady Barrett was elected president, Dr. Jane Walker treasurer, and Miss Martindale honorary secretary, each for five years, this being the period prescribed in the constitution. Other British members of council taking part in the present congress were Dr. Catherine Chisholm, president of the British Federation of Medical Women, and Dr. Letitia Fairfield. Officers elected for the quinquennium 1929–34 were Madame Thuillier-Landry (France), nominated as president, on the proposal of the American and British delegates, and six vice-presidents chosen from the following countries: Great Britain (Lady Barrett), United States (Dr. Tayler-Jones), Germany (Dr. Salzmann), Norway (Dr. Dagny Bang), Italy (Dr. Carcupino Ferrari), Jugo-Slavia (Dr. Nechkovitch Voutchetitch). For the convenience of the president it was decided to maintain the office in Paris during the next five years.

Open sessions of the association, at which the subjects for discussion were sex problems for children and adolescents, and analgesia in midwifery, were formally opened by the Rector of the Paris Academy, to whose speech expressing cordial appreciation of the work of medical women Madame Thuillier-Landry replied on behalf of the International Association. The director of the International Institute of Intellectual Co-operation, welcoming the congress in the name of the League of Nations, emphasized the importance of woman's work in connexion with the League.

Sex Instruction.

At the sessions dealing with sex instruction for children and adolescents Miss Martindale (British Rapporteur General) presented her report summarizing fifteen papers on this subject submitted from Denmark, Germany, Great Britain, New Zealand, Norway, and Sweden, in reply to a questionary which had been sent out from the central office some months previously. Papers from Great Britain were contributed by Dr. Catherine Chisholm, Dr. Letitia Fairfield, Dr. Scoresby-Jackson, Dr. Octavia Wilberforce, and Dr. Lilian Wilson. Similar papers from France, Italy, Hungary, Poland, Switzerland, and Jugo-Slavia were epitomized in a report submitted by Madame Montreuil-Straus, the French Rapporteur General. Following a discussion, in which Great Britain was represented by Dr. Letitia Fairfield and Dr. Doris Odlum, the congress formally adopted the conclusions as summarized by the rapporteurs. Briefly these conclusions are as follows:

1. That sex instruction in some form should be given, though preferably not under that name.
2. That to very young children elementary sex instruction should be given by parents.
3. That during school life biological teaching concerning the facts of reproduction should be included in the routine teaching of nature study.
4. Arising out of 2 and 3, that parents and teachers should themselves be educated in sex matters.
5. That inasmuch as physiological knowledge, however widely imparted, does not necessarily influence conduct, sex education of adolescents should be supplemented by instruction in ethics to ensure control of the instinctive impulses and their subordination to a social ideal.
6. That it is the doctor's special function to deal with the pathological sides of the question—namely, to give advice as to treatment and care of difficult or abnormal children, and instruction on the subject of social diseases.

Analgesia in Midwifery.

The reports on analgesia in midwifery summarizing the papers sent in from various countries were presented by Dr. Kunckel of Germany and Dr. Nechkovitch Voutchetitch of Jugo-Slavia; Great Britain had contributed papers by Dr. Lily Baker, Miss Basden, Miss Bloomfield, Dr. Janet Gray, Professor McIlroy, and Dr. Joan Rose. Among the anaesthetics discussed were chloroform, ether, nitrous oxide, lumbar anaesthesia, twilight sleep, pernocton, avertin, and somnigen. In the published reports the view was expressed that "at present no absolutely safe anaesthetic is known to us, and it would be the task of obstetrical science to discover one." Dr. Clara Kary (Berlin) mentioned the method favoured by most of the English authors—namely, morphine for the initial stages, followed by *narcose à la reine* during the birth of the head. Miss Lily Baker (Bristol) recommended, in addition to morphine, the use of omnopon and heroin, and, if possible, scopolamine and atropin. In operative cases she advocated the use of ether, and, only when this is contraindicated, lumbar or sacral anaesthesia, or nitrous oxide and oxygen. Dr. Janet Gray (London) favoured chloroform, or a mixture of opium, bromide, and chloral hydrate, or chloral hydrate in the first and chloroform in the second stage of labour. Miss Alice Bloomfield (London) stated that the intermittent administration of chloroform to the so-called "obstetrical degree," with a deepening of anaesthesia at the actual time of birth, is the method of choice and general usage in England. Professor Louise McIlroy held that the best analgesics for the first stage of labour were morphine and its derivatives, in conjunction with, and later replaced by, small doses of scopolamine. She had also found chloral hydrate, bromide, and adrenaline useful. For the second stage she recommended nitrous oxide and oxygen as the best anaesthetic. She stressed the importance of administering to the patient the appropriate psychological suggestion, and emphasized the need for establishing in the patient complete confidence in her medical attendant, who should promise her relief from pain in so far as this was possible and consistent with safety for herself and her child. The discussion on the report was opened by Lady Barrett, who was followed by Professor McIlroy, Dr. Bertha Van Hoosen, and other delegates.

Belgium.

[FROM AN OCCASIONAL CORRESPONDENT.]

The League of Mental Hygiene.

A MENTAL hygiene league was inaugurated in Belgium in 1922; it has several provincial sections. The special dispensaries which have been opened co-operate closely with the mental hospitals and with the courts of justice. They constitute, moreover, centres for the supervision of mental cases, and these patients are no longer left to such help as may be given by voluntary associations. Mental hygiene is a vast subject, and includes in its survey such different departments as education and medical treatment. The dispensary assumes primary responsibility for procedures such as investigations of the family history and social circumstances, which in the hands of less experienced workers involve serious expenditure of time. Thanks to the dispensaries medical officers of mental hospitals are reasonably assured that a patient thought to have been cured can go back to a favourable environment, continuing to attend a dispensary for as long as is thought necessary. Only since November, 1926, has the treatment of mentally deficient children been conducted at the dispensaries; the problems which it presents are at times social as well as medical. Three stages have to be considered in this respect. There is firstly the period before the child goes to school; it is a time of adaptation to life in which it is occasionally necessary to intervene very actively from the prophylactic point of view. Such children present a minimum of mental symptoms, except when the graver mental abnormalities are present, and physical signs are relatively much more prominent. The second stage is that of school life, when the child has to adapt himself to this particular environment, and intellectual progress is concerned. The disorders which come up for treatment are now fully developed. The third stage is the post-educational one of adaptation to social life; it is also the stage of delinquency. As regards the selection of these cases the children are brought by their parents, by the health workers in schools and industrial organizations, or by the judicial authorities of children's courts. One of the chief advantages of the system is that very often these children can remain in the family circle, with moral and material benefit, apart from what the hospital or dispensary can give. The part played by these mental hygiene dispensaries in dealing with delinquents is of similar importance.

Health Administration in the Belgian Congo.

The health department of the Government of the Belgian Congo has just published an interesting and very detailed report on the results achieved by the new medical administration, which came into existence in 1922, and was characterized by the concession of autonomy and the creation of provincial medical services. In framing its organization advantage was taken of the experience gained in these matters by the parallel British and French administrations, and the distinctive principles of both have been combined in the Belgian scheme. The British policy is to establish treatment centres to which patients are brought; in this way medical aid is provided for the greatest possible number of those suffering from all varieties of diseases. The French plan utilizes the native medical service; it aims at hunting out the various endemic and epidemic diseases and at the promotion of health measures in the various centres of population. In 1925 the Belgian Government medical officers were solely responsible for the treatment in hospitals and dispensaries of 85,000 cases of trypanosomiasis, 10,045 cases of syphilis, and 33,754 cases of yaws. The steady increase in the financial commitment of the colony in connexion with improvement of the general health is shown by the following figures, which indicate the sums devoted to the provision of drugs and equipment. An expenditure of 250,000 fr. in 1914 rose to 562,000 fr. in 1919; to 2,250,000 fr. in 1921; to 3,400,000 fr. in 1922; to 4,650,000 fr. in 1923; to 9,000,000 fr. in 1925; to 70,000,000 fr. in 1928; and to an estimated 79,000,000 for the current year. Vaccination against small-pox has been a primary concern of the Government since a vaccination service was inaugurated in 1895, and all natives were required to come for periodical re-vaccination. Lymph prepared locally was found to be ineffective, and, consequently, large supplies have since been sent regularly from Brussels. Great benefit followed the introduction of a dried vaccine which gives excellent results but imposes a very heavy financial strain. The outstanding disease as regards Europeans is malaria with its complications; an antimalarial association has been started at Elizabethville, and a second one at Leopoldville. Trypanosomiasis is certainly the most severe of those diseases which ravage the native populations of the Congo; it has been made the objective of an intensive campaign, the history of which is detailed in the report. The total number of sick persons traced, examined, and treated is very high; many leper asylums have also been built. Among other matters the report discusses the work of rural dispensaries, training colleges for native medical assistants, schools for native midwives, child welfare, and medical charities for the native population. As regards the medical staff there are actually 135 medical officers on the official register of the colony; the various industrial organizations are responsible for the addition of about 130 other medical officers.

A New Degree in Anthropology.

The University of Liège has instituted a diploma and a doctorate in anthropological science. The qualifying studies comprise (1) physical anthropology, (2) human anatomy, (3) general and special human physiology, (4) ethnography and ethnology, (5) human geographical distribution, (6) the principles of sociology, (7) the elements of the science of language, (8) human palaeontology, (9) prehistoric archaeology, (10) geology of the Quaternary Period.

England and Wales.

Dinner to Lord Moynihan.

ON April 19th the University of London Medical Graduates' Society gave a complimentary dinner to Lord Moynihan, F.R.C.S., at the Hotel Metropole, Leeds. The guest of honour was accompanied by Lady Moynihan. Sir StClair Thomson, president of the society, was in the chair, and in his speech proposing the health of the guest mingled a vein of playful badinage with terms of sincerest admiration. He drew a picture of Lord Moynihan as the great teacher and inspirer of the young surgeon, always ready to show the minute details of his wonderful craftsmanship. The whole profession was under a deep obligation to him, and this not only because he encouraged others to aspire to a great tradition, but, by the charm of his culture and the width of his interests, he had shown that a medical man was not necessarily a mere "pill-monger" or a "sawbones." Truly, Lord Moynihan had raised the status of the profession throughout the world. The toast was drunk with great enthusiasm. Lord Moynihan, who was greeted with cheers on rising to reply, said, in banter, that all his life he had been endeavouring to chase, but without ever catching up with, the defects of belonging to the University of London; for the university in his day was not a university at all in the strict sense, but merely an external examining body. In his view a university was not primarily a place at which to acquire knowledge, though this was often regarded as its chief function. Much more vital was the impact of mind upon mind among undergraduates, the collision of differing temperaments, and the moulding of a shapeless, plastic mass into something capable of being recognized as a crystal of many facets. Speaking of his peerage, Lord Moynihan said he had been overwhelmed by the friendliness of the acclamation that had come from all over the world. This acclamation, he realized, was not relevant entirely to himself, but was an honour to the profession as a whole, and, in interpreting this honour, he would use it to the utmost of his power for the good of the profession and all it stood for. Dr. Rhoda Adamson of Leeds, to whom the success of the dinner was in great measure due, in a few happy words in appreciation of Lady Moynihan, proposed her health, to which the company very heartily drank. The dinner was a very influential one, no fewer than twelve cities and towns having sent representatives. Among those present were: Mr. A. Richardson, Mr. C. Oldfield, Mr. H. Collinson, Dr. R. A. Veale, and Mr. A. L. Whitehead, of Leeds; Mr. Harry Platt of Manchester; Professor W. Blair Bell of Liverpool; Professor W. Billington of Birmingham; Dr. W. Edgecombe and Dr. W. B. Watson of Harrogate; Mr. J. H. Cobb and Mr. E. F. Finch of Sheffield; Mr. E. M. Hainworth of Hull; Dr. Dorothy Hare, Mr. W. McAdam Eccles, and Mr. Herbert Tilley from London. The University of London Medical Graduates' Society is steadily increasing its membership, and now has a large number of graduates overseas as members. The annual London dinner will be held on Tuesday, May 7th, at 6.45 p.m., at the Langham Hotel, before the reception that evening to the members of the International Congress of Military Medicine and Surgery.

Extension of the Guest Hospital, Dudley.

The board of management of the Guest Hospital at Dudley are appealing for £50,000 for the enlargement and equipment of this institution, which was founded in 1871. In order to obviate interference with the working of the hospital during the reconstruction it is proposed that the extension should be conducted in four stages, the first of which is the provision of a ward unit with two stories, and accommodating twenty-four beds and three single-bed wards. The next stage will be the replacement of the old laundry and boiler house by a new one; subsequently a further ward unit of two stories will be built, and certain portions of the existing hospital will have to be remodelled. In connexion with this extension scheme an illustrated pamphlet has been issued describing the development of the hospital. It is recalled that the present buildings were made available by the late Earl of Dudley for the accommodation of workers who became blind in limestone pits; they were originally designed for almshouses, though never used as such to any extent. They were altered by the late Earl of Dudley to serve as a hospital, and endowed by the late Mr. Joseph Guest, who presented £20,000 for this purpose. In 1912 the out-patient eye department of the Dudley Dispensary was transferred to the Guest Hospital, and it is mentioned that during the last five years there have been over 52,000 attendances of ophthalmic patients at the out-patient department and 2,000 cases admitted to the wards. The x-ray department has recently acquired additional plant at a cost of £500. The Guest Hospital is situated in a densely populated industrial area, and its resources have been severely taxed in recent years by the increase in the population and of the number of road accidents. During 1928 over 2,000 patients were treated in the wards, and there were more than 55,000 out-patient attendances. There is a long waiting list, but it is hoped that the extension, which will eventually add eighty-five beds to the hospital, will enable it to deal more adequately with the local requirements.

Royal Westminster Ophthalmic Hospital.

A report has been issued on the first three months' working of the private paying rooms at the Royal Westminster Ophthalmic Hospital, which were opened in the new building in Broad Street, Holborn, on January 1st of this year. The average stay has been three weeks, and the average cost to the patient £15 15s., exclusive of the surgeon's fee, which is a matter of private arrangement between himself and his patient. Only in one case was it necessary to charge a small additional fee for the services of a special nurse. All the other cases were nursed entirely by the hospital's private nursing staff working under the supervision of two resident medical officers. Fourteen of these private rooms are available at the hospital. They are all single rooms, and the paying wing is entirely cut off from the public wards, having its own theatre, kitchen, and sitting-room.

Scotland.

Small-pox Outbreak in Glasgow.

AN outbreak of small-pox originated on board the Anchor liner *Tuscania* on her homeward voyage from Bombay. Seven members of the crew were landed at Glasgow and confined in Robroyston Hospital; the authorities have kept under observation in the city some 300 persons who travelled on the ship and are possible contacts with infected cases, while the 600 passengers who were landed at Liverpool and Glasgow are also being watched by health authorities in various parts of the country. Arrangements were made, after the cargo of the liner was discharged, to fumigate the whole ship. A large supply of vaccine lymph had been taken on board at Marseilles, and every person on board had been vaccinated. Up to April 12th the number of patients in hospital affected by small-pox was 13, of whom 12 are members of the crew and 1 a passenger. The disease appears to be of a severe type in several cases. On April 15th there were 18 cases in Robroyston Hospital, and 1 case was subsequently admitted to the Aberdeen City Hospital, suffering from small-pox. So far as Scotland is concerned, however, vaccination and tracing of contacts appear to have successfully controlled the outbreak.

Livingstone Flag Day in Scotland.

Arrangements have been made to hold a flag day in Edinburgh, Glasgow, and other Scottish towns on April 27th, for the purpose of raising funds in connexion with the memorial to Dr. David Livingstone, the African explorer. The memorial and museum are to be set up at his birthplace in Blantyre, Lanarkshire, and will be opened early in July of the present year. It may be recalled that the explorer qualified in medicine and took the licence of the Faculty of Physicians and Surgeons at Glasgow in 1840, and that during his travels he took much interest in methods of medical treatment applicable to tropical regions. His journals record many observations on the uses

of various drugs and other medical procedures. In the middle of the nineteenth century, when the use of the clinical thermometer had not yet become one of the commonplaces of medicine in connexion with fever, Livingstone made extended observations with this instrument, using the ordinary thermometer both for taking atmospheric temperatures and that of patients. His advocacy of the wet pack contributed to the more general adoption of this method of reducing high temperature. In regard to febrifuges, he noted several plants which were in use in Africa in place of quinine, and which might be used when the latter drug was not available. He is generally credited with having been one of the first persons to point out that the action of quinine was greatly helped by the previous administration of a powerful purgative, using for this purpose a "rouser" containing 8 grains of jalap resin, 8 grains of rhubarb, and 3 grains each of calomel and quinine.

Edinburgh Dental Hospital and School.

The thirty-seventh annual meeting of the Edinburgh Dental Hospital and School was held on April 16th. Dr. William Guy, dean of the school, presided. The report shows that there were 112 students attending the hospital, and that during 1928 21,977 operations were performed. The total income was £4,975, of which £2,791 went to the school and £2,184 to the hospital, leaving a balance of £665. It was pointed out that they had not yet reached the limit of the increased expenditure occasioned by extensions to the school, and that, though the finances were entirely satisfactory, it was not yet possible to forecast accurately what the future would be. Mr. J. B. Clark, who moved the adoption of the report, pointed out that more than half the total number of operations had been undertaken for preservation of the teeth, and that the hospital was making an enormous contribution to the maintenance of the good health of the community. In the course of the history of the school, about 850 highly qualified dentists had been turned out. He believed that if the public realized the great contribution that this hospital made to the health of the community it would receive more ample support, so that a larger part of the fees of students could be released for increasing and extending facilities for teaching.

Ireland.

Ireland's Freedom from Small-pox.

THE Secretary for the Department of Local Government and Public Health, in a recent statement in connexion with small-pox, claims there is a complete absence of the disease in Ireland, which he attributes to the enforcement of compulsory vaccination. He announced that the department had for a long time anticipated the appearance of small-pox. In 1923 a memorandum was issued summarizing the measures for promptly dealing with any case that might arise. The questions of infection, supervision of contacts, vaccination, and re-vaccination were all discussed in detail, and these instructions were very familiar, both to medical officers and boards of health throughout the country. All medical practitioners were warned to communicate immediately with the local medical officer of health if there was the slightest suspicion of any case of small-pox. Hitherto time had been lost in some instances by mistaking chicken-pox for small-pox. On the general question of vaccination, it was added, local authorities were most diligently carrying out their duties. The department was most anxious to keep a clean bill of health as regards small-pox, a vital matter in a country which exported foodstuffs, and was undeniably an ideal tourist resort. There had been no outbreak for many years, and the department was fully satisfied that the present organization could cope with any emergency. Dr. Angela Russell, wife of the Dublin medical officer of health, in a health talk on small-pox, which was broadcast recently by 2 R.N., referred to the outbreak on the s.s. *Tuscania*, and the fact that one of the contacts was a Dublin man. Some people, she said, had begun to think that it was harmless because of the mildness of the disease in England since the war; they imagined it had lost its virulence, and they neglected vaccination of their infants to ward off what appeared a mere bogy, because it would entail inconvenience to themselves. Small-pox, she pointed out, was as fatal a disease and as great a scourge to-day as it had ever been. If the people on the s.s. *Tuscania* who had been attacked by the disease had been vaccinated within the last few years not one of them would have been affected. The disease was as common long ago as measles to-day, and the reason it had virtually died down was the practice of vaccination, the one and only preventive and cure for the disease.

The Mosquito Nuisance.

The Public Health Committee of Belfast, having considered the nuisance caused by mosquitos and other insects, has issued a statement, signed by Dr. C. S. Thomson, superintendent medical officer of health, giving the following advice. A vacuum machine is useful to destroy the hibernating female in rooms and outhouses. Burn the contents of the bag; do not put them in the dustbin. Fumigation and the limewashing of walls is also valuable. Pools and puddles should be drained and filled up, and choked-up gutters attended to. For small areas a pneumatic sprayer could be used for spraying casual water with paraffin oil containing 2 per cent. of castor oil. To prevent bites, oil of lavender on the hair or clothes may be tried. As the mosquito frequently bites about the ankles, two pairs of thin socks or stockings are better than one thick pair, and Russian or Wellington boots should be worn in the garden. To protect the face use a 50 per cent. alcoholic solution of thymol, or oil of cloves in lanoline. If bitten, dab on at once a weak solution of ammonia or of washing soda or common soap and vinegar, or apply a cut onion to the sore. If the irritation is severe apply iodine in glycerin. Call a doctor if matters get worse.

Correspondence.

THE DISTRIBUTION OF RADIUM.

SIR,—The issue of the report of the Radium Subcommittee raises in an acute form the problem of the distribution of radium throughout the country, and the question as to whether it is better to distribute radium broadcast to all those who would like to make trial of its use or to concentrate it in centres specially equipped for its service. At the present time the former plan has been adopted, and every hospital throughout the country is fighting for supplies, in the full conviction that if a surgeon only possesses radium he can cure cancer, and in utter disregard of the skill and experience required for its successful use. It is surely high time that someone should utter a warning against the folly of such a policy, and should point out the dangers involved in the inexpert use of this most powerful weapon. Should such a policy still be pursued with the large amounts of radium which will shortly be at our disposal it can only result in disaster and discredit.

If any progress is to be made in the treatment of cancer by radium it is surely essential that it should be concentrated in certain centres, and not distributed broadcast. Four such centres in London, four in the provinces, and one in Scotland ought to be sufficient, although some of them might perhaps be divided for convenience in working. Only in this way can sufficient cases of the same kind be brought together to try out different methods of use, a staff of sufficient experience be assured, and accessory apparatus, such as powerful *x*-ray plants, be available. Each centre should be under one director, who would co-ordinate the work done, and who would have under his control, so far as the treatment of these particular cases is concerned, the whole resources of the centre. The centre would probably be situated in a large hospital, but I do not at all mean that cases should be withdrawn from the care of all other members of the staff and handed over to the director of the centre. Those in charge of the cases would, however, only have access to the resources of the centre in so far as they were willing to act in conjunction with the director, and to place the whole of the notes of their cases unreservedly at his disposal. He, on his side, would see that

they were provided with radium in forms and amounts suitable to the cases, and would advise as to dosage and methods of treatment. This would obviously introduce into hospital work an entirely new element, but the circumstances most certainly demand it.

Around each centre there ought to be subsidiary centres, which would be visited on stated days by experts from the centre itself, and where the local practitioners might have an opportunity of consulting an expert as to the treatment of their cases. This would save fruitless journeys for patients, and would prevent the centre from being crowded with unsuitable cases. It would also make for the early recognition and admission of cases of cancer. The system is at work in France, and is very successful.

At certain of the centres, perhaps at all of them, there should be an installation for the preparation of radium emanation, and perhaps for its supply to selected individual surgeons in the subsidiary centres. Although its use demands the same precautions as that of radium itself, it has the great advantage that it is only of transient value, and that its loss is a matter of small importance. I hold strongly that in no circumstances whatever should any of the radium itself be moved from the centre, as the risk of its loss is considerable. With suitable adjustments precisely the same results can be obtained with emanation, the use of which is in many ways advantageous. In contrast to the views held abroad, I am personally of the opinion that the whole future of radium treatment lies with emanation, from its great convenience and safety, whilst in many cases the fact that it need not be removed after introduction is of vital importance.

At every centre arrangements must be made for the admission and treatment of private patients. It would be intolerable that any individual should be debarred from the services of the centre because he was well off financially. In most cases it will be impossible, and most undesirable, that he should be treated in the centre by his private medical attendant, since we are here dealing with a highly specialized form of treatment, which can only be carried out satisfactorily by those who are constantly engaged in its application. This, of course, cuts clean across all our present ideas of medical practice.

It cannot be too strongly stated that the successful treatment of cancer by means of radium is a matter demanding the most expert knowledge, and that attempts to use radium without that knowledge are unlikely to succeed, and are exceedingly dangerous for the patient. Possibly years hence its use may be reduced to a standardized procedure, but at present we are in an experimental stage, where every consideration of wisdom and policy demands the utmost caution and the closest observation of results.—I am, etc.,

London, W.1, April 22nd. H. S. SOUTTAR.

INQUIRY INTO THE ETIOLOGY OF CANCER.

SIR,—In the *British Medical Journal* of June 16th last an appeal was made to your readers to help in a statistical research into the etiology of cancer by answering a schedule of questions relating to a cancer patient and a non-cancer patient of the same sex and about the same age as control.

The response to this appeal, though somewhat disappointing, was sufficient to justify printing the schedules and starting the investigation, and some medical practitioners have rendered most useful service by their careful work in completing these forms.

In order that sufficient data may be secured, more volunteers are needed, and since many of your readers doubtless did not see or give careful consideration to the first appeal, may I again ask that any who are in touch with cases of cancer, whether in general, specialist, or hospital practice, and who are prepared to devote a few hours to assist in this research, will communicate with me at the Galton Laboratory? Unfortunately it is not possible to offer any kind of remuneration for this service, but I feel sure that there are some who will be prepared to make this voluntary sacrifice of a little time to help in a form of cancer research which can only be carried out by team work.—I am, etc.,

PERCY STOCKS, M.D., D.P.H.,
Reader in Medical Statistics, University of London.

Galton Laboratory, University College, London, W.C.1, April 23rd.

POST-GRADUATE INSTRUCTION IN MIDWIFERY.

SIR,—In the recent discussion upon "The future of maternity services" one of the speakers stated that she "was not aware of any post-graduate facilities for the general practitioner, enabling him to take an intensive course."

During the last two years, St. Mary's Hospital, Manchester, has held such a course during the summer extending over a period of one week, and it is intended to repeat this for the third time commencing on June 15th of this year. There is accommodation for eight qualified practitioners to live in the hospital, and during this week each member of the honorary staff resides in turn in the hospital for twenty-four hours so that he is on the spot to attend to any maternity emergency and hold regular systematic classes.—I am, etc.,

Manchester, April 19th. WM. FLETCHER SHAW.

THE TREATMENT OF ACUTE OTITIS AT PUBLIC SCHOOLS.

SIR,—In the Journal of April 20th (p. 745) "M.D." asks some straight questions about this subject, and from me he shall have some straight replies.

I have seen a good many epidemics of influenza, but never have I seen one which attacked the middle ear so severely as the recent one. Adults as well as children have been the subjects of the attacks. I have no hesitation in saying that as soon as the patient complains of earache the membrana tympani should be examined at least night and morning; if it is injected, and more especially if bulging in the slightest degree, there should be no delay in paracentesis. If such early treatment is given the finding of serous pus only will be all the better and the operation justified. Such prompt treatment more often than not is a means of clearing up the affection altogether in a short time, besides which a punctured membrane is much more likely to heal than one which has been allowed to perforate on its own account and which so often results in a chronic discharge, with all its after ill effects.

As to pus in the mastoid antrum, it is just as unwise to leave these cases as it is to do so in acute appendicitis, yet there may be no signs externally, such as swelling or tenderness over the mastoid region. During the recent epidemic of influenza I have opened many mastoid antra, and in all pus was found; these were all cases where the membrane had been allowed to perforate. The difficulty in many of these cases is that one does not see them early enough; this may be due to the fact that the public, and possibly some practitioners, look upon them too lightly in the first instance.

Therefore the answers to both of the questions of "M.D." are in the affirmative.—I am, etc.,

Chichester, April 21st. ARTHUR M. BARFORD.

SIR,—The answer to "M.D.'s" query concerning the treatment of acute suppurative otitis media is in the affirmative, as he very rightly suspects. Nor should there be any waiting till the condition is suppurative, since an early incision in the full drum relieves the *retention pressure* and thus removes the chief factor in infection of any hollow organ. Organisms and infection thrive under pressure. Also the relief of pressure allows the swollen mucosa to subside, thus removing any dam to the antrum or attic contents (which are mucous in the early stages), and discouraging adhesions.—I am, etc.,

London, W.1, April 21st. C. HAMBLEN THOMAS, F.R.C.S.

SIR,—There can be no doubt that there would be fewer "running ears" and "mastoids," with their accompanying complications, if every "gathered ear" was adequately treated at the outset according to ordinary surgical principles—that is, by free incision of the drumhead. Surely it is time that every practitioner recognized the potential gravity of a suppurating ear.

Paracentesis means a "lapping of a body cavity." When applied to the tympanic membrane it is inadequate. There

should be a free and deliberate incision, commencing as high, and extending as low, as possible. The termination of the incision should be slightly curved so as to form a small flap to prevent too early regeneration. It is at the lowest part of every cavity that drainage is most efficacious. A straight incision is very apt to close too quickly. The myringotome should have a very keen edge. An inflamed membrane is acutely sensitive; therefore complete general anaesthesia is needed for precision. In adults I use gas and oxygen.—I am, etc.,

ARNOLD FERGUSON, F.R.C.S.Ed.,
Aural and Ophthalmic Surgeon,
Jersey General Hospital.

April 22nd.

THE INTRACUTANEOUS TUBERCULIN TEST.

SIR,—My view that Professor Lyle Cummins's description of the lesion produced by the intracutaneous tuberculin test (April 13th, p. 707) is inaccurate is strengthened by the fact that in his own case the lesion as an induration lasted many weeks; the lesion is inflammatory, and not oedematous. No one but Professor Cummins could suggest that the lesion he describes indicates the need for treatment. No one who knows my work and views can accuse me of ever having relied upon the intracutaneous test for the diagnosis of tuberculosis in human beings; "as a criterion in diagnosis" with a view to treatment, I neither use it nor recommend it. I am a firm believer in the value of the subcutaneous method of Koch as a means of determining whether in a case of obvious infection specific treatment is wise.

The failures of the system carried out in hospitals and sanatoriums by physicians and tuberculosis officers are strikingly shown by the charts on my table, taken at random. There are 38 patients: 24 with tubercle bacilli in the sputum, 3 patients, sent by ophthalmologists, suffered from episcleritis proved by proper tests to be tuberculous, 1 case of phlyctenular conjunctivitis, 2 cases of tuberculous disease of the skin, 1 case of tuberculosis of a digital joint, 2 cases of pleurisy, diagnosed by tuberculin as tuberculous, and 1 case of severe haemorrhage (pints). Thus, out of 38 cases, 34 are certainly cases of tuberculosis needing treatment. There remain only 4 out of 38 in which the diagnosis could be doubtful. If Professor Cummins had seen these four cases before and after treatment he would hesitate to question my skill in diagnosis and treatment by means of tuberculin. I used Koch's method of diagnosis, and not the intracutaneous test.

In my first book, *Treatment of Consumption* (p. 70) (1903), I criticized the somewhat ancient statistics of Naegeli and Burkhardt, quoted by Professor Cummins. Naegeli's generalization was based upon post-mortem examinations of 391 hospital patients from the poorest parts of Zürich, of whom 110 died of tuberculosis; Burkhardt's generalization upon 1,262 patients of the industrial classes, of whom 465 died of tuberculosis. These statistics show that in the hospitals studied *one death in every three was due to tuberculosis*. At the time the death rate in Zürich was far greater than the death rate in London.

Professor Cummins says that "these findings accord well with my [his] 90 per cent. of 'positives' to 1 in 1,000 [*sic*] tuberculin in healthy adult males." He actually infers that the positive reaction is almost as common in the healthy adult population of England as it was in the hospital population of Zürich and Dresden, when one death in every three was due to tuberculosis. Obviously Professor Cummins's method of testing the value of the intracutaneous reaction has led him into very serious error, and in the public interest I am bound to say so. Dr. Burkhardt, in his article, writes these pregnant words, which Professor Cummins has entirely ignored:

"I have already made it clear that from such hospital material, drawn mainly from the urban working classes, precise statistical generalizations and conclusions as to the incidence and frequency of tuberculosis among the general population are to be made only with extreme caution." (*Zeit. f. Hyg. u. Infectionskr.*, 53–54, 1906.)

Nor is this all. It seems that Professor Cummins has chosen these musty statistics and ignored those of recent date, to which I have referred in my last book, *The Principles of Immunity in Tuberculosis*. The statistics of Hart (*Pathologische Beobachtungen während des Krieges* usw.) show tuberculous changes in post-mortem examinations in 34.2 per cent., those of Rössle in 33 per cent., and those of Oberndorfer in 10 per cent.; Hart's statistics are the work of a master.—I am, etc.,

W. CAMAC WILKINSON.

London, W.1, April 15th.

SIR,—As a surgeon I have followed with much interest the correspondence in your columns between Professor Lyle Cummins and Dr. Camac Wilkinson as to the value of the intracutaneous tuberculin test. Neither of them has mentioned the test of Wildbolz of Bern. This test is based upon the principle that the kidney, among its other functions, is capable up to a point of excreting from the blood active bacteria and their toxins without perceptible damage to its normal function—for example, typhoid, dysentery, *B. coli*, etc.

Professor Blum of Vienna recently told me of a case of a young man who consulted him about a swelling of the epididymis. He was able to exclude venereal disease, and his diagnosis was tuberculous infection. This patient visited Wildbolz, who said, after his test, that it was not tuberculous trouble. The patient returned to Professor Blum, who, unbelieving, removed the diseased testis, and found the condition was an infarct, and not tuberculous. Wildbolz claims that his test is specific for active tubercle, and the allergic element of the patient is excluded by preliminary tests with tuberculin.

For the benefit of those who are not *au fait* with this test it is as follows. A specimen of the urine is taken, and is evaporated down at 50° C. to a small bulk. Two to three minims of the clear evaporated fluid are injected intramuscularly, and if tubercle is present there is an active oedema at the site of injection. I have carried out this test in two cases only, and it has proved true. Of course, one is sceptical, but if this test, along with allergic exclusion, is of value, as suggested by the Vienna school, it will be of real importance.—I am, etc.,

BASIL HUGHES.

Bradford, April 15th.

REPRESENTATION AT POST-MORTEM EXAMINATIONS.

SIR,—Without criticism of the procedure in the particular case of the acquittal of a medical man, reported in your "Medico-Legal" column (April 6th, p. 669), may I draw attention to the attempt in recent legislation to secure for accused persons right of representation at post-mortem examinations, and to indicate how in practice it may come to naught.

Section 23 (4) of the Coroners Act definitely states that a medical man accused of neglect or being in any way responsible for the deceased's death shall "not be allowed to perform or assist at any post-mortem," but "shall have the right, if he so desire, to be represented at such post-mortem examination." But the whole section is only applicable "where a person states on oath before the coroner that in his belief" the death was due to or accelerated by the medical man. The trouble arises from the fact that the necropsy is invariably, and rightly, performed before the inquest, at which any statement inculpating the medical man is made, and until such sworn statement is made Section 23 (4) is not applicable.

Sir Bernard Spilsbury rightly places on the coroner the onus of the conduct of the procedure at post-mortem examinations. The coroner has absolute authority, the police act solely as his "officers": until Section 23 (4) is invoked, he could allow anyone to be present at the post-mortem examination, or even to conduct the examination, as no person is technically "accused" till a statement on oath has been made against him. It would perhaps be unwise to allow any person likely to be incriminated to be present, but his representative could be there. It would be well, therefore, for any medical man likely to be accused to ask for permission for his representative to be present. But if this is refused the right to be represented does not arise under Section 23 (4) until the inquest is opened and the post-mortem examination already done: except in

those cases where the inquest is begun, the sworn evidence taken, and the examination is then ordered on adjournment. Usually the first intimation of any charge against the medical man comes out at the inquest, when it is too late for him to avail himself of the right especially provided in the Act of 1926; by then, indeed, he may have already performed the examination himself.

It would be an advantage if the provision of Section 23 (4), conferring on an accused person the right to be represented at a post-mortem examination, could apply even in cases where the accusation was not made on oath, but as an ordinary statement to the coroner's officer.—I am, etc.,

EDWARD F. HOARE, M.D.

Ringmer, near Lewes, April 12th.

PLEURAL ADHESIONS AS A POSSIBLE CAUSE OF ASTHMA.

SIR,—In the literature on asthma to which I have access I can find no reference regarding pleural adhesions in this disease. Osler mentions that the disease may be induced reflexly from the stomach, intestines, or genital organs, or by direct irritation of the bronchial mucous membrane. My edition of Cunningham's *Anatomy* does not even mention the nerve supply of the pleura.

It would be of interest to know if any animal experiments have been performed to discover what happens to the bronchial musculature on stimulation of the surface of the lung.—I am, etc.,

Crewe, April 18th. W. L. ENGLISH, M.B.

THE ORIGIN OF "QUARANTINE."

SIR,—Under the caption Nova et Vetera in your issue of January 19th (p. 122) appears an interesting article by Dr. F. G. Clemow with reference to the origin of the word "quarantine" and the probable reasons which led to the adoption of a period of forty days as one suitable for that purpose. As so often happens, the study of the origin of words in our language opens up a fascinating field for investigation and speculation.

It would seem that the determination of a fixed period of forty days, or years, is one that has been transmitted from remote antiquity in the literature of the Old Testament. It was the period of time deemed suitable for purposes of trial, punishment, preparation, or purification in matters either mundane or spiritual.

Dr. Clemow makes mention of one passage in Leviticus, but the Old Testament is teeming with references to the precise period of time under consideration. The world was purged of evildoers by the Great Flood in forty days (Genesis vii, 17); Moses was forty days in the mount at the giving of the law (Exodus xxiv, 18), presumably a period of preparation and communion with the Deity; and the Israelites spent forty days searching and making trial of the land of Canaan (Numbers xiii, 25). Other references with analogous applicability are found in I Samuel xvii, 16, in I Kings xix, 8, and in Jonah iii, 4.

The Israelites wandered forty years in the wilderness as a punishment—"to humble thee and to prove thee" (Deuteronomy viii, 2). The maximum number of stripes, or strokes, to be inflicted on a malefactor was also forty (Deuteronomy xxv, 3). The Messiah fasted in the wilderness forty days tempted of Satan, as a period of trial and preparation (Mark i, 13). [The neighbourhood is still known as Mount Quarantana or Jebel Kuruntul.]

In the early centuries of the Christian era, and especially in the mediaeval ages, there existed an intimate correlation between the Church and medicine. The priests and monks of the day were also the healers and quasi-practitioners of medicine. It would seem not unreasonable to suggest that in casting about for a suitable quarantine period they would adopt (or continue, rather) a custom sanctioned by Biblical usage, and therefore familiar to them, and one which, for that especial reason, would receive the imprimatur of the Church.—I am, etc.,

Boodepoort, Transvaal, March 12th. S. M. JACKSON, M.D.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following candidates have been approved at the examination indicated:

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.—*Part I:* W. S. Gross, A. Lazarow, R. Wear. *Part II:* N. H. Bharucha, S. J. Dikshit, D. MacD. Fraser, W. R. G. Frayne, J. B. Hartley, Helen M. Koeller, H. B. Padwick, N. A. Qureishi, A. M. Tripathi, R. Wear, C. Wroth.

UNIVERSITY OF GLASGOW.

AT the graduation ceremony on April 20th the following degrees were conferred:

M.D.—*A. Main, *A. S. Strachan, †O. H. M[illegible], †A. [illegible], G. M. Currie, R. J. L. Fraser, Margare[illegible].

M.B., Ch.B.—‡A. McN. Wylie, ‡A. T. [illegible], ‡T. D. Anderson, †T. F. Rodger, Ina E. Ashby, P. Barr, Jean M. Barrowman, R. S. P. Begg, R. P. Boyd, W. P. Brown, A. MacL. Campbell, I. S. Campbell, D. T. Clark, W. A. Clark, J. S. Craig, T. Dunlop, J. Fahy, R. Forrest, Isobel C. Fraser, P. A. Gallen, W. S. Gardner, Annie R. Greig, T. McF. Haughie, D. L. Henderson, H. W. Laing, J. W. Laird, L. W. Laurenson, H. R. Leishman, D. C. Liddle, J. H. McIlroona, D. R. McCalman, W. D. C. McCrorie, J. McMichael, W. J. McNeich, Georgina A. McNicol, A. F. Maguire, J. L. Mayer, T. R. Murray, A. J. Nairn, Mary S. Nicholson, J. P. O'Hear, Jean B. Parker, Ellen J. C. Ross (Mrs. Campbell), M. M. Scott, J. G. Stimson, W. Smith, J. Stewart, J. Taylor, H. R. Weir, H. Wyers.

* With high commendation. † With commendation.
‡ With honours.

The following prizes were presented to the successful candidates: The Captain H. S. Rankin, V.C., Memorial Prize of £4 10s., awarded to the student who obtained the highest marks in the subject of pathology in the professional examinations held in the year 1928, to W. S. Mack; the Bellahouston Gold Medal for eminent merit in thesis for M.D. to R. P. Smith; the Straits Settlements Gold Medal for thesis for M.D. on a subject in connexion with tropical medicine or tropical hygiene to John W. Graham; the Macewen Medal in surgery to J. S. M. Robertson; the Macleod Gold Medal for surgery to Jean G. P. Stephen.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

FINAL EXAMINATION.—*Medicine:* J. McK. Reid, A. K. Nandi, J. R. S. Gupta, L. Grunis, N. M. Valloly, A. R. Perera, D. Gould, L. A. Paranavitane, B. Kounine, J. Elliott. *Surgery:* F. J. Fell, R. W. Mungul, I. El-Aroussi. *Midwifery:* A. K. Nandi, N. M. Valloly, R. W. Mungul, A. R. Perera, A. S. K. Swami, H. Michaelson, L. St C. Ferguson, D. Gould, L. A. Paranavitane, B. Kounine. *Medical Jurisprudence and Public Health:* T. G. Ward, H. C. Fraser, M. A. Perera, W. C. Ross, D. D. W. Waidyasekera, A. J. Sutherland, A. O. Jollie, C. Cairncross, R. M. Irving, J. C. Coetzee, W. E. Faulkner, S. C. Grant, J. E. Le Fresnais, J. B. D. Oliver.

Out of 76 candidates entered the following, having passed the Final Examination, were admitted L.R.C.P.Ed., L.R.C.S.Ed., L.R.F.P.and S.Glas.:

M. E. Tiruchelvam, M. U. Hayat, Mary E. J. Magee, D. C. Dewar, K. R. L. Evans, S. Schmulian, Violet D. Hunter, J. C. Baumann, M. A. Yousef, Claire N. Frowusberger, S. S. Nagi, S. K. Mitra, Anna N. Edward, C. H. Lovell S. H. Al-Junied, I. Campbell, M. Rifaat, Anna G. McGregor, B. C. Guha.

The Services.

INDIAN MEDICAL SERVICE DINNER.

THE annual dinner of the Indian Medical Service will be held at the Trocadero Restaurant on Wednesday, June 19th, at 7.15 p.m. Lieut.-Colonel D. G. Crawford, "the historian of the service," has been invited to take the chair. Tickets, and all particulars, may be obtained from the joint honorary secretary, Major Sir Thomas Carey Evans, *M.C.*, 31, Wimpole Street.

DEATH IN THE SERVICES.

Lieut.-Colonel William Henry Steele, *R.A.M.C. (ret.)*, died at Clifton on March 25th, aged 84. He was born in Dublin on April 4th, 1844, and was educated at Trinity College, Dublin, where he graduated as A.B. and M.B. in 1866, and as M.D. in 1871. He had previously taken the L.R.C.S.I. in 1865, and became F.R.C.S.I. in 1889. He entered the army as assistant surgeon on October 2nd, 1866, attained the rank of brigade surgeon lieutenant-colonel on October 31st, 1892, and retired on March 3rd, 1897. When on the retired list he was employed at Devonport, in 1897-98, at Horfield, Bristol, in 1898-1905, and at Hot Wells, Bristol, in 1905-9. During his old regimental days he served in the Royal Artillery. He served in the Abyssinian war of 1867-68, and in the Ashanti war of 1873-74, receiving the medal granted for each of these campaigns.

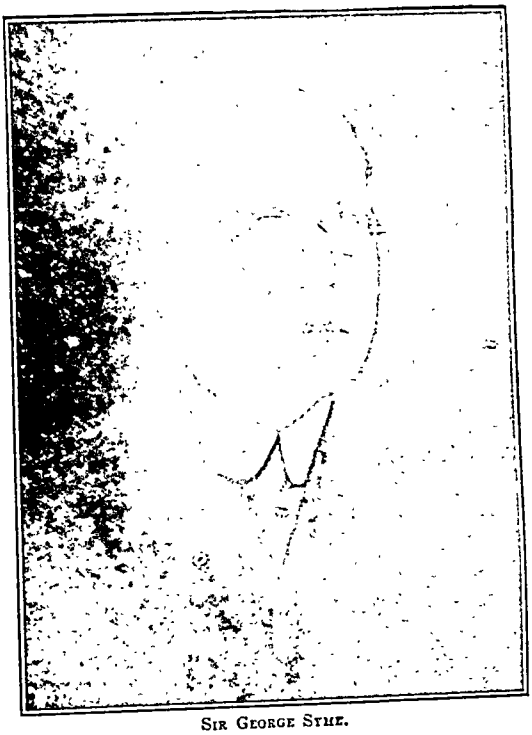
Obituary.

SIR GEORGE ADLINGTON SYME, K.B.E., LL.D., M.S., F.R.C.S., Hon. F.A.C.S.,

First President of the College of Surgeons of Australasia, Vice-President of the British Medical Association.

WE have to record with deep regret the death of Sir George Syme, K.B.E., after a life of distinguished service to surgery and to the British Medical Association in Australia.

George Adlington Syme was born in Nottingham in 1859, and was educated in Melbourne at Wesley College and the University, where he graduated M.B. in 1881 with first-class honours and a scholarship; he proceeded M.S. in 1883. After holding the appointment of resident medical officer at Melbourne Hospital from 1882 to 1883, he returned to England and became a member of King's College Hospital, where he worked under Lister; he obtained the diploma M.R.C.S. in 1884, and the F.R.C.S. in 1885. He then widened his experience by acting as clinical assistant at the Royal London Ophthalmic Hospital, the Central London Throat and Ear Hospital, and the Soho Hospital, after which he returned to Victoria in 1887 and was appointed demonstrator and examiner in anatomy in the University of Melbourne. He was also for a time pathologist to the Women's Hospital and editor of the *Australian Medical Journal*; he held the post of honorary surgeon to out-patients at the Melbourne Hospital from 1887 to 1903, and surgeon to in-patients from then till 1919. During 1888-89 he was secretary to the Royal Commission on the Sanitary Condition of Melbourne. He had been surgeon to the Police Force and to the Queen Victoria Hospital since 1889, consulting surgeon to the Melbourne Dental Hospital since 1891, honorary surgeon to St. Vincent's Hospital since 1893, and lecturer on anatomy and a member of the Faculty of Medicine in the University of Melbourne from 1900 to 1904. Since 1912 he had been a member of the University Council, and had served on various committees. He was a University representative on the Advisory Board of the Melbourne Hospital, and from time to time acted as an examiner for medical degrees in the University of Sydney.



SIR GEORGE SYME.

The value of the services rendered by Sir George Syme to the British Medical Association cannot be overestimated. He was three times president of the Victorian Branch, and served as secretary, treasurer, and president of the Sections of State Medicine, Medical Ethics, and of Surgery. In 1922 he was appointed chairman of the Federal Committee, and he has been reappointed every year subsequently. In 1923 he was president of the Australasian Medical Congress (British Medical Association) when the first session was held in Melbourne; in the same year he was elected a Vice-President of the Association. He was for many years the admitted leader of the medical profession in Australia, and, after his retirement from active practice in June, 1924, the Victorian Branch recognized his many services to the Association and the medical profession by presenting him with his portrait painted in oils by Sir John Longstaff; reference was made to this event in our columns on January 17th, 1925 (p. 134). The Branch further established in 1925 a Syme Foundation under the name of "George Adlington Syme Prize." In June, 1924, he received the honour of knighthood, and in the following year he was chairman of the Federal Royal Commission on Health. The formation of the College of Surgeons of Australasia was greatly helped by his co-operation, and in 1927 he was elected the first president. Among his other public appointments may be mentioned the following as indicating the width of his outlook: he was a member of the Appeal Board of the Commonwealth Repatriation Department, president of the Repertory Theatre, Victoria; trustee of the Medical Society of Victoria; and member of the committee of the new Presbyterian Church of Australia. He was the author of numerous contributions to medical literature, and published various lectures and addresses.

During the war he held the rank of lieutenant-colonel A.I.F., and was chief of the surgical staff of the First Australian General Hospital; he was also consulting surgeon to H.M. Hospital Ship *Gascon*.

It will be within the memory of our readers that he achieved a long-cherished desire when he came to England last year in connexion with the Annual Meeting of the British Medical Association in Cardiff. Together with two prominent South African members of the Association he was the guest of honour at a luncheon given by the Officers of the Association on July 6th, 1928. The degree of Doctor of Laws of the University of Wales *honoris causa* was conferred upon him, and Professor A. W. Sheen, who introduced him, spoke of the high appreciation felt by the University for the professional public work of one who was welcomed as a worthy representative of the medical profession of the Dominions and of the British Medical Association. He made an impression on those with whom he came into close contact in this country which explained the high estimation in which he was held in Australia and the confidence which was reposed in his judgement.

[The photograph reproduced is by Johnstone, O'Shannessy, and Falk, Melbourne.]

THE LATE DR. ALEXANDER GRANVILLE.

DR. ALEXANDER GRANVILLE, who died in London on March 23rd after a long and trying illness, was one of the most distinguished British officials who have served the Egyptian Government, and fully upheld the high standard of efficiency and conduct which characterized the administration of Cromer and Kitchener. A brief notice of his life and career has already appeared in our issue of March 30th (p. 623), but these further notes, contributed by a colleague, will be appreciated by the numerous members of the profession who came in contact with him during his life, and especially in Egypt during the period of the war.

At the beginning of this century, during the South African war, he contracted a bad attack of enteric fever, complicated by phlebitis; the resulting thrombosis adversely affected his health for the remainder of his life, and was finally responsible for his death at the age of 55 from embolism. As is frequently the case, he put on weight after his attack of enteric, and the burden of the flesh lay heavily upon him in his later years; although he made light of it, it handicapped severely a natural activity of the body, which was as much a part of him as his very active mind. His fine work in fighting plague in Upper Egypt in 1907-8 first directed attention to his great administrative abilities, and led to his appointment as M.O.H.

Cairo in 1908. He found full employment for his great talents in coping with the sanitary problems of one of the twenty largest cities of the world, with a death rate unknown in Europe, and a mixed population drawn from most of the races of the East and the West. In this he was so successful that in 1912, by Lord Kitchener's express wish, he was appointed director-general of the Alexandria municipality. The complicated affairs of this city had necessitated an inquiry, and a firm and steady hand and general reforming influence were needed, and were forthcoming in the person of Granville. This was one of his greatest successes; all his knowledge of men, tact, and powers of conciliation, and profound grasp of languages were needed to reconcile the differences and reform the abuses which had sprung up in the management of the affairs of this great cosmopolitan city, with all the undercurrents of Levantine and Oriental subtlety. On the death of Sir Armand Ruffer in 1917 he succeeded him as president of the International Quarantine Board, giving up his position as director-general, but retaining his connexion with Alexandria as vice-president of the Municipal Commission. He also took over Sir Armand Ruffer's position as commissioner of the British Red Cross in Egypt, Palestine, and Syria. This was a very large and important administration, which did an enormous amount of work for the comfort of the sick and wounded, and which collaborated in a most friendly and willing fashion with the official Army Medical Service. After the war he became president of the Labour Conciliation Commission on labour troubles in Egypt, and for his services the dignity of Pasha was conferred upon him by King Fuad in 1922. He was also appointed president of the Egyptian medical delegation to the League of Nations. On retirement from the Egyptian Government Service in 1923 his services were retained to attend the meetings of the Office International d'Hygiène Publique in Paris as representative for Egypt. It was on one of the journeys from Paris to Geneva that he was stricken with illness so severe as to necessitate his gradual retirement from active work.

This brief sketch of his career gives some idea of the varied accomplishments of Dr. Granville, and of the force and power that he was among his fellow men, not only British, but also among all the nationalities which comprise the mixed population of the people of Egypt. His intimate colloquial knowledge of languages enabled him to penetrate the minds of the people of various nationalities with whom he had to deal—French, Italian, Greek, or Arab—in a way that is given to few Britishers. In addition, his sympathetic interest and his remarkable capacity for friendship gave him an influence over individuals of all classes, from the highest to the lowest, of a most exceptional kind, and caused him to be regarded with a very sincere affection by all with whom he came in contact.

Apart from the onerous duties of his official career, his private life was a very full one. Until he fell into very poor health he thoroughly enjoyed every moment of his life, and even towards the end his unquenchable spirit seldom failed to see the silver lining to the cloud. For instance, on partial recovery from a slight stroke which affected his speech some months before his death, he smilingly remarked that it was the first time in his life that he had ever stopped talking. He was a fluent and ready speaker and a brilliant raconteur, gifted with a very retentive memory. He had a critical appreciation of art in all its forms. His private letters were full of wit and humour, and were generally illustrated with delightful little sketches of people and places and events in line or colour, dashed off on the spur of the moment by his facile hand. Indeed, these gifts were such that had his career tended in that direction he could have become an artist of renown. Literature and music were no less attractive to him, and wood-carving, self-taught, from his own designs was one of the hobbies of his later years.

There is no doubt that Granville Pasha's was one of the ablest and cleverest brains in Egypt during his time, and he had the will and the energy to employ it to the greatest advantage, whether at work or play. He was most versatile, and interested in everything around him; he enjoyed good food and wine and pleasant company, was the life of any party or gathering, whether grave or gay, and was the very soul of hospitality in his own house and elsewhere. His friends, who were legion, feel that they will never look upon his like again. He was buried in Chiswick cemetery, and his funeral was attended by a large number of his Egyptian friends and associates, including the Egyptian Chargé d'Affaires.

THE LATE SIR BERTRAM WINDLE.

DR. R. ALLAN BENNETT (Talcahuano, Chile) writes: The announcement on February 23rd (p. 375) of Sir Bertram Windle's death will carry many an old Birmingham man back in spirit to the prehistoric dissecting rooms of the Queen's College, and to the dark and dangerous stone stairs that deviously led to them. Now, nearly forty years after, I can see Dr. Windle's tall figure dash into the lecture room; I feel again the hush that used to fall upon the most turbulent as his grey apocalyptic eye ranged over the class; and I can remember, as though it were but yesterday, the patience, the brilliance, the vividness of his enthralling lectures. He never appeared to bother much about our personalities. He rarely spoke to us, and hardly ever had a word of encouragement or of praise; but in after years one awoke to the fact that he had always taken the keenest interest in the performances of his men, and the realization dawned that behind that singularly undemonstrative manner lay innumerable springs of kindness and of loyalty. He was just, and fierce, and self-sufficient, and he was the greatest teacher I ever knew.

DR. ARTHUR MURRAY MASTERS, who died on March 9th at the age of 48, was born in New South Wales, received his medical education at Edinburgh, and graduated M.B., Ch.B. in 1910; four years later he proceeded M.D. After holding the appointments of assistant resident medical officer to the Westmorland Sanatorium and assistant tuberculosis officer at the Stepney Dispensary, he joined the county of Durham health service as a district tuberculosis officer in November, 1914. During the war he served as a captain in the R.A.M.C. from 1916 to 1919 in India, where he contracted the illness which caused his untimely death. He had exceptional experience of tuberculous disease, and his opinion as a consultant was much valued by medical practitioners in his district. His friends and colleagues on the Durham county medical staff respected him highly for his great sincerity and his integrity of character. Dr. Masters was a member of the British Medical Association, the Northern Branch of the Society of Medical Officers of Health, and the North of England Tuberculosis Society. He leaves a widow but no family.

DR. ROBERT SAMUEL TROTTER, who died in Sydney on March 10th, aged 59, was the eldest son of the late Dr. Robert Bruce Trotter of Perth, Scotland, and a brother of Dr. Alexander Trotter of Perth. He received his medical education at Aberdeen, Edinburgh, and Newcastle-on-Tyne, and graduated M.B., C.M.Aberd. in 1898, proceeding M.D. in 1903. In 1908 he obtained the B.Hy.Dunelm. and the D.P.H., and in 1911 the D.Hy. He was awarded the certificate of the Royal Medico-Psychological Association. He succeeded his uncle, Dr. James Trotter, in practice at Bedlington in 1899, and was medical officer of health there and a member of the Northumberland County Council until 1914, when he left to take up the appointment of medical officer, Fiji. In 1916 he became chief medical officer of Raratonga, capital of the Cook Islands. In 1925 he was appointed medical officer of health for Broken Hill, New South Wales, but after six months he resigned owing to ill health. Dr. Trotter was the author of some valuable contributions on miner's phthisis, and wrote the article on this subject in the *Encyclopaedia Medica*. He was for many years a member of the British Medical Association; in 1912 he was vice-chairman of the Blyth Division, and chairman from 1913 to 1915. He was a member of the North of England Branch Council from 1912 to 1915. Dr. Trotter married Miss Janetta Stevens Martin of Perth, who, with a son and daughter, survives him. He will be remembered by a large circle of friends in the North of Scotland and the North of England as well as in the Islands of the Pacific.

The following well-known foreign medical men have recently died: Geheimrat PAUL DOEHLE, formerly professor of pathology at Kiel University, aged 73; Dr. ALOIS KREIDL, professor of physiology in Vienna; and Geheimrat KORTE, the oldest medical practitioner in Germany, aged 93.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons this week considered the Budget resolutions and the Finance Bill, and also discussed education and unemployment. *Amendments made by the House of Lords in the Local Government (Scotland) Bill* were put down for review by the House of Commons on April 26th.

In the House of Lords, on April 23rd, Viscount GAGE, on behalf of Lord Desborough, introduced a bill to enable the Council of the Pharmaceutical Society of Great Britain to make by-laws providing for the registration without examination of persons desiring to be registered as pharmaceutical chemists in Northern Ireland. The bill was read a first time.

The Parliamentary Medical Committee met at the House of Commons on April 22nd, probably for the last time before the General Election. Votes of thanks were carried to the chairman, Dr. Fremantle, who has been in the chair for nearly five years, and to the honorary secretary, Dr. Drummond Shiels. The Committee discussed the recent small-pox outbreak, and hoped that the Government would impress on the general public the advisability of vaccination and the facilities available for it. Attention was drawn to the fact that the two international *health organizations*, in Paris and Geneva respectively, had not provided a sufficient channel for discussion before action was taken by the *French Government*. There was a discussion about the Government's *scheme* for the purchase of radium, and Lord DAWSON OF PENN made a full statement. The Committee passed a resolution welcoming the announcement that the door is still open for a conference with the medical profession, and it held emphatically that full use should be made of such invitations to consult before action was taken *under the Government's plan*. *Consideration* was given to the results of Lord Onslow's *appointment* as acting Under-Secretary of Health in the *Lords for the Local Government Bill*. The Committee resolved that it was desirable for the Government to make permanent the appointment of a second Parliamentary Under-Secretary to the Minister of Health, in view of the heavy work of that Minister in Parliament and of the calls on him for conferences and inspections. The Committee concurred in the suggestion that at the coming General Election all medical men who were candidates should press for the clearance of slums and continuance of a national housing effort; for reform of the Lunacy Laws; for the amendment of the Factories and Workshops Acts; and for the active and progressive administration of the new Local Government Act.

On April 24th Mr. Baldwin announced that Parliament would be dissolved on May 10th, and the General Election would follow on May 30th. Among the bills which he enumerated as likely to pass into law before the dissolution was the Pharmacy (Northern Ireland) Bill, but he did not include the Preservation of Infant Life Bill, which now awaits consideration by a committee of the House of Commons.

Local Government (Scotland) Bill.

In the House of Lords, on April 17th, Lord SALISBURY brought up the Local Government (Scotland) Bill on the report stage. In Clause 5, dealing with the transfer of the functions of the parish council, Lord ONSLOW moved to insert a new subsection, as follows:

(5) Where in the constitution of any trust or other body, whether corporate or not, provision is made for the appointment as trustees or members of the governing body of one or more members of a district board of control whose functions are by this Act transferred to two or more transferee authorities, the General Board of Control for Scotland may, after consultation with the trustees or governing body, by order provide for the transferee authorities concerned jointly or a joint committee thereof or for the transferee authorities severally nominating trustees or members of the governing body in place of the members of the district board of control, and the constitution of the trust or other body shall have effect subject to the provisions of any such order.

Lord Onslow said the amendment was designed to meet such a case as that of the Royal Asylum at Montrose, where under the constitution the District Board of Control had a right to appoint representatives to the governing body. That district board would now disappear, and its functions would be transferred to two separate authorities, the county council of Angus and of Kincardine. The amendment authorized the General Board of Control to provide that the appointment of these representatives should be made either by the two county councils jointly, or by a joint committee, or else a stated number of appointments might be given to one county council and a stated number to the other.

The amendment was accepted without debate.

A drafting amendment was made in Clause 14, subsection 5, which enacts that every administrative scheme relating to education made by the council of a county, which includes a large burgh, for the purposes of education, shall make provision for medical inspection, supervision, and treatment of children attending the borough schools, and that in this provision the county council shall utilize the medical and nursing staff of the town council and the clinics and hospitals under the control of that council. As amended the clause provides that "the county council before making any such scheme, and the department before approving any such scheme, shall consult with the town council, and any such scheme when so approved shall be binding on the town council." The amendment was accepted.

Clause 35 relates to the appointment of medical officers of health and sanitary inspectors. Lord Onslow moved a drafting amendment to ensure that the provisions of the clause applied to a vacancy which had not been filled at the commencement of the Act as well as to a vacancy arising after that date. The House accepted the amendment, and Lord YOUNGER then moved to leave out the whole clause in order to substitute a new form of words intended to ensure that county sanitary inspectors in Scotland should always become the sanitary inspectors of the small burghs. He contended that this would secure a much better official and a more independent man. Lord ONSLOW said the House had already accepted this principle of appointment of the county authority in the case of the medical officer of health, but different considerations presented themselves in respect of the sanitary inspector. In some of the smaller burghs of Scotland only a very small sum was available for the payment of a sanitary inspector. The bill sought to ensure that all sanitary inspectors should be thoroughly qualified persons. Under Lord Younger's amendment the county sanitary inspector would be concerned with major sanitary services in a small burgh, and the burgh sanitary inspector with lesser services, including the supervision of lodging houses. Many of the smaller Scottish burghs had represented strongly that it was desirable that they should have a sanitary inspector to themselves. Seaside resorts had pressed for this. Under the Government's clause the smaller burghs could secure their wish, provided their official was a qualified man as prescribed by the Department of Health. If a burgh wished to have a sanitary inspector, but could not afford to pay for a qualified man, then that burgh must come to an arrangement, and in all probability it would appoint the county sanitary inspector.

Lord SALISBURY said that if Lord Younger's amendment was carried the sanitary inspector would not be under the medical officer for all purposes. One of the unsatisfactory features of the law in Scotland was that even if the amendment were carried the sanitary inspector could not for all purposes be under the medical officer of health. The proper relation between the sanitary inspector and the medical officer was one of subordination, and in process of time legislation would probably provide that the sanitary inspector was so placed for all purposes. The House divided, and rejected by 33 to 20 the clause as it appeared in the bill. The clause in the new bill proposed by Lord Younger was then inserted in the bill as follows:

On a vacancy arising after the commencement of this Act in the office of medical officer of health or sanitary inspector of a small burgh, the medical officer of health or sanitary inspector, as the case may be, of the county within which the burgh is situated shall *ipso facto* become the medical officer of health or sanitary inspector for the burgh, and such proportion of the salaries and expenses of such officer as the county council and the town council may agree shall be paid by the town council to the county council, and, failing agreement, as may be determined by the Department of Health.

In the first schedule of the bill, which relates to the functions transferred to county councils from the town councils of small burghs, Lord ONSLOW moved to add the Explosives Acts 1875 to 1923, and the Petroleum Consolidation Act, 1928 except Section 11. He explained that this meant that the section of the Petroleum Act relating to questions of amenity would not be transferred.

The report stage was concluded and the bill put down for third reading on April 25th.

Small-pox.

In a reply to a question by Mr RAMSAY MACDONALD on April 17th, Sir AUSTEN CHAMBERLAIN said he understood that the French Council of Ministers had that day decided provisionally to suspend the order demanding from passengers landing in France from Great Britain, from India, and other places evidence that they had been vaccinated within the last two months. He further understood that the Council had decided to arrange for a meeting between the French and English health authorities, so that the two countries could act in common in taking whatever precautions might be deemed necessary. The British Foreign Office had pointed out to the French Government that the occurrence of small-pox in the United Kingdom was very restricted. The period of incubation of the disease from the ship *Tuscania* was over, and there were no reasons to anticipate any further cases. There was nothing in the nature of an epidemic.

On the same day Sir JOHN GILMOUR (Secretary for Scotland) said the steamer *Tuscania* had been dealt with by the medical authorities of the Port of Glasgow in the manner authorized by the

International Sanitary Convention of 1926, which had been ratified by the United Kingdom last year. Two engineers and some frozen poultry had been transferred from the *Tuscania* to the s.s. *Caledonia* before the former vessel had been fumigated or disinfected. The doctor and the purser of the *Caledonia* were notified that the engineers and foodstuffs were from the former ship. Under the International Sanitary Convention the medical officer of health for Glasgow had no power to prevent the transfer to another vessel of the engineers, who were not suffering from small-pox, or of the foodstuffs, even if he had thought it desirable to do so. Sir John Gilmour added that he was satisfied that the measures taken by the medical authorities of Glasgow were in accordance with the International Sanitary Convention, and were all that could reasonably be done to prevent the spread of infection. He promised to investigate an allegation by Mr. Johnston that flour had been transferred from the *Tuscania* to another ship, and that information on the subject had been given to the port medical authorities by the dockers who had to handle these goods.

Dr. VERNON DAVIES asked whether the medical officer of the *Caledonia* knew that these engineers and foodstuffs came from a vessel in which small-pox had broken out. Sir JOHN GILMOUR said he was told the medical officer was fully aware of the circumstances.

Answering Dr. Fremantle, on April 18th, Mr. CHAMBERLAIN said the number of cases of small-pox among the 1,598 persons (passengers and crew) of the s.s. *Tuscania* was 45, which is 10 more than the figure of 35 announced on April 13th. There had been seven deaths. The vaccination history of the patients who died, and of the other patients, was not yet available. All other patients notified had been isolated in hospital, and all the contacts kept under supervision. He had no information, at present that any persons other than those who were on board this ship had contracted small-pox from contact with the passengers or crew. The rigorous action which had been taken in the United Kingdom to prevent the spread of small-pox from this vessel appeared to have proved effectual. As the ship arrived seventeen days ago, any serious risk of a widespread outbreak of the disease should now be at an end, even though some secondary cases might arise. For the community in general facilities were always available for free vaccination, the best safeguard against any risk of infection. He hoped to secure the vaccination history of those who had died, and would convey the information to Dr. Fremantle.

Dr. FREMANTLE further asked, on April 18th, the number of small-pox cases amongst passengers and crew of the s.s. *Mashobra*, shortly due at Southampton from Bombay; what number of passengers landed at Marseilles for England; and what steps were being taken to prevent the introduction of small-pox through them into this country. Mr. CHAMBERLAIN said it was not yet known whether there had been any small-pox aboard the *Mashobra*, but all precautions were being taken, and she would be closely inspected at Plymouth, her first port of arrival. He was informed that 31 of her passengers landed at Marseilles. Whether a case of small-pox was landed there from this ship was not known.

Mr. GODFREY LOCKER-LAMPSON told Dr. Fremantle, on April 18th, that official confirmation had been received of the suspension of the new French regulations with regard to the revaccination of persons travelling from the United Kingdom to France. Discussions continued with the French Government. Dr. FREMANTLE asked why such action should have been taken when at least two international bodies dealt with health matters, one in Paris and one at Geneva. The SPEAKER suggested that this question should be put down.

Sir GEORGE HENNESSY, answering for the India Office on April 18th, told Mr. Viant that there was an epidemic of small-pox in Bombay City, where there had been 233 cases and 130 deaths between January 1st and February 16th. According to a press report the deaths from January 1st to March 18th numbered 368. In the whole of British India between January 1st and February 16th there were 19,529 cases of small-pox and 4,821 deaths, the case and mortality rates being approximately the same as for 1928.

Radium.

Commander KENWORTHY asked, on April 18th, whether the Government had proposals for international action through the League of Nations for control of the available supplies of radium and their price. Mr. CHAMBERLAIN said that until the organization had been established which the Government proposed should act as an agency for the purchase of radium in this country or for Dominion or Colonial Governments, and until experience had shown how far this organization met the needs, to consider international action would be premature. He hoped that the setting up of the organization would not take long. International action was not mentioned in the report of the subcommittee of the Committee of Civil Research, and the immediate question for the United Kingdom was whether it could obtain the supplies it required at a reasonable price. There was every reason to believe that could be done.

Dr. VERNON DAVIES asked whether the House before it rose would have a chance of discussing this report.

Mr. CHAMBERLAIN said he supposed there would be a supplementary estimate for the amount to be contributed by the Government. He thought that would give an opportunity for discussion. The subcommittee which presented the report had finished its labours.

Sir KINGSLEY WOOD informed Mr. R. Morrison that the functions of the trustees, as defined in paragraph 82 of the Radium Subcommittee's Report, would not extend to the expenditure of any funds in an endeavour to discover independent sources of supply. The Government could not give the date of the public appeal for funds to purchase radium, though they hoped it would be made in the near future. The precise form of the organization recommended by the Radium Subcommittee, and accepted in principle by the Government, was under discussion, and Sir Kingsley hoped it would be settled in a very short time. Mr. MORRISON asked whether the promised statement would be published before the General Election. Sir KINGSLEY WOOD replied that he hoped it would be published within a few days.

Report of the Joint Committee on Mental Deficiency.

Answering questions put on April 18th by Commander Kenworthy and Mr. R. Morrison, Mr. CHAMBERLAIN repeated his previous refusal to undertake to publish, until he had given full consideration to it, any part of the report of the Joint Committee on Mental Deficiency other than that which related to children. He had not yet had an opportunity of looking at the report.

Mr. PETHICK-LAWRENCE asked whether local authorities had to put part of the report into force and to prepare schemes before September.

Mr. CHAMBERLAIN said there was a good deal of time before September. He could not say definitely when the report would be published. Actually there were two reports. That relating to children was for the Board of Education to consider. That relating to adults raised a bigger question. He was not sure what effect the report would have on the liberty of the subject.

Dr. VERNON DAVIES asked whether Mr. Chamberlain would carefully study the report before arriving at decisions on the schemes submitted by local authorities. Mr. CHAMBERLAIN: Certainly.

National Insurance.—During a discussion on the Dominions Office Vote in the House of Commons on April 18th, Mr. J. H. THOMAS suggested that nationally insured persons leaving the United Kingdom for the Dominions should be permitted to commute the reserve value of the payments they had made. Mr. AMERY replied that a committee under Sir Donald Maclean had come to the conclusion that, except in case of deposit contributors to national health insurance there was no fund from which the insured person could claim a surrender value, and the payment of any sum on emigration would fall on the Exchequer. He would like, however, to see the whole problem reinvestigated.

Dental Treatment under the Insurance Acts.—On April 22nd Mr. CHAMBERLAIN, replying to Mr. Shinwell, who asked if he was aware that applicants for dental treatment who were members of approved societies in the London area were being inconvenienced through delays in dealing with their claims, said that, owing to a large and rapid increase in the number of cases referred to the regional dental staff, there had been some delays of the kind suggested. Steps had been taken, and a considerable improvement had been effected.

War Pensions: Final Awards.—On April 16th Lieut.-Colonel G. F. STANLEY told Lieutenant Commander Kenworthy that the statutory regulations of the Ministry of Pensions required that a final award (in cases of recurrent disability, including neurasthenia, gas poisoning, and malaria) should not be made until the condition was reasonably stable. He was not aware that hardship had been caused in any class of case by the granting of final awards, whether of life pension or other form of compensation. Each case was considered on its merits, and, in any event, the man had a right to appeal to an independent tribunal. If a condition due to war service called for treatment, it could be provided, and allowances could also be paid where they were justified, notwithstanding that a final award might have been made. If, as a result of such treatment, the final award was found to have been seriously erroneous as an assessment for permanent purposes, a further grant of pension could be made under special sanction.

Doctors on County or Borough Councils.—On April 19th Sir CHARLES TREVELYAN asked whether, when the powers of the boards of guardians were transferred to a city or county council, a councillor who was holding a position such as doctor or public vaccinator under the transferred board would be compelled to resign his position as councillor if he continued his professional work under the new authority. Mr. CHAMBERLAIN said he was advised that a person who, after April 1st, 1930, held such a position as that of district medical officer or public vaccinator under a county or county borough council would be disqualified from being a member of that council.

Homes Registered under the Nursing Homes Act.—Sir KINGSLEY WOOD told Sir Robert Thomas, on April 17th, that medical officers of health had been asked to include in their annual reports for 1928 statistics of homes registered under the Nursing Homes Act, which came into operation on July 1st, 1928. These reports were not yet available, and the Minister of Health had no detail information of how local supervising authorities were exercising their powers to insert nursing homes under the Act.

Notes in Brief.

Three education authorities in Wales—Cardiganshire, Carmarthen Borough, and Pembroke Borough—at present make no provision for dental treatment of school children.

A Slaughter of Animals Bill, presented by Colonel Moore and supported by Dr. Drummond Shiels, was read a first time in the House of Commons on April 18th.

The proposal of the German Government to ratify the Geneva protocol prohibiting the use of poison gas in war was passed by the Reichstag on March 21st, but the British Foreign Office was not aware on April 18th that Germany had yet formally ratified it.

According to the Registrar-General's statistical review the estimated populations of the United Kingdom for the years 1924–27 inclusive were 44,826,000, 45,040,000, 45,218,000 and 45,435,000 respectively, an average annual increase during that period of 183,000.

The chief alkali inspector of the Ministry of Health has made a report on the emission of fumes from artificial silk works. The Minister of Health is arranging for the publication of the report.

Medical News.

THE Prince of Wales will lay the foundation stone of the Eastman Dental Clinic (adjoining the Royal Free Hospital in Gray's Inn Road) on Tuesday, April 30th, at 2.30 p.m.

THE fifteenth annual conference of the National Association for the Prevention of Tuberculosis will be held on October 10th, 11th, and 12th at Newcastle-upon-Tyne. Further particulars will be issued shortly from the association's office, 1, Gordon Square, W.C.1. The association is at present conducting a series of popular educational lectures on the prevention of tuberculosis in the following parts of the country: North Uist, Oxfordshire, and Shropshire.

A SERIES of lectures and counter-lectures in aid of King Edward's Hospital Fund for London will be given at the London School of Economics, Houghton Street, Aldwych, at 5.30 p.m. on Tuesdays, April 30th, May 7th, 14th, and 28th, and June 4th. Further information and tickets may be obtained from the Secretary of the Fund, 7, Walbrook, E.C.4.

AT a meeting of the Illuminating Engineering Society (32, Victoria Street, S.W.) on Tuesday, April 30th, at 7 p.m., Mr. S. English, D.Sc., will open a discussion on some further properties of glass and their application in illuminating engineering.

THE annual general meeting of the London and Counties Medical Protection Society will be held at Victory House, Leicester Square, W.C.2, on Wednesday, May 1st, at 4 p.m., to receive the annual report and balance sheet, to elect officers, and to transact other business.

THE special M.R.C.P. course arranged by the Fellowship of Medicine from May 7th to June 24th will consist of sixteen lectures, on Tuesdays and Fridays, at the lecture hall of the Medical Society of London, 11, Chandos Street, W.1. An intensive course in diseases of the throat, nose, and ear will be held at the Central London Throat, Nose, and Ear Hospital from April 29th to May 18th. A special course in psychological medicine, with lectures and demonstrations, will continue at the Maudsley Hospital from April 29th to May 31st. The Fellowship of Medicine has arranged a summer programme of clinical lecture-demonstrations in medicine and surgery. On April 30th, at 2 p.m., Dr. H. V. Morlock will deliver a lecture on "Early infiltration and its relation to the development of phthisis"; on the same date, at 2.15 p.m., Mr. George Waugh will give a ward demonstration at the Hampstead General Hospital. Both of these are free to the medical profession. For those interested in neurology two weeks still remain of the late afternoon course daily at the West End Hospital for Nervous Diseases. From May 2nd to June 1st the London School of Dermatology (St. John's Hospital) will hold a special course consisting of clinical instruction in the out-patients' department, and lectures on specific dates. Pathological demonstrations can also be arranged. A four weeks' course in venereal diseases will be available at the London Lock Hospital, Dean Street, W.1, from May 6th to June 1st. On May 17th Professor Louise McIlroy will begin a series of four demonstrations on ante-natal diagnosis and treatment, limited to ten post-graduates. The last of the lecture-demonstrations at the Royal Free Hospital will take place on May 1st, and will deal with electro-therapeutic methods and apparatus in use in the department. Detailed syllabuses of any of the foregoing courses may be obtained from the Secretary of the Fellowship, 1, Wimpole Street, W.1, who will also supply information relating to the general course work at the various London general and special hospitals and copies of the *Post-Graduate Medical Journal*.

THE thirty-third post-graduate course organized by the Vienna Medical Faculty on surgery, orthopaedics, urology, obstetrics, and gynaecology will be held from June 3rd to 15th. Further information can be obtained from the secretary, Dr. A. Kronfeld, Porzellangasse1, Wien IX.

THE Joint Tuberculosis Council announces that from May 10th to 18th a post-graduate course will be held in Paris at the Clinique de la Tuberculose, Hôpital Laennec, 42, Rue de Sèvres. The course will include lectures and visits to those antituberculosis institutions in Paris and in provincial centres which are of greatest interest and at the same time representative of French organization. The majority of the lectures, the subjects of which include heredity and tuberculosis, the clinical value of allergic reactions, the use of lipiodol in differential diagnosis, prophylaxis in early infancy, B.C.G. vaccine, treatment by sanocrysin, and French antituberculosis organization and legislation, will be delivered in English; the rest will be translated immediately. Further particulars may be obtained from the honorary secretary, Dr. William Brand, the Larches, Farnham Royal, Bucks.

THE ninth congress known as the Journées Médicales de Bruxelles will be held from June 22nd to the 26th, in association with meetings of other Belgian scientific societies, including the League against Rheumatism, the General Association of Dentists, the Society of Ophthalmology, and the Society of Preventive Eugenic Medicine. As usual, a large exhibition is being arranged, and there will be numerous social functions and excursions, including a visit to the new Medical Faculty at Brussels. Further information may be obtained from the general secretary, Dr. R. Beckers, 62, Rue Froissart, Brussels.

THE third international congress for sexual reform will be held in London, under the presidency of Havelock Ellis, August Forel, and Magnus Hirschfeld, from September 8th to 12th, when the following will be the principal subjects for discussion: marriage and divorce, campaign against prostitution and venereal diseases, birth control, and sexual ethnology. Further information can be obtained from Dr. Norman Haire, 127, Harley Street, W., or from the Institut für Sexualwissenschaften, In den Zelten 9, Berlin, N.W.40.

THE next French congress of orthopaedics will be held in Paris on October 11th, when the following subjects will be discussed: para-articular tuberculous lesions of bone, introduced by M. Andrieu of Berck-Plage, and recurrent dislocation of the shoulder, introduced by M. Louis Tavernier of Lyons.

THE following German congresses will be held in May: Society of Oto-rhino-laryngologists at Königsberg, 16th to 18th; Physiological Society at Kiel, 21st to 24th; Tuberculosis Society at Bad Pyrmont, 23rd to 26th; Society for Psychiatry at Dantzig, 23rd to 25th.

THE April issue of the *Archives Médicales Belges* contains a detailed programme, in both English and French, of the International Congress of Military Medicine and Pharmacy, which will be held in London, principally at the British Medical Association House, from May 6th to 11th. Short accounts are given also of the development of the Royal Naval Medical Service and the Royal Army Medical Corps. In this issue of the *Archives* there is also an article by Commander W. S. Bainbridge, of the United States Naval Medical Service, on the place of surgery in the treatment of malignant growths.

IN the annual report of the committee of University College, London, for the year ending February, 1929, it is mentioned that the department of pharmacology has been able to enlarge its scope and activity very advantageously as the result of its endowment by the Rockefeller Foundation. With the pending opening of the London School of Hygiene and Tropical Medicine the department of hygiene and public health at University College will cease to exist, but arrangements will be made for the instruction in hygiene which is required by students of municipal engineering and architecture.

THE Health and Cleanliness Council announces that it has a number of attractive pictorial health posters and instructive leaflets suitable for display. On January 25th (p. 183) we mentioned two pamphlets published by it respectively for girls and boys; a third, entitled *Hints for the Busy Housewife*, has now appeared and is likely to be as popular as its predecessors. Inquiries about supplies should be addressed to the secretary of the Council, 5, Tavistock Square, London, W.C.1.

LISTS of medical practitioners serving as members of local authorities or their subsidiary public bodies in Great Britain appeared in our issues of December 8th (p. 1057) and December 29th, 1928 (p. 1190), and February 16th (p. 314) and April 13th, 1929 (p. 702). We have since received intimation that Dr. Agnes Estcourt-Oswald was appointed a member of the Colchester Board of Guardians in April, 1923, that Dr. George MacFeat (Douglas) and Dr. G. E. Valentine (Uddingston) are members of the Lanarkshire County Council, that Dr. J. G. McCutcheon is a member of the Glasgow Town Council, and Dr. A. L. Pentland-Smith a member of the Elie Town Council, Fife. We are informed that Dr. E. E. Morrison of St. Andrews, whose name appeared in the list published in

our issue of April 13th as a member of the Fifeshire Education Authority, is not a member of the medical profession.

WE are informed that a Department of Dietetics was established at University College Hospital last November to deal with the special diets, particularly diabetes, nephritis, and gastro-intestinal disorders. The department is under the control of a member of the Honorary Medical Staff and in charge of Miss E. M. Marshall, B.Sc.Lond., who is a fully qualified dietitian. It is hoped later to inaugurate a school for the training of dietitians, with adequate courses of lectures combined with the practical work, for which fees will be charged. At present while such lectures are not available an opportunity occurs for the training of one or two pupils in practical dietetic work; this course would be of six months' duration and the instruction would be given free. Candidates should preferably possess a degree in Domestic Science. Further information can be obtained from the Matron of University College Hospital, Gower Street, W.C.

DR. T. STENNER EVANS of Dowlais, Glamorgan, has been appointed a Justice of the Peace for the County of Glamorgan.

A LOAN exhibition of old English silver (including Scottish and Irish) in aid of Queen Charlotte's Maternity Hospital will be held at Seaford House, Belgrave Square, S.W., from May 1st to 25th.

THE Académie de Médecine has awarded the Prince of Monaco prize of 100,000 francs to Professor Borel of Strasbourg for his work on the etiology of cancer.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863*, and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediocra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 21361 Edinburgh).

QUERIES AND ANSWERS.

SCHMIDT'S SERUM.

DR. R. WHITTINGTON (Hove) writes: I should be grateful if anyone who has tried Drs. Otto and Wolfgang Schmidt's serum and who has found it of benefit in cancer would let me know their results, whether favourable or otherwise.

ANTIHIDROTIC.

"D. M." writes: Can any reader suggest treatment for excessive sweating of the axillae, very much more marked in the [illegible] persistently, irrespective of weather conditions? At one time the American preparation "odorono" controlled it for a few days, but it has no effect now. Inquirer has found that alcoholic solution, but always has very cold hands. The perspiration ceases towards evening, but is very distressing [illegible] the embarrassment of dressing after the morning bath (hot, followed by cold) and [illegible] clothes and causes a cold, clammy feeling, not to mention a certain amount of mental distress.

INCOME TAX.

Car Expenses of Assistant.

"J. M." is an assistant and pays his own car expenses, with the exception of petrol, oil, and garage. Can he claim anything in respect of that portion of the car expenses which is borne by himself?

*** We think that renewal of tyres, repairs, and, say, 15 or 20 per cent. for depreciation. The fact that one portion of the [illegible] is borne by the principal, and presumably deducted for [illegible] income tax return, does not in any way affect the liability of "J. M.'s" portion.

LETTERS, NOTES, ETC.

DR. HUGH DONOVAN writes: I am incorrectly reported in the *Birmingham Post* of April 20th as having stated at the annual meeting of the Birmingham Skin Hospital that I am treating patients with injections of gold. Actually I remarked, as a matter of popular interest, that an (unnamed) colleague of mine was doing this.

ARROWROOT.

SIR ALGERNON ASPINALL (secretary of the West India Committee) writes: From inquiries which I have made recently it would appear that chemists continue to sell at fancy prices "Bermuda arrowroot" in spite of the fact that arrowroot has not been produced in Bermuda for export for many years. In support of this statement I can produce documentary evidence, if required. The principal source of arrowroot to-day is the island of St. Vincent, British West Indies, whose product is derived from identically the same plant—namely, *Maranta arundinacea*—as that formerly cultivated in Bermuda. Another grievance of the St. Vincent proprietors is that arrowroot, which is quoted on the produce market at 3½d. to 11d. per pound, is offered for sale by chemists in the pulverized condition at such exorbitant prices as 3s. 8d. per pound, and even more in many cases. I hope that by my giving publicity to these grievances and to the fact that all the leading grocers are now selling pulverized St. Vincent arrowroot at 1s. to 1s. 4d. per pound, the chemists and druggists will adjust their prices to a more reasonable figure.

DIAGNOSTIC VALUE OF THE WASSERMANN TEST.

DR. M. F. MCELLIGOTT (Wrexham) writes: Are we absolutely justified in basing a diagnosis of syphilis on a report of a positive Wassermann reaction being present? Recently I had occasion to send a patient who had had several miscarriages to a gynaecologist, who, while considering that operative intervention might help the patient to reach full term in future pregnancies, decided, as is customary in patients with such a history, to perform a preliminary Wassermann test. The reaction was found to be positive, so we sent the patient to a venereal diseases clinic with the report. The medical officer in charge very properly took a blood sample, which, on investigation, gave a negative reaction. To be quite certain about the condition a second Wassermann test was performed a fortnight later, and again a negative finding was reported. I may say that, apart from the occurrence of frequent miscarriages, there was no history and no clinical evidence of syphilis; no antisyphilitic treatment had been given. At the present day we have a number of modifications of the original Wassermann test. Would it not avoid ambiguity if a strictly uniform method were employed in all laboratories? It is recognized that the heating of the patient's serum destroys a very large percentage of its total syphilitic antibody content. The necessity for heating can be obviated by using fresh serum, and it has been demonstrated that in some cases in which an inactivated serum gives a negative reaction an active serum from the same source may prove to be positive.

AN ANTIDOTE FOR MORPHINE POISONING.

DR. F. E. LOEWY (London, W.1) writes: It is of considerable practical importance, but not yet sufficiently appreciated, that we possess a powerful stimulant of the respiratory centre—the alkaloid lobeline, which is now available in sterilized ampoules, and can be used safely under proper precautions. It has proved very effective in poisoning by morphine, hyoscine, and other depressants of the respiratory centre, and should certainly be given in cases like those reported by Mr. A. E. Mortimer *Woolf* on March 16th (p. 499), when respiratory failure occurs after the administration of heroin. An ampoule of 1/20 grain should be injected intravenously very slowly, drop by drop. The effect is immediate but transient, and the injection may be repeated every ten to fifteen minutes. Intramuscular or subcutaneous injection of 3/20 grain is also useful, but less reliable. Lobeline should be at hand in every operating theatre.

THE DOCTOR AND CHEMICAL WARFARE.

"V. P." writes: Many of us will have read Dr. Arthur T. Jones's letter of April 6th with the greatest satisfaction. The idea of our profession as a whole taking a definite stand against warfare of any kind, and against chemical warfare in particular, should appeal to all and help to redeem science from the evil reputation which she earned in (what we hope will always be) "the *last* war."

THE USE OF THE TONSILS.

DR. W. S. WHITCOMBE (London, W.1) writes: Dr. McNamara's letter in your issue of April 6th (p. 670) on "The use of the tonsils" will, I hope, attract the attention it deserves. In my letter published in the *Lancet* (December 8th, 1928, p. 1209) I drew serious attention to this grave subject, and I feel sure that more regard should be paid to those who, after long years of clinical experience, consider generalized tonsillectomy unwise.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 44, 45, 46, 47, 50, and 51 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 48 and 49.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *175*.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

390. Clinical Significance of Cardiac Asthma.

R. S. PALMER and P. D. WHITE (*Journ. Amer. Med. Assoc.*, February 9th, 1929, p. 431) describe cardiac asthma as a paroxysmal acute dyspnœa which is usually nocturnal, but sometimes follows exertion. It may last for a few minutes or for hours, and is accompanied by a sense of suffocation, wheezing, and often by cough with frothy and blood-stained sputum. The more severe form has been termed acute suffocative pulmonary œdema. The authors, who report 250 cases, believe that cardiac asthma is due to left ventricular strain and failure, causing a stasis in the pulmonary circulation, the right ventricle supplying more blood than the left ventricle can deal with. This pulmonary circulatory stasis increases until by reflex stimulation the attack of asthma is induced and the patient awakes. On sitting up, the stasis and strain on the left ventricle are reduced and recovery follows. Morphine assists by reducing the irritability of the respiratory and other nerve centres. The authors' 250 cases of cardiac asthma occurred among 3,100 patients who had organic heart disease (8 per cent.). Of these patients, 180 were males and 70 females; only 14 were under the age of 40. The gravity of the condition is shown by the fact that 170 of these 250 patients are known to have died, with an average duration of life of 1.4 years after the first attack of cardiac asthma. There were 1,737 cases of the arterio-sclerotic hypertensive type; of these cases 187 (10.7 per cent.) had cardiac asthma; but the highest relative incidence occurred in syphilitic heart disease (21 per cent.) and in chronic nephritis (19 per cent.). Left ventricular failure due to one or more factors appears to be the exciting cause of cardiac asthma, but the mechanism is not clear. The frequency, duration, and severity of the attacks only affected the prognosis appreciably when they were extreme. Coincidence of feeble heart sounds, gallop rhythm, and pulsus alternans usually indicated early death. Aortic regurgitation (usually syphilitic) was the only common valve defect; it was found in 63 cases (25.2 per cent.). As regards treatment, digitalis and rest were generally successful in reducing the frequency of attacks, and appeared to prolong life. In acute spasms alcohol and the nitrites were sometimes useful, but morphine was the most effective remedy.

391. Haemorrhage in Haemophilia.

P. ÉMILE-WEIL (*Presse Méd.*, February 27th, 1929, p. 266) describes several types of haemorrhages in haemophilic patients and their appropriate treatment. A clean-cut wound is less dangerous than a contused one in that it can be sutured after careful haemostasis. The great point to remember is that the clot is slow-forming and imperfect; it is advisable to remove it and to place a pad soaked in serum directly on the bleeding points. Interstitial haemorrhages are generally less severe than the superficial owing to the pressure of surrounding tissues, but trouble is sometimes caused by the absorption of blood followed by haemorrhages elsewhere—haematuria and haemarthrosis. The gravity of some haemorrhages turns less on their endangering life than on their sequels. A joint in which a haemarthrosis occurs usually clears up the first time, but there is always a tendency for recurrence, and ankylosis may be the ultimate result. Prevention of haemorrhage is therefore of the utmost importance. Meningeal haemorrhage, though rare, must be recognized as a possibility; the withdrawal of pure blood by lumbar puncture should suggest such an occurrence, and suitable treatment be applied at once if the diagnosis is confirmed. Finally, the gravity of the haemorrhage may be due to its site, and the author describes cases of haematomata of the floor of the mouth in which deglutition and speech were quite impossible and death by suffocation seemed impending. Four cases of haematoma of the orbit came under the author's care. They were accompanied by loss of vision, exophthalmos, and corneal ulceration. Unfortunately only one of these cases was seen early in the haemorrhage, and transfusion of blood brought about recovery in a remarkable manner. The other three were seen late, and the total loss of vision became permanent. The author insists that haemophilic patients ought never to be allowed to die from haemorrhage, the arrest of which is an easy matter. Whenever possible, the wound should be minutely examined and cleaned; all blood and clots are removed, and a gauze dressing soaked in normal serum is applied. In internal haemorrhages blood transfusion is advisable; human or animal serum, citrated blood, or normal blood all seem equally effective. The author describes a preventive method which he has been using for over twenty-five years with excellent results. This consists of the monthly subcutaneous injection of 10 to 20 c.cm. of blood according to the age of the patients. In many of his cases spontaneous haemorrhages have entirely ceased and those produced by trauma have become much less severe. One patient, after seven years' treatment, now possesses perfectly normal blood. No serious anaphylactic accidents have been observed, but the best results are obtained by the use of human serum of one of the parents or other member of the family, preferably belonging to the same blood group.

392. "Illness of Infection" in Measles.

G. F. ABERCROMBIE (*Brit. Journ. Child. Dis.*, January–March, 1929, p. 15) describes personal cases of the illness of infection in measles, by which is meant a very rare condition in which a child exposed to the infection of measles a few hours earlier shows physical signs, such as slight rise of temperature, sneezing, conjunctival injection, and even a morbilliform rash, which all disappear in a day or two, but are followed within the incubation period by an undoubted attack of measles. According to Abercrombie an illness of infection in measles is much less rare than is usually supposed, but its signs and symptoms may be so trivial as commonly to escape observation. Goodall and Erdheim regard it as an attack of measles in miniature, whereas Orel holds that it is due to a mixed infection acquired simultaneously with the specific virus. Abercrombie suggests that on the occurrence of a case of measles in a community all the other members should be examined for signs of nasopharyngeal or respiratory catarrh; those who show any should be immediately isolated and injected with convalescent serum.

393. The Arneth Index in Diphtheria and Whooping-cough.

S. PAULON (*Giorn. med. d. Osp. Civ. di Venezia*, December, 1928, p. 238) examined the Arneth index in 24 cases of diphtheria and 19 of whooping-cough, as well as in cases of experimental diphtheria in the guinea-pig, and report the following conclusions. During the acute stage of diphtheria there is a well-marked shift to the left. In convalescence the index tends to move to the right, but it does not return to normal until some days after clinical recovery. Deviation to the left in diphtheria bears a direct relation to the severity of the intoxication, and in some cases the return is delayed. The examination of the Arneth scheme possesses prognostic importance in diphtheria, as progressive deviation of the nuclear index is an unfavourable sign. In the paroxysmal stage of whooping-cough there is a shift to the left; in the majority of cases this is most marked in the stage of decline, and is probably due to the frequency of tuberculous infection following pertussis.

Surgery.

394. One-stage Lobectomy.

H. BRUNN (*Arch. of Surg.*, Part II, January, 1929, p. 430) describes lobectomy as the ultimate goal in surgical procedures on the chest, since by this method the diseased lobe is removed at one stroke, the period of convalescence is diminished, and deformity does not result; he anticipates that lobectomy will become the operation of choice in many morbid pulmonary conditions. Six cases are reported, the operation having been performed for bronchiectasis in five, and for malignancy in one with removal of the lower and middle lobes; there was only one death. The lungs were seriously involved, without prospect of cure, but they were not hopelessly septic. Several months in bed with exposure to sunlight, postural drainage, the use of the bronchoscope, cleaning up of sinuses, and the possible use of vaccines was the preoperative treatment given, while in cases of spirochætal infections neoarsphenamine was used; 500 c.cm. of dextrose solution was given intravenously the night before the operation. During the lobectomy from 1,500 to 2,000 c.cm. of Ringer's solution was injected subcutaneously into the muscles of the thighs. For secondary shock, three to four hours after operation ephedrine, salt solution, and dextrose solution were given, and suction was employed to keep the chest free from fluid and air as far as possible; the suction was continued every two hours through the tube in the chest. After two or three days an *x*-ray picture is taken to see if the

upper and middle lobes have expanded. The factors making for success in one-stage lobectomy are said to be: the careful preparation of the patient; the use of local anaesthesia with scopolamine and morphine, preceded by barbital; careful haemostasis; and the prevention of pneumothorax and hydrothorax for at least five days after the operation.

395. Treatment of Traumatic Cerebro-spinal Meningitis.

I. CONSTANDACHE and M. FRANCKE (*Bull. et Mém. Soc. Méd. des Hop. de Bucarest*, December, 1928, p. 353) report a case of acute purulent cerebro-spinal meningitis, in which cure was obtained by spinal lavages and auto-vaccination. The patient, a man aged 60, had suffered a violent cranial injury, due to a fall, which was accompanied by cerebral disturbance, fracture of the anterior part of the base of the skull, serous discharge from the nose, and marked conjunctivo-palpebral ecchymoses. At the end of six weeks he had completely recovered, but a week later was suddenly seized with severe rigors, associated with headache, pains in the neck and back, vomiting, and hiccup. Opisthotonos, an accentuated stiffness of the occipital muscles, contraction of the lower limbs, Kernig's sign, and the contralateral reflex of Brudzinski were also present. Lumbar puncture revealed a whitish-yellow, sero-purulent fluid which showed an intense polynucleosis and an unidentified Gram-negative bacillus. As lumbar puncture, intraspinal injections of warm physiological serum, and subcutaneous injections of the purulent spinal fluid produced no effect, daily intraspinal lavage with physiological serum was instituted, the lavage being made through one needle inserted in the dorsal region and one in the lumbar. A week later this was supplemented by vaccination at daily intervals with the isolated organism; improvement ensued, and the lavages were performed less frequently, but, on a recrudescence occurring, the original treatment was again enforced. After two months the patient was completely cured, except for a slight defect in hearing. The authors believe that there was a direct association between the previous cranial injury and the meningitis, the infecting organism reaching the meninges from the nose through the fracture of the base. Attention is drawn to the persistence of treatment with drainage, intraspinal lavage, and auto-vaccination.

396. Prevention of Post-operative Pneumonia.

Y. HENDERSON and H. W. HAGGARD (*Journ. Amer. Med. Assoc.*, February 9th, 1929, p. 434) review the recent advances in the treatment of carbon monoxide asphyxia and post-asphyxial pneumonia by the inhalation of carbon dioxide and oxygen, and suggest that the procedure has an application in surgery. During partial or complete asphyxia or anaesthesia considerable areas of lung remain unventilated, the bronchioles become occluded by accumulating secretions, the alveolar air is gradually absorbed, and atelectasis or massive collapse follows. Infection of the bronchial walls results in the excessive production of sticky mucus. Occlusion of an air tube by this secretion shuts off the portion of lung to which it leads, whether a single lobe or an entire lung. When a pneumonic area has developed, irritation of the vagal endings induces shallow breathing; this leaves considerable areas unventilated, atelectasis develops, and infection of these unventilated and undrained areas may progress and cause pneumonia. The authors suggest that hyperventilation of the lungs by deep breathing due to the inhalation of carbon dioxide in proper dilution is a valuable preventive of post-operative pneumonia.

397. Otitis Media in Infants.

OTITIS media is thought by D. BOTTACIN (*Giornale Medico*, December, 1928, p. 290) to be frequently the cause of disturbances of nutrition in infants, possibly owing to the shortness of the Eustachian tube and the vulnerability of the tympanic mucous membrane, together with the vomiting and regurgitation which often occurs in the first few months of life. The number of nurslings who at necropsy show evidence of otitis media is, according to Feer, 70 per cent., and, according to Marfan, 90 per cent. Bottacin points out that pus may pass into the pharynx from the ear and, after being swallowed, cause diarrhoea and other intestinal disorders; the nutrition of the infant is consequently disturbed. Bottacin cites cases in which no physical signs were present during life, but at the necropsy pus was discovered in the middle ear. In other cases the only cause found for loss of weight, failure to take nourishment, and fever was a bulging of the tympanic membrane: paracentesis released the pus, after which the infant made a good recovery. The author considers the intestinal mucous membrane of a young infant to be the site of least resistance, and the effects of an otitis media therefore appear there; chronic otitis diminishes the general resistance and thus sets up a vicious circle.

Therapeutics.

398. The Use of Iodine in Hyperthyroidism.

A. S. JACKSON (*Amer. Journ. Surg.*, January, 1929, p. 7) gives his experience of the value of iodine in the treatment of 300 cases of exophthalmic goitre; he states that in every instance there was immediate and remarkable improvement. He has not found it so successful with other forms of hyperthyroidism, since in some cases the basal metabolic rate was increased, and the symptoms were intensified in toxic adenoma by giving iodine; he warns that iodine hyperthyroidism may be initiated in non-toxic adenomatous goitre by the indiscriminate use of iodine. Particularly good results were obtained with iodine used in conjunction with surgery for exophthalmic goitre, the average dose given being 60 drops a day of Lugol's solution for a week, the amount being doubled on the day of operation and the following day. Emesis and occasional distressing tracheitis have been overcome in toxic cases by the introduction of a duodenal tube on the evening preceding operation to permit the passage of large amounts of fluid, iodine, and nourishment. During the operation the patient receives glucose, orange juice, and iodine. Jackson contends that, provided there has been a proper period of preparation and his suggestions are followed, primary thyroidectomy may be safely performed in every case. The length of time during which iodine should be given in post-operative treatment depends on the amount of gland preserved and the rapidity of recovery. It should be discontinued if the metabolic rate has returned to normal within a month after operation. The author adds that the prolonged use of iodine in exophthalmic goitre may lead to cardiac decompensation and auricular fibrillation or hemiplegia, and in one case the systolic blood pressure increased to 268 after a year's treatment.

399. Excessive Thyroid Extract Dosage.

L. E. PARKINS (*New England Journ. Med.*, January 31st, 1929, p. 231) reports a case to illustrate the dangers in unusually high thyroid dosage. Large doses given over a prolonged period in the treatment of obesity are known to cause nervousness, tachycardia, dyspnoea, and acute pulmonary oedema. The author's patient had all these symptoms and weighed 206 lb.; she was only comfortable when sitting erect in a chair. Her history revealed the fact that four years previously she suffered from a chronic cough, and at that time her weight was 250 lb. Thyroid extract was given and the cough improved, but she continued to take the preparation as follows: 4½ grains daily for three months, 15 grains daily for six months, 7½ grains daily for 3 years and three months; this amounted to a total of 11,805 grains in four years, or an average of 8 grains a day. During the first year she lost 50 lb. in weight, but had been unable to reduce it further. The administration of thyroid extract was stopped, and a mixture containing the three bromides was given; for the acute pulmonary oedema morphine gr. ¼ was prescribed. With this treatment and rest the pulse dropped from 140 to 70 in ten days, but within a few months cardiac disease developed with decompensation and the patient died from cardiac failure. The author suggests that she probably never needed thyroid treatment, and points out how dangerous it is to use so potent a remedy as this extract without first determining the basal metabolism. If this is impracticable, then the pulse rate, blood pressure, and relation of food intake to work should be determined.

400. Intravenous Calcium Therapy.

S. RAMA IYER (*Indian Med. Gazette*, February, 1929, p. 77) records his experience of the use of a 7.5 per cent. calcium chloride solution for intravenous injection, especially in cases of gonorrhoeal orchitis. The chief symptom following the injection was a sense of heat all over the body, not lasting more than two minutes, and all the patients were able to walk about five minutes later, some even for distances ranging from half a mile to a mile and a half. The injections were followed in less than twenty-four hours by marked reduction in the pain and testicular swelling, particularly when the gonorrhoeal affection was recent. A similar result ensued in a case of gonorrhoeal epididymitis of long duration, though in others the sequels were not so striking. The urethral discharge remained unaffected. A stock solution was used; it was prepared by dissolving two drachms of calcium chloride in an ounce of distilled water; 2 c.cm. of this, boiled in a test-tube, was drawn into a sterile 10 c.cm. syringe, into which also freshly boiled normal saline solution was introduced up to 7 c.cm., and the solution thus diluted was injected intravenously. Of sixteen cases, notes of which are given, relief followed in all except three, in which no change was recorded.

401. Treatment of Carbon Monoxide Poisoning.

EXPERIMENTS *in vitro* and on animals as well as clinical observations have convinced F. KOZA (*Bratislavské Lekarské Listy*, January, 1929, p. 16) of the value of ultra-violet irradiation in the treatment of gas poisoning. It is claimed that the ultra-violet rays accelerate the dissociation of carboxyhaemoglobin to a very marked extent. Carboxyhaemoglobin poured into a Petri dish lost 20 per cent. of its initial content after five minutes' irradiation at a distance of 50 cm. The blood of a rabbit poisoned with coal-gas and showing 64 per cent. of carboxyhaemoglobin lost 50 per cent. of carbon monoxide after forty minutes' irradiation at 50 cm. distance, whereas the blood of a control rabbit, which was not irradiated, lost only 17 per cent. of the carbon monoxide during the same time. A similar very striking effect of the ultra-violet rays was observed in the case of two poisoned girls, one of whom was treated with ultra-violet rays, while the other was not. Apart from their direct dissociating influence, the ultra-violet rays are said to cause also changes of the acido-basic balance of the body, resulting in an immediate stimulation of the respiratory centre.

402. Malarial Treatment of General Paralysis.

A. MARIE and LAMBERT (*Bull. Soc. de Ther.*, January 9th, 1929, p. 9) record in tabular form their observations on fifteen cases of general paralysis treated by malaria as follows. A few cubic centimetres of blood are removed from the vein of a general paralytic during a malarial attack and inoculated into the patient's shoulder or vein. A reaction in the form of a typical attack of malarial fever occurs ten days later. Owing to certain premonitory or accidental rises of temperature before the malarial parasite becomes generalized in the system only a temperature of 100.4° and over is regarded as typical. The presence of the plasmodium in the blood is usually found in from forty-eight hours to three days after this temperature has been noted. In a few cases, however, the plasmodium appears in the absence of any rise of temperature, and it is in such cases that the most marked splenic reaction is observed. In one case, indeed, there was no rise of temperature or enlargement of the spleen, although the patient had a relative remission of his symptoms. Patients with symptoms of depression showed the least degree of febrile reaction. Under treatment by sodium stovarsolate intravenously, quinine hydrochloride 1 gram, and quinine sulphate 1 gram internally, the plasmodium disappeared in twenty-four hours, and did not return after provocative injections of adrenaline had been given.

Ophthalmology.

403. Complications of the Cataract Operation.

A. KNAPP (*Journ. Amer. Med. Assoc.*, December 8th, 1928, p. 1794) asserts that the most important complications after cataract operation are due primarily to the lens capsule; he describes the peculiarities that may be met with in the capsule and the methods of incising it. The opening and closing of the wound are of the greatest importance in determining the absorption of any retained cortex and the development of after-cataract. The varieties of after-cataract are: (1) cortical, in which the small capsulotomy wound closes promptly and the retained cortex remains in a closed bag; (2) capsular, caused by the thickening of the capsule or proliferation of capsular epithelium; and (3) iritic, in which a vascularized membrane lies on the thickened capsule adherent to the pupillary margin. Collius states that the frequency of after-cataract depends on the method of capsulotomy employed and on the cortical matter remaining at the operation. Glaucoma is the most important post-operative complication—the most dangerous to the eye and the most difficult to treat. Iritis with altered aqueous is a frequent though transient cause of this complication. Collins has shown that glaucoma develops from adhesion to or entanglement of the lens capsule in the extraction scar. Retained cortex causes glaucoma, particularly if it is shut off by adhesions, and operation is then necessary. The most important preventive is a properly placed corneal section; and next, correct technique of the capsule manœuvre. As a further complication following cataract operation E. C. ELLETT (ibid., p 1797) cites loss of vitreous, which may set up an iridocyclitis or a secondary glaucoma. Predisposing causes of vitreous prolapse are the general health of the patient, the blood pressure, and especially his nervous equilibrium and control. Among the immediate and exciting causes are the fluidity of the vitreous and pressure on the vitreous from within (from an intra-ocular haemorrhage or pressure on the ball). Ellett mentions the precautions necessary in operating, emphasizing especially the anaesthesia. Lost vitreous is not regenerated, but is apparently replaced by aqueous. This is the probable explanation of the fact that such small harm often follows a vitreous loss.

404. Irido-choroiditis in Cerebro-spinal Fever.

V. KNSTITCH (*Thèses de Lyon*, 1927–28, No. 276), who records eight illustrative cases in patients aged from 11 months to 28 years, states that cerebro spinal meningitis is fairly frequently complicated by irido-choroiditis, which in nine out of ten cases is unilateral. The metastatic ophthalmia due to cerebro-spinal meningitis assumes a special clinical form. Whereas the metastatic ophthalmia of medical origin, such as that occurring in pneumonia or influenza, or of surgical origin (suppurative arthritis or pyelonephritis), or of obstetrical origin (puerperal fever), usually assumes the character of a rapidly progressive suppurative panophthalmia which demands immediate enucleation, the metastatic ophthalmia of cerebro-spinal meningitis has a slow course. The irido-choroiditis is accompanied by little or no pain, and, though there is no corneal ulcer, hypopyon develops and may disappear spontaneously. In addition to this comparatively frequent form there is a plastic variety of irido-choroiditis, of which the author records two hitherto unpublished cases. The explanation of irido-choroiditis of this kind is a septic thrombosis or microbial embolism. The prognosis is grave, since unilateral or complete blindness may result, according as one or both eyes are affected. Specific treatment reduces the frequency of this complication, but appears to have little effect when once it has developed.

405. Choroidal Tumour.

P. PESME (*Gaz. Hebd. des Sci. Med. de Bordeaux*, December 9th, 1928, p. 788) describes two cases of choroidal tumour, both of which appeared macroscopically to be leucosarcomata. On microscopical examination the first was found to consist of long fusiform cells with large nuclei arranged in whorls; there was general agreement as to the sarcomatous nature of this tumour. In the second case the cells composing the tumour were of a distinctly epithelial character. In both instances there was infiltration of the normal choroidal tissues by tumour cells, and secondary pigmentation of the tumour by normal chromatophore cells of the choroid. Sections of the second tumour were submitted to Mawas of Paris, who confirmed the opinion as to the epithelial origin; he believes that such tumours are either melanotic epitheliomata arising directly from the choroid, or naevo-carcinomata derived indirectly through naevi. Redslob of Nantes, on the other hand, considered the tumour to be of nerve origin; Pesme considers this unlikely because of the obvious malignant nature. There is general agreement that the tumour belongs to a class of epithelial origin (ectodermal) and is not formed from conjunctival tissues.

Obstetrics and Gynaecology.

406. Epidural Anaesthesia in Obstetrics.

J.-R. HENRY and L. JAUR (*Gynécol. et Obstét.*, January, 1929, p. 19) state that the epidural space lying between the dura mater and the bone can be reached at various points, but especially in the sacral region, where it is more developed and where it surrounds the nerve roots forming the cauda equina. These nerves diverge in such a way that it is possible to regulate by the length of the needle employed for injection the penetrating depth of the anaesthetic—that is to say, the number of roots affected. Thus the lower alone, the lower and middle, or all the roots can be anaesthetized. Hence there are two varieties of epidural anaesthesia, the high and low. The former is obtained with a long needle entered to a depth of 4 or 5 cm.; in the latter a shorter needle, penetrating only 1 to 3 cm., is used. The anaesthetic employed by the authors is a mixture of the following solutions: sodium bicarbonate 0.15 gram, sodium chloride 0.1 gram, distilled water 20 c.cm.; and scurocaine 0.6 gram, adrenaline (1 in 1,000) 7 guttae, distilled water 10 c.cm. These are mixed at the time of using, and the average dose is from 15 to 20 c.cm. In the high method, anaesthesia appears in one or two minutes; in the low, it is slower and only commences five to twenty minutes after the injection. Low anaesthesia appears first in the perineal region between the anus and coccyx, and is then propagated from behind forwards and affects the perineum, vulva, and internal surface of the thighs. In high anaesthesia the effect extends further to the lower limbs and to the abdomen, as high as the umbilicus, sometimes even reaching the false ribs. The whole posterior portion of the patient is paralysed and insensible, and the uterus, bladder, and rectum are completely anaesthetized. The duration of the anaesthesia is

from one and a half to three hours, sensibility returning progressively in inverse order to the anaesthesia. The advantages of epidural over spinal or general anaesthesia are its decreased dangers, the absence of shock and general troubles, its long duration, and, especially in the low method, the absence of risk of uterine inertia. The disadvantages are: in the low type, the absence of anaesthesia of the corpus uteri; in the high, the very great danger of haemorrhages. High epidural anaesthesia should be limited to cases in which an interruption of labour for two or three hours is desired, to versions by difficult external manipulations, and to internal versions rendered painful by uterine contractions. The low method can be employed where an end of dilatation and a painless delivery are desirable; in cases of intervention, especially forceps application, and in perineorrhaphy, it constitutes the method of choice.

407. Remote Results of Wertheim's Operation.

VIOLET (*La Gynecol.*, December, 1928, p. 705) records the results of the treatment between 1909 and 1914 of 26 cases of carcinoma of the cervix; in 25 Wertheim's operation was employed, and one patient had vaginal hysterectomy. Four patients died. Of the 22 who survived the operation, 9 were free from recurrence six to ten years afterwards, and in a further "follow-up," made in the next decade, it was discovered that of these 9, 3 died. Violet contrasts these figures with the results in 32 cases of carcinoma cervicis treated in the same way from 1919 to 1928; 27 underwent Wertheim's operation, 3 had abdominal hysterectomy subsequent to radium, and in 2 vaginal hysterectomy was performed. Of the last, one had recurrence at the end of two years, but there had been no recurrence in the other at the end of six years. In the abdominal hysterectomy cases there was one operative death; one patient was without recurrence at the end of one year, and the third was living but had a recrudescence at the end of five years. Of the 27 Wertheim cases, 3 patients died after the operation, 8 showed a rapid recurrence, and, with regard to the remaining 16, the period of freedom from a recurrence varied from two and a half to nine years. Violet has treated an equal number of cases with radium, and whereas before 1923 he had had only one successful case, since then he has had four. From 1923 onwards, however, he has combined radium with deep *x*-ray therapy. The period of freedom from recurrence in the four cases mentioned ranged from three to five years. The author believes that the best indications of operability are non-involvement of the parametric tissue and a free mobility of the uterus. He urges that inflammatory change as a cause of uterine fixation must not be forgotten. For forty-eight hours before operation he uses vaginal dressings of H_2O_2, and just before operation he applies ether to the vagina and cervix. The recto-vaginal and vesico-vaginal tissues are left free to drain into the vagina, but the parametric tissue is shut off unless there is oozing. In spite of his good operative results, he has a great respect for treatment by radium combined with deep *x*-ray therapy.

Pathology.

408. A Comparison of the Wassermann and the Kahn Tests.

L. FIGUEIRA and C. TRINCAO (*C. R. Soc. de Biologie*, February 15th, 1929, p. 425) have made a comparison of the diagnostic value of the Wassermann and the Kahn tests in the diagnosis of syphilis. In performing the Wassermann test they allowed four hours in the ice-chest for the fixation of complement, since they consider that this increases the delicacy of the reaction. In the Kahn test they used three tubes: the dose of serum was constant—namely, 0.15 c.cm.; the dose of antigen varied as follows: 0.05, 0.0025, and 0.00125 c.cm. Altogether 1,076 serums were examined. In 948 serums the results of the two reactions were concordant; in 128 serums they were in disagreement. Of these 128 serums, 40 showed merely a difference in the degree of positivity; the remainder gave frankly contradictory results. Of these latter, 9 gave a positive Wassermann and a negative Kahn, while 79 gave a negative Wassermann and a positive Kahn reaction. A history of the clinical condition was obtainable in 40 of the cases in which the Kahn test alone was positive; 36 of these were diagnosed clinically as syphilis, and 4 were not. The authors consider that the reading of the different degrees of positivity in the Kahn test is more difficult than in the Wassermann procedure. They are convinced from clinical observations that the Kahn test may be feebly positive in non-syphilitic persons. They regard the Kahn test as more sensitive than the Wassermann method; thus in the present series 6.3 per cent. of cases of syphilis would not have been diagnosed on serological grounds if the Wassermann test alone had been employed. The Kahn test appears to give a higher percentage of positive results, particularly in latent syphilis and in treated cases. For these reasons the authors conclude that, in order to obtain a correct serological diagnosis of syphilis, the two reactions should be practised together.

409. Survival of the Leucocytes in Typhoid Fever.

C. COSTANZI (*Il Policlinico*, Sez. Med., December 1st, 1928, p. 629), as the result of the study of thirteen cases, came to the following conclusions. (1) The survival *in vitro* of the leucocytes in typhoid fever when kept in an 0.8 per cent. solution of sodium chloride is shorter than that of the leucocytes in health. Moreover, the percentage of active leucocytes is low even in the first few days of their survival, and still lower towards the end, and their amoeboid movements are always of slight extent and sluggish. (2) The duration of the survival *in vitro* of the leucocytes in typhoid patients is in inverse relation to the agglutination titre of the blood, the duration of survival diminishing as the agglutination titre increased. Thus when the titre ranged between 1 in 100 and 1 in 400 the duration was four days; between 1 in 400 and 1 in 500 three days; and between 1 in 600 and 1 in 700 two days. (3) The typhoid patients concerned in these researches always showed a neutrophil polymorphonuclear leucopenia in their peripheral blood, with relative lymphocytosis. Costanzi attributes the comparatively short duration of survival of the leucocytes in typhoid cases to the presence in the organism of the typhoid bacillus, the toxins of which may act directly on the leucocytes and injure their vitality, or indirectly on the haemopoietic organs and give rise to the production of forms with a diminished resistance. The polymorphonuclear leucopenia in the peripheral blood of typhoid patients may be due to the diminished production of leucocytes from the action of typhoid toxins on the haemopoietic organs, or to increased destruction of the leucocytes, or to a change in the distribution of the leucocytes, the polymorphonuclears being retained in the deep organs such as the spleen and bone marrow.

410. Sedimentation Rate in Acute Infectious Diseases.

H. VON ROHRBOCK (*Jahrb. f. Kinderheilk.*, December, 1928, p. 192) investigated the sedimentation rate of the red corpuscles in diphtheria, scarlet fever, and measles. Westergren's original method was used and seventy-five examinations in all were made. It was found that in uncomplicated cases of diphtheria and scarlet fever the increased rate of sedimentation which was observed at the onset soon returned to normal. Complications occurring in diphtheria gave rise to considerable oscillations in the sedimentation rate, while the acceleration of the rate in complicated scarlet fever was less marked, but in both diseases the increase in the sedimentation rate might last for weeks. Increase in the sedimentation rate after a return to normal was always found to herald the appearance of a complication. In uncomplicated measles the sedimentation rate was slow, but when the disease was complicated by tuberculosis there was an acceleration of the rate.

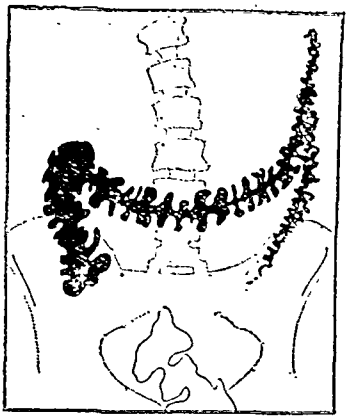
411. Interference with Growth by X Rays.

H. KRUKENBERG (*Zentralbl. f. Chir.*, February 16th, 1929, p. 387) describes an experiment made by him and Försterling on two puppies of the same litter which half an hour after birth were exposed to roentgen rays. One animal was radiated only on the posterior half of the body, and the other only on the anterior half. In the first case there was arrested growth of the hindquarters, so that the animal suggested a giraffe or hyena; in the second animal there was a small head and short forelegs, so that it resembled a rabbit. There soon developed severe cerebral symptoms, tremors, inability to feed without assistance, ataxia, standing with bestraddled legs, and progressive optic atrophy of both eyes. The observation is communicated *apropos* of a demonstration by Beck at the Vereinigung Nordwestdeutscher Chirurgen of six cases of growth interference by roentgen rays. Krukenberg's experiment was made in 1903.

412. Resistance of the Skin to Tuberculous Infection.

O. N. PODWYSSOTZKAJA and M. A. LINNIKOWA (*Zeit. f. Tuberkulose*, January, 1929, p. 474), as the result of experiments on epilated guinea-pigs by rubbing into the skin emulsions of lupus nodules, or tuberculous glands, came to the following conclusions. When small doses only were used the skin remained unchanged. On increasing the size of the dose a nodular eruption with involvement of the regional glands developed; after massive infection ulcers appeared, and finally generalized tuberculosis ensued. The authors conclude, therefore, that the skin possesses a certain degree of resistance to the tubercle bacillus and offers an unfavourable soil for its development. The virulence of the material, however, is an important factor, since the skin may form a portal of entry for infection in spite of its resistance.

Occult Constipation



Occult constipation (from an X-Ray) 24 hours after opaque barium meal. There has been one small stool as usual. Note the deep haustrations and partial dilatation of the cæcum.

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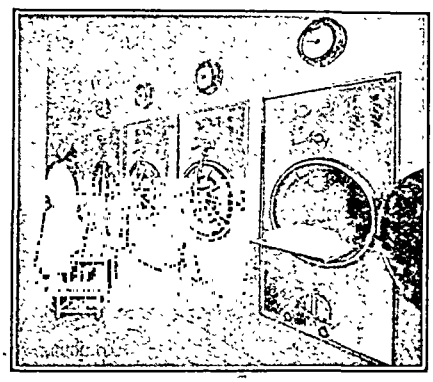

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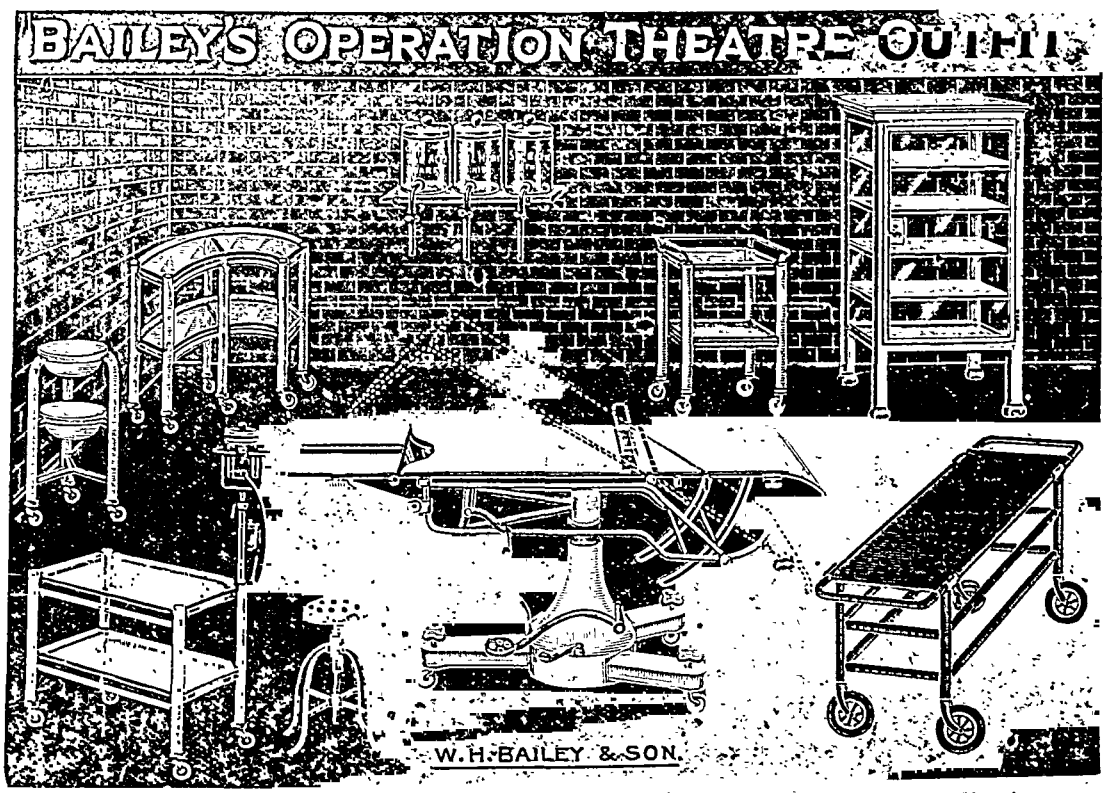

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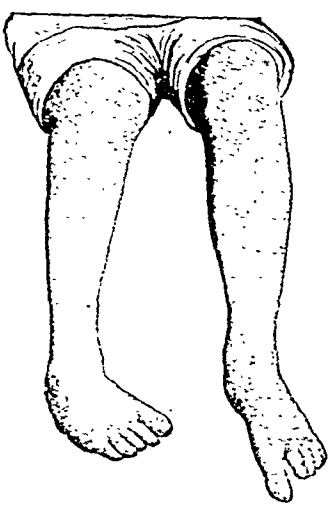

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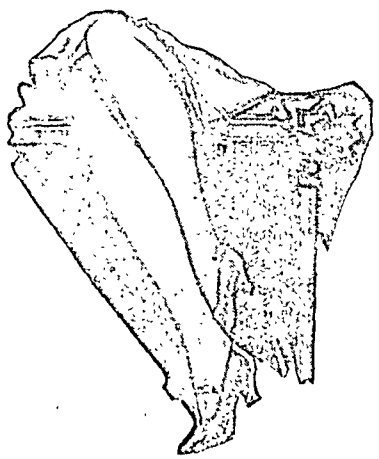

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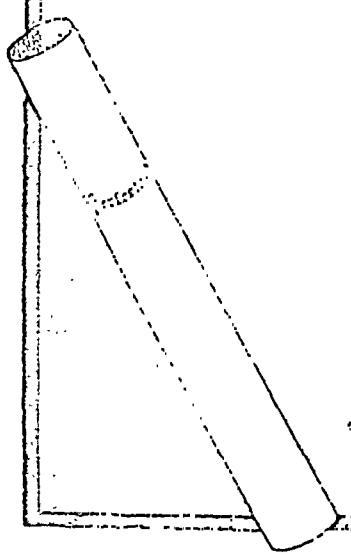

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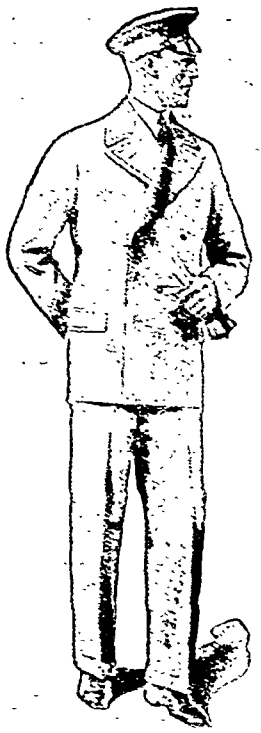

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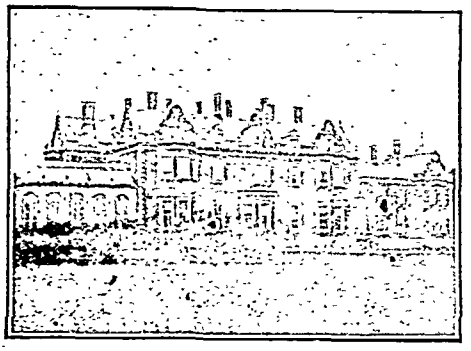

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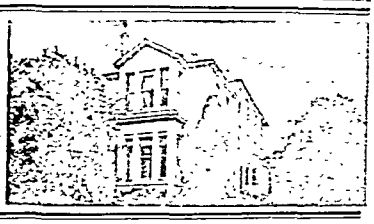

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FOR MENTAL DISORDERS,
NORTHAMPTON

FOR THE UPPER AND MIDDLE CLASSES ONLY.

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Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

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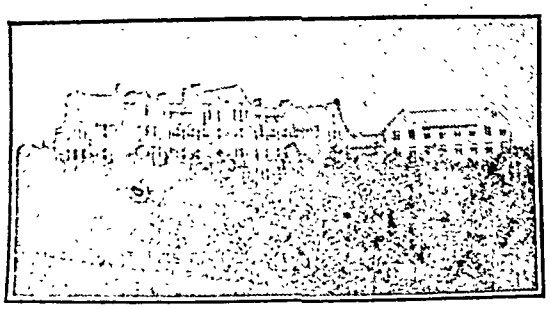

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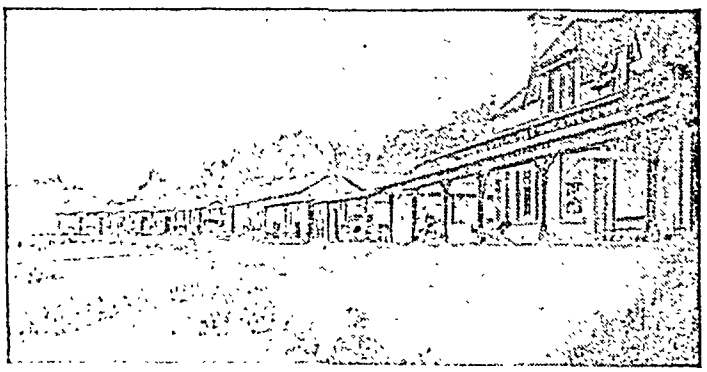

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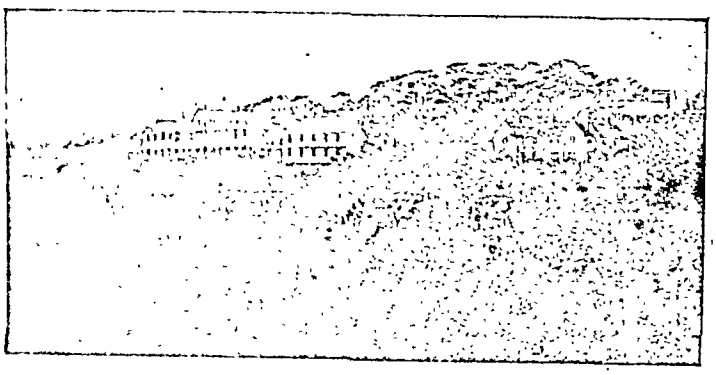

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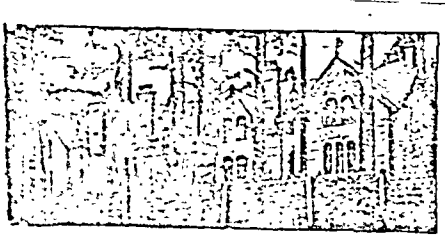

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A Course of Six Lectures on "*Special Sense Physiology*" will be given by Mr. R. J. LYTHGOE at UNIVERSITY COLLEGE, LONDON, on THURSDAYS, MAY 2nd, 9th, 16th, 23rd, 30th, and JUNE 6th, at 5 p.m.

A Course of Six Lectures on "*Dietetics*" will be given by Prof. S. J. COWELL, B.A., M.B., B.Ch.(Cantab.), Professor of Dietetics in the University, at ST THOMAS'S HOSPITAL (Albert Embankment, S.E.1), on THURSDAYS, MAY 2nd, 9th, 16th, 23rd, 30th, and JUNE 6th, at 5 p.m. At the Inaugural Lecture of the Course the chair will be taken by the Hon. Sir ARTHUR STANLEY, G.B.E., C.B., M.V.O., Treasurer of St. Thomas's Hospital.

A Course of Two Lectures on "*Some of the Sequels of Epidemic Encephalitis (Lethargica)*" will be given by Prof. ARTHUR J. HALL, M.A., M.D., D.Sc., F.R.C.P., Professor of Medicine in the University of Sheffield, at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on FRIDAYS, MAY 3rd and 10th, at 4 p.m. At the first lecture the chair will be taken by Prof. T. R. ELLIOTT, C.B.E., D.S.O., F.R.S., Professor of Medicine in the University. Lantern and cinematograph illustrations.

Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

UNIVERSITY OF LONDON. KING'S COLLEGE.

PRIMARY F.R.C.S.

A Revision Course in Anatomy and Physiology, in preparation for the June Examination, will commence on May 1st, under the direction of:

Anatomy.—Professor D. M. BLAIR.

Physiology.—D. H. DE SOUZA, M.D., D.Sc., F.R.C.P.

Fees: Anatomy, five guineas; Physiology, five guineas.

Applications to be admitted to the Course should be addressed to the Dean of the Medical Faculty (Professor R. J. S. MCDOWALL), King's College, Strand, W.C.2.

UNIVERSITY OF CAMBRIDGE

Diplomas in (*a*) PUBLIC HEALTH, (*b*) HYGIENE (for foreign graduates), (*c*) TROPICAL MEDICINE AND HYGIENE.

Courses of Instruction in the Subjects of the Examinations commence October 9th, 1929. Full particulars to be obtained from Mr. J. E. PURVIS, Public Health Chemical Laboratory, Medical School, Cambridge.

St. Bartholomew's Medical COLLEGE.

SENIOR CURATOR OF THE MUSEUM.

Applications are invited for the post of Senior Curator of the Museum, particulars of which can be obtained from the DEAN of the Medical College, St. Bartholomew's Hospital, E.C.1, to whom applications should be sent before April 30th.

University of Birmingham.

(Faculty of Medicine.)

CLINICAL BOARD.

POST-GRADUATE DEMONSTRATIONS, 1929.

A Course of Post-Graduate Demonstrations will be given at the General Hospital, Birmingham, on Tuesdays from 3.30 to 5 p.m., and at the Queen's Hospital, Birmingham, on Fridays, 3.30 to 5 p.m., April to July, 1929, commencing on April 23rd at the General Hospital and on April 26th at the Queen's Hospital. The Course will be given by Members of the Medical and Surgical Staffs and will include Demonstrations on Medical, Surgical, and Gynæcological Cases; Nervous Diseases; Ophthalmic Cases; Diseases of Ear, Nose, and Throat; Radiology; Venereal Diseases; Children's Diseases, etc.

(*Two of the Demonstrations on Tuesdays will be given at the Children's Hospital, Ladywood Road, Birmingham.*)

Medical Practitioners may obtain detailed Time-Tables of Demonstrations at each Hospital, and Ticket of Admission, on payment of the Fee for the Course, £2 2s 0d. *Cheques made payable to "The University of Birmingham," should be sent to the Clerk to the Clinical Board, The University, Edmund St., Birmingham.*

University of Birmingham.

(Faculty of Medicine.)

WILLIAM WITHERING MEMORIAL LECTURESHIP.

A COURSE OF FIVE LECTURES ON "*EPOCHS OF MEDICAL HISTORY*" will be delivered by CHARLES SINGER, M.A., M.D., D.Litt., F.R.C.P., in the Large Theatre of the Medical School Buildings, Edmund Street, on the following dates at 4.30 p.m., viz.: WEDNESDAYS, April 24th, May 1st and 8th, June 19th and 26th, 1929.

SYNOPSIS OF THE COURSE.

Lecture 1.—Wednesday, April 24th, "Ancient Medicine."

Lecture 2.—*Wednesday, May 1st,* "Medieval Medicine."

Lecture 3.—Wednesday, May 8th, "Medicine and the Revival of Learning."

Lecture 4.—Wednesday, June 19th, "The Modern Spirit in Medicine" (1).

Lecture 5.—Wednesday, June 26th, "The Modern Spirit in Medicine" (2).

Members of the Medical Profession are invited to attend.

J. C. BRASH, M.A., M.D., Dean.

Church Missionary Society.

THE ANNUAL MEETING of the MEDICAL MISSION AUXILIARY OF THE C.M.S. will be held in the CENTRAL HALL, WESTMINSTER, at 7.15 p.m., on Wednesday, May 1st, 1929. *The Chair will be taken by* TOM JAYS, Esq., M.R.C.S., L.R.C.P. (Principal of Livingstone College), and the Speakers will be: H. T. HOLLAND, Esq., C.I.E., M.B., F.R.C.S.Edin. (Baluchistan). Rev. W. WILSON CASH, D.S.O. (Gen. Secretary, C.M.S.). NORMAN E. COOK, M.B., B.S.Lond., D.T.M. & H. (Recruit).

Tickets of admission may be obtained from the Superintendent, Loan Department, Church Missionary Society, Salisbury Square, E.C.4. There will be a small number of reserved seats at 1/- each.

DIPLOMA IN PUBLIC HEALTH, &c.

THE ROYAL INSTITUTE OF PUBLIC HEALTH.

Patron:
HIS MAJESTY KING GEORGE V.

Principal and Director of the Laboratories: Colonel Sir WILLIAM SMITH, M.D., D.Sc., LL.D., F.R.S.Ed., Barrister-at-Law.

Assistant Director of Bacteriological Laboratories: E. GOODWIN RAWLINSON, M.D., D.P.H.Oxon.

Assistant Director of Chemical Laboratories: ALAN WEST STEWART, D.Sc., A.I.C., Public Analyst for the County of Berks, Oxford, Paddington, etc.

Lecturers on Public Health, etc.: ALBERT E. THOMAS, M.A., M.D.Oxon., D.P.H.Oxon., Barrister-at-Law, Medical Officer of Health for the Borough of Finsbury; CECIL W. HUTT, M.A., M.D.Camb., M.R.C.P.Lond., D.P.H.Oxon., Lecturer on Public Health, Charing Cross Hospital Medical School, Medical Officer of Health, Metropolitan Borough of Holborn, Examiner for the D.P.H., Conjoint Board of Physicians and Surgeons, London.

The Course of Instruction can be commenced at any time.

The Principal will be pleased to interview intending candidates for the purpose of advice.

Further particulars can be obtained from the Secretary, 37, Russell Square, W.C.1.

Telephone: MUSEUM 0766.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.

(University of London.)

ADVANCED MEDICINE COURSE.

A REVISION COURSE in Clinical Medicine, Morbid Anatomy and Histology, Applied Biochemistry and Bacteriology, suitable for M.D. and M.R.C.P. Examinations, will be given in the Medical School and the Wards of the Hospitals. It will commence on Tuesday, May 14th, 1929, and will last eight weeks.

A similar Course will be given in October, November, and December, 1929.

A Course in Advanced Surgery will also be given, and will commence on March 4th, 1929.

Further particulars and the syllabus of the Course may be obtained on application to the Dean (H. WILLOUGHBY LYLE, M.D., F.R.C.S.), King's College Hospital Medical School, London, S.E.5.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1682. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

"Pre-eminent success in the education and treatment of stammering and other speech defects."—"Times."
"Thoroughly physiological principles."—"Lancet."
"The method is scientifically correct and perfectly effective."—"Guy's Hospital Gazette."

STAMMERING, CLEFT PALATE SPEECH, LISPING, at of Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5, for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to the Secretary.

VALUABLE BOOK FREE

Are you preparing for any Medical or Surgical Examination ?

Do you wish to specialize in any branch of Medicine or Surgery ?

Send Coupon below for our valuable publication.

"GUIDE TO MEDICAL EXAMINATIONS"

Principal Contents.

The Examinations of the Conjoint Board.
The M.D. Degrees of all British and Colonial Universities.
How to pass the F.R.C.S. Examination.
The M.R.C.P. London and Edinburgh.
The D.P.H. and how to obtain it.
The Diploma in Tropical Medicine.
Diploma in Ophthalmology.
Diploma in Psychological Medicine.
Diploma in Radiology.

You can prepare for any of these qualifications by postal study at home. We specialize in Post graduate tuition. Clinical and practical courses in any subject. Attendance at Hospital practice arranged.

THE SECRETARY,
MEDICAL CORRESPONDENCE COLLEGE,
19, Welbeck Street, Cavendish Square, London, W.1. Telephone: LANGHAM 1166.

Sir,—Please send me a copy of your "Guide to Medical Examinations" by return.

Name.....

Address.....

Examination in which interested.....

UNIVERSITY EXAMINATION POSTAL INSTITUTION

17, RED LION SQ., LONDON, W.C.1.

(FOUNDED IN 1882.)

Principal: Mr. E. S. WEYMOUTH, M.A. (Lond.). POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS.

SOME SUCCESSES:

M.D.(Lond.),	1927-28 (9 Gold Medallists during 1913-28)	309
M.S.(Lond.),	1901-28 (including 4 Gold Medallists)	20
M.B.,B.S.(Lond.),	*Final* 1906-28 (Completed Exam.)	237
F.R.C.S.(Eng.),	*Primary* (1906-28)	149
	Final	135
M.R.C.P.(Lond.),	1914-28	152
D.P.H.	(Various) 1906-28 (Completed Exam.)	280
F.R.C.S.(Edin.),	1918-28	39
M.R.C.S., L.R.C.P.	*Final* 1910-28 (*Completed Exam.*)	402
M.D.(Dur.)	(Practitioners) 1906-28	36
M.D.	Various By Thesis. Numerous successes	

Preparation for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B (Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.

M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.). Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

Medical Prospectus (48 pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. *Suggestions* for the higher Medical Exam[illegible] the higher Surgical [illegible] for the Special Diplo[illegible] Course. Openings [illegible] ing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1 (Telephone: HOLBORN 6313.)

NSTITUTE OF PATHOLOGY AND RESEARCH

ST. MARY'S HOSPITAL, LONDON, W.2

A Course of Lectures on PATHOLOGICAL RESEARCH IN ITS RELATION TO MEDICINE has been arranged for the SUMMER SESSION. These Lectures will be given in the Lecture Room of the Bacteriological Department of the Institute on Thursday Afternoons at 5 p.m. as under:

	SUBJECT.
MAY 2nd. Prof. C. A. ARIEN KAPPERS (*Prof. Comparative Neurology, University of Amsterdam*).	"The Phylogenetic Development of the Protopathic and Epicritic Centres in the Central Nervous System."
MAY 9th. EDGAR DOUGLAS ADRIAN, M.D., F.R.S. (University Lecturer in Physiology, Cambridge)	"The Nervous Mechanism of Sensation and Movement."
MAY 16th. Prof. F. T. G. HOBDAY, F.R.C.V.S., F.R.S.E. (Principal, Royal Veterinary College)	"The Value of Research into Animal Diseases as an Aid to the Study of the Diseases of Man."
MAY 23rd. Prof. W. W. C. TOPLEY, M.D. (Prof. Bact. & Immunology, London School Tropical Medicine & Hygiene)	"The Natural Acquirement of Immunity."
MAY 30th. Prof. F. W. TWORT, F.R.S. (Superintendent, The Brown Institution) (*University of London*)	"The Position of Ultra-microscopic Viruses in the Living World"
JUNE 6th. Prof. WILLIAM BULLOCH, M.D., F.R.S. (Prof. of Bacteriology, London Hospital).	"The History of Bacteriology."
JUNE 13th. Prof. J. A. GUNN, M.D. (Prof. of Pharmacology, University of Oxford)	"Variations in Susceptibility to Drugs and Toxins."

These Lectures are open to all Members of the Medical Profession and to all Students in Medical Schools without fee.

THE
LONDON HOSPITAL MEDICAL COLLEGE.

(University of London.)

ADVANCED MEDICINE.

A Course of Post-Graduate Instructions in Advanced Medicine suitable for candidates preparing for the M.D., M.R.C.P. Examinations will begin on Monday, April 29th.

The Course will comprise the examination of selected cases in the Wards, Ward Demonstrations, and instruction in Applied Physiology, Morbid Anatomy, Clinical Pathology, and Pathological Chemistry.

Further particulars may be obtained on application to the Dean, Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., London Hospital Medical College, Mile End, E.

M.D. THESIS

(Camb., Edin., Glasg., Durh., &c.)

SKILLED COACHING, GUIDANCE, and ADVICE.

From Specialist Tutors, in conformity with the Regulations of the various Universities. Apply for particulars and free booklet, "Hints on Writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

A REALLY GOOD SCHOOL FOR GIRLS. REASONABLE INCLUSIVE FEES.

MARLBOROUGH COLLEGE,

Tytherington Hall, nr. Macclesfield.

Sound Education. Upper and Lower Schools. Preparation, when desired, for all University Entrance Examinations. *Particulars from Sec. Special Terms to Medical Men.*

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam. will commence shortly. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

NORTH-EAST LONDON POST-GRADUATE COLLEGE,

PRINCE OF WALES'S GENERAL HOSPITAL, N.16.

The Practice of the Hospital is limited to Medical Practitioners. Particulars from T. H. C. BENIANS, F.R.C.S., Dean.

Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams., Matric., and *Prelims. Chemistry, Physics, and Biology Labs.* MANCHESTER TUTORIAL COLLEGE, 327, Oxford Road, Manchester.

F.R.C.S.(Edin.).

Prep. Classes and Museum Demons. for next Fellowship Exam will commence shortly. Correspondence course for Sept. and later exams. should begin now. Parties., Mr. H. C. ORRIN, F.R.C.S., at Surgeons' Hall, Edinburgh.

THE PRIVATE GENERAL HOSPITAL, COLOMBO.

(Estd. 1923.)

(For the information of members of the profession in Ceylon and South India.)

In-patient Entrance: WARD PLACE.

Entrance to Outdoor Clinic of Specialised Departments: NORRIS CANAL ROAD.

Objects.—(a) In-patient Department.

(1) To give Medical, Surgical, Maternity, and Specialized medical relief to all classes except the indigent.

(2) To give indoor treatment to patients who are permitted to consult one or several qualified medical practitioners according to their own wishes.

(3) Special in-patient facilities to those whose incomes do not exceed Rs.300 per mensem.

(b) The Outdoor Clinic of Specialised Departments.

Open only to that section of the public whose income does not exceed Rs.200 per mensem.

The Outdoor Clinic is divided into the following departments:

(1) Clinic for Metabolic Disorders;
(2) Clinic for Nervous and Respiratory Diseases;
(3) Clinic for Heart Diseases and Electro-therapeutics;
(4) Clinic for Skin and Venereal Diseases;
(5) Clinic for Diseases of Women;
(6) Clinic for Diseases of Children;
(7) Surgical Clinic;
(8) Clinic for Eye, Ear, Throat, and Nose;
(9) Ante-natal and Obstetrical Clinic;
(10) Clinic for Tropical Diseases.

Honorary Consultants to the Clinic in the various departments are members of the staffs of the leading Institutions in Colombo, and other medical men who are specially qualified to be consulted in their respective specialties.

A small commuted fee is payable to cover consultations, laboratory examinations, and medicines, the latter given only to cases which come without the general medical practitioner's card.

As soon as satisfactory diagnosis is made, the cases are referred for further treatment to the general practitioners of the neighbourhood in which the patient resides, and will not be further advised upon without the practitioner's card of request.

The special objects of this Outdoor Clinic are:

(*a*) To promote co-operation between the general practitioners and consultants, and help the busy general practitioner in the diagnosis of the more intricate ailments among his paying patients who are not entitled to poor relief.

(*b*) To encourage the more highly qualified members of the medical profession to confine themselves to their specialties, and thereby help the general practitioner, his poorer class of patients, and the advancement of scientific medicine in this country.

Resident medical attention is also provided for within the premises for this class of patients.

The Receiving Medical Officer attends to all the Out-patients before allotment to the respective clinics.

The Nursing Staff of the Hospital is under European management.

For particulars, please apply to the Resident Medical Superintendent, or to the Secretary, Mr. D. W. WANAGURU, Private General Hospital, Colombo.

THE LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE

Endsleigh Gardens, London, W.C.1.

Pending the development in October next of the full courses of study for the Diploma in Public Health, the following interim courses of lectures will be given in the School by Mr. G. P. GROWDEN, M.R.C.S., L.R.C.P., M.Sc.

SIX LECTURES ON
APPLIED PHYSIOLOGY.

Lectures 1 and 2: Physical fitness, work, fatigue, recovery, sleep.
Lecture 3: Personal hygiene, clothing, exercise.
Lectures 4, 5, and 6: Influence of environmental conditions on human efficiency, composition of air breathed, air space, ventilation, heating, humidity, cooling power, use of katathermometer, atmospheric pressure, acclimatisation. Special reference to problems of human efficiency and fatigue in industry.

On
Friday, May 10th, 1929 Monday, June 3rd, 1929
Monday, „ 13th, „ „ „ 10th, „
„ „ 27th, „ „ „ 17th, „
at 5.30 p.m.

The lectures are primarily intended for students preparing for the D.P.H., but may be attended by others interested.

Admission is free, without ticket. Further particulars may be obtained on application to the Secretary of the School at the above address.

TAUNTON SCHOOL, TAUNTON.

A PUBLIC SCHOOL FOR BOYS.

Boys are regularly prepared for the First M.B. Examination, University Scholarships in Chemistry, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology.

New Science Buildings, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1925. Prospectus from Head Master.

Lowestoft and North Suffolk HOSPITAL.

HOUSE SURGEON (male) preferably with knowledge of X-ray. Salary £120 p.a., with board, residence, and laundry.

Applications, with copies of three recent testimonials, to the Honorary Medical Supt.

Manchester Royal Infirmary.

FIRST ASSISTANT IN THE CLINICAL LABORATORY.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which is non-resident, and is tenable for twelve months; the holder is eligible for re-election.

Salary £350 per annum. Candidates must be duly qualified and registered; they must state age and send twelve copies of their application and testimonials to the undersigned by Wednesday, May 8th.

The appointment is to commence on Monday, June 3rd.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.

Royal College of Physicians.

Dr. F. M. R. WALSHE will deliver the OLIVER-SHARPEY LECTURES on Tuesday, April 30th, and Thursday, May 2nd, at 5 o'clock, at the College, Pall Mall East, S.W.1.

Subject: "*The Physiological Analysis of Some Clinically Observed Disorders of Movement.*"

Any member of the Medical Profession admitted on presentation of card.

By Order of the President,
H. M. BARLOW, Bedell & Secretary.

University of London.

The Senate invite applications for the UNIVERSITY CHAIR OF ANATOMY, tenable at St. Bartholomew's Hospital Medical College. Salary £1,000 a year. Applications (12 copies) must be received not later than first post on May 30th, 1929, by the Academic Registrar, University of London, S.W.7, from whom further particulars may be obtained.

LONDON HOSPITAL,

Whitechapel, E.

A vacancy occurs at the London Hospital in the post of GYNÆCOLOGICAL FIRST ASSISTANT and OBSTETRIC TUTOR. The salary offered is £300 a year for the dual post. Applications, with testimonials, from candidates medically qualified, are invited, and should be sent to the House Governor not later than Saturday, May 11th.

E. W. MORRIS, House Governor.

Manchester Royal Infirmary.

THE DICKINSON SCHOLARSHIPS.

RESEARCH TRAVELLING SCHOLARSHIP IN MEDICINE.

The Trustees invite applications for the Dickinson Research Travelling Scholarship in Medicine.

The Scholarship is of the value of £[illegible], tenable for one year. Candidates must be University Graduates who have taken out the full course of Clinical Instruction required by the examining bodies in the Manchester Royal Infirmary and the University of Manchester, and have earned distinction in so doing. They may apply for the Scholarship within any period of years after qualification as may be approved by the Trustees.

A copy of the Regulations governing the Scholarship can be obtained from the undersigned, to whom six copies of application should be sent not later than Thursday, May 2nd.

FRANK G. HAZELL,
Secretary to the Trustees, Manchester Royal Infirmary.

Manchester Royal Infirmary.

THE DICKINSON SCHOLARSHIPS.

PATHOLOGY SCHOLARSHIP.

The Trustees invite applications for the Dickinson Pathology Scholarship.

The Scholarship is of the value of £[illegible], tenable for one year. Candidates must be University Graduates who have received their full course of instruction in Pathology, Medicine, and Surgery at the University of Manchester and the Manchester Royal Infirmary.

A copy of the Regulations governing the Scholarship can be obtained from the undersigned, to whom six copies of application should be sent not later than Thursday, May 2nd.

FRANK G. HAZELL,
Secretary to the Trustees, Manchester Royal Infirmary.

University of Bristol.

Applications are invited for the CHAIR OF PHYSIOLOGY.

Particulars of the appointment may be obtained from the undersigned, with whom applications should be lodged on or before May [illegible].

WINIFRED SHAPLAND, Secretary.

ie Parkes Memorial Prize.

Prize of 75 guineas in money and the Medal of the Parkes Memorial Prize for has been awarded to Major ALEXANDER , R.A.M.C.

Essay submitted by Surgeon Commander EWIS SMITH, R.N., was highly commended. e subject of the next competition, which en to Medical Officers of the Royal Navy, y, and Indian Army of executive rank on pay, other than Professors and Assistant essors of the Royal Naval Medical School of the Royal Army Medical College, is: *e Cause and Means of Prevention of ulitis, with special reference to Naval and tary Service.*"

says should be submitted to the Secretary, e Committee (Parkes Memorial Prize), M. College, Grosvenor Road, S.W.1, not r than December 31st, 1931.

ch essay to have a motto and to be accom- ied by a sealed envelope bearing the same to and containing the name of the candidate

lhe Alexander Memorial Prize.

he Prize of £50 and the Gold Medal of the xander Memorial Fund for 1928 has been arded to Major JOHN HARE, R.A.M.C.

he Essay submitted by Major W. M. E. NNASS, R.A.M.C., was highly commended. he subject for the next competition is: *ractional Nervous Disorders as Affecting itary Service.*"

he competition is open to executive Officers the Royal Army Medical Corps on full pay, er than Professors and Assistant Professors the Royal Army Medical College.

Essays should be submitted to the Secretary, ze Committee (Alexander Memorial Prize), AM. College, Grosvenor Road, S.W.1, not ter than December 31st, 1931.

Each essay to have a motto and to be accom- nied by a sealed envelope bearing the same otto and containing the name of the candidate

Royal Free Hospital and London (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

ASSISTANT MORBID ANATOMIST AND CURATOR OF MUSEUM.

The Weekly Board of the Hospital and the ouncil of the Medical School invite applica- ions for the above post. Salary, full time, £300 p.a. Seven copies of application, accom- anied by copies of not more than three recent estimonials, and the names of not more than wo persons to whom reference may be made, o reach one of the undersigned, from whom urther information may be obtained, not later han the first post on May 15th. Duties to ommence June 1st.

REGINALD E. GARRATT, Secretary,
Royal Free Hospital,
Gray's Inn Road, W.C.1.

LOUIE M. BROOKS, Warden & Secretary,
London (R.F.H.) School of Medicine for Women, Hunter Street, W.C.1.

April, 1929.

Bristol Education Committee.

ASSISTANT SCHOOL MEDICAL OFFICER.

The Committee invite applications for a Whole- time Assistant School Medical Officer. Age not exceeding 40 years. Salary £600 per annum. The appointment will be subject to the pro- visions of the Local Government and Other Officers Superannuation Act, 1922.

The duties will consist of examination of children in the Committee's Secondary, Elemen- tary, and Special Schools, treatment in School Clinics, and such other duties as may be allocated.

Special consideration will be given to candi- dates who are competent to administer such anæsthetics as are required in dental practice, but this qualification is not essential.

The successful candidate will work under the direction of the School Medical Officer.

Applications, which must be on a form pro- vided for this purpose, should be accompanied by not more than three recent testimonials, and must be received by the undersigned not later than Monday, May 6th. Envelopes should be endorsed "Assistant School Medical Officer."

Canvassing will disqualify.

W. LUDFORD FREEMAN,
Guildhall, Bristol. Director of
April 15th, 1929. Education.

Kent and Canterbury Hospital, CANTERBURY (120 Beds.)

Two RESIDENT MEDICAL OFFICERS re- quired. Salary £125 per annum, plus board, residence, and laundry. Applications, accom- panied by copies of testimonials, should reach the undersigned not later than Thursday, May 2nd.

W. T. SOUTHWOOD, Secretary.

Liverpool Port Sanitary AUTHORITY.

ASSISTANT PORT MEDICAL OFFICER.

The Corporation of the City of Liverpool, as Port Sanitary Authority, require the services of an Assistant to the Medical Officer of Health, whose duties will be in connection with the Tidal Inspection of Vessels, the Medical Inspec- tion of Aliens, and such other duties as may from time to time be assigned to him.

The salary will commence at £700 per annum, increasing to £800 per annum by annual in- crements of £50.

Candidates must possess a registrable Medical and Surgical qualification, and should hold a *Diploma in Public Health, and their age must* not exceed 35 years.

The person appointed will require to devote whole time service to the duties specified, and will be subject to the Superannuation pro- visions of the Liverpool Corporation Act, 1921.

Canvassing of members of the Council is strictly prohibited.

Applications, stating age, qualifications, and past experience, accompanied by copies of recent testimonials, should be addressed to the Chairman of the Port Sanitary and Hospitals Committee, under cover to the undersigned, and delivered not later than May 6th.

Envelopes to be endorsed "Assistant Port Medical Officer."

Municipal Buildings, WALTER MOON,
Liverpool, W. Town Clerk.
April 10th, 1929.

Borough of Folkestone.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified gentlemen for the position of Assistant Medical Officer of Health and Port Medical Officer, at a salary of £600 per annum. Candidates should have previous experience in a similar capacity.

The gentleman appointed must possess the qualifications prescribed by the Sanitary Officers Order, 1926, and will be required to devote the whole of his time to the duties of the office. He will also be required to assist in the duties of Medical Inspection of Aliens.

The post is designated under the Local Govern- ment and Other Officers Superannuation Act, 1922, and the appointment will be made subject to medical examination.

Applications, stating age, qualifications, and experience, accompanied by not more than three *recent testimonials*, and endorsed "Assistant Medical Officer of Health," should be addressed to me and delivered at my office not later than May 18th.

Town Clerk's Office, C. F. NICHOLSON,
Folkestone. Town Clerk.
April 20th, 1929.

City of Leeds.

ASSISTANT RESIDENT MEDICAL OFFICER, KILLINGBECK SANATORIUM.

Applications are invited from registered medical practitioners (male) for the post of Assistant Resident Medical Officer at the Tuber- culosis Sanatorium, Killingbeck (220 beds). Applicants must be unmarried, and preference will be given to those who have held previous Hospital appointments.

The appointment will be for one year at a salary of £250 per annum, with board, resi- dence, and laundry.

Applications, stating age and experience, together with copies of three recent testimonials, endorsed "Tuberculosis Officer," should be delivered to the Medical Officer of Health, 12, Market Buildings, Vicar Lane, Leeds, not later than the first post on Saturday, May 4th.

THOS. THORNTON,
Leeds Town Clerk.

Derby Union.

SECOND RESIDENT MEDICAL OFFICER.

Applications are invited for the appointment of Second Medical Officer (male) of the Guardians' Institution and Infirmary, which is a Major Training School for Nurses (a new Hospital of 350 beds is nearing completion). Salary at the rate of £250 per annum, with residential allowances

Two months' notice of resignation to be given, to date from the Board meeting next after the receipt of the resignation.

The appointment will be subject to the sanction of the Ministry of Health and to the provisions of the Poor Law Officers Superannuation Act, 1896.

Applications, with particulars of age, previous career, qualifications, diplomas, and certificates held, together with copies of three recent testi- monials, must be sent in on or before Friday, May 3rd.

Poor Law Offices, RALPH GRANTHAM,
Derby. Clerk to the Guardians.

Woolwich Union.

THIRD ASSISTANT MEDICAL OFFICER.

A Third Assistant Medical Officer (male) is required at the PLUMSTEAD AND DISTRICT HOSPITAL, Plumstead High Street, S.E.18.

Candidates must be doubly qualified and registered.

The gentleman appointed must have held resident Hospital appointments and have expe- rience in the administration of anæsthetics. He will be required to carry out such duties as may be assigned to him by the Medical Super- intendent, and, should occasion arise, to assist at any of the other establishments under the control of the Guardians.

Salary £300 per annum, rising £25 annually to £350 per annum, with residence and rations, subject to deductions under the Poor Law Officers Superannuation Act.

Further particulars of the appointment may be obtained by personal application to the Medical Superintendent between the hours of 10 a.m. and 1 p.m., or by letter.

Applications, upon forms to be obtained from my office, as under, upon receipt of a stamped, addressed, foolscap envelope, or by personal application, must be returned to me not later than April 29th

The appointment will be made by the Guardians at their meeting on May 16th. The gentlemen selected to appear before the Guardians will be notified, and if they have not had an interview with the Medical Superin- tendent they will be expected to call on him before that date.

By Order,
Union Offices, ARTHUR HOLDER,
Plumstead High St., Clerk to the
S.E.18. Guardians.
April 15th, 1929

Bedfordshire County Council.

ASSISTANT MEDICAL OFFICER (RESIDENT).

Applications are invited for the post of a male Assistant Tuberculosis Officer (Resident) at the Bedfordshire Sanatorium, near Bedford.

The officer appointed will be under the direction of the County Medical Officer of Health, and will be required to take part in the medical inspection of school children, etc.

Applicants must be single, registered medical practitioners, and have had experience in Tuberculosis work, experience in the medical inspection of school children, and the possession of a Diploma in Public Health, are also desir- able. The officer appointed will be required to devote the whole of his time to the duties assigned to him, and not to engage in private practice.

Salary £450 per annum, together with board, residence, laundry, and a travelling allowance of £100 per annum, free use of garage, etc.

Further particulars can be obtained from the County Medical Officer, Shire Hall, Bedford.

Applications, stating age, qualifications, and previous experience, accompanied by copies of three recent testimonials, and endorsed "Assist- ant Medical Officer (Resident)" should be sent to the undersigned not later than Tuesday, April 30th.

Shire Hall, J. B. GRAHAM,
Bedford Clerk of the County
April 15th, 1929. Council.

County of Stirling.

JOINT COMMITTEE OF CONTROL OF COUNTY MEDICAL AND NURSING SERVICES.

Applications are invited for the appointment of a male Assistant to the County Medical Officer at a commencing salary of £500 per annum, rising on approved service by annual incre- ments of £20 to £700, and actual travelling expenses

Applicants must be duly qualified medical men, and must hold the Diploma in Public Health or similar qualification, and have had some experience of Eye work. Experience of V.D. treatment desirable. Canvassing pro- hibited.

Forms of application may be obtained from the undersigned, with whom applications (with copies of three recent testimonials) must be lodged not later than May 6th.

County Buildings, JAMES LEARMONTH,
Stirling. Clerk.

Parish of St. John, Hampstead.

The Guardians of the above Parish require a JUNIOR RESIDENT ASSISTANT MEDICAL OFFICER at their NEW END HOSPITAL, to start duties on June 1st. Appointment six months, renewable at option of the Guardians. Salary £200 per annum, with board, lodging, and washing. Further particulars can be ob- tained from the Medical Superintendent. Applications to be sent to my office on or before 10 a.m., Thursday, May 2nd.

H. WESTBURY PRESTON,
Guardians' Offices, Clerk to the
New End, Hampstead. Guardians.

City and County of Kingston-upon-Hull.

ASSISTANT MEDICAL OFFICER OF HEALTH.

The Corporation of Hull invite applications from medical men and unmarried or widowed medical women, under the age of 40 years and of not less than three years' standing in their profession, for the post of Assistant Medical Officer of Health.

Salary £600 per annum, rising by annual increments of £25 to £700.

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The successful candidate will be required to devote the whole of his or her time to the duties of the office, which consists mainly of work in the Maternity and Child Welfare Department, the School Medical Service and the Tuberculosis Department, but may also include duty in any section of the Health Services of the City or Port.

Candidates must have had special experience in Pædiatrics and Tuberculosis work.

A form of application may be obtained from the undersigned, and must be returned to him, duly completed (in an envelope endorsed "Assistant Medical Officer of Health"), together with copies of three recent testimonials, not later than the first post on Monday, May 6th.

Health Department, Guildhall, Hull. W. ALLEN DALEY, Medical Officer of Health.

County Borough of East Ham.

LADY ASSISTANT MEDICAL OFFICER.

Applications are invited from duly qualified women for the position of Lady Assistant Medical Officer, whose duties will be primarily in connection with the Maternity and Child Welfare work. Age not to exceed 45 years. Salary £600, subject to deduction for superannuation.

The successful candidate will be required to give full-time service, and act under the supervision of the Medical Officer of Health.

Candidates must have definite experience of Children's Diseases. The possession of the Diploma in Public Health or similar qualification is desirable, and preference will be given to those who have had previous experience in Maternity and Child Welfare work.

The successful candidate will be required to pass satisfactorily a medical examination.

Applications on forms to be obtainable from the undersigned must be returned by 9 a.m. on May 9th.

Canvassing the Members of the Council, either directly or indirectly, will disqualify.

By Order,
Town Hall, East Ham, E.6. April 17th, 1929.
C. EUSTACE WILSON, Town Clerk.

County Borough of St. Helens.

ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited for the post of Assistant Medical Officer of Health (male).

The duties mainly include those of Resident Medical Officer at the Council's Tuberculosis Sanatorium (about half-time), but also include the conduct of maternity and child welfare clinics, school medical inspection, and other public health work as required.

Candidates must have special experience in the diagnosis and treatment of Tuberculosis, and the possession of a Diploma in Public Health is desirable.

Salary £450 per annum, with board-residence, subject to a 5 per cent. deduction for purposes of the Council's Superannuation Scheme under the Local Government and Other Officers Superannuation Act, 1922.

Forms of application may be obtained from the Medical Officer of Health, Town Hall, St. Helens, and completed application, accompanied by copies of not more than three recent testimonials, should reach him not later than Monday, May 6th.

Town Hall, St. Helens. April 15th, 1929.
FRANK HAUXWELL, Medical Officer of Health.

Royal Chest Hospital,

City Road, E.C.1.
(Royal Northern Group of Hospitals.)

The post of HOUSE PHYSICIAN at this Hospital will be vacant on May 1st.

The appointment is for six months.

Salary at the rate of £100 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent to the undersigned, from whom forms of application, rules, and further particulars can be obtained

Royal Northern Hospital, London, N.7. GILBERT G. PANTER, Secretary.

The Royal Chest Hospital,

City Road, E.C.1.
(Royal Northern Group of Hospitals.)

The post of RESIDENT MEDICAL OFFICER will be vacant on May 1st. The appointment is for six months, when re-election is desired.

Salary at the rate of £150 p.a., with board, residence, and laundry.

Applications, with copies of testimonials, should be sent to the undersigned, from whom forms of application, rules, and further particulars can be obtained.

Royal Northern Hospital, Holloway, N.7. GILBERT G. PANTER, Secretary.

District Infirmary,

ASHTON-UNDER-LYNE.
(General Hospital, 220 beds, mainly Surgical.)

A HOUSE SURGEON (male) required. Six months' appointment. Salary at the rate of £150 per annum, with board, residence, and laundry. Preference given to candidates with previous Hospital experience.

The Resident Staff comprises a Resident Surgical Officer and three House Surgeons.

Applications, with testimonials, to be sent at once to the undersigned.

April 22nd, 1929. FRANK OLIVER, Gen. Supt. & Secretary.

Royal National Orthopædic Hospital.

SURGICAL REGISTRAR.

The Committee invite applications for the appointment of a Surgical Registrar (male).

Honorarium £105 per annum. The appointment will be made in the first instance up to October 31st, and will be renewable for a further twelve months on the recommendation of the Medical Board.

Applications, with copies of three recent testimonials, should reach the Secretary, 234, Great Portland Street, London, W.1, not later than May 10th.

Royal Sussex County Hospital,

BRIGHTON. (225 Beds.)

Required, a CASUALTY HOUSE SURGEON (male). Salary £120 per annum, with board, residence, and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should be sent immediately to the undersigned.

L. L. W. LANCASTER-GAYE, Secretary-Supt.

The Cancer Hospital (Free)

(Incorporated under the Royal Charter),
Fulham Road, London, S.W.3.

The Committee are prepared to receive applications for the post of HOUSE SURGEON. Salary at the rate of £100 per annum.

The appointment is for six months and subject to rules, a copy of which may be obtained from the Secretary.

Previous experience as a House Surgeon is indispensable.

Applications, with three (copies only) testimonials, to be sent to the undersigned not later than the first post on Monday, April 29th.

J. COURTNEY BUCHANAN, Secretary.

Samaritan Free Hospital for Women,

Marylebone Road, N.W.1.

Applications are invited for the post of HOUSE SURGEON for a period of six months, commencing on May 13th next. Salary at the rate of £100 per annum, with board, lodging, and washing. Previous experience as House Surgeon essential.

Applications, stating age, accompanied by copies only of testimonials, must reach the Secretary at the Hospital on or before Tuesday noon, April 30th.

G. H. HAWKINS, Secretary.

The Victoria Infirmary of Glasgow.

APPOINTMENT OF SUPERINTENDENT.

The Governors invite applications for the appointment of Superintendent. Salary about £1,000 per annum, with free house or allowance for house. Applications, with 12 copies of testimonials, to be lodged with the undersigned not later than May 6th.

67, Carlton Place, Glasgow, C.5. April, 1929.
JOHN W. ROBSON, Secretary & Treasurer.

The King Edward VII Welsh National Memorial Association.

Applications are invited from duly registered medical practitioners (male) for the post of AREA ASSISTANT TUBERCULOSIS PHYSICIAN. Salary £600 per annum, together with travelling and subsistence allowances when absent from base.

Applications, stating full qualifications and previous experience, together with copies of three recent testimonials, should reach the undersigned not later than May 2nd.

Memorial Offices, Westgate St., Cardiff. D. A. POWELL, Principal Medical Officer.

City of Norwich Mental Hospital.

JUNIOR ASSISTANT MEDICAL OFFICER required, age not exceeding 35 years. Some laboratory work, increasing as time goes on, will be included in the duties. Gross salary £500 p.a., with an additional £50 p.a. to the possessor of a Diploma in Psychological Medicine. Pending the provision of accommodation on the premises, the gentleman or lady appointed will be provided with a sitting room, but required to live out and to pay as reasonable cost price for meals taken at the Hospital. Applications, giving details of experience and enclosing copies (no originals) of three recent testimonials, to be addressed to the Medical Superintendent, Hellesdon Hospital, Norwich.

East London Hospital for Children and Dispensary for Women, Shadwell, E.1.

Applications are invited for the Resident post of HOUSE SURGEON and Whole-time CASUALTY OFFICER (male). The appointments are for six months.

Salary at the rate of £125 per annum, with board, residence, and laundry provided. Applications, together with testimonials, should be sent to the undersigned not later than May 11th.

W. M. WILCOX, Secretary.

N.B.—Residents at this Hospital are eligible for the reciprocity scheme with Barnes Hospital, St. Louis, U.S.A.

Leeds Public Dispensary.

Wanted, SENIOR RESIDENT MEDICAL OFFICER (male). Must have held post of Resident Physician and Resident Surgeon. Salary £200 per annum, with board, residence, and four shillings weekly for laundry. Separate sitting room. Applications, with copies of three recent testimonials, to be addressed to the Secretary of the Faculty, Public Dispensary, North Street, Leeds.

Bedford County Hospital.

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing about May 1st. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Secretary, Medical Staff Committee, not later than the first post Wednesday, May 1st.

Darlington General Hospital.

(120 Beds.)

Wanted, SENIOR HOUSE SURGEON, male, unmarried, fully qualified and registered, British. Salary £150 per annum, board, residence, etc. Applications, stating experience, qualifications, with copies of two recent testimonials, to be sent to me forthwith.

G. H. SHARPE, Hon. Secretary.

St. John's Hospital,

Lewisham, S.E.13.

There is a vacancy for a SENIOR RESIDENT MEDICAL OFFICER (male). The appointment is tenable for one year at a salary of £200 per annum, and may be subject to reduction. Full information may be obtained from the Secretary, to whom applications should be sent as soon as possible.

Resident Locum Medical Officer

(male) required for 12 weeks from August 24th to September 15th inclusive. Salary £8 8s. per week, with free quarters and attendance, but not board. Further particulars and applications, stating nationality, qualifications, and experience, together with copies of three recent testimonials, to be sent to the Secretary, GENERAL DISPENSARY, BIRMINGHAM.

APPOINTMENTS—Important Notice.

edical Practitioners are requested not to apply for any appointment referred to in the following table with- it having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, avistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.)*.	**PUBLIC HEALTH** *(continued)*.
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.) (Workmen's Medical Scheme.)*	CITY OF PLYMOUTH: EDUCATION DEPT. *(Woman Deputy Assistant Medical Officer.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	COUNTY TYRONE EDUCATION AUTHORITY. *(School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	COUNTY OF BRECON. *(Probationer Assistant (Female) Medical Officer of Health.)*	COUNTY BOROUGH OF WIGAN. *(Clinical Tuberculosis Officer and Assistant Medical Officer of Health.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE *(Assistant School Medical Officer—Female.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
		YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	*Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.*	*VICTORIA.* *(All Institute or Medical Dispensaries.)*	*Dr. FRANK DAVIES* (Hon Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	Dr. E. S. MEYERS (Hon Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1. By Order of the Council of the British Medical Association.
April 24th, 1929. ALFRED COX, Medical Secretary.

Birmingham & Midland Eye HOSPITAL, Church St., BIRMINGHAM.

Applications are invited for the post of SURGICAL REGISTRAR to this Hospital.

Candidates must have had not less than two years' experience in Ophthalmic work, and should have held a resident post in an Ophthalmic Hospital for at least one year.

Appointment will be for one year with eligibility for re-appointment.

Applications, together with copies of testimonials, must be received not later than first post on Friday, May 10th.

Particulars of salary, duties, etc., can be had from the undersigned, to whom applications should be addressed.

C. A. MASON, General Superintendent.

London Temperance Hospital, Hampstead Road, N.W.1

Applications are invited for the post of SURGICAL REGISTRAR, which will become vacant on May 8th. The appointment is open to qualified men and women, and is for a period of one year. Honorarium 40 guineas ceteris paribus, preference will be given to total abstainers.

Applications, accompanied by not more than three testimonials, to be addressed to the Secretary by May 2nd.

The Royal Infirmary of EDINBURGH

CLINICAL ASSISTANTS (Honorary).

Vacancies exist in the Ear, Nose, and Throat Department for fully qualified Graduates. Appointments to be for six months, but renewable.

Applications, stating qualifications and experience, to the Superintendent, Royal Infirmary, Edinburgh.

Hertfordshire County Mental HOSPITAL, Hill End, St. Albans.

PATHOLOGIST (Assistant Medical Officer) *required. Salary £525 per annum, rising by £25 per annum to £600 per annum, with prospects of further increments.*

Quarters are available in the Hospital for a single man, but not for a married man or lady, who, if appointed, would be required to live in the neighbourhood. The appointment is *subject to the provisions of the Asylums Officers Superannuation Act, 1909.*

Apply, stating age, qualifications, and experience, enclosing copies of recent testimonials, to the Medical Superintendent, from whom further particulars regarding the appointment may be obtained.

Hospital of St. John and ST. ELIZABETH, 60, Grove End Road, N.W.8.

Applications are invited for the post of RESIDENT HOUSE PHYSICIAN (male). The appointment will be for six months from June 1st. Salary at the rate of £100 per annum, with full board. Applications, together with three testimonials, should reach the undersigned not later than May 1st.

F. DUDLEY HOBBS, B.A., Secretary.

Birkenhead General Hospital. (156 Beds.)

Applications are invited for the post of CASUALTY SURGEON (male) at once, salary £100, with board and residence, to take up duties immediately.

Applications, stating qualifications, experience, and nationality, with three copies of recent testimonials, to be sent to the Secretary-Superintendent *as early as possible.*

City of Birmingham Mental HOSPITAL.

The Committee of Visitors invite applications from duly qualified and registered single *medical men under 35 years of age for the post* of full-time JUNIOR ASSISTANT MEDICAL OFFICER at the City Mental Hospital. Preference will be given to candidates who have held a resident appointment in a general hospital.

The commencing salary will be £350 per annum, together with emoluments (board, *residence, and laundry*). *Subject to twelve* months' satisfactory service an increase of £50 will be granted at the end of that period. The appointment will be terminable by three months' notice on either side, and the selected candidate will be required to join the Asylums Officers Superannuation Scheme.

Applications, accompanied by copies of three recent testimonials, should be marked "Junior Assistant Medical Officer," and addressed to the Chief Medical Officer, City Mental Hospital, Rubery Hill, Birmingham, so as to be received by him not later than April 30th.

F. H. C. WILTSHIRE,
Council House, Clerk to the Committee
Birmingham. of Visitors.

Royal Eye Hospital, St. George's Circus, Southwark, S.E.1.

HOUSE SURGEON and ASSISTANT HOUSE SURGEON required at the above Hospital. The appointment is in the first instance for a period of six months, with board and residence. Salaries: House Surgeon at the rate of £150 per annum, and Assistant Surgeon at £100 per annum. Candidates must be registered [illegible] with copies of three [illegible] be sent to the [illegible] not later than May 2nd.

F. E. D'ALTON, Secretary.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
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Sixpence should be added if replies to a box number are to be posted.

All advertisements must be received not later than first post Tuesday previous to date of publication.

ASSISTANCIES.

Wanted, Whitsuntide or earlier, permanent ASSISTANT, English or Scotch. Indoor if single; if married, plainly furnished rooms, with light and heat and part attendance, provided at principal surgery in working-class Lancashire Town. Abstainer. Usual bond. Post-graduate experience in midwifery desirable. Radiographer-Dispenser kept. Fullest partics., personal, professional (includ. attitude to Homœopathy), and of all requirem'ts. —No. 2440, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant in Midland Cathedral City, with Partnership at end of one year. Married man with hospital experience preferred. Share to start of £1,000, increasing at intervals to equal shares. House available. Three Partners in firm, one retiring. Send photograph with application, which will be returned with testimonials.—Address, No. 2419, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, with or without view. £25 monthly (indoor). No midwifery. No clubs. State available capital. Easy terms. Send photo. Married man preferred. — Address, No. 2411, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, in general Practice in West Yorkshire. Total abstainer preferred. Salary £350 to £420 p.a., according to qualifications and experience. Outdoor. — Address, No. 2331, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, keen and energetic, in good-class non-dispensing private and panel Practice. £360 p.a., with rooms and attendance. Car provided Good prospects for right man.—Address, No. 2424, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistant, male (outdoor) to take charge of Branch Surgery, agricultural district, South Wales Coast. Work light. — Address, No. 2421, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, single, age under 30. English or Scotch, experienced. 50 miles London. Salary £300 per annum. Keen and energetic.—Add., No. 2417, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Lady Assistant, outdoor, experienced in G.P. (panel and private), cyclist. London suburb.—Address, stating essential particulars, No. 2447, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Young Assistant for Country Practice in N. Yorks, to assist two partners.—Address, No. 2444, B.M.A. House, Tavistock Square, W.C.1.

Wanted, an outdoor Assistant in a Colliery Practice in South Wales. Salary £350 per annum, with rooms, attendance, etc. Usual bond.—Address, stating age, references, etc., No. 2422, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Indoor and Outdoor ASSISTANTS (male), with and without view. Good salaries offered. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, in May, outdoor ASSISTANT, male, single, British, for general and panel Practice, S. Yorkshire Colliery dist. Small car provided. State age, height, exper., and other essen. partics. Usual bond.— No. 2344, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, a Welsh - speaking ASSISTANT in a mixed Practice, North Wales. References, with experience, and essential particulars. Liberal salary to suitable applicant.—Address, No. 2149, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Several Assistants in North Wales Practices; one with early succession. Send full particulars to "Medical," 40, Hamilton Street, Hoole, Chester.

Wanted. — Assistantship by M.B., F.R.C.S., West London or near. Extensive Hospital experience. View to purchase Partnership or whole, end of six or twelve months. Surgical work desired.—Address, No. 2420, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistantship, whole or part-time, by Woman M.B., D.P.H., qual. 5 yrs, exp. in panel and priv. prac., disp., obstet., child. dis., ultra-violet and elec. therapy. Free, in London. Would consider partnership.— No. 2438, B.M.A. House, Tavistock Sq., W.C.1.

Assistant (indoor) wanted immediately, or not later than May 1st, for private and small panel Practice, Must have experience of minor surgery. Good salary. Car provided. If satisfactory, a share in six months. — Address, No. 2414, B.M.A. House, Tavistock Square, W.C.1.

Assistants or Locum Tenens.— Doctors immediately available for the foregoing, of good address, experience, and of British birth, are invited to call upon THE MEDICAL AGENCY, Watergate House, 15, York Buildings, Adelphi, W.C.2.

Assistantship wanted by Woman Graduate, M.B., Ch.B.(St. Andrews). One year's experience panel and private practice. Excellent testimonials. — Address, No. 2431, B.M.A. House, Tavistock Square, W.C.1.

An experienced Assistant (outdoor) required immediately. Very good prospects for suitable man. Salary £400. East Anglia. — Address, No. 2430, B.M.A. House, Tavistock Square, W.C.1.

Energetic and experienced man requires ASSISTANTSHIP, with view to speedy Partnership, in colliery district, preferably Durham or Northumberland. Capital available.—Address, No. 2405, B.M.A. House, Tavistock Square, W.C.1.

Indoor Assistant wanted for Colliery Practice near Newcastle-on-Tyne. Salary £325 per annum.—Address, No 2446, B.M.A. House, Tavistock Square, W.C.1.

Required, fully qualified Assistant, view early Partnership. Large industrial Practice, S. Wales Seaport Town. Excellent opportunity good worker.—Address, No. 2436, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

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...ry is to be at the rate of £100 per ...

...ndidates must be duly qualified medical ...tioners, and have had experience in ...ction work.

...plications with copies of testimonials, ...d be sent to the Secretary, from whom ...er particulars can be obtained, on or ...e Monday, May 6th.

...yal London Ophthalmic

HOSPITAL (Moorfields Eye Hospital), City Road, E.C.1.

OUT-PATIENT OFFICER.

...plications are invited for the post of ...patient Officer, to attend on Monday and ...rsday in each week.

...ndidates must be registered medical practi- ...ers. Salary at the rate of £100 per annum.

...Out-patient Officer will be appointed for ...riod of one year and will be eligible for ...appointment.

...pies of regulations governing the appoint- ...nt can be obtained on application.

...pplications, stating age and qualifications, ...d copies of testimonials, must be received not ...r than May 7th by—

ARTHUR J. M. TARRANT, Secretary.

...ussex Eye Hospital.

...he Committee of Management hereby give ...tice that a Meeting of the Committee will be ...ld on May 16th for the purpose of appoint- ... ...URG... ...G... ... ... and ... ..., in ...ition, for the vacant offices, with testimonials, ...ust be sent to the Hospital, addressed to the ...ssistant Secretary, on or before Tuesday, ... 7th. Candidates must be registered under ...e Medical Acts. No candidate can hold the ...appointments unless he resides in Brighton or ...ove.

Board Room, Queen's Rd., Brighton. A. F. GRAVES, Esq., Assistant Secretary.

April 18th, 1929.

General Hospital, Nottingham.

A RESIDENT CASUALTY OFFICER (male) is required early in May. The appointment is for six months, with salary at the rate of £200 a year, with board, residence, and laundry. Candidates are required to submit applications, giving age, experience, and qualifications, together with copies of testimonials, not later than Wednesday, May 8th.

P. M. MACCOLL, House Governor & Secretary.

Essex County Hospital.

COLCHESTER (160 Beds.)

Wanted immediately, ASSISTANT HOUSE SURGEON and *REGISTRAR* (male). Salary £120, with board, washing, and residence. Medical and Surgical qualifications required.

Applications, with three recent testimonials, to be sent on or before Friday, May 3rd, to—

ALFRED G. BUCK, Secretary.

Isle of Man Mental Hospital.

Required, ASSISTANT MEDICAL OFFICER (male). Candidates must be registered medical practitioners, and unmarried. Salary £300 per annum, with board, apartments, laundry, and attendance. The appointment is subject to the provisions of the Asylums Officers Superannuation Act. Apply, with copies of three testimonials, to the Medical Superintendent.

Norfolk and Norwich Hospital,

NORWICH.

Applications are invited for the following posts:

HOUSE PHYSICIAN, for which appointment preference will be given to a candidate who has held a previous Hospital appointment.

CASUALTY OFFICER and HOUSE SURGEON (with charge of 25 beds).

Salary for both posts £120 per annum, with board, residence, and laundry. Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned, as soon as possible.

FRANK INCH, April 26th, 1929. House Gov. & Sec.

Woolwich and District War

MEMORIAL HOSPITAL, Shooters Hill, London, S.E.18. (General Hospital. 112 Beds.)

The Appointments Committee invite applications for appointment as HOUSE SURGEON. An honorarium of £125 per annum will be paid in respect of such appointment, which will be for a period of six months as from May 15th, 1929.

Applications, accompanied by copies of not more than three recent testimonials, are invited from suitably qualified candidates, and should be addressed to the Secretary-Superintendent, Woolwich and District War Hospital, Shooters Hill, London, S.E.18, to reach him not later than Wednesday morning, May 1st.

The London Female Lock

HOSPITAL, 283, Harrow Road, W.9. (Founded 1746.)

HON. OBSTETRIC SURGEON.

The Board of Management invite applications for the above appointment. Candidates, who *may be of either sex, must be Fellows of the* Royal College of Surgeons of England.

Applications, enclosing copies of not more than three testimonials, should be lodged with the undersigned on or before Monday, May 6th. The appointment will be made at a Special Court of the Governors in May.

By Order of the Board, H. J. EASON, April 8th, 1929. Secretary.

City of London Maternity

HOSPITAL, City Road, E.C.1.

Applications are invited for the post of ASSISTANT OBSTETRIC SURGEON. Candidates must be Graduates in Medicine of a University of the United Kingdom and Fellows of *the Royal College of Surgeons (Eng.), or* Members of the Royal College of Physicians (Lond.)

Applications (together with twenty copies of three testimonials) should reach the undersigned by May 10th.

RALPH B. CANNINGS, Secretary

Bristol Royal Infirmary.

Applications are invited for the following two vacancies:

1. HONORARY MEDICAL REGISTRAR.
2. HONORARY REGISTRAR to the Ear, Nose, and Throat Department.

Candidates, who must be duly qualified and registered, to send in their applications to the undersigned, together with copies of not more *than four testimonials, on or before* May 18th.

ELLIS C. SMITH, F.C.I.S., Secretary & House Governor.

Central London Throat, Nose,

AND EAR HOSPITAL, Gray's Inn Road, W.C.1.

RESIDENT HOUSE SURGEON (Male).

There will be a vacancy for a Second Resident House Surgeon to enter on duty on June 1st. Remuneration at the rate of £75 per annum. Applications, with copies of not more than three testimonials, should be sent to the undersigned on or before May 4th.

JOHN H. YOUNG, Secretary-Supt.

Walsall General Hospital.

The Committee invite applications (from men) for the post of JUNIOR HOUSE SURGEON. Salary £100 per annum.

Candidates, who must be registered under the Medical Acts, must have had experience in the administration of Anæsthetics, and produce three recent testimonials. The appointment will be for six months.

The Hospital contains 100 beds, and is equipped in all Special Departments.

Applications must be received by the undersigned not later than first post Monday, April 29th.

WALTER FRANCOMBE, April 10th, 1929. Secretary.

Blackburn and East Lancashire

ROYAL INFIRMARY.

FOURTH HOUSE SURGEON (male) required for Casualty Department, etc., at a salary of £130 per annum, with board, residence, laundry etc., the appointment to be for six months.

The Hospital contains 240 beds, with X-ray, Massage, V.D., Eye, Ear, Nose, and Throat Departments, Pathological Laboratory, etc. There is no outside work.

Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent at once to the undersigned.

Royal Infirmary, Blackburn. NATHAN A. SMITH, Gen. Supt. & Secretary.

Bolingbroke Hospital

Wandsworth Common, S.W.11.

Applications are invited from gentlemen engaged solely in the practice of Oto-rhino-laryngology for the post of CLINICAL ASSISTANT in the Ear, Nose, and Throat Department.

The appointment is for one year from June 1st next, and there is an honorarium of £75 *per annum attaching to the position.*

The successful candidate must be prepared to be in attendance at the Hospital on Wednesday afternoons at 2 o'clock.

Applications, accompanied by copies of three testimonials, should be sent to the undersigned on or before May 7th

W. S. RANDOLPH BISS, Secretary-Supt.

Royal Victoria and West Hants

HOSPITAL, BOURNEMOUTH.

The Board of Management will, after the expiration of one month, proceed to appoint an HONORARY SURGEON.

Applicants must be Fellows of a Royal College of Surgeons.

Applications, stating qualifications, age, and experience, should be sent to the undersigned by May 18th. Canvassing, personally or otherwise, will disqualify.

By Order of the Board of Management, GORDON M. SAUL, April 17th, 1929. Secretary.

Royal Victoria and West Hants

HOSPITAL, BOURNEMOUTH.

The Board of Management will, after the expiration of one month, proceed to appoint an HONORARY PHYSICIAN to the Department for Diseases of the Skin.

Applications, stating qualifications, age, and experience, should be sent to the undersigned by May 18th. Canvassing, personally or otherwise, will disqualify.

By Order of the Board of Management, GORDON M. SAUL, April 17th, 1929. Secretary.

St. Mary Abbots Hospital,

London.

A registered medical practitioner is required, to act as Temporary ASSISTANT MEDICAL OFFICER from May 1st to October 31st inclusive. Board, lodging, and washing will be provided and an honorarium of fifty guineas paid upon the completion of the appointment.

Apply at once to the Medical Superintendent, St. Mary Abbots Hospital, Marloes Road, London, W.8.

MEDICAL PRACTITIONERS' UNION AGENCY, LIMITED,

56, RUSSELL SQUARE, LONDON, W.C.1.

Telephone: Museum 6161.
Telegrams: "Uffabrini, Westcent, London."

1. ASSISTANT wanted for large Practice in Northamptonshire. Young man, prefer English or Scotch. Board and rooms provided close to surgery. No dispensing. Car to drive. Salary £275.
2. ASSISTANT wanted for large industrial town panel and private Practice in Lancashire. Recently qualified man suitable. Good salary. Partnership would be offered in a short time to suitable man.
3. ASSISTANT wanted in panel and private Practice in Staffordshire. Board and comfortable rooms over surgery provided. Salary £6 a week and half midwifery fees, which would be about £50 first year. View to partnership later.
4. ASSISTANT wanted. Must be Englishman, preferably unmarried, for general Practice in Devonshire town. Later, partnership share available. Outdoor; salary £500.
5. ASSISTANT wanted in panel and private Practice in Swansea. Preferably Welsh, single, and able to drive car. Salary, indoor, £360 to £400. outdoor, £500.
6. ASSISTANT wanted in S.W. London to work Branch Surgery. Rooms provided over surgery. Must be young, English or Scotch. Good salary to suitable man.
7. LEICESTERSHIRE.—Town PRACTICE for sale. Old-estab. Receipts 1926, £1,030 8s.; 1928, £700. Number on panel 500. Mixed class of patients; fees at surgery 3/6 up. Comfortable house, 3 reception, 4 bedrooms, 2 attics, electric light, gas, central heating, separate surgery. Rent £100 per annum. Premium £950.
   GLASGOW.—PRACTICE, estab. and worked by Vendor 8 years. Receipts £920. 900 on panel. Working-class practice in semi-rural district. Two surgeries 1½ miles apart. Buyer should be Catholic. Premium £1,000.
9. SHROPSHIRE.—PRACTICE estab. 7 years. Income £1,100. Over 500 on panel. Middle-class patients; fees 3/6 up. Large house, 3 reception, 6 bedrooms, large garden, garage, and outhouses. Rent £60 per annum. Premium £1,500; would accept £1,000 down.
10. NEAR MANCHESTER. — Good panel and private PRACTICE. Average income £1,600. Number on panel, 1,600. Working and middle-class patients; fees 2/6 to 10/-. Seven-roomed house in first-class condition. 450 square yards of garden back and front. Freehold to be sold. £1,200. Premium for Practice 1½ years' purchase.
11. PARTNERSHIP for sale in high-class Consulting Practice in London, W. Practice established and worked by Vendor over 20 years. Receipts over £3,000 a year. Fees 10/5 to 5 guineas. One-third or one-half share for sale. Excellent opportunity for young man keen on electrical work.
12. LANCS.—Good mixed PRACTICE for sale. Average income £1,505. Transferable appointments. Number on panel 2,044. Fees at surgery 2/6 up. House contains 4 bedrooms, two reception rooms, boxroom, etc. Rent £34 5s. Premium for Practice 1½ years' purchase.
13. GLOS.—PARTNERSHIP in large town Practice. Average income £2,000. Number on panel 2,475. At present worked by two men. A third partner is needed owing to increasing work. One-fourth share for sale for £1,000. Share to be increased to one-third later. Single man with hospital experience preferred.
14. LONDON.—Good old-established PRACTICE. Average income for last three years £3,388 15s. 4d. Transferable appts. £160. Number on panel 2,800. Nice house, containing waiting room, 2 consulting rooms, dispensary; 2 reception, dining and billiard rooms, 6 bedrooms, dressing, maid's sitting and large boxrooms. Electric light and gas in each. One acre of ground, tennis court, well-kept fruit and vegetable gardens, garage for 3 cars. Premium £6,000.
15. BIRMINGHAM.—Panel and Private PRACTICE for sale. Income £2,500. Panel 1,700. Middle and working-class practice. Fees 2/- up. A good house, with large garden, and two branch surgeries, for sale. Splendid opportunity for two men. Premium 1½ years' purchase.

PROSPECTIVE PURCHASERS

OF PRACTICES

and those seeking

PARTNERSHIPS

should consult

The

BRITISH MEDICAL BUREAU

at

12, Stratford Place, Oxford St., London,

or its Northern Branch at

33, Cross Street, Manchester,

or its Newcastle Branch at

7, Windsor Place, Newcastle - on - Tyne.

Those requiring additional

CAPITAL

should apply to the

Medical Insurance Agency
(Limited by Guarantee)
B.M.A. House, Tavistock Sq., London, W.C.1.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

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TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

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(In conjunction with the MALE NURSES' ASSOCIATION),
29, York St., Baker St., London, W.1.
Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

ST. LUKE'S HOSPITAL.

FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

Wolverhampton and Midland COUNTIES EYE INFIRMARY.

HOUSE SURGEON wanted. It is essential that candidates must possess a knowledge of Refraction work. Duties to commence about May 15th. There are 50 beds for In-patients, and large Out-patient Department. Salary £200 a year, with furnished apartments, board, and laundry. Gentlemen applying should state age, and send copies of three recent testimonials, to reach the Secretary not later than April 30th.

April 8th, 1929. EUSTACE LEES, Secretary.

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PERCIVAL TURNER, LTD.

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Telephone: GERRARD 0399.

Terms post free on application.

N. W. Coast Town.—Over £3,000 p.a. Old-established. Panel over 1,500. Usual fees. Medium house to rent.—No. 8465.

Staffs.—About £1,200 p.a. Good-class non-panel PRACTICE. Visits 5/- up. Good house available.—No. 8464.

London, N.W.—About £700 p.a. Visits 5/6 to 7/6. Appts. £45 p.a. Small panel. Mids. 3 gns. Good house and garden.—No. 8463.

Wilts. — Unopp. — About £900 p.a. Appts. about £100 p.a. Panel about 600. Visits 5/- up. Mids. 3 to 10 gns. House, 4 bed., etc., nice garden, to rent.—No. 8447.

Kent. — £1,500 share in non-panel, non-dispensing Practice. Appts. about £1,200 p.a. Visits 5/- to 7/-. Mids. 5 to 10 gns. Large house to rent.—No. 8469.

Glos.—Unopp. — About £1,270 p.a. Mids. 2 to 8 gns. Visits 5/6 to 21/-. Easily worked. House, 3 bed., etc., large garden. House and Practice £2,500.—No. 8455.

Eastern Suburb.—About £1,100 p.a. Panel about £250. Visits 4/-. House, 5 bed., etc.—No. 8453.

South Coast. — Half Share of about £900 p.a. Panel 900. Visits 5/6 up. Premium £750 or offer.—No. 8456.

Co. Durham. — Half Share of about £2,800 p.a. Panel 2,600. Appts. £300 p.a. Mids from 30/-. Visits 2/6 to 7/-. House, 5 bed., etc.—No. 8453.

N. Wales Coast.—About £1,750 p.a. Panel and appts. about £400 p.a. Mids 2 to 5 gns. Visits 5/6 to 31/6. House, 4 bed., etc. Separate surgery.—No. 8451.

London Suburb. — About £700 p.a. General mixed PRACTICE. Good house available.—No. 8450.

N. Wales.—Death Vacancy.—About £1,000 p.a. Surgical scope. Mids. 5 to 10 gns. Visits 7/6 to 10/6. Small panel. House, 4 bed., etc., to rent. Good garden. Part premium down.—No. 8448.

Kent. — Average £1,500 p.a. Mids. 2 gns. up. Visits 5/6 to 7/6. Panel over 1,300. Large house and garden to rent.—No. 8446.

Warwickshire. — £1,000 share guaranteed. Mids. 2 to 10 gns. Panel 2,500. Visits 5/6 up. House, 5 bed., etc., large garden, to rent.—No. 8445.

Beds.—Death Vacancy.—About £1,100 p.a. Panel and appts. £550 p.a. Visits 5/- up. Mids. 3 gns. up. House, 9 beds., etc.—No. 8444.

Home Counties.—Aver. £2,800 p.a. Up to 2/5 share for sale, short Assistantcy, possible early succession. Appts. £90 p.a. Small panel. Visits 5/6 up. Mids. 2 gns. up. House, 5 bed., etc., to rent.—No. 8441.

Lincolnshire Coast. — Average £2,500 p.a. Old-estab. middle and working-class. Panel about £350 p.a. Appts. over £100 p.a. Mids. 1½ to 3 gns. Visits 4/- to 10/6. Choice of houses to rent.—No. 8439.

Eastern Counties.—Share about £700 p.a. Visits 5/- up. Panel and appts. over £900 p.a. Mids. 2 gns. up.—No. 8434

Lancs. Coast.—About £3,000 p.a. 1/3 to 2/5 share. Appts. over £500 p.a. Visits 5/- and 7/6. Panel 450. Scope for surgery. House to rent.—No. 8429.

Kent.—Country Practice.—About £1,030 p.a. Old-estab. Visits 5/- up. Panel nearly 400. Appts. £55 p.a. Good house, with 6 bed., etc.—No. 8420.

SPECIAL NOTICE.

FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants prepared to pay part of purchase money down and balance by instalments over 7 years (on the security of a Life and Sickness Policy). Full particulars on application to Mr. Percival Turner.

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LONDON, W.—PARTNERSHIP in a West End Practice. Receipts over £3,000 p.a. Panel 3,400. Premium for one-third share £2,500. Address and experience. [illegible]

HERTS.—In close proximity to London.—Middle-class G.P. Good sized house and grounds part could be sub-let). Receipts £1,500. Panel 800. Scope for development. Premium 1½ years' purchase. House £2,200. Part can remain on mortgage.

SOMERSET.—PARTNERSHIP in rural Practice situated in charming locality. Suitable for young experienced man fond of sport, hunting, etc. Commenced share worth £500 p.a. at 2 years' purchase.

DEVON, N.—PARTNERSHIP in market town Practice. Receipts £1,500. Panel 635. Suitable house to rent. One-third share to commence at 2 years' purchase.

MIDLANDS.—X-RAY PRACTICE situated in large town. Excellent corner house for sale or rent. Receipts over £1,200. Two apts., prospects of others. Premium for Practice and full appliances £1,250. Payable part down, balance by instalments. Excellent scope for expert electrician.

LONDON, N.W.—Old-established middle-class G.P. Receipts £700 p.a. Panel 125. Appointments. Medium-sized house. Premium £850.

LONDON, S.—Well-established working-class G.P., situated on main thoroughfare. [illegible] purchased. Receipts approx. £850. Excellent scope. Prem. 1 years' purchase.

EAST [illegible] in old-established country Practice, with panel of approx. 1,800. Receipts nearly £3,000. Suitable for young experienced man fond of country life. Premium for 1/3rd share with view to half share, 2 years' purchase.

LONDON, E.—Working class locality. Cash and Panel PRACTICE. Receipts £2,400. Panel nearly 3,300. Three appointments. Premium 2 years purchase for Practice and freehold House £1,500.

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LONDON, N.W.—DEATH VACANCY in residential locality. Freehold corner house. Excellent all-round scope. Panel nearly 800. Receipts over £400. Premium for house and Practice £2,000

LONDON, S.E.—Cash and Panel PRACTICE. Receipts £541. Panel 620. Premium £750. House may be rented at £90 p.a.

WEST COUNTY.—PARTNERSHIP with view to Succession in old-established country Practice. Receipts approx. £2,000. No panel. Suitable to Varsity Graduate keen on surgery. Premium for one-third share 2 years' purchase.

If the investment you are seeking is not advertised here, let us know your wants, and we will gladly forward details of others suitable to your requirements.

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SOUTH-WEST COAST.—PARTNERSHIP in well-established good-class rural G.P., with Nursing Home attached. Excellent house to rent. Surgery, X-ray and Electro-therapy. Receipts over £4,000 p.a. Panel approx. 1,000. Suitable for well-qualified man keen on surgery. Premium for half share 2 years' purchase.

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2. PARTNERSHIP in growing Practice of £2,000 a year in Coast Resort (N.W.). Third share with increase to Half as arranged. Suitable for active Englishman, aged 28 to 32. Preliminary two months' Assistancy offered. Price 2 years' purchase.
3. MANCHESTER.—Genuine Private PRACTICE of over £400 a year, with panel (extra) of nearly 300, offered at £450 cash. Good house on lease at low rent. Bona-fide reasons for early sale.
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6. PRACTICE of over £1,200 a year, situate in a pleasant country district about an hour's run from Town. Panel and appts. Good scope for active man of ability. Family residence, with garden and garage. Genuine reasons for sale. Known to Mr. NEEDES.
7. SUPERIOR CLASS PRACTICE in bracing residential locality within 40 miles. Annual income about £1,200. Very nice house with all modern conveniences, garden and garage. Price for Freehold and Goodwill £4,000, 3/8 can be raised on mortgage.
8. NURSING HOME (Surgical, Medical, and Maternity) in a well-known Northern Coast Resort. Gross returns about £1,600, showing *profits of £700 to £800 p.a.* Price £1,000, to include furniture, apparatus, etc.

BRITISH MEDICAL BUREAU

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5. LEICESTERSHIRE (near large Town).—PARTNERSHIP (with short preliminary assistantship and ultimate succession) in residential and working-class Practice. Receipts average £1,135 p.a. Panel over 1,000. Good house.
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8. NOTTS. COUNTY.—Panel, Colliery, and Private PRACTICE. Receipts about £440. Panel 340. Good house to rent. Garage.

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The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads:—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence. Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

ASSISTANTS AND LOCUMTENENTS.

Assistants and Locumtenents can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out.

RESIDENT PATIENTS.

Medical Men wishing to receive Resident Patients should enrol their names on the books of the British Medical Bureau. A large number of Patients are placed yearly through this medium.

ACCOUNTANCY.

The British Medical Bureau has its own staff of fully qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Books & Accounts, etc.

Practices and Partnerships for Disposal. Full particulars sent free.

1. SOUTH COAST.—Partnership in Practice of £1,900 in residential town and favourite watering-place. Premium one half share 2 years' purchase.

2. SOUTH OF ENGLAND.—Partnership in Practice £2,280 in first-rate County town. Small panel. Well-built house (6 bedrooms) to rent. Premium one-half share 2 years' purchase.

3. NORTH DEVON.—Country Practice £775 p.a. in a most beautiful part. Panel 340. Detached house (7 bed and dressing rooms), with old-fashioned garden, for sale. Scope. Premium 1½ years' purchase.

4. SOUTH-EAST OF ENGLAND.—Country PRACTICE about £2,000, within 10 miles of Coast. Panel 720. House has 5 bedrooms, garage, and large garden. Prem. £2,250.

5. NORTH-EAST COAST. — Ophthalmic PRACTICE of about £400 p.a., capable of increase in favourite watering-place. Large house in best part, which need not be taken. Prospects of Hospital appointment. Premium £500.

6. WARWICKSHIRE. — Partnership in Country Practice about £3,500 p.a. in agricultural district. Panel 2,400. Detached house (5 bedrooms) to rent. Share of £1,000 or £1,200 at 2 years' purchase.

7. MIDLANDS.—Non-dispensing Practice in prosperous town. No panel, clubs, or midwifery. Receipts 1928, £1,200, including small amount from Electro-therapy. House (5 bedrooms) for sale. Scope. Prem. £1,500, to include apparatus.

8. HALIFAX.—Sound Practice of £1,650 p.a. Panel 1,860. No midwifery. Nice house (6 bedrooms) in pleasant position, with good garden, for sale. Premium, Practice, £2,000 (to include book debts).

9. ESSEX.—Practice averaging £1,216 p.a. in outlying district, 30 minutes from London. Panel 550. Nice detached corner house (5 bedrooms) to be sold or let. Premium 1½ years' purchase.

10. LONDON, W.—Middle-class Practice over £700 p.a. in residential Western Suburb. No panel. House, with 5 bedrooms and garden, to rent. Premium 1½ years' purchase.

11. DEATH VACANCY.—South Midlands.—PRACTICE of £1,100 p.a. in first-rate county town. Panel 485. Exceptionally nice house (7 bedrooms) to be let or sold. Very good Hospital.

12. DEATH VACANCY.—London, S.W.—PRACTICE about £200 p.a., with good scope for increase. Panel 50. House, with 3 bedrooms for sale.

13. WEST OF ENGLAND.—Practice of over £1,200 p.a. in good town. Panel 1,580. House (6 bedrooms), garage, and garden, for sale. Plenty of scope. Premium 1½ years' purchase.

14. GLOUCESTERSHIRE. — Partnership in Country Practice about £2,500 p.a. Panel nearly 1,000. Applicant should be English or Scotch, aged 28 to 30, and have held Hospital appointment. One-third share at 2 years' purchase, after preliminary assistantship.

15. ISLE OF WIGHT.—Easily worked PRACTICE of £1,340 p.a. (including clubs and appointments worth £300). Panel 500. Convenient modern house. Garden and garage. Scope. Premium, practice and house, £3,800.

16. YORKSHIRE (E.R.). — Partnership in Practice over £3,250 p.a. in manufacturing town. Panel over 3,100. House (4 bedrooms) to rent. One-third share at 1½ years' purchase.

17. SHEFFIELD. — Non-dispensing Practice about £800. No panel. Conveniently situated house (6 bedrooms). Premium, practice and house, £2,000.

18. LONDON, S.W.—Practice of £550 p.a. in pleasant outlying suburban district. Panel 417. House, with 4 bedrooms, to rent. Premium 1½ years' purchase.

19. DEATH VACANCY.—NORTHUMBERLAND.—PRACTICE £425 p.a. in pleasantly situated country town, easy distance of Newcastle. Panel 70 (not encouraged). Eight-roomed house, with large garden, to be let. Good schools.

20. EAST COAST. — Partnership in Practice over £2,000 p.a. in small rapidly growing popular watering-place. Panel 700. Partner should be aged 25 to 30, single, with English qualifications, and have held Hospital appointment. Preliminary assistantship. One-third share at 2 years' purchase.

21. LANCASHIRE.—Practice of about £2,000 in semi-rural district, easy distance of several good towns. Panel returns about £520 p.a. Nice house (6 bedrooms), with garage and garden.

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22 MONMOUTHSHIRE. — Practice between £1,400 and £1,500 (£1,100 from panel and contract work) in progressive area. Modern six-roomed house, with garden, to rent. Small cottage hospital. Premium one year's purchase, part by instalments if desired.

23 LONDON, E. — Practice over £700 in populous district. Panel nearly 600, rapidly increasing. Shop-fronted house for sale or rent. Premium 1½ years' purchase.

24 HOME COUNTIES.—Partnership in Practice between £4,000 and £5,000 p.a. in first-rate residential town. Panel 1,900. One-fourth share at 2 years' purchase.

25 S. WALES.—Better-class Practice, nearly £2,000 p.a., in important and rapidly growing town. Panel 500. Large house, in own grounds, to rent. Scope for increase. Good Hospital and scope for major Surgery.

26 N. DEVON. — Partner required (after preliminary assistantship) in Practice worth £3,000 p.a. in first-rate country town. Panel over 2,100. Well-equipped Hospital. One-third share to suitable man at 2 years' purchase.

27 N. WALES.—Very old-established, £1,346 p.a. in small town. Panel 716. House (6 bed and dressing rooms) to rent. Premium 1½ years' purchase.

28 MIDLANDS.—Partnership in Practice £3,600 p.a. in first-rate residential county town. House (5/6 bedrooms) to rent. One-half or one-third share at 2 years' purchase. Partner should have F.R.C.S. degree.

29 LONDON, N.—Rapidly increasing Cash and Panel PRACTICE. Cash receipts last year £715. Panel 510. Shop-fronted Surgery. Rent £53. Premium £800.

30 DEATH VACANCY. — Northants. — Country PRACTICE of £1,200 p.a. Panel between 700/800. Large house, with electric light and central heating, for sale.

31 HOME COUNTIES. — Partnership in Practice about £2,800 p.a. in good town about 30 miles from London. Practically no panel and very little midwifery. Suitable house to rent or purchase. Partner should be experienced, and have held Hospital appointments. One-third share at 2 years' purchase after preliminary assistantship.

32 EAST ANGLIA.—Country Practice about £1,470 p.a., easy reach of important town. Panel about 1,000. Nice house (10 bed and dressing rooms), with electric light, etc., for sale. Premium 1½ years' purchase.

33 SOUTH COAST.—Non-dispensing Practice over £1,800 p.a. in residential town. No panel. Very good house in best part.

34 WEST END OF LONDON.—Partnership in high-class non-dispensing Practice in the best part. No panel. Share worth £1,500 to £1,750 p.a. for disposal.

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36 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. No panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

37 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. Panel over 1,400. Partner should be good at midwifery. Premium one-half share 2 years' purchase.

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39 S.E. COAST.—Partnership in steadily increasing Practice about £2,500 p.a. in popular watering-place. Panel 1,800. Convenient house (5 bedrooms), garden, and garage, to rent. Premium one-half share 2 years' purchase.

40 LIVERPOOL. — Cash and Panel Practice about £865 p.a. in working-class district. Panel over 1,200. Large house to be sold or let. Great scope. Prem. 1½ yrs.' pur.

41 YORKSHIRE (W.R.). — Partnership in Practice nearly £3,300 in colliery district. Panel 3,000. One-half share after a preliminary assistantship.

42 S.E. COAST. — Third Partner required in *Practice £3,750 p.a. in favourite summer resort.* Panel 3,976. Share up to one-third at 2 years' purchase.

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44 S. MIDLANDS.—Practice over £1,700 p.a. in country town 100 miles from London. No panel, appointments, or midwifery. House (5 bedrooms), with garage and garden, for sale. Premium—Practice 1½ years' purchase (or half share with view to succession).

45 MIDLANDS. — Partnership in mixed Practice between £3,600 and £3,700 p.a. in suburb of Cathedral *City.* Panel over 2,200. Partner should be aged about 30, with Hospital experience, and able to do Surgery. Premium one-half share 2 years' purchase.

46 LANCASHIRE.—Partnership in Practice over £3,700 p.a. in first-rate town. Panel 2,600. House (4 bedrooms) to rent. Premium one-half share 1½ years' purchase.

47 SOUTH OF ENGLAND.—Surgical PARTNER required (not over 36) with University degree and F.R.C.S. England, in sound Practice in first-rate town with good Hospital. Share of £1,500 p.a. at 2 years' purchase.

48 MIDLANDS. — Partnership in Practice £3,375 p.a. in attractive town. Panel 1,000. Well-situated house (5 bedrooms) to rent. Partner must be well qualified, preferably a Surgeon who would have chance of Hospital appointment. One-half share at 2 years' purchase.

49 S. WALES. — Practice averaging £1,627 (about £650 p.a. from panel) in good town. Modern house (6 bed and dressing rooms) for sale or rent. Premium one and a half years' purchase.

50 SOUTH COAST.—Practice about £900 p.a. (including appointments about £155) in favourite watering-place. No panel or midwifery. Suitable house or flat. Premium £1,500.

51 CO. DURHAM. — Practice of £1,460 in growing suburb of seaport town. Panel 646. House (5 bedrooms) on main road to be sold or let. Premium 1½ years' purchase.

52 S. WALES.—Non-dispensing Practice in large seaport town. Receipts for past 3 years averaged £1,543 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,500.

53 KENT. — Practice averaging £1,030 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, practice, £1,500.

54 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first-rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. Premium one-third share 2 years' purchase.

55 LONDON, E.—Rapidly increasing Lock-up PRACTICE in populous district. Receipts 1928, £780. Panel 570. Rent £50. Premium £950

56 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose and Throat work.

57 GLOUCESTERSHIRE.—Country Practice averaging £654 p.a. (Elevation 600 feet). Near two good towns. Panel 500. Large house, with garden and paddock, for sale. Scope for increase. Premium £800

58 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 13 acres of land for sale. Premium, practice, 1½ years' purchase.

59 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. One-third to two-fifths share at 2 yrs.' pur.

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4. LANCS.—COAST TOWN.—Old-established better and middle-class PRACTICE. Income for 1928 over £1,200. Panel of 556. Visits from 4/. Well situated house in residential district. Price for freehold £2,700, £1,500 on mortgage. Premium £1,800, £1,000 down and balance by instalments.
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8. PARTNERSHIP.—LONDON.—In a populous district, the half share of an old-established middle and working-class Practice, worth over £2,000 p.a., including panel of 1,300 Visits 3/6 to 10/6. Expenses light, car not necessary. House contains professional accommodation, 2 reception, 2 bedrooms, bathroom, etc. Held on lease at rental of about £60 p.a. Premium 2 years' purchase.
9. SOUTH COAST.—Popular and favourite Watering-place.—Old-established increasing mixed-class PRACTICE, worth last year nearly £1,600, including panel of over 1,150, and offering further scope. Visits 3/6 upwards. Mids. from 4 gns. About 50 cases yearly. House contains eight rooms, with usual offices, and garden. Price £1,450 (at least £1,000 can be obtained on mortgage). Held by Vendor, who will give efficient [illegible] ars.
10. PARTNERSHIP.—OUTLYING [illegible] A one-third or one-half share is for disposa [illegible] mainly better working-class Practice, producing over £2,300 p.a. Appointments worth about £100 p.a., and panel of 1,400. Fees from 2/6 to 21/-. Lowest midwifery 3 gns Purchaser (if single) could reside in rooms, or suitable house obtainable Premium 2 years' purchase.
11. SHEFFIELD.—Good-class non-panel non-dispensing PRACTICE in best residential district. Average income for last three years over £3,000. Fees 5/- to 21/-. Midwifery 3 to 10 gns.; about 30 cases yearly. Surgery premises can be rented on lease, and contain consulting room, waiting room, 3 bedrooms. Electric light. Garden. Purchaser can choose his own place of residence. Premium 1½ years' purchase, with 1 or 2 years' partnership introduction as required
12. STAFFS.—LARGE TOWN.—Owing to ill health of present Incumbent, an old-established good-class non-panel non-dispensing PRACTICE is for immediate disposal. Income last year over £1,200. Fees 5/- to 10/- Commodious house, in best residential road. Price for freehold £1,600, part on [illegible])0, payable easy instalments.
13. SOUTH-WEST [illegible] Thriving Hospital Town.—PARTNERSHIP.— share in an old-established better and middle-class non-panel general and surgical Practice can be acquired by a suitable gentleman possessing the F.R.C.S. degree. Receipts for the past three years average over £5,000 p.a. Good house, with ample accommodation, at present held on lease with option to purchase. Premium 2 years' purchase.
14. SOUTH-WESTERN COUNTY.—LARGE SEAPORT TOWN.—Old-established mixed-class PRACTICE averaging over £3,000 p.a., including panel of 2,100. Visits 3/6 to 10/6; midwifery (discouraged of late) necessary). House contains professional accommodation, 3 sitting, 6 bedrooms, bathroom, etc. Large garden, garage. Vendor's freehold price £2,800, of which £1,200 can remain on mortgage, or might be rented at £95 p.a. Premium 1½ years' purchase, £3,000 down and balance by arrangement.
15. BUCKINGHAMSHIRE.—Country PRACTICE, situated in delightful district within 50 miles of London.—Old-established mixed general Practice, producing a steady average income of £2,000 p.a. Panel brings in about £700 p.a. Moderate expenses. Fees from 2/6 to 21/-. Under 30 midwifery cases yearly. Exceptionally nice and well-situated house, with 2 reception, 6 bedrooms, etc.; separate entrance to professional rooms. Large garden, with tennis court. Price for freehold £1,500. Excellent sport. Premium £3 000.
16. HOME COUNTY.—Within 40 miles of London.—In small Village (with large surrounding population) in pleasant district, old-established mixed and increasing PRACTICE, worth last year nearly £3,600, including Union and Vaccination over £100, and panel producing over £1,150. Railway station in place. House contains surgery and waiting rooms (separate entrance), 2 reception, 4 bedrooms, bathroom, etc., large garden. Gas, electric light available. Price for freehold £2,500, part mortgage. Premium 1½ years' purchase. Good society, sport, etc. Vendor keeps an Assistant, but investment would admirably admit of taking a partner later on, as houses available.
17. HERTS.—PARTNERSHIP.—A one-third share, and up to one-half later, is for disposal in an old-established Practice, averaging about £2,000 p.a., and offering good scope for increase. Fees 3/6 to 15/-. Not much midwifery. Ingoing partner should be experienced and between 30 and 40 years of age. Sport of all kinds. Premium 2 years' purchase.
18. ESSEX. — Small Country Town. — Well-established and increasing PRACTICE, producing about £800 for last 12 months, including panel of 525 and appointments worth about £60. Advice and medicine chiefly 3/6 to 7/6; visits 3/6 to 21/-, medicine extra. Mids. (discouraged) 2 to 5 gns. Exceptionally nice house, with lounge hall, 3 reception, 5 bedrooms, good professional rooms, and usual offices. Hot water supply. Electric light. Large garden, with tennis court. Garage for 2 cars. All in perfect order. Price for freehold £3,100. Premium 1½ years' purchase.
19. WITHIN ONE HOUR OF LONDON (good train service)—Old-established mixed-class PRACTICE, offering good scope. Average income about £600. Fees 2/6 to 7/6. Not much midwifery. Easily worked Semi-detached house in good condition, with 2 reception, 5 bedrooms, etc. Surgery and waiting room. Garden. Rent on lease £65 p.a. Premium 1½ years' purchase, or near offer.
20. SOUTH-WEST OF ENGLAND.—PARTNERSHIP.—A one-half share in a very old-established Practice situated in an attractive small town, amidst beautiful surroundings, and within easy reach of the Coast. Gross cash receipts for the past year over £2,900. Panel of 1,218, which, together with appts., brings in about £900 p.a. Moderate expenses. Visits 2/6, plus mileage and medicine 2/6 and 3/6 extra. Very suitable house, with 3 reception, 4 bedrooms, and usual offices. Garden. Price for freehold £750, of which £350 on mortgage. Premium 2 years' purchase.
21. CHANNEL ISLANDS.—Old-established general PRACTICE. Present income approximately £700, but large scope. Advice and medicine 3/6 to 10/6, visits and medicine 5/- to 15/-. Midwifery refused. Commodious house, with 2 reception, 6 bedrooms, etc Vendor's freehold. Good schools. Price for practice and house £3,000.
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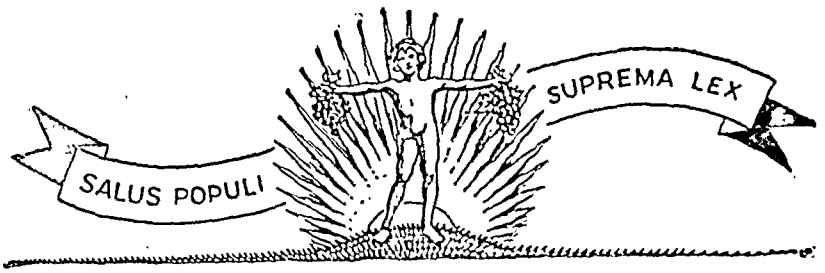

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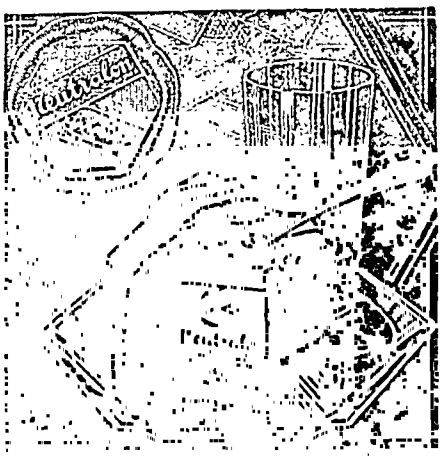

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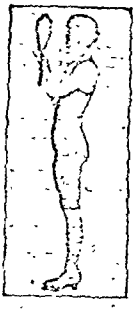

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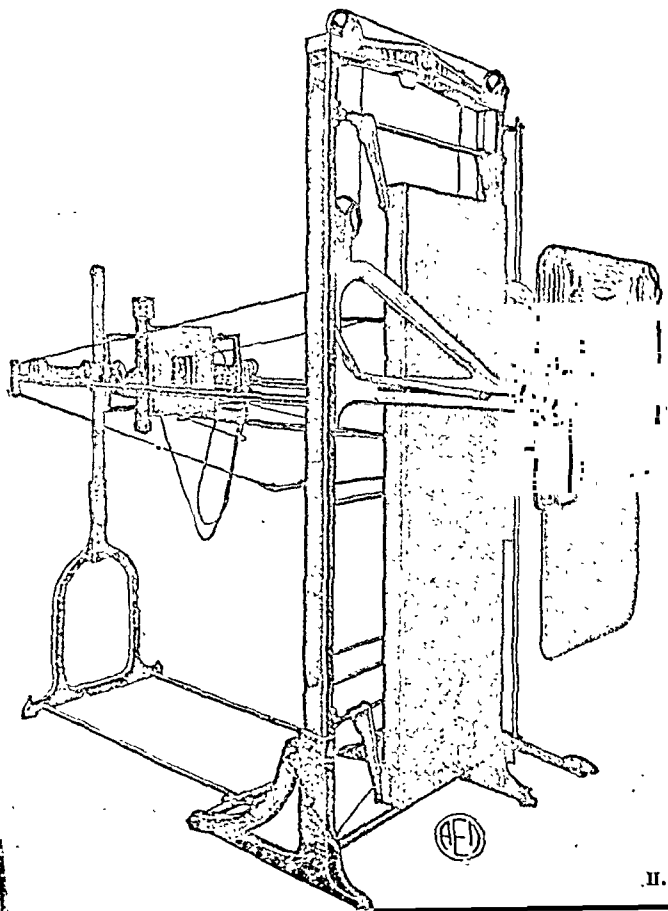

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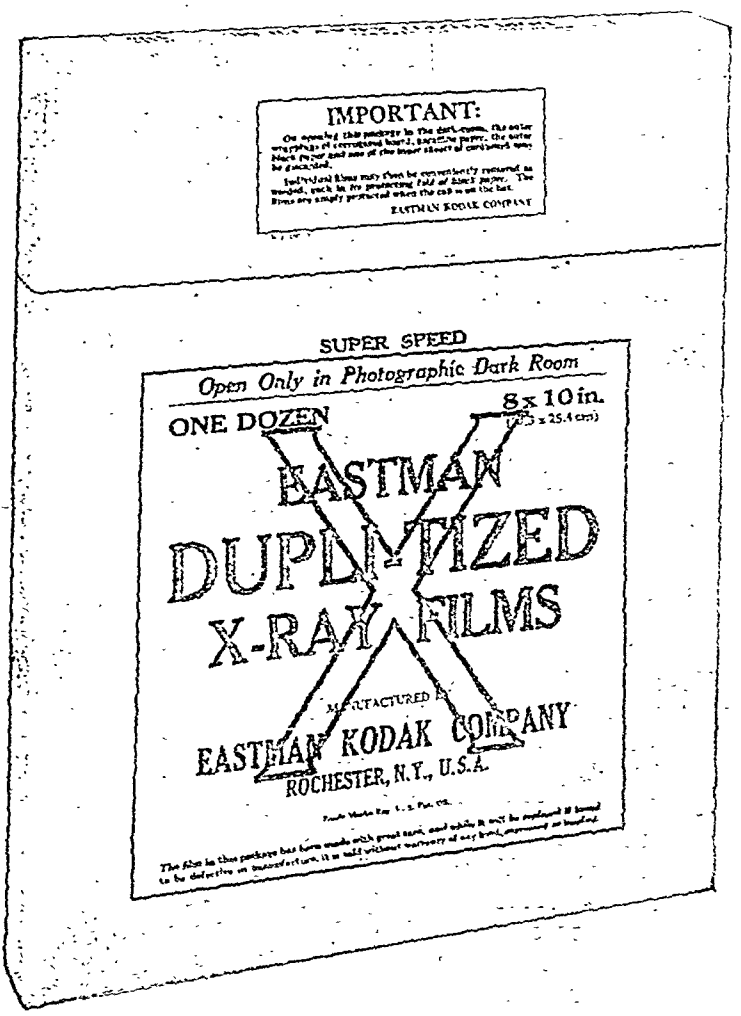

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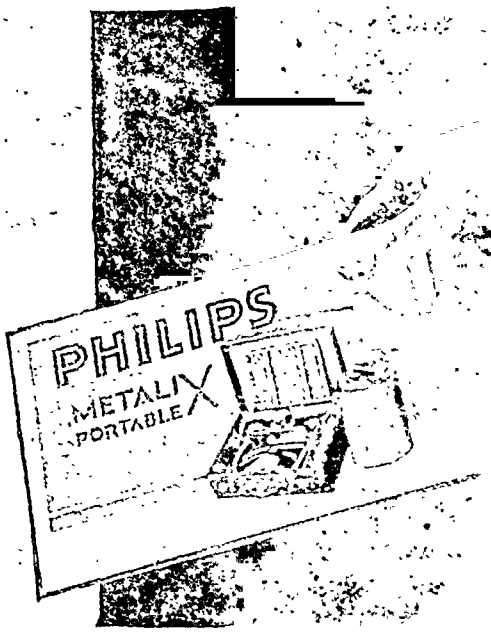

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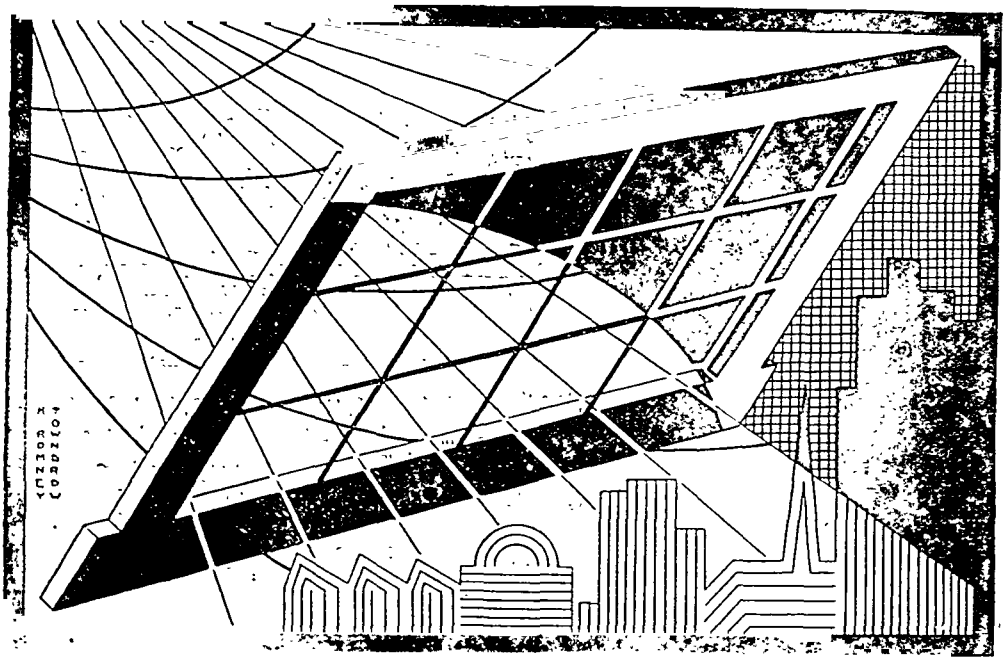

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STARCH-FREE	Nil.	18.9 ,,	76

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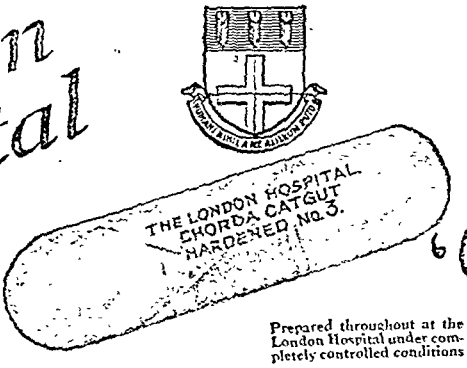

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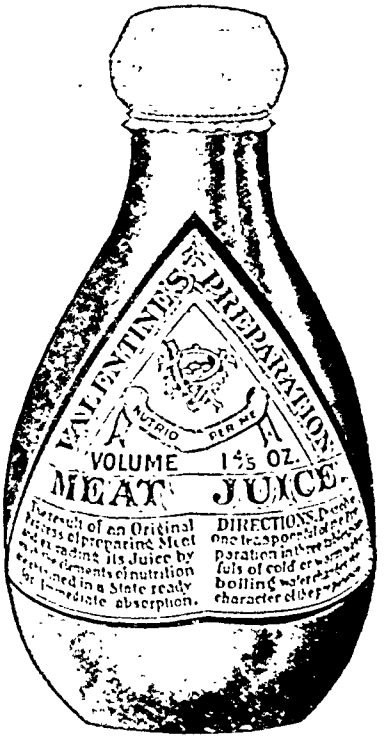

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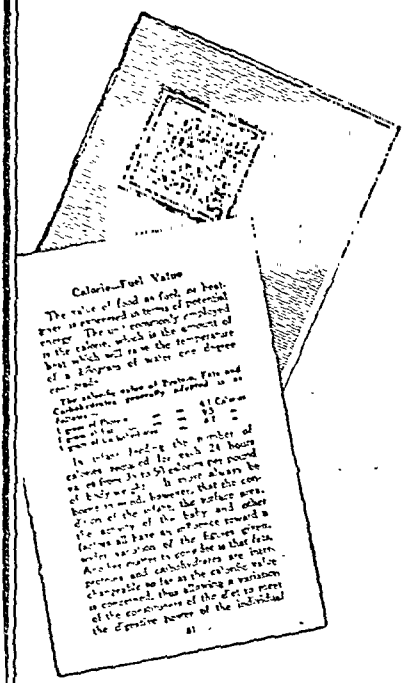

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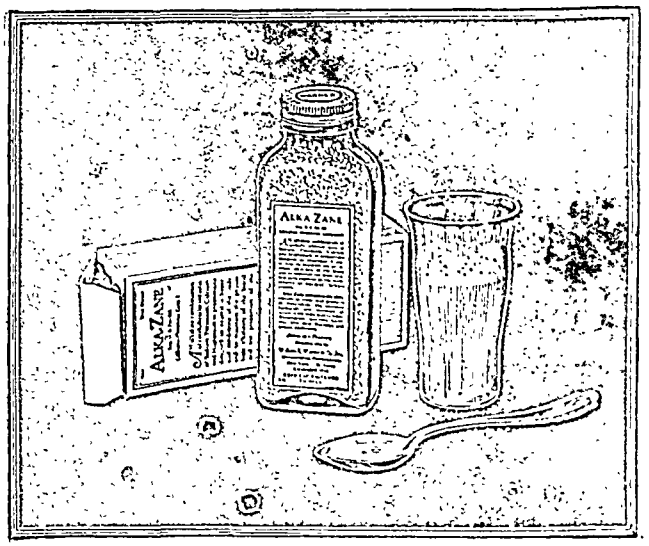

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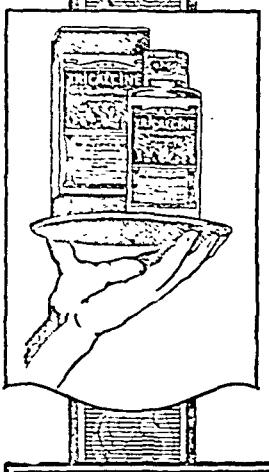

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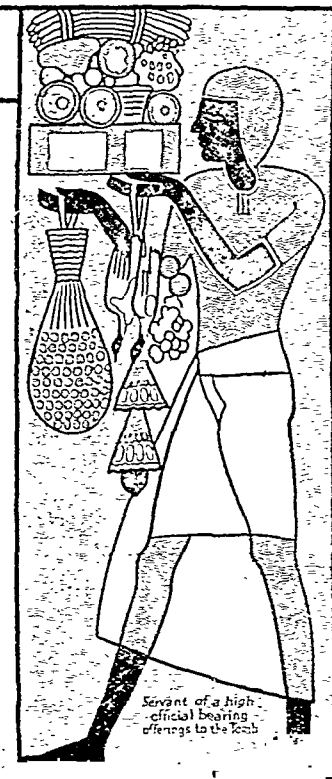

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> ———, M.D.(Ed.), Cavendish Square, W.1.

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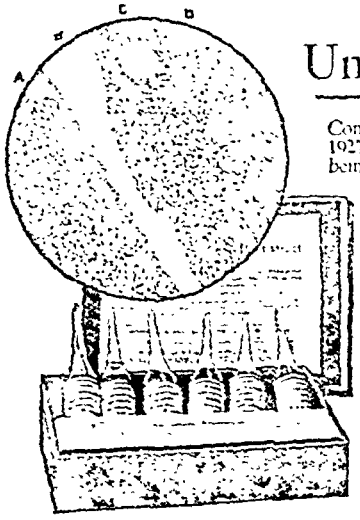

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Micro-photograph of section of Pituitary showing

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(B) inter-glandular cleft (D) pars nervosa (posterior lobe)

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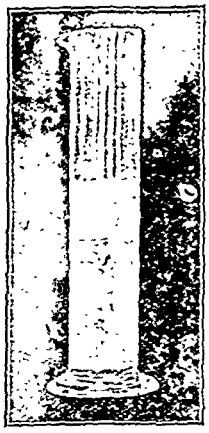

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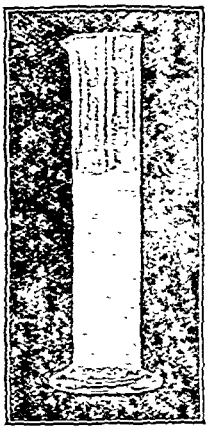

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Typical Case.

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Diagnosis: Cleft palate.

Operation: Plastic repair.

Anæsthesia: Novocain-Adrenaline solution.

Operation: Nerves were blocked with a 2 per cent Novocain-Adrenaline solution, 30 c.c. in all being used. In addition to the nerve block, an effort was made to separate the soft tissues from the bone by the "blowing-off" process. This was signally successful, the subsequent raising of the mucoperiosteum being greatly facilitated by this preliminary manœuvre. The palate united completely with the exception of an opening the size of a lead-pencil at the mid-point. This opening was later closed after making a local infiltration with Novocain-Adrenaline solution.

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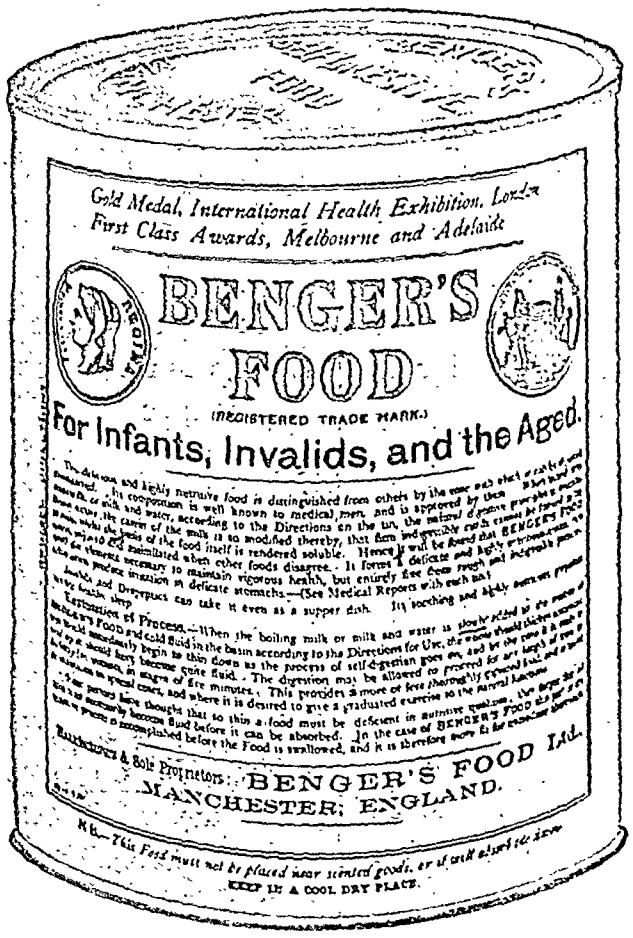

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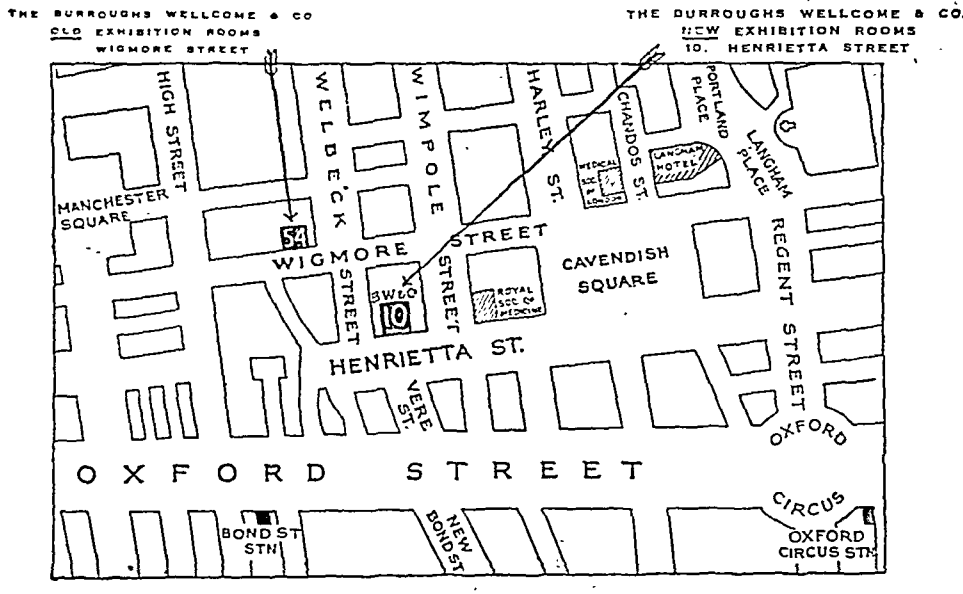

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A British Medical Association Lecture

ON

SOME MODERN ASPECTS OF NEPHRITIS.

DELIVERED BEFORE THE SWANSEA DIVISION, DECEMBER, 1928,

BY

W. LANGDON BROWN, M.A., M.D., F.R.C.P.,
PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL.

THE centenary celebration last year of the publication of Richard Bright's discovery caused his work to be re-examined with greater care. As with Darwin, so with Bright, a study of their own writings makes us realize how much more cautiously they expressed their conclusions than their followers have done. The disciple always tends to be more Royalist than the King. Aschoff says: "Bright himself, with characteristic caution, discussed the question of the extent to which all the symptoms described by him should be referred to primary disease of the kidneys or to primary lesions of other organs. It is, therefore, better to speak of *symptoms of Bright's disease in disorders of the kidneys* and not of Bright's disease of the kidney." He suggests limiting symptoms to the combination of toxic and inflammatory albuminuria with so-called renal oedema. This would exclude some forms of nephritis, such as granular kidney.

In general, nephritis is due to some toxic cause. I do not believe that mere exposure to cold causes nephritis in a healthy kidney, though it may exacerbate a chronic lesion which is already present. In the great war the epidemic of nephritis did not occur during the first winter when men were much exposed and badly housed; it occurred during the early spring of 1915, and there was no relationship between low temperature and the incidence of nephritis. It was then suggested that a great range of temperature was an exciting cause, but in the Boer war, when I saw the mirage at 2 o'clock in the afternoon and hoar frost at 6:30 on the veldt near Bloemfontein, cases of acute nephritis were almost unknown. On the other hand, in subsequent winters in the great war there was some agreement between low temperature and the onset of acute nephritis, because by that time there were a considerable number of men in the field whose kidneys had previously been somewhat damaged.

Adolescent albuminuria does not predispose to nephritis; MacLean tested the urine of 50,000 men in training camps and found that there was no relationship between the cases of albuminuria thus discovered and the onset of subsequent nephritis. The majority of men suffering from nephritis were free from albuminuria until a comparatively short time before symptoms of nephritis set in. We must remember, however, that some of the milder forms of toxaemic kidney may simulate adolescent albuminuria, so that a careful search should be made for toxic foci in those believed to be suffering merely from this condition—for example, in the tonsils, or the appendix, or tuberculous glands.

If the kidney is overwhelmed by a toxin there is a sheer necrosis affecting the convoluted tubules most, the loops of Henle less, and the glomeruli not at all. This is the "toxaemic kidney," where the kidney does not retain what it should excrete, but excretes what it should retain. If the toxic process is rather less severe typical acute nephritis results, in which the glomeruli share. If it is much less severe a chronic nephritis follows in which the interstitial tissues suffer more than the tubules. Geoffrey Evans has shown that even in chronic interstitial nephritis there is an inflammatory reaction. In general terms, then, the intenser the infection, the more the secreting epithelium suffers; the more chronic it is, the more the vessels suffer, and as the glomeruli are vascular tufts, they are specially involved.

Generally speaking, the toxins reach the kidney by *the blood stream*; if in addition to the toxin the actual infecting organisms, as in the multiple emboli of infective endocarditis, are carried to the kidney, a number of foci of small-celled infiltration result, each of which starts an island of nephritis, constituting focal embolic nephritis.

Sometimes, especially after tonsillitis, boils, carbuncles, and staphylococcic infections generally, it is the perinephric tissue which is first involved—a metastatic inflammation which spreads via *the lymphatics* into the kidney. This is the type of nephritis in which pain in the back is most common. Again, the infection may spread upwards from the lower urinary tract—ascending nephritis—though here too, as Kenneth Walker pointed out, it is mainly, if not exclusively, through the lymphatics of the ureter that the infection reaches the kidney.

I shall adopt the following classification of nephritis, *slightly modified from Aschoff.*

1. DEGENERATIVE GROUP.
   - (A) Acute. **Toxaemic Kidney*—such as that produced by drugs (for example, corrosive sublimate and carbolic acid) or by the toxaemias of pregnancy.
   - (B) Chronic. *Amyloid Kidney.*
2. INFLAMMATORY GROUP.
   - (A) *Glomerulo-tubular.*
     1. *Acute—ordinary acute nephritis.
     2. *Subacute—chronic parenchymatous nephritis; large white kidney.
     3. Chronic—chronic mixed nephritis or contracting kidney.

     It must be recognized that these may either follow one another in this order, or 2 and 3 may apparently arise *independently* of 1.
   - (B) *Focal Emboli Nephritis*—as seen in infective endocarditis, when the nephritis is set up by multiple emboli from the heart valves.
   - (C) *Chronic Interstitial Nephritis*—the small red or granular kidney.
3. VASCULAR GROUP.
   - (A) *Hypertonic.*
   - (B) *Senile or Atheromatous.*

Only the starred members of this list really accord with the definition of disorders of the kidney with the symptoms of Bright's disease.

To my mind the position has only been made more difficult and obscured by Volhard's introduction of the term "nephrosis," which has by some writers been so extended as to include chronic parenchymatous nephritis. I consider this term should be limited to toxaemic kidney in which there are merely degenerative changes in the tubules without any inflammatory reaction. There is marked oedema, excess of cholesterol in the blood, and massive albuminuria, but there are no cardio-vascular changes or casts. The urea of the blood remains normal, as does the globulin, but its albumin content falls as the disease progresses. Nephrosis is part of a general toxaemia, and some observers claim that when it is experimentally produced the first protein to appear in the urine may be hepatic in origin. At the necropsy a large amount of cholesterol may be found in the kidney tubules, the so-called "myelin" kidneys. Death or complete recovery is the rule, but occasionally a toxaemic kidney may lead to chronic nephritis.

Of late the tendency has been towards a secretory rather than an anatomical classification. This is really an advantage since the anatomical basis can only be established after death, when the opportunity for treatment is past.

Broadly speaking, the kidney may excrete two classes of substances: (1) those which can be of use to the body—water, salt, sugar, bile, haemoglobin; (2) those which are purely waste products—urea and allied nitrogenous substances. Against the excretion of the first group the kidney presents a threshold; it does not attempt to excrete them until their concentration in the blood reaches a certain height, for it would not do for such substances to be drained out of the body. For the second group no such barrier is needed. The secretory classification is as follows:

1. *Hydraemic Nephritis* (which broadly corresponds to chronic parenchymatous nephritis).—Here the excretion of Class 1 is involved, particularly of water and salt. The output of urea may be normal, and there will not be any retention of it in the blood. Not so with chlorides, the content of which in the blood will be raised. Oedema may be very marked, but there will be little evidence of cardio-vascular change.

2. *Azotaemic Nephritis.*—Here there is gross failure of the concentrating power of the kidney, and since the great

work of the kidney in concentration is in relation to nitrogenous waste products, and as urea is the most abundant of these, we find not only a fall of urea in the urine, but a rise of it in the blood. There is a rise from the normal 20 to 40 mg. per cent. to 80, 100, or much more in severe cases. The cardio-vascular changes tend to be very marked.

3. *Mixed Types.*—As interstitial changes, which are chiefly associated with azotaemia, proceed more slowly than the parenchymatous, which are chiefly associated with hydraemia, the former gradually alter the picture. A chronic parenchymatous nephritic either dies of intercurrent infections or passes into the contracted stage with interstitial changes; the oedema subsides, the blood pressure goes up, and the heart hypertrophies. Both sodium chloride and urea are retained in the blood. If there is both nitrogenous retention and renal oedema the case must be a mixed one.

I shall next consider some clinical features and the treatment of three leading types of nephritis—the acute, the hydraemic, and the azotaemic.

Acute Nephritis.

It is important to treat the cause of acute nephritis as soon as possible. The principal causes are:

1. *Acute Specific Fevers, such as Scarlet Fever.*—Recent observations show the great value of the administration of alkalis *in scarlet fever as a prophylactic measure against the complication* of acute nephritis.

2. *Diseases of the Respiratory Tract.*—This applies particularly to the upper respiratory tract, especially the tonsils. I recently had a case of acute haemorrhagic *nephritis associated with an infected antrum, drainage* of which was followed by rapid improvement. But Sir Thomas Horder has also called *attention to the importance of extended sepsis as well as of focal sepsis.* Thus a widespread infection of the *bronchial tubes can lead to troubles similar to those due to a small collection of pent-up pus.* This is particularly well seen *in* hyperpiesis and nephritis.

3. *Diseases of the Skin.*—Since the skin is a part of the excretory apparatus the association between diseases of the skin and of the kidney is not surprising. Extensive burns are well known to cause acute nephritis, *though here extended sepsis* is probably the chief factor. I have recently had two cases of scabies causing a staphylococcal *infection of the skin, which* were followed by acute nephritis. Here ultra-violet rays helped to clear up the skin very quickly, and the *nephritis* rapidly improved when this was achieved.

4. *Purpura.*—Here presumably the purpura and the *acute nephritis are both consequences of a common cause, but it is* not infrequent for the nephritis to occur later than the purpura.

5. *Epidemic Type.*—This is the type encountered during the war, of which I have written elsewhere. It is sufficient here to point out that dyspnoea was an early symptom, and that Shaw Dunn found multiple thromboses in the lungs. So perhaps this is really a special instance of (2), though presumably due to some unknown specific infection. According to Aschoff the renal lesion is a pure glomerulitis.

In the treatment of acute nephritis I am strongly of opinion that the conventional milk diet is a mistake in the earliest stages. Far better results accrue from von Noorden's plan of giving nothing but fruit, fruit juice, sugar, and water. If there is much hunger I generally allow toffee as well. The question of diuretics will be dealt with under hydraemic nephritis. Later on, milk can be given and the conventional treatment followed. Sufficient alkalis to render the urine alkaline seems a wise measure, and it is well to keep the patient in bed until the centrifugalized urine shows *no* red blood corpuscles *on microscopic* examination.

Hydraemic Nephritis.

There has been much controversy as to the cause of the dropsy which is the outstanding feature of this type. Widal attributed it to the retention of sodium chloride, but the results of a salt-free diet have been disappointing. Moreover, as Izod Bennett *points* out, "the same kidneys which at first secreted a urine poor in chlorides will, a week later, when oedema is subsiding, secrete a urine containing abundant chlorides." In other words, if water is retained, salt must also be retained. But I do not agree with Bennett when he says that an increase in the blood chlorides has never been demonstrated in this condition. Thus, in a recent case of mine, the blood chlorides were 580 mg. per cent., as against the normal 360 *mg., and the* urinary chlorides 150 mg. per cent., instead of 500 *mg.* I think that while retention of chlorides has been overstressed in the past it may be a factor in renal oedema.

Epstein's explanation of renal oedema involves two main factors: (*a*) there is a serious drainage of blood proteins into the urine, which may mean that as *much as 10* per cent. of these proteins are lost daily. In this way there is a fall in the osmotic pressure of *the blood, with consequent* retention of water in the tissues. *Subsequent* investigations on the osmotic pressure of proteins have supported this conclusion. (*b*) *In hydraemic nephritis* the lipoids, especially cholesterol, accumulate in the blood and tissue fluids, which he believes increases the tendency to oedema.

A recent case of *mine* showed a cholesterol content of 390 mg., falling to 250 mg. as the oedema subsided, whereas the normal lies between 100 and 190 mg. *Bright himself called attention* to the milkiness of the plasma and body fluids in nephritis with dropsy, and J. Maxwell has recently devoted attention to the subject. He showed that the cholesterol of the *plasma* is almost invariably increased in every type of renal oedema, and though not necessarily proportional to the amount of oedema *its* presence in increased *amounts is prognostic* of a chronic course. He did not think, however, that the cholesterolaemia and the oedema were related as cause and effect, but rather that both are the results of some toxic action on the tissues.

Epstein advised a high protein diet and very little fat *in such cases. It is true* that a high protein diet may sometimes greatly reduce oedema in hydraemic nephritis, but in part this is due to urea, the natural diuretic, which must be formed in large amounts from the amino-acids into which that protein excess disintegrates during digestion and before it is absorbed.

In passing, *why forbid* eggs in albuminuria, as is so often done? Now that we know how completely protein is disintegrated before it is absorbed, how can it "run through" from the bowel to the kidney? D'Arcy Power's experiments on himself are often quoted apart from the context in justification of this restriction. It is true that *he observed* albuminuria in himself on *three* occasions after he had taken a large number of eggs, but it is also true that each of these occasions was after rowing a course. Now Collier found albuminuria in each *member* of the Oxford crew of 1906 after rowing a course, and strenuous exertion is now well known to produce a temporary *albuminuria.* But it was not known to do so at the time of those experiments. Again, raw eggs may cause a slight toxic albuminuria in those sensitive to them, but this does not occur after cooked eggs. I have deliberately added *eggs to the diet of patients* with hydraemic nephritis, and have found no increase in the albuminuria produced thereby.

It naturally follows that the high protein diet is only applicable when it is certain that there is no urea retention. Mere estimation of the percentage of urea in the urine seems to me to be of little value, since so much of the urea is exogenous, coming directly from the disintegration of food proteins. Many patients with nephritis are already on a low nitrogenous diet, which will necessarily lower the percentage of urea in the urine. MacLean's urea concentration test is, however, of considerable value, since it shows whether, given a definite amount of urea to deal with, the kidney is capable of doing adequate work. I have often found that though the blood urea is normal, the urea concentration test gives too low a figure. This presumably means that the kidney can only just get along on its low protein diet, and that urea retention is just beginning. Such cases are not suitable for Epstein's [illegible]. There seems little justification for his embargo on fats, since it is only cholesterol that is concerned, and that probably not in causal relationship. Moreover, Epstein is not consistent in this, since he allows eggs, which contain cholesterol in fair amount.

It would appear, then, that Epstein's method is only of limited application to cases of hydraemic nephritis

proved to be free from nitrogen retention. Then a high protein diet may help to make good the excessive protein loss, while diuresis may be assisted by giving urea as such in doses of 40 to 60 grains three times a day. It is entirely non-toxic. Some thirty years ago it was given in large doses in tuberculosis. I doubt if it ever did any good for that disease, but it certainly did no harm, so that one need feel no scruples about using it in the type of case here described.

This brings me to the subject of diuretics in nephritis. They may act—

1. *By producing vaso-dilatation in the kidney.* The caffeine group act in this way. They probably act as direct stimulants to the renal epithelium, the vascular change being secondary.

2. *By increasing the cardiac efficiency.* The digitalis group apparently act as diuretics in this way.

3. *By increasing the quantity of circulating fluid:* (*a*) by absorption of water from the intestines, as by giving the patient large quantities of water to drink; (*b*) by increasing the osmotic pressure of the blood. The saline diuretics and urea itself act in this way attracting water from the tissues into the blood stream.

How far are these methods applicable to hydraemic nephritis? The first breaks the physiological law of resting damaged structures; I believe all the stimulating diuretics are capable of doing harm in this disease. The second is presumably only helpful when there is cardiac insufficiency as well. The third can do no harm, and may do good.

A study of the etiology of renal oedema leaves us with the impression that it is "at once suggestive of pathological changes in tissues other than the kidney" (Bennett). This is the idea underlying the use of novasurol and euphyllin as diuretics in nephritis, since they are believed to act on the tissues, enabling them to give up the water they are retaining. It is necessary to raise the hydrogen-ion concentration of the blood first by giving 1 to 2 drachms of ammonium chloride on each of two days, and then on the third day injecting 1/2 to 1 c.cm. of novasurol intramuscularly. Both parts of this treatment are usually repeated after a few days' interval. Some give larger doses of ammonium chloride and over a longer period. This plan may be adopted in obstinate cases, but it often fails. In acute nephritis I believe that 3 (*b*) is the only method that should be tried unless there is cardiac insufficiency as well, in which case digitalis may also be given.

Elimination by the skin as an alternative route of excretion has long been a common practice in nephritis. It is open to the following objections.

(*a*) Only 5 grams of nitrogen can be got rid of through the skin in the day, compared with 8 grams which can be more easily eliminated by the bowel.

(*b*) Physiological rest for the kidney is not secured by giving it a highly concentrated urine to deal with.

(*c*) Diaphoresis is an exhausting process, and may depress the heart.

(*d*) The withdrawal of so much fluid without a corresponding removal of organic solids must increase the concentration of the toxins in the circulation.

It has been argued in support of this method of treatment that after a hot-air bath the patient may be actually covered with small crystals. These are, however, chiefly crystals of sodium chloride, though there may be some urea as well. Herein we have a clue to the type of case in which diaphoresis will be of service—namely, the one when there is salt retention as a factor in the oedema, as explained above. The elimination of salt may then be of indirect service by breaking a vicious circle. In cases of this sort I have actually seen diaphoresis followed by diuresis, which can only be explained in this way. I conclude that the hot-air bath is only suitable when dropsy is actually present. Another indication that the treatment is having a good effect is the occurrence of sweating at a lower temperature than the one originally required to evoke it.

Decapsulation was revived a few years ago as a method of treatment in chronic parenchymatous nephritis by Sir Thomas Horder. It had previously been advocated chiefly for chronic interstitial nephritis, and finally abandoned for this condition. In cases of parenchymatous nephritis the following have been considered to be indications for this procedure.

(1) Persistence of the oedema for three months in spite of careful medical treatment.
(2) Absence of urea retention.
(3) Absence of cardio-vascular changes.

But even when all these indications are fulfilled the results are often unsatisfactory, and I cannot recommend this operation.

AZOTAEMIC NEPHRITIS.

When there is reason to believe that nitrogen retention is occurring the interpolation of two days of von Noorden's fruit juice and sugar diet, as mentioned under acute nephritis, may be of great benefit. I look upon this plan as comparable in value with the vegetable and egg diet in the treatment of diabetes in the pre-insulin days. After this a diet containing a restricted amount of protein should be given, and one which contains as little extractives as possible, since these give work to the kidney without providing a corresponding amount of nourishment. It is possible for an adult to maintain nitrogenous equilibrium on 1 gram per kilogram of body weight, and for a time less than this will suffice if there is nitrogen retention. This means that a man of 10 st. requires 66 grams of protein. During the epidemic of war nephritis I drew up the following two diets, the low nitrogen diet being given for the first week and the moderate nitrogen diet for the second and subsequent weeks as required. I am indebted to Miss Abrahams, dietitian to St. Bartholomew's Hospital, for recalculating these diets for me.

1. *Low Nitrogen Diet.*

Breakfast.—Milk 4 oz., porridge 8 oz., bread 2 oz., butter 1/4 oz. Fluids: Coffee 10 oz., milk 2½ oz.

Lunch.—Bread 3 oz., butter 1/2 oz., lettuce or tomato 1½ oz. Fluids: Milk 5 oz., barley water 10 oz.

Dinner.—Potato 4 oz., greens 5 oz., butter 1/4 oz., stewed fruit 4 oz., boiled rice 4 oz. Fluids: Lemonade, imperial drink, or barley water 12 oz.

Tea.—Bread 3 oz., butter 1/2 oz., lettuce or tomato 1½ oz. Fluids: Weak tea 10 oz., milk 2½ oz.

Supper.—Potato 4 oz., butter 1/4 oz., greens 5 oz., stewed fruit 4 oz. Fluids, Lemonade or barley water 12 oz.

This diet contains Protein 49 grams; carbohydrate 358 grams; fat 35 grams. Calorie value, 1,992.

2. *Moderate Nitrogen Diet.*

Breakfast.—Egg 1 oz., bread 2 oz., butter 1/4 oz. Fluids as in No. 1 diet.

Lunch.—Bread 4 oz., butter 1/2 oz., tomato or lettuce 1 oz. Fluids as in No. 1 diet.

Dinner.—Mutton or fish 3 oz., bread (alternate days) 2 oz., butter 1/4 oz., stewed fruit 4 oz. Fluids as in No. 1 diet.

Tea.—Bread 4 oz., butter 1/2 oz., tomato or lettuce 1 oz. Fluids as in No. 1 diet.

Supper.—Greens 2 oz., potato 3 oz., bread 4 oz., butter 1/2 oz., stewed fruit 4 oz. Fluid: Milk 5 oz.

This diet contains (on average): Protein 63 grams; carbohydrate 407 grams; fat 91 grams. Calorie value 2,772.

These diets have proved suitable in the experience of other observers also. Alcohol is certainly undesirable in azotaemic nephritis.

It is generally recognized now that there are decided dangers in lowering the raised blood pressure in azotaemic nephritis by means of vaso-dilators. The rise of blood pressure is compensatory and should only be treated by such methods as help in eliminating the toxins whose action is forcing the pressure up. For this purpose I find the internal administration of tincture of iodine as useful as anything. Sometimes a small dose, say 1/2 grain, of thyroid extract twice a day will help this. Gentle exercise in the open air will also assist in the physiological lowering of blood pressure.

The necessity for a raised blood pressure in this type is illustrated by the case of a man admitted under my care with chronic interstitial nephritis and much dyspnoea. His blood pressure was 160 mm. systolic and 100 diastolic. On 15 minims of tincture of digitalis three times a day his blood pressure rose to 200 mm. systolic and 125 mm. diastolic, while his blood urea fell from 100 to 40 mg., and his general condition greatly improved. Evidently his blood pressure on admission was too low for due elimination of nitrogen by his defective kidney, and it had fallen

through cardiac insufficiency. When the condition of the heart was improved by digitalis it was able to cope more successfully with the necessities of the situation. In such a case to lower blood pressure is to court disaster.

A case of azotaemic nephritis may terminate through failure of the pump, the tubing, or the filter; in other words, through heart failure, rupture of a vessel as in cerebral haemorrhage, or uraemia.

Uraemia.

What signs and symptoms can rightfully be included under this heading? Personally, I should exclude the diarrhoea and vomiting, which may be regarded as alternative methods of excretion. I have already pointed out that 8 grams of nitrogen can be eliminated by the bowel in this way; and Graham has shown that considerable quantities of ammonium salts are present in the vomit of a uraemic patient. The skin rashes I should also look upon as an attempt to excrete toxins. This leaves us with three groups of symptoms which can be fairly classed as uraemic, but I would urge that these groups are due to different toxic substances and are of different significance.

1. *Convulsions and Amaurosis.*—Though very dramatic symptoms, these are really of less serious significance than the others. Patients may recover not only from the attack, but actually from the nephritis. They may occur also in eclampsia and toxaemic kidney, both conditions from which recovery may be complete. In my series of 160 cases of war nephritis convulsions occurred in 8. They all recovered and escaped without permanent damage to the kidney. It has been suggested that these symptoms are due to some toxin acting on the liver rather than to the kidney lesion. On this view I am in favour of treating such patients with insulin and dextrose, since a hepatic toxaemia is best helped by providing an ample store of glycogen in the liver. But there is no doubt that the best and most rapid relief can be given by prompt venesection. Bennett ingeniously compares the convulsions to tetany, pointing out that there is a reduction of blood calcium in both conditions.

2. *Uraemic Asthma.*—The sufferer from this has been graphically described by Rose Bradford as "a drowsy patient, with hissing respirations and bleeding gums." I believe that the cause of this distressing syndrome is acidaemia from failure of the kidney to excrete acid sodium phosphate. The hydrogen-ion concentration of the blood is consequently raised and the dyspnoea is an attempt at compensation for this by washing out carbon dioxide from the lungs. A compensated alkaline defect may exist without dyspnoea, but an uncompensated alkaline defect will cause dyspnoea and calls for free administration of alkalis. De Wesselow finds that a rise of blood phosphates and a fall in calcium content go together.

3. *Headaches; drowsiness; twitchings; hemiplegia; monoplegia; neuralgias; formication; pruritus.*—All this group of symptoms appear to be associated with nitrogen retention. The actual cause of the symptoms seems to be exudate of lymph and even of actual blood through the capillary wall, especially into the cerebral and the subcutaneous tissues. Small punctiform haemorrhages are commonly seen in necropsies on uraemic patients, and large or small purpuric areas in the skin are not infrequent. Canti considers that a blood urea of 300 mg. is a sure portent of a fatal issue; and I should agree, though I have had one case with a blood urea of 500 mg. reduced to 70 mg. under treatment, and sufficient clinical improvement for the patient to leave hospital. He died, however, about six weeks later. In this case, as there was no dyspnoea, the plan of giving hydrochloric acid was adopted, and the improvement certainly appeared to follow this. It has been suggested that in this way toxic amino-acids are converted into ammonium chloride, but I am not convinced that this is chemically sound. But, as already pointed out, dyspnoea implies an acidaemia calling for free administration of alkalis, under which I have also seen some slight fall in blood urea.

In connexion with nitrogen retention I should like to call attention to the different results given by the hypobromite and urease tests for non-protein nitrogen in the blood. The former method gives the amino-acids as well as the urea, the latter the urea only. Now in health 92 per cent. of the nitrogen given by the hypobromite test comes from the urea, but it must not be assumed that a similar proportion exists in disease. I have, indeed, found the hypobromite test yield twice as much nitrogen as the urease test in uraemia. In other words, in uraemia there is a large increase in the relative and absolute amount of non-protein nitrogen other than urea, and it is presumably this "unknown" amino-acid fraction which is toxic, since urea is a harmless substance. If only one method is going to be used it is better to employ the hypobromite test. But using both gives most useful information as to the amount of toxic material.

This is well illustrated by the great rise of blood urea, sometimes accompanied by tetany, in cases of pyloric obstruction and in toxic conditions severe enough to produce anuria; here the hypobromite and urease methods may give identical figures showing that the rise of blood urea is merely secondary to failure of excretion; there is not, at any rate at first, any excess of amino-acids produced by altered metabolism. Pyloric obstruction presumably acts by preventing ingestion of fluids into the blood stream, so that there is not sufficient for the kidney to function properly. The combined use of the hypobromite and urease methods is a useful way of recognizing such conditions and of proving that they are not primarily renal in origin.

It will be seen that I do not subscribe to the doctrine sometimes advanced that the symptoms of uraemia are due to one specific toxin, albeit of unknown nature. On the contrary, it seems to me that the three different groups of symptoms above detailed are much more likely to be due to different chemical poisons.

Conclusion.

In conclusion, I am conscious that these more recent investigations appear to have had a destructive rather than a constructive effect on treatment. This must be admitted, but new aids to treatment will surely spring from a sounder pathology. In the meantime, our patients will do all the better and be more comfortable if we realize that many of the methods formerly recommended in the treatment of these diseases are impotent where not actually harmful.

FURTHER OBSERVATIONS ON THE MACROPOLYCYTE.

BY

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THE statement that megakaryocytes are not infrequently found in the peripheral blood continues to be repeated in papers and in textbooks, but while not denying that the megakaryocyte may be found in the blood stream, its presence must be extremely rare. I have never seen, in blood films, a cell which faithfully resembled the multinucleated giant cell of the marrow; nor have I seen photomicrographs or drawings of the cells so described that are at all convincing. There is every probability that the vast majority of the so-called megakaryocytes found in blood films belong to one or other class of macropolycyte.

Definition.

The term "macropolycyte" (1927) is applied as a descriptive title to the large or giant polymorphs found in certain conditions. The normal neutrophil polymorphonuclear leucocyte, for brevity called the polymorph, measures 10 to 12 microns in diameter in fixed and stained films. (Plate I and Plate II, Fig. 1.) The title "macropolycyte" is given to the large cells of the polymorph type having a diameter of more than 14 microns. It is of this cell which this paper treats, but for its better appreciation a few details concerning the polymorph may be recounted.

The Polymorph in Health and in Infections.

The polymorph enters the blood stream from the marrow with a single-lobed nucleus, and as its life in the circulation continues, the nucleus becomes more lobulated until

towards the end of its existence it has four or five segments united by fine strands of chromatin. (Plate I.) In the blood stream, therefore, there are normally cells representing the various periods from youth to senility, and it was found by Arneth (1904) that the numbers of polymorphs with one, two, three, four, or five nuclear segments were remarkably constant in health and could be classified on these lines. My own average *normal count*—that is, the percentage of cells in the various classes corresponding to nuclear segments—is:

Class I	II.	III.	IV.	V.
10	25	47	16	2

This was the average of the counts of 90 normal persons of both sexes between the ages of *12 and 55 years*. The greatest possible care was taken to exclude infection at the time the blood was taken, and for two months previously. The teeth, throat, nose, ears, chest, abdomen, and urine were examined, and in many cases radiograms were taken of the chest and teeth.

The length of life of the polymorph *in the blood stream* has been estimated on experimental and clinical grounds (Ponder, 1926; Cooke and Ponder, 1927) to be approximately three weeks. The figures given above represent a polymorph population comparable to infants, children, men, old men, and senile men, in which the deaths in the older groups are exactly compensated for by the births from the marrow. The figures of the polynuclear count tell us whenever this normal state becomes altered, whether by the addition of an unusually large number of young cells, by the removal of an unusually large number of old cells, by both these conditions combined, or by some interference with the normal development.

It will be noted that no class is provided for cells with more than five nuclear segments. Such polymorphs are so rare in normal blood that when they do occur they are placed in Class V.

*In infective conditions the per*centage of cells of Classes I and II is increased, and the older cells of Classes IV and V rapidly disappear from the circulation. The count has, therefore, a left-handed drift, as in the following example.

	I	II	III.	IV.	V.
Normal	10	25	47	16	2
Typhoid fever	54	31	15	—	—
Scarlet fever	44	43	13	—	—
Measles	45	39	16	—	—
Erysipelas	45	40	14	1	—
Diphtheria	41	39	17	3	—
Rubella	30	35	32	3	—
Varicella	33	35	28	4	—
Pertussis	34	39	27	—	—
Puerperal sepsis	43	37	21	—	—
Cerebro-spinal fever	40	45	14	1	—
Lobar pneumonia	57	26	15	2	—

These facts make the appearance of the macropolycyte the more remarkable, because, although a fairly rare cell, it is found in infections associated with a polymorphic leucocytosis and a left-handed polynuclear count.

THE MACROPOLYCYTE.

On morphological grounds macropolycytes may be divided into two classes. The first, or Type I, macropolycyte resembles the other polymorphs of the blood film in that its nuclear structure and fine oxyphil granules are indistinguishable from those in the polymorph, but differs from that cell by reason of its large size and by the hypersegmentation of its nucleus.

The second, or Type II, macropolycyte may be styled "the megakaryocyte type," because its gnarled nucleus and coarse granules, some of which are azurophil in staining reaction, resemble to some extent those of the bone marrow giant cell. The conditions in which these giant polymorphs are found are:

I. *The Type I Macropolycyte.*—(1) In health. (2) In infections and in other states in which there is bone marrow reaction—for example, the acute pyogenic infections, acute tuberculosis, certain cases of carcinoma, the exanthemata, myeloid leukaemia, malaria,* and in rabbits with experimental anaemias due to ricin and repeated haemorrhages. (3) In Addison's anaemia.

II. The *Type II macropolycyte*, or the megakaryocyte type, is, so far as my own experience extends, found only in cases of Addison's anaemia in grave relapses.

Before proceeding to further discussion of the two types, the moment is opportune to suggest that, although the Type I macropolycyte found in Addison's anaemia may be morphologically identical with its prototype found in health and in intoxications, the cause of its appearance is probably very different. For this reason the Type I macropolycyte

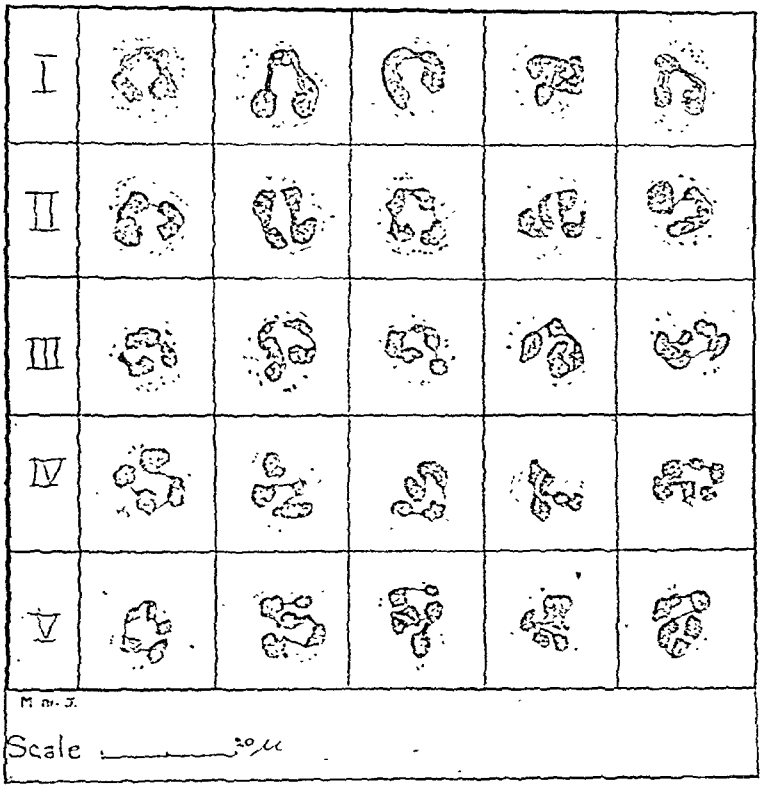

PLATE I.

The five classes of the Arneth or polynuclear count. *If there is any band of nuclear tissue, except a chromatin filament, uniting the nuclear masses, those parts must not be considered as separate segments. Class I, No. 2, Class II, Nos. 3 and 4, Class III, No. 4, and Class IV, No. 5, illustrate this point. In Class V, No. 4, the upper segment of the nucleus overlies the segment below it, but the thin chromatin filament uniting them can be seen on the left.*

* The fact that macropolycytes occurred not infrequently in malaria was pointed out to me by Dr. D. U. Owen, clinical pathologist, Liverpool School of Tropical Medicine.

of health and of intoxications would be better considered together, and both the types found in Addison's anaemia classed under the heading "the macropolycytes of Addison's anaemia."

The Type I Macropolycyte in Health and in Conditions of Abnormal Marrow Activity.

1. *In Health.*—Macropolycytes are extremely rare in health, no example being seen in the blood films of the 90 investigated normal persons that formed the basis of our average normal count. Recently, however, I observed a macropolycyte in a man, aged 34 years, whose polynuclear

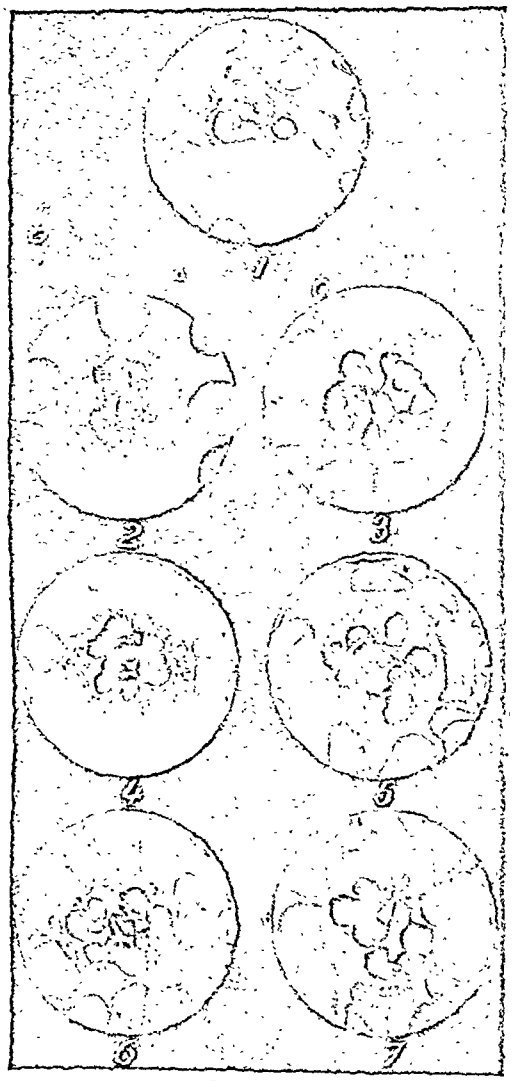

PLATE II.

FIG. 1.—A normal polymorph. (× 1,000 diameters.)

FIG. 2.—Macropolycyte, Type I, from a case of staphylococcal osteomyelitis. (× 1,000 diameters.)

FIG. 3.—Macropolycyte, Type I, from a case of streptococcal septicaemia. (× 1,000 diameters.)

FIGS. 4 AND 5.—Macropolycytes, Type I, from a case of mixed infection by *Staphylococcus aureus* and *Bacillus coli*. (× 1,000 diameters.)

FIG. 6.—Macropolycyte, Type I, from a case of streptococcal endocarditis. (× 1,000 diameters.)

FIG. 7.—Macropolycyte, Type I, from a case of carcinoma of the breast. (× 1,000 diameters.)

count had previously been included in the original 90. He was reinvestigated, but no focus of infection could be found. The counts of the two occasions were almost identical:

I.	II.	III.	IV.	V.
11	31	42	14	2

The count has a weighted mean of 2.65, which falls close to the average normal mean of 2.74, and within the limits of normality. I think we must accept the fact that macropolycytes do very occasionally appear in normal blood films.

2. *In Conditions of Abnormal Marrow Activity.* This type is illustrated by the Figs. 2 to 7 in Plate II.

Plate II, Fig. 2 is a macropolycyte found in a case of staphylococcal osteomyelitis, which had the following blood count:

Total leucocytes	18,000 per c.mm.
Polymorphs	87 per cent.
Polynuclear count	41; 43; 15; 1; 0.

Plate II, Fig. 3 is a macropolycyte from a case of streptococcal septicaemia.

Total leucocytes	26,000 per c.mm.
Polymorphs	79 per cent.
Polynuclear count	34; 43; 21; 2; 0.

Plate II, Figs. 4 and 5 are macropolycytes from a case of a mixed infection by *Staphylococcus aureus* and *Bacillus coli*.

Total leucocytes	23,700 per c.mm.
Polymorphs	88 per cent.
Polynuclear count	45; 39; 15; 1; 0.

Plate II, Fig. 6 shows a macropolycyte from a case of streptococcal endocarditis.

Total leucocytes	16,000 per c.mm.
Polymorphs	76 per cent.
Polynuclear count	33; 34; 27; 0; 0.

Plate II, Fig. 7 is a macropolycyte from a case of carcinoma of the breast.

Total leucocytes	14,500 per c.mm.
Polymorphs	76 per cent.
Polynuclear count	35; 37; 26; 2; 0.

It will be seen that the macropolycytes have hypersegmented nuclei, although polymorphs with single and bilobed nuclei predominate in the blood films. What is the explanation of their presence? It is not easy nor particularly important to determine why macropolycytes appear in health and in infections, because they are rare and do not seem to have any prognostic or diagnostic significance. There are two possible explanations of their presence. The first, that they may represent an occasional polymorph that has escaped the physiological mechanism whose function is the destruction of aged leucocytes and their removal from the blood stream. A polymorph has been imprisoned in some tissue space, exceeded its allotted span of life, and continued to develop beyond the normal limits. The result is that it has become a giant. The second explanation is that they are cells whose development has been altered by an abnormal medium to which they have been exposed in the marrow during the first period of their development.

The Macropolycytes of Addison's Anaemia.

1. The Type I macropolycyte is frequently found in Addison's anaemia, and here again it is necessary to consider the general behaviour of the polymorph in this disease. As we have seen above, in the infective state the polynuclear count is left-handed. Many uncomplicated cases of Addison's anaemia, however, show the remarkable state of having an increase in the cells of Classes IV and V, and the count appears to be actually right-handed, as the following figures show:

	I.	II.	III.	IV.	V.
Normal ...	10	25	47	16	2
Case 1 ...	8	20	39	22	11
Case 2 ...	6	27	40	22	5
Case 3 ...	7	20	44	24	5
Case 4 ...	7	16	29	39	9
Case 5 ...	20	31	17	16	16
Case 6 ...	16	22	32	16	14
Case 7 ...	10	15	38	24	13
Case 8 ...	12	34	26	20	8
Case 9 ...	6	20	42	20	12
Case 10 ...	8	24	30	26	12
Case 11 ...	6	18	36	24	16
Case 12 ...	6	20	40	26	8
Case 13 ...	14	28	23	20	15
Case 14 ...	12	28	36	18	6

This condition is not seen in any microbic disease, and is very strong evidence against Addison's anaemia being due to an infection.

It has been pointed out above that no class is made in the polynuclear count for cells with more than five lobes in their nuclei, because cells with more than five lobes are rare in normal blood, and if any are found they are placed in Class V. In Addison's anaemia, on the contrary, hypersegmentation of the nucleus in cells of normal size is frequent. The nucleus may have six, seven, eight, or even ten or more divisions. Plate III, Figs. 1 to 11 are examples of this nuclear hypersegmentation in cells of approximately normal diameter. All gradations in size are seen until the macropolycyte is reached. Plate III,

PLATE III.

FIGS. 1 TO 11.—Polymorphs showing hypersegmentation of the nucleus from cases of Addison's anæmia. (× 1,000 diameters.)

FIGS. 12 TO 16.—Macropolycytes of Type I found in Addison's anæmia. (× 1,000 diameters.)

The photomicrographs illustrating this article are by C. F. Hill and W. E. Cooke. Plate I is reproduced from *Blutuntersuchung Haematologie* by kind permission of Messrs. Charles Griffin and Co. Plates II, III, and IV are reproduced by kind permission of Dr. Paul Chevallier, editor of *Le Sang*.

PLATE IV

Macropolycytes of the megakaryocyte type (Type II) found in cases of Addison's anæmia. (× 1,000 diameters.)

Figs. 12 to 16 are examples of the Type I macropolycyte. Its frequency in Addison's anaemia contrasts very sharply with the rarity in health and in infective conditions, and the cause of its appearance is not the same.

There are several possible causative factors. Polymorphs of normal size with hypersegmented nuclei accompany the Type I macropolycyte in this disease, and the first thoughts are that there is some biochemical change in the plasma that prematurely ages the polymorph and alters its life-history; the second, that the mechanism for the elimination of old polymorphs is in abeyance. The third reasonable thesis may be advanced that the polymorph is inherently abnormal owing to a defect in its parent, the haemocytoblast, or in its environment. Possibly, too, there is a single biochemical defect that is responsible for all three conditions. The liver diet alters the polymorph picture in a few days. Macropolycytes and polymorphs with hypersegmented nuclei disappear, and at the same time the morphologically and probably also chemically abnormal cells of the haemoglobiniferous series are replaced by cells of normal appearance.

2. The Type II or megakaryocyte type of macropolycyte *is found only in Addison's anaemia,* and appears in blood films during serious relapses. Almost all the cases in which it has been found have had erythrocyte counts of less than 1,000,000 per c.mm., and before the era of liver treatment all died within a short time of its appearance. After death these large cells are found, as Gulland and Goodall (1925) pointed out, in the liver in association with islets of megaloblasts and in the pre-aortic lymph glands. Plate IV illustrates the variations in this type of cell. The cells are large, measuring up to 24 or more microns in diameter, and resemble the megakaryocyte of the marrow. The nucleus is gnarled and may be of the simple horseshoe type, or may have fourteen or more segments. The coarse cytoplasmic granules are not all oxyphil, but mixed with varying numbers of azurophil granules.

The cell does not resemble any embryonic or post-natal blood stream cell, nor is it an accurate replica of the megakaryocyte of the marrow. The life-history would appear similar to that of the polymorph in that it commences its circulatory existence with a single-lobed nucleus, which later becomes segmented. Its length of life we do not know, nor have we any means of calculating it. There is considerable doubt about its origin. It may be an expression of the abnormal reversion to embryonic type of the marrow haemocytoblast as are the haemoglobiniferous cells in Addison's anaemia. On the other hand, *the cell may not arise in the marrow but originate* in the mesenchyme descendants in the liver and haemolymph glands that have undergone abnormal myeloid metaplasia.

Conclusions.

1. The macropolycyte found in health and in infections has no diagnostic nor prognostic significance, and is due to the accidental prolongation of the lifetime of a neutrophil polymorphonuclear leucocyte.

2. The causation of the appearance of the Type I macropolycyte in Addison's anaemia is closely related with the factors responsible for the production of hypersegmentation in the nuclei of the polymorph. Whether the factor *is a biochemical change in the environment or an inherent* defect in its parent cell is not known.

3. The Type II or megakaryocyte type of macropolycyte may have its origin in the marrow, or arise from the endothelium of the liver and haemolymph glands. In the first case it is the product of abnormal reversion of the haemopoietic tissue, and in the second of abnormal myeloid metaplasia.

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CANCER AND THE GENERAL PRACTITIONER.*

BY

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MANY of the papers on the subject of cancer might lead the casual reader to imagine that early diagnosis of this condition is never effected except by the writers of the papers in question, and that practitioners as a body fail *signally in their duty to the community. It is often for*gotten that the early diagnosis of a case of cancer demands the co-operation of an intelligent and alert patient, ready to seek immediate advice, with a doctor competent to appreciate minor departures from the normal and ready to give immediate advice. The patient, however, may be unobservant; or he may not bother, until it is far too late, about a condition which seems to him—usually because it is not painful—of little or no importance. Conversely, the doctor sometimes lets the patient down by making avoidable mistakes.

Generally, I think, mistakes arise from one of two causes: The first is imperfect examination, which may be the fault of the patient or the doctor. The patient, for various reasons, may refuse to be thoroughly examined, or the doctor may continue to prescribe for his patient without attempting any real examination. He may, for instance, give treatment for "piles" without examining the rectum, or give medicine for abdominal pain without inspecting the abdomen. The other fruitful source of error is want of thought—failure to attain, by a careful summing-up of symptoms, the clear perspective which would lead to an immediate diagnosis.

Unfortunately there is no royal road to a diagnosis of cancer—no short cut, as there is in the case of syphilis. But we have many valuable aids to diagnosis, both bedside and laboratory. In the former category are such instruments as the proctoscope, the sigmoidoscope, and the cystoscope, which are used far too rarely by practitioners, though in many cases they are easy to use, easy to maintain, and most invaluable in the information they give.

In the latter category are tests for occult blood in the stools, or for free acid in the stomach. But it is most important to remember that these are only aids; they must never be considered apart from their context—the patient. We must guard ourselves against the danger of getting lost in a laboratory maze; above all, we must not attach undue importance to negative findings, especially to those of the x-ray examination. One often finds that both patient and doctor are lulled into a feeling of security by a radiologist's report that there is nothing abnormal to be seen, which is wrongly taken to mean that nothing abnormal is present.

The subject of early diagnosis embraces a consideration of the preventive treatment of cancer by the early detection and prompt treatment of conditions that we know to be precancerous. I still often see patients with warts of the lip and tongue, papillomas of the bladder, small rodent ulcers of the face, or small tumours of the breast, who have been told that they need not bother about them unless they become troublesome. By the time such things become troublesome they are troublesome indeed.

Periodical Medical Examination.

I will refer briefly to the controversial topic of periodical medical examinations, although why it should be controversial I cannot imagine. We all go to the dentist at regular intervals; we are all examined for life insurance from time to time; some of us have our drains inspected periodically; others have their electric wiring tested. It does not seem to me unreasonable, therefore, to carry this established principle to its logical conclusion and to undergo periodical medical inspection. I should like also to see much more intelligent and sustained instruction of our youth in the elements of physiology, for there can be no question that a more perfect knowledge on the part of the public of normal physiology would result in a quicker appreciation of any departure from the normal standard, and greater readiness to seek advice. At present people know far more of the anatomy and physiology of

* Notes of a lecture given at Leeds under the auspices of the Yorkshire Council of the British Empire Campaign.

their cars than of their own bodies. They know whether or not the car is missing, or heating up, or knocking, and that such defects require immediate investigation and treatment; but to similar premonitory symptoms in their own bodies they attach no importance, and often fail to undergo an overhaul until complete breakdown has developed.

It is still believed by most surgeons that cancer is a strictly local disease in its early stages, and that if the growth can be completely removed or destroyed a good permanent result will be achieved. What are the local methods of treatment at our disposal? They are only two —operative removal and radium; and it is the anxious and by no means easy task of the practitioner to make or influence a final decision when the alternatives have been put before the patient.

RADIUM THERAPY.

The therapeutic action of radium and its mode of use depend upon the fact that it emits two kinds of rays which produce effects upon the cells and tissues of the body—*beta rays*, which are caustic and indiscriminate in their action equally affecting every kind of tissue, and *gamma rays* which are selective in their action, and affect cancer cells more easily than the normal tissues.

The caustic, indiscriminate, and, incidentally, the very superficial action of beta rays renders them unsuitable for therapeutic purposes; and as they are unable to pass through a thin sheet of platinum it is quite easy to cut them off entirely by enclosing the radium in a shell of platinum 0.5 mm. thick. The more powerful and selective gamma rays easily penetrate this amount of platinum, and as it is only these rays that we make use of, it is gamma-ray therapy that we really mean when we speak of radium therapy.

A fundamental feature of the gamma ray is its short radius of effective action; it is therefore necessary to place the radium in intimate contact with the part it is proposed to treat, and so has come about the use of the buried radium needle. Radium needles are hollow, provided with an eye, and vary in length and thickness according to the purpose for which they are to be used and the amount of radium it is proposed to put inside them. Suitably filled, they are threaded with silk or similar material, and embedded in and around the growth, which undergoes destruction, leaving the normal tissues unaffected. But this does not happen all at once, and we know now that there is an important time factor in radium treatment, the effects produced by a large quantity of radium acting for a short time being quite different from those produced by a relatively small quantity acting for a long time. The explanation would appear to be that in the main the gamma ray exercises its selective action upon cancer cells in the act of division. Not all the cells of a growth are undergoing this change at the same time; one cell may divide to-day and be destroyed in the process, while its next-door neighbour, which may not be due to divide for three or four days, will escape injury if the radium is not still in position. There has thus come about the gradual development of a technique involving the use of buried needles each containing no more than two or three milligrams of radium, but remaining in the tissues for a week or so at a time.

There is another important practical point in treatment that results from the selective action of radium upon the dividing—that is, the growing—cell. The main mass of a new growth is composed largely of adult cells which have lived their life, and will, in any event, ultimately die a more or less harmless death. It is at the growing edge of cancer that all the actively dividing cells are situated, and it is therefore the periphery, and not the centre, that matters. If we can control the periphery, the centre will often look after itself. Surround the growing edge with a barrage of radium needles and the whole growth melts away. There are, furthermore, wide variations in the reaction exhibited by different kinds of cancer, but we are beginning to recognize and understand them, and by examination of the tissue are able to form some sort of estimate as to its probable reaction to treatment.

Radium therapy has, however, very definite limitations, chiefly arising from the fact that the action of radium is strictly local. We are all sometimes pressed to give radium treatment in cases with metastases when we know full well that the course of the disease cannot be influenced in any degree whatever. It is our duty to do what we can for our patients, not only physically, but mentally; but we also owe a duty to our own reputation, to our profession, and to the development of radium therapy. It would be the greatest disaster to the cause of radium surgery if the results following upon its reckless and uninstructed use were allowed to obscure the good results obtained in properly selected cases.

Cancer of the Cervix.

Radium scored its first regular and consistent successes in the treatment of cancer of the uterine cervix. At the Cancer Hospital many patients who have come into hospital on an ambulance—weak, emaciated, septic, and bleeding—with a growth of the cervix long past the stage of operation, have been enabled, after treatment by radium alone, to walk home, well and strong. The results of irradiation in cancer of the cervix are, in my judgement, such that radium can now compete on equal terms with surgery in the treatment of early and operable cases of this disease, and I believe that it is perfectly fair and proper to offer patients the choice of operative or radium treatment. Operation, even in the ablest hands, carries a fair mortality, and always involves removal of the ovaries and most of the vagina, but gives a good prospect of permanent freedom. Radium treatment, on the other hand, carries practically no mortality, involves no injury to ovaries or vagina, and gives a prospect of permanent freedom not quite so good perhaps as operation, but at any rate so good that the actual figures over a five-year period afford material for legitimate controversy between the protagonists of the two methods.

Cancer of the Buccal Cavity.

About the next site I want to consider there is no controversy at all. It is the tongue, and buccal cavity generally, and here, with epithelium which closely resembles that of the cervix uteri, the results are similar. All surgeons will agree that operations for cancer of the tongue are about the most disappointing they are called upon to perform. It is true that we have all had occasional successes, but my own were so few and far between that I came to dread the admission of these cases to my wards. You will understand, therefore, with what interest we watched the work of Regaud in Paris and Evans and Cade in this country, and how gladly we relinquished operative surgery and whole-heartedly adopted the radium needle technique for the treatment of these depressing cases. We have a long way to go yet, and much to learn, particularly in dealing with the secondary glands, but we have certainly reached a point where it may be said that the treatment of choice for cancer of the tongue, floor of mouth, cheeks, pillars of fauces, tonsil, pharynx, and larynx is radium.

Cancer of the Breast.

The radium treatment of breast cancer is still in the experimental stage. The operative treatment of early cancer of the breast gives excellent results, for the mortality is negligible, the mutilation is not important, and the ultimate results are good. What can radium offer in similar cases? The immediate results in many cases are apparently as good as those obtained by surgery; the primary growth shrivels up, the glands disappear, and, of course, the breast is not sacrificed. But we do not know yet how long this will last; the systematic treatment of early breast cancer by radium has not been practised long enough to enable us to form a clear opinion as to whether the primary growth or glands return, or whether distant metastases are more or less likely than after surgical operation. My own practice, therefore, is to operate upon early and suitable cases, but to use radium when the patients are old and feeble, when there is any intercurrent disease, or when —owing to extensive glandular involvement—there appears to be no good prospect of obtaining permanent cure by operation.

Cancer of the Rectum.

I think the position with regard to the rectum is very similar to that of the breast. I have seen a few very good results from radium treatment—that is to say, destruction of the growth without the disadvantage of a permanent colostomy. But these cases are so few in number, and the results of surgery in early cases are so good, that I still think it our duty to recommend surgical removal in suitable early cases, reserving radium for the more advanced cases, for the old and feeble, and for the very young; for I know of no case of cancer of the rectum under 30 years of age where operation has had any permanent success.

These examples exhaust the common kinds of cancer in which radium has had a real test, but it has been tried, and is being tried, in many other situations. Cancer of the stomach, cancer of the colon, and cancer of the head of the pancreas are examples that suggest themselves as suitable, and I have embedded radium in all these situations. The numbers are too few, however, and the time too short, to form any definite conclusion about results.

THE RESPONSIBILITY OF THE SURGEON.

Cases of this latter class lead to a consideration of the question as to who is to decide when radium should be applied, and who is to apply it. There is no possible doubt as to the answer; it must be the surgeon; for who else is competent to perform an exploratory laparotomy, to diagnose the nature, and estimate the extent and connexions of the growth, and embed radium needles suitably and effectively in such a way that they will do their work and then permit of safe withdrawal? In the past in this country radium has been chiefly entrusted to the care of roentgenologists, who from the very nature of their training and daily avocation have few opportunities of acquiring extended clinical experience or of familiarizing themselves with surgical technique. But now that the position of radium has been established in surgery many hospital authorities have put their stock of radium in charge of the surgical departments.

In my view this is the right procedure, and surgeons who wish to keep in touch with modern developments must learn the principles and practice of radium therapy in exactly the same way as they would learn the use of a new instrument or any other new method of treatment of proved value. There is no need even to discuss the suggestion that a new class of specialist should be evolved – primarily a physicist—who must learn enough surgery to enable him to devise means of approach to growths in the less accessible situations. The "surgery of access" is everyday surgery, and the view that the use of radium should be confined to a special class is just as unreasonable as the suggestion that the use of potassium iodide should be confined to pharmacologists.

TREATMENT OF ADVANCED CASES.

In discussing the treatment of advanced cases of cancer – cases which, for various reasons, do not lend themselves to radical operation or to radium treatment—I would first refer to the role of palliative operations—operations, that is to say, which merely aim at increasing *comfort* and prolonging life. There is a whole range of such operations – gastrostomy, jejunostomy, colostomy, and cystostomy—all most valuable in their way, but all carrying grave drawbacks in their train, chief of which is the fact that they must be performed upon patients already doomed to die of their disease, and so have come to be associated in people's minds with a *hopeless* outlook. I find that this pessimism is not confined to the general public, but that practitioners as a whole share the common opinion, and, indeed, often add the weight of their influence in dissuading their patients from undergoing them.

I find it easy to understand this, for no one practitioner sees very many cases of the kind, and it is difficult enough for him to form a just estimate when he daily sees his case going steadily downhill. He is inclined to forget how much unhappier the patient would be without it, and how much, on the average, such an operation does towards prolonging life and increasing comfort. One only sees the value of these operations in perspective when they are done for non-malignant conditions. For example, a gastrostomy done for simple stricture of the oesophagus is fully compatible with an active busy life. Similarly, jejunostomy performed for the treatment of chronic simple ulcers of the stomach too extensive for removal is an operation which has given brilliant results—so good, in fact, that I have lately tried the experiment of treating the smaller ulcers of the stomach by jejunostomy in preference to partial gastrectomy. I invariably perform it in all cases of cancer of the stomach too advanced for excision or for gastro-enterostomy. Pain is at once relieved, vomiting ceases, and nutrition is easily maintained by four-hourly feeds through the jejunostomy tube.

What other means are at our disposal for helping the later stages of cancer, and delaying its almost inevitable termination? I am afraid we must reluctantly admit that there is nothing at present which is likely to prove a universal cancer cure. We are therefore reduced to treating symptoms, and I would like to refer to a few points which are brought home to us by our experience in the incurable wards of the Cancer Hospital.

Unquestionably our most important duty is to relieve pain, and to this end there is nothing that takes the place of morphine. Very large doses will often be necessary, but it is worth remembering that cocaine and hyoscine are useful variants in cases where morphine has distressing after-effects, or is ineffective. Many painful conditions are much relieved by exposure to *x* rays. There is no doubt a psychic element as well, but our patients at the Cancer Hospital certainly get great help and comfort from their periodical visits to the *x*-ray department.

Surgical opportunities of dealing with severe pain are few and far between, but when they come the results may be dramatic. For instance, the division of the lingual nerve in cancer of the tongue, or, better still, the destruction of the third division of the trigeminal nerve by alcohol injection, gives immediate relief. Bolder measures involving such major surgical procedures as the division of the posterior spinal roots, or even a portion of the cord itself, have a smaller application than might be expected owing to the poor general condition of the patient by the time that they are indicated. The aspiration of fluid from the pleura or the abdomen is an obvious method of giving help, but I am not sure that it is generally done soon enough or repeated often enough.

Attempts to control discharge from sloughing surfaces afford scope for ingenuity in the use of antiseptics, but the value of any antiseptic is greatly increased if it can be applied in the form of a power-driven spray. The mouth sprays used by dentists and operated by compressed air are most useful for this purpose and thoroughly cleanse every crack and crevice on a sloughing surface. I should like to see compressed air laid on at every bed in a cancer ward. If discharge is largely derived from excessive mucus secretion, the value of belladonna should be remembered. It gives special help in pharyngeal cases where the presence of much frothy mucus is such a troublesome feature.

The question of deodorants must also claim attention, for however careful we may be in maintaining adequate ventilation, something of the kind is often necessary. In my experience the most valuable has proved to be essential oil of peppermint, which should be sprinkled on the dressings or the blankets. It is true that it only hides one unpleasant smell by a more powerful one, but at least it is recognized and understood, whereas the undisguised smell of advanced uterine or rectal cancer, of which happily the patient is often quite unconscious, brings the greatest misery and suffering to the relatives and friends.

In thinking of symptoms and their relief we must not forget the patient. Sunshine, real or artificial, and fresh air, are of just as much importance in cancer as in other wasting diseases, and I look forward to the time when such hospitals as my own will have branches in the country where the incurable cases may spend their last remaining months of life on sunny balconies in the open air, rather than in the confined wards of a London hospital.

EXTRAUTERINE GESTATION AT TERM WITH HEALTHY BABY.

BY

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All cases of extrauterine gestation late in pregnancy are sufficiently rare and interesting to be worth recording in some detail, but the following case has several features that are probably unique.

E. M., a married woman, aged 25, first attended the ante-natal department of University College Hospital on July 3rd, 1923, being pregnant for the first time. Apart from scarlet fever and a vague history of "gastric trouble" she had always been very healthy. Her periods had been quite regular during her married life until February. On February 10th a period began which lasted four days, after which she saw nothing.

During the first three months of the pregnancy she suffered from morning sickness, and during the last few days of June she complained of attacks of colicky pain around the umbilicus, lasting for three or four minutes. Sometimes she vomited during these attacks and at other times not at all. There was no vaginal bleeding then or, indeed, at any time during her pregnancy.

She was examined for the first time on July 5th. Her general condition was good, and her heart and lungs normal. The height of the fundus was noted as twenty-six weeks, although she was only twenty weeks and five days pregnant according to her dates. The presenting part was above the brim, but the presentation could not be determined. The foetal heart sounds were not heard, although foetal movements had been noticed by the patient. The pelvic measurements were normal, and the urine contained no sugar or albumin.

She next attended on August 16th, when the presentation was found to be a right sacro-anterior. On October 11th she again complained of attacks of pain of one month's duration, which were becoming more frequent. There was no vomiting, but she was compelled to lie down during the attacks. She was unable to pass water during the attacks, and also complained of frequency and pain on micturition. On examination the height of the fundus corresponded to thirty-five weeks' pregnancy, the presentation was still a breech, her temperature 98.6° F., blood pressure 156/96 mm. of mercury, and urine quite normal. On this date the foetal heart sounds were heard for the first time at the fundus uteri. Nothing abnormal was noted on abdominal examination, and she was given a palliative for her symptoms.

On October 18th the presentation was transverse, and on the 27th she was admitted as an in-patient. On the 29th she was examined under anaesthesia. The foetal parts were not excessively easy to define even under the anaesthetic. The foetus lay in the left cephalic dorso-posterior position. After attempting external version the head lay above the pelvic brim slightly to the right, but could not be pushed down into the pelvic cavity although it did not appear to be unduly large. On internal examination no pelvic contraction could be discovered, the external os was closed, and the cervix not taken up. Two theories were invoked to explain the failure to complete the external version: (1) extension of the legs of the foetus; (2) a short umbilical cord caught round the neck or the body of the foetus. At the end of the manipulation the foetal head lay in the right iliac fossa, and the foetal heart rate had risen from 110 to 160 per minute.

On the next day the head again lay on the left side, and an *x*-ray examination was made. The film confirmed the presentation, and showed that the foetal legs were flexed and the bones normal in every way. The patient was discharged with instructions to come up immediately if labour began, and in any case to come into hospital two days before the expected date of delivery (November 17th). She was readmitted on November 15th with the foetus still lying transversely. Two lines of treatment were considered: (1) internal version during labour; (2) Caesarean section. The latter was finally decided on as the patient was anxious to have a living child, and the risk to herself was probably not greater than that of internal version and breech extraction. Her general condition was still that of a normal healthy pregnant woman.

On November 20th an operation was performed by Professor F. J. Browne, under general anaesthesia (chloroform followed by ether), administered by Dr. H. N. Webber. A right lower para-median incision 8 in. long was made, and the abdomen opened. At once several abnormalities were noted. In the first place, the left round ligament lay almost in the mid-line at the pelvic brim (suggesting torsion of the uterus); secondly, the "uterus," which was pale yellowish in colour, had two dark venous sinuses low down on its anterior surface lying subperitoneally. An incision was made between them, and to our surprise liquor amnii began to escape before the scalpel had sunk to any appreciable depth. In enlarging the incision a slight nick was made in the lower edge of the placenta, and from this free haemorrhage occurred. The foetus was then delivered, and the cord, which was wound once around the trunk, separated. Meanwhile the house-surgeon had endeavoured to turn the uterus out of the abdomen, but it was noticed that he only held placenta and membranes in his hand. On further examination the uterus was found lying above the pelvic brim, and pushed far over to the right side, while the placenta was attached to the left cornu of the uterus and the left broad ligament. There were no adhesions to the hollow viscera, so that removal of the placenta presented no great difficulty. The infundibulo-pelvic and broad ligaments and the cornu of the uterus were clamped, and the placenta and membranes, with the left tube and ovary and the greater part of the left broad ligament, removed. (The right tube and ovary appeared quite normal.) Owing to the softness and vascularity of the parts ordinary pedicle ligatures cut through and failed to control the haemorrhage, which was fairly free. This was controlled by digital pressure until interrupted mattress sutures of catgut could be inserted. These effectively controlled the bleeding, and all that then remained was to cover over the raw area with peritoneum, using that of the anterior and posterior layers of the broad ligament.

The patient left the theatre in fair condition, with a pulse rate of 130 per minute, and on returning to the ward she was given rectal salines, and, later, morphine 1/4 grain with atropine 1/120 grain. She quickly rallied from the haemorrhage, and was able to suckle her baby after the third day. The temperature was normal throughout the puerperium. On the tenth day the stitches were removed, and on the twenty-first the patient left hospital. No lochia were seen at any time.

The baby was a full-time female child, well formed, and weighing 6 lb. 6 oz. at birth. After dropping to 5 lb. 11 oz. on the fourth day it gained weight steadily, and left hospital weighing 6 lb. 10 oz. It was fed at the breast every three hours during the day.

The Specimen.

The specimen removed at operation was found to consist of a sac, placenta, ovary, tube, and part of the left round ligament. The sac wall contained three layers—amnion, chorion, and peritoneum. The placenta was divided into several separate areas with membrane between, and the insertion of the cord was velamentous about one inch from the lower margin of the placenta. The maternal surface was rough, where it had been detached from the uterus and the base of the left broad ligament, but a considerable part of it was smooth on both sides, due to the attachment of the placenta to the posterior layer of the broad ligament, which had been removed with it, and therefore remained *in situ*. The left tube and ovary lay below and in front of the sac, and the inner end of the tube was extremely stretched, so that it at first appeared to end three inches from the left cornu of the uterus. This, however, was only apparent, the isthmus being stretched over the sac wall and placenta so as to be indistinguishable from them. The left ovary contained a corpus luteum. It was concluded that this was a case of secondary ligamentary pregnancy, which had grown at the expense of the posterior layer of the broad ligament.

Comment.

Several features in this case are worthy of note as being unusual in cases of extrauterine gestation:

1. Neither the symptoms nor the signs during pregnancy were sufficiently pronounced to suggest the diagnosis of extrauterine gestation. In most recorded cases an extrauterine gestation lasting till term has produced a severe or fatal illness, whereas in this case the patient was comparatively well throughout the pregnancy.

2. The diagnosis was not made until the operation was in progress.

3. This case probably provides a unique reason for the failure of external version. It is, indeed, remarkable that the sac was not ruptured by the attempt.

4. Contrary to the usual findings in such cases the child was not deformed.

5. The unusually favourable site of the placenta no doubt accounts for the happy result to mother and child.

When last seen, on March 15th of this year, the mother and baby were both doing well, and the baby weighed 13 lb.

A similar case was reported by Dr. Fairbairn in the *Proceedings of the Royal Society of Medicine*, vol. xii, April, 1919, p. 183; and another by Mr. Jessop in the *Obstetric Transactions* for 1875.

I am much indebted to Professor Browne for his help and for his permission to publish this case.

THE RADIOSCOPICAL DIAGNOSIS OF FILARIASIS.

BY

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HOSPITALS in tropical countries are not as a rule provided with *x*-ray apparatus, and consequently medical practitioners in the tropics have not often the advantage of investigating cases by this simple and reliable method of diagnosis; radioscopy cannot be introduced where electrical plant is not installed. This field of medicine has, however, not been neglected when opportunity admitted. Ample evidence of progress in this respect was afforded recently in London by demonstrations of the diagnosis of tropical bowel ailments, and in Egypt by the notable work of G. O. Lotsy, Mahmoud Affifi, J. E. Bateman, and others, who have so strikingly brought the later complications of bilharziasis within the region of exact diagnosis by the *x* rays.

One form of filariasis may be considerably illuminated by the *x* rays—the filariasis due to the invasion of the trematode worm *F. bancrofti*, which in its adult and larval stages infests the human lymphatics, and is a widespread infection of many tropical countries, being transmitted by the three genera of mosquitos—culex, aedes or stegomyia, and anopheles.

The disease, though not indigenous, is by no means unknown in England; its late manifestation, elephantiasis, appearing after a person has left the tropics. In its earlier stages filariasis (*F. bancrofti*) may be a silent disease giving rise to no symptoms, only diagnosable by blood examination (eosinophilia and the presence of larvae).

Elephantiasis may not show itself for an undefined number of years after the initial infection with the parasite; it is not, of course, a silent phase of the disease, but mild and early cases are not easy to diagnose with certainty because, the adult parasites being dead, the larvae have disappeared from the blood, and eosinophilia is not always present. A patient may present himself with a limb or appendage somewhat bigger than its fellow, which on examination exhibits a little solid oedema, perhaps conspicuous superficial veins, but, objectively, little more. If it be the lower limb, as it frequently is, the patient may experience a sensation of tenseness and numbness after walking—a feeling that it does not belong to the owner; such symptoms are not peculiar to elephantiasis. No doubt this condition will be suspected if there is a history of residence in the tropics. If, however, the blood examination is negative the diagnosis is a matter of opinion. Well-marked cases with characteristic signs due to much lymphatic obstruction following oft-repeated infections are easily diagnosed without the assistance of radioscopy; they are seldom seen in England, but in mild cases, where the parent worms are dead, calcified, and encysted, *x* rays may be a valuable help to diagnosis. The case which I am recording is one in point.

A missionary, aged 62, had spent thirty-four years in South Africa in a parish of 649 square miles, situated between Durban and East London on the east coast, with the Indian Ocean on the east and the Drakensberg range on the west—the Transkei native settlement. During the first fourteen years he spent one night at one place and the next night at another, and so on, month by month; he was frequently bitten by bugs and mosquitos in the huts which he tenanted. It is worthy of record that he had never suffered from malaria or dysentery; in fact, he never had a day's illness during his thirty-four years in Africa. For the last eighteen years he was more or less stationary at Tsolo, Kaffraria.

Diagnosis in his case was important, for he had for some time been looking after a leper, and he himself suspected that he had leprosy. The usual examination of faeces and blood were made, with negative results; there was a trifling eosinophilia (5 and 9 per cent.), but the nocturnal and diurnal blood contained no larvae. The urine was normal, as was the heart; in fact, the only pathological condition present was some calcareous degeneration in the arteries shown well in the anterior tibial artery in one of the films which were taken. The left leg was quite normal; the right was a little larger, the calf by 1½ inches and the thigh by 2 inches. Beyond the sensation of increased weight and the feeling that the leg did not belong to him—sensations experienced after walking—there were no subjective symptoms. Except for some conspicuous veins the skin was natural in appearance; the tactile and other afferent sensations were normal. He recently had no difficulty in walking fifteen to twenty miles a day in Switzerland.

Comment.

I have seen an *x*-ray film from South Africa presenting a somewhat similar cystic condition, though the cysts were much more numerous and appeared to be distributed to all the skeletal muscles of the body, including the face muscles. The cysts were much the same shape as in my case. This film was that of a native infested with the *Cysticercus cellulosae*. The individual cysts appeared to be larger than those of *F. bancrofti*, and there is no reason for thinking that the present case was a case of *Cysticercus cellulosae*. I hoped to have been able to reproduce the photographs of the case and the *x*-ray films, but this was not practicable.

The right leg is slightly larger than the left. Small oblong cyst-like objects occur in the thigh and calf, though only scantily, one in the thigh and one (perhaps two) in the calf; they may well be occupying lymphatic vessels. They appear to taper towards one end; on the films the shadows seem to be about half an inch long, the thick end appears to be of a lighter shadow than the tapering end. I had the leg *x*-rayed in two or three positions, and the objects were always there, altered, of course, in position according to posture.

I examined radiologically other parts of the body—the pelvis, abdomen, chest, and neck—but I could find no filaria worms occupying the lymphatics elsewhere; no doubt others were present, but they were not calcified and therefore did not show in the films.

The cysts which are visible appear to be about half an inch long, to be thicker at one end, tapering to the other; the broad round end appears to be of a lighter shadow on the film.

DIFFERENTIAL DIAGNOSIS OF SPUTUM IN CHRONIC LUNG INFECTIONS.

BY

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THE differential diagnosis of a sputum demands not only its direct microscopical examination, but the preparation and examination of cultures. With respect to the former, when tubercle bacilli are found they may be classified into long, short, or minute forms, and further note may be made of whether or not the organisms are granular, and of the occurrence or otherwise of clumping. The most chronic clinical type of tuberculosis appears to be associated with the presence of long granular bacilli showing clumping; the most acute type with minute, non-granular, and scattered bacilli. At the same microscopical examination the presence of "other organisms" should be noted. These are commonly *B. influenzae*, pneumococci, streptococci, and staphylococci.

Whenever "other organisms" occur a cultural examination has shown them to be invariably associated with yeast-like fungus forms. It follows that as the simplest culture medium for the growth of fungi is beer wort, samples of all sputa should be put up for culture on this medium. The vast majority of fungi thus cultivated belong to the group of fungi imperfecti, and are chiefly monilias. In approximately 85 per cent. of cases monilias are found alone; in the remaining 15 per cent. they are found associated with other fungi. Castellani's pathogenic forms are frequently isolated.

The literature on the subject of monilia infection of the lungs is accumulating, but, unfortunately, moniliasis is usually referred to as a tropical disease. As a result, however, of the above routine examination of sputa one is forced to the conclusion that a large percentage of patients suffering from tuberculosis of lung are suffering also from moniliasis, and that in cases in which fungi are not present the patient is usually not so much a sufferer as a carrier of tubercle. The following is a classification of the results of 2,373 systematic differential examinations of the sputa from 304 patients during 1928: of the 304 patients, 62 were

negative both to tubercle and to fungus infection: of the remaining 242 patients, 6.61 per cent. were infected with tubercle bacillus only, 27.27 per cent. with mixed tubercle bacilli and blastomycetes, and 65.11 per cent. with blastomycetes only.

What may be the significance of the presence of these blastomycetes? They are always to be found in sputa containing "other organisms," and whether considered as pathogenic or non-pathogenic they certainly appear to be activators of growth, not only of "other organisms," but also of the tubercle bacillus. Treatment with vaccines and with alkaline potassium iodide causes the disappearance of the fungus and the diminution, at times a total disappearance, of the tubercle bacillus. Potassium iodide is recognized as the drug of choice in the treatment of fungus infections, and it may be noted that the tubercle bacillus is classed as a fungus belonging to the family Mycobacteriaceae. In Jersey differential diagnosis and differential treatment of tuberculous infections have been associated with the striking fall in the total death rate from all forms of tuberculosis which followed the institution of the bacteriological laboratory in 1922. The reduction in these deaths in the years during which differential methods have been employed is shown in the accompanying table.

Year.	Tuberculosis Deaths.	Year.	Tuberculosis Deaths.
1922	86	1926	53
1923	63	1927	55
1924	65	1928	47
1925	49		

Conclusion.

It is considered that the fall in deaths from tuberculosis has been due to the foundation of a laboratory, which has allowed of differential diagnosis and consequently of differential treatment.

TREATMENT OF SEPTIC HANDS AND FEET ON SHIPBOARD.

BY

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NEW BARNET, HERTS.

WHILE acting as a temporary ship surgeon on a cruise extending over a period of five months, I recently had occasion to treat a series of septic hands and feet among some of the crew. Owing to lack of facilities, instruments, and drugs, I was forced to employ methods differing considerably from those to which I was accustomed. But the apparent success was such that publication of some of these facts might be helpful to someone similarly situated, or might interest someone in a better position than myself to carry on further investigation.

Most of the cases occurred in the tropics, which have a bad reputation for prolonged healing in septic cases. The commonest condition was septic hands among firemen, probably caused by blistering or burning of the skin of the palm, dirt, grease, and infection being then well ingrained into the wound.

Routine Treatment of Abscesses.

The general routine treatment was to open up the abscess with an incision at least one to one and a half inches in length, make no attempt to prevent bleeding, which at times was quite brisk, and then plunge the septic limb into a hot iodine bath (1 drachm of tinctura iodi mitis to a pint of hot water). A gauze dressing soaked in hydrogen peroxide was then applied (hydrogen peroxide, besides being an anti-septic, is a very useful haemostatic), and a bandage was tied well above the wound. Thus for a septic hand the arm would be bandaged above the elbow, just tight enough to cause venous congestion, and left in position for twenty-four to forty-eight hours. The patient was instructed to return the next day, or later in the same day, if the infection appeared acute, when the dressing would be *soaked off* in another iodine bath and a dressing of glycerin and magnesium sulphate (equal parts) on lint or gauze would be applied.

Glycerin and magnesium sulphate dressings would be repeated three times a day for the first two days, each dressing being soaked off in a hot iodine bath, and then twice a day until the wound appeared clean and no pus was apparent, when a dry dressing of iodoform powder on lint was employed. In every case, having once made an incision large enough to allow the pus to escape, the wound was touched as little as possible. No attempt was made to express pus by squeezing, but the patients were encouraged to move the affected limbs themselves whilst they were soaking them in the bath.

The advantages of this method are: (1) The apparatus is simple, all that is required being a basin, a bottle of tinctura iodi mitis, some hot water, a bottle of glycerin and magnesium sulphate, and some gauze or lint. (2) It is comparatively painless. (3) It eliminates the necessity for hot fomentations, which are difficult to apply effectively and only transitory in their action.

Choice of an Anaesthetic.

Out of a total of fifteen cases (three Europeans and twelve Chinese) I operated on four by freezing with ethyl chloride local anaesthesia. The disadvantages of freezing are that it undoubtedly causes intense pain during the thawing process, and its anaesthetic effect is so transitory that the operator has time only for a quick stab with the knife. In three cases no anaesthetic of any sort was employed, and apart from the momentary pain of the incision, the patients appeared to experience less pain in the aggregate than those who had been subjected to ethyl chloride anaesthesia.

I also endeavoured with the last eight patients to ascertain whether nerve blocking with 2 per cent. novocain would have any effect as an anaesthetic, or whether injecting the fluid into a septic limb would have any deleterious effect on the septic condition. I found, as the following case records show, that the injection of novocain appeared to have no markedly bad effect in delaying healing but that as an anaesthetic it gave variable results.

Case 1.—A Chinese fireman with a temperature of 100° F., pulse 100, and a history of pain in the palm of the hand for three days. There was considerable swelling of the palm and some swelling on the dorsum of the hand, the greatest point of tenderness being situated between the fourth and fifth metacarpal bones in the palm. The patient was unable to flex his fingers himself, and the movement of flexion caused considerable pain. Around the ulnar nerve, just behind the internal epicondyle of the humerus, 3 c.cm. of 2 per cent. sterile novocain were injected, and after an interval of ten minutes a vertical incision 1½ inches in length was made over the part where there was most fluctuation. Pus was obtained. The patient appeared to feel a certain amount of pain, but less than with freezing.

After-treatment with iodine baths and magnesium sulphate and glycerin dressings was adopted, the wound healed well, and the patient returned to duty in the stokehold on the eighth day.

Case 2.—A Chinese fireman, with cellulitis of foot, temperature 101° F., pulse 100. The whole of the dorsum of the foot was red and swollen, the ankle was oedematous and its contours were eliminated. Around the external popliteal nerve, just internal to the tendon of the biceps femoris in the popliteal space, 3 c.cm. of 2 per cent. novocain were injected, and after fifteen minutes a 2-inch incision was made on the dorsum of the foot. No pain was experienced from the incision and a serous discharge was obtained. The patient was treated by the method previously outlined. The temperature remained up to 100° for four days, but after that the wound healed well. All the swelling subsided by the eighth day, and he returned to work, attending for daily dressings until the tenth day, when the wound was healed.

Case 3.—A European steward with a subungual paronychia of five days' duration on the ring finger of the right hand. Temperature and pulse were normal. Around the digital nerves 2 c.cm. of 2 per cent. novocain were injected, giving complete anaesthesia at the end of ten minutes. The whole of the nail was removed and two vertical cuts were made, one on each side of the nail bed. A hydrogen peroxide gauze wick was inserted under the flap. The wound was treated with iodine baths and glycerin and magnesium sulphate dressings. The patient was irregular in his attendances, and was never off duty, sometimes washing plates with his bad hand, in spite of this the wound healed in twenty days.

Case 4.—A Chinese fireman with septic third digit of the right foot; the toe was swollen to nearly the size of the big toe. Around the external popliteal nerve 2 per cent. novocain was injected, and after twenty minutes the patient volunteered the statement, through the interpreter, "that his foot felt quite all right, and he would like to return to work." An incision 1½ inches long was made on the dorsum of the toe; no pain was experienced during the incision; the wound was treated as described above and the patient returned to work in eight days.

Cases 5 and 6.—Both of these patients had septic fingers with swelling most pronounced over the terminal phalanx. In each case incision was made under blocking of the digital nerves at both sides of the base of the proximal phalanx; no pain was experienced. Treatment was as before, and the patients returned to work respectively four and six days afterwards.

Case 7.—Septic palm of hand, more pronounced on the ulnar side, with considerable swelling on the palmar surface and slight oedema on the dorsum of the hand. Incision was made under blocking of the ulnar nerve, and caused slight pain. The wound was treated in the usual way, and the patient returned to work in nine days.

Case 8.—Septic hand, oedema of the back of hand and swelling of palm, most pronounced between the heads of the second and third metacarpal bones. The ulnar nerve was blocked behind the internal epicondyle of the humerus, and 2 c.cm. of 2 per cent. novocain were injected under the palmaris longus tendon, two inches proximal to the first transverse crease of the wrist, in an endeavour to block the median nerve. The incision gave no pain, the wound was treated in the usual way, and the patient returned to work in seven days.

General Conclusions.

With the exception of the one steward, who took twenty days before the wound healed, and one trimmer whose finger, originally opened under ethyl chloride anaesthesia, had to be reopened, and who took twelve days before returning to duty, no man was away from his work for more than nine days, most of them for less. I believe that Cases 1 and 7 experienced some pain at the moment of the incision because I failed to realize that the median and ulnar nerves intercommunicate in their nerve distribution to the palm of the hand. In Case 8, when I blocked both the median and ulnar nerves no pain was experienced from the incision. Although gas must remain the anaesthetic of choice for cases of septic hands or feet, for a doctor who is unable to obtain an anaesthetist, or for a patient who refuses a general anaesthetic, nerve blocking with novocain should prove a satisfactory substitute.

Directly pus has formed in any situation in the hand or foot it should be given an opportunity to escape by a free incision, and the operation should be undertaken deliberately and with no attempt at hurrying. If one operates under freezing, or without an anaesthetic, there is a tendency to hurry and perhaps an insufficient incision is made. If early and deliberate incisions are made, allowing free drainage, there is less likelihood of a whitlow progressing and becoming a suppurative teno-synovitis of the forearm, or causing an osteomyelitis of the phalanges or metacarpal bones.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

HAEMOPERITONEUM DUE TO SPONTANEOUS RUPTURE OF THE SPLENIC VEIN.

CASES of haemoperitoneum of unknown origin are not infrequently recorded in the literature. The following case, therefore, seems to merit publication, since such a condition was traceable to spontaneous rupture of the splenic vein associated with cirrhosis of the liver.

A woman, aged 38, was admitted to the Leeds General Infirmary at 10 a.m. on December 8th, 1928, having been seized with lower abdominal pain six hours earlier. She was extremely pale and restless; the pulse was 120, and the temperature 96° F. The respiration was slow and gasping; she was fully conscious. The abdomen was distended, and there was dullness to percussion in both flanks, but no evidence was obtained of uterine bleeding. A diagnosis of haemoperitoneum was made, the source of the haemorrhage being uncertain in view of the absence of amenorrhoea or any significant previous history. Immediate laparotomy was decided on, but unfortunately the patient died before this could be undertaken.

A post-mortem examination was made on December 10th. The abdomen was found to be full of blood, which was partly clotted, and had obviously come from the left upper abdomen. The liver was small (weight 25 oz.), and presented a grossly nodular surface. The spleen was considerably enlarged (weight 15 oz.); it was free from adhesions, and there was a single scar at the lower pole. On section it presented a normal appearance. The lesser sac contained a good deal of blood. The splenic vein was found to be enlarged, tortuous, and considerably thickened, having a mean diameter of about three-quarters of an inch. About half-way along its course there was a tiny rupture, approximately a six-tenth of an inch in diameter, which was the source of the peritoneal haemorrhage.

The liver showed a well-marked multilobular cirrhosis; there was little evidence of active destruction of liver tissue, but the fibrosis was unusually dense. The splenic pulp was increased. There was no evidence of syphilis in this case, nor was there any striking varicosity of the oesophageal or haemorrhoidal veins. The lenticular nuclei were normal.

The woman, a servant, had enjoyed apparent good health till three weeks before her death; during this period she had complained of indigestion. Her employer had noted an increasing mental dullness during the past year. It is of interest to note that several bottles of gin had been missed by her employer, and a bottle of brandy was found among the woman's possessions, but beyond this there was no definite history of alcoholism.

This complication of cirrhosis of the liver must be extremely rare, though peritoneal haemorrhages are recognized as a complication of cirrhosis by Osler[1] and others. Osler[2] mentions rupture of varicose veins as a cause of haemoperitoneum, and, quoting Ernst and Gammeltoft,[3] states that trauma is an important factor. We could discover no history of trauma in this case. An apparently similar case has been recorded by Ogilvie.[4]

We wish to thank Dr. G. L. Neil for supplying the details of the patient's previous history, and Professor Carlton Oldfield for permission to publish this case.

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APPENDICITIS CAUSED BY BILHARZIA.

IN the records of bilharzia lesions I have been unable to find any instance of appendicitis caused by this parasite. I venture, therefore, to bring forward details of such a case.

The patient, a male aged 24 years, a native of Tanta in the Nile Delta, came to this country in 1926 for educational purposes. He had had typical vesical bilharziasis in 1920. He then received the greater part of a course of injections (presumably of tartar emetic), but discontinued the course when the symptoms subsided. Although there was no recurrence he underwent a complete course of injections in 1925, before coming to this country, and was told that he could consider himself cured. He had never shown any signs of involvement of the intestinal tract.

He remained well until December, 1927, when he had an attack of abdominal pain with a rise in temperature (100° F.). The tenderness was not localized to any part of the abdomen. He was very constipated. Enemata relieved the condition at once. The temperature subsided and the abdominal symptoms disappeared. The spleen was not enlarged.

In March, 1928, he had a similar attack, though more severe. There was slight rigidity of the right rectus muscle, and the site of maximum tenderness was at McBurney's point. He was again very constipated, and when this was relieved by enemata all the symptoms subsided. The question of removing his appendix was discussed, but the operation was not performed.

On June 12th, 1928, a third and still more severe attack commenced. He had acute abdominal pain, at first round the umbilicus, but soon settling down in the right iliac fossa. There was rigidity of the right rectus muscle. The abdomen was distended. He vomited twice. In spite of previous warnings he was again very constipated. When enemata had been administered the acute symptoms subsided, but some tenderness and slight rigidity over the appendix persisted. Mr. T. Carwardine was called in, and it was decided to remove the appendix. The operation was performed on June 27th. The appendix was bright red and still showed signs of acute inflammation. Several small white nodules, similar to tubercles, were noticed on the serous aspect. Professor Walker Hall kindly examined the organ microscopically and reported that the appendicular wall showed areas of fibrosis and contained many ova of *Schistosoma haematobium*. Some of the older ova were calcified. Round the groups of ova were signs of acute inflammation, the tissues being infiltrated with small round cells and the blood vessels engorged. There was not any evidence of pyogenic organisms, or of tubercle or actinomycosis. The only apparent cause for the acute inflammatory attack was the ova of the parasite. The ova were seen passing through the mucosa, as well as blocking the lymph canals of the submucosa. Some had penetrated the muscular layer and occasioned the formation of round, fibrous, and calcified nodules just under the peritoneal surface. Examination of the urine and faeces showed no ova. The faeces contained a small quantity of blood and excess of mucus. The blood count showed a marked eosinophilia—12 per cent. of the total white count.

It follows from the fact that many of the ova seen in the sections are fresh that the patient is still harbouring active

[1] Osler and McCrae: *Modern Medicine*, third edition, vol. iii, 813.
[2] Ibid., 907.
[3] Ernst and Gammeltoft: *Acta Gyn. Scandinav.*, Upsala, 1921, 2, 104.
[4] W. H. Ogilvie: *Guy's Hospital Reports*, 1922, lxxii, 219.

adult trematodes, which are presumably localized in the appendix area. Serial sections did not reveal the presence of adult forms, although there was a cavity with appearances of parasitic origin.

The patient made an uninterrupted recovery from the operation.

In *Archives of Pathology, vol. 5*, and again in the number for May, 1928, A. Plant has articles on this subject. He records a case of bilharziasis in an apparently normal appendix which gave no symptoms. He points out that though the spines appeared in sections to be terminal, it was found that they were lateral when the tissues were dissolved out with potassium hydroxide.

I am indebted to Mr. Carwardine for the surgical treatment and advice, and to Professor Walker Hall for the pathological work and advice.

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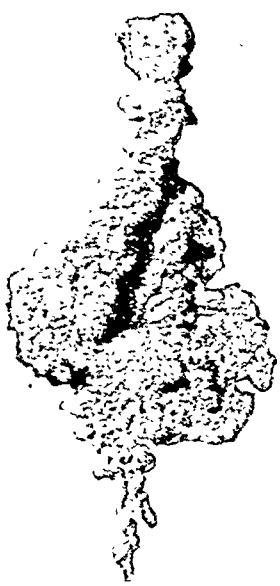
ABDOMINAL TORSION OF THE OMENTUM.

In view of the rarity of this condition the following case seems worthy of publication.

A married woman, aged 32, was admitted to hospital complaining of abdominal pain of two days' duration. Her temperature was 100° F., pulse-rate 104, respirations 20. Mastitis had followed a confinement three years previously, and the patient had become much stouter during the four or five years prior to admission.

While stooping at her washtub one morning the patient became conscious of a dull aching pain in the lower part of the abdomen on the right side; the pain was less severe when she stood up. She continued her work until 4 p.m., notwithstanding an increase in the severity of the pain. A restless night followed. Domestic remedies, such as hot poultices, only relieved the pain very slightly. The pain continued during the next day, when she was seen by her medical attendant and sent to hospital.



On examination the patient was found to be very obese. The pain, which was continuous and located in the right iliac fossa, was of a dull, aching character, with exacerbation on movement. There was loss of appetite, but no vomiting. The bowels were opened on the day of admission. The tongue was clean and moist. Tenderness was elicited to the right of the umbilicus, and there was rigidity of the right rectus abdominis muscle below it; no mass was palpable. Nothing abnormal was detected elsewhere, and a provisional diagnosis was made of subacute appendicitis.

That evening a right paramedial incision was made below the umbilicus, and the rectus muscle was retracted laterally. When the peritoneum was picked up and incised a small quantity of blood-stained fluid welled up through the incision. No mass was found in the appendix region, and the appendix showed no signs of inflammatory process. On passing the hand upward, to examine the gall-bladder a firm mass was encountered, lightly adherent to the anterior abdominal wall below and to the right of the umbilicus. The mass was easily freed and pulled down into the wound, when the nature of the condition became apparent. The mass consisted of a portion of very congested omentum dependent, by a narrow pedicle, which was twisted twice in a clockwise direction. There was no bowel in the mass. The pedicle was transfixed, tied, and divided; appendicectomy was then performed. Further exploration failed to reveal the presence of a hernial opening, or of any pathological condition in the pelvis.

The subsequent progress of the patient was uneventful.

The etiology of this condition is the subject of controversy. Bayer and Baraz[1] state that there are usually found two points of support around which the omentum can revolve to produce the strangulation. This theory is supported by the frequent association of torsion of the omentum and the inflammatory changes in the appendix.

The specimen removed in the present case shows a long fine projection of omental tissue at the base of the strangulated mass. At the time of operation this band was not observed to be adherent, but such an adhesion, if present, might easily have been broken through in the manipulations to deliver the appendix and caecum.

[1] Quoted by Wiener, *Annals of Surgery*, 1900, 2, p. 648.

The case reported illustrates the common findings in this condition as summarized by Cowell.[1] Attention might be drawn to the facts that (1) the pain was first felt in the right lower abdomen, and not around the umbilicus as in appendicitis; (2) there was no nausea and vomiting, and the anxious facies associated with acute disease of the intestinal tract was absent.

I am indebted to Mr. Kenneth Fraser for permission to publish this case.

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Reports of Societies.

STERILIZATION OF THE MENTALLY UNFIT.

At a meeting of the Medico-Legal Society on April 25th, with SIR WILLIAM WILLCOX in the chair, a paper was read by Lord RIDDELL on the sterilization of the unfit.

Lord Riddell quoted from the report of the Board of Control the numbers of notified insane persons and mental defectives, and from the recent report of the Mental Deficiency Committee[2] the estimate that the total number of defectives of all ages is 300,000, and that institutional accommodation is required for 64,000, as well as residential special schools for 23,000 feeble-minded children. He quoted also from official documents some histories of mental defectives, showing how to parents, one or both of whom were feeble-minded, had been born four, five, or six children, all of them imbecile or of a low grade of mentality. He recited particulars of seventeen cases in the courts during the last two years in which mentally deficient persons had been charged with serious crime. Lord Riddell then took up the statement of the Board of Control that the marriage of defectives had disastrous consequences to the community, and that the time had come when legislative steps should be taken to prevent such unions. While this was obvious, Lord Riddell thought that the fact was overlooked that people of this class did not pay much attention to the sanctions either of Church or Law. The sexual instinct was very powerful amongst mental deficients, who were also extraordinarily persistent and clever in eluding observation, and reproduced their kind far more rapidly than the mentally sound. The Board relied on segregation as a curative, protective, and palliative measure, and trounced the local authorities for neglecting to supply institutional accommodation. What about the cost of such a policy? Lord Riddell entered upon some calculations to show that the additional institutional accommodation called for by the Mental Deficiency Committee would involve a capital expenditure of 29 millions, and that the annual expenditure, representing the cost of maintenance of these feeble-minded persons, including those for whom provision is already made, as well as the notified insane, worked out at 16 millions. Could the community afford to spend so much on a section of the population obviously of the worst type. "Unless we are careful, we shall be eaten out of house and home by lunatics and mental deficients."

The alternative seemed to him to be sterilization, though he admitted that this would not be a complete solution, nor do away with the necessity for a certain amount of segregation. It would, however, effectively prevent the defectives from reproducing their kind, as they were doing at present at the rate of some 2,500 a year. The Board of Control considered that sterilization would not materially diminish the immediate need for increased institutional accommodation; defectives would still require supervision. The Board, said Lord Riddell, was entitled to sympathy. Evidently it did not want to "bell the cat." It perceived the dangers, but was afraid to cope with them. The truth was that the existing system was incoherent and illogical. On the one hand, the Board was demanding more and more institutions; on the other, its

[1] *Brit. Journ. Surg.*, 1925, xii, p. 738.
[2] *British Medical Journal*, April 27th, p. 775.

policy was to return as many lunatics and mental defectives as possible to the outside world. Year by year, with the best intentions, it provided opportunities for lunatics and defectives to breed more lunatics, defectives, and criminals. But sterilization would enable the Board to carry out its policy of parole, discharge, and licence with more freedom and with greater safety to the community. The Royal Commission on the Feeble-minded in 1908 made no recommendation, one way or the other, as to sterilization, which was not surprising; but during the intervening twenty years much more information had been forthcoming. It was now universally admitted that mental defectives tended to breed mental defectives, and it had been proved that segregation was no safeguard against procreation. Moreover, sterilization methods since then had been revolutionized. Vasectomy and salpingectomy were not mentioned by the witnesses appearing before the Royal Commission, the methods suggested at that time being equivalent to castration. Again, economic forces, conditions of modern life, and the birth control campaign had changed the public view with regard to the procreation of children. Lord Riddell said that the measures now proposed were very moderate. Sterilization was to be with the consent to the person concerned, or, if he was under age or incapable of consent, with the consent of his parents or guardians. As the law stood, the sterilization operation was only permissible when performed for some adequate therapeutic reason, and though some might argue that lunacy or mental deficiency was a sufficient therapeutic reason, the authorities who controlled asylums and mental institutions were not likely to take the risk.

To the arguments against interference with individual freedom Lord Riddell replied that not only was the operation to be performed with consent, but that instead of restricting the liberty of lunatics about to be discharged or released on parole, it would increase such liberty by enabling them to assume marital relations without fear of producing undesirable offspring. In any case, individual liberty was constantly being restricted for the safety of the community—witness compulsory vaccination and compulsory segregation in infectious disease. It was argued that sterilization would lead to promiscuity and the spread of venereal disease, but it was not proposed to turn the sterilized lunatics and defectives loose on the community; they would still be subject to a measure of supervision. It was also said that sterilizing operations were dangerous, but in fact vasectomy, which was the usual method for men, was simple and called only for a local anaesthetic. Salpingectomy, the usual method for women, was a major operation, and, like any abdominal section, involved a certain amount of risk. Lord Riddell, however, quoted some figures from California, where sterilization had been in vogue since 1909, nearly 6,000 operations—3,232 on men and 2,588 on women—having been performed. Among these there had been only three deaths, two of them said to have been due to the administration of the anaesthetic. Vasectomy and salpingectomy did not deprive the patient of sexual functions, and it was proved that there was very little change in the sexual inclinations; the procedure only prevented the procreation of offspring. All that was asked was that, subject to proper consents, mental deficients, for their own benefit and that of the community, should undergo an operation which many intelligent people were anxious—as the speaker thought, illegally and improperly—to undergo as a birth control measure. One of the Swiss cantons last year passed a statute prescribing compulsory sterilization for persons whose offspring were likely to be tainted with incurable mental malady. Similar legislation had been passed in Alberta, and sterilization had been recommended by official committees to the Swedish and New Zealand Parliaments. The result of these experiments would be awaited with interest. Lunacy and mental deficiency must always be festering sores, but the time had come when the whole subject required careful consideration and statesmanlike attention.

Following the paper there was a somewhat sporadic discussion in which Lord Riddell's proposals found a considerable body of support, though the objections to sterilization were also put forward.

TREATMENT OF GLYCOSURIA.

A MEETING of the Section of Medicine of the Royal Society of Medicine was held on April 23rd, with Dr. A. F. HURST in the chair. Dr. O. LEYTON read a communication on the question "How are we to decide whether a case of glycosuria is one that should be treated?"

Dr. Leyton said that long before there was any reliable method of estimating the sugar in the blood some physicians had recognized that there were cases of glycosuria in which the sign might be neglected. Later, Saloman contributed an explanation by discovering that some persons had a low renal threshold for dextrose, and excreted that substance in the urine without having a concentration of sugar in the blood above the normal average. Most of those who possessed this peculiarity passed urine containing a low percentage of sugar, usually under 2 per cent. The speaker's experience confirmed the statement of MacLean—that a certain number of patients developed a brief hyperglycaemia after taking dextrose by the mouth, the concentration of sugar in the blood rising sufficiently to lead to a temporary glycosuria in those whose renal threshold for sugar was not below the average. In these cases the fall of the sugar concentration in the blood was rapid and complete within ninety minutes. The object of Dr. Leyton's communication was to draw attention to a condition which at first sight suggested that it was a glycosuria calling for treatment, since it was a hyperglycaemic glycosuria. It was a condition which everyone must have expected to exist, but so far as he knew attention had not been drawn to it. The elaboration of more delicate methods of determining the sugar in the urine had necessitated a new definition of glycosuria. For some years the speaker had attempted to determine the rate at which individuals burnt and/or stored carbohydrate in the following manner:

> The patient is kept fasting for about fifteen hours—that is to say, he has a breakfast consisting of a cup of tea without milk or sugar, having had nothing to eat since the previous evening. He is then given 60 grams of dextrose dissolved in 250 c.cm. of water, to which a little lemon juice has been added. The sugar in the blood is estimated before he takes this, and then samples of blood are taken at intervals of half an hour; immediately after the taking of the samples of the blood the bladder is emptied. This is continued for three hours. After estimating the concentration of sugar in the blood one is able to decide how long it has taken for the sugar in the blood to drop to what it was before the administration of the dextrose or to the level of 0.12 per cent., whichever is the quicker. The urine secreted during this period is next measured, and the amount of sugar and of urea in it is estimated. The object of estimating the urea is to determine how much protein has been destroyed and the quantity of carbohydrate that has been liberated by its destruction. By multiplying the weight of the urea excreted by the factor 1.7 the weight of sugar is arrived at.

The average young healthy person was able to burn and/or store about 50 grams per hour, but it was not safe to assume that if an individual was able to burn and/or store only 25 grams per hour he was therefore suffering from a disease. Dr. Leyton described cases to prove his point that the power of burning and storing sugar varied in different healthy persons, and that it was only the gradual diminution in this power which called for treatment, provided that there were no symptoms present in the cases not treated; also that in doubtful cases the only method of deciding whether that power was diminishing was that of allowing the patient to throw normal work upon the carbohydrate metabolism for a period, and re-examining and comparing results. If there was a definite diminution in the power of metabolizing sugar, then, and then only, was the case one of glycosuria that needed treatment. Dr. Leyton explained how these observations had borne fruit in his own practice. The main object of his communication was not simply to release a certain number of individuals from a restricted diet, but to correct what he called a "refraction" in the outlook upon the treatment of hyperglycaemic glycosuria. When a physician had several of these cases under treatment, and by restriction of their diet found them to continue to enjoy almost as good health as if they were allowed to eat and drink whatever they liked, he attributed their well-being to his skilful dieting, and was inclined to think that other cases which did not

belong to this class should do equally as well. Owing to this, many slight cases of disease were not treated with insulin until the damage to the pancreas had become irreparable.

Dr. E. P. POULTON suggested that one criterion might be taken for the classification of these cases—namely, that the patient might be put upon increasing quantities of carbohydrate and tested at each increase. For example, let 30 grams be given in the first instance, and the sugar output determined, then 60 grams, and again the sugar output, and so on; if the increase in the sugar output was out of all proportion to the amount given, it would create a strong suspicion that the patient had true diabetes.

Dr. R. D. LAWRENCE had always been struck by the number of cases in medical literature which seemed to give at least mild diabetic curves, while yet the disease did not seem to make progress, although no dieting had been maintained. But he thought it was hardly justifiable to draw conclusions from these cases with regard to the general run of blood sugar curves.

Dr. SAXBY WILLIS thought that in some cases instanced by Dr. Leyton an abnormality of the pituitary gland might be the cause of the hyperglycaemia—that is to say, they might be pituitary in origin, not pancreatic.

Bovine Tubercle Bacilli in Pulmonary Tuberculosis.

Dr. W. T. MUNRO read a paper based on work at the Fife and Kinross (Glenlomond) Sanatorium, on the occurrence of tubercle bacilli of the bovine type in pulmonary tuberculosis and the part played by this type in pathogenesis. Dr. Munro said that the recovery of bovine type tubercle bacillus from the sputum was sufficiently rare to command attention. Observations at Glenlomond during the past seven years had led to the discovery of ten cases of patients coughing up the bovine type of tubercle bacillus. Four of these patients with pulmonary tuberculosis of the bovine type showed root-spread disease; one of them had died, two were now free from infection, and the other, a more recent case, was making good progress. Of the total of ten patients, six were alive, four of them free from infection. The most notable features present in all these cases were the amount of the fibrotic changes, the lack of evidence of large breaking down of lung tissue, and the entire absence of haemoptysis. There seemed to be more chance of these patients overcoming their systemic disturbance than was to be found in the similar group of human type infections. Why were bacilli of the bovine type so rarely found in the sputum? He thought it a reasonable argument that the bovine type was not capable of such a general lymphatic spread as the human type in the human subject. Various facts combined to suggest that the bovine type was not capable of generalization or of producing visceral tuberculosis to the same extent. Superinfection with the bovine type leading to chronic ulcerative pulmonary tuberculosis was unlikely unless the superinfecting dose was very large; or, in other words, the allergy occasioned by the previous benign infection could protect against superinfection by the bovine type, but broke down in the presence of the human type of bacillus. He raised the further question whether the disease could have been contracted from an aerogenous infection in any of these cases, and gave reasons for the view that it was most unlikely that the superinfection was air-borne. Whatever the common route of the infection might be, there was little doubt that in most of these cases the route was through the tonsils and cervical glands. His final question was: Could the superinfection producing pulmonary disease have been other than endogenous in origin? He had never been able to find a bovine type in the gland and a human type in the lung, and the evidence on the face of it in these bovine type cases was that the superinfection must be endogenous.

Dr. F. G. CHANDLER said that Koch's hasty dictum regarding the harmlessness of the bovine bacillus had probably impeded preventive medicine. He had often wondered why, if bovine tuberculosis of the lungs in the human being occurred at all, it did not occur more often; one was almost tempted into believing that transmutation of type might occur by long sojourn in the human body, which would be a heresy, against which there was abundant evidence. He believed that air-borne infection was probably the most common mode: and this raised another interesting aspect of the case—namely, that when once a human being was afflicted with a bovine pulmonary tuberculosis, the occurrence of air-borne infection to others became a possibility. Dr. Chandler also commented on the fact that, according to all investigations, a larger proportion of cases of bovine tuberculosis were reported from Scotland than from England, and he wondered whether in the northern country the cows were more subject to the disease.

Dr. MUNRO, in reply to this last point, said that there was not more bovine tuberculosis in Scotland than in England, but the Scottish authorities had been more zealous in searching it out.

CONGENITAL ANOMALIES OF THE URETER.

AT a pathological meeting of the Liverpool Medical Institution on April 11th Mr. C. ALEXANDER WELLS read a paper on congenital anomalies of the ureter. After referring briefly to the embryology, Mr. Wells described a series of observed cases in which he had prepared diagrams of the cystoscopic appearances and lantern slides from radiograms. These cases included five examples of reduplication of the ureter on one side, and Mr. Wells pointed out the importance of recognizing the occurrence of this abnormality, and of instituting adequate investigation in order to avoid mistakes in diagnosis—such, for instance, as passing an opaque catheter up a healthy ureter, some distance away from the doubtful stone shadow, when a second instrument passed along the second ureter on the same side would demonstrate its true nature. Mr. Wells described briefly the morbid anatomy of the kidney in these cases, and, after passing rapidly over congenital cystic kidney, simple and crossed dystopia, and unilateral absence of the kidney, dealt with the subjects of congenital dilatation of the ureter and ureterocele. He showed cystoscopic and radiological findings in the case of a boy, aged 3, with enormous dilatation of both ureters and of their pelves and calyces, without any demonstrable obstructive lesion—in fact, widely patent ureteric orifices on both sides, conforming to the recognized though rare type. He further submitted two adult cases which, he said, were representative of the segmental congenital dilatation of certain authors, and described, in connexion with these cases, a reflux of the bladder content up the ureters, synchronous with respiratory movements and indicated by the excursions of a flake of mucus. He suggested that this sign was characteristic of a more or less dilated ureter associated with a fixed patent orifice, and added that he had noticed it also in tuberculous infection of the ureter. The paper concluded with the recording of two cases of ureterocele or ureteric balloon. In the discussion which followed Mr. FRANK JEANS spoke on the pitfalls associated with congenital absence or misplacements of one kidney. Dr. NORMAN B. CAPON referred to two cases of congenital dilatation of the bladder and ureters described by him, in association with Dr. Fordyce, some years ago. Mr. KENNON doubted the congenital nature of the segmental dilatations. Dr. J. T. MORRISON mentioned the difficulties of diagnosis due to disease complications of these anatomical variations, and described a case of calculus occurring in a ureterocele.

AT a meeting of the Royal Society, on May 2nd, a paper on the loss of water and salts through the skin and the corresponding physiological adjustments was communicated by Dr. J. S. HALDANE and Messrs. W. HANCOCK and A. G. R. WHITEHOUSE. Sir FREDERICK ANDREWES presented a paper by Drs. R. G. CANTI and F. G. SPEAR, on the effect of gamma irradiation on cell division in tissue culture. Dr. H. H. DALE communicated a paper on the absorption spectrum of vitamin D, on behalf of Dr. R. B. BOURDILLON and Messrs. C. FISCHMANN, C. JENKINS, and T. A. WEBSTER.

Reviews.

MANSON'S TROPICAL DISEASES.

THE issue of a new edition of *Manson's Tropical Diseases*[1] is always an event of importance in the field of tropical medicine, for the book is read by students and practitioners in all parts of the world, and the number of medical men who rely upon it in the course of their practice in the tropics must be very great. During the five years which have elapsed since the eighth edition appeared there have been many changes and developments in tropical medicine, particularly with reference to diagnosis and treatment. A perusal of the ninth edition will convince the reader that the editor, Dr. PHILIP MANSON-BAHR, is well fitted to carry on Manson's great work. He has kept himself informed of all developments, while his experimental enterprise has led him to test and judge for himself any new methods of treatment and diagnosis. His extensive experience enables him to write with authority, and this forms one of the most valuable features of the book, which provides the reader with a clear, accurate, and up-to-date account of the present position of tropical medicine.

The ninth edition differs little in size from its predecessor, though much new matter has been introduced apart from the thirty new text figures and five half-tone and four coloured plates. This has been rendered possible by much rewriting and abridgement, and the judicious use of small type for certain sections. The book is of convenient size, well printed, and carefully selected subjects are beautifully illustrated. The general arrangement and classification are the same as in the previous editions, though certain changes have occurred. Thus, the recent work on yellow fever, largely the outcome of the discovery that the disease can be transmitted to the monkey *Macacus rhesus*, has necessitated its separation from the leptospiral infections such as Weil's disease and seven-day fever. The facts that the virus is a filterable one and not a leptospira, and that there is a possibility of protection by vaccination, are duly noted. Noguchi's work on Oroya fever and verruga peruana and his cultivation of the causative agent *Bartonella bacilliformis* is described, as also the allied organism *Bartonella muris*, which appears in the blood of rats after splenectomy. Mention is made of Kingsbury's researches on haemolysis in malaria and their bearing on the etiology of blackwater fever. The important work on the relationship of sand-flies to kala-azar which has been carried out in India and China has required the revision of the section on the etiology of this disease. Under treatment many new remedies and methods are described. The recently introduced plasmoquine for malaria, and Sinton's alkaline quinine method of treatment, are discussed. Good results are reported from transfusion in intractable cases of sprue, while Scott's calcium lactate and parathyroid method is also mentioned. In connexion with kala-azar the developments in organic antimony therapy are duly noted, while the advances in the chemotherapy of amoebic dysentery, leprosy, yaws, and other diseases are fully dealt with. In all cases precise details for carrying out treatment are given, so that practitioners will have no difficulty in following the instructions given. In many other sections there have been changes and additions. Thus, the general methods of malarial prophylaxis are more fully dealt with, and in this connexion mention is made of the value of Paris green, while James's method of infecting mosquitos with malaria is illustrated and described. The improvements which have taken place in the diagnosis of helminthic infections by the complement-fixation test are duly noted, while recent work on the influence of vitamins in beri-beri and other deficiency diseases has not been overlooked.

The above are merely a few of the many changes which recent advances and discoveries have necessitated in this new edition, but they illustrate the thoroughness with which the editor has done his work. The appendix of two sections on medical zoology has been revised, and in it the reader will find all the essentials of medical protozoology, helminthology, entomology, herpetology, and laboratory technique. The book is unique in that there exists no other of its size which gives the reader such a vast amount of practical information regarding the diseases of tropical lands and the methods of dealing with them. It should be in the hands of everyone who practises medicine in the tropics, and it is certain that everyone who has it will be constantly referring to it for guidance and instruction.

[1] *Manson's Tropical Diseases.* Edited by Philip H. Manson-Bahr, D.S.O., M.D., D.T.M. and H.Cantab., F.R.C.P. Ninth edition, revised. London: Cassell and Co., Ltd. 1929. (Demy 8vo, pp. xx + 921; 400 figures, 25 plates. 25s. net.)

MIND AND BODY.

IN a volume entitled *Common Principles in Psychology and Physiology*[2] Dr. JOHN T. MACCURDY makes it his aim to show that the relationship between the psychological and the physiological is not merely one of analogy, but of an essential element common to both. To this abstract, impalpable, immaterial agent, element, or property, which the author assumes may be held accountable for the differences between living and inert matter, he applies the term "pattern"—physiological, psychological, or developmental, according to the level of behaviour at which the manifestations of life are exhibited.

Though the author's formulations are by no means free from obscurity, they well repay careful study on the part of those who are interested in the ultimate problems of life and mind. Any serious attempt to bridge the gap between the psychological and physiological activities of the organism, and to suggest a common terminology, merits consideration. There is a tendency to think of physiological and mechanical behaviour under one head, and "mental" behaviour under another. It would certainly appear to be more in conformity with facts to consider inorganic reactions under one head, and physiological and "mental" under another, for the distinction which is apt to be drawn between physiological activity and overtly manifested conduct, associated with consciousness, does not seem to be justified. Psychology deals with additional facts about the living organism with which physiology is not concerned, but it cannot be held to deal with phenomena of an essentially different order. In their last analysis the physiological activities of the organism are not more impressive and remarkable than those of the individual. It is highly probable, indeed, that the medical practitioner may sometimes feel that the "wisdom of the body" is in striking contrast to the foolishness of the man. Thus it seems essential for us not to think of mind and body, of mental and physical, but of the living being and life. Nor can consciousness be relegated to the position of an epiphenomenon; it is a manifestation of life which is possibly dimly present in the lowliest forms of organism. Many writers have expressed similar views. Thus, Dr. C. S. Myers observes, "The problems of life that confront the physiologist are almost precisely those of mind which confront the psychologist. Life and mind must ultimately be described in similar terms." What these terms are is the problem which Dr. MacCurdy sets himself to answer, and apart from certain elusive differences his answer appears to be similar to those suggested by various other writers, for it is essentially his claim that it is the reappearance of the past in the present which differentiates the organic or living from inorganic nature. Like Bergson in the sphere of philosophy, and Semon and Rignano in that of biology, Dr. MacCurdy believes that evidence of the inherency of the past is to be found in the present at both the psychological and the physiological level of behaviour, and that it is this characteristic which distinguishes living from inert matter.

We do not wish to suggest that Dr. MacCurdy's formulations are identical with those elaborated by other writers. He does not accept the view of Semon, for instance, that the impress of experience is some kind of a physical alteration of protoplasm, and that the *mneme* and memory are reducible, fundamentally, to physico-chemical laws. On the contrary, he assumes the existence of unconscious immaterial images—immaterial in the same way that conscious images are immaterial—and develops this concept throughout his book, applying it not only to the whole

[2] *Common Principles in Psychology and Physiology.* By John T. MacCurdy, M.D. Johns Hopkins. The Cambridge Psychological Library. London: Cambridge University Press. 1928. (Roy. 8vo, pp. xvii + 281. 15s. net.)

range of phenomena of psychology, but to the whole range of physiological phenomena as well. Thus this work is, in a considerable measure, a definitely personal contribution to the subject with which it is concerned. In order to grasp the ideas of the writer a cursory study of his book will be found inadequate.

A VENERABLE TEXTBOOK OF PHYSIOLOGY.

A FEW textbooks of science there are which seem, themselves, to be the very stuff of which their subject is made. They belong to their science; they have grown up with it; they have grown old in its service—yet have not lost their youth. Such a book is Halliburton's *Physiology*.[3] Born into a world where laboured Claude Bernard, Ludwig, Liebig, and other "fathers" of modern physiology, this textbook, with the maiden name of *Kirke's Physiology*, has lived through thirty-one editions, and to-day meets us "completely revised," authoritative, venerable—but with no signs of senescence, none of that irritability which may come with age, no weariness of the flesh.

It was a happy thought of the publishers to preface the present edition with a brief unostentatious historical note. *Kirke's Physiology* appeared first in 1848 as a comprehensive work based upon the lectures of Sir James Paget at St. Bartholomew's Hospital. It rapidly won the regard of medical students, and during fifty years passed through thirteen editions, under the editorship of a succession of teachers at this great school of medicine. At the end of the last century, however, the long association with "Bart's" was severed, and the book became Halliburton's *Physiology*. Under the care of Professor W. D. HALLIBURTON a further seventeen editions have been published in a quarter of a century. With the retirement of Professor Halliburton from active teaching, however, a period of four years elapsed without revision of the text, but now continuity is assured by the appearance of the present edition. In the preparation of this the author has had the assistance of Professor R. J. S. MCDOWALL, his successor in the chair of physiology at King's College.

"There have been considerable rearrangements, both in the order of the chapters and within the chapters. Some have been rewritten, for instance, many on the Nervous System, so as to bring Reflex Action up to date, and to admit of adequate treatment of Postural and Conditioned Reflexes. The sections on the Autonomic Nervous System, Speech, the Control of the Circulation, the Carriage of Carbon Dioxide, the Maintenance of Body Neutrality, the Vitamins, Ductless Glands, and Intermediate Metabolism are also for the most part new. Additions have been made on the following subjects: the Formation of the Blood and the Bile, Test Meals, Blood Groups, the Polygraph, recent work on the Spleen and the Control of Respiration, the effects of Exercise on the Respiratory Exchanges, and other matters. To admit of this new material anatomical detail has been reduced, but essential anatomy and histology are retained. Particular stress has been laid upon the requirements of the medical student by omitting less essential details and emphasizing principles."

This is certainly a generous revision, and the senior author acknowledges his indebtedness to Professor McDowall for the greater part of the new material. It is a pleasure to record that the well-balanced and careful presentation of the latter gives ample assurance that the cloak of teacher has fallen upon shoulders which can carry it with authority. The book has actually been reduced in size. It is an interesting reflection that it contains only two hundred pages more than the first edition, which appeared eighty years ago, when, as we are inclined to think, physiology was very young and very ignorant. There is little more that a reviewer may usefully add save the suggestion that there are occasions when it is meet that we should praise famous books and their authors. Physiology has been fortunate in her teachers. But in the group of famous names which come to mind there can be none more familiar to English-reading students than that of Professor Halliburton. During the twenty-nine years of his editorship more than one hundred thousand copies of this book have been worn thin in the service of students. This tattered army were monument enough.

[3] *Handbook of Physiology*. By W. D. Halliburton, M.D., LL.D., F.R.C.P., F.R.S., and R. J. S. McDowall, M.B., D.Sc., F.R.C.P.Ed. Eighteenth edition. London: J. Murray. 1928. (Med. 8vo, pp. xxiii + 902; 633 figures, 4 plates. 18s. net.)

LEUCOPLAKIA AND KRAUROSIS OF THE VULVA.

THE differentiation of leucoplakia and kraurosis from one another and from allied conditions of the vulva is still so far uncertain as to make the clinical and pathological study by Sobre-Casas and Carranza of Buenos Aires well worth attention by gynaecologists.[4] It is published as a monograph, the greater part being occupied by photographic and coloured reproductions of the naked-eye and histological features of cases selected from the forty-five under their observation, together with many case records. There are also several drawings illustrative of the surgical procedures advocated in treatment. The chief points the authors set out to make are that these conditions run into one another, so as to be scarcely distinct as clinical entities, that both are precancerous and therefore both call for radical treatment. The etiological steps are regarded by them as prolonged and intractable pruritus, leucoplakia, kraurosis, and finally epithelioma of the vulva.

Chronic irritation with infection of superficial abrasions gives rise to a chronic dermatitis, showing hyper- or parakeratosis, with hyperaemia and leucocytic infiltration of the corium and subsequent desquamation of the horny layer and retraction of the tissues: this has been generally accepted as the explanation of leucoplakia. In order to distinguish it from those conditions in which the primary cause appeared to be more a regressive atrophic change—that is, kraurosis—emphasis was laid on the thinning and retraction of the tissues and the more marked contraction of the introitus with little tendency to ulceration and malignant change. The view of these workers, based on their clinical and pathological investigations, is that it is better to regard a leucokraurosis as a condition in which, from divers causes, the skin area may be affected in either or both of these directions. They advocate radical removal in cancerous cases by excision of vulva and thoroughgoing removal of the inguinal and femoral lymph glands, even to the extent of removing those which run up the iliac vessels. Radium and deep *x* rays are employed only as a palliative in inoperable cases or as a measure additional to surgical treatment. The operative treatment must, however, be modified to meet the special features of the case. Because a chronic pruritus without obvious cause and rebellious to treatment produces severe disability often leading to mental disorder, and may be the first stage in a precancerous leucokraurosis, vulvectomy about the age of the menopause is advised, both on curative and prophylactic grounds, but without extirpation of the lymph glands.

EXPERIMENTAL NEUROLOGY.

THE appearance of Dr. E. A. SPIEGEL's book on experimental neurology[5] emphasizes the change which has been taking place during the past fifteen years in the methods of neurological research. The microscope which physicists had contributed towards the furtherance of our knowledge of the minute structure of the central nervous system has been developed to the limit of its resolving power. Chemists may still elaborate stains of more delicately selective action to aid our study of morphology, but the examination of serial sections has probably already supplied most of the information available from this source. Other avenues of approach to the subject are being opened up, and if it is to bacteriological and biochemical methods that we turn for light upon the cause and course of neurological diseases, it is from experimental medicine that we may expect an explanation of their signs and symptoms.

In making readily accessible in this volume most of the physiological work and methods which have a bearing upon this subject Dr. Spiegel has rendered valuable service. The task of selecting the pertinent data from all this material and using them for the interpretation of clinical

[4] *Leucoplasie et Kraurosis Vulvaires*. Par C. Sobre-Casas et Felipe F. Carranza, Préface du Professeur J.-L. Faure. Paris: Masson et Cie. 1928. (Med. 8vo, pp. 120; 26 figures, 2 plates. 30 fr. sans majoration.)

[5] *Experimentelle Neurologie*. Von E. A. Spiegel. Physiologie und Pathologie des Nervensystems, Erster Teil. Berlin: J. Karger. 1928. (Sup. roy. 8vo, pp. x + 281; 69 figures. M.24.)

observations is one of quite a different order. The temptation to use such data in circumstances where their applicability is not well substantiated is one which the author has in most cases avoided. This has been easier because he has been concerned with presenting all views for consideration rather than with discriminating between them, and in spite of the number and variety of his own researches he has retained an absence of bias which will greatly help towards the undoubted success of this monograph.

METHODS AND PROBLEMS OF MEDICAL EDUCATION.

THE Division of Medical Education of the Rockefeller Foundation, of which Dr. R. M. Pearce is the director, in its series of *Methods and Problems of Medical Education*, is doing great service to the teachers and administrators of medical schools and hospitals by providing them with detailed descriptions of laboratories and clinics in almost every part of the world, especially of those which have been recently organized and equipped.

The tenth series[6] contains no fewer than thirty-three articles, dealing with the teaching of hygiene, pathology, pharmacology, physiology, anatomy, and medicine, and with medical libraries. The physiological departments described include those of the Universities of Alberta in Canada, Debreczen in Hungary, Milan, Berne, Concepcion in Chile, Illinois, and Leeds. An account is given of the teaching of hygiene in the Universities of Alberta, Jassy in Rumania, Yale, and Pennsylvania, in the Royal Hungarian University of Pécs, and in the Western Reserve University at Cleveland, Ohio. Four pathological departments are described—namely, those of the Universities of Illinois, Prague, Florence, and Leeds—and departments of pharmacology at the Universities of Alberta, Tübingen, Pécs, and Illinois. Dr. Tadasu Saiki gives an account of the activities of the Imperial Government Institute for Nutrition at Tokio, and Principal G. H. Macalister of the buildings and departments of King Edward VII College at Singapore. Members of the British Medical Association will be specially interested in the description of the building and equipment of the faculty of medicine of the University of Manitoba, which is situated at Winnipeg, the city in which is to be held the 1930 meeting of the Association. All the articles are, as usual, generously illustrated by photographs and plans.

The eleventh series[7] contains twenty-two articles, all but two of which deal with clinical departments. Professor Howard T. Karsner gives an account of the diagnostic laboratory of the Cleveland City Hospital, in which the principle of centralization has been adopted with success. His colleague, Professor Elliott C. Cutler, in the course of an article on the education of a surgeon, expresses the view that surgery is perhaps more fortunate than its closely-allied partner, medicine, in that, being almost utilitarian, it has less time for philosophy, and finds it is simpler to avoid the larger fluctuations of educational fashion. Further articles deal with the surgical clinic at the University of Königsberg, with the medical clinics at Breslau, Düsseldorf, Strasbourg, the Johns Hopkins Hospital, and Cornell University, the out-patient departments at the London Hospital and at the Johns Hopkins Hospital; and of ophthalmic, dermatological, oto-rhinological, paediatric, and cardiological clinics in various parts of the world. Writing of the Johns Hopkins Hospital, the physician-in-chief, Professor Warfield T. Longcope, says that as the medical wards—almost unchanged since their erection nearly forty years ago when William Osler was in charge—are now antiquated and inadequate, plans are being prepared for new wards which, with the recently constructed out-patient department, will provide a thoroughly up-to-date medical clinic.

[6] *Methods and Problems of Medical Education* (Tenth Series). New York: Division of Medical Education, the Rockefeller Foundation. 1928. (Demy 8vo, pp. 343; illustrated.)

[7] *Methods and Problems of Medical Education* (Eleventh Series). New York: Division of Medical Education of the Rockefeller Foundation. 1928. (8 × 11, pp. 263; 178 illustrations.)

NOTES ON BOOKS.

Ciliary Movement,[8] by J. GRAY, F.R.S., is a volume of the Cambridge Comparative Physiology Series. The author points out that there are only two methods of locomotion in the animal kingdom—namely, ciliary movement and muscular contraction—and that therefore the former deserves careful systematic study. The first problem studied is the nature of the movement of cilia and flagella. The various types of movement are described, and an account is given of the various theories that have been advanced to account for these movements. This discussion touches on many problems of considerable interest to protozoologists. Later chapters describe the work done by cilia, the effect of ionic changes on ciliary movement, and the metabolism of ciliated cells. An interesting comparison is made between the laws governing the activities of cilia and those regulating muscle cells. The last chapter is concerned with morphological problems; the distribution of cilia in various types is described and their function is discussed. The author deals with a highly specialized field of knowledge, which he himself has done much to develop. It is interesting to note how many problems of fundamental physiological importance become involved in the discussion of this apparently limited field. One problem of great interest is how the activities of the cells of a sheet of ciliated epithelium are correlated so as to produce the wave-like activity that is termed metachronal rhythm. This co-ordination appears to be effected by some mechanism unlike any known in other forms of living tissue.

Mr. W. S. TAYLOR, professor of psychology in Smith College, is responsible for a concise and useful little book on *Morton Prince and Abnormal Psychology*.[9] He feels that a brief exposition and discussion of the psychological theory of a psycho-pathologist whose reputation has travelled far is needed, since students of mental life are liable to associate Dr. Prince's name more particularly with his dramatic and vivid study of the case of Miss Beauchamp, and, in consequence, they may fail to gain an adequate appreciation of the extent or value of his contributions to psychology generally. It is worthy of attention, as Mr. Taylor justly observes, that Dr. Prince's views are not put forward as a finished system. Only a cult could be so represented, and cults are the bane of science.

Rather more than a year after the appearance of the first edition it has been found necessary to publish a second, and revised, edition of EMERSON'S *Physical Diagnosis*,[10] which was reviewed in our columns on September 22nd, 1928 (p. 530). It is satisfactory that the new lines adopted by the author have proved so popular, and there is no doubt that the book has a very real value. We still think that some reference to the origin of visceral pain might have been included; this is, perhaps, the only defect in an otherwise excellent volume.

[8] *Ciliary Movement*. By J. Gray, M.A. London: Cambridge University Press. 1928. (Demy 8vo, pp. viii + 162; 105 figures. 10s. 6d. net.)

[9] *Morton Prince and Abnormal Psychology*. By W. S. Taylor. New York and London: D. Appleton and Co. 1928. (Cr. 8vo, pp. xi + 137; 1 portrait. 6s. net.)

[10] *Physical Diagnosis*. By Charles Phillips Emerson, A.B., M.D. Second edition, revised. London: J. B. Lippincott Company. 1929. (Med. 8vo, pp. xv + 553; 324 figures. 35s. net.)

SMALL-POX.

STATEMENT BY MINISTRY OF HEALTH.

THE Ministry of Health issued, on April 25th, the following note on the present situation in regard to small-pox.

"Small-pox of mild degree has been prevalent in England and Wales, as in other countries of Europe and America, during the last few years, and the following table sets out the number of cases since 1926, with the number which has already occurred in 1929 up to April 13th.

Small-pox: England and Wales.

	Cases.	Deaths.
1926	10,141	11
1927	14,787	36
1928	12,420	53
1929 (to April 13th)	3,899	16*

* Approximately (exact figure not available).

"It should be understood that these returns include a certain small number of cases of small-pox of severe degree in 1926.

"The distribution of this small-pox of mild degree has been relatively wide, but it has been kept under control or stamped out in all of the thirty-five or forty counties in which it has appeared except in some five to ten districts. But owing to the

relatively high proportion of unvaccinated persons in the population of certain areas, or to neglect owing to the mildness of degree of the malady, the disease has obtained more foothold in those areas. For instance, in the present year most of the cases are concentrated in Durham, the West Riding of Yorkshire, Derbyshire, Northamptonshire, Essex, and Glamorganshire. Where vaccination has been properly carried out, and where the public health administration has been vigilantly practised, this form of small-pox of mild degree has not spread.

The "Tuscania" Cases.

"Some uneasiness has been aroused over what is known as the *Tuscania* cases, but risk of any general outbreak from this source of infection is now at an end. The facts are as follows:

"On March 27th the Anchor Line s.s. *Tuscania*, from Bombay, arrived at Marseilles with passengers and crew numbering 1,589. Two members of the crew had, during the voyage, suffered from a malady which appeared to be chicken-pox, but turned out to be small-pox, and one of them died from small-pox on arrival at Marseilles. Some 400 passengers left the liner at Marseilles on March 27th, and travelled direct overland to London and elsewhere. The majority, however, remained on board ship bound for Liverpool. On arrival at Liverpool some 650 passengers disembarked, and information was sent by the Liverpool port authorities to the districts to which they were stated to be proceeding in order that direct personal supervision should be imposed upon them and continued for not less than fourteen days. This practice of supervision has long been adopted in England, and now forms part of Article 42 of the International Sanitary Convention of 1926. Several passengers and the crew subsequently proceeded on the *Tuscania* to Glasgow, where similar action for supervision was taken.

'On receipt of the information thus provided, the central and local health authorities in this country have proceeded in the ordinary way in regard to notification, isolation, disinfection, and strict supervision of all 'contact' persons. It is, however, obvious that if a number of persons apparently healthy at the time of disembarkation leave a ship that has been infected with such a disease as small-pox, it is probable that there will be a number of secondary cases of infection, provided that such persons had not been adequately vaccinated before their contact with the infection. Therefore, although belated vaccination had been offered and practised between Marseilles and Liverpool, 45 persons from the *Tuscania* (out of 1,589) have been notified as suffering from small-pox, 28 in England and 14 in Scotland, the 3 others occurring elsewhere. The English cases occurred in the following districts: in and around London, 13; in the North of England, 7; and in the South, 8. Of the 14 cases in Scotland, 13 occurred in or near Glasgow, and 1 at Aberdeen. The number of deaths up to date has been 7, of which 6 occurred in this country and 1, as stated above, at Marseilles. The date on which the last London case sickened with small-pox was April 7th. The incubation period of small-pox (fourteen days) has expired. It is possible, and indeed probable, that there may be cases of tertiary infection, but speaking generally it may be assumed that the rigorous measures which have been taken in this country have been effectual, and the English ports have been kept free. There was a statement in the Continental press last week that there were not less than 100 cases at Southampton. In point of fact, there have been no cases whatever at Southampton this year, and only 2 in the summer of last year. It has also been stated in the Continental press that small-pox was 'rampant' in London. In point of fact, there have been 167 cases of mild degree in the administrative county of London this year, among a population of 4½ millions. This figure cannot, of course, accord with the number of patients treated in the Metropolitan Asylums Board's hospitals, because cases are admitted to these hospitals from outside London.

"When the *Tuscania* cases occurred, public attention was drawn in France to that incident, and also to the prevalence of small-pox of mild degree in England. Very naturally, France desires to safeguard herself against the invasion of small-pox from Britain, and the action which has now been approved by the French Government is in strict accord with Article 42 of the International Sanitary Convention of 1926, which has been ratified both by France and England. The arrangement is that, if and when unvaccinated travellers from England desire to enter France, they shall furnish the French authorities with their names and addresses in France in order that they may be kept under appropriate supervision until the incubation period (fourteen days) has expired. If they furnish evidence of recent vaccination they obtain 'free pratique'; if they cannot furnish such evidence they are to be provided en route with a card (sanitary passport) on which their name and address will be entered, and they may be called upon to produce this card in the same way that they are called upon to produce a ticket or a passport, and to satisfy the authorities of the district they visit that, within the incubation period, they remain free from small-pox.

"It will be seen [the Ministry's statement concludes] that the great bulk of cases which have occurred in recent years have been mild in degree, and that while the *Tuscania* cases have resembled the more virulent type formerly prevalent, the number of cases has, thanks to the precautions taken, been comparatively small, and any danger of widespread infection from this source may now be said to be at an end."

CONFERENCE ON MENTAL WELFARE.

ADMINISTRATIVE PROBLEMS RELATING TO DEFECTIVES.

A largely attended conference under the auspices of the Central Association for Mental Welfare was held at the Central Hall, Westminster, on April 25th and 26th. The principal matters discussed were the effect of the Local Government Act on the work of local authorities in relation to the mentally deficient, and the report on mental deficiency by the joint committee of the Board of Education and the Board of Control. The latter was the subject of a leading article in our issue of April 27th (p. 775).

Address by the Minister of Health.

Mr. NEVILLE CHAMBERLAIN opened the conference with an address in which he referred to some unsatisfactory features of present administration with regard to mental deficiency, such as the variation in the way in which the statutory duty of ascertainment was carried out by different local authorities, the grave shortage of institutional accommodation, and the lack of supervision and training of non-institutional defectives. He was advised by the Board of Control that so far no single authority had provided sufficient accommodation for its own needs. In view of the fact that it was now sixteen years since the Mental Deficiency Act was passed, this was gravely disturbing. He went on to defend—apparently conscious of some hostility in his audience—the new Local Government Act, saying that those who had criticized it on the ground that a block grant system would not give the same encouragement to local authorities to carry out their duties as was afforded by the percentage grant, had failed to appreciate how far short of expectations were the accomplishments of the last sixteen years under the latter system. While the percentage grant had stimulated the progressively minded local authorities to extend their accommodation, it was not sufficient to tempt the poorer local authorities to draw upon their meagre resources for the purpose of this—as he must call it—unpopular service. The new system was going to take away from local authorities all excuses for not bringing up this service to what it might be. ("Question.") Well, everyone was entitled to his opinion, and time would show who was right. Mr. Chamberlain added that he had endeavoured in this measure to secure the support of voluntary bodies, among which the Central Association for Mental Welfare ranked high. There need be no anxiety as to any ill effect of the Act upon its work or influence.

The Local Government Act and Mental Deficiency.

A discussion followed the Minister's address on the effect of the Local Government Act on the work of local authorities. Mrs. PINSENT, a member of the Board of Control, expressed her belief that the provisions of the Act would lead to a better classification both of the existing institutions in any one district and of the persons concerned,

and this would lead to efficiency, economy, and more humane treatment of a section of the population much to be pitied.

After some criticisms of the Act, which was described by the clerk to one local authority as a "bombshell," had been made, Dr. H. B. BRACKENBURY remarked that whatever opinions might have been held as to this measure while it was passing through Parliament, it was now on the statute book, and there was no use in further argument as to whether it was what might have been desired. It would be generally agreed, however, that it was a very big step forward to that unification of the administration of health services which had been held up as the ideal for many years. While it might not be possible to rely upon a particular authority to accomplish a great deal in the way of unification, it was important to remember that there would be one council clerk and one chief administrative medical officer dealing with all these matters, and this extension of the functions of the principal executive officers to cover the whole field of local administration was a very noteworthy thing. A good deal would depend, of course, upon the personality of these officers, but, assuming that they knew their work and intended to do it in the most helpful way, the fact that there would be one administrative officer was a great gain. With regard to the committee of the local authority which should act in respect to mental deficiency administration Dr. Brackenbury differed from Mrs. Pinsent, who had suggested the Asylums Committee. In his opinion it was the Public Health Committee which should be entrusted with these functions. From both the medical and the social point of view, the problems associated with mental deficiency and retardation were quite different from those of mental disorder and lunacy.

Sir LESLIE SCOTT, who occupied the chair, said that the new legislation would prevent the anomalous position whereby mental defectives who happened to be poor were dealt with by an authority different from that which dealt with more wealthy mental defectives. Mental deficiency would in future be dealt with as it ought to be—as a health matter.

The Incidence of Mental Deficiency.

Sir FREDERICK WILLIS presided over the session when the discussion took place on the report of the joint committee. He made an allusion to the non-publication of Part III, declaring his ignorance as to the reason for withholding, adding ironically that he trusted no such objectionable passages had been discovered in the document as had led to the banning of a recent notorious novel. Dr. A. F. TREDGOLD, a member of the joint committee, also thought the non-publication to be most unfortunate. He could not but feel that some mysterious influences were at work. It was remarkable that there should be any hiding of the carefully considered opinions and recommendations of an independent committee on so important a subject. Dr. Tredgold then described the special investigation on behalf of the joint committee, which had occupied Dr. E. O. Lewis and his staff for two and a half years. The Royal Commission in 1906 came to the conclusion that there were 4.6 mental defectives per 1,000 population—that is, 150,000 defectives in England and Wales. Dr. Lewis's conclusion was that the number was 8 per 1,000, equivalent to a total of 314,000. This higher incidence might be due to a more complete ascertainment, but this did not meet the whole case. While Dr. Tredgold would not suggest that the incidence of mental defect in the community was double what it was a generation ago, nevertheless he could not resist the conclusion that there had been a definite increase in proportion to the population. Possibly the cause in part might be the reduction in infant mortality, whereby a certain number of mental defectives survived; another possible cause was the differential decline in the birth rate. After discussing employability and the classification of defectives from the administrative point of view, Dr. Tredgold added that it was quite clear that there were a large number of defectives in this country urgently in need of institutional care, which at present did not exist. It was doubtful whether the neglect to provide these institutions resulted in any saving of money, and it certainly entailed hardship on the individual.

Professor CARR SAUNDERS of Liverpool pointed out that the full importance of mental defect was not to be measured by the monetary burden. It was not quite true to say that the strength of society was the strength of its weakest link, but this was becoming more nearly true. With social progress there was greater integration and interdependence than before, and this implied that each defective was of relatively greater importance, because a greater drag upon the normal community. Dr. E. O. LEWIS, who carried out the investigation under discussion, also made the point that the mental deficiency figures were an index to a much larger problem. For every one defective thirty others were of subnormal mentality, so that a small increase in the figures for mental deficiency represented a very considerable increase in what might be called the social problem group. Miss EVELYN FOX, another member of the committee, declared that local authorities had failed to secure an adequate number of officers trained in social work, without whom it was impossible to adjust the problem of the defective.

Other speakers referred to what one of them called the "deplorable permission to propagate," and the need for rousing public opinion in favour of measures to prevent propagation. The rural slum, where the very lowest degeneracy was said to be reached, was also mentioned. One speaker suggested that the reason for the apparent increase in the number of mental defectives might be sought in the greater numbers who had applied for relief in recent years in consequence of industrial troubles, with the result that mental deficiency was discovered where it had not been supposed to exist.

The Retarded Child.

The final subject to which the conference addressed itself was that of the retarded child. The discussion was opened by Professor CYRIL BURT, who pointed out some further implications in the report of the joint committee. It appeared that about 1.8 per cent. of the school population in towns were feeble-minded, and nearly double that number in country districts. Applied to the whole country these percentages yielded a total of 90,000 children, or six times the number in attendance at certified special schools. These 90,000 were but the tail-end of a far vaster group of borderline cases. Wherever psychological tests had been applied to large samples of the school population, it had been shown that not only did the normals and defectives overlap, but there was no clean-cut cleavage between them, any more than between day and night. "You cannot diagnose mental deficiency as you diagnose small-pox." Dr. R. H. CROWLEY, senior medical officer of the Board of Education, said that it was in the large group of retarded children—not the mentally deficient—that most delinquents were found. He made a plea for what he called a fresh orientation of ideas and practice with regard to the backward child and his behaviour problems. It was on the behaviour problem that the attention of teacher, social worker, and psychologist should be concentrated.

Many speakers, mostly teachers, took part in the subsequent discussion, which, thanks to the action of the chairman, Mr. MORGAN JONES, M.P., escaped—though narrowly—developing a political bias. The creation of a new educational unit for the retarded child was welcomed, and the need for extending the school-leaving age, above fifteen for such children was emphasized. Some experiments in education and training were described. Mr. TIPPER, director of education, Westmorland, gave an account of an experiment in that county where a teacher specially trained for the purpose was employed to visit the schools which had dull and backward children in order to assist in devising methods for dealing with them. Miss MARSDEN, inspector for the Nottingham Education Committee, described a scheme adopted there whereby each child at seven was given a simple mental test in order to classify him according to his mental age. The names of all subnormal and possibly mentally defective children were sent to the senior medical officer, who tested the children in greater detail and decided whether they were suitable for special classes or how they might be most advantageously dealt with. Finally MONSIGNOR NEWSOME described the experiments at Besford Court, where the Montessori method of educating young mental defectives and the vocational training of older children are carried out.

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ASPECTS OF RENAL DISEASE.

IT is an early and elementary warning to students of medicine never to omit, in their diagnostic enterprises, the examination of the urine, the sanction of this advice being the fact that renal disease may exist without symptoms that obviously suggest it. A parallel lesson is that the discovery of albuminuria is not necessarily incompatible with sound health. Thus the duty of completeness of observation and the necessity for differentiation appear at the outset among the habits that are urged as the only sound foundation for clinical practice. Effectively to apply these counsels presents no great difficulty in the particular instances above indicated, though it may be allowed that the proof in an individual case that an albuminuria means neither renal disease nor any other disease demands the establishment of something like a universal negative. Still, the task can be accomplished even though the doctrinal explanation of the fact is not quite a confident one. When, however, for good and sufficient reasons, the conclusion is reached that albuminuria detected on clinical examination certainly means renal disease, the attempt to determine the type or character of the disease is not infrequently attended with many difficulties; and one of the causes of these difficulties is the varied classifications of nephritis with which authors and textbooks confront us.

At one time the pathological anatomist possessed the field. A limited number of structural pictures or plans were described, and into one or other of these groups the physician was expected to fit his patient. To fail was to be guilty of an error in diagnosis. Time has seriously disturbed this claim, and the attempt to correlate the clinical record with the post-mortem appearances of the kidney has not proved universally successful. Hence diagnostic phrases based on the assumption of particular structural alterations in the kidney are widely recognized to be inadequate, for now and again, without any question, clinicians of experience expect from the symptoms and record to find one pathological type of kidney, and as a fact find something quite different. In recent years, and to an increasing extent, disturbances of function rather than anatomical changes have been adopted as a basis for the classification of the varieties of nephritis, and in some instances this basis has been used for a very simple, perhaps a too simple, clinical grouping. Simplicity is, of course, attractive, but after all the facts must govern the situation, and it cannot be said that the clinical study of renal disease presents facts which readily fall into a very limited number of groups. The present position is that the severe anatomical basis of classification has been severely shaken; quantitative measurement of the degree of functional disturbance is gaining recognition; and in the existing transitional and tentative stage a quite sharp and confident scheme of classification able to accommodate all experiences is hardly possible.

Nevertheless, the practical demands of the situation, as well as the need for helpful discussion, require some generally agreed basis and grouping, and as a contribution to these ends the British Medical Association Lecture by Dr. Langdon Brown, which we print at page 797 this week, has obvious value and interest. The scheme of arrangement (modified from Aschoff) is comprehensive, and the classes and subclasses are well defined. The names are familiar, and suggest actual renal conditions. On the other hand, the classification which would allow only two forms of nephritis—hydraemic and azotaemic—seems almost too simple to be true, and the names are free from any suggestion of actual renal change. Possibly this last-mentioned quality is a virtue when, as is not infrequent, a given *clinical picture cannot* with certainty be interpreted as significant of a given series of structural renal changes. Yet, *after all*, when thinking and speaking of the kidney it seems almost inevitable that some outline of the actual renal condition must be present to the mind's eye. It may be that further attempts to correlate the microscopic features of diseased kidneys with the clinical records as these are studied by the physician will be successful. Though the macroscopic facts of the post-mortem room have not been fully helpful in this respect, it does not follow that histological studies will fail, though, truth to tell, details of the destroyed edifice cannot with much hope be counted on for a definition of the source and characters of the conflagration. In the meantime the practice of medicine must be carried on, and a working scheme, even allowing that it has defects, is better than no scheme at all.

In the text of his lecture Dr. Langdon Brown discusses both the weak points in his tabular grouping and also the possibility of overlapping and of intermediate cases. To read the lecture is an opportunity for noting that an experienced physician, while recognizing the value, or, indeed, the necessity, of classification, keeps classification in its proper place, and uses it to help, not to dominate, the study of facts. Facts remain and will be repeated. The grouping of them will doubtless be modified by the pressure of time and the event.

Another illustration of the modern tendencies in medicine as discussed in the lecture is the advocacy of quantitative chemical analysis as this may be applied both to the urine and to the blood. The younger generation of practitioners is growing up under influences of this order, and though the standard is a high one and not easily to be attained, the service both to exactness of diagnosis and prognosis and to confidence in treatment is beyond question, and a levelling up of practice to these claims may therefore be expected. Some of the chemical tests may perhaps always need laboratory observation and skill; but this is not true of all the tests by which the function of the kidney can be estimated, and the desirable thing is that the practitioner, so far as possible, should cultivate first-hand knowledge and depend on his own observations. Whether such a view is accepted or not, it is manifest that the demand is for greater precision and a more searching investigation in every attempt to estimate the functional value of the kidney when diagnosis and prognosis have to be practised. If the standard is a severe one the reward is to be found in increased scientific knowledge and in added practical values. The broad position that has to be faced is that renal function may be much impaired with little structural change; while, on the other hand, destruction, and even considerable destruction, of the renal tissues may yet leave a large measure of functional efficiency. Evidently, therefore, the demand on the practical plane is for an estimate of the function of the kidney, and particularly of its function as an excreting organ.

A feature of Dr. Langdon Brown's lecture that should gain immediate recognition is the attention he gives to the subject of treatment. Even here, as in the issue of classification, there are differences of opinion, and it is an obvious advantage to have on record the experiences of a physician who speaks after having equipped himself with a large and carefully garnered body of first-hand observation and knowledge. In respect both to diet and drugs Dr. Langdon Brown has arrived at conclusions which do not always fit conventional and traditional teaching, but they are not on this account less worthy of attention. Altogether the lecture presents our readers with a summarized view of the trend of modern opinion in regard to the various forms of nephritis, with the investigations needed to establish diagnosis and prognosis, and with directions for treatment which rest on the basis of personal observation and experience. It may be, as the lecturer says, that modern investigations of the clinical and pathological problems associated with nephritis are disputing what until yesterday seemed to be well-established and admitted teaching, with consequent disturbance and uncertainty of opinion. The challenge, as many recent writings show, is indeed a very radical and inclusive one, and as it bears upon practice in relation to forms of disease that are far from infrequent it needs general attention. Nor are the issues to be settled purely by chemical tests and laboratory experiments. There is room and opportunity for clinical observations and records, and this more especially in the more chronic forms of renal disease. It is not without interest in this connexion to note that it is for an investigation of this order, conducted over a period of thirty years, that the Council of the British Medical Association, as announced in the *Supplement* to our issue of April 20th (*p.* 104), has awarded to Dr. Arthur Crook the Sir Charles Hastings Prize for 1929.

A NATIONAL RADIUM FUND.

ON April 16th the Chancellor of the Exchequer announced that the Government had undertaken to contribute out of public money towards the purchase of radium, on a basis of £1 for every £1 otherwise subscribed, up to a limit of £100,000. A public appeal for £150,000 (making £250,000 in all) to form a "National Radium Fund" has now been set on foot by leaders of the medical profession acting in concert with laymen prominently associated with the work of hospitals and cancer research. The purpose and scope of the fund were indicated in a letter published in the *Times* of April 29th, over the signatures of Sir John Rose Bradford, Lord Moynihan, Lady Barrett, Sir E. Farquhar Buzzard, Lord Dawson of Penn, Dr. Robert A. Fleming, Lord Gorell, Sir Thomas Horder, Lord Knutsford, Mr. J. P. Lockhart-Mummery, Sir Ewen J. Maclean, Dr. J. M. H. MacLeod, Mr. Alexander Miles, Lord Reading, Sir Humphry Rolleston, Sir Arthur Stanley, Lord Stanmore, Sir StClair Thomson, and Sir John Bland-Sutton.

The money obtained in this way, together with that contributed by the Government, is to be held by a body known as the National Radium Trustees, who will buy therewith and hold radium for use by an administrative body of experts known as the National Radium Commission. The Trustees are being constituted by the Government in accordance with one of the recommendations made by the Radium Subcommittee of the Committee of Civil Research,[1] but with two additional medical members to be nominated from their own number by the Radium Commission. The composition of the latter body has been modified so as to ensure adequate representation upon it of those familiar with the use of radium in medical practice, and its membership has been increased from nine to eleven. The Commission will thus consist of a chairman, appointed by the Trustees; six members, appointed by the Trustees from a list of names drawn up by the titular heads of the medical profession; and four members nominated respectively by the Minister of Health, the Secretary of State for Scotland, the Medical Research Council, and the Department of Scientific and Industrial Research. The general effect of these changes in the administrative framework of the scheme put forward by the Radium Subcommittee is summed up in the letter published on April 29th: "The radium will be bought and held by a body of Trustees which has the confidence alike of His Majesty's Government and the medical profession. It will be administered by a Commission which will contain an effective majority of members representing the skilled and experienced workers on the staffs of the voluntary hospitals."

The national appeal for radium is being made conjointly with a special appeal by King Edward's Hospital Fund in aid of the hospitals in the metropolitan area as a thank-offering for the King's recovery, the nucleus of the latter project being 100,000 guineas offered by an anonymous benefactor. Lord Donoughmore is acting as treasurer of the combined appeals, and arrangements have been made by the King's Fund so that contributions ear-marked for the purchase of radium for the needs of the whole country will be applied to that purpose through the National Radium Fund; such gifts should be marked "Radium," and sent to the Treasurer of the Thank-Offering Fund, at 103, Kingsway, W.C.2. Any doubts and misgivings about the constitution of the National Radium Commission having now been removed, the medical profession will whole-heartedly support this appeal. The first list of subscribers was headed with the names of the King, the Queen, and the Prince of Wales; and His Majesty has expressed warm approval of the decision to amalgamate the two undertakings.

[1] A full account of the subcommittee's report appeared in the *British Medical Journal* of April 27th, p. 772

THE LONDON ZOOLOGICAL SOCIETY.

ONE hundred years ago King George IV granted to the London Zoological Society a royal charter "for the advancement of zoology and animal physiology and the introduction of new and curious subjects," and on Monday last, at a special meeting held in University College, London, the society celebrated the centenary of this great event in its history. The study of zoology has always had a special attraction for medical men; the subject forms, and of necessity must always form, an essential part of the curriculum of the medical student, who, because he must become biological in outlook, has to realize that medical science itself involves but the intensive study of one of the highly developed animals. Many of the most celebrated zoologists have belonged to our profession, or else, like Charles Darwin, have been diverted to specialization in zoology while engaged in the study of medicine. Small wonder, then, that a large number of physicians and surgeons are not only Fellows of the Society, but are actively identified with its activities. The post-mortem room has been called the Palace of Truth from which many who have entered with one label have departed with another. No less valuable than the necropsy on the human subject is the study of comparative anatomy and pathology conducted in the society's prosectorium, and it is noteworthy that famous

men closely associated with that work—Richard Owen, Huxley, Alfred Henry Garrod, W. A. Forbes, H. G. Plimmer, Murray, Elliot Smith, and Leiper—have also been members of the medical profession. Perhaps it is because for the past few years all the comparative anatomists of the society and its pathologists have been medical men that much of their contribution to knowledge has had a direct bearing on human health and sickness. Human anatomy has been enriched by Somtag's work on the primates; the work of Bland-Sutton and H. H. Scott, now being ably continued by A. E. Hamerton, has added largely to our knowledge of human pathology. Even more than anatomy and pathology, the science of parasitology—because its study in man is inseparable from its study in animals—has been advanced in the society's prosectorium. Notable in this connexion is the work of Beddard and Nicoll before the war, and since then of Leiper and his colleagues, who, moreover, have rendered invaluable service by providing a number of the younger parasitologists with material for study. Though the medical profession as a whole has appreciated the value of comparative medicine only since the war, many of its leading members have long been engaged in its study, and nowhere more fruitfully than in the London Zoological Society's gardens. In this connexion our profession owes a deep debt of gratitude to the society, and in particular to its brilliant secretary, Dr. P. Chalmers Mitchell, without whose assistance it is probable that much of the research work in comparative medicine could never have been carried through. The appointment of Dr. G. M. Vevers to the post of superintendent, hitherto occupied only by professional zoologists, is a further guarantee that every opportunity will be taken to foster the relation between zoology and general medicine. But research work has by no means been confined to the prosectorium. The new aquarium has provided a vehicle for investigating problems intimately connected with one of our most important food supplies; the gardens themselves have afforded conditions unattainable in the laboratory for the study of economic zoology; and the library, one of the finest of its kind, offers the student and worker the whole range of zoological literature. We congratulate the society on its *hundredth birthday*. Not only has it captured the popular imagination as no other similar society in any part of the world, but it has prosecuted and encouraged active research into problems of fundamental importance to human and comparative anatomy. It enters its second century with the best wishes of the medical profession.

LOCAL GOVERNMENT ADMINISTRATIVE SCHEMES.

Four documents with reference to the submission of administrative schemes under the Local Government Act, 1929, in addition to the general circular on which we commented a fortnight ago (p. 735), have now been issued by the Ministry of Health to the councils of counties and of county boroughs in England and Wales. They are a memorandum addressed to county councils outside *London*, a similar memorandum addressed to county borough councils, together with, in each case, a model administrative scheme. These documents are of great importance, not only to the councils for whose use they are prepared, but also to medical officers of health and medical practitioners in general, and especially to the Branch Councils and Divisional Executive Committees of the British Medical Association, upon whom now rests the duty of securing that the administrative schemes conform, so far as possible, to the general requirements which the Association considers to be in the interests of public health. The memorandum and model scheme for county boroughs are naturally somewhat simpler than those for counties, but both have some features to which particular attention may well be directed. The council has first to make a detailed declaration of all those services in assistance to necessitous persons which it will provide exclusively by virtue of the Public Health or other Acts and not by way of poor relief. The Minister indicates that this declaration must be as widely embracing as possible in each case, and in an appendix sets out all the services which, under several Acts, may be provided in this way. It is, however, pointed out that "the making of such a declaration places the council, in so far as destitute persons are concerned, under an obligation to exercise the powers which they have under the special Acts, and, accordingly, a formal declaration should not be made until adequate resources can be placed at the disposal of the committee administering the special Act." The council, therefore, in some cases, may wish at first to make a scheme meeting only the immediate necessities of the transfer; but any such scheme can be revised and amended at any time by a further scheme similarly made and approved. Even where the including of some service in a declaration is not immediately practicable it will often be possible for a particular Poor Law institution to be appropriated for the purposes of a special Act. "Where, for example, hospital provision cannot be made for a whole county, it may be practicable to appropriate a particular Poor Law infirmary for use as a public hospital under the Local Government Act, 1888, and still to keep in operation the Poor Law powers of relieving the sick poor in so far as other accommodation for them is required." The same would apply to a home for mental defectives under the Mental Deficiency Acts. Next to the declaration as to what services are to be provided otherwise than through the Poor Law, the council must specify its choice between several alternatives for the constitution of its Public Assistance Committee. This committee may be either (1) a new committee with or without co-optative members, (2) another existing committee appointed to act as the Public Assistance Committee, or (3) the members for the time being of another committee of the council, together with additional members who may be either members of the council or co-opted persons who are not members of the council. In practice, if the second of these methods be chosen, it will probably be found that the Public Health Committee is the only one which can conveniently so act. Incidentally it is pointed out that the powers of co-option conferred by the Act on the councils with regard to their Public Health Committees and certain subcommittees can at any time be exercised, and do not need to be mentioned in an administrative scheme. However constituted, it is clear that the business of the Public Assistance Committee must involve on occasion the prompt taking of decisions to be followed by immediate action, and that therefore the councils should use their power of delegating to the committees appropriate responsibility and duty. This may be done with or without reservation, except as regards the raising of a rate or borrowing money; and accordingly the model scheme contains a clause making such delegation and setting out reservations thereto, and a number of definite duties which the committee must perform. Both these categories may, of course, be varied in individual schemes. In the county model scheme the constitution and functions of the local Guardians Committees are also set out. These clauses will require careful watching in all large counties, for to these Guardians Committees may fall in many cases the actual management of hospitals or other institutions. Lastly, attention should be drawn to the important point that "the scheme may provide that particular functions which have been delegated to the Public Assistance Committee shall be discharged on behalf of and subject to the general control of the committee by another committee of the council. This power is directed to meeting a case in which the special Acts under which a particular committee is working do not extend to a service performed under the Poor Law

which it is, nevertheless, desired to co-ordinate with the special service." The number of matters in connexion with which such power may well be exercised will be considerable. This is decidedly a second-best method of securing co-ordination of health services, but pending further legislation it seems the only practicable course. It is of importance to see that the clause embodying this provision is included in every scheme. Apart from the four official documents with which we have been concerned, and which relate only to the preliminary action to be taken by councils with regard to administrative schemes, there are a number of special points on which the Minister of Health will no doubt feel it necessary to issue additional memorandums. Indeed, already there have been three such documents circulated—a memorandum with regard to schemes (under Section 101 of the Act) for securing payment by the council of annual contributions towards the expenses of voluntary associations, if any, providing maternity and child welfare services, together with a model scheme for counties and for county boroughs respectively. These schemes are of some importance in a good many areas, and, of course, seriously affect the activities of the voluntary associations concerned, but they are of minor interest as compared with the general administrative schemes upon which the efficiency of health services and of public health work is vitally dependent.

A MEDICAL SUNDAY SCHOOL IN PARIS.

A SMALL volume entitled *Leçons du Dimanche*,[1] containing twelve lectures by Paris clinicians, has been edited by Professor Paul Carnot, successor to Professor Gilbert as chief of the medical clinic at l'Hôtel-Dieu. Professor Carnot explains how he wished to keep the busy physicians, practising in the city, in touch with recent hospital developments, and therefore a course of twelve lectures, held at 10.30 o'clock on Sunday mornings at l'Hôtel-Dieu, was arranged between New Year and Easter of last year. Their success was immediate, and it is hoped to make these Sunday lectures an annual event. The present small paper-backed volume is a reprint of the first set of lectures, and its main purpose is to refresh the memory of those who attended them. The chief value of this little book to us in Britain is perhaps the way in which it illustrates the differences between the teaching of medicine in the two countries, and it is interesting to consider what might be the titles of the twelve addresses chosen if such a "Sunday school" could be held in one of the large teaching hospitals in Britain. Would any of the lectures be on such subjects as "Les péri-dextro-viscérites infectieuses" (Carnot), "Les troubles du metabolisme de l'eau chez les hépatiques" (Villaret), or even "Thyroxine et folliculine" (Harvier)? Several of the lectures are naturally on subjects of topical interest everywhere, such as the infections of the nervous system, modern radiological methods in gastro-intestinal disorders, and certain aspects of insulin treatment. The characteristic qualities of the individual lecturers stand out clearly, and the points of view of a dozen representative Parisian teachers are easily grasped by a reader who has never been in Paris hospitals and does not know the kind of medical teaching which exists there to-day. He will, however, be somewhat at a loss to understand a good deal of what is discussed, and would wonder how he would fare and what methods he would use if suddenly transported to take charge of a medical practice in Paris. The independence of French medicine is certainly remarkable, and it follows no lead given by any other country. Its trend is becoming far more difficult to follow than it was a generation ago, and even the close co-operation of the war years seems in no way to have approximated the details of everyday methods employed in practice in France and Britain. The basic ideas of physiology are naturally the same, but what has been developed out of them seems so different. It is to be hoped that this volume of lectures may be repeated annually, to enable those who are interested to keep in touch with the problems which are engaging the attention of the practising physicians of France at the moment.

[1] *Leçons du Dimanche.* Par P. Carnot, Sainton, Bensaude, M. Villaret, H. Renard, A. Baudouin, Dieulafé, Tiffeneau, Halbron, Rathery, Harvier, Chabrol. Paris: J. B. Baillière et Fils. 1929. (5½ × 8½, pp. 273; 29 figures. 20 fr.)

THE HISTORY OF PATHOLOGY.

THE history of pathology has not hitherto engaged the attention of medical students except in a very perfunctory and partial manner, without any definite educational aim. That it might be of distinct educational value appears to have been first recognized by Sir William Osler, who made use of it in his lectures, and Professor Long has emphasized its claim in this connexion. A bewildering mass of detail is now presented to the student in all branches of medicine, and his knowledge is in consequence apt to consist of loosely connected facts. The sense of perspective is to a great extent lost, and the significance of individual facts in relation to the science generally is unperceived. Some guiding thread is needed which will assist him in organizing his knowledge and enable him to place isolated facts in their proper organic position in the general scheme, and to recognize their bearings. It is claimed, with some justification, that nothing serves this purpose better than history; the historical connexion of facts is readily comprehended, and the human and personal element which pervades it holds the attention more firmly than a purely abstract presentation. The history of pathology is, however, a large subject, and the student is not recommended to study it in any considerable detail; but a short abridgement, such as that of Professor E. R. Long,[1] made interesting by personal details relating to notable discoverers, and by indications of the scientific and pseudo-scientific ideas prevailing in the several stages of the progress of civilization, should be helpful to the student. In twelve brief chapters Professor Long has traced, in a readable manner, the progress of medical science from its beginnings, sketching with a skilful hand the evolution of our present conceptions. The book was written with the object of assisting students on the lines indicated above; it is small, so that it may be read in a few sittings of an hour or two each; and an occasional reperusal from time to time would without doubt help students in maintaining their bearings amid the mass of facts which threaten to overwhelm them.

HEALTH IN ILLINOIS.

WE noted a year ago the appearance of the first memorial volume issued by the Department of Health for Illinois in commemoration of its jubilee in 1927, which contained a historical account of the progress of sanitation in the State from early down to recent times. The second volume,[2] which has now appeared, reviews the position of the local health administration. Every city, village, and rural area in Illinois is empowered by law to establish a public health service. The cities may either have boards of health or be administered for health purposes by a commissioner. One health department is described as privately owned, and rural areas in a number of cases are

[1] *A History of Pathology.* By Esmond R. Long, Ph.D., M.D. London: Baillière, Tindall and Cox. 1928. (Cr. 8vo, pp. xxiv + 291; 48 plates. 22s. 6d. net.)

[2] *The Rise and Fall of Disease in Illinois.* Vol. II. By Isaac D. Rawlings, M.S., M.D., in collaboration with William A. Evans, M.D., D.P.H., Gottfried Koehler, M.D., and Baxter K. Richardson, A.B. Illinois: State Department of Health. (Sup. roy. 8vo, pp. 493; illustrated.)

ill provided for. In general the level of competence of health officers is not up to British standards. Of the 2,720 local health officers in the State fewer than 400 have any medical or sanitary training. In some outlying areas, therefore, as is inevitable in a new country in certain stages, administration is still in process of development. Strongly contrasted with these immature communities of Illinois is its chief city of Chicago, which has an intensively organized health service. The phenomenally rapid growth of the city raised health problems of the most varied kind, among the acutest of which were the disposal of sewage and the protection of the water supply. Time was when Chicago drew its water in a natural state from Lake Michigan, and discharged its sewage into the Chicago River, which terminates in the lake. This river had been an offence for years, and various devices had been used to improve it, but in August, 1885, after two days' heavy rain, it rushed in a torrent into the lake, carrying its foulness two miles off-shore across the only water intake of the city, the supply of which was at this date untreated. Amid considerable popular excitement preventive measures were set on foot, and in 1892 powers were given to construct the Chicago drainage canal. This great channel, opened in 1900, reverses the flow of the Chicago River, and carries the waters of Lake Michigan, bearing the sewage of Chicago with them, from the St. Lawrence watershed to the Des Plaines River, and so to the Mississippi. The effect of the drainage canal was soon apparent in the reduction of the typhoid mortality of Chicago. It fell from 27 per 100,000 in 1899 to 10 per 100,000 in 1911. *The introduction of chlorination of the* water supply in 1912 was an added measure of safety. In 1926 *the typhoid* death rate was 0.8. *In view of misgivings* which have been expressed in certain quarters as to the *propriety of transferring* water which might have nourished the St. Lawrence to a purely American river, it is pertinent to note the comment of the writer of this interesting volume that the canal merely renews the flow from Lake Michigan to the Mississippi, "as it had flowed in prehistoric times"!

THE YELLOW FEVER COMMISSION.

HONOUR has now been officially bestowed on the work of Walter Reed and those associated with him in the Yellow Fever Commission by the Congress of the United States, with the full approval of the President. A roll of honour is to be published regularly in the Army Register, and will contain the names of the twenty-two members of the military establishment who participated in the experimental investigation of yellow fever in Cuba. Gold medals are being presented to those who survived and to representatives of those who died; pensions are to be awarded to the sixteen living members and to the widow of one of the soldiers. Commenting on this, the *Journal of the American Medical Association* for March 23rd remarks that the report of these experiments published for the use of the Senate in 1911 is one of the most interesting volumes in American medicine, and our contemporary recalls the vote of thanks to the members of the Yellow Fever Commission adopted by the meeting of the American Medical Association at Saratoga in 1902. The self-sacrifice of those who risked their lives in the attempt to discover the method of transmission of a fatal epidemic disease can, indeed, hardly be overpraised. They were injected with blood from patients dying from yellow fever; they were bitten by infected mosquitos; they slept in beds in which patients had died; and they wore infected clothes. We referred more than once last year to the progress that is being made in the prophylaxis of yellow fever, and a review of what has already been achieved by Hindle and others was given in a leading article on November 24th (p. 947).

ANNUAL MEETING OF THE CANADIAN MEDICAL ASSOCIATION.

THE annual meeting of the Canadian Medical Association is being held this year at Montreal from June 17th to 21st. Among the principal speakers are: Professor E. Rist of Paris, who will give a lecture on the onset of pulmonary tuberculosis and its lobar localizations; Mr. J. A. Cairns-Forsyth of London, who will lecture on the surgery of the biliary tract and pancreas; Sir StClair Thomson, who will speak on intrinsic cancer of the larynx and its successful treatment by laryngo-fissure; Dr. D. P. Armand-Delille of Paris, who will demonstrate the diagnosis of the early stages of pulmonary tuberculosis in infancy and childhood, by means of x-ray films, anatomical preparations, and coloured lantern slides; Professor L. Ambard of Strasbourg, who will lecture on the significance of hyperglycaemia in diabetes; and Dr. G. B. Roatta of Florence, who will deal with child welfare as the basis of public health. Other subjects for consideration at this meeting are: the differential diagnosis of clinical conditions accompanied by jaundice; periodic health examination; acidosis in anaesthesia; and the duty of the doctor to the hospital. The Harvey film will be shown by Dr. Léo Parizeau of Montreal. A report on B.C.G. vaccine will be rendered by Dr. J. A. Baudouin of Montreal. In addition to these general sessions there will be sectional meetings occupying three mornings. Thursday, June 20th, will be celebrated as "Osler Day," and the Osler Memorial Address will be inaugurated. The April issue of the *Canadian Medical Association Journal* contains further details about this annual meeting, and also an historical sketch of Montreal.

THE KING, as patron of the London Radium Institute, has approved the appointment of Sir George Blacker, M.D., as president of the Institute in place of the late Sir Anthony Bowlby, and of Sir Hugh Rigby, F.R.C.S., as a member of the committee.

THE President of the Victorian Branch informs us that a meeting will be held by that Branch on May 12th as a memorial to Sir George Syme, LL.D., F.R.C.S., Vice-President of the British Medical Association, of whom an obituary notice appeared in our last issue.

IT is announced that the first congress of the International Society for Microbiology, which was fixed to take place in Paris in October, 1929, has been definitely postponed to June 25th, 1930. The programme, which has already been published in various scientific journals, will stand.

Two popular lectures will be delivered next week in the Great Hall of the British Medical Association House, Tavistock Square, in connexion with the Fifth International Congress of Military Medicine and Pharmacy. They are open to any member of the British Medical Association, and the Executive Committee of the Congress hopes to welcome many medical practitioners and ladies accompanying them. The first lecture will be by Major Ian Hay Beith (Ian Hay) on the subject of "The English sense of humour." It will be delivered at 3.30 p.m. on Tuesday, May 7th, the chair being taken by Surgeon Vice-Admiral Arthur Gaskell, Medical Director-General, R.N. The second lecture, at 3.30 p.m. on Thursday, May 9th, will be by Sir Philip Gibbs, on "Experiences of an official war correspondent." Those attending the lectures will be welcomed also at the Service and Commercial Exhibition which is being organized in the extension of the B.M.A. House during the week of the Congress.

BRITISH CONGRESS OF OBSTETRICS AND GYNAECOLOGY.

DISCUSSION ON THE MANAGEMENT OF CASES OF PELVIC DISPROPORTION.

THE seventh British Congress of Obstetrics and Gynaecology met in the Royal College of Physicians, Dublin, on April 24th, 25th, and 26th; Dr. GIBBON FITZGIBBON presided. The opening subject was the management of cases of pelvic disproportion, and the discussion was introduced by Professor MUNRO KERR (Glasgow), who dealt with the diagnosis of this condition.

Professor Munro Kerr pointed out that the diagnosis of pelvic disproportion by instruments, the hands, or radiography was very difficult in so far as the obtaining of exact measurements of the pelvic inlet was concerned, but that deformities of the outlet could be accurately determined. He insisted that the selection of treatment for deformity of the pelvis at the inlet depended on an exact estimation of the relative size of the foetal head and the pelvis, but, for the outlet, treatment should be based on exact measurement of the outlet. He emphasized the importance of recognizing minor deformities, since failure to do so resulted so often in unsuitable treatment being employed; he believed that the largest proportion of disasters occurred in this group. In conclusion, he pointed out that the practical question was: Will the head pass? He referred to the factors which influenced spontaneous delivery: (1) the previous obstetric history; (2) any irregularity in the pelvic brim; (3) the size of the foetal head; (4) the degree of ossification; (5) the variety of biparietal obliquity; and (6) the strength of the uterine contractions.

Professor FLETCHER SHAW (Manchester) dealt with the immediate results to the mother and the child of labour with contracted pelvis. He showed clearly that induction, even though it must be performed unnecessarily in many cases, was still a potent factor in reducing the large number of Caesarean sections.

Dr. JAMES YOUNG (Edinburgh), speaking on the treatment of obstructed labour due to pelvic disproportion, brought to the notice of the meeting the importance of inter-hospital investigation of the mortality and morbidity in institutions where the same lines of treatment were being employed. In one instance which had come under his notice, one hospital, in a series of Caesarean sections performed on clean cases, had a mortality six times greater than another hospital using the same technique. He cited the great record of Frances Ivens in this respect, and suggested that the discrepancy between any two institutions, when all other sources of infection had been excluded, was one endemic to the particular hospital concerned.

Dr. J. D. BARRIS (London) dealt briefly with the history of the operation of induction, and clearly indicated the value of this method of treating disproportion, provided that a time after the thirty-sixth week was chosen.

Dr. R. H. PARAMORE recommended pubiotomy in neglected contracted pelvis cases. In such cases, in which delivery with forceps had been tried perhaps often, and many vaginal examinations had been made, if pubiotomy was discarded one must either perform Caesarean section, with what seemed a very considerable risk to the mother, or a craniotomy, at times on the living and uninjured child. In these cases pubiotomy was a valuable and useful procedure. He had performed the operation seven times; he had had one death from pre-eclampsia, and one case of urinary incontinence due to ulceration of the urethra. The death was in nowise connected with the operation; the urinary trouble in the other seemed to be due to the use of a retained catheter, but the case had been very difficult to nurse; all the other patients had recovered. A point to be noticed, which was not mentioned in the books, was that the vagina might be split, during the delivery, opposite the section of the bone. In septic cases an osteo-myelitis could develop, and this happened in one of the speaker's cases. In another case pubiotomy resulted in a living child, and convalescence was normal.

Dr. W. R. MACKENZIE (Belfast) said that while external pelvimetry enabled them to measure directly external pelvic diameters, and thence to draw certain conclusions as to the degree of contraction, it was insufficient for estimating the size of the pelvic cavity. This could not be done directly in the living woman except during a laparotomy. Internal pelvimetry had the disadvantage that an anaesthetic was required for accuracy, and even then more than one finding was necessary. The only accurate method was that of æ-ray photography, with a standard pelvic photograph as introduced by him in 1923. By this method one could accurately measure the pelvic inlet and outlet. The minor degrees of contraction were easily recognized, and one could advise the patient when a test of labour or induction should be attempted.

Dr. BETHEL SOLOMONS and Dr. W. TAYLOR (Dublin) discussed 294 cases encountered at the Rotunda Hospital during a period of two years. The various methods by which diagnosis was made ante-natally were considered; the value of external pelvimetry was dealt with, and its relation to the size of the foetal head. Other points for discussion were: should the Skutsch pelvimeter be used, and would it, with æ-ray pelvimetry, replace this method? A modification of the external Müller procedure was suggested and illustrated. The Kerr-Müller procedure must be carried out as a routine; its technique was considered. Treatment would depend largely on the findings of this examination, and successful results could only be obtained after experience. Some points in a trial labour were emphasized; in connexion with this the details of making a rectal examination were of importance. The fact that a woman had been delivered of one or two infants normally did not exclude the possibility of difficulty in subsequent confinements. Were there indications for pubiotomy? Disproportion might be caused by factors other than the relation of head to pelvis; inco-ordinate uterine action was a typical example. Examples of this abnormality were given and the question was discussed. At the end of the paper a summary of the varieties of contracted pelvis encountered in the investigation was given. The conclusions reached were as follows. There were 294 cases that could be grouped as disproportion among 4,000 progressive cases at the Rotunda Hospital over two years, a percentage disproportion rate of 7. Ante-natal diagnosis was the ideal to aim at; the possible course of labour could be surmised thus in many cases. External pelvimetry was of much service; 43.8 per cent. of the cases with small measurements in the series required some form of operative intervention. Internal pelvimetry by the Skutsch instrument was used; the measurements obtained were of distinct service in estimating the probable margin of safety on the side of proportions in conducting a trial labour. X-ray pelvimetry was useful, and should prove to be more so. It avoided internal manipulation, and gave accurate results in a large percentage of cases. An æ-ray film provided a fair idea of relation of head to pelvis. The head was the best pelvimeter. The suggested modification of the Müller method was extremely useful. The Munro Kerr-Müller estimation must always be made; in this the importance of the soft parts must be remembered. Induction of labour had an important place in their treatment, but the knowledge when to induce and when to leave alone required prolonged practice. Induction and trial labour might be employed in borderline cases, with a view to the performance of the lower segment section operation with safety. Rectal examination should be used to watch the progress of labour, but there was no need to overdo it; one vaginal examination was usually sufficient. When uterine inertia occurred great care must be exercised in diagnosing whether the condition was primary or secondary. The condition of the foetal heart must be observed; temporary accelerations or diminutions were not always of great importance. Information of note could often be obtained by observing the height of the retraction level; this gave a relative idea of the size of the cervix and of the amount of tension in the lower segment. Since failure to deliver with the forceps had been common in some countries in the past, the authors gave their points in diagnosis regarding pubiotomy, in the belief that the failures referred to had been due to faulty diagnosis. They believed that pubiotomy had a very small place in treatment. A final Munro Kerr-Müller examination should be made under anaesthesia in cases in which

there were indications for delivery, but it was not possible to be absolutely certain without anaesthesia that the head had passed through the brim. It was suggested that an investigation into the comparative weights of mothers and newborn babies might be made. The symptoms and signs of dystocia were given. The diagnosis of false labour, spasm of the uterus, and especially contraction ring must be thought of when dealing with any case of disproportion. A group of symptoms found in cases of contraction ring was given.

Professor R. W. JOHNSTONE (Edinburgh), in a paper on the induction of premature labour in disproportion, dealt most lucidly with the points for and against the procedure, citing the experience and dicta of various schools. He stated that it was his feeling that the place of induction was in those cases of disproportion where there was just an element of doubt whether a full-sized child would pass through the pelvis without subjecting itself and the mother to a prolonged and difficult labour. This was especially the case in primigravidae, for the information so gained would be of the first importance in subsequent labours. Professor Johnstone believed that the operation was justified in the case of a woman who, in a previous labour, had been delivered naturally of a stillborn child of average or over average weight, or in whom the test of labour on a previous occasion had failed and necessitated a high forceps operation. Cases of slight contraction of the outlet also came within the category of this suitability.

Mr. EARDLEY HOLLAND said that the results of treatment of cases of slight and moderate disproportion by the induction of premature labour were, up to a point, very good; the maternal mortality was almost zero, the foetal and neo-natal mortality was not more than 10 or 12 per cent., and the later infant mortality was said to be not too high. The alternative method of treatment by the "test of labour" had never found favour in Great Britain, but was employed in almost every other country. Treatment by induction of premature labour did not require a high degree of obstetrical skill or experience; but treatment by the "test labour" method was suitable only for expert obstetricians. It was essential to have an experienced and expert obstetrician resident in the hospital; every phase of a "test labour" must be watched by an expert, who must know exactly when and how to intervene. Mr. Holland had become dissatisfied with the induction method many years ago. Apart from the high foetal and infant mortality associated with its then methods of inducing labour left much to be desired. They were slow, uncertain, and often required many operations; the character of the resulting labour was often unsatisfactory; in a high proportion of induced labours there was uterine inertia and early rupture of the membranes, with the common sequels of malrotated vertex presentations and badly flexed heads. His experience led him to continue using the "test labour" method. In an investigation undertaken in 1926, the results of which were embodied in a paper read at the Coombe Hospital Centenary Congress, he had come to the conclusion that induction had been performed unnecessarily in 89 per cent. of the cases, and had been performed either too early or too late in many of the remainder. Cases of apparent disproportion at the thirty-sixth or thirty-seventh week might by the time term was reached be found with the head well engaged in the pelvis. Mr. Holland concluded by emphasizing the value of the "trial labour," when properly conducted by an expert.

Dr. BETHEL SOLOMONS, replying, said that the main purpose of the teaching at the Rotunda was that the general practitioner should acquire knowledge which would ensure a safe delivery for his patients. He practically never performed section before labour, unless in repeat cases with absolute indications. The lower segment operation was safer than the classical. There was scarcely any mortality, and the morbidity was small: it could be employed after trial forceps or failed forceps. Drainage should be used in suspicious cases. The papers read that day had established the superiority of the low over the high incision, especially with regard to the number of fatalities in potentially septic cases. He intended to give trial labours to suitable patients on whom the lower segment operation had been performed. There had been one incomplete rupture of a scar; the patient had previously had an 8-lb. baby, and the measurements were normal. On the subsequent occasion the child was over 10 lb., and foetal distress necessitated delivery; the uterine muscle had ruptured for about an inch, the membranes and the peritoneum were intact. Both mother and child had uneventful recoveries. There had been several normal deliveries after previous section. There was never any necessity for craniotomy on the live child; the lower segment operation was as safe, if not safer, in suspicious cases where marked disproportion existed. In some cases, even when the child was dead, section might be indicated. He did not agree that previous stillbirths made Caesarean section absolutely necessary, unless the woman was near the completion of the child-bearing age. It must be clearly remembered that most of the cases reported by Holland were before the popularity of the lower segment operation became manifest. The longer that labour lasted the greater was the bacterial content of the uterus. When the results of induction and section were compared the number of unnecessary sections must be taken into account. He, Dr. Solomons, was a firm believer in induction, in trial labour, and in induction followed by trial labour; they all had their place. There was a very small field for induction in primigravidae, but this treatment certainly had a place in obstetrics. He joined in the protest against the separation of the ante-natal clinic from the maternity hospital. The establishment of such isolated clinics was a waste of public money, which could be spent much better on increased grants to the hospitals. Trial labour could be practised in private practice. He thought it was a great credit to the congress, and to British and Irish obstetricians in particular, that the Kielland forceps had not been mentioned by any speaker in the discussion; the instrument was dangerous.

(To be continued.)

ZOOLOGICAL SOCIETY CENTENARY.

THE centenary celebration of the Zoological Society of London took place in the Great Hall of University College on April 29th. The president of the society, the Duke of Bedford, occupied the chair, and congratulatory addresses were presented by the representatives of learned societies in seven countries. Among those on the platform were the French and Italian Ambassadors, a representative of the German Ambassador, Viscount Grey, the Earl of Onslow, Sir Ernest Rutherford, President of the Royal Society, and representatives of many scientific bodies.

Historical Surveys.

The DUKE OF BEDFORD gave a brief account of the history of the society from the more popular side—that is, the development of the gardens and the menagerie—leaving it to Dr. P. Chalmers Mitchell, the secretary, to speak of scientific achievements. He mentioned as one example of the forward look of the society that as far back as 1829 it made women equally eligible with men as Fellows; in fact, the senior Fellow of the society at the present moment was a lady, elected in 1865. Each sovereign in turn, from George IV onwards, had been a patron of the society and had enriched its collection with gifts. It was an encouraging fact that at this one hundredth annual meeting it should be possible to report that the number of visitors to the gardens last year (2,225,000) and the present number of Fellows (8,067) should both be at high-water mark.

Dr. CHALMERS MITCHELL then followed with some description of the society's scientific work. He mentioned that the first list of items in the collection a hundred years ago included 43 species of mammals, 93 of birds, and one of reptiles; the centenary list comprised 949 species of mammals, 2,330 of birds, and 1,174 of reptiles, amphibia, and fishes. The society had also introduced to science, by inadvertence rather than design, many new and curious subjects of the animal kingdom, comprising a greater number of species than all the animals legitimately in the gardens. These were the external and internal parasites—inhabitants of skin [illegible] ther, of intestinal tract, blood, and internal or[illegible]als. The imp[illegible] tance of these parasites was [illegible] be understood,

and although they had been collected and named intermittently throughout the history of the society, it was only during the last dozen years, under the direction of Professor Leiper, that they had been systematically studied, the study adding greatly to scientific knowledge. A large part of the usefulness of animals to science, Dr. Mitchell continued, began after their death, and the bodies of the society's animals had furnished valuable material for the study of comparative anatomy. He mentioned some famous anatomists and physiologists of the past who had worked in connexion with the gardens, among them Thomas Bell, Huxley, and Victor Horsley. Among living men of eminence in this field, Sir Arthur Keith, Professor Elliot Smith, and Sir John Bland-Sutton had all acknowledged their indebtedness to the prosectorium. It was largely owing to the influence of Huxley that the prosectorium was established, and the prosectorship had been filled by a succession of men of great ability. Pathological investigation into the cause of death was an integral part of Huxley's scheme, and although it faded out for a time, in 1903 pathology was restored to its proper place, and a pathological post added to the prosectorium; this post also had secured brilliant occupants. After touching on the way in which the society had advanced zoological knowledge in consequence of its publications, Dr. Mitchell mentioned that at one time it maintained a museum which kept systemic zoology alive during the "dark ages of Bloomsbury," before the renascence came with the setting up of the Natural History Museum at South Kensington. In recent times he claimed that the society had done much to advance animal physiology; he knew that the mention of "physiology" opened the floodgates of apprehension, but physiology had no specific relation to laboratory research. It implied simply observation of the habits of living animals, breeding, acclimatization, and the investigation of hygiene in its widest sense. The relations of animals to their environment had been studied, especially as regards fresh air, heat, light, and food. Some of the work carried out was pioneer experiment based on the investigation of animal physiology, and here he thanked Dr. Leonard Hill, of the Medical Research Council, for invaluable assistance in the effort to apply correct physiology to the welfare of animals.

Congratulatory Addresses.

Addresses of congratulation were then presented. Sir CHARLES SHERRINGTON for the Royal Society, spoke of the long and honorable record of the Zoological Society in the promotion of research and exploration. The society combined, as few scientific societies could combine, the pursuit of science with popular interest, and what greater proof of popularity could there be than to bring about a distortion of the language, as in the word "zoo." He found the gardens an admirable place for the exercise of that supremely human prerogative—contemplative curiosity. M. CHARLES GRAVIER brought the felicitations of the Académie des Sciences and the sister institution of France. Mr. H. H. DRUCKHOFF, representing the German Zoological Society, spoke in grateful terms of the help which British zoologists had afforded in establishing the many collections in German cities. Dr. CASEY WOOD conveyed the greetings of the Smithsonian Institution at Washington, reminding the company that that institution owed its foundation and endowment to an English chemist who never saw America. In trying to carry out James Smithson's ideals the institution had taken pattern by the Zoological Society, though without its unrivalled opportunities for obtaining specimens. Dr. JORDAN, from the Royal Academy of Sciences, Amsterdam, made a plea for scientific internationalism. Professor COSMO EWART brought the greetings of the Royal Society of Edinburgh, while having to acknowledge that there was very little to be said about zoological work at present in Scotland; and, finally, Professor A. F. DIXON, representing the Royal Irish Academy and the Zoological Society of Dublin, expressed the thanks of the latter body for much valuable co-operation.

Sir JOHN BLAND SUTTON, in proposing a vote of thanks to the president, made some characteristically whimsical remarks about the antiquity of zoological science. Eden, he said, was the first zoological garden, and Adam, the keeper, had the privilege of naming the animals without being embarrassed by priority in nomenclature. The first travelling menagerie was undoubtedly that of Noah, whose ability to get the animals to go two and two into the ark must have been the envy of every superintendent and keeper since. Zoology was studied to-day as a part of natural history, also for comparative anatomy, and in relation to pathology, even human pathology. From the beginning of its existence the society had been hampered by its environment, but now it had acquired a valuable zoological park at Whipsnade in Bedfordshire, where observations—he did not like to use the word "experiments"—would be carried out likely to throw a good deal of light still upon the origin of species, and particularly in regard to the infertility of hybrids, which had never yet been explained.

Dinner at the Zoological Gardens.

The formal oratory of the celebration was confined to the afternoon gathering, but a private dinner party was held in the evening at the society's gardens in Regent's Park, when the Duke of Bedford presided over a very distinguished company, which included H.R.H. the Prince of Wales. Among prominent representatives of medicine who accepted invitations to the dinner were the following:

Sir John Rose Bradford (President, Royal College of Physicians), Dr. H. H. Dale, Dr. F. G. Dawtrey Drewitt, Sir Walter Fletcher, Sir Archibald Garrod, Lieut.-Col. A. E. Hamerton, Professor Leonard Hill, Sir Arthur Keith, Professor R. T. Leiper, Dr. G. C. Low, Mr. V. Warren Low (representing the President, Royal College of Surgeons), Mr. P. H. Mitchiner, Dr. S. Monckton Copeman, Professor F. G. Parsons, Dr. Charles Porter (M.O.H., Marylebone), Sir David Prain, Sir Charles Sherrington, Dr. G. Sowden (M.O.H., St. Pancras), Sir John Bland-Sutton, Dr. G. M. Vevers, Dr. C. M. Wenyon, Professor William Wright, and the Editors of the *Lancet* and the *British Medical Journal*.

Union of South Africa.

[FROM OUR CORRESPONDENT IN PRETORIA.]

Radium.

THE Federal Council of the Medical Association of South Africa (B.M.A.) has on more than one occasion recently drawn attention to the desirability in the public interest of a supply of radium which shall be available for the use of such hospitals in the Union as possess the services of competent radiologists. The public imagination has been stirred, perhaps to an unwarranted extent, by the therapeutic possibilities of radium. Difficulties have, however, arisen owing to the cumbersome organization of medical services. Appeals made to the central Government have been referred to the provincial administrations which are responsible for the provision of hospital supplies. The provincial administrations point out that the matter is one to be dealt with by the individual hospital boards, and that they have to wait on these boards to put up the case for the provision of radium. The sympathetic interest of some of the provincial Governments has, however, been aroused. In the Cape Provincial Council on March 25th, the Kimberley member drew attention to the many millions of pounds being spent in the Union on cattle diseases, the destruction of locusts and vermin, and on the eradication of noxious weeds. In view of funds being so readily available for these purposes, he asked if the administrator would not approach the Union Government in the cause of suffering humanity with the object of obtaining not less than £25,000 for the purchase of radium for the principal hospitals of the Union? Failing this, would the administrator place a similar sum on the current year's estimates of the Provincial Council for the purpose? The administrator, Mr. Fourie, replied that investigations into the efficacy of radium treatment were being instituted, and the request of the Kimberley member would be considered when the inquiries were complete. A hospital radium fund is in existence in Johannesburg to which sums have been privately contributed. Recently the sum of £10 was presented to it by the Johannesburg Clinical and Pathological Club.

Further Plague Cases.

Plague continues to spread in waves among the veld rodents, and periodically a crop of human cases is announced in an area containing infected rodents. On March 22nd the Minister for Public Health made an official announcement as to the position. During January an active recrudescence of plague in veld rodents commenced in the northern portion of the Orange Free State, spreading eastward and northward from there. In the affected area eight human cases, including one European,

occurred. During February there were two further cases, both in natives. Field surveys carried out by the Union Health Department and the Johannesburg municipality showed that the infection in veld rodents had spread to the little village of Meyerton and the southern boundary of the Germiston municipality, both of which areas abut on the Johannesburg municipal area. During the present month fifteen native cases with fourteen deaths have occurred in the area immediately south of the Vaal River. Dr. Hauptfleisch, district surgeon of Parys, who had been actively engaged in the work in this area, also became infected, and had to be removed to the *Bietfontein Hospital* for Formidable Epidemic Diseases. The Minister's announcement that Dr. Hauptfleisch was making good progress was greeted with applause. The Union Health Department has established a field hospital south of the Vaal River. On March 21st an itinerant native was found sick of plague north of the Vaal River, but this is the only case so far reported on the Johannesburg side of the river. Conferences have been held between officers of the Department of Health and those of the Johannesburg and other Reef municipalities. All of these bodies are actively co-operating to prevent further spread. The chief danger continues to be the extension of infection from veld rodents to town rodents. A great deal has, however, been done by most of the Reef municipalities during the past three years to exclude rats by the rat-proofing of all buildings where material attractive to rodents is stored. Rat-free zones round the urban areas have also been maintained.

Mass Thermometry.

The medical supervision of large groups of natives employed on the gold and coal mines of the Transvaal involves many practical difficulties. At present the only examination made periodically on all the native employees is the determination of their weight. These weighings are generally carried out by a lay hospital superintendent. Individuals with even slight loss of weight are then picked out for detailed clinical examination by the mine medical officer. Loss of weight is of very obvious significance to a medical officer who is continually on the alert for incipient phthisis. Sir Spencer Lister, director of the South African *Institute for Medical Research*, has now devised a method for ascertaining the body temperatures of these workers in bulk. By this method it will be possible rapidly to pick out for further clinical examination any individuals with abnormal temperatures. This may prove a useful adjunct to the present system of periodic weighing for the detection of tuberculosis. Instruments are already in use for recording continuous temperatures in human subjects for experimental purposes, but this is apparently the first time that the principle involved in such instruments has been adapted for mass clinical purposes. The experiments for determining the best means of putting into effect the principle that Sir Spencer Lister has devised were carried out by Professor A. V. Hill of London, and the apparatus was put together by two of his assistants, Messrs. J. C. Parkinson and A. C. Downing. The apparatus at present used consists of fifteen thermo-couples, a dead-beat moving-coil galvanometer with a reflecting mirror which is interposed in the electric circuit, a thermostat, a switchboard connecting the fifteen thermo-couples with the galvanometer in such a way that each thermo-couple can be placed independently in circuit with it by turning over its corresponding switch, a calibrated scale upon which are recorded the movements of the light spot reflected from the mirror attached to the moving coil of the galvanometer, and a suitable electric lamp for the illumination of the mirror on the coil of the galvanometer. By means of this apparatus obvious variations from the normal temperature can quickly be detected among individuals of large groups of persons. The apparatus, which Sir Spencer has willingly demonstrated to various interested persons, enables fifteen individuals each to place simultaneously the hot junction of one thermo-couple beneath the tongue or in the axilla. When any one switch is closed the moving coil is deflected, the deflection being recorded by the movement of a spot of light on the calibrated side. With the switch open—that is, with no thermo-electric current flowing—the light spot takes up a position at an arranged zero point on the scale. Sir Spencer suggests that this principle of rapid clinical thermo-electric thermometry may find useful application in large hospitals, saving much of the time and labour involved in the present use of maximum clinical thermometers. If it could be made more compact and portable it would be invaluable to port health officers, who are frequently called upon to take the temperature of passengers and crews of large steamships.

India.

Transmission of Plague by X. cheopis.

IN a leading article on the international control of plague (February 2nd, p. 213) it was suggested that the reports collected on behalf of the International Health Office, and introduced by Professor Ricardo Jorge, while leaving little doubt that the rat-flea, *Xenopsylla cheopis*, is the most important transmitting agent, fail to settle the vexed question of the part played by *X. astia*. We noted that, though the work in Ceylon of Dr. L. F. Hirst, city microbiologist to the Public Health Department of Colombo, would seem to acquit *X. astia* of serious harm, Graham and Mital, reporting from India, gave data which were difficult to reconcile with that flea's innocence. We have now received from Dr. Hirst the following additional information.

The results of a rat-flea survey of such an area as the United Provinces are not comparable epidemiologically with my findings in the lowlands of Ceylon. The climate of the United Provinces is characterized by violent seasonal fluctuations in atmospheric temperature and humidity, and there are corresponding variations in gross rat-flea prevalence from about two per *R. rattus* during the height of the hot season to about twenty during the season most favourable to rat-flea reproduction. *X. astia* and *X. cheopis* are both indigenous to the Indo-Gangetic plains, and *X. cheopis* is present in sufficient numbers for plague propagation. The climate of low-country Ceylon is, on the other hand, equable and humid, the mean temperature is very near the upper limit favourable for plague transmission by *X. cheopis*, and the gross flea index averages from 2 to 4. So far *X. astia* alone has been found in the plague-immune lowlands of Ceylon outside Colombo. *X. cheopis* is a foreign invader imported with grain and other forms of merchandise; its distribution and prevalence in Colombo are closely correlated with human and rat plague. Plague is endemic only in that small area near the harbour where *X. cheopis* is relatively numerous; the importation of small numbers of *X. cheopis* into an *X. astia* area has frequently been followed by sporadic outbreaks of plague, which, however, have shown no tendency to spread.

In the lowlands of Ceylon, with their relatively stable rat-flea population, the percentage of *X. cheopis* among the various local collections of rat-fleas may be correlated with the corresponding local incidence of plague, though even here, from a strictly biometric point of view, it is much sounder to adopt the *X. cheopis* index (average number of *X. cheopis* per rat) as the criterion of flea prevalence. I am well aware of the theoretical objections to using specific flea indices as a comparative measure of flea population, but maintain that the method is adequate for the purpose in view. The Colombo data as set forth in my memoir[1] on researches on the parasitology of plague have been submitted to Professor M. Greenwood, who finds "no substantial ground for statistical criticism."

In the United Provinces crude percentages of *X. astia* and *X. cheopis* in local collections of rat-fleas cannot legitimately be correlated with the corresponding variations in plague incidence. The curves of *X. cheopis* and *X. astia* seasonal percentage variation shown in Dunn and Mital's original report fail to represent correctly the real fluctuations in the flea population of the respective species. I have criticized their flea survey technique in the above-mentioned memoir. The original report of the results of the United Provinces survey contains the following comment by Lieutenant-Colonel J. Taylor, I.M.S., formerly a member of the commission for the investigation of plague in India: "The report would be much more valuable if the average number of fleas per rat had been recorded monthly, and as it stands it is not possible to say what the maximum prevalence of such species may be. The flea curves have been found of the greatest value by the plague commission in relation to the seasonal prevalence of plague and to some extent to severity of outbreaks and likelihood of epidemic plague." I heartily concur, but would it not have been better to publish these criticisms in the *Bulletin* of the International Health Office?

[1] Published in Colombo, 1927.

Curves showing the seasonal prevalence of all species of fleas in such localities as Lucknow, Cawnpore, and Banca can be constructed from the data contained in the report by Norman White and Gloster on the epidemiology of plague in the United Provinces. Unfortunately Rothschild[1] had not published his paper on the Indian *Xenopsylla* at the time when these observations were made. *X. cheopis*, *X. astia*, and *X. brasiliensis* were not distinguished as separate species in any of the reports of the Indian Plague Commission; all *Xenopsylla* were identified as *cheopis*. When the percentage figures for these localities given by Dunn and Mital are converted, with the aid of the gross flea-index data supplied by White and Gloster, into specific flea indices, it is seen that the curve of *cheopis* prevalence fits that of plague seasonal incidence more closely than does the *astia* curve. Dunn and Mital would have done better to complete the preliminary rat-flea survey of the United Provinces begun by Cragg in 1921, using as the criterion the percentage number of *X. cheopis* and *X. astia* during the plague season, and then, taking into account all the relevant factors, concentrate on the study of the relation between seasonal prevalence of rat-fleas and of plague in carefully selected areas.

The northern plains of India are, as a whole, unsuitable for the investigation of the relationship between *X. astia* dominance and regional immunity to plague. Towards the south-west of the Punjab the relative immunity is probably due rather to the effect of an intensely hot, dry climate on the survival of infected rat-fleas than to *X. astia* predominance; in part of Bengal it may be attributed to scarcity of rats, and lack of communication with infected areas.

Until we know more of the factors which influence the relative transmitting power of flea species in a state of nature the results of transmission experiments under artificial conditions cannot lead to definite conclusions. Attention may, however, be drawn to the findings of Armath Govle[2] in Lucknow, which confirm the conclusion based on my Colombo experiments that under tropical conditions *X. astia* is inferior to *X. cheopis* as a transmitter of plague.

Dr. Hirst adds that he has just completed a fresh rat-flea survey of Colombo, supplemented by observations in hill and low-country Ceylon. He thinks that there is a slight but definite extension of the *cheopis* areas, and therefore of the potential zones of plague endemicity. He suggests that a similar slow process of *cheopis* infiltration of originally pure *astia* territory is taking place in several parts of India as a result of commercial intercourse with *cheopis*-infested stations, and remarks that if this is the case the relative immunity from plague hitherto enjoyed by the inhabitants of the *astia* zones is doomed to disappear.

Preventive Medicine in Assam.

Two striking instances of the value of prophylactic medical measures are given by Lieut.-Colonel T. D. Murison, director of public health in Assam, in his report for the year 1927. Although the problem of the transmission of kala-azar remains unsolved, there is thought to be a reasonable possibility of eradicating this infection, provided that the campaign against it is pressed in the future with no less energy than is the case at present. In June, 1927, universal or mass treatment of all kala-azar patients with urea stibamine was instituted consequent on a marked reduction having been effected in the cost of this preparation; previously only 10 per cent. of the patients had been so treated, the remainder having received the less effective sodium antimony tartrate. The change of treatment resulted at once in a most gratifying increase of cures and a more regular attendance of patients at treatment centres. In a certain district, for example, a survey of villages served by one dispensary was conducted, all persons suspected of kala-azar infection were examined, and treatment was started at once when the disease was detected. Prompt improvement in the incidence of infection followed, and, later on, after another very careful survey, it was found possible to close the dispensary. This active searching for disease is carried on wherever kala-azar appears or is suspected, and the results are most promising. In some districts such surveys are of vital importance, since the patients live far from the hospitals and few come forward voluntarily for treatment; but for this careful investigation numerous cases would be overlooked and serve as foci of infection. The great danger in the future appears to be that these efforts may be relaxed in view of the lessened incidence of outbreaks, and a serious warning was given by Major H. E. Shortt, I.M.S., director of the Kala-azar Commission, to members of the Health Interchange of the League of Nations, who visited Assam early in January, 1928. Within another two or three years, he said, kala-azar would probably have reached again the comparatively low level of the inter-epidemic periods. During the progress of an epidemic it was quite easy to raise large sums of money and to excite public interest in measures of treatment and prevention, and, therefore, full advantage should be taken of the existing public interest during the next year or two, so that the few remaining embers of infection left behind as the result of the present epidemic might be extinguished. Major Shortt added that this was the first occasion on which any effective treatment had been available for kala-azar, and that therefore the next few years were likely to be highly critical in view of the fact that if intensive measures were continued they would have a more far-reaching effect than had ever been possible before. In another part of Lieut.-Colonel Murison's report attention is called to the rise in the cholera mortality in Assam during 1927, as in other parts of India. As the result, however, of mass inoculation with anticholera vaccine being undertaken, the death rate had been considerably lower than could have been anticipated. At first it was thought that the spread of the infection was due to infected milk, and certain preventive measures were adopted, but this view was subsequently found to be erroneous, and, eventually, the infection was traced definitely to the water supply. Immediately on the receipt of notification of a case of cholera, disinfection of wells in the area and inoculation of contacts were secured, guards being placed over the wells, and care being taken to supply only uncontaminated water to the inhabitants of infected localities. The epidemic was quickly brought under control, though a temporary isolation hospital had to be erected in one district. Elsewhere numerous outbreaks were quickly suppressed by these preventive measures, though in one case delay in notification allowed the disease to get a firm foothold for a short time. The increased success which rewarded these efforts in 1927 is attributed to the use of inoculation on a large scale.

[1] *Bulletin of Epidemiological Research*, vol. v, p. 83, 1914.
[2] *Indian Journal of Medical Research*, vol. xv, p. 837, 1928.

Ireland.

Enteric Fever in Leitrim.

DR. P. MCDONNELL, medical inspector, Department of Local Government and Public Health, attributes the recent epidemic of typhoid fever in Carrick-on-Shannon, which resulted in some deaths, to the water supply and the want of sanitary organization. Dr. McDonnell, in a report addressed to the Leitrim Board of Health, traces the outbreak to the water supply, the infection having been introduced through the defective methods of disposing of the sewage from Carrick-on-Shannon fever hospital, coupled with the faulty condition and surroundings of the pipe line by which the town water is conveyed to the pumping station and the reservoir. He went to Carrick-on-Shannon on the report of the medical officer of health that there was a severe local epidemic of influenza with typhoid symptoms. Influenza had been prevalent, and those who recovered were stricken down in four or five days with what was at first believed to be a relapse of influenza. A patient sent to Roscommon Infirmary was found to be suffering from enteric fever, and this appeared to be the first indication of the presence of a typhoid infection. Dr. Walsh, the local medical officer of health, was amongst the patients, and Dr. McDonnell visited several cases, accompanied by Drs. McDermott and Doorly, and Professor Meenan, professor of medicine in the National University of Ireland. After examining five or six cases they concluded that they were dealing with an outbreak of enteric fever. Discussing the origin of the outbreak, Dr. McDonnell says that the water supply is taken from the River Shannon by a pipe not more than fifteen feet from an open drain, which is the channel through which the fever hospital sewage passes.

Holes and defects in the pipe line, and excavations made for leakages, he believes, would give direct connexion with the sewage in the drain. From January 9th to March 14th eight typhoid cases from Ballinamore were treated in the fever hospital. The disposal of the fever hospital sewage constituted a disgustingly foul cesspool. The overflow passed through a network of drains, which finally emptied themselves in the Shannon parallel to the intake of the water supply. Dr. McDonnell suggests the steps that should be taken to remedy the defects in the water supply, and recommends a new source of supply from Corbally Lake, because as long as the people are depending upon the Shannon for their water supply they will be in danger of an epidemic. The village of Leitrim is only four miles from Carrick-on-Shannon, and the occurrence of even one case of enteric in this village would be a serious menace to the health of the people of Carrick-on-Shannon. Dr. McDonnell adds that if the county had the services of a county medical officer of health with a trained sanitary staff this outbreak could not have occurred, and the prevailing conditions in Carrick-on-Shannon would not have been permitted to exist for twenty-four hours. He regards the employment of untrained sanitary officers as one of the gravest defects in the county organization, and draws attention to the neglect on the part of medical practitioners to fulfil their statutory obligation of notifying infectious diseases. The Board of Health decided to expend at once £500 to remove the sources of pollution of the water, and to increase the supply. They further decided to ask the Local Government Department for a grant in aid in view of the loss sustained.

Montgomery Lecture in Ophthalmology.

Mr. Louis E. J. Werner, M.B., D.O.M.S., the Montgomery lecturer for 1929, delivered an address on "The slit-lamp in clinical practice," before a large audience in the Physiological Laboratory of Trinity College, Dublin, on April 25th. The lecturer first described the mechanism and means of employment of the slit-lamp, and then dealt in detail with its use in both diagnosis and prognosis. He insisted on the fact that the slit-lamp was no mere clinical toy, but that it yielded important information which could not be obtained by any other available means. He himself had found it of much value in distinguishing between optic neuritis due to intracranial pressure and optic neuritis of inflammatory or toxic origin. In the former group of cases little or no change was found in the vitreous, while in the latter group extensive cellular infiltration of the vitreous was constantly noted. He had also found it of great use in cataract cases, more particularly by enabling him to distinguish the type of early case in which immediate operation was advisable from the type in which delay should be recommended. Many illustrative cases were quoted to demonstrate points in connexion with the use of the lamp in corneal disease, diseases of the anterior chamber, and diseases of the ciliary body. The lecture was illustrated throughout by lantern slides.

Retirement of Dr. E. C. Thompson.

Dr. E. C. Thompson, who has resigned his appointment as surgeon to the Tyrone County Hospital after forty-four years in that capacity, in which he followed his father, has been the recipient of many expressions of appreciation from his medical colleagues and numerous friends in Tyrone, where he was a deputy lieutenant. The material gifts included: a silver tea and coffee service, a silver cup, an illuminated address, and a cheque. For ten years Dr. Thompson was chairman of the Tyrone Medical Committee, and he was largely responsible for the formation of the Tyrone Division of the British Medical Association, of which he has been chairman and representative; he was also vice-president of the Ulster Branch from 1910 to 1923. He has been a member of the Association since 1876. Dr. Thompson has represented North Monaghan in the House of Commons, and took an active part in framing the Local Government Board Amendment Bill of 1902. As the result of his intervention certain facilities were obtained for county councils which resulted in very vital financial benefits being made available for county hospitals in Ireland.

Scotland.

Suggested Improvements in Medical Education.

An address was delivered at Glasgow University on April 22nd by Sir Norman Walker, who took as his subject "Medical education and qualification in the United States." Principal Sir Donald MacAlister, who presided, said that the Americans were not satisfied with their present system and were sending a deputation to investigate the methods obtaining in Glasgow and Edinburgh. The lecturer detailed the systems which obtained in this country and America, pointing out that in America each State was an authority to itself in making its laws and requiring the doctor to possess the licence of its own State board before passing. Many State boards demanded of students not only a degree from a first-class college, but one year's experience as resident in a hospital, and the lecturer thought the practice of holding intern posts in hospitals should be extended in this country. At the beginning of medical education in America the student went through a period of apprenticeship, covering generally about seven years. This system had failed in course of time, and gradually all over the continent there came into being colleges professing to teach medicine, of which there had been some 400 at various times. Many of these had been purely commercial undertakings, completing a course of medicine in a ridiculously short period, and some of them had contained no facilities for adequate teaching in medicine. A report on these institutions black-listed a number, which accordingly went out of existence. In 1910 there were still 121 medical schools in the United States, in 1925 the number had dropped to eighty, at which figure it now stood. There was a general feeling that the primary and secondary education in this country was better than that in America, but the preliminary requirements of medical schools in America were steadily rising, and now a two years' preliminary course had been introduced into fourteen schools, while one insisted on a four years' course. Many American schools limited their entry to the number of students they could efficiently teach. Thus in one year 11,000 students had applied for admission to twenty-three schools, which had accepted only 6,500. At present in America there was one doctor for every 763 people. In America the principle of frequent class examinations was carried out, and an elaborate system of card-indexing was used to follow the work of the student throughout his course. If the student's work was unsatisfactory, after a warning he was dismissed, and subsequently he found it difficult to enter any of the other schools. When the students graduated, 90 per cent. of them held passes as interns in hospitals, and the lecturer thought there was room in this country for more resident doctors, especially in the smaller hospitals. The American graduand was aged 27 before he could practise, in consequence of this long course, and a four-quarter system was being introduced in an attempt to reduce the period of training by one year. This system had advantages, but the lack of holidays entailed might, however, result in an undue strain being placed upon the student.

Red Cross Work in Glasgow.

At the annual meeting of the city of Glasgow branch of the British Red Cross Society the Lord Provost said that there had been considerable expansion in the work and an increase in the V.A.D. movement in the city. The registered detachments in Glasgow were continuing training with enthusiasm, and would be able to render first-class service if the need should arise. Colonel G. H. Edington, F.R.F.P.S.G., chairman of the branch, seconded the adoption of the report and pointed out that during the year five additional detachments had been formed. The strength of the original four detachments was 134, and the five new detachments would bring in an additional 155 members. One detachment had been raised in the Glasgow and West of Scotland College of Domestic Science, where its members got training in invalid cookery.

England and Wales.

The Paratyphoid Outbreak in London.

THE report of the London County Council's medical officer of health, dated November, 1928, on the outbreak of paratyphoid fever—which it was deemed expedient to mark "private and confidential," copies being distributed only to members of the council and to medical officers of health concerned or interested—is to be removed from the category of private documents and to be published. The report deals comprehensively with the serious outbreak of paratyphoid fever which occurred in London and adjacent districts in July of last year. Statistics giving very full information as to the number of cases and the investigations made in London are included in the report, and also, by the courtesy of the Minister of Health, statistics of cases outside the county. The Minister of Health has intimated that he does not desire to offer any objection to the publication of the report if the Council deems this course desirable in the public interest.

King Edward VII Sanatorium, Midhurst.

An attempt has been made to collate the results of treatment of pulmonary tuberculosis by the induction of pneumothorax at Midhurst since October, 1924; in 63 cases this operation was performed, and the after-histories to October, 1928, have been investigated, so that the statistics relate to patients from one to four years after such induction. In the twenty-second annual report of this institution an account is given of this investigation. In 19 cases, it is stated, the procedure was unsuccessful: in some cases because no pleural space was found or only a small pocket was struck, while in others the treatment could not be continued owing to the presence of many adhesions. Of the remaining 44 patients, 40 are still alive; 34 have now no expectoration, or tubercle bacilli are absent, but in 6 the sputum is still positive. Of these 6, 3 have been advised to have thoracoplasty, and one gave up treatment for no apparent reason. In 18 of the 40 cases the appearance of fluid has been a complication at one time or other during the treatment. Refills have now ceased to be necessary in 11 instances, and all these patients are in good condition. Laryngeal disease was found in 10 of the 63 cases, 2 of which were included in the 19 classified as "failures." One was cured by silence treatment, the other, in whom the disease was very advanced, remained stationary while under artificial pneumothorax treatment and died subsequently. It is believed that this research will eventually contribute useful information on the prognosis of those cases where the treatment failed, although the patient seemed clinically suitable. The work of the x-ray department is steadily growing, and its value has been particularly obvious in controlling the increasing number of cases of artificial pneumothorax. It has not infrequently proved useful in showing that patients believed to be suffering from pulmonary tuberculosis were really the victims of chest disease of some other kind. In the pathological department research on the sedimentation test has been continued, with the result that this test has now been adopted as a useful routine measure. It is proposed to study next the sugar metabolism in tuberculosis, and, in particular, the liability of tuberculous patients to diabetes; the sedimentation test is said to have given some interesting results in diabetic patients. The work of the statistical committee has been continued on the same lines as in previous years, and the familiar tabular statistics are again supplied.

The East End Maternity Hospital.

The East End Maternity Hospital maintains a free midwifery service for poor married women, and a centre for training midwives and nurses who attend at their homes patients unable to enter hospital. The report for the year ending December 31st, 1928, records the treatment of 1,276 in-patients—the largest number in any one year—but a slight decrease in the number of out-patients. The discrepancy is probably only apparent, and may be due to the fact that the mothers are realizing the benefit of entering hospital for their confinement. In the hospital, during the year under review, 1,256 infants were born alive, 36 were stillborn, and there were sixteen sets of twins. In the same period, 14,556 visits from midwives and 108 from doctors were paid to out-patients, and 788 mothers were delivered. On the district, 779 infants were born alive, 21 were stillborn, and there were twelve sets of twins. During the year no cases required Cæsarean section or embryotomy, there were no cases of insanity, and no patients were removed to other institutions; there was one case of eclampsia in a woman who had neglected to come for ante-natal examination fourteen days before her confinement. Two patients died in hospital—one a patient sent in as an emergency case suffering from severe hyperemesis, the other a primigravida of 33 years, with valvular heart disease, who died of heart failure shortly after a prolonged labour. There were no deaths in the out-patient department. Among in-patients there were 55, and among out-patients 13 forceps deliveries, and puerperal pyrexia—that is, a mouth temperature of 100.4° F. or more for twenty-four hours—was observed in 17 in-patients and 5 out-patients. Attendances at the ante-natal clinic totalled 6,927. There were 21 cases of ante-partum haemorrhage among in-patients, 6 due to placenta praevia, and 15 to accidental haemorrhage. Twenty-one of the 1,256 infants born alive in hospital died, 10 within twelve hours of birth.

Correspondence.

THE UNITY OF TUBERCULOSIS AS AFFECTING DIAGNOSIS AND TREATMENT.

SIR,—*It is not a little surprising*—and it is certainly disconcerting—that at this stage in our knowledge of tuberculosis there still seems to remain hesitancy in the ordinary parlance of medicine as to the essential unity of tuberculosis in its various manifestations. The continued use of the adjectives "medical" and "surgical" in relation to tuberculosis is ill advised, and savours of days when the scientific conception of tuberculosis was nebulous. Thanks to the labours of a succession of workers, these days are happily past.

The essential facts in the natural history of tuberculosis have been pretty well determined. Tuberculosis results from the entrance of the tubercle bacillus into the body at any point. The effects of infection—local and systemic—are extremely various, and, as viewed clinically, may emerge almost anywhere. In respect of clinical course there is, subject to certain reservations, a remarkable analogy between tuberculosis and syphilis. Neither the tuberculologist nor the syphilologist can afford to regard his subject in partial fashion. Each stage in the pathological process and every clinical manifestation are within his sphere.

For the tuberculologist the methods of approach, alike in diagnosis and in treatment, are uniform, whatever, and wherever, the outward (clinical) expression of the infection may be. It matters little whether he has to deal with a superficial tuberculosis of skin or mucous membrane, or with tuberculosis of the skeletal tissues, or with tuberculosis of any one or several of the viscera. The common guiding principles of diagnosis, clinical and bacteriological, are well defined, just as are the guiding principles in the diagnosis of syphilis.

What is true of diagnosis is no less true of treatment. Certain principles and methods of treatment are applicable, with adjustment of detail, to the manifold expressions of tuberculosis, wherever these occur. Procedure, applicable to tuberculosis as such, is, of course, subject to modification and adjustment in different situations; and in some cases therapeutic measures applicable to all tuberculosis may require to be supplemented by special procedure because of the structure or tissue involved. Such addition, however, is accidental and not essential to the treatment of tuberculosis as such.

Of the value of tuberculin in the diagnosis of tuberculous disease, wherever situate, particularly when visible to the eye of the observer, there can be no manner of doubt. Its successful use depends, however, on skill and

experience in its application. This implies training and practice, which unfortunately is not available in every school. It is curious how tuberculin is apt to be turned down by men who have seldom used it themselves nor seen it used.

Certain physiological principles form the basis of treatment in tuberculosis and are serviceable more or less in all forms of tuberculosis. Their adjustment in detail requires consideration based on experience. This is likewise true of the therapeutic use of tuberculin, the value of which in suitable cases can hardly be questioned by anyone who has had extensive experience in its use.

It is a vast pity that so great a gap remains between the scientific conception of tuberculosis and the current manner of describing and handling its varying manifestations, each one of which is but *part* expression of *one* far-reaching infection.—I am, etc.,

Edinburgh, April 26th. R. W. PHILIP.

INTRACUTANEOUS TUBERCULIN TESTS.

SIR,—The only important point at issue between Dr. Camac Wilkinson and myself is as to whether the reactions reported by me as positive were really positive or not. Dr. Camac Wilkinson may feel capable of judging these reactions without seeing them; others, perhaps, may think his doing so a little rash.

The work is being repeated on very careful lines, and I hope that your readers (Dr. Camac Wilkinson apart) may be interested to hear my further findings in due course. —I am, etc.,

Cardiff, April 29th. S. LYLE CUMMINS.

SIR,—About twenty years ago I was asked to assist in the diagnosis of a supposed case of tubercle of the urinary tract. The bacteriological findings were negative. I then gave the patient a series of inoculations of tuberculin (B.E.) in increasing doses without any effect on the frequency of micturition. My experience had been that tuberculin even in small doses often aggravates the patient's discomfort in this class of case. I therefore advised that, as no evidence of tuberculous infection could be elicited in this way, the condition was probably not due to tuberculosis.

At the subsequent operation, however, some thickening of the hilum of the kidney was found, it was inferred that this was tuberculous, and the kidney was removed. On section a small stone was found; otherwise the kidney was normal.

Is tuberculin a valuable aid to diagnosis in this type of case? My own experience of tuberculin in diagnosis is too limited to permit a definite conclusion.—I am, etc.,

Manchester, April 29th. J. STAVELY DICK.

THE DISTRIBUTION OF RADIUM.

SIR,—Mr. Souttar's letter in your issue of April 27th (p. 787) upon the distribution of radium in accordance with the recent report of the Radium Subcommittee elaborates the view which I expressed in a letter published in your columns of December 8th, 1928 (p. 1064).

I feel most strongly that until much more experience has been obtained in the treatment of cancer by radium, and until some standardization of dosage, etc., has been established, the distribution of such a powerful remedy will require very great consideration, and the possibility of subdivision of the total quantity to place small amounts in the hands of many surgeons is much to be deprecated. Rather let the distribution, at all events in the first place, be made to such hospitals as have the facilities for using it to the optimum purpose, and are already equipped with a staff experienced in the use of radium and also with a powerful *x*-ray apparatus. We at the Cancer Hospital have found, for example, that it is necessary not only to have special radium officers, but also special research pathologists and a physicist attached to the radiological department.

In the treatment of superficial carcinomata which afford a ready access considerable technical experience is necessary, and for the treatment of deep-seated or intra-abdominal growths it is probable that the direct insertion of emanation capsules, or the treatment "at a distance" by intensive surface applications, will be found more advisable than the burying of needles of radium or its salts into the growth. For both the emanation and the "distant treatment" a greater quantity of radium is required, greater than that possessed in any hospital in England at present; for this purpose in New York, Paris, and Stockholm an amount of four grams and upwards is used. Though I cannot agree with Mr. Souttar that "the whole future of radium treatment lies with emanation," I consider that this method has its uses; a longer experience will alone decide, not only the particular histological form of growth that is amenable to radium treatment, but also the kind of treatment most applicable to each.

I am fully in accord with Mr. Souttar that it is desirable to provide main centres where both hospital and private patients can be treated, and in which accurate observations can be recorded on a number of cases by trained observers; in this way centres may be formed in Britain which will adequately compete with the favoured few abroad.—I am, etc.,

London, W.1, April 29th. R. H. JOCELYN SWAN.

POST-GRADUATE INSTRUCTION IN MIDWIFERY.

SIR,—I am interested in Professor Fletcher Shaw's letter on this subject in the *British Medical Journal* of April 27th (p. 788). If an average of from five to six confinements daily for a week is an intensive course in midwifery the general practitioner can get it in most maternity hospitals. At the Rotunda there were over 2,000 cases in the intern maternity during the past year, and the post-graduate courses continue all the time. There is, in addition, an extern maternity, of somewhat similar figures, in connexion with most institutions. Probably residence for a week in a hospital may be of a *little* assistance, but I do not believe that much real value will be gained under a month. Needless to say, the longer the stay the greater the value.—I am, etc.,

BETHEL SOLOMONS,
Dublin, April 29th. Master of the Rotunda Hospital.

EFFECTS OF DEEP X RAYS ON THE CELLS OF THE BLOOD.

SIR,—The letters in your recent issues from Dr. Paul Cave and Dr. J. H. Douglas Webster rightly call attention to a statement in our paper which, taken by itself, would be too sweeping in character. Our remarks must, however, be considered in relation to the particular type of disease which we had under observation. The cases complicated by sepsis to which we referred were those which, from the nature of the disease, require a series of five or more full-dosage radiations within a period of a few days. It has, however, been found by experience that these patients generally do badly if so treated, and, more or less empirically, the procedure, as Dr. Webster points out, has been adopted of giving fractional doses spread over longer periods. As a control in these cases observation of the phagocytic power should prove of great value.

Our statement would certainly not apply to the treatment of localized infections where the total dosage employed is comparatively small. As Dr. Webster remarks, it is the quantity and not the quality of the rays absorbed that is probably the deciding factor, and the experiments of Dr. Knott and myself appear to show that it is the absorption of the secondary radiations which is of greatest importance. One has not infrequently seen resistant areas of furunculosis, septic glands, infected alveoli, etc., heal completely within a few weeks as a result of a single short application of deep *x* rays. Should, however, numerous radiations be given, or wide areas of the body require to be treated, then the possibility of lowered phagocytic power would come into question. As to the mechanism of the beneficial effect of brief radiation on the septic lesions mentioned, one might suggest that the temporary hyperaemia produced should give increased opportunity for the diapedesis of phagocytic cells, and in this sense the *first* effect of *x* rays in light dosage may quite possibly be stimulant. This

point we did not attempt to investigate, our experiments being concerned only with the frankly destructive effects associated with the larger doses necessary in the treatment of such diseases as the leukaemias and deep-seated neoplasms.—I am, etc.,

London, W.1, April 21st. W. L. WATT.

THE CURABILITY OF ASTHMA.

SIR,—You published on December 25th, 1926 (p. 1221), an *article by myself on* "Instinct and functioning in health and disease," and your interesting leading article on "The curability of asthma" on April 27th (p. 776) induces me to recall it to the minds of your readers. In it I endeavoured to give a short account of what I consider to be the epoch-making work of F. M. Alexander; to show that, according to his views, man, guided largely by the instinct of his tree-dwelling ancestors, fails to function to the best advantage in his modern environment, and particularly in a sedentary environment; that disease is associated with wrong functioning; and that, incidentally, disease or at least symptoms of disease, disappear or tend to disappear with improvement in functioning.

Your article encourages me to repeat this. From observation I have been driven to the conclusion that asthma in cases I have observed was associated with bad functioning—defective methods of sitting, walking, standing, breathing, etc.—and that asthma, or at least the symptoms associated with asthma, disappeared in process as improved functioning was acquired. If these observations could be repeated so as to enable a generalization to be established—and, *a priori*, the possibility of such generalization is likely—then "cure" of asthma can confidently be expected. Such cure would be a real one, for it would mean the removal of the primary and not the secondary cause of the disease.

I have "cured" cases of asthma by removal of spurs from nasal septa, but, as you point out in your leading article, such "cures" are not real ones, since the underlying conditions, which irritation from a nasal source tends to precipitate in the form of an attack of asthma, remain. No one recognizes this more than I, and it is because I do *so recognize* it that I urged and again urge on the medical profession the investigation of methods which seem to me to have at least some relation to a real cure in this, as in other conditions of disease.—I am, etc.,

York, April 28th. PETER MACDONALD.

THE CIRCULATION UNDER THE SPHYGMOMANOMETER CUFF.

SIR,—May I beg the opportunity to comment on Professor Hill's letter (April 20th, p. 745) and at the same time on Dr. Pines's contribution, which came too late for me to deal with in my reply of April 6th (p. 664).

I am very glad to have Professor Hill's assurance that the method used by him "is the same in principle as that of the sphygmomanometer"—on that I rely. That method shows, in the final stage of a rising pressure in the cuff, when the normal circulation has come to a standstill, that "the blood is squeezed out, *the direction of flow being reversed in the artery*" (my italics). This is crucial, for the presence of a reversed flow eliminates the possibility of an impervious main artery; that is my contention, the blood being an incompressible. It must also be noted that the flow of a liquid is inevitably towards the point of least resistance, and this we have seen is situated at the mouth of the brachial at the upper edge of the cuff.

It is true that I did not allude to the difference of pressure in systole and diastole, but it had not been overlooked, nor the closure of the artery during each cardiac cycle from the time when the cuff pressure begins to exceed the diastolic pressure, *as taught*. But to have pursued the subject would have needlessly complicated matters, since my immediate concern was the state of the artery when the cuff pressure had exceeded the systolic pressure.

Dr. Pines's letter drew attention to the interesting observations of Professor Bailliart on the effect, upon the vessels of the disc, of a rising pressure exerted upon the globe of the eye—the artery collapses (is obliterated) rather suddenly when, presumably, the intraocular tension surpasses the arterial pressure. Professor Hill says these effects are exactly what he sees in the web of the frog's foot (though I could find no reference to a *reversed* flow in Bailliart's report); and he considers that this proves the obliteration of the brachial artery in similar case. Dr. Pines holds the same view.

The fallacy in this conclusion (accepting the eye experiment as the counterpart of the sphygmomanometer procedure) seems to me to lie in arguing from a minute local effect to an effect on a scale vastly greater. Thus the effort necessary to shift the blood contained in the artery of the disc (Bailliart limits the effect to the disc) must be incredibly small, as compared with that required to shift the relatively vast volume of blood contained in the brachial artery and its branches. It is the inertia of this mass of blood and the resistance of the walls of the containing vessels which oppose the obliteration of the artery. *Evacuation must precede obliteration*, and, with only a surplus pressure of a few millimetres of mercury as driving force, the time required to yield an appreciable effect must needs be considerable; therefore the blood pressure trial will be over and done with long before any perceptible alteration in the calibre of the larger arteries will have occurred—they will still be widely patent. Time, then, is of the essence of the situation.

Finally, if this be true, is it thinkable, when the cuff pressure begins to exceed the diastolic pressure, that within the time limits of the single cardiac cycle, say one second, the artery will momentarily suffer obliteration?—I am, etc.,

London, W.1, April 23rd. HARRINGTON SAINSBURY.

THE GENERAL PRACTITIONER AND HOSPITAL TREATMENT.

SIR,—In reading the Annual Report of Council in the *Supplement* for April 20th, I find in Appendix XI, Part II, paras. 7 and 8, an attitude that I feel general practitioners should not accept without challenge. It is tacitly assumed that a large number of out-patients are foisted on to hospitals by insurance practitioners, who should be doing the work themselves. This may or may not be so, but it is not by any means the whole story. I, personally, have always regarded a hospital as a place to send a patient either for a second opinion or for special treatment I cannot give; chiefly for a second opinion. I have always sent a letter with the patient with full details and a clear statement that I want a second opinion only.

Now some hospitals are very good indeed and their honorary staff must give an endless amount of their private time to correspondence about hospital patients, but others simply absorb the patient, of whom one hears no more. One large hospital makes a routine practice, in reply to such a letter, of sending a printed form: "Dear Sir, Your patient, Mr. So-and-So, has been accepted for treatment in the out-patient department." In consequence, any interesting cases I have go elsewhere. Other hospitals apparently put one's letter in the waste-paper basket and go on indefinitely "rep. mist."-ing till the patient sickens of going there.

The whole trouble is that the hospitals have no organization for acting in a consultant capacity. Unless individual *members of the staff answer letters privately* it is not done. There should be a stenographer in attendance at the out-patient department and a definite system to see that all doctors' letters are answered, that the patient is not encouraged to come again by being given an out-patient card, and that he is not lost in the mob which besieges the casualty box and receives a gallon of medicine as a placebo. And if a patient is sent to a hospital for special treatment he should have it unless there is a good reason to the contrary. It is not essential to put him first for trial on to the ordinary treatment which he has been having for some time and which has failed. His family doctor should be credited with a little sense.

My point is not a criticism of the honorary staffs, but a criticism of the method, or lack of it, by which the consultative function of the hospital depends on their individual energy in their private time, and is not organized by the governing bodies of the hospitals.—I am, etc.,

Southborough, Kent, April 21st. W. EDWARDS, M.D.

TONSIL PUNCTURE.

SIR,—We are obliged to Drs. Cronin Lowe and Hugh Smith for their interesting comments on our paper. These observers naturally prefer their own methods in the investigation of pathological material, while we prefer ours; but we cannot agree with them on the question of the collection of the material from the tonsil. The use of a platinum loop in a tonsillar crypt may be possible and advisable (1) if the observer wishes to ascertain the condition of the crypt as distinct from the tonsil as a whole, and (2) if, in investigating the crypt, the latter is sufficiently visible and wide-mouthed to admit the loop.

In our paper we gave reasons for judging that the appearance of, and bacteriological findings in, a crypt may lead to fallacious conclusions as to the true condition of the tonsil. In our experience the tonsil which is most difficult to assess, as regards its pathological condition, is the one which is fibrosed and in which it is impossible to find any crypt into which a platinum loop could be introduced. This was one of our chief reasons for adopting the procedure outlined in our paper. It is quite possible that our needle may, occasionally, enter or traverse a crypt, but we think that this is unlikely because the needle is introduced in a direction more or less parallel to that in which the majority of the crypts run, as judged by histological appearances. The needle is not rotated until it is buried deeply in the substance of the tonsil.—We are, etc.,

JEFFREY RAMSAY.
C. M. PEARCE.

Blackburn, April 29th.

Obituary.

FRANK COLE MADDEN, C.M.G., M.D., F.R.C.S.,

Emeritus Professor of Surgery, Royal School of Medicine, Cairo; Consulting Surgeon, Kasr-el-Ainy Hospital, Cairo.

WE have to record with regret the death, at the age of 56, of Professor F. C. Madden, which occurred in tragic circumstances at Cairo on April 20th.

Frank Cole Madden was born in Melbourne in 1873, and was educated at Melbourne University, where he graduated M.B., Ch.B., with honours, in 1893. After holding appointments as senior house-surgeon and acting medical superintendent to the Melbourne Hospital, he continued his medical studies at St. Mary's Hospital, London, obtaining the diplomas of M.R.C.S., L.R.C.P. in 1896, and proceeding to the Fellowship of the Royal College of Surgeons in 1898. In the course of a distinguished career at St. Mary's Hospital he gained an exhibition in surgery and gynaecology, and the Beaney scholarship in surgery. After holding, from 1895 to 1898, posts as house-surgeon and medical superintendent to the Hospital for Sick Children, Great Ormond Street, he proceeded to Cairo, having obtained an appointment as assistant surgeon to the Kasr-el-Ainy Hospital. This was the first of the many posts Frank Cole Madden held in Cairo; he became in the course of time senior surgeon to the Kasr-el-Ainy Hospital, professor of surgery at the Royal School of Medicine, medical officer to the Victoria Deaconess Hospital and the Anglo-American Hospital, medical officer to H.E. the High Commissioner for Egypt and to the British Consulate, and medical referee to the Egyptian State Railways and the Eastern Telegraph Company. During the war he was attached to the Egyptian Expeditionary Force, and was civil surgeon in charge of various military hospitals, the Red Cross Hospital, Cairo, and at the Kasr-el-Ainy Hospital. At the time of his death he was rector of the State University, dean of the faculty of medicine, director of the Kasr-el-Ainy Hospital and of its Medical School, consulting surgeon to the Kasr-el-Ainy Hospital, and emeritus professor to the University of Cairo. In the last New Year's Honours List he was created C.M.G. in recognition of his work in organizing the International Congress of Tropical Medicine and Hygiene, held at Cairo in December, 1928. It is not unlikely that his arduous work in relation to this congress, added to the pressure of his many other duties, contributed to the breakdown that preceded his tragic end. Madden's work and personality were highly appreciated in Egypt, and his death was a shock to his friends and to the numerous students, doctors, patients, and officials with whom his work had brought him in contact. For thirty years he devoted himself to raising the standard of medical education and practice in Egypt.

Throughout his professional career Frank Cole Madden was an active member of the British Medical Association. He was made president of the Egyptian Branch from 1924 to 1925, its representative in 1926, and a member of the Egyptian Branch Council from 1926 to 1928. His special interests were tropical surgery and schistosomiasis, and his publications included *Bilharziasis* (1904), the *Surgery of Egypt* (1919), articles on schistosomiasis in Choyce's *System of Surgery* (1923) and in Byam and Archibald's *Practice of Medicine in the Tropics* (1921), and numerous papers on surgical subjects in the various medical journals. He is survived by a widow, two sons, and two daughters.

The medical profession in Limerick and the surrounding counties has been deprived by the death, on March 26th, of Dr. WILLIAM AUGUSTUS FOGERTY, a highly esteemed and learned colleague. He was in his seventy-second year, and had practised in every department of his profession in his native city for more than forty years. He received his medical education at Queen's College, Cork, graduating M.D., M.Ch., M.A.O. in 1885. Appointments held by him included honorary surgeon to Barrington's Hospital, consulting surgeon to the Lying-in Hospital, and visiting surgeon to the Limerick County Infirmary. He was a brilliant, careful, and successful operator, and in every branch of his art he was an acknowledged master. As aurist, oculist, and gynaecologist he had attained a very high standard, while his knowledge of the collateral sciences was extensive and accurate. He excelled as a botanist, and at one time held temporarily the chair of natural science in Queen's College, Cork, as it was then designated. His colleagues fully realized and appreciated as they deserved the many various qualities and attainments that combined to stamp him as a medical practitioner of the first rank. Some years ago he was mainly instrumental in the formation of a society that had for its object the bringing together of the local medical men for friendly discussion of matters affecting their common interests, and consolidating their position, especially that of the junior members; as, for instance, when their services might be required by working-men's unions for collective attendance. This secured an adequate, reasonable fee, and eliminated a possibly destructive competition; it was, moreover, most useful in obviating misunderstandings. He was a member of the British Medical Association. He also found time to devote to the duties of alderman and to serve on a conciliation board for the adjustment of disputes between capital and labour, the utmost confidence being placed by all in his judgement and impartiality. He was chairman of the Citizen's Protective Society, and of the local branch of the Rotary Club. Sometimes he would appear as a public lecturer, speaking in a masterly and most pleasing manner. His funeral was one of the largest in Limerick for many years. All classes and creeds, high and low, rich and poor (for to the poor he had given unstintingly his time and skill in the wards of Barrington's Hospital), crowded round his grave. All felt that Dr. Fogerty had brought credit to his native city and honour to his profession.

The following well-known foreign medical men have recently died: Geheimrat SATTLER, formerly professor of ophthalmology at Leipzig, aged 84; Dr. ERNST LEUTERT, emeritus professor of otology at Giessen, aged 66; Dr. PAUL ALBRECHT, a Vienna surgeon, aged 55; Dr. LOUIS PHILIPPE NORMAND, formerly president of the College of Physicians and Surgeons of Quebec, and Commander of the Order of St. Gregory the Great, aged 65; Dr. ENRICO MORSELLI, an Italian psychiatrist; Dr. LÉON BOUVERET, an eminent physician of Lyons, aged 79; Professor A. SWAEN, founder of the Anatomical Institute of Liège and member of the Royal Academy of Medicine of Belgium; and Dr. R. JOCQS, formerly president of the Société d'Ophtalmologie.

Medico-Legal.

DEATH UNDER ETHER ANAESTHESIA.

A VERDICT of "Accidental death consequent upon an excessive amount of ether being administered for a lawful purpose" was returned at an inquest held in South London on April 23rd on a 9-weeks-old child who died while undergoing a minor operation at a large general hospital. In evidence it appeared that the operation had been performed by a dresser under the supervision of a casualty officer who had qualified about four months previously, and the anaesthetic administered by an assistant casualty officer qualified about a week. There had been no undue haemorrhage, but, owing to the circumstances in which it had been performed, the time taken for the operation was rather longer than usual. After the patient had been anaesthetized for twenty-five minutes breathing stopped suddenly; oxygen and brandy were administered, artificial respiration was started at once, restoratives were injected, and hot-water bottles were placed at the patient's feet. A pathologist in evidence said that the child was perfectly healthy and that the operation was a proper one. He added that it was the usual practice in all teaching hospitals for dressers to perform simple operations under supervision. The coroner stated that an experienced anaesthetist would have noticed something wrong before respiration ceased.

DEATH FROM MERCURY POISONING.

A verdict of "Accidental death" was recorded on April 23rd in the case of a boy, aged 7, who had died on March 24th at Islington. At previous hearings the mother stated in evidence that the boy had been under treatment at a large general hospital for a skin rash. On March 22nd she was given a box of fourteen grey powders at the hospital, to be administered to the boy according to definite instructions; this box she gave him to carry, but before she could stop him he had swallowed two of the powders in the street. When she got home she put the powders on the mantelpiece, but since the boy's death she had been unable to find the box or the powders. Sir Bernard Spilsbury said that the prescription for the powders contained mercury, but he did not think two grey powders would seriously affect the child. Death was due to acute colitis. Dr. Lynch stated that he had found traces of mercury in the boy's organs: there was one-twelfth of a grain in the kidneys, and he thought mercury poisoning was the cause of death. There were two similar cases of death from mercury poisoning on record. Sir Bernard Spilsbury said that in view of the analyst's report, and from a further examination he had made, he concluded that death was due to syncope resulting from acute colitis brought about by mercury poisoning. In recording his verdict the coroner said that precise instructions had been given with the powders at the hospital, but the child, apparently, had taken an excessive dose.

The Services.

DIRECTOR OF MEDICAL SERVICES IN INDIA.

MAJOR-GENERAL W. H. S. NICKERSON, V.C., C.B., C.M.G., late R.A.M.C., has been selected for the appointment of Director of Medical Services in India in succession to Major-General Sir Walter H. Ogilvie, K.B.E., C.B., C.M.G., I.M.S., who will retire on September 2nd.

DEATHS IN THE SERVICES.

Major Louis Hope Loyal *Mackenzie*, Indian Medical Service, of Tomich, Beauly, died at Parachinar, on the North-West Frontier of India, on April 5th, aged 47. He was educated at Cambridge (Trinity College), where he graduated as M.A. with honours in 1902, B.C. in 1907, and M.B. in 1908; and at St. Thomas's Hospital, taking also the M.R.C.S. and L.R.C.P. in 1907. Entering the I.M.S. as lieutenant on July 31st, 1909, he became captain after three years' service, got a brevet majority for war service on June 3rd, 1917, and became permanent major on July 31st, 1921. He served in the recent war of 1914, and was mentioned in dispatches in the *London Gazette* of August 15th, 1917. For several years past he had been in political employ in the North-West Frontier Province.

Captain John Crawford Burns, R.A.M.C. (ret.), died at Aberdeen on February 26th, aged 34. He was born on January 15th, 1895, the second son of the late Walter Burns of Denholm Hill, Roxburgh, and was educated at Edinburgh, where he graduated as M.B. and Ch.B. in 1917, joining the Special Reserve of the R.A.M.C. as lieutenant on August 9th, 1917. He afterwards took a commission in the regular R.A.M.C. from the same date, and was promoted to captain on February 9th, 1921. He was then placed on half-pay, and transferred to the retired list last year. He served in the war of 1914-19.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on April 26th the following medical degrees were conferred:

M.D.—W. S. Hunt, A. C. Hampson, W. Brockbank, W. Smith.
M.B., B.Chir.—J. O. R. Murray, J. G. Milner, F. D. Morgan.
M.C.—C. A. Francis, E. Clayton-Jones, E. A. E. Palmer.
B.Chir.—E. B. Murrell.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examination indicated:

DIPLOMA IN PSYCHOLOGICAL MEDICINE (*with special knowledge of Psychiatry*).—J. Braithwaite, Catherine M. Hext.

UNIVERSITY COLLEGE.

The Faculty of Medical Sciences of University College announces that an examination for the Buckmill Scholarship (of the value of 160 guineas) and two Exhibitions (each of the value of 55 guineas) will be held in June. Full particulars and entry forms may be obtained from Mr. C. O. G. Douie, secretary, University College, Gower Street, London, W.C.1.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary comitia of the Royal College of Physicians of London was held on April 25th, when the President, Sir John Rose Bradford, was in the chair.

Fellowship.

The following were elected Fellows on the nomination of the Council:

R. W. Marsden, M.D. (Manchester), Rupert Waterhouse, M.B. (Bath), A. G. Yates, M.D. (Sheffield), K. D. Wilkinson, O.B.E., M.D. (Birmingham), T. L. Hardy, M.D. (Birmingham), Geoffrey Bourne, M.D. (London), C. T. Champion de Crespigny, *D.S.O., M.D.* (Adelaide), A. C. Roxburgh, M.D. (London), B. T. Parsons-Smith, *M.D. (London)*, A. W. M. Ellis, M.D. (London), H. Gardiner-Hill, M.B.E., M.D. (London), J. H. Sheldon, M.D. (Wolverhampton), J. M. H. Campbell, O.B.E., M.D. (London), J. H. Dible, M.B. (Liverpool), D. H. Paterson, M.D. (London), J. C. Bramwell, M.D. (Manchester), A. F. Tredgold, M.D. (London), Hugh Gainsborough, M.D. (London), C. H. Kellaway, M.D. (Melbourne), A. H. Southwaite, M.D. (London), B. Hunter, M.D. (London), H. M. Turnbull, M.D. (London), C. A. Lovatt Evans, D.Sc., F.R.S., M.R.C.S., L.R.C.P. (London).

Membership.

The following, having satisfied the Censors' Board, were elected Members:

R. S. Aitken, M.B., J. Anderson, M.D., R. W. Brookfield, M.D., W. L. Chrestman, M.B., H. A. Clegg, M.B., Gladys Mary Evans, M.D., F. R. Ferguson, M.D., W. E. Fisher, M.D., H. G. Garland, M.B., H. K. Goadby, M.B., C. A. Keele, M.B., A. J. May, M.B., M. M. Mehta, M.B., L. Minski, M.D., A. G. Ogilvie, M.B., W. E. Rees, M.D., H. M. Sein, M.B., E. W. Skipper, *M.B.*, W. R. O. Stowe, M.B., M. M. Suzman, M.D., P. C. Varrier-Jones, *L.R.C.P.*, W. S. Whimster, *M.D.*, C. E. Woodrow, *L.R.C.P.*

Licences.

Licence to practise were granted to the following 108 candidates:

E. G. Abdel-Malek, D. A'Brook, Annie D. M. Adams, C. L. Ahluwalia, *Annie F. Allport*, C. Arthur, J. C. Arthur, S. Alstead, A. R. Banham, I. T. Barling, J. R. J. Beddard, D. Bielenky, R. E. Blake, M. Bloom, R. K. Bowes, A. M. Boyd, J. S. B. Bray, A. D. D. Broughton, C. W. F. Burnett, E. L. Butler, *C. E. Candwell*, M. A. Chamberlain, P. P. Chanda Nambiar, *Rosa O.* J. Clark, J. O. Clyde, J. R. Colvillo, S. J. Cope, D. M. Craig, F. A. D'Abreu, A. M. D'Cotta, J. G. Dathan, H. R. J. *Donald*, *E. S. Fossey*, I. Friedman, Dorothea L. Geo, T. Giblin, A. Gilpin, *Joan Goodger*, H. Gordon, E. Grundy, P. N. Hansen, K. W. D. Hartley, Dorothy C. Hay, G. Herbert, J. H. Howells, *D. Hugo*, A. H. Hussein, A. E. Hutton, K. L. James, W. H. P. Jones, *C. Jones*, Mary E. H. Jones R. A. Jones, L. D. Khatri, H. V. Knight, R. G. Krishnan, R. J. Krogh, A. J. C. Latchmore, J. C. Lee, J. M. Leggatt, F. G. Lewis, O. V. Lloyd-Davies, J. Y. Lucas, H. G. McGregor, C. G. Millman, A. J. Moffatt, B. A. Moss, L. P. Nay, W. L. Noustatter, J. C. Nicholson, R. J. L. O'Donoghue, J. R. Owen, E. R. G. Passo, A. S. Philps, R. K. Price, K. H. Pridie, A. B. Rao, *J. B. A. Reynolds*, *R. A. C. Rice*, N. W. *Roberts*, C. St. Johnston, J. G. Sandrey, R. W. Scanlon, C. P. Scott, J. D. W. Sheddon, M. D. Sheppard, B. Singer, W. F. Skaife, D. R. Subaliskaw, W. C. Smallwood, E. S. C. Tanner, L. Taylor, K. S. Thon J. J. van Niekerk, E. Vitenson, L. Wheeler, B. Williams, D. C. Williams, E. R. Williams, Sybil D. Williams, Kathleen Wilson.

Dr. F. E. Fremantle was appointed delegate to the fourth Imperial Social Hygiene Congress.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—B. L. Fishout, E. T. Garthwaite, E. Marks, A. N. de Monte, C. J. Poh, P. U. Rao.
MEDICINE.—B. L. Fishout, D. F. Michael, C. J. Poh, H. Whitby.
FORENSIC MEDICINE.—H. M. Feldman, H. Markus, A. W. Tam.
MIDWIFERY.—L. Banszky, G. R. Davies, C. W. Ellison, D. C. Ghose, C. F. H. Quick, T. Singh.

The diploma of the Society has been granted to Messrs. H. M. Feldman and D. F. Michael.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

PARLIAMENT will be dissolved next week. This week the House of Commons considered the Finance Bill and departmental estimates, and both Houses were occupied with the final stages of bills previously discussed.

At the House of Commons, on April 29th, with Dr. Fremantle as chairman, Conservative members entertained Mr. Chamberlain and Sir Kingsley Wood to dinner.

Local Government (Scotland) Bill.

Third Reading in the House of Lords.

The House of Lords, on April 24th, read the Local Government (Scotland) Bill a third time after making minor amendments to it. By one of these the House, on the motion of Lord YOUNGER, restored to Clause 35, which deals with medical officers of health and sanitary inspectors, a subsection which had been deleted by inadvertence when Lord Younger had previously carried an amendment varying the operative words of the clause. The subsection which, with the approval of the Government, was restored on April 24th runs:

"Except with the sanction of the Department of Health, no person shall, after the commencement of this Act, be appointed sanitary inspector of a county or burgh unless he possesses such qualifications as may be prescribed by the Department of Health."

The bill was returned to the House of Commons, which on April 26th considered the Lords' amendments.

The Lords' Amendments in the House of Commons.

The Lords' amendments to the bill were considered by the House of Commons on April 26th. The Commons agreed to the subsection added by the Lords to Clause 5. This clause makes provision relating to the transfer of functions, and Sir JOHN GILMOUR explained that the subsection added by the Lords was designed to meet a case where a district board of control would disappear, and where its functions would be transferred to two separate county councils. The subsection authorized that the appointment of representatives should be made either by the two counties jointly or by a joint committee, or else that a certain number of appointments should be allotted to one county council and a certain number to the other. Sir John added that he thought this a good working agreement.

The Commons also agreed to an amendment made by the Lords in Clause 11, which provides for the combination of local authorities. Sir John Gilmour said the Lords' amendment was made to meet circumstances such as would occur at Paisley in consequence of the transfer of an asylum. The amendment was introduced by the Government after conference with the authorities concerned. On Clause 35, dealing with the appointments of medical officers of health and sanitary inspectors, Sir John Gilmour moved that the Commons disagreed with the amendment which, on the motion of Lord Younger, the Lords had carried. This amendment laid down that sanitary inspectors of small burghs should be succeeded on any vacancy arising after the Act coming into force *ipso facto* by the sanitary inspector of the county within which the burgh was situated. Mr. W. WATSON supported Sir John Gilmour's proposal. He said that considerable hardship would be imposed upon certain burghs if they had burgh surveyors who were not also sanitary inspectors. Mr. WESTWOOD also thanked the Government, and said many people would be glad to know that the Government had sufficient backbone to face the House of Lords. The House of Commons then disagreed with the Lords' amendment, and subsection (1) of Clause 35 reverted to its original form, in which the provision that a county official should succeed to a vacancy in a small burgh only applied to medical officers of health.

Other amendments concerning the transfer of officers and rights in superannuation funds or compensation were accepted by the Commons, and the bill was returned to the Lords with a statement of the reasons for disagreeing with the Lords' amendment on Clause 35.

Radium.

Answering Dr. Fremantle, on April 25th, Mr. CHAMBERLAIN said the British Empire Cancer Campaign was not consulted before the Government decided its action on the proposed radium appeal. The Campaign would not be asked to undertake the appeal to the public for funds. Mr. Chamberlain added that, while appreciating the work being done by the British Empire Cancer Campaign, he hesitated to accept Dr. Fremantle's estimate of it as the principal association for the promotion of cancer research. Dr. FREMANTLE asked whether Mr. Chamberlain knew that the Cancer Campaign had prepared an appeal on an extensive scale. Mr. CHAMBERLAIN replied that he understood that was for research only, whereas, according to the general opinion, the need was for more than research. Dr. FREMANTLE retorted that the subcommittee of the Committee of Civil Research had used the word "research." He asserted that the Cancer Campaign had appealed widely for radium, that they had a large stock in hand, and that they were therefore the proper body to do what was suggested by the Committee of Civil Research. Mr. CHAMBERLAIN said Dr. Fremantle was mistaken if he thought that the whole of the recommendations of the Committee dealt with research. He saw no need for giving the House of Commons an opportunity to discuss the question before an appeal was made, and added that he had every reason to suppose this appeal would be before the General Election. Answering Mr. Robert Morrison, Mr. CHAMBERLAIN said the subcommittee of the Committee of Civil Research was not in a position to secure any guarantee that 20 grams of radium bought through a single agency would be cheaper than much smaller amounts bought by numerous purchasers, but their opinion on this point, with reasons, was set out in their report.

Small-pox.

On April 25th, in an answer to Dr. Fremantle, Mr. CHAMBERLAIN said that, according to the information then available, two cases of small-pox had been notified during the past week from the *Tuscania*. No further deaths had occurred, and no case of small-pox had been reported from the *Mashobra*. Information on the vaccinal history of the fatal cases from the *Tuscania* was not then available.

Mr. LOCKER-LAMPSON told Dr. Fremantle, in a written answer on April 25th, that the regulations with which travellers proceeding from this country to France had at that date to comply provided that:

(1) All persons in possession of certificates to the effect that they had been vaccinated within the last five years and not more recently than ten days would be allowed to land without hindrance.

(2) Those without such certificates would be required to fill in a sanitary passport, giving their names and addresses and their destination, so that they might be subject to medical supervision during the next fourteen days.

(3) There would be no compulsory vaccination on disembarkation.

He understood that at Dieppe holders of certificates were also being asked to submit their arms for medical inspection. At Havre the special regulations introduced by the mayor, and announced in the press, were still being enforced. The length of time which these regulations would remain in force must necessarily depend upon circumstances.

Dr. FREMANTLE asked whether these matters would in future be arranged through the International Committee of Public Hygiene, at Paris, or through the Health Organization of the League of Nations, at Geneva. Mr. LOCKER-LAMPSON replied that, in the opinion of the British Government it was not possible to leave the details of administration in such matters to an international body. The French Government had acted in the present case in accordance with Article 42 of the International Sanitary Convention signed at Paris on June 21st, 1926.

Sir KINGSLEY WOOD told Sir Basil Peto, on April 30th, that there was no quarantine station or quarantine ship at the port of Liverpool. The measures taken at Liverpool on the arrival of the s.s. *Tuscania* were in accordance with the procedure laid down in the International Sanitary Convention of 1926. Sir BASIL PETO asked whether, in the absence of any quarantine station and ship, the crew and passengers were distributed all over the country; and whether at East Ham and West Ham 24 cases of small-pox arose from contact with a steward from the *Tuscania* who had seven or eight children attending an elementary school at Leyton Road. Sir KINGSLEY WOOD: Yes, Sir; the Minister of Health and I have answered several questions on this matter, giving an exact account of what has taken place. Obviously, the conditions which have to be complied with are those of the International Sanitary Convention, but the real lesson of the whole affair is the necessity for vaccination.

Power Stations and the Smoke Nuisance.

Colonel ASHLEY announced, on April 18th, that the Electricity Commissioners had asked the Government chemist to examine the results of the investigation by the London Power Company on the problem of eliminating sulphur fumes from smoke. He was informed that research chemists had already obtained satisfactory results in laboratory experiments. In conjunction with the Department of Scientific and Industrial Research the Government chemist would advise the First Commissioner of Works and the Electricity Commissioners on the efficacy of the measures proposed for the new power station at Battersea. Only the newer power stations in the London area were subject to the condition that there should be the best known precautions for the consumption of smoke and for preventing, so far as reasonably practicable, the evolution of oxides of sulphur.

In the House of Lords, on April 25th, Lord JESSEL called attention to "the menace to the health and amenities of London by the erection of the Battersea power station." He said the proposed site was close to Battersea Bridge. The station, if erected, would be the second biggest station in the country. It would have six chimneys, each 275 feet high. The Electricity Commissioners, in giving consent to the station, had imposed the condition that "the company shall, in the construction and use of the said generating station, take the best known precautions for the due consumption of smoke and for preventing as far as reasonably practicable the evolution of oxides of sulphur, and generally for preventing any nuisance arising from the generating station or from any operations thereat." Protests had been made, but it seemed that nobody had powers over the Electricity Commissioners. He believed that laboratory experiments had not devised any means of obviating the sulphur nuisance. At St. Pancras the nuisance from the power station was so great that the Municipal Reformers nearly lost the last election because of the disgust of the inhabitants at the fumes from the power station. In Poplar the power station caused great inconvenience, and dishes in households were filled with grit emanating from the power station. Surely the time had come when these big power stations should not be placed in the centre of large cities like London.

Lord BIRKENHEAD defended the erection of the Battersea power station.

Lord LONDONDERRY, First Commissioner of Works, said the danger which was represented to threaten the parks and public buildings of London was less important than the health of the population. The Minister of Health would not allow the scheme to go forward unless he was satisfied there was no danger in that direction. It was important that these generating stations should be in the centres where the chief loads were to be carried. If they were placed at a distance from the centres which they were destined to supply a greatly increased cost would fall on the public. Generating stations must also be close to water. The difficulties connected with smoke and grit had been overcome, and they need no longer be a nuisance to the public. All coal fires gave off sulphur fumes, and these fumes existed in all centres of population. The erection of the Battersea station would permit the elimination of three stations—at Horseferry Road, Westminster, Shepherd's Bush, and Earl's Court. The reduction of sulphur fumes by elimination of these stations and the establishment of one station was calculated at 30 per cent. In addition, the new station would reduce the consumption of coal in a great number of houses, with consequent reduction of the sulphur fumes now given off by fires. The further extension of the Battersea power station by two-thirds would not be undertaken unless the Minister of Transport, the Minister of Health, and the First Commissioner of Works were satisfied on the advice of the Government chemist and of the Scientific and Industrial Research Department that there was no danger accruing.

Lord CRAWFORD said experience in Lancashire showed that people within 300 yards of a big chimney often did not suffer so much as those who were half a mile or more from it. The limit of 300 yards which the Electricity Act imposed on complainants was a great hardship on people who lived beyond that limit, and had no means to state their case.

Lord LONDONDERRY repeated his assurance that only one-third of the Battersea scheme was being undertaken now, and Lord JESSEL withdrew his motion.

Schools for Mental Defectives and Nursery Schools.

Lord EUSTACE PERCY, speaking on the vote for the Board of Education, in the House of Commons, on April 23rd, said that to complete the balanced scheme of education they must give a more natural and normal place in the structure to two types of school which had hitherto stood rather outside the elementary school system—the special school and the nursery school. A recent report by the committee appointed by Sir George Newman had indicated certain defects in their methods of dealing with mentally deficient children. He (Lord E. Percy) had been criticized for waiting for this report before deciding his policy in regard to schools for mental defectives, but he believed that the committee's work would enable them to make within the general educational system a more comprehensive and varied provision for the needs of such children than had been possible on the basis of a procedure of medical certification. That certification had tended to divide retarded children into two fixed and somewhat artificial categories. The nursery school presented a different problem, but was also a subject on which all needed to clarify their views by thorough investigation. He had left this problem at the stage at which he had found it—that of isolated experiments. Those experiments had not been unfruitful. They had led the Board to modify its views on certain points, such as the size of nursery schools, but the Board of Education could not be content either with the present rate of progress or with any of the proposals which had recently been put forward on this subject, and which seemed to him to amount to a little more than a [illegible] experiments. The time had come w[illegible] problem should be brought into the focu[illegible] recently announced, the Board of Education proposed to conduct a comprehensive inquiry with this object.

Education Estimates for Scotland.

The Education Estimates for Scotland were also debated on April 23rd, and Mr. D. M. COWAN congratulated the Scottish Education Department on the fact that recently an education research committee had been set up in Scotland. That committee included representatives of the medical profession. This enthusiastic body was devoting itself to the study of the child mind. The object of the committee would be not only to provide a good educational course for the normal child, but to find out how the backward child could be specially dealt with.

Mr. JOHNSTON said that in the report of the Scottish Education Department it was admitted that the nutrition of over 6 per cent. of the school children examined by the school medical officers was below the average. Within the last ten years things had gone back in this respect. Medical inspection of school children was very briefly dealt with in the report of the Scottish Education Department. The annual report of the Scottish Board of Health showed that 73 per cent. of the children attending schools suffered from defective teeth. The dental services were inadequate. Then there was rickets—a poverty disease; and defective eyesight, which amounted to 5 per cent. and was still growing. Some of the schools were designed and built many years ago, and a large amount of the children's troubles arose directly from bad heating arrangements and bad ventilation.

Dr. ELLIOT said that the school accommodation in Scotland had been considerably enlarged in the last few years. It was obviously a mistake to mix up sound with sick school children, and defective children with normal children. There was every reason to believe that with the unification of the activities of the local authorities it would not be necessary to overcrowd educational institutions with school clinics, while, a street or two away, or it might be only across the street, there were facilities for carrying out these examinations in buildings designed for the purpose, where the work could be done without trenching on the premises available for the teachers for carrying out the main purposes of the school.

The break between the school health services and those of the local authority was a flaw in their educational system which the Local Government Bill would remove. He would report to the Secretary of State for Scotland that the House considered greater attention should be paid to the physical condition of school children. The debate on the vote was adjourned.

Bills.

On April 25th a Standing Committee of the House of Commons, which included Dr. Fremantle, passed the Preservation of Infant Life Bill through the committee stage with a verbal amendment, and altered the title to the Infant Life Preservation Bill. The bill has already passed the House of Lords.

The Royal Assent was given on April 25th to the Army and Air Force (Annual) Act.

In the House of Lords, on April 30th, Lord DESBOROUGH moved the second reading of the Pharmacy Bill. He said the bill was designed to secure reciprocity in regard to qualified pharmacists between Great Britain and Northern Ireland. The bill was read a second time.

Insurance Medical Service.—Mr. CHAMBERLAIN told Mr. Thurtle, on April 25th, that he had seen reports of an inquest recently on the death of a Shoreditch man at which the coroner had spoken of the inadequacy of the home treatment of this patient and of insured patients in general. Mr. Chamberlain said he did not think the case afforded sufficient reason for a general inquiry into the home treatment given to insured persons. There were very few complaints about this treatment. Insurance practitioners were required by their terms of service to visit and treat patients whose condition so required at any place within the districts in which the practitioners had undertaken to visit patients. Any complaint that a practitioner had failed to visit a patient when necessary should be made in the first instance to the local Insurance Committee, who must have it investigated.

Deaths in England and Wales for the First Quarter of 1929.—Sir KINGSLEY WOOD informed Mr. Malone, on April 23rd, that the returns issued by the Registrar-General showed that in the first quarter of this year the deaths in 107 great towns in England and Wales exceeded the births by 25,108. The deaths numbered 111,003, influenza being certified as one of the causes of death in 12,711 cases. No similar figures were yet available for the country as a whole. The Medical Research Council were promoting researches into the group of diseases to which influenza was believed to belong.

Smuggling of Drugs.—On April 16th Sir V. HENDERSON, replying to Sir R. Thomas, said that the Home Office had no information indicating that drugs were being smuggled into this country on a large scale through the ports of Cardiff and Swansea.

Refuse Dumps.—The public cleansing inspector of the Ministry of Health has inspected refuse tips at Little Britain and Iver, and the Minister of Health has appointed a departmental committee to consider his report and to recommend what measures should be taken on it. In the meantime, the Minister is making further inquiries at Iver, where he understands a new tip has been started.

Notes in Brief.

Pending receipt of a report from the Committee of Inquiry, the Minister of Agriculture is unable to reach a decision on the future of the Royal Veterinary College. The committee is still taking evidence.

Sir W. Joynson-Hicks informed the House that in the year 1928 coroners' verdicts in England and Wales found that 3,331 males and 1,464 females had committed suicide. He would endeavour to ascertain how many of these committed suicide by gas.

Medical News.

KING EDWARD'S Hospital Fund for London has sustained a severe loss in the death of Lord Revelstoke, who in 1906 was appointed as one of the first members of the newly formed Finance Committee. In 1915 he succeeded the late Lord Rothschild as Treasurer and Chairman of the Committee. Lord Revelstoke devoted unremitting attention to the financial welfare of the Fund, and to the maintenance of its stability. On April 30th it was announced that he had bequeathed the munificent sum of £100,000 to the Fund.

THE Sir George Birdwood Memorial Lecture will be given at the House of the Royal Society of Arts, John Street, Adelphi, W.C., on Friday, May 10th, at 4.30 p.m., by Mr. P. Johnston-Saint, M.A., F.R.S.E., secretary of the Wellcome Historical Medical Museum. The subject of this year's lecture is "*An outline of the history of medicine in India*," and Sir E. Denison Ross will preside.

A SERIES of dances is being arranged by different London hospitals in aid of the Royal Medical Benevolent Fund Guild, in the Hall of the British Medical Association House, Tavistock Square, W.C.1. The first of these, organized by Guy's Hospital, will be held on Thursday, May 16th, from 8.30 p.m. to 12.30 a.m. Tickets, 6s. each, or 11s. for two, which include light refreshments, may be obtained from Mrs. Hale-White, 1, Portland Mansions, W.1; Miss V. S. Fripp, 19, Portland Place, W.1; or Mr. Winston, Medical School Office, Guy's Hospital, S.E.

TWO lectures on the physiology of glycogen will be given at the London Hospital Medical College, Mile End, E., by Dr. J. J. R. Macleod, F.R.S., regius professor of physiology in the University of Aberdeen, on May 16th and 17th, at 5.30 p.m. The first lecture will deal with the absorption of sugar, the glycogen of the liver, and the glycogen of the muscles, and the second lecture with the significance of sugar tolerance curves and the role of insulin and other hormones in the control of carbohydrate metabolism. Professor Leonard Hill, F.R.S., will take the chair at the first lecture. Admission is free.

AT a sessional meeting of the Royal Sanitary Institute to be held on May 17th and 18th, in the Town Hall, Devizes, discussions will take place on the Milk and Dairies Order, 1926; on meat inspection; and on some aspects of local government on air, water, and sewerage.

A CLINICAL meeting will be held at the East London Hospital for Children, Shadwell, on Wednesday next, May 8th, at 4 p.m., when a short discussion on the significance of otitis media in influenza will be held, followed by a demonstration of cases of interest. All practitioners are cordially invited.

AN open meeting of the London Association of the Medical Women's Federation will be held in the Hastings Hall, British Medical Association House, Tavistock Square, W.C.1, to-day (Friday, May 3rd) at 8.30 p.m. A report of the Cancer Research Committee of the Marie Curie Hospital on three years' work on the treatment of cancer of the uterus with radium will be presented, with demonstrations of technique and cases.

THE eighty-first half-yearly dinner of the Aberdeen University Club, London, will be held at the Trocadero Restaurant on Thursday, May 16th. The secretary's address is 9, Addison Gardens, W.14.

THE Fellowship of Medicine announces that the special course of instruction for the July M.R.C.P. examination will begin on May 7th, when Dr. B. T. Parsons-Smith will deliver a lecture on the assessment of valvular heart disease; this will be followed on Friday, May 10th, by his second lecture, entitled "The treatment of cardiac failure." These lectures will be given at the Medical Society lecture room, 11, Chandos Street, on Tuesdays and Fridays at 8.30 p.m. for eight consecutive weeks. On May 6th a course in venereal disease will start at the London Lock Hospital, Dean Street, occupying each afternoon for one month and consisting of clinical instruction. A series of four lecture-demonstrations on ante-natal treatment will be given by Professor Dame Louise McIlroy on successive Fridays from May 17th to June 7th (both dates inclusive) at 5 p.m. at the Royal Free Hospital. From May 27th to June 8th a course in diseases of infants will be held at the Infants Hospital, Vincent Square, occupying each afternoon. Free demonstrations will be given during the week: on May 8th, at 2.30 p.m., in the children's out-patient department at King's College Hospital, by Dr. Wilfrid Sheldon, and on May 10th, at 2 p.m., at the Cancer Hospital by Mr. A. Lawrence Abel. Copies of all syllabuses, tickets of admission, copies of the *Post-Graduate Medical Journal* (issued monthly), and particulars of the general course of work provided by the Fellowship, may be obtained from the secretary, 1, Wimpole Street, W.1.

THE final programme has now been issued for the congress of the Royal Institute of Public Health, to be held at Zürich from May 15th to 20th. Copies may be obtained from the honorary secretary of the Institute, 37, Russell Square, W.C.1.

DR. WALTER E. MASTERS and Dr. Leonard P. Lockhart have been called to the bar by the Middle Temple and Gray's Inn respectively.

AN anonymous donor has given £2,000 for the purchase of radium for the treatment of cancer at the Royal Victoria Infirmary, Newcastle-upon-Tyne.

THE National Baby Week Council draws attention to the fact that it supplies, free of charge, a leaflet on vaccination addressed to parents. Application should be made to the office of the Council, 117, Piccadilly, London, W.1.

THE April issue of the *Archives of Surgery* is a special number in honour of the sixtieth birthday of Professor Harvey Cushing, C.B. All the articles are contributed by former pupils, and cover a wide range of surgical and anatomical subjects.

AT the fourth congress of the German society for combating rheumatism, held at Wiesbaden on April 5th and 6th, a committee was appointed to collect statistics of the incidence of rheumatic diseases.

THE medical tour organized annually by the Italian State Tourist Department to spas and other health resorts in Italy will be made this year from September 10th to 26th, and the party will be accompanied as in previous years by an English-speaking Italian medical practitioner. Each of those participating is allowed to bring one relative. Special train facilities are available and there is no night travel. A programme of receptions, local sightseeing, and entertainments is being arranged. Among the spas to be visited are: Merano, Carezza (Karersee), and other Dolomite resorts; Riva and Gardone on Lake Garda; Montecatini, and Viareggio. Detailed information can be obtained from the Italian Travel Bureau, 16, Waterloo Place, Regent Street, S.W.1.

ON the occasion of the celebration of the seventh centenary of the foundation of the University of Toulouse, a medical congress will be held on June 8th, when addresses will be given by Professor Bordet of Brussels and Professor Gley and Inspector-General Toubert of Paris.

THE Luigi Devoto Foundation of Milan has offered a prize of 10,000 lire for the best work on industrial pathology.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediocra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

RADIUM IN ARTHRITIS.

DR. F. WILLIAM COCK (Appledore, Ashford, Kent) writes: Can any of your readers inform me if there is information to be obtained of the use of radium for rheumatoid arthritis with somewhat rapid formation of bone in and about the hip-joint?

TREATMENT OF PERICARDITIS.

"B." writes to ask for advice in the treatment of a case of pericarditis of long standing in an elderly but very active man.

NEO-NATAL INTRACRANIAL HAEMORRHAGE.

"M. D." asks whether any reader has noticed intracranial haemorrhage in the newborn child as a sequel to strong pressure applied to the fundus in order to expedite delivery in delay in the second stage of an otherwise normal confinement. He has used this procedure in a considerable number of cases. The full weight of the body was brought to bear through the two palms, and undoubtedly delivery was hastened and the use of forceps avoided in many cases. Three infants, however, showed signs of cerebral damage. One had convulsions, starting six weeks after birth, and continuing occasionally for some months. This child is now mentally deficient. Another had convulsions starting when four months old and lasting for five months. This child also is mentally deficient. The third child showed signs of slow mental development, had pneumonia when 1 year old, and died of meningitis. "M. D." thinks that there may be a connexion between the pressure and the abnormal brains. He has given up pressure entirely, and now uses forceps much more frequently. He believes that this procedure is probably much safer than pressure or unduly long delay.

AXILLARY HYPERIDROSIS.

DR. CATHERINE EVANS (Herne Bay) writes in answer to "D. G.": I have found small doses of *x* rays to be the most efficacious treatment. Eight or ten applications are usually enough, given at weekly intervals.

DR. BLANCHE A. M. HENDERSON (West Hartlepool) writes: "D. G." might find the following helpful. Axillary hyperidrosis is aggravated by constipation, and in women at certain times. It is also made worse by too much clothing; this should be loose, light, and frequently changed. Two outfits should be worn, on alternate days, no garment being worn on two consecutive days. For washing a hot soapy lather should be used, with household ammonia added; both feet and axillae should be washed as frequently as possible. Exposure of the whole skin to sun and air will help. Diet should be plain and light, with plenty of fruit and fresh vegetables. A hot bath at night is to be recommended and a hairwash every week or ten days. The underwear should not be of wool but cotton, which can be boiled.

INCOME TAX.

Purchase of House and Microscope.

"C. F. E." has recently purchased his house for £2,000; it is assessed to income tax Schedule A at £62 10s., and he borrowed £700 of the purchase price at 5½ per cent. What can he now deduct in respect of the house, and, also, of a microscope bought (not by way of replacement) for £70?

*** The only deduction he can make in respect of the house is the proportion one-half or two thirds of the £62 10s. on which he pays the rental tax. No allowance is due for the microscope, unless he can persuade the local income tax authorities to regard it as an item of "plant and machinery" rather than as falling into the category of loose tools.

Renewal of Car.

"E. E. H." inquires whether he can claim for renewal of car on April 4th, 1928, although he was not liable for assessment for the year 1927-28.

*** The cost of renewing a car can be treated as an expense of the year in which it was incurred. If "E. E. H." makes up his accounts to December 31st or March 31st then the transaction on April 4th cannot affect his liability for 1928-29, but it may be otherwise if he makes his accounts up for the year ending April 5th each year. It is immaterial that he was not liable to assessment for 1927-28, provided that the wearing out of the car has been caused by his work as carried on in 1928-29.

Appointment: Car Depreciation.

"A. P." bought a car in April, 1925, for £225 and used it in connexion with work for which he received a salary and a mileage allowance adequate to cover running costs and depreciation. In April, 1927, he transferred to another authority, and then received a smaller mileage allowance and was granted a depreciation allowance for income tax purposes—£22 for 1927-28 and £18 for 1928-29. In March, 1929, he sold the car for £52 and bought a new car for £293. What can he claim for obsolescence?

*** He used the car for four years, in the first two of which the depreciation was covered by a non-assessable allowance, and consequently is entitled, in our view, to one-half of the full obsolescence allowance—that is, ½ (£225—£22 – £18 – £51) = ½ £225 [illegible] £91 = £131 £67.

Depreciation of Car.

"P. W." bought a car in 1928 for £196; he had previously hired a car as [illegible] required. What depreciation allowance should he claim [illegible] for 1929-30?

*** 15 per cent.—or if the local revenue authority agrees, 20 per cent. of £195 will be the appropriate allowance for 1929-30.

For the following year it will be the same percentage of £193 less the amount of the 1929-30 allowance, and so on, the allowance growing less each year.

Depreciation of Motor Cycle.

"N. D. M." bought a motor bicycle in 1920 or 1921 for £110; it was used for a year, and was then put away until 1928, when it was brought into use by his assistant. Can he claim depreciation on this cycle?

*** Yes. The amount of the allowance will be small, because it must be calculated on the basis of annual writing down by, say, 15 or 20 per cent., but it is as well to claim the allowance and to make a point of putting in the (more remunerative) obsolescence allowance when the cycle is replaced—for example, by a small car or another cycle.

LETTERS, NOTES, ETC.

CANE SUGAR IN THERAPEUTICS.

DR. C. G. S. BARONSFEATHER (Bournemouth) writes: For some ten years I have been studying the effect of cane sugar on lung diseases, more especially tuberculosis and "weak chests" in children. I was led to prescribe it frequently, with the best results. The late Dr. Arthur Goulston in his book, *Cane Sugar and Heart Disease*, points out the great value of this simple remedy in cases of weakness of the heart muscle. A sentence in which he sums his conclusions runs as follows: "It is obvious how urgent it is that something be done to lessen the alarming death rate from diseases of the circulatory system. . . . After careful thought I hazard the opinion that in the matter of diet, if more sugar derived from the sugar cane and less sugar derived from beetroot were consumed, we should soon find a satisfactory means of prophylaxis." *It would seem that in pure* Demerara cane sugar we have a valuable and cheap treatment for diseases of the heart and lungs, ailments which form a large proportion of the chronic troubles of the poor. If the Ministry of Health would issue a short printed form to panel doctors, suitable for handing to their panel patients, recommending them to take 3 oz. of cane sugar in hot water daily I think it would go far to settle the grave problem presented by the ever-increasing drug bill. Several simple formulae might be printed on the paper, and once the patient had formed the sugar habit he would not trouble the doctor much more, as I know from experience.

THE TRIANGULAR BANDAGE.

MISS M. L. SPACKMAN (Clitheroe, Lancs) writes: In further reply to "Inquirer" (New Zealand), the triangular bandage used in "first aid" is named after Johannes Friedrich August von Esmarch, the German military surgeon, who was the pioneer of first-aid teaching in Germany, imitating, in 1881, the English St. John Ambulance classes. He wrote a manual, *First Aid to the Injured*, which is based on his lectures, and has been translated into twenty-three languages.

TYPHUS FEVER IN EUROPE.

DURING the war typhus fever appeared first in those countries in which it was endemic, being favoured by famine, overcrowding, and poverty; it was then conveyed by troops, prisoners, and refugees into countries previously healthy. With the termination of the war and the progressive re-establishment of better economic conditions, the disease gradually returned to its former endemic state. J. Laussel has studied the incidence of typhus in Europe since 1914, and has embodied his conclusions in a thesis (*Thèse de Paris*, 1928, No. 427). He states that the incidence of typhus fever in the Balkans, and especially Rumania, is greater now than before the war, and that that country, with Poland and Russia, shows the highest incidence of this infection, though the Russian pandemic—due to the revolution—subsided as the condition of the country improved. Owing to the enforcement of sanitary measures, France remained free from typhus throughout the war, in spite of the arrival of soldiers from the East, the large number of prisoners, and the conditions of life in the trenches. The only epidemic which occurred after the war was at Marseilles in 1919, and here it was confined to the prisons. The outbreak—which was of external origin—was only rendered possible by the fact that the first cases were not recognized; it was soon stamped out by sanitary measures. Laussel adds that the identity with typhus of the recent outbreaks of exanthematous fever on the Mediterranean coast has not yet been established.

PRICE OF INSULIN.

THE British Drug Houses Ltd. and Allen and Hanburys Ltd. announce that the price of "A.B." insulin is to be reduced from 2s. 8d. to 2s., as from May 10th.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 50, 51, 52, 53, 56, 57, and 58 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 54 and 55.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 183.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

413. Etiology of Pernicious Anaemia.

A. ENGEL and G. OLIN (*Acta Med. Scand.*, February 28th, 1929, p. 150) remark that the theory of the intestinal origin of cryptogenic anaemia has been accepted generally for nearly thirty years. Dibothriocephalus anaemia closely resembles pernicious anaemia, and toxic substances capable of producing anaemia have been prepared from that parasite. In the great majority of cases of pernicious anaemia the nature and origin of the toxic substance are unknown, though in view of recent clinical and experimental investigations it may be presumed to be of intestinal origin. Several investigators have observed the simultaneous occurrence of pernicious anaemia and intestinal stricture, and that achylia gastrica, almost invariably associated with the disease, frequently precedes it by several years. Pernicious anaemia is always accompanied by pathological changes throughout the entire digestive tract. It has been proved that, though under normal conditions *B. coli* is not found in the stomach, duodenum, or jejunum, in cases of achlorhydria they appear occasionally in the stomach and duodenum, and in pernicious anaemia almost constantly in the stomach, duodenum, and jejunum. The present authors have investigated the production of agglutinins in the blood serum acting upon *B. coli* isolated from the same patient's faeces. They found that, as a general rule, agglutinins were not formed when these organisms were absent from the upper part of the alimentary tract. On the other hand, in gastric achylia and pernicious anaemia *B. coli* agglutinins were found in the blood serum in 17.2 and 55.2 per cent. respectively of the cases examined. Agglutination never occurred in patients who had no *B. coli* in the stomach contents. The authors believe that the occurrence of these agglutinins in the blood in cases of pernicious anaemia is due to the presence of that organism in the stomach and small intestine. They reject the theory of some American authorities that pernicious anaemia is caused by anaerobic bacteria, especially by *B. perfringens* or by certain haemolytic streptococci, and maintain that *B. coli* is the chief if not the only bacterial agent in the etiology of pernicious anaemia. They found no difference in the degree of agglutination between serious and slight cases of pernicious anaemia, nor between recent cases and those which had passed through several remissions.

414. Bell's Facial Paralysis.

C. ROSENHECK (*Med. Journ. and Record*, March 6th, 1929, p. 265) states that, anatomically, a facial palsy may supervene at any point between the cortical origin of the facial fibres to the point of exit at the stylo-mastoid foramen, where the facial nerve divides into several branches to supply the facial muscles. The differences between the central or cortical types of palsies and the peripheral forms (Bell's palsy) are discussed. One diagnostic difference is that in central facial palsies the upper half of the face escapes, while in the peripheral forms the entire face is involved. The former condition is due to the fact that bilaterally acting muscles have representation on both sides of the cortex, so that if disease affects one side the other continues to function. No age is exempt from Bell's palsy, and exposure to wind and cold is usually insisted on by patients as the direct cause. Subjective symptoms are generally inconsequential, the paralysis being the first manifestation, and constitutional symptoms are rare. The degree of involvement is variable, ranging from a mild palsy to a very severe paralysis. The most marked objective symptom is total paralysis of all the muscles on one side of the face, including the forehead and those that close the eye. The electrical response of the paralysed muscles gives valuable information, and there is generally a gradual or total reduction of faradic response with the same phenomena observed with the galvanic current. Very satisfactory results have followed rational treatment; electricity is an important measure, and the type of current that produces contraction in the affected muscles should be employed. The sinusoidal current with its gradual ascent and descent is probably the best. Systematic massage or manipulation of the paralysed muscles and voluntary exercise in reproducing normal movements are of great value. Persistence and patience in treatment are necessary and bring about good results. Rosenheck adds that the haphazard application of electricity should be avoided.

415. B.C.G. Vaccination.

J. A. A. MUÑOYERRO (*Arch. de med., cir. y esp.*, March 23rd, 1929, p. 369) records his observations on 757 infants at the foundling hospital at Madrid who had been inoculated with the Calmette-Guérin bacillus vaccine against tuberculosis. The general mortality was 28.5 per cent., as compared with 35 per cent. among 1,174 infants who did not receive the vaccine, and the mortality from tuberculosis 2.24 per cent., as compared with 4.25 per cent. among the controls. Muñoyerro concludes that, in view of the smaller number of cases of tuberculosis found among the vaccinated, the B.C.G. vaccine is not dangerous. It does not invariably protect against tuberculosis, though possibly in the vaccinated cases in which tuberculosis was found the infection was of intrauterine origin, or so massive in amount that vaccination had no power to control it. The author thinks that before the employment of B.C.G. is generalized or its use made compulsory it should be restricted to maternity hospitals and orphanages, or to patients living in an infected environment, from which the vaccinated subject should be immediately removed.

416. Toxic Jaundice.

K. MOTZFELDT (*Norsk Mag. f. Laegevid.*, March, 1929, p. 283), who records an illustrative case, remarks that different preparations of chinolin, such as atophan and cinchophen, are widely used by the public in the treatment of rheumatic and arthritic pain, and are recommended without restriction in textbooks of pharmacology as being less toxic than the salicylates. During the last two years there have been recorded 25 cases of severe toxic jaundice, including those of Willcox (*Journal*, 1926, ii, 273) and Wells (ibid., 759), 10 of which were fatal from acute yellow atrophy of the liver. Motzfeldt's patient was a woman, aged 27, in whom severe toxic jaundice developed after she had taken a total of 117 grams in two periods during a course of two months for rheumatic pains. Recovery gradually followed.

417. Paroxysmal Sneezing in Pertussis.

H. S. REICHLE (*Journ. Amer. Med. Assoc.*, February 9th, 1929, p. 443), who records two illustrative cases in infants aged 20 and 2 months respectively, states that paroxysmal sneezing may be of great value in the early diagnosis of pertussis, since in young children it may entirely or partially supplant the cough. The attacks are generally convulsive, cause congestion of the head, cyanosis, and exhaustion, and may end in the expulsion of the usual tenacious mucus through the mouth and nose. They may be accompanied by coryza, an inspiratory crow, and vomiting. The few cases seen by Reichle or described in the literature have been moderately severe but not fatal.

Surgery.

418. Arterial Embolectomy.

H. KOSTER (*Amer. Journ. Surg.*, March, 1929, p. 306) believes that the only hope of successful embolectomy lies in early diagnosis and operation, since the mortality rate increases sharply with every hour of delay. As soon as the obstruction occurs secondary thrombosis may begin and so lessen the chances of re-establishing the circulation. Emboli may arise from the heart, the pulmonary veins, the systemic veins, or the arterial tree trunk; no form of heart disease is free from the danger of embolism, the tendency being increased in valvular disease, especially in mitral stenosis. Mural auricular thrombosis occurs often in myocarditis with auricular fibrillation. Thrombus formation depends on platelet accumulation, which develops with circulatory stasis. Thrombosis may be found in both sides of the heart and give rise to simultaneous pulmonary and systemic circulatory embolism with [illegible]tion of the lung and gangrene of an extremity. The [illegible] are sudden severe pain in the affected extremity, [illegible] as the nutrition to the part is lessened; cold an[illegible] are complained of, and there is disturbance of sen[illegible] skin changes colour and becomes marble-white, [illegible] later lividly mottled. The temperature of the li[illegible] skin and tendon reflexes are lost, and pulsation [illegible] the embolus is in a small vessel, without dange[illegible] heat and vigorous massage should be the treatm[illegible] in a large vessel embolectomy should be im[illegible] informed. Spinal block anaesthesia should be [illegible]

nd Obstet., our cases, ation, state the urinary aracteristic, appearance n the urine, decided im- The diagnosis

it lowers the blood pressure and gives maximal relaxation. The incision should be made below the embolus, and the latter be extracted by gentle massage, the wound being closed by continuous suture. Reports show that of 75 operations within ten hours of occlusion 34 were successful; of 14 between ten and fifteen hours 3 patients recovered; of 13 cases between twenty and thirty hours only 2 patients were cured; and of 9 cases operated on between thirty and forty-eight hours after occlusion only one was successful. No case was successful when forty-eight hours elapsed before the operation. The best ultimate results were in embolism following an operation or parturition without cardiac lesions.

419. Treatment of Intestinal Obstruction.

T. G. ORR and R. L. HADEN (*Annals of Surgery*, March, 1929, p. 354) classify the treatment of acute intestinal obstruction under five headings: removal of the mechanical obstruction; relief of dehydration; treatment of hypochloraemia; relief of starvation; and drainage of the small bowel by an enterostomy. They emphasize the importance of early diagnosis and surgical treatment before change has taken place in the chemistry of the tissues and fluids; but before any operation is undertaken the patient should receive large quantities of water, salt, and glucose, and the total quantity of liquid given during twenty-four hours while the acute stage lasts should not be less than 4 to 6 litres. Water should always be given in the form of salt solution; in the hypochloraemia of intestinal obstruction sodium chloride is an essential part of the treatment, and tends to restore the blood chlorides to normal. By using hypodermoclysis and intravenous injection, 3 to 4 litres of water and 50 to 75 grams of sodium chloride can be given in the 24 hours before operation. After the operation the administration of salt solution should be continued until the patient is out of danger, and glucose should be given intravenously in 10 to 25 per cent. solution at the rate of 0.8 to 0.9 gram of glucose per kilo of body weight per hour. A patient weighing about 11 st. can assimilate 56 to 63 grams of glucose per hour, which furnishes 200 to 250 calories of energy. It is considered that dehydration and hypochloraemia are largely responsible for death in intestinal obstruction. Enterostomy as a preliminary operative treatment is of value in selected cases.

420. Dupuytren's Contraction.

A. C. ABBOTT (*Canadian Med. Assoc. Journ.*, March, 1929, p. 250) reviews the literature and describes a fascial transplantation procedure used in the surgical treatment of Dupuytren's contraction; he believes that this offers in the majority of cases the greatest chance of a satisfactory result. Notes are given of a case in which the contracture followed a forcible dorsiflexion of the right middle and ring fingers, and was unsuccessfully treated by local excision. A second operation with wide excision of all diseased fascia and an immediate transplantation of a piece of fascia lata resulted in complete functional recovery. At this second operation the old scar was excised and the surrounding skin dissected up; all diseased fascia was freely removed, care being taken not to injure the underlying vessels and nerves. A piece of fascia lata fashioned to the shape of the space left by the removal of the abnormal palmar fascia, and overlapping it by about a quarter of an inch, was loosely tacked with plain catgut to the remaining palmar fascia, and the skin was carefully united with interrupted silkworm-gut sutures. The patient was discharged in ten days with an excellent result; two years later all thickening on the palm had completely disappeared, and all movements were perfect, the patient being at work as usual and using a heavy pair of wire cutters. Abbott insists that in transplantation it is important to obtain as fine a piece of fascia as possible, larger than the palmar defect to allow for shrinkage, and that this should be merely tacked in place without tension in order to prevent any portion of it being strangulated by tight sutures; complete haemostasis is essential. The hand should be kept on a splint for a fortnight, and work be avoided for three months in order to prevent all source of irritation; light work is advisable for a further three months. In the more severe types of contractures, with considerable skin involvement and the possibility of sloughing, skin [illegible] might be necessary.

[illegible] deprec[illegible]
and co[illegible]
[illegible]
1 [illegible]

Appendicitis in Measles.

[illegible]911) (*Zentralbl. f. Chir.*, March 23rd, 1929, p. 721) refers [illegible]atient (*Epitome*, September 22nd, 1928, para. 192) a case in a previously healthy man, aged 23, who [illegible]ghruptive period of measles developed symptoms [illegible]ecacitis, appendicectomy, which was performed [illegible]r [illegible]s. a greenish-yellow appendix coated with [illegible]staining a coprolith at its base. Histological [illegible]er showed destruction of the epithelium; diffuse polymorphonuclear infiltration of the mucous, submucous, muscular, and subserous coats; and a fine network of fibrin on the serous coat. Uncomplicated recovery ensued.

P. W. [illegible]
a cr[illegible]
be claim[illegible]
[illegible]
[illegible]
20 per cent.

422. Clinical Aspects of Cystitis.

A. E. SCHIMER (*Minnesota Med.*, March, 1929, p. 160) insists that successful treatment of cystitis is impossible without a comprehensive diagnosis, a thorough clinical examination being essential. Cystitis may be the first sign of an associated pathological condition in the urinary organs, treatment of which will cure the bladder infection. While the normal bladder wall possesses a high degree of immunity to bacteria, interference with its emptying will predispose to infection, which may result from chemical irritation, bacterial infection, animal parasites, yeasts, or fungi. Every possible focus of infection, including the teeth, tonsils, appendix, gall-bladder, and prostate, must be eliminated.

Therapeutics.

423. Phenylhydrazine in Polycythaemia Vera.

SINCE very little is known about the pathogenesis of polycythaemia vera, except that the erythroblastic bone marrow usually shows hyperplasia, treatment has been solely symptomatic and directed either to reducing the number of red cells or to inhibiting their formation. S. H. HURWITZ and J. LEVITIN (*Amer. Journ. Med. Sci.*, March, 1929, p. 309) report a case treated with phenylhydrazine; they emphasize the value and dangers of this drug, and suggest certain criteria for the control of its dosage. Phenylhydrazine is a powerful protoplasmic poison, causing extensive fatty degeneration of the liver and marked destruction of erythrocytes, and resulting in a reducing effect on haemoglobin. It is given orally in capsules, and the following plan of treatment is recommended as being safe. Guided by frequent blood examinations, 0.2 gram may be given for three or four days. The dose is then reduced to 0.1 gram daily until the leucocytes increase in number or the haemoglobin falls below 100 per cent. When this occurs 0.1 gram may be given every second or third day, or the drug be discontinued, the latter course being probably the safer. It has been stated that about 0.1 gram once a week in the average case will keep the red count within normal limits. The authors found that phenylhydrazine produces definite clinical improvement in polycythaemia vera, and that, guided by frequent counts of the red and white blood corpuscles and by estimations of the serum bilirubin, it may be given without danger. Its administration should be stopped before the red blood count reaches a normal level, as the action continues after its withdrawal. The haemolytic crisis observed by the authors and others may be avoided if additional safeguards be used. Because of the great difference in the response of patients to varying amounts of the drug, quantitative estimations of the serum bilirubin and leucocyte counts should be frequently made. A marked rise in the amount of the former means excessive blood destruction, whereas a rising leucocyte count probably indicates great destruction of liver cells. The use of phenylhydrazine is no exception to the general observation that the various measures used in polycythaemia vera are transitory, and the effect produced purely palliative. Whatever therapeutic measures are adopted, there is a tendency for the erythrocyte count to rise and for subjective symptoms to return.

424. Treatment of Tetany in Infants.

H. BAKWIN, RUTH BAKWIN, and GERTRUDE GOTTSCHALL (*Amer. Journ. Dis. Child.*, February, 1929, p. 311) divide therapeutic agents useful in tetany into two groups: (1) substances such as calcium chloride and parathyroid extract, which effect an immediate but transient rise in the serum calcium, and (2) those with a slower but more lasting effect—namely, ultra-violet radiant energy, irradiated cholesterol, and irradiated ergosterol, this last being the most rapid in its action. In a series of twenty cases the administration of 4 mg. daily caused the serum calcium to rise to normal in an average of seven days. Ultra-violet radiant energy was as constant in its action, but took twice as long. Irradiated cholesterol was still slower and less constant. Cod-liver oil was found to be inadequate, its action being too slow and inconstant. The treatment of choice appears to be a combination of calcium chloride, which has a marked immediate effect on the serum calcium, and irradiated ergosterol; the calcium salt is given in large doses (15 grains) at intervals of one or two hours during the first few hours. The daily dosage of ergosterol was 3/50 grain, and it was not ascertained whether larger doses would have acted more rapidly.

425. **A Calcium-Stovarsol-Phosphate Preparation.**

A. A. LEVY (*Med. Journ. and Record*, March 6th, 1929, p. 279) draws attention to the therapeutic possibilities of a recently elaborated combination representing the calcium salts of stovarsol (calcium acetylamino oxyphenylarsenate) and of phosphoric ether of glucose (calcium glucophosphate), discovered in 1926 by Sabatay of the Pasteur Institute. From the interlocking, synergistic, and "balance" action of the three constituents, it was considered that this new preparation, named "realphene," might prove to be of considerable value in those disturbances of metabolism or deficiency conditions in which these constituents were formerly prescribed. Favourable results were also expected in debilities of syphilitic origin and in parasitic infections amenable to stovarsol treatment. Levy reports marked benefits from its administration in the following groups of cases: stomatitis with anorexia and loss of weight; convalescence; secondary anaemia; syphilitic cases; under-nourished children; asthenic adults; and cases of tuberculous diathesis. The preparation is granular and of a not unpleasant chocolate flavour; it contains 5 cg. of the stovarsol salt and 2 cg. of calcium glucophosphate in each drachm. The doses are one level tablespoonful for children and one heaped tablespoonful for adults; they are taken three times a day in a glass of milk. Levy considers that this preparation is of definite value as a metabolic synergist in improving assimilation and nutrition in convalescence and deficiency conditions.

426. **Quinine Injections in Lobar Pneumonia.**

L. H. VAN DER VELDE (*Nederl. Tijdschr. v. Geneesk.*, February 16th, 1929, p. 821) records his observations on cases of lobar pneumonia treated by intragluteal injections of quinine hydrochloride. The dosage is as follows: for infants aged 1 to 12 months, 60 to 80 mg.; between the ages of 1 and 2 years, 100 to 140 mg.; from 2 to 5 years, 140 to 200 mg.; from 10 to 15 years, 300 to 400 mg.; 15 years and over, 500 mg. The favourable action of the injection is described as very striking. Rapid fall of temperature ensues, accompanied by improvement of the general condition and a recovery of appetite. The great advantage of the treatment is said to be the remarkable fall in the death rate, the case mortality, which is otherwise about 25 per cent., falling from this to 5 or 6 per cent. To avoid the pain caused by the injection the quinine may be combined with urethane in doses of 250 mg.

Dermatology.

427. **Scleroderma Treated by Insulin.**

O. MICHAELIS (*Brux.-Med.*, March 17th, p. 560) describes fully a case of generalized scleroderma. When the patient was first seen the disease had lasted six months. The lower half of the body was less affected than the upper, but the hardening had proceeded so far that side-to-side movements of the head had become almost impossible, and the patient could not ring a door bell without tilting the whole trunk backwards. In taking the blood for a Wassermann test great difficulty was experienced in penetrating the pachydermatous skin. In spite of the Wassermann reaction being negative antisyphilitic treatment was tried, but without result, and thyroid extract was similarly ineffective. The patient presented one constant symptom of Raynaud's disease—namely, blueness of the fingers on cold damp days. Since the possibility of there being some association between Raynaud's disease and scleroderma had been suggested, and as insulin had been effective in a case of Raynaud's disease, it was determined to try a course of insulin in this case, combined with ultra-violet radiations for the asphyxia of the hands. At the end of six months there was a relaxation and a softening of the tissues. Progress was very gradual, and is expressed by the authors as "three steps forward, two steps back." At the end of a year's treatment the condition was so much better than at the beginning that the author was hopeful of a complete [illegible] would persevere with the same what [illegible]

428. **[illegible] the Limbs.**

L. [illegible] *and Syph.*, March, 1929, p. [illegible] "erythrodermia" is a definite [illegible]on and persistent "eczema" [illegible] of a purely neurotic origin. It [illegible]c red, scaling, often moist and [illegible]orearms or legs, or both, of sharply [illegible]ay other skin disease, and strikingly [illegible]terical "glove and stocking" anaesthesias. The [illegible]ion never extends lower than the dorsum of the foot nor higher than a line just below the patella; in the forearm it is limited by the elbow-joint above and the wrist below, only occasionally spreading to the back of the hand as far as the webs of the fingers. In long-standing cases this distribution is maintained, though usually only on the legs, where the skin has a leathery, shiny, lichenized appearance. In one of the author's cases both legs were affected for twenty years, and yet even such long-standing cases present nothing bacteriologically beyond the normal cutaneous flora without any subsequent scarring, while the general health is unimpaired. The patients are of the type of constitutional neurotics with a typical melancholic facies resembling that of anxiety neurosis, a lined face, wrinkled forehead, tremulous lips, and staring eyes. Treatment should be directed mainly at preventing the habit of rubbing and scratching, which induces and maintains the condition. Sedatives and hypnotics such as luminal or bromides are given to induce sleep and allay the irritation. Bland lotions or small doses of x rays are applied locally for their antipruritic action; malachite green paint may be used for its effect on the imagination; well-applied occlusive dressings can be relied on. After protecting the affected part with a layer of sterile gauze, plaster bandages incorporating Unna's zinc and gelatin paste may be applied. Notes of sixteen cases with descriptive photographs are given.

429. **Liquid Oxygen in Dermatology.**

H. G. IRVINE and D. D. TURNACLIFF (*Arch. Derm. and Syph.*, February, 1929, p. 270) advocate the use of liquid oxygen in the treatment of warts, naevi, seborrhoeic keratosis, lupus vulgaris, skin tuberculosis, and small epitheliomata. The authors state that liquid oxygen can be obtained commercially and will keep for several days stored in Dewar flasks; it can be applied with a saturated swab of cotton-wool on an ordinary wooden applicator. This is maintained on the lesion without pressure until it freezes, and by taking care to avoid the surrounding skin little pain results, since it is only when the liquid spreads beyond the lesion and freezes the normal skin that considerable pain is caused. The authors record successful results in the treatment of warts (22 cases), herpes zoster (5 cases), seborrhoeic keratosis (7 cases), small pigmented and papillomatous moles (3 cases), and small raised vascular naevi (4 cases). They conclude that the treatment is more rapid and less painful than with the electric needle, and that for this reason it is specially useful in children, while the cosmetic results are excellent.

Obstetrics and Gynaecology.

430. **Treatment of Uterine Fibroids.**

REEB (*Bull. Soc. d'Obstet. et de Gynécol.*, February, 1929, p. 153) utters a warning to those enthusiasts who consider that treatment by radium or x rays is invariably effective for uterine fibromata. The fact that treatment by radiation avoids both the immediate and remote risks of operation has caused this method of treatment to be popular. The author considers that radiation treatment fails not infrequently, and that it may even be dangerous, as when the fibromata are complicated by affections of the adnexa. There is also the danger that all genital functions may be suppressed in a young woman. The duty of deciding which cases should be submitted to radiation treatment devolves upon gynaecological surgeons. Reeb maintains that radiation should never be employed [illegible] is uncertain. The three principal [illegible] he considers, are the following: [illegible] by purulent tumours of the adnexa; peritonitis may be precipitated by the treatment. (2) Adenomyomata; it is known that radium has but little effect on cylindrical-celled neoplasms of the cervix and body, and it may be deduced that glandular new growths with the cylindrical epithelium of an adenomyoma may be equally refractory to radiations. (3) Submucous fibromata; patients with such growths, after treatment by radiations, not infrequently appear on the operation table. Radiologists claim that submucous fibromata can be cured by radiations. Probably the difference of opinion lay in the difficulty of arriving at a correct diagnosis. To obtain the best results collaboration between gynaecologist and radiologist is essential.

431. **Spontaneous Rupture of Pyosalpinx.**

S. DI PALMA and M. M. STARK (*Surg., Gynecol. and Obstet.*, March, 1929, p. 419), who have collected thirty-four cases, including one which came under their own observation, state that spontaneous rupture of a pyosalpinx into the urinary bladder is very rare. The symptoms are very characteristic, consisting of sharp pelvic or suprapubic pains, the appearance of large quantities of pus, often foul-smelling, in the urine, a relief of urinary and vesical symptoms, and a decided improvement in the patient's general condition. The diagnosi

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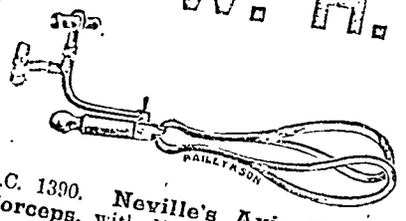

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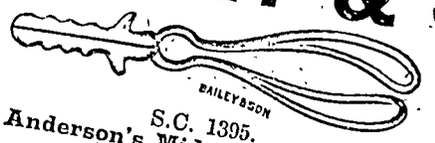

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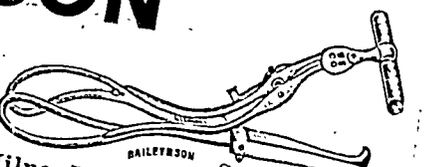

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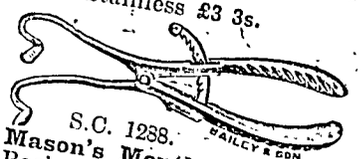

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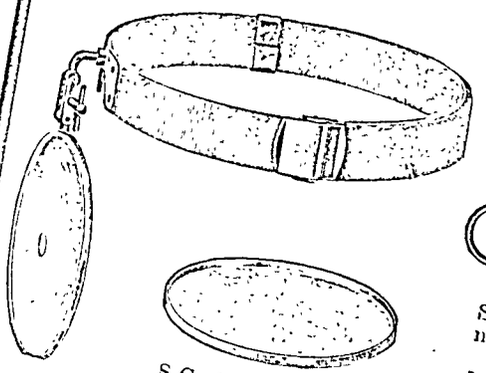

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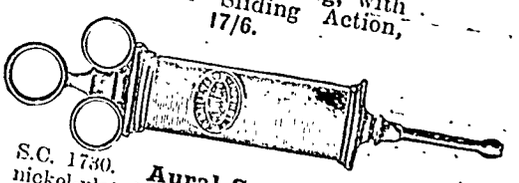

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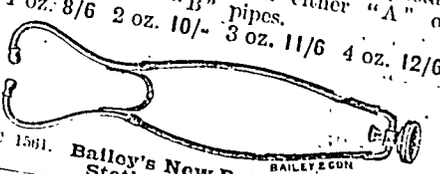

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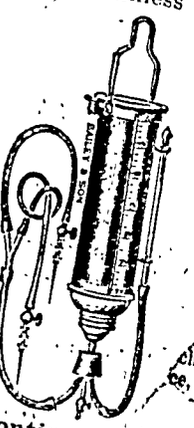

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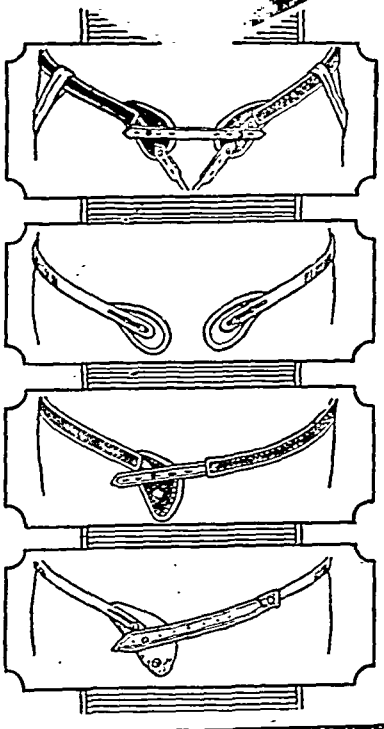

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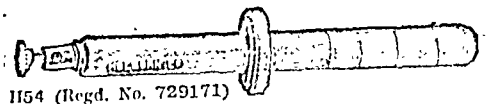

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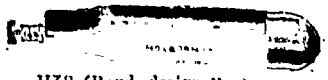

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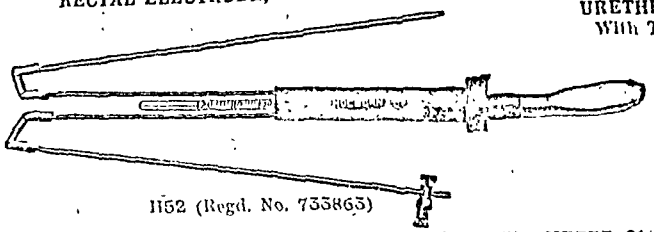

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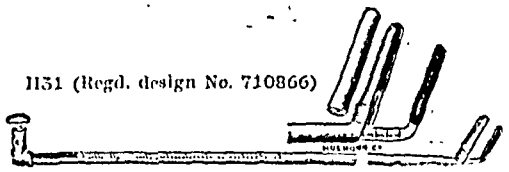

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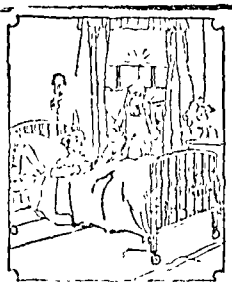

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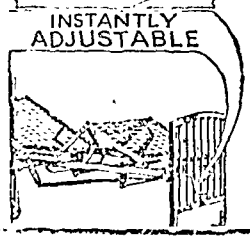

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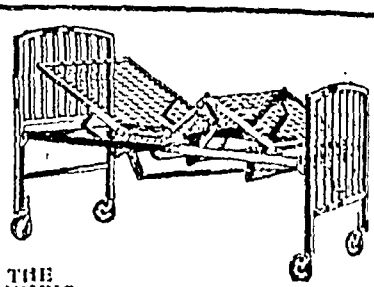

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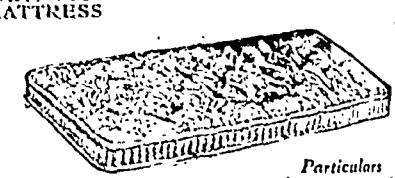

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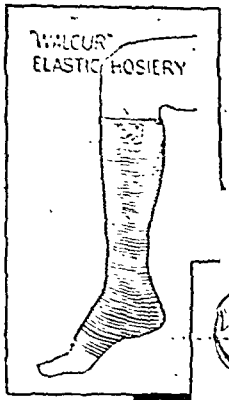

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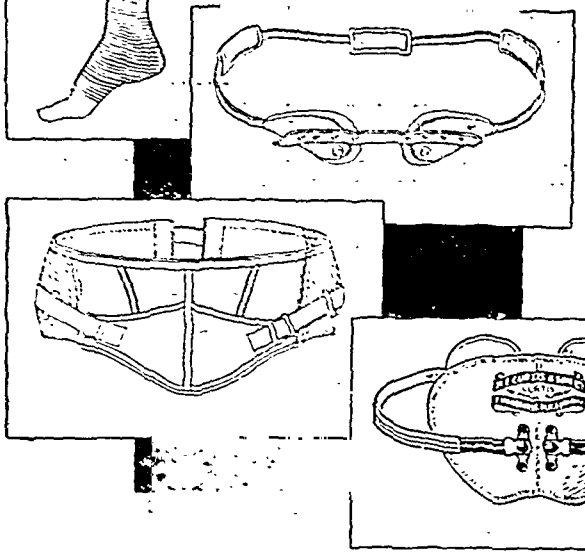

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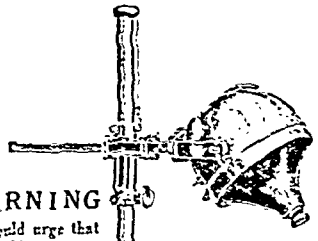

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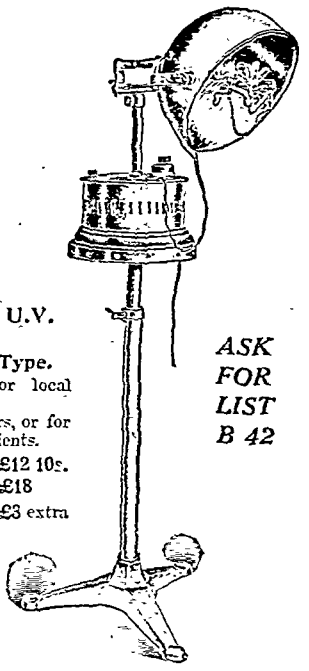

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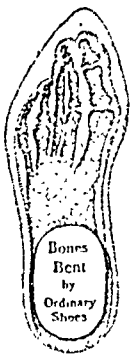

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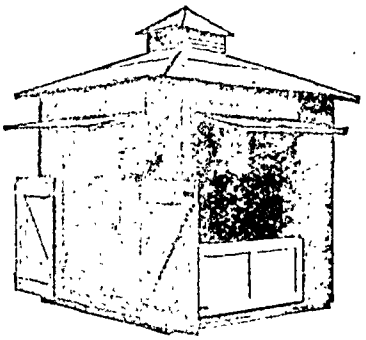

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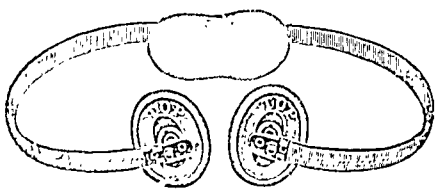

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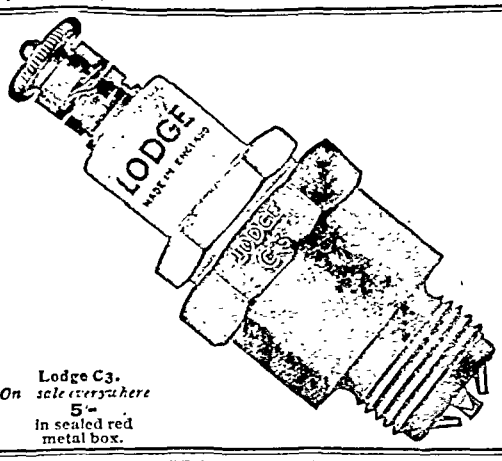

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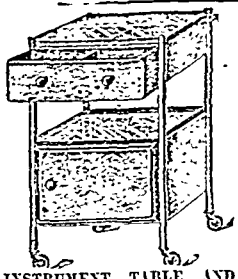

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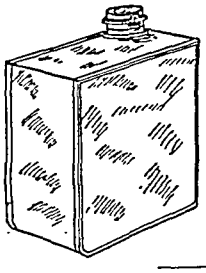

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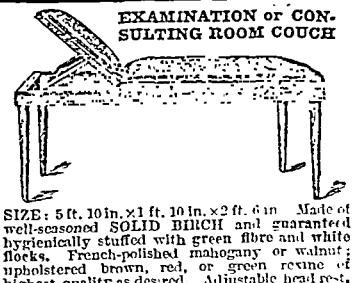

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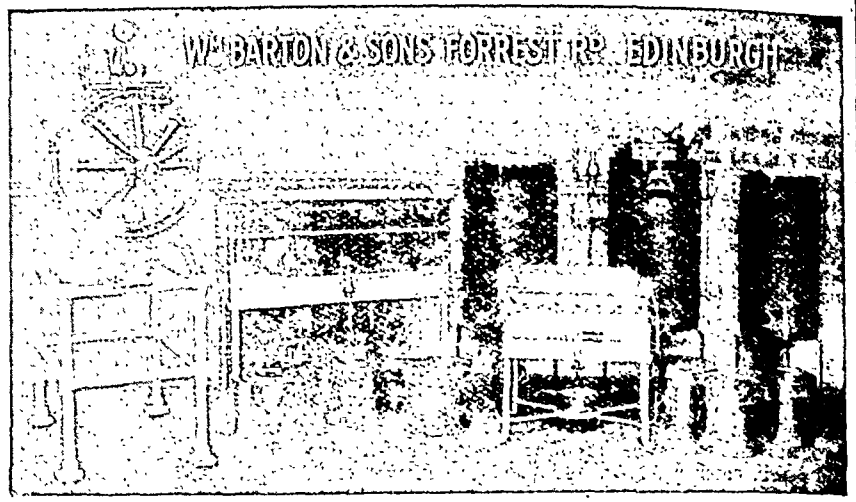

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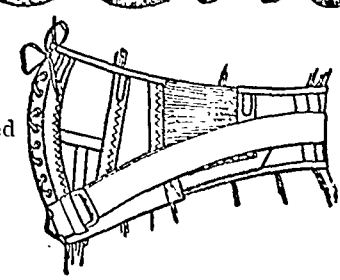

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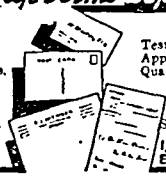

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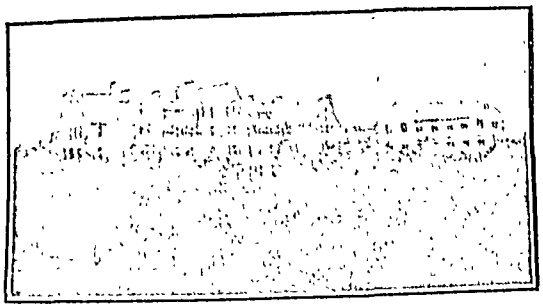

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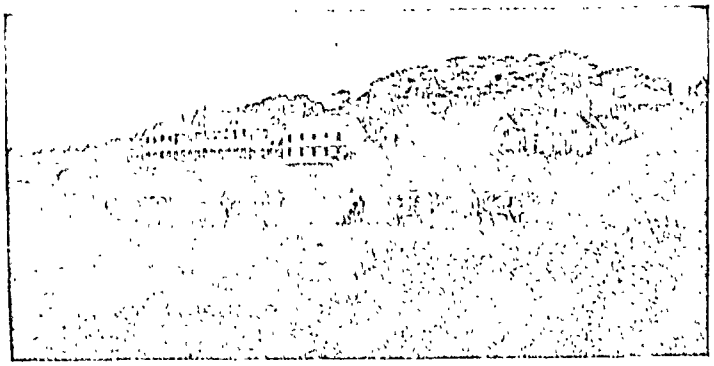

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1. Physics, with examinations in January and April.
2. *Radiology and Electrology*, with examinations in April and July.
3. The presentation of a thesis or exercise which is entirely the candidate's own work, and is intended to show that he has had practical experience of the subjects.

The first three months may be spent either in Cambridge, where the Physics is done in the Cavendish Laboratory and the *Radiology* and Electrology in a specially equipped Department of Radiology, or in London, where the Physics is done in the Laboratories of the Middlesex Hospital and King's College and the *Radiology and Electrology* is taught at the British Institute of Radiology. These Courses run concurrently in Cambridge and London.

The second three *months* must be spent in London, where courses of lectures are given at the British Institute of Radiology, and are combined with *clinical* instruction in the large teaching hospitals.

The third three months may be spent in recognized hospitals in London or elsewhere, the student acting as clinical assistant or in similar capacity.

Further information as to the Courses may be obtained from:

G. STEAD, M.A., Secretary for the Diploma, and *Lecturer* in Physics as applied to Medical Radiology, Cavendish Laboratory, Cambridge.

A. E. BARCLAY, O.B.E., M.A., M.D., Lecturer in Radiology, Department of Radiology, *Medical School*, Cambridge.

The Director of the British Institute of Radiology, 32, Welbeck St., London, W.1.

UNIVERSITY OF CAMBRIDGE

Diplomas in (a) PUBLIC HEALTH, (b) HYGIENE (for foreign graduates), (c) TROPICAL MEDICINE AND HYGIENE.

Courses of Instruction in the Subjects of the Examinations commence October 9th, 1929. Full particulars to be obtained from Mr. J. E. PURVIS, Public Health Chemical Laboratory, *Medical School*, Cambridge.

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE.

FACULTY OF MEDICAL SCIENCES.

An Examination for the following will be held in June next:

1. BUCKNILL SCHOLARSHIP, value 160 gns.
2. and 3. TWO EXHIBITIONS, value 55 gns. each.

Intending candidates should apply to the undersigned for particulars and entry forms as early as possible, and not later than June 1st.

University College, London (Gower St., W.C.1). C. O. G. DOHIE, Secretary.

University of London.

A Course of Two Lectures, with lantern illustrations, on "*The Physiology of Glycogen*," will be given by Professor J. J. R. MACLEOD, F.R.S. (Regius Professor of Physiology in the University of Aberdeen), at THE LONDON HOSPITAL MEDICAL COLLEGE (Turner Street, Mile End, E.1), on MAY 16th and 17th, at 5.30 p.m. At the First Lecture the Chair will be taken by LEONARD HILL, Esq., F.R.S. (Director of the Department of Applied Physiology, National Institute of Medical Research).

Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

University of London.

The Senate invite applications for the UNIVERSITY CHAIR OF ANATOMY, tenable at St. Bartholomew's Hospital Medical College. Salary £1,000 a year. Applications (12 copies) must be received not later than first post on May 30th, 1929, by the Academic Registrar, University of London, S.W.7, from whom further particulars may be obtained.

The University of Manchester.

The Dr. ROBERT ANGUS SMITH SCHOLARSHIP is offered for competition. The Scholarship, which is of the maximum value of £150, is for the encouragement of research in Sanitary Science. The Scholar will be required to devote the whole of his time to research. Last date for applications June 1st. Further particulars may be obtained from the Registrar.

EDINBURGH POST-GRADUATE COURSES IN MEDICINE

IN CONNECTION WITH THE UNIVERSITY AND ROYAL COLLEGES, 1929.

POST-GRADUATE COURSES will be held this year from July 15th to August 10th, and August 12th to September 7th inclusive, and will comprise:

(1) A GENERAL PRACTITIONERS' COURSE. (2) A GENERAL SURGICAL COURSE.

The composite fee for each Course will be £10 10s. for the four weeks, or £6 6s. for either the first or second fortnight.

(3) A COURSE IN OBSTETRICS AND GYNÆCOLOGY AND DISEASES OF CHILDREN, from July 15th to August 10th.

In addition to the above, the following *Special Courses* have been arranged: Fee £10 10s.

SUMMER TERM.

SURGICAL PATHOLOGY.—Mr. Wade, F.R.C.S.Ed., and others. May 14th. Fee: £4 4s.
OPHTHALMOSCOPY.—Drs. Graham and Ligertwood. May 6th. 12 Meetings, thrice weekly. Fee: £5 5s.
CLINICAL MEDICINE.—Medical Staff of Royal Infirmary. During May. Fee: £5 5s.

SUMMER, AUTUMN, AND SPRING TERMS.

CLINICAL SURGERY.—Surgical Staff of Royal Infirmary. Fee £5 5s.
DISEASES OF EAR, NOSE, AND THROAT.—Staff of Ear, Nose, and Throat Department, Royal Infirmary. Minimum number 5. Fee: £10 10s.
VENEREAL DISEASES.—Mr. Lees, F.R.C.S.Ed., Ward 5a, Royal Infirmary. Minimum number 5. Fee: £10 10s.
DISEASES OF EAR, NOSE, AND THROAT.—Dr. Douglas Guthrie. This class will meet twice weekly at the Ear and Throat Dispensary, Cambridge [Street. Fee: £4 4s.
RADIOLOGY.—Dr. Wooslburn Morison and Assistants, Royal Infirmary. Fee: £2 2s.

DURING THE PERIOD OF THE GENERAL COURSES (AUGUST-SEPTEMBER).

EXAMINATION OF THE BLOOD.—Dr. Alex. Goodall. Fee: £3 3s. VACCINE THERAPY.—Dr. A. Nimmo Smith. Fee: £3 3s.
MEDICAL CHEMISTRY.—Dr. C. P. Stewart. Fee: £4 4s.
X RAY PHYSICS AND ELECTRO-TECHNICS.—Mr. C. Norman Kemp, B.Sc., A.I.C. Fee: £3 3s.

Further particulars may be had on application to the Hon. Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL

MEDICAL SCHOOL.

(FOUNDED 1816.)

Telephone: REGENT 1457. BROAD STREET, HOLBORN, W.C.2. (Near British Museum Station.)

The Hospital has just been re-built and has accommodation for 71 patients in general wards, and, in addition, has fourteen private rooms for paying patients. The new building has been specially designed for clinical teaching and post-graduate study.

Classes for the D.O.M.S. Examination are held thrice yearly in January, April, and October.

Out patients are seen daily at 1 o'clock. Operations are performed at 3 p.m.

Qualified medical practitioners and registered students may join at any time. For particulars apply to the Dean or Secretary at the Hospital.

Post-Graduate Teaching, West London Hospital.

CONTINUOUS INSTRUCTION. CLINICAL WORK IN ALL DEPARTMENTS. CLINICAL ASSISTANTSHIPS. SPECIAL ANNUAL MEMBERSHIP TERMS FOR GENERAL PRACTITIONERS. ANÆSTHETIC COURSE.

COURSES MAY BE COMMENCED AT ANY TIME.

Prospectus from Sir Henry Simson, K.C.V.O., Dean, West London Hospital, Hammersmith, W.6.

Examining Board in England

BY THE
ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE
ROYAL COLLEGE OF SURGEONS OF ENGLAND.

PRE-MEDICAL EXAMINATION.
This Examination will commence on Tuesday, July 16th, 1929.

FIRST EXAMINATION (OLD REGULATIONS).
This Examination will commence on Tuesday, July 16th, 1929.

SECOND EXAMINATION (OLD REGULATIONS).
This Examination will commence on Thursday, June 27th, 1929.

FIRST EXAMINATION (NEW REGULATIONS).
This Examination will commence on Thursday, June 27th, 1929.

FINAL EXAMINATION (NEW REGULATIONS).
This Examination will commence on Monday, July 1st, 1929.

THIRD OR FINAL EXAMINATION.
This Examination will commence on Tuesday, July 2nd, 1929.

DIPLOMA IN LARYNGOLOGY AND OTOLOGY.
Part I of this Examination will commence on Monday, June 3rd, and Part II on Monday, June 10th, 1929.

DIPLOMA IN PSYCHOLOGICAL MEDICINE.
Part I of this Examination will commence on Monday, June 10th, and Part II on Friday, June 14th, 1929

DIPLOMA IN PUBLIC HEALTH.
Part I of this Examination will commence on Monday, June 24th, and Part II on Monday, July 1st, 1929.

DIPL[illegible] PSYCHOLOGICAL MEDICINE AND [illegible]
This [illegible] on Monday, July 22nd, 1929.

DIPLOMA IN OPHTHALMIC MEDICINE AND SURGERY.
Part I of this Examination will commence on Monday, July 8th, and Part II on Friday, July 12th, 1929

Candidates who have completed the prescribed courses, and who desire to present themselves for examination, must forward the necessary schedule or schedules through the post to the Examination Hall, Queen Square, Bloomsbury, London, W.C.1, fourteen days before the Examination commences.

HORACE H. REW,
April 24th, 1929. Secretary.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

[illegible]

STAMMERING, CLEFT PALATE SPEECH, LISPING, 39 of Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to **The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5,** for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics For further particulars, fees, etc., apply to the Secretary.

EXAMINATION FOR DIPLOMA IN OPHTHALMOLOGICAL MEDICINE AND SURGERY.

PRIVATE COACHING for both parts of above examination, with use of models and specimens, by M.B., D.O.M.S.
Apply: Dr. H. W. BEEDHAM, 15, Crediton Hill, N.W.6.

F.R.C.S. (Edin.).

The TUTORIAL CLASS for the next Examination will commence shortly. Correspondence tuition if desired. — For particulars apply FRED. GRAHAM, M.D., F.R.C.S.Ed., Surgeons' Hall, Edinburgh.

Will Edmonds Clinical Research FUND.

Applications are invited for a FELLOWSHIP under the above Fund. The Fellow elected will receive a salary of £500 per annum, and must devote his whole time to clinical research in a Metropolitan Hospital. He will be eligible for re-election annually up to 5 years. Formal applications must be received on or before June 1st.

Further particulars may be obtained from the Hon. Sec., 68, Great Cumberland Place, W.1.

Royal Free Hospital and London (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

ASSISTANT MORBID ANATOMIST AND CURATOR OF MUSEUM.

The Weekly Board of the Hospital and the Council of the Medical School invite applications for the above post. Salary, full time, £300 p.a. Seven copies of application, accompanied by copies of not more than three recent testimonials, and the names of not more than two persons to whom reference may be made, to reach one of the undersigned, from whom further information may be obtained, not later than the first post on May 15th. Duties to commence June 1st.

REGINALD R. GARRATT, Secretary,
Royal Free Hospital,
Gray's Inn Road, W.C.1.
LOUIE M. BROOKS, Warden & Secretary,
London (R.F.H.) School of Medicine for Women, Hunter Street, W.C.1.
April, 1929.

Society of Apothecaries of LONDON.

MASTERY OF MIDWIFERY.

The next Examination will take place on Tuesday, May 21st, and following days. For regulations apply to—

FRANK HAYDON, *Secretary.*

All Saints' Hospital (For Genito-URINARY DISEASES),

49/55, Vauxhall Bridge Road, S.W.1.

DEMONSTRATIONS IN CYSTOSCOPY are held on:

Wednesdays ...	Mr. Coyte	... 1.30 p.m.
Thursdays ...	Mr. Attwater	... 1.30 p.m.
Saturdays ..	Mr Loughnane...	1.30 p.m.

Special classes and tuition by arrangement.

Hospital of St. John and ST. ELIZABETH,

60, Grove End Road, N.W.8.

Applications are invited for the post of RESIDENT HOUSE PHYSICIAN (male). The appointment will be for six months from June 1st. Salary at the rate of £100 per annum, with full board. Applications, together with three testimonials, should reach the undersigned not later than May 8th

F. DUDLEY HOBBS, B.A., Secretary.

Municipality of Singapore,
STRAITS SETTLEMENTS.

HEALTH DEPARTMENT.

APPOINTMENT OF LADY ASSISTANT MUNICIPAL HEALTH OFFICER.

The Municipal Commissioners of Singapore require a lady Assistant Municipal Health Officer for their permanent staff, the appointment being in the first instance upon a three years' agreement.

Candidates should be between 25 and 35 years of age, and unmarried. Candidates must be Graduates in Medicine and Surgery of one of the British Universities, or must hold the qualifications of the College of Surgeons and Physicians of London, Edinburgh, or Ireland. They must also hold a registrable qualification in Public Health. Candidates will also be expected to have had at least three years' experience of the practical and administration side of Infant Welfare work and control of Midwives in a large town, as the selected candidate will be required to take charge of this branch of the Municipal Health Department.

The selected candidate must pass a medical examination as to her fitness for service in the Tropics.

Salary $8,400, $8,800, and $9,360 respectively for the three years of the agreement, rising thereafter, if service be continued, to a maximum of $12,000 per annum. The exchange value of the dollar is 2/4 sterling, at which rate the initial salary of the appointment is £960 per annum. There is no Income Tax at present.

Free first-class passage with half-pay on the voyage out will be provided, and a return passage on satisfactory completion of the agreement (if not renewed) provided that the officer returns to England forthwith. An allowance for the maintenance of a private motor car for use on duty will be granted. Should the officer continue in the service after completion of the agreement, six months' leave on full pay, with passage paid, will be granted after three years' service. Liberal Provident Fund.

The population of Singapore is about 400,000, and the day temperature about 80° to 90° F.

Applications, giving age and birthplace, with details of education, training, and experience generally, and referring particularly to the qualifications mentioned above, and accompanied by copies (not originals) of testimonials, to be lodged with Messrs. PEIRCE & WILLIAMS, M.M.Inst.C.E., 64, Victoria Street, S.W.1, Agents for the Commissioners, not later than Thursday, May 9th.

Further particulars, if desired, can be obtained from the Agents.

University of Durham College
OF MEDICINE,
NEWCASTLE-UPON-TYNE.

PUBLIC HEALTH LABORATORIES and BACTERIOLOGICAL DEPARTMENT.

Applications are invited for the post of Whole-time ASSISTANT. Applicants must be registered medical practitioners with experience of Public Health Bacteriology and Clinical Pathology. In addition to work in the Public Health Laboratories, the Assistant will be required to take part in teaching.

Commencing salary £400 per annum.

Applications, with copies of three recent testimonials, should be submitted to the Registrar, University of Durham College of Medicine, Newcastle-upon-Tyne.

County Borough of Birkenhead.

MEDICAL OFFICER'S DEPARTMENT.

ASSISTANT MEDICAL OFFICER (Resident).

Applications are invited for the above appointment from duly qualified men (unmarried) holding a Diploma in Public Health.

The appointment carries with it a salary of £450 per annum, residence at the Infectious Diseases Hospital, board and washing.

The successful candidate will be required to pass a medical examination, and a deduction of 5 per cent. will be made from salary towards the Council's Scheme under the Local Government and Other Officers Superannuation Act, 1922.

He will be required to undertake the treatment of patients in the Hospital, to assist at the Municipal Venereal Diseases Clinic, and to carry out such other duties as may be assigned to him by the Medical Officer of Health.

Canvassing members of the Town Council, either directly or indirectly, will disqualify.

Particulars of the appointment and form of application may be obtained from D. MORLEY [illegible], M.A., M.D., Medical Officer of Health, 9, Hamilton Square, Birkenhead.

Applications must be received not later than [illegible]

Town Hall, Birkenhead. E. W. TAME, Town Clerk.

County Borough of Croydon.

PUBLIC HEALTH DEPARTMENT.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

Applications from qualified medical practitioners are invited for the appointment of an Assistant Medical Officer of Health and Assistant School Medical Officer.

Applicants must be medical men holding a special qualification in State Medicine or a Diploma in Public Health, and must have had three years' experience of the practice of medicine since obtaining their medical qualification.

Preference will be given to applicants who

(i) Have had some definite experience of school medical work;
(ii) Have enjoyed special opportunities for the study of diseases in children;
(iii) Have had experience in infectious diseases; and
(iv) Have held one or more resident hospital appointments.

The candidate appointed will be required to produce a recent satisfactory medical certificate of health and to devote the whole of his time to the duties of the office. The appointment is subject to three months' notice of termination on either side.

The salary will be £600 per annum.

Applications, to be made on forms to be obtained by sending a stamped addressed foolscap envelope to the Public Health Department, Town Hall, Croydon, with copies (not originals) of not more than three testimonials of recent date, not later than 10 o'clock in the forenoon of Monday, May 13th, endorsed "Assistant Medical Officer of Health."

Canvassing in any form is prohibited.

Town Hall, Croydon. JOHN M. NEWNHAM, Town Clerk.

April 22nd, 1929.

Romford Union.

OLDCHURCH HOSPITAL.

RESIDENT THIRD ASSISTANT MEDICAL OFFICER.

The Guardians of the Romford Union invite applications for the appointment of a Third Assistant Resident Medical Officer (male) at their Oldchurch Hospital, Romford, which has a present accommodation of 650 beds. The Hospital is situated 12 miles from London.

Applicants must be single, and preference will be given to one who has held the position of House Surgeon or House Physician in a General Hospital.

The appointment is governed by the regulations laid down in the orders of the Ministry of Health.

The salary will be at the rate of £250 per annum, subject to deductions under the Poor Law Officers Superannuation Act, 1896, with furnished apartments, maid, rations, and laundry.

Forms of application may be obtained from the undersigned upon receipt of a stamped addressed foolscap envelope, and must be returned not later than Monday, May 13th.

By Order,

Union Offices, Romford. R. H. MASON, Clerk to the Guardians.

April 25th, 1929.

Parish of Lambeth Board of GUARDIANS.

Wanted, Male JUNIOR ASSISTANT MEDICAL OFFICER for the LAMBETH PARISH HOSPITAL (including lying-in wards) and for the out-relief districts of the parish administered therefrom. Applicants must be fully qualified and have recently held a resident appointment at a recognized teaching school. The work is arranged so that a wide experience may be obtained by the officer appointed.

Inclusive salary £200 per annum, payable monthly, together with residential emoluments, valued at £150 per annum. The person appointed will be required to repay to the Guardians any fees whatsoever received by him by virtue of the office held.

Written application to be sent to the Clerk to the Guardians, Guardians' Offices, Brook Street, Kennington, S.E.11, and to arrive not later than by the first post Saturday, May 11th.

Papworth Village Settlement,
near CAMBRIDGE, for the Treatment of all forms of Tuberculosis.

Applications are invited for the post of HOUSE PHYSICIAN. Applicants should be male and single. The appointment is for six months, with prospects of advancement to a higher position on the staff. Salary £100 to £200 per annum, according to previous experience, with board, lodging, and laundry.

Apply to Medical Director, Papworth Hall, Cambridge.

Borough of Ilford.

APPOINTMENT OF ASSISTANT SCHOOL DENTAL SURGEON.

The Ilford Borough Council invite applications from registered Dental Surgeons of either sex holding a degree or diploma in Dental Surgery for the above appointment.

The inclusive salary of the office will be at the rate of £450 per annum.

The duties of the officer appointed will be mainly connected with the dental inspection and treatment of school children, but the successful candidate will be required to assist when necessary with the other dental services of the Council.

The person appointed will be required to devote his or her whole time to the duties of the office, to reside within the Borough, to work under the general supervision of the Medical Officer of Health of the Council, and to enter into a contract with the Council for the due performance and fulfilment of the duties and conditions of the appointment.

The appointment will be subject to the Staff Regulations of the Council, and the successful applicant will be required to pass a medical examination.

Candidates must not be more than 45 years of age.

Applications, which must be made on forms obtainable (with list of duties) from the undersigned, accompanied by copies of three recent testimonials (which will not be returned) and endorsed "Dental Surgeon," must be received at my office at the Town Hall, Ilford, not later than noon on Monday, May 13th.

Canvassing members of the Council or Education Committee, directly or indirectly, is prohibited and will disqualify.

By Order,

Town Hall, Ilford. ADAM PARTINGTON, Town Clerk.

April 24th, 1929.

Borough of Folkestone.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified gentlemen for the position of Assistant Medical Officer of Health and Port Medical Officer, at a salary of £600 per annum. Candidates should have previous experience in a similar capacity.

The gentleman appointed must possess the qualifications prescribed by the Sanitary Officers Order, 1926, and will be required to devote the whole of his time to the duties of the office. He will also be required to assist in the duties of Medical Inspection of Aliens.

The post is designated under the Local Government and Other Officers Superannuation Act, 1922, and the appointment will be made subject to medical examination.

Applications, stating age, qualifications, and experience, accompanied by not more than three recent testimonials, and endorsed "Assistant Medical Officer of Health," should be addressed to me and delivered at my office not later than May 18th.

Town Clerk's Office, Folkestone. C. F. NICHOLSON, Town Clerk.

April 30th, 1929.

Parish of Southampton.

SECOND RESIDENT ASSISTANT MEDICAL OFFICER.

The Guardians of the above Parish are desirous of receiving applications for the appointment of a SECOND RESIDENT ASSISTANT MEDICAL OFFICER of the Parish Infirmary, Shirley Warren, Southampton, at a salary of £275 per annum, increasing by £10 yearly until a maximum of £350 per annum be reached, with apartments, rations, washing, and attendance, subject to the provisions of the Poor Law Officers Superannuation Act, 1896.

Applications to be made upon forms to be obtained from the undersigned, and must be returned on or before May 11th.

By Order,

Guardians' Offices, Southampton. A. J. WALDEN, Clerk to the Guardians.

April 26th, 1929.

Metropolitan Asylums Board.

The Board [illegible] the appointment of [illegible] MEDICAL OFFICER [illegible] Service. Commencing salary £650, rising by £32 10s. per annum to £800 per annum. Candidates must be under 40 years of age, and must have had previous Mental Hospital experience.

Preference will be given to those holding the Diploma in Psychological Medicine.

Forms of application may be obtained by sending stamped addressed foolscap envelope to the Clerk to the Board, Metropolitan Asylums Board, Victoria Embankment, E.C.4, to which they should be returned not later than May 13th.

ALLAN POWELL, Clerk to the Board.

WEST AFRICAN MEDICAL STAFF

VACANCIES exist for MEDICAL OFFICERS and MEDICAL OFFICERS OF HEALTH in the BRITISH WEST AFRICAN COLONIES.

SALARIES.

Medical Officers receive salaries at the rate of £660 a year, rising by annual increments of £30 to £720 a year, and then on confirmation £720 a year, rising by annual increments of £40 to £960 a year, together with a seniority allowance (payable only in West Africa) at the rate of £72 a year. After three years' service on £960, the salary may be raised to the scale of £1,000 a year, rising by annual increments of £50 to £1,150 a year, together with a seniority allowance at the rate of £100 a year.

Medical Officers of Health receive salary on the above scale beginning at £800 a year, together with seniority allowance of £72 a year. They also draw staff pay at the rate of £150 a year, half of which is payable during leave.

QUARTERS.

Free furnished quarters are provided or an allowance in lieu.

OUTFIT ALLOWANCE.

An outfit allowance of £60 is granted on first appointment.

PASSAGES.

Free first-class passages are provided on first appointment, and when proceeding on or returning from leave.

PENSIONS.

All appointments are pensionable; a minimum service of seven years is required to qualify for a pension. An officer may retire on reaching the age of 50 and may be called upon to retire at the age of 55. Officers of the West African Medical Staff are permitted to retire if they wish with a gratuity of £1,000 or £1,250 after nine or twelve years' approved service respectively, but in that event they receive no pension.

TOURS OF SERVICE AND LEAVE.

A tour of service in West Africa lasts from twelve to eighteen months at the discretion of the Colonial Government, and is followed by leave at the rate of one week for each completed month of residential service. Leave begins on the date of arrival in England.

PROMOTION.

There are good prospects of promotion in the West African Medical Staff.

COURSE OF INSTRUCTION.

Selected candidates are required to attend courses of instruction in tropical medicine and hygiene at either the London School of Hygiene and Tropical Medicine or the Liverpool School of Tropical Medicine or the University of Edinburgh.

Further information regarding the conditions of service, pensions, etc., may be obtained from the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1, to whom applications should also be addressed.

County Council of Middlesex.

ASSISTANT MEDICAL OFFICER.

The County Council of Middlesex invite applications for the post of an Assistant Medical Officer in the Public Health and School Medical Department. The applicants must be duly qualified registered medical practitioners.

The duties of the post are the Medical Inspection of School Children, the supervision of treatment of minor ailments, the carrying out of work under the Maternity and Child Welfare Scheme, and such other duties as may be required by the Council. The officer appointed must devote whole time to the duties of the post, will act under the supervision and control of the County Medical Officer of Health, and will be required to reside in any place fixed by the Committee.

Salary at the rate of £600 per annum, rising after two years' service by yearly increments of £30 to £750 (no bonus). Reasonable travelling expenses allowed.

The successful candidate will be required to contribute to the County Council's Superannuation Fund and to pass such medical examination as the County Council may direct.

The appointment will be during the pleasure of the Council, and subject to one month's notice on either side.

Applications, stating (1) age, (2) qualifications, and (3) previous experience, together with copies of not more than three recent testimonials, must be sent to the undersigned not later than May 18th.

Canvassing, directly or indirectly, will be a disqualification.

ERNEST S. W. HART,
Clerk of the
County Council.

Magdalen Guildhall,
Westminster, S.W.1.
April 26th, 1929.

Boroughs of Neath and Port Talbot Education Committees.

Applications are invited from fully qualified and registered Dental Surgeons for the post of full-time DENTAL SURGEON to the Education Committees. The appointment is open to men and women. Salary £500 per annum. The duties will be: (1) the dental inspection and treatment of children under the Education Acts; (2) such other duties as may from time to time be imposed by the Education Committees.

The successful applicant will be required to reside within the area covered by the Joint Authorities, and to work under the direction of their Medical Officers. A knowledge of Welsh is desirable. Applications, stating age and experience, and accompanied by three recent testimonials, should be sent to the Town Clerk, Port Talbot, by June 1st.

MOSES THOMAS,
Town Clerk and Secretary to the
Education Committee,
Port Talbot.

ARTHUR J. EVANS,
Clerk to the Education Committee,
Neath.

City of Sheffield.

ASSISTANT TUBERCULOSIS OFFICER.

Wanted a male (unmarried) Assistant Tuberculosis Officer, to reside at WINTER STREET HOSPITAL, and to devote his whole time to the Municipal Tuberculosis Scheme.

Salary £450 per annum, rising to £500 per annum by annual increments of £25, with board, residence, and laundry.

Applicants must be registered medical practitioners, with not less than three years' experience.

Applications stating age, qualifications, and experience, with copies of testimonials, to be sent to the undersigned on or before May 16th.

Town Hall, FRED. E. WYNNE,
Sheffield. Medical Officer of Health.

Derby Union.

SECOND RESIDENT MEDICAL OFFICER.

Applications are invited for the appointment of Second Medical Officer (male) of the Guardians' Institution and Infirmary, which is a Major Training School for Nurses (a new Hospital of 350 beds is nearing completion). Salary at the rate of £250 per annum, with residential allowances.

Two months' notice of resignation to be given, to date from the Board meeting next after the receipt of the resignation.

The appointment will be subject to the sanction of the Ministry of Health and to the provisions of the Poor Law Officers Superannuation Act, 1896.

Applications with particulars of age, previous career, qualifications, diplomas, and certificates held, together with copies of three recent testimonials, must be sent in on or before Friday, May 17th.

Poor Law Offices, RALPH GRANTHAM,
Derby. Clerk to the Guardians.

County Borough of Southampton

ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited for the position of Assistant School Medical Officer at a salary of £600 per annum.

The gentleman appointed will hold office during the pleasure of the Council, and the appointment will be determinable by two months' notice on either side. He will be required to carry out duties in connection with the Medical Inspection and Treatment of School Children, the Public Health Acts, Mental Deficiency Acts, 1913-27, Maternity and Child Welfare and Venereal Disease work, etc.

He must devote the whole of his time to the duties of the office and the performance of such other duties as may be required under the direction of the Medical Officer of Health.

The appointment will be subject to the approval of the Board of Education and the Minister of Health.

The Local Government and Other Officers Superannuation Act, 1922, will be applicable to the appointment, and contributions to the Superannuation Fund will be deducted from the salary. The selected candidate will be required to pass a satisfactory medical examination.

Forms of application may be obtained from the Medical Officer of Health, Municipal Offices, Southampton.

Applications on the prescribed forms, endorsed "Assistant Medical Officer of Health," and stating age, qualifications, experience, etc., together with copies of not more than three recent testimonials, must be delivered at the Town Clerk's Office, Municipal Offices, Southampton, on or before May 18th.

R. RONALD H. MEGGESON,
Town Clerk.
April 29th, 1929.

County Borough of Southampton

APPOINTMENT OF SCHOOL DENTIST.

Applications are invited for the position of an Assistant School Dentist to carry out the dental examination, treatment, etc., of elementary school children.

The gentleman appointed must be fully qualified and registered. He will hold office during the pleasure of the Council and will be required to devote the whole of his time to the duties of the office and to act under the direction of the School Medical Officer.

Salary £450 per annum.

The Local Government and Other Officers Superannuation Act, 1922, will be applicable to the appointment, and contributions to the Superannuation Fund will be deducted from the salary. The selected candidate will be required to pass a satisfactory medical examination.

The appointment will be determinable by two months' notice on either side.

Forms of application may be obtained from the Medical Officer of Health, Municipal Offices, Southampton.

Application on the prescribed form, endorsed "School Dentist," together with copies of not more than three recent testimonials, must be delivered at the Town Clerk's Office on or before May 17th.

R. RONALD H. MEGGESON,
Town Clerk.
April 29th, 1929.

West Ham Union.

ASSISTANT MEDICAL OFFICERS.

The Guardians invite applications for the appointments of Two Resident Assistant Medical Officers (male) at their WHIPPS CROSS HOSPITAL, Whipps Cross Road, Leytonstone, E.11, at the salary in each case of £300 per annum, rising by annual increments of £25 to a maximum of £350 per annum, and the usual residential allowances.

Candidates must possess qualifications both in Medicine and Surgery, and preference will be given to those having previous Hospital experience. Intending applicants should communicate with or call on the Medical Superintendent who will furnish information as to the duties. The successful candidates will be required, should occasion arise, to act in any other Institution under the control of the Board.

Applications, stating age, experience, and qualifications, together with copies of not more than three testimonials, must reach the undersigned not later than 10 a.m. on Thursday, May 16th.

Union Offices, L. E. FRAQUET,
Leytonstone, E.11. Clerk.
April 29th, 1929.

Royal United Hospital, Bath.

Wanted at once, a HOUSE PHYSICIAN. Salary £120 per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three testimonials, must be addressed to the Secretary.

J. M. SHEPPARD, F.C.I.S., Secretary.

Kent County Council.

LENHAM SANATORIUM.

Applications are invited for the post of an unmarried Male ASSISTANT MEDICAL OFFICER to this Institution, which has 165 beds.

Applicants must be registered medical practitioners, and must devote the whole of their time to the duties of the office. Previous experience in tuberculosis and hospital administration is desirable.

The successful applicant will work under the administrative control of the County Medical Officer and of the Medical Superintendent of the Institution.

The post is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922. Salary £400 per annum, increasing to £450 per annum, with board, lodging, etc.

Applications, stating age, experience, and full qualifications, together with copies of three testimonials, to be sent to the undersigned not later than May 20th.

ALFRED GREENWOOD, M.D.,
County Medical
Officer and Chief
Tuberculosis Officer.

Sessions House,
Maidstone.
April 29th, 1929.

The Royal Hospital, Wolverhampton.

(240 Beds.)
(Incorporated under Charter.)

CASUALTY OFFICER and RESIDENT ANÆSTHETIST (male) required. Duties to commence forthwith, and will include Casualty work and administration of anæsthetics.

The Hospital contains 240 beds, and includes the usual special departments, and is recognized by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical Practice.

Candidates must be registered under the Medical Acts, and unmarried.

The appointment is for six months, with eligibility for further appointment for six months as House Surgeon to In-patients.

Salary at the rate of £125 per annum. Board, furnished rooms, and laundry provided.

Applications, with copies of testimonials, to be forwarded to the undersigned.

W. H. HARPER,
House Gov. & Secretary.

April 8th, 1929.

Manchester Victoria Memorial Jewish Hospital,

CHEETHAM, MANCHESTER (Non-sectarian).

Applications are invited for the post of SENIOR HOUSE SURGEON (male) at the above General Hospital. The appointment is for one year, the holder being eligible for re-election for a further period of one year. Salary at the rate of £250 per annum, with board, residence, and laundry. The successful applicant must be prepared to commence duties as soon as possible.

Applications, stating age, qualifications, and experience, with copies of testimonials, to be forwarded to the undersigned

FRANK JENNINGS, Superintendent.

Montagu Hospital, Mexborough,

YORKS.

Applications are invited for the position of JUNIOR HOUSE SURGEON (lady) at the above Hospital (64 Surgical Beds). Ten Maternity Beds are shortly to be brought into commission. Commencing salary £100 per annum, with board, residence, etc.

Duties will commence on June 1st.

One month's holiday will be allowed each year.

Applications, stating qualifications, should be addressed to the undersigned, so as to be received not later than Saturday, May 18th.

DONALD WILSON, Secretary.

West Suffolk General Hospital,

BURY ST. EDMUNDS.
(108 Beds.)

Applications are invited for the post of HOUSE SURGEON (male), which is now vacant. Salary £150 per annum, with board, residence, and laundry. Candidates must be fully registered and qualified.

Applications, giving particulars of experience, and enclosing three recent testimonials, to be sent to the undersigned.

E. E. HARDWICKE,
Secretary.

April 16th, 1929.

The Waterloo & District General Hospital, near Liverpool.

Applications are invited for the post of HOUSE SURGEON, vacant May 15th. Applicants must be fully qualified. Salary at the rate of £50 per annum, with board and residence.

Applications, together with copies of testimonials, should reach the Hon. Secretary not later than May 11th.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	CITY OF PLYMOUTH: EDUCATION DEPT. *(Woman Deputy Assistant Medical Officer.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	COUNTY TYRONE EDUCATION AUTHORITY. *(School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	COUNTY OF BRECON. *(Probationer Assistant (Female) Medical Officer of Health.)*	COUNTY BOROUGH OF WIGAN. *(Clinical Tuberculosis Officer and Assistant Medical Officer of Health.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE *(Assistant School Medical Officer—Female.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE *(Assistant School Medical Officer.)*
		YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE.
(Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	Dr. E. S. MEYERS (Hon Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
May 1st, 1929.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Royal Sussex County Hospital,
BRIGHTON. (225 Beds.)

Required, a CASUALTY HOUSE SURGEON (male). Salary £120 per annum, with board, residence, and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should be sent immediately to the undersigned.

L. L. W. LANCASTER-GAYE,
Secretary-Supt.

Royal Northern Hospital,
Holloway, London, N.7.

Applications are invited for the post of HOUSE SURGEON (male). The appointment is for nine months (six months House Surgeon and three months Casualty Officer) from June 15th. Salary at the rate of £70 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent by May 11th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER, Secretary.

LONDON HOSPITAL,
Whitechapel, E.

A vacancy occurs at the London Hospital in the post of JUNIOR GYNÆCOLOGICAL FIRST ASSISTANT, non-resident. The salary offered is £300 a year.

Applications, with testimonials, from candidates medically qualified are invited, and should be sent to the House Governor not later than Saturday, May 11th.

E. W. MORRIS, *House Governor.*

London Jewish Hospital,
Stepney Green, E.1.
(General Hospital, 108 Beds.)

Applications are invited for the following posts:

RESIDENT MEDICAL OFFICER. Salary at the rate of £150 per annum, with board and resid[illegible] six months.

JUNIOR [illegible] OFFICER. Salary at [illegible] per annum, with board a[illegible] for six months.

CASUALTY OFFICER, Non-resident. Salary at the rate of £150 per annum, with luncheon and tea. Appointment for six months. The holder will be required to attend the Out-patient Department daily from Monday to Friday, at 9 a.m.

Applications, with copies of three recent testimonials, to be sent to the Secretary on or before Friday, May 17th. The successful candidates will be required to take up their duties on June 1st.

Winsley Sanatorium,
near BATH.

The Governors invite applications for the appointment of a whole-time ASSISTANT RESIDENT MEDICAL OFFICER (male). Salary £250, with apartments, board, laundry, etc.

The appointment will be made for a period of twelve months (subject, however, to termination during such period by one calendar month's notice on either side).

Forms of application and particulars of duties can be obtained from the undersigned, to whom all applications should be addressed, accompanied by not more than three recent testimonials, not later than first post May 11th.

T. A. W. CARLISLE,
Winsley Sanatorium, Secretary.
Near Bath. April 27th, 1929.

Gravesend and North Kent
HOSPITAL.

JUNIOR HOUSE SURGEON.

Applications are invited from fully qualified men for the above post.

The Hospital contains 72 beds and cots (extensions will bring this number up to 100 by July), and has a large Casualty, Out-patient, and Ophthalmic Department.

Owing to the unique situation of the Hospital at the Entrance to the Port of London, many accidents and interesting cases are treated, and the post affords an excellent opportunity for Surgical experience.

The appointment is now vacant, and will be for twelve months. Salary at following scale, with addition of board, lodging, and washing: £80 p.a. for first six months, £150 p.a. for second six months as Senior House Surgeon, payable *in equal monthly instalments*. There is also a possibility of the successful applicant being retained for a further six months as Resident Medical Officer at the rate of £200 p.a. Three weeks' holiday at end of first six months, and three weeks' holiday at end of second six months if appointed R.M.O., both on full pay.

The Hospital is fully equipped with modern X-ray and other apparatus.

Applications, with one copy of three recent testimonials, to be sent to the undersigned immediately.

C. E. CHAPMAN,
April 27th, 1929. Secretary.

Lowestoft and North Suffolk
HOSPITAL.

HOUSE SURGEON (male) preferably with knowledge of X-ray. Salary £120 p.a., with board, residence, and laundry.

Applications, with copies of three recent testimonials, to the Honorary Medical Supt.

ASSISTANCIES.

Wanted. — Assistant, indoor, male, single, Protestant, cyclist, healthy, under 30. State age, qualifications, etc. Salary at £250 a year.—Address, No. 2514, B.M.A. House, Tavistock Square, W.C.1.

Wanted, an Assistant, with view to Partnership. Englishman and abstainer, with practical experience in midwifery, and accustomed to panel work. Usual bond, photo, and testimonials required. State religion.—No. 2504, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, male, in Colliery Practice, South Wales. Suit newly qualified. Partnership later. Must be keen and abstainer.—Address, No. 2629, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Experienced Assistant, outdoor, preferably ex House Surgeon, in a good mixed Practice in an industrial district within six miles of Manchester. Salary from £400 per annum, with view to Partnership. — Address, with particulars, No. 2535, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Indoor and Outdoor ASSISTANTS (male), with and without view. Also LOCUM TENENS. Good salaries offered. State full particulars.—British Medical Bureau, 33, Cross Street, Manchester.

Wanted immediately, indoor ASSISTANT in large panel and private Practice in pleasant part of Monmouthshire. Abstainer and motorist preferred. Salary £23 per month, all found, except laundry. Apply, stating age and all particulars. Usual bond.—No. 2926, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately, a qualified ASSISTANT (single) in an industrial Practice, South Wales. Salary £300 p.a., with furnished room, coal, light, and attendance.—Address, No. 2517, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, ex M.O. or H.P., with some experience of general practice preferred, for panel and private Practice, North East Coast. Usual bond. Salary £400 to commence.—Address, No. 2632, B.M.A. House, Tavistock Square, W.C.1.

Wanted, an outdoor Assistant in a Colliery Practice in South Wales. Salary £350 per annum, with rooms, attendance, etc. Usual bond.—Address, stating age, references, etc., No. 2525, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted; ex resident preferred (indoor); in an Industrial Practice in a University City, where a standard of careful work is followed. £300 per annum or upwards, according to experience.—No. 2554, B.M.A. House, Tavistock Sq., W.C.1.

Energetic and experienced man required ASSISTANTSHIP, with view to speedy Partnership, in colliery district, preferably Durham or Northumberland. Capital available. Addr. No. 2405, B.M.A. House, Tavistock Square, W.C.1.

M.B.(Edin.), æt. 35, wishes CHARGE OF BRANCH or Outdoor ASSISTANTSHIP. Seven years' experience of all forms of G.P., including three years own practice. Preference London or South preferred.—Address, No. 2627, B.M.A. House, Tavistock Square, W.C.1.

Woman Doctor requires an ASSISTANT for Branch Practice, in London. Small salary and rooms to commence with. Must recently qualified woman. Scotch or Irish. Address No. 2651, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the London College of Pharmacy for Ladies. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and exper. in priv. and panel prac. Perm. and temporary Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3579. The Reliance Bureau for Dispensers, 87, Holborn Viaduct House, 12, Holb. Viad., E.C.1.

Wanted. — Woman Doctor for MISSION HOSPITAL, MANCHURIA. Urgent owing to unforeseen depletion of staff. Some Surgical and Midwifery experience preferred. Willing share in Missionary activities. Unpara[illegible] terms [illegible] Church [illegible]

Wanted at once by Doctor's widow, fully trained Nurse, post as Doctor or Dentist as RECEPTIONIST-SECRETARY. — Address, No. 2630, B.M.A. House, Tavistock Square, W.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Gerrard 2699, The Dispensers' Bureau, 145, Shaftesbury Avenue, London, W.C.2.

Doctor wishes to recommend young widow as SECRETARY-RECEPTIONIST to Doctor or Dentist. Eight years' experience book-keeping, typing; shorthand speed 120. Moderate salary.—Mrs. Hudson, Nightingale Place, Cookham.

Gentleman, young, with entrée to medical profession, desirous of taking profitable side-line, required by well-known firm. Car an advantage. First-class references. — Write full particulars of age, present employment, etc., strictly in confidence, to Box 683, Potter's Advtg. Agency, Imperial House, Kingsway, W.C.2.

Graduate, active, experienced, relinquished Practice, would undertake RESPONSIBLE WORK, regular or occasional. Works' clinic, institution, examinations, travel, etc. Highest references.—Address, No. 2621, B.M.A. House, Tavistock Square, W.C.1.

Gentlewoman seeks Post. London. Chartered masseuse, medical electrician, military nursing, experienced ultra-violet rays, diathermy, etc; also secretarial, typewriting. Non-resident pref.—Address, M. Crouch, 2 Bristol House, Southampton Row, W.C.1.

Lady Dispenser - Bookkeeper (Hall qualification) requires POST with Doctor. Experienced. Excellent testimonials. London or Suburbs. Free now. Doctor's widow. —Address, No. 2515, B.M.A. House, Tavistock Square, W.C.1.

Lady Dispenser wanted May 14th Four Doctors in firm. Book-keeping not required.—Address, No. 2521, B.M.A. House, Tavistock Square, W.C.1.

M.B., M.R.C.S., D.O.M.S., ex H.S. and H.P., now reading for final Fellowship, would like PART-TIME WORK in London, particularly during week-ends.—Add., No. 2409, B.M.A. House, Tavistock Sq., W.C.1.

Part-time work wanted in London by well qualified and experienced Post Graduate; aged 31, female, British. Working-class surgeries preferred. — Address, No. 2510, B.M.A. House, Tavistock Square, W.C.1.

Post - Graduate, M.D.Lond., studying Ophthalmology, free to take CHARGE OF PRACTICE in London. Wednesdays 5 to 10 p.m.—Address, No. 2503, B.M.A. House, Tavistock Square, W.C.1.

Resident Medical Officer required by GOLD MINING COMPANY in WEST AFRICA. Knowledge of Tropical Diseases an advantage. Period of service 12 months, under agreement. First-class (single) passages and quarters provided.—Write, stating age, qualifications, etc., to Box 651A, Smiths, 3, Lincoln's Inn Fields, W.C.2.

Wanted by M.R.C.S., L.R.C.P., doubly qualified, Scotch extraction, PART-TIME WORK, any locality. Reading higher degree. Institutional, private, or charge of surgery. Experienced panel, etc.—Address, No. 2633, B.M.A. House, Tavistock Sq., W.C.1.

LOCUMS.

As Locum. — Exper. middle-aged Doctor, had own practice, now doing locums, desires further ENGAGEMENTS. Free May 6th. Terms 6 gns. p.w. If country, where car and driver available. Good refs.—"Medicus," c/o Dr. Roberts, 51, Dalston Lane, E.8.

Holiday Locum Tenency re- quired for one month from second week August. Seaside or Country Practice. State terms. — Address, No. 2520, B.M.A. House, Tavistock Square, W.C.1.

HOLIDAY LOCUMS.

THE MEDICAL AGENCY has pleasure in announcing that lists are now being prepared [illegible] the forthcoming [illegible] requiring a [illegible] advised to make early application.—Address, W. H. Grant, The Medical Agency, Watergate House, Adelphi, W.C.1. Tel.: Gerrard 8954 and Riverside 1254 (night calls).

Hospitality offered Doctor and wife for working small Country Town Practice, close to first-class Spas for rheumatism. Band, garden, tennis. Small remuneration. June and July. — Address, No. 2620, B.M.A. House, Tavistock Square, W.C.1.

Locum Tenens wanted June 24th for five weeks. Hospitality to Doctor and wife. Three guineas a week; single expenses. Small country town. Large garden, good house. —Address, No. 2520, B.M.A. House, Tavistock Square, W.C.1.

Lady (L.R.C.P. & S.Ed.) desires LOCUM work or to assist Doctor for June and July. Hospitality and nominal fee. Pleasant district preferred. Five years' experience general practice (private, panel, dispensing). Ex. tests. —No. 2518, B.M.A. House, Tavistock Sq., W.C.1.

Locum desires engagements. Free May 2 th. An experienced, reliable G.P. Obstetrician. M.R.C.S., L.R.C.P. Lond., Ex House Surgeon. Abstainer. Rates. Fees £6 6s. p.w. and return fare. Own car if essential. Terms.—Apply, "Doctor," 4, Hanbury Road, Clifton, Bristol.

M.B., Ch.B., ex H.S. & H.P., requires LOCUM or TEM ORARY ASSISTANTSHIP. Experienced in private and panel practice.—Address, No. 2626, B.M.A. House, Tavistock Square, W.C.1.

M.R.C.S., L.R.C.P., woman, desires LOCUM or ASSISTANTSHIP. Experience in general practice, private and panel work. Used to sole charge. Free May 6th.—Address, No. 2622, B.M.A. House, Tavistock Square, W.C.1.

Practitioner with wide experi- ence as G.P., is willing to undertake LOCUM appointments. Abstainer. Reduced terms if work light.—Address, No. 2508, B.M.A. House, Tavistock Square, W.C.1.

FOR LOCUM TENENS APPLY TO
Mr. PERCIVAL TURNER, Ltd.
The oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals.
4, ADAM ST., Strand, London, W.C.2.
Teleg.: "Epsomian, Lond." 'Phone: Gerrard 0399

PARTNERSHIPS.

Wanted by M.B., F.R.C.S.E., with Hospital experience, PARTNERSHIP or PRACTICE, Northern England or Midlands preferred.—Address, No. 2636, B.M.A. House, Tavistock Square, W.C.1.

North Wales Doctor requires PARTNER for half share of practice. Large panel and dispensing, also important appointments. Full particulars.—Address, No. 2513, B.M.A. House, Tavistock Square, W.C.1.

Partner (Third) wanted in sound industrial and middle-class Practice near Newcastle-upon-Tyne. Purchaser must be well qualified and experienced G.P., and should have held Hospital appointment. Average cash receipts over £4,000. A 3/10 share for disposal at 2 years' purchase. Suitable house and surgery available.—Address, No. 2443, B.M.A. House, Tavistock Square, W.C.1.

Partner wanted in sound old- established Practice averaging £3,000 in first-class residential town and health resort, N.W. Coast. Either Physician or Surgeon. Splendid opening for latter. One-half share for sale (one-third for first year) at 13 years' purchase. Capital essential.—Address, No. 2624, B.M.A. House, Tavistock Square, W.C.1.

Partner wanted, very old-established country Practice, Wiltshire. Share over £2,000 at two years' purchase. Good house and garden. Hospital experience essential. Cottage Hospital. Address, No. 2532, B.M.A. House, Tavistock Square, W.C.1.

Partnership.—Practice doing nearly £3,000 p.a. Panel 3,000. Industrial area Manchester. Choice of two houses. One-third or one-half share. Two years' purchase.—Address, No. 2628, B.M.A. House, Tavistock Square, W.C.1.

Partner wanted in Home for Resident Patients twenty minutes from Waterloo. Must be able to introduce patients, mental or otherwise. Opportunity to establish private practice.—Address, No. 2527, B.M.A. House Tavistock Square, W.C.1.

Seaport Town, N.E. England. PARTNER required in old-established general practice with surgical work. No panel. Receipts about £3 000. One third or more for disposal.—Address No. 2531, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES.

Wanted immediately, mixed PRACTICE or PARTNERSHIP from £800 to £1,000, preferably Midlands. Convenient house to rent, and educational facilities. Capital available.—Address, No. 2524, B.M.A. House Tavistock Square, W.C.1.

Wanted.—Panel and private PRACTICE, £800–£1,000, in Hampshire, Dorset, Devon, or Cornwall. Preferably near sea or bracing climate. Moderate-sized house with good garden Capital available.—No. 2530, B.M.A House, Tavistock Sq., W.C.1

Wanted.—Good-class Practice or PARTNERSHIP in town or, near, coast of Southern, South-Western, or South-Eastern County. Advertiser has ample capital and higher qualifications. Strict confidence. Private advertisement. — Address, No. 2516, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Large well-estab. non-panel PRACTICE within 100 miles London (main line). Income not less £2,500. A suitable house at rental desired in first instance. Advertiser is free to negotiate. Capital available.—Address, No. 2314, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.D.Cantab., F.R.C.S.Eng., Public School, better-class PRACTICE or PARTNERSHIP, within 100 miles London, or good-class suburb. Ample capital. —Address, No. 1505, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—We have innumerable applicants for sound investments in all districts, incomes from £600 to £4,000, with and without panel. Correspondence invited from prospective Vendors. — THE MEDICAL AGENCY (W. H. Grant), Watergate House, 15 York Buildings, Adelphi, W.C.2

Wanted, a good-class preferably non-dispensing PRACTICE in good residential district, West End or good suburb or Provincial Town, with income of £2,000 a year or more, by experienced Practitioner with ample capital.—Details to "D. L.," c/o Mr. PERCIVAL TURNER, 4, Adam St., W.C.2

Cheshire.—Practice in pleasant Country Town near Manchester. Receipts £865, including panel income of £208. Excellent house, 6 bedrooms, 3 reception rooms, good garden Premium—Practice and house—£2,000.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Death Vacancy.—Radnorshire.— PRACTICE of about £1,000 per annum, including [illegible] Good house. No residen[illegible] opportunity for young VAUGHAN & BAKER, Radnorshire.

Death Vacancy. — Practice (Coventry District) for sale, conducted by deceased for 10 years. Excellent freehold house, with garage.—Apply, DOCKER, HOSGOOD & Co., Solicitors, 10, Newhall St., Birmingham.

Death Vacancy, Manchester.— Good-class PRACTICE. Cash receipts 1928, £1,248, including income of £330 from appointments. Excellent corner house, 2 entertaining, 5 bedrooms, garden Premium—Practice and house—£2,500, or near offer.—BRITISH MEDICAL BUREAU, 33, Cross St., Manchester.

Death Vacancy of about £200 (visits 5/-). Freehold house, with garage, in fast growing neighbourhood.—Write, "S.," [illegible], Hepton Road, Streatham, S.W.16.

For Sale. — Doctor's House. Price £1,000. PRACTICE, unopposed, receipts £930, work light, is free to purchaser of furniture.—Address, No. 2661, B.M.A. House, Tavistock Square, W.C.1.

For Sale. — Birmingham. — PRACTICE, established few years. Small house, suit bachelor. Receipts £800. Panel £000. Great scope. Premium £1,200; house and contents £600.—Address, No. 2107, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Easily worked Panel, Private, and Contract PRACTICE, Colliery district in Yorkshire. Good house and land and large garden. Scope for increase. Estab. seven years. Average income £500 per annum from all sources. Purchase price 1¼ years House, land, and garden, £650. Must sell end of May. — "A. J.," c/o FERRIS & Co., Ltd., Bristol.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2

For Sale. — Death Vacancy. — County of Durham. Old-established Colliery and Panel Practice. Cash receipts £1,047. Panel 1,000. Locum Tenens in charge. Easily transfer. Slight oppos. Prem. 1 yr.'s pur. —No. 2662, B.M.A. House, Tavistock Sq., W.C.1.

For immediate Disposal in Bradford. — Old-established mixed PRACTICE. Panel and appointment £518. Average receipts £1,350 per annum. Excellent modern house with garage, etc., for sale with the Practice. Practice, one and a half years' purchase.—Address, No. 2432, B.M.A. House, Tavistock Square, W.C.1.

For Sale, in nice residential district (Midlands), sound mixed PRACTICE, established 30 years. Panel 800; dispensing. Income £1,700. Price 1½ years' purchase. Very exceptional house, with garden and tennis lawn. Price £2,300. Owner, who is remaining in district, would give partnership introduction as required. Good social facilities; golf, tennis. Capital essential.—Address, No. 2528, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Mixed Practice in rapidly growing suburb of flourishing Midland town. Income last year £1350; panel 1,000. 1½ years' purchase; adequate introduction. Commodious house; low rental.—Address No. 2533, B.M.A. House Tavistock Square W.C.1.

Immediate Compulsory Sale.— Mid-Kent NUCLEUS, doing £600. Accepted public appointment. First offer accepted.—Address, No. 2627, B.M.A. House, Tavistock Square, W.C.1.

Lancs Town.—Sound old-estab. middle and working-class PRACTICE. Cash receipts last year £1,855. Panel over 1,500. Excellent detached house, garden, and garage. Vendor retiring. Premium—Practice—1½ years' purchase; house £1,500, part on mortgage or may be let on lease with option to purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

London, N.W. — Easily worked PRACTICE for sale. Visits 3/6 to 7/6, cons. 3/6. Total receipts £700. Small panel. Premium £850. Nice house, with garden, £1,200. — Address, No. 2301, B.M.A. House, Tavistock Square, W.C.1.

London, N.W. — Developing district. Income £2,000. Panel 2,050, growing. Cons. 2/6, 3/6. Visits 3/6, 5/-. Few mids. £3 3s. up. Compact. Fine det. house, spec. built, 4 bed., £2,000. Prac. 1½ yrs. Full records, audited books. Banker's refs. req. No agents.—No. 2148, B.M.A. House, Tavistock Sq., W.C.1.

Leeds. — Old-estab. Practice. Average cash receipts £490 p.a. Panel 267. Good house, 3 reception rooms, 4 bedrooms, large garden. Rent £60 p.a. Premium —Practice—£550.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Lancs Town, near Manchester.— Average cash receipts £994. Panel 1,330. Good house to rent in main street, 4 bedrooms, 2 reception rooms, garage. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

London, E. — Well-established Cash and Panel PRACTICE. Practice returning £450 p.a. Panel 300. Nice compact house, good lease, at £78 p.a. Price £650, to include lease. — Address, No. 2511, B.M.A. House, Tavistock Square, W.C.1.

Manchester.—Practice for Sale in populous district. Good house, garden, garage, £60. Receipts about £1,400; appts. £200; panel 950. Price 1 year's purchase, provided furniture (house) be bought.—MANCHESTER MED. & SCHOL. ASSOC., 6, Brown St.

Monmouthshire.—Private Pract- TICE, £1,750 p.a., for sale. Panel refused by Vendor. Scope for increase. Good house available. Premium £2,000.—GRIFFITHS MEDICAL AGENCY, Tredegar Chambers, Newport, Mon.

Monmouthshire.—To be sold, an old-established practically private PRACTICE over £1,000 p.a., with small panel which could be vastly increased, together with a beautiful freehold residence, situate in its own grounds of about 3½ acres. Every investigation courted. Further particulars. — Address, No. 2507, B.M.A. House, Tavistock Square, W.C.1.

Midlands. — Over £900, panel 550. House, 5 bedrooms, electric light, central heating, garden, etc. Very healthy, 700 feet elevation.—Address, No. 2535, B.M.A. House, Tavistock Square, W.C.1.

Medical Practice in Aberdeen for Sale. Excellent opportunity for energetic young Practitioner. — Apply Messrs. MCHATTIE & LUMSDEN, Solicitors, 480, Union Street, Aberdeen.

N. Wales.—Old-estab. Practice in picturesque district. Nice house, lawn, garage (3 cars), rent £70. Receipts £1,700; appointments £200; panel 800. Price £1,600. Golf, tennis, glorious view.—MANCHESTER MED. & SCHOL. ASSOC., 6, Brown St.

Near Manchester. — Good-class PRACTICE. Average receipts last three years, £2,060 p.a. Panel 300. Excellent corner house, containing 6 bedrooms, 3 entertaining rooms, garage, and garden. Good introduction. Prem. 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Near Manchester. — Old-estab. mixed PRACTICE. Average cash receipts £1,954 p.a. Panel 1,100. Good detached house, 5 bedrooms, garden, and garage, for sale at £1,200, or would rent at £70 p.a. Premium —Practice — 1½ years' purchase. — BRITISH MEDICAL BUREAU, 33, Cross St., Manchester.

North Wales Coast.—Good-class PRACTICE. Cash receipts 1928, £1,749. Panel 713. Excellent modern house, 4 bedrooms, lawn; also well-fitted surgery and garage, to rent. Good scope. Premium 1½ years' purchase. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Practice for Sale. — Good-class Country PRACTICE within 20 miles of Manchester. Receipts £1,400, increasing yearly. Good house to let (rent £60), containing 5 bedrooms, 2 entertaining rooms, surgery and waiting rooms, garage. Premium £2,000. —Apply, STOWELL & BAYLEY, Chartered Accountants, 46, Pall Mall, Manchester.

To Purchasers. — Do not buy without expert assistance. With 40 yrs.' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Gerrard 0599. Telegrams: "Epsomian, London."

University Graduate, aged 36, 10 years' experience G.P., desires OPENING in good-class PRACTICE. Good house essential (preferably rented). Income £1,500 upwards. Not free for six months.—Address, No. 2509, B.M.A. House, Tavistock Sq., W.C.1.

£750 Practice wanted in August. Convenient house, garden, and educational facilities for young children essential. Capital available — Address, No. 2519, B.M.A. House, Tavistock Square, W.C.1.

HOUSES, CONSULTING ROOMS.

As Nursing Home, Practice or Partnership PREMISES, in rapidly developing residential district. Fine main road house, 16 miles Harley Street; 12 larger ones, level working domestic offices, no basement; constant hot water; electric. gas; good garden and large outbuildings. Used many years as private school. In excellent repair, ready for occupation. Freehold £3,500, about £2 000 could remain.—Address, No. 2529, B.M.A. House, Tavistock Square, W.C.1.

Consulting Rooms to Let.— Harley Street and Dist let. Whole or part-time. Lists sent on application.—Full particulars from ELGOOD & Co., 10, Henrietta Street, Cavendish Square, W.1. Mayfair 5659.

For Sale. — Good opportunity to start Practice. Semi-detached CORNER HOUSE suitable for Doctor. Rapidly growing estate, no resident Doctor. In Cheshire, 30 minutes from Liverpool. — Address, No. 2625, B.M.A. House, Tavistock Square, W.C.1.

Harley Street. — For Sale, one of the best HOUSES in this Street, now in the occupation of an eminent Physician — ELGOOD & Co., 10, Henrietta Street, Cavendish Square, W.1. Mayfair 5659.

SPECIALLY ERECTED FOR A DENTAL PRACTITIONER.

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MODERN FREEHOLD RESIDENCE, near Birmingham, Lichfield, and Walsall, and occupying a prominent and most convenient position in the Royal Borough.

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The Residential Quarters comprise—Hall, two reception rooms, good domestic offices, four bedrooms, bathroom, separate w.c., etc.

Central Heating. Electric Light and Power. Well Laid Out Garden. Full Size Tennis Lawn.

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FOR SALE BY PRIVATE TREATY.

Full particulars from the Auctioneer's Head Offices, 17, Newhall St., Birmingham. Telephone: Central 3194 (three lines).

Harley Street. — Part use CONSULTING AND WAITING ROOM, £6 5s. per quarter, including attendance, lighting and telephone, etc. Particulars from.—Address, No. 2505, B.M.A. House, Tavistock Square, W.C.1.

Harley Street Doctor requires CONSULTING ROOM. Write, Box 192, at HORNCASTLE'S, 60, Cheapside, E.C.2.

Ideal holiday quarters for three Doctors.—To let, August or September, FURNISHED HOUSE on the banks of CHRISTCHURCH HARBOUR. Large parlour, sun-room, four bedrooms, two bathrooms, kitchen, garage, electric light, telephone. Easily run by one man, or maid. Motor-boat, with sail. Excellent harbour for sailing; deep-sea fishing. £15 15s. per week.—Mrs EMMOTT-LARGE, Mudeford Harbour, Christchurch, Hants.

TO RADIOLOGISTS AND MASSEURS.

Large Ground-floor Room, Park Cres., Portland Pl., suitable as Consulting Room or Gymnasium. Space for dark or dressing room. Suit Surg.-Dentist. Immed. poss.—No. 2502, B.M.A. House, Tavistock Sq., W.C.1.

Nursing Home, modern and up to date in every respect, about to be built in quiet situation close to Harley Street; perfect accommodation; over 50 rooms; convenient north lighted theatre; lift; central heating. Long lease for disposal.—For plans and particulars apply BEDFORD & Co., 10, Wigmore Street, W.1.

Portland Place. — First Floor CONSULTING ROOM available at very moderate rent of £220 per annum. Recommended by sole agents.—BEDFORD & Co., 10, Wigmore Street, W.1. Langham 3927

Portman Square (near). — NURSING HOME for disposal. Long lease. Price £26,000.—Apply, GEORGE HEAD & Co., 40, Baker Street, W.1.

Suitable for two or three Doctors or Specialists in Partnership, with exceptionally fine waiting room, ENTIRE HOUSE, near Park Lane. Would be let on long lease, rent £1,250 per annum.

ALFRED SAVILL & SONS, 62, Brook Street, W.1. Ambassador 9072

To be Sold.—Possession Corner [illegible] exceptionally good main road [illegible] hundreds of new houses [illegible] Price £1,150 £1,250, Third £1,050. [illegible] Low Deposit and charges. Finance arranged. [illegible] Wembley Pk. Station

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To Let, with option of [illegible] occupation, large shop fronted CONFECTIONERY, on main road, London East. [illegible] furnished and stocked. SMALL MODERATE RENT. No premium.—Address, No. 2534, B.M.A. House, Tavistock Square, W.C.1.

Wimpole Street.—To suit Medical Man MAISONETTE comprising [illegible] room, seven rooms, kitchen, bath. *Rent £350.* Owners, ELWOOD & Co., 10 Henrietta Street, Cavendish Square, W.1. Mayfair 5659.

Welbeck Street, W.1. — Two COMMUNICATING ROOMS of good size, with use of well-furnished WAITING ROOM. Ideal for an Anæsthetist, etc. Rent £150 p.a., inclusive, on lease.—Address, No. 2506, B.M.A. House, Tavistock Square, W.C.1.

Wimpole Street, Cavendish Sq. —FLAT, consisting of three beds., large recep., bath., kitchenette, etc., with large consulting room and use well-furnished waiting room. To be let—whole or separ. Immed. poss. —No. 2501, B.M.A. House, Tavistock Sq., W.C.1.

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TWEED SUITS & OVERCOATS to measure from £6 6s.
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DINNER SUITS fr. £8 8s. DRESS SUITS fr. £10 10s.
PLUS FOUR SUITS, Coat with Pivot Sleeves, fr. £6 6s.
THE IDEAL Suit for ALL Sporting Purposes.
GOLD MEDAL RIDING BREECHES ... from £2 2s.
RIDING HABITS fr. £10 10s. COSTUMES fr. £6 6s.

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For Sale.—Zund-Berguet Electro- PHONOIDE APPARATUS for the cure of Chronic Deafness. New model in good condition. Cost £106; price £75.—Address, No. 2525, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—"Cries of London" (mezzotints, fifteen in number). Issued by Museum Galleries Studios at 150 *guineas*. —Address, No. 2522, B.M.A. House, Tavistock Square, W.C.1.

INCOME TAX EXPERT (late Inspector of Taxes) will assist you to avail yourself of special facilities provided for the Medical Profession relating to *Income Tax*.

For further particulars write or call.—C. G. C. KILNER, 17, George St., Baker St., W.1. (Phone: Welbeck 2012).

The Medical Practitioner's Cash BOOK is a boon to the busy medical man. Saves time, worry, and Income Tax. 12/6 post free. Money refunded if *not satisfied*.—CHARNWOOD PUBLISHING Co., Atlas House, Coalville, Leicester.

X-Ray and Electro-Medical APPARATUS (SECOND-HAND), by the best makers, in stock. Re-conditioned and in perfect working order. Very moderate prices. Write for list, stating requirements.—The COX-CAVENDISH ELECTRICAL Co. (1924), Ltd., 105, Great Portland Street, London, W.1.

Thaxted, Essex.—Owner going abroad, would let FURNISHED HOUSE from June 1st for 12 months. Two reception, kitchen, billiard room (full-size table), 5 bedrooms, bath, gas, central heating. Modern sanitation. Secluded garden with lily pool. Garage. Maid would stay on. 6 months 5 gns.; 12 months 3 gns.—Address, W. BENNETT, Thaxted.

"Radiometric" High Tension TRANSFORMER X-RAY APPARATUS, having an output of 90 kV at 30 mA, complete with auto-transformer control, independent filament heating transformer, automatic magnetic time switch with timing mechanism, milli-amperemeter, amperemeter for filament circuit, crank regulation for controlling the penetration, filam[illegible] etc with Radiator type [illegible] fully described in catalog [illegible] Supply Association, who are the makers. Arranged for use on any alternating current supply. Price £90.—MEDICAL SUPPLY ASSOCIATION, Ltd., 167-185, Gray's Inn Road, London.

APPOINTMENTS.—Contd.

Liverpool Maternity Hospital, OXFORD STREET.

HOUSE SURGEON required for six months commencing July 1st next. Salary at the rate of £90 per annum, with board, residence, and laundry. Previous experience as House Surgeon essential. Membership of a Medical Defence Society is a condition of appointment.

Applications, stating age, qualifications, and experience, together with copies of testimonials, to be sent to the Hon. Secretary of the Medical Board on or before May 24th.

District Infirmary, ASHTON-UNDER-LYNE. (General Hospital, 200 Beds, mainly Surgical.)

A HOUSE SURGEON required. Six months' appointment. Salary at the rate of £150 per annum, with board, residence, and laundry.

The Resident Staff comprises a Resident Surgical Officer and Three House Surgeons.

Applications, with testimonials, to be sent at once to the undersigned.

FRANK OLIVER,
April 29th, 1929. Gen. Supt. & Secretary.

Bedford County Hospital.

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing May 31st. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Secretary, Medical Staff Committee, not later than the first post Wednesday, May 8th.

Royal Aberdeen Hospital for SICK CHILDREN.

The Board have resolved to appoint an HONORARY ASSISTANT SURGEON, who would be attached to the Wards of the Second Surgeon and the Ear, Nose, and Throat Surgeon. Applications, along with one copy of testimonials, should be lodged with the Hon. Secretary, Mr. A. S. R. BRUCE, 12, Dee Street, Aberdeen.

Aberdeen, May 1st, 1929.

Samaritan Free Hospital for WOMEN, Marylebone Road, N.W.1.

ANÆSTHETIST required. Specialist preferred. Honorarium £30 per annum.

Applications, stating age, accompanied by copies of testimonials, must be sent as early as possible to the Secretary at the Hospital.

G. H. HAWKINS, Secretary.

Taunton and Somerset Hospital, TAUNTON. (104 Beds.)

JUNIOR HOUSE MEDICAL OFFICER (male) required in June. Candidates must be registered. Appointment for six calendar months. Salary at the rate of £100 per annum, with board, residence, and laundry. Applications, with testimonials, to F. J. J. STACEY, Secretary.

Darlington General Hospital.

Wanted, SENIOR HOUSE SURGEON, male, British, fully qualified. Salary £150 per annum, board, and residence. To take over duties in June. Applications, stating qualifications, experience, together with copies of two recent testimonials, to be addressed to me forthwith.

G. H. SHARPE, Honorary Secretary.

Stamford and Rutland General INFIRMARY (Not Poor Law).

Wanted at once, HOUSE SURGEON, male, either English or Scot. Must be good anæsthetist. Salary £4 a week, all found.

Apply Dr. HUTTON-ATTENBOROUGH, with copies of two testimonials.

CAVENDISH NURSES (Male and Female)

Head Office: 54, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

A very convenient term of telephone message pad sent free on application to the Secretary.

Branches: MANCHESTER: 176, *Oxford Road.* *GLASGOW*: 28, *Windsor Terrace.* *DUBLIN*: 23, *Upper Baggot Street.*

TELEGRAMS: Tactear, London. Surgical, Glasgow. Tactear, Manchester. Tactear, Dublin.

TELEPHONES: London, 1277 Welbeck. Glasgow, 477 Douglas. Manchester, 3152 Ardwick. Dublin, 631 Ballsbridge.

Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling and all cases. Nurses reside on the premises, and are always ready for urgent calls Day and Night. Skilled Masseuses, Masseurs, and good Valet attendants supplied.

Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

Hackney Hospital.

The Guardians of the Hackney Union invite applications from duly qualified gentlemen for the position of JUNIOR ASSISTANT MEDICAL OFFICER.

Candidates must be single, and must have held a previous resident hospital appointment.

The Hospital, which is situate at High St., Homerton, E.9, contains 800 beds and is equipped with modern requirements.

Besides the Medical Superintendent, there are six Resident Medical Officers and a Clinical Pathologist.

The remuneration is at the rate of £330 per annum, rising £25 annually to a maximum of £375 per annum, together with rations, washing, furnished apartments, and attendance.

The officer appointed will be required to render assistance at the other establishments and departments of the Union, to assist in the training and instruction of nurses, and to devote the whole of his time to the service of the Guardians.

The appointment will be subject to the provisions of the Poor Law Officers Superannuation Act, 1896.

Further particulars as to the duties may be obtained from the Medical Superintendent

Canvassing the Guardians, directly or indirectly, will disqualify candidates.

Applications must be made upon forms which are obtainable from the undersigned. The forms must be completed and returned, with copies of not more than three recent testimonials, by Friday, May 10th.

By Order,
E. W. HARBOUR,
Clerk to the Guardians.

Clerk's Office, Hackney Union, 2, Sidney Rd., Homerton, E.9.

London Homœopathic Hospital,

Great Ormond Street and Queen Square, Bloomsbury, W.C.1.
(A General Hospital. 172 Beds)

The periodical vacancy for a RESIDENT MEDICAL OFFICER, male or female, occurs on June 10th, the appointment being for twelve months (four months as Medical and Casualty Officer, four months as House Surgeon, and four months as Medical and Gynæcological Officer), with salary *at the rate of £100 per* annum, and board, apartments, and laundry.

Candidates must be legally qualified and registered.

Candidates will be required to attend a Meeting of the Medical Committee.

Applications, stating age, with 35 copies of application and 31 copies of each testimonial, may be sent to the Secretary immediately

Successful candidates are required to take the Hospital course of instruction in the principles and practice of Homœopathy

EDWARD A. ATTWOOD, Secretary.

Nottingham Children's Hospital.

Applications are invited for the post of RESIDENT HOUSE SURGEON (woman). Candidates must have held a resident Hospital appointment. Experience in the administration of Anæsthetics essential. The salary will be at the rate of £150 per annum, with apartments, board, and laundry. The appointment will commence on June 1st.

Applications, together with testimonials, stating age, qualifications, and experience, to be sent to F. PRAGNELL, the Honorary Secretary, 1, King John's Chambers, Bridlesmith Gate, Nottingham, by May 16th. Selected candidates will be required to attend at the Hospital for a personal interview on *May 28th*, when the appointment will be made.

April 29th, 1929.

Warneford General Hospital,

LEAMINGTON SPA.

RESIDENT HOUSE PHYSICIAN and RESIDENT HOUSE SURGEON required at the beginning of June. Salaries £165 per annum each, with board and laundry.

Applicants, who must be qualified and registered and single men, should apply at once to the undersigned, and send copies of three recent testimonials.

W. RUSSELL RUDALL,
House Governor & Secretary.

Royal Sea-Bathing Hospital,

MARGATE (For Surgical Tuberculosis).

A Male HOUSE SURGEON is required to take up duty on June 1st next. The salary is at the rate of £100 per annum, with board, residence, attendance, and laundry.

Candidates for the post must be legally qualified and registered.

The appointment is for six months.

There are 300 beds for adults and children, which afford special opportunities for the study of Surgical Tuberculosis.

Applications, stating age and previous appointments, with copies of three testimonials, should be sent to the Secretary, R.S.B.H. Offices, 15, York Buildings, Adelphi, London, W.C.2.

Manchester Victoria Memorial

JEWISH HOSPITAL,
CHEETHAM, MANCHESTER. (Non-sectarian.)

APPOINTMENT OF HONORARY AURAL SURGEON.

Applications are invited for the office of Honorary Aural Surgeon to the above Institution. Applicants must be Fellows of the Royal College of Surgeons of England or Edinburgh and must be in Consultant Practice.

Applications in duplicate, stating age, qualifications, and experience, together with copies of at least three testimonials, to be forwarded to the Chairman at the Hospital not later than Saturday, May 18th.

Blackburn and East Lancashire

ROYAL INFIRMARY.

FOURTH HOUSE SURGEON (male) required for Casualty Department, etc., at a salary of £130 per annum, with board, residence, laundry, etc., the appointment to be for six months.

The Hospital contains 240 beds, with X-ray, Massage, V.D., Eye, Ear, Nose, and Throat Departments, Pathological Laboratory, etc. There is no outside work.

Applications, with copies of testimonials, stating age, nationality, experience, etc, to be sent at once to the undersigned.

Royal Infirmary, Blackburn. NATHAN A. SMITH, Gen. Supt. & Secretary.

The Gordon Hospital for Rectal

DISEASES, Vauxhall Bridge Rd, S.W.1.

HONORARY ASSISTANT SURGEON.

The Committee of Management invite applications for the post of Hon. Assistant Surgeon.

Candidates must be Fellows of the Royal College of Surgeons of England.

Particulars of duties may be obtained from the undersigned, to whom applications, with copies of three recent testimonials, should be delivered not later than May 15th.

CLEMENT COBBOLD, Secretary.

The Gordon Hospital for Rectal

DISEASES, Vauxhall Bridge Rd., S.W.1.

Applications are invited from fully qualified medical practitioners for the post of HOUSE SURGEON (male or female). Salary £75 per annum, with board, residence, and laundry. [illegible] nationality, and qualifications, and [illegible] three recent testimonials in writing to the Secretary by mid-day, May 15th. Duties to *commence* June 1st. (Candidates are not required to call on the Honorary Surgical Staff.)

CLEMENT COBBOLD, Secretary.

St. Bartholomew's Hospital.

OFFICE OF ASSISTANT PHYSICIAN.

Notice is hereby given that a Meeting of the Election Committee will be held on Tuesday, June 4th, at 4 o'clock in the afternoon, to elect an Assistant Physician to this Hospital.

Candidates, who must be Fellows or Members of the Royal College of Physicians of London, are required to lodge 36 copies of their applications and testimonials with the undersigned *on or before Monday*, May 20th.

THOMAS HAYES,
April 26th, 1929. Clerk to the Governors.

St. Peter's Hospital for Stone,

Henrietta Street, Covent Garden, W.C.2.

[illegible] is being established *part-time CLINICAL* [illegible] to organise it, and remain in charge.

Hours of attendance necessary and detailed rules are not yet defined, but it is proposed to pay a commencing salary at the rate of £250 per annum.

Applications for this appointment, which should be accompanied by *eight copies of not* more than three recent testimonials, will be received by the undersigned not later than Tuesday, May 21st.

BEECHEY ROGERS, Secretary.

Victoria Hospital, Burnley.

Wanted, a HOUSE SURGEON (male). *Appointment will be made for six months.* Salary £125 per annum, with board, etc. Particulars of appointment can be had from the *Hon. Secretary*, to whom applications must be sent on or before May 10th next, endorsed "House Surgeon."

7, Grimshaw St., Burnley. F. A. HARGREAVES, Hon. Secretary.

N.B.—This Hospital is approved by the London University for the purpose of the M.B. and M.S. examinations.

The Liverpool Eye and Ear

INFIRMARY, MYRTLE STREET.

Applications are invited for the post of HOUSE SURGEON to the Ear, Nose, and Throat Department of the above Institution. Salary £100 per annum, with board and lodging.

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, should be sent in not later than May 21st, to—

CHAS. W. WRIGHT, Esq.,
9, Harrington St., Liverpool.

Wolverhampton and Midland

COUNTIES EYE INFIRMARY.

HOUSE SURGEON wanted. It is essential that candidates must possess a knowledge of Refraction work. Duties to commence at an early date. There are 50 beds for In-patients, and large Out-patient Department. Salary £200 a year, with furnished apartments, board, and laundry. Gentlemen applying should state age, and send copies of three recent testimonials, to reach the Secretary not later than May 7th.

EUSTACE LEES,
April 29th, 1929. Secretary.

Assistant Medical Officer (male)

wanted at FIFE AND KINROSS DISTRICT ASYLUM, CUPAR, FIFE Applicants must be unmarried and duly qualified medical practitioners. Previous experience in Asylum work a recommendation. Salary £300 to £350, according to experience, with board, lodgings, and laundry. The appointment is subject to deductions under the 1909 Asylum Officers Superannuation Act. Apply, in writing, giving full particulars, to the Medical Superintendent.

Leeds Public Dispensary.

Wanted, JUNIOR RESIDENT MEDICAL OFFICER. Salary £150 per annum, with board, residence, and four shillings weekly for laundry. Separate sitting room. Applications, with copies of three recent testimonials, to be addressed to the Secretary of the Faculty, Public Dispensary, North Street, Leeds.

Golden Square Throat, Nose, and

EAR HOSPITAL, London, W.1

Applications are invited for the post of CLINICAL ASSISTANT. Particulars of duties may be obtained from the undersigned

F. P. CARROLL, Secretary-Supt.

Herts County Mental Hospital,

HILL END, ST. ALBANS

LOCUM TENENS MEDICAL OFFICER required from May 15th. £7 7s. per week, plus board, etc.

Apply to the Medical Superintendent.

North Riding Infirmary,
MIDDLESBROUGH.
General Hospital. 150 Beds.)

SENIOR HOUSE SURGEON (gentleman) wanted to take up duties June 1st. Salary £200 per annum, with board, residence, and laundry. As the present Junior House Surgeon is an applicant for the Senior post, candidates should state if they are willing to accept the post of Junior House Surgeon, the salary of which is £150 p.a., with board, residence, and laundry.

Applications, with three recent testimonials (copies), stating age, qualifications, experience, and nationality, must reach the undersigned not later than May 15th.

CHARLES POSTGATE,
May 3rd, 1929. Secretary-Supt.

Birmingham & Midland Eye
HOSPITAL, Church St., BIRMINGHAM.

Applications are invited for the post of SURGICAL REGISTRAR to this Hospital.

Candidates must have had not less than two years' experience in Ophthalmic work, and should have held a resident post in an Ophthalmic Hospital for at least one year.

Appointment will be for one year with eligibility for re-appointment.

Applications, together with copies of testimonials, must be received not later than first post on Friday, May 10th.

Particulars of salary, duties, etc., can be had from the undersigned, to whom applications should be addressed.

C. A. MASON, General Superintendent.

Bolingbroke Hospital
Wandsworth Common, S.W.11.

Applications are invited from gentlemen engaged solely in the practice of Oto-rhino-laryngology for the post of CLINICAL ASSISTANT in the Ear, Nose, and Throat Department.

The appointment is for one year from June 1st next, and there is an honorarium of £75 per annum attaching to the position.

The successful candidate must be prepared to be in attendance at the Hospital on Wednesday afternoons at 2 o'clock.

Applications, accompanied by copies of three testimonials, should be sent to the undersigned on or before May 7th.

W. S. RANDOLPH BISS, Secretary-Supt.

Leicester Royal Infirmary.
(400 Beds.)

THIRD RESIDENT ANÆSTHETIST.

Applications are invited for this post. Appointment for six months with possibility of renewal. Salary £250 per annum, with board and residence.

Applicants should give particulars of special experience in the administration of anæsthetics, and enclose copies of testimonials, with particular reference to anæsthetic work, to the House Governor and Secretary by first post of Friday, May 10th.

April 24th, 1929.

East London Hospital for
CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.1.

Applications are invited for the Resident posts of HOUSE SURGEON and Whole-time CASUALTY OFFICER (male). The appointments are for six months.

Salary at the rate of £125 per annum, with board, residence, and laundry provided. Applications, together with testimonials, should be sent to the undersigned not later than May 11th.

W. M. WILCOX, Secretary.

[illegible] Hospital are eligible [illegible] scheme with Barnes Hospital, [illegible]

General Hospital, Nottingham.

A RESIDENT CASUALTY OFFICER (male) is required [illegible] May. The appointment is for six months with salary at the rate of £200 a year with board, residence, and laundry. Candidates are required to submit applications, giving [illegible] experience, and qualifications, together with copies of testimonials, not later than Wednesday, May 8th.

P. M. MACCOLL,
House Governor & Secretary.

Birkenhead General Hospital.
(156 Beds.)

Applications are invited for the post of CASUALTY SURGEON (male) at once, salary £100, with board and residence, to take up duties immediately.

Applications, stating qualifications, experience, and nationality, with three copies of recent testimonials, to be sent to the Secretary-Superintendent as early as possible.

Manchester Royal Infirmary.
APPOINTMENT OF HONORARY ASSISTANT PHYSICIAN IN CHARGE OF OUT-PATIENTS.

The Board of Management invite applications for the above appointment.

Candidates must hold the qualifications of a Fellow or Member of the Royal College of Physicians in London, and shall have a diploma from some University requiring examination for its degree. Candidates are required to forward diplomas, original testimonials (not exceeding eight in number), and certificate of age with their applications, addressed to the Secretary, on or before 9 a.m. on Thursday, May 23rd, from whom also a copy of the rules can be obtained. Candidates are required to furnish 45 copies of their applications and dated testimonials, addressed to the Secretary, for distribution prior to the Meeting of the Committee.

Canvassing, directly or indirectly, is forbidden, and the Committee reserve to themselves the right on proceeding to election to take into consideration any complaint that canvassing on behalf of any candidate has taken place.

By Order,
FRANK G. HAZELL,
May 4th, 1929. Gen. Supt. & Secretary.

Royal National Orthopædic
HOSPITAL.

SURGICAL REGISTRAR.

The Committee invite applications for the appointment of a Surgical Registrar (male).

Honorarium £105 per annum. The appointment will be made in the first instance up to October 31st, and will be renewable for a further twelve months on the recommendation of the Medical Board.

Applications, with copies of three recent testimonials, should reach the Secretary, 234, Great Portland Street, London, W.1, not later than May 10th.

Royal Hampshire County
HOSPITAL, WINCHESTER.

HOUSE PHYSICIAN.

Applications are invited from fully qualified men for the above post, which is tenable for *six months* from June 1st. Salary £150 per annum, with board, residence, and laundry. Candidates, who must have had Ophthalmic experience, and be of British nationality, should make application *at once* to the undersigned, enclosing copies of three testimonials.

HERBERT MASLEN, Secretary.

Stroud General Hospital,
STROUD, GLOS.

HOUSE SURGEON, male, required to commence duty on May 20th. Salary £120 per annum, with board, lodging, and washing. The appointment is tenable for six months, but *application* may be made for an extension of this period. Candidates must be registered according to the provisions of the Medical Act.

Applications, *stating* age, *nationality*, etc., together with copies of three recent testimonials, to reach the undersigned not later than May 8th.

C. FORD SPENCER, Secretary.

Miller General Hospital,
Greenwich Road, S.E.10.

OUT-PATIENT OFFICER (male and unmarried) required to see *Medical* and Surgical cases. Attendance daily (except Sunday) from 9 to 1; Tuesdays and Fridays 9 to 5. Salary £150 per annum, and lunch. The appointment is for six months. Applications, *stating age, nationality*, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent as soon as possible to the Secretary.

April 29th, 1929.

St. Albans and Mid Herts
HOSPITAL.

Offers are invited for the purchase of sundry SECOND-HAND X-RAY APPARATUS, which can be inspected at the HOSPITAL, CHURCH CRESCENT, ST. ALBANS.

The Committee do not bind themselves to accept the highest or any offer.

W. G. MARSHALL,
April, 1929. Secretary.

Royal Surrey County Hospital,
GUILDFORD. (125 Beds.)

Wanted, HOUSE SURGEON. Six months' appointment. Salary £150 per annum, with rooms, board, and laundry.

Applications, with copies of three testimonials, to be sent to the Hon. Secretary at the Hospital.

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Leicestershire.—About £700 p.a. Panel 500. Few mids. Visits 4/6. Good house, 4 bed., etc., to rent. Separate surgery. Premium £950.—No. 8469.

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N. W. Coast Town.—Over £3,000 p.a. Old-established. Panel over 1,500. Usual fees. Medium house to rent.—No. 8465.

Staffs.—About £1,200 p.a. Good-class non-panel PRACTICE. Visits 5/- up. Good house available.—No. 8464.

London, N.W.—About £700 p.a. Visits 3/6 to 7/6. Appts. £45 p.a. Small panel. Mids. 3 gns. Good house and garden.—No. 8463.

Wilts. — Unopp. — About £900 p.a. Appts. about £100 p.a. Panel about 600. Visits 3/- up. Mids. 3 to 10 gns. House, 4 bed., etc., nice garden, to rent.—No. 8447.

Kent. — £1,500 share in non-panel, non-dispensing Practice. Appts. about £1,200 p.a. Visits 5/- to 7/-. Mids 5 to 10 gns. Large house to rent.—No. 8460.

Glos.—Unopp. — About £1,270 p.a. Mids. 2 to 8 gns. Visits 3/6 to 21/-. Panel 1,100. House, 3 bed, etc., large garden. House and Practice £2,500.—No. 8458.

Eastern Suburb.—About £1,100 p.a. Panel about £250. Visits 4/-. House, 5 bed., etc.—No. 8458.

South Coast. — Half Share of about £900 p.a. Panel 900. Visits 3/6 up. Premium £750 or offer.—No. 8456.

Co. Durham. — Half Share of about £2,800 p.a. Panel 2,600. Appts. £300 p.a. Mids. from 30/-. Visits 2/6 to 7/6 House, 5 bed., etc.—No. 8453.

N. Wales Coast.—About £1,750 p.a. Panel and appts. about £400 p.a. Mids. 2 to 5 gns. Visits 3/6 to 31/6. House, 4 bed., etc. Separate surgery.—No. 8451.

London Suburb. — About £700 p.a. General mixed PRACTICE. Good house available.—No. 8450.

Kent. — Average £1,500 p.a. Mids. 2 gns. up. Visits 3/6 to 7/6 Panel over 1,300. Large house and garden to rent.—No. 8446.

Beds.—Death Vacancy.—About £1,100 p.a. Panel and appts. £550 p.a. Visits 5/- up. Mids. 3 gns. up. House, 9 beds., etc.—No. 8444.

Home Counties.—Aver. £2,800 p.a. Up to 2/5 share for sale, short Assistancy, possible early succession. Appts. £90 p.a. Small panel. Visits 3/6 up. Mids. 2 gns. up. House, 5 bed., etc., to rent.—No. 8441.

Lincolnshire Coast. — Average £2,300 p.a. Old-estab. middle and working-class. Panel about £350 p.a. Appts. over £100 p.a. Mids. 1½ to 3 gns. Visits 4/- to 10/6. Choice of houses to rent.—No. 8439.

Eastern Counties.—Share about £700 p.a. Visits 5/- up. Panel and appts. over £900 p.a. Mids. 2 gns. up.—No. 8434

Lancs. Coast.—About £3,000 p.a. 1/3 to 2/5 share. Appts. over £500 p.a. Visits 5/- and 7/6. Panel 450. Scope for surgery. House to rent.—No 8429.

Kent.—Country Practice.—About £1,050 p.a. Old-estab. Visits 5/- up. Panel nearly 400. Appts. £55 p.a. Good house, with 6 bed., etc.—No. 8420.

SPECIAL NOTICE.

FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants prepared to pay part of purchase money down and balance by instalments over 7 years (on the security of a Life and Sickness Policy). Full particulars on application to Mr. Percival Turner.

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MIDLANDS.—DEATH VACANCY.—Well-established middle and working-class PRACTICE in country district. Receipts approx. £1,200 p.a. Panel 900. House available. *Premium 1 year's purchase.*

DEVON (Seaport).—Old-established G.P. Excellent house to rent or for sale. Panel 1,100. Receipts approx. £2,000 p.a. Premium £3,600.

LIVERPOOL.—Well-established G.P. Medium-sized house to rent or for sale. Panel 700. Receipts £500 p.a. Premium £750.

LONDON, W.—PARTNERSHIP in a West End Practice. Receipts over £3,000 p.a. Panel 3,400. Prem. for one-third share £2,500. Suitable only to man of good address and experience.

SOMERSET.—PARTNERSHIP in rural Practice situated in charming locality. Suitable for young experienced man fond of sport, hunting, etc. Guaranteed share worth £500 p.a. at 2 years' purchase.

LONDON, E.—Well-estab. working-class G.P., situated on main thoroughfare. House to rent at £80 p.a. or may be purchased. Receipts approx. £850. Increasing panel of nearly 500. Excellent scope. Premium 1½ years' purchase.

HERTS.—In close proximity to London.—Middle-class G.P. Good-sized house and grounds part could be sub-let). Receipts £1,500. Panel 800. Scope for development. Premium 1½ years' purchase. House £2,200. Part can remain on mortgage.

SURREY.—NUCLEUS G.P. situated within easy distance of London, suitable for semi-retired man. House to rent. Receipts £280. Panel 160. Premium £350.

EAST MIDLANDS.—PARTNERSHIP in old-established *country Practice*, with panel of approx. 1,800. Receipts nearly £3,000. Suitable for young experienced man fond of country life. Premium for 1/3rd share with view to half share, 2 years' purchase.

LONDON, N.W.—DEATH VACANCY in residential locality. Freehold corner house. Excellent all-round scope. Panel nearly 800. Receipts over £400. Premium f[illegible]

If the investment you are seeking is not advertised here, let us know your wants, and we will *gladly forward* details of others suitable to your requirements.

[illegible] with view [illegible] country Practice. Receipts approx. £2,000. No panel. Suitable to Varsity Graduate keen on surgery [illegible] years' purchase.

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4. MIDLANDS. — NUCLEUS in middle-class Practice. Receipts £600 to £700 p.a. Panel 118, and rapidly increasing. Good house to rent or for sale. Garage.
5. [illegible] Town]— [illegible] preliminary [illegible] *cession)* in [illegible] Practice. [illegible] Panel over 1,000. Good house.
6. BIRMINGHAM (Suburb). — Middle-class PRACTICE. Established 3 years. Receipts £440 to £500 p.a., and scope for increase. Panel 360. Good house, garage, and garden.
7. NOTTS. COUNTY.—Panel, Colliery, and Private PRACTICE Receipts about £440. Panel 340. Good house to rent. Garage.
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Practices and Partnerships for Disposal.

Full particulars sent free.

1 SUSSEX.—Partnership in Country Practice, £2,750, in residential district (appointments and panel *about* £1,000). Good house (5 bedrooms and 3 attics) with large garden. To rent. One-half share at 2 years' purchase.

2 BUCKINGHAMSHIRE.—Small Country PRACTICE over £300 p.a. Panel 250. Very nice attractive house (8 bedrooms), garden and garage, for sale. Prem., Practice, £500.

3 LONDON, W.—Steadily increasing PRACTICE in rapidly developing Western District. Receipts 1928, £1,145. Panel 750. House (5 bedrooms), with *nice garden*, for sale. Ample scope. Premium £1,650.

4 LEEDS. — Practice £1,800 p.a. Panel 1,400. House (5 bedrooms) for sale or rent. *Premium £2,600*, to include drugs, etc.

5 SOUTH AFRICA.—Old-established PRACTICE in one of the pleasantest towns, with beautiful *climate*, in the Cape Province. Receipts average over £5,000 p.a. House (4 bedrooms) to rent. Purchaser should be able to do major surgery. *Premium £2,500*.

6 SOUTH AFRICA.—Well-established PRACTICE, £1,200 p.a., in the Orange Free State. House *in best* position in centre of town. Rent £10 per month.

7 SOUTH OF ENGLAND.—*Partnership* in *Practice* £2,200 in first-rate County town. Small panel. Well-fitted house (6 bedrooms) to rent. Premium one-half share 2 years' purchase.

8 NORTH DEVON.—Country Practice £775 p.a. in a most beautiful part. Panel 340. Detached house (7 bed and dressing rooms), with *old-fashioned* garden, for sale. Scope. Premium 1½ years' purchase.

9 SOUTH-EAST OF ENGLAND.—Country PRACTICE *about* £2,000, within 10 miles of Coast. Panel 720. House has 5 bedrooms, garage, and large garden. Prem. £2,250.

10 NORTH-EAST COAST. — Ophthalmic PRACTICE of about £400 p.a., *capable* of increase, in favourite watering-place. Large house in best part, which need not be taken. Prospects of Hospital *appointment*. Premium £500.

11 MIDLANDS.—*Non-dispensing Practice* in prosperous town. No panel, clubs, or midwifery. Receipts 1928, £1,200, including small *amount from Electrotherapy*. House (5 bedrooms) for sale. Scope. Prem. £1,500, to include apparatus.

12 ESSEX.—Practice averaging £1,216 p.a., in outlying district, 30 *minutes from London*. Panel 550. Nice detached corner house (5 bedrooms) to be sold or let. Premium 1½ years' purchase.

13 LONDON, W.—Middle-class Practice £730 p.a. in residential Western Suburb. No panel. House, with 5 bed*rooms* and garden, to rent. Premium £1,100.

14 DEATH VACANCY.—London, S.W.—*PRACTICE* about £200 p.a., with good scope for increase. Panel 30. House, with 3 bedrooms for sale.

15 GLOUCESTERSHIRE. — Partnership in Country Practice about £2,300 p.a. Panel nearly 1,000. Applicant should be English or Scotch, aged 28 to 30, *and have held Hospital appointment*. One-third share at 2 years' purchase, after preliminary *assistantship*.

16 ISLE OF WIGHT.—Easily worked PRACTICE of £1,340 p.a. (including clubs and appointments worth £300). Panel 500. Convenient modern house. Garden and garage. Scope. Premium, Practice and house, £3,800.

17 YORKSHIRE (E.R.). — Partnership in Practice over £3,250 p.a. in manufacturing town. Panel over 3,100. *House* (4 bedrooms) to rent. One-third share at 1½ years' *purchase*.

18 SHEFFIELD. — Non-dispensing Practice *about* £800. No panel. Conveniently situated house (6 bedrooms). Premium, Practice and house, £2,000.

19 LONDON, S.W.—Practice of £550 p.a. in pleasant outlying suburban district. Panel 417. House, with 4 bedrooms, to rent. Premium £700.

20 DEATH VACANCY.—NORTHUMBERLAND.—PRACTICE £425 p.a. in pleasantly situated country town, easy distance of Newcastle. Panel 70 (not encouraged). Eight-roomed house, with *large garden*, to be let. Good schools.

21 EAST COAST. — Partnership in Practice over £2,000 p.a. in small rapidly growing popular watering-place. Panel 700. Partner should be aged 25 to 30, single, with English *qualifications*, and have held Hospital appointment. Preliminary assistantship. One-third share at 2 years' purchase.

22 LANCASHIRE.—Practice of about £2,000 in semi rural district, easy distance of several good towns. Panel *returns about* £520 p.a. Nice house (6 bedrooms), with garage and garden.

23 MONMOUTHSHIRE. — Practice between £1,400 and £1,500 (£1,100 from panel and contract work) in progressive area. Modern six-roomed house, with garden, to rent. *Small* cottage hospital. Premium one year's purchase, part by instalments if desired.

24 LONDON, E. — Practice over £700 in *populous district*. Panel nearly 500, rapidly increasing. Shop-fronted house for sale or rent. Premium 1½ years' purchase.

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Practices and Partnerships for Disposal (continued).

25 HOME COUNTIES.—Partnership in Practice between £4,000 and £5,000 p.a. in first-rate residential town. Panel 1,900. One-fourth share at 2 years' purchase.

26 S. WALES.—Better-class Practice, nearly £2,000 p.a., in important and rapidly growing town. Panel 500. Large house, in own grounds, to rent. Scope for increase. Good Hospital and scope for major Surgery.

27 N. DEVON. — Partner required (after preliminary assistantship) in Practice worth £3,000 p.a. in first-rate country town. Panel over 2,100. Well-equipped Hospital. One-third share to suitable man at 2 years' purchase.

28 N. WALES.—Very old-established, £1,346 p.a. in small town. Panel 716. House (6 bed and dressing rooms) to rent. Premium 1½ years' purchase.

29 MIDLANDS.—Partnership in Practice £5,800 p.a. in first-rate residential county town. House (5/6 bedrooms) to rent. One-half or one-third share at 2 years' purchase. Partner should have F.R.C.S. degree.

30 LONDON, N.—Rapidly increasing Cash and Panel PRACTICE. Cash receipts last year £715. Panel 510. Shop-fronted Surgery. Rent £53. Premium £800.

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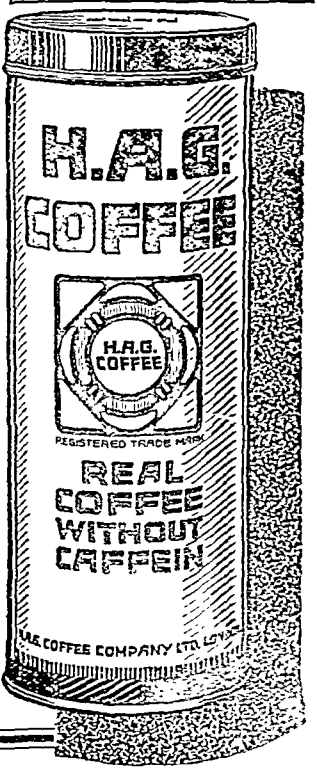

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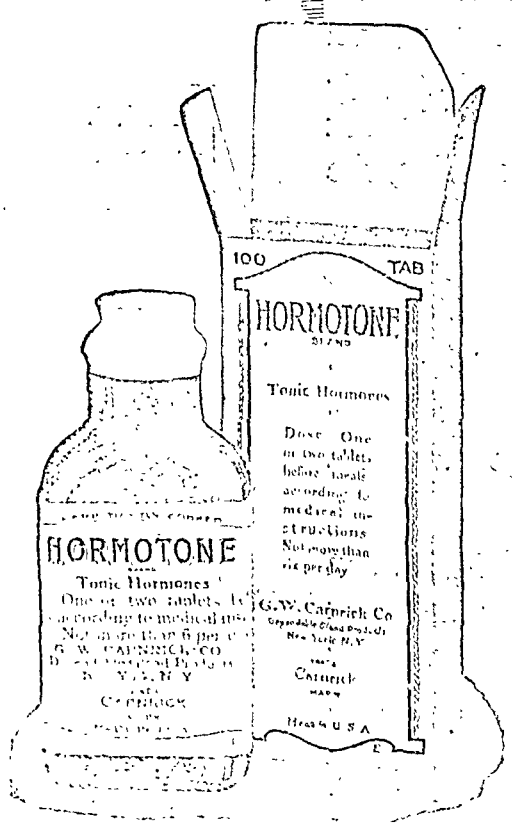

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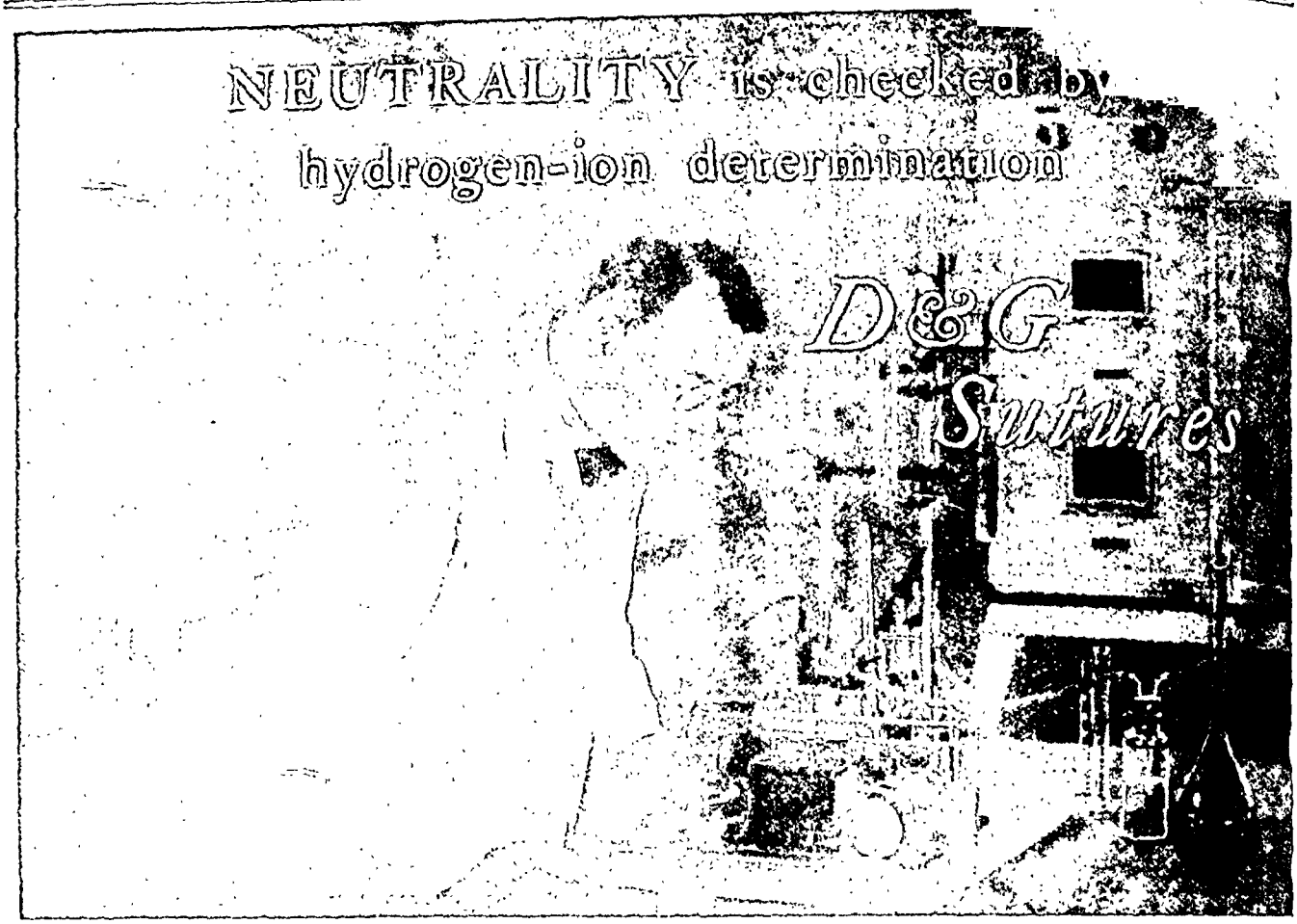

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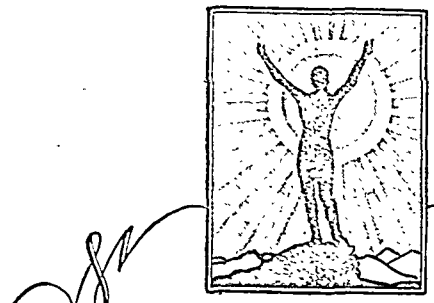

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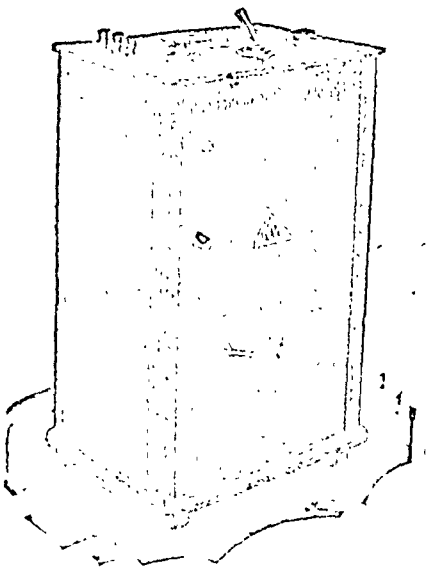

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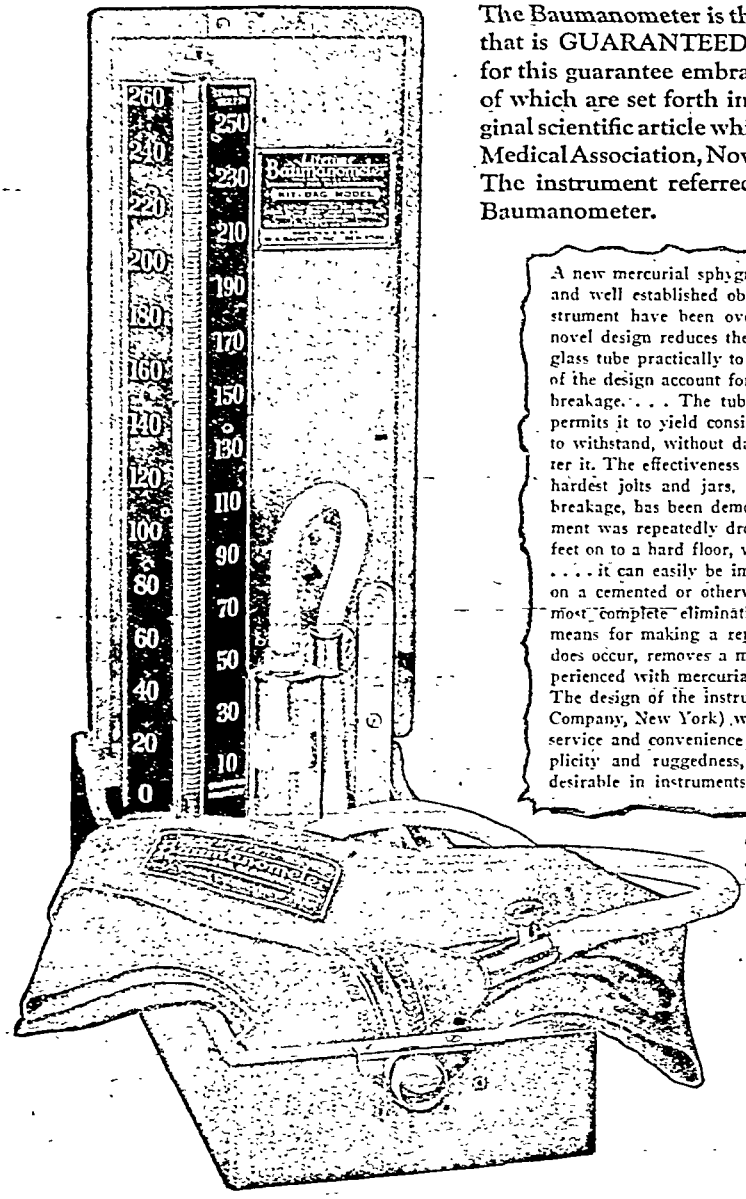

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The active substances of the extracts from cone bearing pine trees (Pinus silvestris, Abies alba, Pinus montana) is found in an oily substance commonly known as pine oil.

Novopine Sparkling Pine Bath Tablets contain this oil in a convenient form and an effervescence is introduced to facilitate successful solution in the bath. Their therapeutic value lies in their action on skin, lungs, and heart. For, in addition to the direct action through the pores of the skin, the ozonic aroma given off is automatically inhaled during the taking of a hot bath.

Besides their general cleansing and health-giving properties, they have been found especially beneficial as a remedy against nervous heart diseases and kindred disorders.

Samples on request from Natural Products Ltd., 40, Furnival Street, E.C.4.

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Sparkling Pine Bath Tablets

For Diabetics

Appleby's Starch-Reduced and Starch-Free Flours

1-oz. of FLOUR (30 grams) contains:—

	Carbohydrate.	Protein.	Calories.
No. 1. WHITE	16.5 grams.	6.9 grams.	98
No. 2. BROWN	15.0 ,,	6.3 ,,	93
No. 3. WHITE	11.1 ,,	9.6 ,,	87
STARCH-FREE	Nil.	18.9 ,,	76

Doctors are invited to write for samples and further particulars of these flours to

Josh. Appleby & Sons, Ltd., Carolina Street, Bootle, Liverpool.

EATAN

Pronounced E-TAN

NEURO TONIC
NUTRITIVE
DIGESTIVE
RECUPERATIVE

A great advance on Meat Juices, Jellios, Essences, etc., particularly in extreme Weakness, Gastritis, Fever, Debility, after Operations, Tuberculosis, etc. Very palatable. Non-irritant.

Dr. Haff, after long experience in the transplantation of glands in deficiency diseases, conceived and produced the hydrolysates contained in Eatan for the positive regeneration of the body tissues, when the natural processes of metabolism fail to function normally.

A host of testimony from the medical profession and numerous clinical tests have definitely established Eatan as a unique restorative beverage for invalids.

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Special Terms to Hospitals.

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Supplied in tubes sufficient to vaccinate one person at 8d. each.

Packing and postage 2d. each extra.

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VACCINES

AUTOGENOUS AND STOCK.

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Prepared under licence of the Ministry of Health; issued in eight varieties, for the treatment of Staphylococcal and Streptococcal infections of skin and mucous membranes.

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INTESTINAL SUBINFECTION

SALVITAE is the key whereby the physician may control elimination and alkalinization, thus dealing fundamentally and effectively with Intestinal Subinfection, Toxæmia, Acidosis, Uricacidæmia, Constipation, and a large number of disorders characterized by, and more or less dependent upon, faulty metabolism, imperfect elimination, and disturbances of the acid-base equilibrium of the body.

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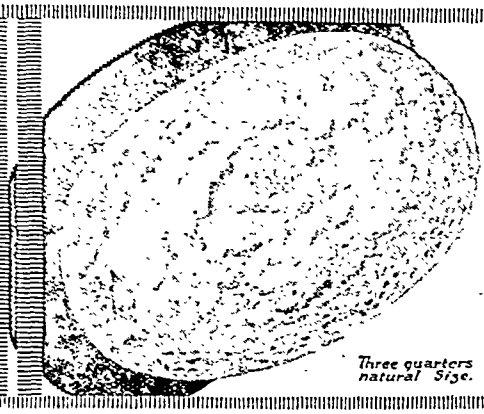

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Unsolicited testimonials daily for Carr's famous Bath Rusks, which are ideal for babies and young children.
Scores of letters from grateful mothers

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SOAPS.
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A Brighton doctor writes:—"The Sphagnol Ointment acted like a charm in an obstinate case of Pruritus, the Soaps are excellent, and the Shaving Soap the best I have ever used."

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Total extract of the glands of the intestine Biliary Extract-Agar-Agar-Selected Lactic Ferments

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LARGELY AND SUCCESSFULLY PRESCRIBED IN

Skin Diseases, Rheumatism, Gout, Neurasthenic : : Conditions in Arthritic Subjects, Etc. : :

And as a valuable addition to the Inunction TREATMENT OF SYPHILIS with Mercury.

Employed in BATH and TOILET BASIN.

Possesses powerful Antiseptic, Antiparasitic, and Antalgic properties. Relieves intense Itching and Pain, is WITHOUT OBJECTIONABLE ODOUR, and does not blacken the bath enamel. Recommended for the Skin and Hair. Especially useful in the treatment of Acne and Seborrhœa of the Scalp. Largely used in dermatological practice.

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"SULPHAQUA" is stocked by the leading Wholesale Houses in Canada, Australia, New Zealand, South Africa, India, U.S.A.

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SOLUTION of IRON and ARSENIC.

Specially prepared for hypodermic or intramuscular injection. It is a valuable antiperiodic. Particularly indicated in Lymphadenoma, Lymphatic Leukæmia, Secondary Anæmia following malaria, and where gastric conditions do not allow oral administration of iron.

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WYLEYS LIMITED WHOLESALE DRUGGISTS COVENTRY *Established 1750.*

ELIXIR BROMO-VALERIAN CO.

Free from any disagreeable taste or odour.

Each fluid drachm (4 c.c.) contains:

Strontii Bromidi	5 gr.	Tinct. Adonis Vernalis	5 m.
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Useful for functional nervous affections, particularly in controlling epileptic seizures.

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British and Best. VITALIA MEAT JUICE 8% Hæmoglobin

Sample free to medical practitioners on request to Vitalia Ltd., 17, Boniface St., London, S.E.1.

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CREAM OF MAGNESIA WITH LIQUID PARAFFIN

(Contains 30% Liquid Paraffin)

A stable, well-balanced combination containing 30% Liquid Paraffin held in suspension in a finely divided state. Its consistency is such that the tendency to leak exhibited by Liquid Paraffin is eliminated.

Regesan Cream of Magnesia with Liquid Paraffin provides suitable treatment for all digestive troubles with which constipation and hæmorrhoids are associated. It is certainly the ideal laxative during pregnancy and lactation, and most suitable for infants and children.

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Full size trial sample free on application by postcard to BOOTS THE CHEMISTS, Station St., Nottingham.

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OVER 800 BRANCHES IN GREAT BRITAIN

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VICHY-CELESTINS

And the other State Springs of Vichy
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¶ This Natural Alkaline Mineral Water may be prescribed with absolute confidence with regard to its purity and natural condition. It is bottled at the Springs under the most careful supervision, and to ensure fresh supplies is imported with regular frequency.

¶ The VICHY WATERS, being almost devoid of Sulphates, are most agreeable to the taste, and are daily relied upon by Physicians the world over in the treatment of Gout and Rheumatism and for Affections of the Liver, Stomach, etc.

NATURAL VICHY SALTS for Drinking and Baths.
VICHY DIGESTIVE PASTILLES prepared with Natural Vichy Salts.

CAUTION.—Each bottle from the STATE SPRINGS bears a neck label with the word "VICHY-ETAT" and the name of the SOLE AGENTS:

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Samples free to Members of the Medical Profession.

What your Professional Colleagues say of HUMANISED TRUFOOD

Dear Sir,

It has always been a rule of mine to avoid writing anything in the nature of a testimonial. So excellent, however, has been the result of your Humanised Trufood in the case of my own seven months' old baby that I feel a line at least of congratulation is due to you.

This personal test, referred to here, has convinced me that this preparation of yours is an ideal medium for the purpose of supplementing breast milk in cases where the latter is insufficient in quantity. At three months of age my own child was 2½ lbs. under the average weight. By means of careful test weighing, and an addition of Humanised Trufood to make up the requisite quantity following each breast feed, the baby's weight steadily rose, and reached normal in less than five weeks.

She is now doing splendidly (seven months) and is second to none in health, looks, and liveliness.

(Signed) ———, *M.R.C.S., L.R.C.P.*

TRUFOOD LIMITED, THE CREAMERIES, WRENBURY, NR. NANTWICH, CHESHIRE

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Largest VITAMIN B Content

Important Conclusions

The question as to what form of bread provides the essential Vitamin B most completely and economically has now been settled by independent experiments.

It is shown that in 100 g. dried bread the content of Vitamin B in milling products and yeast is:

White Bread	200
Wholemeal Bread	1,450
HOVIS Germ Bread	2,600

That the presence of the Vitamin is essential actively to promote health in adults and sturdy growth in children, is generally accepted from continued observation.

Wheat is rich in Vitamin B and the germ is the richest part.

HOVIS is made from the white flour, with the germ added. This gives HOVIS its pre-eminent position as a basic ration.

You obtain—as demonstrated by series of experiments by independent investigators—a greater active nutritive value from HOVIS than from any other cereal.

You need a smaller amount of HOVIS than any other bread for the proportion of nourishment received. This is a matter of very practical importance, especially where, as in so many homes and institutions, bread of necessity forms a large part of the daily diet. With children especially, a far larger amount of Vitamin B is supplied to them when fed on HOVIS.

One slice of HOVIS weighing 1 oz. contains as much Vitamin as 2 oz. of Wholemeal, and as 5 to 6 g. of fresh yeast.

Everybody likes it—another practical consideration, especially with children, and it is digested nearly as easily as white bread, and much more so than wholemeal.

HOVIS

(Trade Mark.)

Best Bakers Bake It

HOVIS LTD. LONDON & MACCLESFIELD

Invaluable as a Galactagogue

This nourishing and sustaining food drink is helpful to nursing or expectant mothers

NOT only hundreds, but literally thousands of cases are recorded in which this well-known preparation — Horlick's Malted Milk — has proved its efficiency as a body-building food.

It is particularly valuable as an addition to the diet of the expectant and nursing mother. For Horlick's is a perfectly balanced food containing fat, proteins and soluble carbohydrates combined together in correct nutritive ratio. It is prepared from fresh, full-cream cows' milk, selected wheat and malted barley — and, during manufacture, is partially predigested to ensure easy assimilation.

Horlick's is rich in valuable malt-sugars, but contains neither cane sugar nor free starch. It is therefore extremely easily digested, and highly productive of energy.

These characteristics make it valuable as a galactagogue. Its abundant nutriment supplements any deficiencies in the mother's regular diet, and promotes a regular and nourishing supply of milk, and its easy digestibility makes it acceptable when other forms of nourishment are unwelcome.

Taken during pregnancy, it builds up the mother and helps to maintain her vitality. A cupful taken regularly first thing in the morning frequently abolishes and almost invariably alleviates the discomfort of morning sickness.

Horlick's is now obtainable in two forms — the original, natural-flavoured Malted Milk, and the new Chocolate Flavoured form — identical in its constituents with the original Horlick's, but flavoured with fine chocolate. Horlick's is sold in sealed glass bottles, price 2/-, 3/6, 8/6, 15/-. Also in tablet form.

Further details may be obtained from Horlick's Malted Milk Co., Ltd., Slough, Bucks.

Therapeutic Ointments

Ung. Renaglandin and Ung. Renaglandin Anaesthetic . .

Invaluable in Hæmorrhoids—Styptic.

Ozoline . . .

An ideal method of employing the detergent action of Hydrogen Peroxide.

Ung. Iodsam . .

A stainless ointment containing 10% of Iodine. Useful in Rheumatic affections, Tinea and Ringworm.

Ung. Zoleas . .

A combination of Zinc and Mercury Oleates; Invaluable in dry and chronic Eczema, especially of gouty origin.

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(D.76) "Improvement in weight and general tone. Heart is stronger and angina pains less frequent."
M.B., B.S.

(D.101) "In about a week felt better, and in two months put on 3 or 4 lbs. in weight." M.D.

Bemax is now established as the B vitamin food. Over 27,000 members of the medical profession are taking Bemax themselves or prescribing it for their patients, with excellent results. The diseases for which medical men are prescribing Bemax are Constipation, Intestinal Toxaemia, Debility, Neurasthenia, Rheumatism, Gastric disturbances and all forms of skin disease. In fact, any ailment due to B-vitamin deficiency. If you have not tried Bemax, a free full size tin will be sent you on receipt of your professional card.

THE BEMAX LABORATORIES, VITAMINS (1928) LIMITED
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DUSTING POWDER

COMPOSED OF ZINC OLEATE & BORIC ACID

IN COMBINATION WITH PURE WHEATEN STARCH

This powder is useful for dusting irritated and ulcerated surfaces, for burns and scalds, and for excessive perspiration. It is an excellent preparation for the toilet and an essential adjunct to the nursery.

Supplied in ½-lb. and 1-lb. enamelled tins; also in 2-oz. enamelled tins with dredger tops.

SAMPLE AND PRICES ON APPLICATION.

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(Hexyl-resorcinol B.D.H.)

The advent of a new journal devoted entirely to the subject of the treatment of urinary diseases serves to emphasise the importance of the study of urology.

Caprokol, immediately after its discovery, established itself as the best all-round antiseptic for use in the treatment of urinary tract infections.

Caprokol therapy gives immediate relief from the pain, frequency and other distressing symptoms associated with urinary troubles. The administration of Caprokol ensures hours of continuous sleep (unbroken by the necessity for frequent micturition), resulting in comfort, increase of appetite and marked improvement in general health.

Clinical evidence shows also that persistent treatment with Caprokol leads, on account of its continuous germicidal action on the urine, to complete disinfection of the urinary tract.

In Capsules for Adults *In Solution for Children*

Sample on request

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LONDON N-1

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BOOTS PRODUCTS

Viules (BOOTS)

AMPOULE PRODUCTS

Adrenalin Hydrochloride, 1-1000, 0.5 c.c.
Amyl Nitrite min. 2, min. 3, min. 5.
Camphor in Oil, 1 c.c., Camphor 20%
Camphor in Oil, 1 c.c., Camphor 10%
Emetine Hydrochloride, gr. $\frac{1}{4}$ in 1 c.c.
Emetine Hydrochloride, gr. 1 in 1 c.c.
Emetine Hydrochloride, gr. $\frac{1}{6}$ in $\frac{1}{2}$ c.c.
Glycerophosphate Compound, 1 c.c.
Iron Arsenite, gr. 1 in 1 c.c.
Iron Arsenite, gr. 1, and Strychnine Sulphate, gr. $\frac{1}{30}$ in 1 c.c.
Morphine Sulphate, gr. $\frac{1}{2}$ in 1 c.c.
Morphine Sulphate, gr. $\frac{1}{4}$, Atropine Sulphate, gr. $\frac{1}{100}$ in 1 c.c.
Quinine Bihydrochloride, gr. 5 in 2 c.c.
Sodium Cacodylate, gr. 3 in 1 c.c.
Sodium Morrhuate, 3% in 2 c.c.

Outstanding features of Viules (Boots) are :—

(1) The contents are sterile.
(2) Accurate measure is guaranteed.
(3) The contents are standardised chemically, and also physiologically where this is possible.

Obtainable through all branches of Boots the Chemists.

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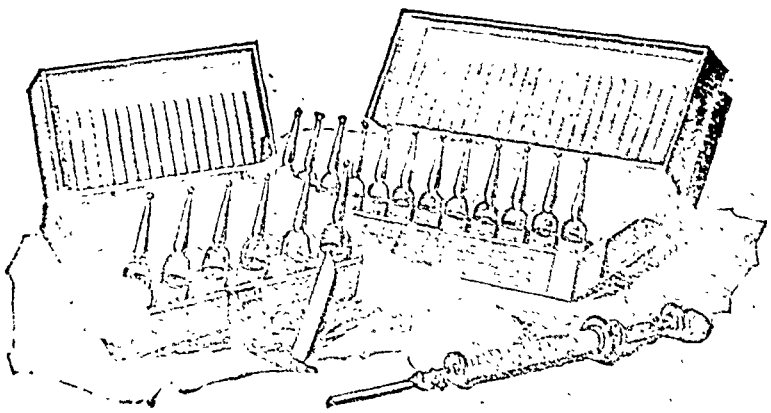
BOOTS PURE DRUG CO. LTD.,

Manufacturing Chemists & Makers of Fine Chemicals

NOTTINGHAM ENGLAND

Telephone: Nottingham 45501. *Telegrams* "Drug" Nottingham.

V.B. 26



Manganese Butyrate B.D.H.

Manganese Butyrate B.D.H. is proving itself to be of exceptional value in the treatment of acute infections, particularly those of staphylococcic and streptococcic origin.

In cases of furunculosis, carbuncles, erysipelas and whitlows Manganese Butyrate therapy is particularly successful, whilst some very striking results have been obtained with it in acute gonococcal urethritis.

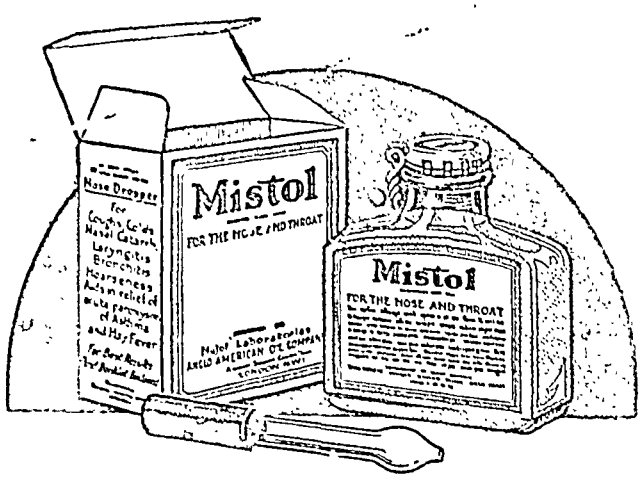
Literature on request

Manganese Butyrate B.D.H. is supplied in ampoules and in rubber-capped vaccine bottles containing a 1 per cent. aqueous solution ready for intramuscular injection.

THE BRITISH DRUG HOUSES LIMITED
LONDON N.1

M.B.3

For Head Colds Prescribe "Mistol"



MISTOL and the Mistol Dropper are a real advance in nose and throat therapy. Menthol, eucalyptol, camphor, and chlorbutynol are combined in a specially prepared petroleum base, which keeps these soothing and healing ingredients in direct contact with the mucous membrane for a considerable length of time.

Unlike douches, Mistol avoids any possibility of sinus trouble. With head tilted back, the patient should let Mistol drop into each nostril until it is felt to be running into the back of the throat. It is manifestly superior to salves which do not reach all parts of the mucous membrane.

Especially efficacious in coughs and colds, simple, congestive, and catarrhal rhinitis, hoarseness, bronchitis, and laryngitis.

Sold in original sealed cartons containing a—

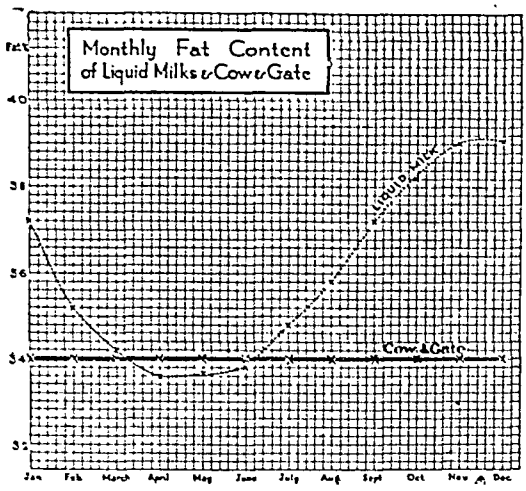
Mistol
(Registered Trade Mark)

Two-ounce Bottle and Mistol Dropper.

Made by Nujol Laboratories

Distributors: **ANGLO-AMERICAN OIL CO., LTD., Albert Street, Camden Town, London, N.W.1**

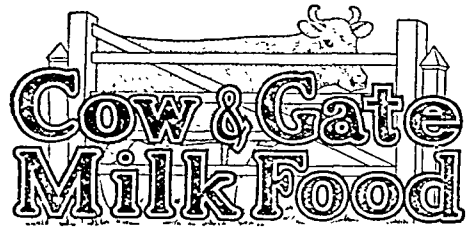
A RELIABLE BASIS



The above chart shows the large fluctuations in the fat content of liquid milks throughout the year, as compared with the unvarying fat content of COW & GATE, which is based on the fat content of average healthy Breast Milk.

Fat content in COW & GATE reconstituted (1 in 8) 3.4%
Fat content in average Breast Milk 3.3% — 3.5%

This is ONE of the many reasons why COW & GATE is one of the safest and most reliable alternatives when breast-feeding fails, and why it affords the most reliable basis for Infant-feeding modifications.



ENQUIRIES FOR FURTHER INFORMATION ARE INVITED.

COW & GATE LTD.,
GUILDFORD, SURREY.
Wincanton, Sherborne, Beaminster, Evershot, Kildorrery, Somerton, Carmarthen.

NEW-PROMONTA

A SPECIFIC FOOD FOR NERVES AND BRAIN

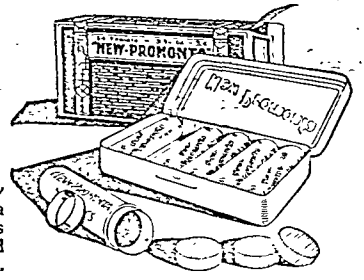
It has been definitely established both in private practice and clinical work that "NEW-PROMONTA" is a very valuable aid in stimulating healthy cell formation and growth, particularly as regards the nerves and brain.

The value of "NEW-PROMONTA" is due to the very high percentage of Nerve Lipoids present in it, and in no less degree to the fact that a special method of preparation leaves Lipoids, Phosphatides, and Cholesterols not only intact, but also in the exact combination in which they are present in the living nerve cells.

In addition to the constituents mentioned above, "NEW-PROMONTA" contains other, well-known body builders and nutritious substances—notably Iron, Hæmoglobin, Lime, Albumins, and the Vitamins A, B, D, and E.

TO TEST "NEW-PROMONTA."

A trial supply of "NEW-PROMONTA," together with a collection of authoritative data on its composition and the tests to which it has already been subjected, will be sent post free to any Doctor, Clinic, or Hospital upon application.



"NEW-PROMONTA" in tablet form is supplied in handy boxes containing 54 tablets at 3/6. Each box includes a metal container for the pocket, which holds a day's supply. "NEW-PROMONTA" in powder form is supplied in sealed air-tight boxes of ¼-lb. at 3/-, and ½-lb. at 5/6.

PROMONTA COMPANY LIMITED, Westmorland House, 127/131, Regent Street, LONDON, W.1.
'Phone: REGENT 7950.

Successful Treatment of Hyperchlorhydria and Associated Conditions

"Alocol" (Colloidal Hydroxide of Aluminium) has proved remarkably successful in the treatment of hyperchlorhydria, gastric ulcer, fermentative dyspepsias with gastro-intestinal flatulence, acid eructation and other symptoms common to gastric disease.

The advantages of "Alocol" are that it actually removes from the system the causative acid radicle (Cl) instead of merely neutralising it, and so permitting reabsorption, accumulation and consequent recurrence of the symptoms of the disease.

Furthermore, "Alocol" neither hinders proteolysis nor causes destruction of any food element or factor. "Alocol" has a distinct healing and sedative effect; it promptly allays irritation by absorbing acid and other irritants.

Complete chemical history of "Alocol" with convincing clinical reports and supply for trial, sent free to physicians on request.

A. WANDER, Ltd., Manufacturing Chemists, 184, Queen's Gate, London, S.W.7.

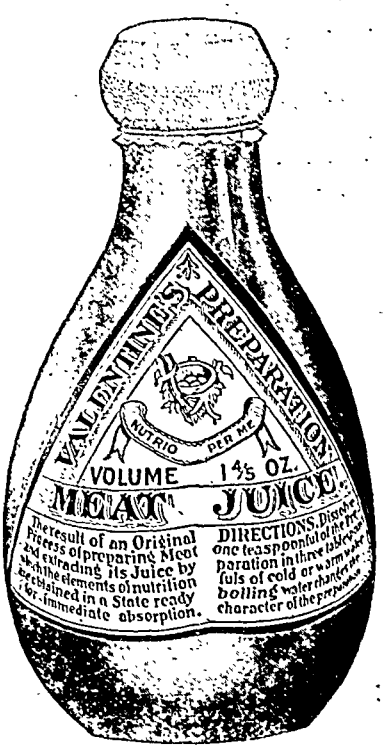
Works: KING'S LANGLEY, HERTFORDSHIRE. M231

ALOCOL

Colloidal Hydroxide of Aluminium

Valentine's Meat-Juice

In cases of **Extreme Exhaustion**, at **Critical Times**, in **Wasting Diseases, Low Forms** of **Fever, Cholera Infantum, Diarrhoea, Dysentery, Influenza, Pneumonia** and **Phthisis**, when other Food fails, **Valentine's Meat-Juice** demonstrates it Power to **Sustain** and **Strengthen.**



Physicians are invited to send for Clinical Reports from Hospitals and General Practitioners in all parts of the world.

For sale by European and American Chemists and Druggists.

VALENTINE'S MEAT-JUICE COMPANY,

Richmond, Virginia, U. S. A.

JB 93

The after-effects of Illness are sometimes more serious than the disease itself

Compound Syrup of Hypophosphites

TRADE "FELLOWS" MARK

accelerates Convalescence, restores Energy and Vitality; and for over sixty years has been known as

"THE STANDARD TONIC"

Samples and Literature upon request.

FELLOWS MEDICAL MANUFACTURING CO., Inc.
26 Christopher Street, New York, U. S. A.

Kaylene-ol

POST-INFLUENZAL DEPRESSION

is partly a direct effect of Influenzal Toxins, but is largely due to Toxæmia arising from the debilitated digestive tract.

KAYLENE-OL prevents Intestinal Toxæmia —thus shortens convalescence and enables the patients to resist secondary infection.

Literature and supply for Clinical trial obtainable from the Manufacturers:

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Telephone: MAYFAIR 1608. Telegrams: KAYLOIDOL, WESDO, LONDON.

Intestinal Disinfection

ALIMENTARY TOXÆMIAS

IN our last advertisement, the subject of Alimentary Toxæmia was briefly discussed, and intestinal disinfection by means of Kerol Capsules was held to be the first line of treatment.

The reason for this may be stated as follows:—None of the ordinary so-called intestinal antiseptics, such as Salol and Beta Naphthol, are found experimentally to exert any disinfection of the contents of the bowel.

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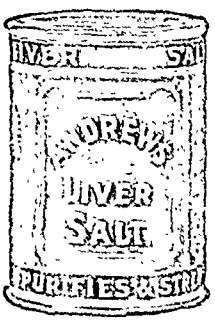

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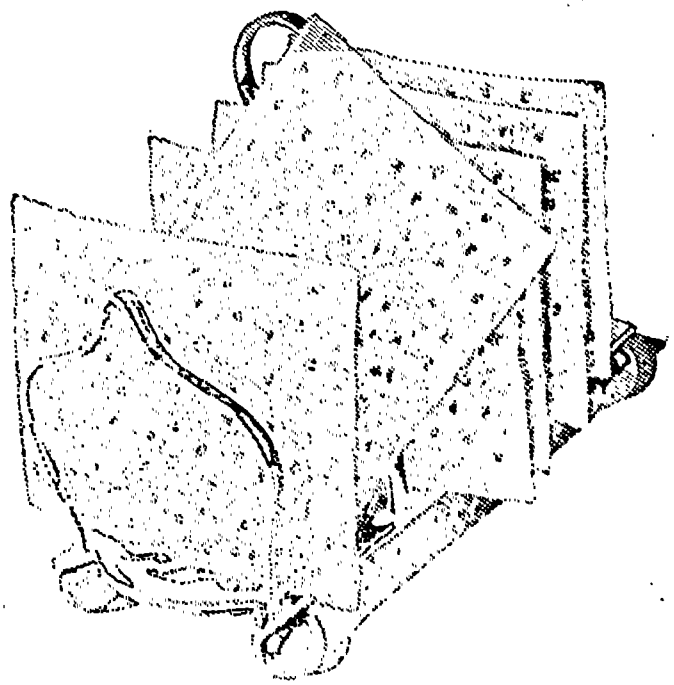

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DATE: c. 250 B.C.

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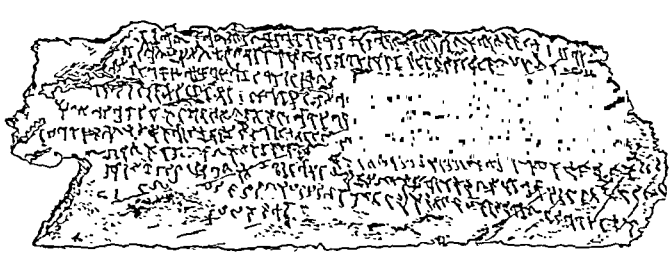

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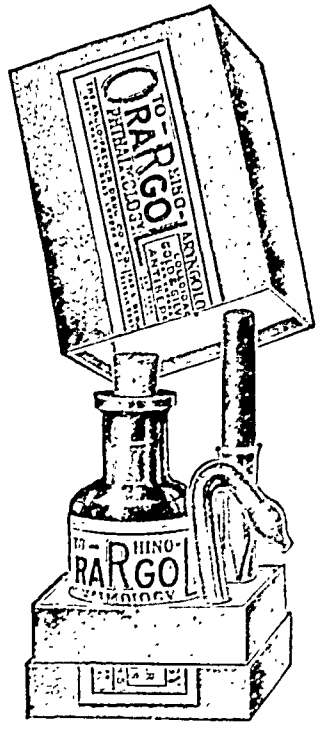

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An Address
ON
TUBERCULOSIS AND THE NERVOUS SYSTEM.*

BY
SIR FARQUHAR BUZZARD, K.C.V.O., M.D., F.R.C.P.,
REGIUS PROFESSOR OF MEDICINE, OXFORD UNIVERSITY.

THE title of my address gives me a wide choice of subjects for discussion, a choice which must be limited by the time at my disposal and influenced by the wish to touch upon matters of interest and importance. Before considering the direct results of the invasion of the nervous system by the tubercle bacillus let me call your attention to such changes as may occur in the personality of patients who suffer from tuberculosis of other organs. It would be surprising if changes did not occur, and equally surprising if they did not vary with, and to some extent depend upon, the inherent and acquired characters of the individual. What other factors may be concerned in their production? The psychogenic factor must be admitted, and this, at its outset anyway, can hardly fail to be a depressant in its action. In these days it is scarcely possible for a victim of pulmonary tuberculosis to be ignorant of the nature of his trouble or to be blind to the inferences to be drawn from the diagnosis of consumption or phthisis. The initial phase of depression, born of this knowledge, is not, however, necessarily of long duration; reassurance, the beneficial results of treatment, and possibly the absence of pain, combine to bring about a brighter outlook. But the "spes phthisica" denotes something more remarkable—that is to say, the inability of the patient to realize the gravity of his condition in spite of increasing distress, increasing disability, and all the signs which, to the onlooker, point to only one end: That "hope springs eternal in the human breast" is not a scientific explanation of this phenomenon and is not supported by another quotation from Pope: "Heaven from all creatures hides the book of Fate, All but the page prescribed, their present state." I would submit that in this instance it is the poisonous products of disintegrating bacilli, exerting their influence on the highest nerve centres, which hinder realization of the present state

This suggestion does not seem so far-fetched if we recall the picture of Korsakow's psychosis, a clinical syndrome which in its earliest stages is characterized by a defect of retention for recent events, a lack of insight and some degree of euphoria, accompanied by the ability to converse with clearness, intelligence, and plausibility. In the majority of cases Korsakow's psychosis is etiologically concerned with the abuse of alcohol, but it has been observed in connexion with malaria, typhoid fever, and tuberculosis. In support of the toxic origin of phthisical optimism is the fact that it is more often observed in severe and chronic cases than in patients whose favourable progress would give it justification. In other words, its presence, although merciful, does not warrant a cheerful prognosis.

DISTURBANCES OF NERVOUS FUNCTION.

Most patients suffering from chronic tuberculosis undergo changes in disposition, changes which are common to many forms of invalidism and for which their relations and friends, on the one hand, and their general nervous exhaustion on the other, are mainly responsible. Irritability, lack of consideration, indecision, vacillation, and failure of concentration are all familiar features of any sick-room and cannot be considered pathognomonic.

Psychoses, generally speaking, have no special incidence on tuberculous patients, but the susceptibility of psychotic patients to pulmonary tuberculosis is, of course, well recognized, and the association of mental disorders with tuberculosis in family histories is met with more frequently than can be explained by coincidence.

The evidence for a specific peripheral neuritis of tuberculous origin is not convincing, and I cannot recall a case which gives it support. Multiple neuritis may develop in bedridden patients suffering from septic absorption, and it is difficult to disregard that factor in a case of tuberculosis complicated by secondary infections.

The regulation of the autonomic nervous system is often unstable; pyrexia, sweats, localized vasomotor disorders such as those seen on the cheeks, are significant in this connexion, and a syndrome indicating hyperthyroidism may attract attention. In addition, the cervical sympathetic nerve supply may be involved in the local morbid process and oculo-pupillary phenomena develop on one side.

No physician whose practice is largely concerned with thoracic disease can afford to neglect the study of pains, nor to overlook the significance of painful and tender areas on the surface of the body remote from their site of origin. The pain referred to the shoulder region, accompanied by cutaneous hyperalgesia, when the diaphragm is the seat of disease, is a case in point, and the various locations of headache associated with pathological disturbances in different parts of the lung are more than haphazard in their determination.

So much for some of the casual disturbances of nervous function resulting from the presence of a tuberculous lesion in any part of the body. Such a lesion, however, once established, must be regarded as a potential menace to the nervous system itself, with the possibility of attack either by direct extension through the tissues which form its natural, but not always efficient, protection, or through the medium of metastasis. Of all infections of the nervous system, with the exception of syphilis, the tuberculous is the most frequent, especially during the periods of infancy, childhood, and adolescence.

TUBERCULOMA.

This age incidence is applicable to the occurrence of tuberculomata, which are probably the commonest tumours of the brain in the young. The majority of them are more of academic interest than of practical importance, as they are often small, multiple, and discovered in patients who have succumbed to phthisis or to a secondary meningitis. They are generally located in that part of the brain and brain stem which fills the posterior fossa.

A more important, though less common, problem is presented by a large tuberculoma developing in one cerebral or cerebellar lobe, and giving rise to the characteristic signs and symptoms of an intracranial neoplasm. Such an event may occur in a patient who has an apparently quiescent tuberculous lesion in the thorax and whose general health is more or less unimpaired. A typical example of such a problem is afforded by a case with which I had to deal a few years ago.

A young married woman, about 24 years of age, was under my care in hospital on account of headache, vomiting, and early optic neuritis. She presented physical signs which pointed to a tumour of the right frontal lobe, and others which were unmistakably those of a small tuberculous lesion at the apex of one lung. The probabilities were in favour of a cerebral tuberculoma, but it was quite possible that a growth of some other nature might be responsible for the patient's trouble, and my colleague Sir Percy Sargent agreed to explore the site of disease. He found and removed a spherical hard mass, about the size of a large marble, embedded just beneath the surface of the brain and easily detachable from the surrounding soft tissue. Its consistence and attachment to the pia-arachnoid were more suggestive of some form of meningioma than of a granuloma, but, on section, it proved to be an encapsuled tuberculous abscess or broken-down tuberculoma. Its liquid content included no living pyogenic organisms, and its fibrous wall was nearly an eighth of an inch in thickness.

The operation was one demanding great care and skill in avoiding any escape of fluid from the abscess, or injury to the adjacent structures, but was completely successful in its object. So successful, indeed, that after a long stay in hospital and a convalescent home, the patient was able to return to her family fully restored to health. Unfortunately domestic conditions were unfavourable, the lung disease flared up, and brought about her death a year or two later.

* Delivered to the North-Western Tuberculosis Society in Manchester, on March 21st, 1929.

The risk of setting up an acute tuberculous meningitis in the process of removing tuberculomata must be constantly present to the mind of a surgeon undertaking the task, and considerable judgement is required in deciding on the propitious moment for operation. In some instances it is wise to give the patient a prolonged course of rest and open-air treatment before any attempt is made to eradicate the disease, so long as it is possible to keep him under strict observation and watch the progress of papilloedema and other physical disturbances. Adopting these principles, I have seen at least one large tuberculoma, with a firm capsule and caseous centre, removed from a cerebellar lobe with excellent and lasting results.

Under the microscope tuberculomata of the brain and spinal cord may be recognized by their caseous centres, surrounding which will be found a zone either of giant-celled nodules or of infiltrating epithelioid cells, along with disintegrated nervous elements. Further afield there is evidence of toxic degeneration of nerve cells and often an abundance of granular corpuscles. Neighbouring blood vessels are congested and, where they penetrate the outer layers of the tuberculoma, are found to be thrombosed. The amount of fibrous wall depends on the local reaction of the tissues, the virulence of the bacilli, and the age of the growth.

Chronic Tuberculous Meningitis.

A subject which is of interest, and perhaps of more far-reaching importance than appears at first sight, is that of local chronic tuberculous meningitis or meningo-myelitis. The following story will illustrate its clinical and pathological bearings and emphasize their significance.

A girl, 14 years of age, with a history of having suffered from frequent epileptic attacks during the previous two years, came under my care in St. Thomas's Hospital. Her attacks were of the Jacksonian type, beginning with spasm in one upper limb and following a definite line of march before consciousness was lost. In the intervals the girl was quite well and free from headaches. Examination revealed no physical signs of disease, and there was no story of illness or injury which could be regarded as of etiological importance. A routine *x*-ray examination of the head, however, revealed an unusual picture. There were seen scattered over the precentral convolution of one hemisphere a number of small very dark shadows suggestive of osseous or calcareous bodies, some of which were in a position to account for the epileptic symptoms. Finding that the attacks could not be controlled by bromides, and encouraged by the radiographical findings, I asked Sir Percy Sargent to explore. He discovered an area of chronic leptomeningitis in which a number of calcareous nodules were embedded, and proceeded to dissect the latter away from that part of the motor area which is responsible for movements of the upper limb. The osteoplastic flap was replaced and bromide treatment was resumed with very much more successful results. Many months passed without any attacks, and the child was able to resume her normal life.

Although positive proof was lacking, there could be no doubt that we had to deal with the scars of an old tuberculous meningitis limited to a small surface area of one hemisphere. The calcareous deposits alone enabled the lesion to be detected by the radiologist, and so provided a clue to the pathology of the condition. In the absence of calcareous deposits that clue would have been wanting, and the question naturally arises as to the frequency of localized tuberculous meningitis and its possible bearing on the origin of many obscure cases of epilepsy. In exploratory operations on patients suffering from Jacksonian attacks focal thickenings of the leptomeninges, sometimes associated with small loculated collections of fluid, are not infrequently met with, and it seems quite likely that some of these may be the cicatrices of old tuberculous lesions. Certain it is that calcareous nodules in this situation are very rarely come across, in spite of the general use of radiography in cases such as the one I have described. On the other hand, small tuberculomata may be found in relation to the soft meninges in patients dying from generalized tuberculous infection.

Jacksonian Epilepsy.

Having been led circuitously into the field of Jacksonian epilepsy, I am disinclined to leave it without uttering a protest against the common but fallacious belief that the removal of anything from the cerebral cortex or its meninges is an adequate measure in itself to arrest the disease. It cannot be too strongly emphasized that such a source of irritation is only one factor in the evolution of epilepsy, and that the habit or inclination to "fit" is not only as important, but a great deal more difficult to eradicate. An operation, therefore, should be followed by a prolonged course of bromide therapy if it is to be given any chance of achieving the object for which it has been undertaken. Surgical measures for the relief of epilepsy have often failed in the past on account of ignorance or neglect of this principle, and too much has been asked and expected of them.

Acute Tuberculous Meningitis.

Acute tuberculous meningitis is so common, and so minutely described in all textbooks of medicine, that I shall make no attempt to retail to you its protean symptomatology. Since Robert Whytt of Edinburgh, in the eighteenth century, published his *Observations on the Dropsy in the Brain* its pathological features have been well recognized, and since 1833, when Gerhard of Philadelphia produced his monograph on *Tuberculous Meningitis in Children*, little of clinical interest has been added to our knowledge. But during the last ten years the advent of epidemic encephalitis has made the problem of diagnosis a more difficult one, in that both diseases can display identical symptoms and run very similar courses. When that diagnostic difficulty arises we are often obliged to rely on an investigation of the cerebro-spinal fluid in order to overcome it, and a short space of time will not be wasted in considering the information which can be derived from a lumbar puncture.

The fluid in tuberculous meningitis is usually clear, although in the later stages of the disease it may display a faintly yellowish turbidity. It always comes away under increased pressure, and, if allowed to stand, develops a fibrinous coagulum in the meshes of which a few tubercle bacilli can usually be detected. The cytology of the fluid is characterized by an increase of cells, chiefly, but not all, of the small lymphocytic variety, which may vary in number from 25 to several hundreds per cubic millimetre. Other cells, such as macrophage, large mononuclear, and plasma, are found in much smaller numbers in most cases. The amount of protein, always increased, varies from 30 to 200 or 300 mg. in 100 c.cm. of the fluid, and tends to rise in the course of the disease. Globulin reactions are usually positive. Glucose and the chlorides are progressively reduced in quantity, and the chlorides in particular may reach a lower level than is met with under any other pathological condition.

In encephalitis, on the other hand, the fluid is always clear except for the occasional presence of blood, and no coagulum ever forms unless haemorrhage has taken place. Its pressure is only moderately raised, and if cells are present in excess they are almost entirely of the small lymphocytic variety, and rarely number more than 80 or 100 per c.mm. Protein and globulin are generally within normal limits. The same remark applies to the chlorides, but glucose is often slightly increased in amount.

These are the essential features of the fluid obtained by lumbar puncture in the two diseases, and they afford a most competent guide to diagnosis when we are faced with an acute febrile condition in which there is evidence of diffuse and scattered lesions disturbing various functions of the central nervous system. A differential diagnosis based on the clinical picture alone is often difficult, sometimes impossible.

Another fairly common disease in children which may, in its early stages, give rise to a suspicion of tuberculous meningitis is that due to the virus of poliomyelitis and poliomyelitis. Symptoms and signs of meningeal irritation, in the form of headache, head retraction, and diplopia, with stabismus, are very frequent, and are often associated with vomiting and fever. The cerebro-spinal fluid in the pre-paralytic stage may afford help in arriving at a correct diagnosis. Its important features are a considerable increase of cells, from 30 to 1,500 per c.mm., in which the large majority are polymorphonuclear. Protein may or may not be slightly increased, while glucose and the chlorides remain normal. Changes in the cytological

picture rapidly appear, and in the course of a few days the cell count may reveal a large percentage of lymphocytes and a comparatively few polymorphs. But in spite of this lymphocytosis the glucose and chloride content is not diminished. In fact, the maintenance of the normal quantity of the chlorides must be regarded as strong evidence against the presence of increasing meningeal inflammation. The importance of this is further emphasized by the fact that in cases of poliomyelitis, as in cases of tuberculous meningitis, there may be seen a fibrinous coagulum which develops when the fluid is kept standing, and which is never met with in cases of epidemic or lethargic encephalitis.[1]

The value attaching to examinations of the spinal fluid in the diagnosis of tuberculous meningitis is much increased when this disease occurs in older subjects. In adults the clinical picture often differs from that seen in infants, and sometimes presents great difficulties. I refer particularly to its insidious onset, long-drawn-out course, the slight or absent fever, and the prominence of mental as opposed to physical disturbances of function. It must be within the recollection of most of us to have met with cases of this kind in which the diagnosis has only been arrived at after much delay.

The prognosis in acute tuberculous meningitis when it is only a part of a general miliary tuberculosis is as bad as it can be. But the same cannot be said when the spread of infection is limited to the nervous system, and the diagnosis of tuberculous meningitis, even when acute, does not always justify a hopeless outlook. I have seen more than one patient recover, and careful review of this subject some years ago led A. E. Martin to these conclusions:

> 1. That undoubtedly long remissions and even recoveries do occur in tuberculous meningitis.
>
> 2. That recoveries are possibly more frequent than has been believed, since no fewer than twenty established cases have been recorded since 1894, together with a number of others in which the same definite proof has not been afforded.
>
> 3. That in these cases either the resistance of the individual is so much greater than usual that the disease is checked early in its course, or the virulence of the bacilli is so much less than usual that the lesion in the meninges becomes localized and undergoes a fibrous change.

On the other hand, he goes on to say "that the lesion in the meninges may at a later period form the focus of a fresh infection which usually terminates fatally, and that consequently the prognosis in these cases must be guarded."

Martin, as was natural, regarded the discovery of tubercle bacilli in the cerebro-spinal fluid as the fundamental evidence requisite for establishing a correct diagnosis. Later writers have shown that bacilli are discoverable in almost 100 per cent. of cases if care and skill are employed in the search for them.

Tubercles in the choroid were of more importance in the diagnosis of tuberculous meningitis before lumbar puncture became part of a physician's equipment. They were first seen with the ophthalmoscope by Jäger in 1855, but their presence cannot be regarded as sufficiently frequent to afford much help, and their absence cannot be advanced as an argument against the diagnosis of tuberculous meningitis. Moreover, it must be remembered that they have been observed in tuberculous subjects without other evidence of involvement of the nervous system. Although of little practical importance, therefore, they nevertheless provide us with the only opportunities for seeing isolated tubercles during life, and the white, yellowish, or reddish-yellow, rounded spots with pale centres are very characteristic when they come under observation. As a rule they cause no symptoms, although transient disturbances of sight have been recorded.

SPINAL CARIES.

No consideration of tuberculosis in relation to the nervous system would be complete without reference to Pott's disease of the spine, or spinal caries. That cases of this disabling disease have become less numerous and less disastrous during the last quarter of a century can hardly be denied, and the credit for that blessing may be frankly given to those who are concerned principally with the preventive side of medicine.

Percival Pott was a surgeon on the staff of St. Bartholomew's Hospital whose name might not have been known to posterity except for two reasons. In the first place, he was fortunate enough to fall in the street and sustain a fracture of the fibula which thereafter bore his name. As the result of the enforced leisure consequent on this accident he took to writing, and some years later, in 1779, produced his epoch-making pamphlet on palsy from spinal deformity. In the second place, he earned our gratitude for being the man from whom John Hunter derived not only much of his medical knowledge, but his inspiration for pathological research.

Pott, however, did not really describe the tuberculous nature of his disease, which had been surmised by Hippocrates and Galen, but drew attention to the characters of spinal deformities and their sequelae. The tuberculous origin of spinal caries was finally established by a less fortunate Frenchman, Delpech of Toulouse, the pioneer of orthopaedic surgery in that country. He met a violent death at the hands of a patient on whom he had operated for varicocele and who thought he had thereby been rendered unfit for marriage.

So much for the romance of Pott's disease. It has another aspect worthy of our notice in the question of its treatment, the guiding principles of which demand some acquaintance with the pathology of the disease and with the mechanism of compression paraplegia.

Spinal caries is an osteomyelitis of the vertebrae commencing either in the cancellous tissue of the body close to an intervertebral disc or at the root of the laminae. Much erosion of the body may take place, with or without resulting deformity and without disturbance of the spinal cord. In the same way an abscess, arising from a small focus of bony disease, may track in various directions and attain a great size without the development of a kyphosis or paraplegia. On the other hand, paraplegia may be the first symptom of the disease without obvious abscess formation or angular curvature.

Speaking generally, it is not often that bony deformity alone produces paraplegia, nor is the presence of a psoas or lumbar or retro-pharyngeal abscess necessarily associated with nervous symptoms. Compression usually results either from an abscess bursting through the posterior common ligament or from tuberculous granulations filling up the epidural space and forming a cuff of dense tissue around the dura mater. As a consequence of this strangulation the subarachnoid space may be completely obliterated and the vascular supply of the cord seriously interfered with. Only rarely does the displacement of a sequestrum backwards from a diseased vertebral body cause direct pressure on the cord, or a sharp kyphosis bring about a kinking of that organ.

In deciding on the appropriate line of treatment for any particular case, all these pathological processes must be passed in review and the attempt made to assign the paraplegia to one or more of them. It is of paramount importance to remember that the injury done by compression largely depends on interference with vascular supply, which leads to ischaemia, softening, and finally sclerosis. Unless the circulation can be restored and maintained, return of function is impossible, and the longer circulation is inadequate, the less chance is there of an ultimate success for treatment. Therefore, before deciding on rest and extension as the measure to be adopted, every effort should be made to exclude the presence of such compression as will not be relieved by that form of treatment. An abscess inside the vertebral canal may need evacuation, or a simple decompression may suffice when the epidural space is filled with granulomatous tissue.

On the whole, it is true to say that caries in children is more often cured by simple rest and extension than it is in adults, but every case must be considered on its own merits and in the light provided by the known pathology of the disease.

[1] Vide *Cerebro-spinal Fluid in Clinical Diagnosis*, Greenfield and Carmichael.

THE TREATMENT OF CARCINOMA OF THE CERVIX WITH RADIUM.

BY

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THE wide prevalence and extreme malignancy of carcinoma of the cervix are well appreciated by all practitioners, and any method of treatment which promises cure or alleviation calls for careful investigation.

In operable cases the results of surgical excision, especially in expert hands, have been of great benefit, and many lives have been saved by this method. But it is common experience that in many cases presenting themselves for the first time for examination the disease is advanced beyond the possibility of operative removal. This "operability rate" is estimated with considerable variations in different centres and according to the personal leanings of different surgeons. Bonney finds only 36 per cent. of his cases inoperable, while in the Cancer Hospital, London (Cole), the percentage is quoted at from 88 to 93, and other centres quote intermediate figures. Taking involvement of the adjacent vaginal wall as a useful criterion of inoperability, we find in Cardiff that 90 per cent. of our cases of carcinoma of the cervix are inoperable when first seen. For the alleviation of these advanced cases many palliative remedies have been advocated, and the most important of these is exposure to the gamma rays of radium. It is our experience with this method of treatment in advanced cases of carcinoma of the cervix that we wish to discuss in this paper.

THE ACTION OF RADIUM.

It would be out of place in this article to discuss the physics of radium, but the clinical effect on tissues can be considered. In general terms the action of radium is to produce cellular death, but this effect varies within wide limits with the amount of radium used, the duration of exposure, and the type of tissue involved. The destructive effect is most marked in the case of embryonic cells, as in a malignant growth, or in the Graafian follicles of the ovary; it is less marked in the more mature cells of a benign neoplasm, and is least marked in the case of the adult type of cells forming the parenchyma of organs.

The important point now emerges that the more malignant a tumour the more susceptible is it to the destructive action of radium (Bergonié and Tribondeau), and several workers, such as Ewing, Martzloff, Broders, and others, have attempted to judge from the degree of malignancy or anaplasia of the cells of tumours the degree of radio-resistance or radio-sensitiveness of these tumours, and the corresponding likelihood of radium being effective as a remedial agent or the reverse. These researches have not been of great practical value, and at present we know of no criteria by which the effect of radium on a given carcinoma can be foretold.

The exact manner in which radium produces its lethal effect is not yet known. It may be by a direct action on the tumour cells, or by an indirect action, such as by the production of thrombosis or of antibodies. Ewing is of opinion that the constituents of the cells are ionized and the intercellular ferments stimulated, while Dixon points out that radium has a marked effect in decomposing lecithin; and it is just those tissues which are rich in lecithin which are most affected by radium. The cellular degeneration may therefore be due to the effects of the decomposed lecithin. The known action of radium in producing thrombosis must also be kept in mind as at least a contributory factor in this respect.

The clinical changes occurring in a carcinoma of the cervix reacting satisfactorily to radium have lately been summarized by Farrar of New York as (1) hyperaemia one week after the application; (2) slough formation on the surface of the cervix three weeks later; (3) separation of the slough one month later; (4) a stage of contraction due to fibrosis after another month; and (5) a final stage of marked upper vaginal and cervical contraction. These findings are in general accord with our own experience, but the time factors have been found to be somewhat more variable than those stated. The histological changes occurring as the result of irradiation have been described by several writers, and need not be gone into here.

PRELIMINARY EXAMINATION.

While irradiation is the treatment of election in advanced cases of carcinoma of the cervix, not every case in this category is suitable for radium, and for this reason alone it is necessary to carry out a careful preliminary investigation in every case which it is proposed to treat by this agent. The following points call for investigation.

1. *The general condition of the patient* is important. A cachectic and emaciated patient is a poor subject for radium, which in such a case may do more harm than good. In these cases radium should be withheld until the general condition has improved, if it is going to improve, by rest and appropriate feeding.

2. *Anaemia* from repeated haemorrhages or from toxic absorption from a foul cervix should be looked for in every case. In general it can be laid down that, with a red cell count of 3 million or under, or with a haemoglobin index below 40, radium should not be applied on account of the danger of still further increasing the anaemia.

3. *Extensions* of the disease should be investigated. Tenderness and swelling in the loins would indicate hydro- or pyo-nephrosis from ureteral obstruction, and would constitute a contraindication to irradiation. Increased liver dullness, especially if associated with jaundice, points to secondaries in this organ, while suprapubic swelling might point to pyometra.

4. *The local condition* is to be carefully examined, if necessary under anaesthesia, and the size, character, and extent of the tumour accurately estimated, as well as the degree of parametrial infiltration and uterine fixation present. The size of the uterus is important: if enlarged it may indicate pyometra, and in such a case careful uterine exploration should be carried out. The fornices should be carefully palpated for any signs of salpingitis, pyosalpinx, or pelvic abscess. It has to be emphasized that *in the presence of any inflammatory pelvic lesion*, such as a foul carcinomatous ulcer, pyometra, pyosalpinx, or pelvic abscess, *radium should not be applied* until the condition is cleared up, *owing to the risk of* setting up peritonitis.

5. *Involvement of rectum or bladder*, as indicated by symptoms of tenesmus, dysuria, or bleeding, or as found on *physical examination*, would *constitute contraindications* to irradiation. The disease is far advanced in such cases, and the effect of radium would be merely to hasten fistula formation. It follows that the presence of a definite fistula into either of these organs, especially into the bladder, would render the case unsuitable for radium. Occasionally radium may be applied in the presence of a small rectal fistula, but never in the presence of a vesical fistula.

Only after a thorough preliminary examination of this nature should radium be applied.

TECHNIQUE OF APPLICATION.

In different clinics in this country, on the Continent, and in America considerable variations exist regarding the amount of radium to be applied, the duration of dosage, and the manner of insertion. The technique here described has been evolved by us since 1922.

Before radiation the vagina is douched twice daily with weak lysol, and the rectum cleared as for perineorrhaphy. If the surface of the carcinoma be foul, radiation is postponed and douching continued until it is clean.

With the patient under anaesthesia in the lithotomy position, a final bimanual examination is made to verify the points mentioned above, and after exposure with a speculum the cervix and vagina are thoroughly swabbed with tincture of iodine. If possible, the cervix is now gently steadied by vulsella, but in advanced cases there may be no cervix left owing to extensive ulceration. A section of the tumour, if possible with a piece of the adjacent healthy tissue, is now taken for microscopical examination.

A sound is then passed through the cervical canal in order to determine the position of this in the ulcer, to estimate the size of the uterine cavity, and to explore for the presence or absence

of pyometra. If pyometra be present the cervix is dilated and the condition drained, while radiation is postponed until the uterine discharge has ceased. It may be very difficult, and in some cases impossible, to find the cervical canal in the midst of the carcinoma, but prolonged and gentle attempts should be made for the reasons stated; in such difficult cases the canal is often to be found at some point in the periphery of the growth. One 50-mg. tube of radium sheathed in platinum is then introduced with Pinch's forceps well up the cervical canal; if the growth extends particularly to one or other side a tube of 25 mg. is inserted in this extension, while round about the periphery of the tumour five or six 10-mg. tubes are buried. The 50 and 25 mg. tubes are 2.5 cm. in length, and the 10-mg. tubes are 1.7 cm. in length. They are of platinum, and one end is pointed, while at the opposite extremity is an eye through which a length of silk is threaded. These radium tubes should be inserted well up into the substance of the growth.

The silk threads from the eyes of the radium tubes are then knotted together, and this strand is tied to the end of a roll of gauze, which is firmly packed into the vagina, especially into the anterior and posterior fornices, so as to keep the rectum and bladder as far from the effects of the radium as possible. Finally, a self-retaining catheter is passed into the bladder.

After twenty-four hours the catheter and packing are taken out, and along with the latter the radium tubes are easily removed by gentle traction. Another vaginal douche of lysol is given.

The amount of radium inserted therefore depends to some degree on the extent of the lesion, and in this respect we fully agree with Ward of New York, who maintains that every case is an individual study, and that no definite dosage can be laid down for all cases. The usual dosage is from 125 to 150 mg., and this, left in for twenty-four hours, represents a milligram-hour dosage of from 3,000 to 3,600.

Daily douches are given, and the patient is allowed up in a few days, and usually goes home by the end of the week. She is instructed to give herself a daily vaginal douche until she reports again for examination in four weeks' time. This is beneficial not only in keeping the parts clean but also in the prevention of vaginal stenosis. The patient is examined again in a month and after that at intervals. Further irradiation depends entirely on the reaction of the tumour to the first insertion. In some cases it has been found that a single irradiation produces a beneficial and evidently permanent effect, while in other cases several applications have been required.

Deep x-ray therapy, applied either to or subsequent to local radiation, is now being used in a number of clinics. While it is difficult to find any figures to show improved results from this therapy, it is likely that in the future this will form an important adjunct to local radiation, especially with improved technique of application. The main objection to deep x-ray therapy has been that the action is not localized to diseased tissues, and that healthy organs, such as the bowel, may be affected, with resulting gangrene and perforation. These accidents have happened, but with more modern and improved technique it is likely that this aspect will be eliminated and the rays concentrated more especially on the diseased parts.

Clinical Results.

In considering these it will be seen that the majority of patients with carcinoma of the cervix treated by radium have died at varying intervals. But in this connexion it has to be remembered that all these cases were advanced when first seen, with involvement of the vaginal walls, and mostly with impaired uterine mobility and parametrial infiltration. They were inoperable by any usual clinical standard, and under these circumstances a high mortality is to be expected. It has to be emphasized that no patient died as the result of irradiation.

In discussing results it is unsafe to use the word "cure," as experience has shown that a number of cases apparently cured recurred even after several years, and it is better to use such terms as "alive" or "free of symptoms" in describing such cases.

Since we started using radium in this condition, late in 1922, 153 cases have been treated, and of these 40 are now alive, while 113 are known to be dead or have failed to report. It may be stated in passing that, as the result of the help which we obtain from the Cardiff, Glamorganshire, and Monmouthshire health authorities, no case has been lost sight of for the last three years, and we acknowledge our deep gratitude to these bodies. The cases (40) still alive may be tabulated as follows:

	Total Cases Treated.	Number Alive.	Percentage Alive.
First treatment:			
Over 5 years ago	26	0	0
" 4 " "	43	3	6 9
" 3 " "	72	5	6.9
" 2 " "	93	8	8.1
" 1 year ago	117	14	12.1
Less than 1 year ago "	153	40	26.5

Of the other 113 cases, 89 are known to have died, while 24 have been lost sight of. While it is certain that at least the majority in this category of "failed to report" have died, they cannot be included for statistical purposes. These 89 cases can be tabulated in this way:

Duration of Life since First Irradiation.	Number of Cases.
Over 5 years	2
" 4 "	2
" 3 "	3
" 2 "	6
" 18 months	6
" 12 "	15
" 6 "	25
Under 6 months	30
	89

The average duration of life in these patients who died was 13.2 months.

Practically all the deaths occurred after discharge from hospital, so that in very few cases were post-mortem examinations obtainable. The reported cause of death was usually increasing weakness from toxic absorption or ascending renal infection (especially in cases where vesico-vaginal fistulae had developed). Rarer causes were intestinal obstruction (2), pyaemia, and secondary anaemia and general exhaustion following the development of a large abscess in the buttock (1 each).

Relief of Symptoms.

Apart from the saving of life, an important feature in the successful use of radium is the amount of relief obtained from the distressing symptoms of uterine haemorrhage, foul discharge, and pelvic pain, and it is our opinion that even if life were not prolonged by a day irradiation would be justified in its use for this reason.

Haemorrhage was controlled in 90 per cent. of the cases; in 10 per cent. it recurred before death; and in 80 per cent. it ceased permanently. Vaginal discharge ceased in 60 per cent. of cases, and was improved in another 15 per cent. Pelvic pain was relieved in 45 per cent. of cases; in 30 per cent. it was not influenced; and in 25 per cent. it was aggravated or appeared for the first time after irradiation.

Conclusions.

It is obvious from the foregoing that, while radium cannot as yet be described as a certain and definite "cure" in all cases of carcinoma of the cervix, the results are encouraging, taking into consideration the initial extent of the disease in the cases reported. It has to be remembered that this treatment is in its early stages, and with improved technique, especially as regards the subjecting of all the primary and secondary tumour cells to the immediate effects of radium, improved figures are confidently to be expected. There is a vast field here for investigation and research, which is being energetically carried out in many centres. As a palliative agent, however, radium is the most potent that we possess, and in this way alone it has abundantly justified its use in the relief of the distressing symptoms of the condition.

I feel compelled, in conclusion, to protest against the manner in which radium has been hailed as a "cure for cancer" by certain sections of the lay press. Much false hope and subsequent disappointment have been created by this propaganda, and although funds have in some cases

been obtained for hospitals for the purchase of radium by these means, scientific and clinical progress has been correspondingly embarrassed.

The main hope of advance in the treatment of carcinoma by radium lies in the combined investigations of the clinician, the pathologist, and the physicist, and it is in this way only, and not by startling newspaper headlines, that future clinical results are likely to improve.

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TECHNIQUE OF INTRA-ABDOMINAL INSERTION OF RADIUM FOR CARCINOMA OF THE CERVIX UTERI.

BY

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IT will be many years before the public is sufficiently educated in medical matters to realize that periodic overhauls of their bodies are as necessary as for their motor cars. For a long time, therefore, there will be a large number of patients with advanced cancer, especially carcinoma of the cervix.

In discussing the problem of cancer treatment it is of some importance to consider why an advanced case of malignant disease should be more difficult to cure by radiotherapy than an early case. When dealing with "excisional surgery" it is easy to realize that if the diseased area is extensive it will be impossible with a knife to cut this out without excising portions of essential organs, with fatal results to the patient. In radiotherapy, on the other hand, it is not so easy to be certain why there is such difficulty in destroying malignant cells placed deep in the pelvis when it is so easy to destroy them if placed on the tip of the cervix. There are several possible explanations for this difference.

First, it may be the better blood supply that is found in the region of the deeper part of the growth: Strangeways and Fell found that the reaction of tissues in the embryonic chick to x rays differed considerably before and after circulation had been established.

Secondly, it is possible that the cancer resistance of the body materially helps the radiotherapy in early cases, but that in the more advanced cases no such help is forthcoming. This idea is very seriously considered in Sweden.

Thirdly, the type of cell developed in these late cases may in itself be more radio-resistant; this, however, is hardly likely, as the cells in the cervix and more exposed part of the growth are just as easily destroyed in the late stages as in the early cases.

Fourthly, there is the simple explanation that it is more difficult to apply an efficient dose to these more distant cells. It is with this simple explanation in view that I am at the present time treating a series of patients by means of intra-abdominal radium.

It is to the Brussels Radium Institute that we owe the first attempt along these lines. The technique they used in 1919 consisted in putting the patient in the Trendelenburg position, opening the abdomen, and, when the posterior layer of the broad ligaments had been incised, placing 20 mg. of radium element in a single tube at the base of each ligament. In addition to this they sometimes put needles into the uterus. The sutures from these tubes were carried out through the lower end of the abdominal incision, and the whole pelvis was packed with 6 to 8 yards of gauze. At the end of four or five days this was removed, with or without an anaesthetic. I modified this technique by using needles instead of tubes. Thirteen cases were treated with a modified technique during 1923-24. Of these thirteen cases:

One was of the first degree and is living and well after four years.
Four were of the second degree, and of the four cases two are living after five years, although the latest report from one is not very satisfactory. Two have died, one after fourteen months and the other after seven months.
Six were of the third degree; three of these six are living after five years or more, and three have died, having lived less than one year.
Two were of the fourth degree; one is living after five years and the other died after a year and ten months.

It will be seen, therefore, that of the thirteen cases six are alive after five years, and one has lived for four years and shows no signs of the disease.

Present Technique.

The intra-abdominal insertion of radium is usually carried out about six to eight weeks after the vaginal application—that is to say, when the local external growth has disappeared and all ulceration healed. No attempt so far has been made to combine the intra-abdominal application at the same time as the vaginal, merely on the theoretical grounds that, whilst there is an infected area in the cervix and fornices, it is perhaps not wise to do anything to the abdomen and parametrium which might lower the resistance to that infection.

The patient is put into the Trendelenburg position and the abdomen opened, a general examination is made of the liver and aortic glands, in addition to the pelvic organs and the iliac glands. The intestines are packed off and the uterus is pulled forward; the parietal peritoneum is then picked up with forceps and the needle inserted, leaving only the eye of the needle protruding from the peritoneum. The suture is put through a small portion of the peritoneum below the level of the needle eye, and the knot tied over a glass bead to prevent cutting through the thin peritoneal tissue.

The needles are placed at a distance of 1 to 1½ cm. from each other, starting at one sacro-iliac synchondrosis and ending at the corresponding joint of the opposite side. In addition four, or possibly more, needles are placed in front of the broad ligaments in the hope of eradicating the disease from the obturator glands. The ends of the ligatures are tied together and pushed down into the pouch of Douglas. The abdomen is sewn up completely and the radium left *in situ* for seven days. At the end of this time the abdomen is again opened and the radium removed.

An objection to this technique is the second laparotomy at the end of a week, but up to the present it has been felt that in order to keep them in position the needles should be sutured to the peritoneum, which makes it impossible to pull them out. In addition to this they are often placed at an angle to the line of traction, and damage might be done if pulled out blindly. Dodd of the Westminster Hospital has modified this technique by using radium needles in catheters placed retro-peritoneally so that they can be withdrawn through stab incisions. In addition he combines this with excision of the glands.

Immediate Results.

The first case chosen in this series was a patient (second degree) in whom it was considered there was a reasonable chance of the treatment being of some value, and the operation took place in October, 1927. Three or four months were allowed to elapse in order to see if there were any untoward symptoms before attempting the technique again. At the end of this time the patient was found to be extremely fit. During the year 1928 twelve other cases were treated in a similar manner. Of these, three were diagnosed as being first degree, two were of the second degree, two of the third degree, and five were of the fourth degree.

Of the first degree patients there is little to be said except that on opening the abdomen one of these was found to have enlarged obturator glands. The operation was done in September, 1928, but in December a letter stated that she did not feel very fit, and she died in February, 1929. Another, operated on in June, is very

well at the present time. The third, operated on in July, 1928, has vague pains, but appears to be doing well. The two patients diagnosed as second degree are both doing well.

Of the third degree patients one, operated on in March, has died recently. This patient is of particular interest because when she had her vaginal application it was noticed that there was a swelling in the region of the right kidney. At the intra-abdominal operation it was found that this swelling was due to a hydronephrosis, which seemed to be caused by the pressure of the growth round the ureter. In spite of this the patient wrote in December, saying, "There is no doubt my health generally is greatly improved. I feed regularly and have regained much of my lost weight."

Of the fourth degree patients one had a slight degree of intestinal obstruction and masses of glands were found in the pelvis; a colostomy was performed and radium was inserted. She has since died, and there is no evidence that the radium improved her condition.

Another late case was admitted in April, 1929. The patient was so anaemic that a blood transfusion was carried out before putting the radium in per vaginam. She had an ulcer of the cervix two inches in diameter, involving the fornices. Two months later the vagina had completely healed and an intra-abdominal operation was carried out. Glands were found near the aorta, which felt hard and were probably malignant. In December there was marked induration in front of the rectum, but the patient was extremely fit considering her original condition. In another very advanced case the patient was treated in May and was found to have pus in Douglas's pouch. Radium, however, was inserted, and there is little doubt that this was an error of judgement, as, in spite of drainage, the patient got general peritonitis and died as a result of the operation.

The next patient in this series was operated on in September and found to have large masses of glands, some the size of a walnut. It was realized that it was not possible to effect a cure, but it was thought that if those near the uterus were diminished in size it might reduce the amount of pain at a later date. The needles were therefore concentrated on those glands. In December the mass of glands did not seem to be diminished and the patient was obviously not so well.

The last of the fourth degree patients was treated in December. Considerable adhesions were found in the pelvis but no markedly enlarged glands. There was, however, much induration in both the broad ligaments. Following the removal of the radium there was a certain amount of wound infection, but this cleared up and the patient left hospital in fair condition.

It will be seen, therefore, that of the 13 cases 9 are living, but it is too early to say much about their condition.

Conclusions.

Since it has been proved beyond doubt that radium will entirely eradicate carcinoma in the cervix and vagina it is logical to try and extend the influence of the radium to the growing edge of the tumour by means of intra-abdominal radium. The cases so far treated show that this method is not attended by any undue risk to the patient, and the small series treated in 1923–24 show sufficiently good results to justify us in investigating further this line of treatment.

RADIUM TELETHERAPY: EXPERIENCE WITH A TEMPORARY "BOMB."

BY

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Few medical men are unaware of the excellent results of radium treatment of primary growths and accessible glandular metastases by needles and seeds, but only those constantly employing these methods are fully awake to their limitations. If local and accessible manifestations can be successfully treated with gamma rays, so also should the inaccessible lesions; and therefore until the difficulties of producing x-radiation of a sufficiently high frequency have been overcome radium teletherapy must be provided.

It is well to follow the line of thought that has led to the technicalities of teletherapy. Whatever be the view taken as to the mode of action of gamma rays on normal or cancer cells, the treatment is substantially the same. An attempt is made to dose the cancer adequately without overdosing the patient, and to this end the cancer is irradiated more intensely than the rest of the body whenever possible. The dosage, measured as it is in milligram hours or millicuries destroyed, is a measure of available energy of which as a rule only a small proportion is absorbed by the cancer, and a larger by the surrounding tissues. The cancer itself can be adequately dosed by widely varying values of intensity and time, but the patient stands the best chance of recovery only when those values are suitably chosen. The usual method of placing needles or seeds interstitially provides economically a more intense irradiation in the growth than in the surrounding tissues; it is also possible in a large measure thus to provide the optimum intensities, but it has been found that local applications are by no means always sufficient, and in practice an attempt is made to irradiate more generally from over the lesion by the so-called "surface application." This system, employing radium at a short distance from the skin, usually about 15 millimetres, is elementary teletherapy. Surface application is usefully employed only when the lesion is close to the skin. To extend the system to the treatment of deeper manifestations Sluys of Brussels uses radium similarly at a distance of 5 cm. from the skin, and in teletherapy proper the radium is employed at distances as great as 16 cm. This has given rise to the belief that gamma rays penetrate to a greater depth when the source is farther from the surface. It is of course quite erroneous; but greater distance does enable us to irradiate usefully to a greater depth, for the reason that the necessary intensities can then be maintained without producing destructively high skin and upper-layer intensities.

The intensity of irradiation is reduced in proportion to the square of the distance from the source, and also by absorption in the tissues. Evidently, then, the intensity near a needle is very much greater than it is at a distance. For this reason, while the intensity between two needles may be insufficient for the desired reaction, radium necrosis may yet be produced close around them, even when all but a minute percentage of beta particles are excluded. An average of the effective minimum intensities employed with needles is approximately that intensity which is produced at the surface of a sphere of 1 cm. diameter when 1 mg. of radium is placed at its centre. This intensity is here called the "standard needle intensity." It is likely that where, as in teletherapy, the practical difficulties of placing the needles accurately enough to maintain this value are entirely eliminated, then half this intensity produces the same reactions; and experience shows that this intensity must be available at the greatest depths.

A concrete example will serve to compare the four radium arrangements mentioned.

The lesion is supposed to be two inches in diameter and three inches in length, the longitudinal axis being at a depth of 10 cm. To maintain the standard needle intensity with the usual needle technique from 30 to 40 mg. are required. Using surface application to produce half this intensity, 600 mg. would be required; with the radium at 5 cm. from the skin some 1,000 mg.; and if skin-radium distance is increased to 16 cm. the amount would have to be more than 2,600 mg. to maintain that intensity. The economy of the interstitial method is obvious.

The relation between the intensity at a depth and that at the skin is known as the "relative depth intensity." This value for the above lesion, employing needles, is from 24 to 32; employing surface application 1/170; radium at 5 cm. 1/16; and radium at 6 cm. 1/5.6. It is assumed that in the three latter methods only a single point source is employed in each case. It is impossible with them to irradiate the lesion more intensely than the surrounding tissues; indeed, the reverse is the case, but it has been

found that a relative depth dose of 25 per cent. for a depth of 10 cm. may be satisfactorily employed. This is the case when the radium is a point source at a distance of 16 cm. from the skin.

A patient irradiated by gamma rays does not appear to be harmed by them if the intensities are reasonable. On the average the deleterious effects upon the blood are less than might be anticipated, but there are important exceptions, particularly when irradiation includes such organs as the spleen, liver, heart, and bone marrow; moreover, the greater the volume irradiated the greater the effect. In cases where the dosage involves a high intensity and a prolonged time, and where in addition the general health of the patient is bad, the effects upon the blood and metabolism generally are serious, and, indeed, success or failure may be determined by them before the cancer has received its essential treatment. This is true of all radium treatment, but more so with teletherapy than with the usual needling, because, while dosing the cancer equally with either system, the patient absorbs more energy by teletherapy. With needling there is no means of preventing irradiation of the patient while irradiating a cancer, but there seems to be no necessity. With teletherapy the irradiation can within certain limits be restricted to desired fields—that is to say, it is often possible to irradiate the cancer without also irradiating the susceptible organs. This is accomplished by means of screening. The irradiation of a patient will be reduced to a minimum when those rays only which traverse the cancer are permitted to enter the body. In practice, even if an accurate knowledge of the position and extent of growth were available, it would not be possible either to shape the "beam" to fit the growth, or to direct it with the necessary accuracy. It is probable, therefore, that in the case of the lesion already considered a clearance around the growth of at least one inch would be essential. If this be the case the absorption of energy by the growth would represent about 4 per cent. of that in the "beam," and the absorption by the body some 60 per cent. Since the beam itself carries but one-sixtieth of the available radiation, it follows that but 1/15 per cent. of the available radiation is "usefully" employed. With needling some 6 per cent. would be similarly employed and about 50 per cent. absorbed by the body.

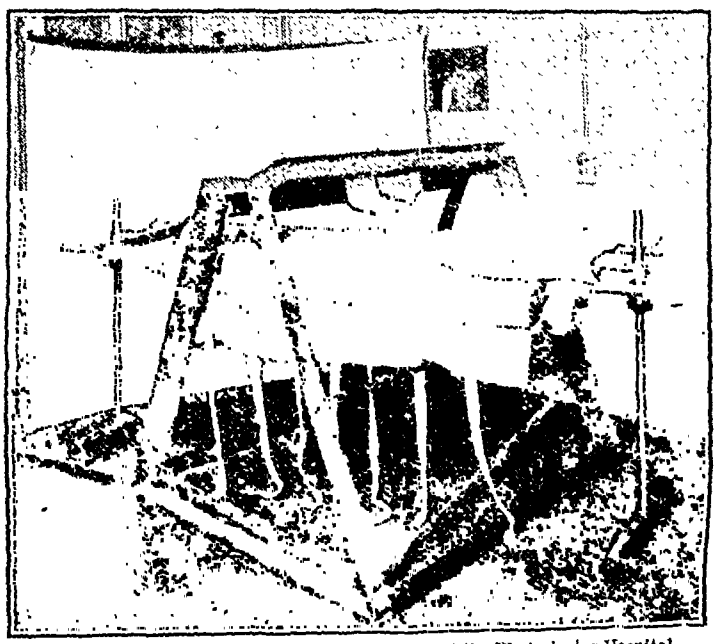

FIG. 1.—Radium teletherapy apparatus in use at the Westminster Hospital.

To obtain the highest value of relative depth intensity from a single point source without increasing the skin-to-radium distance, it is desirable to employ only gamma rays of high frequency. This can be partially accomplished by filtration, because the lower frequencies are more easily absorbed. The filtration should not, however, be increased much beyond the equivalent of 1 mm. of platinum, an amount in general use on the Continent, in the interests of economy. The low penetration of the beta particles prevents any derived directly from the radium having any effect upon deep cancers; they are, in fact, entirely harmful, especially to the skin. For this reason, too, it is undesirable to reduce the filtration below the value already mentioned.

In the interests of economy it is desirable that the radium-skin distance should be less than 16 cm., but at the same time the relative depth intensity must remain at least as high as 25 per cent. at a depth of 10 cm. This can be accomplished by the use of several sources so arranged that while the cone of rays from each passes through a separate area of skin, they all cover the area of the cancer. If this is accomplished the relative depth intensity for each cone can be multiplied by the number of sources to give the relative depth intensity for the whole system. It will, however, be obvious that unless the sources are very widely separated there will be zones of high intensity in the upper layers beneath the skin where the various cones intersect. Fortunately, these tissues are not, as a rule, anything like as susceptible as the skin, so that unless extremely short skin-radium distances are employed it is safe to assume that if the skin has been provided for, so has the intervening tissue.

This multiple source system is known as crossfire. It has been exploited by Sluys, who employs thirteen sources contained in lead "cannon." He is able with its help to obtain a relative depth intensity greater than unity. Unfortunately so great a number of sources necessitates great obliquity of some of them; some valuable intensity is thus lost, and at the same time separate adjustment of each to cover the cancer is necessitated.

It is possible to obtain some crossfire by the use, instead of a point source, of a large flat one parallel to the skin. This system shows to the greatest advantage when the area is large compared with the skin-radium distance. It cannot, however, give such a high value of relative depth intensity as the screened point sources, since rays from it can reach the skin which do not pass through the lesion. Régaud of Paris employs a modification of this system. His radium is distributed in many tubes in the upper angles of a lead box having the side opposite the radium open. By this means he obtains a beam which is restricted approximately to the direction required. It is very large in cross section, but he believes that the intensity at a depth is increased by reason of secondaries generated in the surrounding tissues. The relative depth intensity obtained for a depth of 10 cm. is better than 25 per cent.

Cheval of Brussels employs a working skin-radium distance of 16 cm., at which distance his radium may be looked upon as a point source. He obtains some economy of radium by treating two patients simultaneously. Both Régaud and Cheval employ several "ports of entry," which is to say that the "beam" is directed at the cancer in several positions in such a way that from each position a separate area of skin is irradiated. In this way any given area of skin receives a correspondingly smaller dose. The relation between the depth dose and the skin dose is known as the "relative depth dose," and it has been found that a relative depth dose of unity is satisfactory for a depth of 10 cm. To obtain this value Régaud and Cheval must use four ports of entry. Sluys does not employ several sets of ports of entry, for he obtains a relative depth dose greater than unity with the one set.

In order to compare the economy of radium, it has been assumed that the most efficient method is that which produces at a depth of 10 cm. the greatest intensity. This occurs when the radium is placed on the skin in the position nearest to the lesion. The "relative efficiency" is the relation between the intensity actually produced at the depth and that produced as above by the same quantity of radium. Thus the relative efficiency of Cheval is 15 per cent.—this can, in a sense, be said to be 30 per cent. when he treats two patients—of Régaud 25 per cent., and of

Sluys 28 per cent., the skin-radium distances being respectively 16 cm., 10 cm., and 8 cm.

To measure the intensities obtainable by various "bombs" these intensities may be compared with the "standard needle intensity." Thus the "relative needle intensity" obtained by Sluys using one and one-third grams of radium is 46 per cent., that of Régaud using 4 grams 125 per cent., and that of Cheval using 4 grams 84 per cent.; or if each uses 1 gram they are, in order, 35, 31, and 21 per cent. Evidently, therefore, a carefully designed "bomb" can show considerable advantages on the score of economy. None of the "bombs" mentioned provide adequately for reducing the irradiation of the patient to a minimum—in the cases of Régaud and Cheval because the "beams" are not adjustable and therefore necessarily large, and in the case of Sluys because the source is so widespread that ports of entry cannot conveniently be chosen at will. It is only a matter of design to eliminate these defects.

In addition to giving (*a*) an intensity at a depth of 10 cm. of at least half the "standard needle intensity," (*b*) a relative depth intensity as high as 25 per cent., (*c*) a relative depth dose not less than 100 per cent., (*d*) a filtration of not less than the equivalent of 1 mm. of platinum, (*e*) control of the size of the "beam," a bomb must provide protection of the workers from the rays and a reasonable degree of comfort for the patient. It must also, for hospital purposes at least, be simple to operate.

Protection is usually provided in the form of lead screening round the radium, but during treatment there is always a proportion of the radiation unscreened, and the only really satisfactory protection from this is distance. While the bomb is being adjusted to the patient the radium can be entirely surrounded by lead, and probably no useful purpose is served by increasing the thickness beyond three inches. Régaud does not provide for complete protection by lead during adjustment, but the radium can be simply removed to a distance if desired. Cheval, on the other hand, has his radium so disposed that it can at will be completely surrounded by lead by the movement of a lever. Sluys provides only a very meagre protection, for the reason that he could not conveniently adjust his many "cannon" were they adequately protected.

Comfort for the patients is provided for by these workers by treating them while lying in bed or on comfortable stretchers. Cheval can place his patient either over or under his radium, which avoids the necessity of lying on the stomach, but the immobility of his "bomb" must necessitate rather difficult positions.

Details of the Westminster Hospital Temporary "Bomb."

The apparatus (Fig. 1) was constructed with the object of forming a definite opinion of the relative importance of the various factors already considered, as well as to employ usefully the radium which was originally supplied in the form of ten brass containers 6 cm. in length and 6 mm. in diameter, containing in all just over 1 gram.

No attempt was made to design a perfect "bomb," but merely to construct at a minimum expense and in the shortest possible time a means of applying the radium to the patient.

With reference to the diagrams (Fig. 2), a lead box L, some 3 inches in thickness, contains the radium tubes N, spread over its inner upper face. They are held in place by an aluminium plate O, one-eighth of an inch in thickness. The box has passing through it a steel shaft M, which bears, on the upper beam A, G of the steel trestle D, so that it can revolve about its axis. The beam itself can revolve about an axis at right angles to the latter, bearing at F. The trestle is provided with cross bracing K. The patient lies on a steel-framed stretcher C, which can be tilted at B, about its longitudinal axis. It can also be raised by means of the nuts and threads E; ball thrust races greatly reduce the effort required. The entire structure can, of course, be moved in almost any direction in a horizontal plane. The opening of the bomb, which is about 3 inches by 4 inches, is covered by wax P, half an inch in thickness, to absorb secondary beta particles. The total screenage amounts to just over the equivalent of 1 mm. of platinum.

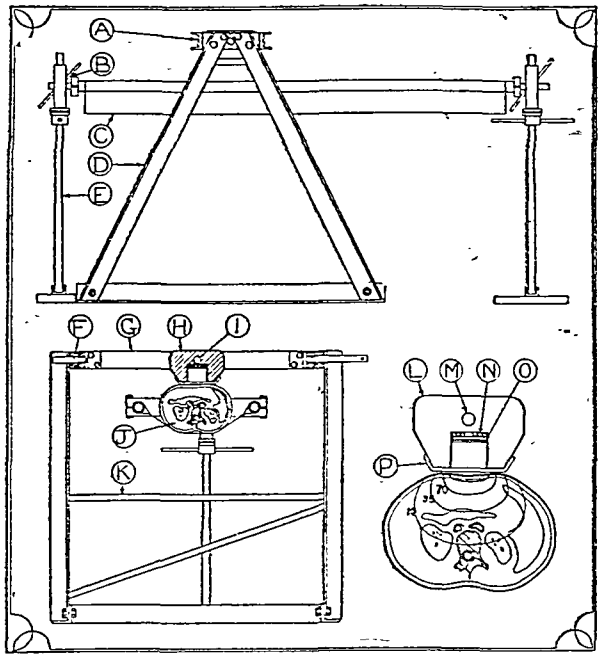

FIG. 2.

Apart from the obvious difficult of getting the patient into position with an arrangement of this kind, it has been found that patients resent more than anything else lying on the stomach and, indeed, are often quite incapable of doing so. Again, a patient cannot remain in one position for more than about two hours at a time twice a day. In this case the total time of treatment (with a gram) might well be two months.

It has been found that even after the patient is in position some considerable time is occupied in adjusting the "bomb" to the patient, even when, as is here the case, the beam is very large. It is likely, therefore, that when there is provision for reducing the size of the beam to a minimum for any given case the exposure of the worker would be excessive unless satisfactory means be adopted to prevent it.

The procedure in the treatment of a patient is the following. Transparent sections of the patient near the position of the lesion are prepared life size, from an atlas, the outline being modified by observation to suit the individual case. An iso-intensity chart of the gamma ray field from the "bomb" is then placed beneath the section so as to cover the estimated position of the growth. It is then possible at a glance to know the relative needle intensity at any point within the irradiated volume. At the same time the best ports of entry can be determined by observation. Not only can the required dose be estimated if the necessary clinical experience is available, but the patient's chance of recovery can be more than guessed at. It is largely with the help of these charts that the necessary value of intensity, relative depth intensity, and relative depth dose have been arrived at.

Experience with the temporary bomb has shown that with 1 gram of radium it will be necessary to work with the radium at a distance not greater than 6 cm. from the skin if the necessary intensities are to be obtained. It is also proposed, in the interests of economy, to treat two patients

simultaneously. In the design for the permanent bomb four point sources are placed approximately at the corners of a square, the radiation from each being restricted to a cone of any desired shape by means of lead screens, each cone, of course, employing a separate area of skin at entry, but all covering the depth point; the distance from the source to the skin is normally 6 cm., but can be increased to any desired extent, and also, if found desirable, reduced to 4 cm. The normal "relative depth intensity" at a depth of 10 cm. being 25 per cent., no difficulty would be experienced in using four ports of entry for the "beam," thus making the relative depth dose 100 per cent. The "relative needle intensity" would then be, at a 10 cm. depth, one-half the standard needle intensity. Radiation will be permitted on both sides of the square referred to, one patient being treated by each beam. The normal axis of the beams will be at about 45 degrees to the ground, and each beam separately adjustable in shape and size with separate screens. The patients will be parallel to one another on different levels, this arrangement permitting a greater latitude of adjustment between one patient and bomb without interfering materially with the adjustment of the other patient. It has been said that adjustment requires some considerable time, so that when two patients are treated the adjustment of one would interfere with the treatment of the other were adequate protection provided for the worker during this adjustment. It is proposed, therefore, to make the necessary adjustments with a dummy "bomb" symmetrically situated with respect to the one containing radium. It will then be possible to perform the adjustment at leisure without fear of harm from the radium, and yet to continue the treatment of the patient already in position. The adjustment effected, the patient will be transferred mechanically from the dummy to the real "bomb," and the necessity for the worker to approach it, except in cases of emergency, will be avoided.

Designs for the permanent "bomb" have been prepared, and will be published in due course.

EARLY GRAVES'S DISEASE.

BY

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THE cause of Graves's disease has yet to be found, but there can be small doubt that a connexion exists between the condition of the nervous system and the severity of the symptoms associated with this disease. In many instances a history of sudden shock or a period of prolonged emotional strain can be traced in the period before the onset of the disease.

In recording a case recently under my care I have two objects in view—namely, to lay stress upon the difficulties associated with the diagnosis of early cases, and, secondly, to show that by controlling the nervous symptoms of the syndrome a complete cure may occur, in some instances, without any other treatment. The following is an abstract from my notes of the case, which commence on February 1st, 1928.

A blonde woman, aged 21, consulted me complaining of loss of weight, which had been steadily increasing for some six months, associated with profuseness of menstruation, which had been hitherto regular in nature. In the past few weeks she had felt easily fatigued after the slightest exertion. Constant hunger was complained of, but attacks of diarrhœa and vomiting prevented her from indulging her craving for food. In the past fortnight she had had two attacks of fainting, in which she was unconscious for some hours.

On talking over the history with her father, I ascertained that two colleagues had diagnosed her condition as being due to early tuberculosis, and based their diagnosis on a history of night sweats and the progressive loss of weight. On examination I found that she was markedly emaciated; the skin was moist—in fact, she was perspiring freely, a phenomenon which, she said, occurred with distressing frequency. The pulse was feeble, and the rate varied between 120 and 140 beats per minute at different periods during the examination.

A thorough general examination was made, particular attention being paid to the condition of the lungs and the pelvic organs, with, however, negative results. On careful cross-examination I ascertained that the hot sweats occurred during the day as well as during the night. It became obvious during the examination that the girl's nervous system was profoundly disturbed, and that she was extremely restless; a fine tremor of the hand was constantly present.

Bearing in mind the clear syndrome presented by the foregoing symptoms, I made a provisional diagnosis of Graves's disease, and proceeded to look for the classical signs of this disease. The thyroid gland was found to be but slightly enlarged, not more so than commonly occurs in young women. Exophthalmos was absent; von Graefe's sign was not present. Stellwag's sign (widening of the palpebral fissure caused by a spasmodic retraction of the upper eyelids) was, however, present. Gootsch's test (reaction of the pulse rate and blood pressure to subcutaneous injections of adrenaline) was applied, and found to be positive. The urine was normal. The patient's weight was 7 st. 10 oz.

Finally, the patient was closely questioned, and I ascertained that she was greatly worried over her occupation as a typist, and that the symptoms of which she complained had come on shortly after obtaining employment in this capacity. A basal metabolism estimation was suggested to the father, but consent for this was not given owing to the extreme state of nervous exhaustion which my examination had produced.

I have, for some time, been engaged in investigating the syndrome of the menopause, and I have shown elsewhere that the change of life is associated with many symptoms which are present also in Graves's disease. In particular, I have shown[1 2 3] that women at the menopause have an increased sensitiveness to adrenaline injections similar to that exhibited by cases of Graves's disease in general and the case under consideration, this adrenaline sensitiveness forming the basis of Gootsch's test for early exophthalmic goitre. Furthermore, I have also published evidence[4] that the disturbance of the nervous system in women at the menopause is readily controlled by small doses of sodium veronal. I therefore prescribed a simple mixture, in this case consisting of sweetened water (to disguise the bitter taste of the sodium veronal) and sodium veronal, in such a dosage that the patient would take 1 grain of sodium veronal three times daily in a tablespoonful of the mixture. She was then instructed to report weekly.

The progress of the case was dramatic. On August 28th, 1928 (some seven months after commencing treatment), her weight had risen to 10½ st., all her symptoms, including the menorrhagia, had disappeared, and her pulse rate was now 65 beats per minute and of good tension. At the present time she is entirely normal and back at work.

It is interesting to note that some four weeks after seeing me for the first time exophthalmos became obvious and von Graefe's sign was positive. After this time, the exophthalmos became quickly better and von Graefe's sign disappeared. Stellwag's sign, which was the first to appear, was the last to disappear—namely, at four months after commencing treatment.

Several points of interest arise on considering this case. In the first place, we have the confusion which arose between the diagnosis of early tuberculosis and early Graves's disease without exophthalmos and without marked enlargement of the thyroid. In particular, I would draw attention to the importance of Stellwag's sign in these cases, which others, besides myself, have found to be present before exophthalmos becomes a feature of the syndrome. Furthermore, I would suggest that Gootsch's test might be more frequently employed with advantage in cases of this nature.

With regard to treatment, I feel that more attention should be given to the control of the nervous symptoms associated with Graves's disease than is done at present, and suggest that all patients showing evidence of this syndrome should be given a course of sedative treatment with sodium veronal before more drastic measures are undertaken.

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THORACOSCOPY AND CAUTERIZATION.

BY

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IN 1910, for the first time, Jacobaeus divided pleural adhesions by the galvanic cautery under the guidance of endoscopy. The results attained by earlier workers were far from encouraging, and even the procedure of Jacobaeus is not free from objection. That his operation is justified is clear from the results it has achieved; we criticize it, however, on the ground that after the pleural adhesions have been severed the incidence of tuberculous empyema, even of mixed bacterial infections, is very high. According to Jacobaeus and others who have used his operation, 10 per cent. of cases are followed by mixed bacterial empyema and 36 per cent. by tuberculous exudates, of which 15 per cent. are serious. Kremer and others have recently published statistics showing a somewhat smaller proportion of such infections of the pleural cavity. On the other hand, when there are no complications, improvement is obtained by means of this operation—according to Jacobaeus in 66 per cent. of cases, and according to Kremer in 63 per cent.

Recently one of us (G. M.) has elaborated a method of dividing pleural adhesions, especially those of considerable size, by means of a combination of the galvanic cautery with a prophylactic coagulation by diathermy. In this writer's series of cases only 1 per cent. with mixed bacterial empyema and 4 per cent. with serious tuberculous exudates have been observed; this represents a substantial reduction in the incidence of a dangerous complication.

The prophylactic diathermy is valuable for the following reasons. After the induction of artificial pneumothorax in cases of pulmonary tuberculosis the pleural surfaces are separated, adhesions between them being drawn out into the form of bands, which may consist either of lung tissue or of fibrous tissue, or, as is usually the case with adhesions of any size, of both. It is necessary to sever each adhesion as closely as possible to its parietal end and thus to prevent damaging the bronchial system and the lung tissue, and opening up the walls of cavities which may have been drawn into the adhesion. This procedure, which requires a considerable amount of technical skill, may be rendered very difficult by the rich supply of vessels usually found in the parietal portion of the adhesion, and, through the thoracoscope, seen clearly passing from the parietes into the adhesion. The danger of haemorrhage can, however, be almost completely eliminated by thoroughly coagulating the thoracic part of the adhesion with the diathermic cautery before severing it by means of the galvanic cautery. Attempts have been made to break down adhesions by the diathermic cautery alone; it has been found, however, that a current which is powerful enough to sever adhesions is likely also to produce dangerous internal reactions; indeed, in cases where the stumps are rather short the resulting necrosis may even reach the lung parenchyma, and eventually lead to the dreaded complication of empyema. We believe that diathermy used only to secure coagulation of vascular adhesions is a valuable procedure which lowers the incidence of complications and opens the way to still further development of Jacobaeus's original operation. The following case may serve to demonstrate the possibility of this combined method.

The patient, a man aged 24, suffering from severe tuberculosis, had a daily rise of temperature up to 102° F., and brought up each day about 2 oz. of muco-purulent sputum containing tubercle bacilli and elastic fibres in large quantities. The following radiographic appearances were observed after the induction of artificial pneumothorax on the left side. *Right side*: a light veiling was seen in the upper part, and in the lower part there were numerous small soft shadows. *Left side*: the apex was diffusely clouded, the lung being apparently firmly fixed by adhesions.

Five months after the induction of pneumothorax an attempt was made to divide the adhesions on the left side by the combined method above described. Through the thoracoscope the pleural cavity was seen to be strongly vascular, the intercostal spaces and rib demarcation being clearly visible. The apex of the lung was fixed chiefly in the neighbourhood of the second rib by an adhesion about the thickness of a little finger. A thin transparent band was seen stretching to the front of the chest, and two others, each about the thickness of a lead pencil, stretched upwards and forwards from the lung to the chest wall. The patient stood the operation very well, having practically no reaction. His temperature gradually settled down, becoming normal a week later, and he showed great improvement in general health. Three months later the cough and sputum had disappeared and a radiograph showed healing of the lesions on the right side and total collapse on the left side.

In this case, considering the technical difficulties involved in breaking down the coarse adhesions, complete thoracoplasty might have appeared to be the operation of choice; on account of the bilateral disease, however, and of the poor general condition of the patient, the plastic operation was ruled out, and the ultimate result in this case has proved to be very good.

Memoranda:

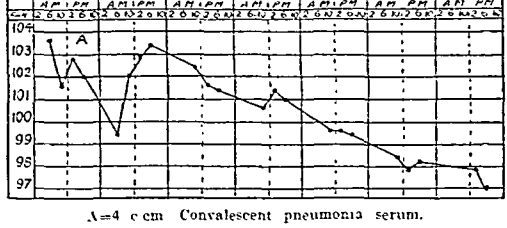
MEDICAL, SURGICAL, OBSTETRICAL.

TREATMENT OF PNEUMONIA BY CONVALESCENT SERUM.

THE following description of a case of influenzal pneumonia treated with convalescent serum is given in the hope that it may stimulate the application of similar treatment to further cases and so enable conclusions to be drawn as to the value of the procedure.

During the week ending February 2nd, a female patient, aged 34, had a sharp attack of influenza. After the temperature had been normal for a day it rose rapidly again with the development of central influenzal pneumonia. The sputum was rusty and blood-stained, signs were indefinite but suggestive of mainly left lower lobe involvement. Throughout the attack pleurisy was absent, and possibly on this account the respiration rate was little affected. At the end of the seventh day a rapid lysis set in and the temperature dropped to normal in thirty-six hours, with the usual amelioration of symptoms (February 11th).

While the patient's temperature was falling (February 10th) her child, a boy, aged a year and eleven months, became ill, and in two days (February 12th) he was obviously suffering from pneumonia. On February 13th, at 6 p.m., two days after his mother's temperature had reached normal, he was given 4 c.cm.



A=4 c.cm. Convalescent pneumonia serum.

of her serum subcutaneously, the blood having been taken four hours previously. He had been delirious during the day, and for three or four hours after receiving the dose of serum he had attacks of wild delirium separated by periods of disturbed sleep. About 11 p.m. he became quiet and slept for the rest of the night. In the morning his temperature was 99.4° F., a drop of nearly three degrees, his condition seemed much less toxic, and he began to take fluids with avidity. Though his temperature rose to 103.4° the same evening, it began to drop from that point about a degree every day, reaching normal on February 18th. The respiration rate remained 50-60 till the temperature had reached normal, but the general condition never caused as much anxiety as it did before serum was given.

No bacteriological examinations of sputum were made, but it was concluded from the type of temperature in the case of the mother, and the absence of any tendency for it to recur after the rapid lysis, that infection was mainly pneumococcal.

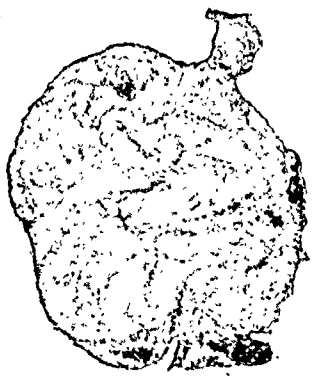
A. MCLAREN FERRIE, M.C., M.B., Ch.B.,
DONALD E. MORLEY, M.D., B.S., D.P.H.

St. Helens, Lancs.

FIBROMA OF THE URINARY BLADDER.

A FIBROMA of the urinary bladder is such a rarity that it seems advisable to place the notes of such a case on record.

The patient, a married woman of 28, was admitted to the Royal Waterloo Hospital, under my care, complaining of (1) acute pain before and during micturition (duration of symptoms eleven months); (2) partial loss of bladder control (duration five months). The first symptoms noticed (about one year before her admission into hospital) were suprapubic colicky pains and frequency of micturition. The latter, which at first was intermittent, had become progressively severe. The frequency of micturition, which was accompanied by pain, increased from eight to twenty times a day, and from three to six or eight times at night. During the last five months there was partial loss of bladder control. There was no history of haematuria, rigors, or pains in the region of the kidneys. She had little or no sleep, and she was rapidly losing weight. The patient had had no children, no miscarriages, and menstruation was normal in every way. There was no history of gonorrhoea or syphilis, or of any serious previous illness.



The patient was a thin, pale, nervous woman, and examination showed that the heart, lungs, and nervous system were normal. The kidneys were not tender or palpable. There was no evidence of distension with overflow. Three ounces of urine were withdrawn for a catheter specimen examination, and this showed no abnormal constituent apart from a slight excess of mucus. A rectal examination was negative; and per vaginam the uterus was felt to be anteflexed, and of the usual size and shape. On bimanual examination a circular tumour, about the size of a golf ball, could be felt in the bladder and separate from the uterus. On cystoscopy the tumour was seen to be covered with healthy mucous membrane, and to be lying three-quarters of an inch above the right ureteric orifice in the right antero-lateral wall of the bladder. Bilateral ureteric catheterization proved the kidneys to be healthy. A cystogram was taken, but this did not show any gross "filling defect."

Operation.—Under a general anaesthetic the bladder was distended with 8 oz. of warm boric lotion, and the patient was placed in the Trendelenburg position. An extraperitoneal exposure of the bladder was obtained through a suprapubic incision, and the viscus opened in the middle line. On retracting the walls of the bladder a hard submucous tumour was found on the right antero-lateral wall. The mucous membrane over it was incised and the whole tumour was shelled out of its bed. The rent in the mucous membrane was closed with 00 non-chromicized catgut suture, and the bladder was drained through a small suprapubic tube.

Description of Tumour.—The tumour was white, encapsuled, almost circular, hard, elastic, and presented all the naked-eye appearances of a fibroma. The surface was thrown into irregular folds, and, on section, whorls of fibrous strands could be seen.

The microscopical report of the sections showed the tumour to be a "puro" fibroma. Weight: 320 grains. Size: maximum diameter 5 cm., minimum diameter 4 cm., maximum circumference 11 cm., minimum circumference 9½ cm.

The patient made a good recovery; she passed urine per urethram on the fifth day; was allowed out of bed on the ninth day; and the wound was healed on the seventeenth day after the operation.

On discharge she had complete control of the bladder, and there was no pain or frequency of micturition. Cystoscopy performed two months later showed the bladder to be normal. She was then rapidly putting on weight, and looking fit and well.

RODNEY MAINGOT, F.R.C.S.,
Surgeon, Royal Waterloo Hospital.

PREGNANCY FOLLOWING AMPUTATION OF THE CERVIX.

THIS interesting condition occurred in a multipara, aged 34, who gave the following history.

She had had an amputation of the cervix performed eighteen months previously and followed by regular but painful menstrual periods. In July, 1928, she became pregnant, and nothing untoward occurred until February 16th, 1929; she was then seven months pregnant, and her membranes were said to have ruptured. Drainage of liquor continued during the following week, but she did not complain of pains until 1 a.m. on February 22nd. The pains continued, and she was admitted to hospital at 12.50 a.m. on February 23rd, because she was making no progress, and no dilatation could be felt by her doctor.

Abdominal examination on admission indicated a vertex presentation; the head was well engaged, and foetal heart sounds were easily heard. On vaginal examination, much to one's surprise, no os could be found. There was much scar tissue, which was very friable, the patient bleeding easily; the head was well down, and the lower uterine segment was thin and bulging. The only obvious spontaneous termination seemed to be rupture of the uterus by the head pushing its way through the lower uterine segment. Caesarean section was therefore performed and a living child of 5 lb. weight was delivered. A tube was passed through the lower uterine segment into the vagina to drain the lochia. The patient was pyrexial for about three weeks following delivery, after which she made an uninterrupted recovery.

This case is interesting in that menstruation had occurred regularly and liquor amnii had drained away in spite of the fact that the scar tissue had seemingly obliterated the external os.

Preston Royal Infirmary. H. W. DAVIS, M.B., Ch.B.

Reports of Societies.

RADIUM TREATMENT OF UTERINE CANCER.

AN open meeting of the London Association of the Medical Women's Federation was held at the British Medical Association House, Tavistock Square, on May 4th, when a report of the Cancer Research Committee of the London Association on three years' work on the treatment of uterine cancer with radium was presented.

Dr. FRANCES HUXLEY, from the chair, reminded the gathering that the Cancer Research Committee was formed in 1924, although it did not begin clinical work until late in the following year. More than three years' experience had now been gained as to the application of radium in cancer of the uterus. The report to be presented was really a continuation of one which was made rather more than a year ago (*British Medical Journal*, April 14th, 1928, p. 641), but the committee now had further encouraging results to communicate, and was looking forward to fresh developments.

Miss M. CHADBURN said that the work on cancer of the uterus treated by radium took place between October, 1925, and March, 1929. The committee first spent a considerable time in the general study of radium treatment, especially as carried out in Continental clinics, in deciding upon the technique and in designing the applicators, and in collecting the necessary funds to obtain the loan of the radium. The actual clinical work had been carried on up to the present in four hospitals—namely the South London Hospital for Women, the Elizabeth Garrett Anderson Hospital, the New Sussex Hospital for Women and Children at Brighton, and the Royal Free Hospital. The actual number of clinicians working in co-operation was eighteen. Each hospital was allocated its day for the use of the radium available, the radium being conveyed to and from the hospital by an officer appointed for the purpose. All the eighteen clinicians had been using the same technique and the same recording and follow-up systems. The work, although scattered over four centres, had been co-ordinated, because, in the first place, the technique was settled by the committee, which included representatives from each hospital, and by the clinical subcommittee, which included all the medical women engaged in the research; and, in the second place, the whole work was supervised by one research officer, a senior member of the profession and an experienced gynaecologist, Dr. Hurdon, who had given her whole time to the work of superintending the radium applications at the different centres. At first most of those concerned agreed to treat inoperable cases only. The surgeons at that time had more faith in operation than in radium, but subsequently more and more operable or borderline cases had been treated. Those concerned were now unanimous in feeling that the work could most advantageously be centralized in one hospital. The result was that the Marie Curie Hospital (named after the discoverer of radium), at Swiss Cottage, was expected to be opened in September of this year. Here it would be possible to work without the disadvantage of a scattering of centres, and the work might be widened beyond treatment of the uterus. Unfortunately, the hospital would have to make its own way financially; there would be private wards, but an appeal must be made to a generous public.

Dr. HURDON then gave a description of the cases treated, and some eight or ten of the patients, three of whom had come from Brighton, were presented to the audience as living witnesses to the efficacy of the treatment. These had been mostly cases of squamous carcinoma of the cervix, the symptoms having lasted for several months. The period which had elapsed since treatment was in only one case less than three years. A few of the women were above 60, but the average age would be from 45 to 50. Their

condition when treatment began was described as operable or borderline. Dr. Hurdon showed some tables giving the total cases treated since 1925. By far the greater number —191—were cases of cancer of the cervix; of these, 130 were still living. Operable or borderline cases accounted for about 21 per cent. of the whole. Recurrences were found to be very much more frequent during the first year following treatment; in subsequent years these diminished, and in the fourth and fifth years were very few. She thought the value of radium treatment had been definitely demonstrated. It had to be remembered, of course, that many of the patients applying were already in a very advanced condition.

Miss HELEN CHAMBERS gave a description of the technique employed. She said that it was based upon Heyman's technique at Stockholm, modified by the results of experimental work done in this country, especially in the laboratories of the Middlesex Hospital under Professor Sidney Russ, to whom those concerned in this research were greatly indebted. She showed slides illustrating the disposition of the radium tubes. Usually two tubes were placed, tandem-wise, in the intrauterine position, and two or three applicators in the vaginal vault. She reminded the meeting that, satisfactory as many of the results appeared to be, it was still possible only to cure—in the sense of a period of years free from symptoms—twenty out of a hundred patients applying; so that there was a great deal of room for improvement and for the devising of supplementary methods of treatment, notably x rays.

Dame LOUISE MCILROY emphasized the value of this joint work by the association. Three years ago some medical women from this country went over to Paris and saw Régaud's clinic, where they were so impressed by the work done with radium that they—she at any rate—gave up operating for carcinoma of the cervix in favour of radium therapy. She had also applied radium treatment in carcinoma of the body of the uterus with good results. The success of radium in this field was not to be doubted, and it was possible that in the future, with improved technique and better facilities, carcinoma of the breast might be dealt with similarly. Lately at the clinic in Brussels she with others had been impressed by the treatment of cancer of the rectum. But although this work undertaken by the London Association had produced satisfactory results beyond expectation, she thought it was a wise policy not to rush into print about it or to make very much of it for the present, waiting at least until the end of a five-year period. One eminently satisfactory feature with radium was the absence of operative mortality, which had the indirect value that it made women more likely to come early for advice when they knew that they had not the risk of operation hanging over their heads.

Miss ELIZABETH BOLTON forwarded some notes on cases from the Elizabeth Garrett Anderson Hospital. The number of cases of cancer of the cervix treated during three and a half years was 48, and 31 remained alive. Practically all were inoperable, though a few might be described as borderline. Advanced cases treated during 1925 were still living.

Miss LOUISA MARTINDALE said that this report was forthcoming evidently at the psychological moment when there was a movement all over the country for greater supplies of radium. More knowledge was necessary with regard to supplementary methods, especially intensive x-ray therapy. She had lately returned from a tour of Continental clinics —Frankfort, Freiburg, Geneva—and everywhere she had found that the practice of operating on the cervix was being given up in favour of radiation methods. She had been particularly struck at Frankfort by the provision for intensive x-ray therapy.

Dr. MALCOLM DONALDSON congratulated the London Association very heartily on the magnificent work it was doing, and especially on the team spirit displayed. He deplored the fact that at St. Bartholomew's, while they had the team, they lacked the beds. Lady BARRETT and others added their congratulations, and Dr. HELEN CHAMBERS, in reply, after acknowledging the willing co-operation of the surgeons, remarked that, after all, medical women, in taking up this field of endeavour, were only performing a simple duty to their sex.

INDICATIONS FOR SPLENECTOMY.

AT a joint meeting of the Sections of Surgery and Medicine of the Royal Society of Medicine, on May 1st, with the president of the Section of Surgery, Sir HOLBERT J. WARING, in the chair, a discussion was held on the indications for, and the results of, splenectomy.

Dr. HUGH THURSFIELD, opening for the Section of Medicine, reminded the meeting that seventeen years previously he had opened a similar discussion at a time when the operation appeared to be a daring innovation. The advance of surgical technique and of the experimental side of surgery had since that time led to a considerable increase in the knowledge of what could be done by splenectomy, but exact knowledge of the functions of the spleen remained almost the same as it was thirty years ago. It was known that the spleen was somehow concerned with the processes of digestion, and also with acute infective processes; but there was no other statement about the functions of the spleen which had not been challenged. It had been established that the spleen as an organ did not represent all the splenic tissue in the body, and hence splenectomy could not remove all splenic tissue. It was also known that removal of the spleen for any sort of condition produced no permanent changes which could be constantly identified; there was no permanent effect on blood formation, and the platelets, although raised at first, if low before operation, were soon at the old level. Dr. Thursfield said that splenectomy was a modern operation, the first recorded example having been performed by Spencer Wells in 1866; the patient was still living. There were three medical conditions for which splenectomy was advised almost as a routine: the first of these was splenic anaemia, which was defined as a chronic disorder with primitive splenomegaly, reduction in the red cells without the appearance of nucleated forms, a low colour index, leucopenia without myelocytes, and a diminished or normal fragility of the red blood corpuscles. Dr. Thursfield thought that the term Banti's disease ought not to be employed, since it was doubtful whether the condition occurred outside Florence. It was agreed that removal of the spleen was indicated for splenic anaemia as soon as possible after diagnosis, and by this means it was possible to restore a chronic invalid to a useful life. The second condition in which splenectomy gave brilliant results was congenital acholuric jaundice, in which it resulted in a cure, and the fragility of the red cells became normal. The third condition was the thrombocytopenic type of purpura haemorrhagica, in which it was believed that the blood platelets were restored to their normal quantities; although recent work had shown that this increase in the platelets was only temporary, the operation certainly stopped the haemorrhages. It was beginning to be held that the platelets played no part in the occurrence of the bleeding, but in any case splenectomy produced cure in about 80 per cent. of the chronic cases. Apart from these three conditions opinion was not so unanimous. In acquired cases of acholuric jaundice the operation of splenectomy by itself was not so effective as in the congenital cases, and any focus of sepsis must be carefully looked for and eliminated. The fragility of the corpuscles in these cases was not necessarily affected by the operation. Other conditions for which splenectomy had been performed included pernicious anaemia, a procedure now rendered unnecessary by the liver treatment, and cirrhosis of the liver. There were many forms of this condition, some of them cryptogenetic; it was known that removal of the spleen had a great effect on the liver in such conditions as splenic anaemia, where a cirrhotic process might be brought to a standstill. Hence, in every case of cirrhosis of the liver the question of splenectomy ought to be considered. At the Mayo Clinic 35 patients with cirrhosis of the liver had had their spleens removed, and of this number ten were alive and nine in good health. It appeared probable that in splenectomy there was a new weapon for combating cirrhosis of the liver, although it could not be used for advanced cases with ascites. Lastly, Dr. Thursfield mentioned the use of splenectomy for Egyptian splenomegaly, and for certain cases of myelocytic leukaemia.

Mr. A. J. WALTON, for the Section of Surgery, said that the surgical problems connected with splenectomy were difficult; it was first of all essential to have some sort of

classification upon which to work. It was also difficult for the individual surgeon to have great experience of all the conditions for which the spleen might be removed. Mr. Walton began with injuries of the spleen, including spontaneous and traumatic rupture; in this country the latter was the more common, and it was noticeable that the amount of trauma might be very slight. Torsion of the spleen also occurred, but was seldom diagnosed. Local lesions of the spleen included cysts and tumours. Hydatid cysts were most common in those countries where this infection was frequent, but in this country dermoids and other neoplastic cysts were commoner. Of tumours of the spleen fibrosarcomata were the commonest, producing large painful growths. There were also tumours due to overgrowth of the lymphoid elements, some of which it was difficult to distinguish from Hodgkin's disease. In the speaker's experience, if the lymphatic glands in the abdomen were found to be enlarged during the splenectomy the outlook was poor. The inflammatory lesions of the spleen were acute or chronic. A localized abscess was important surgically, producing a tumour with pain and pyrexia; if seen early, splenectomy was possible. In the later cases drainage and marsupialization were necessary. Chronic cases were more difficult, for one found patients with large spleens and all the symptoms of splenic anaemia. These cases had usually a pyogenic focus, which had to be cleared up. Mr. Walton included splenic anaemia in this group of chronic inflammations, and he regarded this condition as an early stage of Banti's disease. The results of splenectomy before liver changes had occurred were good, and there was some evidence that the liver might improve after operation if it was already affected. He did not think there was much evidence at present to support splenectomy as a therapeutic measure in cases of cirrhosis of the liver. The operation was not indicated in Hodgkin's disease; in such diffuse disorders as malaria, tuberculosis, and syphilis splenectomy might be called for in exceptional cases. In cases of secondary polycythaemia with much enlargement of the spleen its removal was of some value. In the next group of general blood diseases Mr. Walton placed first aplastic anaemia, for which splenectomy was not advised. With regard to pernicious anaemia, he discussed the possibility of cases of secondary anaemia due to bleeding gastro-jejunal ulcers passing into the pernicious type, especially if gastrectomy had to be performed. In cases of haemolytic jaundice splenectomy was not always necessary if the patients were not seriously troubled by the malady. With regard to purpura haemorrhagica, it was not a sound rule to remove the spleen because the platelets were decreased. It was much more important to consider the problem of whether the removal of the spleen would be dangerous if the platelets were normal, because of the risk of thrombosis. Splenectomy in Gaucher's disease should only be undertaken to relieve symptoms; it could not cure the disease. In cases of leukaemia the results did not appear to justify the operation. Discussing the general considerations with regard to splenectomy, Mr. Walton said that a platelet count and a white cell count were important; the size of the spleen was also of some help, for the bigger it was the more evidence there usually was of its destructive activities. He used a double incision, a left pararectal, with an extension carried up obliquely in the line of the intercostal nerves; the first essential was to cut down to the vessels and ligature them.

Dr. A. F. HURST thought that purpura haemorrhagica was a misleading name, since all purpuras were haemorrhagic, and many cases of this disorder had no purpura. He preferred the term "haemorrhagic diathesis," which manifested itself by a tendency to bleed, mostly into the skin, but also from the stomach, bowel, uterus, kidneys, and nose. The first haemorrhages might occur from one of these sites, and not into the skin at all. In obscure cases of gastric haemorrhage it might be well to examine the blood; if the platelets were reduced or the bleeding time prolonged splenectomy should be considered. Essential haematuria might also prove to be the same sort of disorder, and some cases of uterine haemorrhage also came into this category. In late cases of splenic anaemia with cirrhosis of the liver and ascites the mortality after operation was higher, but Dr. Hurst still thought that splenectomy should be performed. He mentioned one case of syphilitic infection where no improvement occurred until the spleen was removed.

Dr. F. PARKES WEBER said he had never recommended splenectomy, although he had seen cases in which it had been performed, or might have been performed. He had recorded a family with inherited haemolytic jaundice in which the jaundiced members for the most part enjoyed good health. During the strain of the war one of the younger members became very ill, and the spleen was removed. The others still enjoyed good health, and Dr. Parkes Weber was uncertain as to what advice he ought to give. He had seen cases of purpura haemorrhagica in which splenectomy was contemplated, but in spite of this he was still uncertain when the operation should be performed and in what kind of case. With regard to the pathology of the spleen, he thought that in acholuric jaundice the spleen caused excessive destruction of abnormally fragile blood corpuscles; in purpura it destroyed or counteracted the abnormal thrombocytes. In both diseases there must be some other factor present, however, possibly connected with lipoid metabolism, and Dr. Parkes Weber urged that the blood cholesterol should be determined in all cases of splenomegaly. In Banti's disease he had seen a case come to necropsy with extensive thrombosis of the mesenteric and portal vessels, and he felt that splenectomy would have precipitated a fatal issue. He had seen one case of lymphatic leukaemia in which great benefit had been experienced from removal of a bulky spleen. In conclusion, Dr. Parkes Weber emphasized that an enlarged spleen might be serving a useful purpose.

Dr. A. KNYVETT GORDON remarked that in most medical conditions submitted to splenectomy the diagnosis had to be determined by clinical pathology. He had reached certain conclusions with regard to splenectomy, especially concerning its value in thrombocytopenic purpura. Whenever spontaneous bleeding occurred it was important to examine the spleen and the platelets. Any septic focus must also be investigated, and if an organism was found its pathogenicity must be tested. If the platelets were reduced then the spleen should be removed irrespective of its size or the site of the bleeding. Splenectomy should also be performed in cases of splenic anaemia in order to prevent the development of Banti's disease, but it should not be employed in any case with a leucocytosis.

Mr. R. E. KELLY said he had removed the spleen for almost all the classical conditions, and he had seen fragility of the splenic vessels in many cases at operation. He used as his incision one passing horizontally across the abdomen; this gave good access. He thought that it was not strictly true that patients with congenital acholuric jaundice were ever really well; during the bouts of illness from which they suffered the spleen often became larger. With regard to splenectomy and its effect on the platelet count, he showed charts illustrating how this count was increased after operation, but generally came down again, although in two cases the increased platelet count was maintained for a long time. There was a danger of thrombosis when the platelets were increased after operation. From observations on the blood in the splenic artery and vein it was ascertained that the spleen caught and held one platelet in every four taken to it.

Dr. P. MANSON-BAHR explained that Egyptian splenomegaly was part of a general infection; the enlargement of the spleen in these cases was not easy to understand, and was probably secondary to changes in the liver. The blood picture was like that of splenic anaemia, and while the parasites which caused the disease were killed off by antimony tartrate, it was also necessary to excise the spleen. It had been advanced that the removal of the spleen was simply a way of getting rid of redundant tissue in such cases, and was purely mechanical in its beneficial results.

Sir HOLBURT WARING thought that if adhesions were present these must be dealt with first before it became feasible to get at the splenic vessels in splenectomy.

Dr. THURSFIELD, replying, emphasized the connexion between enlargements of the spleen and cirrhosis of the liver as brought out in the discussion, especially in certain tropical conditions. He felt that splenectomy ought to be

a more common operation in such cases. Mr. WALTON, replying, mentioned that in many cases of congenital acholuric jaundice there were gall-stones as well. If pure pigment stones were found in a case of gall-stones the fragility of the red blood corpuscles ought to be investigated.

DIAGNOSTIC PROBLEMS.

AT a meeting of the Devon and Exeter Medico-Chirurgical Society at the Royal Devon and Exeter Hospital on April 25th, with Dr. F. A. ROPER in the chair, Dr. ROY CRAIG showed a girl, aged 17, with symptoms of early disseminated sclerosis.

Dr. Craig said that the prominent subjective symptoms in this case were giddiness and difficulty in walking. There was a slight degree of nystagmus, and the left disc showed some pallor and congestion. Tremor was noticeable in the right hand. The plantar reflex was extensor on the right side, and both patellar reflexes were greatly exaggerated. Ankle clonus and spasticity were absent on both sides. Dr. Craig remarked that the initial symptoms were compatible with a diagnosis of "hysteria," but these were followed by unsteadiness of gait and intention tremor, with much variation in their intensity from time to time. He concluded, therefore, that the evidence indicated the presence of a pyramidal lesion, where the pressure of the axon was not yet complete—a lesion which should not be regarded as beyond hope of cure. The pressure required treatment, but the variation in symptoms showed that there was as yet no actual destruction. Intramuscular injections of bismuth given in the intervals between intravenous injections of the arsenical compounds answered best in these cases. Treatment by malaria infection had proved of doubtful value in disseminated sclerosis.

Dr. ROPER said he had found disseminated sclerosis of rare incidence in the South-West; the majority of the cases occurred in young girls. The disease seemed to be more common in the industrial centres in the North of England. Dr. W. GORDON remarked that hysteria and disseminated sclerosis afforded an excellent example of the "coupled diagnosis"; neither of these conditions should be considered as being present without the possibility of the existence of the other being borne in mind.

Dr. CRAIG also showed to the meeting, for comparison, a boy, aged 8, who was a cretin under treatment, and a girl, aged 2¾, with Mongolism. As points in the differential diagnosis, Dr. Craig demonstrated the restlessness, the protruded tongue, the shuffling, the small head, and the groove in the palm of the hand—all very marked in this case of Mongolism. In the cretin shown to the meeting there were the typical facies with sunken bridge of the nose, the dry skin, lethargy, and the backward mental development, as opposed to the definite mental deficiency in the Mongol.

Dr. F. A. ROPER showed a girl, aged 16, known to be the subject of diabetes insipidus since the age of 4, when she was found to have an inordinate thirst. Up to the present time all treatment had failed to stem a polyuria ranging from 8 to 12 pints in the twenty-four hours. The girl was undersized, and menstruation had not yet appeared, although the onset of puberty was otherwise indicated. She had complained of severe headaches from the age of 15, and there had been two recent attacks of an epileptiform character. Beyond the very low specific gravity, relative to the polyuria, the urine showed no abnormality. Radiographs of the skull were negative as regards abnormality in the pituitary fossa. Dr. Roper had admitted the girl to hospital quite recently, and it was too early yet to estimate the value of pituitary injections, which were being given *pari passu* with routine investigation of the urine.

Dr. CROCKFORD cited the case of a middle-aged woman suffering from mammary carcinoma who suddenly developed symptoms of diabetes insipidus, doubtless from a secondary deposit in or near the pituitary body. Dr. W. GORDON mentioned the case of a woman, aged 50, where the alternative diagnosis of renal cirrhosis was negatived. Pituitary injections had been considered of diagnostic value at one time. As regards the pathology, one possibility was a basal meningitis of syphilitic origin.

Varieties of Aneurysm.

Dr. R. V. SOLLY showed pathological specimens of three recent cases of aneurysm.

The first was a saccular aneurysm of the ascending aorta from a man, aged 49, with pressure symptoms involving the left lung. The chief interest in this case arose from the fact that the man had carried on his work as a postman without apparent distress, and had not consulted a doctor for fifteen years. He collapsed suddenly when going up a hill, and became deeply cyanosed and unconscious. Subsequently he made a partial recovery, but pressure symptoms on the left lung remained constant until his death two months after admission to hospital.

In the second case there was a dissecting aneurysm of the abdominal aorta. A married woman, aged 49, was admitted to hospital complaining of vomiting after food, and of feeling a lump in the stomach. She was found to have an aortic diastolic bruit, and a pulsating abdominal tumour to the left of the umbilicus. The blood pressure was 242/120. The Wassermann reaction was negative. The necropsy revealed hypertrophy of the left ventricle, and atheromatous changes in the aorta and on the mitral aortic valves. There was also marked thickening of the abdominal aorta down to the common iliac bifurcation.

The third case was one of aneurysm of the descending thoracic aorta, which had burst into the left side of the thoracic cavity. A man, aged 46, was admitted to hospital for a suspected pleural effusion; he had complained of pain in the right side and under the right shoulder blade of twelve hours' duration. On examination he was found to have dullness at both pulmonary bases, left-sided cardiac enlargement, and a diastolic bruit in the aortic area. The pupils reacted poorly to light and the tendon reflexes were sluggish. The Wassermann reaction of the blood was positive. The man died suddenly twenty-four hours after admission, having shown no particularly urgent symptoms prior to the fatal collapse. The necropsy revealed an enormous clot, filling the left side of the chest. A sacculated aneurysm, the size of an orange, was found just above the diaphragm; it arose from the descending portion of the thoracic aorta. The site of rupture was on the anterior surface and was half an inch in breadth. Erosion of the ninth, tenth, and eleventh dorsal vertebrae had taken place, an aneurysmal sac being adherent to the spine at that level.

DIGITALIS IN THE TREATMENT OF AURICULAR FLUTTER.

A MEETING of the Section of Medicine of the Royal Academy of Medicine in Ireland was held on April 12th, with the president, Dr. R. J. ROWLETTE, in the chair. Dr. H. F. MOORE read a paper entitled "Some further experiences with auricular flutter," and illustrated the course of each case by electro-cardiograms.

Dr. Moore reported that sixteen attacks of established flutter had been seen in eight patients within the last six years; in one case only was the Wassermann reaction positive. In this case two attacks of flutter were successfully treated; the patient subsequently died with cerebro-spinal syphilis, but with an apparently normal heart rhythm. One patient died two hours after admission to hospital with 1.1 ventricular response—a very rare condition. Six patients were still alive. Fifteen out of sixteen attacks of flutter were abolished, with final restoration of the sinus rhythm by full digitalization (to induce auricular fibrillation), followed by three doses of quinidine (to induce normal rhythm).

The PRESIDENT thought a point to bear in mind was that digitalis might be pushed more than probably most clinicians had done up to the present. The failure of others to get results comparable with those of Dr. Moore was probably due to the fact that they did not do this.

Dr. G. E. NESBITT said that he had come across only two cases of flutter. He believed that in Dr. Moore's third case the patient had exhibited some signs of bundle-branch block. Myocarditis was undoubtedly present, and he regarded the prognosis as bad. He thought it was necessary to be very careful in increasing the dosage of digitalis; he had seen cases in which the patient had developed coupled rhythm subsequently. He mentioned a case of typical flutter in a man, aged 75, in whom the condition had been present for two years; after a holiday without treatment he came back with normal rhythm.

Dr. L. ABRAHAMSON referred to a case of auricular flutter with persistent 4.1 block. He pointed out that in paroxysmal flutter the administration of digitalis was unnecessary, since in cases where the attacks did not cease spontaneously quinidine alone usually sufficed to restore normal rhythm. He mentioned a case of paroxysmal tachycardia occurring in pregnancy and due to paroxysms of

auricular fibrillation alternating with flutter; quinidine rapidly abolished the attacks. He suggested that development of a transient flutter during the administration of digitalis in auricular fibrillation was not so rare as Dr. Moore supposed, and thought that in Dr. Moore's case resumption of digitalis because of the supervention of flutter was unnecessary.

Dr. MOORE, replying, agreed with Dr. Nesbitt that bundle-branch block was present in the third case he had described; he thought it was difficult to know what the outlook was, since some of these patients lived for quite a long time, and others did not. It was essential in giving digitalis to remember that it was a poison, and therefore should not be pushed too much; if coupled rhythm occurred it should be stopped at once. He believed that by using an electro-cardiogram toxic symptoms could often be avoided. He agreed with Dr. Abrahamson that flutter often replaced fibrillation after the giving of quinidine.

Pemphigus Foliaceus.

Dr. W. G. HARVEY read notes on a case of pemphigus foliaceus.

A man, aged 60, was admitted to the Adelaide Hospital on June 17th, 1928; he was a farmer, but had nothing to do with cattle and very little with sheep. He was completely covered by a profuse red scaly eruption, presenting the appearance of pityriasis rubra. He had had no skin trouble until about two months before admission, when blebs developed on the back and arms, which grew in size to a handbreadth or more. These blebs were at first discrete, but gradually coalesced to cover the entire surface of his skin. A month later the skin became scaly, but there were still some vesicles on the legs.

The temperature was then 99.6° F. in the evening and normal in the morning; it rose gradually in a fortnight to 101° F. A week before admission he had become somewhat delirious and was getting worse every day. At first the skin was in an inflamed desquamative condition, and the scalp was covered with thick crusted scales, making the features almost indistinguishable. Large flakes of skin were desquamating over the whole surface; the skin of the soles of his feet was separating en masse at the edge, like a slipper, and from the sides pus exuded. Pus of a dark grumous appearance was coming from his right ear. His mouth, tongue, cheeks, and fauces were intensely reddened and dry, with here and there greyish flakes of inspissated material. He was comatose, but next day became conscious, and though he rambled a good deal, he was at times quite sensible. He had all the appearance of a case of pityriasis rubra, but there was a peculiar sour smell somewhat reminiscent of the gas gangrene of war times. The history of the commencement of the attack indicated that the case was really one of pemphigus foliaceus. With the exception of the pus, there was little sign of moisture, and no blebs were observed at this time or during the period he was under Dr. Harvey's care; but the newly formed skin under the scales was easily detachable by firm rubbing, showing Nikolsky's sign. The urine contained a slight trace of albumin and a large amount of indican, which was constantly present.

The treatment adopted was calomel internally in 1/4 grain doses as an intestinal antiseptic, sodium bicarbonate, and arsenic. Locally, carron oil was applied and a glycerin preparation of lead subacetate; a mixture of glycerin and water was used as a lotion. Calamine cream and calamine lotion were also tried with and without ichthyol. The patient towards the end of his fifth week in hospital began to run a higher temperature, and died on July 24th.

Dr. O'MEARA read his pathological report of the finding of an acid-fast bacillus in numbers in the lesions—a unique finding. This bacillus was not, of course, the tubercle bacillus. On culture it did not yield any growth.

Dr. E. T. FREEMAN said there was no doubt that the condition was pemphigus foliaceus. He suggested that possibly the micro-organism was the smegma bacillus.

Dr. O'MEARA, replying, said that the organism which he had found did not resemble the smegma bacillus. As a rule this bacillus was not difficult to grow, and when it was remembered that the organism was growing on the surface of the skin in the case described, he thought that it would also have grown on artificial culture; an anaerobic culture might have been more successful.

The Value of Splenectomy in Banti's Disease.

Dr. F. J. O'DONNELL read notes on a case in which death followed splenectomy.

A boy, aged 6, had his spleen removed in 1926 for early Banti's disease. The operation checked his downhill course at the time, and subsequently he improved greatly.

On June 16th, 1928, he had headache and vomited three times during the day. The temperature was 102.6° F.; the pulse 120; and the respirations 24. Physical examination was negative except for a suspicion of a patch of pneumonia at one base. The boy was mentally quite clear, and complained chiefly of frontal headache.

Next morning the boy was looking intensely ill; there was a purpuric patch on the upper lip, the gums were bleeding, and black material was frequently vomited. He was restless and for the most part delirious. The head was slightly rigid, the pupils sluggish with photophobia. The temperature was 103.8° F.; the pulse was hardly palpable, and the heart sounds were feeble. During the day his condition grew progressively worse; the purpura spread widely on the face and similar patches appeared on the legs. The delirium and irritability grew more pronounced; in the afternoon the urine was bright red with blood, and by night the head was rigid. Death occurred the following morning; no necropsy was held.

Dr. O'Donnell said that the boy had died from an acute septicaemia, possibly of fulminating cerebro-spinal fever, but the case had also features of purpura fulminans. The boy's father had had his spleen removed in 1919, and had died later of septic pneumonia, manifesting a similar lack of resistance to the disease. The combined histories suggested some association between splenectomy and a diminution of the natural resistance of the body to disease.

Professor T. G. MOORHEAD said that this case raised a question as to the value of splenectomy in splenic anaemia. In recent years it had been universally accepted that surgery held out the only prospect of cure to sufferers from this disease; but in order to assess the value of surgery it was necessary to know the natural course of the disease when left untreated, and also to know the after-history of cases in which operation had been performed. Ordinary textbooks stated that untreated patients might live from fifteen to twenty years, and that the precirrhotic stage of the disease might last for as long as twelve years. As yet he believed no surgical statistics were available to show that life was prolonged or health permanently improved by operation, though there seemed to be no doubt that splenectomy was generally followed by an immediate and striking improvement in symptoms. Professor Moorhead remarked that Dr. O'Donnell's case was undoubtedly one of Banti's disease of the rare familial type; this had been proved by histological examination of the spleen. He also reported the after-history of three other cases in which splenectomy had been performed, but in two of these the operation had definitely not checked the course of the disease. One of the patients, though operated on in an early stage, continued after operation to suffer from progressive anaemia with haemorrhages, and died six months later. The other died two years after the operation, and in the intervening period had repeatedly suffered from haemorrhagic and thrombotic disturbances. The third patient lived nine years after the operation, but during all that time was anaemic and only fit for light work. Professor Moorhead said that a detailed account of the working capacity and the general health of patients on whom splenectomy had been performed for Banti's disease was urgently required.

Dr. G. E. NESBITT said he had always doubted the real value of splenectomy in these cases. He suggested that a statistical inquiry to determine the after-history of all cases in which splenectomy had been performed would be of great value.

THE OSLER CLUB.

THE Osler Club celebrated its first anniversary at a meeting held on Tuesday, April 30th. The secretary, presenting his report for the year, paid a tribute to the splendid work of the club's foreign secretary. Sir FARQUHAR BUZZARD, in a paper on the history of neurology, traced the growth from neurological aspects of other sciences of the independent science of neurology, for which he foresaw a future of great importance in the elucidation of the problems of education. Mr. FALCONER MADAN charmed the meeting with an address on Osler and Burton, full of the rare fruits of his wit, wisdom, and scholarship. Dr. J. D. ROLLESTON gave a brief account of the life and work of Billroth, and Sir D'ARCY POWER and Mr. W. G. SPENCER took part in the discussion. The club's collection of Osleriana was exhibited, together with portraits and works of Burton and of Billroth. Among those present were Dr. H. Morley Fletcher, Professor Gask, Dr. G. B. Harrison, Professor Fraser-Harris, Dr. Schroeder (of the Anglo-German Academic Bureau), Mr. Geoffrey Keynes, Dr. A. P. Cawadias, Mr. Hugh Cairns, Mr. C. Wilson, the Conservator of the Wellcome Historical Medical Museum, the librarian of the Royal Society of Medicine, and Mr. Philip Franklin

Reviews.

BILIARY DISEASES.

THE book by EVARTS GRAHAM, COLE, COPHER, and MOORE on *Diseases of the Gall Bladder and Bile Ducts*[1] was first published in 1928, and already has required reprinting, which may be taken as good evidence of its immediate success. In the second printing (1929) a short introduction, placed immediately after the preface, is the only addition, and gives the authors the opportunity of dealing with some minor criticisms which have appeared in previous reviews of the book. They explain how they wished to emphasize particularly the new work on the biliary tract, and therefore made no attempt to go fully into questions of differential diagnosis between biliary disorders and other diseases which may simulate them.

It is impossible to consider adequately all the features of interest in this book of nearly 500 pages, and some sections can only be named to show the completeness of the work. There is first of all an excellent account of the anatomy and physiology of the biliary tract, in which due allowance is made for many points, especially in physiology, which are still matters of controversy. Then follows a clear description of cholecystitis in its various forms, a disease of which the frequency and importance are gradually being recognized by physicians and surgeons alike. The medical treatment of acute cholecystitis is not adequately discussed, but this is inevitable in a book written by three surgeons and a radiologist. Gall-stones, their varieties, and the theories of their mode of formation are, as might be supposed, fully dealt with. Catarrhal jaundice and cholangitis are considered together, in accordance with the newer teaching, and the description of the various forms of cholangitis is to be warmly recommended as the most complete discussion of the subject available anywhere.

The subject of cholecystography naturally gets the fullest description from the authors, who are the originators of the method. This section, extending as it does to one hundred pages, with full references, must be regarded as the authoritative pronouncement on cholecystography, and is therefore indispensable to physicians, surgeons, and radiologists alike. Another long chapter of over fifty pages is devoted to the possible applications of tests of hepatic function in the diagnosis of biliary disease. All the various dye tests, sugar tests, and tests such as the van den Bergh reaction are fully described, and finally it is pointed out how the intravenous injection of phenoltetraiodophthalein provides at one and the same time both a "dye test" of hepatic function and an opaque substance for the radiological test of cholecystography. Hidden away in the chapter on tests of hepatic function is an interesting account of "white bile." Quite apart from the very great physiological interest of white bile, its presence always means an increased surgical risk in operations on the biliary tract. It is now agreed that "white bile" is the product of the walls of the main bile ducts, and collects in the ducts, as Rous and Drury have shown, in conditions of severe damage to the liver parenchyma when biliary obstruction is also present. Judd and Lyon at the Mayo Clinic found "white bile" nineteen times in operations on the common bile duct, and four of these nineteen patients died. The last long chapter of the book is devoted to surgical treatment of diseases of the biliary tract, medical measures being scarcely referred to, and this chapter is obviously meant for surgical readers alone. The index has been compiled with great care, and is entirely adequate.

The whole book is easily the best available on diseases of the biliary tract and their surgical treatment. The work of Evarts Graham and his colleagues and their development of the technique of cholecystography rank along with the more purely physiological work of F. C. Mann and his colleagues as among the best scientific and practical studies in medicine which have appeared in the United States of America in the last decade.

[1] *Diseases of the Gall Bladder and Bile Ducts.* By Evarts Ambrose Graham, M.D., Warren Henry Cole, B.S., M.D., Glover H. Copher, M.D., and Sherwood Moore, M.D. Second printing. London: Baillière, Tindall and Cox. 1929. (6 × 9¼, pp. xv + 477; 224 figures, 7 plates. 25s. net.)

The fourth volume of a series of German monographs on the practice of medicine, edited by Grote, Fromme, and Warnekros, is entitled *Die Erkrankungen der Gallenwege und ihre chirurgische Behandlung*[2] (diseases of the biliary passages and their surgical treatment), and is written by KÖRTE. It contains only about 170 pages, but is an excellent and complete summary of all modern knowledge on the subject. It is quite up to date and its completeness is extraordinary. We have searched for omissions of important details, but have not found them. As is common in German textbooks, almost all the references are to the German literature, and even in the section on cholecystography the name of the originator of the method, Evarts Graham of St. Louis, is merely mentioned without any references to his original papers. The twenty-six illustrations are remarkably good and clear, and there is an adequate index. The whole monograph gives a thoroughly sound account of the subject from the German point of view, and makes it easy for any reader to refer to all the recent German scientific papers dealing with diseases of the bile ducts and their surgical treatment.

MUIR'S PATHOLOGY.

PROFESSOR ROBERT MUIR'S *Text-Book of Pathology*[3] has established its reputation as a standard work on the subject, and as it has already been reviewed in these columns (April 15th, 1925, p. 787) it is unnecessary to refer to its general features. A second edition has now been issued, and a comparison with the former gives evidence of considerable revision in details, together with the addition of much new matter, entailing an enlargement of the work to the extent of a hundred pages.

The section on oedema has been revised and the recently recognized role of physical factors, as distinguished from the secretory activity of the endothelium, discussed. A very good account of the reticulo-endothelial system is given; much importance has been attached to this system in recent years, and the author makes some useful critical comments as to its significance. Similarly with regard to the interesting subject of tissue proliferation induced by special stimuli—for example, the stimulating action of embryonic juice on tissue cultures. Carrel has done much work on these substances, to which he has given the name of trephones, and considers that they play an important part both in repair and in tumour formation. The author gives a warning of the danger of applying the results of test tube observations to the more complex relations in normal tissues *in situ*. In a later part of the volume, under the heading of metaplasia, an excellent instance of a special stimulant of cell proliferation is given in connexion with J. S. Young's experiments, in which an injection of sudan III in olive oil with sodium cholate produced a marked proliferation of the cells of the pleural serosa, leading to an appearance *resembling transitional, and even squamous*, epithelium. The question of filterable viruses in connexion with the Rous sarcoma is fully discussed, including Gye's theory of the dual nature of the filterable agent. The author considers it questionable whether tumours of the Rous sarcoma type do not form a class by themselves, and finds it difficult to reconcile the view that a virus is concerned in tumour growth in general, with the results of the experimental production of cancer. An account is given of Mann's experiments on the extra-hepatic production of bilirubin. He and his co-workers have found that bile pigment is formed in the liver to a slight extent only; rather more is formed in the spleen than in the liver, and the chief source is the bone marrow. It may be, as the author points out, that the site of bilirubin formation differs in different animals, and it is impossible at present to say what is the normal site in the human subject. Among other matters added by the author and bringing the work up to date may be mentioned the recent researches

[2] *Die Erkrankungen der Gallenwege und ihre chirurgische Behandlung.* Von Professor Dr. Werner Körte. Medizinische Praxis, Band iv. Dresden und Leipzig: T. Steinkopff. 1928. (6 × 8¾, pp. xii + 183; 26 figures. R.M.10.)

[3] *Text-Book of Pathology.* By Robert Muir, M.D., Sc.D., LL.D., F.R.S. Second edition. London: E. Arnold and Co. 1929. (Med. 8vo, pp. vii + 872; 591 figures. 35s. net.)

on the cerebro-spinal fluid, rickets, the islands of Langerhans, and the so-called thyroiditis of Riedel.

A few additional illustrations have been included, but the general excellence of the figures in the first edition called for little alteration in this respect. A feature of the work which might be more generally adopted is the limitation of bibliographical references. It is customary either to give an extensive bibliography or to omit it altogether, and in neither case is the student much assisted. The middle course adopted by Professor Muir seems to be the right one—namely, to choose a few good books for the student, which will give him all the additional information he requires.

LARYNGO-PHARYNGEAL SYMPTOMS OF NERVOUS DISEASE.

THE monograph entitled *Kehlkopf und Rachen in ihren Beziehungen zu den Erkrankungen des Zentralnervensystems*[4] (larynx and pharynx in their relation to diseases of the central nervous system) recently produced by Dr. BÉLA FREYSTADTL contains a wealth of material which is of great value. Not only does it systematize in a manner which helps to emphasize their importance the well-known disturbances of laryngeal and palatal innervation, but it adds many new observations to those already current.

Too often, as Dr. Freystadtl has pointed out, the absence of any symptoms referred to the larynx or pharynx leads to perfunctory examination of these regions, whereas a more detailed and careful investigation will reveal defects which have been sufficiently compensated or insufficiently severe to be noticed by the patients themselves. It has been the author's task to show which of these slight defects are indicative of incipient disease and to estimate their significance. Many progressive diseases, involving widespread lesions in the central nervous system, have a characteristic order of attack upon the medullary nuclei. The particular onset and course of the functional impairment which results is sometimes pathognomonic of the disease, and Dr. Freystadtl shows how this knowledge makes it possible to differentiate between the various forms of bulbar palsy at a stage when other motor and sensory defects do not contribute to the clinical picture. If the nature of the lesion is thus suggested, its site may be as readily deduced from the same observations. The localization of small lesions around the aqueduct is greatly facilitated by our knowledge of the topography and connexions of the nuclei of the third cranial nerve. The information supplied for such localization by examination of oculomotor functions is furnished in the case of lesions in the lower part of the medulla by examination of the largyngopalatal mechanism. One difference which will be immediately appreciated between these two sets of apparatus—the visual and the laryngeal—is that, whereas stereoscopic vision demands such nicety of adjustment and co-ordination that diplopia, at least, may be complained of at a stage when defective movement can with difficulty be observed, the various functions of the larynx are less exacting and their impairment is later in appearing. Disturbances of breathing, of voice production, of swallowing, of speech, and even of taste are all dealt with by Dr. Freystadtl, who thus enlarges the field purposely beyond the strict limits of the larynx and pharynx. Spinal, bulbar, cortical, and motor nerve lesions have been considered separately: in the absence of exact knowledge as to the nature of myasthenia gravis no one will quarrel with its inclusion among diseases primarily affecting the bulb. The author has ranged widely in search of clinical and pathological data, and no obvious omissions present themselves. Vascular lesions of the bulb claim, of course, a prominent place among those under consideration, and the work of Foix and Hillemand, who have recently published a detailed account of this vascular supply, might have been usefully included in an attempt to systematize the lesions in that region. This monograph will prove of the greatest interest to neurologists, and is, within a comparatively narrow compass, complete.

[4] *Kehlkopf und Rachen in ihren Beziehungen zu den Erkrankungen des Zentralnervensystems.* Von Dr. Béla Freystadtl. Berlin: J. Karger. 1928. (Sup. roy. 8vo, pp. 325; 35 figures. M. 17.)

FORENSIC MEDICINE.

A THIRD edition of the late Dr. F. J. SMITH'S *Forensic Medicine and Toxicology*[5] has been published under the editorship of Dr. GEORGE JONES. This book consists essentially of the course of lectures given at the London Hospital Medical School, and within a compass of some 400 small pages it traverses the whole field of forensic medicine. This compression has certain advantages if the object is to place a summary of the subject before the student for examination purposes. If, however, the object of the book is to provide a real help to the student when dealing with cases in practice, then such compression tends to be destructive.

The chapters on law and procedure are full and informative and the general description of wounding and deaths from various forms of violence is adequate, but there is a distinct lack of practical detail throughout the various sections. In connexion with the examination of blood stains, a number of non-specific tests which are obsolete should be omitted, and the space utilized for a better description of more useful tests. In the toxicological section, the student is given a useful summary of the actions of the common poisons, but here again much more care should be exercised in the choice of material and the method of its presentation. For example, carbon monoxide and carbon dioxide poisoning are mentioned together, and no information is given about the dangerous concentrations of carbon monoxide, nor is the presence of this gas in the exhaust fumes from motor cars, geysers, etc., mentioned. The Poisons Act and the Dangerous Drugs Act and Regulations are insufficiently described in so far as they affect the young practitioner.

The editor has brought much of the subject-matter up to date, but the great amount of new legislation affecting practitioners of medicine and the advances in the various sciences related to the study of medicine make a revision of a small textbook a matter of extreme difficulty. Dr. Jones has, however, produced a very creditable new edition, which retains the individuality of the author and gives students a working knowledge of the subject of forensic medicine.

HOSPITALS AND THE STATE.

AMONG the numerous books and papers regarding the hospital question there is one which has an especial interest in that it deals with the history of the hospitals of this country. Dr. R. WESTLAND CHALMERS has written a most interesting little book, *Hospitals and the State*,[6] in which he traces the origins of hospitals as we know them, from the days when guests were so few that the stranger was always welcome, to the times when the great houses had their own strangers' halls, and so through centuries of private kindliness and charity to a stage where the hospital provided hospitality for the sick alone instead of for all. Three-quarters of his little book is filled with this most interesting story, in a series of chapters which are well documented and sufficiently wide in their scope to be informative. From hospital origins and hospitality we are taken to forced benevolences, to the policing of the poor, the growth of mediaeval hospitals, and their influence upon the public conscience; then to the philanthropist as a reformer, and the growth of collective philanthropy. Dr. Chalmers next discusses the modern situation, upon which he has definite ideas, and we may observe here that his book is much better than his foreword. There are half a dozen pages of this, and there is scarcely a hint in it of the interest of his historical survey; it is full of sneers at the "voluntary" system. It is strange that Dr. Chalmers should have written such caustic words on benevolence, for the main part of his book is in effect a eulogy of benevolence and of what it has effected. But the reason of his attitude is not far to seek. He has come to believe that the care of the sick is the sole duty of the organized State, and that

[5] *London Hospital Lectures on Forensic Medicine and Toxicology.* By the late Frederic John Smith, M.D., F.R.C.P., F.R.C.S. Third edition, revised by George Jones, M.B., M.R.C.S., L.R.C.P., D.P.H. London: H. K. Lewis and Co., Ltd. 1929. (Fcap. 8vo, pp. xx + 440. 10s. net.)

[6] *Hospitals and the State.* By R. Westland Chalmers, M.B., Ch.B., D.M.R.E. London: J. Bale, Sons, and Danielsson, Ltd. 1928. (Demy 8vo, pp. ix + 143. 6s. net.)

the State alone can effectively deal with the hospital problem, for which, as he rightly says, it is already responsible to the extent of some three-fifths of the work. Yet, despite the fact that the State is responsible for so much, he blames the voluntary hospitals for the defects he finds. "It becomes obvious that any reform of a practical nature will demand large financial resources if true economy and efficient methods are to be established against the hand-to-mouth and fumbling methods of the old-fashioned routine of voluntaryism."

AUSCULTATION.

In his little book on modern auscultation of the lungs[7] Dr. JUMON discusses the causes of the various normal and abnormal breath sounds. Some of his theories seem new and interesting. He believes, for instance, that the normal vesicular murmur is caused by the production of numerous fluid veins when the air passes through the muscular ring surrounding the mouth of each alveolus. This ring he calls the "bronchiole sphincter," and he states that section of the vagus, causing paralysis of the muscle, abolishes the murmur. The book consists of an introduction, three parts, and an appendix. The introduction deals with the history and anatomy of auscultation, and describes the technique. The first part describes the normal vesicular murmur, its causation, and its variations from the normal with regard to audibility. The second part, which is the largest, deals with the pathological variations of the murmur and with the various adventitious sounds. A brief description of the physical signs present in each of the diseases mentioned is given. The third part deals with those physical signs in which both percussion and auscultation are necessary simultaneously, and the appendix describes a system for recording the auscultatory phenomena graphically. The book is more interesting to the experienced clinician than useful for English-speaking students, as it only deals with one of the four necessary methods of routine examination of the lungs.

NOTES ON BOOKS.

PROFESSOR LYMAN is one of the best known and most industrious workers in the field of the ultra-violet rays, and the second edition of his book on *The Spectroscopy of the Extreme Ultra-Violet*[8] contains a wealth of facts and measurements unknown when the first edition appeared fourteen years ago. The volume is meant for physicists and the increasing number of experimental workers who deal with ultra-violet rays, and the apparatus connected therewith, from the physical, chemical, or biological point of view; the subject of therapy with these rays is not dealt with. The book is well written, full of information, and supplied with a long bibliography. It should be in the hands of all who are interested in the Schumann region of the spectrum.

Dr. ERNEST WARD is evidently a man of great energy and varied interests. In 1915 he helped to form an Association of General Practitioners for Collective Research, which obtained support in many influential quarters. The great war nipped the association in the bud, but in his book *Medical Adventure*[9] Dr. Ward has exhibited some of the problems with which such a body of general practitioners might deal. Many of his chapters were contributed to the *London Hospital Gazette*, and all are described as plain unvarnished narratives of the author's actual experience, recording observations and reflections along the by-paths of medicine. He begins his entertaining book with an account of legal adventures, from which the young practitioner may learn something of the pitfalls met with in giving evidence before a court of law: he will appreciate the usefulness of a well-turned phrase, but realize the advantage to be gained by adopting an inflexible ethical code. One of Dr. Ward's little stories may be quoted—that of a coroner's jury which, despite the advice of the coroner, insisted on returning a verdict that "the deceased died from a stone in the bladder, swallowed while lying in a gravel pit in a state of intoxication." The more serious and instructive parts of the book will be found in such matters as Dr. Ward's conclusions about the treatment of tonsils and adenoids, the treatment of tuberculous glands, the diagnosis of early tuberculosis, and the recognition of aberrant forms in infectious disease, such as measles. Whether his views on some of these topics are acceptable or not, they are appropriate matters for collective research by general practitioners. The book ends with a subjective study of encephalitis lethargica.

Wheat Flour and Diet,[10] by Professor SWANSON, and a practical guide to rational cookery,[11] by POZERSKI, HEMMERDINGER, LABBÉ (Mme and Dr.), and MARTEL, are books that have at least one common feature—namely, that they are written rather for a general than for a professional public. The first is an interesting survey of what, after all, is one of the oldest and most essential of human industries. The reader has before him a clear and simple account of milling, from the primitive quern to the modern American mill. In the latter part of the book there is a discussion of dietetics and of the nutritive values of various foods. A practical guide to rational cookery appears to embody a course of instruction given to students of the Société Scientifique d'Hygiène Alimentaire. It contains a short discussion of the scientific basis of cookery, practical instructions, and a large selection of attractive-looking recipes.

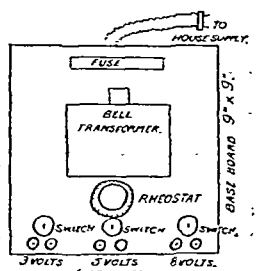
A pharmacopoeia for the King Edward VII Memorial Hospital, Bombay, has been compiled by Dr. A. S. ERULKAR, with the aid of a committee. It is arranged on the usual lines, the only exceptional feature being lists of the vernacular names of drugs. Copies can be had from the dean at the price of 2 rupees each and postage.

[7] *L'Auscultation Pulmonaire Moderne*. Par H. Jumon (de la Bourboule). Paris: N. Maloine. 1929. (5½ × 7½, pp. 217; 30 figures. 25 fr.)
[8] *The Spectroscopy of the Extreme Ultra-Violet*. By Theodore Lyman, Ph.D. Second edition. Monographs on Physics. London: Longmans, Green and Co. 1928. (Med. 8vo, pp. vii + 160; 7 figures. 10s. 6d. net.)
[9] *Medical Adventure: Some Experiences of a General Practitioner*. By Ernest Ward, M.D.Camb., F.R.C.S.Eng. London: J. Bale, Sons, and Danielsson, Ltd. 1929. (Cr. 8vo, pp. xii + 291; illustrated. 8s. 6d. net.)
[10] *Wheat Flour and Diet*. By C. O. Swanson, Ph.D. New York: The Macmillan Company. London: Macmillan and Co., Ltd. 1928. (Cr. 8vo, pp. xiii – 203, illustrated. 10s. 6d. net.)
[11] *Traraux Pratiques de Cuisine Raisonnée*. Par les Drs. Pomiane Pozerski et Hemmerdinger, le Dr. et Mme Henri Labbé, et M. Martel. Paris: Le François. 1928. (Med. 8vo, pp. 134; 4 figures. 13 fr.)

PREPARATIONS AND APPLIANCES.

A CONSULTING ROOM TRANSFORMER FOR SMALL SURGICAL APPLIANCES.

DR. E. M. R. FRAZER (Burton-on-Trent) writes: Most practitioners use small electric lamps in such pieces of apparatus as laryngoscopes, ophthalmoscopes, and head-lamps, but frequently find that the batteries supplied with these are run down, whether with use or disuse. A simple means of obtaining current of 3, 5, or 8 volts from the domestic supply is by a bell transformer, which is a small instrument about the size of a pocket-lamp, and costing about 5s. 6d. The domestic current is applied from a wall plug or lamp socket; at the other side of the instrument are terminals providing 3, 5, or 8 volts at 1 ampere. The transformer may be permanently mounted on a small board, to which are also fixed the three pairs of terminals necessary for the supplies. Between the transformer and the domestic supply a fuse of 3 amperes resistance should be placed (on the base board). The low voltage, of course, on an alternating current supply is also alternating. These transformers can be purchased for any domestic supply, and will be found to be most reliable. An added refinement is a small (wireless) rheostat in the 5-volt circuit to vary the amount of current. Such a board can be made up for about 15s., including fuse, terminals, three switches, rheostat, transformer, all wiring, and plug or adaptor for connexion to supply. The amount of current taken from the mains is infinitesimal. I append a sketch of the complete apparatus. The wiring is very simple, and can be carried out by any amateur electrician.



JACOBSON'S SOLUTION.

"Dr. Jacobson's Solution" (benzyl cinnamic ester), prepared by Messrs. Boots Pure Drug Company, is a solution in olive oil of benzyl alcohol and ethyl cinnamate, intended for intramuscular injection. Jacobson claims that a course of such injections (0.25 to 1.0 c.cm.) produces benefit in a variety of forms of tuberculous infections, including pulmonary tuberculosis. These claims have been supported by numerous articles in French medical journals.

SALICYLATE SOLUTION FOR INJECTION TREATMENT OF VARICOSE VEINS.

"Hypoloid" sodium salicylate is prepared in 20, 30, and 40 per cent. solutions and put up in hermetically sealed phials of 5 c.cm. ready for immediate intravenous injection. This preparation provides an alternative to solutions of quinine and urethane for the production of sclerosis in varicose veins. It is manufactured by Messrs. Burroughs Wellcome.

BRITISH CONGRESS OF OBSTETRICS AND GYNAECOLOGY.

(*Concluded from page 825.*)

BOTH morning and afternoon sessions on the second day of the congress were devoted to short communications on various subjects. Dr. FREDERICK EDGE was in the chair in the morning, and Dr. GORDON FITZGERALD during the afternoon.

SEQUELS OF UTERINE HAEMORRHAGE OF NON-MALIGNANT ORIGIN.

Professor J. O. POLAK (New York) read a paper on the follow-up results in 500 cases of uterine haemorrhage of non-malignant origin. He stressed the importance of absolutely careful examination and diagnosis to exclude such conditions as adnexal disease. He said that in the case of fibroids an attempt should be made to correlate the clinical manifestations with the site of the tumours. In the main he felt that fibroids were best treated by operation; the decision as to myomectomy or hysterectomy must be governed at all times by the judgement of the operator. Professor Polak showed very beautifully, by means of lantern slides, the effect which fibroids had on the blood circulation in the uterine wall. He advocated the use of radium in selected cases, never exceeding 300 milligram hours, and seldom 250 milligram hours in cases of idiopathic bleeding, but emphasized the importance of adequate drainage afterwards, if pyometra and other unpleasant sequelae were to be avoided. A routine examination of curettings was made as a preliminary in all cases.

Metropathia Haemorrhagica.

Dr. WILFRED SHAW (London) read a paper on metropathia haemorrhagica. He pointed out that in this disease, which was to be regarded in the nature of a clinical entity, the endometrium was thickened and in parts hyperplastic; cystically dilated glands were found, and there were areas of necrosis in the superficial and middle layers. These peculiarities of the endometrium were associated with constant disturbances in the function of the ovaries, which resulted in an inhibition either of the process of ovulation or of the full development of the corpus luteum. The follicle which was affected became cystic. The continuous vaginal haemorrhage complained of by patients with this disease was produced by necrosis in the superficial layers of the endometrium. Dr. Shaw suggested that the term "metropathia" should be employed to describe these cases, and that the various clinical types should be referred to under names which indicated the characters of the symptoms. Some overlapping was bound to occur, and it was mainly for this reason that the term "metropathia" was advocated for these cases.

The Cause of Cancer of the Cervix.

Dr. K. V. BAILEY (Manchester) read a paper entitled "An inquiry into the basic cause of cervical cancer; the pathology of cervicitis (cervical erosion), and the relation between cervicitis and cancer of the cervix." The investigation comprised the examination of 850 specimens of the cervix uteri with a twofold object: to ascertain the precise pathology of the so-called cervical erosion; and, with a thorough knowledge of this pathology as a basis, to inquire into the problem of the inception of cervical cancer. He considered there were two types of pathology of cervicitis: the relatively unimportant and rare condition of congenital erosion seen in the nulliparous, and presumably non-infected, cervix; and the large group of inflammatory erosions. Dr. Bailey believed the life-history of this condition fell into four stages: (1) the primary effects of irritation; (2) epithelial reaction; (3) replacement of columnar by squamous epithelium on the surface of the affected area; and (4) ultimate healing. These several varieties were illustrated by photomicrographs. Finally, Dr. Bailey traced the connexion between the reaction of the cells of the Malpighian layer to various strengths of irritants and the metaplastic changes that resulted.

The papers by Dr. Polak, Dr. W. Shaw, and Dr. K. V. Bailey were discussed together owing to their more or less intimate connexion.

Professor ADLER (Vienna) objected to the bare term "metropathia," since in many instances "ovariopathia" would describe the condition better in relation to cause and effect. He pointed out the frequency in these patients of cystic degeneration of the ovary, and cases of subacute inflammation where excess follicle ripening occurred. In young women he preferred to try corpus luteum and other glandular extracts in combination with iron, and at the menopause, if x-ray treatment failed, he advised vaginal hysterectomy.

Professor BLAIR BELL (Liverpool) commented on Professor Polak's restraint, emphasizing as he had his successes and his failures. The speaker added that he had also employed radium considerably, except in cases with fibroids, for at the menopause the trouble with fibroids did not end. Radium had only a very local effect on the endometrium and produced a sclerosis; the ovaries were too far away to be affected. He had often employed radium in the subinvolution of the menopause, but with great care and judgement; in cases where the cervix was badly lacerated he performed vaginal hysterectomy. He had not used radium for dysmenorrhoea, and did not believe very much in corpus luteum, since he thought the follicle fluid more reasonable. He stated that the cysts so often found in the ovary were irritant to the interstitial cells, and cited a case of ovarian grafting where he had to cut down on the graft and shell out a cyst before bleeding would stop.

Dr. FITZGIBBON (Dublin) divided cases into: (1) young women with retroversion; (2) those menopausal women in whom the uterus had undergone atrophy but whose ovaries were still active. In such cases the atrophic uterus was unable to control bleeding. In young women large ovaries were frequently found at laparotomy; for these he had employed a wedge resection operation, and corrected the uterine deformity with good results. He had had a small experience with radium, which he found of value in its sclerosing effect on the endometrium.

Mr. T. G. STEVENS (London) disagreed with some of the previous speakers who had referred to the excess of fibrous tissue over muscle in these cases. He stated emphatically that it was in the arterioles that excess elastic and not fibrous tissue was laid down.

Dr. BETHEL SOLOMONS said that curettage was nearly useless in excluding malignant degeneration which might be present in a tumour far away from the endometrium; therefore, unless there was some constitutional contra-indication to operation, he did not believe in radiotherapy. He had had six cases of abdominal malignancy in women who had been treated in this way for fibroids. Recently a patient for whom he had recommended hysterectomy two years previously, and who had chosen radiotherapy, returned suffering from a large tumour. At operation he had removed two carcinomatous ovarian tumours and a uterus full of fibroids; these had persisted in spite of the stopping of menstruation. The blood changes in connexion with radiation must be considered. When a patient was highly anaemic he advised a bloodless hysterectomy without previous transfusion; it arrested further loss, and gave excellent results. He believed that radium should be inserted by the gynaecologist under the guidance of an expert radiologist. He inquired when retroversion was present whether operation or pessary was used before the insertion of radium; also whether any of the young girls were sterilized by the radium. He believed that if the correct hormone were discovered the haemorrhage could be controlled; in addition, many of the old-time drugs could be tried, since these were sometimes successful.

Dr. POLAK, replying, said that the object of his paper had been to show the limitations of radium. If a retroversion was present results with radium were bad owing to inefficient drainage. In submucous fibroids, unless sessile, radium should not be used. Dr. SHAW said he had found the corpus luteum extracts sold in this country quite useless, and that other glands were not to be forgotten.

USE OF GLYCERIN IN OBSTETRICS AND GYNAECOLOGY.

Dr. CAROLINE ELLIOTT (Edinburgh) read a paper on the use of glycerin in obstetrics and gynaecology. After discussing at some length the rationale of the use of glycerin, Dr. Elliott drew a contrast between patients who had been treated prophylactically (those who had had major obstetrical intervention, or who had become septic as a result of intervention at delivery) and patients who had been delivered without complication but had afterwards shown morbidity; a large number of the latter were from the venereal department. The technique of administration consisted in the introduction, under very low pressure, of two ounces of unsterilized glycerin into the uterus; smaller amounts of glycerin were used in other cases.

Mr. LOUIS C. RIVETT (London) asked if a comparison had been drawn between cases treated during a year and those in years when no glycerin was used. He felt that this procedure had a very definite place in the treatment of puerperal sepsis, but unless cases were suitably selected the procedure would be abused. Dame LOUISE MCILROY (London) referred favourably to the use of glycerin in the differential diagnosis of pelvic peritonitis and frank appendicitis. She believed in frequently repeated injections of small quantities, for which purpose a rubber catheter was stitched into the cervix, and the ward sister could then perform the injections. Dr. CRAWFORD (Liverpool) referred to the efficacy of the treatment in septic abortion, but stated that she had seen unpleasant reactions follow its use. Dr. LACEY (Liverpool) said he had been using glycerin and chloramine owing to the difficulty in sterilizing glycerin.

THE EXTENDED VAGINAL OPERATION FOR CERVICAL CANCER.

Professor ADLER (Vienna) read a paper entitled "Results in 1,000 cases of the extended vaginal operation for cancer of the cervix." He referred to the growth in favour of the Schauta operation; he commented on its low primary and remote mortality, and on its high percentage of five-year cures, which had shown a steady increase with the passing of two decades until, with the additional employment of post-operative radiation, the percentage reached the wonderful figure of 58.8. Professor Adler, by means of lantern slides, demonstrated most clearly the steps of the operation, pointing out the ease of access to the ureters and parametrium, the short time the peritoneal cavity was actually open, and the absence of shock, more especially since the adoption of local anaesthesia.

COMPLICATIONS OF OVARIAN TUMOURS.

Professor J. HENDRY (Glasgow) read a most interesting description of cases, and showed actual specimens of ovarian tumours which were associated with complications, either obstetrical or gynaecological.

Dr. BETHEL SOLOMONS said that the discussion two years hence precluded many remarks at present; he felt, however, that several main themes were suggested for the future paper. The most important were the malignancy, extent of malignancy or maturity, and the non-malignancy of the tumour. The results of *x*-ray treatment after removal of the tumour were excellent. It was difficult to answer the questions whether both ovaries should be taken away, and also the uterus.

ECLAMPSIA AND ITS RENAL LESION.

The morning of the third day of the congress was occupied by the reading of short communications. Mr. R. H. PARAMORE (Rugby) contributed a paper on eclampsia and its renal lesion.

Mr. Paramore opened his argument by pointing to difficulties in the acceptance of the toxaemic explanation of the visceral lesions of eclampsia—both in the case of the liver and in that of the kidney. In eclampsia, since the periportal cells became degenerated while the central cells escaped, if the implication of the periportal cells was due to a poison, then the periportal cells must be different in nature from the central cells. In the symmetrical necrosis of the renal cortices, since the inner third of the convoluted tubules remained intact, on the supposition that the outer parts of these tubules were destroyed by a poison, the cells of the inner and outer parts of these tubules, similarly, must be different in nature from each other. The speaker believed that these lesions were produced mechanically. He reviewed the vascular mechanism in the kidney, pointed out the importance of the arteriae rectae, and showed that the renal lesions of eclampsia were the associated effect of a compression of the kidney and an engorgement of the medulla with blood. He argued that in experimental diuresis a distension of the cortical tubules occurred; if the ureter was clamped the distension of the cortical tubules was exaggerated, and the kidney became almost bloodless. In eclampsia the oliguria could not be regarded as an expression of the needs of the body: the cause of it must exist in the kidney. The distension of the Bowman's capsules and of the convoluted tubules showed that an attempted diuresis had been in play, and that the oliguria was not due to a vaso-constriction of the renal arterioles or to an inability of the renal cells to work. The oliguria was thus the result of an obstruction to the outflow of urine, and the only place of such obstruction could be the medulla. *Microscopic examination of the medulla* showed that in eclamptic states it was congested and turgid with blood.

The circuitous route of the uriniferous tubules and the passage of casts when diuresis was induced indicated that obstruction of the tubules in the medulla could and did occur. The blockage could only be caused by a compression of the whole kidney, in which the medulla, invested by the cortex, was implicated; and—after the relief of the compression (as, for example, by taking a breath)—by an engorgement of the medulla with blood. The proneness to oliguria of strong primigravidae, of women with twins, and of women with progressive concealed accidental haemorrhage, was mentioned. The oliguria was instituted by direct pressure on the kidney, but was maintained during resting states by vascular engorgement of the medulla. At the moment of decompression, blood could enter the medulla from the renal arteries more readily than urine could escape from the cortex; thus a high blood pressure usually obtained. Reference was made to the occasional bad effect of delivery on the pre-eclamptic patient; and it was pointed out that even in the non-pre-eclamptic patient delivery might be followed by anuria. This was explained by supposing that at the time of delivery the kidneys were in a state of stress, all the cortical tubules being distended and the capsule investing the organ being already tight. On emptying the uterus the pressure on the kidney was greatly reduced, but the organ, because of its capsule, could not expand. Thus blood from the renal artery was unable to enter the cortex, and was thus forced into the expansile medulla, engorging this part and effectually preventing the exit of urine from the cortex. Proof of this conception was afforded by the evidence of decapsulation: the way this operation worked was shown. The conditions arising in pregnancy were similar. The renal lesion of eclampsia was due to an inability of the urine to escape from the cortex: this prevented blood entering the cortex, and thus the renal cells suffered degeneration and necrosed.

This paper was discussed by Drs. FAIRBAIRN, HOLLAND, and FITZGIBBON.

DOUBLE MONSTERS.

Dr. A. L. MUDALIAR (Madras) read a paper entitled "Double monsters—a study of their circulatory systems and some other anatomical abnormalities, and the complications in labour." Referring to the circulatory system Dr. Mudaliar showed a most interesting selection of specimens ranging in type from the very primitive, almost amphibian, character of the chambers to monsters with two almost separate hearts. The specimens comprised: thoracophagi, including tetrabrachius tetrapus, tribrachius dipus, and dibrachius dipus (anencephalic); syncephalic, including tetrabrachius and tetrapus; craniophagus; and ischiophagus. Dr. Mudaliar discussed their obstetrical significance, diagnosis, prognosis, methods of treatment, the separation of fused twins, and the *x*-ray findings.

Professor GATENBY (Dublin) spoke shortly on polyspermia as a cause of these conditions, and mentioned the experiment of Stochard in producing a cyclopean fish by changing the osmotic pressure of its medium.

Professor GREEN ARMYTAGE commented on the association of excess of liquor amnii with monsters, and stated that a large percentage of monsters were female.

FOETAL DEATH AFTER QUININE INDUCTION.

Drs. W. J. DILLING and A. A. GEMMELL (Liverpool) reported a preliminary investigation of foetal deaths following quinine induction. This investigation comprised a series of 765 cases in which quinine was used for induction, and the drug may have been responsible for eight stillbirths (1.04 per cent.). Judged from the point of view of weight gained or lost on the tenth day after delivery there was no evidence in a series of 201 cases that quinine had a detrimental effect on the nutrition of the children who survived. From the rate of excretion of quinine in the mother's urine the maximal concentration of the drug in her tissues after receiving three doses of 10 grains at hourly intervals occurred from the sixth to the eighth hour after the first dose, but the period of high concentration might persist until thirty-six hours afterwards. It was not possible to prove by the thalleioquin test the presence of quinine in foetuses of rabbits which received doses of quinine; nor in the liver or kidneys of an infant, stillborn within twenty-four hours of the last dose of quinine given to its mother. The presence of quinine to the extent of 0.015 per cent. was demonstrated in the urine of infants born six to twelve hours after the last dose of quinine to the mother. This concentration was held to be sufficiently high to merit investigation with regard to the toxicity of quinine on foetal tissues. No decisive evidence of quinine in the foetal (placental) blood was obtained. The presence of quinine nine to eleven hours after administration had been discovered in the liquor amnii to the extent of about 0.006 per cent.

PREGNANCY FOLLOWING OVARIAN RADIATION.

Dr. MILES PHILLIPS (Sheffield) read a paper entitled "A successful pregnancy following *x*-ray stimulation of the ovaries after ten years' amenorrhoea." He stated that a short review of the literature showed that a number of normally developed children have been born after *x*-ray therapy directed to the ovaries in certain cases of amenorrhoea accompanied by sterility. He described the case of a nullipara who after ten years of amenorrhoea had menstruated promptly after the treatment, and soon became pregnant. The child was delivered by Caesarean section. He gave details of the appearances of the ovaries. Dr. Phillips pointed out the necessity for correct spacing of the *x*-ray exposures in order to prevent radiation of the newly fertilized ovum.

Professor DAVIDSON (Dublin) mentioned a case in his practice of a woman, aged 40, who had been married for twenty years but had had no children. Her menses were becoming steadily more excessive. He tried *x* rays, using one-fifth of an erythema dose, and gave eleven exposures over a period of three weeks. The menses became less, and nine months later they *stopped*; *pregnancy* was found to have occurred and a normal delivery followed. It seemed clearly proved that instead of sterilizing the woman the *x* rays had stimulated the ovary.

Dr. JOHNSTONE (Belfast), concluding the discussion, urged the necessity of not regarding menstruation as the all-important factor. He reminded the meeting of cases of pregnancy occurring during lactation.

Dr. BETHEL SOLOMONS believed that there was a great future for this form of treatment; he had had several cases of menstruation following prolonged amenorrhoea. He believed, however, that *x*-ray treatment should be left until the last, and that trial should be made of hormonic preparations and other stimulating drugs.

Among the other papers read at the congress was one by Dr. G. I. Strachan (Cardiff) on the different methods of technique in the application of radium to uterine carcinoma. (A paper by Dr. Strachan dealing with this subject is published in this issue of the *Journal* at page 842.)

An exhibition of pathological specimens was arranged and aroused considerable interest. Various operations were demonstrated on the afternoon of the last day of the congress. A reception was given by the President and Mrs. Gibbon FitzGibbon at the Royal College of Surgeons during the evening of April 24th. The congress dinner was held at the Royal College of Surgeons on the following evening with the President in the chair.

LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.

THE annual general meeting of the London and Counties Medical Protection Society was held on May 1st at Victory House, Leicester Square, under the presidency of Sir JOHN ROSE BRADFORD, P.R.C.P.

The council reported another year of useful work, with a substantial increase in membership. The new members elected during the year numbered 977, of whom 337, having applied for membership within a year of their registration, were exempt from entrance fee. At the end of 1928 the number of members was 11,492. Applications for advice and assistance were received during the year to the number of 1,067. In the majority of cases satisfactory results were obtained without litigation. The solicitors of the society again refer to the growing critical and litigious spirit of the general public. While the society had been spared spectacular legislation, there had been heavy calls upon its resources during the year, and the cases dealt with had been of unusual number and variety. Cases arising under the National Health Insurance Act were increasing. "It is a matter of surprise to us," say the solicitors, "that those responsible for watching the interests of the medical and dental professions, and bodies concerned in matters pertinent to those professions, are so powerless to prevent the growth of bureaucratic power which can usurp jurisdiction designed to give citizens the fairest form of trial, and can vest in one man, who, by virtue of his statutory powers of making regulations, can pass what are virtually laws affecting so large a number without their having a word to say antecedent to such regulations becoming effective, a power of decision and sentence without right of appeal." An extraordinary number of cases of the breaking of hypodermic needles in the course of injection came before the society during the year, and a legal decision as to responsibility would be of great value, but up to the present it has not been possible to get a test case.

Sir JOHN ROSE BRADFORD referred regretfully to certain losses by death, notably Dr. G. W. Hill, a regular attendant at council meetings, Sir Anthony Bowlby, a trustee, and Mr. A. Neilson, K.C., who for many years had assisted the society on its legal side. A great deal of the work of the society, said the president, arose from the unfortunate attitude sometimes taken by patients in their relations to members of the profession, but he was bound to say in the same breath that some of the work might be diminished if the members of the profession took more precautions, especially in safeguarding their interests in that class of case in which they were most liable to attack—namely, fractures. In many cases, even during the last year, the defence of members had been embarrassed because they had not made an *x*-ray examination or had not secured evidence of having advised such an examination and of the advice being rejected. He added that there was a slight deficit on the year's work—nothing like so much as in some former years, and not one to cause any anxiety in view of the strength of the society's assets and of the inevitability in such a society of single years or even a succession of years of abnormally heavy expenditure.

On the motion of Dr. C. M. FEGEN, Sir John Rose Bradford was re-elected president, with hearty thanks for his past services; Dr. Fegen himself was re-elected treasurer, with similar compliments. Other re-elections were of the vice-presidents, Dr. R. L. Guthrie taking the place of the late Sir Anthony Bowlby; and of the retiring members of council, with the addition of Mr. William M. Morrison. A hearty vote of thanks was accorded to the society's solicitors, Messrs. Le Brasseur and Oakley, upon the soundness of whose advice and judgement, said Sir John Rose Bradford, the society had had occasion to rely on innumerable occasions, to its great satisfaction.

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY.

LONDON, MAY 6TH TO 11TH, 1929.

THE fifth International Congress of Military Medicine and Pharmacy was held in London from May 6th to 11th. It was attended by nearly 800 members, including official delegates from close upon forty countries, as well as from the League of Red Cross Societies and the International Committee of the Red Cross. The House of the British Medical Association in Tavistock Square was the Congress centre. The Great Hall was used for the principal meetings, and the newly completed extension accommodated the reception office, a large exhibition of service equipment, and writing and club rooms for the members and the ladies accompanying them.

The varied and spectacular character of many of the foreign uniforms excited much public interest. When the members gathered in the quadrangle on Monday morning for a panoramic photograph they presented a kaleidoscope of colour. While the British khaki and the French blue predominated, a gorgeous note was struck by some of the head-dresses and breast decorations of the visitors. The delegates then visited Westminster Abbey, where, in the north transept, a procession was formed to the Tomb of the Unknown Warrior. Here the procession was awaited by the Dean and Canons, and a wreath was deposited.

On Monday afternoon the opening ceremony took place in the Great Hall, the platform of which was decorated with large banks of hydrangeas, roses, and other flowers. The Secretary of State for War, Sir Laming Worthington-Evans, Bart., M.P., performed the opening ceremony. He was supported by the President of the Congress, Lieut.-General Sir Matthew H. G. Fell, K.C.B., Director-General, Army Medical Services, Sir Ewen Maclean, President of the British Medical Association, and by two distinguished foreign delegates—namely, General Lanne of the French Army Medical Services, and General Stanislas Rouppert, Director of the Medical Services of the Polish Army, and President of the fourth congress, held at Warsaw in 1927.

Others on the platform were:

Surgeon Vice-Admiral Gaskell (Medical Director-General of the Navy), Air Vice-Marshal D. Munro (Director of Medical Services, Royal Air Force), Sir Leonard Rogers (Medical Adviser, India Office), Colonel Sir Lisle Webb (Director-General of Medical Services, Ministry of Pensions), Sir John Rose Bradford (President, Royal College of Physicians), Major-General Sir Alfred Blenkinsop (representative of the British Medical Association on the Organization Committee), and the following delegates from abroad:

Surgeon-General Hugh S. Cumming (chief of American Public Health Service), Major-General Bauar (Director-General, Swedish Medical Service), Don Agustin Yan-Baumbergher (Spanish Ministry of War), Major-General Commandante Umberto Riva (Italy), Tenente Colonello Dr. Arturo Casarini (Italy), Major-General J. C. Diehl (Netherlands).

WELCOME BY THE SECRETARY FOR WAR.

Sir LAMING WORTHINGTON-EVANS, in formally inaugurating the Congress, welcomed the delegates from the various countries, also the representatives of the Red Cross and Voluntary Aid Societies, whose beneficent work had done so much to alleviate the hardships of war. It was inspiring to think that in the field of medicine, at any rate, the nations of the world had reached a unanimity of aim and endeavour which was still far to seek in the realm of international politics. The reason was that the medical and nursing services in the different countries were all ranged on the same side against a common enemy—namely, disease and injury—and the cause which they all served transcended those rivalries and differences which added such difficulty to the statesman's task. Was it not inspiring, too, that in the sphere of military medicine it was possible to meet together and exchange freely the fruits of separate research, secure in the knowledge that, whatever might happen in the future, these would never be used save in the name of humanity?

"Yours," said Sir Laming, "is an easier task than that of the statesman. You can identify the enemy against which you are combining. You may not always know whence he comes and whither he goes, but you can recognize him as an enemy. The statesmen are in greater difficulty. While wishing to combine against war as you combine against disease, they cannot so easily identify the cause of war. You are leading in this matter of co-operation, and I hope the statesmen may follow with equal success."

The Minister then commented on the variety of the programme provided, including as it did visits to the naval centre of Portsmouth, the military station of Aldershot, and the establishments of the Royal Air Force at Halton. He thanked the British Medical Association for so generously placing at the disposal of the Congress its magnificent hall and other buildings.

It had been intended that at the conclusion of the ceremony in the Great Hall the War Secretary should proceed to the Exhibition and open it, but owing to a meeting of the Cabinet which called him away he was unable to fulfil this part of the programme. He did, however, visit the exhibition before leaving.

THE PRESIDENT'S INAUGURAL REMARKS.

Lieut.-General Sir MATTHEW FELL, the President of the Congress, said that the British members of the Services extended a most hearty welcome to their colleagues from all parts of the world. This Congress was the fifth of a series which had taken place since the Armistice, the others having been held in Brussels, Rome, Paris, and Warsaw. The congresses had their origin in the meetings of the consulting surgeons of the inter-allied armies in the West during the war. Dr. Tuffier of Paris, who was president of those inter-allied conferences, had been deeply impressed by the benefits derived from them, and was desirous that some means should be found of continuing in peace the international exchange of ideas and experiences which had been so profitable in war.

The medical services of armies must necessarily function in accordance with the principles and limitations required by the army organizations which they existed to serve. To some degree, consequently, they must vary in every army, just as they must vary with the climate and terrain in which they operated. During the progress of war there were limits prescribed by purely military necessity. But the main objects of the services were the same for all armies—namely, the maintenance of the highest standards of hygiene and sanitation, and the elaboration of an organization which, with the least possible delay, could bring to the sick and wounded the fullest benefits that medical science could apply. Within these service medical organizations functioned the Red Cross and the great voluntary aid societies, without whose generous and freely given assistance the lot of the stricken soldier in war would be still harder.

Those who read the story of medical aid in war (continued Sir Matthew Fell) could not fail to be struck by two things. The first was, quite apart from any humanitarian considerations, the comparatively recent acceptance of the advantages to an army, both in peace and in war, of a highly organized medical service. It was true, as might be seen by memorial tablets erected at York and on the Roman wall and in other places in Great Britain, that two thousand years ago the Roman legions possessed their own medical service. But it was not until the Napoleonic wars at the beginning of the last century that any real advance was made in medical organization. In the middle of that same century, again, the war in the Crimea gave to history the name of Florence Nightingale, and opened to women of education and position the service of nursing, both military and civil. The Geneva Convention and the vast developments of the International Red Cross had their origins even within living memory.

The second impression from the study of medical aid in war related to the indubitable effect which war had had

in accelerating the general application of the discoveries of medical science. He recalled being present in that hall two years ago at the centenary celebrations of the birth of Lord Lister, and although only one of those who gave addresses on that occasion referred to the benefits which Listerism had brought to the wounded in war, it was impossible not to feel certain that, at any rate on the Continent of Europe, those nations who nearly sixty years ago saw their wounded die by the thousand of surgical infections had felt urged to press forward—and had in fact pressed forward—the principles which Lord Lister preached, but which in England were only tardily accepted. Anyone who cared to read the short personal account by the late Sir William MacCormac of his experience with an ambulance in the war of 1870 must feel that that was true. Again, the more recent British experience of the war in South Africa, with its terrible losses from enteric disease, undoubtedly stimulated the brilliant band of research workers, whose names would occur to all those assembled, in the elaboration of a method of prevention by vaccine treatment which had proved of benefit to humanity throughout the world.

In conclusion, Sir Matthew Fell mentioned the many difficulties attendant upon the preparation for such a Congress as the one now beginning. Not least among them was the fact that the people of our island nation lacked a knowledge of other languages than their own, which he trusted the visitors from other countries would pardon. He also thanked the British Medical Association for the generous offer of its House. His final word, which elicited hearty and general applause, was an expression of his belief that the efforts of statesmen throughout the world to-day to make war impossible were watched by none with more sympathy than by the members of the medical services, whose sphere of duty brought them into intimate contact with all the horrors which war involved.

Responses from Delegates.

M. Lanne, Inspector-General, French Army Medical Services, acknowledged on behalf of the visitors the welcome extended, and made a sympathetic reference to the King's illness, praying for His Majesty's complete restoration, and affirming that his illness had evoked the sympathy of the whole world. In pooling the knowledge and experience gained by the various medical services the Congress was assisting the cause of humanity.

General Stanislas Rouppert, Director of Medical Services of the Polish Army, said what pleasure it gave him to be present, more especially as he had presided over the previous Congress, held in Warsaw. His fellow officers in the Polish Army regarded these Congresses as a unique opportunity for instruction and encouragement.

The Exhibition.

After these proceedings a move was made towards the exhibition, in which the delegates and members spent some time. In the trade exhibition about seventy firms contributed; almost all of them were familiar to visitors to the exhibition at the Annual Meetings of the British Medical Association. In addition to the commercial display, there was a service exhibition of the equipment used in the Royal Navy, the Army, and the Royal Air Force. This included medical and surgical stores for service afloat; apparatus employed in the investigation of ventilation conditions in H.M. ships and naval establishment (shown by the Department of Hygiene, Royal Naval Medical School, Greenwich); army field medical equipment, and the medical equipment of the Royal Air Force. Among the items of special interest in this last exhibit were the Reid flying aptitude apparatus, Flack's rebreather bag, and the rotating chair, sphygmomanometer, and other apparatus used to ascertain the effects of rotary movement; also electrically heated clothing for high altitude flights.

Reception by the Prince of Wales.

The principal delegates were afterwards received by the Prince of Wales at York House; they were presented to His Royal Highness by Sir Laming Worthington-Evans.

Government Dinner.

On Monday evening, at the Hotel Cecil, a dinner was given by the Government to the principal official delegates and distinguished visitors. About 120 sat down at the tables under the presidency of the Right Hon. Sir Laming Worthington-Evans. Among British medical men, in addition to the principal officers of the services invited to meet the guests from abroad, were the following: Sir John Rose Bradford, P.R.C.P., Lord Moynihan, P.R.C.S., Sir Lenthal Cheatle, Sir Richard Luce, Sir Ewen Maclean (President, British Medical Association), Mr. N. Bishop Harman, Sir George H. Makins, and Lieut.-Colonel C. T. Samman (Master of the Apothecaries' Society).

The oratory was brief, because the tireless visitors had still another engagement in the shape of an official Government reception at Lancaster House. After the toasts of "The King" and of "The Sovereigns of the Kingdoms and Presidents of the Republics represented" had been honoured, Sir Laming Worthington-Evans proposed the health of "The Guests." He expressed the hope that the friendships formed at the Congress would outlive the few days of the meeting. These congresses were of immense value, he believed, from the professional point of view, but they had also a wider significance because they fostered international understanding, and helped to form a public opinion in all the countries represented, which would be of real assistance to the labours of those working in the interests of world peace. It was difficult for a layman to keep pace with the advances made in medical science. Experience in the great war showed that on the Western Front the risk of death from disease was much smaller than the risk of death from enemy action, whereas in all former wars in the same area the balance of risk was reversed. In peace time also the standard of health maintained in the armies was not unimportant. Thanks to the medical profession, noteworthy advances had been made, to the benefit of officers and men, as well as to the relief of the public purse.

Brief replies were made by General Stanislas Rouppert (Poland) and General Demolder (Belgium). The former referred to the great traditions of British medicine and military science. The latter similarly praised the British people, not only for their eminence in arts, literature, commerce, and industry, but for their great example in charity.

THE FIRST SESSION.

Evacuation of Sick and Wounded.

The first discussion of the Congress took place on Tuesday morning, under the presidency first of Surgeon Vice-Admiral Gaskell, and later of Air Vice-Marshal Munro. The subject was the evacuation of sick and wounded by water and by air.

Evacuation by Sea.

Surgeon-Commander A. Yavasour Elder, R.N.V.R., dealing with evacuation by sea, drew attention to the various administrative and clinical problems of water transport. Such transport, he said, was invariably subject to local and weather conditions, so that it was impossible to lay down any fixed routine. He described the various methods of transferring cases by hoisting. He also put forward as a constructive suggestion for inquiry as to practicability the establishment of a water transport service, in future instances of combined naval and military operations, for casualties in all branches of the armed forces. This would be organized and operated by the Naval Military Service, the land transport of sick and wounded being allocated to the military medical authorities, and cases requiring transport by air would naturally be dealt with by the Air Force Service. On the clinical side, he mentioned the use of morphine, saying that while its administration could not be left to the initiative of unqualified persons, more lives after action had been lost through unrelieved "shock" than by the administration of this drug. The sedative effect of tobacco should be remembered, and, except in cases of gas poisoning, cigarettes and matches provided.

M. OUDARD, Médecin en chef de la Marine Nationale, spoke of the construction of the hospital ship, which, he said, must be very seaworthy, strongly built, stable, and silent, with the minimum of vibration; the average size should be 8,000 tons, and the speed 15 knots. The wards should have from 25 to 100 beds, with not less than 6 cubic metres of air per person. Isolation wards and one or more padded cabins should be provided. Surgical services should be on deck in one or more complete operating rooms. He also spoke on the several problems of international law which were raised by the evacuation of wounded by sea, which would justify a revision of The Hague Convention of 1907.

The Air Ambulance.

Group-Captain HARDY WELLS, R.A.F., introduced the subject of evacuation by air. The aeroplane, he said, was the quickest and easiest means of transport. It enabled serious cases to be treated early, and hospitals to be centralized, thus making for economy in hospitalization. Its limitations were those imposed by weather, and also the necessity of having landing grounds adjacent to hospitals. The employment of the aeroplane depended very much on the type of war, whether a "great war," a "small war," or a "tropical war." In a great war, with the front line continually under shell fire, the employment of aircraft on ambulance work in the area would be impossible. The nearest position for such work would be somewhere outside this area. The plan he suggested was to have advanced mobile hospitals, with landing grounds reasonably adjacent, connected by a light railway. It could not be expected to clear large numbers by air, but those serious cases which crowded up the clearing hospitals could be sent down to the stationary or base hospitals by this means. In a small war, with a force operating from an established base, and columns moving up, casualties could be removed direct from the field ambulance to stationary hospitals, the air route being extremely useful when the intervening country was unsafe. Aircraft solely employed on ambulance work should be under Red Cross protection. Difficulty would arise as to identification, and he suggested that the whole aeroplane be painted red and a red cross with white edges picked out.

Lieut.-Colonel SCHICKELÉ (France) said that ambulance aeroplanes must now be considered a routine method of evacuation. In a European war, if they were used on a considerable scale, they must be made in large numbers and be chiefly of the large carrier type. It did not seem possible, however, for the large aeroplane to get beyond the army corps area (10 to 15 kilometres from the front), though the small aeroplane might be in contact with the medical divisional formations (5 to 8 kilometres). The helicopter should give new facilities in the front area. With regard to the airship, he could not contemplate this means for the evacuation of casualties. The seaplane, again, would always be less seaworthy than the boat, and could only be used with any chance of success in a calm sea. In naval warfare its use was problematical, and apparently would be restricted to the rendering of aid to damaged battleships which had taken refuge in sheltered roadsteads. The use of ambulance aeroplanes raised several problems of international law for which a solution should be sought.

The other speakers who briefly participated in the discussion were Colonel SAINT-SERNIN, Colonel A. VAUDREMER, and Colonel H. S. ROCH. The last-named gave an interesting account of his experiences with a small military column, 5,000 strong, on the frontier of Kurdistan in 1923. The country was almost inaccessible, and evacuation by any other means than air would have been of the utmost difficulty. It would have meant hand carriage for any period from two to eight days; but through the help of the Air Force it was possible to move the casualties the same distance in four hours with the utmost comfort. The limitations of which Group-Captain Wells had spoken were exactly those which he had experienced in Kurdistan—namely, weather and landing grounds. While his column was in a hopeless part of the country there was constant rain for a fortnight, and the camp became a perfect morass, a sea of mud, in which it was hopeless to operate. Under these conditions a man went down with acute appendicitis, in which immediate operation was desirable. An S O S was sent to the Air Force, which dispatched a machine, but on two successive days the weather prevented landing. On the third day the weather cleared, and the plane landed and took away the man, who within a few hours was on the operating table, and made a good recovery. The method was to wrap him in blankets, in the army stretcher, which was strapped to the machine-gun fitting in the plane. With regard to landing grounds, Colonel Roch said that he could also speak from experience of some of the roughest country it was possible to find. No landing was possible nearer than twenty-five miles, and there were 150 sick and wounded. The serious cases were carried on stretchers, the others put on donkeys, and it was three days before advantage could be taken of the help of the Air Force, though even so, if it had not been for the Air Force, he did not know what would have happened. But what was wanted from the Air Force was a plane which would land in any weather on any ground, and take off "from a threepenny bit." A third difficulty was fatigue and stress of the pilots. Group-Captain Wells had rather suggested that the work of piloting the wounded was less trying than ordinary air fighting, but Colonel Roch's experience was that these young pilots were full of zeal and ardour when it was a question of bombing places, but the responsibility of carrying wounded affected them more than might have been anticipated. The time arrived, indeed, when the aeroplanes were used only for the most serious cases, simply on account of the wear and tear experienced by these gallant pilots.

VISITS TO ALDERSHOT AND PORTSMOUTH.

The discussion was over in time to permit of the members journeying to Aldershot, which they did by char-a-banc. On arrival, they were separated into parties, and visited various places of interest, including the R.A.M.C. training centre, the Cambridge Hospital, the dental clinic, the Army School of Hygiene, the R.A.S.C. formations, as well as barracks, regimental institutes, and the supply and transport organizations. After tea they witnessed, on the central sports ground, a gymnastic display by members of the Army School of Physical Training. On returning to London they were the guests at a conversazione at the Royal College of Physicians and a reception at the Royal College of Surgeons.

The whole of Wednesday was devoted to a visit to Portsmouth, where the visitors were guests of the Lord Mayor and Corporation at the Guildhall, and of the officers at the Royal Naval Barracks. H.M.S. *Victory* and H.M.S. *Hood* were visited, as well as the Royal Naval Hospital, Haslar, and the submarine depot at Fort Blockhouse.

RECEPTIONS.

A conversazione in honour of the delegates was held on the evening of Tuesday, May 7th, at the Royal College of Physicians. The guests were received in the Library by the President, Sir John Rose Bradford, and Lady Bradford. In one of the upper rooms an interesting exhibition had been arranged of portraits and books in the possession of the College illustrative of naval and military medicine. An attractive programme of music was provided by musicians from the band of H.M. Welsh Guards.

There was also an evening reception on May 7th at the Royal College of Surgeons, where the President, Lord Moynihan, and Lady Moynihan welcomed the delegates and their friends. Sir Arthur Keith, conservator of the museum, gave an epidiascope demonstration in the lecture theatre of various museum specimens illustrating design in nature. The army medical war collection was a centre of attraction, and many Hunterian relics, portraits, and other objects of interest were displayed. A portion of the Royal Artillery band rendered a selection of music during the evening.

A report of the later proceedings of the Congress, which included discussions on tropical fevers, wounds of blood vessels, and the standard of physical fitness, will appear in the next issue.

British Medical Journal.

SATURDAY, MAY 11TH, 1929.

CHRONIC DEAFNESS.

THE progress of aural surgery in the treatment of middle-ear suppuration, with its attendant labyrinthine, intravenous, and intracranial complications, has been so remarkable that it has perhaps obscured the claims upon the otologist of those who are only deaf. The discussion held last week by the Section of Otology of the Royal Society of Medicine on the subject of chronic deafness had the merit of showing what has been done for the alleviation and cure of this disability, and of taking stock of the methods at present adopted for its prevention and treatment. There can be no doubt that the success of preventive measures—for example, the removal of adenoids in early life, or the prompt treatment of middle-ear suppuration, which nowadays is only rarely allowed to become chronic—has received less credit than it deserves. While, however, there are substantially fewer deaf persons haunting the out-patient clinics and the consulting rooms of otologists, their number is still a standing reproach to modern aural surgery.

Without entering into a detailed classification of pathological types of deafness, it may be said briefly that changes in the middle ear, disease of the cochlea or of the auditory nerve, and that mysterious disorder otosclerosis, account for practically all cases. It has been contended that study of the pathology of deafness has resulted in nothing but a therapeutic nihilism, nearly everything that has been done for its practical relief having originated in mere empiricism. This statement, while it is unduly sweeping, and certainly unjust to those who have scientifically studied the morbid anatomy of the ear, contains some truth, and accounts for the number and variety of the methods of treatment recommended. Their very number, admittedly the product of a commendable activity in the otological microcosm, is evidence of the inefficiency of each method individually. It is conceded on all sides that the basic and well-established treatment of chronic deafness is the removal of septic tonsils, whose presence is often overlooked, the drainage of any focus of infection in the nose, and inflation of the tympanum by the Eustachian catheter or the method of Politzer. When these measures have failed, as they often do, the otologist still finds himself confronted with the maze of remedies which have been tried and discarded and then revived again, and also with some newer methods still on trial. Thus there are those who still employ inflations of vapour into the tympanum, massage, and ionization. Recently massive intravenous doses of colloidal iodine have been tried, but as they may well cause obliteration of veins the method is unlikely to come into general use. Diathermy has given benefit, and has been found to relieve the tinnitus aurium which is so often a distressing concomitant of deafness. Ultra-violet light has naturally been given a trial, and the apparatus of Zund-Bourguet is still in active use. Dr. Cathcart claimed at last week's meeting that of 623 patients treated by this apparatus 396 (63 per cent.) were improved, but it is impossible to say how many (and this is true of the claims made on behalf of most forms of treatment) were cases of functional deafness. The hard of hearing become inattentive; if they do not listen they do not hear, and they develop an epiphenomenon, a functional deafness, "the malady of not marking." The most satisfactory report came from Mr. Eric Watson-Williams, who has found that some patients with otosclerosis, which has an ill-defined but generally accepted relation to calcium metabolism, are benefited, even cured, by extract of parathyroid gland in large doses. There is one form of treatment—namely, operation on the middle ear—which seems to have been abandoned definitely and permanently. This method has had a fair trial, but on the whole without good result. The difficulty of obtaining a sterile field of operation entails the risk of provoking a middle-ear suppuration, with all the attendant consequences and possibilities, and little is now heard of stapedectomy and intratympanic tenotomies.

Behind all this, however, as the president (Mr. Somerville Hastings) wisely observed, lies the fundamental difficulty of testing the hearing efficiently. It frequently happens that the patient is pleased with treatment, and says he hears better, although tests of hearing show no improvement. The opposite also is true: the patient may show an improvement to hearing tests without obtaining any subjective benefit. We may conclude that, although a great deal can be done for deafness and tinnitus even to-day, it is not likely that much advance will be achieved by methods founded on empiricism. There must first be developed more satisfactory methods of testing the power of hearing and estimating its changes, and new methods of treatment must be established on a rational pathological basis. It may be gratifying to produce a subjective increase of hearing and diminution of tinnitus, but this by itself should no longer satisfy the modern student of otology with a scientific training. The introduction of new and better methods of treatment will entail much laborious research, both clinical and pathological.

THE PARLIAMENT OF 1924–29.

THE sixth Parliament of the reign of King George V ended this week after a busy life of four and a half years. The dissolution might legally have been postponed till the autumn, but poor attendances in both Houses, perfunctory debates, and the mortality among members of the House of Commons had shown during late months that the present Parliament was exhausted. Whatever the political complexion of the Parliament to be elected on May 30th, it will contain many new members, some of them probably women, though it is noteworthy that the extension of the franchise to women over 21 has not been followed by the nomination of more than a few scores of women candidates. Practically all the medical men in the late Parliament will offer themselves for re-election. The extension of the franchise to millions of women electors, giving them a numerical superiority over men in almost every constituency, is generally regarded as the chief work of the Parliament now closed, but constitutional authorities will attach equal importance to the events of 1926, when the Government withstood and broke the general strike, and of 1927, when Parliament passed the Trade Disputes and Trade Unions Act, by which general strikes were made illegal and civil servants were forbidden to be members of external associations with political objects. The events of these two years cut deeply into the time available for normal legislation, and in view of the loss of revenue during 1926 the Treasury was necessarily hesitant in approving schemes for the extension of social services.

The reduction of the State contributions to national health insurance, carried on the proposal of the Chancellor of the Exchequer, has, according to his critics, restricted the granting of additional medical and other benefits by approved societies.

Despite these preoccupations, and difficulties over time and money, the legislative output has been high, particularly in bills bearing on medical subjects and the public health. This Parliament's interest in the public health found expression even at its close in the many questions on the purchase of radium for medical purposes and on the reports of the Interdepartmental Committee on Mental Deficiency. The Parliamentary Medical Committee, comprising medical M.P.'s and university members, influenced opinion and guided policy both in the Ministry and in the Opposition parties. In the House of Lords Lord Dawson of Penn, lately joined by Lord Moynihan, has presented the point of view of the profession, notably on the Local Government Bill, in speeches of conspicuous ability. Non-medical members, too, who were fortunate in obtaining good places in the ballot, rendered useful service by introducing bills on public health subjects; several such bills were helped in the later stages by the Government, and have become law. Nevertheless, the chief credit for the large and valuable output of public health legislation introduced during the period under review rests with the Minister of Health, Mr. Neville Chamberlain, the Parliamentary Secretary of his department, Sir Kingsley Wood, and the Under Secretary for Scotland, Dr. Walter Elliot. During his period of office Mr. Chamberlain has brought a comprehensive legislative scheme to a successful issue. Mr. Churchill, by providing pensions for widows and orphans and by giving insured workers pensions at 65, reduced the calls upon the old Poor Law. Mr. Chamberlain then took powers to supersede certain boards of guardians, standardized valuation, and, with the aid of Mr. Churchill, altered the basis of local rating. He codified the Poor Law, including its public health provisions, and in 1925 secured the passage of a Public Health Act, giving local authorities larger powers to deal with infectious disease. The passage of the Local Government Act abolished elected boards of guardians, and converted county councils and county borough councils into the chief public health authorities entrusted with the administration of the Poor Law, and allowed them to deal under the relevant statutes with many matters relating to the public health. Under the terms of this Act workhouses, infirmaries, and other public institutions revert to the new public health authorities, whose duty it will be to reclassify them and to secure their best use according to schemes which must be submitted to the Ministry. Mr. Chamberlain hopes that by this reclassification much accommodation will become available for the use of the sick and of mental defectives. A similar Act has been passed for Scotland. Only during the closing stages of these bills in the House of Lords were their medical aspects discussed, and then largely through the insistence of Lord Dawson, who directed the attention of Parliament and of the country to the manner in which they might weaken the voluntary hospital system.

The administration of the Ministry of Health during the past four and a half years has ensured steady building of houses with public assistance, though slum clearance is only now being placed in the front of the Government's programme. Great progress has been made in schemes for the promotion of maternal and child welfare; and the Government has denied the suggestion, expressed in the course of debate, that the new block grant system introduced under the Local Government Bill will check the extension of this work. All parties have now pledged themselves to make special efforts to reduce maternal mortality, and Mr. Chamberlain has lately told the House that investigations conducted by general practitioners of the country under the auspices of the British Medical Association had already contributed to this end.

Other measures of medical interest passed during this Parliament include the Housing (Scotland) Act, the Criminal Justice Act, the Lead Paint Act, the Births and Deaths Registration Act, the Smoke Abatement Act, the Coroners Act, the Nursing Homes Registration Act, the Midwives and Maternity Homes Act, the Midwives and Maternity Homes (Scotland) Act, the Mental Deficiency Act, the Food and Drugs Adulteration Act, the Medical and Dentists Acts (Amendment) Act (confirming an agreement with the Irish Free State over the *Medical Register*), and the National Health Insurance Act, 1928, which authorizes specialist medical advice and surgical treatment as additional benefits. The control and compulsory notification of venereal disease was raised in a bill which failed to pass the House of Commons. This, the Edinburgh Corporation Bill, aroused very strong feelings in the House, and showed that few M.P.'s are willing to accept medical opinion when they think it conflicts with the liberty of the subject.

THE NATIONAL RADIUM FUND.

It is gratifying to note that the National Radium Fund, for which an appeal had been launched in the *Times* of April 29th, was already over-subscribed on May 6th. We explained last week (p. 820) that the appeal for £150,000, the amount required for the National Radium Fund, was being made conjointly with a special appeal by King Edward's Hospital Fund in aid of the hospitals in the metropolitan area, as a thank-offering for the King's recovery, the latter project having for its nucleus the 100,000 guineas offered by an anonymous donor. The treasurer of the combined appeal is Lord Donoughmore, and its two branches, sharing a common office organization, have been administered throughout in the closest co-operation. Lord Donoughmore, in a letter to the press dated May 4th, has indicated that, the money required for the National Radium Fund having been subscribed, all connected with King Edward's Hospital Fund would wish that the needs of hospitals outside the metropolitan area should be more directly associated with the Thank-offering Fund. While the desire of donors outside London to help their own hospitals could be met by the opening of local funds, he suggests that if they prefer to send contributions to the offices of the Thank-offering Fund, at 103, Kingsway, W.C.2, ear-marked wholly or partly for hospitals in which they are particularly interested, care will be taken that their gifts are allocated in accordance with their wishes. In a letter to the *Times*, published on May 2nd, the Prime Minister expressed, on behalf of His Majesty's Government, the deep gratification with which they had seen the swift and spontaneous response of the public to the opportunity of manifesting its relief at the lifting of the shadow which lay over the country during the King's illness. With the £154,779 already in the National Radium Fund, and the Government's contribution of £100,000, practical steps could be taken to bring the benefit of radium treatment to many who would otherwise have waited for it in vain. The Prime Minister suggested that the people could best complete their thanksgiving in its outward and visible aspect by contributing, as far as lay in their power, to the continued maintenance and prosperity of the voluntary hospitals of the country.

LEPROSY OUTSIDE THE BRITISH EMPIRE.

THE increasing number of references to leprosy in these columns recently will have made it clear to our readers how greatly the old pessimism with regard to this disease has been modified by the improved methods of treatment which have been introduced. A short note on the position as regards the British Empire appeared on March 30th (p. 612), and the story of the campaign against leprosy may be conveniently amplified now by a reference to what is occurring in foreign countries. In previous years the League of Red Cross Societies published a monthly review entitled *The World's Health*; this periodical is now issued quarterly, and its issue covering the first three months of 1929 illustrates one advantage of this change—namely, that reports can now be grouped, the topic in the present instance being leprosy. Describing the position of leprosy in Japan, Dr. Rokuro Takano mentions that the country is now divided into five areas, each of which has its own sanatorium. A national sanatorium has been built on an island situated off the west coast, and in addition to these sanatoriums there are a number of small institutions, but most of the lepers in Japan remain in their homes. A scheme to create a leper settlement in a suitable district is receiving the careful consideration of the Government, which will have to provide part of the funds for its maintenance in view of the fact that the majority of lepers are destitute. A movement is on foot to organize a national prophylaxis institute with the aim of hastening the enlargement and improvement of existing hospitals and directing a campaign against the disease. Investigations in November, 1925, showed that there were over 15,000 lepers in Japan, the disease being more than twice as common among men as among women. While a certain number of cases may have been overlooked, it is believed that leprosy is decreasing definitely in Japan. Prince Vallabhakara, who is director of the Health Section of the Siamese Red Cross Society, mentions that a clinic and an asylum have been established in and near the capital. We have previously referred to the valuable work in Southern Siam of the American Presbyterian Mission, and to what is being done by the British and American Missions for Lepers at Chiengmai in Northern Siam (*Journal*, June 23rd, 1928, p. 1071). Importance is attached to establishing better co-ordination between the various agencies operating against leprosy in a country where it is admitted that a large number of lepers are under no control of any kind. Professor Jorge Bejarano, in a brief note on the energetic attempt made in the Republic of Colombia to deal with leprosy within its frontiers, states that three settlements have been established and are doing well. He considers that the disease is undoubtedly brought into his country from Europe, and that the number of lepers in Colombia is far less than is generally thought. The management of the leper settlements is entrusted to a director-general, who is responsible to the Ministry of Education and the Ministry of Public Health. The high incidence of leprosy in Mexico was mentioned in a note in the *Journal* on January 26th (p. 165). Leprosy in Central and Southern Europe is the subject of the second of a series of communications by the Rev. J. E. Abbott in the April issue of *Leprosy Notes*, the quarterly periodical of the British Empire Leprosy Relief Association; he reports the conclusions reached after a tour made with a view to gaining first-hand knowledge of this matter. No evidence was discovered of leprosy in Poland, Austria, Czechoslovakia, or Hungary, but it is present in Jugoslavia, Italy, and in Switzerland where it was once endemic. There is one small leper colony in the south of Sardinia, and it is hoped to provide more facilities for clinical treatment and segregation in other parts of Italy. Mr. Abbott attributes this freedom of Central Europe to the fact that none of the countries concerned have colonies in lands infested with leprosy, nor have they any special connexion with such lands. He believes that South America furnishes Europe with a large number of her lepers. The position in this respect in Bulgaria, Greece, and Albania is unknown, but the author estimates that there are at least 1,600 lepers in Central and Southern Europe. In the same issue of *Leprosy Notes* there is an article on leprosy in the Dutch East Indies, by Lieut.-Commissioner Palmer of the International Headquarters of the Salvation Army. He reports that the Dutch East Indian Government is energetically coping with the disease, and that the lepers are coming for treatment in increasing numbers. It is hoped to build a large leper hospital in Batavia, and all possible help is given by the Dutch Government to the various leper colonies under the care of voluntary societies. Finally, it may be remarked that in the April issue of *Without the Camp*, the quarterly magazine of the Mission to Lepers, interesting short notes will be found on the present position in Japan, China, Korea, and the Federated Malay States.

POISON GAS IN WARFARE.

ON April 30th, at the session of the Preparatory Commission for Disarmament Conference held at Geneva, Lord Cushendun announced that, subject to certain reservations, the British Government had decided to ratify the Geneva pact of 1925 against the use of asphyxiating and poison gas and bacterial weapons in warfare. The reservations were to the effect that His Majesty's Government would be bound only in relation to those other States who had ratified the protocol and adhered thereto, and would cease to be bound by the protocol in relation to any enemy States whose armed forces or whose allies did not respect it. Lord Cushendun added that he made this announcement, at their request, also on behalf of the Governments of Australia, New Zealand, South Africa, and the Irish Free State, and his statement was followed by one from the Canadian delegate, Dr. Riddell, who said that his Government also had decided to ratify the protocol subject to the same reservations concerning reciprocity. The protocol in question binds the contracting parties, so far as they are not already bound by other treaties prohibiting the use of asphyxiating, poisonous, or other gases, and of all analogous liquid, materials, or devices, to accept such prohibition, and to extend it to the use of bacterial methods of warfare. It comes into force for each State from the moment its ratification is deposited. This protocol is to be welcomed as an instrument of propaganda against the use of inhumane methods in warfare. It gives some expression to the revolt of civilized persons against methods of warfare that, by their nature, cannot discriminate between soldiers and non-combatants. It makes articulate a common sentiment which may become powerful enough, even when war is actually in progress, to hinder the efforts of those persons who naturally would tend to use the most lethal weapons at their command. The weakness of this protocol, as of all similar pacts, is that arrangements made dispassionately in peace time generally have little power to bind in time of war. During the great war ships were sunk without notice and the transit of food destined for the civilian population was interfered with, though both these acts were contrary to international law. In this connexion we may recall that the use of asphyxiating gases in warfare had already been prohibited by the Hague pact of 1907, to which the majority of powers were parties. It may be noted that there is nothing in the protocol to prevent a signatory from using poison gas and bacterial methods as a reprisal, and it may be questioned whether modern warfare can be conducted even for a single day

without creating what may be interpreted as occasions for reprisals. A rumour, a false report even, that the enemy is using inhumane methods of waging war may become a pretext for regarding the provisions of the protocol as no longer binding.

MAKING THE MOST OF SUNSHINE.

WHATEVER may be the outcome of the controversy about artificial sunlight, it will be agreed that the natural variety is better, and it ought to be a national endeavour to make the most of it. The antirachitic virtues of sunlight are due to certain of the ultra-violet rays, but actually there is only a very narrow zone of effective solar rays, and the intensity of this portion of the spectrum falls off very rapidly. This rapid falling off is due to absorption by the earth's atmosphere, and has been attributed to ozone in the outer limits, and to smoke, dust, and moisture in the lower layers. A marked seasonal variation in the prevalence of rickets has long been recognized, and this can be correlated with a seasonal variation in the antirachitic value of natural sunshine. The question as to what produces this variation has been studied for some years, and in a recent paper[1] Drs. F. F. Tisdall and Alan Brown of Toronto discuss the altitude of the sun in relation to its antirachitic effect. They used for their experiments rats fed on a diet calculated to produce rickets, and the animals were exposed daily to the sun's rays during the spring and autumn of 1927 and the spring of 1928. The time of day during which the animals were exposed, the duration of the exposure, and the exact altitude of the sun in Toronto at the time of the experiments, were ascertained. In the course of the experiments, which were somewhat complicated because of the difficulty of obtaining exposures at the various altitudes of the sun which were being investigated, it became obvious that a marked increase in the antirachitic effect of sunshine occurred when the sun reached an altitude of about 35 degrees in the spring, and a decrease occurred at a corresponding time in the autumn. It was ascertained also that the spring sunshine was slightly more effective than the autumn sunshine, and the morning sunshine was more effective than that of the afternoon. These results are believed to be due not so much to the fact that the shorter rays get through at increased altitudes of the sun, but rather that there is an increased intensity of the effective zone of ultra-violet light. These experiments are interesting in view of the geographical distribution of rickets. In certain parts of the world where the disease is unknown, or at the worst occurs in a very mild degree, the minimum seasonal altitude of the sun is only slightly less than 35 degrees. In London, on the other hand, the minimum altitude is 16, and is below 35 for five months of the year; and although the amount of antirachitic rays required is probably smaller with children than with rats fed on rickets-producing diets, yet a study of the altitude of the sun gives a very good idea of the prevalence of this disease in certain parts of the world and at certain seasons of the year. The practical results of these experiments are concerned with the exposure of infants to the sun. During the hot summer months it is considered inadvisable in Toronto to expose infants to the heat of the sun at midday, and a consideration of the time of day at which the sun reaches an altitude of 35 degrees indicates that infants may be placed outside at any time from 8 and 8.30 in the morning to 4 and 4.30 in the afternoon during the summer months. Similar times can, of course, be calculated for any other place, and it is important that such calculations should be made if the best use of natural sunlight for curing rickets is to be obtained. These studies are concerned only with rickets principally because experiments in this disease are comparatively easy, but it is obvious that to make the most of sunlight a great deal of further knowledge on similar lines for other disorders is necessary.

[1] *Journ. Amer. Med. Assoc.*, March 16th, 1929, p. 850.

THE ROYAL ACADEMY, 1929.

IT seems to be agreed that the 161st exhibition of the Royal Academy is one of the best all-round displays of contemporary art that have been seen in recent years. Though there are few works of outstanding importance, much of the material is very good of its kind, and the arrangement of the pictures is happier than usual. Black-and-white work at last receives due recognition at Burlington House, water colours are better represented and better shown, and the corresponding decrease in the number of oil paintings is, if anything, a gain to the exhibition as a whole. Medical art connoisseurs who intend to visit this year's Academy will not need assistance from us in finding their way about the galleries, and our purpose here is merely to name some of the exhibits that have direct interest for members of our profession as such. Among these must first be mentioned the lifelike portrait, by Richard Jack, R.A., of Lord Moynihan in the scarlet and gold and purple robe worn on ceremonial occasions by the President of the Royal College of Surgeons of England. Equally unmistakable is the painting by Sir William Orpen, R.A., of the Minister of Health, Mr. Neville Chamberlain, against a crimson background, though this cannot compare with the same artist's wonderful portrait of Sir Ray Lankester—a masterpiece if ever we have seen one. Professor Priestley Smith is the subject of a quiet canvas by Harold Speed, and there are two other straightforward medical portraits in oils—one of Dr. Barbara Sprott, by G. Spencer Watson, A.R.A., and the other of Mrs. J. H. Macdonald, M.D., by Maud Hall Neale. In the black-and-white gallery will be found an etching by Edmund J. Sullivan of Sir StClair Thomson in doctor's gown and wearing the presidential badge and chain of the Royal Society of Medicine. The crowded sculpture in the Lecture Room include a marble bust by Sir Goscombe John, R.A., of the late Sir Charles Brown, to be placed in the Royal Infirmary, Preston, and another, by Albert Toft, of Dr. A. S. Woodwark; both are well executed. There is also a miniature of Dr. Charles Miller in the South Room, and this completes our list of medical portraits. Among the medals exhibited by the Royal Mint is the member's badge for this week's Congress of Military Medicine and Pharmacy, designed by T. H. Paget. As for the architectural room, this contains many drawings of new hospital buildings, welfare centres, clinics, convalescent homes, and research institutes. Lastly, those in search of pathological specimens will find in Gallery VIII a clear case of facial paralysis, dwarfs in abundance, and a striking representation of cachexia in a young woman.

HEALTH AND WELFARE OF MERCHANT SEAMEN.

A NATIONAL conference on the health and welfare of the British merchant navy at home and in ports overseas was held in London on May 3rd. It was organized by the British Social Hygiene Council and the British Council for the Welfare of the Mercantile Marine (the latter a body which has recently come into existence for the purpose of providing recreational facilities for merchant seamen). The Marquess of Linlithgow presided over a representative gathering, in which Dr. H. G. Dain and the Medical Secretary represented the British Medical Association. Mr. H. B. Butler of the International Labour Office, who made a statement on the international position, mentioned that the health insurance of seamen was one of the subjects which would come before the next International Labour

Conference at Genova in October; he hoped that an international agreement would be reached parallel to that which was embodied in the convention already existing dealing with workers on shore. Sir John Sandeman Allen, M.P., described the general conditions in home ports from the point of view of the moral welfare of the seaman, and Dr. R. M. F. Picken, medical officer of health for Cardiff, reported on the subject of venereal diseases. Dr. Picken said that no definite information was available as to the extent of venereal disease in the community, and no special knowledge about its incidence among the seafaring population. Records showed that the amount of venereal disease coming to the clinics was diminishing so far as syphilis was concerned, and probably also with respect to soft chancre, but there was no diminution in the number of gonorrhœa patients. Cardiff was one of the few places which had a special hospital for seafaring men with a clinic for venereal disease attached. The amount of venereal disease treated at that clinic diminished from 1921 to 1926, but since then it had increased. This must not be taken to mean that venereal disease in general was increasing; it was simply a reflection of the amount of trade at the port. Although venereal disease might be declining to a certain extent among the seafaring population, there was still a great deal of it, much of which did not come up for treatment at all. From some further figures which Dr. Picken gave it appeared that nearly one-third of the men attending the clinic he had mentioned were infected in home ports; nearly 15 per cent. in France; 10 per cent. in Spain and Portugal; and nearly 10 per cent. in South American ports. As to facilities for treatment, there had been organized through the Ministry of Health a system of interchange of information between ports, so that men might receive treatment under more or less scientific conditions at the various places of call. This, however, did not meet all the requirements, and the most important matter of all in relation to treatment was that the medical profession itself should discover methods which did not have to be continued for such long periods. After further discussion a series of resolutions was adopted; one of them welcomed the proposals of the International Labour Organization to consider the terms of an international convention for the health insurance of seafarers, and another called for the establishment of port welfare committees in major ports to stimulate and co-ordinate the activities for providing recreation and decent accommodation.

ROCKEFELLER MEDICAL FELLOWSHIPS.

THE Rockefeller Medical Fellowships for the academic year 1929–30 will shortly be awarded by the Medical Research Council, and applications should be lodged with the Council not later than June 1st. These Fellowships are provided from a fund with which the Medical Research Council has been entrusted by the Rockefeller Foundation. Fellowships are awarded by the Council, in accordance with the desire of the Foundation, to graduates who have had some training in research work in the primary sciences of medicine or in clinical medicine or surgery, and are likely to profit by a period of work at a university or other chosen centre in the United States before taking up positions for higher teaching or research in the British Isles. In special circumstances the Fellowships may be tenable at centres of research not in America. A Fellowship held in America will have the value of not less than £350 a year for a single Fellow, with extra allowance for a married Fellow, payable monthly in advance. Travelling expenses and some other allowances will be paid in addition. Full particulars and forms of application are obtainable from the Secretary, Medical Research Council, 38, Old Queen Street, Westminster, S.W.1.

DARWIN'S HOME.

THE president and officers of the British Association for the Advancement of Science have issued invitations to a garden party on the afternoon of Friday, June 7th, on the occasion of the opening of Down House, the home of Charles Darwin, which Mr. G. Buckston Browne, F.R.C.S., has presented to the association in custody for the nation. Mr. Buckston Browne has fully restored the whole house and brought back the ground floor as far as possible to its condition in Darwin's time. Thanks to a number of donors, this floor now contains many objects actually used by Darwin or appropriate to his period. At the opening ceremony on June 7th the chair will be taken by Sir William Bragg, president of the British Association, and the house will be declared open by Sir Arthur Keith, ex-president.

DR. W. H. CRAGO.

THE gold medal of the Branches of the British Medical Association in Australia is to be formally presented to Dr. W. H. Crago at the inaugural meeting of the third session of the Australasian Medical Congress (British Medical Association) on September 2nd. Dr. Crago joined the Association in 1884. He was elected a member of the council of the New South Wales Branch five years later, and held the position of honorary treasurer from 1889 to 1893, when he became vice-president. In the next year he held the post of president of the Branch, and from 1895 to the present time he has been honorary treasurer. Among the many services rendered by Dr. Crago to medical progress in Australia may be mentioned his supervision of the publication of the *Australasian Medical Gazette* from 1895 to 1914. He was also chairman of the directors of the Australian Medical Publishing Company, Ltd., from its creation in 1913 until 1924.

AMONG those upon whom the University of Cambridge will confer honorary degrees at a special congregation on Tuesday, June 4th, is the Poet Laureate, Dr. Robert Bridges, F.R.C.P.

THE Chadwick Trustees announce that the Malcolm Morris Memorial Lecture by Sir Norman Walker, M.D., on "The Progress of Dermatology over Fifty Years," will be given in the Hall of the Royal Society of Arts, John Street, Adelphi, on Thursday next, May 16th, at 5.15 o'clock; Sir StClair Thomson, M.D., will preside. The date of the last Chadwick Lecture of the spring programme (an open-air lecture, weather permitting, in the Chelsea Physic Garden) has been changed to Friday, May 31st, when Mr. H. V. Taylor, commissioner of horticulture to the Ministry of Agriculture, will discuss supplies from the vegetable kingdom and the public health.

THE spring number of the *Bristol Medico-Chirurgical Journal*—of which Professor J. A. Nixon is editor—includes a practical note on the care and treatment of mental defectives, by Dr. H. L. Ormerod, and an article of topical interest by the assistant editor, Dr. Carey F. Coombs, on the distal phenomena accompanying high arterial tension. Mr. H. S. Souttar's address on radium and its surgical applications, which was recently published in our columns, is reprinted by permission. Other clinical articles are: the rôle of pyelography in renal disorders, by Mr. A. Wilfred Adams; and a case of rectal prolapse, reported by Dr. D. Robertson and Mr. D. G. C. Tasker. Reviews of books, and reports of the meetings of the Bristol Medico-Chirurgical Society and the Clinical Society of Bath, are other features of an interesting number of a live medical publication which reflects credit on its producers.

CONCERNING MATERNAL MORTALITY IN CHILDBIRTH.

BY

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MUCH that has been said and written recently concerning maternal mortality in childbirth points to a general dissatisfaction with the manner in which parturient women are looked after. To ascertain where the blame for the admittedly unsatisfactory state of affairs lies it is necessary to consider the part played in obstetric practice by four separate groups of people—namely: (1) the general public, from whom parturient women are derived; (2) those who teach obstetrics; (3) those who practise obstetrics; and (4) the public health authorities and the Ministry of Health.

THE GENERAL PUBLIC.

What in the past has been the attitude of mind of the general public towards childbirth? I do not think anyone will quarrel with the statement that the vast majority of the general public look upon childbirth and the rearing of children as the natural occupation of women, and upon the act of childbirth as a natural process which must of necessity be normal. From these premisses the conclusion has been derived that Nature is the best obstetrician, and that the only help a parturient woman requires can be quite satisfactorily obtained from some other woman who has "gone through" with it herself, preferably on a sufficient number of occasions to be able to show a quiverful and to refer to the obsequies of several others. This attitude of mind might be justified in the case of a multipara who has three or four normal confinements to her credit, but to apply it to a primipara is absolutely unjustifiable—in fact, one might almost call it criminally negligent. It assumes that during the 274 days of pregnancy which precede labour the great obstetrician Nature is quite capable of looking after an expectant mother, and that as a parturient woman may expect to go "twice round the clock" before she delivers herself, it is quite unnecessary to send for assistance until she has exhausted herself in her efforts to overcome a difficulty which could quite certainly have been rectified had assistance been obtained earlier. By earlier I mean not only earlier in labour, but earlier in pregnancy—nay, even before pergnancy had begun.

Not very long ago, a rickety dwarf was admitted to one of my beds in hospital for repair of an extensive laceration of the perineum extending two or three inches into the rectum. She had received no ante-natal supervision whatever, and the doctor was not sent for until she had been in labour for over twenty-four hours. When finally he did arrive the child was dead, and a craniotomy had to be performed.

Had that woman been seen by any doctor any time after she had reached maturity, she would have been told that she would have to be delivered by Caesarean section, the pelvic deformity being so obvious. The general public must be made to realize that Nature is by no means a good obstetrician, especially in first confinements: that competent supervision during the 274 days of pregnancy which precede labour is infinitely more important than supervision during the early stages of labour: and that when the question of obtaining medical assistance during the later stages of labour arises the words "once round the clock" must be substituted for "twice round the clock."

THOSE WHO TEACH OBSTETRICS.

Obstetrics is taught to medical students by obstetric specialists on hospital staffs; to midwives it is taught by obstetric specialists, but to a greater extent by the matron and sisters of lying-in hospitals. Both these sets of teachers find it impossible to reproduce the conditions in which the majority of their pupils will eventually have to work. They therefore start their task of imparting clinical obstetric knowledge with an almost overwhelming handicap, and it is a matter of great regret that the lot of the teachers of medical students is very much worse than that of the teachers of midwives.

The regulations of the Central Midwives Board with regard to the training of midwives are excellent. Every midwife is compelled to call in medical assistance in all cases where the presentation is not an uncomplicated vertex or breech; I do not propose to offer any criticism on this point beyond saying that it is not always easy to assert that a given vertex or breech is uncomplicated. The special curriculum in obstetrics required for a medical student is quite another matter. Take, for example, that required for the Conjoint Board: all teachers and examiners in obstetrics are agreed that it is inadequate, but the time of medical students is so fully occupied with other work that it is practically impossible to extend the obstetric curriculum. It is not this, however, that handicaps the teaching of obstetrics. Consider the position of the resident obstetric surgeon of a lying-in hospital. He finds himself responsible for the welfare of a large number of expectant mothers in his district. He knows that when these women go into labour they will be attended by inexperienced nurses, some of whom are still undergoing their training, and by undergraduates whose knowledge of clinical obstetrics is negligible. He therefore impresses on his pupils that there is never any occasion to hurry in the early stages of a confinement; that most confinements may end naturally (which, however, is not to say normally); that in the event of assistance being required the less examination the patient has been subjected to the better; and that at the first visit all that is necessary is to ascertain that the woman is in labour and that the presentation is a vertex. Both of these points, he teaches, can be determined by abdominal palpation, and by abdominal palpation only. The making of a digital vaginal examination is considered to be extremely dangerous, and in certain quarters a rectal examination is advocated as a lesser risk. The whole of his teaching is based upon the policy of "wait and see"; but unless he is a superman he gives his pupils clearly to understand that if he is routed out of bed unnecessarily it will not be to their advantage. In this policy he is amply justified, because he knows that if anything goes wrong and he is sent for, he has at his back an ambulance service, a fully equipped lying-in hospital with a sterilizing department to supply him with a sterile obstetric outfit, a labour ward, an operating theatre, and a specialist to help him should a major obstetric operation be necessary. Last, but not least, he has an ante-natal department, where all abnormalities are detected and admitted to the hospital. The unfortunate result is that the pupils rarely see an abnormal case on the district, and are only shown how to manage difficult labours in ideal surroundings.

Can such instruction be translated into private practice? Consider what may happen if the practitioner fails to hurry when rung up to go to a confinement. The usual answer to the question "When will the baby arrive?" is "You must expect to go twice round the clock." At the end of twelve hours the answer to the same question may be "Confinements are often very slow—please don't worry." But at the end of twenty hours the statement that "a specialist should see the patient" will probably be met by the question "What will his fee be?" When at last the consultant arrives he finds that he has to do his work in most unsuitable surroundings, unless the patient can afford to go to a nursing home, and even then there is no ambulance service available for her removal.

There is, therefore, no doubt that before a newly qualified medical practitioner can conscientiously attend a confinement in private practice he must find some opportunity for post-graduate instruction. One would go so far as to say that it is the duty of all medical practitioners who propose to attend confinements to obtain this additional training and knowledge.

THOSE WHO ATTEND CONFINEMENTS.

Midwives chiefly attend people who are unable to afford to engage a doctor as well, and I can think of no one more suitable to attend a normal confinement than a fully qualified competent midwife. In quite a large number of cases she

is actually on the spot before the patient has started labour. Once labour has started she is able to give up the whole of her time to her patient until the labour is finished, and she is in constant attendance on her patient for the first ten days of the puerperium. To prevent her doing more than to "wait and see" she is only allowed to take with her to a confinement an appliance for giving a vaginal douche, an appliance for giving an enema, a pair of scissors, a clinical thermometer, and a nailbrush; and the moment she finds herself in any difficulty she is expected—nay, even compelled—to send for medical assistance.

This is where her troubles begin. If she is lucky she has a doctor whose post-graduate training has given him a considerable knowledge of obstetrics; if she is unlucky she may call one with less experience and training, but who none the less has a qualification which allows him to use morphine, hyoscine, chloral, pituitary, chloroform, rubber gloves, axis-traction forceps, perforators, cranioclasts, intrauterine douches, and goodness knows what besides.

Now there are a small number of medical practitioners who specialize in obstetrics. What this really means is that these men have devoted a considerable amount of time to the post-graduate study of clinical obstetrics, that they are prepared to limit their work to obstetrics and gynaecology, and that when attending a confinement they are ready (at an adequate remuneration, of course) to give up their time to a personal supervision of the case, provided a fully trained maternity nurse is engaged and the patient is in suitable surroundings. Also, before undertaking to attend a case, they insist that they must be given a free hand with regard to ante-natal observation. In the confinements attended by these men the number of women who are allowed to go twice round the clock and deliver themselves unaided is non-existent. Statistics can, of course, prove anything, and can also be explained away, but I know of a nursing home which took in 147 confinements in one year, of which 95 cases were complicated and 52 terminated in natural delivery. The complicated cases comprised 29 Caesarean sections, 16 inductions, of which 5 demanded the use of forceps as well, and 50 forceps deliveries. All the natural deliveries had chloroform, and most of them had some form of morphine and hyoscine in the early stages of labour. All that these figures show, however, is that Nature is not always to be relied upon in dealing with a pregnant woman.

In addition to the specialists there is a very much larger number of medical practitioners who combine obstetrics with their general practice. They do their obstetric work in less favourable circumstances than the specialists. They find it difficult to persuade their patients that ante-natal supervision is so important, and in a busy general practice it is sometimes difficult to find the time to carry out this supervision adequately. Once a patient goes into labour it is often impossible to neglect the rest of the practice until the labour is over. Can it be wondered, then, that many of these eminently competent practitioners intensely dislike the obstetric part of their work? The general public do not grumble if the family doctor refuses to remove their tonsils, extract their teeth, or ligature their piles—but if he does not attend confinements they go elsewhere. One notices with interest and with satisfaction that all over the country the tendency is towards the formation of small groups or firms of medical men, each with his own special part in the practice, but each prepared and thoroughly competent to carry out the ordinary work of any of his partners. Should a woman go into labour the partner whose job it is feels himself at liberty to devote as much time as is necessary to the case, secure in the knowledge that the rest of his work is being looked after by his colleagues.

I feel certain that on lines like these is to be solved the problem of the care of pregnant women belonging to the class which can afford to have the attention of a doctor and a maternity nurse. But at a conservative estimate only about 25 per cent. of labours in the country are attended by the two classes of medical men just referred to. The other 75 per cent. are among women who cannot afford to have both a doctor and a trained maternity nurse. These women either bespeak the services of a doctor—without, however, expecting much attendance from him unless anything goes wrong—and have a handywoman to "see them through," or they engage a midwife. Now I maintain that the ultimate responsibility for adequate attendance on these women rests with the Ministry of Health under the Insurance Act, or with the public health authorities. Under the Insurance Act what is called a maternity benefit is given to an insured woman or to the wife of an insured man. This benefit takes the form of a sum of money, which is paid out, as a rule, through an approved society after the confinement, and covers a period of four weeks from the confinement. The Act makes no stipulation as to how this sum of money is to be expended, and no provision for ante-natal observation, but by giving the grant the framers of the Act have definitely assumed that they are to some extent responsible for the welfare of its recipients.

In a good many of the London boroughs the public health authorities have opened ante-natal clinics and maternity beds for poor patients, but these clinics do not definitely co-operate either with the Ministry of Health or with medical practitioners in the borough, the attendance of expectant mothers is entirely voluntary, and no provision is made for the conduct of labour in the women's own homes. There are, furthermore, 847 infant welfare and ante-natal clinics scattered throughout the country. These are philanthropic institutions which make us proud of our country; at present these centres receive money grants in aid of their work from the Ministry or public health authorities. The actual results of these various attempts to deal with the situation are not altogether encouraging. In illustration I would cite the following case.

> A primipara engaged a midwife, but did not think of going to see her until a week before the baby was expected. The midwife, finding that the patient was suffering from headache and swollen ankles, advised her to see a doctor. The patient went to an ante-natal clinic, where it was found that the urine was loaded with albumin, and she was most strongly urged to go at once to a hospital. She went home to consult with her husband and mother, and did not act on the advice given to her at the ante-natal clinic. The next that was heard of her was when she had had two eclamptic fits. Everything possible was done, but the woman died.

Now all the persons concerned in this case did all that was expected of them, but as no one was actually responsible no treatment was actively undertaken until too late. Proper co-ordination between the midwife, a medical practitioner, the ante-natal clinic, and a hospital would have prevented the catastrophe.

It would not be difficult to cite other cases, but the outstanding features of them all have been the same: an absence of any organized co-operation between the various parties concerned; some abnormality in labour which, owing to the accepted "wait and see" policy, was not diagnosed until too late to be rectified easily; some form of internal examination or operation which necessitated the introduction of the hand into the uterus, or the use of instruments; and an exhausted patient with an exhausted uterine muscle which was incapable of dealing with the third stage of labour adequately.

I have still to be convinced that digital vaginal examination is a source of danger to a woman in labour. I am prepared to argue that anyone who has not sufficient surgical knowledge to make such an examination in a surgically clean manner has no business to attend a confinement. Cases of puerperal infection have been reported where no examination of any kind has been made. If one takes into consideration the surroundings in which so many confinements take place, the only wonder is that serious intrauterine sepsis is not more prevalent than it is. That a subacute puerperal infection is extremely common has been abundantly proved by the work of Dr. Remington Hobbs, but at present we are only concerned with the maternal death rate, of which 80 per cent. is due to some form of sepsis. The history of the cases of severe puerperal sepsis in which I have been consulted have a number of features in common: a long labour, probably a primipara, an exhausted patient, and an exhausted uterus, possibly an instrumental delivery, certainly a third stage with a retained placenta or post-partum haemorrhage; and then has gone in more than the index finger in circumstances and surroundings which court disaster.

FINAL CONCLUSIONS.

I have been forced to the conclusion that, in primiparae at any rate, a normal labour—that is, a labour completely free from abnormality—is not a common occurrence. In the normal labour of a primipara the head should be engaged a week before labour starts, and the membranes should not rupture until the os is fully dilated; yet at least 50 per cent. of first confinements occur without the fulfilment of one or other or both of these conditions. If, however, the head does not engage until uterine contraction begins, and, as frequently happens, an enema has not been administered within an hour of the commencement of labour, the loaded sigmoid prevents the occiput from descending readily. In consequence the head enters the brim slightly extended, and the occipito-bregmatic diameter takes the place of the suboccipito-bregmatic. This causes very definite delay in anterior rotation and abnormally long first and second stages. If, moreover, extension takes place while the head is crowning, the extra half-inch of the engaged diameter causes a tear of the perineum. When the second condition is not fulfilled the anterior lip of the cervix tends to get pushed downwards in front of the occiput. This not only causes severe pain to the woman, but increases enormously the strain on the cervico-pubic portion of the fascial support of the anterior wall of the vagina. The best treatment is to push up the anterior lip during three or four consecutive pains by digital pressure, but owing to the fetish against vaginal examination the condition is neither diagnosed nor treated. The result is unnecessary and prolonged pain for the patient at the time, and in a very large number of cases a definite rupture of the cervico-pubic fascia. How often this occurs one realizes on recalling the number of women who, after they get up from a confinement, complain of bladder trouble and even slight incontinence of urine, especially on coughing. This rupture of the anterior fascia is the first stage of a subsequent prolapse, and there is no doubt in my mind that unnecessary prolongation of the first stage of labour, with the undue strain on the pelvic floor which it entails, has more to do with the production of prolapse than anything else. The remedy is to preach the doctrine of surgical cleanliness, and so to allow of an early diagnosis of a difficulty to be made while time remains to rectify that difficulty easily.

It would take too long to enter into details as to how the proposed co-ordination between the Ministry of Health, the public health authorities, the welfare centres, and the practitioner can be effected; but one thing leaps to the imagination: the Ministry of Health grants a cash maternity benefit. It is surely within its powers to make the payment of this benefit dependent on proof of adequate ante-natal observation. This certificate of observation could be obtained from the patient's medical attendant, an ante-natal clinic run by the public health authorities, a welfare centre, or a lying-in hospital. I am certain that many general practitioners who attend expectant mothers would welcome co-operation with the clinics and centres. Pregnant women would soon realize that they must get in touch with a doctor or a midwife early in pregnancy. Many doctors, knowing that the clinic was not run in opposition, would be glad to be relieved of the work of ante-natal supervision. During pregnancy they would remain in charge of the patient's general health, and the moment any special symptoms showed themselves, being in touch with the ante-natal clinic, they would be in a position to co-operate immediately to the best advantage of the patient.

With regard to the actual attendance at the confinement, a midwife or a maternity nurse would always be in attendance in the early stages, and it would be simply a matter of arrangement between the parties concerned whether she would send for the medical practitioner or to the ante-natal clinic as soon as she began to suspect some abnormality. It should also be possible for midwives and general practitioners to obtain sterilized obstetric outfits from the clinics and centres.

That some scheme such as this is within the range of practical politics is proved by the fact that the Ministry of Health has already taken over the treatment of venereal disease throughout the country among the same class of patient which would be looked after by this suggestion. But the general public, like the ostrich with his head in the sand, is a curious bird. As long as a danger is not absolutely obvious it is difficult to get people to realize that preventive measures are infinitely better than measures for treating bad results. The person suffering from syphilis is an obvious danger to the community; but the parturient woman does not obtrude herself in the community until she dies—and then it is too late.

PARATYPHOID FEVER IN LONDON.

REPORT ON THE 1928 OUTBREAK.

THE outbreak of paratyphoid fever which occurred in London and several of the Home Counties during the end of July, 1928, and continued throughout August, gave rise, it will be remembered, to a considerable agitation in the press and in certain interested quarters, in favour of altering the law relating to the use of preservatives in food. In a leading article (August 18th, p. 316) discussing the outbreak we expressed the opinion that "there would be no additional security to the public against outbreaks of this character were a 'minute quantity of boric acid' permitted to be added to cream as a preservative. It is not in the public interest that an outbreak of infectious disease calling for calm and experienced investigation should be made the subject of a newspaper stunt, and exploited to revive a practice which has been abolished in America and in regard to which, as the result of careful, prolonged, and skilled inquiry, official prohibition has tardily followed in this country." Confirmation of this opinion is now given in the report of his investigation presented by Dr. J. A. H. Brincker to the medical officer of health to the London County Council, and published this week.[1]

Etiology and Incidence.

The report opens with a general discussion of the etiology of typhoid and paratyphoid fevers, and of the peculiarities exhibited by the outbreak in question. Dr. Brincker points out that whereas cases of illness exhibiting prostration, continued fever, and abdominal symptoms were till comparatively recently all notified as typhoid, or continued fever, the use of bacteriological methods has made it possible to allocate the majority of such cases into the categories to which they belong—namely, typhoid fever and paratyphoid A, B, and C. The micro-organisms of these diseases, with certain kindred pathogenic organisms, such as Aertryke's and Morgan's bacillus, which are associated with outbreaks of food poisoning, are responsible for the Salmonella group of diseases, which all result from the ingestion of appropriately contaminated food or drink.

During the war there was some expectation that *B. paratyphosus* A, B, and C, together with Aertryeke's and Morgan's bacillus, hitherto comparatively uncommon in this country, might be brought into it by troops who had contracted and recovered from the corresponding diseases in countries where they are normally endemic; this expectation has not been fulfilled. What higher incidence of paratyphoid there has been in London since the war may be due to the better methods of diagnosis and the wider recognition of the disease as a separate entity; on the other hand, the infrequency of the post-war outbreaks demonstrates that modern sanitation, increased vigilance on the part of sanitary authorities, and possibly the absence of conditions that favour the spread of the disease, have combined to keep the risks in check. Apart from occasional outbreaks, usually traceable to a specific cause—namely, infected food—efficient supervision and control of foodstuffs, milk and water supplies, shellfish beds, and so on, has limited the occurrence of enteric fever to sporadic cases.

A comparison of the notifications and deaths from enteric fever in London during the ten years preceding the war with those for the ten post-war years illustrates not only that the fears of a greater prevalence of enteric fever following demobilization were not realized, but that the disease has considerably declined. Thus, in 1905, there were

[1] Outbreak of Paratyphoid Fever. Report by the Medical Officer, London County Council. No. 2643. Price 1s.

1,552 cases, with 234 deaths; in 1914 there were 789 cases, with 147 deaths. In the post-war period the disease had so declined that in 1919 there were only 342 cases, with 59 deaths, and in 1927 there were 322 cases, with 27 deaths. During the three months ending September 29th, 1928, however, no fewer than 338 enteric or continued fever notifications were received in London, 230 being notified as paratyphoid fever. If the date of onset be taken into account there were 282 patients, of whom 201 were cases of paratyphoid B, who developed their illness during the period July 1st to September 1st, the great majority during the third and fourth weeks in July. In Surrey there were 203 notifications, in Middlesex 63, in Kent 38, and in Hertfordshire 21, during the same period. Most of these cases also developed about the third or fourth week in July. A comparison of these figures with those showing the normal incidence of the enteric group of diseases during the years 1919 to 1927 made it clear to the authorities that they were faced with an outbreak which could not be explained by normal conditions.

History of the 1928 Outbreak.

On July 30th five cases of paratyphoid fever, serologically diagnosed as paratyphoid B, occurred in a children's nursery in Streatham. On the following day fifteen cases, mostly among well-to-do persons, occurred in Kensington. Inquiries made by the public health authorities elicited reports of other cases in Fulham, Westminster, and various other western London boroughs. Simultaneously the Ministry of Health drew attention to an outbreak in Surrey, about which it was established that most of the patients had partaken of cream from one common source —namely, "X's" large wholesale dairy. The following day particulars of additional cases were received from other outlying districts, and practically in them all cream supplied by "X" was inculpated.

Source of Infection.

As the inquiry proceeded it became increasingly evident that practically the only common factor in the cases investigated was the consumption of cream from "X's" dairy. In his early investigations Dr. Williamson, medical officer of health for Epsom, made the significant discovery that the cream received from "X" on July 7th by certain retailers was bad on the following day, in spite of having been kept in a refrigerator overnight, and that customers had complained about it. It was also brought to light by a study of the dates of onset of the illness that in practically all the cases the patients were actually infected on or about the week-end July 7th–8th. From Carshalton, Leatherhead, Dorking, Beddington and Wallington, Sutton and the Maldens, from Kensington, Fulham, Wandsworth, and Paddington, the reports were essentially the same: a majority of paratyphoid B cases reported were definitely known to have consumed cream derived from "X." This weight of evidence notwithstanding, an investigation was made of other possible sources of infection. No evidence could be found implicating water supplies, contaminated foods, and attendance at baths—all factors usually associated with outbreaks of this kind.

Investigation of "X's" Creamery.

Immediately "X's" creamery came under suspicion, inquiries were made to ascertain the source or sources from which his supplies were derived, the methods of handling and distributing the cream, and the means employed for sterilization. "X," it was found, receives his supplies of cream from Ireland, Holland, and an English company. The cream from Ireland is said to be pasteurized at the place of origin, but "X" has always found it necessary to re-pasteurize it immediately upon its receipt in London. Examination of samples of this cream as received by "X" showed it to be grossly contaminated with *B. coli*. The Dutch cream is sterilized in Holland at 200° F., and exported in sealed tins. On analysis it was found to be quite satisfactory and above suspicion. The English cream is pasteurized before delivery to "X," but samples taken from time to time on "X's" premises were found to be contaminated with *B. coli*. The Ministry of Health was unable to discover anything suspicious about the milk from which the English cream is derived, or about the health of the employees handling it. Careful inquiry into the medical history of these employees and of their families yielded no evidence to show that any one of them could have acted as a focus of infection. The method of pasteurization was, however, open to objection, and the Ministry suggested improvements in the technique employed. While, then, there is strong presumptive evidence from the data available that cream supplied by "X" was responsible for the outbreak, actual proof is lacking owing to the failure to discover paratyphoid organisms in the samples of cream taken every three weeks after the infection occurred. It may be assumed, however, that the infection was probably of a transitory character, such as would be produced by an intermittent carrier.

It is noteworthy that not until July 25th, 1928, did "X" begin to pasteurize the English cream. Before that date, however, it had been regularly supplied by the English firm every Friday to its employees, and no case of paratyphoid fever was discovered to have occurred among them. Furthermore, certain seaside towns were supplied by "X" with this cream during the week-end July 7th–8th; yet no cases of paratyphoid fever were reported from these towns. The amount of cream diverted to the employees and the seaside towns amounted to about half of the total supply of one day; the remainder was used by "X" for mixing with Irish and Dutch cream. Had the cream from this source been infected it would have been expected that cases of paratyphoid would occur among the persons in the seaside towns and the employees who consumed unmixed cream. The fact that the Irish cream was grossly contaminated with *B. coli* indicates that at some stage of its production or in transit it must have been exposed to pollution. Whether it was actually infected with *B. paratyphosus B* will now never be known, but if such were the case the only explanation that can be offered is that it may have inadvertently slipped through the cordon of precautions during a rush period, when there was an abnormal demand for cream.

Boric Compounds as Preservatives in Cream.

In view of the press criticisms of the ban against the use of boric acid as a preservative in food, Dr. Brincker devotes a portion of his report to a discussion of the existing food preservative regulations. Boric acid in food, he points out, is intended merely as a preservative, not as a germicide; while inhibiting the growth and activity of putrefying organisms it does not kill them. It has no action on the germs of disease. In the past it has been used as a preservative in cream in a 0.25 per cent. concentration; it has been proved, however, that cream with as much as 4 per cent. boric acid will contain vigorously growing bacteria, even after thirty-six hours. The tendency in some quarters to rely upon preservatives to mask the signs of early decomposition in food is in itself a potent reason against their free use. Proper care in the preparation and handling of food to minimize the risk of contamination, and, where applicable, pasteurization or sterilization, must be regarded as the basis of all wisely directed measures for safeguarding the food of the people.

ROYAL MEDICAL BENEVOLENT FUND.

DURING the first quarter of this year £2,774 has been voted in grants and £1,320 paid to annuitants, showing an increase on the corresponding period of last year. As the fund expands in usefulness so is further support and the need of enlisting new subscribers the more urgent. Subscriptions and donations should be sent to the Honorary Treasurer, 11, Chandos Street, Cavendish Square, London, W.1.

At the recent meeting of the committee thirty-three grants were made, amounting to £715 2s. The following are short notes on four of the cases helped.

M.D., aged 76, whose sight had been damaged by x-rays in the early days of long exposures. Vision of the right eye practically gone, and left eye failing. Applicant was one of the earliest pioneers of radiology in this country. Private income £22. Freemasons have given a pension of £64, making a total income of £86. Voted £30.

M.B., C.M., aged 72. For many years has suffered from mitral valvular disease; during the last few months has had increasing difficulty in walking, and cannot work. His savings are exhausted. Voted £40.

Widow, aged 62, whose husband was a ship surgeon until his death in February, 1929. She has been left with no income. Her daughter is earning £130 a year, and relations contribute £50. Voted £35.

Daughter, aged 61, of M.R.C.S. Her father died when applicant was a child. She was trained as a nurse and supported herself through life as nurse matron in schools. In 1928 a severe operation compelled her to give up work. Income £75; rent £25. Voted £25.

VITAL STATISTICS FOR ENGLAND AND WALES.

THE REGISTRAR-GENERAL'S REVIEW.

THE Registrar-General's Statistical Review of England and Wales would at first sight appear to be a no more dramatic document than any other report of annual stocktaking. Through the masses of statistical tables, however, and within the graphs, the discerning mind may perceive a coherent picture of the social structure and of the trend of events on which any just forecast must be founded. Changes in birth rates and in death rates, in the incidence of disease and in the expectation of life, in the age distribution of population and in the marriage rate—these, as much as the results of a cultural or an economic survey, must determine an appreciation of the nature and the progress of a civilization.

1927 and its Forerunners.

The review for 1927,[1] just published, opens with an account of the deaths registered in England and Wales during that period, of which 246,606 occurred among males and 233,003 among females. The total of 484,609 corresponds to a rate of 12.3 per 1,000 of estimated population, or, standardized to correct for the deviation of the age and sex distribution of the population, to 10.6. In 1926 the standard rate was 10.1, and in 1925 10.3; but apart from these two years no other has ever returned so low a rate as that for 1927. After a period of practical stability from 1841 to 1880, and until the end of the nineteenth century, the age constitution of the English population gradually became more favourable to longevity, in consequence of the fall in the birth rate dating from 1877. This had the effect of decreasing the proportion in the age group 0–5, for which the mortality is now almost exactly double the average for all ages, though in the last century the excess was much greater. During the present century, however, other influences have come into play, chiefly reduction of mortality in later life, which, by greatly increasing the proportions living at ages over 55, have interrupted the tendency to low mortality. Since the enumeration of the standard population in 1901, the proportions of persons per million of all ages in the age groups under 20 are lower now than at any preceding census, and at all over 45 they are higher. This increase has resulted both from the large decline of mortality at most ages over 45, and from the fact that persons over 45 are survivors from a period when population was being more rapidly recruited by new births than at present. The increased death rate in 1927 was determined by the mortality in the March quarter (in which there were more deaths than in any corresponding period since the great influenza epidemic), all the other three quarters returning rates which are among the lowest yet recorded. The tendency for the male death rate to increase as compared with the female is revealed by the fact that for the third year in succession there is male excess in each age group of population. In the middle of the last century mortality was steadily higher for females than for males of 25 to 35; at that time tuberculosis was more fatal to females at this age, whereas from 1871–80 onwards its mortality has been greater for males.

Infant Mortality.

The rate of infant mortality in 1927 was 70 per 1,000 live births, the lowest yet recorded in this country with one exception—69 in 1923. Of the 484,609 deaths registered during the year, 45,610, or 9.4 per cent., were those of infants under 1 year of age; this proportion, which as recently as 1901–10 was 22.6 per cent., has fallen greatly of late years, owing mainly to reduction of the birth rate. During the last forty years of the nineteenth century infant mortality was almost stationary; the fall in this century, represented in England and Wales by a halving of the rate, has occurred throughout Europe and the civilized world generally, being accompanied elsewhere, as here, by a fall in the birth rate, which may go far to account for it. The mortality rates for the county boroughs and for the North were, as usual, in considerable excess, the highest rate being 87 for the northern county boroughs, and the lowest 49 for the urban and rural districts of the South. The general tendency has been for the reductions to be greatest in the South and smallest in Wales, and whereas the advantage of the South over the North has tended to increase, that of the country over towns has diminished. Particularly noteworthy are the figures recorded for London; usually its mortality is high in early infancy and tends to some excess later on, especially at 3 to 6 months; but in 1927 the London rate was below that for England and Wales at all ages, except for a 4 per cent. excess at 3 to 6 months. The regional differences are of a surprisingly constant nature, and indicate that in England a southern environment is more favourable to life, even from the day of birth, than a northern.

The excess mortality of males over females, which has greatly increased along with and in consequence of the fall in infant mortality during the present century, was 31 per cent. in 1927. In each recorded age period up to 1 year the death rate was considerably greater—at certain periods twice as great—among illegitimate than among legitimate infants. Changes in the recorded causes of mortality are largely attributable to increased caution in diagnosis, particularly of conditions formerly classified as convulsions, debility, and tuberculosis, and to the substitution of more definite forms of return. The only causes of appreciably increased mortality are influenza and congenital defects, the rate from the former being attributable to the prevalence of fatal influenza in the first three months, from the latter to the increasing incidence of malformations, which in the year under review accounted for a mortality of 4.77 per 1,000 live births, the highest rate yet recorded.

Causes of Death.

Causes of death are classified in this review in the form adopted by the Registrar-General in consultation with the Ministry of Health for use in 1921–30, and are related to the international lists as revised by the commission which met for the purpose at Paris in 1920. The low mortality from enteric fever, the incidence of which was somewhat higher in 1927 than in several previous years, is attributable to the unprecedentedly low fatality rate of 104 per 1,000 notified cases. Scarlet fever and diphtheria yielded lower fatality rates in 1927 than in any other year since 1911, when publication of the notifications was begun. In general, the small-pox prevalent during the year conformed to the mild type, but the report of the Chief Medical Officer records cases of severer types in certain local outbreaks in London and Middlesex. The deaths from measles numbered 3,622, corresponding to a mortality of 92 per million of population; the rate was thus lower than for any previous year, except 1921 (59) and 1926 (89). The statistical tables show how preponderantly measles mortality is affected by city life. The regular increase shown for 1927 from rural districts to small towns, and from these to county boroughs, is common to the experience of each of the years 1911–27, for which the facts are available. For twelve years in succession the rate of mortality from scarlet fever has been much lower than any recorded previous to this period (1916), the rate for 1927 being less than 2 per cent. of that prevalent sixty years ago. Deaths from whooping-cough have been falling rapidly during the present century, the rate for 1927—94 per million total population—being less than half that for 1906–10. The 2,732 deaths from diphtheria included 1,339 of males and 1,393 of females; this excess of females is a constant feature of the returns, applying to each year since the disease was first distinguished, except 1922. The rate—257 per million aged 0–15—was lower than in any previous year except 1923–24, and less than one-fifth of the maximum rates during the years 1856–65.

The mortality from influenza—567 per million persons living—was the highest crude rate recorded since the great epidemic of 1918–19, though the standardized rate was exceeded by the similar rate for 1922. The effect of standardization in reducing the crude death rate from influenza—a disease chiefly fatal to old people—has been increasing along with the proportion of old people in the population since the standard year, 1901. During the great epidemic of 1918–19, age for a time ceased to favour mortality, but since then the proportion both of the population and of influenza deaths has increased at the higher ages. Mortality from influenza with pneumonic complications has been in considerable excess for males, and that with other pulmonary and without stated complications in some excess for females. Of the deaths in 1927, 45 per cent. were stated to have been associated with pneumonia, and 24 per cent. with other complications. The highest mortality was in the first quarter of

[1] The Registrar-General's Statistical Review of England and Wales for the year 1927. (New Annual Series, No. 7.) H.M. Stationery Office. 1929. Price 5s. net.

the year, culminating in February, when 42 per cent. of the year's deaths occurred.

The mortality from encephalitis lethargica, 29 per million, though lower than during 1924-26, was higher than for any previous year since 1918, when these deaths were first distinguished. The notifications were also higher than for any year previous to 1924. The standardized death rate from tuberculosis increased from 942 per million in 1926 to 952, its proportion to that from all causes falling, however, from 9.3 to 9.0 per cent. It is probable that the share in the total mortality attributed to tuberculosis has never been so low in any previous year. The small increase of tuberculosis mortality in 1927 was attributed to the outbreak of influenza in the first quarter of the year, a causal association which is confirmed by similar comparison for other recent years. The mortality ascribed to syphilis, after falling steadily from a maximum for recent years of 60 per million in 1917 to 30 in 1925, rose again to 32 in 1926 and to 36 in 1927. The infant death rate from this cause has, however, continued to fall, and it seems probable that the recorded adult increase may be attributed to the use in the second half of 1927 of the new form of death certificate, in which the attention of the certifying practitioner is directed to the remoter antecedents of the immediate cause of death.

The deaths ascribed to cancer—25,048 for males and 29,030 for females—are the highest yet recorded. The standardized death rate for males, 1,018 per million, is higher than for any previous year except 1925, but the rate for females, 984 per million, is below that for the years 1924-26 and 1913. During the last century the standardized rate for each sex increased steadily and to practically the same extent for each sex, the excess for 1896-1900 over 1851-55 being 488 per million for males and 483 for females. But this equality of increase implied a reduction of the proportionate excess for females from 114 to 32 per cent. After 1900 the rate of increase slackened greatly, but less for males than for females, with the result that by 1924 addition of a further 311 per million to the rate for males, as against only 74 to that for females, has placed the former for the first time in excess of the latter, an excess which has been maintained in each of the three subsequent years.

The standardized death rates from diabetes—in 1927, 88 for males and 101 for females—were higher than in 1926, the rate for males being the highest since 1923, and for females since 1915. The increase has occurred entirely at the highest ages, and if it is desired to trace the effect of insulin on mortality it is necessary to deal with the various periods of life separately. The figures show that whereas for all ages under 55 an obvious improvement has occurred, its effect on the total mortality has for males been almost, and for females more than, wiped out by the extraordinary increase in the diabetes death rate at greater ages. The death rate from pernicious anaemia is of interest because of the introduction of liver treatment in 1927. Though it is too early to form a definite conclusion from the figures available, the fact that the highest reduction of mortality occurred in the fourth quarter of the year, after attention had been called to the new treatment in the third, would seem to offer hopeful prospects for the future.

The number of deaths allocated to heart disease—33,365 of males and 38,744 of females—was, as usual, higher than for any other of the scheduled causes of death. The increasing age of the population and the change in certification contributed to the large increase in the crude mortality from heart disease in 1927, but two most significant factors were the influenza epidemic in the first three months of the year and the introduction of the new form of death certificate in July. It is probable that more than half of the increase may be attributed to influenza.

The death rate assigned to pregnancy or childbirth was 4.11 per 1,000 live births, inclusion of deaths associated with pregnancy and childbirth raising the figure to 5.43. The increased associated mortality was due partly to the prevalence of influenza, partly to the increasing tendency to record, without necessarily implicating, recent childbirth on certificates of death from other causes. Especially noteworthy in 1927 was the fact that the puerperal mortality in London from both septic and other causes was the lowest in the country. In rural districts the rate of mortality from sepsis was for the first time greater than that for all England and Wales, and the highest recorded since the epidemic of 1920.

The total number of deaths under or connected with the administration of anaesthetics was 596, thus exceeding that for 1926 by 40, and being more than double that of any year prior to 1916, except 1914 (300). The increase has occurred notwithstanding the very general substitution of ether for chloroform, the latter having been associated with over four-fifths of the deaths at the beginning of the century, but with less than one-fifth in 1927. The record of ethyl chloride, stovaine, and novocain on death certificates is increasing rapidly. Unfortunately, the deaths associated with each type of anaesthetic cannot be collated with the number of administrations, and it is not even possible to say whether the rapid increase in the number of deaths implies increased mortality under anaesthetics. No record is available of the number of administrations, and the deaths tabulated are those which occurred under, not those caused by, anaesthesia. It is possible that the increase of this type of death may be partly dependent upon increased boldness in operative surgery.

Population.

The total population of England and Wales as at June 30th, 1927, has been estimated at 18,804,000 males and 20,486,000 females. The population is assumed to have grown by 3.7 per cent. over the period since 1921, representing an arithmetical average of 0.61 per cent. per annum, as compared with 0.49 per cent. per annum during the decade 1911-21. The sex inequality expressed in 1921 as 1,096 females per 1,000 males has been reduced to 1,089 females per 1,000 males at the present time. The average ages of the mid-1927 population were 30.9 and 32.4 for males and females respectively, as compared with 29.9 and 31.2 at the last census. 654,172 live births were registered during 1927, corresponding to a birth rate of 16.6 per 1,000 of population. This rate is the lowest on record, not even excepting that of the war years, during which it was unusually depressed. Having regard to current economic and industrial conditions, the rate appears likely for some time to remain low in relation to the rates that obtained at all earlier periods for which we have reliable records. The proportion of male to female births was 1,041, 1,051, and 1,042 to 1,000 for legitimate, illegitimate, and total births respectively. From 1919 the male excess has fallen almost continuously, the ratio now approaching that of the years immediately preceding the war. The excess of live births over deaths was 169,563, as compared with 240,759 in 1926; this drop in the natural increase figure is attributable to the conjunction of the decrease in births with the increase in deaths. The population as a whole is gradually getting older, owing to the heavy falls which have occurred during the past half-century both in fertility and mortality. The older sections, where the death frequencies are naturally highest, are becoming relatively more numerous, and if the true underlying mortality remains unchanged the crude death rate must continue to encroach on the already diminished margin of natural decrease. The encroachment would be delayed by a real decrease in mortality or an increase in fertility. Of the advent of the latter there is no evidence at all; while as regards the former, from the very nature of the case the lower mortality falls the less room is there for it to fall still further. The inference must be that with a continuation of present conditions the further growth of population will tend to take place at an ever-diminishing rate up to a stage at which births and deaths are equal, the latter thereafter gaining the ascendancy, with a consequent decline in population.

SMALL-POX CASES FROM THE "TUSCANIA."

REPORT BY THE M.O.H. FOR GLASGOW.

THE following report, supplied by Dr. A. S. M. Macgregor, medical officer of health for Glasgow, deals with the circumstances attending the recent introduction of small-pox from India by the s.s. *Tuscania* between April 5th and 22nd. Fifteen cases of small-pox were removed to hospital in Glasgow subsequent to the arrival of the vessel on April 4th, thirteen being members of the crew, one a passenger, and one a relative of a steward, who conveyed the infection presumably by means of his clothing. All were directly due to infection received on or, in one case, transmitted from the ship. Contemporaneously with this occurrence others of the ship's complement, both passengers and crew, became ill shortly after reaching their destinations in various parts of the country and abroad.

Movements and Personnel of the Vessel.

The ship arrived at Bombay on March 4th and left on March 14th, the ports of call on the homeward journey being as follows: Port Said and Suez, March 22nd; Marseilles, March 27th; Gibraltar, March 29th; Liverpool, April 1st; and Glasgow, on the evening of April 4th. She left Bombay with a total complement of 1,117 passengers and an all-British crew of 437 members, taking on 19 passengers at Port Said, 8 at Marseilles, and 9 at Gibraltar. There disembarked 21 passengers at Suez, 14 at Port Said, 457 at Marseilles, 10 at Gibraltar, and 651 at Liverpool. Of the crew, 176 were paid off at Liverpool. The vessel arrived at Glasgow with a crew of 288 and 8 remaining passengers. A supply of lymph sufficient to vaccinate, if need be, the whole personnel of the ship had been taken on board before leaving this country. Notices offering revaccination were posted up on the vessel at Bombay, but without effect.

Incidence of Small-pox on the Vessel.

On April 3rd a message was received from the port medical officer at Liverpool that the ship had had small-pox on board, that a case had been landed at Liverpool, and that the date of onset was March 18th. This was followed by a list of the crew and passengers proceeding to Glasgow, either on shipboard or by rail. On arriving at the boarding station at Greenock it was ascertained by the port medical officer that a case of small-pox had been removed at Marseilles in the following circumstances, as reported by the ship surgeon.

The patient, a seaman, had been taken ill on March 17th, and had been removed to the ship's hospital on the following day, where he remained until admitted to hospital at Marseilles. His symptoms were headache, fever, and a severe tonsillitis, followed on March 20th by an erythematous rash, developing next day into what appeared to be a marked general dermatitis, going on to the formation of large blisters on various parts of the body, with considerable prostration. The patient was given antidiphtherial serum, and the condition did not suggest small-pox. The ship surgeon pointed out that he was fortified in this diagnosis by the opinion of the boarding medical officers at Port Said, Suez, and Marseilles, and by two other medical men on board. It was only after the ship had disembarked its passengers and had left Marseilles that the diagnosis of small-pox was communicated to the ship by a wireless message. Revaccination of the ship's personnel was then commenced and completed by April 1st, when the ship reached Liverpool.

This patient was treated throughout in the ship's general hospital, and even although he was ultimately recognized to be suffering from small-pox it seems most unlikely that this source of infection could have been responsible for the widespread infection of the passengers and crew, which apparently took place about this time. His immediate contacts, a passenger and a member of the crew, both of whom were under treatment in the hospital, along with the hospital attendant, were removed to Liverpool for observation, and none of them have developed the disease.

The second patient on board ship, a greaser, who was removed at Liverpool, became ill on March 18th, and was treated throughout in the isolation hospital as a case of chicken-pox.

The ship surgeon states that this man was also seen by the boarding officers at Port Said, Suez, and Marseilles, but no other diagnosis was made.

Procedure at Glasgow.

On arrival at Glasgow on April 4th a general inspection of the crew and the remaining passengers revealed no case of small-pox on board, and arrangements were made to maintain strict daily supervision over the passengers and members of the crew, whether remaining on the ship or proceeding to their homes. This procedure is in accordance with general practice and with Article 42 of the International Sanitary Convention, 1926. At the same time, appropriate arrangements were made for disinfection of the ship's hospitals. This was the position when the vessel arrived, and on the basis of the facts as ascertained, there was no reason to anticipate the events which followed, especially as the two small-pox patients on board, although undiagnosed, had been isolated in the ship's hospitals, and were most unlikely to have caused a widespread general infection of the personnel of the ship. Even had there existed power to place a vessel in quarantine, it is extremely doubtful whether the facts disclosed on the arrival of the ship would have justified so serious a measure of precaution.

As regards notification of the destination of contacts for the purpose of surveillance to the local authorities concerned, it appeared that this had been carried out at Liverpool in so far as related to those passengers and crew who had disembarked there. There was, however, no indication that passengers who left the ship at Marseilles, and proceeded overland to various parts of this country and abroad, had been similarly reported. It was, indeed, ascertained that among this group were several passengers proceeding to Glasgow, in respect of whom no notification of contact had been received. Accordingly, a list of the names and addresses of the 457 passengers via Marseilles was obtained from the shipping company and notified to the appropriate authorities in various parts of this country and the Continent. These passengers had disembarked on March 27th, and by the time these lists had been obtained and the names and addresses forwarded to the proper quarter, the information would arrive just about the time that contacts might be expected to sicken of small-pox. Had the voyage been still further prolonged the delay would have been still greater. As it was, this measure was late enough, especially as many of the passengers were moving about on holiday.

This raises a very important point as to the procedure for effecting adequate surveillance of contacts disembarking from a ship on which small-pox has occurred. It should clearly have been the duty of some person or authority to perform this function as soon as the first case landed at Marseilles was definitely diagnosed. It was not undertaken till the port of final destination had been reached. As soon as it was apparent that small-pox was occurring among the ship's complement an effort was made, without success, to obtain the names and destinations of the ten passengers who disembarked at Gibraltar.

Incidence of Small-pox among the Contacts.

On April 5th, the day after the arrival of the ship, the first case of small-pox declared itself in a bedroom waiter, who was removed on suspicion, and definitely diagnosed next day to be suffering from small-pox with a sparse eruption. On April 6th three other cases were discovered in a linen keeper, who had been isolated on the previous day in the reception house for observation, an engineer, and a first-class steward. There then followed, during subsequent days, a series of further cases among the crew, making a total of thirteen.

On the ship's arrival, and for one or two days later, a number of the crew were affected with catarrhal conditions resembling a very mild influenza, no doubt due to their return from the tropics to a cold climate. Owing to the difficulty of separating these from possible early cases of small-pox a number were admitted to the reception house for observation. Two of this group were found to be developing small-pox. This complication was, however, evanescent, and as a routine procedure during the subsequent period of observation and contact showing indisposition, however mild, was removed to the reception house. For these purposes, 27 members of the crew were thus dealt with, of whom 6 actually developed small-pox. The immediate contacts of the cases who took ill at home were also accommodated in the reception house. The thirteen members of the crew admitted to hospital with small-pox were as under:

Case.	Rating.	Sickened.	Rash.	Isolated.	Remarks.
J. S.	Waiter	April 1	April 5	April 6	Sparse eruption.
E. B.	Linen keeper	,, 3	,, 6	,, 5	Abundant semiconfluent.
A. M.	Engineer	,, 4	,, 6	,, 6	Abundant semiconfluent.
D. M.	Waiter	—	,, 6	,, 8	Scanty eruption. No history of sickening.
J. F.	Engineer	April 5	,, 7	,, 7	Severe confluent eruption.
R. M.	Waiter	,, 5	,, 7	,, 7	Scanty eruption.
J. M.	Steward	,, 5	,, 7	,, 6	Scanty eruption.
P. M.	Waiter	,, 7	,, 9	,, 9	Abundant eruption.
A. C.	Trimmer	—	,, 11	,, 11	Abundant eruption.
J. M.	Waiter	?	,, 8	,, 11	Sparse eruption.
J. P.	Trimmer	April 7	,, 9	,, 8	Sparse eruption.
M. M.	Seaman	,, 8	,, 11	,, 10	Sparse eruption.
J. C.	Steward	—	,, 12	,, 14	Very sparse eruption. No history of sickening.

To this list there must be added three other patients, two of whom were directly related to infection on or from the ship, and a third whose origin has not been satisfactorily explained.

A passenger, who had left the ship at Liverpool, and, after spending a few days in London, had proceeded to Glasgow on a visit, was detected with a discrete small-pox eruption by a medical practitioner whom he had consulted shortly after arrival on April 9th.

This man had travelled from the South by motor car to a town near Glasgow, and after being shaved in a local barber's shop in Uddingston had traversed the city in several tramcars and buses, with a fully developed eruption. The itinerary followed during this journey was ascertained in detail, and published in the press, with a recommendation that any person who might have travelled on these vehicles at the time specified should take the precaution of being vaccinated. The date of appearance of this man's eruption was approximately April 8th.

There occurred also an indirect case of infection in the person of a sister of a steward who had proceeded to his home in Glasgow on April 4th, taking with him his kit, which was sorted out and washed a day or two later by the patient, who was taken ill on April 18th, the rash developing on April 20th. This man, who remained well under close observation and who presented no evidence of a recent infection, had, however, been in close contact with one of the cases on board ship. He had developed an abscess on an arm, which was lanced by the surgeon, and, being off duty, had been detailed one night to look after the ship's hospital, and had personally attended to the patient who was removed at Marseilles on March 27th. His sister was infected within a day or two of his arrival home, the contagion being conveyed probably through the medium of his clothing or the dressings of his wound, a quite likely explanation.

The third patient, a boy aged 13, unvaccinated, became ill on April 10th, and was admitted to one of the fever hospitals as acute pneumonia on April 12th, developing a small-pox rash on the evening of the same day. His father, a dock labourer, had worked at the dock shed in connexion with another ship during the time of arrival of the *Tuscania* alongside, but had no connexion with this vessel or its contents. Any association of this kind must be regarded as much too slender, since it would in any case presuppose an incubation period of five days. On the other hand, the boy's father gave a history of having been ill a month previously, a few spots appearing on his face, the sole remaining evidence of which is some half-dozen faint pinkish marks on his forehead. The illness may or may not have been a very mild attack of small-pox. If so, the source of his infection is quite unknown.

Source of the Infection.

The list given above shows the dates of approximate sickening and the dates when the rash appeared. Taking the latter dates, the cases developed as follows: April 5th, one case; 6th, three cases; 7th, three cases; 8th, two cases; 9th, two cases; 11th, two cases; 12th, one case. Reckoning back fourteen days from these dates, it may be inferred that there existed a source or sources of infection operating continuously on board ship between March 22nd and 29th as an approximate period. Further, the widespread character of the subsequent outbreak among passengers and crew alike points to equally widespread opportunities afforded for contracting infection. According to a statement issued on April 25th by the Ministry of Health, 45 persons from the *Tuscania* have been notified as having small-pox from various parts of the country. A clear picture of the incidence of the outbreak awaits further detailed information, but it would appear that the great majority of those who contracted infection on board were passengers, waiters, and stewards. The evidence points strongly to the presence among one or other of these groups of a "missed" case or cases in an infective condition between the dates mentioned above. The possibility of this was recognized as soon as cases began to occur, but a careful examination of passengers and crew who had arrived in Glasgow failed to reveal the presence of any such recent infection. As there is no indication that the source of infection persisted after the ship left Marseilles, it may be surmised that the "missed" case or cases, unreported and unrecognized, had occurred among the passengers who landed at that port.

Revaccination of the ship's complement took place between March 29th and April 1st, all but three persons submitting. Those who disembarked at Marseilles were not revaccinated. As regards the cases which ultimately developed small-pox in Glasgow, it is apparent from the dates of this revaccination and those of sickening that these patients must have received their infection several days prior to the date of the adoption of this precaution. This procedure, though promptly undertaken, was, unavoidably in the circumstances, too late to prevent the damage that had been done.

As cases of small-pox began to develop in Glasgow and elsewhere it became apparent that the likelihood of a freely circulating source or sources of infection having been present on board had to be taken into account, and it was considered advisable not only to disinfect thoroughly the whole ship, particularly the sleeping quarters, but to remove for disinfection all the ship's linen, etc., amounting to 35,000 articles. The living quarters of the ship were finally cleaned out, and repainted by the owners.

The introduction of small-pox into this country by sea in such volume and with such wide distribution is, fortunately, unique in epidemiological experience. It frequently happens that a ship arrives at a home port from the East, having deposited a case or cases of small-pox at an intermediate port, or with a case or two on board. In many instances, revaccination of the ship's complement has already taken place on the occurrence of the first case. Removal of the sick, medical examination of the personnel, and revaccination, followed by surveillance for the prescribed period, has been the routine procedure followed. Within the past few years no instance has occurred of small-pox developing among contacts travelling to Glasgow by infected ships. The problem of administration set by the *Tuscania*, however, involving the strict supervision of so many contacts and the prompt detection of the first signs of the disease, gave rise to considerable difficulty and anxiety. From the ostensible medical data of the ship's voyage so great an aftermath of infection could not have been anticipated. It was impossible to reckon with the accident of the "missed" case and its inevitable sequel.

An unfortunate incident of this kind, even if most unusual, is an indication of the possibilities which may arise on ship board during transit from a country heavily infected with small-pox. The lesson of the episode is not so much a question of the imposition of strict measures of quarantine as of ensuring that passengers from, and crews of ships proceeding to, infected countries should be protected by recent revaccination.

Public Health Department,
Glasgow, May 6th.

MEDICAL CANDIDATES AT THE FORTHCOMING PARLIAMENTARY ELECTION.

THE following members of the medical profession have, we understand, been chosen for nomination as candidates for election to the House of Commons at the forthcoming General Election.

ENGLAND.

LONDON BOROUGHS.

*Dr. A. Salter (Lab.), Bermondsey West.
Dr. H. B. Morgan (Lab.), North-West Camberwell.
Dr. J. D. Cooke (C.), Peckham.
Dr. G. E. Spero (Lab.), Fulham West.
Dr. W. H. Summerskill (L.), Wandsworth (Balham and Tooting).
Dr. Ethel Bentham (Lab.), Islington East.
Dr. C. W. Brook (Lab.), Balham and Tooting.
*Sir Henry Jackson (C.), Wandsworth Central.

ENGLISH BOROUGHS.

Dr. R. O. Moon (L.), Oxford.
Dr. F. G. Bushnell (Lab.), Moseley.
*Sir Richard Luce (C.), Derby.
*Sir Thomas Watts (C.), Withington.
Dr. Joseph Robinson (Lab.), Withington.
Dr. J. W. Leech (C.), Newcastle-upon-Tyne West.
Dr. A. B. Howitt (C.), Preston.
Mr. Somerville Hastings (Lab.), Reading.
Dr. Haden Guest (C.), Salford.
Dr. Betty Morgan (L.), Sunderland.

ENGLISH COUNTIES.

Dr. J. V. Shaw (L.), Ilkeston.
Dr. R. A. Lyster (Lab.), Winchester.
*Dr. A. V. Davies (C.), Royton.
Dr. Stella Churchill (Lab.), Brentford and Chiswick.
Dr. R. Lyons (Lab.), Hendon.
The Right Hon. Christopher Addison (Lab.), Swindon.
*Dr. H. C. Haslam (C.), Horncastle, Lincs.
*Dr. F. E. Fremantle (C.), St. Albans, Herts.

WALES.

WELSH BOROUGHS.

*Dr. J. H. Williams (Lab.), Llanelly.
Dr. J. H. Morris-Jones (L.), Denbigh.

SCOTLAND.

SCOTTISH BURGHS.

*Dr. W. E. Elliot (C.), Kelvingrove, Glasgow.
*Dr. D. Shiels (Lab.), Edinburgh East.

SCOTTISH COUNTIES.

Dr. J. Hunter (L.), Dumfries.
Dr. R. Forgan (Lab.), Renfrew Western.

UNIVERSITIES.

*Dr. E. Graham Little (Ind.), London University.
*Sir George Berry (C.), Scottish Combined.
Dr. J. Kerr (Lab.), Scottish Combined.
*Professor T. Sinclair (C.), Belfast (Queen's) University.

* Denotes sitting member.

England and Wales.

The Eastman Dental Clinic.

THE foundation stone of the Eastman dental clinic at the Royal Free Hospital, London, was laid by the Prince of Wales on April 30th. This clinic is the result of a gift of £200,000 by Mr. George Eastman, chairman of the board of the Eastman Kodak Company, who, some years ago, founded a dental dispensary in Rochester (New York), and has been convinced that the marked success achieved there could be repeated elsewhere. To secure his offer for the building and equipment of a clinic in London a sum of £100,000 was provided by the generosity of Lord Riddell and Sir Albert Levy, respectively the president and treasurer of the Royal Free Hospital, to serve as an endowment fund. The maintenance of the clinic, however, is estimated at £20,000 annually, so that further sums are needed if the Royal Free Hospital is to be relieved of all charge in this connexion. The Prince of Wales emphasized the importance of dental health, and said that prevention, in the form of special provision for children and for expectant and nursing mothers, would be a feature of the clinic's work. He hoped that this compact institution, dealing with all aspects of dental healing, would give a further impetus to the education of public opinion in dental matters, and he added that this gift again exemplified the friendship which existed between this country and the United States. The Prime Minister, who made formal acknowledgement of Mr. Eastman's gift, remarked that teeth reacted upon digestion, and digestion upon temper, and suggested that if all people had perfect teeth there would be less gloom and pessimism in the body politic. Mr. Baldwin added that the generosity of the wealthy citizens of America had become proverbial; they gave their money in the wisest directions—towards education and health. No gift could be more welcome here at a time when such keen interest was being taken in the health of children and mothers. Without health there could be no proper education, and without education the future citizens could not take their proper place in the life of the country and of the world. Mr. Baldwin also paid a tribute to the devoted work which women, medical and other, were doing in the hospitals and clinics, and in connexion with women's and children's welfare. It was largely as a result of their labours that infant mortality had been reduced to one-half of what it was in his own youth. A visitor at the ceremony, Mr. Harvey J. Burkhart, director of the Rochester dental dispensary, brought the good wishes of the American Dental Association, of which he himself had been president.

Leicester Royal Infirmary and Children's Hospital.

In spite of the continuance of adverse industrial circumstances during the past year, there has been a considerable increase in the financial endowment of the Leicester Royal Infirmary and Children's Hospital. In the annual report of the board of governors for 1928 it is stated that for the first time in history the annual subscriptions of this institution passed the £10,000 mark. There was a slight fall in donations, but a "record" total of over £45,000 was received through the Saturday Hospital Fund, this representing an advance of £1,440 on the 1927 figure. During the year 242 new subscribing firms joined this fund, and it is confidently hoped that with the arrival of better trade conditions a total income of £50,000 from this source will be obtained. The extension and reconstruction of the Infirmary is proceeding. Rebuilding of the central wing was commenced last August, and it is expected that the new wing will be ready for occupation this year. We referred to the opening of two new operating theatres in our issue of February 2nd (p. 219), and the kitchens and domestic department have been simultaneously enlarged and improved. The number of in-patients during the year under review was 7,380, as compared with 6,788 in 1927. An interesting comparison is indicated in the annual report between the accident cases dealt with in the two years; it is noted that a large increase has occurred in traffic accidents from county areas, motor cars being particularly involved. The approximate cost of such traffic accidents to the hospital during the year is estimated at £1,851, and the expense incurred in respect of accidents generally now exceeds £10,000. Over £3,000 was devoted to the purchase of radium during 1928, and, since last December, this element has been available for use in the form of platinum needles, not only in the Infirmary, but also in certain other local hospitals; an increase in the demand for bed accommodation has naturally followed. Priority of admission to the Infirmary is given to cancer patients who are recommended from the local cancer clinic for operative and other treatment.

Child Guidance Clinics.

In consequence of generous financial assistance by the Commonwealth Fund, the Child Guidance Council hopes to open a clinic in Canonbury Place, Islington, during May. This will be available for the treatment of children of any age referred, with the consent of the parents, by the school medical officer of the London County Council, by child welfare centres, day nurseries, and social agencies, or by education authorities and agencies outside the London County Council area. Facilities will be provided at the clinic for the practical training of psychiatrists, psychologists, and social workers. Close co-operation is being established with the University of London and its various centres—for example, a one-year post-graduate course, beginning in October, is being established by the London School of Economics for the training of mental welfare workers, including those who devote themselves to children; special opportunities will be given by the clinic to those who attend that course. In a leaflet issued by the Child Guidance Council the importance of co-operation with all authorities, societies, and individuals concerned with the welfare of children is emphasized. It will be ready to place any information on the organization of clinics or of methods of training at the disposal of inquirers, and it is announced that meetings will be arranged or assisted in order to attract the interest of medical practitioners, parents, teachers, and social workers. Further information about the work of the council may be obtained from the secretary, 24, Buckingham Palace Road, S.W.1. In this connexion it may be recalled that the Jewish Health Organization of Great Britain opened a clinic last year for the study and treatment of maladjusted and delinquent children and adolescents of any race or creed (see *Journal*, October 13th, 1928, p. 675).

Proposed Bermondsey Health Centre.

The Bermondsey Borough Council recently applied to the London County Council for sanction to borrow £11,000 for the acquisition of a site for the erection of a building in which to establish "a clinic for the diagnosis and treatment of cases of rheumatism, arthritis, cancer, etc., and incorporating therewith various other existing services—namely, maternity and child welfare, tuberculosis, and dental clinic." (The London County Council report on the subject remarks that it is not stated what "etcetera" means, but it may cover the whole field of medicine and surgery.) The Finance Committee of the London County Council, after consultation with the Public Health Committee, takes the view that as the premises at present occupied by the tuberculosis dispensary and by one of the maternity and child welfare centres were purchased quite recently, and expenditure was incurred in rendering them suitable, the necessity for the proposed scheme appears to depend on the need there might be for the establishment of a clinic for the other purposes mentioned. As to this the county medical officer of health has advised that diseases such as arthritis, rheumatism, and cancer cannot be conveniently dealt with, either for diagnosis or treatment, except as part of the work of a modern hospital. To establish an *ad hoc* clinic as proposed, in the form of an out-patient department, as a separate unit altogether apart from the highly specialized equipment of the hospital, would be inefficient and expensive. The borough council states that there is not sufficient accommodation at the Bermondsey and Rotherhithe Hospital for the provision of the alternative scheme, but this is disputed. The Finance Committee is recommending to the London County Council that the application of the Bermondsey Borough Council be not entertained.

Ireland.

Public Health in the Free State.

IN his last report Dr. E. F. Stephenson, Chief Medical Adviser, Department of Local Government and Public Health, has stated, with regard to the appointment of county medical officers of health, that there is no reason for despondency at the delay in appointing county medical officers of health in the Irish Free State. The novelty of the position in the Free State and the adverse financial circumstances that prevail in some counties acted as deterrents at the outset, but the importance of the question and the necessity for whole-time health officers is now generally recognized, and it is felt that further delay in making the appointments cannot be condoned. Dr. Stephenson said that no other activity on the preventive side of public health administration gave a more direct return than the early diagnosis and treatment of children's ailments. The cost per child was inconsiderable; it purchased an increase of health, happiness, and efficiency for the individual, and cumulatively for the community at large, while it saved many from permanent incapacity. During 1928 approximately 12,000 children were inspected in Dublin. Of these, 7,000 had defects (one or more); 5,000 of these required treatment immediately, and 2,000 were under observation; 2,243 were suffering from their tonsils, and of these 507 required treatment, the remainder being put under observation; 1,433 suffered from defective vision, and of these 1,000 required treatment immediately, 433 being under observation. These figures did not include cases of squint, of which there were nearly 500. There were also 630 cases of external eye affection. Of skin diseases, including ringworm, there were 442 cases, 300 of which required urgent treatment, and 142 were under observation. There were 227 cases of ear disease, of which 132 required treatment, and the remainder were under observation. In Cork the scheme had been in operation for five years and the arrangements were more fully developed. The supervision of the school medical officers extended over the pupils at thirty-nine schools. In 1928, in course of inspection (excluding dental defects) defective vision constituted the most numerous group, followed by enlarged tonsils and by septic sores and minor injuries. Conditions of uncleanliness were detected in 17.5 per cent. of the children inspected, a slight improvement on the experience of the previous year, and 16.6 per cent. were found to be below normal standard as a result of defective nutrition. Of 5,605 school children examined for their teeth 3,531 were found to require treatment. In the counties Kildare, Offaly, and Louth, medical inspection was inaugurated towards the close of 1928, and already 3,549 school children had been examined in co. Kildare, 3,667 in Offaly, and 970 in Louth. Speaking generally, it could be said that inspection had revealed a high incidence of decaying teeth, defective sight, enlarged tonsils and adenoids, whilst all forms of tuberculosis, deformities, and cripples were fewer than anticipated. Provision was made under each scheme for the correction or treatment of defects of eyes, ears, teeth, throat (enlarged tonsils and adenoids), minor ailments, and conditions of uncleanliness. In affording treatment and correction, the existing facilities—hospitals and organizations—were used as far as possible. Ophthalmic surgeons and surgeon dentists attended at convenient centres, and cases requiring more specialized treatment were sent to them. In Dublin the general and specialized hospitals were used for the treatment of eyes, ears, and throat; and dental clinics were held at the Carnegie Institute. The general hospitals and the Eye, Ear, and Throat Hospital were utilized also in Cork, and defective teeth were treated at the Dental Hospital. In the counties, visiting ophthalmic surgeons and surgeon dentists attended at the extern department of the county hospital and at other convenient centres. Fifty per cent. of the cost of these services was borne by the State. This involved a great saving to the rates, as, in the absence of a school medical service, practically the entire cost of providing treatment would fall on the rates. During 1928 the following received treatment in Cork: (1) At the Eye, Ear, and Throat Hospital and by private practitioners, (a) operative treatment, 196; (b) refractions, 435; (c) glasses prescribed, 427; (2) at school clinics, minor ailments, 512; (3) at the dental hospital and by own dentist, 1,244. After-care and follow-up was generally carried out through district nursing societies, and, where district nurses were not available, by whole-time school nurses. There were 125 district nurses in the Free State, and six additional appointments were pending.

Infant Aid Society, Dublin.

The annual meeting of the Infant Aid Society was held recently in the Carnegie Child Welfare Centre, Dublin, under the chairmanship of Dr. R. J. White. The report stated that during the year 29,023 visits were paid by voluntary workers, 1,090 garments were provided for distribution by the sewing guild; 24 additional articles of clothing were provided by the pupils of Muckross Convent, and 108 were presented from other sources, making a total of 1,222. In addition, 446,360 pint bottles of milk were distributed. Of this number 426,686 were given free, and the remainder were sold at a reduced rate. This total was an increase of 112,668 over last year. Professor J. M. O'Sullivan, Minister for Education, in moving the adoption of the report, referred to the growing belief among the public that relief should be borne by the State, and deplored the acceptance of the idea which, he said, was based on a wrong ideal. His view was supported by Sir Joseph Glynn, who spoke of the need for voluntary workers, and described the appalling conditions in which some of the slum dwellers existed.

Scotland.

Mental Defectives in Scotland.

ARRANGEMENTS are being made in connexion with the visit of the Duke and Duchess of York to Edinburgh, at the end of the present month, for the laying of the foundation stone of a second instalment of the buildings at Gogarburn, intended to house mental defectives. The Edinburgh District Board of Control in 1923 purchased the house and estate of Gogarburn, comprising 58 acres of land, and shortly afterwards purchased a neighbouring estate extending to 361 acres, with the object of developing a scheme for mental defectives. This scheme, when completed, is expected to cost over £400,000, of which about one-half will be contributed by the Treasury. At the present time some 60 feeble-minded persons are accommodated in the renovated mansion house of the estate, and when the other buildings, of which the foundation stone is to be laid in the present month, are completed, there will be accommodation for 500 inmates. The scheme, however, includes plans to permit of extensions which, if necessary later, will raise the accommodation to 1,000 persons, and will serve both Edinburgh and the south-eastern counties of Scotland. Those of the patients who possess sufficient mental development will be employed in gardening, boot repairing, laundry work, and other suitable employment, and a part of the grounds has been planted with willow trees, of which the branches are intended for use in basket-making by the inmates. The institution will be not merely a place of detention for adult defectives, but also a place of training for educable children under 16 years of age.

Health of Dunfermline.

The annual report for 1928 to the magistrates of Dunfermline, by Dr. C. Barclay Reekie, medical officer of health for the burgh, has just been issued. With regard to infectious diseases, there have occurred in the burgh 118 cases of diphtheria, 236 of scarlet fever, 537 of measles, 151 of whooping-cough, and 128 of chicken-pox, these forming the chief causes among 1,342 notifications. There were no deaths from scarlet fever, but the number of notifications of diphtheria, of which the highest incidence took place in November and December, is the largest received for several

years. An outbreak of measles in February, March, and April attained epidemic proportions, and 5 cases terminated fatally. Whooping-cough was responsible for 4 deaths. Insulin was supplied to 10 diabetic patients during the year—to 4, in necessitous circumstances, free, to 6 on payment. There were 52 notifications of pulmonary tuberculosis, as compared with 47 in 1927 and 61 in 1926, and there were 21 deaths from this cause. Three health visitors were employed to make inquiries into the circumstances and home conditions when a notification was received, and the patient thereafter attended a tuberculosis dispensary or was visited by the medical officer of health. During the year there were 100 patients in the area suffering from pulmonary tuberculosis, and the total number of visits paid was 931. Sanatorium treatment was carried out in three sanatoriums, the admissions during the year for pulmonary tuberculosis amounting to 30. Considerable activity had taken place under the maternity service and child welfare scheme. Forty-four infants died within the first year of life, as compared with 52 in the previous year, death in 22 cases being due to ante-natal causes. The infant mortality rate was 69, as compared with 78 in the previous year, the number of deaths registered having been 686. Of these, 542 cases were attended by a doctor, and 144 by a midwife. There were now four child welfare clinics in the burgh and its environs. The local authority had some time ago established a maternity home, and in this 278 cases were treated, an increase of 64 over the number of the previous year. Out of the 703 children whose births had been registered during 1927, 364, or over 50 per cent., were successfully vaccinated, while declarations of conscientious objection were lodged in respect of 230, or 30 per cent. The corrected death rate amounted to 12 per 1,000 of the estimated population.

Edinburgh University Medical Buildings.

At the statutory half-yearly meeting of the general council of the University of Edinburgh, held on May 1st, Principal Sir Alfred Ewing presided, and referred to his resignation of the office of principal at the end of the current academical year. He commented on the very exacting nature of the office and the heavy tasks that it involved, for which in the future he felt himself unequal. The Scottish universities, he said, were very fortunate in their constitution, and the people who had framed them had been extraordinarily far-seeing, for the constitution admitted of expansion and had produced valuable and effective progress in recent years. Great developments were now proceeding in the scientific departments at the King's Buildings, and progress had been made in the departments of arts and medicine. One of the last acts with which he had been concerned as principal was a scheme for the interior reconstruction of much of the medical buildings. Those buildings had been a splendid novelty in their day, but they had become out of date owing to changes in the subjects to be taught and in the manner of teaching them. A drastic internal reconstruction would be necessary, which would cost something like £60,000, but he believed this money would be available before he relinquished office. He referred also to the recent development of hostels for students at Edinburgh.

New Principal of Edinburgh University.

The curators of Edinburgh University have offered the principalship of this University, rendered vacant by the retirement of Sir Alfred Ewing at the end of the present session, to Sir Thomas Henry Holland, K.C.S.I., D.Sc., F.R.S., rector of the Imperial College of Science and Technology, London, and he has accepted the appointment. Sir Thomas Holland is at present in South Africa; he is in his sixty-first year, and has held several important appointments in India. He was in charge of the geological survey of India from 1903 to 1909, was chairman of the trustees of the Indian Museum for four years, and president of the Burma Oil Reserve Committee in 1928. For a considerable period he was associated with Calcutta University, where he became dean of the Faculty of Science in 1909. In 1915–16 he was president of the Institute of Mining Engineers, and from 1909 to 1918 he was professor of geology and mineralogy in Manchester University. During the war he was president of the Board of Munitions of India. He has published numerous memoirs on petrology, geology, and anthropology.

Poliomyelitis in Orkney.

A report was submitted to the meeting of Orkney County Council, held at Kirkwall on May 3rd, from Dr. Bannerman, medical officer of health for the county. In this communication the medical officer reported that an outbreak of poliomyelitis had occurred in the island of Stronsay. A number of persons had been affected, and two patients had died of the disease. The others were, however, progressing favourably, and the epidemic was well under control. All known contacts had been placed under observation and isolated as well as possible. It was not anticipated that the disease would spread further, though it was possible that some of the contacts might still develop it.

Correspondence.

TESTIMONIAL TO SIR RONALD ROSS.

SIR,—We, the undersigned, write to inform your readers that a Fund, called the Ross Award Fund, is being started in order to give some recognition to Sir Ronald Ross, K.C.B., K.C.M.G., F.R.S., for his discoveries on the mode by which malaria is carried and for his lifelong efforts regarding the prevention of that disease. Those wishing to subscribe may send their donations to Lloyds Bank, Ltd., 110, High Street, Putney, London, S.W.15; cheques, etc., to be crossed "Ross Award Fund a/c."

The sum of *£244 13s. 6d. has already been subscribed* spontaneously by American friends and some personal friends in England, and this necessitates some definite action being taken here in the matter, in order to put such donations on a proper basis.

We have to thank you, as Editor of the *British Medical Journal*, for consenting to publish a list of the names of the donors from time to time in your columns, in order to minimize clerical work.—We are, etc.,

JAMES BARR.	G. H. F. NUTTALL.
CHARLES BROQUET (Paris).	EDORADO PERRONCITO (Turin).
J. P. CARDAMATIS (Athens).	ROBERT L. PITFIELD (Philadelphia).
ALDO CASTELLANI.	HUMPHRY ROLLESTON.
JAMES CRICHTON-BROWNE.	C. S. SHERRINGTON.
G. FRANCHINI (Bologna).	DAVID THOMSON.
MAJOR GREENWOOD.	J. G. THOMSON.
W. G. KING, Colonel I.M.S.(ret.).	MALCOLM WATSON.
EWEN J. MACLEAN.	F. PARKES WEBER.
BERNARD NOCHT (Hamburg).	

THE DISTRIBUTION OF RADIUM.

SIR,—On reading the recently published Radium Subcommittee's report one is struck by the immense amount of work which has been carried out and the amount of knowledge accumulated by the committee.

Anyone who has worked with radium in this country during the last few years and who is conversant with the work on the Continent will have welcomed Mr. Souttar's letter on April 27th (p. 787), and the very useful suggestions it contains. Until recently we abused rather than used radium, and it is only of late that any change has taken place. This is largely due to the efforts of Mr. Malcolm Donaldson, who arranged for a large number of surgeons to visit the Curie Institute, where real scientific work in treatment with radium was viewed for the first time. Since that date scientific investigation on the same lines has been carried out in this country, and, as far as our restricted stock of radium has allowed, we have performed quite as good work as anywhere else.

I can echo what Mr. Souttar says about the advantage of using, at the hospitals, the emanation of radium called "radon," rather than radium itself. Not only does the country require the 20 grams of extra radium mentioned in the report, but it requires men who know how to use it, and centres from which it can be used; France already has these centres, with subcentres all round.

I would put in an urgent plea that those hospitals which are already using radium and which have among the members of their staffs some who are at any rate conversant with its use, should be given sufficient radium as soon as it is available to enable them to turn out radon. The amount of radium necessary for this is roughly half a gram at each centre; special apparatus must be installed for the production of radon, but this is easy and not very expensive. These could form the first centres of the system. Gradually the system can be expanded, but it must be remembered that it is easier and quicker to buy radium than it is to train men to use it.

Radon at the present time cannot be obtained in anything like sufficient quantities, and we have to use radium. Radium has certain advantages, especially to the private owner, but the risk of loss and the worry of looking after it is excessive; I speak from experience, as I have a quarter of a gram under my charge. During the last few years I have been constantly asked to send this radium to doctors in the country that it may be inserted into their patients; but, knowing that the doctors have no knowledge whatsoever of radium treatment, I have had to refuse to allow any to go. Radon—which they think is the same as radium—can, however, be obtained, and I have known of this being sent after I had refused to send radium.

Perhaps the most extreme example of ignorance was in the case of a patient I saw in the country a little while ago; I found her suffering from deep carcinomatous ulcers, one of which was six to eight inches across; it had been thought radium might benefit this condition. The doctor, who knew nothing about radium beyond what he had read, wrote to an institution and received a plaque of radon; the dose he could not tell me, and he did not even know that the dose was important. It would have been impossible to place this for twenty-four hours over the whole of the ulcerated surface before the radon had all decayed. One can hardly find words to describe such a travesty of treatment. This sort of treatment has already begun and should be stopped at once.

Radium treatment requires specialists who have had experience which can only be gained through long training, such as we surgeons, who begin to know how radium should be used, still feel the need of. On the other hand, radium is, and must be, regarded as a surgical instrument, and any attempt to treat cancer without a thorough surgical training will end in disaster.

Special surgeons should be appointed to conduct each centre in co-operation with radium specialists, and then only will success be possible. At present we have neither radium specialists nor the surgeons to supply the centres.—I am, etc.,

DUNCAN C. L. FITZWILLIAMS.

London, W.1, May 3rd.

SIR,—I am at one with Mr. Souttar in his anxiety that the radium held by the National Radium Trustees should be most efficiently and economically used, but I would suggest that his outlined scheme is hardly likely to achieve these objects, and, indeed, has many inherent defects.

1. It tends to create a monopoly. All monopolies are bad, in medicine very bad. The physical properties of radium and some of its biological effects are well known, and there are several well-recognized techniques for its employment; the greater the number of brains trying to interpret these effects and to improve the various techniques the better. There is considerable risk of stereotyped methods developing in large central clinics.

2. It will eliminate or seriously hinder the individual worker. Some of the recent advancements in technique have admittedly been due to the individual worker: more can be expected of him, and he should be encouraged.

3. It would possibly be another step towards a State medical service; it would certainly be a great encroachment on private practice. One may take it that these radium experts will be salaried, and if the State provides half the salary it will certainly demand a say in the conditions of their employment. At one end there would be the panel, at the other the radium centre.

4. It does not suggest sufficient provision for patients not of the hospital class.

5. By branding the vast majority of medical practitioners as incompetent to apply radium it would greatly damage the none too high prestige of the medical profession in the eyes of the public.

The scheme is sketched in bare outline and it would be unfair to criticize any but its main points: (*a*) The proposed number of centres is far too few. I suggest that the distribution should be as wide as possible, and that, figuratively speaking, radium should be brought to the door of the general practitioner. (*b*) Until radon is proved to be as efficacious as radium it would be disastrous to run subsidiary centres on radon alone. Although radon is the actual source of radium's power it has one outstanding difference therapeutically—the radiation from radium is constant and even, that from radon rapidly becomes less intense, and in seven days its value is practically *nil*. Much larger initial amounts of radon must be employed to give the amount of radiation that would be obtained from a small relative amount of radium, and even then the duration of the application cannot be so prolonged. It is from the small prolonged dose of radium that the most brilliant results have been obtained. (*c*) By implication the scheme deals with cancer; there are, however, a number of gynæcological conditions causing widespread ill health which are most suitably treated with radium, and these should certainly be catered for. (*d*) The most startling feature in the scheme is that it would debar the vast majority of surgeons from using the radium held by the National Radium Commission. Such restriction would be unique, and its imposition a retrograde step.

I suggest that individual surgeons should be allowed to avail themselves of the use of this radium, but on condition that they render satisfactory notes and reports of the immediate and subsequent history of the patients in whose treatment they have used it. Surgeons failing to comply with this condition should naturally lose the privilege of obtaining supplies from the Radium Commission. One may hope that when radium or radon is available, the charge for its hire will bear a reasonable relation to its cost.—I am, etc.,

Southsea, April 30th. R. K. WHITE, F.R.C.S.Ed.

THE MEDICAL PROFESSION AND UNQUALIFIED VETERINARY PRACTICE.

SIR,—May I be given an opportunity of asking the sympathetic attention of the medical profession to the following matter? In a recent action for slander brought by an unqualified woman practitioner against a qualified veterinary surgeon, the plaintiff called three medical practitioners to testify as to her skill in the medical and surgical treatment of animals: Dr. X said he had sent animals to the plaintiff and had also recommended her to patients of his; she had been extraordinarily successful in her treatment of the animals; Dr. Y said that for a good many years he had sent animals to the plaintiff for treatment, and that he was satisfied with the treatment; Dr. Z said she had sent a dog, which was ill from obstruction of the bowel, to the plaintiff and she had treated it successfully.

These three medical practitioners appear to be well aware that the plaintiff is an unqualified person, but nevertheless they not only consult her, but recommend her to others. May I suggest for the earnest consideration of your readers that it is to be deprecated as a matter of principle that members of the sister profession should give their support to unqualified persons in animal medicine and be willing to come forward and give evidence in their favour. I think it will be agreed by medical men that it is not necessarily certain that a medical practitioner is competent to judge whether any particular treatment is the correct treatment to give in the case of ailing animals, yet to a jury of unprofessional people the fact that members of the medical profession were on the side of the plaintiff would be likely to lead them to believe that the plaintiff was in some manner qualified.

Medical men ought really to be the last to give encouragement to unqualified practice in any form, and I plead that they should treat the sister profession with

some sympathy. The two professions are closely related; the laws governing them are practically identical; the same professional discipline is applied to practitioners in both branches; and, as much recent work has shown, they are close allies in research. Let us, therefore, be allies in protecting the public.—I am, etc.,

Royal College of Veterinary Surgeons, London, W.C.1, May 4th. FRED BULLOCK, Secretary and Registrar.

FORTY YEARS' MEMBERSHIP.

SIR,—It has been suggested that some form of friendly association, similar, perhaps, to the "Old Boys" societies of many public schools, might be formed by those members of the British Medical Association who have attained to forty years' or longer membership. These members would have similarity of interest in point of time and past experience, and possibly such a society might also be an inducement for continued membership of the British Medical Association when some regard it as unnecessary on account of having relinquished active work.

The number of members of the British Medical Association of over forty years' standing is now 968, and it would be of importance, before further steps are taken, to have the opinion of those interested, either through the medium of the *British Medical Journal* correspondence page, or on a postcard addressed to the undersigned. Amongst others, Mr. G. Morgan, a past-president of the Sussex Branch, gives his support to the suggestion.—I am, etc.,

Meadowside, Burgess Hill, Sussex, April 30th. W. W. SHRUBSHALL, Vice-Chairman, Brighton Division.

THE INTRACUTANEOUS TUBERCULIN TEST.

SIR,—I noted with surprise the letter of Mr. Basil Hughes in your columns on April 27th (p. 789) as a contribution to the discussion on intracutaneous tuberculin tests. I had assumed that by now Dr. Wildbolz's urinary tests were gone and forgotten, as they deserve to be; but from Mr. Hughes's letter it seems that they are being resuscitated and presented in a slightly new form.

Dr. Wildbolz first presented a communication on this subject to the French Congress of Urology in October, 1920, when he stated that the urine of subjects of active tuberculosis contained tuberculous antigens. He recommended the use of specially prepared urine for the purposes of an *intradermal* test, and stated that that method depended upon the allergy of the tissues of tuberculous subjects for tuberculous antigen. To prove that the patient would react—that is, was allergic—he gave control intradermal injections of old tuberculin (Mantoux's method). He further insisted that when a tuberculous focus became encapsuled and completely fibrosed the antigens disappeared from the serum and urine of that subject, and hence no intradermal reaction was given on injection of autogenous prepared urine. Dr. Wildbolz seems to have overlooked the fact that, assuming his statements to be true, there is nothing to preclude the kidneys from excreting other antigens besides those of tubercle. It is well known that phthisical patients, especially in towns, are subject to mixed infections. It is thus impossible to limit the type of antigen present in a given urine to that caused by the tubercle bacillus alone. If a phthisical patient with a superadded streptococcal infection reacted to his urine the reaction would be no proof that he was tuberculous, since he is also susceptible to his streptococcal antigen.

In 1921, while house-physician at the Brompton Chest Hospital, I performed an investigation to decide on the diagnostic value of urinary skin reactions. With Dr. Cecil Wall's consent and clinical control, I gave a series of injections to his in-patients. The concentrations were made by the Lister Institute, and the material was kept in hermetically sealed sterile ampoules in the interval before use. I can only say in the compass of this letter that my results showed that Wildbolz's method was not reliable enough to be of any practical use in the diagnosis of active tuberculosis. I have not heretofore troubled to publish my results.

I very much doubt whether giving these injections intramuscularly, as stated in Mr. Hughes's letter, will make the method any more reliable. The reaction obtained by the revised method is stated to be an active oedema. What this means I do not know; perhaps, when hidden in the intramuscular planes, the detection of reaction is more dependent on that elusive possession—clinical acumen!

I can quite understand Dr. Wildbolz becoming uncertain of intracutaneous reactions when we remember the pseudo and combined reactions given by both the Schick and the Dick tests. Bearing this in mind, I can also appreciate Dr. Camac Wilkinson's desire to receive full details from Professor Lyle Cummins as to what he means by a positive intracutaneous tuberculin reaction.—I am, etc.,

London, E., April 29th. MARK TREE.

THE RELATION OF ALASTRIM AND SMALL-POX.

SIR,—With reference to the relationship of alastrim and small-pox or variola major, may I give an experience of mine some years ago? I was called to a farm some twenty miles from town to see a girl, aged about 18, whom I found suffering from small-pox in a moderately severe form, the pocks being numerous but discrete. On inquiry I found that among the natives on the farm, some fifteen in number, there had been eleven cases of what they called Kaffir-pox; two still showed dried-up pustules and had evidently all been cases of amaas or mild small-pox. The only patients who had escaped were some old men who had had the disease and two youngsters who had been vaccinated in Basutoland. Five of the younger children of the white family had had it and were convalescent. The last patient, this daughter, had the disease much more severely than any of the others, and, alarmed by the appearance of her face and body, which were covered with big pustules, the parents had sent for me. I vaccinated all those who had not yet had the disease, but found that the father was already infected, and showed the prodromal symptoms and temperature. Three days later I visited the farm again and found him the victim of a very severe confluent attack, from which he died. Evidently the mild disease, like others of the exanthemata, may become intensified in virulence and pass into variola major. Precautions should never be relaxed, and all possible means should be taken to cut short an epidemic, even if the cases are all mild to begin with.—I am, etc.,

JOHN A. GRAHAM, M.B., C.M.

Bethulie, South Africa, April 8th.

INTRAVENOUS INJECTION OF UROTROPINE.

SIR,—In the account of the meeting of the Sections of Urology, Pathology, and Therapeutics of the Royal Society of Medicine published in your issue of April 6th (p. 645), I notice that in discussing urinary antiseptics no mention is made of urotropine given intravenously. Mr. Swift Joly is reported as saying that there seemed to be practically no antiseptic of any value at all at the kidney level.

My experience is that in cases of acute pyelitis the intravenous injection of urotropine is truly a specific. In a few hours a temperature of 104° to 105° F. falls permanently to normal, and the pus disappears from the urine. I inject 5 c.cm. of 40 per cent. urotropine solution as supplied in ampoules by Schering. This is the usual treatment of acute pyelitis by Continental practitioners; it is quite devoid of unpleasant effects, and may be repeated (if necessary) twice daily for some days. I should add that it appears to be of very little, if any, benefit in cases of cystitis.—I am, etc.,

Alexandria, April 15th. E. N. RUSSELL.

TREATMENT COMMITTEES:

A Suggestion for County and County Borough Councils.

SIR,—In connexion with the transference of Poor Law functions to county councils and county borough councils, may I suggest that it would be wise for medical men to use what influence they can to persuade each of these bodies to set up a new committee to deal with all forms of the treatment of disease. The public health committee would then control only the prevention of disease, and I submit that this should be the sole duty of the medical officer of health, as its official. All treatment of disease, whether in

hospital, sanatorium, out-patient clinics, or the patients' own homes, and the treatment of children of every age, would be under its supervision. The medical officer of health is not necessarily (if a whole-time officer not usually) a person with special experience in the treatment of disease, and his duties should be confined to its prevention. Even the treatment of cases of infectious disease is not, I think, in his province, though for convenience of administration it is usually allotted to him. His real business is to prevent their occurrence, and to prevent further infection from those under treatment.

On this treatment committee which I propose should be set up, or on a hospital subcommittee of it, should be co-opted men of special experience in hospital work, both medical and administrative; and on the committee should, I think, be co-opted medical practitioners experienced in all the other work of the committee, including medical men or women specially experienced in diseases of children. I suggest that maternity work should be placed under this committee, as it is more a matter of treatment than of hygienic measures during pregnancy, and that some skilled obstetricians should be co-opted on it, and perhaps the child welfare work should also be under this committee. All Poor Law asylums will doubtless be transferred to the asylums committees of the councils, and I suggest that mental deficiency work should be transferred to this committee also.—I am, etc.,

CHARLES A. MORTON.

Bristol, May 5th.

MEDICAL INSURANCE AGENCY.

A Scottish Office.

SIR,—Owing to the enormous growth and ever-increasing pressure of work in the Medical Insurance Agency, the Committee of Management have decided to establish an office in Edinburgh, which they feel sure will have the effect of minimizing the delay in dealing with inquiries and claims from the profession in Scotland and the counties of Northumberland and Durham.

The Scottish Office will be under the control of Mr. R. Chalmers Fergusson, and he will commence his duties at the British Medical Association House, 7, Drumsheugh Gardens, Edinburgh, on June 1st.

It may be that the arrangements we have made will need variation, but we shall alter these if necessary in order to carry out our primary purpose—namely, giving sound and unbiased advice to doctors in matters relating to all classes of insurance.—I am, etc.,

L. FERRIS-SCOTT,
Honorary Secretary.

Medical Insurance Agency, B.M.A. House, Tavistock Square, W.C.1, May 1st.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

Estimates for Health Services.

THE House of Commons went into committee on May 1st on estimates of £14,228,664 for Ministry of Health services in England and Wales. Introducing the estimates, Mr. CHAMBERLAIN said the constantly recurring increases in the expenditure of his department grew with the increase of population, and the extending appreciation on the part of the people of the benefits which they received from health services. Housing was the largest single item of cost in the estimate, and the increase in that item was £485,000, rather greater than the increase in the total estimates. An abnormal spurt in building had ended in September, 1927, and nothing like it would recur till housing authorities were satisfied that prices had touched bottom. The total of houses completed in 1928 was not less than 169,000, the vast majority of them under an annual value of £26 a year. Since the armistice 1,241,500 houses had been built in this country. Local authorities were responsible for 467,500. The pensions work of the Ministry was proceeding with satisfactory regularity, and 88,560 old people, widows, or dependent children had been freed from dependence on the guardians by receipt of pensions and allowances. During last year the new National Health Insurance Act came into force, and its provisions had proved beneficent. The genuinely unemployed now lost nothing of their health benefit by reason of arrears. The Act of 1925 had brought in 200,000 voluntary contributors who had previously been excluded. The extension of national health insurance by the Act of last year to share fishermen and certain other workers had been received with satisfaction. Turning to the health services, Mr. Chamberlain said the estimates before the House were probably the last main estimates for his department which provided percentage grants. Another service aided by a similar grant was that for which the Board of Control was responsible. That Board was responsible for the treatment of insane persons, and also of mental deficients, work which was not very attractive, but very valuable to the community. At present about 141,000 insane persons were under care in England and Wales. That number showed a fairly regular increase of about 2,000 a year, an increase not necessarily meaning that the proportion of insane persons to population was increasing at that rate. Insanity was a disease affecting adults and not children, and as the expectation of life continuously increased, so a larger proportion of the population became susceptible to this disease. The figure of recovery was less satisfactory. It was surprising and disquieting that the rate of recovery among insane persons seemed always to remain at about 30 per cent. One might, however, assume that medical superintendents were more careful in classifying cases as recovered than they used to be, and that an increase might exist which was not reflected in the figures. He could not say how the figures of recovery compared with those in foreign countries. The one class of case in which there was a definite improvement in recovery was the case of general paralysis of the insane. The new treatment of that was to give the patient another disease—malaria. By it general paralysis of the insane was in many cases capable of considerable improvement, and possibly of cure. As part of the equipment of a mental hospital to-day a portion of a ward with one or two beds in it would be shut off and surrounded by mosquito curtains. An infected mosquito was brought down from London and introduced, and after that the matter worked out in its own way. He wished that further progress could be made in lunacy research, for which at present local authorities had no power to devote money. It was one of the matters which might well arise out of the report of the Royal Commission on Lunacy, a report which would, he hoped, provide part of the work of another Parliament.

Mental Deficiency.

Turning to mental deficiency, he remarked that some misunderstanding had arisen on the attitude of the Ministry of Health to the Wood Report. That committee issued two very long reports on various matters concerned with mental deficiency, and he had said that he must have time to consider that part of the report which dealt with adults before he could say whether all or how much of it should be published. He had no intention of withholding from local authorities anything they ought to know which was in the report. Probably the most important part of it for them consisted of the figures of Dr. Lewis's investigations into mental deficiency, which had already been published. The rest was having his personal consideration, and he hoped to make a decision on it before long. Dr. Lewis estimated there were 300,000 mental deficients in this country, about double the estimate of the Royal Commission in 1908. That must give rise to serious anxiety and apprehension. In some countries a system of sterilization was practised, and the Ministry of Health was asked why it should not follow that example. Personally, he thought that some day there would have to be a scientific inquiry into this. Up to the present they had not sufficient data to enable them to come to any satisfactory and definite conclusion. But he would say this, that the mental deficients of the country were the product of one-tenth of the population, and out of that one-tenth only one-tenth, or 1 per cent. of the whole, were themselves definitely defective. The others might be indefinitely defective, unrecognizable as such, or might only be carriers. Therefore any process of sterilization could not possibly deal satisfactorily with the problem. He could not say that the mental deficients came from any special district or class in the community. They were widely distributed. The ideal method for dealing with them, in the light of our present knowledge, was in colonies, which, if they were to be carried on with greatest efficiency, must consist of not less than 1,000 persons. These colonies should be places where mental deficients should, as far as possible, be trained to a point where they could be released under licence and supervision. It was impossible to carry out the ideal of that kind at a single step. To provide one of these colonies was costly, and the Government must have regard to the financial limitations of the country. They would have to proceed slowly. Even now they could do much to mitigate the lot of these unfortunates and render them less dangerous to society and to themselves. Under the Local Government Act which placed many institutions in the hands of county and county borough authorities, it would be possible to devote some of these institutions to reception of certain types of mental deficients and insane persons. Seeing that the cost of a bed in a mental hospital was about twice that in a mental defici-

colony, local authorities would perhaps make a bargain for themselves if they allotted some of these institutions to the treatment of insanity.

Miss WILKINSON asked whether the Minister proposed to increase the care of the borderline cases not yet certified.

Mr. CHAMBERLAIN said he could not, under the rules of the House, discuss the question of legislation for such a purpose, but so far as administration was concerned his answer was "Yes." To make further provision for borderline cases was part of the general policy which was being pursued by the Board of Control all over the country.

On May 6th Lord EUSTACE PERCY told Mr. R. Morrison that the mental deficiency report was receiving his careful attention, but local authorities and other bodies concerned must also have time to consider its recommendations before any proposals for action upon them could usefully be discussed. Sir KINGSLEY WOOD, on the same day, informed Mr. Morrison that the Minister of Health was giving his personal consideration to the adult section of the report, and hoped to be able to make a decision with regard to its publication before long.

State-aided Services.

Mr. Chamberlain then turned to State-aided health services. He said that four came under the Ministry of Health—tuberculosis, venereal diseases, the welfare of the blind, and maternity and child welfare. The year 1928 gave the lowest death rate on record both for pulmonary and non-pulmonary cases of tuberculosis. In the non-pulmonary tuberculous cases 60 per cent. of the decline occurred among children. The death rate among such cases from 1901 to 1910 was 500 per 1,000,000. Last year it came down to 173. At the same time the condition of those who survived was much better than it used to be. Many a child went about to-day with straight legs who formerly would have been a permanent cripple. Blind persons were better looked after to-day than ever before. In 1922 there were 8,000 cases of ophthalmia neonatorum. In 1927 that number had fallen to 5,000. The maternity and child welfare work had produced the most striking results in all the health services in the last generation. The infant mortality rate came down from 70 per 1,000 in 1927 to 65 per 1,000 in 1928. In the five years he had been at the Ministry of Health it had declined from 75 to 65 per 1,000. In 1923 6,550 babies survived which would have died had they been born under the conditions of 1924. The lives saved were a barometer of the general rise in the standards of health of young children. This wonderful fall in the death rate was the product of a number of causes, but the actual expenditure on grants proved there was a steadily expanding service for which a major share of the satisfactory results might be claimed. In 1924–25 £814,000 was spent by Exchequer grants on maternity and child welfare services. In 1928–29 the sum was £1,072,000, and in the present estimates £1,163,000 was set apart for the purpose.

Maternal Mortality.

A year ago he had told the House that the figures for maternal mortality had practically not moved for twenty years. He set up two committees, one to inquire into the conditions affecting the practice and profession of midwifery. That committee had nearly completed its labours, and he hoped in a few weeks to have its report. The other committee was directed to throw more light upon the causes of these deaths. Even now they were largely ignorant of the causes of this persistent maternal mortality. He had set the investigation on foot with the help of the general practitioners of the British Medical Association and of the local authorities with a view to getting a report on every case of maternal death right through the country. The committee began to function in the latter part of last year, and 311 deaths formed the subject of reports in 1928. This year already the Ministry had reports of 448 more cases. It is too soon to say what conclusions they would be able to draw from this evidence, but already the focusing upon these cases had begun to show indications from which they believed they saw flaws and weaknesses in the system. The arousing of public attention upon the lamentable results to the health and life of this nation which come from this persistent mortality meant that greater care was given already before and after birth. He said with some confidence that from the mere fact of this attention they would see a large reduction in this mortality.

Small-pox.

There had been a good deal of discussion on small-pox within the last few weeks, and embarrassing restrictions had been placed upon the entry of British nationals into another country. That had arisen partly owing to certain cases of virulent small-pox which came to this country in a ship. He did not think that this state of affairs would have arisen had it not been that the attention of other countries had been drawn to the mounting figures of cases of small-pox of a mild character which had been so remarkable a feature of the last few years. In 1927 there were upwards of 14,000 such cases. Last year there were not quite so many, and the fact of these cases being mild has tended to prevent anxiety. He felt that as long as a large part of the population were unvaccinated the public was running a risk which might seem small to-day, but which, if a really virulent type should spread, might cause a panic.

Cancer and Radium.

Unfortunately the number of cases of cancer was still on the increase in England and Wales, nor had the Ministry been able, in spite of research, to say they had got to the real cause of cancer or of the agencies which encouraged its development in the human body. What they could say was that, after many experiments and some mistakes, they had obtained a fairly practical working knowledge of a method of treatment which had in a great number of cases been singularly successful and had superseded older methods of surgery. He referred to treatment by radium in one form or another. The demands for the substance had become pressing and urgent. It was found in workable quantities in few spots in the world, and required most careful handling in its preparation. It was a very costly substance. A subcommittee appointed by the Committee of Civil and Industrial Research had informed the Government that 20 grams of radium, all that could be properly and efficiently used at this moment, could be obtained at a cost of £200,000. In the opinion of the subcommittee it was desirable that the Government should offer pound for pound for any sums raised for this purpose by the public, and the Government felt that they must at once accept that recommendation. As a result of the appeals made in the press a large share of the sum required had been forthcoming. This appeal had the sympathy of many people. It was a satisfaction to him at the end of this period of office to find that something had been done to bring relief in future to many sufferers from this most terrible and terrifying of diseases. He was confident that in a few days the necessary money would be secured. He hoped he had convinced members that the money spent on the health services of the Ministry of Health brought an ample return in the improved health and efficiency of the people.

Debate.

Mr. ARTHUR GREENWOOD, for the Labour Party, moved to reduce the estimate by £100, and contended that the country should now be building over 200,000 houses a year.

Mr. HOPKIN MORRIS said the report of the Wood Committee on mental defectives had been originally presented on January 19th as one report, not, as now appeared, two reports. Mr. Chamberlain referred it back to the committee and asked them to divide it. The committee reluctantly agreed. They regarded the section of the report which dealt with adults as part of the same problem as that relating to the children. Why should local authorities be debarred from a knowledge of this report? Dr. Tredgold, a member of the committee, was reported in the *Times* on April 26th as regretting that the Government departments concerned should have required the report to be divided, and that the part dealing with adults should not have been published. Mysterious influences were at work to delay or even prevent publication of the considered opinions of an independent committee on such a subject. Dr. Tredgold had further said he doubted whether the public authorities who were charged with the duty of providing for these defectives would tolerate such an autocratic procedure. Mr. Chamberlain had said there was a good deal of misapprehension about this report. Why did he not explain how it had not been published? The figures and investigations of Dr. Lewis had been published; why not the whole of the findings of the committee? The *British Medical Journal* was not a partisan paper. It could not be accused of political opposition to Mr. Chamberlain or of political bias. It had said: "The portion of the report which deals with adult defectives is still mysteriously withheld. Neither delay nor withholding is the fault of the joint committee themselves. . . . In the public interest it is necessary to press for, even insist upon, the early publication of the missing Part III."

Dr. VERNON DAVIES said Mr. Chamberlain's statement had been lucid and interesting, but, probably owing to lack of time, had not dealt fully with health services. Even after all that had been done in the last four years, an appalling amount of work remained to do in connexion with health services. Undeniably there was anxiety over the non-publication of the adult part of the report on mental deficiency. He hoped Mr. Chamberlain would give the matter his immediate attention. Mr. Chamberlain had mentioned the large number of lunatics in the country, and had accurately stressed the point that lunacy was a curable disease. It was important to bear in mind that a large number of people on the borderline could, by proper treatment in mental hospitals or in other suitable hospitals, be prevented from going over the line and brought back to normal. That was an urgent and vital work before the Ministry of Health, and its essential was the treatment of a class of mental patients without certification. Dr. Davies remarked upon the discredit popularly attached to persons suffering from mental illness, and said that until the Ministry of Health brought in legislation to deal with the report of the

Royal Commission on Lunacy, there would be this feeling in the country towards people who suffered from mental affliction.

Small-pox, Dr. Vernon Davies continued, was another important question. The home of Jenner, the country which first discovered the principle of vaccination, and which first dealt with small-pox, was held up to the ridicule and horror of the world. France, a neighbouring and friendly country, had in a moment of panic issued a drastic order directed against this country. Brazil was objecting to the admission of people from Great Britain unless they had been vaccinated. A publication of the International Labour Office or of the Health Commission had said that this was the worst vaccinated country of the world. The Rolleston Committee had suggested alterations in regard to vaccination, and Dr. Davies hoped Mr. Chamberlain would see the country had efficient administration to get rid of the curse of small-pox. Dr. Davies remarked that the House of Commons would probably have an opportunity of discussing, on the Supplementary Vote for Radium, the question of cancer and the Radium Fund. Though radium was a substance of enormous value in the treatment of certain forms of cancer, it was extremely dangerous and ought only to be handled by experts. Having obtained radium, they must ensure it was only used by medical men who were thoroughly expert in its use. He was not afraid that the country would not get a sufficiency of radium, but that for some time there would not be a sufficiency of experts in its use. The House appreciated the fact that Mr. Chamberlain had set up committees on maternal mortality, but Dr. Davies was convinced that the secret of maternal health was efficient midwives, properly trained, and above all that babies should be born in satisfactory surroundings. The Minister of Health had said he had made inquiries from medical men in the country on the causes of deaths in childbed, and that inquiry had already led to an improvement. That could only result from extra care by the doctor or nurse, or attendants, and from a little more cleanliness. If such extra care and attention were going to save lives, that alone would justify Mr. Chamberlain's work. Unfortunately Mr. Chamberlain had said little about tuberculosis, and the House had not the report for last year. Had there been improvement in the compulsory notification of phthisis? Was the dispensary system functioning? Was the Ministry co-operating with the medical men, with the sanatoriums, and with the hospitals? Would Mr. Chamberlain ensure that under the Local Government Act the tuberculosis service was worked as a complete unit? If it was necessary to have a full-time medical officer for health services, it was ten times more important to have a full-time tuberculosis officer. The essential thing in tuberculosis was early diagnosis, and that was for the expert. The Ministry could not expect the ordinary general medical practitioner, who had not the latest means at his disposal, such as *x* rays, to diagnose the early case. There had been increased co-operation between the general medical practitioner and the tuberculosis expert. It was no use getting the middle or the final cases; and they could not get the early cases unless a full-time tuberculosis officer was appointed. On venereal disease Mr. Chamberlain had said little. He had referred to the diminution in cases of ophthalmia neonatorum, but that was simply an example of the extra care now being taken. He did not mention how many of the 5,000 were blind, but with ordinary care and attention there should not be a single case of ophthalmia neonatorum. He hoped Mr. Chamberlain would exercise all the moral and administrative pressure he could in regard to this disease.

Dr. Davies remarked that during the last four and a half years the health of the country had improved, the social services had advanced, and Mr. Chamberlain, with Sir Kingsley Wood, had earned admiration and respect from the medical profession. If Mr. Chamberlain had become a member of that profession he would have risen to great heights. He concluded by criticizing an item of the vote. Under the heading "Medical staff (including Government lymph establishment)" there were forty medical officers. Of these, two were in receipt of pensions of £100 and £460 respectively per annum from Indian funds; one of a pension from Nigeria and Gold Coast funds to bring his total emoluments up to £1,305, and two of army retired pay of £365 and £510 per annum respectively. Were there no medical men in this country fit for these offices without taking retired officers from the Indian Medical Service? It was essential, particularly in the national health insurance service, that a man who had a chance of working up from general practitioner to a higher administrative office should not be pushed on one side and the job given to another man from another service. There was probably good reason for these appointments, but Dr. Davies said he would be glad to know what it was.

Miss LAWRENCE, [illegible] Chamberlain's tightening up of Poor Law [illegible] criticized Mr. Ch[illegible] refusal of out-relief to single able-bodied young men drove them on [illegible] to the roads and to casual wards, which had all the evils of the old [illegible] mixed prisons.

Captain FRASER said there were about [illegible] 48,000 blind persons in England and Wales, of whom 11,000 were [illegible] under the age of 40. About 10,000 were unemployed, and 33,000 characterized as unemployable. The amount of blindness had decreased, but there had been an increase in the registered cases, partly through the Act passed in 1926 giving blind persons free wireless licences. In London alone 900 blind persons previously unregistered had been discovered through that Act. Last year 17,000 blind persons over the age of 50 received State pensions at a cost of about £450,000, and grants from the Ministry for the welfare and employment of the blind £126,000. In 1928 the local authorities must have spent about £225,000 on the welfare of the blind. Between 1924 and 1928 expenditure on the blind from public funds had gone up by about 68 per cent. This country had a more carefully worked out, systematic, and widespread method of helping the blind than any other in the world. The time had come to go further. The inquiry by the Minister's advisory committee into the condition of unemployable blind persons must be nearing completion. Whatever was done they should not extinguish private charity and voluntary effort. Turning to the question of cancer, he remarked that the country needed a central institution where sufficient cases could be gathered together to provide statistics on experiments and treatment—an institution comparable to those established in France, in Sweden, and in Berlin.

Mr. LANSBURY said no House of Commons had tackled the cause of health problems—the poverty which caused people to be sick, murdered the mothers at childbirth, and caused consumption. If Dr. Fremantle were to speak in that debate he would have to say that after the Ministry of Health and the local authorities had done all they could for phthisical cases, they sent them back to the same slums, again to fall victims to the disease. The reason consumption increased was poverty, imposed by social conditions.

Dr. DAVIES: Not always.

Mr. LANSBURY retorted that doctors, especially those having anything to do with the public health, knew the diseases with which they dealt were due in the main to bad housing, low wages, unemployment, casual labour, and all that went to produce poverty. He thanked God he was not a medical man or an expert, but he knew that most of the children attending schools for mental defectives came from homes which suffered from poverty—the same homes from which the phthisical cases came. Worry and the struggle for a living caused in pregnant women the things which brought about mental deficiency in the child when it was born. Before the doctors started telling the multitude those whom they were going to pick out for sterilization, let them take care that the multitude did not sterilize the whole lot of doctors first.

Sir KINGSLEY WOOD said he would reply privately to the point raised by Dr. Davies about the appointment of medical officers under the Ministry. He would be able to satisfy him that the medical men whom he had cited had special knowledge of particular sides of the Ministry's work. One was a doctor from the Indian Medical Service with special knowledge of malaria and kindred diseases. The rest of Sir Kingsley's reply, except for a reference to the Ministry's work for the blind, was confined to a defence of the department's housing policy.

The debate was then interrupted for private business. Later Mr. Greenwood's amendment was rejected without a division, and the House agreed to the estimates for the Ministry of Health.

Estimates for Agriculture.

The House of Commons, on May 2nd, went into committee on estimates for the Ministry of Agriculture, including estimated grants for the eradication of tuberculosis in cattle. Introducing these estimates, Mr. GUINNESS said he had not had a previous opportunity for three years to explain the agricultural estimates in detail. He said milk production had been one of the encouraging sides of agriculture in these years of difficulty. The House knew of the result of recent experiments in regard to the health of school children who were fed on milk, and a good deal had been done to encourage the demand, but consumption remained far below what it was in foreign countries, and far below what it ought to be in this country. The Ministry believed the best way to encourage the consumption of milk was to reassure the public on the purity of the milk supplies. The industry had done much itself in that direction, and the Government a good deal by clean milk competitions. Distributors in London, Birmingham, and elsewhere were giving special payments for high quality and cleanliness of milk. The Diseases of Animals Act, passed in 1925, enabled the Government to give compensation for cows slaughtered on account of certain forms of tuberculosis. Between September, 1925, and the end of 1928 700,000 cows were examined. These cows and heifers were not taken at random, but were cases in which the milk had been found to be impure or in which notification had been given by the local sanitary or veterinary authorities, or by the farmers themselves. Of these suspected cows, 8.4 per cent. were found to be affected with scheduled forms of tuberculosis, but only 1.3 per cent. were giving tuberculous milk or suffered from tuberculosis of the udder. Figures and alleged facts had been

published about this investigation which were misleading. He thought the figures were very satisfactory and gave ground for increased public confidence in the purity of the milk supplies. Mr. Guinness went on to say that the Ministry of Agriculture was also trying to reduce the farmers' losses through foot-and-mouth disease. There had been a steady reduction in the number of outbreaks. In 1924 there were 1,404; in 1928 138. In the first three months of 1929 there were 20 outbreaks, but none since March 24th, and when he spoke the country was clear. The disease continued to rage on the Continent. Last year Holland had 19,700 outbreaks and France 11,000. British organization for dealing with the problem was now nearly perfect. There was greater vigilance on the part of the farmers. The embargo imposed in 1926 on the import of Continental meat was immediately followed by a large drop in the number of outbreaks. Drastic arrangements had been negotiated in South America to see that no animal infected by foot-and-mouth disease or in the incubation period of that disease could reach the killing floor for export to Great Britain. A delegation, including two members of the House, had recently visited the Argentine and reported that the South American States were doing all they could to prevent the export of infected carcasses to this country. A fifth precaution enforced by the Ministry of Agriculture was the boiling of swill.

Mr. R. J. RUSSELL protested against the application to cream of the Order issued by the Minister of Health against preservatives in food. In one dairy there had as a result been a shrinkage of over £1,000 a month in the demand for cream. As a result of the Order the use and preparation of synthetic cream had grown up throughout the country. The dairying industry was not satisfied with what the Ministry of Agriculture was doing about tuberculosis, infective abortion, and Johne's disease. What was being done about the unhealthy cowsheds found throughout the country, whose condition was a menace not only to the cow but to the cowman?

Answering Mr. Russell's complaint about cream, Mr. GUINNESS said the matter must be left to the Minister of Health. Medical authorities said that small doses of boric acid were likely to produce a form of disease in some people, so the agriculturist must not weigh his own convenience against the public health. A man who treated his cream on modern lines was well able to carry on without boric acid, and the forbidding of that preservative would be as much for the benefit of the cream producer as it had been in the case of the milk producer. Personally, he deplored the production of reconstituted cream, of which the raw material was a waste product from specialized agricultural industries in other parts of the world. If the public chose this stuff instead of cream they could not be prevented. There had been many complaints that local authorities were unduly severe about cowsheds, but there had been no real grievance. Experience had shown that clean milk could be produced in very poor buildings. The men and their methods mattered much more than the cowsheds.

The House then agreed to the estimate.

The London Lock Hospital.

In the House of Commons, on April 30th, on the motion for the adjournment,

Mr. PETHICK-LAWRENCE called attention to the management of the London Lock Hospital. He said that the Minister of Health had admitted, in reply to questions, that the report of the committee of inquiry showed that changes in the management of the hospital were desirable. Mr. Chamberlain, however, had refused to publish the committee's report, and had stated that the board of the hospital was making considerable changes. In his (Mr. Pethick-Lawrence's) view reforms at the hospital could not be carried out except by a reconstituted board of management and a change in the personnel of the hospital staff. It was ten years since the action of the board was first called into question, and all that time the board had made no important changes. The promises of the board were not good enough.

Mr. CHAMBERLAIN said he wished to remind the House that this was a voluntary hospital. It was not an institution over which he had any authority by law, and he only came into the matter because, in consequence of publicity which had been given to the charges made against the board, the board requested him, as an impartial and independent person, to appoint a small committee to inquire into the charges. In asking for that inquiry the board made it a condition that it should be a private inquiry, and that the evidence should be treated as private. On that condition the committee was appointed and evidence was given. In no circumstances could the evidence given to the committee be published. Where a private inquiry was held it was certainly not the usual practice to publish a report. He had no personal knowledge of the cases which led to the charges which had been alluded to; his concern was that of a person who desired to see that the interests of the public in London were protected. This hospital, which was the only one of its kind in London, could, if properly conducted, perform a great service, and one which no other institution was capable of performing. He was not concerned with what took place before the inquiry, but only with what had occurred since. Some of the delay which had taken place was due to the fact that the chairman of the board had been in bad health, and had not been able to give continuous attention to the matter. A board faced with recommendations which involved the alteration of the management and of the whole system on which the hospital was run could hardly formulate proposals to carry out those recommendations in one or two meetings. It was reasonable that they should take adequate time to examine thoroughly all possible alternatives. If he felt that the board was not facing up to the situation and was disposed to go on as it had before, and to take no serious account of the important suggestions which had been made in the report, he would not hesitate to publish the report as a means of bringing pressure upon them through public opinion. But he had felt all along that that was a course which he ought not to take unless he felt convinced that it was really necessary to bring about the results desired. The report, after all, did not charge the members of the board with any moral obliquity or any dishonesty or any financial irregularity, but it certainly did indicate that the administration of the board, in parts, might well be improved. The publication of the report would draw public attention to the hospital in a way which could hardly fail to have a serious effect upon its working. The first result must inevitably be a reduction in the public contributions to the hospital, which had already suffered to some extent. The public discussion of the report would present difficulties to the board in obtaining the services of the staff—not merely of the medical staff, but particularly of the nursing staff. He had good reason to suppose that the reconstitution of the board formed a part of the proposals which he expected to have in his possession before long. If the report was published also it would be difficult to secure the men and women to form the reconstituted board, whose presence might give confidence to the public. He had in contemplation some further steps which he did not feel at liberty to discuss in public, but which might assist towards a satisfactory solution. Nothing had occurred up to the present to justify him in publishing the report. He still reserved to himself the right to publish the report if he was not satisfied that the administration of the hospital was going to be reformed in the way he thought it should be. He felt confident that the board desired to reform itself and its administration, and he was confident that it would succeed.

Bills.

On May 6th the Mount Vernon Hospital Bill was read the third time by the House of Commons and passed, with amendments.

The House of Lords, on May 7th, went into committee on the Reconstituted Cream Bill. Lord CLINTON moved an amendment to substitute the word "artificial" before the word "cream" instead of the word "reconstituted." This amendment was carried, and the title of the bill was accordingly altered to "The Artificial Cream Bill." The bill passed through committee.

In the House of Commons, on May 7th, the Pharmacy Bill passed through all its stages and was read the third time and passed.

The Infant Life Preservation Bill, which had already passed the Lords and the title of which had been slightly altered by a standing committee of the House of Commons, was read a third time in the Commons on May 2nd, without discussion.

The Hospitals (Relief from Rating) Bill, introduced by Colonel Gretton, is officially described as dropped.

Small-pox.—Lord EUSTACE PERCY said, on May 1st, that no regulation had been issued by the Board of Education giving a local medical officer of health the right to exclude healthy unvaccinated children from school. In an answer to Dr. Fremantle, on May 2nd, Mr. CHAMBERLAIN said that of the seven deaths from small-pox among the passengers and crew of the *Tuscania*, three were of persons who had not been vaccinated and four of persons vaccinated only in infancy. Two of the former were vaccinated and three of the latter revaccinated during the incubation period. The ages of the persons who had been vaccinated in infancy ranged from 28 to 37 years. Answering Mr. Malone on the same date, Mr. Chamberlain said he was advised that in ordinary circumstances it was unnecessary for small-pox contacts to refrain from following their occupations if they were subject to regular medical supervision during the incubation period. It was not the practice of the Ministry of Health to sanction the payment of compensation except in cases where it was necessary for the protection of public health that the contacts should abstain from work. He knew that certain boroughs where his sanction was not required had made payments to contact cases. Sir JOHN GILMOUR said, on May 2nd, that the medical officer of health for Glasgow had issued certificates to all members of the crew of the *Tuscania* within his area, stating that they had been under observation for the quarantine period of the disease, and that they were now free from infection so far as that source was concerned.

Ministry of Pensions.—Major TRYON stated, on May 2nd, that institutions in charge of the Ministry of Pensions had on March 31st, 1929, 11,785 in-patients, including 6,000 mental patients. For out-patient treatment 2,688 cases were in attendance. These figures were lower than the corresponding figures on January 1st, 1928, by 1,360 in-patients and 2,142 out-patients.

Notes in Brief.

In the metropolitan police district during the first quarter of 1929 3,651 motorists were prosecuted for causing undue noise.

During 1928 the deaths of 667 males and 421 females in England and Wales were classified as suicides from gaseous poisoning.

In the Ministry of Health 3,592 persons are employed on the administration of the National Health Insurance and Contributory Pensions Acts.

In 1928 71,200 lb. of medical opium were exported from India to the United Kingdom.

Obituary.

HERBERT JONES, L.R.C.S.I., D.P.H.,

Late Medical Officer of Health for the Herefordshire Combined Districts.

WE have to announce with great regret the death, on May 1st, at Welwyn Heath, of Dr. Herbert Jones, who was for many years a leading figure in the public health service and a recognized authority on medical administration under the Local Government Acts.

Herbert Jones was born in 1858 and received his medical education at the Middlesex Hospital, whence he qualified as L.S.A. in 1886, subsequently obtaining the diplomas of L.R.C.S.I., L.M., and L.A.H.Dub., and the D.P.H.Camb. in 1892. After some years in general practice at Shipley he was appointed in 1893 medical officer of health for the borough of Crewe, and from 1898 to 1900 held the corresponding post under the Rhondda Urban District Council. He then went to Hereford as medical officer of health and school medical officer for the Herefordshire combined districts and Bromyard urban district. During his twenty-five years' residence in Hereford Herbert Jones rendered great services to the local profession and endeared himself to all his colleagues. As medical officer of health his relations with the practitioners in his district were always most cordial, and he was ever ready to assist them in any case of anxiety or doubt. He was largely instrumental also in resuscitating the Herefordshire Medical Society, and acted as its honorary secretary for many years.

Photo by J. Russell and Sons, London.

Both locally and at headquarters the British Medical Association owed much to Herbert Jones. From 1903 to 1908, and again in 1922 to 1924, he was honorary secretary of the Hereford Division, and held office as chairman in 1913. He had also been honorary secretary and president of the Worcester and Hereford Branch. He served on the central Council of the Association for two terms, and was a valued member of the Public Health and Insurance Acts Committees: he served as chairman of the Superannuation Subcommittee, and did much good work on the Joint Committee on Minimum Salaries for Public Appointments. When the Association held its Annual Meeting in London in 1910 he was vice-president of the Section of State Medicine, and in 1924 at Bradford he presided over the Section of Public Medicine and Industrial Diseases. He was long an active member also of the Society of Medical Officers of Health, on whose council he served for more than twenty-five years; he was elected president in 1914 and for a short time acted as editor of *Public Health*. Both in the Association and in the society he was the chief mover in the fight for security of tenure and superannuation for medical men holding public appointments. Herbert Jones's disinterested work in this and many other professional affairs was of the greatest help, not only to his own district, but to the profession throughout the country. Few men were more intimately acquainted with the intricacies of public health law and administration, and his knowledge was always at the disposal of inquirers. For several years after the introduction of medical benefit under the Insurance Act he was a member of the Hereford Local Medical and Panel Committee, where his sane views and wide knowledge were highly appreciated. Thus it was only fitting that when ill health compelled him to retire from active work three years ago a testimonial was raised on the initiative of the Herefordshire Medical Society, in acknowledgement of his great services to his colleagues in that county and to the profession at large.

Soon after the outbreak of war in August, 1914, Herbert Jones was given command of the Territorial Mounted Field Ambulance attached to the Welsh Territorial Division, with the rank of lieutenant-colonel R.A.M.C.(T.), and later in the war he served in Ireland until his health broke down. His many other activities included the honorary secretaryship of the Herefordshire Branch of the National Association for the Prevention of Consumption, and long service as examiner for the Royal Sanitary Institute and the St. John Ambulance Association. He was the author of small books on school hygiene and on the elements of sanitary science, and wrote a number of papers on such subjects as back-to-back houses, isolation hospitals, and the reform of the public health service. For many years he gave ungrudging help in public health matters to the *British Medical Journal*; he was always willing to answer questions from correspondents, and regularly supplied notes on items of general interest in the reports of his colleagues in the health service.

At the funeral service on May 3rd the Council of the British Medical Association was represented by Dr. C. Courtenay Lord, Assistant Medical Secretary.

Dr. E. H. SNELL, medical officer of health for Coventry, writes:

It may be difficult to appraise at their full value the services which Herbert Jones rendered to the medical profession. For some years, through ill health, he has had to withdraw himself from the active arena of medical politics; and there have been few whose withdrawal has been more missed by those who appreciated the valuable services he had rendered. Herbert Jones was a medical man first and a medical officer of health afterwards, and he appreciated to the full that both branches of the profession could render their fullest services to the community by working in harmony. That he was successful in securing the confidence of both is borne out by the positions of honour accorded to him in the British Medical Association and in the Society of Medical Officers of Health. For many years, before what may perhaps be called the "entente cordiale" between these two bodies, he was a member of the Public Health Committee of the British Medical Association, and there he devoted much energy towards forwarding two objects that he had made peculiarly his own—namely, security of tenure and superannuation for medical officers of health. He was successful in inducing the Association to promote bills in Parliament towards these ends; these bills were not successful, but they broke the ground, and he lived to see both of these objects attained to a considerable extent and with a fair promise of complete attainment in the near future, though unfortunately he himself derived no benefit.

For his colleagues Herbert Jones was an "intelligence officer" and was accepted as the historian of his generation. This resulted naturally from his methodical habits. He docketed and he indexed everything that might be of future interest. And he came to be regarded as the natural reservoir for information on forgotten minutiæ. Holding, as he did in his latter active years, a post in a combined sanitary district, he met the difficulties inherent in such a post with a due regard to the dignity and the rights of the medical man. In August, 1908, Herbert Jones was appointed medical officer of health and school medical officer to the county of Hereford; it then emerged that a condition of the appointment was that all qualified medical assistance required should be provided not, as is invariably the case, by the council, but by the medical officer of health. After some months of negotiation Herbert Jones withdrew from the position.

Having had the privilege of an intimate personal friendship with Herbert Jones for over thirty years, I am able to say that I highly regarded that friendship. He was a true and trusty friend; his ideals made him that: he was not in search of limelight; he was out to serve his day and generation. And few have left such a record of unselfish devotion to the causes of right which he upheld.

HENRY RUTHERFURD, M.B., C.M., F.R.F.P.S.GLAS.,

Consulting Surgeon to the Glasgow Royal Infirmary.

WE regret to record the death of Mr. Henry Rutherfurd, which took place, in his sixty-ninth year, at his residence in Glasgow, on April 14th, after a short illness.

Henry Rutherfurd was educated at the old High School of Glasgow and in the University. He graduated M.A. in 1881, and M.B., C.M., with distinction, in 1884. He held *house appointments in the Western Infirmary under the* late Sir William Gairdner and the late Sir Hector Cameron, and it is probable that the influence of the latter played a large part in moulding his future surgical career. He maintained an intimate friendship with Sir Hector Cameron to the end of his chief's life. After visiting the Continental schools of Jena and Vienna he returned to Glasgow to join the staff of the late Professor Coats as demonstrator in pathology. He held various junior surgical posts, and then became extra surgeon to the Royal Hospital for Sick Children. In 1906 he was appointed surgeon to the Royal Infirmary of Glasgow, holding that position till 1921, when he became consulting surgeon; shortly afterwards he joined the board of managers as one of the three members appointed by the Royal Faculty of Physicians and Surgeons. He was also surgeon to the Royal Cancer Hospital, Glasgow, where he early recognized the potentialities of radium as a curative agent, and encouraged the younger members of the staff to carry out original research. He became a Fellow of the Royal Faculty of Physicians and Surgeons of Glasgow in 1890, and filled various offices, being a councillor, an examiner, and a representative on the Conjoint Board.

Rutherfurd was very happy in his work in the Royal Infirmary, devoting far more time than was commonly allotted to such public work. He had an extraordinarily accurate and full knowledge of the science of surgery, and was renowned for his interest in surgical pathology. His contributions to surgical literature were comparatively few. In his earlier surgical career, in 1898, he was one of the editors of three volumes of *Glasgow Hospital Reports*, to which he contributed two excellent monographs on the "Management of rupture of the urethra" and "Tumours in the sacro-coccygeal region." Other papers were "Nephrectomy for transverse rupture," "Downward dislocation of the patella," and "Irreducible intussusception in the infant."

Rutherfurd was a man of interesting personality, though not a fluent speaker; indeed, his speech was well known for its staccato jerky style; but it was remarked that when he did speak—as for example, in meetings of the Royal Faculty—every word could have been taken down verbatim and not a single phrase or word would have required to be corrected. He was a man of keen wit, with a kindly but not cynical eye for his fellow men. He volunteered for foreign service during the war at the age of 56, and was attached to a hospital in Salonika, with Serbian soldiers as patients. He had the highest sense of honour, with no thought of personal advancement behind any of his actions. To this he added a gift for friendship, and there are many of his time in Glasgow who feel sorely grieved by the loss of Harry Rutherfurd.

A colleague (G. T. M.) writes:

To those of us who were privileged to know and work with Mr. Henry Rutherfurd his death comes as a personal loss, and there must be many of his former students and house-surgeons who will recall their time with him in the Royal Infirmary. A man of wide culture, full of historical and classical knowledge, his conversation during a ward visit might begin with the ancient Persian wars and end on the correct interpretation of a sonnet of Keats. It was, perhaps, this wide knowledge that was responsible for the clarity of thought and the almost whimsical outlook on people and things which were typical of him. Well versed in the surgical literature of the day, he had a humorous eye for the gusty theories which enliven or entwine the surgical wayfarer, and his advice was always to trust clinical experience before anything. His ward journals must have been models of what records should be, and his meticulous care in dealing with patients was, at times, the despair of a house-surgeon with a golf appointment. Beneath his reserve one found a simple kindly gentleman of the old school, with a wide knowledge of men and things, an honesty of thought and directness of speech which expressed itself sometimes forcibly but always fairly, and a very high sense of duty.

WILLIAM McCONNELL WANKLYN, M.R.C.S., L.R.C.P., D.P.H.,

Consultant in Diagnosis of Small-pox, London, Middlesex, and Essex County Councils.

WE deeply regret to record the death, in his sixty-third year, of Dr. W. McConnell Wanklyn, which occurred suddenly at the County Hall, London, on April 30th.

William McConnell Wanklyn received his early education at St. Paul's College, Stony Stratford, later proceeding to Cambridge, where he graduated in arts in 1888. He pursued his medical studies at the Middlesex Hospital, Edinburgh, and Vienna, qualifying M.R.C.S., L.R.C.P. in 1893, and in 1904 obtaining the Diploma of Public Health of the Royal College of Surgeons, London.

We are indebted to a colleague (C. J. T.) for the following appreciation and account of his career:

The loss of Wanklyn at any time during the past twenty-five years would have been a calamity to the community. It is doubly so at this time when the metropolitan area is at last invaded by small-pox of the type which has been so unpleasantly prevalent during the past five years in some parts of provincial England. It is not too much to say that it was largely due to Wanklyn *that London* enjoyed complete freedom from spread of the disease for a whole quarter of a century—from 1902 to 1927. He was the first line of defence, and his services as a super-diagnostician were sought not only in the metropolitan area itself, but by the authorities of Greater London and by those still further afield.

In diagnosis Wanklyn was superb. How many times have his colleagues called him in to decide the character of a rash which in appearance puzzled them hopelessly, and how many times have they been abashed in his presence by the simplicity the case presented immediately he had summed up the salient features! His brilliance in diagnosis had its foundation in his orderliness of mind: the facts of the case were marshalled in their proper order, the weighty ones first, the secondary ones—by undue attention to which mistakes and doubts invariably arise—relegated to their proper position; and under his masterly guidance the case seemed to alter its character before one's eyes until it almost seemed that the rash arranged itself to spell the diagnosis and shouted its name aloud. His rare gifts of mind were exhibited almost equally in tracing the contacts of a case. His method was strongly reminiscent of the method of reconstruction of the crime followed by the French detective force. His mind, indeed, resembled in its pure logical quality a French rather than an English type.

His first experience in medical practice was obtained in various institutions of the Metropolitan Asylums Board, amongst which he assisted at the Hospital Ship, the Gore Farm, and the Brook Hospital, and thus gained a wide practical acquaintance with various types of infectious diseases. At the Hospital Ship he came under the tuition and influence of Ricketts, and throughout his official life Wanklyn never wearied of bearing testimony to the remarkable talents of his teacher, talents which he himself assimilated and brought to further fruition.

The outbreak of small-pox which occurred at the beginning of this century found Wanklyn in the position of medical superintendent of the River Ambulance Service (1901–3) and referee in diagnosis of small-pox to the Metropolitan Asylums Board. In September, 1903, he entered the institutional service of the London County Council and was stationed at the Heath Asylum, Bexley. His service there, however, was interrupted for a period of six months from the following April, when Sir Shirley Murphy brought him to St. Martin's Place to carry out special duties in reference to small-pox. It was during this period that his true mission in life dawned upon Wanklyn, and during this year (1904) he prepared himself for entrance to the public health service proper by taking

his Diploma in Public Health. After a brief return to institutional life in November, 1904, he was finally appointed assistant medical officer in the Public Health Department of the London County Council on February 28th, 1905, from which date he carried on, against a menace ever present to an imperfectly vaccinated community, a magnificent struggle which ended only with his death.

On the outbreak of war Wanklyn immediately took up military duties, and from September, 1914, to January, 1919, served with the rank of captain in the R.A.M.C.(T.F.) during which period he served in France for one year and eight months.

Wanklyn was naturally intensely concerned with propaganda for vaccination, to which he devoted much of his official life, and to this propaganda he turned again on his return to civil life. In 1921 he delivered the Emeritus Address No. 3 upon "The abolition of small-pox in the British Isles as the next step in the medical advancement of England's industrial health and efficiency," while a little pamphlet he wrote entitled *Facts that you ought to know about Small-pox and Vaccination* has run into several editions. His literary *chef d'œuvre*, however, is the manual *The Accurate Diagnosis of Small-pox*, published in 1923. This book enshrines those qualities of lucid and logical exposition which made Wanklyn in his own sphere truly great. No practitioner at this time when small-pox threatens to become prevalent throughout Britain can afford to be without a copy of this, the clearest guide to the diagnosis of small-pox that exists.

The recent extension to London of the mild type of disease, together with the need of strenuous effort to prevent the complication of the situation by invasion by the more deadly type from the East, no doubt put a great strain upon Wanklyn, but no one anticipated his sudden and tragic death in harness.

Dr. R. KINA BROWN, late medical officer of health for Bermondsey, writes:

I had the good fortune to make Dr. Wanklyn's acquaintance during the small-pox epidemic of 1901–2, when he had charge of the South Wharf of the Metropolitan Asylums Board, which is situated in the borough of Bermondsey, and when I was medical officer of health for that borough. The friendship formed then lasted up to the day of his death, which came as a great shock to me as well as to his many friends. His knowledge of the early diagnosis of small-pox was unrivalled, and I learned lessons in the disease from him which proved invaluable to me during the (almost) twenty-eight years of my tenure of office in Bermondsey. He was a perfect type of a cultured English gentleman, and worked most unselfishly for the good of his fellow countrymen in season and out of season. He was indeed most enthusiastic and thorough in whatever subject he took up, and will be sorely missed by his numerous friends. Enemies he had none, and I cannot even imagine him having had any. His life was not in vain, for his works will survive, and be an incentive to many of the younger generation.

We regret to announce the death of Dr. WILLIAM KINNEAR, on March 30th, at his residence in Dundee, after a short illness following several years of impaired health. He was born in Dundee in 1863, and received his medical education at Edinburgh, where he graduated M.B., C.M. in 1888, and proceeded M.D. in 1901. Shortly afterwards he returned to Dundee, and soon built up an extensive practice, winning general esteem and affection. He had been an active member of the Dundee Branch of the British Medical Association, and a former vice-president; he had also been president of the Dundee Medical Club and of the Forfar Medical Association. He was medical officer to the Bearer Company, 3rd B.B.R.H. (Dundee Highlanders). At the inception of the Territorial Force he was appointed to raise the 3rd Highland Field Ambulance; he later became A.D.M.S. to the 51st Highland Division, and held the rank of colonel, and was appointed honorary physician to the King in 1913. When the 51st Division went to France he was retained to organize the medical services of the 64th Division until 1917, when he resigned owing to ill health. He held the V.D. for long service, and was an Associate of the Order of St. John of Jerusalem. He is survived by his widow, a daughter, and six sons, of whom two are in practice in Dundee.

The following well-known foreign medical men have recently died: Dr. EMANUEL FORMANEK, professor of chemistry and toxicology at Prague, aged 59; Professor AUGUST HOFFMANN, director of the medical clinic of Düsseldorf Academy, aged 67; Colonel JOHN MOORE BANISTER of Omaha, emeritus professor of tropical medicine at Nebraska University, aged 74; Dr. JAMES MOORES BUE, formerly editor of the *Annals of Ophthalmology*, aged 69; and Dr. THOMAS SAGE, formerly professor of pharmacology and therapeutics of the Detroit College of Medicine and Surgery, aged 59.

ROBERT EDWARD SARE, manager of the *Lancet*, died last week in his 51st year, after a long illness. Mr. Sare first joined the staff of Messrs. Hodder and Stoughton in 1904; three years later he became manager of the Oxford Medical Publications, and in 1920 was appointed manager of the *Lancet*, which Hodder and Stoughton had that year acquired from Wakley and Co., Ltd. For twenty-two years his occupation brought him into close relation with many members of the medical profession, and it was his understanding of their point of view, and perhaps the fact that originally he had intended to study medicine, that helped him to carry out the duties of his post with such success. He was a very hard worker, and earned the respect of all his colleagues on both the managerial and literary staffs. We would wish to express our sympathy to the *Lancet* in its loss.

Universities and Colleges.

UNIVERSITY OF LEEDS.

THE degree of M.D. has been awarded to G. R. Baxter.

UNIVERSITY OF DUBLIN.

TRINITY COLLEGE.

AT the first summer commencements held on May 2nd the following degrees in the Faculty of Medicine were conferred:

M.D.—J. R. Craig, W. P. E. M'Intyre.
M.B., B.Ch., B.A.O.—H. Dundon, C. de L. Shortt, P. A. Thornton.

NATIONAL UNIVERSITY OF IRELAND.

AT a meeting of the Senate on May 3rd Dr. D. J. Coffey was reappointed representative of the University on the General Medical Council for a further term of three years.

The following candidates have been approved at the examinations indicated:

D.P.H.—*Part I*: *M. Hanly, *P. Fleming, M. A. Cooney, J. J. L. Cox, R. Dalton, T. Feeney, E. A. Grant, T. J. Kirby, Mary E. McGloughlin, H. Macken, A. B. O'Malley, M. Peppard, P. B. Waldron, E. White. *Part II*: *T. F. Higgins, *J. V. McLoughlin.

* With second-class honours.

The diplomas were conferred upon Dr. T. F. Higgins and Dr. J. V. McLoughlin on the following day.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

LICENCES to practise have been conferred upon the following 43 candidates, who have passed the final examination of the Conjoint Board and have complied with the by-laws of the College:

Dorothy G. Angus, Audrey Z. Baker, W. Y. Bowman, T. D. T. Brock, Hurst, H. H. Brown, G. H. Burk, Mabel J. Cooke, J. R. Crumbie, F. A. T. Edwards, T. C. R. George, D. H. Gibson, P. N. Go[illegible], S. E. F. Gooding, M. Gordon, E. Hacker, E. J. Hamp, Haribans[illegible], W. Heath, H. L. Hoffman, C. E. Holden, R. G. S. Hone, H. F. Hutchinson, G. Lal, R. A. Leader, F. M. Mallinson, F. W. Marshall, R. S. Marya, Jocelyn A. M. Moore, W. R. C. Morris, G. T. E. Parsons, R. S. B. Pearson, A. P. Petigura, Edith M. Redding, C. J. Sander[illegible], W. H. H. Serasinghe, U. P. Sinha, A. El M. Soliman, Mary S. Steed, C. R. Todd, R. L. Whittaker, A. S. Wisfield, B. Wright, R. H. Yorke.

LONDON INTER-COLLEGIATE SCHOLARSHIPS BOARD.

THE London Inter-collegiate Scholarships Board announces that an examination for six medical scholarships and exhibitions, and one dental scholarship, of an aggregate total value of £533, will commence on June 25th. They are tenable at University College and University College Hospital Medical School, the London (Royal Free Hospital) School of Medicine for Women, and the London Hospital Medical College. Full particulars and entry form may be obtained from the secretary of the Board, Mr. S. G. Ranner, M.A., the Medical School, King's College Hospital, Denmark Hill, S.E.5.

Medical News.

THE Glasgow University Club, London, will dine at the Trocadero Restaurant, Piccadilly, on Friday, May 31st, at 7.30 p.m., when the chair will be taken by Emeritus Professor F. O. Bower, D.Sc., F.R.S. Any Glasgow University men who, though not members of the club, desire to attend are requested to communicate with the honorary secretaries, 62, Harley House, N.W.1.

THE annual medical missionary breakfast of the Medical Prayer Union will be held on Wednesday, May 15th, at the Refectory, University College, Gower Street, W.C., at 8 a.m., under the presidency of Dame Mary Scharlieb; an address will be given by Dr. L. E. Sharp of Ruanda, Uganda. Intimation of intention to be present will be welcomed by the honorary secretary, Dr. Tom Jays, Livingstone College, Leyton, E.10.

THE second meeting of the Internationale Gesellschaft für Sexualforschung will be held in the House of the British Medical Association, Tavistock Square, London, from August 3rd to 9th, 1930. It may be assumed that, as was the case in Berlin, the papers presented for discussion will fall into the following groups: biology; physiology, pathology and therapeutics; psychology, pedagogy, ethics, aesthetics, religion; demography, statistics, social and racial hygiene; sociology, ethnology, and folklore. All the arrangements are in the hands of Professor F. A. E. Crew, the University, West Mains Road, Edinburgh, to whom those who are interested are requested to write.

THERE will be a clinical meeting of the London Clinical Society at the London Temperance Hospital on Thursday, May 16th, at 8.30 p.m. All medical practitioners are welcome.

THE next meeting of the Biochemical Society will be held in the Department of Biochemistry, University Museum, Oxford, to-day (Saturday, May 11th), at 3 p.m.

THE Fellowship of Medicine announces that the third and fourth lectures of the M.R.C.P. evening course will be given at the Medical Society's House, 11, Chandos Street, Cavendish Square, at 8.30 p.m.: on May 14th Dr. A. Knyvett Gordon will discuss the clinical significance of the blood film, and on May 17th Dr. Bernard Myers will deal with purpura. A clinical demonstration will be given by Dr. J. R. B. Hern on May 15th, at 4.30 p.m., at the City of London Hospital for Diseases of the Heart and Lungs, and another clinical demonstration will be given by Mr. Cole Marshall on May 17th, at 2.30 p.m., at the Western Ophthalmic Hospital, Adelphi Rooms, 264, Edgware Road, W.2. These demonstrations are free to medical practitioners. A course of four lecture-demonstrations on ante-natal treatment will be given by Professor Dame Louise McIlroy on Fridays, at 5 p.m., at the Royal Free Hospital, starting on May 17th. Tickets can still be taken for the courses in progress at St. John's Hospital and at the Lock Hospital. Courses in June include ophthalmology at the Royal Westminster Ophthalmic Hospital; gynaecology at the Chelsea Hospital: chest diseases at the Victoria Park Hospital; proctology at St. Mark's Hospital; diseases of children at the Children's Clinic; and medicine, surgery, and the specialties at the Prince of Wales's Hospital. More detailed information, syllabuses, and tickets can be obtained from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

DR. DRUMMOND SHIELS, M.P., has been made a member of the committee appointed by the Secretary of State for the Colonies to consider the existing system of appointment in the Colonial Office and in the Public Service of the Dependencies not possessing responsible government.

COLONEL R. J. BLACKHAM, C.B., C.M.G., C.I.E., D.S.O., M.D., who is a member of the City Corporation and clerk to the Worshipful Company of Glaziers, was recently invested as Grand Sword Bearer of the Grand Lodge of Freemasons of England.

DR. ARTHUR R. WELLINGTON, Director of Medical and Sanitary Services, has been appointed an official member of the Legislative Council of the Colony of Hong-Kong.

IN an article published in the *Medizinische Klinik* of April 5th, B. Möllers states that an increase in the general mortality and the influenzal mortality has been reported in the Rhine district and in the greater part of England. In the English large towns with a population of about 20 million there were 2,183 deaths in the week ending March 2nd, or more than twice the number of deaths during the influenza epidemic of 1927. Although the mortality on the Continent was nowhere so serious as in England, the mortality rate in the Rhenish towns is also high at present (Cologne 32, and Elberfeld-Barmen 36 per 1,000), whereas in North Germany and the Scandinavian towns the epidemic was subsiding. The epidemic appeared to be spreading in countries on the Baltic, Czechoslovakia, and Hungary. Holland seemed to be the only country where the epidemic had caused considerable interference with public business.

IN addition to the lists of medical practitioners serving as members of local authorities or their subsidiary public bodies in Great Britain, published in our issues of December 8th (p. 1057), and December 29th, 1928 (p. 1190), and February 16th (p. 314), April 13th (p. 702), and April 27th, 1929 (p. 795), we are informed that Dr. H. D. Brice (Dukinfield) has been a member of the Dukinfield Borough Council for some years and is chairman of the Housing Committee; Dr. Brice is also a Justice of the Peace for the county of Chester. We have also received intimation that Dr. Morgan is a member of the Paddington Borough Council; Dr. C. Fuller is a member of the Marylebone Borough Council, of the Board of Guardians, and of the Metropolitan Asylums Board; and Dr. Burnhill is a member of the Hammersmith Borough Council. Professor Eyre, Mr. H. L. Eason, and Dr. Dreaper are members of the Metropolitan Asylums Board, the last-named being also a member of the Kensington Guardians of the Central Unemployed Body.

THE late Mr. Illtyd Williams of Bournemouth and formerly of Normanby, Yorks, has by his will bequeathed £20,000 to the Imperial Cancer Research Fund, and in the event of an established cure for cancer being found any balance then remaining is to be applied by the Royal College of Surgeons and the Royal College of Physicians for such further investigation into the diseases of man as they may from time to time determine.

IN connexion with the thirteenth International Congress of Ophthalmology at Amsterdam and The Hague, from September 5th to the 13th, committees have been appointed to prepare reports on the following subjects: the examination of visual acuity; perimetry; notation of the cylinder-axis; examination of the light sense; standardization of the visual examination of railwaymen, motor drivers, seamen, and airmen; and uniformity in the programme of ophthalmological studies. The fee for membership of the congress is twenty-five Dutch florins. Members wishing to contribute a paper must give notice not later than June 1st to the secretary of the Editorial Committee of the Congress, Wilhelminagasthuis, Amsterdam, from whom further information may be obtained. A previous reference to this congress appeared in our issue of March 9th (p. 485).

WE have received the first issue of *Röntgenpraxis*, which is to appear twice a month as a supplement to *Fortschritte auf dem Gebiete der Röntgenstrahlen*, the organ of the German Roentgen Society, under the editorship of Professors R. Grashey of Cologne, H. Holfelder of Frankfort, and H. Holthusen of Hamburg. As its subtitle indicates, the journal deals with diagnosis and treatment by *x* rays, radium, and light.

MESSRS. BURROUGHS WELLCOME AND CO.'S West End exhibition rooms have been transferred from 54, Wigmore Street, to more commodious premises at 10, Henrietta Street, Cavendish Square, W.1. Members of the medical and allied professions are invited to inspect the exhibits, which are on view daily from 9 a.m. to 6 p.m.; Saturdays, 9 a.m. to 1 p.m.

WE have received the fifth volume of the publications of the Obstetrical and Gynaecological Clinic of Copenhagen University, edited by Professor S. A. Gammeltoft. The volume consists of 14 papers, most of which have been published elsewhere, seven being in Danish, six in English, and one in German. An appendix contains statistics of the clinic for 1926.

THE sum of 400,000 florins (£34,000) has been placed at the disposal of the University of Utrecht by the trustees of the Rockefeller Foundation for the establishment of a new institute of physiology.

IT has been arranged to hold the second national congress of equatorial medicine at Guayaquil in 1930, under the presidency of Dr. B. Gimez, professor of clinical medicine; the sixth international congress for industrial medicine at Zürich or Geneva in 1931; and the international congress of oto-laryngology in Madrid in 1932.

WE are informed that, as a result of a recent meeting, a body has been constituted under the title of the "Ultra-Violet and Allied Trades Association," consisting of a number of the leading firms engaged in the design, manufacture, and marketing of ultra-violet, physio-therapeutical, and other electro-medical apparatus in this country. The objects of the association are: to promote co-operation between manufacturers with a view to making improvements in apparatus; to provide a medium through which the manufacturers may be taken into consultation by the medical profession on matters of mutual interest; and to form a clearing-house for information on all points affecting the technical and constructional aspects of electrotherapy. The offices of the association are at Kern House, 36, Kingsway, W.C.2.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediocera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

PLATELETS IN CIRCULATING BLOOD.

DR. R. CRAIK (Ealing) writes: In your issue of November 17th, 1928 (p. 913) Dr. Leonard Hill reported an observation of the capillary circulation at the edge of the liver in mice. Dr. J. McQueen confirmed the observation. I should be *greatly obliged if either of these observers would inform me* whether blood platelets were seen in the circulating blood. It is easy to detect platelets in a blood film with 1/3 in. objective.

BULBAR PARALYSIS.

"WM. B." *writes: Can any reader suggest treatment for progressive bulbar paralysis of recent origin?*

INJECTION OF VARICOSE VEINS AFTER PREVIOUS THROMBOSIS.

"MEDICO" asks for advice as to the length of time after a previous *thrombosis which should elapse* before varicose veins in the same leg can be treated by the quinine-urethane method, if, indeed, it is ever safe to do so. He has a patient who had thrombosis of the leg a year ago after an operation; also another patient with superficial thrombosis (localized) of recent development.

PAINFUL HEEL.

"GIZA" writes: A patient of mine complains of "painful heel," the pain being referred to the inner and lower aspect of the right heel. *X*-ray examination has revealed no abnormality of the *os calcis, and no foreign body* was detected. *The pain persists* even when the patient is resting in bed, and on getting out of bed in the morning it becomes acute on putting the heel to the ground. No physical signs are present in the heel, nothing can be felt in the fatty pad, and no swelling can be detected. *I should be very grateful* for advice as to treatment, as I am frankly puzzled. No symptoms of gout are present; the patient's age is 49, and there are no rheumatic tendencies.

AXILLARY HYPERIDROSIS.

DR. J. CURTIS WEBB (Cheltenham) writes: If "D. G." (April 27th, p. 796) will give his patient two or three full pastille doses of *x* rays with medium heavy filter (about 2 mm. Al), *I think he* will cure this distressing complaint. *X* rays have a specially effective action on glandular tissue, and the aim of the treatment is to destroy the sweat glands in this region.

INCOME TAX.

Car Renewals and Depreciation.

"G. S. S." bought a four-seater car in 1924 for £210 and sold it in 1927 for £50, when he bought a two-seater car for £170, being allowed as an expense £160—£50=£110. In March of this year he bought a four-seater car (apparently of a better grade than the first one) for £430, receiving £80 for the second of the three cars. What can he claim (1) as an expense, and (2) by way of depreciation of the new car.

*** The lower capital value of the car equipment of the practice effected in 1927 was merely temporary, and in our opinion "G. S. S." is now entitled to claim by way of renewal cost—that is, as an expense of the year ending March 31st, 1929—£210—£80=£130. The question of the depreciation allowance is more difficult. It is a *definite rule of law that "renewals" and* "depreciation" cannot be claimed simultaneously, and we feel that "G. S. S." will meet with much difficulty if he should, in all the circumstances, seek to establish that the £130 allowance is for "obsolescence" rather than for "renewal." We suggest, therefore, that he might drop any claim to depreciation on the new car for 1929–30, but claim it for 1930–31 and following years. There will be a temporary loss, but that will be put right automatically later on if "G. S. S." *will* make a point of claiming the obsolescence allowance when he replaces his present car.

Occasional Residence in this Country.

"CERONS" inquires whether he is liable for income tax on an annuity payable from Canada to France; *he has* a small income from investments in this country, is married, and lives in his wife's flat for *about* five months of the year.

*** It is not possible to deal very fully with this matter here; much turns on whether or not "Cerons" is liable as a British *resident, and that is determinable* partly by reference to his habits of returning to this country, social and business ties, etc. But on the facts as stated we are of opinion that our correspondent is not liable to account for tax on the annuity, and that tax is not deductible by him therefrom unless the share income is charged by way of security in favour of the annuity.

LETTERS, NOTES, ETC.

PAROXYSMAL TACHYCARDIA.

DR. W. F. LLOYD (Windsor) writes: Paroxysmal tachycardia starts suddenly, and as suddenly ceases, for no apparent reason; it is generally supposed that treatment has no effect on this condition. Yet there is a very easy method of treatment, which in less than a minute causes the heart to resume its natural rhythm. If the *patient is told* to take in a deep breath and retain it as long as possible, in a short time the heart will be found to have resumed its normal rate. Cases of ordinary palpitation may also be cured in this way, but not so certainly. The regular uniform pressure on the pericardium seems to produce this astonishing effect on the heart.

CANE SUGAR IN THERAPEUTICS.

DR. J. CAMERON (Beverley) writes: I observe that Dr. G. S. Barons-feather (May 4th, p. 838) believes there is a special *something* in "cane" sugar not found in "beet" sugar. About a year ago I raised this question *in respect of sweetness, etc., in a newspaper.* I was answered by an expert chemist, who agreed with me that twenty years ago beet sugar was defective, but that to-day beet sugar could not be detected from cane sugar by any chemical or physical test. I quoted the scriptural allusion to *salt* and *savour*; this was readily disposed of by the chemist, and I agreed with him. The colour of Demerara sugar is readily washed off; some say this colour is an added quality. Apparently the "cane" *versus* "beet" *something is a delusion*, or requires explanation.

PROLONGED EMETINE TREATMENT.

DR. F. G. CAWSTON (Durban) writes: A piece of lint moistened with a saturated solution of magnesium sulphate and covered with oiled silk is very gratifying where any local reaction has occurred from an intravenous injection, and may be used to lessen the tenderness which sometimes follows intramuscular injections. In the Indian quarters round Durban whole families of children are sometimes infested with the *bilharzia haematobia*. Children of 8 years tolerate the required dose of intravenous antimonium potassium tartrate very well and are not so liable to cough or vomit as European children, but I am not convinced that any curative treatment can yet be recommended to a little girl, aged 3, whose urine *contains the ova of Schistosoma haematobium* and much blood, or even younger children who likewise suffer from chronic haematuria in the same district. The injurious effects of prolonged administration of emetine have not been fully appreciated. Though the early signs of the accumulative *action of emetine are more* readily detected in the child than they are in an adult, any line of treatment should aim at a complete cure within one month, and the oral administration of any drug would necessitate a longer course of treatment than would be required by injections. By repeating the course of *intramuscular* injections of emetine hydrochloride I have obtained a complete cure in a little European boy, aged 4, but the total dose required is ill defined and heroic at such an age. Although emetine periodide may be recommended as a relatively safe preparation of this drug, it sometimes causes vomiting unless patients are confined to bed and kept on a strict diet, as is to be preferred in the treatment of dysentery, *for which* the drug is more suitable. Since bilharzia infection tends to die out of itself in many cases, it would seem best not to undertake the treatment of very young children who are continually exposed to further infection, and may thus develop a relative immunity to the disease, *until such a time as less toxic and more effective means* of cure are at our disposal. But their presence in the neighbourhood emphasizes the need for more *theoretical* prophylactic measures to avoid the dissemination of the third species of Schistosome worms which attack man in Natal.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals, will be found at pages 49, 50, 51, 54, 55, 56, and 57 of our advertisement columns, and advertisements as to partnerships, assistantships, *and locumtenencies* at pages 52 and 53.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *191*.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

437. Anaemia in Sprue.

N. H. FAIRLEY, F. P. MACKIE, and H. S. BILLIMORIA (*Indian Journ. Med. Res.*, January, 1929, p. 831) record an analysis of the blood conditions in 67 cases of sprue, in which, in addition to the routine haematological investigations, the van den Bergh reaction was employed to estimate the bilirubin content of the serum, and efforts were made to determine the haemolytic or non-haemolytic nature of the anaemia. Sprue and pernicious anaemia have certain common features, and the salient points of difference between the two diseases are given. At onset sprue anaemia is rarely if ever found to be as severe as in corresponding stages of pernicious anaemia, and during its course a grave grade of anaemia less frequently develops. The red corpuscles averaged 3,242,000, the haemoglobin 65.5 per cent., and the colour index 1.0 for the whole series. The blood picture proved remarkably constant. Anisocytosis was the outstanding feature, especially as regards increase in size, and microcytes were much less in evidence than the larger forms. Poikilocytosis and polychromasia occur, but not so markedly as in pernicious anaemia; nucleated red cells were only rarely seen. In uncomplicated sprue the leucocyte counts were either normal, or there was a leucopenia which was sometimes associated with a relative lymphocytosis. A blood crisis characterized by a rapid and critical fall in the haemoglobin and erythrocytes occurred in certain cases. This condition is generally associated with severe diarrhoea; it terminates fatally without remissions and without the corpuscular regeneration so typical of pernicious anaemia. Price-Jones curves were investigated in 11 cases and closely resembled those in pernicious anaemia. Essentially the anaemia is of the megalocytic type. The van den Bergh readings were low, the mean for the whole series being 0.66 unit. These results, compared with those found in malaria and active pernicious anaemia, show that hyperbilirubinaemia is far more frequent in the two latter diseases. The results also indicate that the anaemia is of the non-haemolytic type. Three stages occur in the evolution of bone-marrow lesions. At the onset the changes are minimal and the anaemia is slight. An intermediate stage, characterized by erythroblastic hyperplasia of the red marrow, ensues; and finally a late phase of hypoplasia or actual aplasia of the marrow is seen. These changes are fully described in a paper on the morbid anatomy of sprue by Mackie and Fairley (ibid., p. 799). Deficient blood production rather than excessive blood loss constitutes the basis of sprue anaemia. The authors consider that the trouble originates in an ill-nourished bone marrow which, poisoned by sprue toxin of alimentary origin, undergoes primary hypertrophy and secondary atrophy. In the causation of the latter state toxins produced by a changed intestinal flora and secondary bacterial invaders may play a part.

438. Pulsus Alternans.

C. LAUBRY and D. ROUTIER (*Rev. de Méd.*, 1929, No. 1, p. 11) adopt Traube's definition of alternation of the pulse or heart as the regular succession of weak and strong pulsations, either equidistant from one another or the weak slightly nearer the following strong one; they assert that cardiac and pulse alternations are not necessarily related. The various methods of pulse and heart examination and the findings (sphygmograms and cardiograms) obtainable by mechanical means are discussed, and the clinical varieties of alternating pulse with their diagnosis are enumerated. Various theories as to the pathogeny of pulsus alternans are criticized—namely, the alternating total hyposystolic theory of Wenckebach (since said to have been abandoned by him) and the theory of Gaskell-Hering of partial asystole. The authors incline to the view that the alternation is due to disturbances of the circulatory dynamics; they think that pulsus alternans is a function of transient irregularities of rhythm, arterial tension, and frequency, and is the expression of an alternation of volume of the cardiac wave caused by circulatory factors independently of the force of the heart. This theory of the haemodynamic etiology of the condition is supported by the experiments of Magnus, de Heer, and de Boer. It recognizes the action of the extra-systole and arterial tension on alternation, and explains the clinical circumstances of its appearance in arterial hypertension, in the arterio-sclerosis and atheroma of old age, and especially in paroxysmal tachycardia, when cardiac insufficiency is absent or but slightly marked. By it the discordance between the behaviour of the pulse and cardiac tracings is explained. It does not exclude the phenomena of contractility, nor does it impose an arbitrary conclusion of cardiac insufficiency. The prognosis in these cases is not necessarily unfavourable and depends greatly on the cause, the danger lying less in the alternation than in the hypertension, or causes which keep it up, or its complications. Hence treatment should be directed to the cause. If haemodynamic conditions (pressure, frequency) are present, sedatives such as gardenal, quinine, and valerian act better than any other drugs. If insufficiency predominates, cardiac tonics are indicated. Digitalis, despite its alternogenic power, has remarkable effects; given in large doses it causes disappearance of the alternation by slowing the cardiac rhythm.

439. Diagnosis of Abdominal Aortitis.

B. THEODORESCO and I. DANIEL (*Arch. des Mal. du Cœur, des Vaisseaux et du Sang*, March, 1929, p. 172) do not agree with some writers that the diagnosis of abdominal aortitis is comparatively easy; often it can be inferred only from the coexistence of thoracic aortitis. Skiagrams are less reliable in abdominal aortitis by reason of the deep position of the vessel and its close proximity to the vertebral column. The authors describe the case of a man, aged 35, who had a chancre in 1915. When serving in the army in 1917 he broke down under training and was invalided on account of pain in the right hypochondrium and epigastric pulsation. In 1918 occasional oedema of the legs appeared; this subsided with rest and cardiac tonics. The patient began to suffer from anginal precordial pain, with return of pain in the epigastrium and right hypochondrium, now radiating to the back and the cardiac region, accompanied by dyspnoea, which became worse at night. The heart was slightly dilated, with a loud rough aortic systolic and apical diastolic murmurs; the latter was conducted to the left axilla. The abdominal aorta and left iliac artery were distinctly palpable, hard, and tender. The patient could obtain some relief by pressing the epigastrium against the edge of the bed, but manual pressure over the aorta would produce an anginal attack. At one time these attacks recurred almost daily, but were relieved invariably by amyl nitrite. The paroxysms became less frequent, and finally disappeared. The authors remark that the origin of the precordial pain might be a sudden distension of the left ventricle due to sudden rise of blood pressure produced by compression of the abdominal aorta, or possibly the pain was caused by a peri-aortic neuritis.

440. Primary Pseudo-rheumatic Infections.

ACCORDING to P. LE NOIR and R. LIÉGE (*Ann. de Méd.*, February, 1929, p. 140), Bouillaud first noted the distinction between acute articular and infectious pseudo-rheumatism, and Bouchard was the first to recognize that all infectious diseases were capable of being accompanied by articular manifestations. In the majority of cases these pseudo-rheumatisms can be traced to their real cause, but in other cases the articular manifestations are of such intensity as to mask the diagnosis till other symptoms appear; in still other cases these symptoms do not appear, and the pseudo-rheumatism sums up the whole disease. Among the numerous organisms capable of causing these articular manifestations four occur with particular frequency: the meningococcus, the streptococcus, and the bacilli of Eberth and Koch. Netter and others have noted the frequency of arthropathies during the course of cerebro-spinal meningitis and other meningococcal infections. These arthropathies can attack all the joints; they may be localized in one or several joints, and are most often accompanied by swelling and pain on movement, and sometimes by more intense inflammatory symptoms due to an effusion in which meningococci are to be found. Arthropathies can equally constitute the first objective symptom of a typhoid septicaemia. In these cases the number of joints affected varies; some may be simply painful, while others are swollen, red, and hot. The articular symptoms noted at the commencement of streptococcal septicaemia are more curious, and in these conditions the port of entry of the organism is sometimes not apparent. Primary tuberculous rheumatism has been noted by Mornet, Bezançon, and other observers. Among other infections, such as the pneumococcal or enterococcal, Laggrifoul and Roger have noted pseudo-rheumatism due to *B. melitensis* in a case of undulant fever. The authors believe that in all cases of polyarticular rheumatism the possibility of primary infectious arthropathy should be considered.

441. Amyloid Degeneration of the Kidney.

J. ALVAREZ-SIERRA (*Arch. de med., cir. y esp.*, March 9th, 1929, p. 311) has observed amyloid degeneration of the kidney most frequently in hip disease and ulcerative pulmonary tuberculosis, and then, in order of frequency, in tuberculosis of the vertebrae, knee-joint, intestine, and small joints. Amyloid degeneration is liable to occur after the disease has lasted some time and has been accompanied by profuse expectoration or suppuration. The prognosis, though grave, is not hopeless. It is more serious in the adult than in the child, and less serious in pulmonary than in bone tuberculosis. Contrary to the opinion held by most writers the tuberculous amyloid kidney is seldom recognized, as the clinician's attention is centred on the primary disease. The possibility of amyloid disease should be considered when a tuberculous child shows some oedema and polyuria accompanied by a large amount of albumin and a few renal casts. As regards treatment, a mixed diet consisting of eggs, vegetables, and milk is best. Iodine and iodides, especially those of potassium and iron, are indicated. The author has employed lithium benzoate and the salts of strontium, and found that they produced in some cases a general improvement, and in others a disappearance of the oedema and urinary symptoms.

442. Varicella complicated by Acute Nephritis.

E. R. DENNY and B. M. BAKER, Jun. (*Bull. Johns Hopkins Hosp.*, March, 1929, p. 201), who report an illustrative case, state that since Henoch first described nephritis as a complication of varicella in 1884 only 52 cases have been recorded in the literature. Its rarity is further shown by the fact that it occurred only once in 200 consecutive cases studied by Cassel. It usually appears late in the disease, but it may develop as early as the first week, as in the present authors' case. Their patient was a boy, aged 6, in whom, during the course of haemorrhagic varicella, a mild haemorrhagic nephritis developed, preceded by an acute infection of the tonsils with haemolytic streptococci of the B type. During the acute stage of the nephritis the same organisms were also found in the urine, while after recovery from the nephritis they disappeared from both the throat and the urine. Denny and Baker suggest that the acute haemorrhagic nephritis in this case was not associated with haemorrhagic varicella, but with the streptococcal infection.

443. Prophylaxis against Nocturnal Cramps.

G. GAERTNER (*Wien. klin. Woch.*, February, 1929, p. 211) believes that the nocturnal cramps in the calves and feet of persons who appear to be otherwise healthy, except that some suffer also from varicose veins, are similar in their etiology to the cramps occurring in cholera, severe diarrhoea, and vomiting, and in persons whose occupation entails much sweating; they are attributed to loss of water and the consequent concentration of the blood. Various workers have suggested intravenous injections of isotonic or hypertonic saline for the treatment of the latter kinds of cramp. Gaertner has been able to cure a number of cases of nocturnal cramp by ordering the sufferers to drink a glass of water (or mineral water, lemonade, tea, or milk) at bedtime. If any other liquid is substituted for water it must not have a diuretic, diaphoretic, or aperient action, since the diluent effect on the blood would thereby be neutralized.

Surgery.

444. Treatment of Traumatic Cerebral Compression.

F. W. THOMAS (*Zentralbl. f. Chir.*, March 9th, 1929, p. 586) comments on the increasing employment of intravenous injections of 50 per cent. glucose solution in the treatment of cerebral concussion, compression, haemorrhage, or laceration. Many writers have reported good results. Apparently, osmosis is the mechanism by which increased intracranial pressure and cerebral volume are diminished by hypertonic solutions, either of sodium chloride, Ringer's solution, or glucose. Hypertonic sodium chloride solutions have been abandoned on account of their toxicity; but when considerable cerebral prolapse occurs in cases of trephining a combination of Ringer's solution with 50 per cent. glucose is of great value. Thomas has treated fourteen cases of severe cerebral or cranial injury in men by intravenous injection of 50 per cent. glucose solution; symptoms of commotio cerebri, or cerebral haemorrhage or laceration, were usually relieved in a few days. Although one-fourth of these cases showed little change after this treatment, one patient who had contusion of the chest, fractured ribs and mandible, as well as a fractured skull, with definite signs of pulmonary oedema, rallied quickly after the injection, although previously he appeared to be on the verge of death. Thomas states that this treatment is never dangerous if the correct technique is observed. Regarding the indications for injection of glucose solution, the author was at first very cautious in making use of this treatment, which he reserved for severe cases, slighter cases of cerebral injury receiving the usual treatment by rest and ice-bags. Since, however, the prognosis is always doubtful in these cases, Thomas now employs this treatment whenever operation has revealed the presence of cerebral oedema. He is convinced that it has saved many patients who suffered from various degrees of cerebral laceration, and will prove a most valuable method of combating cerebral oedema and shock conditions.

445. Tannic Acid Treatment of Burns.

F. BEEKMAN (*Arch. of Surg.*, March, 1929, p. 803) gives the result of the treatment of 434 cases of children suffering from burns of second and third degree intensity involving more than 10 per cent. of the surface of the body. Of these, 320 were treated before November, 1925, and 114 after that date. The first group was treated by means of the hot air tent; in some cases paraffin was applied to the wound, and in others sodium bicarbonate baths were given. The patients in the second group were treated by the tannic acid method. In the first group there were 89 deaths and in the second 17, showing a comparative mortality of 27.8 to 14.9 per cent. It was noticed that during the first day the percentage of deaths in each group was the same, but during the second twenty-four hours it rose to 7.2 in the first group and fell rapidly to 0.8 in the group treated with tannic acid, since this method of treatment prevents the absorption of the toxins which are generally the cause of death between the first and third days. The tannic acid treatment produced more rapid healing in second degree burns, and in third degree burns the granulation tissue of the wound was in the most suitable condition for skin-grafting directly after the separation of the tanned eschar. The use of tannic acid decreased the pain caused by the burn. A 5 per cent. solution is used for all parts of the body. Attention is given to early administration of fluids to prevent blood concentration; the most satisfactory method of giving these fluids is by hypodermoclysis of a 5 per cent. dextrose solution. Additional fluids may be supplied by the mouth and rectum, and in twenty-four hours a patient should take at least one litre of fluid for every 25 lb. of body weight. Opiates should be given sparingly, since they diminish the secretions.

446. Ureteral Meatotomy.

H. A. R. KREUTZMANN (*Urol. and Cut. Rev.*, March, 1929, p. 168) states that the operation of cutting the ureteral orifice at its point of entrance into the bladder by scissors, with which fulguration may be associated, is indicated in the following groups of cases in order of frequency: (1) Stones impacted in the lower end of the ureter; (2) destruction of a ureterocele; (3) splitting strictures situated in the intramural portion of the ureter. Stones lodged in the lower third of the ureter are best removed by a combination of meatotomy and the insertion of several ureteral catheters for some distance beyond the stone. The catheters are left in position for twenty-four to forty-eight hours; they are then twisted and pulled out together. In the case of ureteroceles the ureteral orifice is always pin-point in size, and there is a bulging of the lower end of the ureter. The diagnosis of intramural stricture is made by exclusion. In the case of a large tortuous ureter in which the enlargement extends right down to the bladder wall, and no other disease of the urinary tract is demonstrable, intramural stricture must be responsible. The operation consists in slitting the anterior lip of the ureteral orifice with cystoscopic scissors, controlling the bleeding by fulgurating the cut edges, and inserting a filiform catheter into the ureter.

447. Surgical Treatment of Intractable Blepharospasm.

E. S. GURDJIAN and H. W. WILLIAMS (*Journ. Amer. Med. Assoc.*, December 29th, 1928, p. 2053) describe the treatment of three cases of intractable blepharospasm—a closure of the eyelids caused by organic changes in the reflex arc between the trigeminal and the facial nerves. After concluding that the condition was refractory to all ordinary forms of treatment the following procedures were tried. The first method employed was neurectomy of the upper two or three branches of the facial nerve under local anaesthesia in order to weaken the orbicularis oculi by severing most of its nerve supply, but not enough to cause complete palsy as in facial paralysis. In one case treated thus the nerve fibres regenerated and the blepharospasm recurred. The operation was successfully repeated on both sides six months after the first attempt. After the second operation there was no lacrymation and the patient resumed his former

occupation, there being no relapse eight months later. The second method adopted for two patients was the injection of alcohol into the upper branches of the facial nerve. This was not so satisfactory as neurectomy, but although the patients still had occasional attacks of the condition they were much better.

448. Thrombo-angiitis Obliterans.

V. GHIRON (*Arch. Ital. di Chir.*, February, 1929, p. 227) reports six cases of thrombo-angiitis obliterans, and concludes that the disease is much commoner in men (especially in men under the age of 40) than in women. He does not think it occurs more often among Jews. It usually affects the lower limbs, and pain or intermittent claudication are early symptoms. Characteristic signs are the presence of wandering phlebitis, absence of pulse, ischaemia, especially on raising the limb, erythema, hyperaemia, cyanosis, absence of symmetry, and a slow progressive course. Histologically the changes found differ materially from those of arteriosclerosis, being more of an inflammatory nature. On the assumption that hyperadrenalism is a causal factor, Oppel has removed the left suprarenal gland in some cases with apparent benefit. Insulin has also been found useful, the presumption being that the action of the pancreas in some way is antagonistic to that of the suprarenal. Ghiron devised some experiments to test how far adrenaline could cause the symptoms, and concludes that, while not completely accounting for them, it clearly played an important part. Other modes of treating this disease are ligature of a vein to increase stasis in the limb, and extirpation of the sympathetic ganglia of the lower limb. Experiments with nicotine and ergot were negative in respect of producing similar lesions. While the author is convinced that the suprarenal gland plays an important part in the causation of thrombo-angiitis, he does not think it is the sole agent.

449. Cancer of the Small Intestine.

M. MIRANDA GALLINO and M. IRIART (*Arch. Argentinos de enferm. del aparato digest. y de la nutrición*, March, 1929, p. 387), who record a personal case, illustrate the rarity of cancer of the small intestine by the following statistics. Futtle collected 2,432 cases of malignant growths of the intestine; 37 (1.5 per cent.) of these were situated in the ileum, 15 being epithelioma and 22 sarcoma. The combined statistics of Maydl, Nothnagel, Zeemann, Max Müller, F. Müller, and Rueff, amounting to 87,555 necropsies, showed 7,131 cancers, of which 707 were localized in the intestine, and of these 3.1 per cent. were situated in the ileum. The patient of the present authors was a man, aged 62, whose symptoms were recurrent attacks of severe abdominal pain. A diagnosis of obstruction of the large intestine was first made, but *x*-ray examination showed that the obstruction was situated in the lower end of the ileum about a metre above the ileo-caecal valve. At operation a small hard annular tumour was found in the ileum. Resection of the affected intestine, mesentery, and corresponding lymphatic glands was performed, followed by latero-lateral anastomosis. Death from cardiac collapse ensued twenty hours after the operation. The tumour proved to be an epithelioma.

450. Synovectomy in Chronic Arthritis.

N. ALLISON and G. K. COONSE (*Arch. of Surg.*, March, 1929, p. 824) define the function of the synovial membrane as the supplying of a lubricant to the bearing surfaces of a joint; it is also a cooling mechanism for the joint cavity. It contains numerous sensory nerve filaments which endow the joints with sensations of pain and discomfort, and it acts as a barrier to the invasion of infection and toxic agencies. The synovial membrane produces a fluid which is similar to the blood plasma and other serous secretions and is of value in diagnosis. In acute arthritis due to toxic disturbance, bacterial invasion, or acute trauma the synovial membrane thickens, becomes haemorrhagic, and pours out an excess of fluid which fills the joint space and causes pain and loss of function in the joint. This may progress to chronic thickening of the membrane and to destruction of cartilage with ankylosis following. Where subacute synovitis, local tenderness, pain and stiffness of the joint, and an excess of synovial fluid are present, synovectomy is indicated, and is a useful operation in polyarticular and non-articular arthritis. In nearly every case out of fifty treated by synovectomy, pain was relieved and weight-bearing re-established; 65 per cent. showed marked gain in health. The removal of both semilunar cartilages in a complete synovectomy improved the function and gave greater relief from pain. Synovectomy is said to have value in the chronic subacute stage of gonorrhoeal arthritis, but to be contraindicated in acute cases.

Therapeutics.

451. Treatment of Warts.

E. LANGER (*Med. Welt*, February 9th, 1929, p. 200) remarks on the many superstitions concerning the cure of warts and the truth underlying some of them. Warts may be only a disfigurement, but may come to be a serious disability in certain types of work and in certain areas. They are most frequently seen on the dorsum of hands, fingers, and feet, the face and the forehead. They are commonest in children and young people, but may occur in old age. Their cause is not known; their infective nature is widely held and has been proved experimentally and clinically, given a susceptible soil; against this others point to their appearance in uninjured skin and to the success of treatment by suggestion, from which a psychic origin is inferred. As regards treatment, arsenic may be given internally for sessile warts in young people; mercury is also useful. If successful these cure quickly and without scar formation; they are, however, uncertain, but are harmless and worth trying. Scars are especially to be avoided on the face; here the warts should be frozen with ethyl chloride and scraped off with a sharp spoon and the root touched with trichloracetic acid or with a styptic. Of chemical applications the most reliable is said to be trichloracetic acid, which leaves a fine, smooth scar. The same may be said of salicylic and lactic acids in collodion applied twice daily. Such treatment should not be left to the patient to carry out. Fuming nitric acid should be applied cautiously and never on the face because of the risk of scar or keloid formation. A 1 in 10 solution of salicylic acid in glacial acetic gives good results; previous softening of the warts with 10 to 20 per cent. salicylic acid plaster is recommended. As regards physical treatment, *x* rays and radium must be used cautiously and in exact dosage, or the resulting scars, especially in obstinate cases, may be more disfiguring than the warts. Langer finds electro-coagulation more satisfactory than electrolysis; even with numerous warts one or two sittings are sufficient. Bieberstein, working on the assumption that the infectious nature of warts is proved, gives intracutaneous injections of a vaccine prepared from warts, and has had good results. Similar injections of milk have been successful in flat warts. Lately suggestion has been tried, and in some hands gives satisfactory results. The author emphasizes the need of giving due attention to this minor but often disfiguring and even disabling ailment.

452. Opium Therapy in Infancy.

IN a short review G. BLECHMANN and P. DELTHIL (*Rev. de Méd.*, No. 8, 1928, p. 1061) show that contradictory opinions are held as to the advisability of administering opium to infants, and maintain that all trouble can be avoided by giving fractional doses of largely diluted preparations. With these precautions most derivatives of opium can be used, the average dose being 1 mg. of morphine for each year of age, though this must vary with the intensity of the symptoms. Infants seem to tolerate the alkaloidal forms of opium better than the complex ones, such as laudanum. The principal opiates used in infancy are discussed. The formula of laudanum has been changed, so the amounts formerly prescribed can be safely doubled and 2 or 3 minims per year of life be considered as a normal dose. The "elixir paregoric" contains 1 cg. of morphine in 20 grams, and is especially useful in the second and third months of infancy. Syrup of opium, which contains 1 cg. of morphine in 100 grams, is indicated in benign cases, but is too inactive for use in acute ones. Dover's powder has a sedative action, which is counterbalanced by the expectorant effect of the ipecacuanha; 10 cg., corresponding to 1 mg. of morphine, is the maximum dose for a child 3 years old. Codeine, only employed in infants in the form of the syrup, is considered the best cough sedative for children over the age of 3. The normal dose is 1 to 2 grams per year of age. Subcutaneous injections of opium extracts are not advised. In cases of emergency a 1 in 100 solution of morphine hydrochlorate may be given to older children, and a 1 in 1,000 to young ones. In this dilution 1½ or 2 mg. per year of age may be given fractionally in several doses. This drug or pantopon in a 1 in 100 dilution may be given orally in doses of 1 to 2 minims for each year of age. Syrup of morphine, which contains 1 cg. of morphine in 20 grams, may be used in doses of 1 to 2 grams per year of age, and is beneficially combined with other active syrups, such as that of chloral. Papaverine is of great value in oral doses of 1 or 1½ cg., or in subcutaneous injections of 1/3 to 1/2 cg. The authors consider that opium is of incomparable benefit in many infantile conditions; among these are intense thoracic pain, visceral colic, certain meningites, acute laryngitis, post-operative pain, asthmatic crises, and whooping-cough. It is also very useful in numerous digestive disturbances.

453. **Oxygen Therapy.**

P. ROTH (*Anesth. and Analges.*, January–February, 1929, p. 47) states that the amount of oxygen required by the average male or female adult at various ages when at rest or under the ordinary conditions of one confined to bed is approximately from 15 to 18 c.cm. per breath; this small allowance is one of the fundamental requisites of life. Failure in the constant and adequate supply of oxygen to the tissues is always serious. Acute asphyxia, as in drowning or electrical shock, is so rapidly fatal that prompt measures of resuscitation are imperative, even seconds in instituting these being of importance. When the process of oxidation in the tissues is interfered with, serious disturbances rapidly manifest themselves and soon become destructive to the living cell. The dangers of anoxaemia in all conditions resulting from or accompanied by an insufficient supply of oxygen are always grave. Haldane insists that the longer the period of oxygen deficiency lasts the greater is the progressive damage to the central nervous system, heart, and other organs, and the slower and more difficult does recovery become. The symptomatology of anoxaemia is discussed, and Roth asserts that general or local, acute or chronic anoxaemia in any degree of intensity is primarily the indication for oxygen therapy, which, like artificial respiration, is for the prevention and relief of asphyxia and anoxaemia. Early measures for the prevention rather than for the relief of this condition are strongly urged. Three methods of oxygen administration are described—namely, emergency methods, tents and hoods, and oxygen therapy chambers. Roth emphasizes the following points. Safety in anaesthesia depends upon the prevention of anoxaemia or asphyxia by the proper and timely use of oxygen and carbon dioxide inhalation. Oxygen therapy requires an experienced operator. Fire risks and the accidental cutting off of the supply of oxygen must be guarded against during the use of any apparatus and also in basal metabolism tests, especially with apparatus in which carbon dioxide absorbers are used.

454. **The Administration of Emetine.**

F. G. CAWSTON (*Journ. Trop. Med. and Hygiene*, January 15th, p. 22) considers that the prolonged administration of relatively small doses of emetine is more to be feared than that of a few heroic doses, and that the immediate toxic effects of the drug are less dangerous than those due to its cumulative action. Vomiting may occur after a large single dose, and usually shows that the largest single dose compatible with safety has been employed, as the acquired tolerance for emetine is so small that it does not exist for more than one or two days. The use of larger doses on alternate days enables the system to recover from the toxic effects of one dose before the next is given, and avoids further doses before the earliest signs of cumulative action are recognized. Among the serious indications of poisoning are increased pulse rate with listlessness and fretfulness, and cardiac depression. Towards the end of a course of relatively large doses albuminuria sometimes appears, and must not be mistaken for that due to disease of the bladder wall. Paralysis may occur, the earliest sign of which is the increased pulse rate, and further use of the drug results in looseness of the bowels, weakness of the legs, or indefinite paralysis of some nerve endings. These symptoms occur whether the emetine be given orally, intramuscularly, or intravenously. Cardiac stimulants should be used at the earliest possible moment after signs of the cumulative action of the drug become evident. The addition of 1 per cent. carbolic lotion to the emetine solution avoids local tenderness. Cawston has found that the curative dose for schistosomiasis is double that for amoebic dysentery, and that in the latter disease emetine should be given orally and at the same time intramuscularly. It is best to keep the patient at rest, and as soon as undesirable signs of emetine poisoning occur he should at once be put to bed.

455. **Blood Transfusion.**

P. ÉMILE-WEIL (*Bull. Soc. de Thér.*, February 13th, 1929, p. 37) maintains that to let a patient die from haemorrhage without employing transfusion is a grave blunder for which a legal penalty should be enforced. He considers, however, that a dose of 500 c.cm. is always sufficient, however great and violent the loss of blood. In nine out of ten cases a transfusion of this amount is sufficient to produce a permanent cure; if not, a second transfusion should be given six, twelve, or twenty-four hours later. Out of several hundred transfusions for gastric ulcer, haematemesis in splenomegaly, and extrauterine haemorrhage, the author has only had to employ multiple transfusions six times. In giving a transfusion of 500 c.cm., 1.50 grams of sodium citrate is sufficient, and, far from being harmful, it adds its own haemostatic properties to those of the blood.

Neurology and Psychology.

456. **Glioma of the Medulla.**

O. C. PERKINS (*Journ. Nerv. and Ment. Dis.*, January, 1929, p. 26) reports a case of glioma of the medulla belonging to that rare group which present local but no general symptoms. These symptoms are generally produced by a lesion of the posterior inferior cerebellar artery with involvement of the hypoglossal nerve and the pyramid. In the present case sections at various levels showed a glioma infiltrating the left side of the medulla from the pyramidal decussation to the mid-olive region. In infiltrating tumours of this type destruction of the brain tissue generally results from prolonged pressure, and secondary degenerations are quite common. In the case under discussion the following ipsilateral symptoms were noted: hemi-asynergia and hemi-ataxia, laryngoplegia and palatoplegia, paralysis of the sterno-cleido-mastoid and trapezius muscles, hemifacial anaesthesia, nystagmus, facial paresis, and paralysis of the tongue. Contralateral symptoms were hemiplegia and loss of pain-temperature sensibility except over the face; other symptoms were vertigo and irregularity of the heart and respiratory rate. Correlation of these symptoms with the pathological findings is fairly clear. The hemi-asynergia and hemi-ataxia were due to involvement of the dorsal and ventral spinocerebellar tracts, and the laryngoplegia and palatoplegia to infiltration of the nucleus ambiguus. Paralysis of the two muscles mentioned was caused by invasion of the entire region where the spinal accessory nerve emerges; the hemi-anaesthesia was probably due to an intrusion into the descending pyramidal tract; and the nystagmus to involvement of the descending vestibular nucleus and tract. The contralateral hemiplegia resulted from involvement of many of the pyramidal fibres of the decussation; and the loss of pain-temperature sensibility from involvement of the lateral spinothalamic tract. The facial paresis cannot be accounted for, as there was no involvement of either the nucleus or efferent peripheral neurons. The irregularity of the heart and respiratory rate was due to direct invasion of the peripheral neurons of the vagus. Intense vertigo is often seen in subtentorial tumours, as they involve the cerebellar system.

457. **Psychological Results of Birth Trauma.**

THOUGH there has been much research into the effects of pathological pregnancy and labour, such investigations have been chiefly concerned with the physical condition of the child. P. L. SCHROEDER (*Journ. Amer. Med. Assoc.*, January 12th, 1929, p. 100) gives a brief review of the references to intelligence in the early literature, and details a study of 145 children having infantile cerebral palsy, and of 79 others showing signs of cerebral injury at birth. In the former group only 7 (4.8 per cent.) were diagnosed as premature, and 22.8 per cent. showed one or more of the following signs: inability to suck, cyanosis, asphyxia, deformed head (other than caput succedaneum), convulsions, and paralysis before the second month. In the second group the percentage of premature births is 7.6—that is, almost twice as great as in the infantile cerebral palsy group. Requests for examination in the behaviour clinic of the Institute for Juvenile Research are generally made because of retardation, delinquency, and "nervousness." Schroeder's conclusions from this study are that difficult labour tends to determine behaviour problems, which, however, are chiefly the result of mental retardation. Distractibility and hyperactivity are characteristic personality traits in the birth traumas, but no behaviour difficulty is specific. Children with cerebral birth injuries who do not develop palsies show the behaviour characteristics and mental retardation common to those with cerebral birth palsies, and differences of behaviour in this group are largely explained by the absence of orthopaedic handicap. Children with cerebral injury at birth who show distractibility and hyperactivity, although free from birth palsies, should therefore be included in the classification of the results of birth trauma.

458. **Syphilis of the Nervous System in Buenos Aires.**

M. ALURRALDE and M. J. SEPPICH (*Bull. Off. Internat. d'Hyg. Publ.*, December, 1928, p. 1951) state that the clinical manifestations of syphilis of the nervous system are nowadays more frequent and appear earlier, especially in patients who have been treated exclusively with salvarsan, or in those who after an inadequate mercurial treatment had subsequently been treated exclusively or systematically with arsenobenzol. During the last twelve years the proportion of cases of nerve syphilis at Buenos Aires has risen from 14 to 21.65 per cent. The most frequent clinical form is tabes, the incidence of which has risen from 2.64 per cent. in 1915 to 5.10 per cent. in 1925. The syndromes next more

frequently encountered are those due to local arteritis—namely, right hemiplegia with aphasia 4 per cent., left hemiplegia 3.65 per cent., and general paralysis 2.3 per cent. No appreciable rise has been noted in the neuritic forms. Of recent years there has been a decline in frequency of latent or attenuated forms of nerve syphilis—namely, from 7.10 per cent. in 1918 to 2.9 per cent. in 1925, a fact which may be explained by the systematic use of lumbar puncture, whereby forms corresponding to tabes and general paralysis can be identified in their preclinical stage.

Obstetrics and Gynaecology.

459. The Advantages of Vaginal Hysterectomy.

V. B. GREEN-ARMYTAGE (*Indian Med. Gaz.*, November, 1928, p. 613) upholds the superiority of vaginal over abdominal hysterectomy, especially in the East, where "cutting the stomach" is very unpopular. A review of 150 consecutive cases of vaginal hysterectomies, with a mortality of 2 per cent., is given. Many of the operations were for fibromata, but only if the tumours were no larger than a cricket ball. In larger growths abdominal hysterectomy is held to be indicated. Before undertaking vaginal hysterectomy for fibroids it is important to discover whether there is pain in the tumour, or whether attacks suggestive of localized pelvic peritonitis have occurred. If on careful examination the tumour is found to be fixed, the rectum or intestines are probably densely adherent and the vaginal operation is precluded. The next most common indication for vaginal hysterectomy is chronic metritis. There are three types of this condition: the large subinvolution type, caused by a low-grade degree of sepsis, either from a lacerated cervix or an incompletely emptied or retroverted uterus after labour or abortion; the hypertrophic type, commonly seen in prostitutes or as the sequel of contraceptive measures; and the arterio-sclerotic type, in which the patients bleed furiously and in all of which hypertension, and in many generalized arterio-sclerosis, is present. Haemorrhage, with or without backache, is the indication for operating, but before doing so extensive tubo-ovarian inflammation must be excluded by digital examination. A large proportion of the cases was operated on for so-called precancerous cervix—that is, a cervix lacerated, everted, and eroded, with deep infiltration of the mucosa and endocervicitis. These patients suffer from leucorrhoea, menorrhagia, and backache, the latter being due to lymphangitis and swelling of the glands in the hollow of the sacrum. Only seven cases were operated on for cancer of the cervix. The author advocates vaginal hysterectomy for cervical cancer in only exceptional conditions, and considers that an operable case of this condition is best treated by radium, followed, if desired, by abdominal hysterectomy. In all the cases the static results were excellent, but convalescence was tardy in three cases from oozing or sloughing of the posterior vaginal wall. The advantages of vaginal hysterectomy are: rapidity of the operation, absence of shock, lessened risk of infection as the operation is extra-peritoneal, and no painful scar or danger of post-operative hernia results. The operation is said to be ideal in chronic metritis, small fibromata or very early cancer, in precancerous cervix, and in certain conditions of prolapse in the aged.

460. Diathermy in Cancer of the Cervix.

J. MERLIN (*La Gynécol.*, January, 1929, p. 5) maintains that in early diagnosed cervical cancer the sole really curative measure is surgical intervention, and that only in inoperable cases and cases requiring pre-operative treatment are physical agents advisable. Such cases are divided into two groups. In the one the mobility of the uterus is doubtful, and swelling of the parametria is present. In these cases a pre-operative radium treatment may be employed, but this should be reserved for ulcero-sclerous cases with slow evolution and slight infection. In the other group the uterus is almost mobile, but there exists a large infected granulation. In these patients diathermo-coagulation is indicated. While pre-operative radium therapy is efficacious, Merlin points out certain disadvantages to that method. It is slow, much time being necessary for the treatment itself and for the elimination of the sloughing granulations; the vaginal mucosa is always injured by the irradiation and must be reconstituted; and there is always a resorption by the lymphatics and blood vessels of waste cellular products and toxins injurious to the liver and kidneys. The risks of curetting and the dangers and needlessness for diagnosis of biopsy are alluded to. Diathermy, a method too little employed, permits the infected, haemorrhagic, granulating cervix to be cleaned rapidly, without haemorrhage or any risk of infection, and with an almost perfect microbic sterilization. This can be effected in a minimum of time, with practically no pain, and with a facility of application. The method consists in supplying calories to the whole uterus or one of its parts by means of oscillating currents of very high frequency. Merlin uses a Walter high-frequency apparatus, and describes his technique. Coagulation is effected and the treated tissues are eliminated in fifteen days. Besides being of great benefit as a pre-operative measure, diathermy is the only method to employ in recurrences. For recurrent nodules on the cervix and uterine walls radium and x rays are strongly contraindicated; in these cases the bipolar method should be employed. The effect obtained is only superficial, and this is important, as tissues already modified and difficult of cicatrization should not uselessly be injured.

461. Rupture of a Pyosalpinx causing Peritonitis.

L. SABADINI (*Rev. de Chir.*, No. 9, p. 629) draws attention to the rarity of this occurrence, and reports two instances which have recently come to his notice. The two conditions which can give rise to peritonitis are: (1) rupture of the Fallopian tube, usually caused by trauma, and affecting a tube which is the seat of a chronic salpingitis; and (2) perforation, which occurs in an acutely inflamed tube similar to a perforated appendix. Rupture may be the result of one of many different forms of trauma, such as the effort of straining in defaecation or labour, shock as in gynaecological examination or coitus, or traction on the neighbouring viscera during uterine contraction in childbirth. In the case of rupture, symptoms may not appear for several days, but in perforation they are manifested immediately, the first sign usually being an intense and violent pain either in the right or left iliac fossa, or spreading over the whole abdomen below the umbilicus. The pain is accompanied by collapse, sweating, a shallow and rapid pulse, and a quick rise in temperature, with nausea followed by vomiting. The abdomen shows the characteristic signs of peritoneal infection, and immediate surgical intervention is necessary. This should take the form of a sub-umbilical laparotomy; the peritoneal cavity must be freed from pus, cleansed by means of an ether swab, and adequately drained. In both Sabadini's cases this conservative operation was successful, and it is pointed out that if it is ever found to be insufficient the more radical operation of hysterectomy or salpingectomy may still be performed.

462. Methods of Inducing Labour.

R. A. REIS (*Amer. Journ. Obstet. and Gynecol.*, March, 1929, p. 392) reports an investigation of 500 consecutive inductions of labour in 430 patients, during a period extending from January 1st, 1925, to April 1st, 1928; the pregnancy in all cases was calculated as having lasted for more than thirty-eight weeks. In 388 patients the induction was successful, but in 26 patients two inductions were required, and in 16 from three to five inductions. Six different methods were tested, the most effective of the medicinal remedies being found to be castor oil, quinine, and pituitrin; at or near term the efficacy of these medicinal methods was materially enhanced by stripping of the membranes. Reis remarks that induction methods at or near term are as efficient in primiparae as in multiparae, and that the character of the delivery is not affected. Morbidity without stripping the membranes was slightly greater than the average morbidity in the obstetrical department as a whole; the addition of the stripping procedure resulted in a further increase in morbidity, but, even so, the figures were approximately only one-third of those recorded when bag induction was employed. No evidence was obtained that these procedures were dangerous to the foetus.

463. Vulval Expulsion of the Retroverted Gravid Uterus.

M. HENKEL (*Zentralbl. f. Gynäk.*, February 2nd, 1929, p. 287) states that incarceration of the retroverted gravid uterus, if not treated by reposition, proves fatal, in the majority of cases, from sepsis of the urinary or genital tract. In a case which he reports there was an unusual but ultimately favourable termination. The patient, a 9-para, aged 35, showed during the fourth month the usual clinical signs of incarceration of the retroverted gravid uterus—dysuria, pain, ammoniacal cystitis, and the whole of the small pelvis filled by the retroflexed womb; in addition, she had prolapse of the posterior vaginal wall, which contained a small area of incipient necrosis. The bladder having been emptied, operative correction of the malposition was postponed for twenty-four hours; the next day, however, the whole of the uterus was found extruded from the vulva, whither it had been expelled suddenly through the posterior vaginal wall. Recovery followed hysterectomy. A parallel case with a similar fate was recorded by Rosenberger in 1909.

Pathology.

464. Effects of Ultra-violet Rays on the Blood.

A. S. SMALL (*New England Journ. Med.*, March 7th, 1929, p. 484) records the results of investigations in fourteen cases of active rickets with associated anaemia undertaken with a view to observing the effects of ultra-violet rays upon the capillary blood. The observations were made during the winter and spring months over a control period of from ten to twenty days, after which the blood was examined about once in seven to fourteen days for the next four to twelve weeks, the children being kept as nearly as possible on the same diet as they had been receiving prior to admission. The blood examination included erythrocyte, leucocyte, differential, platelet, and reticulocyte counts with haemoglobin determinations, a deep puncture being made in the same finger, toe, or heel each time, and a free flow without pressure promoted, the specimens so obtained being as nearly as possible at the same time of the day of each week in order to obviate any variations in the white cells. After puncturing, the first drop of blood was wiped away, the second being taken for a white count, the third for a red count, and the fourth, fifth, and sixth for haemoglobin determinations, and so on. The red cells were found to be in number and form consistent with a mild degree of anaemia without any marked increase in number; the white cells were within the normal limits, but in several cases a slight increase in the number of lymphocytes was observed. Reticulated red cells showed a fairly constant figure. Exposure of infants to various types of ultra-violet transmitting glasses as well as the Alpine lamp failed to produce any outstanding changes in the capillary blood beyond, in some cases, an increase in lymphocytes, though with the exception of those treated by vitaglass and ordinary window there was evidence of healing or healed rickets. From these investigations it would appear that the treatment has practically no beneficial effect on the associated anaemia.

465. Action of Adrenaline and Nicotine on the Pulmonary Circulation.

W. E. DIXON and J. C. HOYLE (*Journ. of Physiol.*, February 28th, 1929, p. 77) remark that, as concerns its vascular effects, adrenaline produces the same type of action as stimulation of vasomotor nerves. Wiggers has pointed out that its cardiac action masks any trifling direct effect it may have on the pulmonary vessels. The present authors also have shown that its action is seen equally well after the cardiac nerves have been divided, and after the autonomic ganglia have been paralysed. Nicotine affects the autonomic ganglion cells, acting on the motor and not on the sensory cells. This drug has another, not so well known, action, and a good deal of evidence exists to show that it acts not only on ganglion cells but also on more peripheral structures. Since its effect on the heart and systemic blood pressure are practically identical with that of adrenaline, it affords a useful substance with which to compare the action of the latter on the pulmonary circulation. A series of experiments on cats and dogs were performed in which doses of nicotine and adrenaline, which produced similar effects on the blood pressure and heart, were injected intravenously at a standard rate. The authors found that adrenaline, injected intravenously, caused a rise in pulmonary arterial pressure, an increase in the vascular volume of the lung, greater outflow from the pulmonary veins, and a rise in the left auricular pressure. Direct action on the heart and coronary dilatation are considered to be the important factors in producing these effects. Injections of nicotine had relatively little effect on the pulmonary pressure while diminishing the vascular volume of the lung, and causing a diminished outflow from the pulmonary veins and a fall in the left auricular pressure. Constriction of the pulmonary vessels, and, with very small doses, the coronary, is considered to be the deciding factor responsible for the differences from the action of adrenaline. Both drugs in large doses cause cardiac embarrassment from systemic vaso-constriction, and this results in secondary changes in the pulmonary circulation.

466. Experimental Increase in the Virulence of the B.C.G. Strain.

S. W. KORSCHUN, P. P. DWIJKOW, and A. J. GOROCHOWNIKOWA (*Centralbl. f. Bakt.*, March 8th, 1929, p. 297) bring evidence to suggest that it is possible under experimental conditions to raise the virulence of the B.C.G. strain of tubercle bacillus. Their general procedure was to inoculate the organism into guinea-pigs, recover the strain from the lesions, and inoculate this into fresh animals. After three passages made by subcutaneous inoculation no evidence was obtained of any appreciable alteration in virulence. But after three further passages made by intraperitoneal, and three further passages made by intratesticular inoculation, there did appear to be a definite increase in the virulence of this organism. Thus the injection intraperitoneally of the ninth passage strain, recovered from the testicle, killed a guinea-pig in fifty-one days; at necropsy there was great emaciation and the presence of numerous masses in between the viscera; the spleen was three times its usual size and was studded with grey nodules; the liver was friable and contained a number of miliary grey nodules and a few larger nodules; in both testicles there were caseous masses about the size of cherry stones. The authors consider that the production of a generalized tuberculous infection must be regarded as evidence that the virulence of the strain had been increased by passage.

467. A Pathogenic Streptothrix.

LE BARON and R. PATAY (*C. R. Soc. de Biologie*, March 15th, 1929, p. 695) describe the case of a man, aged 37, who during the course of a year developed abscesses in numerous parts of the body, affecting chiefly the subcutaneous tissue and muscles; the abscesses were often large, sometimes discharged as much as 500 c.cm. of pus, and generally became fistulous. Microscopical examination of the pus showed the presence of numerous groups of short branching filaments with a terminal or subterminal spore. The filaments were Gram-positive and non-acid fast. The organism was cultivated on alkaline potato, on which it grew poorly. No growth occurred on the ordinary media or on ascitic agar; but on blood agar or serum agar growth proceeded rapidly, with the formation of moist, grey, convex colonies. In serum broth there was an abundant growth with a flocculent deposit. Gelatin was not liquefied. Acid was produced in glucose, maltose, mannite, levulose, lactose, and sucrose, but not in glycerin. The optimum temperature for growth was 37° C., but growth occurred slowly at room temperature. The organism was apparently a facultative anaerobe. Cultures remained viable for two months. In order to destroy the organism in cultures it was necessary to heat it for one hour at 70° C. Inoculated subcutaneously or intramuscularly into guinea-pigs, the organism gave rise to an abscess which opened spontaneously. Inoculated intraperitoneally into guinea-pigs, it proved fatal in twenty-four hours, and at necropsy multiple small abscesses were found in the omentum together with a slight exudate. Intravenous inoculation into rabbits was without effect, but intramuscular inoculation gave rise to a large abscess which proved fatal before spontaneous opening occurred. Histologically the experimental lesions consisted of a filamentous network containing a few spheres at the periphery, and surrounded by polymorphs; outside there was a layer of granulation tissue.

468. The Spinal Fluid in Chronic Alcoholism.

L. STERN and E. S. LOKSCHINA (*C. R. Soc. de Biologie*, February 16th, 1929, p. 465), as the result of experiments, report the following conclusions. (1) In a rabbit which was in a state of chronic alcoholic intoxication increase of the body temperature to 41.5° C. caused the passage into the cerebro-spinal fluid of crystalloids such as sodium iodide, and colloids such as Congo red and trypan blue. It is noteworthy that even higher temperatures do not in normal animals cause a passage of crystalloids from the blood into the cerebro-spinal fluid, while alcoholic intoxication alone produces an increased resistance to crystalloids. (2) Fall of the body temperature to 34.4° C. produced in the alcoholic rabbits a passage of crystalloids and colloids into the cerebro-spinal fluid contrary to what is seen in normal animals. (3) In the alcoholic rabbit injection of diphtheria toxin produced a passage of crystalloids and colloids from the blood into the cerebro-spinal fluid during the pyrexial period on the day following the injection of toxin, whereas in the normal animal this does not take place until just before death.

469. Complement-fixation Reaction with Rabies and Herpes Viruses.

F. TANG and M. R. CASTANEDA (*Journ. Immunol.*, February, 1929, p. 151) report experiments on the complement-fixation reaction in rabbits immunized against rabies or herpes. The animals received a long series of inoculations, which were apparently sufficient to render them refractory to the intracerebral inoculation of living virus. In the performance of the complement-fixation reaction two antigens were used: (1) a "cooked" antigen, prepared by heating a 10 per cent. saline suspension of the brain to 100° C. for thirty minutes; (2) a plain unheated glycerin extract antigen. Both antigens were kept in the refrigerator, and the supernatant fluid only was used. The results were disappointing. The cooked antigen was less anti-complementary than the unheated antigen, but with neither was any evidence obtained of specific fixation in the serum of rabbits immunized against rabies or herpes.

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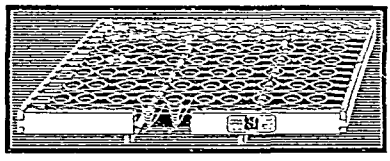

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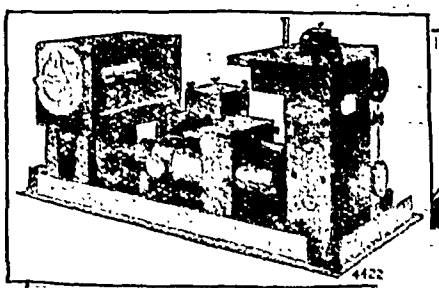

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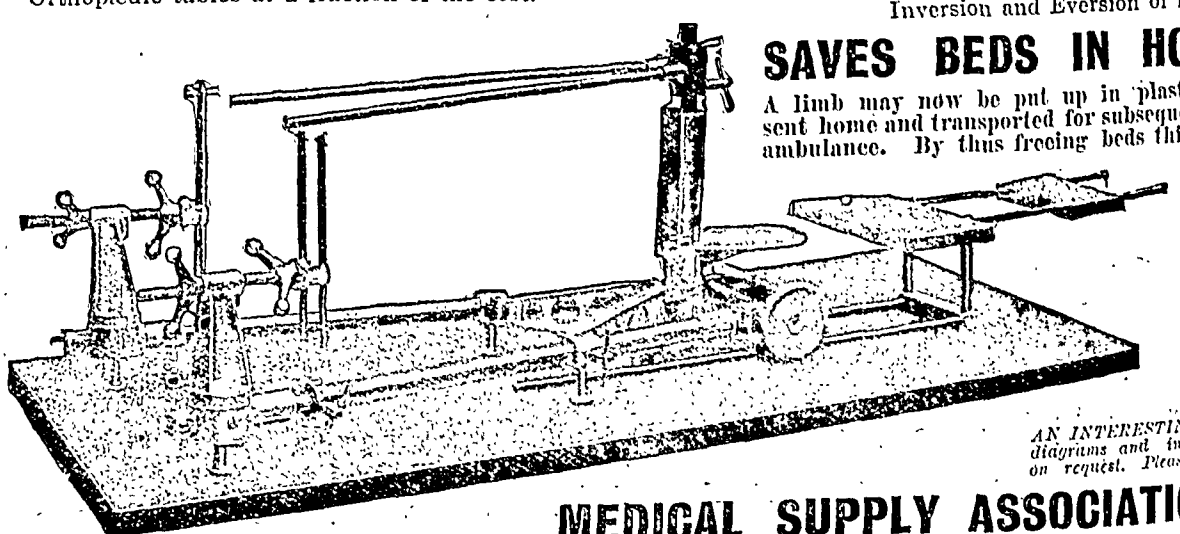

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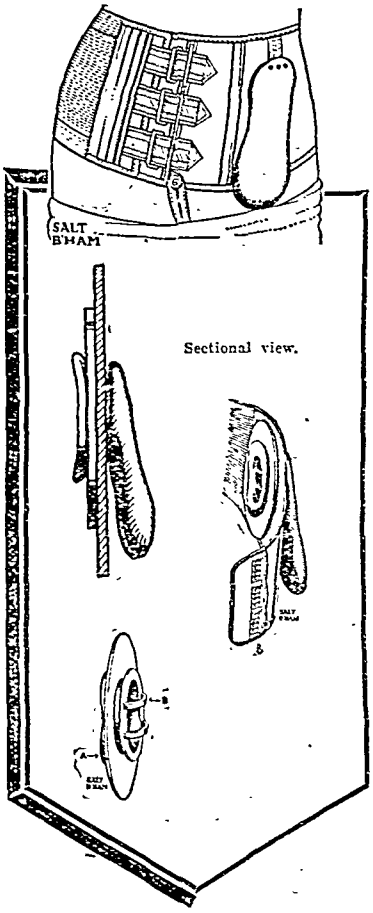

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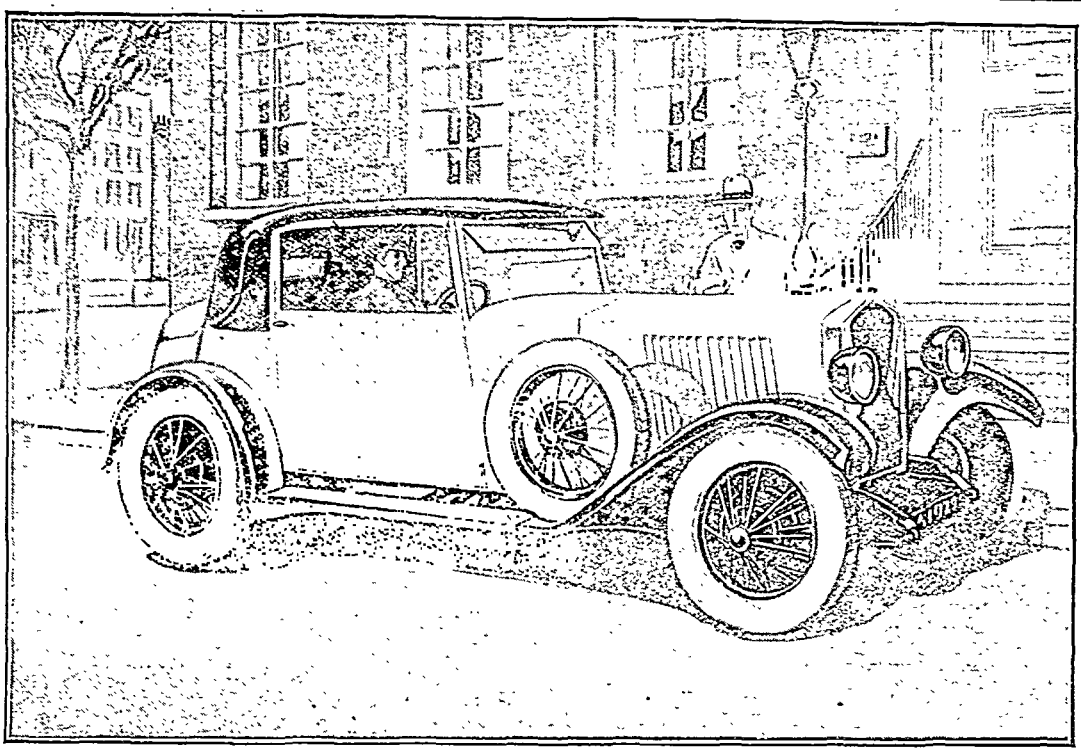

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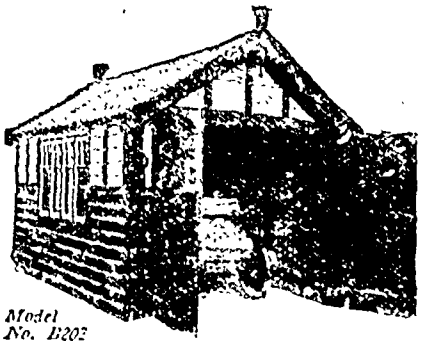

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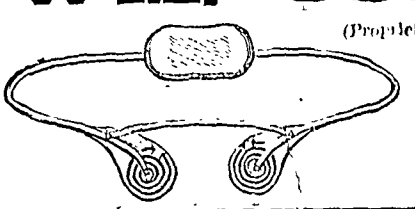

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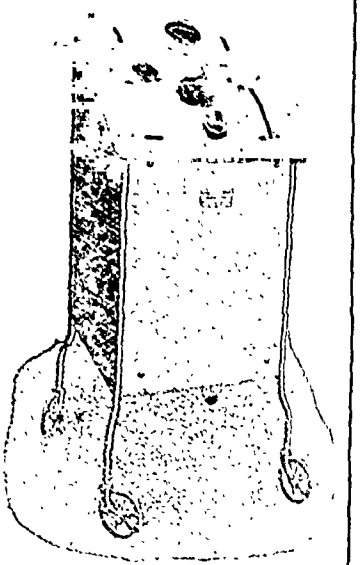

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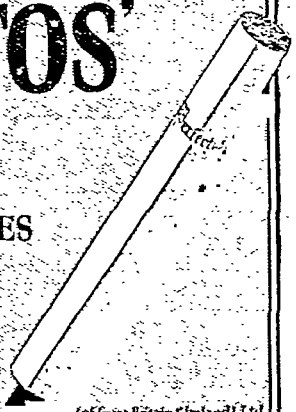

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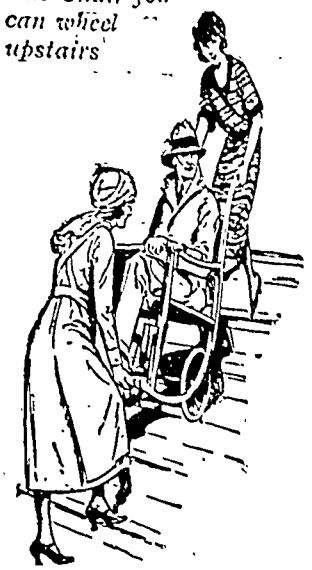

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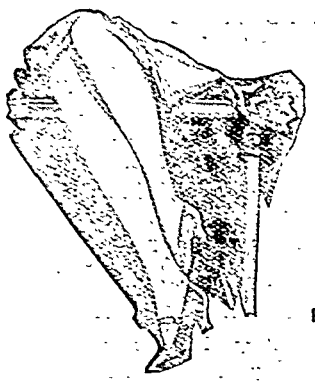

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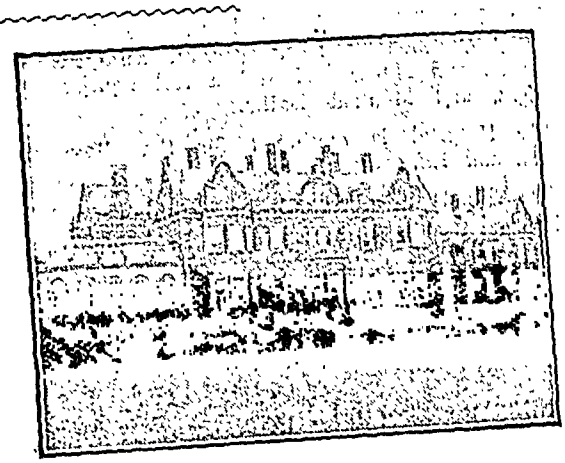

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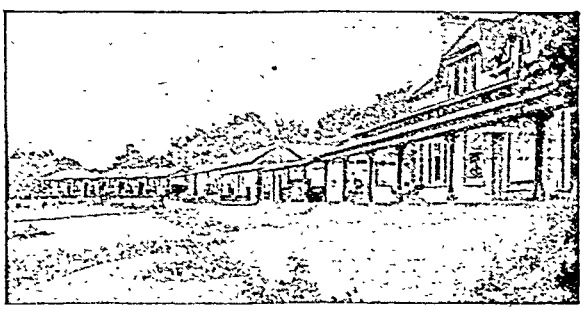

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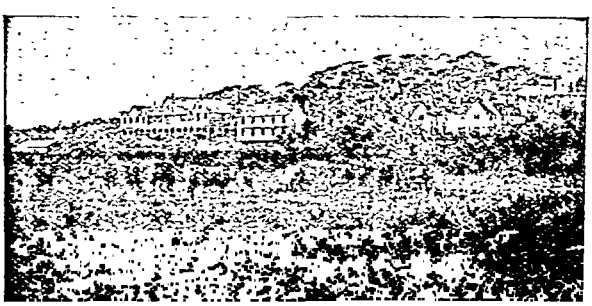

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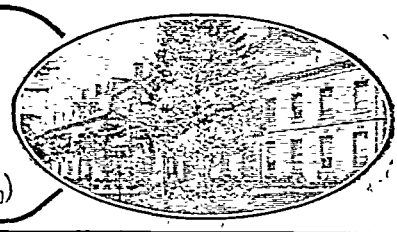

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INSTITUTE OF PATHOLOGY AND RESEARCH
ST. MARY'S HOSPITAL, LONDON, W.2

A Course of Lectures on PATHOLOGICAL RESEARCH IN ITS RELATION TO MEDICINE has been arranged for the SUMMER SESSION. These Lectures will be given in the Lecture Room of the Bacteriological Department of the Institute on Thursday Afternoons at 5 p.m. as under:

	SUBJECT.
MAY 16th. Prof. F. T. G. HOBDAY, F.R.C.V.S., F.R.S.E. (Principal, Royal Veterinary College).	"The Value of Research into Animal Diseases as an Aid to the Study of the Diseases of Man."
MAY 23rd. Prof. W. W. C. TOPLEY, M.D. (Prof. Bact. & Immunology, London School Tropical Medicine & Hygiene).	"The Natural Acquirement of Immunity."
MAY 30th. Prof. F. W. TWORT, F.R.S. (Superintendent, The Brown Institution) (University of London).	"The Position of Ultra-microscopic Viruses in the Living World."
JUNE 6th. Prof. WILLIAM BULLOCH, M.D., F.R.S. (Prof. of Bacteriology, London Hospital).	"The History of Bacteriology."
JUNE 13th. Prof. J. A. GUNN, M.D. (Prof. of Pharmacology, University of Oxford).	"Variations in Susceptibility to Drugs and Toxins."

These Lectures are open to all Members of the Medical Profession and to all Students in Medical Schools without fee.

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The Course of Instruction can be commenced at any time.
The Principal will be pleased to interview intending candidates for the purpose of advice.
Further particulars can be obtained from the Secretary, 37, Russell Square, W.C.1.
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NORTH-EAST LONDON POST-GRADUATE COLLEGE,

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The Practice of the Hospital is limited to Medical Practitioners. Particulars from T. H. C. BENIANS, F.R.C.S., Dean.

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One year's Course of Study for the Diploma in Bacteriology, beginning in October.

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Special Courses of not less than three months.

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Enquiries for syllabuses, etc., should be addressed to the Secretary, Endsleigh Gardens, London, W.C.1.

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For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5, for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to the Secretary.

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(Estd. 1928.)

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Objects.—(a) In-patient Department.

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(2) To give indoor treatment to patients who are permitted to consult one or several qualified medical practitioners according to their own wishes.

(3) Special in-patient facilities to those whose incomes do not exceed Rs.500 per mensem.

(b) The Outdoor Clinic of Specialised Departments.

Open only to that section of the public whose income does not exceed Rs.200 per mensem.

The Outdoor Clinic is divided into the following departments:

(1) Clinic for Metabolic Disorders;
(2) Clinic for Nervous and Respiratory Diseases;
(3) Clinic for Heart Diseases and Electro-therapeutics;
(4) Clinic for Skin and Venereal Diseases;
(5) Clinic for Diseases of Women;
(6) Clinic for Diseases of Children;
(7) Surgical Clinic;
(8) Clinic for Eye, Ear, Throat, and Nose;
(9) Ante-natal and Obstetrical Clinic;
(10) Clinic for Tropical Diseases.

Honorary Consultants to the Clinic in the various departments are members of the staffs of the leading Institutions in Colombo, and other medical men who are specially qualified to be consulted in their respective specialties.

A small commuted fee is payable to cover consultations. Laboratory examinations, and medicines, the latter given only to cases which come without the general medical practitioner's card.

As soon as satisfactory diagnosis is made, the cases are referred for further treatment to the general practitioners of the neighbourhood in which the patient resides, and will not be further advised upon without the practitioner's card of request.

The special objects of this Outdoor Clinic are:

(*a*) To promote co-operation between the general practitioners and consultants, and help the busy general practitioner in the diagnosis of the more intricate ailments among his poorer patients who are not entitled to poor relief.

(*b*) To encourage the more highly qualified members of the medical profession to confine themselves to their specialties, and thus help the general practitioner, his poorer class of patients, and the advancement of scientific medicine in this country.

Resident medical attention is also provided for within the premises for this class of patients.

The Receiving Medical Officer attends to all the Out-patients before allotment to the respective clinics.

The Nursing Staff of the Hospital is under European management.

For particulars, please apply to the Resident Medical Superintendent, or to the Secretary, Mr. D. W. WANAGURU, Private General Hospital, Colombo.

University of Birmingham.

(Faculty of Medicine.)

INGLEBY LECTURES, 1929

The Ingleby Lectures will be delivered on THURSDAYS, MAY 23rd and 30th, at 4 o'clock, in the MEDICAL LECTURE THEATRE (Edmund Street Buildings), by

H. CHARLES CAMERON, M.A., M.D., F.R.C.P., Physician in Charge of the Department for Diseases of Children, Guy's Hospital.

Subject: "*Some Types of Septic Infection in the Newly-born.*"

Members of the Medical Profession are invited to attend.

J. C. BRASH, M.A., M.D., Dean.

University of London.

The Senate invite applications for the UNIVERSITY CHAIR OF ANATOMY, tenable at St. Bartholomew's Hospital Medical College. Salary £1,000 a year. Applications (12 copies) must be received not later than first post on May 30th, 1929, by the Academic Registrar, University of London, S.W.7, from whom further particulars may be obtained.

University of London.

A Course of Two Lectures, with lantern illustrations, on "*The Physiology of Glucogen.*" will be given by Professor J. J. R. MACLEOD, F.R.S. (Regius Professor of Physiology in the University of Aberdeen), at THE LONDON HOSPITAL MEDICAL COLLEGE (Turner Street, Mile End, E.1), on MAY 16th and 17th, at 5.30 p.m. At the First Lecture the Chair will be taken by LEONARD HILL, Esq., F.R.S. (Director of the Department of Applied Physiology, National Institute of Medical Research).

Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

University of London.

THE UNIVERSITY STUDENTSHIP IN PHYSIOLOGY, of the value of £100, is offered to a student qualified to undertake research in Physiology. Applications must reach the undersigned (from whom full particulars may be obtained) not later than May 31st.

The University of London, South Kensington, S.W.7. EDWIN DELLER, Academic Registrar.

University of Birmingham.

(Faculty of Medicine.)

POST-GRADUATE LECTURES, 1929.

A LECTURE *ON* SPA TREATMENT will be delivered on THURSDAY, MAY 16th, at 4 o'clock, in the MEDICAL LECTURE THEATRE (Edmund Street Buildings), by MATTHEW B. RAY, D.S.O., M.D., C.M., T.D., Physician to the St. Marylebone General Dispensary: and Member of Committee of Society for the Study of Medical Hydrology in Great Britain.

Subject: "*The Spa Treatment of Chronic Non-Tuberculous Arthritis.*"

Members of the Medical Profession are invited to attend.

J. C. BRASH, M.A., M.D., Dean.

UNIVERSITY OF CAMBRIDGE

Diplomas in (*a*) PUBLIC HEALTH, (*b*) HYGIENE (for foreign graduates), (*c*) TROPICAL MEDICINE AND HYGIENE.

Courses of Instruction in the Subjects of the Examinations commence October 9th, 1929. Full particulars to be obtained from Mr. J. E. PURVIS, Public Health Chemical Laboratory, Medical School, Cambridge.

University of Cambridge.

E. G. FEARNSIDES SCHOLARSHIP FOR CLINICAL RESEARCH ON THE ORGANIC DISEASES OF THE NERVOUS SYSTEM

This Scholarship is open to Graduates or titular Graduates in Medicine, or to Graduates or titular Graduates in Arts who have passed Part II of the Natural Sciences Tripos.

Applications must be sent to the University Registrary before June 20th.

G. A. WEEKES, Deputy Vice-Chancellor.

The University of Manchester.

The Dr. ROBERT ANGUS SMITH SCHOLARSHIP is offered for competition. The Scholarship, which is of the maximum value of £150, is for the encouragement of research in Sanitary Science. The Scholar will be required to devote the whole of his time to research. Last date for applications June 1st. Further particulars may be obtained from the Registrar.

Royal College of Surgeons of ENGLAND.

ELECTION OF PROFESSORS AND LECTURERS.

Notice is hereby given that the Council are prepared to receive applications for election to the office HUNTERIAN PROFESSOR and ARRIS AND GALE LECTURER for the ensuing year.

Fellows and Members of the College desirous of becoming candidates must make application, in writing, to the Secretary on or before the 5th proximo, and are requested to furnish a synopsis of the one or more Lectures which they propose to give.

S. FORREST COWELL, Secretary.

May 11th, 1929.

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam. will commence shortly. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

Will Edmonds Clinical Research FUND.

Applications are invited for a FELLOWSHIP under the above Fund. The Fellow elected will receive a salary of £500 per annum, and must devote his whole time to clinical research in a Metropolitan Hospital. He will be eligible for re-election annually up to 5 years. Formal applications must be received on or before June 1st.

Further particulars may be obtained from the Hon. Sec., 63, Great Cumberland Place, W.1.

Farringdon General Dispensary AND LYING-IN CHARITY, Holborn Circus, E.C.4.

Applications are invited for the following Honorary appointments:

1. PHYSICIAN in Charge of the Department for Diseases of the Skin.

2. SURGEON in Charge of the Dental Dept.

Applicants must be fully qualified practitioners, prepared to attend the Department once weekly.

Applications, with copies of two recent testimonials, must reach the Farringdon General Dispensary, 17, Bartlett's Buildings, Holborn Circus, E.C.4, not later than May 22nd.

B. A. COCELE, Hon. Secretary.

Royal Medico-Psychological ASSOCIATION.

The Examination for the GASKELL PRIZE AND MEDAL and [illegible] CERTIFICATE IN [illegible] will be held at [illegible] DENMARK HILL, LONDON, on Friday, May 31st, 1929, and (if necessary) on Saturday, June 1st.

Applications for entry to either Examination to be sent to the Registrar, St. Andrew's Hospital, Northampton, before May 17th, 1929.

There is no fee for entrance to the Gaskell *Prize Examination. The entrance fee for the* Examination for Certificate in Psychological Medicine is three guineas, payable to the Registrar.

DANIEL F. RAMBAUT,
St. Andrew's Hospital, Registrar.
Northampton.

Rhondda Urban District Council.

ASSISTANT MEDICAL OFFICER.

The above Council invite applications from male registered medical practitioners to act as whole-time Assistant Medical Officer of Health and Assistant School Medical Officer, under the direction, supervision, and control of the Council's Medical Officer of Health, at a salary of £600 per annum, together with travelling expenses necessarily incurred in the performance of the duties.

Candidates must have had not less than three years' professional experience subsequent to registration, and the possession of a Diploma in Public Health is desirable.

The duties will pertain to both public health and school medical services, but experience in the work of school clinics, including the examination and certification of defective children, orthopædic work, and the prescription of glasses for errors of refraction, will be considered to be of special importance.

The appointment will be subject to two calendar months' notice on either side, and to the approval of the Board of Education. The officer appointed will be required to reside within the Rhondda Urban District and will not be allowed to engage in private practice.

Canvassing by or on behalf of candidates will be considered to be a disqualification.

*Applications are to be made on forms obtain*able from the Medical Officer of Health, Tydfil House, Llewelyn Street, Pentre, Rhondda, by whom they must be received, endorsed "Assistant Medical Officer," and accompanied by copies of three *recent testimonials, not later* than the first post on Saturday, May 18th.

The Council Offices, D. J. JONES,
Pentre, Rhondda. Clerk of the Council.
May 4th, 1929.

University of Durham College OF MEDICINE, NEWCASTLE-UPON-TYNE.

PUBLIC HEALTH LABORATORIES and BACTERIOLOGICAL DEPARTMENT.

Applications are invited for the post of Whole-ti[illegible] ASSISTANT [illegible] Applicants must be registere[illegible] with experience of [illegible]y and Clinical Patholog[illegible] in the Public Health Laboratories, the Assistant will be required to take part in teaching.

Commencing salary £400 per annum.

Applications, with copies of three recent testimonials, should be submitted to the Registrar, University of Durham College of Medicine, Newcastle-upon-Tyne.

City of Sheffield.

ASSISTANT TUBERCULOSIS OFFICER.

Wanted, a male (unmarried) Assistant Tuberculosis Officer, to reside at WINTER STREET HOSPITAL, and to devote his whole time to the Municipal Tuberculosis Scheme.

Salary £450 per annum, rising to £500 per annum by annual increments of £25, with board, residence, and laundry.

Applicants must be registered medical practitioners, with not less than three years' experience.

Applications, stating age, qualifications, and experience, with copies of testimonials, to be sent to the undersigned on or before May 16th.

Town Hall, FRED. E. WYNNE,
Sheffield. Medical Officer of Health.

Elizabeth Garrett Anderson HOSPITAL, 144, Euston Rd., N.W.1.

Applications [illegible] women are in[illegible] HOUSE PHYSI[illegible] Three HOUSE [illegible] of £50 per an[illegible] laun[illegible] [illegible]ly 1st next for six [illegible]h testimonials, must [illegible] on or before May 27th.

IMOGEN H. MURPHY, Secretary.

City of Manchester.

MONSALL HOSPITAL FOR INFECTIOUS DISEASES. (600 Beds.)

APPOINTMENT OF JUNIOR MEDICAL OFFICER.

The Public Health Committee invite applications from qualified medical men for the position of Junior Medical Officer at Monsall Hospital.

Every applicant must be a registered medical practitioner and unmarried.

Preference will be given to applicants who *have held Resident Surgical* and Medical posts in a General Hospital.

The candidate appointed will be required to assist in the teaching of the *nursing staff* and to reside at the Hospital.

Salary £350 per annum, with board, residence, and laundry in addition. No bonus.

The appointment will be made in the first instance for a period of *twelve months, renew*able at the expiration of that period.

Every application, stating fully the training, qualifications, and experience of the candidate, and his age, with copies of three *recent testi*monials, and endorsed on the envelope "Junior Medical Officer, Monsall Hospital," must be addressed *to the Medical Officer of Health*, Civic Buildings, 1, Mount Street, Manchester, only, and not to members of the Committee or Council, and must be received by him not later than Wednesday, May 15th.

The candidate appointed will be required to devote the whole of his time to the duties of the position, to pass a medical examination, to contribute to the Corporation Superannuation Fund, and to execute the Deed of Service.

Canvassing in any form, oral or written, direct or indirect, is prohibited.

Town Hall, F. E. WARBRECK HOWELL,
Manchester. Town Clerk.
May 6th, 1929.

County Council of Middlesex.

ASSISTANT MEDICAL OFFICER.

The County Council of Middlesex invite applications for the post of an Assistant Medical Officer in the Public Health and School Medical *Department. The applicants must be duly* qualified registered medical practitioners.

The duties of the post are the Medical Inspection of School Children, the supervision of treatment of minor ailments, the carrying out of work under the *Maternity and Child Welfare* Scheme, and such other duties as may be required by the Council. The officer appointed must devote whole time to the duties of the post, will act under the supervision and control of the County Medical Officer of Health, and will be required to reside in any place fixed by the Committee.

Salary at the rate of £600 per annum, rising after two years' service by yearly increments of £30 *to £750 (no bonus).* Reasonable travelling expenses allowed.

The successful candidate will be required to contribute to the County Council's Superannuation Fund and to pass such medical examination as the County Council may direct.

The appointment will be during the pleasure of the *Council, and subject to one month's* notice on either side.

Applications, stating (1) age, (2) qualifications, and (3) previous experience, together with copies of not more than three recent *testimonials*, must be sent to the undersigned not later than May 18th.

Canvassing, directly or indirectly, will be a disqualification.

ERNEST S. W. HART,
Middlesex Guildhall, Clerk of the
Westminster, S.W.1. County Council.
April 26th, 1929.

West Ham Union.

ASSISTANT MEDICAL OFFICERS.

The Guardians invite *applications* for the appointments of Two Resident Assistant Medical Officers (male) at their WHIPPS CROSS HOSPITAL, Whipps Cross Road, Leytonstone, E.11, at the salary in each case of £300 per annum, *rising* by annual increments of £25 to a maximum of £350 per annum, and the usual residential allowances.

Candidates must possess qualifications both in Medicine and Surgery, and preference will be given to those having previous Hospital experience. Intending applicants should communicate with or *call on the Medical Superintendent* who will furnish information as to the duties The successful candidates will be required, should occasion arise, to act in any other Institution under the control of the Board.

Applications, stating age, experience, and qualifications, together with copies of not more than three *testimonials, must reach the under*signed not later than 10 a.m. on Thursday, May 16th.

Union Offices, L. E. FRAQUET,
Leytonstone, E.11. Clerk.
April 29th, 1929.

Liverpool County Borough. LOCAL EDUCATION AUTHORITY.

JUNIOR ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are *invited for a Junior Assistant* School Medical Officer in the Department of the Medical Officer to the Local Education Authority, at a salary of £600 per annum.

Applicants must be registered medical practitioners, with at least three years' experience. It is desirable that they should have had some special *experience in school hygiene* and in diseases of children.

The officer appointed will be require to devote his whole time to the service of the Education Authority, under the direction of the Medical Officer of Health, who is also the Medical Officer to the Education Authority. He will not be allowed to undertake private practice, and will be required to contribute to the Liverpool Corporation Superannuation Scheme as required by the standing orders of the City Council.

Applications, *stating* age, qualifications, etc., together with copies of not more than three recent testimonials, endorsed "Junior Assistant School Medical Officer," must be delivered at the office of the Town Clerk, Municipal Buildings, Liverpool, on or *before May 23th.*

Canvassing of members of the Committee or the *City Council* is strictly prohibited and will be considered a disqualification.

WALTER MOON,
Municipal Buildings, Town Clerk and
Liverpool. Clerk to the Local
May 8th, 1929. *Education Authority.*

Derby Union.

SECOND RESIDENT MEDICAL OFFICER.

Applications are invited for the appointment of Second Medical Officer (male) of the Guardians' Institution and Infirmary, which is a Major Training School for Nurses (a new Hospital of 350 beds is nearing completion). Salary at the rate of £250 per annum, with *residential allowances.*

Two months' notice of resignation to be given, to date from the Board meeting *next after the* receipt of the resignation.

The appointment will be subject to the sanction of the Ministry of Health and to the provisions of the *Poor Law Officers Superannuation Act, 1896.*

Applications, with particulars of age, previous career, qualifications, diplomas, and certificates held, together with copies of three recent testimonials, must be sent in on or before Friday, May 17th.

Poor Law Offices, RALPH GRANTHAM,
Derby. Clerk to the Guardians.

Kent County Council.

LENHAM SANATORIUM.

Applications are invited for the post of an unmarried Male ASSISTANT MEDICAL OFFICER to this Institution, which has 165 beds.

Applicants must be registered medical practitioners, and must devote the whole of their time to the duties of the office. Previous experience in tuberculosis and hospital administration is desirable.

The successful applicant will work under the administrative control of the County *Medical* Officer and of the Medical Superintendent of the Institution.

The post is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922. Salary £400 per annum, increasing to £450 per annum, with board, lodging, etc.

Applications, stating age, experience, and full qualifications, together with copies of two *testimonials, to be sent* to the undersigned not later than May 20th.

ALFRED GREENWOOD, M.D.,
Sessions House, County Medical
Maidstone. Officer and *Chief*
April 29th, 1929. Tuberculosis Officer

City of Salford.

INFECTIOUS DISEASES *HOSPITAL.*

[illegible] are invited for the post of [illegible] RESIDENT MEDICAL [illegible] lary £200 per annum, plus board, residence, and *laundry.* The appointment will be for one year. Form of application may be obtained from *the Medical* Officer of *Health*, 143, Regent Road, Salford, to whom it must be returned, endorsed "Junior Assistant Resident Medical Officer," not later than May 25th.

L. C. EVANS, Town Clerk.

Huntingdon County Hospital.

HOUSE SURGEON needed shortly. Salary at rate of £100 per annum, and [illegible] ing. Apply, with *testimonials*, etc., to

Dr. GROVE,
County Hospital, Huntingdon.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CITY OF PLYMOUTH: EDUCATION DEPT. *(Woman Deputy Assistant Medical Officer.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society)* *(Workmen's Medical Scheme.)*	COUNTY TYRONE EDUCATION AUTHORITY. *(School Medical Officer.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	COUNTY BOROUGH OF WIGAN. *(Clinical Tuberculosis Officer and Assistant Medical Officer of Health.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.— WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1. By Order of the Council of the British Medical Association.
May 8th, 1929. ALFRED COX, Medical Secretary.

Royal Southern Hospital, LIVERPOOL.

Applications are invited for the post of HONORARY ASSISTANT PHYSICIAN. Applicants must be registered Graduates of a British or Irish University, and if not Members of the Royal College of Physicians of London, must undertake to obtain that qualification within four years of appointment.

Applications and testimonials to be sent addressed to the Chairman of the Medical Officers Election Committee not later than noon on Monday, May 20th.

Extract, Rule 17.—Any candidate shall be disqualified who advertises in the public papers or personally canvasses the Members of the Election Committee; but candidates are to be at liberty to send to the Members copies of their applications and accompanying documents as delivered to the Chairman of the Committee.

ALLEN NALDRETT, Supt. & Secretary

The Royal National Hospital for CONSUMPTION AND DISEASES OF THE CHEST, VENTNOR, ISLE OF WIGHT.

A MALE ASSISTANT RESIDENT MEDICAL OFFICER required for six months, to take up duties at an early date.

Salary £300 per annum, with residence and board in the Hospital. Candidates must be recently doubly qualified, registered, and unmarried, and be desirous of undertaking the earnest study of tuberculosis.

Applications, in candidates' own handwriting, stating age and qualifications (with one copy of three recent testimonials), may be sent to the Medical Superintendent, addressed to the R.N. Hospital for Consumption, Ventnor, Isle of Wight.

April 29th, 1929.

Queen's Hospital for Children, Hackney Road, London, E.2.

CASUALTY OFFICER required on July 12th A six months' appointment. Salary £100 a year, with board, residence, and washing. Preference given to candidates who have previously held Resident appointments. Applications must be made on forms to be obtained from the Secretary, and must be sent in, with copies of not more than four testimonials, on or before May 30th.

T. GLENTON-KERR, May 3rd, 1929. Secretary.

Queen's Hospital for Children, Hackney Road, London, E.2.

HOUSE PHYSICIAN required on June 30th. Six months' appointment. Salary £100 a year, with board, residence, and washing. Preference given to candidates who have previously held Resident appointments.

Applications must be made on forms to be obtained from the Secretary, and must be sent in, with not more than four testimonials, on or before May 30th.

T. GLENTON-KERR, May 3rd, 1929. Secretary.

Warneford General Hospital, LEAMINGTON SPA.

RESIDENT HOUSE PHYSICIAN and RESIDENT HOUSE SURGEON required at the beginning of June. Salaries £165 per annum each, with board and laundry.

Applicants, who must be qualified and registered and single men, should apply at once to the undersigned, and send copies of three recent testimonials.

W. RUSSELL RUDALL, House Governor & Secretary.

Royal Hampshire County HOSPITAL, WINCHESTER.

Applications are invited to fill a vacancy on the staff of this Hospital for an HONORARY SURGEON IN ORDINARY. Candidates must be Fellows or Members of one of the Royal Colleges of Surgeons of Great Britain or Ireland, or Graduates in Surgery of one of the Universities of Great Britain or Ireland, and must be duly registered.

Applications, with testimonials, not more than three, to be sent to the Secretary not later than May 18th.

Canvassing, direct or indirect, is prohibited.

HERBERT MASLEN, Secretary.

The Liverpool Eye and Ear INFIRMARY, MYRTLE STREET.

Applications are invited for the post of HOUSE SURGEON to the Ear, Nose and Throat Department of the above Institution. Salary £100 per annum, with board and lodging.

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, should be sent in not later than May 21st, to—

CHAS. W. WRIGHT, Esq., 9, Harrington St., Liverpool.

Victoria Hospital, Blackpool. (152 Beds.)

HOUSE SURGEON (SECOND), male, twelve months. Salary £120 per annum, with residence, board, and washing. Applicants (who must be duly qualified and registered) are requested to send in their applications, stating age, qualifications, and experience, with three recent testimonials, not later than May 20th, and endorsed "House Surgeon," to—

JOHN HACKING, Hon. Secretary.

ASSISTANCIES.

Wanted.—Assistant, male, for twelve months, in Gloucestershire Country Practice. Salary £300, with rooms and board. Must have car. Easy work with time for reading. Public School man pref. Photo and full partics. —No. 2706, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, male, single, abstainer, Protestant, for panel and private Practice in Newcastle-upon-Tyne. Salary £250 a year, all found. State full particulars.—Address, No. 2723, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, English or Scotch, to take charge of Branch Surgery, 12 miles from London. All essential particulars.—Address, No. 2704, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, outdoor, at once, for Panel and Private Practice. North London. References.—Address, No. 2712, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant at once, private and panel Practice, single, young. Scotch or English preferred. Salary to commence £250 to £300, according to experience. University Town.—Address, No. 2710, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male. £240 per annum.—Address, No. 2741, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Three Assistants for North Wales Practices, one with early succession. Welsh-speaking desirable, but not essential. Send full particulars, to "MEDICAL," 40, Hamilton Street, Hoole, Chester.

Wanted immediately, indoor ASSISTANT in large panel and private Practice in pleasant part of Monmouthshire. Abstainer and motorist preferred. Salary £23 per month, all found, except laundry. Apply, stating age and all particulars. Usual bond.—No. 2526, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately, Indoor and Outdoor ASSISTANTS (male), with and without view. Also LOCUM TENENS. Good salaries offered. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted immediately. — Assistant, indoor, Leeds. Partnership likely ultimately. Send photo, detailed essential particulars. Motorist, recently qualified suitable.—Dr. SUTHERLAND, Lytham House, Low Wortley, Leeds.

Wanted.—Assistantship, preferably in or near London, by Lady M.B., Ch.B., D.P.H.Edin., ex R.M.O. Excellent testimonials. Free now. State salary.—Address, No. 2708, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, with view to Partnership or succession, by M.B., M.R.C.S.; 3 years' hospital; ex H.P., H.S., and C.H.S., one year G.P. N.W. of England preferred.—Address, No. 2736, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship or LOCUMS by Woman M.B., B.Ch., D.P.H. Varied experience in private and panel work. Hospital experience, anæsthetics. Five years' Graduate. Free very shortly.—Address, No. 2732, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, LOCUMS, or PART-TIME WORK by Woman M.B.; qual. 5 years; experienced in panel and private practice, dispensing, etc. Free, in London. Small salary.—Address, No. 2738, B.M.A. House, Tavistock Square, W.C.1.

Wanted by Woman L.R.C.P., etc., ASSISTANTSHIP, with or without view. Four years' experience of G.P. (private, panel, obstet.). Used to sole charge. Free in June. — Address, No. 2728, B.M.A. House, Tavistock Square, W.C.1.

Birmingham District. — Indoor ASSISTANT required in middle-class and *industrial Practice; age not over 30.*—Apply, giving qualifications and previous experience, to "XX," c/o R. SUMNER & Co., Ltd., Manufacturing Chemists, Liverpool.

Egyptian Doctor, L.R.C.P., M.R.C.S., and M.B.(Cairo), male, 28, with four years experience in G.P., H.S. for one year, reading for F.R.C.S., desires post of ASSISTANT.—Address, No. 2734, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, with view to Partnership and succession on easy terms, South Wales Colliery Practice. Gross income at present £1,600, should improve. Applicant must be ex H.S. and used to major surgery as latter is done locally.—Address, No. 2711, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Experienced Assistant keen and energetic, for non-dispensing good-class private and panel Practice. Salary £400, *with rooms and attendance.* Car provided. *Partnership in short time to suitable man.* State age, height, experience, etc.—Add., No. 2714, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Experienced Assistant, outdoor, preferably ex House Surgeon, in a good mixed Practice in an industrial district within six miles of Manchester. Salary from £400 per annum, with view to Partnership. — Address, with particulars, No. 2635, B.M.A. House, Tavistock Square, W.C.1.

Woman Doctor requires an ASSISTANT for Branch Practice, in London. Small salary and rooms to commence with. Suit recently qualified woman. Scotch or English.—Address, No. 2631, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and exper. in priv. and panel prac. Perm. and *part-time Bookkeeper-Dispensers, Secretary-Dispensers,* Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 87, Holborn Viaduct House, 12, Holb. Viad., E.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Gerrard 2699, THE DISPENSERS' BUREAU, 145, Shaftesbury Avenue, London, W.C.2.

Graduate, active, experienced, relinquished Practice, would undertake RESPONSIBLE WORK, regular or occasional. Works' clinic, institution, examinations, travel, etc. Highest references.—Address, No. 2621, B.M.A. House, Tavistock Square, W.C.1.

Lady Dispenser - Bookkeeper (Hall) requires POST with Doctor. Experienced. Good testimonials.—Address, No. 2733, B.M.A. House, Tavistock Square, W.C.1.

M.B., D.P.H., experienced, highest references, seeks EMPLOYMENT, London, management Branch or Surgery, or Insurance work, or assist at same. No midwifery. Write terms.—Address, No. 2709, B.M.A. House, Tavistock Square, W.C.1.

Offer.—Consulting Surgeon, age 37, offers SERVICES (part-time preferred) to large firm or company in advisory or other useful capacity. Higher qualifications.—Address, No. 2731, B.M.A. House, Tavistock Square, W.C.1.

Part-time work wanted in London. Elderly doctor, until recently in good-class G.P. Anæsthetist. Tel. Riverside 5330. —Address, No. 2722, B.M.A. House, Tavistock Square, W.C.1.

Required by large Company operating in the MIDDLE EAST, SURGEON (whole-time), who must be a first-class man, experienced in general surgery, F.R.C.S. essential, aged 32-36. Also Two ASSISTANT MEDICAL OFFICERS, who must be between ages of 30 and 35 and must have held resident appointments. Fully organized medical service, four hospitals, eighteen British doctors, including *specialists, etc. Commencing* salary for Surgeon £1,100 per annum, and for Assistant Medical Officers £800 per annum, with, in each case, free furnished bachelor quarters, provident fund, etc. Three years' agreements, renewable. Free first-class passage out and home. Applicants must be of British parentage, and preferably unmarried. —Address, with copies of testimonials (not returnable), No. 2705, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS.

HOLIDAY LOCUMS.

THE MEDICAL AGENCY has pleasure in announcing that lists are now being prepared for Locum engagements for the forthcoming Holiday Season. Principals requiring RELIABLE Locums early are advised to make The Medical Agency, W.C.1. (night calls). V. H. GRAVE, House, Adelphi. Riverside 1234

As Locum.—Experienced Doctor, had own practice, now doing very 10 locums ann., desires further ENGAGEMENTS; now free. Terms 6 gns. p.w. London preferred. Home country, where car and driver available. Good refs.—"MEDICUS." 24, Colville Road, Bayswater, W.

Hospitality offered Doctor and wife for working small Country Town Practice, close to first-class Spas for rheumatism. Band, garden, tennis. Small remuneration. June and July. — Address, No. 2620, B.M.A. House, Tavistock Square, W.C.1.

Locums and Assistants required, preferably those within easy distance of *Liverpool.*—Apply to Messrs. R. SUMNER & Co. Ltd., 40, Hanover Street, Liverpool.

Locum wanted, June 1st, four weeks. Five guineas, and expenses, per week. British, young, Public School, preferred. View to partnership. Motor. Few mids.—Address, JENNINGS, Kepler House, Christ Church Road, Northampton.

Locum Tenens now available. Experienced in G.P., panel and mental work. Qualified 1900, S. Bart.'s. Recent references.—Apply, stating terms, "MEDICUS," Red House, Lancing, Sussex. 'Phone: 57 Lancing.

M.B., Ch.B. requires Locum *or TEMPORARY ASSISTANTSHIP.* Ex-H.S. and H.P.; well experienced in private and panel practice.—Address, No. 2735, B.M.A. House, Tavistock Square, W.C.1.

Medical Man, *experienced in* hospital, panel, and private practice. Bachelor, abstemious, reliable, and cyclist. Will be disengaged from June 15th for LOCUM or ASSISTANCY. Terms moderate.—Address, No. 2724, B.M.A. House, Tavistock Square, W.C.1.

Pathological and Bacteriological LABORATORY ASSISTANTS ASSOCIATION.—Pathologists and Bacteriologists requiring SKILLED CERTIFICATED LABORATORY ASSISTANTS are invited to communicate with H. GOODING, Hon. Sec., "Moelfre," 10, Holbeck Grove, *Victoria* Park, Manchester. No fee.

Reynolds & Branson, Ltd., Medical Transfer Department, 12 & 13, Briggate, Leeds.—Gentlemen desirous of undertaking LOCUM TENENCIES now and during the summer months are invited to enter their names on our Register. Form of application will be sent on request.

Woman M.B., B.S., desires LOCUM (any part), or Assistantship or Part-time work in London. Several years' exper. G.P., private and panel. Accustomed sole charge. Now free.—'Phone: Temple Bar 862; or address, No. 2734, B.M.A. House, Tavistock Square, W.C.1.

FOR LOCUM TENENS APPLY TO
Mr. PERCIVAL TURNER, Ltd.
The oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals.
4, ADAM ST., Strand, London, W.C.2.
Teleg.: "Epsomian, Lond." 'Phone: Gerrard 0370

PARTNERSHIPS.

Wanted.—Partnership in good-class Practice within 20 miles of London, share worth £1,000, by Glasgow Graduate, age 34, married. The advertiser has been 8 years on honorary medical staff of General Hospital and has extensive experience of general practice. Free September.—Address, No. 2730, B.M.A. House, Tavistock Square W.C.1.

Wanted.—Glasgow Graduate, age 48, at present in own practice, would PURCHASE PANEL or SHARE or otherwise arrange ment where educational facilities. Capital available. Address, No. 2720, B.M.A. House, Tavistock Square, W.C.1.

A Third Partner required soon for a good-class Practice in London. Share worth about £1,600 at 2 years' purchase. Preliminary assistantship. Excellent opportunity for a young man with experience and capital.—No. 2445, B.M.A. House, Tavistock Sq., W.C.1.

Lancashire Town.—Partnership. Half share in old-estab. Practice. Average cash receipts £3,000. Panel 2,516. Excellent house for sale, 5 bedrooms, garage, and garden. Price £1,000. Premium—Practice—1½ years' purchase. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Lanc's Town.—Partnership with early succession. Receipts £1,150, excellent scope. Panel about £300. Good Insurance appts. Price, half share, 1½ years' purchase, part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Medical Woman wanted as PARTNER to help work up two well-established Nuclei in S.E. London. Good future for suitable woman. Premium the only capital outlay. —Address, No. 2721, B.M.A. House, Tavistock Square, W.C.1.

North Wales Doctor requires PARTNER for half share of Practice. Large panel and dispensing, also important appointments. Full particulars—Address, No. 2513, B.M.A. House, Tavistock Square, W.C.1.

Partner (Third) wanted in sound industrial and middle-class Practice near Newcastle-upon-Tyne. Purchaser must be well qualified and experienced G.P., and should have held Hospital appointment. Average cash receipts over £4,000 A 3/10 share for disposal at 2 years' purchase. Suitable house and surgery available.—Address, No. 2443, B.M.A. House, Tavistock Square, W.C.1.

Partner wanted for Country Practice, Home County. £1,000 to £1,200 at 2 years' purchase, great scope. Cottage Hospital. Charming house and garden, rent £100. Hospital experience essential. Married Physician preferred. — Address, No. 2716, B.M.A. House, Tavistock Square, W.C.1.

Partner wanted, very old-established country Practice, Wiltshire. Share over £2,000 at two years' purchase. Good house and garden. Hospital experience essential. Cottage Hospital.—Address, No. 2715, B.M.A. House, Tavistock Square, W.C.1.

Partner wanted in good working-class and middle class Practice near

Third Partner wanted shortly for lucrative Practice in North of England Resort. Must be well qualified, preferably Oxford or Cambridge Graduate, and must have held resident Hospital appointments. A good Anæsthetist and one who is capable of undertaking Eye work would be preferred. Excellent house for sale. Share worth about £1,400 a year at 2 years' purchase.—Address, No. 2705, B.M.A. House, Tavistock Sq., W.C.1.

PRACTICES.

Wanted.—Ophthalmic Practice or PARTNERSHIP by D.O.(Oxon), F.R.C.S.(Edin.), in England or Scotland. Prospect of Hospital appointment desired.—Add., No. 2744, B.M.A. House, Tavistock Sq., W.C.1.

Wanted by M.D.Cantab., F.R.C.S.Eng., Public School, better-class PRACTICE or PARTNERSHIP, within 100 miles London, or good-class suburb. Ample capital. —Address, No. 1505, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Practice, £1,500—£2,000, in Home or Southern Counties. House to rent preferred. Good educational facilities. Capital available.—Address, No. 2742, B.M.A. House, Tavistock Square W.C.1.

Wanted.—Good general PRACTICE in Home Counties or South, pleasant residential locality. Income £1,000—£1,500. Opportunity for surgery appreciated. —Replies in confidence to BM/VDMK London, W.C.1.

Cheshire.—Nucleus in pleasant industrial area small private and panel, 255. Good house, garden, bath electric light, to rent. Premium £100, drugs included.—Address, No. 2730, B.M.A. House, Tavistock Sq., W.C. 1.

Wanted.—We have innumerable applicants for sound investments in all districts, incomes from £600 to £4,000, with and without panel. Correspondence invited from prospective Vendors. — THE MEDICAL AGENCY (W. H. Grant), Watergate House, 15, York Buildings, Adelphi, W.C.2.

Wanted. — Large well-estab. non-panel PRACTICE within 100 miles London (main line). Income not less £2,500. A suitable house at rental desired in first instance. Advertiser is free to negotiate. Capital available. — Address, No. 2314, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Good-class Practice or PARTNERSHIP in town on, or near, coast of Southern, South-Western, or South-Eastern County. Advertiser has ample capital and higher qualifications. Strict confidence. Private advertisement. — Address, No. 2516, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—General Practice, £1,500—£2,000, in Southern half England (Devon and Cornwall excepted), country or country town. House 5—6 bedrooms. Good schools; golf. Address, No. 2725, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Seasonal Spa PRACTICE. £600—£1,000 p.a. Necessary large So il advantages Tavis ock Square, W.C.1.

Cheshire.—Practice in pleasant Country Town near Manchester. Receipts £855, including panel income of £208. Excellent house, 6 bedrooms, 3 reception rooms, good garden. Premium—Practice and house—£2,000.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Cheshire. — Old-estab., pretty country district. Very nice house, good flower and kitchen garden, garage. Receipts £800, panel £250. Price 1 year's purchase. House also for sale. Golf, tennis.—MANCHESTER MEDICAL & SCHOL. ASSOC., 6, Brown Street.

Co. Durham.—Death Vacancy.— Forty years established. Immediate disposal. Magnificent opening for energetic man. Perfect house.—Particulars, Dr. GIBBON, Hove.

Death Vacancy.—Radnorshire.— PRACTICE of about £1,000 per annum, including panel and appointments. Good house. No resident opposition. Excellent opportunity for young energetic Doctor.—Apply, VAUGHAN & BAKER, Solicitors, Kington, Herefordshire.

Death Vacancy, Manchester.— Good-class PRACTICE. Cash receipts 1928, £1,248, including income of £330 from appts. Panel 433. Excellent corner house, 2 entertaining, 5 beds., garden. Premium—Practice and house—£2,500, or near offer.—BRITISH MEDICAL BUREAU, 33, Cross St., Manchester.

For Sale.—Easily worked Panel, Private, and Contract PRACTICE, Colliery district in Yorkshire. Good house and land and large garden. Scope for increase. Estab. seven years. Average income £500 per annum from all sources. Purchase price 1½ years House, land, and garden, £650. Must sell end of May. — "A. J.," c/o FERRIS & Co., Ltd., Bristol.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2.

For Sale, in nice residential estab Incom excep Price £2,300 Owner, who is remaining in district, would give partnership introduction as required. Good social facilities; golf, tennis. Capital essential.—Address, No. 2719 B.M.A. House Tavistock Square, W.C.1.

For Sale.—Urgent. Unopposed Country PRACTICE in Lincolnshire. Price £1,500, cash down, which is about one year's cash takings. Family house on lease, or would sell.—Address, No. 2726, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Woman's Practice in Cheshire seaside resort; small panel and general. Good nucleus, scope for enlargement. House for sale or to rent.—Further particulars from NEAL, Accountant, 7, Tithebarn Street, Liverpool.

Lancashire Coast Resort.—Average cash receipts £1,100. Panel 500 to 600. Good scope. Modern double-fronted house (freehold), containing 2 reception rooms, 5 bedrooms, garage, and garden, for sale. Premium—Practice—1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Lancs Town.—Sound old-estab. middle and working-class PRACTICE. Cash receipts last year £1,855. Panel over 1,500. Excellent detached house, garden, and garage. Vendor retiring. Premium—Practice—1½ years' purchase; house £1,500, part on mortgage or may be let on lease with option to purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Midlands. — Over £900, panel 550. House, 5 bedrooms, electric light, central heating, garden, etc. Very healthy, 700 feet elevation.—Address, No. 2535, B.M.A. House, Tavistock Square, W.C.1.

Near Manchester. — Good-class PRACTICE. Average receipts last three years, £2,060. Panel 300. Excellent corner house, containing 6 bedrooms, 3 entertaining rooms, garage, and garden. Good introduction. Prem 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Practice for Sale, Manchester district. Panel and private £1,500. Excellent scope. Panel over 1,600. Premium for Practice, £2,000. Good house to be sold or leased.—Address, No. 2743, B.M.A. House, Tavistock Square, W.C.1.

To Purchasers. — Do not buy without expert assistance. With 40 yrs.' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Gerrard 0399. Telegrams: "Epsomian, London."

University Graduate, aged 36, 10 years' experience G.P., desires OPENING in good-class PRACTICE. Good house essential (preferably rented). Income £1,500 upwards. Not free for six months.—Address, No. 2509, B.M.A. House, Tavistock Sq., W.C.1.

Unopposed Country Practice for Sale in Lincolnshire, near coast. Cash receipts about £1,500. Price £1,600—about £750 cash, balance by arrangement. Schools, sport. — Address, No. 2727. B.M.A. House, Tavistock Square W.C.1.

HOUSES, CONSULTING ROOMS.

AN ADMIRABLE SITUATION FOR PROFESSIONAL PURPOSES.

A unique small residence on Upper Norwood Heights. Residential main road, 2 recep., 3/4 beds., tiled bathroom, h. & c., kitchen, etc. Elec. light. Modernized and newly decorated. Large secluded garden, conservatory. Immed. poss. Rent £125 excl. Garage, optional, 7/6 p.w.—F. L. RICHARDSON, Estate Office, 5, Church Road, Upper Norwood, S.E.19.

Borough of Ealing, main Uxbridge Road. — Important FREEHOLD PROPERTY. Brick-built garage, room for 2 cars, particularly adapted for doctor; 5 bedr oms, 3 reception, bath, very large garden. £1,850.—Write, BEER, 35, Williams Road, W.13.

Cottage Residence in East Anglian Heights, Thaxted, Essex, to LET FURNISHED for three to twelve months from June onwards. Five bedrooms, two reception, billiard room (full-sized table); modern conveniences. Charming garden; garage; maid optional.—Apply, W. BENNETT, Maytree House, Thaxted.

Consulting Rooms to let, Harley Street and district, whole or part-time. Lists sent on application.—ELGOOD & Co., 10, Henrietta Street, Cavendish Square, W.1. Mayfair 5659.

Excellent opportunity to buy charming CORNER HOUSE in growing middle-class suburb, with nucleus of Practice, worth at present £150 p.a. Capable of great expansion. Owner leaving for private reasons. House can be mortgaged.—Address, No. 2715, B.M.A. House, Tavistock Square, W.C.1.

House (or part of House) to Let (unfurnished) in the most attractive and prominent position at 75, THE LAWNS, SHEPHERD'S BUSH. Suitable for Doctors' or Solicitors' Practice. Beautifully decorated. Electric light and all convenience. — Apply, VENIS, 128, Uxbridge Road, W.12.

ESTABLISHED 1845.
ELLIOTT, SON & BOYTON
(H. H. Holt, H. E. Allpress, H. C. Rowe),
Estate Agents, Auctioneers, and Surveyors,
6, VERE STREET, CAVENDISH SQUARE, W.1
are the BEST LOCAL AGENTS for HOUSES and CONSULTING ROOMS in the Harley, Wimpole, Queen Anne, and other Streets in the Cavendish Square district. Valuations for all purposes.
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Messrs. BEDFORD & CO.
(C. E. BEDFORD, F.S.I., F.A.I.),
Surveyors, Auctioneers, and Estate Agents.
10, WIGMORE STREET,
CAVENDISH SQUARE, W.1.
SPECIALISTS IN PROFESSIONAL HOUSES AND CONSULTING ROOMS
in Harley Street and leading Medical Positions.
Telephone: Langham 3927 and 3928.

Harley Street (close to).—Commodious Important RESIDENCE, now used as Nursing Home, for disposal. Eighteen patients' rooms, 5 bathrooms 4 sitting rooms, theatre, good kitchen, house cook's room, etc. Passenger lift. Central heating. Independent hot water. Ground rent £120 p.a. Direct lease 33 years.—Price and further particulars from the Agents, MAPLE & CO. LTD., Tottenham Court Road W.1.

Modern Freehold House for Sale situated on corner of two main omnibus routes in South-East London. High-class residential suburb being rapidly populated by a desirable class of resident and having at present insufficient number of Doctors to cope with the demands of the growing district. An ideal opportunity for a Practitioner desiring to work up a practice. Garage, tennis courts, etc.; also room for extension of property. Price £2,250, of which a substantial amount could remain on mortgage.—Address, No. 2701, B.M.A. House, Tavistock Square, W.C.1.

Portland Place.—To Let, splendid SUITE OF ROOMS (first floor) 33 ft. × 18 ft., 25 ft. × 13 ft., 16 ft. × 15 ft., together with small telephone room, lavatory (constant hot water), and w.c. Electric lift, central heating, man-servant. Suitable for Medical Department of Insurance Company, Dental Surgeon or Firm of Dentists, Actinotherapeutist, or similar purpose. View by appt. —No. 2707, B.M.A. House, Tavistock Sq., W.C.1.

Sundridge Park, Bromley, Kent. —Splendid position and eminently suitable HOUSE for Doctor or Dentist. Attractive prominent corner detached residence, soundly constructed and with spacious rooms. Accommodation comprises lounge hall with fireplace, two large reception rooms, billiard room, six bedrooms, dressing room, large tiled bathroom, with hot and cold shower to bath, tiled w.c., good domestic offices. Nice garden, well laid out in tennis lawn, clock golf green, poultry run, etc. Freehold £2,750. Thoroughly recommended by NUNN & ARMAND, Sundridge Park Station, Bromley. Ravensbourne 4166.

To be Sold.—Possession Corner HOUSE, exceptionally good main road position for Doctor, hundreds of new houses around. Plume. F'hld. £1,250, F'hld. £1,050. Frontage 105'. No road charges. Finance arrged. —HEWLITT, Estate Offices, Wembley Pk. Station.

MISCELLANEOUS SALES, etc.

Amazon Diathermy, with Stand and Converter, D.C. 220-240 V., £36; cost £54; absolutely new, discontinuat, D.C. 220 V., with Trolley, spare MULTAVANOME, D.C. Universal Volt., Table, £18 f. cond. —No. 2702,— B.M.A. House, Tavistock Sq., W.C.1.

Austin 12 h.p. 1929 body. 4 CC. COUPE, drop head special Englishhall's Seats three in front. In wonderful condition, ardly Cost £395, accept £235.—69, St. Revenue, Willesden Green, London, N.W. ed

Bournemouth.—Unfurnish tal MAISONETTE of 7 rooms, over Dental Surgeon. Excellent position main road, Doctor. £120 per annum.—Write, J. ESKELL, 10, Kent Road, Southsea.

Consult GRIMALDI'S before buying your next Car, whether NEW or SECOND-HAND. AGENTS for ALL MAKES. 100 GUARANTEED USED CARS always in stock. SPECIAL DEFERRED TERMS FOR DOCTORS financed entirely by ourselves. Strictest privacy ensured.—ERNEST GRIMALDI, Ltd., 88, Gt. Portland St., W.1. Museum 3931.

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MEMBERS OF THE MEDICAL PROFESSION
Can secure Perfect Fitting and Distinctive Clothes of Exceptional value. FINEST QUALITY MATERIALS. *BEST WORKMANSHIP ONLY.*
SPECIAL OFFER.
JACKET & VEST (in black or grey), £5 5s.
SOLID FANCY WORSTED TROUSERS, £2 2s.
THE Ideal Suit for Professional or Business wear
TWEED SUITS & OVERCOATS to measure from £6 6s.
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THE IDEAL Suit for ALL Sporting Purposes.
GOLD MEDAL RIDING BREECHES ... from £2 2s.
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UNSOLICITED APPRECIATION.
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HARDY & HARDY
TAXATION CONSULTANTS.
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Medical Surgical Sundries Ltd.
Supply Instruments, Dressings, Attaché Cases, etc.
Let us quote for your requirements.
Showroom: 97, Swinderby Road, Wembley.

For Sale.—An Ambulance Body, with wings and running boards, by BARKER, off a Phantom chassis. Triplex glass; stretcher or a Foote-chair for invalid.
Suitable for Hotel 'bus. Condition absolutely as new.
Apply, BOX No. 64, KENNINGTON ADVERTISING SERVICE, 4, Regent Street, S.W.1.

For Sale.—Hanovia Alpine SUN LAMP, *normal suspension model*, A.C.230 v., complete with quartz burner, counter weight and pulley. Purchased eighteen months ago.—Apply to Dr. BARLOW, 4, High Street, Skipton, Yorks.

For Sale.—22 Half-yearly Vols., bound in Cloth Boards, *British Medical Journal*, 1891 to 1901, inclusive; also the separate numbers (unbound) from 1902 to 1928, inclusive. What offers?—Apply Dr. LIVINGSTON, Hursley, near Winchester, Hants.

Nursing Home, modern and up to date in every respect, about to be built in quiet situation close to Harley Street; perfect accommodation; over 50 rooms; convenient north lighted theatre; lift; central heating. Long lease for disposal.—For plans and particulars apply BEDFORD & Co., 10, Wigmore Street, W.1.

Proceedings Royal Society MEDICINE 1919-1[illegible] TRANSACTIONS ROYAL SOCIETY TROPI 1928, some incomplete.
BULLETIN 1912-1914, 4 vols., incomplete. All the above unbound. Offers.—Address, No. 2718, B.M.A. House, Tavistock Square, W.C.1.

"Radiometric" High Tension TRANSFORMER X-RAY APPARATUS, having an output of 90 kV at 30 mA, complete with auto-transformer control, independent filament heating transformer, automatic magnetic time switch with timing mechanism, milliamperemeter, amperemeter for filament circuit, crank regulation for controlling the penetration, filament adjustment. Complete with Radiator type Coolidge X-ray Tube. Fully described in catalogue No. 3 of the Medical Supply Association, who are the makers. Arranged for use on any alternating current supply. Price £90. —MEDICAL SUPPLY ASSOCIATION, Ltd., 167-185, Gray's Inn Road, London.

APPOINTMENTS.—Contd.

Bolton Infirmary & Dispensary.
SECRETARY'S OFFICE.
(233 Beds, including Auxiliary Hospitals.)
Applications [illegible] RESIDENT SURGICAL [illegible] salary £250 per ann[illegible] (gentleman), salary £150 per annum; and an ASSISTANT HOUSE SURGEON (lady), salary £100 per annum, with apartments, board, and attendance, are invited from ladies and gentlemen having a registered Medical and Surgical qualification. The appointment will be for twelve months from July 1st.
Applications, stating age, with copy of testimonials, should be forwarded to the undersigned (from whom further particulars may be obtained) not later than Wednesday, May 29th. The appointments will be made on Thursday afternoon, June 6th, at 4 o'clock.
ALBERT E. BRISCOE, Secretary.

West London Hospital,
Hammersmith Road, W.6. (226 Beds.)
Required, One HOUSE PHYSICIAN, One HOUSE SURGEON, and One AURAL AND OPHTHALMIC HOUSE SURGEON (males). These three appointments are tenable for six months from July 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodgings, and washing allowance. Applications (which must be made on printed forms obtained from me) must reach me not later than Friday, June 7th. Selected candidates will be required to call upon such Members of the Medical Staff as directed, to be in attendance at a Meeting of the Medical Council on Friday, June 21st, at 4 p.m., and the House Committee Meeting at 4.45 p.m. the same day, when the appointments will be made.
H. A. MADGE, Secretary.

Papworth Village Settlement,
near CAMBRIDGE, for the Treatment of all forms of Tuberculosis.
Applications are invited for the post of HOUSE PHYSICIAN. Applicants should be male and single. The appointment is for six months, with prospects of advancement to a higher position on the staff. Salary £100 to £200 per annum, according to previous experience, with board, lodging, and laundry.
Apply to Medical Director, Papworth Hall, Cambridge.

Swansea Hospital.
(316 Beds.)
HOUSE SURGEON wanted, gentleman, unmarried. Salary £150, with board, residence, and laundry. Duties to commence June 1st.
Applications, stating age, nationality, qualifications, and experience, with copies of three recent testimonials, to be forwarded to the undersigned on or before May 22nd.
O. C. HOWELLS, Secretary.

Napsbury Mental Hospital,
Near ST. ALBANS, HERTS.
COUNTY COUNCIL OF MIDDLESEX.
JUNIOR ASSISTANT MEDICAL OFFICER required. Salary £485 per annum, rising by £10 per annum to £525. Deductions for board, lodging, washing, and attendance £[illegible] per annum. Appointment is subject to the Asylum Officers Superannuation Act, 1909. Applications, with copies of testimonials, to the Medical Superintendent.

Liverpool & Samaritan Hospital
FOR WOMEN.
HOUSE SURGEON wanted for period of [illegible] months from July 1st. Salary at rate of £[illegible] per annum. Applications, with testimonials, to be addressed to the undersigned before May 31st.
J. ST. GEORGE WILSON
31, Rodney St., Liverpool. Hon Secs., Cons. Med. Board

Assistant Medical Superintendent (male) wanted. Apply, stating age, qualifications, nationality, experience, and essential particulars, to Medical Superintendent, EVERSFIELD CHEST HOSPITAL, LEONARDS-ON-SEA. Quarters provided

Applications are invited by the Committee of the WEIR HOSPITAL, [illegible] Road, Balham, S.W.12 (30 beds), for the appointment of HONORARY CONSULTANT [illegible] NOSE, and THROAT SPECIALIST. Further information may be obtained from the Secretary at the Hospital.

West Derby Union.

RESIDENT ASSISTANT MEDICAL OFFICER (Male).

The Guardians [illegible] above position [illegible] RICE LANE, [illegible] the rate of £ [illegible] rations, apartments, etc.

Candidates must be single, fully qualified, and registered.

Appointment will be for a period of one year in the first instance, subject to one month's notice to terminate on either side at any time, and to extension for a further period of twelve months at the option of the Guardians.

Applications to be sent, stating age, qualifications, etc., with copies of three recent testimonials, to [illegible] than first post on [illegible]

Union Office
Brougham Terrace, Liverpool.
May 6th, 1929.

Clerk to the Guardians.

The Royal Hospital,

WOLVERHAMPTON. (240 Beds.)
(Incorporated under Charter.)

CASUALTY OFFICER and RESIDENT ANÆSTHETIST (male) required. Duties to commence forthwith, and will include Casualty work and administration of anæsthetics.

The Hospital contains 240 beds, and includes the usual special departments, and is recognized by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical Practice.

Candidates must be registered under the Medical Acts, and unmarried.

The appointment is for six months, with eligibility for further appointment for six months as House Surgeon to In-patients.

Salary at the rate of £125 per annum. Board, furnished rooms, and laundry provided.

Applications, with copies of testimonials, to be forwarded to the undersigned

W. H. HARPER,
April 8th, 1929. House Gov. & Secretary.

West Suffolk General Hospital,

BURY ST. EDMUNDS.
(108 Beds.)

Applications are invited for the post of HOUSE SURGEON (male), which is now vacant. Salary £150 per annum, with board, residence, and laundry. Candidates must be fully registered and qualified.

Applications, giving particulars of experience, and enclosing three recent testimonials, to be sent to the undersigned not later than Wednesday, May 15th.

E. E. HARDWICKE,
April 16th, 1929. Secretary.

City of Birmingham.

MATERNITY AND CHILD WELFARE DEPARTMENT.

RESIDENT MEDICAL OFFICER.

A Resident Medical Officer is required on July 1st next, for a period of six months, for the City Babies' Hospital (50 beds). Salary at the rate of £150 per annum, with board and laundry. Previous experience in a Children's Hospital desirable. Apply, giving all particulars of qualifications, age, and experience, to the Medical Officer of Health, the Council House, Birmingham, on or before May 25th next.

General Hospital, Nottingham.

RESIDENT CASUALTY OFFICER, male, required shortly. Appointment for six months, with salary at the rate of £200 a year, with board, residence, and laundry. Candidates are desired to send applications at once, stating age, experience, and qualifications, with copies of testimonials.

P. M. MACCOLL,
House Governor & Secretary.

Essex County Hospital,

COLCHESTER. (160 Beds.)

Wanted immediately, ASSISTANT HOUSE SURGEON and REGISTRAR (male). Salary £120, with board, washing, and residence. Medical and Surgical qualifications required.

Applications, with three recent testimonials, to be sent on or before Friday, May 17th, to—

ALFRED G. BUCK, Secretary.

Leeds Public Dispensary.

Wanted, JUNIOR RESIDENT MEDICAL OFFICER. Salary £150 per annum, with board, residence, and four shillings weekly for laundry. Separate sitting room. Applications, with copies of three recent testimonials, to be addressed to the Secretary of the Faculty, Public Dispensary, North Street, Leeds.

Southport (General) Infirmary.

(120 Beds.)

(Special Departments for Eye, Ear, Nose and Throat, X-rays, Massage, Sunlight, V.D., etc.).

Wanted, a JUNIOR HOUSE SURGEON, male, unmarried. Must be doubly qualified and registered. Salary at the rate of £100 per annum, with residence, board, and washing, and additional salary of £50 per annum for services rendered in the Venereal Diseases Department. Duties to commence on June 1st.

Applications, stating age, nationality, and experience, with copies of testimonials, to be sent by May 18th to Mr. J. H. SHAW, Secretary, Infirmary Office, Pilkington Road, Southport.

North Staffordshire Royal

INFIRMARY, STOKE-ON-TRENT.
(350 Beds.)

The General [illegible] for the post of [illegible] Salary £125 p[illegible] and laundry. [illegible] period of two[illegible]

Applications to be sent to the undersigned immediately, together with copies of two or three recent testimonials. Preference will be given to candidates having had previous Hospital experience.

There are six Residents (2 Medical, 4 Surgical).

W. STEVENSON,
Secretary and House Governor.

Swindon and North Wilts

VICTORIA HOSPITAL, SWINDON, WILTS.

Required, a RESIDENT MEDICAL OFFICER (male). Salary £100 per annum, with board, residence, and laundry. Appointment for a minimum of six months.

Candidates must be registered under the Medical Act. Applications, stating age, qualifications, and experience, accompanied by copies of three testimonials, should be sent to the Secretary at the Hospital on or before Wednesday, May 22nd.

Selected candidates will be required to appear before the Medical Committee for interview.

Victoria Hospital, Burnley.

Wanted, a HOUSE SURGEON (male). Appointment will be made for six months. Salary £125 per annum, with board, etc. Particulars of appointment can be had from the Hon. Secretary, to whom applications should be sent in immediately, endorsed "House Surgeon."

7, Grimshaw St., Burnley. F. A. HARGREAVES, Hon. Secretary.

N.B.—This Hospital is approved by the London University for the purpose of the M.B. and M.S. examinations.

Sussex Maternity and Women's

HOSPITAL. (38 Beds)

RESIDENT HOUSE SURGEON (male) required. Salary at the rate of £130 per annum. Board and washing found. Good experience in Midwifery and Gynæcology. No canvassing allowed. The successful candidate will be required to enter on his duties early in June.

Applications, in writing, accompanied by testimonials, should be sent to A. F. GRAVES, Clerk, 117, North Street, Brighton.

Miller General Hospital,

Greenwich Road, S.E.10.

OUT-PATIENT OFFICER (male and unmarried) required to see Medical and Surgical cases. Attendance daily (except Sunday) from 9 to 1; Tuesdays and Fridays 9 to 5. Salary £150 per annum, and lunch. The appointment is for six [illegible] age, nationality, [illegible] accompanied by c[illegible] recent testimonials, to be sent as soon as possible to the Secretary.

April 29th, 1929.

Darlington General Hospital.

Wanted, SENIOR HOUSE SURGEON, male, British, fully qualified. Salary £150 per annum, board, and residence. To take over duties in June. Applications, stating qualifications, experience, together with copies of two recent testimonials, to be addressed to me forthwith.

G. H. SHARPE, Honorary Secretary.

The Willesden General Hospital

(Incorporated), N.W.10.

Applications are invited from general practitioners for appointment as REGISTRARS. Several vacancies exist, and a copy of the regulations governing such appointments can be obtained from the Secretary, to whom detailed applications should be addressed not later than Monday, June 3rd.

April 30th, 1929.

Hull Royal Infirmary.

The Appointing Committee invite applications for the office of HONORARY PHYSICIAN to the Institution.

Applicants must have obtained a degree in Medicine at one of the Universities of the United Kingdom, be a Fellow or Member of the Royal College of Physicians of London, Edinburgh, or Ireland, and be duly registered under the Medical Acts.

Honorary Physicians are appointed for a period not exceeding 20 years, or until attaining 60 years of age, and in accordance with the terms of the Royal Charter.

Applicants are prohibited from personally canvassing, but may send copies of their applications and testimonials to the members of the Appointing Committee.

Applications should be addressed to the Chairman of the Managing Committee.

R. J. CARLESS,
May 6th, 1929. House Governor.

Hull Royal Infirmary.

Applications are invited for the post of CASUALTY HOUSE SURGEON (male, unmarried), at present vacant.

Applicants must be fully qualified. Period of appointment six months in the first instance. Salary at the rate of £130 per annum, with board and residence.

Applications, together with copies of testimonials, should be sent to the undersigned.

R. J. CARLESS,
April 23rd, 1929. House Governor.

City of London Maternity

HOSPITAL, City Road, E.C.1.

Applications are invited from fully qualified male candidates for the post of ASSISTANT RESIDENT MEDICAL OFFICER, vacant July 1st. Three months' appointment at £80 p.a., with board, lodging, and laundry. If satisfactory, the appointee becomes Senior after third month at £100 p.a.

Twenty copies of applications and of three testimonials should reach the undersigned by May 24th.

RALPH B. CANNINGS, Secretary.

Bradford Royal Infirmary.

Wanted for June 1st, HOUSE SURGEON (male). Candidates must be single and legally qualified. Salary £150 per annum, with board, residence, and washing. There are 215 beds and six resident officers.

Applications, stating age, qualifications, and previous experience (if any), with copies of recent testimonials, to be received by the undersigned not later than May 16th.

J. J. BARRON, Secretary-Supt.

Radcliffe Infirmary and County,

HOSPITAL, OXFORD.

Applications are invited for the post of HONORARY ASSISTANT PHYSICIAN to the Dermatological Department of the above Hospital.

Twenty-five copies of applications and testimonials, which will be forwarded to members of the electing Committee, must be sent to the undersigned, from whom further particulars may be obtained, not later than Monday, May 27th.

A. G. E. SANCTUARY, Administrator.

Mildmay Mission Hospital,

Austin Street, Bethnal Green, E.2.

[illegible] for the post of Specialist. One of [illegible] anxious that all in sympathy with [illegible] spital.

Applications, stating qualifications, accompanied by testimonials, to be sent as soon as possible to the Medical Superintendent.

St. John's Hospital, Lewisham,

S.E.13.

There is a vacancy for a SENIOR RESIDENT MEDICAL OFFICER. The Hospital has 103 beds and a large Out-patient Department. The successful applicant must be able to undertake major surgery. The [illegible] year at a salary of [illegible] be addressed to the [illegible] from whom further information may be obtained.

Birkenhead General Hospital,

(156 Beds.)

Applications are invited for the post of CASUALTY SURGEON (male) at once, salary £100, with board and residence, to take up duties immediately.

Applications, stating qualifications, experience, and nationality, with three copies of recent testimonials, to be sent to the Secretary-Superintendent as early as possible.

CAVENDISH NURSES (Male and Female)

Head Office: 54, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

A very convenient form of telephone message pad sent free on application to the Secretary.

Branches: *MANCHESTER*: 176, *Oxford Road.* *GLASGOW*: 28, *Windsor Terrace.* *DUBLIN*: 23, *Upper Baggot Street.*

TELEGRAMS: Tactear, London. Surgical, Glasgow. TELEPHONES: London, 1277 Welbeck. Glasgow, 477 Douglas.
Tactear, Manchester. Tactear, Dublin. Manchester, 3152 Ardwick. Dublin, 551 Ballsbridge.

Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling and all cases. Nurses reside on the premises, and are always ready for urgent calls Day and Night. Skilled *Masseuses, Masseurs, and good Valet attendants supplied.*

Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

Gravesend and North Kent HOSPITAL.

JUNIOR HOUSE SURGEON.

Applications are invited from fully qualified men for the above post.

The Hospital contains 72 beds and cots (extensions will bring this number up to 100 by July), and has a large Casualty, Out-patient, and Ophthalmic Department.

Owing to the unique situation of the Hospital at the Entrance to the Port of London, many accidents and interesting cases are treated, and the post affords an excellent opportunity for Surgical experience.

The appointment is now vacant, and will be for twelve months. Salary at following scale, with addition of board, lodging, and washing: £80 p.a. for first six months, £150 p.a. for second six months as Senior House Surgeon, payable in equal monthly instalments. There is also a possibility of the successful applicant being retained for a further six months as Resident Medical Officer at the rate of £200 p.a. Three weeks' holiday at end of first six months, and three weeks' holiday at end of second six months if appointed R.M.O., both on full pay.

The Hospital is fully equipped with modern X-ray and other apparatus.

Applications, with one copy of three recent testimonials, to be sent to the undersigned immediately.

C. E. CHAPMAN,
April 27th, 1929. Secretary.

Blackburn and East Lancashire ROYAL INFIRMARY.

FOURTH HOUSE SURGEON (male) required for Casualty Department, etc., at a salary of £130 per annum, with board, residence, laundry, etc., the appointment to be for six months.

The Hospital contains 240 beds, with X-ray, Massage, V.D., Eye, Ear, Nose, and Throat Departments, Pathological Laboratory, etc. There is no outside work.

Applications, with copies of testimonials, stating age, nationality, experience, etc, to be sent at once to the undersigned.

Royal Infirmary, Blackburn. NATHAN A. SMITH, Gen. Supt. & Secretary.

Prince of Wales' Hospital, CARDIFF.

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry.

Candidates, who must have had previous Hospital experience, and possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the Secretary.

Appointment is for six months, but candidates are eligible for re-appointment for a further period.

GILBERT D. SHEPHERD, Secretary.

City of London Hospital for DISEASES OF THE HEART AND LUNGS, Victoria Park, E.2.

The Committee of Management are desirous of making a further appointment of a PHYSICIAN to Out-patients. Candidates must be Fellows or Members of the Royal College of Physicians of London. An honorarium is attached to the post.

Applications, accompanied by copies of testimonials, should reach the Secretary at the Hospital not later than Wednesday, May 29th.

GEORGE WATTS, Secretary.

Accrington Victoria Hospital.

The Governing Body of this Hospital invite applications for the post of HOUSE SURGEON.

Candidates must be of the male sex and duly qualified and registered. Number of beds 50. Salary £150 per annum, with board and lodging.

Conditions of appointment and particulars of duties may be obtained from the undersigned, to whom application, with copies only of testimonials, should be sent on or before the 20th instant.

Town Hall, Accrington. W. H. WARHURST, Hon. Secretary.

Kensington, Fulham, & Chelsea GENERAL HOSPITAL.

HONORARY RADIOLOGIST.

The Board of Management invite applications from gentlemen engaged in the practice of Radiology. This Hospital is in the process of re-building and will be fully equipped from the Radiological point of view. There will eventually be 112 beds, which will include a number of private beds for paying patients. The Radiologist appointed will be expected to undertake the organisation of his Department and the ordering of suitable apparatus, etc., during the next 18 months, at the end of which time the clinical work will begin. Applications, accompanied by copies of three recent testimonials, should be forwarded to the undersigned not later than Monday, May 27th.

L. MAY NORTON, Superintendent.

Walsall General Hospital.

The Committee invite applications from men or women for the posts of:

HOUSE SURGEON. Salary £125 per annum.
JUNIOR HOUSE SURGEON. Salary £100 per annum.

Candidates, who must be registered under the Medical Acts, must have had experience in the administration of Anæsthetics, and produce three recent testimonials. The appointments will be for six months.

The Hospital contains 100 beds and is equipped in all Special Departments.

Applications must be received by the undersigned not later than the first post Tuesday, May 21st.

WALTER FRANCOMBE,
May 6th, 1929. Secretary.

The Royal Portsmouth Hospital.

Applications are invited for the posts of:

SENIOR HOUSE SURGEON (male). Salary at the rate of £175 per annum, with board, etc. Candidates must have held appointment as House Surgeon at a General Hospital.

HOUSE SURGEON (male). Salary at the rate of £130 per annum.

Both officers must be qualified and will be required to commence on June 1st. Six months' appointments, and eligible on completion of term for extension or other resident posts.

Applications, stating age, nationality, and full details, with copies of three recent testimonials, to be sent to the undersigned on or before May 21st, from whom all particulars can be obtained.

B. WAGSTAFF, Secretary.

Royal London Ophthalmic HOSPITAL

(Moorfields Eye Hospital), City Road, E.C.1.

PATHOLOGIST AND CURATOR.

Applications are invited for the office of Pathologist and Curator. Candidates must be registered medical practitioners, and must be prepared to begin the duties on July 1st.

Salary £200 a year, with lunch in the Hospital.

The Pathologist and Curator will be appointed for one year, and will be eligible for re-appointment yearly, but shall not hold this office for more than five years.

Applications, stating age and qualifications, with copies of testimonials, must be received by the undersigned not later than May 31st.

A. J. M. TARRANT,
May 3rd, 1929. Secretary.

Stroud General Hospital, STROUD, GLOS.

HOUSE SURGEON required to commence duty on May 20th. Salary £120 per annum, with board, lodging, and washing. The appointment is tenable for six months, but application may be made for an extension of this period. Candidates must be registered according to the provisions of the Medical Act.

Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the undersigned as soon as possible.

C. FORD SPENCER, Secretary.

The Royal Sea-Bathing Hospital, MARGATE (For Surgical Tuberculosis). (300 Beds.)

Applications are invited for the post of ASSISTANT MEDICAL SUPERINTENDENT at the Royal Sea-Bathing Hospital, Margate, at a salary of £500 a year, with furnished quarters, light, fuel, and laundry. The appointment is tenable for two years.

Candidates must be unmarried and have held a resident surgical appointment in a General Hospital. He should have had some experience of Pathology and Orthopædic Surgery. He will be required to take up his duty at the end of September.

Applications, with three recent testimonials, should be sent on or before May 31st to the R.S.B.H. Office, c/o A. NASH, Esq., Watergate House, York Buildings, Adelphi, W.C.2.

Royal Sea-Bathing Hospital, MARGATE (For Surgical Tuberculosis)

A Male HOUSE SURGEON is required to take up duty on June 1st next. The salary is at the rate of £100 per annum, with board, residence, attendance, and laundry.

Candidates for the post must be legally qualified and registered.

The appointment is for six months.

There are 300 beds for adults and children, which afford special opportunities for the study of Surgical Tuberculosis.

Applications, stating age and previous appointments, with copies of three testimonials, should be sent to the Secretary, R.S.B.H. Offices, 15, York Buildings, Adelphi, London, W.C.2.

North Staffordshire Royal INFIRMARY, STOKE-ON-TRENT. (350 Beds.)

The General Committee invite applications for the post of HOUSE SURGEON for Ophthalmic and Aural Departments. Salary £150 per annum, with board, residence, and laundry. The appointment will be for twelve months. Applications to be sent to the undersigned immediately, together with two or three copies of recent testimonials. Preference will be given to candidates having had previous Hospital experience in Ophthalmic and Aural Departments. There are six resident—two medical, four surgical.

North Staffs Royal Infirmary, Stoke-on-Trent. W. STEVENSON, Secretary and House Governor.

St. Bartholomew's Hospital.

Notice is hereby given that a meeting of the Election Committee will be held at St Bartholomew's Hospital on Tuesday, June 4th, at 4 o'clock in the afternoon, to elect a PHYSICIAN to the Children's Department to this Hospital.

Candidates, who must be Fellows or Members of the Royal College of Physicians of London, are required to lodge 50 copies of their applications and testimonials with the undersigned on or before Monday, May 20th.

THOMAS HAYES,
April 26th, 1929. Clerk to the Governors.

The Hospital for Epilepsy and PARALYSIS, Maida Vale, W.9.

Applications are invited for the post of MEDICAL REGISTRAR. They should be accompanied by copies of not more than three recent testimonials, and should reach the undersigned by May 22nd.

An honorarium of £100 is attached to the appointment, which is for one year, and further particulars can be obtained on application.

R. W. BURLEIGH,
Secretary and General Superintendent.

Taunton and Somerset Hospital TAUNTON. (104 Beds.)

JUNIOR HOUSE MEDICAL OFFICER (male) required in June. The appointment, which will be for six calendar months, is approved by the University of London for the purposes of the M.D. examination. Salary at the rate of £100 per annum, with board, residence, and laundry. House Medical Officers retain certain fees.

Applications, with testimonials, to—
F. J. J. STACEY, Secretary.

The . . . General Hospital,
BIRMINGHAM.

The Board proposes to appoint Two RESIDENT SURGICAL REGISTRARS, and applications are invited for the posts.

Each Registrar will be attached to two Surgical Units and to either the Gynæcological or Throat and Ear Department. The salary will be £100—£20—£140.

The appointment will be made for one year in the first instance, and be subject to renewal for two further years. Candidates must have had previous surgical experience.

Applications, giving full details of qualifications and experience, and accompanied by testimonials, should reach the undersigned by May 27th.

A. H. LEANEY, House Governor.

North Riding Infirmary,
MIDDLESBROUGH.
General Hospital. 150 Beds.)

SENIOR HOUSE SURGEON (gentleman) wanted to take up duties June 1st. Salary £200 per annum, with board, residence, and laundry. As the present Junior House Surgeon is an applicant for the Senior post, candidates should state if they are willing to accept the post of Junior House Surgeon, the salary of which is £150 p.a., with board, residence, and laundry.

Applications, with three recent testimonials (copies), stating age, qualifications, experience, and nationality, must reach the undersigned not later than May 15th.

CHARLES POSTGATE,
May 3rd, 1929. Secretary-Supt.

Nottingham Children's Hospital.

Applications are invited for the post of RESIDENT HOUSE SURGEON (woman). Candidates must have held a resident Hospital appointment. Experience in the administration of Anæsthetics essential. The salary will be at the rate of £150 per annum, with apartments, board, and laundry. The appointment will commence on June 1st.

Applications, together with testimonials, stating age, qualifications, and experience, to be sent to F. PRAGNELL, the Honorary Secretary, 1, King John's Chambers, Bridlesmith Gate, Nottingham, by May 16th. Selected candidates will be required to attend at the Hospital for a personal interview on May 28th, when the appointment will be made.

April 29th, 1929.

St. Peter's Hospital for Stone,
Henrietta Street, Covent Garden, W.C.2.

A Pathological Department is being established and the services of a part-time CLINICAL PATHOLOGIST are required to organise it, and remain in charge.

Hours of attendance necessary and detailed rules are not yet defined, but it is proposed to pay a commencing salary at the rate of £250 per annum

Applications for this appointment, which should be accompanied by eight copies of not more than three recent testimonials, will be received by the undersigned not later than Tuesday, May 21st

BEECHEY ROGERS, Secretary.

New Sussex Hospital for Women
AND CHILDREN. (50 Beds.)
WINDLESHAM ROAD, BRIGHTON.

Applications are invited from fully qualified medical women for the following posts:

(1) HOUSE SURGEON. Previous resident appointment essential.

(2) HOUSE PHYSICIAN, with experience in Clinical Pathology.

Honorarium for each £50 per annum.

Duties to begin fourth week in May.

Applications, with copies of three recent testimonials, should reach the Secretary on or before May 18th.

Bristol Royal Infirmary.

Owing to sickness a vacancy occurs for a HOUSE SURGEON for the period ending August 31st next. Salary at the rate of £80 per annum, together with board, apartments, and laundry.

Applications, together with copies of three recent testimonials, to be sent to the undersigned.

ELLIS G. SMITH, F.C.I.S.,
Secretary & House Governor.

Manchester Royal Eye Hospital.

Two JUNIOR HOUSE SURGEONS required. Salary £120 per annum, with residence, board, etc. Applications (with copies of testimonials), endorsed "House Surgeon," to be addressed to the Chairman of the Board of Management not later than May 15th.

H. R. NORTH, Secretary.

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Telephone: Mayfair 5420.
Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165

The Gordon Hospital for Rectal
DISEASES, Vauxhall Bridge Rd., S.W.1.

HONORARY ASSISTANT SURGEON.

The Committee of Management invite applications for the post of Hon. Assistant Surgeon. Candidates must be Fellows of the Royal College of Surgeons of England.

Particulars of duties may be obtained from the undersigned, to whom applications, with copies of three recent testimonials, should be delivered not later than May 15th.

CLEMENT COBBOLD, Secretary.

The Gordon Hospital for Rectal
DISEASES, Vauxhall Bridge Rd., S.W.1.

Applications are invited from fully qualified medical practitioners for the post of HOUSE SURGEON (male or female). Salary £75 per annum, with board, residence, and laundry. Applications, stating age, nationality, and qualifications, with copies of three recent testimonials, should be made in writing to the Secretary by mid-day, May 15th. Duties to commence June 1st. (Candidates are not required to call on the Honorary Surgical Staff.)

CLEMENT COBBOLD, Secretary.

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Western Suburb.—About £1,200 p.a. Non-panel, non-dispensing. Mids. 5 gns up. Visits 5/- up. Good house and garden.—No. 8445.

Home Counties. — Country PRACTICE. About £1,000 p.a. Panel about 400. Appts. over £50 p.a. Visits 5/6 to 10/6. House, 5 bed., etc. Extensive grounds.—No. 8408.

Leicestershire.—About £700 p.a. Panel 500. Few mids. Visits 4/6. Good house, 4 bed., etc., to rent. Separate surgery. Premium £950.—No. 8469.

Birmingham.—About £2,300 p.a. Middle and working-class. Panel 1,700. Mids. from 2 gns. Visits 5/6 up. Good house, 4 beds., etc. Large garden. Two branches. Suitable for two.—No. 8466.

N. W. Coast Town.—Over £3,000 p.a. Old-established. Panel over 1,500. Usual fees. Medium house to rent.—No. 8465.

Staffs.—About £1,200 p.a. Good-class non-panel PRACTICE. Visits 5/- up. Good house available.—No. 8464.

Wilts. — Unopp. — About £800 p.a. Appts. about £100 p.a. Panel about 600. Visits 5/- up. Mids. 3 to 10 gns. House, 4 bed., etc., nice garden, to rent.—No. 8447.

Kent. — £1,500 share in non-panel, non-dispensing Practice. Appts. about £1,200 p.a. Visits 5/- to 7/-. Mids. 5 to 10 gns. Large house to rent.—No. 8460.

Glos.—Unopp. — About £1,270 p.a. Mids. 2 to 8 gns. Visits 3/6 to 21/-. Panel 1,100. House, 3 bed, etc., large garden. House and Practice £2,500.—No. 8455.

Eastern Suburb.—About £1,100 p.a. Panel about £250. Visits 4/-. House, 5 bed., etc.—No. 8458.

South Coast. — Half Share of about £900 p.a. Panel 900. Visits 5/6 up. Premium £750 or offer.—No. 8456.

Co. Durham. — Half Share of about £2,800 p.a. Panel 2,600. Appts. £300 p.a. Mids. from 30/-. Visits 2/6 to 7/6. House, 5 bed., etc.—No. 8453.

N. Wales Coast.—About £1,750 p.a. Panel and appts. about £400 p.a. Mids. 2 to 5 gns Visits 3/6 to 31/6. House, 4 bed., etc. Separate surgery.—No. 8451.

London Suburb. — About £700 p.a. General mixed PRACTICE. Good house available.—No. 8450.

Kent. — Average £1,500 p.a. Mids. 2 gns. up. Visits 3/6 to 7/6. Panel over 1,300. Large house and garden to rent.—No. 8446.

Home Counties.—Aver. £2,800 p.a. *Up to 2/5 share for sale, short Assistancy*, possible early succession. Appts. £90 p.a. Small panel. Visits 3/6 up. Mids. 2 gns. up. House, 5 bed., etc, to rent.—No. 8441.

Lincolnshire Coast. — Average £2,300 p.a. Old-estab. middle and working-class. Panel about £350 p.a. Appts. over £100 p.a. Mids. 1½ to 3 gns. Visits 4/- to 10/6. Choice of houses to rent.—No. 8439.

Eastern Counties.—Share about £700 p.a. Visits 5/- up. Panel and appts. over £900 p.a. Mids. 2 gns. up.—No. 8434.

Lancs. Coast.—About £3,000 p.a. 1/3 to 2/5 share. Appts. over £500 p.a. Visits 5/- and 7/6. Panel 450. Scope for surgery. House to rent.—No 8429.

Kent.—Country Practice.—About £1,030 p.a. Old-estab. Visits 5/- up. Panel nearly 400. Appts. £55 p.a. Good house, with 6 bed., etc.—No. 8420.

SPECIAL NOTICE.

FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants prepared to pay part of purchase money down and balance by instalments over 7 years (on the security of a Life and Sickness Policy). Full particulars on application to Mr. Percival Turner.

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Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads:—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence. Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

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Assistants and Locumtenents can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out.

RESIDENT PATIENTS.

Medical Men wishing to receive Resident Patients should enrol their names on the books of the British Medical Bureau. A large number of Patients are placed yearly through this medium.

ACCOUNTANCY.

The British Medical Bureau has its own staff of fully qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Books & Accounts, etc.

Practices and Partnerships for Disposal. Full particulars sent free.

1. SURREY.—Partnership in non-dispensing Practice £3,600 p.a. in first-rate residential town. Panel 3,800. House (6 bedrooms) to rent. Two-fifths share at 2 years' purchase. Partner must be experienced, aged 30/40, and be a good Surgeon.

2. HOME COUNTIES. — Country Practice about £425, in beautiful part about 40 miles from London. Small panel. House and about 50 acres farm land. Price, Practice, House, Farm, etc., £4,250.

3. HUNTS. — Steadily increasing Country PRACTICE about £1,200 in attractive agricultural district. Panel 880. Beautiful house (5 bedrooms), garden, and paddock, to rent. Premium £1,850, to include drugs, etc.

4. YORKSHIRE COAST. — Practice averaging £1,850 p.a. (some Eye work) in pleasant seaside town. Panel 80. Modern double-fronted house (6 bedrooms) for sale. Premium £2,400.

5. N.E. COAST.—Partnership in sound Practice in rapidly growing and attractive seaside town. Panel about 700. Suitable house available. Share of about £1,400 for disposal at 2 years' purchase. Partner aged about 30 and well qualified, who has held resident Hospital appointments.

6. NEAR NEWCASTLE. — Partnership in old-established panel and middle-class Practice of £4,000 p.a. House available. Three-tenths share at 2 years' purchase. Scottish Graduate who has held Hospital appointments preferred.

7. S.W. ENGLAND. — Steadily increasing PRACTICE of £1,600 in seaport town. Panel 1,100. Small house to rent. Unlimited scope. Premium £3,400.

8. LONDON, W. — Practice about £1,200, largely from the panel. Two Surgeries. Premium £2,500 cash.

9. LONDON S.E. — Practice about £800 in populous district. Panel 800. No midwifery. House (3 bedrooms) to rent. Premium 1½ years' purchase.

10 SUSSEX.—Partnership in Country Practice, £2,750, in residential district (appointments and panel about £1,000). Good house (5 bedrooms and 3 attics) with large garden. To rent. One-half share at 2 years' purchase.

11 BUCKINGHAMSHIRE.—Small Country PRACTICE over £300 p.a. Panel 250. Very nice attractive house (8 bedrooms), garden and garage, for sale. Prem., Practice, £300.

12 LONDON, W.—Steadily increasing PRACTICE in rapidly developing Western District. Receipts 1928, £1,145. Panel 750. House (5 bedrooms), with nice garden, for sale. Ample scope. Premium £1,650.

13 LEEDS. — Practice £1,800 p.a. Panel 1,400. House (3 bedrooms) for sale or rent. Premium £2,600, to include drugs, etc.

14 SOUTH AFRICA.—Old-established PRACTICE in one of the pleasantest towns, with beautiful climate, in the Cape Province. Receipts average £2,900 p.a. House (4 bedrooms) to rent. Purchaser should be able to do major surgery. Premium £2,500.

15 SOUTH AFRICA.—Well-established PRACTICE, £1,200 p.a., in the Orange Free State. House in best position in centre of town. Rent £10 per month.

16 SOUTH OF ENGLAND.—Partnership in Practice £2,280 in first-rate County town. Small panel. Well-built house (6 bedrooms) to rent. Premium one-half share 2 years' purchase.

17 NORTH DEVON.—Country Practice £775 p.a. in a most beautiful part. Panel 340. Detached house (7 bed and dressing rooms), with old-fashioned garden, for sale. Scope. Premium 1½ years' purchase.

18 NORTH-EAST COAST. — Ophthalmic PRACTICE of about £400 p.a., capable of increase, in favourite watering-place. Large house in best part, which need not be taken. Prospects of Hospital appointment. Premium £500.

19 MIDLANDS.—Non-dispensing Practice in prosperous town. No panel, clubs, or midwifery. Receipts 1928, £1,200, including small amount from Electro-therapy. House (5 bedrooms) for sale. Scope. Prem. £1,500, to include apparatus.

20 ESSEX.—Practice averaging £1,216 p.a. in outlying district, 30 minutes from London. Panel 550. Nice detached corner house (5 bedrooms) to be sold or let. Premium 1½ years' purchase.

21 LONDON, W.—Middle-class Practice £730 p.a. in residential Western Suburb. No panel. House, with 5 bedrooms and garden, to rent. Premium £1,100.

22 DEATH VACANCY.—London, S.W.—PRACTICE about £200 p.a., with good scope for increase. Panel 30. House, with 3 bedrooms for sale.

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Practices and Partnerships for Disposal (continued).

23 GLOUCESTERSHIRE. — Partnership in Country Practice about £2,300 p.a. Panel nearly 1,000. Applicant should be English or Scotch, aged 28 to 30, and have held Hospital appointment. One-third share at 2 years' purchase, after preliminary assistantship.

24 YORKSHIRE (E.R.). — Partnership in Practice over £3,250 p.a. in manufacturing town. Panel over 5,100. House (4 bedrooms) to rent. One-third share at 1½ years' purchase.

25 SHEFFIELD. — Non-dispensing Practice about £800. No panel. Conveniently situated house (6 bedrooms). Premium, Practice and house, £2,000.

26 LONDON, S.W.—Practice of £550 p.a. in pleasant outlying suburban district. Panel 417. House, with 4 bedrooms, to rent. Premium £550.

27 DEATH VACANCY.—NORTHUMBERLAND. In pleasantly situated country town, Panel 70 (not encouraged). Eight-roomed house, with garden, to be let. Good schools.

28 EAST COAST. — Partnership in Practice over £2,000 p.a. in small rapidly growing popular watering-place. Panel 700. Partner should be aged 25 to 30, single, with English qualifications, and have held Hospital appointment. Preliminary assistantship. One-third share at 2 years' purchase.

29 LANCASHIRE.—Practice of about £2,000 in semi-rural district, easy distance of several good towns. Panel returns about £520 p.a. Nice house (6 bedrooms), with garage and garden.

30 MONMOUTHSHIRE. — Practice between £1,300 and £1,500 (£1,100 from panel and contract work) in progressive area. Modern six-roomed house, with garden, to rent. Small cottage hospital. Premium one year's purchase, part by instalments if desired.

31 LONDON, E. — Practice over £700 in populous district. Panel nearly 500, rapidly increasing. Shop-fronted house for sale or rent. Premium 1½ years' purchase.

32 HOME COUNTIES.—Partnership in Practice between £4,000 and £5,000 p.a. in first-rate residential town. Panel 1,900. One-fourth share at 2 years' purchase.

33 S. WALES.—Better-class Practice, nearly £2,000 p.a., in important and rapidly growing town. Panel 500. Large house, in own grounds, to rent. Scope for increase. Good Hospital and scope for major Surgery.

34 N. DEVON. — Partner required (after preliminary assistantship) in Practice worth £3,000 p.a. in first-rate country town. Panel over 2,100. Well-equipped Hospital. One-third share to suitable man at 2 years' purchase.

35 N. WALES.—Very old-established, £1,346 p.a. in small town. Panel 716. House (6 bed and dressing rooms) to rent. Premium 1½ years' purchase.

36 MIDLANDS.—Partnership in Practice £3,800 [illegible] inty town. House (5/6 bedroom [illegible] share at 2 years' purchase. [illegible] ree.

37 L[illegible] creasing Cash and Panel PRACTICE. Cash receipts last year £715. Panel 510. Shop-fronted Surgery. Rent £53. Premium £800.

38 DEATH VACANCY. — Northants. — Country PRACTICE of £1,200 p.a. Panel between 700/800.

39 HOME COUNTIES. — Partnership in Practice about £2,800 p.a. in good town about 50 miles from London. Practically no panel and very little midwifery. Suitable house to rent or purchase. Partner should be experienced, and have held Hospital appointments. One-third share at 2 years' purchase after preliminary assistantship.

40 EAST ANGLIA.—Country Practice about £1,470 p.a., easy reach of important town. Panel about 1,000. Nice house (10 bed and dressing rooms), with electric light, etc., for sale. Premium 1¼ years' purchase.

41 SOUTH COAST.—Non-dispensing Practice over £1,800 p.a. in residential town. No panel.

42 GLOUCESTERSHIRE. — Partnership in Country Practice about £3,600 p.a. Applicant should be aged 35 to 45 and have held resident Hospital appointments. Share of £1,000 at first at 2 years' purchase.

43 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. [illegible]o panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

44 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. Panel over 1,400. Partner should be good at midwifery. Premium one-half share 2 years' purchase.

45 LONDON, E.—Partnership in exceptionally old-established Practice averaging over £3,500 p.a. Good fees and appointments. Two-fifths share for disposal at 1½ years' purchase, or one-third could be purchased at first, part by instalments. Small house may be bought or rented at a moderate figure.

46 LIVERPOOL. — Cash and Panel Practice about £865 [illegible] anel over 1,200. Large house [illegible] m. 1½ yrs.' pur.

47 YOR[illegible] rtnership in Practice near [illegible] mel 5,000. One-half share at [illegible]

48 S.E. [illegible] required in Practice £5,750 p.a. in favourite summer resort. Panel 3,976. Share up to one-third at 2 years' purchase.

49 N. WALES.—Increasing Country PRACTICE about £1,000 in growing district, with good prospects.

50 S. MIDLANDS.—Practice over £1,700 p.a. in country town 100 miles from London. No panel, appointments, or midwifery. House (5 bedrooms), with garage and garden, for sale. Premium—Practice 1½ years' purchase (or half share with view to succession).

51 MIDLANDS. — Partnership in mixed Practice between £3,600 and £3,700 p.a. in suburb of Cathedral City. Panel over 2,200. Partner should be aged about 30, with Hospital experience, and able to do Surgery. Premium one-half share 2 years' purchase.

52 SOUTH OF ENGLAND.—Surgical PARTNER required (not over 36) with University degree and F.R.C.S. England, in sound Practice in first-rate town with good Hospital. Share of £1,500 p.a. at 2 years' purchase.

53 MIDLANDS. — Partnership in Practice £3,575 p.a. in attractive town. Panel 1,000. Well-situated house (5 bedrooms) to rent. Partner must be well qualified, preferably a Surgeon who would have chance of Hospital appointment. One half share.

54 SOUTH COAST.—Practice about £900 p.a. (including appointments about £155) in favourite watering-place. No panel or midwifery. Suitable house or flat. Premium £1,500.

55 S. WALES.—Non-dispensing Practice in large seaport town. Receipts for past 3 years averaged £1,543 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,500.

56 KENT. — Practice averaging £1,030 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, practice, £1,500.

57 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first-rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. Premium one-third share 2 years' purchase.

58 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

59 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 13 acres of land for sale. Premium, practice, 1½ years' purchase.

60 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. One-third to two-fifths share at 2 yrs.' pur.

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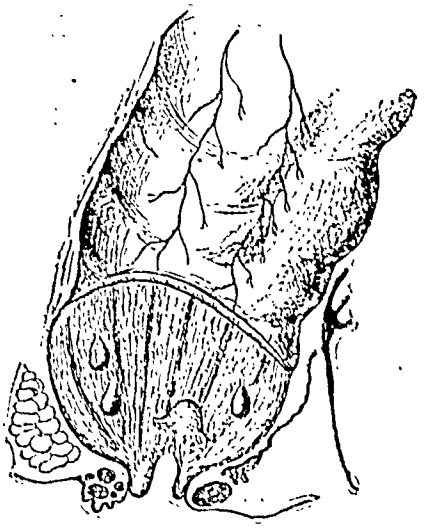

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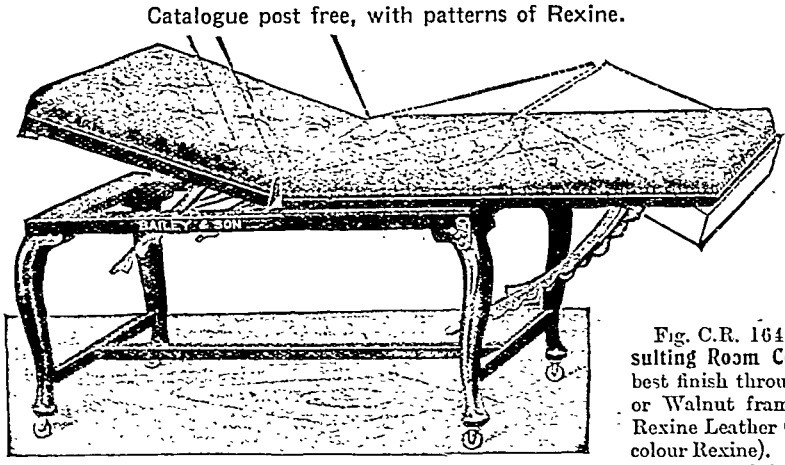

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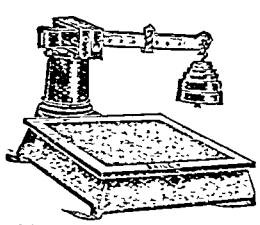

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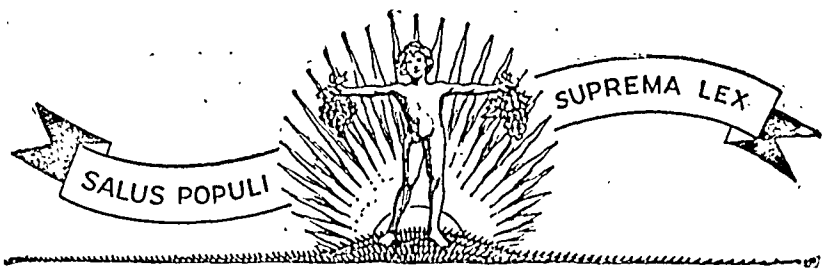

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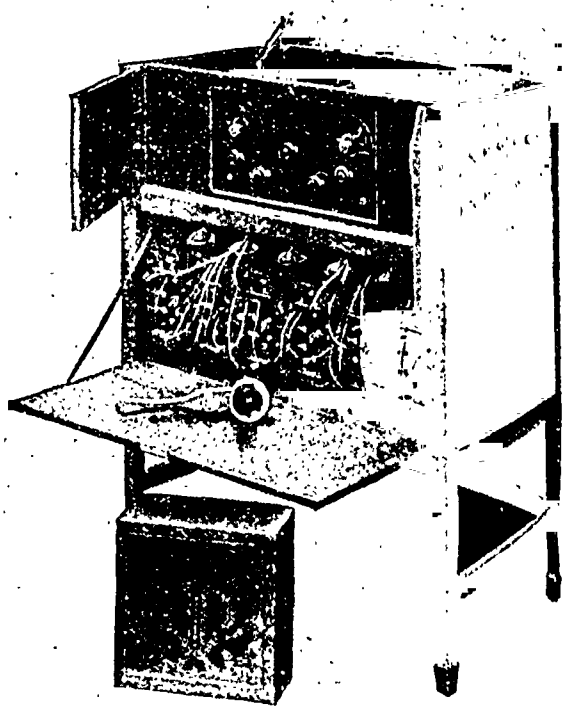

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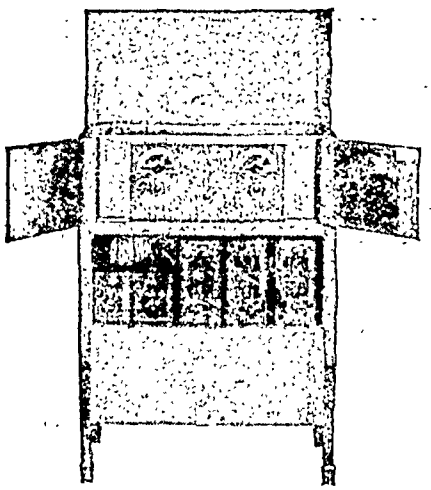

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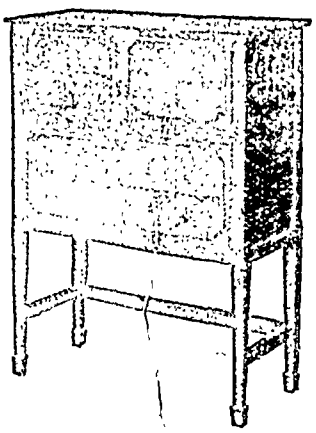

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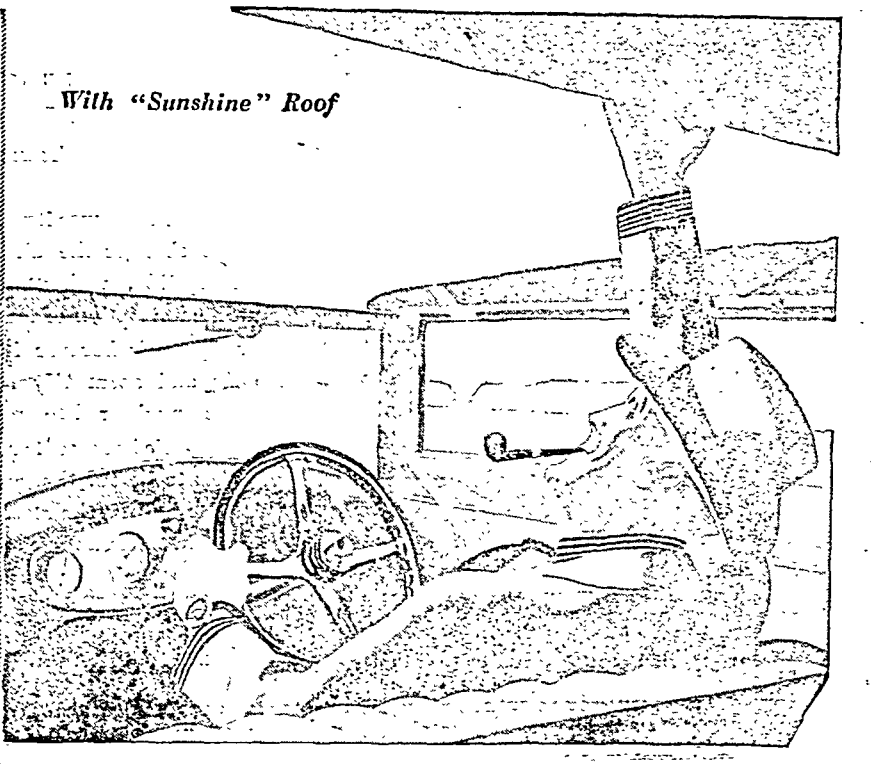

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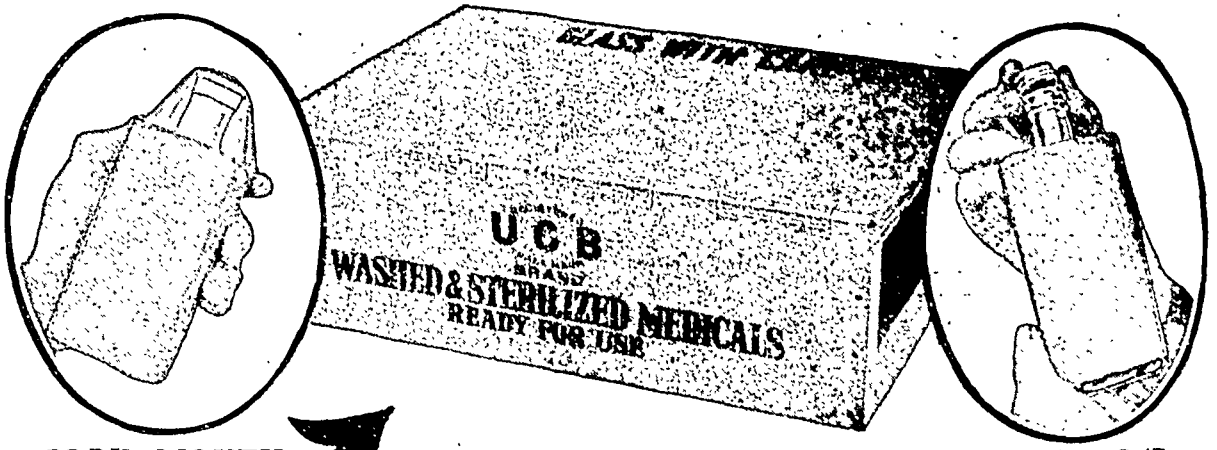

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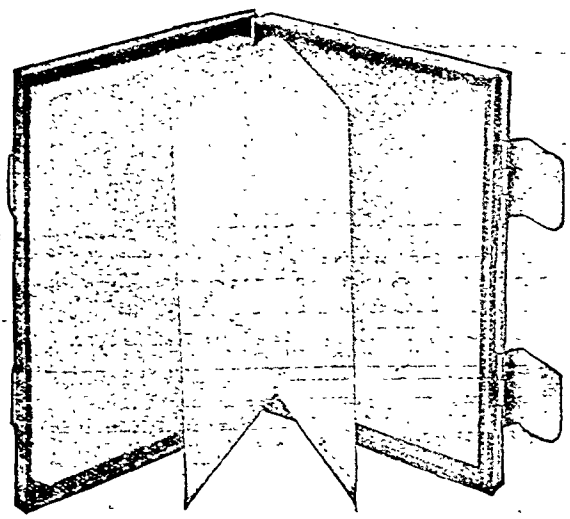

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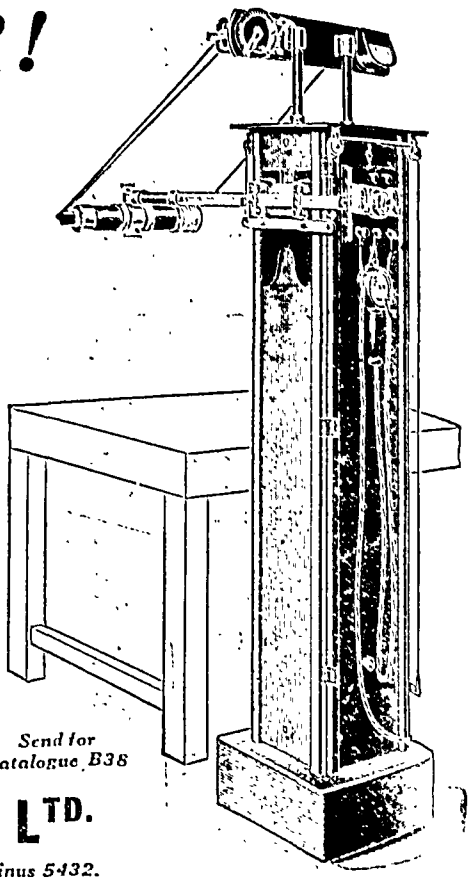

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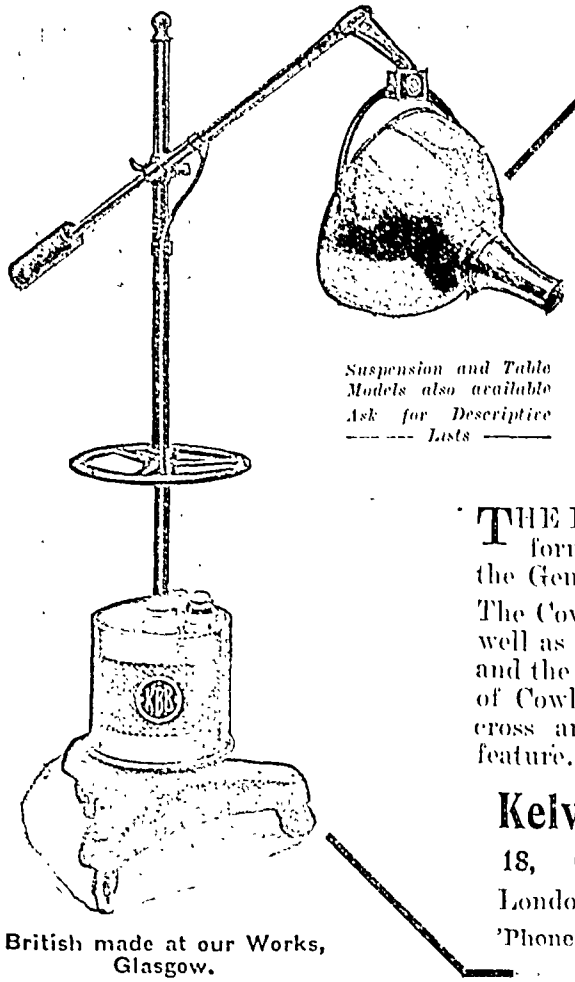

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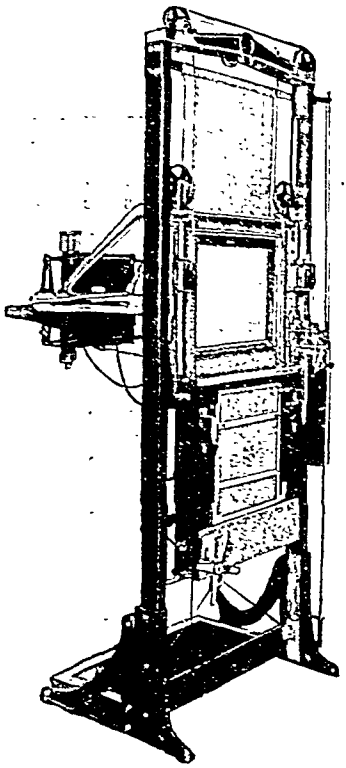

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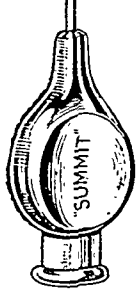

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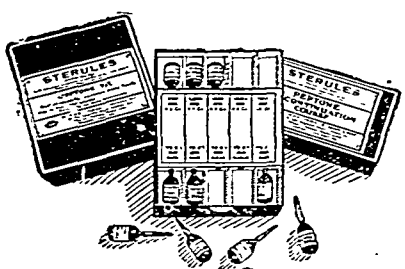

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In the constipated colon, putrefactive bacteria produce highly active poisons such as skatol, indol, etc. These enter the blood, lower its resistance, and thus weaken all fluid secretions such as the saliva. No wonder 85 per cent. of all sick people have coated tongues. Constipation is almost universal among the sick.

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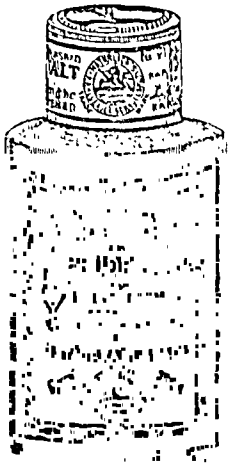

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Extractum Gastricum is put up in 6-ounce unlettered bottles without literature.

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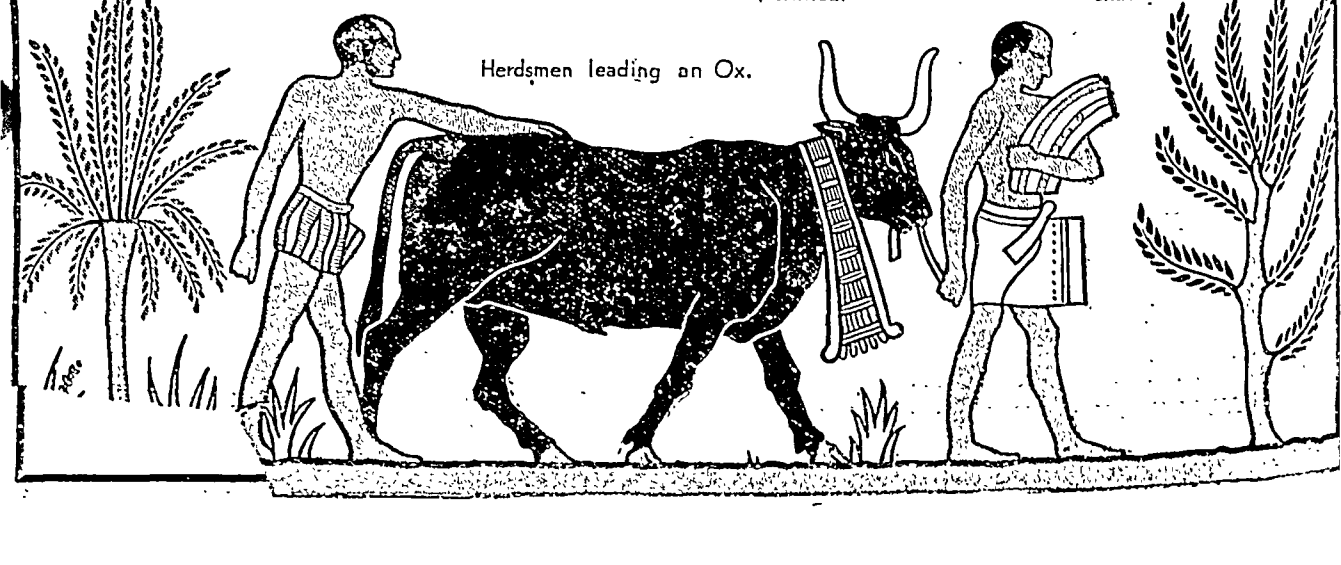

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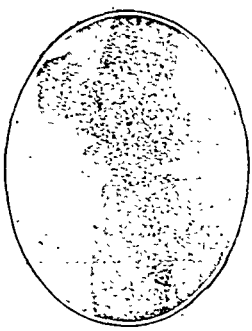

Radiograph of Knee-joint in Rheumatoid Arthritis

A fibrolytic agent which gives really satisfactory results in a large percentage of cases must appeal to the general practitioner who has constantly to deal with difficult and intractable cases of chronic rheumatism and allied conditions. This can be justly claimed for 'Iodolysin' which has a striking effect in Rheumatoid Arthritis; and it is also employed with advantage for the removal of all forms of pathological fibrous tissue.

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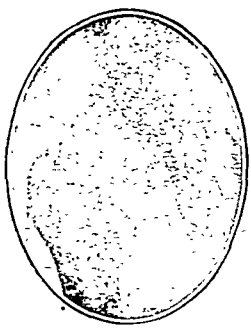
Ready Solubility in water. Well tolerated. Absence of local reaction on injection

'Iodolysin' is supplied in ampoules for hypodermic injection; in capsules for oral administration, or as an ointment or paint for local application.



Radiograph of Hip-joint in Rheumatoid Arthritis

Free Clinical Sample and Literature on request

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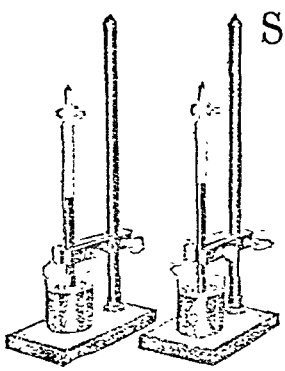
Stable Hydrogen Peroxide



A B

Showing volumes of Oxygen liberated by (A) "Dioxogen," and (B) the same quantity of a fresh sample of ordinary Hydrogen Peroxide (10 volumes).

The merits of nascent oxygen as an antiseptic are too well known to require reiteration. The difficulty lies in obtaining a convenient and reliable source and, while Hydrogen Peroxide is most convenient in use, the unreliability, both in strength and in keeping properties, of the ordinary commercial product seriously limits its utility in practice.

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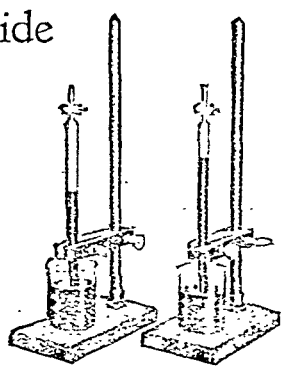
Descriptive literature and a clinical trial sample will be sent post free on application.

Sole Distributors:



A B

Showing volumes of Oxygen liberated by the same quantity of (A) "Dioxogen" and (B) Hydrogen Peroxide (10 volumes), both having been kept for the same period.

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Its Prevention and Relief

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Sold in original sealed cartons containing a—

Mistol
(Registered Trade Mark)

Two-ounce Bottle and Mistol Dropper.

Made by Nujol Laboratories

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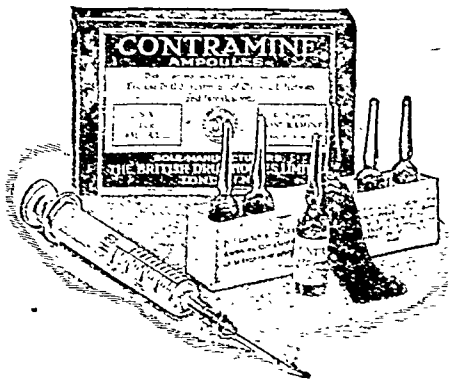

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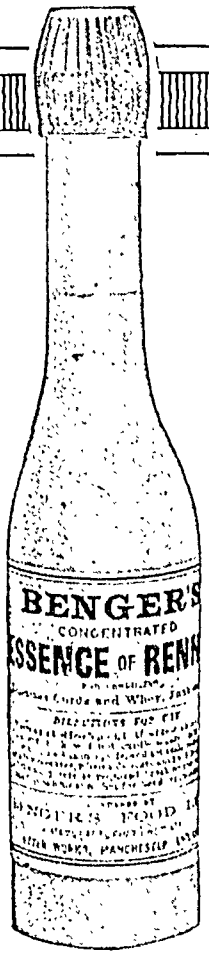

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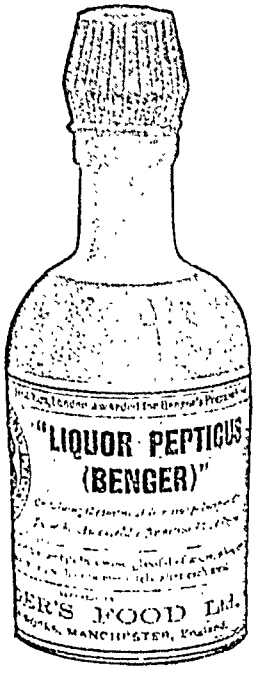

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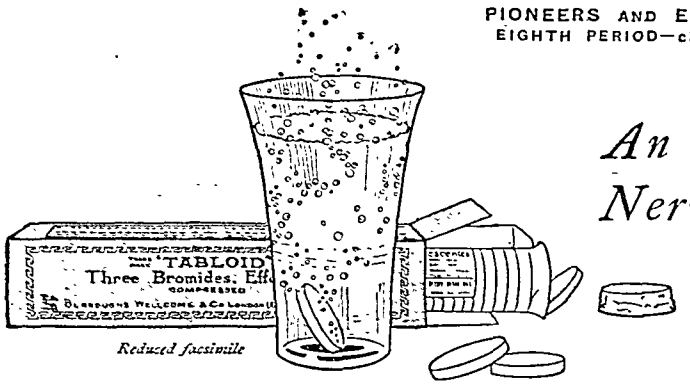

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COIN-LEGEND AND ROCK INSCRIPTION IN BRĀHMĪ, THE PARENT OF THE MODERN ALPHABETS OF INDIA: EXAMPLES OF THE EARLIEST EXTANT RECORDS OF INDIA.—The multitudinous forms of writing used in India down to the present time can be traced back to one original script—the Brahmi—specimens of which are here illustrated. This was evolved, by Aryan pioneers of civilisation settled in India, from Phœnician characters, such as those seen on the Moabite Stone. These were introduced, probably by Hindu merchants by way of Mesopotamia, about 800 B.C., and were then employed by ancient Indian scholars in writing their own tongue. For this purpose, they evolved from them an alphabetical system to suit the Sanskrit language.

The Brahmi script and its offspring are, therefore, ultimately derived from the same source as our own European characters. While we possess Mesopotamian inscriptions dated to earlier than the third millennium B.C. and Egyptian inscriptions going back perhaps to 5500 B.C., the earliest known among such records in India belongs to the middle of the third century B.C. Nevertheless, there seems no doubt that the art of writing was widely diffused there from about the seventh century B.C., for we learn from Greek sources that the Hindus wrote letters upon some sort of closely-woven tissue—a very perishable material. In addition to Brahmi a script known as Kharoshthi, was used in parts of early India, but it died out leaving no descendants.

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An Address on THE WOMAN DAMAGED BY CHILD-BEARING.*

BY

JAMES YOUNG, D.S.O., M.D., F.R.C.S.ED.,

PHYSICIAN, EDINBURGH ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL; GYNAECOLOGIST, ROYAL INFIRMARY, EDINBURGH.

THE subject of this address is the case which we all see frequently—*the woman who has never enjoyed* good health since the *birth* of her children, and, more particularly, since the *birth of her last* child. In such cases the last *pregnancy or birth* is commonly responsible, because, as we know, the *factors* that make for the chronic ill health are frequently *those* factors which, at the same time, make *for infertility*. When a woman gives a history, for example, of one or more pregnancies with a normal spacing in time followed by a lengthened interval of ill health and sterility, the inference is very strong that we are dealing with *some pelvic* damage sustained at the last pregnancy of *the series*. Where this sequence follows the birth of one child we have that *not infrequent* source of marital anxiety, the one-child *marriage*. It is true that in some of these cases there may be some general medical disability—such, for example, as heart or kidney disease; or there may, *of course*, be intentional prevention of pregnancy—*but in the great majority* of cases the source of the ill *health-sterility* complex is to be looked for in a local damage of the pelvic functions.

This morbidity of childbirth is one of the most important problems that face the profession and the community at the present time. It is responsible for much individual, family, and economic distress, and to those of us who are attached to a hospital this army of shattered lives that swell the out-patient attendances and that crowd our already large waiting lists has become a problem of very serious concern. We know that each year in Great Britain about 4,000 women die during pregnancy and in childbed. We have no certain knowledge of the numbers who escape death with their health undermined from the same causes. It is probably understating the case to say that, for every woman who dies, at least ten live with their systems scarred, giving on a moderate estimate about 40,000 annually who pass on to recruit this army of ill health, and who later in many cases fall out by the way from disease whose origins in the fact of childbirth are often very imperfectly or not at all revealed on the death certificate.

In the majority of such cases there is obvious damage of the pelvic organs, and, in general terms, the lesions found fall under one or other of two heads: (1) mechanical, (2) infective. For reasons that are not far to seek we often find that the two types of lesion are combined, for lacerations of the soft structures of the pelvis, which end, it may be, in displacements or cicatricial immobilization of the organs, constitute at the time of birth the most important predisposing cause of infection. It thus happens that in such women some of the symptoms are more properly to be ascribed to an alteration in the statics of the pelvis, whilst other symptoms spring from the superadded infection. At the same time we have to note at the very beginning of our survey that, whilst a purely pelvic pathology may in some instances provide a complete explanation of the impaired health, in many more this is by no means the case. In no class of chronic sufferer is there greater need for the broad outlook in diagnosis than in the woman damaged by child-bearing, for the lesions to which she has been exposed are pre-eminently of that kind that tend to spread their effects into both adjacent and remote parts of the body. A vaginal prolapse, for example, may lead to diseases of the urinary, the gastro-intestinal, and the nervous systems; a cervical infection may not only cause a uterine or tubo-ovarian inflammation or be the factor behind a persisting urinary sepsis, but it may be responsible for chronic rheumatism or even progressive heart disease. Again, chronic ill health dating from childbed may be a compound of pelvic infection and disease of the gall-bladder with gall-stones—a condition in the causation of which child-bearing and its lesions play an important part.

These few examples suffice to point the lesson that to deal successfully with such cases we must cultivate a comprehensive method of approach. There is no class of patient in whom shoddiness of diagnosis and treatment is more disastrously easy, with its attendant disappointment to patient and doctor. Speaking as a gynaecologist and a specialist, whose limited contact with my patients has often made me acutely conscious of the difficulty in pursuing that ideal approach which I am urging, I would earnestly remind my general practitioner listeners of the privileged position they occupy for the study of these problems with that comprehensiveness which they demand. In the hope that I may help to this end I have in this lecture traced the main varied features of the subject, emphasizing those aspects which experience has shown to be most important.

DISPLACEMENTS AS A CAUSE OF GENERAL ILL HEALTH.

The most common *mechanical* lesion is undoubtedly that group of conditions which fall under the general term of *prolapse, and which* are caused by a stretching or tearing beyond a recoverable degree of the lower margins of the levator ani muscles and the connective tissue that bridge across the bony outlet of the pelvis. The lower parts of the levatores ani spring from the pubis in front, and consist of two strong bellies which pass backwards on either side of the bladder and vagina to encircle the rectum. They control the lower end of the bowel, and hold it and the vagina firmly forwards towards the pubis. When their fibres are torn on one or both sides the rectum and anus and posterior vaginal wall fall backwards and downwards, the genital opening gapes, and through it the vaginal walls, with the bladder in front (cystocele) and, less frequently, the rectum behind (rectocele) are forced downwards, with a stretching and dragging on all the surrounding structures of the pelvis. The prolapse of the lower vaginal wall is apt to be followed quickly by a dragging downwards of the womb and tubes and ovaries. Not infrequently an accompanying birth lesion consists of laceration and infection of the cervix, which is then apt to become tightly cicatrized at the vaginal vault; in these circumstances the uterus is able to withstand the intra-abdominal pressure which is the immediate cause of prolapse, and the lesion then consists for a long time only of the vaginal walls and the adjacent viscera (bladder and rectum).

It is unnecessary for me to discuss the ordinary symptoms of prolapse, for these are well known to you all. In the majority of cases the symptoms begin to manifest themselves soon after the occurrence of the damage to the pelvic floor, and they are especially apt to develop early in the woman who has to resume her work before there has been time for an attempt at natural recovery. In many cases, however, the symptoms do not appear for a considerable time, and in such it is not infrequent for the first manifestations to reveal themselves only after the menopause. The typical symptoms are a feeling of "something coming down," a dragging or bearing-down pain in the small of the back and lower abdomen, frequency of micturition and "exertion incontinence" of urine, and constipation. If there has been a tear extending right through the entire thickness of the perineal body and the lower end of the rectum and anus there is, of course, incontinence of the bowel. In such cases, it is true, there often is little or no prolapse, as if the clean-cut laceration of the structures in the mid-line had allowed the easy escape of the child, and had thus saved the levatores ani on either side from being stretched to bursting point.

I would draw your attention specially to certain other common symptoms, which, although springing originally from the pelvic lesion, have little obvious relation with the pelvis. For this reason their significance, or even their existence, is often overlooked, with resulting errors in diagnosis and treatment of grave moment to the patient. Women with prolapse, for example, will tell you that they suffer from a feeling of exhaustion, which increases as the day goes on, and which is especially severe after exertion. This, added to their bladder symptoms, may make ordinary

* Delivered to the Fife Branch of the British Medical Association.

outdoor exercise intolerable. They go to bed overwrought, sleep poorly, and waken up unrefreshed. Their appetite suffers, they become irritable and depressed, and women whose temperament previously had been bright and buoyant may on this score become a source of great annoyance to themselves and their family. These more general symptoms, in which the nervous element is strongly marked, often lead to the poor woman being marked down by her friends and relations, and sometimes even by her doctor, as "suffering from nerves," and this, in its turn, naturally tends to aggravate her symptoms by adding to her troubled mind a further source of worry. My experience of ailing women has long convinced me that in the majority of cases neurasthenia has a physical basis, and that there is no more important contributory cause of this condition than vaginal prolapse. I have seen such women tortured by the attitude of their nearest and dearest, and by their own sense of self-depreciation, and treated by their doctors for functional nervous disorders, the real source of the trouble being meanwhile unrecognized.

Another extremely important point in regard to prolapse is that the longer it is untreated the greater is the risk of the health becoming permanently damaged. In this connexion we have to remember especially that the disturbance of the urinary apparatus may in the course of time lead on to infection of bladder and kidney, and that the constipation caused by the loss of the muscular control of the lower end of the bowel may result in increasing stasis of the intestine with the production of permanent structural changes. Moreover, in course of time the nervous system may become damaged beyond recovery. For all these reasons it is important that prolapse should be treated early.

In many cases the condition can be treated effectively with a pessary, but this must be carefully fitted if it is to be of any use. In slight cases a small ring is sufficient, but in marked cases, and more especially where there is a considerable degree of cystocele, it is better to use a large instrument of oval shape, for at its lower end this forms a shelf for the bladder. By plunging a vulcanite ring for a few seconds into boiling water it can be softened sufficiently to allow of its being compressed to the desired shape. Rubber instruments should never be used, since they quickly corrode, producing crevices and spaces in which the vaginal discharges accumulate and putrefy. On the whole, unless the patient can be trusted to douche the vagina twice or thrice weekly, and to report at intervals of two or three months to have the instrument removed and cleaned, the pessary regime is unsafe, and operative treatment, consisting of a lifting up and a fixation of the bladder at a normal level and a repair of the damaged pelvic floor behind, should be carried out.

The other common class of displacement of the uterus, *retroflexion*, frequently owes its origin to childbirth, especially if there has been any infective complication which has prevented the healthy involution of the uterus and its supporting ligaments. Under these conditions the uterus remains permanently enlarged (subinvolution), and it does not recover its normal position. On the other hand, apart from the sterility or the tendency to abortion which the displacement may cause, the symptoms so commonly associated with retroflexion, such as menorrhagia, dysmenorrhoea, leucorrhoea, and dyspareunia, are usually caused not by the abnormal uterine position, but by the associated chronic infection. For these reasons an operation for the replacement of a retro-deviated uterus is required only on comparatively few occasions. We see many cases in which failure to appreciate these facts has led to operations that bring no relief. Treatment of an infected cervix and curettage for the menorrhagia may be all that is required. Where, on the other hand, the womb is greatly enlarged and forms a tender tumour pressing on the bowel, causing constipation and pain on defaecation, dyspareunia, and pain in the lower abdomen and back, an abdominal operation for replacement and forward fixation is necessary. This at the same time allows of the treatment of the tubal and ovarian disease, which is often present in such cases, and which may be responsible for adhesions that fix the uterus in its backward position. Where the uterus is mobile and can be lifted forward a tentative trial of a pessary enables us to gauge how far the symptoms have been derivable from the retroflexion alone in those cases where otherwise the diagnosis is not quite clear. In this way we get an indication as to how far an operation is likely to be helpful. If the retro-deviation is recognized in the puerperium, reposition of the uterus and the use of a pessary for a few months may be followed by cure of the condition.

STRAINS OF THE SPINAL AND PELVIC JOINTS.

Another common mechanical disability dating from childbirth or child-bearing consists of *strains of one or more of the articulations of the spinal column and pelvis*. These strains are a frequent cause of chronic pain and discomfort, and, as they often remain undiagnosed and untreated, they constitute a fertile source of persisting ill health. The joints apt to be so affected are the sacro-iliac, the lumbo-sacral, the sacro-coccygeal, and the symphysis pubis. Whilst strains of these articulations are by no means uncommon in nulliparous women and in men, where trauma and faulty posture play an important part, there are present during pregnancy and childbirth certain influences which peculiarly tend to their production. The first of these factors is the softening of the ligaments and the increased mobility of the joints found at these times; the second is the marked alteration in the spinal posture which the pregnant woman tends to assume, and the third is the stretching of the ligaments and the excessive movement of the joints which may occur during labour, especially when there is mechanical difficulty arising from undue size of the child or other cause. To these factors must be added such common individual defects as arise from general loss of tone and muscular and structural flabbiness, which lead to an aggravation of the changes resulting from postural or parturient causes, and which, in such women, may easily result in structural alterations.

Sacro-iliac and lumbo-sacral strains are a frequent cause of low back pain, situated over the affected joint or spreading into a broad area of the "small of the back." The pain frequently extends into the iliac fossa and groin, across the buttock and down the back of the thigh. It is present during standing or sitting, and it is unrelieved by lying down, whilst it is aggravated by stooping and by lateral movement of the trunk; these movements may be restricted. There is tenderness on pressure over the affected joint. In sacro-iliac strain pain may be felt in the joint when the thigh is flexed on the abdomen with the knee straight, whilst in lumbo-sacral strain full flexion of the thighs with bent knees causes pain. In severe cases there may be lameness.

It is important to remember that these orthopaedic lesions, by causing pain and discomfort in the back and lower abdomen, may easily lead to an erroneous diagnosis of gynaecological disease, appendicitis, or kidney disease. The confusion in diagnosis is still further increased when, as not infrequently happens, the strained joint is accompanied by disease of the pelvic organs. In the presence of prolapse, for example, which is a common cause of low back pain, the existence of a sacro-iliac or lumbo-sacral strain may easily be overlooked. We have further to recognize the possibility that a gynaecological or abdominal lesion—for example, visceroptosis—by establishing a fault in posture or by inducing a general hypotonus, may be the primary factor behind the strained joint. A recognition of all these facts has led, on the one hand, to the discovery that much of the suffering which has persisted in the past after our plastic operations for prolapse and our abdominal operations for pelvic disease is to be traced to an accompanying and undiagnosed static disorder. On the other hand, it has forced us to the view that treatment of a damaged joint, if it is to be successful, should be accompanied by treatment directed to any associated gynaecological or general abdominal condition.

The treatment of sacro-iliac and lumbo-sacral affections to be effective must be prolonged and carefully supervised, and consists of rest in bed for several weeks in a posture aiming at easing the strained ligaments, the application of hot fomentations over the joint, and, later, the use of prescribed exercises and the provision of a well-fitting brace or belt. In working-class and poor women such lengthy treatment is usually impossible, and we then have

o be satisfied with the support given by strips of adhesive laster extending round the pelvis and placed above the evel of the trochanters, or by the application of a belt. n addition to these measures any local pelvic disease hould be treated and dietetic and hygienic procedures nstituted with the object of increasing the general health. n aggravated cases with dislocation of the joint manipulation under anaesthesia may be required.

The following case is a typical example of unrecognized acro-iliac strain associated with, and probably secondary o, abdominal and gynaecological disease.

A nullipara, aged 43, fifteen years ago (in Canada) underwent emoval of the right and partial removal of the left ovary for evere dysmenorrhoea. Her condition was greatly improved. Four ears ago she was operated on for right inguinal hernia, and two ears ago for gall-stones. For four years she had constant incapaitating low back pain, frequent and painful micturition, and nuch abdominal distress with attacks of recurring pain. The terus was large, retroflexed, and tender. An operation was performed for intraperitoneal shortening of the round ligaments. ollowing this the bladder and abdominal symptoms were relieved, ut the backache was unimproved. Re-examination and *x*-ray hotograph showed faulty posture with marked lumbar lordosis nd tilting back of the sacrum, and evidence of sacro-iliac and umbo-sacral strain on the left side. Manipulation under gas naesthesia was carried out by Mr. Cochrane, and followed by est in a prescribed position and local application of hot fomentaions for two weeks; a brace was fitted to hold the shoulders orwards and the pelvis and lower abdomen back. These measures esulted in a cure of the condition.

Strain of the pubic symphysis during labour is a not infrequent cause of pain over the joint in the early puerperium, ut it has usually passed off by the time the patient is ready o get out of bed. In rare cases the condition may persist, nd in some instances it may cause serious discomfort asting for many weeks or months and necessitating prolonged rest in bed. The treatment consists in immobilization of the joint by adhesive plaster placed in broad strips round the pelvis and worn for some weeks after the patient is allowed to get up. *Strain of the sacro-coccygeal joint* may cause long-persisting pain which is aggravated by sitting, and is especially marked in cases where there has been a backward displacement and fixation of the coccyx in a position which causes its point to project under the skin. The treatment consists in forcible reduction of the displacement and rest in bed till the bone becomes fixed in a normal position. In some cases excision of the coccyx may be necessary.

Before leaving the consideration of the conditions arising from mechanical damage I would refer briefly to a rare lesion of which I have seen only one example—namely, *fracture of the pelvis during labour.*

The patient was a 4-para, aged 36, who since the instrumental birth of a baby weighing 11¼ lb. four years previously had suffered from severe pain in the small of the back and lameness affecting both legs. Since then she had been a cripple, being able to walk only with difficulty and with the aid of two sticks. On *x*-ray examination she was found to have fractures of the transverse and descending rami of the pubis on both sides and a series of fractures of the iliac bones radiating from the sacro-iliac joint on each side. There was, in addition, a severe degree of osteoporosis of the pelvic bones and of the shafts of the long bones; the skull was not involved. The condition was diagnosed as one of defective calcium metabolism with bony absorption due to deficiency diet, and treatment including the administration of cod-liver oil and artificial sunlight was instituted.

I have records of a further case showing marked disturbance of locomotion with a waddling gait in an unmarried girl of 19 years, in whom *x*-ray examination revealed osteoporosis of the pelvic bones. Under a general dietetic regime and the administration of cod-liver oil the condition has returned practically to normal within a few months.

These cases demonstrate the role of deficiency disease in the production of osseous lesions of the pelvis.

Infection of the Pelvic Organs as a Cause of Chronic Ill Health.

Infection dating from childbed may involve any part of the pelvic area, but the most common lesion by far is *infection of the cervix.* It is only within recent years that the importance of this lesion has come to be appreciated. It is recognized by the soft, pulpy feeling, and, on examination with the speculum, by the deep congestion of the mucous membrane surrounding the external os, although the lesion is, of course, more deep-seated. The starting point of the trouble is often an imperfectly healed laceration. Enlargement of the cervix from general congestion and fibrous thickening is common. Blockage of the tubules of the cervical glands leads to distension of the acini by a thick infected mucous secretion to form the so-called Nabothian follicles, which are felt as hard nodules and frequently show on the surface as small raised greyish points. A chronically inflamed cervix often bleeds on being touched, and this, added to the hardening produced by the fibrosis and the Nabothian nodules, may lead to an erroneous diagnosis of cervical cancer.

The cardinal symptom of chronic cervicitis is "whites," and sterility is common. In many cases it may cause little further disturbance of the pelvic functions or of the general health, whilst in others it is a source of much pelvic discomfort and chronic disability. Disease of the cervix *itself* does not cause pain, but cervicitis, by leading to a persisting infection in the surrounding cellular tissue, is one of the most frequent causes of that commonest of all chronic pelvic symptoms—pain in the left iliac fossa. It is also a fertile source of pain in the right side and in the sacral area. The relationship between the cervicitis and the pain in these areas can often be brought out in a striking manner by the simple expedient of putting the corresponding tissues on the stretch. If, for example, the cervix be pushed over to the right side, a left iliac pain caused in this way can be reproduced accurately. So, in chronic utero-sacral cellulitis, a fairly common sequel of cervicitis, by pushing the cervix forwards we immediately elicit the sacral pain and the sense of discomfort often felt by such patients when the bowels move. The fibrosis and cicatricial contraction following these cellulitic deposits may lead to the cervix becoming immobilized and displaced in the direction of the scar.

Infection of the cervix is a further source of trouble in that at any time it may spread upwards into the uterine body, and thence—or perhaps more commonly by extending via the veins or lymphatics—it may involve the tubes and ovaries. Furthermore, as we believe, chronic cervicitis is a common precursor of malignant disease.

For all these reasons cervical infection should always become the object of active treatment, the best method we at present have at our disposal being a thorough opening up of the inflamed areas with the cautery. This allows of drainage of the infected and distended glands and of the pent-up sepsis in the cellular tissue. Thereafter the daily introduction of a tampon containing ichthyol (10 per cent.) in glycerin should be carried out for two or three weeks. To avoid staining of the clothes with the ichthyol a thick diaper should be worn. In severe cases two or three cauterizations at monthly intervals may be necessary. Where there are cervical lacerations these should be repaired. Where the cervix is markedly enlarged from deep-seated infection the best treatment often consists in amputation.

We have next to consider a fairly common group of cases in which the pathology is ill defined, but in which a chronic infective factor seems to predominate. They consist of parous women typically nearing the age of the menopause, although they may be much younger, in whom the dominating symptom is excessive menstrual loss, often with much clotting of the blood, and frequently, in addition, irregularity of the periods and intermenstrual bleeding. Leucorrhoea and dysmenorrhoea are common, and debility and anaemia from the blood loss are frequently present. On examination the cervix is often found to be lacerated and chronically infected and the uterine body to be large and tender. There is no evidence of a fibroid growth in the uterus, and the existence of mucous polypi or malignancy is excluded by curettage. Curettage gives no relief. Largely as a result of this process of exclusion with, in addition, the frequent evidence of an infective element and chronic ill health dating from childbed, these cases are often thrown into the category of chronic inflammation of the uterine body or *chronic metritis.* In some cases the symptoms may in reality spring from ovarian dysfunction. They require active treatment on account of the excessive blood loss, and in many instances this can be effectively and safely carried out by the introduction of 30 mg. of radium into the uterus for four days. This induces an artificial menopause, and has the advantage of obviating

the risks incidental to an operation for removal of the uterus. In the absence of radium, hysterectomy is the only alternative.

Chronic inflammation of the tubes and ovaries dating from childbed infection is a fairly frequent cause of persisting invalidism, revealing itself in iliac fossa premenstrual dysmenorrhœa, chronic lower abdomen pain, sterility, menorrhagia, dyspareunia, and leucorrhœa. It produces tender inflammatory masses felt behind and to the sides of the uterus, which is usually enlarged, immobilized, and often retroflexed. There are general systemic symptoms, such as dyspepsia, headaches, loss of weight, etc. It is important to remember that chronic tubal and ovarian disease frequently follows a puerperal infection so mild in its onset that there may be little or no history of acute symptoms or fever in the puerperium. In such cases the origins of the trouble are to be found in the history which the patient gives that she has never been fit since the last miscarriage or labour. "Acute exacerbations" of the symptoms may occur, although they are not so common in puerperal as in gonococcal salpingitis, where we now recognize that the typical tendency to recurring acute attacks is dependent usually upon reinfection. In some cases the ascending infection may arise primarily in a diseased cervix, and in these a sort of reinfection may continually be going on. In some instances a puerperal infection consists in reality of a pre-existing more or less quiescent gonorrhœa, which flares up as the result of the trauma of labour and the opening up of fresh raw surfaces.

The treatment of salpingo-oöphoritis should in the first place always be palliative. The infected cervix is first dealt with, and thereafter the diseased appendages are treated by rest, attention to the bowels to relieve pelvic congestion and local pressure, douching, and plugging with some such material as ichthyol in glycerin. A mixed vaccine containing streptococcus and *B. coli*, given in doses below the reaction point and administered over a period of several months, is often useful. Under such measures clinical recovery may sometimes be looked for, although functional recovery with an opening up of blocked tubes is much less certain. Where the local or the general symptoms persist operative removal of the diseased appendages is called for.

Sterility.—In many cases of chronic infection of the genital organs the consideration of greatest moment to the patient and her husband concerns the possibility of further pregnancies. The doctor is often asked to give an opinion on the prospects, and in any treatment to be carried out the chance of conception which this will give often weighs largely with the patient. At the outset we have to remember that it is always necessary to give a very guarded prognosis, because experience teaches that a period of sterility following chronic infection frequently implies a permanent loss of function. At the same time the outlook must necessarily depend on the degree and site of the damage. Thus, in that most common infective lesion chronic cervicitis, which is a common cause of sterility, pregnancy not infrequently follows active local treatment. The reposition of a retroflexed uterus, and its suspension with a vaginal pessary, is also sometimes followed by pregnancy. The outlook is gloomiest in cases of tubal infection, for whilst it is true that chronically infected and blocked tubes may become spontaneously recanalized, as witness the occurrence of tubal pregnancy in such cases after a period of sterility, in the majority of instances the fine structure of the tube is damaged beyond repair. In some cases an abdominal operation for the purpose of liberating the adherent tubes and ovaries and the making of a new ostium in closed tubes (salpingostomy) may be followed by pregnancy. Where, on the other hand, the destruction of tissue is great, the chances of functional recovery are negative, and such operations as that which consists in insinuating the ovary with its mesentery into the uterine cavity through a hole made in the cornu are still too untried to be generally justifiable. It should be mentioned that, short of operation, a certain amount of accurate information regarding the condition of the tubes can be obtained by two methods recently added to our diagnostic procedures—namely, the insufflation of the tubes from the uterus by means of air or carbon dioxide under pressure, and the injection of some opaque fluid (for example, lipiodol) into the tubes via the uterus, followed by an x-ray photograph. By these methods the existence and the site of a tubal block can be recognized, and pregnancy practice is sometimes followed by pregnancy, probably owing to the gas or fluids having dislodged some obstructing discharges lying in the tubes.

Finally, we have to remember that infection of the pelvic organs must always be considered in our hunt for sources of focal sepsis in cases of chronic rheumatism, chronic heart disease, etc. The two following cases illustrate this point.

1. A 3-para, aged 37, had suffered from chronic ill health since childbirth nine years previously. Of the last two years she had spent eighteen months in hospital for valvular heart disease and progressive rheumatoid arthritis with marked deformity of wrists, elbows, ankles, and knees. Leucorrhœa was discovered on the last occasion in hospital. The cervix was found to be very septic and was amputated. This was followed by rapid improvement in the condition of the joints and in general health.

2. A primipara, aged 34, with a progressive painful rheumatoid condition of the wrists, fingers, and ankles of several years' duration. Leucorrhœa was present, together with a "granular" vaginitis secondary to infection of the cervix and uterine body. Panhysterectomy was performed. Within a few days improvement set in and increased progressively thereafter. Within two months the vaginitis and leucorrhœa were arrested and the swelling and tenderness of the joints gone. Movement and use of the limbs were being recovered fairly rapidly.

General Causes of Ill Health.

The conditions previously brought under review in this address, although entirely local in their origin and often predominantly local in their symptomatology, may initiate a pathology which spreads its ravages beyond the pelvis to almost any system and region. Thus we have seen that prolapse frequently causes gastric and intestinal dyspepsia, involvement of the urinary tract, and nervous phenomena, and the same is also markedly true of chronic pelvic infection. In the majority of cases of pelvic infection we find irritability of the bladder with diurnal and often nocturnal frequency. There may be an associated bacteriuria and pyuria, although not uncommonly the urine is free of abnormal constituents. Whether this involvement of the urinary tract is due to a direct spread of the inflammation across the tissues intervening between the infected area—for example, the cervix, and the bladder and ureter—or whether it is a blood-borne infection it is difficult to say. Furthermore, chronic pelvic infection may constitute the causal factor in cases of rheumatism and heart disease, whilst both puerperal sepsis and the toxæmias may produce brain lesions that persist in the form of mental impairment or even actual insanity. We have, further, to remember that there are a variety of antecedent diseases, such as gonorrhœa, pulmonary phthisis, heart disease, and Bright's disease, which are specially liable to suffer exacerbation by the fact of pregnancy or the strain of labour, whilst there is hereby any taint which is not apt to be augmented by an abnormal pregnancy or the debility following a complicated labour which saps the general resisting powers of the patient.

A class of disease often with obscure symptomatology but with pointers towards an origin in an *endocrinal abnormality* is not an uncommon legacy from pregnancy and childbirth. Space will allow of only a brief reference to this extremely interesting and at the same time intriguing type of disorder, which constitutes a field in which further data remain to be gathered. A common complex includes amongst its salient features an increasing general adiposity, dryness of the skin, thinning and falling out of the hair, scantiness, suppression, or irregularity of the menses, and a low basal metabolic rate—features, in other words, suggestive of a hypothyroidism, with perhaps a superadded ovarian deficiency. In other cases the appearances are more suggestive of a pituitary syndrome. Many of these patients have obvious pelvic lesions, and it is not improbable that the endocrinal upset is usually secondary to pelvic sepsis. Hence it is necessary to treat the focal factors in addition to the exhibition of the appropriate

land products (ovarian, thyroid, pituitary). The follow-ig case may be quoted in illustration of these conditions.

A *primipara*, aged 28, since the birth of a child two years reviously, which was nursed for seven months, had never felt ell. There was complete amenorrhoea, and she complained of ucorrhoea. She gained nearly 3 st. in weight. The skin was cy, and the hair falling out. On examination she was found have marked cervical infection; otherwise there was nothing normal in the pelvis. The cervix was treated, and half a grain thyroid extract *administered night and morning*. *Within two* ionths the weight was reduced by 1 st. and menstruation sumed.

A still further cause of loss of health following child-earing is found in the dregs remaining behind after regnancy pyelitis and toxaemia. In the production of yelitis, stasis in the ureter due to the pregnant state is n important predisposing cause, and there is usually a apid recovery from the symptoms after delivery, but, on ccasion, active infection of the urinary tract may remain, ausing pain and tenderness in the kidney area and bdomen, frequency of micturition and dysuria, recurring yrexia, and pyuria. In some cases the condition first eveals itself in the puerperium. It is important in all uch cases to make a careful search for areas of focal epsis, as this factor is known to play an important part n the initiation and perpetuation of infection of the urinary tract. Another lesion of the urinary tract, o which Hunner has recently directed special atten-ion, is *stricture of the lower end of the ureter* with lilatation of its upper section and of the renal pelvis. Whilst predisposed to by child-bearing, it occurs not in-requently in childless women. In some cases it is asso-iated with infection. Its chief symptoms are backache igh up in the flanks, pain and tenderness over the corre-ponding side of the abdomen, and frequency and pain on nicturition. The urine may be normal, or may reveal nothing but an occasional red blood cell or leucocyte. The ain, especially at first, may be definitely menstrual in its iming, and if situated, as it commonly is, in the iliac egion, it may suggest a gynaecological source. In other ases the occurrence of nausea and sickness may lead to an rroneous diagnosis of appendix, gastro-intestinal, or gall-bladder disease. Such errors may lead to faulty treatment *and to futile operations. In other cases the stricture* of the ureter is combined with gynaecological or other disease. The condition is revealed by the existence of an obstruction to the passage of a bougie and by a pyelographic examination following the injection of an opaque fluid. The treatment consists in dilatation of the stricture in one or both ureters by means of a bulbous ureteral bougie. At the same time any local pelvic lesion that may be contributing to its production—for example, cervicitis or cellulitis—should be dealt with. According to Hunner a not uncommon causal factor is focal sepsis in the teeth or tonsils, and this, if found, must receive attention.

Pregnancy toxaemia, like pyelitis, is usually recovered from quickly after the birth of the child. In some cases, however, especially in women who have had a recurrent series of toxic pregnancies, the acute kidney lesion may pass over into chronic kidney disease. In such women *chronic cardio-vascular lesions*, as manifested by persisting hypertension, arterio-sclerosis, and hypertrophy and dilatation of the heart, are commonly present as well. In a recent communication[1] I have shown that in about 50 per cent. of cases pregnancy toxaemia (eclampsia, albuminuria) recurs in succeeding gestations, and that in women with this taint the risk of permanent *cardio-renal lesions* increases with each succeeding pregnancy. For this reason women who have had two toxic pregnancies should be instructed to avoid further pregnancies, whilst, in the event of conception again occurring, they must become the subject of very strict ante-natal supervision.

I must not take leave of our subject without a reference to the influence of child-bearing on *gall-bladder disease*, which constitutes a fertile source of chronic invalidism in women, especially in the middle and later periods of life. It is well known that gall-stones are two or three times commoner in women than in men, and that the main factor behind this high female incidence is multiparity. In attempting to explain the bearing of pregnancy on this tendency to cholelithiasis we have three possible factors to consider, which may operate singly or in combination. The first is the high cholesterin content of the blood in pregnancy, and which in the last months is about twice the normal (Moynihan).[2] The second is the tendency to the occurrence of stasis in the biliary ducts during pregnancy. The third is the frequency with which women who have borne children suffer from focal sepsis in the pelvic, urinary, and, other regions. There is reason for the belief that infection of the gall-bladder usually precedes the deposition of stones, and that this infection may reach the gall-bladder from some such distant source. Gall-bladder disease is notorious for the frequent obscurity of its symptomatology. Where it is associated with local pain and tenderness, recurring biliary colic, and jaundice its recognition is easy. Often, however, these cardinal features are absent, and its presence will be missed unless it is brought under suspicion in all cases of parous women, especially those tending to obesity, who suffer from *chronic ill health*, dyspepsia, and vague abdominal symptoms. It is a common accompaniment of chronic gynaecological disease.

CONCLUSION.

The woman suffering from chronic ill health dating from *childbirth* is frequently the subject of multiple lesions. Failure to carry out a comprehensive investigation of the various systems may lead to an imperfect diagnosis, resulting in operations and other forms of treatment that bring little relief.

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THE DIAGNOSTIC VALUE OF THE PLANTAR RESPONSE IN INSULIN COMA.

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RECORDS of the plantar reflexes in insulin hypoglycaemia are rare. Emmons[1] was apparently the first to report an extensor response in a case of insulin coma during the period preceding recovery. Elliott and Walshe,[2] in comment on Emmons's case, suggested that the state of the plantar reflexes might be of great value in distinguishing between ordinary diabetic coma and that due to hypoglycaemia, but they could not supply the necessary clinical evidence. Pemberton[3] then reported a fatal case of insulin coma, in which an extensor response was obtained, persisting up to within a few minutes of death. On the other hand, a flexor response was recorded by Graham[4] in a case of temporary hemiplegia without coma, the result of insulin overdosage.

In the two cases of insulin hypoglycaemia described in this paper an extensor response was observed while the patients were comatose. As consciousness returned the extensor response faded, the plantar reflexes becoming flexor in one case and inexcitable in the other.

It seems to us that these cases now suffice to provide the evidence required to establish the *clinical value of this* physical sign as a means of distinguishing between the two states of coma in diabetics.

CASE I.

The patient, a man aged 70, was admitted to the Royal Northern Hospital on November 24th, 1928, suffering from severe diabetes of at least three years' duration. Two years previously he had been taken to an infirmary in insulin coma, but there had been no recurrence of this complication.

On admission his general condition was good, in spite of loss of weight. The urine contained sugar and acetone bodies in considerable amount. He was given a generous diet with 10 units of insulin morning and evening. On November 27th the blood sugar three hours after insulin and breakfast was 0.24 per cent., and accordingly the dose of insulin was increased.

At 11.30 a.m. on December 2nd the patient rose as usual for his bath, but on getting out of bed felt giddy, and fell against his locker. He was put back to bed. At 12.40 p.m. he collapsed, *becoming breathless, cold, and clammy*. He was able, however, to drink 7 ounces of 5 per cent. glucose, while 10 minims of

adrenaline 1 in 1,000 were given intramuscularly. In spite of these measures he passed, half an hour later (1.10 p.m.), without fits, into a state of complete coma. The pulse was slow and irregular, and the breathing stertorous. No acetone could be detected in the breath. The pupils reacted to light, and were not dilated. The knee-jerks were brisk, and the plantar response of both feet was definitely extensor. A catheter was passed, and the urine found to be free of sugar.

He was given 50 c.cm. of 25 per cent. glucose intravenously. This led to rapid recovery, the patient changing in five minutes from a condition of coma to complete consciousness and intelligence. Examined half an hour later the plantar reflexes were equivocal, the definite extensor response being no longer obtained.

During the night of December 4th the patient had a second attack of insulin coma. As before, this was heralded by shivering and a feeling of coldness. He was easily revived by rectal glucose, followed by a drink of tea with sugar.

Examined on December 14th, the knee-jerks were brisk, ankle-jerks slight, and the plantar response was absent in both feet.

No further attempt to lower the blood sugar to the accepted normal value was deemed advisable at this stage, and the patient was discharged on December 18th with instructions to attend the out-patient department. The dose of insulin was then 15 units morning and evening. This was increased later, and when last examined on February 6th, 1929, he was taking 25 units morning and evening; the blood sugar was 0.16 per cent., and the urine was sugar-free.

CASE II.

The patient, a woman aged 66, was admitted to University College Hospital on February 20th, 1929, suffering from severe diabetes. Emaciation was extreme, her weight being only 4½ st., and the urine contained a large amount of sugar and acetone bodies. The knee-jerks were absent and the plantar reflexes flexor. She was given a diet of 1,000 calories with 20 units of insulin twice daily. With this dosage of insulin the glycosuria persisted, and the blood sugar was 0.23 per cent.; in consequence the dose was increased, together with the diet, until she was taking 100 units a day on a diet of 1,500 calories. The urine then became sugar-free.

Shortly after midnight on March 5th the patient had what appeared to be a hypoglycaemic attack. It lasted twenty-five minutes, during which she was unconscious and restless, throwing her limbs about, and foaming at the mouth. The pupils were inactive to light, and there was incontinence of urine and faeces. The condition was relieved by adrenaline and glucose.

The next day, at 1.45 p.m., the patient was noticed to be flushed, restless, and confused. Glucose was given by the mouth, but in spite of this she became more and more drowsy, and when examined at 3 p.m. was completely comatose, the swallowing reflex, however, remaining. Slight stiffening of both arms was noted, but no convulsions were observed. The left plantar reflex was definitely extensor, the right being doubtful on account of the deformity of hallux valgus.

Blood was taken for the estimation of sugar, which was found to be 0.05 per cent.; meantime the oral administration of glucose was continued, but in increased amount. During the succeeding half-hour consciousness returned, at first gradually, and then with rapid awakening; when examined at 3.45 p.m. she was completely conscious, and the plantar response was flexor in both feet.

A fortnight later, on examination, the knee-jerks were sluggish, ankle-jerks absent, and both plantar reflexes were flexor.

There was no arterial obstruction in the circulation through the feet in this case.

There is thus a certain amount of evidence to show that insulin hypoglycaemia, if severe enough to produce coma, is likely to be accompanied by an extensor plantar response during the stage of unconsciousness. In exhibiting this phenomenon insulin hypoglycaemia resembles a variety of other toxic states associated with coma, including cholaemia, eclampsia, and uraemia. While, however, in the latter two conditions epileptiform fits seem to be essential for the appearance of an extensor response (Elliott and Walshe[2]), this does not hold in insulin coma, for in Case i no convulsions were observed at any stage.

The character of the plantar reflexes in insulin coma is in striking contrast to that obtaining in ordinary diabetic coma, in which condition, unless there is some other associated organic disease affecting the pyramidal tract, an extensor response apparently never occurs. Allen and his co-workers[5] give a detailed description of 17 cases of diabetic coma. They frequently found the tendon-jerks diminished or absent, but noted no other abnormality of the reflexes. Elliott and Walshe[2] failed to obtain an extensor plantar response in any of the cases observed by them, even after two days of coma, and within an hour of death. In examining the records of 53 cases of diabetic coma of all degrees of severity we have not found an extensor response noted, except in one instance; this was a patient in whom coma had been precipitated by a cerebral abscess. A flexor response was definitely recorded in 21 of the other cases.

It is suggested, therefore, that the state of the plantar reflexes may prove to be of great assistance in quickly distinguishing ordinary diabetic coma from that due to insulin hypoglycaemia. Mild hypoglycaemic attacks without coma are not accompanied by an extensor response, and it is possible that even deep insulin coma may not show the extensor phenomenon. But inasmuch as diabetic coma, unless complicated by an organic pyramidal tract lesion, does not give an extensor response, it is plain that the occurrence of this physical sign in a comatose diabetic on insulin treatment should be accepted as evidence that the coma is due to excess of insulin, and consequently sugar (intravenous 10 per cent. by preference), together with subcutaneous adrenaline, should at once be given very freely. The state is dangerous when once an extensor response has appeared, and there is little time to be lost. The quick recovery of the patient, upon adequate treatment with sugar, is totally unlike the very slow emergence from diabetic coma.

We wish to express our thanks to Dr. E. G. B. Calvert and Professor T. R. Elliott for permission to publish these cases of insulin coma, and to the physicians of the Royal Northern Hospital, St. Mary's Hospital, and University College Hospital, who have allowed us to use the records of their cases of diabetic coma for comparison.

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GROWTH RECOVERY AFTER INHIBITION BY LEAD.

BY

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IN previous papers of this series (Studies in the Biology of Metals) results were reported demonstrating that growth in length of roots is retarded by Pb-ion,[1] and that this is due to inhibition of cell division.[2] These findings as they stand seem good evidence in favour of the lead treatment of malignant growths,[3] particularly in view of the fact that the regions of most active growth by increase in cell number in the chick embryo are similarly affected.[4] But the whole story is not told until we know what happens when the growing organisms are removed from the Pb environment. With this in mind I have first inhibited growth of roots of yellow corn (*Zea mays*) seedlings for twenty-four hours by Pb[1] and then transferred them to non-Pb-containing culture solutions, and after eighteen hours determined the mitotic index.

Comparing Growth and Mitotic Index of Pb-retarded Roots subsequently allowed to grow in Pb-free Culture Solutions (A) with Roots grown in Pb cultures only (B).

Pb-ion Concentration.	Growth Increment.		Mitotic Index.		
	A.	B.	A.	B.	Individual Counts.
mg.	Per cent.	Per cent.			10 mg. Pb
25.0	26.5	5.5	3.7	0.5	0.5:0.6:0.3:0.4:0.5:0.4:0.5:0.6
5.0	64.0		10.0		
5.0	81.3		9.4		
5.0	55.5		13.5		
5.0	64.3		15.2		2.5 mg. Pb
2.5	85.0	17.8	12.2	1.7	1.6:1.7:1.9:1.6:1.1:1.4:2.1:1.5

The results (A) given in the accompanying table are compared with those obtained from roots taken directly after growth in the Pb-containing culture solutions (B).

The A values, therefore, represent the recovery response from the treatment accorded the B series.

The growth increment values by themselves hardly justify a conclusion, since the time interval was unavoidably longer in the A than in the B series. On the other hand, the differences may be valid, since I have noted, but not recorded, the fact that roots left in Pb-culture solutions for more than a day hardly increase in length over that which obtains at the end of the first twenty-four hours. The marked superiority in mitotic index values, however, indicating as it does a far greater cell proliferation activity, is striking proof that growth recovery after Pb-retardation is possible.

Particular note should be made of the fact that roots subjected to a Pb-ion concentration of 5 mg. per litre showed some seven times as many mitoses per 100 nuclei after transference to Pb-free culture solutions as roots subjected to only half the concentration (2.5 mg.), but not subsequently removed from the Pb environment. In view of this, and since root growth in length is to a great degree dependent upon the rate of cell division in the meristematic region, it is probable that the greater growth increment of the A series does in part at least represent a real renewal of length growth.

The results of these experiments show conclusively that the retardative influence of Pb on growth by increase in cell number is not a permanent affair in roots. This is no proof that a like recovery of cell proliferative activity would occur in animal forms under either normal or pathological conditions with cessation of Pb administration. Yet the biological hint afforded should serve as a warning against too high expectations from the use of Pb, or indeed any other metallic element, in the treatment of malignant growths.

In concluding I might state that the details of technique used in this investigation are to be found in the papers cited. They have not been repeated here, in order to save space.

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PROGRESS IN ANAESTHESIA FROM THE SURGEON'S STANDPOINT.

BY

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SINCE the great war, and no doubt as a result of experiences gained from it, the science of anaesthesia has been advanced in certain clinics in this country and on the Continent. Unfortunately, however, the advance at present is slow, and it may be said that, in so far as many clinics to-day adopt inhalation narcosis for practically all operations, irrespective of their magnitude or the condition of the patient, surgical anaesthesia has not kept pace with the requirements of modern surgery. Shock following a severe operation is generally attributed to the manipulations of the surgeon—perhaps a justifiable charge if rough usage of the tissues has occurred. But even the surgeon who handles the tissues with deliberate, gentle, and dexterous movements has his quota of failures in severe and prolonged operations when inhalation narcosis with ether or chloroform has been employed.

In operations demanding complete muscular relaxation inhalation narcosis may necessitate administration of large doses of the narcotic, with the production of serious toxic effects upon the myocardium, the liver, the suprarenal glands, the central nervous system, and, indeed, the tissues generally. Furthermore, the employment of this type of anaesthesia necessitates pre-operative preparation of the intestinal tract. The patient enters the theatre with an empty gut, and often three or four days pass before he is able to take solid food. Four or five days' starvation takes its toll even of a healthy individual; how much greater must be the effect upon a patient who has undergone a severe operation! Add to this the pain and exhaustion resulting from post-anaesthetic vomiting, and it may be conceded that neither the surgeon nor the anaesthetist may be responsible for failures which follow prolonged anaesthesia by inhalation narcosis, but that it is the anaesthetic which is at fault.

On February 25th, at the Medical Society of London, Professor A. H. Burgess of Manchester, opening a discussion on acute intestinal obstruction,[1] stated that, excluding cases of strangulated hernia and intussusception, the mortality resulting from operations for the relief of this condition during the period 1920 to 1924 in seven leading hospitals was 37.9 per cent. No mention was made of the anaesthetic used, but I hope I am not wrong in assuming that it was some form or other of inhalation anaesthesia, as in a series of fifty similar cases operated upon by me during the period 1926–28, using spinal and block anaesthesia, the mortality was only 13.6 per cent. In view of the very different results obtained in these two series of cases I propose as briefly as possible to describe the procedure as regards surgical anaesthesia at the Bradford Municipal General Hospital.

Rectal Ether.

For operations on the head, neck, mouth, and thorax, including trephining for cerebral tumours, trigeminal neuralgia, extirpation of goitre (especially toxic goitre), total laryngectomy, and radical excision of the breast, rectal ether, and more recently avertin (tribromethyl-alcohol), are the anaesthetics of choice. After trying several mixtures the following formula for rectal ether has been adopted for some time as giving uniformly good results.

Magnesium sulphate	2 oz.
Glucose	1½ oz.
Olive oil	1 fl. oz.
Acacia	5½ dr.
Ether	4 fl. oz.
Paraldehyde	4 fl. dr.
Morphine sulphate	1/4 grain
Water	to 12½ fl. oz. (approx.)

Rub the acacia with olive oil in a dry mortar, dissolve the magnesium sulphate and glucose in 7 oz. of water, then add 1 fl. oz. of this solution to the acacia and olive oil; gradually add the remainder. Transfer to bottle of 16 oz. capacity and add the morphine sulphate, previously dissolved in water. Dissolve the paraldehyde in ether and add gradually, shaking well. Make up to 12½ fl. oz. (approximately). Secure the cork with string and keep in a cool place.

The anaesthetic solution should be made up the evening before operation, securely corked, and kept in a cool place. It is not safe to use a solution that is thirty-six hours old.

The solution is introduced high up into the bowel by means of a rubber catheter, and the procedure is best carried out in a dark room. The introduction requires twenty minutes for its completion, and during this period there may be, though very rarely, an interval of excitement. The onset of anaesthesia varies; it may follow immediately after the anaesthetic has been completely introduced into the bowel, but more often it occurs from ten to twenty minutes later than this. A smell of paraldehyde is readily, and of ether faintly, detected in the patient's breath. It has been suggested, I think with some reason, that in making up the mixture the ether is converted into ethyl sulphate and absorbed as such. This anaesthetic is ideal for operations on the head and neck, and has the following added advantages:

1. There is no anaesthetist's apparatus to hamper the surgeon.
2. The patient's respiration is quiet and uniform, resembling that of normal sleep.
3. The patient's colour is perfect throughout.
4. There are no toxic after-effects, and vomiting does not occur.
5. Following the operation the patient has a refreshing sleep, lasting three to four hours, after which he is able to take nourishment.
6. According to our experience the anaesthetic is absolutely safe, and has no harmful effects upon the bowel.

As a routine the bowel is washed out when the patient returns to the ward.

Combined Spinal and Splanchnic Anaesthesia.

For abdominal operations in the neighbourhood of the diaphragm—for example, partial gastrectomy, gastro-enterostomy, resection of growths of the transverse colon and the flexures, operations on the gall-bladder and ducts—spinal anaesthesia with 0.1 gram stovaine introduced between the second and third lumbar vertebrae combined with splanchnic anaesthesia (60 to 70 c.cm. of a 0.5 per cent. solution of novocain), given according to Braun's method, is the anaesthetic of choice. The combination is used because, for operations lasting over an hour, spinal anaesthesia by itself is not sufficient. The anaesthesia can be prolonged if necessary by administering a further dose of the splanchnic anaesthetic and infiltrating the peritoneum and abdominal muscles with 0.5 per cent. novocain in 1 in 200,000 adrenaline solution. To nervous patients about to undergo an operation which is likely to be prolonged we have given, in addition to the spinal anaesthetic, a dose of avertin by the rectum sufficient to produce a quiet sleep, and thus unconsciousness of the surroundings and of the heat, which some patients find distressing. This anaesthetic combination has the following advantages:

1. It secures complete and uniform muscular relaxation.
2. Diaphragmatic movements are damped down to a minimum.
3. There is a marked absence of post-operative shock.
4. The anaesthetic is non-toxic.
5. Post-anaesthetic vomiting and chest complications do not occur.

Professor Finsterer, whom I have watched and assisted at his work in Vienna, would take three hours or more to perform the extensive operation of partial resection of the stomach for jejunal ulcer following previous gastro-enterostomy, using block anaesthesia to enter the peritoneal cavity, and splanchnic anaesthesia as advocated by Braun; he would repeat the splanchnic anaesthetic, but never more than once. I visited the subjects of these operations afterwards and found very little evidence of post-operative shock. Moreover, inhalation narcosis could not have secured *the certain and continued relaxation and the safety rendered possible by the above measures.*

Spinal Anaesthesia.

For operations about and below the umbilicus—for example, in acute appendicitis, acute intestinal obstruction, strangulated umbilical hernia, pelvic operations in the female, operations on the bladder, excision of the rectum, haemorrhoids, and so forth—spinal anaesthesia, achieved by introducing 0.05 to 0.1 gram of stovaine into the theca between the third and fourth lumbar vertebrae, is the method of choice. It is also ideal for all operations of magnitude on the lower extremities, and has the same advantages as the anaesthetic combination described above. In operations for intestinal obstruction spinal anaesthesia confers an added advantage: the caecum can be exposed without escape of viscera, and if distended it can be tapped. The action of stovaine being to cause strong and active peristalsis, the tapping is followed by rapid emptying of the gut. In cases of intestinal obstruction it is more than ever essential to use an anaesthetic of minimum toxicity but affording complete and uniform muscular relaxation.

Infiltration and Block Anaesthesia.

This anaesthetic (solution of novocain 0.5 per cent. in adrenaline 1 in 200,000) has been freely used alone in such instances as strangulated herniae in very old bronchitic subjects, for caecostomy in cases of acute intestinal obstruction where the toxic effects are very marked, and for amputation for gangrene in old people who have accompanying serious constitutional complications. For removal of superficial tumours—for example, lipomata, etc.—infiltration anaesthesia is the one of choice.

Avertin.

I first saw this compound used in Berlin by Professor Katzenstein in December, 1927, and was impressed by its properties; I have since used it in over a hundred cases, and find that, though not in itself a complete analgesic, it is a powerful amnesic. It is useful in combination with infiltration anaesthesia in adults and older children, and with light ether anaesthesia in younger children. Combined with infiltration anaesthesia it may be used in cases of operation for goitre, appendicitis, hernia, excision of the breast, and so forth. It is entirely non-toxic, and must find a useful place both in general surgery and obstetric practice.

For the reduction of fractures avertin in combination with local anaesthesia is ideal, and is used extensively on the Continent: 50 to 60 c.cm. of 0.05 per cent. novocain solution in 1 in 200,000 adrenaline are injected into the blood clots surrounding the fractured ends of the bone. The surgeon, having ensured that his needle has entered the blood clot by withdrawing blood-stained fluid into the syringe, may carry out the necessary manipulations in a perfectly painless manner five to ten minutes after the injection.

I would say in conclusion that since using the above-described method of anaesthesia I have witnessed a 50 per cent. fall in the mortality from my abdominal operations. I hope the time is not far distant when ether and chloroform narcosis with their inevitable mortality will have been superseded.

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APPARENTLY SPONTANEOUS RUPTURE OF THE NORMAL SPLEEN.

BY

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IT is a fact well known to all surgeons that in various pathological conditions, of which chronic malaria affords the best example, the spleen may rupture following the slightest degree of trauma, or even without injury at all. To the latter condition the term "spontaneous rupture" is applied. Rare cases have been reported in which it is claimed that a similar spontaneous rupture has taken place in a perfectly normal spleen. That a healthy spleen should without apparent cause suddenly burst is difficult of belief, and the following case is recorded as offering an explanation of the anomaly.

The patient was a fairly well-covered and muscular male, aged 50, by occupation a shopkeeper. He stated that he had previously been quite healthy, and that he was one of a large family all of whom were healthy. He gave a history that on the evening of March 12th, 1927, he suddenly, and without apparent cause, experienced acute pain in the epigastrium, which within a few minutes became so severe that he had to stop work. The pain later spread to both his shoulders. He went to bed, but was not seen by his doctor until March 14th, when he was immediately ordered to hospital.

On admission the patient looked extremely ill, his face being pale and covered by a cold sweat. The temperature was 99° F., and the pulse 120; the respirations were shallow and grunting. The tongue was slightly furred. The abdomen did not move on respiration, and was uniformly rigid to superficial palpation. Deep tenderness was present all over the abdomen, being most marked in the epigastrium. A rectal examination was negative. The patient was regarded as a typical case of perforated gastric ulcer, which diagnosis was made independently by his doctor, the house-surgeon, and the surgeon.

Operation (March 14th).—The abdomen was opened by a right paramedian upper abdominal incision. Immediately on opening the peritoneum there was a profuse outpouring of blood, at first dark and old, but later mixed with fresh blood. Investigation showed the spleen to be the source of the haemorrhage, and the organ was removed after the left rectus muscle had been divided transversely to obtain better access. The patient was by this time very collapsed; an intravenous saline was therefore given on the table, while the abdomen was rapidly closed with through-and-through sutures. The patient rallied well from the operation, and had a normal uneventful convalescence. He was discharged on April 11th.

Macroscopical Appearance of the Spleen.—The normal appearances of the spleen were almost completely obscured by two large subcapsular haematomata, one situated on the outer convex surface, the other on the concave side of the organ, the two communicating with each other round the posterior border. The only normal spleen visible was a narrow strip along the anterior border. The haematoma on the convex aspect of the organ had ruptured through the capsule at one point, and it was through this rupture that the haemorrhage into the abdomen had taken

place. The vessels in the hilum of the organ appeared healthy. On section the diagnosis of subcapsular haematoma was confirmed, and it was in addition seen that a considerable portion of the splenic substance had been ploughed up by the haemorrhage.

Microscopical Examination.—A portion of the spleen which appeared to be undamaged by the haemorrhage was submitted to microscopical examination. A normal histological picture was found. A portion of the splenic artery was also examined, but no abnormality was discovered.

As far as could be judged, therefore, apart from the damage caused by the haemorrhage, the spleen was a normal healthy organ of the usual size and with healthy blood vessels. The patient was repeatedly questioned as to whether he had received any injury, but this was denied. A diagnosis was therefore made of spontaneous rupture of a normal spleen.

Shortly after his discharge the patient was asked to attend in order that he might be further examined, and investigations were made to see if some cause could be discovered to account for the apparently spontaneous rupture. No abnormal signs were found in the heart, lungs, or abdomen. The urine was acid, and contained no abnormal constituents. The arteries were slightly thickened and the blood pressure was 140/85. While the examination was in progress the patient stated that he had lately remembered that at 10.30 a.m. on the day of the onset of his illness he was leaning over a ledge in order to open his shop window, when he slipped and fell on to his left side against the edge of the ledge. He had only slight discomfort, and, thinking nothing of his injury, dismissed it from his mind until our repeated questionings recalled the incident. Undoubtedly this forgotten trauma was the primary cause of the ruptured spleen.

Similar cases have been reported by T. S. Jackson[1] and J. L. Stretton.[2] Jackson's patient was a girl, aged 15, in whom the apparent spontaneous rupture occurred while she was sitting in a cinema. After her recovery he elicited the history that four weeks previously she had fallen against a desk, striking her left side. Stretton's patient was a pregnant woman, aged 37, in whom the lesion professedly followed the getting out of bed to pass urine. Subsequent careful inquiry elicited a story of violent coitus.

M. P. Susman[3] reports, as a spontaneous rupture of an apparently normal spleen, a case the clinical features of which bear a close resemblance to the one recorded here, and in which the original diagnosis was also perforated gastric ulcer. He could find only six similar cases in the literature.

Admitting that spontaneous rupture of a perfectly healthy spleen can hardly occur, he suggests as an explanation that some lesion was present which was responsible for the rupture, though evidence of its existence was destroyed by that occurrence. In other words, we are dealing with examples of spontaneous rupture of pathological spleens. It seems simpler to believe that occasionally, in certain individuals and at certain phases, rupture of a normal spleen may occur following minimal trauma. If the capsule is intact the symptoms may be delayed for hours or days, and when eventually the patient collapses the memory of the original and causative injury has disappeared. The case here recorded affords a good example of this happening.

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A NOTE ON HAEMATOCOLPOS.

WITH A REPORT OF TWO CASES.

BY

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HAEMATOCOLPOS is a very uncommon affection, and is the result, generally, of cryptomenorrhoea, the condition in which the formation of the menstrual discharge goes on, but without the normal appearance of menstruation. Two cases which recently came under my notice and presented features of much interest prompt a review of the general points and symptomatology of the condition.

The patient is generally between 15 and 18 years of age,[1] and is usually brought to medical notice on account of one or other of three things: (1) non-appearance of menstrual periods; (2) swelling in the abdomen; (3) disturbance of micturition.[2]

In most cases subjective symptoms of the menstrual period are present, and these tend to be better defined in older girls. The obstruction to the escape of the menstrual discharge may be anywhere below the internal os, and its commonest site is the ostium vaginae, where a diaphragm is present, formed by the non-canalization of the lower end of the fused Müllerian ducts, and not by an imperforate hymen.[3] In some cases the normal hymen may be seen external to the obstructing membrane, but in others there is no trace of the hymen whatsoever, and some observers have described this type as due to a true imperforate hymen.

De Sahn[4] many years ago, in a review of the condition, stated that the error of formation is never very great, as it would then promote atrophy of the internal genitals, especially of the ovaries, and menstruation would not occur. He pointed out factors leading to stenosis of the vaginal canal, such as inflammatory or specific ulceration of the vagina, chronic vaginitis, cicatricial constriction following injuries during labour, or an attack of small-pox or typhoid fever, and, possibly, cancer obstructing the vagina. These latter cases must be very rare and may be considered separately from those under consideration now, which can be conveniently termed primary or membranous haematocolpos.

CASE I.

The patient, a girl aged 13 years and 8½ months, was admitted to Paisley Royal Alexandra Infirmary on January 17th, 1929, under the care of Mr. Hugh Donald.

History.—Four months before admission to hospital the girl complained of slight pain in the abdomen. This persisted for an afternoon, during which her mother detained her from school. Between three and four weeks later slight pain recurred, and lasted for about three hours; it was not severe enough to keep her from attending school. Another mild attack appeared between three and four weeks later, and, like the others, was referred to the "middle of the stomach and low down." A similar interval elapsed until the next attack, which was more severe than the others, but only lasted about four hours. The next spasm occurred three weeks later, and was sufficiently severe to make her seek medical advice, and to be detained in hospital. Five days before admission she had a sharp and moderately severe epistaxis, with no accompanying symptoms. The following morning she was given Epsom salts at home, and in the evening complained of slight pain in the abdomen, similar to that which she had previously been experiencing, but which her mother attributed to the purgation. The next afternoon she was crying with the pain, which persisted all the evening. On the following day the pain was still more severe; it was situated just below the umbilicus, and for the first time necessitated her remaining in bed. Her mother stated that the pain seemed to be cramp-like, as, at short intervals, the girl would cry out as a painful spasm occurred. This persisted until the next day, when pain on micturition became an added feature. The painful micturition and spasmodic attacks of evidently severe pain, causing her to roll about in agony in bed, made her family doctor suspect urinary calculus, and he sent her to hospital.

On examination the patient was found to be a well-nourished and well-developed girl, the secondary sex characters being well formed. Deep tenderness was elicited in the middle line of the abdomen between the symphysis pubis and one inch below the umbilicus, and this tenderness was also present, extending for about two inches from the mid-line on the left side, but not on the right. A distinct mass could be felt in this situation through the abdominal wall, but its outline could not be defined. Rectal examination proved excessively tender, but a large, soft swelling was readily made out, bulging into the anterior rectal wall, and haematocolpos was diagnosed. When the condition is kept in mind, diagnosis is simple. While in the ward before operation she had one severe spasm of pain, which was relieved by 5 grains of aspirin. There was no albuminuria.

Treatment.—Under anaesthesia, examination of the hymen revealed it to be bulging, deep red in colour, and quite imperforate. A very freely movable tumour was palpated through the abdominal wall with its upper border about one inch from the umbilicus. The abdomen was opened in the mid-line and the tumour found to be the uterus distended with blood; the ovaries and tubes were examined and found normal. Laparotomy was justified to observe the condition of the Fallopian tubes, as haematosalpinx would most probably have necessitated their removal. The hymen was vertically incised under scrupulous asepsis, and one pint of dark red, jelly-like fluid escaped. The external os of the cervix admitted one finger readily. The condition was, then, haematometra. The vulva was swabbed with spirit and iodine, but no vaginal cleansing was employed. The vulva was swabbed with spirit daily, and the patient made an uninterrupted recovery, being dismissed on February 26th. Menstruation, to that date, had not yet reappeared.

CASE II.

This patient, aged 14 years and 2 months, was admitted to the Royal Samaritan Hospital for Women on February 17th, 1929, under the care of Dr. John Gardner.

History.—Seven days before admission she complained of a low backache, which she ascribed to sitting on a high stool at piano practice. This continued slightly and intermittently until the evening before admission. She retired to bed at the usual hour, but was awakened at 2 a.m. with severe colicky pain in the lower abdomen. This continued almost continually throughout the night, but there was no sickness or vomiting. About 7 a.m. she complained of a strong desire to urinate, but passed only a small quantity of urine (amount unspecified). From that hour until admission to hospital at 6 p.m. on the same day there was marked vesical tenesmus and complete inability to micturate.

On examination the patient was found to be well nourished. She was obviously in great discomfort and the lower abdomen was markedly distended, the percussion note being dull to within an inch of the umbilicus. Twenty ounces of urine were withdrawn by catheter, and the patient immediately and spontaneously declared her great relief and comfort. There was no albumin or any abnormality in the urine. The temperature was 97.6° F. and the pulse rate 92. The ostium vaginae was occluded by a reddish bulging membrane, which showed a marked impulse on coughing. Rectal examination revealed a fairly firm mass, palpable through the anterior rectal wall. No tumour could be felt through the anterior abdominal wall, and there was only slight suprapubic tenderness. The case was diagnosed as simple haematocolpos.

Treatment.—The hymen was incised vertically, and each edge sutured to the adjacent skin. About five ounces of thick menstrual fluid escaped. No douching was employed, but daily swabbing of the vulva with mild antiseptics, and recovery was uneventful.

Comment.

The features of special interest in Case i are: (1) the unusually early age of the patient to have haematocolpos and haematometra—13 years 8½ months; (2) the predominant symptom that caused the girl to be sent to hospital—severe abdominal pain, probably caused by spasmodic contractions of the uterus; (3) marked epistaxis on the day before the onset of pain.

The feature of note in Case ii is undoubtedly the very acute retention of urine; and, of course, the absence of any previous monthly disturbance or premonitory symptom, except the slight backache of one week's duration.

I am much indebted to Mr. Hugh Donald for permission to publish Case i, and to Dr. Gardner for Case ii.

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A CASE OF ALEUKAEMIC LYMPHATIC LEUKAEMIA.

BY

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The case here recorded revives the controversy as to the existence of really acute lymphatic leukaemia to which one of us, in conjunction with L. E. H. Whitby, refers in a paper, "Some difficulties in the diagnosis of leukaemia," published in the *Lancet* of June 18th, 1927 (p. 1279). The present patient was in good health until October 1st, 1928; the duration of her illness was six and a half weeks; cases of acute myeloblastic leukaemia, it is true, may terminate even more rapidly. The degree of haemorrhage no doubt largely controls the period of survival.

A single woman, aged 25, employed as a monotype operator, was first seen professionally in 1925. She was then found to be chlorotic. She took but little outdoor exercise, and was advised to play games and go walks. The adoption of this advice led to rapid improvement, and she enjoyed good health until the beginning of October, 1928. The conditions under which she worked were quite satisfactory, but she had always had a "delicate throat," was very sensitive to the smell of smoke, and could not tolerate gas fires. Her previous medical history revealed nothing else of importance.

Present Illness.

On October 1st, 1928, she developed a "feverish chill" and was sent to bed; a week later the symptoms were chiefly gastric, and by October 15th she was up and about again. On October 22nd she was referred to a throat specialist on account of a complaint of foul-tasting discharge from the nose, but nothing was found in the nose, nasopharynx, or sinuses to account for her symptoms. On October 27th she developed what appeared to be a typical attack of rheumatism, the pains flying from joint to joint and yielding to sodium salicylate. On November 2nd she was seen on account of bleeding from the gums and the passage of tarry stools; no evidence of valvular disease of the heart was found. The haemorrhage continued, uninfluenced by calcium—by the mouth and intramuscularly—or haemoplastin.

On November 9th enlargement of the spleen was detected, and some discomfort was complained of in that region. Petechiae on the buttocks now appeared, and diarrhoea with dark stools and haematemesis occurred. Her condition rapidly deteriorated. She was admitted to the Cirencester Memorial Hospital on November 12th; from that time until her death, two days later, her temperature ranged between 100.6° and 103° F.

On November 13th a blood examination was made. The blood was extremely thin, and with the Dare haemoglobinometer the haemoglobin value was found to be about 9 per cent.; the red cells 1,050,000 per c.mm.; colour index 0.5; leucocytes 1,100 per c.mm. A differential count of 250 leucocytes gave:

	Per cent.
Polymorphonuclears	0.4
Neutrophile promyelocytes	2.4
Neutrophile metamyelocytes	2.4
Eosinophile myelocytes	0.4
Myeloblasts	1.6
Lymphocytes (mostly small forms)	84.4
Turck's cells	1.6
Lymphoblasts	6.0
Large mononuclears	0.0
Eosinophils	0.0
Unclassified	0.8
	100.0

No nucleated red cells were found. There was a moderate degree of anisocytosis and slight poikilocytosis. A few basophilic red cells were present. A film stained by Graham's oxidase method gave: oxidase granule containing leucocytes 8 per cent., non-granulars 92 per cent.,—a finding which agrees closely with the differential count from a Leishman-stained film described above.

Post-mortem Examination.

At the necropsy on November 15th, twenty-one hours after death; small subcutaneous haemorrhages were noted on the left upper eyelid, on the buttocks, and one on the right thigh; rigor mortis was present. The body was not emaciated. Subcutaneous fat was fairly abundant and of normal colour. No enlarged superficial glands were detected. There was no excess of free fluid in the abdomen.

The spleen was enlarged, about 8 in. long, and of normal consistence. Malpighian bodies were visible; on section nothing noteworthy was found. There was much perisplenitis, but only slight thickening of the capsule. The liver was of normal size; on section it was greasy-looking and pale. The pancreas was normal, as also were the kidneys.

In the great omentum and in the portal fissure were a number of enlarged glands, mostly about the size of filberts; they were pale pinkish on section, and some showed haemorrhages. There were several small subperitoneal haemorrhages in the course of the intestinal tract, and two large ones, one extending over about two inches in the mid small intestine and another about the caecum.

There was slight excess of free fluid in the pericardial sac, yellow in colour; several petechial haemorrhages on the visceral pericardium. There were no valvular changes. The lungs were pale, with no adhesions; two or three subpleural petechiae were present. The marrow in the ribs appeared red.

Portions of the liver, spleen, a gland from the mesentery, and of a rib were fixed in Holly-Maximow fluid and sections stained by Ellermann's method, as described by Piney in *Recent Advances in Haematology*; other portions from the same sources were fixed in formol saline and stained by haematoxylin and eosin. The report on these was as follows.

Liver.—The portal canals are everywhere infiltrated with lymphocytes which, in places, penetrate a little way into the outer parts of the lobules, some liver cells being cut off, as it were, by them. A similar invasion is seen in the deeper part of the capsule of Glisson. Some of the liver cells round the hepatic veinules show vacuolation (fat globules, dissolved in dehydration).

Gland.—There is but little indication of lymph nodes and germ centres, lymphocytes being fairly evenly distributed throughout cortex and medulla, though they are somewhat denser under the capsule. Besides lymphocytes there are many larger rounded or oval cells with large round nuclei; some of these cells contain two or three nuclei. Some of the trabeculae are thickened, and the larger cells are, in places, disposed along the trabeculae.

Spleen.—Malpighian corpuscles small and inconspicuous; phagocytic cells scanty. No fibrosis. Lymphocytes everywhere abundant.

Rib.—The marrow consists mainly of lymphocytes, some larger cells (? myeloblasts) seen. Red blood cells not numerous.

We think that there can be no question of the correctness of the diagnosis of lymphatic leukaemia, though we can find no record of a case with such extreme leucopenia. The sections of the liver were typical of lymphatic leukaemia, those of lymphatic gland and spleen very suggestive of that condition. The sections of the rib were less successful and convincing.

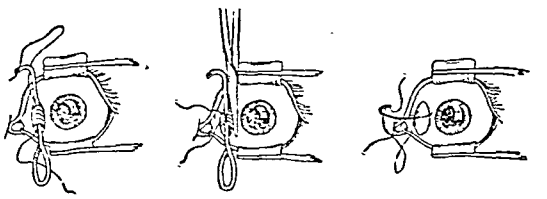
We have to thank Dr. L. E. H. Whitby, *M.C.*, for examining the sections and giving his opinion on them.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CONCOMITANT CONVERGENT STRABISMUS: EPITOME OF TREATMENT.

SQUINT is a preventable defect. At about 3 years of age judicious use of a collapsible tube of atropine ointment permits predisposing refractive errors to be discovered and provides an effective mode of preventive treatment. The left eye tends to deviate more often than the right.



Unfortunately all children are not examined before they go to school. The amblyopia of an established squint concerns the brain rather than the eye, hence glasses are slow to cure it: an occluder of Chavasse's 6/60 glass is usually prescribed for the straighter eye until fusion training becomes worth while.

As a last resort a modified recession operation has yielded good results in 200 consecutive cases. With the aid of a miniature-eyed strabismus hook, made to my design in stainless steel (Weiss), the internal recti are ligated, detached from their insertions, and sutured to the tough outer layers of the sclera further back, as shown in the accompanying diagrams. The suture material is 000 twenty-day chromic catgut (Davis and Geck). Both eyes are covered for forty-eight hours, and the formerly fixing eye is kept covered for three weeks.

The organization of the Bradford School Medical Service ensures effective following up of the cases.

W. O. LODGE, M.D., F.R.C.S.Ed., D.O.M.S.
(From the Bradford Pre-School Clinic)

ALOPECIA AREATA ASSOCIATED WITH FRONTAL SINUS DISEASE.

THE following case is of interest in view of the recent work of Wright,[1] who has shown that the theory of reflex irritation as a cause of alopecia areata is untenable and that it is unlikely that this disease is a trophoneurosis.

A healthy-looking man, aged 30, consulted me in January of this year on account of a patch of baldness the size of a penny situated in the left temporal region. He stated that the hair had begun to fall in October, 1928, but that the baldness was limited to this spot and that no other area had been involved.

On examination the condition was found to be alopecia areata and the patch corresponded, according to Jacquet,[2] with the site of maximum predilection for the disease. The patient stated that he had had much domestic trouble during the past year owing to the illness of his wife. In February, 1928, he had had severe pain in the right frontal region, which lasted for several days and then completely disappeared; further attacks had occurred in September, 1928, and January, 1929. On my advice the patient saw Mr. E. Watson-Williams, who reported that a skiagraphic examination confirmed the diagnosis of right-sided frontal sinus disease. As the patient was unwilling to undergo an operation, the scalp was treated by local measures. At the beginning of April he had on one occasion a free discharge of pus from the right nostril. He has had no further symptoms of sinusitis since January, and when seen at the end of April hair was beginning to grow on the bald patch. No new areas of alopecia have developed.

It would be difficult to explain the relationship in this case between a right-sided frontal sinusitis and a left temporal patch of alopecia on the basis of reflex irritation, and we are therefore led to the conclusion that the focal infection *per se* was responsible for the disease.

NORMAN BURGESS, M.A., M.B., M.R.C.P.
Clifton, Bristol

[1] Wright, C. S.: *Arch. of Derm. and Syph.*, 1929, p. 365.
[2] Jacquet: *Ann. de Derm. et Syph.*, 1902, p. 362.

AN EXTRAORDINARY TUMOUR.

HAVING read the note on "an unusual tumour" by Dr. R. L. Paterson in the *British Medical Journal* of January 5th (p. 16), I have been reminded of a case of mine which was very much like the one there described.

A Pathan woman, aged about 50, came to me in August last with a large, pendulous, pear-shaped growth on the left side of her body. It started a little above the costal margin in a comparatively narrow skin pedicle, increasing in size from above downwards and reaching down to the middle of the thigh. The growth was lobulated and of soft consistency; there were multiple old scars over its dependent part, and some varicose veins over its surface. The growth had commenced twenty years previously, and apart from its objectionable bulk caused no great inconvenience.

The tumour was diagnosed as a lipoma, and was removed. The patient left the hospital on the ninth day after operation, well gratified with the result.

The accompanying photograph, taken just before the operation, illustrates the extent of the growth, and may be of interest.

SAEED AHMAD, M.B., B.S.,
Assistant Surgeon, Provincial Hospital, Peshawar, India.

A CASE OF THREE-LOOP INGUINAL HERNIA.

CONSTITUTING as it does a trap for the uninitiated, I thought it well to publish the following case in order to impress juniors with the necessity, when operating on a hernia with a double loop of bowel in the scrotum, to bring down and examine the intervening abdominal loop, no matter how healthy the portions in the scrotum appear to be. I would also commend to juniors the method of dealing with a very doubtful loop by enveloping it in oiled gauze. It may not constitute brilliant surgery, but it enables a very rapid and efficient operation to be performed, even when the patient is critically ill, and has been used with success in cases where the patient was very old and very ill, and yet, although the loop went gangrenous, the patient recovered.

A labourer, aged 24, was admitted to the Eastern District Hospital, Glasgow, in December, suffering from a huge strangulated inguinal hernia of the right side. He stated that he had had this hernia as long as he could remember, and, although it grew gradually larger, he was always able to reduce it until the day of admission, when it suddenly became very much larger, painful, and irreducible.

At operation three loops of small intestine, probably ileum, were found, involving fully three feet of bowel in all. Two of these loops were only separated from one another by about six inches of bowel, but they again were separated from the third loop by an intra-abdominal portion about eighteen inches long. While the portions in the scrotum looked healthy, that which was withdrawn from the abdomen was black, and so much affected that its vitality appeared doubtful. The doubtful portion was therefore enveloped in oiled gauze, and the patient returned to bed. Two days later it was inspected, found to be recovering, and was returned to the abdomen, and the wound closed, but radical cure was not performed, as the patient's condition was still unsatisfactory. About six weeks later the scar was excised and the radical cure performed, the patient making an uneventful recovery.

So far as I am aware, Lauenstein of Hamburg was the first to draw attention to these double-loop, or W, herniae,

as he called them, and the tendency in these herniae for the intra-abdominal loop, connecting the two scrotal loops, to become gangrenous, while the scrotal loops escape. I had published a couple of cases of double-loop hernia on which I had operated, and Lauenstein sent me a copy of an article he had written reporting a number of such cases, in most of which the abdominal loop had become gangrenous.

J. MACEWEN, M.B., C.M., F.R.F.P.S.,
Surgeon, Glasgow District Hospitals.

CHRONIC TEMPORO-SPHENOIDAL ABSCESS.

IN view of the difficulty of diagnosis in the earlier stages, and the ultimate recovery of the patient, the following case appears to be worth recording.

A boy, aged 5, was admitted to the Royal South Hants Hospital, Southampton, on December 10th, 1928, complaining of feeling sick and having a headache. The mother stated that for fourteen days previously he had had a foul discharge from the left ear, accompanied by attacks of giddiness and unsteadiness of gait. There was no history of infectious disease or of any other previous illness.

On admission the temperature was 100° F., the pulse 120, and the respirations 26; there was a profuse foul-smelling discharge from the left ear, but no swelling or tenderness behind, and no tenderness on firm percussion above it. During the next week the patient became listless, and, later, very drowsy, sleeping most of the day. He vomited on two occasions and the ear continued to discharge profusely. The temperature ranged between 98.8° and 102.4° F. From December 22nd to 27th the condition gradually improved, and the child appeared much brighter. Pain was felt over the left mastoid area on December 28th, and there was slight tenderness, but no swelling or oedema was present. No pathological change was found in the fundus of either eye.

On January 7th, 1929, vomiting recommenced for the first time since the middle of December; the child became very drowsy, and the left pupil was slightly larger than the right. The temperature was now 105° F., the pulse 124, and the respiratory rate 24. The left mastoid antrum was explored, and also the left lateral sinus and middle fossa of the skull on the left side after trephining, but nothing abnormal was discovered. For some days the patient continued to be very drowsy and disinclined for food. *Twitching of the right side* of the face was noticed on January 16th, with apparent inability to speak. There was occasional vomiting, and two days later slight twitching of the right hand appeared. The left pupil was now much larger than the right.

On the afternoon of January 21st violent twitching of the right hand and arm, and also of the right side of the face, began. The child was taken to the operating theatre and the trephine disc was removed. The subdural space was aspirated and pus was found on the left side. The dura mater was opened by a crucial incision overlying the left temporo-sphenoidal region, and the abscess was left to drain. The child began to speak soon after regaining consciousness, and the condition subsequently improved each day. He was discharged from hospital on February 26th, a small hernia cerebri being present at the site of the trephine opening.

I am indebted to Mr. H. G. G. Nelson for permission to publish the case.

R. VAUGHAN THOMAS, M.B.,
Late Senior House-Surgeon, Royal South Hants Hospital, Southampton.

Reports of Societies.

FISTULA IN ANO.

AT a meeting of the Subsection of Proctology of the Royal Society of Medicine, held on May 8th, the president, Sir CHARLES GORDON-WATSON, in the chair, Mr. J. P. LOCKHART-MUMMERY opened a discussion on fistula in ano.

Following a historical survey, in the course of which he mentioned that the operation for fistula was cited in a manuscript of 2200 B.C., and that "cutting of a fistula" was performed by John Arderne in the fourteenth century, Mr. Lockhart-Mummery said that all fistulae were due to peri-ano-rectal inflammation and suppuration, but were less common now than they were ten to fifteen years ago. Summarizing the various causes of the disease, he said that in the substance of the internal sphincter there were present glandular spaces called intramuscular glands. These glands communicated with the submucous tissue in the region of the lower end of the rectum and anal canal. Inflammation of these glandular elements was probably the starting-point of many cases of infection in this region. Congenital fistulae were due to inclusion dermoids lined with skin and containing hair and sweat glands. Their situation was typically over the coccyx and lying well behind the anus. Very chronic fistulae were often lined with skin, which had grown in from the external opening, but contained no hairs or sweat glands. Tuberculous fistulae differed clinically and histologically from other types by the lack of induration surrounding the track. Tuberculous granulation tissue infiltrated the surrounding tissue, and there was no limiting membrane or surrounding fibrosis. Referring to the treatment of fistula, the speaker said that there were many ways of operating, but that certain very definite principles were necessary in all cases to ensure success. Careful following of all the tracks and excision as far as possible, adequate drainage, and careful dressing of the flat wound left after operation were among the most important. He was convinced that division of the external sphincter should not be carried out at the first operation, but that a two-stage operation should be performed, particularly if the sphincter must be divided laterally. Delaying the division of the sphincter for two to three weeks after laying open the superficial tracks ensured the fixation of the divided ends of the sphincter by the surrounding fibrosis, which developed during the healing process, and prevented wide retraction. Division of the internal sphincter did not cause incontinence; the external sphincter was the chief factor in the control of the anal orifice. In dealing with very extensive and complicated fistulae treatment in stages and control of the healing process, by enabling the final opening in the bowel to be made through the posterior part of the sphincter, obviated the possibility of producing incontinence. In treating tuberculous fistula the tuberculosis as a whole should be treated as well as the fistula. Excision of the fistula should be aimed at with all the surrounding granulation tissue. Primary suture of the wound after complete excision of a fistula had not been very successful, as the wound was in such intimate relation with the anal canal. In the speaker's opinion, complete excision of the fistula, leaving a flat, open, granulating wound, was the best method of treatment. Excellent photographs and sections of various types of fistulae and sections, prepared by Dr. Cuthbert Dukes, showing the intramuscular glands, were shown.

Dr. H. A. HARRIS gave a lucid demonstration of the embryology of the rectum and anal canal. He pointed out that the primitive gut, and, finally, the fully formed alimentary tract, were poorly covered with muscles, compared with the tubes which were developed from them—for example, the trachea, bile ducts, and urogenital sinus. The poor musculature made the parent tube liable to the formation of diverticula, and, by overgrowth of the lining membrane, to occlusion. Referring to the intramuscular glands, Dr. Harris said that glandular tissue was found in the submucosa and in the muscle in various parts of the alimentary tube, such as the glands present in the oesophagus, Brunner's glands in the duodenum, and the intramuscular glands in the ano-rectal region. These glands extended outwards through and between the muscle fibres and, in the perianal region, into the loose connective tissue between the internal and external sphincters.

Mr. C. NAUNTON MORGAN gave an account of his analysis of 100 consecutive cases of peri-ano-rectal infection and fistula formation admitted to St. Mark's Hospital. The condition was very much more common after the age of 30, was three times more frequent in men than in women, and between the ages of 10 and 15 than between 15 and 20. Certain occupations were more liable to be affected than others, especially tailors, bus drivers, and clerks, and the disease was nearly twice as common in cavalry regiments as in the infantry. Most fistulae were of the direct type, and passed radially into the bowel (46 per cent.); the horseshoe variety was present only in 15 per cent. Over 50 per cent. passed superficial to the external sphincter, 33.3 per cent. deep to the sphincter, and the remainder through the fibres of the sphincter. Over half the direct fistulae were situated in front of a line drawn *transversely through the anus*. The incidence of tuberculous fistulae was 9 per cent., and pulmonary *tuberculosis was present* in about 8 to 11 per cent. of the cases. Tuberculous fistulae healed well if the patient's general condition was good and there was no accompanying pulmonary disease. In eight cases with active pulmonary tubercle only two fistulae healed, whereas four cases in five of tuberculous fistulae uncomplicated by pulmonary disease healed rapidly and

well. Exacerbation of the pulmonary condition following the operation occurred in three cases, though regional anaesthesia had been used. It was suggested that the recumbent position should be avoided after operation and the cases transferred as soon as possible to a sanatorium. Most of the cases complicated by pulmonary tuberculosis occurred in patients after the age of 40. In over 60 per cent. of the cases under consideration no exciting cause for the infection was found. Fissure and haemorrhoids accounted for only about 15 per cent., foreign bodies only 4 per cent., and inflammation of a crypt 1 per cent. Inflammation of a crypt and tearing of an anal valve might possibly be common exciting causes, but owing to the difficulty of demonstrating such minute lesions they had not been looked for up to the present in every case of fistula.

Sir CHARLES GORDON-WATSON said he thought the two-stage operation was a sound procedure. He had practised excision of fistulae and primary suture with considerable success. He described a case in which a foreign body, a bone, had produced two ischio-rectal abscesses, and also a case of very extensive rectal fistula due to a gunshot wound, with openings extending down the left thigh as far as the popliteal space. Colostomy had to be performed on this case. He thought that the intramuscular glands described by Mr. Lockhart-Mummery were possibly the cause of many abscesses in this region. The figures quoted by Mr. Naunton Morgan showed the importance of early and thorough treatment of ischio-rectal abscesses, and the results of treatment in the various groups of cases suffering from tuberculous disease were very interesting and important.

Dr. GANT (New York) said that it was easy to diagnose the average case of tuberculous fistula, and he agreed that the general condition should be treated as well as the fistula. He thought that the two-stage operation was unnecessary and that retraction of the sphincter and laxity of the anal orifice would not occur if the wound was not tightly packed. The careful after-treatment of the healing wound was as important as the operation for fistula. Dr. Gant said that he used local anaesthesia almost exclusively for fistula operation.

Mr. L. E. C. NORBURY said that in his experience tuberculous fistula healed quite well if the pulmonary condition was carefully treated. He showed a foreign body, a German bullet, which he had removed from the ischio-rectal fossa of a man who had had numerous operations for fistula without success.

Mr. E. T. C. MILLIGAN said that resolution of an infective process in this region occurred only extremely rarely, and therefore early and adequate drainage was called for to prevent extensive fistula formation. Multilocular abscesses often occurred in the ischio-rectal fossa, and they should be laid open into one cavity for drainage. Gangrene was fortunately an uncommon termination of inflammation, but he had seen one fatal case. The early signs of inflammation, heat, redness, swelling, were usually absent in the early stages and should not be waited for; deep tenderness was often the only physical sign. He thought tuberculous fistulae should be treated by wide excision and primary suture.

Mr. ASLETT BALDWIN said that he had employed ionization with some success in healing fistulous tracks.

TREATMENT OF LONG-STANDING VOLKMANN'S CONTRACTURE.

A MEETING of the Section of Surgery of the Royal Academy of Medicine in Ireland was held on April 26th, with Mr. R. A. STONEY in the chair. Mr. H. MEADE showed a case of Volkmann's ischaemic contracture treated by transplantation of the internal condyle.

Mr. Meade gave the following clinical details of the case.

A boy, aged 5, fell off a stool in 1917 and fractured his humerus. He was admitted to hospital the following day. Two days later he developed measles and was transferred to the fever ward, where he remained six weeks, during which time his arm was in a splint. His parents noticed that when he was discharged from the fever ward his fingers were bent and that he was not able to straighten them; the elbow also was in bad position. A couple of years later he underwent an operation, which gave him good use of the elbow. Nothing, however, was done to the contracted fingers, which were steadily getting worse. Shortly after he developed tuberculous disease of the knee-joint, for which he received conservative treatintermittently.

Mr. Meade first saw the patient on June 3rd, 1928, when he was consulted about the joint, which was in the third stage, with the knee ankylosed at right angles. There was a good deal of backward displacement. The patient's right hand was in a position typical of an advanced case of Volkmann's contracture; his parents considered that it was useless trying to do anything for it, but Mr. Meade obtained their leave to operate on the knee and to do what he thought best for the hand. On June 6th Mr. Meade operated on the knee, performing an erasion; he stretched the fingers and put them in splints, but did not make any attempt to dorsiflex the wrist. In three weeks' time there was a considerable improvement in the movements of the fingers, and the forearm and the hand were placed in a malleable splint. The wrist was gradually dorsiflexed and the splint was removed daily for massage. There was a steady improvement up to a certain point, when the condition became stationary. On July 19th further stretching was done under gas, without using much force; the result was a further shade of improvement. This stretching was repeated on October 25th, using more force, but producing very little improvement. Massage was still continued.

On March 13th, 1929, Mr. Meade performed the operation first described by Max Page, with the slight modification introduced by Hamilton Bailey; very little difficulty was encountered. The immediate result was disappointing, as the originator had stated, but within four weeks there was a considerable improvement, and the hand was now fully dorsiflexed with the fingers straight.

Mr. Meade said that the splint had only been removed from the fingers one week before the date of reporting, so it was impossible to say what degree of flexion would return to them. The result thus obtained in one month was, however, better than in nine months of conservative treatment, and that in a case that had been neglected for eleven years.

Mr. ARTHUR CHANCE said this method of treating contractures due to shortening of the muscles seemed to be the right one, as it was on the same lines as Souttar's operation for hip flexion. He was sure that it was much better than any lengthening of the tendons or any attempt to shorten the bones, not only because it gave a better result, but because it was much more simple to do.

Sir WILLIAM WHEELER showed an illustration of the type of Volkmann's contracture which was not uncommon in the Ministry of Pensions hospital after the war. He and his colleagues had obtained the best results from conservative treatment along the lines recommended by Sir Robert Jones. The treatment required great patience; the good results obtained were in a measure due to the fact that the patients could be kept under constant observation, and there was no lack of trained assistance from a well-equipped electro-therapeutic department. Treatment after shortening the bones of the forearm was very difficult, but some good results followed lengthening of the tendons. The pathological shortening of the tendons was only one factor in a generalized process. Stripping the flexor origins downwards from the humerus and the bones of the forearm, and transplantation of the bony origin of the muscles, were rational procedures when followed, as in Mr. Meade's case, by conservative treatment to stretch the other structures.

Mr. MEADE, replying, added that it was important to remember that a Volkmann's contraction could occur without splints being supplied.

Antitoxin Treatment of Tetanus.

Mr. R. A. STONEY showed a recent case of recovery after tetanus.

A child, aged 8 years, complained of abdominal pain on March 22nd, and was admitted to hospital as a case of tetanus. Examination showed trismus, well-marked risus sardonicus, and tonic contraction of all muscles, with recurrent clonic spasms. There was a history of injury to the great toe four days previously, and the nail was black, with pus under it. An intramuscular injection of 8,000 units of antitoxin was given at once. On the following day the nail was removed under chloroform, and dressed with hydrogen peroxide; 7,000 units of antitoxin were injected intrathecally, and 5,000 units intramuscularly. Five doses, each containing chloral hydrate 15 grains and potassium bromide 30 grains, were given at intervals of four hours; altogether 33,000 units of antitoxin were administered intramuscularly, 7,000 units intrathecally, and 6,000 units intravenously, with 240 grains of chloral hydrate. The child left the hospital well on April 17th.

Sir WILLIAM WHEELER said that he had been a member of the committee on tetanus presided over by Sir David Bruce during the war, which, after much investigation, recommended as a working hypothesis a definite dosage of antitoxin. For prophylaxis 1,500 units was usually given as a first injection intramuscularly; subsequently a dose of 500 units was injected once a week for three weeks.

For treatment an injection of 8,000 units was given by the intramuscular route together with 16,000 units intrathecally on the first and second days. On the two succeeding days this dose was halved, and on every second day afterwards 2,000 units was given by the subcutaneous route. Intravenous injection did not find favour owing to the danger of anaphylactic shock. The mortality fell from 58 per cent. in 1914 to 16 per cent. in 1917, and the period of incubation was raised from thirteen days to forty-seven days in the same period. Sir William Wheeler said he favoured large dosage; it was a case of toxin meeting antitoxin—a union took place, and the toxins were rendered inert.

Mr. W. DOOLIN recorded a case in which he had given 56,000 units intrathecally, intravenously, and intramuscularly with recovery. He drew attention to the fact that avertin had been very largely used in cases of tetanus in Germany recently in conjunction with antitetanic serum, with successful results.

Mr. H. STOKES thought the length of the incubation period might not have any relation to the severity of the disease, and mentioned the case of an officer during the war who contracted severe tetanus after a two and a half months' incubation period. He thought that the general opinion which had been formed during the war was that antitetanic serum in large doses had not very much advantage over that given in small doses. It was sometimes difficult to know when the infection had occurred.

Sir JOHN MOORE mentioned a case of tetanus at present under his care in hospital; the patient was recovering after the administration of 4,000 units only. Mr. F. J. HENRY said the only case of tetanus he had seen was one in which death occurred in a couple of days; the wound had been received from a cartridge fired from a toy pistol. In some cases Mr. Henry thought that the disease might be the result of acute infection from the patient's own intestinal tract. Mr. F. MORRIN referred to the advance in the successful treatment of tetanus which had been made by the use of avertin, and mentioned the cases of this disease which occurred in America every year after the celebration there of Independence Day and following wounds received from blank cartridges.

Persistence of Meckel's Diverticulum.

Mr. WILLIAM DOOLIN presented the case-histories of two male adults in whom the persistence of a Meckel's diverticulum was directly responsible for the condition of acute abdominal emergency.

A man, aged 44, was admitted to St. Vincent's Hospital with an inguinal hernia of three months' duration. At the operation the sac was found to contain a Meckel's diverticulum; this was reduced in the ordinary manner, and the sac was closed. Six days later, within two hours of dinner, the patient was suddenly seized with severe colic-like pain in the right abdomen and vomited once. The attacks of pain were rapidly intermittent, and an enema was returned heavily stained with blood. A tumour, dull on percussion, and tender to palpation, was found to be occupying the right flank. On the diagnosis of intussusception the abdomen was reopened; a large intussusception was found, its apex being within two inches of the hepatic flexure. As reduction proved impossible, the colon was rapidly mobilized, clamps were applied, and the colon was opened. The intracaecal mass of intussusception was amputated within the caecum, and the caecum was closed. The intussusception was caused by the inversion of the Meckel diverticulum, which, acting as an intestinal polypus, had produced an ileo-caecal intussusception. The patient made an excellent recovery, leaving hospital on the twenty-fourth day after operation.

The second case occurred in a man, aged 51, and was admitted to St. Vincent's Hospital as an "acute abdomen"; the patient's symptoms and physical signs pointed to the diagnosis of a subacute perforation of a duodenal ulcer. On opening the abdomen a heavily injected omentum presented, beneath which the coils of intestine were found to be covered with plastic lymph. Through the wall of one coil a piece of what appeared to be a quill projected. The complete coil was lifted out of the abdomen, when it was recognized as a Meckel's diverticulum; it was resected, and the opening in the bowel carefully closed. The patient made a rapid recovery, leaving hospital on the eighteenth day after operation. No histological examination of the diverticulum was made, as it was mounted as a unique museum specimen. The patient stated definitely after the operation that as he never ate fish the "quill" could not be a fishbone, but admitted that he had a habit of frequently plucking feathers from some hens he kept in order to use them as toothpicks; he often chewed these quills for long periods, and might have swallowed one unconsciously.

From a careful review of the available literature Mr. Doolin stated that perforation of a Meckel's diverticulum might be due to one of three pathological lesions: (1) peptic ulceration, in which the mucosa lining the diverticulum was of gastric type, and had ulcerated in the same fashion as gastric, duodenal, or jejunal mucosa might do; (2) inflammatory ulceration, either tuberculous or typhoid, and due to the involvement of the diverticulum, when present, in infections of the ileum; and (3) traumatic ulceration, due to the penetration of a foreign body from within the lumen of the diverticulum. The forecast in these cases varied greatly: the collective mortality of the peptic diverticular ulcers was over 50 per cent.; that of typhoid ulcers was 100 per cent.; in tuberculous ulceration the mortality was over 30 per cent.; and, in curious contrast, all the collected cases of purely traumatic perforation found in the literature (five in all) had terminated in recovery. Mr. Doolin asserted that the discovery of a Meckel diverticulum, whether the seat of pathological change or not, was sufficient indication for its removal. The method of removal might be either simple amputation or excision of the diverticulum along with its parent segment of bowel, followed by entero-anastomosis.

The PRESIDENT said he had never encountered a case of pathological Meckel's diverticulum. He had twice seen cases in anatomical subjects, but in neither instance was there any sign of pathological trouble having followed.

Mr. A. B. CLERY had recently discovered three cases of Meckel's diverticulum, the first in association with intussusception, the second causing acute peritonitis, and the third causing intestinal obstruction. Mr. H. S. MEADE said he had encountered four cases of intussusception at operation. In the first case the diverticulum was about 4 inches long. The second was one of obstruction in which there was a band running from the tip of Meckel's diverticulum to the caecum. In the fourth case operation revealed a diverticulum about 5 inches long. Mr. Meade had seen about a dozen cases in the dissecting room, but he had never found one inflamed or associated with any pathological condition. Mr. C. MACAULEY said he had detected a Meckel's diverticulum in the course of a routine examination of the abdomen on several occasions, but had only twice found it to be the cause of acute emergency symptoms. The first patient was a boy, aged 12, who complained of pain mainly about the umbilicus, and at operation Meckel's diverticulum was found attached to the umbilicus. The boy recovered completely. The second case resembled the one described by Mr. Clery, and an operation for intestinal obstruction was performed, the pressure being due to a band. It was hard to determine where the torsion began and where it ended, but the diverticulum was undoubtedly twisted. It was excised, and the patient recovered.

ANTIBACTERIAL POTENCY OF THE BLOOD IN PREGNANCY.

AT a combined meeting of the Edinburgh Pathological Club and the Edinburgh Obstetrical Society there was read a joint communication by Drs. DOUGLAS MILLER and J. R. WHITTAKER, jun., entitled "A study of the bactericidal and bacterio-static property of the blood during pregnancy and the puerperium, and its relationship to the development and course of puerperal infection."

The authors referred in the first instance to the anomalous nature of the incidence of puerperal infection which not infrequently developed in cases in which delivery had been spontaneous and uncomplicated, while failing to occur in cases in which trauma and manipulation had made its appearance probable. Bacteriological and clinical evidence appeared to warrant the inference that puerperal sepsis could rarely be explained on the basis of an endogenous infection: on the other hand, it seemed possible that the occurrence of sepsis in cases in which there had been a minimum of interference might be related to an abnormally low degree of resistance on the part of the individual. To test the validity of this hypothesis it was decided to examine the bactericidal and bacterio-static property of the blood in a large series of pregnant and parturient women, the

method employed being that described by Wright, Colebrook, and Storer. Coincidentally, the test of skin sensitiveness to streptococcal toxin was employed in a number of cases, but was discontinued, partly because the results obtained were inconsistent, and partly because, although the result might indicate the possession or otherwise of substances antitoxic to streptococcal toxin, it was not in the same sense a measure of resistance on the part of the individual to the important local invasive potentiality as distinct from the toxin-producing property of the organism, a property which from anatomical considerations was of special importance in puerperal infection.

Details of the Investigations.

In the majority of their observations the authors had employed a twenty-four-hours broth culture of *Staphylococcus aureus*, diluted to 1 in 5,000; in practice it had been found convenient to examine specimens of blood in groups of six, all of which had been withdrawn simultaneously and tested with one inoculum of uniform density. The bactericidal and bacteriostatic property of the blood in a total of 396 individuals was examined. The first series of experiments was undertaken to determine whether such individual variation as might exist could be related to the incidence of pyrexia in the puerperium; this series comprised 229 healthy individuals, all of whom had experienced spontaneous uncomplicated labours, blood being withdrawn at or about the time of delivery. There were in this group 17 women who subsequently experienced febrile puerperia due to pelvic infection: in 14 of these the degree of antibacterial activity of the blood was lower than the average of the other members of the respective groups, while in 3 cases it was higher. An associated investigation was conducted with cases in which labour had been seriously complicated, and in which, from the amount of interference and extent of trauma, it appeared probable that serious sepsis would develop. Twelve such cases were investigated, each potentially septic case being grouped along with women who had experienced normal labours, the latter constituting a control. In eight of the twelve groups the antibacterial power of the blood was above the average; all these patients recovered, and in two instances the puerperium was afebrile. In one case no difference was noted; this patient recovered. In three cases the antibacterial power of the potentially septic patient was lower than the average; two of these patients died.

The next series of experiments was undertaken to determine, if possible, the factors on which variability in antibacterial property might depend, and comprised, in the first place, a comparison of the antibacterial property of the blood of pregnant as compared with non-pregnant individuals, and of the blood at various stages of pregnancy and the puerperium. The results obtained showed that there was a gradual increase in antibacterial activity as pregnancy advanced, which reached its maximum at or about the full term of pregnancy. The effect of labour itself was slight, if spontaneous and uncomplicated, but after delivery there was a rapid decline in antibacterial power, the curve falling sharply, so that about the tenth day of the puerperium the non-pregnant level was reached; thereafter there was a further temporary increase, which had disappeared by the twelfth week after parturition.

A further series of observations was made to determine the effect of certain clinical conditions on the antibacterial power of the blood. There appeared to be no difference in this respect between the parous and the nulliparous non-pregnant individual nor between the primigravid and the multigravid woman. Albuminuria of pregnancy appeared definitely to depress the resisting power to infection as measured in this way. An attempt was made to determine the influence of prolonged labour, of instrumental delivery, and of severe blood loss on antibacterial activity; although the findings were given with reserve because of the existence of associated factors such as anaesthesia and fatigue, the effect of which it was difficult to appraise, the impression had been gained that with these conditions a lowering of antibacterial power occurred.

The authors presented, in conclusion, the results of an inquiry into the extent to which changes in antibacterial activity might be related to variations in the leucocyte count, and in particular to the leucocytosis which normally occurred during pregnancy. Although there was a broad parallel between the degree of antibacterial activity and the leucocyte count the relationship of the one to the other was in certain respects inconsistent. Whereas with a low leucocyte count the authors had usually found a similarly low degree of antibacterial activity, a white count above the average was not so uniformly accompanied by a corresponding increase in antibacterial power. This applied more particularly to cases of infection, but had frequently been noted in the absence of any apparent disturbance of health. It was illustrated particularly in the rapidly increasing leucocytosis which occurred during labour without any corresponding accentuation in antibacterial activity. Furthermore, in groups of cases in which both had been examined simultaneously it had occasionally been found that no relationship obtained between the one and the other.

It appeared probable, therefore, that the accentuation of antibacterial activity which occurred during pregnancy could only partially be explained by the simultaneous increase in the leucocyte count, and was attributable to factors other than, or in addition to, a mere numerical increase in white cells. What precisely these factors were, and by what means they could be stimulated so as to increase resistance to infection, remained for further research to determine.

THE ETIOLOGY OF RHEUMATISM.

AT a meeting of the Brighton and Sussex Medico-Chirurgical Society on May 2nd, with Dr. DONALD HALL in the chair, Dr. F. E. GRAHAM-BONNALIE read a paper entitled "Some aspects of rheumatism."

Dr. Graham-Bonnalie suggested that one of the chief stumbling-blocks to the advance of knowledge of rheumatism, especially of arthritis, was the question of classification. Probably the best classification was that adopted by the Ministry of Health, but this did not help very much in discovering the etiology or in the treatment, since the successful treatment of most diseases depended upon a just appreciation of the etiological factors. The greater part of research work tended to show that rheumatism was of bacterial origin, but that it was not possible to ignore the biochemical side of the picture, for, though this was probably only the precipitating factor, there would appear to be some relation between acidosis or a low *p*H and the rheumatic tendency. If, for the sake of argument, it was admitted that rheumatism was due to an infecting organism, could it be divided into streptococcal and non-streptococcal types? If such a clear differentiation was possible, why was treatment not more successful? Dr. Graham-Bonnalie suggested that one reason for this was that the organism or its right strain had not been isolated. He thought it possible that the streptococcus might alter its serological properties according to its particular domicile for the time being, and therefore he did not believe in using a vaccine prepared from too pure a culture, but preferred to combine it with a stock vaccine. A further reason might be that a primary focus had not been eradicated, which focus was most likely to be connected with the teeth or tonsils. Apparently the bowel was not uncommonly a primary focus, but was probably more often, as was the gall-bladder, a secondary focus. He gave as other possible reasons for failure in treatment the presence of secondary foci; another factor which had to be taken into account was the sensitiveness of the patient to vaccines, due to the presence of these foci, or because too large doses were given at the outset, or because a reaction was not always recognized as such. It was not necessary to give large doses to produce improvement. On the contrary, the smaller the dose which produced good results the more efficacious the treatment was likely to be. In some patients where there was great sensitiveness and no localized focal sepsis could be found, improvement continued even if repeated small doses of the same strength had to be employed. An underdose was never wrong; an overdose, especially at the outset, might be disastrous in a case which was at all acute. Dr. Graham-Bonnalie said that in a series of fifty consecutive cases he had endeavoured to find some relation between signs and symptoms on the one hand and the pathological findings on the other, but with no great success. There seemed to be little doubt that of all the organisms isolated from rheumatic patients, whether from teeth, tonsils, or the bowel, the commonest seemed to be the *Streptococcus viridans*. In the speaker's opinion the problem of dental infection was not so difficult as it appeared to be, provided that all the factors were taken into consideration. He also thought that pyorrhoea probably played little part in the primary production of rheumatism, but it might be a potent cause of secondary infection of the tonsils or bowel. He had had several cases in which the same organism had been isolated from the teeth, tonsil, and bowel, and the patients had responded to vaccines prepared from the bowel.

Reviews.

THE MEDICAL ANNUAL, 1929.

The Medical Annual[1] for 1929 contains a thoroughgoing survey, valuable alike to the general practitioner, the specialist, and the laboratory worker, of the progress of medicine and the ancillary sciences in Europe and America during the past twelve months. The growing importance of endocrine products in medical treatment is reflected in the articles on therapeutics. Among the many therapeutic measures described, especially worthy of note are the use of sodium salicylate in encephalitis, of tolysin (a cinchonic acid derivative) in rheumatic infection, avertin in anaesthesia, synthalin and glukhorment in diabetes, and a chart of recipes for use in liver therapy.

Professor E. W. Hey Groves reviews the treatment of tuberculous spine in children, Sir William Wheeler makes a survey of other diseases and injuries of the spine, and Mr. Geoffrey Jefferson writes on spinal fractures. Dr. Henry Devine surveys medico-legal psychiatry, clinical psychiatry, and psychopathology, with special reference to the alcoholic subject; Professor Beckwith Whitehouse writes on labour and its complications, twilight sleep, the two active principles of the posterior lobe of the pituitary, trial labour, and the failed forceps case. Professor Dickson Wright describes advances of surgery in the Orient. The article on the surgery of the chest is particularly well illustrated. The annotations on new discoveries include a description of the pityrosporon of Malassez in dermatitis, and the new thumb sign in pyramidal tract disease.

The article on the conduct of post-mortem examinations in general practice for medico-legal purposes is complete, practical, and modern. Equally commendable are the articles on radium, radiotherapy, and phototherapy; the nature and use of lysozyme, an antibacterial body present in the tears and more effective than any antiseptic ordinarily used in ophthalmic practice; pulmonary asbestosis, Kümmell's disease, and the rheumatic lung. The article on encephalitis brings up to date the information given in previous years. The medico-legal aspects of practice are, as usual, adequately considered, and the volume contains notes on the workings of the new Coroners Act.

Especially stimulating are the articles dealing with matters of current controversy: the etiology of rheumatic fever, the validity of liver efficiency tests, the value of washing out the renal pelvis, the treatment of gastric ulcer, and the relative advantages of thyroxin and thyroid extract. A great deal of unnecessary repetition of experimental work would be avoided if research workers made a practice of consulting the *Medical Annual* for the last few years before undertaking what they believe to be new investigations. Important features of this year's issue are the presence of full bibliographical references, indexes of new appliances and drugs, and useful lists of addresses of public bodies, traders, spas, and hospitals. The volume is well printed and the illustrations are good.

[1] *The Medical Annual.* Forty-seventh year. Bristol: J. Wright and Sons, Ltd.; London: Simpkin, Marshall, Ltd. 1929. (Demy 8vo, pp. c + 610, 141 figures, 71 plates. 20s. net.)

HYDATID DISEASE.

CASES of hydatid disease are comparatively rare in these islands and on the Continent, although the statistics of large hospitals show a certain number annually. Any series of cases, therefore, that is large enough to enable general conclusions to be drawn is likely to come from the countries, such as Australia and South America, where the disease is common. A notable exception is in the work of Professor Dévé of Rouen, who, by careful observation and experiment during the last thirty years, has probably contributed more than anyone to our knowledge of the general pathology and clinical course of hydatid disease. His papers, however, are scattered in many French and Belgian journals, and are often difficult of access. Since the war a band of workers at the Walter and Eliza Hall Research Institute, Melbourne, has reviewed from all sides the problems of hydatid infestation, and in his book *Hydatid Disease*[2] Mr. HAROLD DEW gives a full account of present-day knowledge in regard to this disease.

What are the outstanding facts about hydatid disease? The dog is the usual definitive host of the taenia echinococcus, while sheep are the most frequent intermediate hosts. It is in places where dogs and sheep are closely associated that the disease is most rife. Infection in man may occur through ingesting contaminated water or vegetables, but more frequently by direct contact with dogs; infection in childhood is common. Prophylaxis is best carried out by preventing the access of dogs to the offal (livers and lungs) of slaughtered animals at abattoirs. The embryo, passed in the dog's excretion, is taken in by the alimentary tract and carried in the portal vein to the liver, where it usually lodges, 70 per cent. of hydatid cysts occurring in the liver. It may pass through the liver and heart and settle in the pulmonary capillaries, where about 10 per cent. of hydatids are found, or it may get through to the general circulation. At the site of lodgement there is a reaction on the part of the host's tissues of mononuclear and eosinophilic cells, and eventually the growing cyst is surrounded by a capsule of fibrous tissue derived from the host. The cyst itself differentiates into three portions; on the outside there is a laminated elastic hyaline membrane, carrying on its inner surface a cellular germinal layer and enclosing the crystal-clear hydatid fluid. In the germinal membrane small areas of cells show increased activity and form the brood capsules in which the embryonic elements or scolices develop. The scolices are provided with hooklets and are retractile; by rupture of the brood capsules they become free, and may be present in enormous numbers, constituting the hydatid sand found in the cyst fluid. The scolices, when ingested by the dog, grow into the tapeworm in its alimentary canal, and the cycle starts afresh. There is evidence, too, that an intermediate cycle may take place, and scolices may grow into fresh hydatid cysts. In this way recurrence of hydatid in the incision and general peritoneal dissemination may occur from spilling of scolices at operation, or from rupture of a liver hydatid into the peritoneal cavity—a secondary echinococcosis (Dévé). Experimentally, too, scolices injected into the vascular system can by embolism develop into hydatid cysts. This is not, however, of frequent occurrence clinically, but may follow rupture of a hydatid into a blood vessel.

A curious phenomenon, more frequent in man than in the herbivora, and, as Mr. Dew points out, more frequent in older cysts and those which are so situated as to be subject to trauma, is the formation of daughter, and even granddaughter, cysts which become free in the cavity of the mother cyst, and which may again produce brood capsules and scolices. The daughter cysts may be derived from cystic development of scolices, but usually are formed from portions of the germinal membrane separated by trauma. Trauma and the character of the tissue in which growth is taking place probably account for the peculiarities of hydatid disease in muscle and bone, where wide spread dissemination may occur in the muscle planes and in the trabeculae. Besides rupture, suppuration may occur; again, injury to the cyst or interference with its nutrition precedes infection. Cysts may die, the fluid being absorbed, the cyst contents degenerating and the cyst wall undergoing calcification. Besides the symptoms caused by the state of the cyst, pressure symptoms occur and haemorrhage may be caused by erosion of a blood vessel.

The host responds to the presence of the cyst by various immunity reactions which can be used in diagnosis. The eosinophilia, an absolute increase in the eosinophilic cells of the blood, is present in about 30 per cent. of the cases; evidence of specific precipitins occurs in 65 per cent.; deviation of the complement may be demonstrated with

[2] *Hydatid Disease.* By Harold R. Dew, M.B., B.S., F.R.C.S.(Eng.), F.A.C.S. Sydney: The Australasian Medical Publishing Company, Ltd. 1928. (Roy. 8vo, pp. 429; 87 figures. 27s. 6d. net.)

modern technique in 80 to 100 per cent., and a specific response to intradermal injection of sterile hydatid fluid in 90 to 95 per cent. of cases. The recent Melbourne Hospital figures show that not more than 5 per cent. of hydatid cases have been missed when the combined use is made of the complement fixation test and the intradermal (Casoni) test.

Two-thirds of Mr. Dew's book is devoted to the consideration of the symptoms, diagnosis, and treatment of hydatid disease of the different organs of the body. This part is admirably clear, and the various points are elucidated by illustrative cases. No medical treatment has been found efficacious, and aspiration is dangerous. The surgical technique is fully described. The cyst should be exposed by suitable and ample incision, and the wound packed off. An amount of formalin to produce a concentration of about 1 per cent. of the cyst contents is injected to kill the scolices. The cyst is then incised and its contents evacuated. The indications for drainage or for closing the cavity after filling it with saline are fully dealt with. The volume is produced by the Australasian Medical Publishing Company, who are to be congratulated upon the result. The type is clear, and the illustrations are well reproduced. Typographical errors are rare, though one occurs in the preface, and the textual reference to Fig. lxxxvi is given as lxxxv. Mr. Dew's book is fully documented with references to the literature of the subject, and is likely to be for a long time the standard work on hydatid disease in the English language.

Hydatid Cysts of the Lung in Children[2] by Dr. HERRERA VEGAS of Buenos Aires, is a monograph based on the author's personal observation of 50 cases in his hospital and private practice. The book starts with a general description of the taenia echinococcus and of the development of a hydatid cyst. This description follows conventional lines, and is based on Déré's writings. Primary infection of the lung usually takes place. In the author's series of 50 cases, 28 were in the right lung, 19 in the left, and 3 were infected in both lungs. In 11 cases cysts were present elsewhere in the body, and in 5 cases more than one cyst was present in the lung. The author concludes that the child is not infected until after weaning, and that a maximum of two years may elapse after infection of the lung before the cyst is revealed by clinical manifestations. He believes that first the clinical signs and then the *x* rays, are the principal means of diagnosing and localizing pulmonary cysts; but quotes with approval an aphorism of Lanari that the finest cysts seen by radiography have turned out to be sarcomas of the lung. He mentions the diagnostic methods derived from immunity reactions, but does not give them the value accorded to them by the Melbourne Hospital workers. Vegas believes that once the presence of a hydatid cyst is known it should be operated upon at the earliest possible moment. Puncture, whether merely exploratory or aspiratory, is attended by so much risk that it should be rejected as a means of treatment; open operation is the method of choice. The author discusses the indications for closing the lung and chest without drainage, and for marsupialization. Of his series of 50 cases, in 3 cure resulted by coughing up the cyst; 6 cases were lost sight of after diagnosis. The remaining 41 were operated upon, and 14 died—3 at the time of operation, 8 of bronchopneumonia, and the others of sepsis. Of 12 cases in which the cyst was evacuated and closed without drainage, 5 died; while of 30 cases in which marsupialization and drainage were carried out, 23 recovered. Some patients were operated upon twice. The book is unfortunately difficult to read, the spelling is often inaccurate, and sometimes the meaning is only clear from the context. The case sheets of the author's 50 patients are full of detail, and there is an excellent bibliography of Argentine and foreign literature. In the compilation of the latter, the author gratefully acknowledges the assistance received from the officials of the Royal Society of Medicine, London.

[2] *Hydatid Cysts of the Lung in Children.* By Marcelino Herrera Vegas, M.D., F.A.C.S., F.R.S.M. Buenos Aires: S. A. Imprenta Lamb y Cía, Ltd. 1927. (Sup. roy. 8vo, pp. 300; illustrated.)

CONGENITAL SYPHILIS IN THE NEWBORN.

OLUF THOMSEN'S atlas of pathological changes in congenital syphilis in the newly born[4] was first published in Danish in 1912. It now appears in German, and so will be available to a larger number of readers. This monograph provides for the student of syphilis in the newly born an atlas of illustrations of the most commonly found manifestations. The wide distribution of syphilitic infection in the foetus is readily appreciated from them. The illustrations have been selected from a series of 223 cases of congenital syphilis which the author has examined. The author in the preface points out as a justification for this book the gradual disappearance of grosser manifestations of syphilis since the recognition of the *Spirochaeta pallida*, and the introduction of the Wassermann reaction and salvarsan treatment.

There are about twenty pages of text. The author has made a comprehensive and exhaustive investigation into the problem of mode of infection of the foetus: he believes that everything speaks against a germinal route of infection and that the placental is the only proved route. He investigated forty-two cases of abortion before the third month, and only two of his cases had evidence of syphilis. Further, he examined the products of abortion of six known syphilitics, and in only one (a 5 months foetus, maternal Wassermann reaction positive) was the *Spirochaeta pallida* found. Thomsen has also investigated twenty-seven 6 months syphilitic foetuses, and in only three has he found syphilitic manifestations. The conclusions Thomsen reached from this extensive personal investigation was that histological examination of the foetus during the first five months showed no evidence of syphilis—if the infection is a germinal one it must remain passive in the first half of pregnancy, a most improbable occurrence. The ground of failure to find either spirochaetes or anatomical changes is, in his opinion, because syphilis is transmitted through the placenta, which first towards the middle of pregnancy is passable. He believes the placental "age changes" render it passable. Although he has been unable to find a spirochaete passing through a placental villus, he lays little stress on this negative finding, and all who have investigated syphilitic placentas will agree with him.

The book is attractive on account of the lucidity with which the subject is presented. It forms a notable contribution to the subject of congenital syphilis.

PHYSIOTHERAPY.

THE second edition of *Physiotherapy*[5] by Dr. HARRY EATON STEWART shows evidence of careful revision and of the degree of enlargement warranted by the growing importance of this subject in everyday practice. An outstanding merit in all Dr. Stewart's writings is the modesty of his claims. He is not one of those who see in physiotherapeutics a cure for every ailment. He aims rather at explaining in simple language the physiological responses that may reasonably be expected from the various forms of treatment. He considers that the time is now ripe for the general practitioner "to be familiar with the physics, physiological effects, indications, and contraindications of the various physiotherapy modalities." The rapid growth of actinotherapy in this country shows clearly that the practitioner is ready to make himself familiar with the care and use of apparatus which he believes will give him results that he could not obtain by the older and more familiar forms of treatment. In the present edition the new field opened by the so-called endothermy current, and so capably explored by Dr. Harvey Cushing, is dealt with; but the chapter that describes this current would have been improved by further details, particularly as regards its uses and limitations.

The author states in his introduction that "many industrial insurance companies are either making contacts

[4] *Pathologisch-Anatomische Veränderungen über die congenitale syphilis bei dem Foetus und dem Neugeborenen Kind.* Von Oluf Thomsen. Copenhagen: Levin and Munksgaard; Leipzig: G. Thieme. 1928. (Demy 4to, pp. 31; 19 plates.)

[5] *Physiotherapy.* By Harry Eaton Stewart, M.D. Second edition, revised. London: Milford, Oxford University Press. 1929. (Med. 8vo, pp. xvii + 365; 76 figures. 35s. net.)

with established physiotherapeutic clinics or establishing their own. The saving is calculated upon the provisional award made for a given disability. After a regime of treatment the reduction of award minus the cost of the treatment constitutes the net saving in the case. It is solely on this financial basis that physiotherapy must demonstrate its value to the companies. There must be a reduction in the amount of weekly compensation paid and a lessening or elimination of the partial permanent disability greater than the cost of physiotherapy treatment." No better evidence that properly run physiotherapeutic clinics "deliver the goods" can be given than this; and it would be interesting if an English industrial insurance company were to make an experiment on these lines. If the results showed definite shortening of the period of disability, they would afford valuable statistical proof of some of the claims of physiotherapeutic specialists and help to remove some of the scepticism with which their methods are at present viewed.

Although Dr. Stewart has written another book on the uses of diathermy with special reference to pneumonia, it is satisfactory to find that in the book under review he has made an excellent précis of his experiences in the treatment of broncho-pneumonia and lobar pneumonia. His candid statements with regard to the cases in which diathermy has failed, and his explanation of the technique and clinical responses to be expected in pneumonia, alone make the book worth reading.

INJECTION TREATMENT OF VARICOSE VEINS.

THE influence of the late Professor Sicard on the development of the treatment of varicose veins by sclerosing injections is well known, and his commendation in a prefatory note of a little practical book[6] by Dr. RAYMOND TOURNAY will go far to popularize a useful handbook for those who read French. After discussing briefly the history of the treatment of varicose veins, their etiology, and symptomatology, Dr. Tournay gives a careful account of the injection treatment, including the possible difficulties and the ways of overcoming them. He then deals with such complications of this condition as eczema and ulceration, and also with the application of the injection treatment to such morbid processes as angioma, haemorrhoids, and varicocele. A few illustrations emphasize usefully various points in the technique. The book will, doubtless, win favour as a methodical statement of this treatment from the purely practical point of view.

A fourth edition of Dr. A. H. DOUTHWAITE'S popular book *The Injection Treatment of Varicose Veins*[7] has now appeared; the third edition was noticed in our columns on June 23rd last. The principal additions refer to the injection of varicocele, the use of Dalton's carbolic acid method, and the dangers arising from the employment of incorrect technique in the obliteration of varices.

NOTES ON BOOKS.

THE third edition of KOLLE and v. WASSERMANN'S handbook of micro-organisms[8] is appearing seriatim. We mentioned the publication of previous fasciculi in our issues of May 7th, 1927 (p. 839), February 11th, 1928 (p. 223), and October 27th, 1923 (p. 751). Seven further fasciculi have reached us—namely, Part 29 of vol. i, in which the subjects of allergy, anaphylaxis, and the relation of colloids to the immunization process are reviewed; Parts 23 and 24 of vol. iii, dealing with serological, chemotherapeutical, and epidemiological topics; Part 25 of vol. v, which is largely concerned with leprosy; Parts 27 and 28 of vol. vi, containing numerous articles on bacteriological and worm infections; and Part 26 of vol. ix, which is devoted to certain veterinary and botanical diseases. The high standard of the previous volumes is well maintained.

Practical parasitology,[9] as its name implies, is essentially a handbook for use in classes of human parasitology. Most of the parasites and their vectors encountered in the ordinary course are discussed, and brief notes are given on their biology and pathogenicity. In addition to the protozoa, helminths, and arthropods, chapters are included on the spirochaetes, fungi, intermediate hosts, and on technique. There are numerous black-and-white illustrations, all of them full-page size and well reproduced. The volume is excellently written, in easy French, by two well-known authorities and teachers, and it is published at a very low price. It will prove an invaluable laboratory companion to all students of the subject.

In ancient times philosophers expatiated on morals, and sought after absolute goodness, truth, and beauty. The discoveries of science, however, have compelled them to take cognizance of human development and structure; hence the numerous attempts to reconcile science, philosophy, and religion. Of such efforts, *From the Seen to the Unseen*,[10] by the Rev. J. H. BEST, vicar of Little Marlow, is certainly one of the most readable. Mr. Best has read much; he possesses an extensive knowledge of science, and he is clear in exposition. His object is to prove the existence of purpose, and with relentless purpose he expounds the purposeful aims of Providence in the development of man. We are led through the pathways of physiology, embryology, psychology, evolution, and astronomy with the idea that they all lead to the goal of conviction that man is the highest product of the Divine Mind. Religion would appear, from Mr. Best's arguments, to involve a kind of spiritual anthropomorphism. As the world is beautiful, we must attribute to the Divine Mind which designed it a feeling for beauty. So that the Divine Mind not only possesses intelligence and will, but also, like the human mind, is susceptible to emotion. Mr. Best believes that in every germ cell there is a "psyche," which in some way is part and parcel of the Divine Mind, and he argues skilfully that only on some such assumption can memory be explained. In fact, his chapter on memory, and his exposition of the weak points in theories that seek to explain evolution, from the pangenesis of Darwin to the latest views on Mendelism, are among the cleverest things in the book. Towards the end, however, when Mr. Best begins to resume the role of clergyman, and much poetry creeps into his text, he may be found less convincing. To the minds of some the attempt to solve insoluble problems brings satisfaction. Others can only sum up their experiences by saying that they "came out by the same door as in they went."

Our Tounis College[11] is a collection of verses published in the students' magazines of Edinburgh University during the last century. The Students' Representative Council is responsible for the production of the volume, and most of the selections are verses by undergraduates that were published in *The Student*. Some of the verses bear well-known names, and especial mention must be made of those by the late Professor Mair. Among these is his famous Greek rendering of the song "Clementine," in which the rhythms of the original are carefully preserved in the Greek. In a different vein is his beautiful lament for the vanished students, which was written in 1917. The real interest in the volume lies, however, in the average verse that it contains—verse which records the thoughts of youth for a century, sometimes cynical, sometimes sentimental, usually critical, changing with the changing generations, and yet always touched with the same enthusiasm and energy. Most readers will find much to interest and amuse them in this volume, but it will, of course, appeal specially to that great band that is scattered over the five continents, the Edinburgh alumni. The Students' Representative Council and its editors are to be congratulated on having rescued from oblivion this interesting record of student thought.

In the *Writers' and Artists' Year Book, 1929*,[12] those who are interested in the press as a market for their literary, artistic, musical, or photographic works will find much useful information. The main feature is a directory of British and American publications, with notes on their requirements and scales of payment. Advice is also given on questions of copyright, publishers' agreements, etc.

The British Goat Society's Year Book for 1929[13] contains, in addition to articles and poems in praise of the goat—which, as

[6] *Les Varices: Pratiques des Injections Sclérosantes.* Par Raymond Tournay. Préface du Dr. Raoul Baudet. Avant-propos du Dr. J. A. Sicard. Paris: N. Maloine. 1929. (5½ × 7½, pp. xi + 264; 22 figures. 20 fr.)

[7] *The Injection Treatment of Varicose Veins.* By A. H. Douthwaite, M.D., M.R.C.P. Fourth edition. London: H. K. Lewis and Co., Ltd. 1929. (Cr. 8vo, pp. x + 58. 4s. net.)

[8] *Handbuch der pathogenen Mikroorganismen.* Begründet von W. Kolle und A. v. Wassermann. Dritte, ëiweiterte Auflage. Jena: G. Fischer; Berlin und Wien: Urban und Schwarzenberg. 1928 und 1929.

[9] *Traité Pratique de Parasitologie.* Par E. Brumpt et M. Neveu-Lemaire. Paris: Masson et Cie. 1929. (5½ × 7½, pp. vi + 801; 262 figures. 30 fr.)

[10] *From the Seen to the Unseen.* By John H. Best, B.Sc.Lond. London and New York: Longmans, Green and Co. 1929. (Demy 8vo, pp. xi + 352; 51 figures. 16s. net.)

[11] *Our Tounis College.* Edinburgh: The Darien Press. 1928. (Demy 8vo, pp. vii + 414. Cloth, 3s. 6d., post free; de luxe edition, 11s. 6d. post free.)

[12] *The Writers' and Artists' Year Book, 1929.* Edited by Agnes Herbert. Twenty-second year of issue. London: A. and C. Black, Ltd. 1929. (Cr. 8vo, pp. viii + 259. 3s. 6d. net.)

[13] *The British Goat Society's Year Book for 1929.* London: T. W. Laurie, 10, Lloyd's Avenue, E.C.3. (Demy 8vo, pp. 203; illustrated. 1s. 6d.)

shown in many of the photographs adorning the volume, is a most praiseworthy animal—a number of papers of medical and veterinary interest, and articles and memorandums dealing with the problems, scientific and economic, of goat keeping and goat breeding. This, the ninth issue of the *Year Book*, is admirably produced and illustrated, and contains much interesting and useful material.

Two volumes of reprints of papers and monographs by members of the gynaecological department of the Johns Hopkins Hospital and University have been issued,[14] the first containing those published from 1922 to 1926, and the second volume those from 1926 to 1928. They have been placed in the Library of the British Medical Association, where they can be consulted by members.

A volume of reprints of researches emanating from the wards and laboratories of the London Hospital during 1928[15] has been published by Messrs. H. K. Lewis and Co., Ltd. It includes the Schorstein Lecture on expectoration, various clinical reports, and physiological and pathological articles.

[14] *Collected Papers by Members of the Gynecological Department of the Johns Hopkins Hospital and University, 1922–1928.* Volumes A. and B. (Sup. roy. 8vo; illustrated.)

[15] *Researches Published from the Wards and Laboratories of the London Hospital during 1928.* London: H. K. Lewis and Co., Ltd. 1929. (7½ × 10¼; illustrated.)

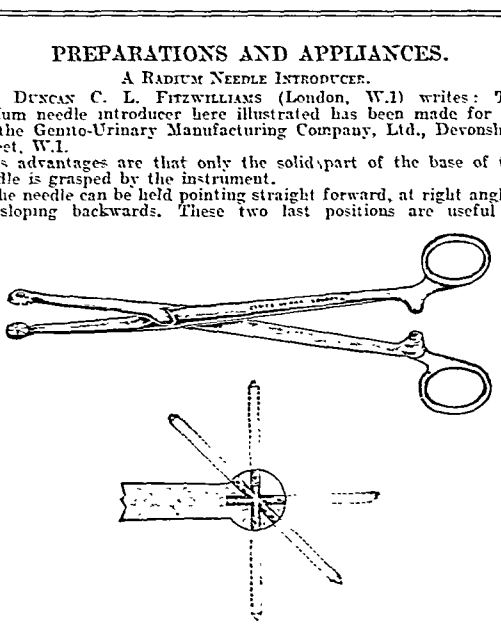
PREPARATIONS AND APPLIANCES.

A Radium Needle Introducer.

Mr. Duncan C. L. Fitzwilliams (London, W.1) writes: The radium needle introducer here illustrated has been made for me by the Genito-Urinary Manufacturing Company, Ltd., Devonshire Street, W.1.

Its advantages are that only the solid part of the base of the needle is grasped by the instrument.

The needle can be held pointing straight forward, at right angles, or sloping backwards. These two last positions are useful in

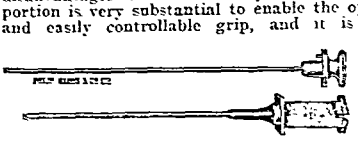


dealing with tumours in positions like the base of the tongue. There is a cuplike depression on the outer side of the forceps, which facilitates pushing the needle into the tissues flush with the surface.

The handles vary in length according to what is required of the instrument. They should be at least 8 inches long; this keeps the hand well away from the radium, and also allows needles to be inserted through a proctoscope or a short sigmoidoscope.

A Maxillary Antral Trochar.

Mr. B. Seymour Jones, F.R.C.S., honorary surgeon, Ear and Throat Hospital, Birmingham, writes: The maxillary antral trochar illustrated has been designed to overcome some of the disadvantages of the ordinary Lichwitz pattern. The proximal portion is very substantial to enable the operator to obtain a firm and easily controllable grip, and it is slotted for a bayonet catch on the male attachment. This modification was devised because a nurse at the Ear and Throat Hospital contracted a temporary ophthalmia owing to some pus being splashed into her eye when she was using an ordinary push-in attachment. A fluting on the side of the butt of the trochar corresponds with the point of the bevelled end of the hollow needle, which should always be directed outwards to the bone. A special adapter (not shown) is supplied, which fits a Watson Williams's syringe. Solutions such as argyrol 5 per cent. (Tilley) or iodoform water (Seymour Jones) may thereby be introduced with great benefit into an acute suppurating antrum.



ATHLETICS AND TRAINING.

The following note on a recently published book has been contributed at our request by Mr. E. B. Turner, F.R.C.S., vice-president (president in 1913) of the London Athletic Club.

All those who actually compete in athletics, as well as those who take an interest in such sports, will be well advised to read and study *Athletics*,[1] by Mr. D. G. A. Lowe and Dr. A. E. Porritt. Both these gentlemen have been presidents, the one of the Cambridge, the other of the Oxford University Athletic Club. Both also are record holders—in one case of a world's record—and both of them have represented their country in the Olympic Games. Lowe achieved the unprecedented feat of winning the 800 metres race at two successive Olympiads, and Porritt reached the final of the 100 metres, running fourth against the cream of the world's talent. Both authors, therefore, are thoroughly well qualified by hard-earned personal experience to treat of this matter with knowledge and authority. In this book they have given a history of athletic competitions from the very earliest times—from the Funeral Games for Patroclos up to and including the 1928 Olympiad. This chapter alone is well worth attentive study.

After their historical opening the authors proceed to discuss the most important and essential subject of training. They deal with this difficult question with skill and discretion. No hard-and-fast rules are set forth as the laws of the Medes and Persians. Moderation in all things is the keynote. They do not argue from the individual to the mass, but advise that each person, having found out what may suit himself best in food, drink, sleep, and exercise, should stick to that regimen and so attain the greatest possible perfection in bodily condition. They rightly insist that all training should be gradual and progressive, and that no person really unsound should ever attempt to take part in strenuous athletic competitions. Hints are given with regard to the proper training which is necessary to get fit for short and long distance racing, hurdling, cross-country running, high and long jumping, as well as the various field competitions, such as putting the shot, hammer, discus, and javelin throwing. The aid of such experts as C. T. van Geyzel and M. C. Nokes in high jumping and hammer throwing has been invoked to make the chapters on these events full and authoritative.

There is a section devoted to athletics for women and boys. The unwisdom of allowing young growing boys to overdo competitions is insisted on most strongly, and all those who know anything about the physical and mental effects of strenuous competitions will most heartily agree. The authors face the fact that athletic competitions for women have come to stay, though they evidently do not thoroughly approve of it on aesthetic and other grounds. The commission which went into the whole question of strenuous games for women some years ago, after hearing exhaustive evidence, unanimously reported in favour of such games; and the great experience of Dr. Sanderson Clow with some 2,000 girls at Cheltenham shows that hard exercise at all times improves the health of the girl. The women who race in the present day have been well coached and trained, and on a side view show as good and elegant form as the majority of men. The Women's Amateur Athletic Association is directing this very important movement with great circumspection, and those of the medical profession who really understand athletics have found no harmful effects on those women who compete with discretion, while the good effects of hard open-air exercise and training on hundreds of "indoor" girls are apparent.

The book contains an appendix of tables of records and statistics which are most interesting, especially to anyone who may have been fortunate enough to see most of those which were achieved in England. One or two errors have crept in. For instance, C. N. Jackson ("Jacker") of Oxford University was credited with 16 seconds for the 120-yards hurdle race in the late sixties. This record may or may not be one which would be accepted at the present time, but it has always been set forth in the tables of the Oxford and Cambridge sports. M. J. Brooks is credited

[1] *Athletics.* By D. G. A. Lowe and A. E. Porritt. London and New York: Longmans, Green and Co. 1929. (Demy 8vo, pp. x + 372; 39 figures. 12s. 6d. net.)

with the 6 ft. he cleared in pouring rain on wet grass in the A.A.C. championships in 1876, but not with the 6 ft. 2½ in. which he jumped on the preceding Friday at the Oxford and Cambridge meeting. The initials of the Eton schoolboy, Ridley, who won the 440 yards in 1868, were "J. H.," not "E."

One great thing about this book is that, even in these days of keen rivalry, it nowhere puts the actual "win" first of all. It is easy for any young athlete studying this excellent book still to appreciate the great fact that "the training is more than the contest, and the contest more than the win."

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY.

LONDON, MAY 6TH TO 11TH, 1929.

THE fifth International Congress of Military Medicine, the earlier proceedings of which were reported in our last issue, concluded on May 11th, amid many expressions of congratulation. It was decided at the closing meeting to drop the pendant "and Pharmacy," the term "Medicine" being judged sufficiently comprehensive. It cannot be said that the discussions revealed anything very novel; perhaps the newest thing was a suggestion by a Spanish delegate, made in the closing hour of the Congress, for an international standardized form of register, giving the clinical history and all other particulars, in each case of sickness or injury. The fraternal feeling encouraged by the Congress was evident on all sides and highly gratifying.

LORD MOYNIHAN'S ORATION.

The entertainment given by the Corporation of the City of London in the Guildhall was in a sense the climax of the Congress, 770 being accommodated at the banqueting tables. In addition to the Lord Mayor, the aldermen, and commoners, and the delegates and members of the Congress, [illegible] included the Chief of the Imperial General [illegible] of the Royal Colleges, the Vice- [illegible] dozen universities, representatives of Government departments and other official bodies, and the presidents of medical societies, including the British Medical Association. A noteworthy oration was made by Lord Moynihan, President of the Royal College of Surgeons, in proposing the toast of the evening.

Lord MOYNIHAN spoke as follows.

It is entirely right that we medical men should have our day of celebration after a great war, for we above all men know what the cruelties and cruelties of war have always been and still remain, and we—not more than all men, but with more reason than others—have a detestation of war in all its aspects. I shall never forget my first few days' experience of its revolting tragedies. Within one minute I saw more destruction of life than I have ever been able to prevent in a year of arduous work. I think it may interest some of you if I recall the effectiveness of our army in France in respect of its medical services during the great war:

Total wounded	1,983,748	
Wounded returned to duty	1,602,033	(80.7%)
Total sick	3,494,165	
Sick returned to duty	3,260,056	(93.3%)
Sick and wounded returned to duty ...	4,862,089	

If the average strength of an army is roughly 288,000 men, the medical services were responsible for returning to duty no less than 16.8 full armies. But a great claim may also be made on behalf of the medical services of all countries with regard to their help in times of peace. Here we see, to as great a degree as we see anywhere, an evidence of the brotherhood of science. The men attached to the medical services of the various armies have been responsible for work which in times of peace has saved scores of millions of human lives. Take the problem of malaria, the parasite discovered by Laveran of France, and the agency of the mosquito in transmission demonstrated by our own Ronald Ross and by the illustrious Grassi of Italy, and here we have a triple entente—England, France, and Italy—engaged in another form of warfare against the enemies, not of one nation, but of mankind. We recall with gratitude the work on inoculation by Almroth Wright. Though the war in France lasted much longer than the South African war, and a larger army was employed, fewer men suffered from typhoid fever in the war in France than died from it in South Africa. The incidence of typhoid in the inoculated was one-tenth of the incidence in the uninoculated, and the case mortality in the latter was four times greater than in the former. I think it is true to claim for Almroth Wright and for Leishman that their work saved an army corps for the British army in France. Another piece of work in the late war was the attack on bilharzia. It has been shown that bilharzia has affected the population of Egypt since the days of the Pharaohs. The parasite was discovered by a German, Biharz—may I express my personal regret that no German is with us to-night—and the secret of the transmission was worked out in part by a Japanese and in part by Leiper in England—again a triple association of nations to the advantage of mankind as a whole. Also I want to carry the recognition into military work of our immense debt of obligation to the nurses. The most illustrious name in the whole history of warfare from the beginning of time is the name of Florence Nightingale.

Well, my Lord Mayor and brother officers, if there is any meaning behind life, if life is not merely a feast, or a spectacle, or a predicament, but is, as I believe, a sacrament, we must be sent into the world for the purpose of helping each other. It is because our profession in all its activities is founded upon the law of love, love to one's fellows, love to mankind, expressing itself in service, that I ask you to drink to the success of the present Congress.

Three brief responses were made—in French by General LANNE, in Italian by General RIVA, and in English by Colonel G. E. SEAMAN of the United States, who took the place of Surgeon-General Cumming. Sir HUMPHRY ROLLESTON proposed the health of the Lord Mayor and Corporation, and spoke of the traditions of civic London, its administrative stability, its princely hospitality, its generous charities, its wise endowment of research. He also paid a tribute to Sir Kynaston Studd, not only as Lord Mayor, but as a son of Cambridge. With the Lord Mayor's very sincere and informal reply the proceedings were brought to a close.

DISCUSSIONS.

Tropical Fevers of Short Duration.

On Thursday morning the Congress devoted itself to a discussion on tropical fevers of short duration, General LANNE, presiding. Lieut.-Colonel W. P. MACARTHUR introduced the subject with a paper, in which he said that diseases might be indefinite because they were typical examples of well-known infections, or because they were separate clinical entities which still awaited full description. The first class included mild or abortive cases of typhoid, paratyphoid, and undulant fever. Malaria frequently showed a low continued fever, the paroxysms being absent and the parasites so scanty in the blood as to be easily overlooked. Dengue and phlebotomus fever were recognized as distinct clinical entities, but owing to the lack of definite symptoms were frequently confused with similar syndromes. Especially was this the case with influenza, which was very common in the tropics, but rarely accompanied by nasal catarrh. The blood pictures of dengue and sandfly fever were often not sufficiently distinct from that of influenza to separate, with certainty, these diseases. Recently spirochaetosis as a cause of short fever had attracted attention. The leptospira as a group showed many variants, which, although indistinguishable morphologically, yet seemed able to cause clinical symptoms which varied from a day or two of pyrexia up to a severe toxaemic jaundice. Weil's disease had probably at times been recorded as dengue. The more severe forms of dengue disease, in its turn, could generally be distinguished from spirochaetosis by their respective blood pictures. Weil's disease, in its turn, could generally be distinguished from yellow fever by the relative quantities of albumin in the urine. Colonel MacArthur added that the attempts which were being made to classify and describe indefinite short fevers were handicapped, and confusion increased, by the habit of labelling cases, in which the diagnosis was really unknown, with a definite name, for the sake of hospital records. If a case, in spite of all investigation, remained a "pyrexia of unknown origin," it must be honestly left as such in all sick returns.

M. GERARDS (Dutch East Indies) said that febrile diseases of the tropics, formerly differentiated by clinical manifestations alone, could [illegible] ation as a manner. Duration and [illegible] tion of the means of identification had given place to detection of the

causative organism, so that a rational system of classification and a better nomenclature were now possible. He proceeded to give a précis of the more important diseases of the group, including yellow fever, Weil's disease and other spirochaetoses, and dengue and its group of diseases.

Short communications were made by MM. SACQUEPÉE and CRISTAO (France) on tropical fevers in the Mediterranean littoral, by Colonel CAZANOVE on these conditions in the French colonies, and by M. BLANCHARD, who spoke of the African epidemic icterogenic spirochaetosis, a disease described by him and other French observers, resembling yellow fever and Weil's disease, capable of transmission by *Aedes argenteus*, and spread by fleas.

Dr. A. CAWADIAS (Greece) spoke of the epidemic of dengue fever occurring lately in South-Eastern Europe. When in Greece some time ago he found certain small epidemics of dengue fever, and from these small epidemics there had now developed a very serious epidemic in the Eastern Mediterranean. *The epidemiology of this condition* needed to be studied, and this was the task of a commission now in Greece. Dengue fever was due to a virus circulating in the blood; the exclusive carrier was *Aedes argenteus*. He thought there were many cases of so-called three-day fever which were really dengue. This was a benign condition, and did not kill, although, if the patient was suffering from some concurrent malady it might hasten a fatal termination.

Injuries to Blood Vessels.

The third subject of discussion at the Congress was injuries to blood vessels and their sequels. It was opened by Surgeon Commander H. E. R. STEPHENS, who read a joint paper by himself and Colonel G. DE LA COUR. He made *grateful acknowledgement—as did several of the subsequent speakers*—of the indebtedness of all workers in this field to Sir George Makins (who was on the platform) for his contributions to the general knowledge during the war. Perhaps the point of chief importance in an exhaustive paper was as to the treatment of primary and secondary haemorrhage. In the local treatment of primary haemorrhage blood vessels in the open wound were ligatured as early as possible. When an injured vessel was visible in an open wound it should be ligatured whether bleeding or not, and a thrombosed vessel should be treated in a similar manner to avoid a degree of secondary haemorrhage. It was inadvisable to interfere primarily with a large vessel which had been wounded in the course of a track traversing the body or limbs if no signs of haemorrhage were forthcoming, or if there were no indications that the vitality of the distal portion of the limb was being endangered, but the formation of traumatic aneurysm should be awaited. As for general treatment, in sudden and abundant primary haemorrhage immediate blood transfusion was indicated. In less severe cases Bayliss's gum arabic solution might be tried, followed later by blood transfusion if necessary. *In mild cases administration of* fluids by mouth and rectum might be made, followed by the other measures if expedient. In the local treatment of secondary haemorrhage direct ligature of the bleeding point was the only satisfactory practice. Proximal ligature, except for the gluteal and sciatic arteries, was unreliable; in the general treatment immediate transfusion of blood provided the safest course. The authors set forth the following as a guide towards perfecting the special surgical technique required in performing suture of the vessels:

Lateral wounds involving not more than one-third of the calibre of the vessels are most suitable for suture. If more than one-third of the calibre is injured then an end-to-end union is attempted after resection of the damaged segment.

Reconstruction of a vessel by employing flaps from the adventitious sac of an aneurysm is not advised.

Very fine needles with Japanese silk—size 0000—*which has been* coated with paraffin will enable the best results to be obtained.

The most satisfactory arteries for suture are the carotid, the femoral, and the popliteal.

Colonel MAISONNET (France) stated objections to improvised tourniquets. He said that in all countries efforts were being made to produce a perfect tourniquet for field use. All combatants should be trained in the method of application. Every wounded man to whom a tourniquet had been applied should be specially reported and evacuated as soon as possible to a surgical unit. The treatment of blood vessels had benefited greatly by the general improvement in the treatment of war wounds, and the prognosis had improved with the facilities for early and more elaborate treatment in the surgical organization of the army.

Major VONCKEN (Belgium) spoke of the sequels of wounds of the blood vessels, and discussed the trophic, vasomotor, and functional causes to which delay in the restoration of the circulation might be due. The formation of arterial and arterio-venous aneurysms, diffused or cirsoid haematomas, constituted grave complications in wounds of blood vessels. In general, the treatment most frequently applicable was resection, in addition to ligatures required during the operation. The after-effects of wounds of blood vessels were important, and even in the absence of visible disturbances the function must be watched very closely by means of the passive movement test and oscillometric research.

A very large number of speakers, the great majority of them from France, took part in the discussion. Colonel LÉO paid a tribute on behalf of his French colleagues to Sir George Makins. He also described a case in which a missile pushed the wall of the artery to one side and produced a clot. Professor CACCIA (Italy) related his personal experiences of wounds of the blood vessels during the great war. He believed that injuries to blood vessels caused by bullets were less grave and healed more quickly than those produced by shells. The greatest number of injuries to blood vessels were in the extremities, especially the lower limbs. The tourniquet in wounds of vessels in war increased the chance of gangrene, and should be avoided, or at least maintained for the shortest time possible—not more than one or two hours. Lieutenant WALCHER (France) spoke on the operative technique in aneurysms, Dr. LATKOWSKI (Poland) urged the suture in replacement of the tourniquet, Colonel GOMEZ (Spain) exhibited some absorbable metallic sutures of his own devising, Dr. FRANCESCO (Italy) dealt with the immediate and remote effects of aneurysms, Colonel BOTREAU-ROUSSEL (France) described the results after the use of a triple ligature, and also of resection in a case of popliteal aneurysm, Dr. STABHOLZ (Poland) remarked on the surgical treatment of aneurysms, as did Colonel LEVIT (Czechoslovakia), while Dr. ZAHOUB, Dr. FREDER, Colonel DE FOURMESTRAUX, and Professor JEANNENEY, all of France, spoke generally on *dry wounds of blood vessels*.

The discussion may be summarized in the "conclusions" brought forward at a later stage.

The immediate danger of wounds of the blood vessels is considerable, and mortality higher in war wounds than in peace-time injuries. Wounds of blood vessels require treatment to be carried out as soon as the wound is inflicted. In spite of its drawbacks the tourniquet is essential. Efforts to devise a simple and effective tourniquet which is not dangerous are necessary.

The surgical treatment is not straightforward. In most cases ligature is necessary owing to the nature of the lesions and their association with other wounds. It is necessary to have thorough access and to employ methods which will produce the most satisfactory restoration of circulation and function.

The ultimate prognosis is reserved. It depends on sequelae: (1) deficient circulation with its various signs—trophic, functional, and vasomotor disturbances; (2) aneurysms. Prognosis may be improved by treatment of these after-effects. Treatment of functional disturbances is still being investigated. *Treatment of aneurysms generally* consists in resection of the part of the sac with necessary ligatures. Secondary operations, such as suture of blood vessels, are seldom applicable in military surgery. The after-effects must not be lost sight of when *fixing* the percentage of disability for injuries to the blood vessels.

Standard of Dental Fitness.

At a meeting of the Congress held at the house of the *British Dental Association*, a communication on the state of the teeth in relation to physical fitness in the different military services was made by Surgeon Lieut.-Commander J. T. WOOD, Captain S. H. WOODS of the Army Dental Corps, and Lieut.-Colonel C. L. COLBRAN. They gave the following comparative figures of percentage rejections for purely dental reasons in the three services:

	Navy.	Army.	Air Force.
1924	4.57	3.8	6.7
1925	5.12	3.3	5.9
1926	6.10	3.4	6.9

They also noted that closed dental sepsis producing severe systemic lesions had followed the conservation (frequently by crowning) of pulpless teeth. The recognition by the dental profession to-day of the uncertainty of the result of the treatment of infected teeth and the grave symptoms which so frequently followed such treatment would, it was to be hoped, result in fewer cases being recorded in future of the effects of closed dental infections.

Captain CLARK (Cuba) gave an account of the dental service in the Cuban army, which, he said, had been gradually perfected until it possessed in each district, even the remotest from the capital, dental surgeries inferior to none, where dental practitioners could do their work effectively.

The result of a considerable discussion may be summed up in the "conclusion" presented to the meeting:

"There is a definite relationship between dental conditions and physical efficiency. A high standard of dental function should be required for admission to the fighting services, and adequate provision should be made for maintaining this standard. In countries where military service is compulsory the period of such service should be utilized for the continuance of prophylactic treatment in dental hygiene."

Testing of Glass and Rubber.

A discussion also took place at the house of the Pharmaceutical Society on the physical and chemical analysis of the glass and rubber articles employed by the medical services, when Surgeon Commander F. LEWIS SMITH and Mr. F. HOOPER, technical assistant to the Medical Director-General of the Navy, presented a paper describing the available tests. They mentioned that rubber was the most difficult of all articles used in the profession so far as satisfactory testing was concerned; but they described certain simple tests which yielded satisfactory results for the medical storekeeper. A more comprehensive paper on the same subject was presented by the Spanish delegation.

CLOSING MEETING OF CONGRESS.

The closing meeting of the Congress was held on Saturday morning in the Great Hall of the British Medical Association. The chief business was the reading, in four languages—English, French, Italian, and Spanish—of the "conclusions" of the week's discussions. These were not in the form of resolutions, but were summaries by the committee of the Congress of the leading points which had emerged.

A belated communication from Dr. TUFFIER of Paris was read by Air Vice-Marshal MUNRO. The subject was the use of aeroplanes for the transport of surgical cases, which had been the first subject for discussion by the Congress. Dr. Tuffier was of opinion that the fighting plane could be transformed readily into a machine for the transport of the wounded. For general use a saloon de luxe was not required; the conditions were that the machine should be warm and airtight and should contain all that was necessary for the duration of the flight. There was no more danger in flying, even to the most serious surgical case, than in undergoing a general anaesthetic. He did not think, however, that evacuations by aeroplane could be made on a very big scale. The slightly wounded should be otherwise transported. He made some practical suggestions as to the use of injections before starting, in order to avert as far as possible any unfortunate consequences to the patient.

International Standardization.

Colonel VAN BAUMBERGHEN (Spain) reported on certain resolutions which were taken at the session of the Committee on Standardization of the International Red Cross Organization at its meeting in July last. Statistical tables (of which he showed examples) had been devised with a view to forming a continuous record of each case of injury or sickness in a form and with a nomenclature applicable to all countries. The idea was that the form should comprise the clinical history of the case, particulars of treatment, and dietetic regime, the results of special examinations, and notes by the hospitals where the man had been detained.

Arising out of this, it was agreed, on the motion of General LANNE (France) and General ROUPPERT (Poland), supported by other delegations, that the secretary of the Permanent Committee of the Congress should be a liaison officer with the Red Cross Standardization Committee. Sir MATTHEW FELL said that some really practical results would follow this step.

Major DIEHL (Netherlands) and Dr. A. BAKESH (Hungary) supported a hearty vote of thanks to Sir Matthew Fell, President of the Congress, and Major A. D. Stirling, its indefatigable secretary.

VISITS AND EXHIBITIONS.

About 500 members visited the Halton camp of the Royal Air Force in Buckinghamshire. The R.A.F. hospital, the pathological laboratories, and the medical training centre were inspected, and afterwards there was an assembly at the aerodrome for a demonstration of the use of aircraft for carrying sick and injured, and the transfer of stretcher cases from aircraft to ground motor ambulances. The air ambulance was the subject of one of the discussions at the Congress, and also of a lecture by Major-General Bauer (Sweden).

The exhibition housed in the new extensions of the British Medical Association House was open throughout the week. One feature of special interest to both British and foreign delegates was the Daimler ambulance used to convey the King to Bognor. The body of this ambulance was designed and constructed by Messrs. Mann Egerton and Co. some four years ago, following suggestions made by the Medical Insurance Agency, who had been requested to ask their consulting engineers to design an ambulance which would give the greatest possible comfort and safety to the patient.

RECEPTIONS.

Two receptions were arranged for delegates on the evening of May 9th. A large party was given a warm welcome at a conversazione at the Royal Army Medical College at Millbank, where they were enabled to see how its many varied activities are carried on. They were received by the commandant of the College, Colonel H. E. M. Douglas, V.C. Another party was entertained at the Wellcome Historical Medical Museum, where the various exhibits excited great interest until a late hour. Dr. C. M. Wenyon, on behalf of Mr. H. S. Wellcome, who is abroad, expressed the pleasure felt at the opportunity of greeting representatives of military medicine from so many countries. Sir John Moore and Surgeon-Commander Bainbridge (U.S.A.) replied on behalf of the delegates.

On May 10th the official delegates were entertained to luncheon at Apothecaries' Hall, Blackfriars, by the Society of Apothecaries of London. The guests were received by the Master, Lieut.-Colonel C. Samman, and the deputy wardens, Dr. Bramley Taylor and Dr. Vincent Dickinson. After the King's health had been honoured the toast of "Our Guests" was proposed in a graceful speech by the Master, and very cordial responses were made by Commander Bainbridge of the United States Navy and Major-General Tobia of the Italian Army Medical Service. On the same day foreign dental surgeons were entertained to luncheon by the British Dental Association, and foreign pharmacists by the Pharmaceutical Society of Great Britain.

THE NEXT CONGRESS.

The next congress is to be held, on the invitation of the Hungarian authorities, at Budapest in 1931. The subjects for discussion will be the recruitment and training of military doctors and pharmacists; the psychoneuroses of war; methods of haemostasis on the battlefield; pharmaceutical questions; and the sequelae of war wounds affecting the teeth and maxillae.

The number of delegates and members attending the London Congress (without counting the ladies accompanying them) was approximately as follows:

France	107	Belgium	17
Poland	52	United States	13
Italy	45	Spain	12
Rumania	18	Czechoslovakia	9

Thirty other countries were represented by smaller numbers.

CONVALESCENT PROVISION IN THE UNITED STATES.

ESTABLISHING STANDARDS OF ADMINISTRATION.

IN a recent article in the *British Medical Journal* (February 23rd. p. 365) attention was directed to the fact that the provision of convalescent treatment, notwithstanding a general recognition of its importance, has received very little exact study in Great Britain. It is, for example, impossible to offer an adequate standard by which the extent of the convalescent provision required for any particular institution or area may be assessed, to provide criteria by which the efficiency of existing convalescent homes may be judged, or to describe with precision the machinery by which convalescent treatment is provided for those whose needs make it desirable. Information is so sparse and unco-ordinated that not only observers from abroad, but even those in intimate contact with our hospital administration, have been misled as to the extent to which convalescent treatment is actually available.

It is therefore interesting to note that in the United States the provision of convalescent treatment is in a somewhat similar position; in that country, however, the existence of the problem is more clearly recognized; and in the New York area in recent years attention has been given increasingly to the study of convalescence in its various aspects, and to the organization of a convalescent service. From the information available it seems that the existing convalescent provision in the United States is considerably less, relatively, than in Great Britain. In the article to which reference was made above it was shown that in Great Britain there are approximately 14,300 beds available in convalescent homes, while in twenty-two of the States of the United States there were available last year 12,812 beds. Of this number 5,685 beds were in institutions open in the summer only, 7,127 in institutions open throughout the year. The States included in this total comprise the most populous in the Union, the aggregate population being considerably more than that of Great Britain.

It is clear, therefore, that convalescent provision is more nearly adequate in Great Britain than in America, and to some extent this may account for the apparent indifference with which the matter is treated here. Convalescent facilities are very unevenly distributed in this country, but in the United States this feature is even more marked, and over one-half of the convalescent beds enumerated are in New York State and in New Jersey. In New York City, again, to a greater degree than in London, convalescent homes are independent institutions: in 1923, of 61 homes, only 7 were maintained and operated by hospitals. Most of the homes have been established by individual philanthropists, or by charitable organizations of one kind or another. As in Great Britain, a number of so-called convalescent homes exist largely to provide facilities for persons requiring restful holidays through minor ill health. In short, the provision of convalescent treatment in the United States presents no striking difference from that in this country, except in its extent.

There are, however, aspects of the problem about which the United States has much to teach. It has frequently been remarked that the American mind, more than the British, is concerned with the details of organization and the accumulation of information. American studies of convalescent provision certainly support this view. There is at least the beginning of an accumulation of literature on convalescence; an effort has been made in New York to assess the extent and nature of the provision required, and a centre for the collection and dissemination of information on convalescent facilities in the area has been established; furthermore, the Public Health Committee of the New York Academy of Medicine has prepared a pamphlet defining certain medical and administrative standards for the guidance of convalescent homes. It should be recognized, of course, that the movement described appears to be limited to the New York area; but it is probable that the interest generated by developments there will, before long, spread to other parts of the country.

The initiative in this forward movement was taken by the Public Health Committee of the New York Academy of Medicine, which, about five years ago, convened a conference on institutional convalescence and presented a report on convalescent care. As a result of this conference a convalescent service, governed by a representative committee and organized by a permanent secretary, was created in connexion with the information bureau of the United Hospital Fund of New York.

The first task of the service was to compile a directory of existing homes, giving the types of case admitted, the terms of admission, and other details, for each home. Its aim was to secure that the maximum use should be made of the facilities available. The need for such an organization is illustrated by the fact that in the New York area a recent investigation showed that only 72 per cent. of the capacity of the various convalescent institutions was utilized, while difficulty was being experienced in securing accommodation for convalescent patients—notably neurological cases, cases of nephritis and diabetes, cases requiring dressings, etc. Clearly a central clearing house can perform a useful function in securing a better adjustment between supply and demand; and what is true in New York in this connexion is probably also true in London and other centres of population in this country. It may be added that the directory of convalescent homes issued for the New York area is a model of what such a publication should be—telegraphically brief, complete as to detail, and authoritative.

The report on standards for the care and management of convalescent homes* consists of the reports of four subcommittees dealing with the convalescence respectively of medical, surgical, and neurological cases, and of children, together with a general summary by Mr. E. H. Lewinski-Corwin, and certain comments by Dr. Frederic Brush, who, as medical director of the Burke Foundation, has played a leading part in the development of convalescent treatment in the United States. The report treats of convalescence as "an important but neglected phase of medical interest," and emphasizes the need for the establishment of standards by which existing institutions may be judged. Reference is made to the value of "preventoria" for those on the verge of breakdown and other appropriate cases, but detailed consideration is restricted to provision for convalescence proper—that is, to provision for patients who have actually passed through acute illness, but are yet unfit to resume normal activities. It is suggested that neurological, cardiac, and orthopaedic patients, patients recovering from respiratory diseases or diseases requiring special diet, and children, should be segregated in separate institutions. A fifty- to sixty-bed unit is considered the optimum size, and that larger houses should consist of multiples of such units. Equipment should include a gymnasium and other physiotherapeutic and occupational requirements. The need for trained nursing and regular or resident medical attention is emphasized, and various suggestions are formulated for the maintenance of a close liaison between the hospital and the convalescent home.

Dr. Brush, in his comments, takes the view that "convalescence is the most important health segment now lacking organization and skilled direction," and formulates a suggestive programme to rectify this deficiency. His aim is to raise the status of convalescent treatment so that it may be recognized as an essential part of the machinery by which the health of the modern urban community is maintained. He considers that the convalescent service generally has fallen short of its task, and that its directors have failed fully to recognize their responsibilities. We in this country might well ponder his words in a self-critical spirit.

LITERATURE.

Institutional Convalescence: Standards for the Care and Management of Convalescent Homes. Report of the Public Health Committee of the New York Academy of Medicine.

Provision for the Care of Convalescents in New York City. By E. H. Lewinski-Corwin, Ph.D.

Directory of Convalescent Homes in New York City and Vicinity.

* Single copies of this, and other publications, may be obtained free on application to the Sturgis Fund, Burke Foundation, White Plains, N.Y., U.S.A.

PREVENTION OF PLAGUE IN NORTHERN MANCHURIA.

THE sixth annual report of the North Manchurian Plague Prevention Service[1] covers the years 1927 and 1928, and is principally concerned with the pneumonic form. It embodies original observations which are the outcome of much research work on the problem of hibernation and perpetuation of plague among wild rodents, chiefly the tarabagan.

Pneumonic plague was probably the disease involved in the pandemic known as Justinian's plague in the sixth century. It played an important part in the Black Death (1346–52), where it was most prevalent at the *beginning* of many local outbreaks, passing in the later stages into the bubonic type. But, as in other branches of medicine, the facts recognized by only a few advanced thinkers were soon forgotten, and were not recalled until authors such as Hecker, Webb, and Husch in the nineteenth century defined its occurrence in modern Indian outbreaks and properly described the pneumonic features. It broke out occasionally in South-East Russia, but it was not till the investigations of Childe (Bombay) that the pneumonic form was definitely established as being a special entity of plague. Lung pest was never considered as more than an interesting but rare variety of plague until the great Manchurian epidemic of 1910–11 showed that it might assume dimensions comparable with those of the Black Death.

In Manchuria there were over 65,000 deaths in five months without a single known case of recovery, and the consequent clamour for more knowledge about this fatal disease caused the Imperial Chinese Government to convene an International Plague Conference at Mukden. The general belief among the delegates at that time was that this pneumonic epidemic form was due to the extremely cold climate causing human beings to huddle together indoors; man-to-man infection by breath droplets was thus made more easy, and *B. pestis* maintained high virulence by direct infection in the passage from lung to lung. In the present report, however, it is claimed that such an assumption was erroneous, since the disease also occurs during hot seasons and in countries with warm and even tropical climates. While this may be so, and people in hot climates live more in the open, pneumonic epidemics are limited to the overcrowded masses, and the disease only occurs very occasionally and sporadically among the richer classes, in much the same way as is the case with bubonic plague. The greater frequency is more apparent than real, far more attention being now paid to this deadly type than a few years back.

The rise of pneumonic plague outbreaks is attributed to the summation of different factors, such as the special character of the epizootics and susceptibility to lung diseases in general, or to plague infection. Extrinsic factors also indirectly contribute to the rise: climatic conditions may enhance the susceptibility of the lungs, while bad social conditions may impair the general resistance of the individual. But, in spite of all these, the difficult problem how this form of epidemic arises is by no means solved, though climatic and social conditions, together with the influence of measures taken, are no doubt instrumental factors in the spread and control of the outbreaks.

On the much-discussed point as to the tendency for these outbreaks to decline spontaneously, the report records investigations in the laboratories at Harbin and Vladivostock indicating that most of the cadavers dissected towards the end of the epidemic of 1920–21 did not show the usual pneumonic foci, but presented (though undoubtedly infected through the respiratory tract) only hyperaemic and oedematous changes in the lungs as well as marked general septicaemic features. These cases were designated *pulmonary* plague, and were much less infectious than those with the usual features of plague pneumonia, because in the former the disease runs the rapid course of acute septicaemia, and the principal medium of infection—the cough—is absent.

The findings as to the pathology of pneumonic plague hinged round the debatable question whether infection enters through the tonsils and reaches the lungs secondarily *through the blood and lymph stream*, or whether it is due to infection through the lower portion of the respiratory tract; all the work done by Drs. Wu Lien-Teh and Jettmar upon human cadavers, tarabagans, and sisels (small South Russian marmots) convinces them that the second view is the correct one. It is noted that infectivity is small during the first twenty-four hours after contact, but as soon as this stage is passed the patient becomes dangerous on account of a continuous increase of the cough and the number of bacilli emitted by it.

The value of vaccine prophylaxis has yet to be determined, and the same may be said of serotherapy. Also, there yet remains for study the possibility of the existence of a special ultra-virus or filter-passing form of *B. pestis* as the causative agent of pneumonic plague.

Much work is recorded on the perpetuation of plague among wild rodents, especially the tarabagan—the Siberian marmot. A considerable number of these animals, infected while hibernating, quickly succumbed to acute plague, and a peculiar form of latent plague was also found in which virulent bacilli survive either at the site of inoculation or in the regional lymph glands, or both. This appears to be the principal means of carrying over the disease from one season to another, and it may explain the mystery of the perpetuation of plague among hibernating animals. Dr. Wu deserves special credit for this important finding; the manner of perpetuation through the long Manchurian winter was a feature which greatly troubled the International Plague Conference.

A chapter in the report, dealing with recent knowledge of pneumonic plague, surveys researches in which the incidence, epidemiology, pathology, clinical features, and prophylaxis of the disease, as observed all over the world, are fully summarized. Though great progress has been noted, the riddle as to how pneumonic plague epidemics arise is evidently still unsolved. An extensive bibliography has been collated for reference. In an attempt to draw conclusions from the assembled evidence about plague in wild rodents the report says: "It must be emphasized that the more one learns about plague in wild rodents the more serious the problem appears. As a rule, once the infection has gained a foothold among such animals it not only perseveres, but even tends to spread whenever possible, sometimes at an alarming rate."

The report includes chapters by (1) Major G. A. Cullenden, M.D., on the morbid histology of pneumonic plague; (2) Dr. Lin Chia Swee on international aspects of pneumonic plague; (3) Dr. Li Yuan Po on a special kind of amoeba found in the faeces of tarabagans; (4) Dr. H. M. Jettmar on plague experiments upon insects; and (5) Dr. J. W. H. Chun, senior medical officer of the service, on plague investigations in a wide area of North Manchuria. There is an interesting chapter by Dr. Jettmar describing a year he spent in a Mongolian laboratory at Urga under the Russian Dr. Dudukaloff. He also writes on the vitality of scarlet fever streptococci. But the greater part of this report has been prepared by Dr. Wu Lien-Teh, formerly known as Dr. Gnoh Lean Tuck (South China orthography); he was a Cambridge research scholar and gold medallist in clinical medicine at St. Mary's Hospital, London. The North Manchurian Plague Prevention Service began its career under his direction in 1912, and has continued ever since to reflect the energizing activity and methods of research that he has instilled into it. There is an autobiographical chapter of his career. Taken as a whole, the volume may be regarded as a useful contribution to the subject of pneumonic plague, while it also shows that this Chinese prevention service has been brought into a good position among the modern European and American institutes of similar nature, and that China, by its help, is now beginning to take a more noticeable part towards the health betterment of the world. No fewer than seven hospitals are maintained by the North Manchurian Plague Prevention Service, which, in addition to many hundreds of in-patients, dealt with 69,770 out-patients between October, 1926, and August, 1928.

We are informed that this report may be obtained from the Cambridge University Press or from Messrs. H. K. Lewis, price 15s.

[1] Reports of the North Manchurian Plague Prevention Service, 1927-28. Edited by Wu Lien-Teh, M.D., B.Ch.Cantab. Vol. vi, December, 1928.

British Medical Journal.

SATURDAY, MAY 18TH, 1929.

NOISE AND ROAD TRAFFIC.

On October 23rd, 1928, the British Medical Association submitted to the Minister of Health a memorandum on noise and the public health. This memorandum (printed in the *Supplement* of November 10th, 1928, p. 209) represented not an isolated gesture of protest against the danger threatened to the mental and physical health of the community by the ever-increasing clamour on our roads and city streets; it was the culmination of a movement, begun by the Edinburgh Branch, which took definite shape at the Annual Meeting held at Cardiff in the previous July. On that occasion, after full discussion, the Representative Body unanimously adopted the following resolution: "(1) That in the interest of the public health the British Medical Association support any measures which may be taken so to alter or amend existing legislation as to give greater power to local authorities to suppress unnecessary noise which is disturbing to the lieges; and (2) that any noise from 11 p.m. to 6 a.m. which is capable of being prevented or mitigated, and which is dangerous or injurious to health, shall be a nuisance within the meaning of the Public Health Acts."

It cannot be held that the recently published proposals[1] made by the conference of local and police authorities and motor organizations, which was convened by the Minister of Transport to consider road traffic noises, are in complete accord with those set out in the British Medical Association's memorandum, but they go far towards being so. Their application would not subject us to the risk of living in an oppressive silence, but it would produce a welcome diminution in the volume of sound that threatens to engulf our civilization. The report of the conference, which is signed by Sir Henry Maybury, as chairman, draws a clear distinction between proposals whose effectiveness depends on the voluntary effort of motoring organizations, manufacturers, and the motoring public in general, and those which might reasonably be embodied in national legislation. In the latter class is the suggestion that a regulation should be made under the Motor Car Acts to deal with excessive and avoidable noises from motor vehicles which are badly constructed, badly loaded, or in a faulty condition. The conference proposes that under this regulation no person should use, or permit to be used, on the highway any motor car which, by reason of its construction or its load, creates any excessive noise; and it suggests that any noise should be regarded as excessive if it is caused, directly or indirectly, by faulty construction or condition, lack of repair or adjustment of the vehicle, or the faulty packing or adjustment of its load, and is in excess of that ordinarily created by motor cars of a similar class. The innocent driver is protected in the saving clause that it should be a good defence to proceedings taken under these regulations to prove that the noise in respect of which the proceedings have been taken was due to some temporary or accidental cause which could not have been prevented by the exercise of due diligence, or that it arose through the fault of some other person whose duty it was to keep the car in good condition or properly to adjust its load.

Probably the most perplexing problem before the conference was in relation to the control of the noise from horns and other warning instruments, and its proposed solution involves recommendations both for legislation and for voluntary effort. Horns of all types (electric buzzer, wind-blown, or electric motor driven) can be made with either objectionable or melodious notes, and the conference, unable to find any definition which would distinguish between different types of horns according to their notes, pleasant or otherwise, concluded that if any regulation were made the only course would be to permit the use of specific types which had been proved satisfactory by some kind of test as yet undetermined. Two causes of noise from motor horns have to be considered: the use of horns with an unduly strident note, and the excessive and unnecessary sounding of any kind of horn. With regard to the former the conference suggests that although a more powerful horn may be reasonable on the open road in rural areas, where in the daytime comparatively high speeds may be justifiable, in the hours of darkness the warning given by the headlights should reduce the need for a strident note to the minimum. Until the Ministry of Transport, in consultation with various scientific bodies and the motoring organizations and manufacturers, has succeeded in fixing a practical standard to which all horns should conform, the conference holds that much might be done if strong representations were made through the motoring organizations to the manufacturers and to the motoring public at large, drawing attention to the annoyance caused to the community by the use of strident horns, and urging them to confine the use of all types of horns to occasions when it is necessary in the interests of safety. The suggestion that zones of silence might be instituted where the sounding of motor horns would be forbidden, or permitted only on grounds of public safety, was uncompromisingly opposed by the motoring organizations, both on the ground that nothing should be done to interfere with the discretion of the driver in this matter, and that the enforcement of any such regulation would be fraught with considerable administrative difficulties. One must concede the argument of the motoring organizations that so long as failure to blow a horn is regarded by the police and insurance companies as an indication of responsibility for an accident, a certain amount of horn-blowing in self-protection is bound to occur. On the other hand, the conference recognizes that the use of horns when vehicles are stationary shows a lack of consideration for the public, and can be dealt with by regulations; it recommends that when a car is at rest on the highway no person should use or permit to be used in connexion therewith any instrument for the purpose of giving audible warning except on the ground of safety.

A most important series of recommendations concerns the reduction of traffic congestion—the chief cause of unnecessary horn-blowing in towns. Immediately applicable are the suggestions for the adequate name-plating of streets whereby the need of drivers to slow down their vehicles in an effort to discover their whereabouts may be reduced; for the adoption of a scheme on the lines of that recommended to the Minister of Transport by the County Councils Association, by which at road junctions traffic proceeding along a road of lesser traffic importance should be expected to look out for, and give way to, vehicles

[1] Report of Conference on Road Traffic Noises and Priority of Traffic at Cross Roads. H.M. Stationery Office. 1929. Price 2d. net.

proceeding along a road of greater traffic importance; and for the generous provision of signposts, especially at junctions which are known from accident statistics and otherwise to be particularly dangerous, above all where doubts may arise as to which is the road of greater importance. The needs of modern traffic can be met only by the most careful and far-seeing road planning. "The rolling English drunkard made the rolling English road"; and so long as there was no problem of traffic congestion the job could be left to him as well as to anybody else. To-day it has become important to plan roads and types of lay-out at road junctions not only with regard to present needs, but in anticipation of future needs. The conference, in considering these new problems, held that the lay-out at a crossing of two roads of equal traffic importance should be different from that of a crossing where a road of minor crosses one of major traffic importance; and from this point of view it suggests three classes of road crossings: (*a*) the crossing of two roads of major traffic importance; (*b*) the crossing of a road of major traffic importance by one of less traffic importance; (*c*) the crossing of a road of major traffic importance by a subsidiary road of quite minor importance. For each of these classes it is important to provide a lay-out which will induce drivers to act according to the traffic value of the road on which they are travelling, and for the first class a complete roundabout is suggested, for the second a partial roundabout, and for the third a "staggered" (that is, zigzag) crossing. The conference recommends further that when roads are being enlarged or new roads are under construction, sufficient land should be taken to enable a junction to be laid out in accordance with whichever may be the most appropriate of these systems, but that where it is not possible to lay out such a junction, illuminated beacons should be placed at the intersections of the roads.

The conference is to be congratulated on having produced an admirable report. While proposing a number of legislative changes, it has duly recognized that silence cannot be enforced by Act of Parliament, that there are aspects of the problem of noise which may best be solved by the public itself. Above all, its proposals for dealing with traffic congestion are informed with constructive vision, and their adoption will have effects far beyond the purpose of noise prevention for which they were designed.

THE REDUCTION OF MATERNAL MORBIDITY.

At a time when the subject of maternal mortality is given a prominent place in lay and professional discussions, when the whole country is crying out that it is as dangerous for a woman to have a child now as it was twenty years ago, and when promises to reduce the mortality rate are held out to the electorate as a party policy, there is a tendency to overlook any diminution that may have occurred in the amount of permanent disability left in the 99.5 per cent. of parturient women who do not die as the result of childbirth.

Dr. James Young, in an address on the woman damaged by child-bearing published in the *Journal* this week at page 891, presents what at first sight appears to be a depressing picture; yet it must be conceded that so far as the treatment of the late ill effects of child-bearing is concerned we have advanced very much in the last twenty years. The excellent results now obtained from plastic operations for prolapse afford a good example of the improvements that have accrued from the experience of the last generation of gynaecologists; and, since pelvic surgery has become a reasonably safe procedure, many women who a generation ago would have become permanent invalids can now be restored to health and useful activity. These, however, are improvements in gynaecology, not in midwifery. Although it is impossible to assess the amount of damage that occurs as the result of child-bearing, it has been shown that well over half of the gynaecological beds in the hospitals of this country are filled with the after-effects of complications of labour. But when we consider the relative rarity nowadays of such gross injuries as urinary fistula we must conclude that the practice of midwifery has improved in recent years. That the gynaecological beds are still full is due merely to the fact that gynaecologists now operate for lesions that formerly were not regarded as severe enough to warrant operation.

Since the scope of operative intervention in midwifery has been widened there can be little doubt that the amount of immediate suffering during labour has been decreased. Although it may be possible that infections and lacerations are in part due to operative procedures, the corresponding lessening of psychological trauma must not be lost sight of entirely when comparing the results of to-day with those of years ago. The substitution of Cæsarean section for a labour lasting several days and perhaps ending in craniotomy, the shortening of the second stage of labour by a low forceps operation, and the alleviation of labour pains by means of sedatives and anæsthetics—all these measures must not be condemned because they have not resulted in a diminution in the death rate among the 0.5 per cent. of women who die in consequence of childbirth. They may have saved a number of the remaining 99.5 per cent. from an ordeal of suffering so great as to leave its mark on the patient for the rest of her life.

In every branch of medicine we demand more perfect results with the advance of the art; in midwifery in particular, in our anxiety to reduce the mortality rate, we must not lose sight of those women who suffer permanent damage which may cause lifelong disability. There is in this direction still much room for improvement, but when present-day results are compared with those of former years, we have at least some grounds for encouragement in the progress already attained.

VENOUS BLOOD PRESSURE.

DISTENDED cervical veins and an engorged liver constitute the simplest demonstration that in cardiac failure there is increased pressure in the great veins and right auricle. Investigations of the venous pressure in health and disease therefore hold, besides an academic interest, the possibility that incipient failure may be demonstrated by exact methods for the measurement of this pressure. The direct method by vein puncture and manometry was introduced eighteen years ago by Moritz and Tabora,[1] and since then the mechanisms controlling the venous return to the heart and the transit of blood from the capillaries to the great veins, have claimed increasing attention. It is clear that a large number of factors must be in operation: the force of the heart, the tone of the arterioles, the great fluctuations demonstrated by Krogh in the capillary bed, and the rate of the heart are but a few of them. Further, it is obvious that venous engorgement may arise either from inadequacy of the heart in transferring blood into the

[1] *Arch. f. Klin. Med.*, 1910

systemic circulation or from altered peripheral conditions facilitating passage of blood from the arterial to the venous system. This principle explains the seeming paradox that individuals with prominent veins in the extremities may have no reduction of effort tolerance, while the subjects of cardiac failure often show no peripheral venous distension. The normal venous pressure as measured in the basilic vein, with the patient and the arm in the horizontal position, is generally held to be between 5 and 15 cm. of water. Readings within these limits were observed in 90 per cent. of normal students by Bedford and Wright[1]; these observers further found, in agreement with other workers, an increased pressure in the veins in cardiac failure. A comprehensive survey of venous pressure in its relation to heart disease has recently been made by Harris,[2] who confirms the relation of increased tension to failure, with the exception of certain cases in which the arterial pressure is high and the pulse slow. The pulse rate is regarded by this author as controlling to a large extent the venous pressure; observations made on patients suffering from hypertension and compensated heart disease showed generally normal readings, while if the pressure in the veins was increased there was a tendency to rapid pulse rate. Likewise in those conditions typically associated with rapid rhythm, such as auricular fibrillation, exophthalmic goitre, paroxysmal tachycardia, and effort syndrome, high venous pressures were found. In his discussion of these results Harris attributes venous engorgement to a primarily increased pulse frequency which entails reduced output per beat, and, since the augmented rate does not compensate for reduced efficiency of the beat, a reduced output per minute. He thus inverts the mechanism described by Bainbridge, in which auricular distension reflexly evoked increased heart rate. This matter, however, seems still open to question. With a good venous return the filling of the heart is almost complete before the conclusion of diastole, so that the initial result of increased rate is greater output; conversely, if the venous return is poor, diminished output results from acceleration of the heart. Harris's argument thus postulates inadequate venous filling, but, whatever may be the explanation, a relation between high venous pressure and rapid rhythm has been established by this work. In its special relation to arterial hypertension the venous blood pressure has been investigated by C. Alexandresco-Dersca[3] and his collaborators. In the presence of right heart failure or renal disease, measurements between 17 and 60 cm. of water were found; high readings were also recorded where intrapulmonary tension was increased. Patients with uncomplicated hypertension showed normal venous pressures, but the latter were reduced in the presence of arteriosclerosis or other lesion involving the small arteries and capillaries. Whether or not estimations of pressure in the veins may assume more than a physiological importance remains to be seen. There is no doubt that the method has provided an additional means of attacking the many problems still to be solved concerning the mechanics of the circulation. As a diagnostic aid in cardiac failure the measurement of venous pressure appears, from the results obtained by Bedford and Wright, to be of limited value, increase in the pressure being always accompanied by other signs of failure. There remain, however, the provinces of prognosis and therapeutics. It may well be found, in the light of future knowledge, that venous pressure measurements are of value in estimating improvement or deterioration in a patient's condition. Possibly also they may be of use in determining which of the therapeutic measures employed in hypertension and in cardiac failure are of greatest benefit.

[1] *Lancet*, 1923, ii, 106.
[2] *Edin. Med. Journ.*, 1928, xxxv, 630.
[3] *Paris Méd.*, August 11th, 1928, 133.

PRINT AND READING.

THERE has been issued under the aegis of the Committee upon the Physiology of Vision of the Medical Research Council the report of an interesting piece of research work by Mr. Vernon, of the Psychological Laboratory of Cambridge University, on "Errors made in reading."[1] In experimental work upon the legibility of printing type it has been assumed that confusion between letters will occur as much in reading connected meaningful material as in reading single letters, nonsense words, and disconnected words. On this account some have clamoured for the alteration of the shapes of various letters which, by experiments or *a priori* reasoning, were held to be ambiguous and easily confused with other letters. Others found that words were not perceived letter by letter, but from a few "determining" or "dominant" letters, of which the initial letter and the letters extending above and below the line are the most important; or from the total word-form; or from a combination of these two factors. Others, again, found that some people read more by word-wholes, some by "dominant" letters. Thus it seems that confusion between individual letters is unimportant in connected reading, unless they are dominant letters. Experiments were therefore undertaken to determine how far typographical errors, and especially the mutual substitution of readily confused letters, affected the legibility of various kinds of reading matter. Various types of test material were used, from disconnected words to meaningful passages: the print was exposed for brief periods in a specially lighted tachistoscope. Students and research workers in psychology were subjected to the tests, and the type of error made by them in reading these tests was investigated. Subjects were instructed to read aloud as rapidly as possible all that they saw, and to report guesses as to words or parts of words of which they were not certain. The mistakes showed, speaking generally, that alteration of the total word-form was quite as common as substitution of letters with preservation of the total word-form. Shortening of the word-form was more common than lengthening. There was no evidence that one particular part of the word rather than another "determines" how the word shall be read; but there was evidence that the vertical "elevation" of the words was more correctly apperceived than their horizontal extension, and that the general contour of words, as indicated by the relative heights of the letters, was of considerable importance in reading them. Letters found to be most frequently replaced fell into two groups, ascenders and small letters. Of ascenders, *f* and *t*, and *l* and *t*, were the most confused: *d* and *l*, *d* and *t*, and *h* and *t* were also substituted for each other. Among the vowels, *o* and *e* gave difficulty; there was a natural tendency to introduce *e*, the most frequently occurring letter of the alphabet. It is unfortunate that *a*, *e*, and *o* are all small curved letters resembling each other closely; but it was noted that *e* and *i*, which are not alike, were almost as commonly confused. Thus, the view that typographical resemblance is the preponderating factor leading to the frequent mutual substitution of the vowels was held to be incorrect. There would appear to be some call for the alteration of the form of *a*, *r*, and *s*, and for the differentiation of *f* and *t*, though the subjects of the experiment occasionally made mistakes from other causes; they would read into a line a word from the line above or below, and made further errors by failing to begin on the succeeding line. Mr. Vernon's general conclusion is that when the meaning of the material read is fully comprehended, typographical errors, being few in tachistoscopic reading, would be negligible in normal reading. When the meaning is not understood, or when there is no continuous context, unfamiliar words

[1] Privy Council. Medical Research Council. Reports of the Committee upon the Physiology of Vision. Studies in the Psychology of Reading. London: H.M. Stationery Office. 1929. Pp. 59. Price 2s. net.

or long and difficult words are replaced by familiar words of a somewhat similar form and appearance, or by much shortened words or nonsense combinations. Thus, mutual confusion of individual letters is only a minor cause of errors in reading.

DANGEROUS DRUGS AND THE FAR EAST.

ARISING out of the Geneva Opium Conferences of 1924–25, a commission has been set up by the League of Nations to inquire into opium smoking in the Far East. The contributions of the French, British, and Netherlands Governments to the expenses of the inquiry have been increased, and the League's Council now regards the financial position as sufficiently assured. M. Ekstrand, the Swedish Minister at Buenos Aires, has been appointed chairman of the commission, and he has as his colleagues M. Max Leo Gérard, honorary secretary to the King of the Belgians, and Dr. Jean Havlasa, the Czechoslovakian Minister at Rio de Janeiro. It will be remembered that The Hague Opium Convention of 1912 pledged the contracting Powers to bring about the gradual and effective suppression of the manufacture of smoking or prepared opium, and to prohibit its import and export either immediately or as soon as possible. The Geneva conference relaxed these requirements to the extent of postponing the suppression of smoking opium until not more than fifteen years from a date when the commission, now appointed, shall have decided that the export of the drug from producing countries no longer constituted an obstacle to the reduction of opium smoking in consuming countries. China was no party to this engagement, although exports, whether licit or illicit, from that country were regarded as the chief obstacle to the contemplated suppression. At the twelfth sitting of the Opium Advisory Committee the representative of China made a lengthy statement on the whole question of the attitude of China to opium smoking and to the illicit traffic in opium, morphine, and cocaine generally. This statement, which contained many historical and political references of a polemical character, was refused discussion by the committee, and has now been published by the "Ligue anti-opium d'outre mer." Mr. Wang King Ky therein urged that the commission which has just been appointed should have its inquiry extended "to cover all opium-producing countries or countries manufacturing its derivatives," with a view to securing conformity with Article 9 of The Hague Convention, and restrict the manufacture, sale, and use of dangerous drugs to medical and scientific purposes. He quoted Mr. Porter, the United States representative, who said: "There must be only one standard of morality for the world, not one for the West and another for the East. What is forbidden and punished with severity in the West must not be excused and defended and promoted in the East." It is no longer possible to deny that tons of morphine, heroin, and cocaine manufactured in European countries have been finding their way to the Far East, and, as Mr. Sato, the Japanese delegate, observed, there is no reason why "the flood of morphine and heroin into China should not be considered at the same

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TUBERCULOUS FAMILIES.

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tuberculous patients. The number of deaths from pulmonary tuberculosis was too small to form a basis for any conclusion, but in the case of non-pulmonary tuberculosis, in which two-thirds of the mortality was due to tuberculous meningitis, the death rate was significantly greater among children living in tuberculous households than the corresponding rate in the geographical county of Lancashire, used as a "control." In cases where the adults in the households had positive sputum the excess mortality from non-pulmonary tuberculosis amongst the children was from nine to nineteen times greater, according to the age group, than among the controls. Where the sputum of adults was negative or absent, the non-pulmonary tuberculosis death rate of children was also greater than that in the county rate, but not sufficiently so to be statistically significant. The mortality was higher among children of mothers with positive sputum than of fathers. When the death rate from all causes of the 1,486 children was examined, it was found that during the first year of life the rate for the children in tuberculous households was significantly below the corresponding rate for Lancashire. Between the ages of 1 and 2 years the rates were about the same, while in the age group 2–5 years the death rate from all causes in the children of tuberculous households was significantly higher. This curious observation in children under 1 year old has perhaps some interest in connexion with Professor Calmette's assertion that infants vaccinated with B.C.G. show a greatly diminished death rate from all causes as compared with the general death rate. Dr. Lissant Cox seems inclined to attribute the difference to extra supervision by the medical and nursing staffs in the case of tuberculous households, and to the consequent advice in feeding and health, and the assistance given to necessitous cases. In connexion with this lowered mortality from all causes in children under the age of 1 year, Dr. C. W. Laird, one of the group of officers engaged in the investigation, recalls the claim of Professor Abderhalden of Halle to have discovered proteolytic ferments in the blood of pregnant women which were not to be found apart from pregnancy. Further reference to Professor Calmette's work is made in the report in stating the actual death rate from tuberculosis in Lancashire. Whereas Professor Calmette calculated that in France 24 per cent. of the children of tuberculous mothers died from tuberculosis in the first year of life, the corresponding figure for Lancashire was only 3.2 per cent. The death rate from all causes among these children was only 11.5 per cent. Further, the Lancashire investigation of children observed from birth to the age of 4 revealed a mortality figure, both from tuberculosis and from all causes, which was a little lower than the French figure for corresponding children vaccinated with B.C.G., and much lower than that for untreated French children.

ROENTGENOLOGY.

Roentgenology[1] is the title of an essay, in book form, by Dr. G. W. C. Kaye, superintendent of the Physics Department of the National Physical Laboratory. It makes very interesting reading. The book divides itself into three main parts, of which no doubt the first and the last will prove of most interest to the ordinary reader. Dealing with the first part, we find that this is a fascinating account, the matter being arranged in chronological order, of the evolution of electricity and its bearing on the discovery of *x* rays. It relates shortly the discovery of essential features, and gives the name of the discoverer and the date of the discovery. This part is beautifully illustrated by numerous portraits, drawings of original apparatus, photographs of Wilhelm Konrad Roentgen and of

[1] *Roentgenology.* By G. W. C. Kaye, O.B.E., D.Sc. London: W. Heinemann (Medical Books) Ltd. 1928. (Cr. 8vo, pp. xiv + 157; 43 figs., 1 plate. 7s. 6d. net.)

laboratory, and a reproduction of the first *x*-ray photograph of the human hand made in England. The second part deals successively with the nature of *x* rays; reflection, prismatic refraction, diffraction of *x* rays, and the nature of radiation. This part will interest physicists and some radiologists, but is too technical for the majority of medical men. The concluding part deals entirely with the dangers of *x* rays, protection for workers, and the recommendations drawn up by the British X-Ray and Radium Protection Committee and those adopted at the second International Congress of Radiology in 1928. The author describes the evolution of protection, and the reasons for the various recommendations, and he also discusses in detail the protective value of various metals and other materials. Over one hundred persons lost their lives, and many more were injured, before *x*-ray work was made safe. Thanks in a very great measure to Dr. Kaye's own work, there is no reason now why any further loss of life or health should occur.

EDUCATION AND THE PREVENTION OF MALARIA.

THERE is an inclination both among those holding official appointments in health departments and among the populations whom they serve to think that healthy conditions of living can, and should be, created by official action. The private individual, though ready enough to admit the failure of officialdom to create healthy conditions, is disposed to blame "Government inefficiency" rather than the inherent weakness of the system. Experience may be relied upon to teach the health official that the essence of the problem is the education of the individual in fundamental matters which affect his health. The problem is familiar at home, but it is much more pressing in those foreign parts where a more primitive social and sanitary organization coincides with more numerous and more varied, but none the less avoidable, disease risks. Particular interest therefore attaches to a new move announced from Kenya, where the medical department has adopted the slogan "Every man his own health officer," and where the word "propaganda" has appeared in the Colony's estimates. Far from relying on the inherent blessedness of the word, the medical department has made arrangements for what appears to be an effective scheme, admirably suited to the Colony's needs. There has been created the appointment of "special farm medical officer," first among whose duties comes "continuous safari on the farms, personal propaganda with regard to how to avoid malaria and how to make the farm healthy." He will travel from one isolated farm to another, camping at each for sufficient time to get to know the farmer and his difficulties, to examine thoroughly the labourers, and to teach practically and on the spot the feasible remedies for unsatisfactory conditions. Even in Great Britain much might come of some such scheme, but two factors make it especially valuable in the tropics, where the problems of no two homesteads are identical. Taking malaria alone, the preventive measures desirable and practicable at one farm may differ widely from those at another ten miles away. Moreover, such sanitary measures as are to be applied—for example, in regard to the water supply and the disposal of excreta—may often, of necessity, have an element of makeshift, or at least require expertly directed ingenuity. How many health officers in the tropics have said to themselves: "If only I could sit down beside this fellow for a week I could really do something"! When the Kenya scheme was mentioned at the Royal Society of Medicine the other evening, a distinguished administrator from another African territory said that in his domain medical officers had been visiting farms for many years, and he was pleased to hear that Kenya was now going to do the same. But the casual visit of a district medical officer, whose duties at his headquarters are meanwhile accumulating, is a very different thing from that now instituted in Kenya. It seems probable, for example, that the Kenya plan would go a long way to control the blackwater fever which has been such a bane to white colonists in Southern Rhodesia.

A MODIFIED FORM OF THE WASSERMANN TEST.

THE Medical Research Council has issued a report[1] on the technical details of the Wassermann test (No. 1, M.R.C.) as modified by Dr. E. J. Wyler. When the Medical Research Committee (as it was then named) published in 1918 two reports relating to the technique of four variations of the Wassermann test, Nos. 1 and 3 appeared to be of equal value as regards sensitivity and accuracy. For many years Dr. Wyler has been using the well-known No. 1 method, with certain modifications introduced by himself, and the present report gives full details of his technique. The precautions taken include securing that the temperature of the water in the inactivating bath is uniform throughout; standardization of the sheep-cell suspension by the Haldane haemoglobinometer; the employment of pooled guinea-pig serums from selected animals for complement; and the use of a dropping pipette. Dr. Wyler emphasizes the importance of adhering rigidly to the same exact "ritual" from day to day. The hope is expressed in the report that with the aid of this information other workers will be able to conduct the investigation so as to obtain strictly comparable results.

THE next session of the General Medical Council will commence on Tuesday, May 28th. The President, Sir Donald MacAlister, Bt., K.C.B., M.D., will take the chair at 2 p.m. and give an address.

IN accordance with the statutes of the College, the Fellows of Trinity Hall, Cambridge, have pre-elected Professor H. R. Dean, M.D., to succeed Dr. Henry Bond as Master on June 17th next. The Master-Elect has been a Fellow of Trinity Hall since his appointment as professor of pathology in the University in 1922.

WE much regret to have to record the death of Mr. Arthur Henry Cheatle, C.B.E., F.R.C.S., who was for many years aural surgeon to King's College Hospital, and presided over the Section of Otology at the International Congress of Medicine in London in 1913. We hope to publish an obituary notice in an early issue.

A BRONZE portrait bust of the late Sir Clifford Allbutt, Regius Professor of Physic from 1892 to 1925, will be unveiled by Sir James Crichton-Browne, in the Allbutt Library at the Medical School, Cambridge, to-day (Saturday, May 18th), at 2.30 p.m. Lady Allbutt, the donor of the portrait, will be present, and invitations to the ceremony have been sent to a few friends. The Allbutt Library occupies the room formerly known as the Kanthack Library, which has been removed to the new Pathological Department.

[1] Privy Council: Medical Research Council, Special Report Series, No. 129: The Wassermann Test. Technical Details of No. 1 Method M.R.C. (modified). By E. J. Wyler. H.M. Stationery Office. 1929. Price 9d. net.

THE Hanbury medal of the Pharmaceutical Society of Great Britain "for high excellence in the prosecution or promotion of original research in the natural history and chemistry of drugs" has been awarded to Henry Hurd Rusby, M.D., professor of materia medica in the College of Pharmacy of the Columbia University, New York, and director of the New York Botanical Gardens. It is hoped that Professor Rusby will visit England next autumn to receive the medal.

CANCER OF THE COLON.

ANNUAL ORATION OF THE MEDICAL SOCIETY OF LONDON.

THE annual oration of the Medical Society of London was delivered on May 13th by Professor G. GREY TURNER of Newcastle-on-Tyne, whose subject was "Cancer of the colon." Dr. J. WALTER CARR, president of the society, was in the chair.

Professor GREY TURNER, who held his hearers' attention for a full hour and a half, and spoke entirely to lantern slides, began by giving some personal statistics. He said that he had had the opportunity of operating on 241 cases of cancer of the colon. Out of that number he had been able to do some type of resection of the growth in 142; only a palliative operation was possible in 85, and in 14 only an exploratory laparotomy. He was not able to furnish the number of cases brought to his notice out of which these cases for operation had been selected, but his operability rate had been extremely high. It was clearly understood that in operating for cancer the ideal was to excise the whole of the diseased part, together with a wide area of healthy tissue, which latter should include the path of probable cancer invasion. This was probably as well illustrated in connexion with growths at the ileo-caecal angle or in the caecum as in any part of the body.

The results of the 142 cases in which resection was done showed 27 deaths; in 58 of these cases, with 15 deaths, the operation was done before the end of 1919, and in 84 cases, with 12 deaths, it was subsequent to that year. In the former period the mortality was nearly 26 per cent., in the latter period 14 per cent., but he added that he was by no means satisfied with this last figure. His aim was to reduce the mortality to 5 per cent., which would, however, mean the acme of judgement and technical skill. As to the parts of the bowel involved, one constantly read in surgical publications that malignant disease was different according to the part of the colon in which it appeared, the difference relating to clinical history, symptoms, and prognosis after operation, so as considerably to affect the ultimate results; but in his own comparatively small series of cases he had not found this to be so. The great majority of the growths had been in the sigmoid (69 out of the total of 142); the caecum was involved in 22, the ascending colon in 6, the hepatic flexure in 7, the transverse colon in 14, the splenic flexure in 15, and the descending colon alone in 9. The most frequent of his cases was that in which the descending colon was involved right down to the bottom of the sigmoid.

Mortality.

It was a salutary thing for a surgeon to ponder over his deaths. Professor Turner showed a table in which the causes of the 27 deaths were set out. In 15 cases the death was due to peritonitis or other sepsis; in 3 to intestinal obstruction; in 3 to pneumonia, and single cases to haemorrhage, shock, diarrhoea, heart failure, exhaustion, and unknown cause. With regard to the deaths from peritonitis or other sepsis, in a good many of the cases there had not been general septic peritonitis, but some form of sepsis, sometimes in connexion with the glands, and sometimes in connexion with the peritoneal cavity generally. The element of obstruction had a good deal to do with the ultimate mortality. The other deaths which had occurred in this series, apart from the large group associated with sepsis, were just the sort of deaths that had to be recorded from time to time in intra-abdominal surgery of any sort.

Tennyson's line, "Knowledge comes, but wisdom lingers," was very appropriate here. If wisdom were parallel with knowledge he would not have lost his last two cases. In one of these, on a very stout person, he carried out an anastomosis at one stage; in the other he essayed a one-stage operation in a weakly, frightened old man. The two-stage operation might have carried them through. Of this series of 142 cases, 70 operations were done in one stage, and 72 in two or more stages. In all, 267 operations were required. What was called the two-stage operation (though in fact the operations were usually more than two) showed only half the mortality of the one-stage operation—12.5 per cent., as against 25.71 per cent.—which was a very striking and informative figure.

Grade of Malignancy.

Instead of looking on obstruction, as so many people did, as an undesirable thing from the patient's point of view, he was inclined to think it most favourable. If a patient developed an obstruction in the early stage of malignant growth, thus demanding an operation for drainage, that patient was more likely to get well after a subsequent radical operation for removal of the growth. The obstruction drew attention to the condition at a stage at which the malignant disease was probably in an operable state.

Just as many surgeons thought that obstruction in these growths was a very bad thing, many had assumed that malignant disease in the large bowel was of low grade; but there was no doubt that these growths varied greatly in malignancy. He himself was not able as yet to say while the growth was *in situ*—which was the only useful time—what was the degree of malignancy of the growth. He showed a specimen of a constricting carcinoma of the sigmoid adherent to the appendages which he had removed from a very fat woman, who lived fourteen years and ten months after the operation, while in an exactly similar case the patient died in less than two years from a recurrence of the growth.

It was quite likely that a great many cases of carcinoma of the colon never reached the surgeon. The surgeon was never asked to see them. Many of them masqueraded under the care of physicians as cases of ascites or secondary carcinoma of the liver. But he did not think it fair to assume that all bowel growths were of a low grade of malignancy, though there could be no doubt that many of them did exhibit such low degree. He was accustomed to say to his students that whatever some surgeons might believe with regard to carcinoma, however much they might believe that carcinoma was a generalized disease and never had a purely local origin, that was the worst possible attitude of mind for the operating surgeon. If the surgeon was to do good to his patient and to subject him to a sufficiently radical operation, it was extremely important that he should have faith at the time he did the operation that he was dealing with a local disease.

Operability.

This brought him to the question of operability. He felt that at the present time, when radium was reaching such a wonderful field of usefulness, and was being employed tentatively in the treatment of malignant disease of the internal organs, it was very important to decide what operative measures could offer for patients suffering from such disease. He had little confidence in surgeons who, while they presented excellent statistics as to their after-results, rejected an undue number of cases, selecting only a comparative few for their surgical enterprise. He had more confidence in the man who, although he might have a big mortality, had also a big operability rate.

First of all, one must not be deterred by the age of the patient. He instanced a woman of over 70, with carcinoma of the ascending colon, who had done extremely well; recently he had had under his care a man of 86 with carcinoma of the descending colon, and he had made an equally satisfactory recovery. Nor need the surgeon be deterred by the mere size of the growth, nor by the local spread, whatever the parts to which it was attached. The more important question was that of distant dissemination; in the selection of these cases it was the surgeon's duty to make a thorough search for such dissemination. It was only the cases with distant dissemination that need be absolutely rejected so far as operation was concerned. He had made it a working rule that if in the presence of malignant growth there was no unequivocal sign of distant dissemination it was the surgeon's duty to offer that patient the chance of operation. There was, however, a type of spread of these growths which was undoubtedly unfavourable—namely, extensions towards the mesentery. Extension away from the mesentery was of little moment.

The best comment he could make on the question of operability was to invite the attention of his audience to

some of the cases in which he had been able to carry out multiple resections. In one case he had opened the abdomen in a man who was clearly suffering from a large malignant growth about the splenic flexure. There was no distant dissemination, and therefore, following the rule of which he had spoken, he explored the abdomen and found the growth involving the small intestine and the stomach. He made an anastomosis between the ascending colon and the sigmoid, and within a fortnight this patient, having been relieved of his obstructive symptoms, was well enough to undergo the radical operation, and was now alive and well nearly three years afterwards. It was better to do rather too much than too little, especially if, as in many of these cases, it really did not add very considerably to the risk of the operation.

Restoration of Continuity.

In any operative procedure the patient, perhaps unfortunately, only estimated the advantage of surgery by the perfection of the functional result. The patient had no nice appreciation of the technical difficulties. Therefore one attempted to make a perfect job by restoring the continuity of the bowel. Out of the 142 cases in which the growth was excised he had done excision with restoration of continuity in 124. Included in this group were 8 cases operated upon by Paul's method; incidentally Professor Turner said that he thought the work of Paul of Liverpool had been of very great value in the evolution of intestinal surgery. It would stand out as one of the milestones on the long road of surgical progress. Nevertheless, Paul's method was one that he was not in the habit of using if he could help it, because it took up a large amount of the intestine. In the 8 cases so operated on there were 2 deaths. In the whole group of 124 cases there were 24 deaths. In the remaining 18 cases out of his 142 the procedure was excision with permanent colotomy; there were 3 deaths.

After-History of Survivors.

What of the after-history of the patients who survived the operation? Out of 115 who survived, 32 were either alive or were known to have died without recurrence more than five years after operation; 31 were known to be alive and well without recurrence less than five years after operation; 2 died within a year without recurrence; 41 were known to have died of recurrence; 3 were alive, but with recurrence, and 6 had not been traced. In explaining the large proportion of cases which it had been possible to trace, Professor Turner said in an aside that he had hit upon an effective method of tracing patients. Instead of marking the envelope "If undelivered return to ——," he had left it unmarked, and, the letter being delivered at the house, female curiosity prevailed, and in many cases he got information from the present occupier as to the whereabouts of the patient. Of the 26 patients who were alive and well more than five years after operation, 2 had survived for more than fifteen years, 7 others for more than ten years, and 9 more for longer than seven years. Of the 31 who were known to be alive and well less than five years after operation, 10 had survived for over three years, and 8 for over two years. The tendency to recurrence certainly diminished after five years. He liked to stick to the five-year period, though he noted in some recent publications that surgeons were still talking of the three-year period. His own figures for the two periods were as follows: out of 82 cases operated upon more than five years ago and who survived the operation, 32 (39 per cent.) were alive without recurrence or were known to have died of other causes; of 97 cases for the three-year period, 42 (43.3 per cent.) fell in with the condition as stated. Of the 41 patients known to have died with recurrence, 1 lived over seven years, 8 lived between three and seven years, and 18 between one and three years; in 14 cases there was recurrence and death within less than twelve months. The great majority were perfectly well until the symptoms of recurrence appeared, when they died quickly.

Palliative Operations.

The palliative operations, he was afraid, presented a sorry picture. They were the bad residue. The short-circuiting operation had been done in 45 cases, with 9 deaths; 7 of these cases had not been traced, and 29 were known to be dead, their average duration of life being just under eight months. Some type of colostomy was done in 40 cases, with 15 deaths; 5 of the cases which survived operation had not been traced, 4 were alive, and 16 dead, the average duration being again eight months. In the 14 cases in which explorations only were done there were 6 deaths. In spite of this unhappy record, he thought one need not deny the possible benefits of operation to any patient if that operation was going to relieve obstruction and pain.

Methods of Examination and Operative Technique.

Turning to diagnosis, Professor Turner said that the classical symptoms which one read about in some textbooks were the symptoms in the late stages of the disease. The conditions which it was most important to note were recurring attacks of colic, with complete relief, or not, in between. He attached great importance to consideration of haemorrhages from the bowel in persons past middle life when there was no local explanation. In the great majority of cases the bowel growths could be ascertained by abdominal, rectal, and bimanual examination, repeated under varying conditions, by observation of stools, the use of the sigmoidoscope, and the barium *x*-ray enema. The consulting surgeon had the poorest opportunity of making a diagnosis; it was the man who had the patient under frequent observation who was better able to assess the condition. The patient might show no physical signs at one time, and at another the signs might be perfectly obvious. While appreciating the sigmoidoscope, a warning was necessary. He had seen the sigmoid perforated by the use of this instrument, and he had learned of four such cases from his colleagues. With regard to *x*-ray examination, this had a definite meaning and importance in a gathering of experts, but one had to remember that these patients were scattered over the country under the care of those who had little experience of the *x*-ray method, and there it was by no means the absolutely certain thing that some people thought.

In the case of big distended abdomens he favoured a blind caecostomy, though caecostomy had its limitations, and sometimes it would be better if a preliminary colostomy were made. In the actual conduct of the resection operation he wanted to draw attention to the extreme importance of proper mobilization of the growth. In his time there had been nothing more valuable in connexion with the surgery of the large bowel than, first, the recognition of the necessity of preliminary drainage in cases of obstruction, and, secondly, the appreciation of the importance of thorough mobilization under the guidance of the eye. In the absence of distant dissemination there were very few growths which would not lend themselves to local removal if the mobilization was properly carried out. With the aid of many illustrations, Professor Grey Turner described the classical operations, mentioning that operations in the theatre were rather different from those depicted in the textbooks, and that it was extremely difficult to make good textbook illustrations. Because it was not always possible to carry out classical resections, he was afraid that many people were deterred from doing a radical operation. The modern surgeon must be catholic in his methods, must know exactly what he wanted to do, must have properly planned incisions—here the orator paid a grateful tribute to his master, Professor Rutherford Morison, especially for his teaching with regard to an ample muscle-cutting incision—and must have certain principles before him. A standardized operation was not possible. Standardization in operations would only be possible if patients were standardized, and pathology also. But in intestinal resection it was most important to follow certain general principles, also to see absolutely clearly the parts to be dealt with, and, above all else, to assure the vascular supply. The orator concluded with a quotation from Gladstone: "Let us cherish a sober mind, and take for granted that in our best performance there are latent many errors which in their own time will come to light."

A warmly accorded vote of thanks was proposed by Mr. H. W. CARSON and Mr. A. J. WALTON, and Professor GREY TURNER, in reply, suggested that the society, by means of

a scholarship or lectureship, might do something to help the older men in practice who had come to the end of their hospital appointments, so that they might be encouraged to devote some of their time to working up their cases.

ANNUAL MEETING OF THE SOCIETY.

At the annual meeting of the society, which preceded the oration, Mr. Donald J. Armour was elected president for the session commencing October, 1929. It was reported that the number of Fellows stood at 627.

Nova et Vetera.

THE MAP OF ROMAN BRITAIN.

ARCHAEOLOGY has always been a favourite study with medical men, many of whom have been notable contributors to the science. An inductive science, based on facts none too easy to ascertain and demanding common sense and a wide range of ancillary sciences for their interpretation, is naturally attractive to minds trained in observation and reasoning by clinical medicine.

The new edition of the Ordnance Survey "Map of Roman Britain" may be looked upon as the latest chart exhibiting the archaeological facts so far observed of one of the most interesting periods of our history; and an attempt to base a picture of the Roman occupation upon them cannot be without interest.

It is true that written record is not wholly wanting, and a summary of events is duly noted on the chart, but the historical material is notoriously meagre. The Claudian conquest in A.D. 43, Boudicca's rebellion, the Conquest of Wales in 78, about five successful incursions from Scotland, at intervals of twenty-five or thirty years as each new generation grew up, one long period of sixty-five years' peace and prosperity in the third century, before the Saxon raids began, a few usurpations and civil wars among the Romans, the invasions of the West of Scotland and England in the fourth century by the Irish Scots, the great invasion of the Picts and Scots aided by Saxons, reaching as far as London and Kent in 367, then more troubles among the Romans themselves, until in 407 these troops are finally withdrawn. That is about all the history—archaeology must fill in the picture.

The foundation of the map is the Ordnance Survey Physical Map of Great Britain, which brings out clearly the division of the island into Highlands and Lowlands by a line running north-east from the Severn Estuary and then due north along the eastern edge of the Pennine Chain. This marks off roughly the military from the peaceful occupation: nearly all the forts are on one side and nearly all the "villas" on the other.

A new and welcome feature is the delineation, by admirably chosen symbols, of the dense impenetrable forest and the more open woodlands which covered the country as the Romans found it—the first attempt at this restoration yet made for the whole island, and one that will be of the utmost value for the archaeology of all periods. All proved Roman roads are shown, and those not proved are not shown, even though they may be known to have existed: such is the case in Cornwall, where four Roman milestones have been found, though the roads themselves cannot be traced. They cover the whole country, reaching as far west as Exeter, and one running as far north as the Tay.

Altogether there are marked some four thousand five hundred miles of Roman-made roads, besides two of the pre-existing British ridgeways—the Icknield Way and the Harroway, which were undoubtedly used by the Romans.

The headquarters stations of the three legions were at York, Chester, and Caerleon-on-Usk. Taking the country as a whole no fewer than 90 detached permanent forts for land defence have been discovered; all in England are north of the Trent.

In the Cumbrian region there were 35 forts, the Peak country has 10, and Wales was held by no fewer than 23. In all this mountainous country there is hardly a villa; a few humble habitation sites have been found and a Romano-British village or two, besides caves where the finds indicate occupation by robbers or refugees. It is a wide and dreary network of roads strung with permanent forts ten or twenty miles apart. The occupation was evidently for mineral wealth; mines are found throughout—lead and copper, with one gold mine in South Wales.

But it was from Scotland that the chief danger to Rome arose. Hadrian's Wall from the Solway to the Tyne, 73 miles long and linking up fifteen permanent forts, though taken and reoccupied more than once, remained the frontier throughout. But, beyond it as far north as Aberdeenshire are found many remains of the unsuccessful attempts to occupy Scotland. Eighty miles north of Hadrian's Wall is the Scottish turf wall across the isthmus from Clyde to Forth. It was only 35 miles long and had no fewer than seventeen forts upon it, but it was nevertheless overrun twice, and was finally abandoned forty years after it was built. Along the two roads running into Scotland sixteen large temporary marching camps, not found elsewhere in Britain, point to great military activity. There are twelve permanent forts south of the Scottish wall and five beyond it, besides eight signalling stations. But all efforts were in vain, and the Emperor Severus died at York after his last campaign without effecting a permanent conquest.

Against the Saxon raiders a system of coast defence was set up in the fourth century under the Count of the Saxon Shore. There are the remains of ten strong stone-built fortresses on the east and south coasts reaching from Brancaster in Norfolk to Portchester at the head of Portsmouth Harbour. Five signal stations about ten miles apart guarded the Yorkshire coast between Huntcliff and Filey, and there is one at Old Burrow on the Bristol Channel.

The evidence of civil prosperity is nearly all in the southern half of Britain. The non-military inhabited sites in the north, even round such centres as York and Chester, are very few.

A continuous belt of thick forest, nowhere less than ten miles broad, stretched across the Midland clays from the head of the Severn Estuary to the edge of the Fens. This has always tended to act as a cultural division, and though the Romans drove their roads through it, and several occupation sites show that it was largely cleared, it still remained a great barrier to civilization; only two unfortified towns in England—Lincoln and Leicester—and three on the Welsh border are to be found north of it: the other twenty provincial towns, such as Exeter, Winchester, Canterbury, and London—mostly developments of the pre-Roman tribal centres—are all in the south.

Romano-British villages, large and small, are found all over the map; rare in the north, they cluster thickly over Salisbury Plain and the Dorset uplands. Here they are entirely agricultural, and are found as centres of the square-field "Celtic" cultivation. The light soil was suited to the implements of the period, and the scanty cultivation of later days has allowed their remains to be still traced. "Finds indicating permanent settlements"—in most cases, no doubt, the houses of small agricultural holdings—occur everywhere, though they are rare in the densest woodlands.

By far the most striking feature of the new map, however, is the record of the "villas"—important country houses, many of them showing evidence of being the centres of large agricultural estates. Their chief localities curiously correspond to favourite residential districts of the present day. They are found strung along the slopes of the North and South Downs, but not on occurs in the Weald; this was dense forest, and unoccupied except for its iron workings. In Hampshire, Dorset, Somerset, and Gloucestershire they abound. They are much fewer in East Anglia and the Southern Midlands but there is a thin line straggling up the north road to Lincoln and on to Yorkshire. There are about a dozen in that county, but none north of Catterick. Northern Wales has one and South Wales ten. A count shows 75 villas north of the forest belt and 325 to the south.

A curious feature is the absence of evidence of any important civil settlement in the south-west. Exeter is the most western town; there is no villa west of Seaton,

and only two villages and four inhabited sites have been found in the rest of Devon and Cornwall. There had been peaceful trade in tin and copper for centuries, but though there was much settlement in West Somerset the pleasant coasts of the British Riviera seem to have been unoccupied.

In the choice of a site the Romano-British landed gentry were far ahead of any of their successors down to quite modern times. Their villas are seldom far from a stream, and nearly all have a dry soil, a sunny aspect, and especially a good view. They chose a good corn-growing soil with open woodlands, which gave opportunity for sport. They were never far from a good road, and usually within a ride of a town, where their produce could be sold for the Continental or home market. They were not isolated; in many districts they are as close together as the country seats in the eighteenth century. They had every luxury, and even the poorer buildings show signs of comfort.

Southern Britain under Rome was a rich and civilized region, but it was a foreign civilization, and its roots had not struck deep enough to stand against the onslaughts from the North Sea. A large proportion of the villas show signs of fire and devastation.

J. P. WILLIAMS-FREEMAN.

Scotland.

Report of Scottish Board of Health.

THAT part of the tenth annual report of the Scottish Board of Health which deals with the work of the Board during the past ten years was summarized in our issue of April 20th (p. 740). The part of the report dealing with the year 1928 records several important developments. The output of houses of a working-class type for 1928 was 19,799, of which 5,517 were erected in county areas and the remainder in burghs; under the steel house scheme of the Government, which was completed in 1928, 324 houses were finished. In regard to town-planning, substantial progress has been made with the preparation of a regional scheme in the Clyde Valley area, while several local authorities in the neighbourhood of Aberdeen have combined in a joint committee to schedule an area of some 60,000 acres for building development. In Fifeshire, Ayrshire, Hamilton, Glasgow, Haddington, and Dundee plans have also been set on foot. Under the Highlands and Islands Medical Service Act considerable developments have taken place. Subsidies are paid to doctors in return for rendering medical service at low fees to the families and dependants of insured persons, and uninsured persons of the crofter and cottar classes, on condition that the doctors provide motor cars and, where necessary, motor boats, so that they might reach their patients expeditiously. Nursing services have continued to be subsidized, and two new nursing associations have been added to the grant list. In the course of the year a surgeon consultant was appointed for the county of Orkney by arrangement with the trustees of the Balfour Memorial Hospital, Kirkwall, this being the third appointment of its kind in the Highlands and Islands. In May, 1928, extensions to the Lewis Hospital, Stornoway, were provided by means of a grant, and were formally opened by the Under-Secretary of State for Scotland, thus removing the main difficulties under which the surgeon for Lewis and Harris has been compelled to work during the first four years of his service. The annual grant, amounting to £42,000, has been more than utilized, the excess of expenditure being provided from previous surpluses. It is stated in the report that 1928 was the first year in which the Preservatives Regulations in regard to food were in full operation, and that not a single outbreak of food infection was reported to the department throughout the whole year. The report points out that during the last few years there has been much activity in hospital construction, by way both of extensions and new buildings, and it contains a chapter which embodies the experience of the department in modern requirements for hospital planning and construction; this affords a model that may be useful to hospital managers, architects, and others. The deaths of children under 1 year in 1928 numbered 8,301, giving a death rate for these children of 86 per 1,000 births, which is 3 less than the rate for 1927, and 6 less than the mean of the preceding ten years. In the four large cities the rates for 1928 were: Edinburgh 75, Glasgow 107, Dundee 102, and Aberdeen 94, the Edinburgh and Aberdeen rates being the lowest recorded in these cities. While in 1919 there were 121 maternity and child welfare centres in operation in Scotland, by the end of 1928 there were 193. It is pointed out that this increase in numbers does not show the full increase in work, because at many centres there has been an increase in the number of sessions, while in some burghs local authorities have concentrated the work in large and modern premises, and closed a number of smaller centres. The number of practising midwives in Scotland at March 31st, 1928, was approximately 4,500, and during the year ended at this date midwives had attended 30,261 out of 89,167 births occurring in areas from which returns were received by the Central Midwives Board for Scotland. During the year under review there were in Scotland 7 maternity homes and 13 maternity hospitals, exclusive of institutions run for profit, and of these 11 were maintained by local authorities, with accommodation for 169 cases. A considerable amount of health propaganda work has been done by health weeks held under a number of local authorities, and at Edinburgh a health exhibition was organized by the corporation, at which 90,000 persons attended. The report draws attention to the need for further considering the subject of mortality and sickness associated with childbirth. During the year 676 deaths in Scotland were ascribed to conditions associated with maternity, as compared with 6,962 deaths due to cancer and 5,731 deaths due to pneumonia. The maternal deaths, though not relatively high, are believed to be largely preventable. It is pointed out that autogenous puerperal infection is probably rare, and that infection usually takes place from some source outside the patient. The increasing realization of the value of maternity homes is regarded as a favourable factor, and the opinion is expressed that every such institution should possess an administrative chief, necessarily a medical practitioner, who should lay down certain standards to which all persons working in the institution must conform. Reference is made to the desirability of notification of puerperal pyrexia in addition to the statutory notification of puerperal fever, which has operated since 1889. The conclusion is drawn that the provision of an ideal maternity service requires adequate training of both doctors and nurses, the recognition by both of their respective spheres and the need for co-operation, insistence on continuous ante-natal supervision, removal to hospital at the earliest moment of all complicated cases, and, finally, a hospital properly planned, staffed, and equipped. In regard to tuberculosis, a further fall in mortality is noted, the death rate per 100,000 of population in 1928 being 97, as compared with 99 in the year 1927. The figures for respiratory tuberculosis and other forms of this disease were respectively 68 and 29. The report deals with the work of the district medical officers appointed by the Board to adjudicate as to fitness for work, where a difference of opinion existed between the insurance medical practitioner and the patient or the society. An analysis of 5,000 consecutive cases, coming under these officers in Glasgow, was made. It was decided that of the male cases referred, 47 per cent. were incapable, while 53 per cent. were found capable of work; among the female cases 32 per cent. were found incapable, and 68 per cent. capable of work.

Poliomyelitis in Glasgow.

In 1928 there occurred in Glasgow an outbreak of poliomyelitis, confined to the months July to October, during which 91 cases were notified. This figure, points out Dr. James L. Halliday in his report,[1] is considerably in excess of those recorded during the previous five years, in which, though there was a slight progressive increase, the average

[1] *The Medical Officer*, April 13th, 1929.

number of cases was less than 9; the total number in 1928 was 112. Nearly three-quarters of the cases occurred in children under 5, a quarter of the total in the age group 1–2; infants under 1 year, and the age group 4–5, were much less affected. The incidence among males, except in the later age groups, exceeded that among females in the ratio 58 to 42. This ratio corresponds with that observed in other epidemics, though in the Glasgow epidemic the excess of females in the higher age groups was an unusual finding. The disease showed no tendency to pick out members of one social class rather than another. Only eight deaths occurred in the year, all during the outbreak proper, and there was no indication of a progressive increase in virulence. Only in two instances did groupings of infected cases occur—one of infants in direct contact with each other in a tenement building, the other of six children attending the infant and junior sections of a day school. A few possible abortive cases were discovered among those who had been in contact with cases of the fully developed disease. No evidence was found to inculpate the milk supply, or of concomitant disease among domestic animals in infected households. In 56 per cent. of cases the only early symptoms were vague feverishness and malaise; in 6 per cent. paralysis was the first evidence of illness, and in the remaining cases local symptoms, coryzal, bronchial, tonsillar, and gastro-intestinal, were prominent. In 79 per cent. of cases paralysis, mainly of the spinal type, occurred within seven days of the onset. Four months after the subsidence of the outbreak 43 per cent. of the cases of the spinal type showed more or less complete recovery from crippling.

New Municipal Hospital for Edinburgh.

Craigleith Hospital, situated on the northern outskirts of Edinburgh, has been reconditioned, and was formally opened as a hospital on May 7th by Dr. J. Parlane Kinloch, chief medical officer of the Department of Health for Scotland. Mr. James Duncan, chairman of the parish council, presided at the ceremony, and mentioned that the institution had been originally opened in 1868, having received various additions since that time. The hospital, which had a capacity for 120 beds, though there was a plan for its considerable extension, would be handed over next year to the town council under the Local Government Act. During the war it had been taken over by the Government as a military hospital, and had subsequently been used by the Ministry of Pensions. The reconditioning of the building had been effected out of money paid by the War Office, and this had been one of the last acts of the Edinburgh Parish Council. Dr. Parlane Kinloch, in declaring the building open, said that the achievement had been a great one, especially as it had been carried out at the time when the parish council and other local authorities responsible for health services had been engaged in examining the proposals of the Government for a far-reaching reform which envisaged the abolition of parish councils. The Edinburgh Parish Council had been imbued with the urge for social betterment, and had been enabled to provide for its successors this splendid example of hospital reform. A vote of thanks was accorded to Dr. Kinloch on the motion of Dr. J. W. Keay, medical superintendent of the hospital, and Sir Leslie Mackenzie, in proposing a vote of thanks to the chairman, remarked that they were standing at a point of new departure, and in the Local Government Act he saw one of the greatest documents in the history of Scotland, which constituted an excellent beginning for the twentieth century.

Home Relief to Incurables.

The annual meeting of subscribers to the Royal Society for Home Relief to Incurables was held in the City Chambers, Edinburgh, on May 10th. Bailie Shaw, who presided, said that this was one of the oldest benevolent institutions in the city. Applications for relief were received from patients in all parts of Scotland, and more than £5,100 had been paid in grants last year to 472 annuitants, while a further £1,700 had been distributed to beneficiaries under the Dunlop Cancer Fund. Mr. Alexander Miles, President of the Royal College of Surgeons, said that medical men had opportunities of seeing at first hand the benefits which flowed from this society, and they could appreciate that the relief was very real. The society had been in operation now for nearly a century and a quarter, and it brought great comfort to incurable persons in their own homes. The word "incurable" was, after all, only a relative term, and many diseases which fifty, forty, or even twenty years ago were looked upon as incurable were now almost completely under control. Tuberculosis, for example, was now looked upon medically as one of the most eminently curable of diseases, given satisfactory surroundings and conditions, with sufficient time to carry out treatment efficiently. There was also some hope for cancer, and within the last few weeks they had seen the magnificent response which the charitable public had made to the national appeal for money to secure a supply of radium for treatment of this disease. The value of radium in the treatment of cancer in many of its forms had been established, although there was much still to learn regarding cases in which it was appropriate, and as to the best methods of applying it. The time might come when the *raison d'être* of this society would cease, but meantime the need for financial support was urgent.

Irradiated Milk.

A demonstration of the value of irradiated milk in the treatment of rickets and other conditions was given by Dr. Chalmers Watson in the Royal Infirmary, Edinburgh, on May 10th to members of the public health department staff and others interested in child welfare. The lecturer pointed out that the value of irradiated milk had been indicated by Professor Scher of Frankfurt and others, but that little attention had been paid to the subject in this country. The municipal authorities in various German cities were now supplying irradiated milk as a curative and preventive agent. This treatment of milk had the advantage that the process of irradiation did not involve any chemical treatment or the application of heat or other process which would impair its nutritive value. The demonstration included a large number of *x*-ray photographs of children affected with rickets, illustrating the condition before and after treatment with irradiated certified milk, and appeared to show that irradiated milk exerted a marked curative influence on the disease, greater than that shown by exposure of the patient to ultra-violet rays and by other modern remedies. It was urged also that, from the economic side, treatment by irradiated milk showed a great advantage.

England and Wales.

The Home Ambulance Service.

THE growing complexity of diagnostic and therapeutic procedures in medicine and surgery, necessarily accompanied by an increasing tendency to remove patients from their homes to institutions where these procedures can be conveniently applied, has of recent years accentuated the demand for safe and efficient ambulance transport. In the voluntary hospitals of England and Wales outside London the number of in-patients treated rose from 461,834 in 1923 to 595,943 in 1927, and in the same period the number of out-patients from 1,969,194 to 2,467,140; the number of surgical operations under general anæsthesia increased from 367,905 to 534,436, the number of radiograms from 158,768 to 344,965, and of treatments in the electro-therapeutic and massage departments from £21,7[illegible] to 1,328,271. The Home Service Ambulance Committee of the Joint Council of the Order of St. John and the British Red Cross Society in its tenth annual report suggests that these figures, taken from the Joint Council's report on the voluntary hospitals, may serve to explain why the number of patients carried annually by the service has doubled since it was set up. It may fairly be claimed, says the report, that if the developments in transport are responsible for the increasing number of accidents, to transport also must be credited a very [illegible]

siderable share in the curing of disease. Since the service came into being the number of road accidents has risen by some 300 per cent., the number of persons killed or injured by road accidents in England and Wales during the year under review being over 150,000. To meet this situation the Home Service Ambulance Committee established a road service, with first-aid stations at many points on the main roads, and first-aid boxes at large numbers of dangerous places. The committee has succeeded in bringing the ambulance service into the closest possible relationship with the first-aid activities of the Order and the Society. Ambulances lent in the early days of the service for use in the larger towns have largely been replaced by municipal services, and the committee has thus been enabled to carry out its intention of extending its work further in rural areas. Thanks to increasing local support a considerable number of stations have been able to acquire ambulances of a more luxurious type than those provided by the committee; many units of the Order and the Society have in this way purchased ambulances without making any demands on the committee's funds. The committee's mobile *x*-ray service, designed to provide the physician and surgeon with facilities for conducting radiographic examinations of patients confined to bed, is being increasingly employed by the medical profession, and, though primarily intended for use in and around London, has on several occasions rendered valuable assistance much further afield. Many smaller hospitals have preferred to take advantage of this service rather than to install the smaller, and in the main unsatisfactory, type of *x*-ray sets. Radiograms prepared by the mobile *x*-ray service are submitted, together with the attending physician's notes of the case, to the British Institute of Radiology for interpretation, the considered opinion of a consulting medical member of the Institute being then forwarded with the radiograms to the doctor in charge of the case. The committee records with gratification the fact that its mobile *x*-ray service was employed for the examinations of His Majesty the King at Buckingham Palace, and that in one of the authoritative statements addressed to the medical profession the radiograms taken with this apparatus were referred to as excellent.

National Baby Week Council.

The National Baby Week Council in its report for the year 1928 records a greater demand for the council's services—for example, assistance in local baby weeks, health and baby weeks, health weeks, baby days, baby competitions—than in any other year since the war, and a remarkable increase in the requests for propaganda lectures, films, and literature. During the year there was a further extension of the health week movement, with continued co-operation between the council and the Health Week Committee. While regarding all aspects of the maternity and child welfare problems as important subjects for propaganda, the council, during 1928, urged that special attention should be given to immunization as a means of protecting young children against disease; prevention of maternal mortality —with special reference to ante-natal care and the provision of maternity homes and hospitals; and new developments in maternity and child welfare work. In connexion with the national baby week to be held this year from July 1st to 7th, the National Association for the Prevention of Infant Mortality has arranged for a conference to take place from July 2nd to 5th, at which the subjects for discussion are to be, the care of the child between 1 and 5 years of age; maternal mortality and morbidity; the establishment of special V.D. clinics for women and children in connexion with maternity and child welfare departments; and the suffering entailed on mothers and young children by prolonged waiting in out-patient departments of hospitals. During the same week the council is arranging for an extensive display of propaganda films, to which admission will be free by ticket, to be obtained from the secretary, 117, Piccadilly, London, W.1. The 1929 propaganda campaign will concentrate on the following three problems:

Practical measures which can be taken to combat maternal mortality, morbidity, and disability, with special reference to ante-natal and post-natal clinics, convalescent homes, holidays for mothers, and home helps. (2) What local authorities and parents can do to lessen the incidence and dangers of infectious diseases amongst young children. (3) The importance of teaching parentcraft and hygiene to school children. These subjects, the council advises, should find place in local and national propaganda programmes, in lectures, discussions, articles and paragraphs in the press, and in religious discourses.

The Work of Cripples.

The Devonian Association for Cripples' Aid, of which Dame Georgiana Buller is the chairman, is to hold what should prove to be an interesting exhibition at Exeter from October 30th to November 1st, under the auspices of the Central Council for the Care of Cripples in London and the International Society for the Care of Cripples in New York. The objects of the exhibition are to demonstrate the value of occupational therapy, to show how far cripples can compete successfully in the open industrial market, and to rouse public interest in the general question of the training and employment of physically defective persons. The promoters hope that the high quality of some of the work displayed will not only act as a stimulus to teachers and other workers acting in co-operation with orthopaedists in charge of crippled patients, but that it will have the effect, by showing what standard can be attained, of raising the at present uneven level of achievement aimed at by the disabled subject. Occupational therapy has the twofold advantage that it enables the patient to use and develop his available potentialities and to enjoy the moral advantage that comes from engaging in serious work and not merely in a consoling game. Some idea of the scope of the work done by cripples is afforded by the schedule of exhibits; in which there are twenty-nine classes, ranging from needlework to leather work, metal work, pottery, woodwork, manufacture of surgical appliances, and upholstering. This exhibition should go far to extend the demand for the products of cripples' industry and bring funds to the county organization for their care and cure.

The Tavistock Square Clinic.

The annual general meeting of the Tavistock Square Clinic took the agreeable form of a luncheon at the Hotel Russell on May 6th, when Sir Frederick Willis presided, and Dean Inge and Sir Philip Gibbs were the principal guests. Minutes, formal resolutions, and the usual agenda of such an occasion were suppressed, and, instead, the company listened to a witty address by Sir Philip Gibbs, whose theme was mainly neurasthenia as treated by contemporary novelists. Explaining, if not excusing, some features of modern fiction, the speaker said that if everybody was normal and balanced, not only would the Tavistock Square Clinic have no patients, but the novelists would have no characters. The novelist could not make much of those normal people who were facing up to life with courage and gaiety. Like the psychotherapist, he found his material among the abnormal, especially among those suffering from that nervous disturbance which was the price we paid for civilization and for getting away from primitive simplicities. The clinic, he said, was an institution for enabling people to get right in their minds, and he felt that it ought to be multiplied in many towns and cities, Tavistock Square remaining the headquarters. Sir Frederick Willis, from the chair, said that the annual report, which was printed and placed in the hands of the guests, was the record of a very fine piece of work. This clinic was started only eight years ago, because of the urgent need for treating cases of mental illness. It was a remarkable fact that the incidence of certified insanity in this country and also the recovery rate had not improved for a large number of years—the more remarkable because in other spheres of medical treatment great improvements had been made. One reason might be that other illnesses were now treated earlier than formerly, whereas early mental illness had gone untreated. The report of the clinic, made by the honorary director, Dr. Crichton Miller, stated that during the last twelve months there had been

5,447 attendances (4,582 adults and 865 children). There was no appreciable difference in the number of new cases, but the average length of treatment had increased. Adults who received treatment, as opposed to mere consultation or advice, had been seen, on the average, fifteen times. The number of cases referred to the clinic by hospitals had doubled in three years, and that of cases referred from police courts (mostly children) had nearly trebled. The honorary and acting staff, including the clinical assistants, numbered thirty-three doctors. From January last Dr. J. R. Rees assumed the duties of deputy director on a basis which enabled him to devote a large part of his time to active direction. The clinic is suffering from limitation of space, and schemes for extension are being mooted.

Treatment of Venereal Diseases in London.

The Public Health Committee of the London County Council recently considered, on a motion by Dr. Stella Churchill, the best means of putting into effect some of the recommendations of the Trevethin Committee, and the steps which might be taken to diminish further the number of defaulters under the venereal diseases scheme. In its report to the Council on May 7th the Public Health Committee described the attempt made already in London to reduce as far as possible the number of defaulters. Doctors and nurses at the clinics impress upon patients the necessity for regular attendance; the fares of necessitous persons to and from the clinics are paid; complaints relating to conditions likely to deter from attendance are investigated and remedied; and, most effective of all, five all-day treatment centres (a sixth to be provided next month) have been established. In 1921 the percentage of defaulters in London was estimated at 30; it is now about 16. Moreover, the ratio of attendances to new cases of venereal disease has increased from twenty-nine in 1923 to forty-six in 1928. It is felt that the very large number of non-venereal patients presenting themselves for examination—nearly 9,600 in 1928, as compared with 2,360 in 1917—indicates that the public are realizing more and more the serious effects of the disease. The conclusions of the Public Health Committee are that notification *per se* is of little value and might even be harmful to the efficiency of any venereal disease scheme; notification of defaulters followed by compulsory treatment raises questions as to forcing a certain line of treatment on an unwilling subject; there is difficulty in defining the standard of cure to be enforced; and the inequity is apparent of measures which operate in full degree on only one class—namely, clinic patients—affect only slightly defaulters among the patients of private practitioners, and leave untouched those who resort to quacks or make no attempt at all to obtain treatment, thus becoming a much greater danger to the community. It was thought that the inevitable result of any measure of notification would be an increase in the number of patients giving false names and addresses, and delay in reporting for treatment. The committee feels that in view of the continuous improvement in the attendances per patient there is at the moment no urgent necessity for the introduction of measures of doubtful wisdom such as compulsory notification.

Ireland.

Appointment of M.O.H. for County Galway.

AT a meeting of the Galway Board of Health and Public Assistance a letter was read from the Department of Local Government and Public Health suggesting that the board should seriously consider the advisability of recommending the county council to appoint a county medical officer of health, and expressing the view that the board would incur a grave responsibility if it postponed dealing with this urgent matter. Dr. Sterling Berry, one of the department's medical inspectors, who attended the meeting, pointed out that the incidence of infectious disease in the county was far too high. During the past two years 79 cases of enteric fever and 184 cases of diphtheria were reported to his department from the county of Galway. These figures of disease, due to preventable causes, and pointing to extensive disregard of proper sanitary precautions, were much in excess of those from other counties in the Free State, and indicated clearly the necessity for a centralized county control of infectious disease, especially when it was remembered that money spent in maintaining institutions for segregation and treatment would cover the cost of beneficial schemes of public health improvements. Dr. Berry pointed out that where county medical officers of health had been appointed persons were being scientifically examined as to their susceptibility to diphtheria and immunized against the disease. In Connemara there was a chronic smouldering infection of typhus fever, with periodical outbreaks, which exacted a heavy cost both in human life and in money. Modern sanitary methods applied to Connemara would eradicate this dreadful disease, which progressive communities had succeeded in stamping out. During the year 1926 a widespread outbreak of encephalitis lethargica occurred in county Galway, about one hundred persons being affected. These cases were not reported to the Minister, and as there were no local facilities for co-ordinating supervision, a valuable opportunity for studying the disease, and perhaps preventing further outbreaks, was missed. Dealing with the question of school inspection, Dr. Berry stated that a number of children through the county suffered from dental defects, adenoids, septic tonsils, malformations, and defective vision, and that the detection and early treatment of such conditions were essential if these children were to become efficient and self-supporting citizens. Defects discovered in children could be treated in their excellent county hospital by the staff of experts attached to it, and half the cost of such treatment would be met by the Government. The organization of inspection of school children under a scheme of school medical service was one of the chief duties of a county medical officer of health. The care of expectant and nursing mothers and the inspection of midwives (now a statutory obligation of the Board of Health) were urgently required in county Galway, and would come within the province of the county medical officer of health. The port of Galway was becoming an important centre for immigration and emigration, and it was now absolutely necessary that the incidental operations, particularly in regard to immigration, should be controlled by an expert medical officer of health. The cost of a county health service would not really be an added burden on the rates, as so many of the health activities ranked as recoverable on a 50 per cent. basis. After a discussion it was decided to refer the appointment of a county medical officer of health to the county council, the body which was responsible for making the appointment.

School Inspection in County Kildare.

At a recent meeting of the County Kildare Board of Health the county medical officer of health, Dr. Harbinson, reported that during the month of March 749 children had been inspected in ten schools. The following are the particulars of the defects found: suffering from defect, 564; suffering from more than one defect, 239; free from defect, 185. Dental defect, 400; defective vision, 89; tonsils and adenoids, 139; malnutrition, 53; uncleanliness, 65; bronchitis, 16; heart disease, 7; suspected phthisis, 1; tubercular glands, 8; postural defects, 30. Thirty-three children were inadequately clothed and shod; and 389 had been vaccinated. The figures correspond closely with those disclosed at the previous inspection.

County Limerick Infirmary.

At the meeting of the Committee of Management of the County Infirmary, Limerick, a vote of condolence was tendered to the relatives of the late Dr. W. A. Fogarty, and regret expressed at the resignation of Dr. T. F. Mulcahy as visiting surgeon to the institution. The committee appointed Dr. D. Corboy and Dr. C. Moloney to vacancies in the visiting staff caused by the death of Dr. Fogarty and the resignation of Dr. Mulcahy.

Correspondence.

THE DISTRIBUTION OF RADIUM.

SIR,—The question raised by Mr. Souttar (April 27th, p. 787) requires urgent consideration and decision, as it appears that we are about to spend a vast sum of money on the purchase of a much-needed additional supply of radium. It is well to recall that a quarter of a century ago, after the discovery and therapeutic application of radium, when small quantities were in the hands of many, a wave of enthusiasm swept over Europe and America because the immediate results of the treatment of malignant disease were so favourable that the cancer problem was regarded as solved. In the course of a few months, however, when it was found that the growths reappeared, reaction set in, and radium was relegated to the heap of discarded cures. In the intervening years, in the hands of patient workers, radium has won a definite place for itself in the treatment of cancer, but the danger of enthusiasm again threatens to flatter immediately, but to destroy ultimately, the position won.

To ensure against the repetition of history two conditions are essential: (1) to gain the confidence of the public. They should not be misled into thinking that all cases of cancer can be cured by radium; it would be truer to state that our knowledge of the action of radium is incomplete, but that in the hands of the most experienced workers the results of irradiation are so good that in some cases operation has been abandoned in its favour. To this end the publication of lectures and papers containing sweeping statements, often inaccurate and frequently tinged with the bias of enthusiasm, should be deprecated. It is rare to attend a discussion on the treatment of cancer without hearing reports of the immediate results of radium therapy or the results after one or two years, neither of which are of value in assessing the importance of radium. We should encourage a self-denying ordinance in which no results should be published for five years.

(2) The second condition naturally follows the first. If the public give us their trust in the matter they are entitled to demand that they shall only be treated by the most experienced workers, and therefore the radium should remain in the control of the few until such time as disciples have gained sufficient knowledge and experience.

I agree with Mr. Souttar that radium centres should be established. They should be set up in relation to the population served, preferably in modern hospitals possessing recent *x*-ray plant. Each centre should serve the neighbouring two, three, or four counties, where distances would be relatively small and therefore subsidiary centres unnecessary, and there should be a sufficient number to cover the whole of Great Britain. The work should be under direction to ensure uniformity of technique, for haphazard work leads nowhere. The staff of the Soho Hospital for Women have adopted a uniform plan for the treatment of cancer of the cervix, and I believe St. Bartholomew's have similarly planned treatment of cancer of the breast; in this way considerable experience will be gained of particular methods. These centres must undertake the treatment of the well-to-do class; the family doctor would be at no greater disadvantage than he is now when he hands over his patient for operation. Fees should be charged for the radium in addition to the surgeon's fee, and in this way insurance, repairs, and new apparatus would be provided for.

I do not agree with Mr. Souttar that the future lies with emanation, at any rate until we have gleaned much more knowledge than we possess to-day. There is no doubt that it is financially safer to use seeds, but when we recollect that they lose half their strength in 3.85 days, and a further half of the remainder in the same time, it requires a large assumption to say that one obtains the same result, even though adjustments be made, as when we expose the growth to the salt, which for practical purposes remains uniform.—I am, etc.,

SIDNEY FORSDIKE, M.D., F.R.C.S.

London, W.1, May 6th.

THE RELATIONSHIP OF ALASTRIM (VARIOLA MINOR) TO SMALL-POX (VARIOLA MAJOR).

SIR,—Dr. John A. Graham's letter in your issue of May 11th (p. 881) cannot be allowed to pass unchallenged. He describes an experience of his, "some years ago," where at a farm in South Africa there occurred an outbreak of alastrim or "mild small-pox" (a most unscientific name) in which most of the cases were of the usual trivial character, but two were more severe, and one of these, the father, had "a very severe confluent attack, from which he died." Dr. Graham sums up: "Evidently the mild disease, like others of the exanthemata, may become intensified in virulence *and pass into variola major*." (Italics added.)

In this facile manner Dr. Graham settles, apparently to his own satisfaction, the crucial point which has been exercising experts for years!

Unfortunately Dr. Graham makes the common mistake of failing to appreciate the distinction between clinical type and strain of variety, a mistake easily accounted for by the present unscientific use of the term "severe small-pox" as a synonym for variola major, and of "mild small-pox" for variola minor. The fact is, of course, that we may have mild cases of variola major and severe cases of variola minor, the distinction between the two affections being that a case of variola major, whether mild or severe, tends to propagate a severe variety of small-pox, whilst a case of variola minor, whether mild or severe, tends to propagate a mild variety of the disease.

Severe confluent variola minor.

Dr. Graham apparently takes it for granted that because his case was a severe one it was necessarily one of variola major. I submit that the evidence he adduces all points to the case having been one of variola minor, and, if so, then of course his thesis that the minor form may change into the major collapses entirely. The only way to prove that an individual case of small-pox, however severe or however mild, is variola major or minor is by tracing the history of a series of cases arising from the case in point. In practice, so long as one is only dealing with a single variety not much difficulty is likely to be experienced, since the average severity of the two affections is so different.

I would like to parallel Dr. Graham's case with a very severe confluent case of small-pox in a man which occurred in Leicester in 1925, in the course of an outbreak of undoubted variola minor. The man was acutely ill, and for a time I was anxious for his life. He was infected by his wife, who had a typical trivial attack of variola minor, with less than a score of lesions altogether. Even if the man had died there would have been no question of his being a case of variola major. A photograph of this case, showing the confluent nature of the eruption, is reproduced here. I have no doubt others who have had experience of variola minor could adduce similar cases.—I am, etc.,

Leicester, May 12th. C. KILLICK MILLARD.

PLACENTA PRAEVIA.

SIR,—As the subject of placenta praevia is to be discussed at the Annual Meeting this year of the British Medical Association it seems opportune to suggest that the terminology of the subject might be reviewed and, if possible, standardized. The difficulty lies with the two types described variously as lateral and marginal. Whitridge Williams and Fothergill, to quote two writers, describe the type in which the placenta partially covers the os as lateral, and the type where the placenta merely

extends on to the lower uterine segment as marginal. Other writers, Johnstone and Fairbairn among them, refer to the former as marginal and the latter as lateral. This has given rise to considerable confusion in the past, especially in the teaching of students, and must inevitably do so at the Annual Meeting, particularly when treatment is being discussed.

It is perhaps unfortunate that the condition cannot be described under the two headings, central and lateral, but the treatment is so dependent on the relationship between the edge of the placenta and that of the cervix, at the time at which it has become necessary to intervene, that it would be essential to describe, as a subdivision of the second, a third type—namely, that in which the edge of the placenta does not reach the edge of the cervix, and the one, incidentally, in which artificial rupture of the membranes and application of a binder is adequate treatment.

As lateral and partial have already been used to describe the same or intermediate type may I suggest that the term lateral be dispensed with entirely in favour of the more descriptive term partial, and that the three types be referred to as central, partial, and marginal? One recognizes, of course, that any classification must refer only to the state of affairs at the time of examination, since a case appearing central when the dilatation of the os is one finger may prove to be partial when dilatation has proceeded further.—I am, etc.,

E. A. GERRARD,
Resident Obstetric Surgeon, St. Mary's Hospitals, Manchester.

May 8th.

COLLES'S FRACTURE.

SIR,—The innate modesty of the general practitioner often stays his hand from reporting the results of treatment. The paucity of his cases as compared with the many of the surgeon associated with a hospital has a very deterring effect. I have, however, been so much interested in the articles on Colles's fracture that have appeared recently in this *Journal* that I have been tempted to add my personal experience, which your readers can evaluate from their own.

During the first forty years in general practice the methods taught in the colleges, practised in the hospitals, and gleaned from literature, present and past, were religiously followed. The results—pain, deformity, dysfunction—were, only too often, exasperating to both patient and surgeon. About 1914 an innovation came—whence or how is unknown, as I had never heard or seen any reference to it—but the results from it have been most gratifying to both patients and surgeon. For forty years I disliked treating a Colles's fracture, but since 1914 my attitude has been completely changed. The method now in use is as follows.

Complete surgical anaesthesia is induced. The assistant grasps the patient's forearm firmly, while the surgeon clasps hands—right with right and left with left—as in handshaking. Sufficient extension is made to reduce any impaction that may exist, and when free from any entanglement the lower end of the ulna is used as a fulcrum, and the hand bent downwards until the distal fragment hangs over the end of the radius, much like a suspended "corner stone" that is about to be laid. When a proper alignment has been made by the thumb and fingers of hand clasping the wrist, the hand is raised, and the muscles jerk the fragment into place with a "snap." The contour of the wrist is carefully compared with that of the normal wrist. The hand is freely moved to ascertain that it can function normally. Plain, guttered, or plaster splints may be used. These are removed daily, or at longer intervals. Electrotherapy can hasten functional restoration, as also massage and sunshine. No restriction is placed on moving the fingers, while the surgeon can move the hand in all directions after the second or third day, and within three or four weeks the patient may resume his or her vocation.

Two recent cases show the results to be expected under normal conditions.

A young pianist fell about twelve feet and struck a cement pavement with right hand extended: excruciating pain followed; the swelling and classic deformities were very pronounced. The pain was promptly relieved by this procedure. The patient resumed piano-playing within a month, and neither patient nor parents could detect any difference in the wrists.

A woman, over 60 years old, and weighing 190 lb., tripped on the doorstep and fell about six feet on to a cement pavement with her left hand extended. Excruciating pain, swelling, and very marked deformity ensued. The pain was quickly relieved, and the patient resumed knitting on the third day; within a month she was strenuously engaged in washing, ironing, and at other work. She says, "The broken wrist is just as strong as the other, and my friends cannot tell which one was broken."

The surgeon must not use the ulna as a fulcrum to reduce the impaction, since a serious complication could easily be produced by excessive pressure.—I am, etc.,

Toronto, Canada, April 24th. JOHN HUNTER.

SIR,—In the course of several years in general practice and as casualty officer in a large general hospital I have found the following mechanism of reduction the best, whether general anaesthesia was available or not. I will describe the reduction of a right Colles's fracture; if it is in the left forearm, the other hand of the operator should be used from the other side of the patient.

Lay the patient on a couch, stand at his right side facing his feet, and take the injured limb under the left arm, gripping it against the side by the elbow and resting the injured part on the left hand, so that the thenar eminence fits into the hollow proximal to the distal end of the broken radius, and the fingers support the patient's palm. Now proceed to reduce the fracture by pressure with the right thenar eminence, the right fingers and thumb steadying the injured hand and, as soon as the impaction is reduced, applying the necessary downward traction, to correct the dinner-fork deformity, by a sliding forward and downward movement. The limb can be held under the arm while the splint is being applied and adjusted, a great advantage when one is working single-handed.

This is really an adaptation of Sir Robert Jones's thenar eminence method, but is performed the other way round, with the opposite hand, looking away from instead of facing the patient, and has the additional advantage that the limb can be held definitely steady even if the patient is hysterical and no anaesthetic is available.—I am, etc.,

H.M.S. *Flinders*, May 1st. T. WILSON FROGGATT.

THE SUBCUTANEOUS TUBERCULIN TEST.

SIR,—I cannot answer the question put by Dr. J. Stacey Dick in his letter on May 4th (p. 831) as to the value of tuberculin injections in the diagnosis of renal tuberculosis, because when I meet a case suggestive of renal tuberculosis I send the patient to a hospital where cystoscopic examination and tests can be applied, with a view to finding which kidney, if any, is tuberculous; I have depended on the report of the urologist for the diagnosis. However, in cases referred to me as tuberculous peritonitis, with or without a note of interrogation, I have used in doubtful cases test doses of tuberculin given subcutaneously, and have made my diagnosis in accordance with the result of the test. In no case so far has the subsequent history of the case shown the diagnosis so made to have been wrong.

In connexion with the diagnosis of pulmonary tuberculosis I have had a much more extensive opportunity of observing whether the test by subcutaneous injections of tuberculin is to be relied upon or not. On looking up my records I find that my assistants and myself have applied this test in 726 cases where there were symptoms and/or signs pointing to pulmonary tuberculosis as a possibility. These cases have been spread pretty evenly over the last sixteen and a half years. As a first test dose we give an injection of 0.0002 c.cm. of old tuberculin human (T). If no local or temperature reaction follows we go on to give doses of 0.0004 c.cm., 0.0008 c.cm., 0.0016 c.cm., 0.0032 c.cm. and 0.0064 c.cm. If none of these injections produce a decided reaction, we inform the patient and his friends that he is not suffering from tuberculosis.

In all the 726 cases the sputum, when available, had been previously examined and no tubercle bacilli found; the patient was afebrile, or had become so by a preliminary resting in bed. Of these patients 435 reacted and 291 did

:ot—that is, 60 per cent. reacted and 40 per cent. did not. :o be able thus definitely to eliminate 40 per cent. of our therwise doubtful cases is extremely valuable. As Pro- essor Lyle Cummins has found, the intracutaneous test ·ould only eliminate about 10 per cent.

It will naturally be asked: Has the subsequent history f the 291 persons pronounced not to be suffering from uberculosis justified such a pronouncement? I consider hat it has. In 5 out of the 291 negative cases tubercle acilli have subsequently been found in the sputum. ience we do not say that those who have not reacted to :x subcutaneous test doses are immune to tuberculosis for fe, but only that at the time of the testing they were ot suffering from it. The smallness of the proportion of ose who have afterwards been found with tubercle bacilli i the sputum appears fully to justify this. Of the 435 ho reacted to the test doses 62 have later been found to ve tubercle bacilli in the sputum.

We advise all the reactors to spend the necessary time ther to go to a sanatorium or to attend one of our spensaries for a course of tuberculin.—I am, etc.,

JOHN R. GILLESPIE,
May 7th. Tuberculosis Medical Officer, co. Down.

MEDICAL WOMEN AND THE POST OFFICE.

SIR,—*The attention of the council of the Medical* omen's Federation has been drawn to the fact that there e certain appointments now vacant in the Post Office edical Service which are being offered to medical women salaries which are grossly inadequate. It is felt that iblic attention should be directed to the matter.

Two half-time appointments in the Savings Bank and oney Order Departments, involving four hours' work on : mornings a week (three weeks' holiday) and carrying th them no pension and no sick pay, have been offered to edical women at salaries of £150 per annum. Under essure this sum has been raised to £175. The original ure works out at a little over 2s. 4d. per hour, and the ended one at 2s. 9d. per hour. This scale of remunera- n, we are sure it will be agreed, is an insult to the men who are expected to accept it.

The Post Office is already notorious for the underpayment its women medical staff, and as being the only Govern- nt department in which unequal payment exists between male and female medical officers. But such flagrant derpayment as in the present instance—at the rate of 50 per annum with no sick pay and no pension—passes bounds of belief. The Federation sincerely hopes that next Government, whichever party may be returned to wer, will set itself to rectify this unjust and intolerable te of affairs.—We are, etc.,

CATHERINE CHISHOLM, President.
CHRISTINE M. MURRELL, Past-President.
A. E. SANDERSON CLOW,
ALISON M. HUNTER,
L. MARTINDALE, Vice-Presidents.
JANE H. WALKER, Honorary Treasurer.
MABEL L. RAMSAY, Honorary Secretary.

ondon, W.1, May 10th.

THE GENERAL PRACTITIONER AND HOSPITAL TREATMENT.

SIR,—Dr. Edwards's letter on May 4th (p. 832) under s heading is of great interest. The grievances of the eral practitioner and those of the honorary medical er are, indeed, identical; the first does not want lose his chronic patient, and the second cannot get of him. The patient so often prefers the flavour of eleemosynary "mist" be it "repped" ever so often, the authorities will not help the honorary medical er to reduce attendance statistics. Providing steno- phers for the medical staff would increase the value hospital's work tenfold, but it would not look so well he annual report as a few thousand extra "rep. mists."

Dr. Edwards referred to the literature accompanying the eat on his homeward journey; let us now analyse that which attends him to the out-patient department. It falls into five categories.

1. Request for opinion, containing useful note on early symptoms, previous treatment, etc., 10 per cent.
2. Request for opinion *tout court*, 40 per cent.
3. "Mrs. Jones has ringworm, for *x*-ray treatment, please" (!), 5 per cent.
4. Printed certificate that "Mrs. Jones is suffering from so-and-so and is recommended for hospital treatment," 15 per cent.
5. Visiting card, 30 per cent.

The whole work of the hospitals could at once be put on a better basis altogether by creating but one vacancy in the hagiology of the voluntary system. Abolish subscribers' letters. Their only function is to give an occasional "vice-president" or "governor" a feeling of patronage for his money, and they are quite useless in ensuring that the right kind of patient receives attention. Replace them by books of vouchers issued to each general practitioner, one kind entitling him to send a patient for one consultation in the out-patient department, a second kind stating that the patient has no means and is suitable for free treatment, and a third kind for emergencies of all kinds. No patient, saving accident cases, should receive attention without production of one or other voucher. Where special treatment was advised, or even a further examination desired by the honorary medical officer, an out-patient's card could be enclosed in his letter to the general practitioner for him to hand to the patient if he approved of such arrangement.

In this way could the honorary medical officer be spared, and the hospital prevented, from competing with the private practitioner.—I am, etc.,

Brighton, May 7th. J. H. T. DAVIES.

SIR,—Dr. W. Edwards in his letter (May 4th, p. 832) complains that some hospitals "have no organization for acting in a consultant capacity" with practitioners who send them patients for an opinion or for special treatment. His experience is most unfortunate; it is the usual practice of surgeons and physicians in charge of out-patient departments to reply in person to letters concerning cases sent by doctors, or to ask their house-surgeons or house-physicians to do so.

When a patient is admitted to the Royal West Sussex Hospital the following notice is sent to the private practitioner:

Dear Sir,
I beg to inform you that your patient.....
of..... .....is to be admitted under the care of Dr.....

When the patient is discharged the following notice is sent, with the particulars duly entered.

Date.....
Name and address of Patient.....
Name and address of Doctor.....
Surgeon.....
Physician.....
Diagnosis.....
Operation or Treatment.....
X-Ray Report.....
Pathological Report.....
Cause of Death and date.....
Post-mortem Report.....
Remarks.....
(Signed) .....House-Surgeon.

If this method were generally adopted in relation to out-patient cases as well as in-patients, it would, I think, meet the requirements of most doctors.—I am, etc.,

Chichester, May 6th. ARTHUR M. BARFORD.

A RELIABLE TEST FOR PROGRESS IN HEARING.

SIR,—It was truly stated in your interesting leader on chronic deafness in the *Journal* of May 11th (p. 864) that the patient might think he heard better, although to our tests his hearing was as poor as before. It is also true that the patient thinking he hears no better (generally on the authority of his wife) may prove, on fair and unbiased testing, to have undoubted increase of hearing power. There is one test, however, which I think incontrovertible. *If other people have spontaneously made the statement that the deaf person hears better*, I think we may safely assume that he really does so.—I am, etc.,

London, W., May 14th. JAMES DUNDAS-GRANT.

ASTHMA.

SIR,—Before studying any disease it is often wise to become familiar with the physiology of the subject. The admirable physiological experiments of T. G. Brodie and W. E. Dixon have been lost in obscurity by the fact that they are to be found only in those libraries which store the *Transactions of the Pathological Society of London*. In the volume of 1902–3 their work is published. If you, Sir, could see your way to reprint this all-important but very inaccessible document it would be a great service to all who are interested in asthma. I suggest this because the more I read of and study the various aspects of this difficult subject, the more I realize that no one can even begin to understand it unless he is fully grounded in the fundamental facts which no one can dispute.—I am, etc.,

London, W.1, May 4th. H. MORTIMER-WHARRY.

*** We hope to publish in the near future an adequate abstract of the paper by the late Professor T. G. Brodie and Professor W. E. Dixon, which appeared in full, with illustrations in the *Transactions of the Pathological Society of London*, vol. liv, pp. 17–39.—Ed., *B.M.J.*

MODERN ASPECTS OF NEPHRITIS.

SIR,—I read with interest Dr. Langdon Brown's paper on nephritis (May 4th, p. 797) and was especially interested in his plea for recognizing high blood pressure in chronic nephritis as a compensatory phenomenon, to be preserved rather than artificially reduced, a point which I also endeavoured to make in my address on the treatment of nephritis (April 20th, p. 726). I should like, however, to criticize some minor inconsistencies and misstatements.

Dr. Brown stresses the septic factor in the etiology of acute nephritis, but he omits to follow up this obvious indication in treatment; he makes no mention of the importance of removing such foci. Referring to Epstein's views, he states that "the *lipoids, especially* cholesterol, accumulate in the blood . . . ," but later, in criticizing Epstein that "there seems little justification for his embargo on fats, since it is *only* cholesterol that is concerned . . ." (the italics in each case are mine), also that "Epstein is not consistent in this, since he allows eggs. . . ." If Dr. Brown will refer to Epstein's papers (for example, *Amer. Journ. Med. Sci.*, 1917, ii, 638) he will see that it is only egg *white* which is used.

Further, Dr. Brown refers to "Volhard's introduction of the term 'nephrosis,'" and suggests that it should be limited to "toxaemic kidney in which there are merely degenerative changes . . . without any inflammatory reaction." The term was actually introduced by Müller, as Volhard himself states (*Die doppelseitigen hämatogenen Nierenerkrankungen*, 1918, p. 322), to include all non-inflammatory kidney diseases, and was limited by Volhard to primarily degenerative cases.

I may say that I am not a whole-hearted supporter of Epstein's views, and agree that the term "nephrosis," though often useful, is not ideal. Nevertheless, I think it is considerably more justifiable than the term "hydraemic nephritis," which Dr. Brown retains, since we find in chronic glomerulo-nephritis "according to some authorities, a marked hydraemia, and yet these cases run, as a rule, until the end without any edema, while cases of nephrosis with marked edema do not show any real hydraemia." (Epstein, *Amer. Journ. Med. Sci.*, 1922, i, p. 178).—I am, etc.,

Sheffield, May 4th. ROBERT PLATT, M.D., M.R.C.P.

INCUBATION PERIOD OF SCARLET FEVER.

SIR,—A patient, aged 17, had a tooth extracted under gas, which caused such severe haemorrhage that she was confined to bed for ten days, during which period there was no possible contact with infection. On the eleventh day she developed definite scarlet fever, which was followed by peeling. Does this not suggest that the recognized period of incubation (that is, one to eight days) is not of sufficient length?—I am, etc.,

Southbourne-on-Sea, Hants, May 10th. S. J. HAYLOCK.

PYORRHOEA ALVEOLARIS.

SIR,—Perusal of the letters of Mr. Badcock (February 23rd, p. 373) and Mr. Porter (March 16th, p. 525) gave me the curious illusion of having returned to the late nineties when, as a student, I was taught that decayed teeth do not decay and that pyorrhoea is a fine disease. I am glad to recognize that this was an illusion and that the last thirty years have brought us some fresh knowledge of these conditions. I can go a great part of the way taken by Mr. Badcock and Mr. Porter, but I think patients might well be encouraged to use the small round brushes employed by dental surgeons for brushing their teeth. They are efficient and much more easily kept in a sanitary condition than is the ordinary toothbrush of commerce. They are so cheap that they can be frequently discarded; but it is not every patient who has sufficient nous to acquire the technique of their proper use.

There are, in effect, two quite distinct types of pyorrhoea; one is a septic or dirt disease which can be prevented, and in early cases cured, by scaling and efficient tooth-brushing. This is the more prevalent type of the disease; but the other, the infective type, occurs in mouths that are kept scrupulously clean, and is much more frequently associated with systemic infection, arthritis and anaemia. This type of case is comparatively rare in the ranks of the well-fed, often overfed, opulent classes who frequently get out beyond the smoke pall of the great towns. Besides, having been told by Mr. Badcock that it is all a question of cleanliness these patients may be ashamed to return to him, and to show that the condition has gone from bad to worse. In fact, mere local treatment is quite unavailing in these cases, in which there is an insidious and dangerous infection, like that of tuberculosis. It cannot be cured by extracting the teeth, a traumatic procedure calculated to open up new tracts of infection into the alveolar circulation and frequently followed by deplorable results. The disease can only be conquered by the patient's own defensive reactions; and the reinforcement of these is almost the whole objective of rational treatment.

These are essentially cases for the doctor rather than the dental surgeon; the chief thing that the latter is called upon to do is to realize the importance of the condition when he sees it and to get the diathesis treated. Can not medical practitioners be induced to take a renewed interest in a very important condition which during the past thirty years has been relegated to the hands, the hands rather than the brains, of dental surgeons?—I am, etc.,

London, W.1, April 29th. F. TALBOT.

THE ABUSE OF NARCOTICS AND SEDATIVES.

SIR,—The unfortunate and widespread habit of drug-taking has reached such an acute stage that it is over time we should unite in order to lessen what may be a national curse. It is far from uncommon, for instance, to meet women who have been taking, on medical advice, some drug such as luminal for months. These patients are, as a rule, in a hopeless state, both mentally and physically. The continual use of this and other drugs—medinal, adalin, chloral, trional, veronal, etc., should never be prescribed without due thought and care.

The very fact that many narcotics are capable, if given in small repeated doses, of exciting the nervous system should in itself call for discrimination. Loss of self-control and will power are common effects of drug-taking. An energetic action may be necessary in order to save a patient from becoming a wreck, so there is surely only need for a word of caution. I have seen a large number of these cases which are slowly but surely approaching the "borderline" through careless prescribing; hence this letter. One can do much by the use of suggestion in general treatment. The physical condition is so often poor, a warning in itself against undue use of drugs. Neurasthenia, insomnia, hysteria, and nervous debility are conditions which are always calling for care and attention, and, further, will often respond to general treatment where narcotics and sedatives have failed.—I am, etc.,

Canford Cliffs, April 30th. FRANCIS G. BRETT.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

Prorogation: The King's Speech.

THE King's Speech proroguing Parliament, which the Lord Chancellor read in the House of Lords on May 10th, referred to the British Government's decision to take steps to accept in the King's name the Protocol prohibiting chemical and bacteriological methods of warfare. Mention was made of the confidence held by Ministers that the reorganization of relations between the State and local authorities would enable better provision to be made for the health and welfare of the people. Allusion was made to the reorganization of the Scottish Department of Health. The Speech further said:

"My Ministers have initiated an inquiry into the radium requirements of the country in the light of the knowledge and experience gained as to the importance of radium in the treatment of cancer, and in accordance with the recommendation made to them they have agreed to contribute to a fund for the acquisition of a stock of radium. It is My earnest hope that this action may prove a substantial step forward in the campaign against one of the most distressing maladies known to mankind."

Acts which received the Royal Assent on May 10th before the prorogation of Parliament include the Pharmacy Act, 1929, Artificial Cream Act, 1929, Infant Life (Preservation) Act, 1929, Age of Marriage Act, 1929, and Acts confirming provisional orders of the Ministry of Health.

The Scottish Estimates

On May 7th the House of Commons discussed the vote for the Scottish Department of Health. Dr. ELLIOT said that the estimates for it this year were up by about £260,000. The figures for infant mortality were 86 per 1,000, compared with 89 per 1,000 last year. The average of infant mortality for ten years past came out at about 92 per 1,000, so that there had been a very important saving in life. The rate, however, was not satisfactory compared with those of England and other countries in the Empire. Maternal mortality remained high, both in Scotland and in other countries with a high standard of living. It did not appear to yield to a general advance in the prosperity of the country as did infant mortality. The death rate from tuberculosis was 97 this year, as compared with 99 last year and 116 in 1924. Those figures compared favourably with world figures. Health benefit payments showed a disquieting tendency to increase to successively higher levels. In the first four months of last year the total cash benefits paid out amounted to £75,000, and for the first four months of this year to £981,000. In that morning's issue of the *Times* he had given an account of some tests that nature had carried out in East Africa, where two tribes had been found living under similar conditions, one of whom consumed a great deal of milk while the other did not. Tests carried out at Aberdeen gave similar results to those in East Africa, and showed that there was a marked improvement in the health of school children by the addition of a small amount of milk to their diet. Scotland was fortunate in possessing a close and intimate link between the Department of Health and the voluntary hospitals and medical schools associated with those hospitals. About £68,000 per annum was being spent on the Highlands and Islands service. Without this service the inhabitants of the Highlands and Islands of Scotland would be without proper medical treatment. The fund, however, had been living on its savings for some time, and it would be the duty of the new Government after the General Election to maintain and enlarge the provision made for it.

Dr. DRUMMOND SHIELS said that in times of stringency other things should be sacrificed before the public health services. The 1,000 houses that had been provided in Scotland towards slum clearance were a miserable contribution. He was glad to notice the emphasis in the report of the department on the importance of dealing with children between the ages of 2 and 5 years in nursery schools. These nursery schools might provide facilities for inculcating habits of discipline and so on, but their object was to remove children from playing in the gutter and to give them a chance of having physical defects remedied. School medical officers and other medical men were sure that bad tonsils, adenoids, and similar defects, which were such a nuisance and cause of anxiety to parents during the ordinary school life of the children, had their beginning at that period of life, and if they were promptly dealt with a great improvement would result in the health of the children. There were 350,000 such children in Scotland, and only by a system of nursery schools could the problem be tackled. He did not know what the position in Scotland generally was, but in Edinburgh plans had been made for starting one nursery school in the immediate future. A big programme of nursery schools would be put into operation if the Labour party came into power after the election. The Under Secretary for Scotland had dealt interestingly with the problem of maternal mortality, child welfare, and infant mortality, all of which were more or less grouped together. He was glad to notice in the report the figures relating to ante-natal clinics and childbirth. These showed that, taking an average of four years from 1924 to 1927, in the case of women who received ante-natal attention the deaths in childbirth or immediately after were only 3 per 1,000, whereas in the case of those who had no ante-natal attention the figures were 7 per 1,000. Taking 1927 by itself the figures were more remarkable. Among women who had ante-natal attention the mortality rate was 2.4 per 1,000, and among those who received no ante-natal attention it was 11.2 per 1,000. The ante-natal centres in Scotland were not numerous enough. In large towns like Glasgow and Edinburgh there were a certain number of such centres, but more were required, and they ought to be so situated as to be convenient of access to the women, who should not have to travel long distances. As a considerable period of waiting was in some cases inevitable, the centres should be made more comfortable. Some of the centres had not suitable conditions for the examination of women. The Department of Health ought to urge all local authorities which had ante-natal centres to see that they were such as would encourage women to attend. Strong pressure should be put on the local authorities which had no such centres at all. It was satisfactory, so far, that the figure for infantile mortality was down to 86, but the figure had always been higher in Scotland than in England, and this difference was due to the difference in housing conditions. The same steady progress was being made in regard to tuberculosis, but he would like to see it greater. That, again, was really a housing question. The country was spending a great deal of money on sanatoriums and on the treatment of tuberculosis, but the best medical authorities believed that with decent housing conditions they could sweep away the whole problem of tuberculosis in a generation. Little prominence had been given to the question of venereal diseases. They did not know whether they were decreasing or whether public health authorities were getting to the causes. There seemed to be an increase in gonorrhoea, although the evidence in regard to syphilis was that it seemed not to be increasing. They did not know whether the increase in gonorrhoea meant that more people were attending the clinics or whether it was an actual increase. This disease was so important and was costing local authorities and the country so much money that until they had some method for dealing with it, such as was suggested in the recent Edinburgh bill, they would continue to have inadequate results from a very large national expenditure. Continuing, Dr. Shiels said the report of the Scottish Department of Health brought out the fact that every four years, or about three times in the school life of a child, it was medically inspected. That was not enough. There should be a medical inspection of every child at least once a year. Certainly the medical staff would have to be increased. That would be a great economy, because if, in the course of school life, they could attend to the physical conditions of the children, they could turn them out at the end not only well educated, but physically well equipped. Attention should also be paid to systematic and daily exercises for children at school. They could honestly congratulate Dr. Elliot on the interest which he had taken in the experiment in regard to milk, and probably also for its initiation. The linking of two experiments, one in Scotland and the other as far off as East Africa, was of scientific interest and of great practical importance. The good work which Professor Leighton had done, and the interest he had taken in this subject for many years, in encouraging the milk producers of Scotland to supply pure and cleaner milk ought to be recognized. The present nomenclature of graded milk was misleading. People thought that Grade A milk was the best quality, whereas certified milk was the best. He would like information on the quality of the non-graded milk. Did the department take steps to obtain any samples of milk, and to subject them to bacteriological examination? The sale of tuberculous milk should be made a serious crime. The national health insurance scheme in Scotland was now well organized and working well. The report called attention to the fact that the action taken under the Economy Act, 1916, in reducing the State grant had prejudiced the possibility of extension of the dental and ophthalmic services. It was the duty of the Government to make the national health insurance system really comprehensive and to enable contributors to have at their command every medical and surgical aid. At present they were thrown back on the voluntary hospitals, which were overcrowded and had not enough beds. He echoed the hope expressed by Dr. Elliot in regard to the new hospital services under the Local Government Bill. That section of the bill would permit a development of municipal hospital service to supplement the voluntary service, and would make it possible for the ordinary citizen to obtain that specialist advice which was essential. The Labour party were sympathetic about research. There was, for example, the question of influenza, our knowledge of which was

limited. Research regarding that disease was badly needed. Measles and whooping-cough, though not seriously regarded by the public, were two of the most serious diseases, but they were not making a great deal of progress in regard to them. The entire sum which this wealthy country spent on research of all kinds was only about £20,000, and it would be a tremendous thing if, by research work, even a few hundred lives could be saved in Scotland each year. He wished to emphasize the importance of proper dental treatment for children. Most local authorities in Scotland had made such provision, but two of them—Argyllshire and Bute—had no provision at all. He appreciated Dr. Elliot's reference to the Highlands and Islands Fund. He (Dr. Shiels) had had an opportunity of seeing its work in Shetland and Orkney, and there was no question about its value and necessity. The Department of Health should put some pressure on local authorities in the North of Scotland who had failed to provide maternity and child welfare services.

Dr. ELLIOT, replying to the debate, said that the department were taking active steps to deal with maternal and infantile mortality. Their expenditure in the current year was 50 per cent. greater than the expenditure for which the Labour Government was responsible. With regard to milk tests, it was a question of quality, not of quantity. Last year 2,249 cattle affected by tuberculosis were slaughtered. The process of cleaning up the herds was continually going on and was bound to result in an improvement in public health. There was no increase in the number of school children suffering from malnutrition over last year.

The vote was agreed to.

Pensions Estimates.

On an estimate of £32,723,500 for salaries, expenses, and contributions of the Ministry of Pensions, which came before the House of Commons on May 8th, Major TRYON made a comprehensive review of the work of his department. He said the vote for the Ministry was still nearly the largest single vote in all the civil estimates. Payments from it affected the weekly budget of nearly one million families, and the beneficiaries of the Ministry numbered a million and a half. The total vote for the Ministry in the current year would amount to £53,723,500, and at the end of the current year the country would have spent in the fifteen years since the beginning of the war no less than £913,000,000 on war pensions, a sum roughly equal to the expenditure of both France and Germany together for similar purposes. Turning to the medical services of the Ministry, he remarked that the medical examination or boarding of pensioners for the assessment of their pensions was rapidly diminishing. The bulk of the work was now directed to the making of final awards. Only about 100,000 cases still drew pensions that were subject to further review. In a few months he hoped the Ministry would complete the medical boarding of all these cases for final award so far as they were likely to be found suitable. For many of the men it would probably be unfair in their own interests to give final awards, because they were cases actively deteriorating. The other side of the Ministry's medical work consisted of the medical and surgical treatment of cases. The demand for treatment of all kinds continued to decline at the same rate as during the last seven or eight years, and the hospital accommodation of the Ministry had been reduced proportionately. The Ministry, however, still maintained 17 hospitals of its own, with approximately 3,000 beds, and had a call on 25 other hospitals under the control of voluntary bodies which reserved the bulk of their accommodation for a further 2,000 cases. In addition, the Ministry used civil hospitals to a substantial extent, and on March 31 there were 5,601 patients in Ministry hospitals or civil hospitals. Explaining the system of final awards Major Tryon said that 6,000 cases had been given over and above their final award some further concessions under the system known as "correction of error," by which any officer or man who had received a final award and subsequently received hospital treatment could be given further pension if, at the end of his course of treatment, his condition was found to be seriously at variance with the degree of disablement which had been assumed for the purposes of final settlement. These cases were only about 1 per cent. of all the final awards made. The proposal that, in addition, any man who had received a final award should be given the further right to appeal at any time, and for an indefinite number of times, would make an end of final awards altogether.

Mr. F. O. ROBERTS, a former Minister of Pensions, called attention to a reduction of £290,000 in the provision of medical treatment under the Ministry of Pensions. He asked whether that saving could have been made if the men received the just treatment to which they were entitled, and whether too large a share of the responsibility for dealing with ex-service men was not now being left to private charities. He further asked whether the Ministry had devised any means of giving weight to the opinion of a claimant's own medical man when it was against the opinion expressed by the representatives of the Ministry. Had the Ministry considered the appointment of an independent medical tribunal to settle such questions? Medical representatives of the Ministry almost constantly disputed opinions which had been expressed by the medical advisers of claimants. Mr. Roberts cited the claim of a demobilized man for a pension on account of tuberculosis which had developed four months after demobilization, and which doctors of high standing had deemed to be due to the war, but which the Ministry had refused to consider, despite the prominence given to it by the British Legion. He pointed out that, although such benefit could be allowed to widows and orphans, only 71 grants had been authorized out of 494 applications, and he asked for an explanation of this grudging consideration. He further asked whether the Ministry of Pensions had considered widening the operations of village centres for the treatment of tuberculous patients. There now seemed justification for the conclusion that the proper way to deal with tuberculous ex-service men was to give them useful work in village centres. He also urged the provision of greater and wider occupational opportunities for neurasthenic ex-service men. He understood that from three to six days now passed before a man who had applied for treatment for any disability received a visit from the Ministry's medical officer. Could not some arrangement be made to avoid this delay, and might men not be attended by local doctors under products of award showing that their disability had been accepted by the Ministry of Pensions?

Sir BASIL PETO was glad to hear that 300 to 400 cases had been admitted for pension after the lapse of seven years from demobilization. There must be many more, he thought, which also deserved to be admitted after that limit, and he cited instances which had come to his knowledge.

Captain FRASER said it was probably true that war service left its mark upon every individual who suffered at all seriously, but not all of the 5,000,000 men who were recruited were subjected to hardships. If they gave to every man who had served a right of appeal for the rest of his life they would waste money on administration instead of spending it on pensions.

Sir FRANK MEYER said that if the House decided to do away with the time limit local voluntary boards would have to be set up, each consisting perhaps of a doctor, an ex-service man, a magistrate, and one or two other people of common sense and experience. Such a board would sift these cases, and only permit them to go to the Ministry if applicants showed there was a real connexion between their ailments and war service, and genuine reasons why the appeal should not be brought within the seven years' limit. He knew of cases where eight or nine years after the war men who had all that time suffered slightly from some wound finally found themselves worse and unable to carry on their job, having previously refrained from claiming pensions so as not to prejudice their chances in the labour market by appearing not to be wholly sound.

Sir MARTIN CONWAY cited two cases known to him of men who were gassed in the war, and who, fearing sentence of death of consumption were diagnosed, had not submitted themselves to medical examination until the seven years' limit had passed, when they were discovered to have consumption in a pronounced degree.

Dr. VERNON DAVIES congratulated the House on dealing with pensions from a non-party point of view. The question was not justice was being done to the ex-service men intimately concerned the medical profession because the skill and accuracy of diagnosis and of assessment by the medical profession decided whether an ex-service man could make out a case for a pension. Medical men had to remember to hold the scales of justice equal between the taxpayer and the ex-service man. Certain cases, such as the loss of an eye or a limb, could be recognized by everyone as being due to war injuries. A second class of case was definitely not due to war injuries, as, for instance, if an ex-service man developed small-pox or scarlet fever, and then claimed that it was due to his service. Medical men with experience were equally certain about some other cases were due to war injury or not. A man might say that he was perfectly right when he went to the war, but that after five or six years he developed a certain form of paralysis which he thought must be due to injury, shock, or nervous strain in the war. But medical men knew that form of paralysis was definitely the result of syphilis. The layman did not realize this, and thought that injustice had been done. A third class of case was doubtful even to the medical man. What was the right thing to do in this debatable ground? It was to see that the best, the highest, the best, and the most competent medical opinion before confirming an opinion. People had sometimes wondered whether the Ministry of Pensions had been as humane as it might be. He wished to testify to the kindness and humanity of Major Tryon, who had always received him with sympathy and done all he possibly could. He had seen him at work concerning a difficulty in the administration of the medical department. Major Tryon had offered him an interview with any of the medical staff, and had arranged for him to see the Director-General of Medical Services and his deputy. Dr. Davies then outlined the system whereby the medical officers of the Ministry dealt with assessments of claims, certificates of treatments. He explained that particular types of cases could be reconsidered in the Ministry by trained medical assessors, specially in certain diseases, such as tuberculosis and neurasthenia, and

if they desired anything to be explained when claimants came up for the award grant, the claims could be referred to another group of specialists. After a claim had passed through the area board, and had been considered by the awards branch in London, the House could safely say that every skill and medical attention had been given to it by expert medical men. The medical branch of the Ministry of Pensions was concerned solely with entitlement and assessment, and the financial aspect never came within their view. The medical men attached to the Ministry were absolutely fair and unbiased, and anxious to do the best they possibly could for the ex-service men. He cited two cases, one of a man who had venereal disease before the war, and another of a man who went to the war at about 50 years of age. The first developed symptoms of general paralysis of the insane a little sooner than might have been expected, and the second symptoms of arterio-sclerosis, followed by a stroke and paralysis. The Ministry accepted the first case as an aggravation due to war service, and the second case as absolutely due to war injury or war service, and not to the normal passage of time. Dr. Davies added that if the country got the idea that the medical profession as a whole was a profession of honourable men who were anxious to do all they could for the ex-service man, a better spirit would be created and suspicion would be reduced. Members must remember that in surgery and medicine one man might interpret a symptom in a certain way, and the next might, with equal honesty, interpret it in a different way. Very often the profession did not know which man was right until there was an operation or a post-mortem examination. When cases were referred to the Ministry accompanied by certificates from doctors, these certificates were given according to the best of the medical men's ability on the symptoms they had observed. But it was only fair to regard the opinions of experts on tuberculosis, neurasthenia, insanity, or wounds as of more value than that of the ordinary practitioner.

Mr. KELLY said he was prepared to accept the statement that the main body of doctors were honourable men, but he suggested that mistakes were made even by the experts and specialists. He was not sure that the House could rely in pensions matters on certificates handed out by medical men. A doctor might be able to say whether a man was suffering from a particular disease, but it was not the function of medical men to say whether a man was capable of doing his work From experience of many cases under the Workmen's Compensation Act Mr. Kelly judged that doctors' opinions were not worth a great deal. He remarked that most of the men now suffering from diseases after their return from the war had been passed as healthy before they went out, and it was difficult for the layman to believe that men who underwent hardships, such as having to sleep in the open without covering, would have been in their present position but for those hardships. He asked for special consideration for mental cases. Men who were mentally fit when accepted for war service had become unbalanced by the changed conditions under which they had to live at the front, and by the rush and scramble for jobs which they found when they came back to industrial life.

General CLIFTON BROWN drew the attention of the Ministry to two cases where constituents of his felt grievances. In one the constituent felt aggrieved because a pensions appeal tribunal had refused his application, and he had asked for the names of the two doctors who acted on the tribunal. The Ministry of Pensions had stated that to give the names was not its business, and the application was referred to the Lord Chancellor, who replied that the decision was in the hands of the president of the panel. General Clifton Brown thought the aggrieved man was justified in asking for the names, because he desired to set their opinions against the opinion of his own local doctor. The second case concerned an ex-officer with 100 per cent. disability, who occasionally suffered from neurasthenia and needed certain medical treatment immediately. His local doctor was not allowed to order at once the drug necessary in the case, but had to get permission from the Pensions Committee. They usually acceded to the request after a month or two, when the bad nervous attack had passed off. General Brown thought that the regulations might be administered so as to allow the local doctor who had had charge of the case for seven or eight years to act in the emergency.

Dr. FREMANTLE remarked that there was a definite decline in the provision made for surgical and medical cases in the Ministry's institution, and he asked what was the direction in which this was leading. The general surgical cases dealt with by the Ministry had decreased from 2,500 at the beginning of 1925 to something like half that number; in just over four years 64,000 surgical cases had been treated, and 60,000 medical cases, while there have been 26,000 neurological cases. The experience of neurological treatment thus gained had been of immense value to medical science, and for treatment in civil life hereafter. Naturally the decline in the number of cases demanded fewer institutions and smaller staffs. The institutions had been reduced from 250 in 1921 to 28; the hospitals from 75 to 20; the medical staff from 560 to 150; and the nursing staff from 1,300 to 360. He asked what steps were to be taken to ensure that this wonderful equipment and experience was to be properly used. As a service of this kind dwindled difficulty arose in giving the same proper treatment to those cases which still remained, while at the same time equipment, institutions, and services were lost which might otherwise be used for the general good of the community. The more they praised the organization and its great results the more anxious they must be to see that these results were not thrown away. He agreed with Dr. Davies that the medical men who were doing the difficult work of assessment were without fear and without reproach. But he had not the same absolute faith in the results of the judgements of their profession. All were liable to make mistakes, even when there might be two or three of them together, and his own experience was that when cases were brought before the Minister of Pensions in which there appeared to have been an error of judgement, even in the higher courts, medical men found themselves satisfied with the action taken. There must be protection for the public and there must be a limit. The fact that a man's disease was aggravated in some way by war service, and that he was worse off on that account, did not necessarily mean a corresponding liability on the State. He instanced a case of a farrier-sergeant who served in the war and died after seven years, when his widow applied for a pension. The question was whether the man's death from a tumour on the head was due to injuries received in the course of his duties during the war. It was shown that he was kicked on the head, but obviously a farrier expected to be kicked on the head from time to time. That was a case where a line must be drawn.

Captain FAIRFAX could not accept the contention of Dr. Davies that the value of the medical experts of the Ministry was necessarily and invariably greater than that of general practitioners. In some cases a man's general practitioner who had known his health for a long term of years was in a better position to diagnose his case than an expert who only saw him later on. Many laymen thought that if they went up and down Harley Street and Wimpole Street asking for a diagnosis of any complaint they would get a different diagnosis at almost every door, whereas if they relied on the common sense of general practitioners in provincial towns they would get a sound diagnosis and more uniform treatment. The specialist and the expert had become too predominant in the composition of the Ministry.

Replying to the debate, Major TRYON thanked members of all parties for the non-party way in which pensions had been treated, even on the eve of a General Election. Referring to a particular case raised by Mr. F. O. Roberts and the British Legion, Major Tryon said there was definite evidence with reference to the man's injuries at the time they had appeared, and this evidence could not be set aside by other medical evidence obtained eight or ten years later by men who had not seen and did not know the medical evidence in the possession of the Ministry. The House had decided that the final decision in such cases should rest with an independent tribunal whose decision was binding on the Ministry, and Mr. Roberts had failed through inadvertence to mention the fact that this case had been decided by such a tribunal. Members sometimes spoke as if to-day a seven years' limit absolutely barred all claims. That had been the position, but the present Government had arranged that where there was evidence claims could thereafter go through. There were 2,000 branches of the British Legion, but in the six months ending March, 1929, the Legion had only submitted thirty-seven claims to the headquarters of the Ministry. Major Tryon said he appreciated the references made to the medical services of the Ministry by Dr. Davies. He himself admired and respected their work, and resented attacks which were made, though not in the House, against the doctors of the Ministry of Pensions. The difficulty of the Ministry was generally not with the men who went to the front, but with the million men who enlisted, but were unfit to go to the front. An enormous proportion of the Ministry's medical men had been in the army and had served overseas. Of the whole staff 96 per cent. were ex-service men. Very often, of all the men concerned with the examination, consideration, and decision of the case, the only man who had not been at the front was the man applying for the money of the State on the grounds that he had been disabled by the war. Major Tryon thanked Dr. Fremantle for the interesting points he had raised about the inadvisability of losing the organization and experience now concentrated in Ministry of Pensions hospitals and staffs. In discussing that subject the House was handicapped because it concerned a large number of departments.

The House then agreed with the estimate for the Ministry, and the debate ended. The House also agreed without discussion to the estimates for other departments, including several votes for medical purposes, and to the report stage of a vote for £14,228,664 for the Ministry of Health. This included grants in connexion with public health services, and expenses of administration under the National Health Insurance Act.

The Mental Deficiency Report.

Mr. CHAMBERLAIN told Mr. Robert Morrison, on May 9th, that he had decided to publish the adult section of the Mental Deficiency Report, and that it would be issued as soon as possible.

Vaccination Statistics.

With the warning that the figures for expenditure and for vaccinations referred to different periods, and could not be strictly correlated, Mr. CHAMBERLAIN, on May 9th, furnished Mr. Broad with statistics of the cost to rates and taxes of vaccination in England and Wales in recent years, and of the number of persons vaccinated or revaccinated at the cost of the rates. The latter figures are as follows.

Year Ended September 30th.	Successful Primary Vaccinations.	Successful Revaccinations.	Total.
1923	415,549	316,641	732,190
1924	331,522	89,600	421,122
1925	270,755	40,939	311,694
1926	279,721	54,221	333,942
1927	305,005	113,117	418,122

Hygiene of Merchant Ships.

On the Appropriation Bill, in the House of Commons, on May 9th, Commander KENWORTHY opened a discussion on the mercantile marine. He said the statutory accommodation for a seaman was still 120 cubic feet, which was far less than for inmates of common lodging houses, prisons, or workhouses. Many shipowners had exceeded that allowance, and had provided very good accommodation. During the war the standard ships had the cubicle system in the forecastle, and it was much appreciated by the men. Now new ships were being built without the cubicle system. The President of the Board of Trade had few, if any, qualified medical men. If the health of the seamen was to be properly looked after the duty must be placed on the Minister of Health, who had the necessary medical officers.

Sir PHILIP CUNLIFFE-LISTER said the Board of Trade desired to bring the world into line with British standards. Then all countries could advance together. The regulations governing accommodation for seamen had been made as lately as 1923. At present the Board of Trade was collecting full reports of the conditions on different ships, and proposed to submit these to an interdepartmental committee of the Board of Trade and the Ministry of Health. The Board of Trade had no real complaints about the quality of food supplied to seamen. It hoped to get more detailed particulars on the rate of mortality due to sea service.

After some further discussion the subject dropped.

Artificial Cream.

The House of Commons considered, on May 9th, the Lords' amendments to the Reconstituted Cream Bill, the title of which had been altered in the House of Lords to the Artificial Cream Bill. Mr. A. V. ALEXANDER said the substitution of the word artificial was designed to create a bias in the mind of the public against the article known as reconstituted cream, and was quite unfair to the facts which were known to the Ministry of Health. Information had been communicated to the Ministry about the experiments which had been conducted by the London Hospital, and at a research laboratory in regard to reconstituted cream. These experiments showed that reconstituted cream was often more healthy for the public to consume than natural cream. A test made in a laboratory gave a bacterial count in matter of cream of 2,800,000 in a cubic centimetre compared with the very small count indeed in a sample of what was to be called artificial cream. These tests had also shown by proper research that in the making of reconstituted cream there was no destruction of essential by-products. The hospitals were using reconstituted cream, and the Ministry of Health was using it in its own buffet for the meals provided for the staff. He had had conversations with medical officers at the Ministry who believed reconstituted cream to be a thoroughly sound wholesome article. They would not prevent it being used in their own culinary department at the Ministry. Sir W. WAYLAND said Mr. Alexander might just as well argue from analysis made by hospital chemists that milk made from the soya bean, which analytically was exactly the same as ordinary cow's milk, and could not be detected from cow's milk, should be sold as ordinary milk. Farmers desired the article bought by the public to be real cream separated in the dairy, and not something called cream, which was made from butter, dried milk, and water, beaten up in a machine. The House of Commons then agreed to the Lords' amendment altering the title of the bill to the Artificial Cream Bill, and to other amendments, including one which required the registration of restaurants where artificial cream is sold, whether manufactured there or on other premises.

On the following day, as stated above, the bill received the Royal Assent.

Centres for Radium Treatment.—Mr. BLINDELL asked Mr. Chamberlain, on May 9th, what response he was sending to a resolution passed at the annual meeting of the British Hospitals Association recently held in London offering the advisory services of the association to the Ministry and the Radium Subcommittee as to the best and most convenient centres for radium treatment. Mr. CHAMBERLAIN replied that this resolution had not yet been formally submitted to him, but he proposed to bring its terms to the notice of the bodies through whom the new supply of radium will be administered as soon as they are set up.

National Health Insurance Fund.—Mr. CHAMBERLAIN, in a written answer, on May 10th, gave the approximate total receipts and payments of the National Health Insurance Fund in England and Wales during 1928 as £34,670,000 and £33,740,000 respectively. He added that the payments included about £810,000 for central administration.

Value of Skimmed Milk.—Sir JOHN GILMOUR, replying to Mr. Groves on May 7th, said that he was not aware that anything in the annual report of the Scottish Board of Health had created the impression that skimmed condensed milk should not be labelled "unfit for babies." There was no doubt that skimmed condensed milk was unsuitable for the feeding of infants, but food tests in Scotland had shown the value of good, fresh skimmed milk as a supplement to the diet of school children.

London Lock Hospital.—Answering Mr. Pethick-Lawrence and Captain T. J. O'Connor, on May 9th, Mr. CHAMBERLAIN said he understood a conference had been held that day between representatives of the governing body of the London Lock Hospital and of the former ladies' committee. The object of the conference was to reach agreement, both on proposals made by the board for the future management of the hospital and on the action to be taken with respect to certain former members of the staff. He could not tell the House of the results of the conference, but members would regard the board's action in seeking it as evidence of their desire to promote the harmonious and successful working of the hospital.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

As recorded elsewhere, Professor Henry Roy Dean, M.D., F.R.C.P., has been pre-elected by the Fellows of Trinity Hall to succeed Dr. Henry Bond in the Mastership of that College. Professor Dean received his medical education at the University of Oxford and St. Thomas's Hospital, and has held in succession the chairs of pathology at the Universities of Sheffield, Manchester, and Cambridge.

At a congregation held on May 12th the following medical degrees were conferred:

M.B., B.CHIR.—J. L. Franklin.
B.CHIR.—A. B. Connell, C. A. Francis.

UNIVERSITY OF LONDON.

THE annual Presentation Day ceremony took place at the Albert Hall on May 8th.

The Vice-Chancellor, Sir Gregory Foster, said that a message had been sent to the King and Queen expressing heartfelt joy at [illegible] King from his long illness. The King, in his [illegible] said that their Majesties realized the special [illegible] Presentation Day, marking, as it did under the revised constitution, a fresh era in the history of the University and the possession of the Bloomsbury site. The Vice-Chancellor gave a warm welcome to 3,383 men and women who had taken the degree of Bachelor during the year, as well as to 508 men and women who had graduated as Master or Doctor. He said that the vexed question of fuller facilities for the clinical education of women medical students, and the provision of more adequate hospital appointments open to women, was still unsolved. The question would be one of the first problems to be tackled by the new Senate and the Council that would shortly be constituted. Progress had been made towards the laying out of the Bloomsbury site, which was to be devoted mainly to the central activities of the University. To develop the site would require the generous co-operation of the City of London and of the friends of university education throughout the Empire, because the cost would not be far short of £2,000,000.

The Principal's report for the year 1928-29 recorded that the total admissions by all channels during the period was 9,708, as compared with 9,117 in 1927 and 3,852 in the last year before the war. The total number of candidates for all examinations was 34,940, against 33,903 in the previous year and 11,937 in 1913. The successful candidates at all examinations numbered 15,155, of whom 3,089 obtained degrees and diplomas. Reference is made to the appointment at St. Thomas's Hospital Medical School of Mr. S. J. Cowell to be the first holder of the Chair of Dietetics and to the appointment of Professor W. E. Le Gros Clark to the Chair of Anatomy. At Guy's Hospital Medical School Dr. [illegible] Donaldson has succeeded the late Professor Adrian Stokes in the Sir William Dunn Chair of Pathology, and the title of Professor

Morbid Anatomy has been conferred upon Dr. G. W. de P. Nicholson. The new Readership in Morbid Anatomy, tenable at Middlesex Hospital Medical School, has been filled by the appointment of Mr. S. L. Baker, and in view of the munificent gifts of Mr. S. A. Courtauld for the Institute of Biochemistry and the endowment of the Chair of Biochemistry at that school the title of the chair has been changed to the "Courtauld Chair of Biochemistry." At the London School of Medicine for Women Dr. Geoffrey Hadfield has succeeded Professor J. H. Dible in the Chair of Pathology. The title of Professor of Bacteriology has been conferred upon Mr. Alexander Fleming, in respect of the part-time post held by him at St. Mary's Hospital Medical School. At University College Hospital Medical School Dr. H. D. Wright now holds the new Readership in Bacteriology and Dr. C. R. Harington has received the title of Reader in Pathological Chemistry. Dr. Harold Raistrick has succeeded Dr. Percival Hartley in the Chair of Biochemistry at the London School of Hygiene and Tropical Medicine and Dr. Archibald Leitch now holds the title of Professor of Experimental Pathology at the Cancer Hospital. There had been instituted a Ph.D. degree in non-clinical subjects in the Faculty of Medicine and academic diplomas in clinical pathology and public health for internal students.

The special service was held at Westminster Abbey, when Bishop Gore preached, and the graduation dinner took place in the evening at Merchant Taylors' Hall.

Parliamentary Election.

The constituency of the University of London now comprises some 15,500 graduates who have registered as parliamentary voters. For the forthcoming General Election there are three candidates.

Dr. E. G. Graham Little, physician-in-charge of the Skin Department of St. Mary's Hospital, has been a member of the Senate since 1905; in 1924 he stood as an Independent candidate for the University seat, and was elected by a majority of 389 over the Conservative candidate; he is standing again as an Independent. The Liberal candidate is Mr. W. T. Layton, C.H., M.A., editor of the *Economist*, and formerly Director of the Economic and Financial Section of the League of Nations, who recently accompanied the Simon Commission to India. Sir John Gilbert, K.B.E., B.A., who has been adopted as the Conservative candidate by the University of London Conservative and Unionist Association, is a former Chairman of the London County Council, and has recently been elected for the sixth time as Chairman of its Education Committee; he was a member of the late Senate of the University, and has been elected to the University Court under the new Act.

Voting will be by post, and between the days of Monday, May 27th, to Friday, May 31st, both days inclusive.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council meeting of the Royal College of Surgeons of England was held on May 9th, when the President, Lord *Moynihan, was in the chair.*

Sir George H. Makins was presented with the honorary Gold Medal of the College, together with a document declaratory of its award, in appreciation of his valuable services to the College, more especially in arranging and describing the series of drawings in the Army Medical War Collection.

Diplomas of Membership were granted to 151 candidates. (The names were printed in the report of the comitia of the Royal College of Physicians of London, published in our issues of May 4th (p. 834) and May 11th (p. 888), with the exception of that of J. H. Boultbee.)

Mr. Charles Aubrey Pannett was elected a member of the Court of Examiners for the period of five years, and was admitted to the Court.

The following professors, nominated by the Canadian Medical Association, to act as Assessors to the Examiners at the Primary Examination for the Fellowship to be held at Toronto on August 6th, 7th, 9th, and 10th, for which there are 30 applications for admission, were appointed: *Anatomy*, J. P. McMurrich, M.A., Ph.D., LL.D., Professor of Anatomy, University of Toronto; *Physiology*, C. H. Best, M.A., M.B., D.Sc.Lond., Professor of Physiology, University of Toronto.

Sir Holburt J. Waring was appointed to go to Toronto as Visitor to the Primary Examination for the Fellowship to be held there in August.

The offer made by Mr. W. W. Ouless, R.A., to present to the College his portrait of Sir Arthur Keith was accepted with thanks.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on May 7th, when the President, Dr. Robert A. Fleming, was in the chair.

Dr. Ella Ferrier Pringle and Dr. John Miller Woodburn Morison took their seats as Fellows of the College. Dr. Frederick William Woolrabe (Rhodesia), Lieut.-Colonel John Philip Cameron, C.I.E., I.M.S., Dr. Helen May Russell (Edinburgh), Major Ambuj Nath Bose, I.M.S., Dr. Andrew Rae Gilchrist (Edinburgh), Dr. Matthew Burn (Birmingham), and Dr. David Rutherford Dow (Fife) were elected Fellows.

The Parkin Prize was awarded to Dr. Harold Whitridge Davies, and the Freeland Barbour Fellowship to Dr. John Smith Fraser.

Obituary.

THE death of Dr. HAROLD SAUNDERSON SUGARS, D.S.O., M.C., which occurred at his residence, Carrigrenaud, Killiney, co. Dublin, on March 4th, as the result of war disabilities, will be deeply regretted by his many personal friends. He received his medical education in Dublin, where he graduated M.B., B.Ch., B.A.O. in 1908. He then joined the Colonial Medical Service, and was stationed in the Malay Peninsula. In 1915 he was released to join the R.A.M.C., and was attached to a battalion of the Yorkshire Light Infantry. He was awarded the M.C. in June, 1917, and this was followed by the D.S.O. for conspicuous gallantry and devotion to duty. "He showed magnificent disregard to personal safety in attending to the wounded under heavy fire for five days. On the fifth day his leg was broken, but this did not prevent him going through heavy shell fire to save the life of a corporal, whose main artery had been cut and who required immediate attention." He had to crawl part of the way, dragging his shattered limb over the ground as best he could. He reached the wounded man, who was under fire, and stopped the bleeding; both were then helped back to safety. The Arnott Memorial medal for bravery was also gained by him. A colleague writes: Dr. Sugars, or "*Hal,*" *as he was known to his friends, also excelled in* sport. He gained his cap at Trinity College, Dublin, in 1906, and was picked to represent Ireland as a Rugby international on several occasions. He played against New Zealand in 1906 and against South Africa in 1907. In the latter match he scored two of the three Irish tries. After the armistice he was appointed to the British Ministry of Pensions in Ireland, and became in due course Principal Officer in Ireland. His work here was characterized by the same devotion and strength of purpose as he had always shown. He leaves behind him in the Ministry a record of work done, deeply appreciated by his colleagues and the ex-service men. His early death has been widely felt as a real loss, and the sympathies of all go out to his widow and four children.

DR. JOSEPH WILLIAM DAWES, who died on April 18th at the age of 65, was one of the outstanding practitioners in North Staffordshire. He received his medical education at Edinburgh, where he graduated M.B., C.M. in 1885. Soon after this he joined his father in the practice founded by his grandfather at Longton. He succeeded to full control of the practice in 1894 and built up a very large connexion. He was honorary surgeon on the staff of the Longton Cottage Hospital for forty-six years; on his recent retirement his colleagues presented him with a silver salver, and he was elected consulting physician and trustee. He had held most of the available local offices in the British Medical Association, having been chairman of the North Staffordshire Division and president of the Staffordshire Branch; for some years he represented the Division at the Annual Representative Meeting. He also held the office of president of the North Staffordshire Medical Society, of which he was one of the founders in 1915; he was always a regular attender and a vigorous supporter. In public life he took great interest, and had been a justice of the peace for fifteen years; he was president of the local branch of the British Red Cross Society, and was instrumental in raising £6,000 during the war. Of late years he had been an ardent worker in connexion with the local branch of the League of Nations Union. Dr. George H. Sowry, president of the Staffordshire Branch, writes: Dr. Dawes never held back when asked to help any good cause. He was a very loyal Roman Catholic, and he not only gave freely in work and kind to his church, but its tenets entered into and influenced every act and thought in his life. In appearance he was very dignified, in manner always extremely courteous, and in his work he was devoted heart and soul to the interests of all his patients, whether rich or poor. He never spared himself nor missed the chance of doing a kind act. He died quite suddenly in the bedroom of a poor patient, and it is a great consolation to his family and friends to know that he passed away without

any bodily or mental suffering straight from the work he loved. He has left a widow, three sons, and two daughters. He was a great and good man, loved by everybody who knew him; he will be sadly missed.

Dr. THOMAS KIRKWOOD, who died on April 13th, received his medical education at Glasgow, where he graduated M.B., C.M. in 1892. He obtained the diplomas D.T.M.Liverpool in 1911, and D.P.H. Dublin in 1917. He held house appointments in Glasgow at the Royal Infirmary, the Maternity Hospital, and the Ophthalmic Institution; he was also house-surgeon to the Greenock Fever Hospital and assistant medical officer to the Govan Parochial Hospital and Asylum. He was for some time assistant medical officer at the Hereford County Council and City Asylum. He subsequently spent ten years in China, where he was in charge of a mission hospital containing fifty beds. During the war he held a commission in the Royal Army Medical Corps, and after the armistice acted as chairman of medical boards under the Ministry of Pensions for one year; he was then appointed a regional assessor in the South of Ireland, and carried on this work for three years. From January, 1925, to the end of his life he was medical officer to Dr. Barnardo's Homes. Dr. Kirkwood was a member of the British Medical Association. A colleague writes: 'One could not speak too highly of Dr. Kirkwood as a man and as a doctor. He had the highest possible aims in the discharge of his duty in the most practical and religious sense. A man of exceptional character and of the highest probity, he has done all through his working life everlasting good.

Dr. GABRIEL WILLIAM STAHEL FARMER, who died in Queensland, at the beginning of February, at the age of 64, was a son of the well-known composer and organist, John Farmer. He received his school education at Harrow, whence he entered University College, London, subsequently proceeding to Oxford. After studying medicine at the London Hospital he graduated M.B.Lond. in 1885, and M.B. Oxon. in 1890. He obtained the diplomas M.R.C.S., L.R.C.P. in the latter year, and the F.R.C.S. in 1894, and proceeded M.Ch. in 1895. He held appointments as house-physician and house-surgeon to the London Hospital, and senior resident medical officer to the Royal Free Hospital; he was then appointed lecturer and demonstrator of anatomy in Oxford, and, later, examiner in anatomy. He was awarded the Radcliffe Travelling Fellowship. In 1896 he commenced private practice in Oxford, and in 1898 was appointed surgeon to the Radcliffe Infirmary. Ten years later he travelled twice round the world, and then decided to start practice at Texas, in Queensland. In 1916 he removed to Maryborough in Queensland, where he resided until his death. He held the appointments of surgeon to the Lady Musgrave Hospital and honorary surgeon to the Maryborough General Hospital. Dr. Farmer was a member of the British Medical Association. He leaves a widow, and one brother and two sisters in England.

Dr. PERCY ROBERTS WILDE, who died on April 23rd at Bath, in his seventy-second year, came of a medical family, his father being in practice at Twyford, Hants. He was educated at Edinburgh and Aberdeen, and graduated M.B., C.M.Aberd. in 1880, proceeding M.D. in 1884. After holding clinical and teaching appointments in the University of Aberdeen he commenced practice in Bath over forty years ago. A man of striking personality with an original and independent mind, he was largely responsible for the foundation and progress of the Lansdowne Hospital, and was thus a pioneer in the establishment of the self-supporting hospital that depends entirely on the fees paid by its patients. He was also the founder and for many years editor of Wright's *Medical Annual*, and in its earliest days helped to nurse the little book, as it was then, into the portly volume that has for so long been familiar to readers all over the world. It will be remembered that he wrote several books on rheumatic disorders, on the etiology and treatment of which he had his own views. He leaves a widow, and one son and one daughter by his first wife, who died some years ago. One son was killed in the South African war, another went down in the *Indefatigable* at Jutland, and a third died about a year ago.

Medico-Legal.

THE SOCIETY OF APOTHECARIES AND AN UNQUALIFIED PRACTITIONER.

WE have received from the Clerk to the Apothecaries' Society the following communication:

> The officers of the Society of Apothecaries of London, having had the opportunity of investigating the alleged matters of complaint against Mr. Raphael Roche, have satisfied themselves that he had not contravened the provisions of the Apothecaries Act, 1815; and, having obtained from him the subjoined undertaking, the Society are glad to be able to announce that there is now no reason for invoking the powers vested in them under the aforesaid Act.

The undertaking, signed by Mr. Roche is in the following terms:

> "Following the recent correspondence between the Society and myself, terminating with my interview with your Clerk last week, I hereby undertake that I will not in the course of my work act in such a manner as to contravene the provisions of the Apothecaries Act, 1815, relating to acting and practising as an apothecary."

The Services.

THE GILBERT BLANE MEDAL.

THE Gilbert Blane medal, founded in memory of the late Sir Gilbert Blane and presented annually to the medical officer obtaining the highest aggregate marks at the examination for promotion to the rank of surgeon lieutenant commander, has this year been granted to Surgeon Lieutenant Commander T. N. D'Arcy, R.N.

TERRITORIAL DECORATION.

THE King has conferred the Territorial Decoration upon the following officers of the R.A.M.C.(T.F.): Lieut.-Colonel (Brevet Colonel) F. A. E. Crew, Edinburgh University Contingent, Senior Division, O.T.C., and Major H. G. L. Haynes.

DEATHS IN THE SERVICES.

Major General George William Robinson, C.B., Army Medical Service (ret.), died on March 14th, aged 75. He was born at Exeter on March 22nd, 1854, the son of the late George Robinson, Esq., of Sydenham Hill, and was educated at St. Thomas's, and after taking the M.R.C.S., the L.R.C.P.Lond., and the L.S.A., in 1876, entered the R.A.M.C. as surgeon on March 6th, 1880. He attained the rank of surgeon general on March 15th, 1911, and retired on March 22nd, 1914. He served in the Burma campaigns, with the Momeik column, in 1891, receiving the Indian frontier medal with a clasp, and in the Nile campaign of 1898, when he was present at the battle of Khartum, was mentioned in dispatches in the *London Gazette* of September 30th, 1898, specially promoted to lieutenant-colonel, and received the medal with a clasp and the Khedive's medal. The C.B. was conferred on him in 1911. He was unmarried.

Brevet Colonel Herbert Edward Deane, R.A.M.C. (ret.), died in London after a long illness on April 7th, aged 68. He was born at Hintlesham, Suffolk, on July 16th, 1860, the younger son of the late Rev. Henry Deane, M.A., rector of that parish, was educated at Middlesex Hospital, and took the M.R.C.S. and L.S.A. in 1881, also subsequently the M.D. Durham in 1905. Entering the R.A.M.C. as surgeon on July 29th, 1882, he became lieutenant-colonel after twenty years' service, and retired on October 8th, 1904. He served in the Tirah campaign on the North-West Frontier of India in 1897–98, and received the medal with two clasps. In 1899-1900 he was in charge of plague operations in Calcutta, for which he received the Kaisar-i-Hind gold medal. He rejoined for service on August 5th, 1914, the first day of the war, and was promoted to brevet colonel on June 3rd, 1917.

Lieut.-Colonel James McGann, R.A.M.C. (ret.), died on February 20th, aged 77. He was born at Carron, co. Clare, on July 28th, 1851, was educated in Dublin, and took the L.R.C.S.I. in 1872, and the L.K.Q.C.P.I. in 1873. Entering the army as surgeon on September 30th, 1874, he became surgeon lieutenant-colonel after twenty years' service, and retired on September 25th, 1895. When on the retired list he was employed in Dublin in 1904–7. He served in the first Boer war in 1881, in the campaign in the Transvaal, was present in the actions at Laings Nek and the Ingogo River, and was mentioned in dispatches in the *London Gazette* of March 10th and 29th, 1881. No medal was given for this campaign.

Medical News.

THE Home Secretary has appointed Dr. Herbert Morley Fletcher, senior physician to St. Bartholomew's Hospital, to be a member of the advisory committee on the administration of the Cruelty to Animals Act, 1876.

THE Prime Minister of the Commonwealth of Australia has, through the Secretary of State for the Dominions, requested the Minister of Health to liberate Dame Janet Campbell, the senior medical officer for maternity and child welfare at the Ministry of Health, to proceed to Australia in order to advise the Government on the organization and development of maternity and child welfare services for the benefit of the several States of the Commonwealth. In view of the special importance of these services in the interests of the Empire as a whole, the Minister has acceded to the request and has agreed to set Dame Janet Campbell free from her official duties in this country for a limited time.

THE next quarterly meeting of the Royal Medico-Psychological Association will be held on Wednesday, May 22nd, at University College, Gower Street, W.C., under the Presidency of Professor J. Shaw Bolton. The Maudsley Lecture will be delivered at 3.30 p.m., in the Botanical Theatre, by Professor C. Spearman, on "The psychiatric use of the methods and results of experimental psychology."

THE annual general meeting of the Fever Hospital Medical Service Group of the Society of Medical Officers of Health will be held at the House of the society, 1, Upper Montague Street, W.C.1, on Friday, May 24th, at 3 p.m., when officers and members of council will be elected for the session 1929–30. Afterwards there will be a discussion on "The uses of scarlet fever antitoxin," to be opened by Dr. W. Mair MacFarlane.

AT the next meeting of the Chelsea Clinical Society on Friday, May 24th, there will be a demonstration by Messrs. Kodak Ltd. of films of medical interest. The council of the society invites the attendance on this occasion of male practitioners who are non-members. Before the demonstration members will dine at the Rembrandt Hotel at 7.30 p.m. Further details may be had on application to Mr. Rugg-Gunn, 49, Harley Street, or Mr. Harwood, 90, Sloane Street, S.W.1.

AT the meeting of the Medico-Legal Society to be held at 11, Chandos Street, W.1, on Thursday, May 23rd, at 8.30 p.m., a discussion on acute arsenical poisoning will be opened by the president, Sir William Willcox, who will be followed by Professor Walker Hall, Dr. Roche Lynch, Dr. J. H. Ryffel, and Mr. Edward Hinks.

THE house and library of the Royal Society of Medicine will be closed to-day (Saturday, May 18th) and on Monday, May 20th. The next evening reception of the Society will take place on Wednesday, May 22nd, at 8.15 p.m. The Scott antarctic film will be shown in the Barnes Hall at 9 p.m.

THE thirtieth annual meeting of the Lebanon Hospital for Mental Diseases at Beirut, Syria, will be held at Friends House, Euston Road, N.W.1, on Tuesday, May 21st. The chair will be taken by Dr. R. Fortescue Fox at 5 p.m.

THE Fellowship of Medicine announces that on Tuesday, May 21st, Dr. L. S. T. Burrell will give the fifth lecture arranged for the M.R.C.P. course at the Medical Society of London, 11, Chandos Street, Cavendish Square, at 8.30 p.m.; his subject will be modern methods of diagnosis and treatment in pulmonary tuberculosis. The sixth lecture in the same course will be delivered by Dr. H. E. Archer, on tests of hepatic and pancreatic functions, on Friday, May 24th, at the same place and time. On Tuesday, May 21st, at 3 p.m., Dr. Alice King will give a clinical demonstration on chronic lung cases at the Queen's Hospital for Children, Hackney Road. On Wednesday, May 22nd, at 2 p.m., Mr. Swift Joly will demonstrate by operation at the St. Peter's Hospital for Stone, Henrietta Street. The second of the lecture-demonstrations by Dame Louise McIlroy will be given on Friday, May 24th, at 5 p.m., at the Royal Free Hospital. From May 27th to June 9th a comprehensive afternoon course for medical officers of welfare centres and others will be held at the Infants Hospital; visits will be made to other centres during the course. From June 3rd to 22nd the Royal Westminster Ophthalmic Hospital will provide an afternoon course consisting of clinical instruction and operations every day, with special classes on Mondays, Thursdays, and Fridays. Other courses next month will deal with gynaecology, at the Chelsea Hospital for Women, June 10th to 22nd; diseases of the chest, at the Victoria Park Hospital for Diseases of the Heart and Lungs, Cambridge Heath; proctology, June 24th to 29th, at St. Mark's Hospital; diseases of children, June 24th to July 6th, at the Children's Clinic and other hospitals; and an intensive course in medicine, surgery, and the specialties, at the Prince of Wales's General Hospital, Tottenham. All information regarding courses can be obtained from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

THE committee of the British Red Cross Society's Clinic for the Treatment of Rheumatic Diseases, on the recommendation of the Medical Subcommittee, has made the following appointments to the honorary visiting medical staff of the clinic: Dr. M. B. Ray, Dr. F. D. Howitt, Dr. C. B. Heald, Dr. B. S. Nisse, and Dr. W. S. C. Copeman.

IN the list of medical candidates for the forthcoming General Election, printed in our issue of May 11th at page 876, the name of Dr. Betty Morgan was included in error. We understand that this candidate is not a member of the medical profession.

THE annual meeting and May dinner of the University of London Medical Graduates Society was held at the Langham Hotel on May 7th, with the president, Sir StClair Thomson, in the chair. Among those present were Sir J. Charlton Briscoe, Bt., Lady Barrett, C.H., Lady Briscoe, Mr. Herbert Tilley, Dr. Harry Campbell, Dr. Cole Marshall, Mr. W. McAdam Eccles (honorary treasurer), Miss Dorothy C. Hare, and Dr. C. A. H. Franklin (honorary secretaries). The president spoke of the growth of the society since it was formed last year, but pointed out, in view of the fact that the medical graduates of the University numbered over 4,000, that there was still plenty of scope for a very large increase in numbers, and he appealed to all members to bring in their friends and fellow graduates during the coming year. He remarked that the society had been formed at the right time, before the actual construction of the university centre in London, so that when that was established the society would already be in existence prepared to play its part in the development of the corporate spirit of the University. Sir StClair Thomson was re-elected president; Sir John Rose Bradford, P.R.C.P., Lord Moynihan, P.R.C.S., and Dame Mary Scharlieb were re-elected vice-presidents; and it was agreed to invite the following to serve as additional council: Dr. Rhoda Adamson, Mr. Victor Bonney, Dr. A. M. H. Gray, Dr. Louisa Hamilton, Sir Thomas Horder, Bt., and Mr. Harry Platt.

AT the recent annual meeting of the Society for Relief of Widows and Orphans of Medical Men Mr. V. Warren Low was elected president in succession to the late Dr. F. de Havilland Hall. The annual report of the society for 1928 showed that the invested funds amounted to £140,500, and the income therefrom £4,174 16s. In recording the deaths of two widows during the year attention is drawn to the fact that in the first case the husband had only paid £26 5s. in subscriptions and the widow had received from the society £2,040; in the second case £31 10s. had been paid in subscriptions and £990 had been received in grants by the widow. During the year £4,772 had been distributed in grants among fifty widows and seven orphans. The total membership of the society, which is both provident and benevolent, was 301 at the end of the year. Should a member die and leave his widow with an income not above £125 she would on the present scale receive a yearly grant of between £75 and £90, and any children under the age of 16 would receive a yearly grant of £60. Special grants may be made for orphans over the age of 16 to enable them to continue their education or start in some profession. The annual subscription for a member who at the time of his election is under 40 years of age is two guineas, if over 40 and under 50 three guineas, and over 50 four guineas. Membership is open to any registered medical practitioner who at the time of his election is resident within a twenty-mile radius of Charing Cross; he nevertheless remains a member should he move to outside the radius provided he conforms with the by-laws. The offices of the society are at 11, Chandos Street, W.1.

THE Minister of Health received a deputation, on May 8th, from the Women's Sanitary Inspectors and Health Visitors Association. The deputation was introduced by Dr. F. E. Fremantle, M.P., and included representatives of local [illegible] local government [illegible] ganizations. The [illegible] importance of the service rendered to the community by health visitors and other women public health officers. They urged that the time had arrived at which the salaries and conditions of service of these officers should be improved and standardized. The deputation was an outcome of a conference, held early in 1928, of representatives of local authorities and health visitors and other interested organizations, at which a resolution was passed calling for this reform. The Minister said, in reply, that the request made by the deputation had his entire sympathy, and he would give them all the help he could to persuade local authorities to offer such salaries and conditions as would attract the right type of woman to the service. The first step was to persuade local authorities and their representative associations of the need for improvement. He was, however, glad to know that conditions were

already to some extent becoming better, and he drew attention to the provisions of the Local Government Act, which require persons appointed as health visitors to be qualified in accordance with the Ministry's regulations. Finally, he suggested that it might be useful if a survey were made of the actual conditions of service in all parts of the country, and the deputation unanimously endorsed this proposal.

DR. D. E. FINDLAY of Gloucester has been made a justice of the peace for the city of Gloucester.

A REPORT on rural water supplies has been issued by the Ministry of Health; it urges the importance of devoting more attention to improving public wells, pumps, springs, and rain-water tanks in places where piped supplies cannot be installed. Recommendations are made with reference to the adequate storage of rain water, and it is added that local authorities require more powers than they at present possess, including the right to charge for water supplies provided by them. Although there has been substantial progress in recent years, there is still much to be done before conditions can be considered generally satisfactory.

THE April issue of the *Journal of the Association of American Medical Colleges* appears in two parts: the first includes a report on applications for matriculation in schools of medicine of the United States and the Dominion of Canada in 1928–29; notes on pre-medical education; on arts-medical courses; on four years' experience of the co-operative plan in medical education; on impressiveness in medical teaching; and on the status of functional pathology in the medical curriculum. The second part gives a list of fellowships and scholarships offered by the medical schools of the United States and Canada. This quarterly periodical is published at 25, East Washington Street, Chicago, at 2 dollars a year; single copies 75 cents.

THE fourth congress of French-speaking psychanalysts will be held in Paris under the presidency of Dr. A. Borel on June 3rd.

THE tenth annual international neurological congress will be held at La Salpêtrière, Paris, on June 4th and 5th, when the following subjects will be discussed: torsion spasms, introduced by Wimmer of Copenhagen; spasmodic torticollis, introduced by Barré of Strasbourg; and the surgery of the sympathetic, introduced by R. Leriche and R. Fontaine of Strasbourg. An address will also be delivered on malariotherapy by Professor Wagner-Jauregg of Vienna.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediocra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

SODIUM BARBITONE.

DR. F. P. STURM (Leigh, Lancs) writes: Can any reader tell me whether sodium barbitone remains stable in aqueous solution?

AFTER-EFFECTS OF "TWILIGHT SLEEP."

DR. FRANK E. KINGSTON (Leysin, Switzerland) writes: It would be interesting to know if the psychopathologists have anything to say on the subject of "twilight sleep." They assert, I believe, that some psychoneuroses may be traced to the deliberate forgetting of an unpleasant experience, which leads one to question whether the amnesia produced in a successful morphine-hyoscine narcosis is entirely free from undesirable after-effects.

AXILLARY HYPERIDROSIS.

DR. HESTER M. HENDERSON (Tunbridge Wells) writes: A severe case of axillary hyperidrosis was cleared up, after four or five doses, by a half-teaspoonful (ordinary breakfast spoon) of bicarbonate of soda in 2 oz. of water each night. When any slight return of the trouble comes (with extra exercise or hot weather), one dose keeps it down. A *cotton* vest with sleeves is worn next the skin, summer and winter; this can be boiled when washed. This very simple treatment has turned a miserable state into an easily controlled one. When the trouble is very severe a hot soda bath (handful of ordinary washing soda) distinctly helps.

INCOME TAX.

Appointment; Car Allowance.

"M. F. G. M." uses his own car for visiting various institutions under the control of the local authority for whom he acts. "The authority takes full responsibility for the maintenance of the car." In May, 1928, he sold his former car for £55 and bought his present car for £260. There is partial private use. Can he claim anything for depreciation?

*** If it is clear that the payments made by the authority do not include anything for the depreciation of the car there is no reason why a claim should not be made. We suggest that "M. F. G. M." should claim, for 1929–30, 20 per cent. of £260—that is, £52—as reduced by the proportion of private use. If he uses the car, as estimated on a mileage basis, three-quarters as to professional and one-quarter as to private purposes, his net allowance for 1929–30 would be £52−£13=£39.

LETTERS, NOTES, ETC.

PAROXYSMAL TACHYCARDIA.

DR. ROBERT A. WELSH (Felton, Northumberland) writes with reference to the note by Dr. W. F. Lloyd in the *Journal* of May 11th (p. 890): The term "paroxysmal tachycardia" was not used when I began medicine thirty years ago, but soon after commencing practice I had under my care a middle-aged man who suffered from such attacks; I did not know anything of its pathology, nor could I do anything for it, but he came in one day to tell me he had himself found a cure, which was exactly what Dr. Lloyd describes. This procedure always checked it, but he still got his attacks. I may say he had had acute rheumatism in early life, and died eventually of uraemia. I have only had one other case of this condition, and the patient, an elderly man, gets almost instant relief in the same way. "*Nullius-ed jam dictum, quid non dictum sit prius.*"

MATERNAL MORTALITY.

"Medical Investigator of Maternal Mortality and Medical Officer to Ante-natal Clinic" writes: I have read the paper of Sir Henry Simson on maternal mortality (May 11th, p. 879) with interest, and would draw attention to the details of the second case he cites. Would he support the compulsory internment in hospital of pregnant women found suffering from some abnormality? What means would he suggest for dealing with the mentality of the pregnant woman with regard to the medical advice she has received? Should the approved society refuse to pay maternity benefit in cases where this advice has been disregarded, thus rendering the woman poorer as well as sicker?

TITLES AND SUBJECTS.

SHORT headings are usually, but not always, best; now and then an author or an editor does well to ignore the adage about brevity and wit. A case in point is a note written by an operating room orderly, which appeared in the *Journal of the American Medical Association* for April 20th under the caption "Keeping the drawstrings on surgeons' operating trousers from sneaking back into the hem." This fulfils one of Samuel Butler's definitions: "A good title should aim at making what follows as far as possible superfluous to those who know anything of the subject."

MEDICAL GOLF.

THE Spring Knock-out Tournament of the Medical Golfing Society was won by Sir Kenneth Goadby, the runner-up being Mr. L. S. Plummer. The other semi-finalists were Dr. A. Hope Gosse and Dr. Ulysses Williams. The summer meeting of the society will be held on June 20th at Walton Heath, and the Canny Bowl Challenge Cup for mixed foursomes (with the Ladies' Medal) will be played for at Northwood on June 27th.

ASTHMA RESEARCH COUNCIL.

WE are informed by Surgeon Rear-Admiral T. T. Jeans, R.N. (ret.), that he has resigned his appointment with the Asthma Research Council.

IRON SUCCINATE.

WILL the contributor of a note on the use of iron succinate (mentioned on May 13th) be so good as to communicate his name and address?

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 44, 45, 46, 47, 50, 51, and 52 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 48 and 49.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 199.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

470. The Genesis of Heart Disease.

IN view of the existence of a family susceptibility to certain diseases such as tuberculosis, C. G. KERLEY (*Journ. Amer. Med. Assoc.*, February 16th, 1929, p. 517) suggests that there may be a type of child who is particularly susceptible to the infecting factors of morbus cordis. The patient with this inherently favourable soil for the development of infecting agencies is a child with potential heart disease. Such cases belong to one of three groups: those who have or have had rheumatic fever; or chorea; or those who complain repeatedly of pain in the extremities which cannot be accounted for by trauma or disease. Rheumatic endocarditis is responsible for more than 90 per cent. of the cases of juvenile heart disease, and months and perhaps years before morbus cordis develops children with potential heart disease show warning signals. Muscle pain and stiffness, sometimes joint pains, pain in the extremities by day and often by night, and restlessness during sleep, are ominous symptoms. The repeated complaint of tired legs is significant in a child who is apparently well; in such cases diseased foci should be eradicated, and Kerley asserts that the tonsils should immediately be removed whether they appear healthy or not. The teeth must be carefully examined and treated, and there should be competent inspection of the sinuses. In addition, predisposed patients should be given salicylic acid in some form, at first in sufficient amount to control the pain and discomfort, and later interruptedly for an indeterminate period; Kerley thinks it might be administered for five or ten days or more each month, and be continued for several months or even years. Its vigorous use should be resumed at the first indication of a return of the muscle pain or soreness. In the same way every patient with chorea should be regarded and treated as potentially having heart disease, being kept under medical supervision till the age of 12 or even later. Kerley considers that, when the dormant possibilities underlying "growing pains" are appreciated by physicians, the incidence of heart disease will be notably lessened.

471. Diagnosis of Mild Poliomyelitis.

E. FRIEDMAN (*New England Journ. of Med.*, February 21st, 1929, p. 384), who records two illustrative cases, maintains that every febrile disturbance in children, when accompanied by such symptoms as headache, stiff neck, spinal tenderness, and tenderness of the extremities, however mild these symptoms may be, should be looked upon with suspicion. Examination of the spinal fluid is of great help in doubtful cases, provided that the lumbar puncture is performed early and never later than the ninth day of disease, since the spinal fluid rapidly becomes normal again. The increased pressure returns to normal as soon as the febrile period ends. The globulin test is distinctly positive only in the first few weeks and then becomes doubtful. The sugar content of the spinal fluid varies but slightly on the different days of the disease. The average amount of sugar is 65 mg. per 100 c.cm., and is of importance in distinguishing poliomyelitis from tuberculous meningitis, which seldom has a sugar content of over 300 mg. per 100 c.cm. The cell count, which mainly consists of lymphocytes, is rather low in mild cases, averaging about 50 per c.mm., and rapidly returning to normal.

472. Chronic Pulmonary Infection.

L. H. COLLINS, jun., and K. KORNBLUM (*Arch. Int. Med.*, March, 1929, p. 351) record a clinical and radiological study of three cases of chronic pulmonary infection due to Friedländer's bacillus; they regard such a condition as a distinct entity which should be differentiated from other pulmonary infections. The onset in two of the cases was suggestive of broncho-pneumonia, and in the other of lobar pneumonia. The authors state that in some cases the condition can only be diagnosed from pulmonary tuberculosis by the results of bacteriological examination, the two conditions being in many respects so similar that the authors recommend that in cases of suspected tuberculosis in which tubercle bacilli cannot be discovered the sputum should be examined for Friedländer's bacillus. Extensive destruction in the involved areas of the lung leads to the formation of multiple abscesses and cavities, and causes a characteristic *x*-ray appearance only simulated occasionally by an influenzal pneumonia, in which the principal involvement is in the neighbourhood of the hilum. In the Friedländer type of pneumonia, however, the change is chiefly in the parenchyma of the lung. In the three cases reported the temperature fell by lysis, and the leucocyte count tended to be lower than that seen in an ordinary lobar pneumonia. An outstanding feature of this infection is the extreme indolence of the chest lesion, pathological changes being demonstrable by physical and *x*-ray examination several months after the acute infection has subsided.

473. Paraldehyde Poisoning.

P. SCHNEIDER (*Wien. klin. Woch.*, March 21st, 1929, p. 357) refers to the rarity, until recently, of cases of paraldehyde poisoning. The drug has, however, become popular owing to its rapid action and alleged harmlessness, and in spite of the inconvenience due to its fluidity, pungent odour, and peculiar burning taste. It has therefore been self-administered in numerous cases of suicide. According to the Austrian Pharmacopoeia the maximal single dose is 5 grams (80 minims), and the daily quantity administered should not exceed 10 grams. One author has reported a fatal dose of 15 to 20 grams (approximately 6 drachms); another has described the accidental poisoning of three female patients who were given in one dose 75 grams (approximately 2¾ ounces) of pure paraldehyde. They slept for from thirty to fifty hours, and on awakening appeared to be none the worse. In another case 30 grams (approximately one ounce) was administered without fatal result; on the other hand, a total quantity of 50 to 60 grams (2 ounces), taken during a period of thirty-six hours, has proved fatal. At the necropsy the gastric mucosa was found to be hardened, wrinkled, and greyish-white, resembling the condition found in phenol or mercuric chloride poisoning. Schneider records several cases of suicide by taking paraldehyde; in one case 4 grams (61¾ grains) of veronal and 50 c.cm. (nearly 2 ounces) of paraldehyde were taken. The post-mortem appearances were similar to those described above.

Surgery.

474. Gastric Ulcer and Tabes Dorsalis.

P. BONNET and P. DELORE (*Lyon Médical*, March 31st, 1929, p. 381) discuss the comparative frequency of gastric ulcer in cases of tabes dorsalis, and record the case of a man, aged 49, who had been admitted to hospital on several occasions in 1927 and 1928 for gastric crises. His sight had been failing since 1918, but the gastric crises did not begin until 1924. His pupils were unequal (the left being dilated), and optic atrophy was present. The Wassermann reaction was strongly positive in the blood and cerebro-spinal fluid, and he had all the symptoms of tabes dorsalis, except that the tendon reflexes were present and Romberg's sign was absent. The first attack lasted eight days, with vomiting, anorexia, and slight haematemesis; he received twelve injections of neosalvarsan. During the next three years he had only intermittent girdle pains and lightning pains in the lower limbs. In April, 1927, the second gastric crisis occurred, with agonizing pain, vomiting, and inability to retain fluid. This crisis subsided in five days under treatment. Vomiting, lasting three weeks, recurred a month later, and again after an interval of two months; this crisis lasted for seven days. In October, 1927, there was another crisis; the pain was so severe that it was relieved only by morphine, and vomiting was followed by slight haematemesis. A similar crisis, lasting six days, followed in February, 1928, and in August he returned with a still more severe attack, which lasted for three weeks, and was followed by two alarming haemorrhages. An exploratory operation disclosed an ulcer of the lesser curvature, in which a large eroded artery, occluded by endarteritis, was found. This was excised and gastro-mesocolostomy, by Murphy's button, was performed; there was no evidence of carcinoma. The attacks of vomiting became less frequent and the gastric crises ceased entirely; the patient's weight increased to 17 st., and he remains free from pain. Anti-syphilitic treatment has been given regularly. The authors have collected a number of similar records, occurring since two French authors described, in 1909, a fatal case of haematemesis due to a pyloric ulcer. Two German surgeons who performed vagus resection for relief of gastric crises found six cases of ulcer at ten operations. The present authors discuss the question of the connexion, if any, between gastric ulcer and tabes dorsalis; it has been suggested that these gastric ulcers are either syphilitic or trophic in

origin. They remark that the diagnosis is often difficult, and that the possibility of gastric ulcer must be considered in all tabetic patients who suffer from severe gastric crises, especially when haematemesis occurs.

475. Operative Treatment of Hepatogenous Jaundice.

P. FRANGENHEIM (*Zentralbl. f. Chir.*, April 6th, 1929, p. 854) states that 10 cases of icterus gravis with intact peripheral bile ducts on which he had operated within the last few years presented the following different histological appearances. There was central necrosis of the hepatic cells or subacute dystrophy of the liver in 6; intrahepatic cholangitis in 2; and in 2 cases intrahepatic peripheral infiltration was present without changes in the liver cells or bile ducts. The operative measures for hepatogenous jaundice are drainage of the hepatic duct, establishment of a biliary fistula, or the connexion of the gall-bladder or common bile duct with the stomach or intestine. Cholecystectomy or splenectomy is not required. The recovery rate of 41 cases collected by Schlegel on which operation was performed was 24 (58 per cent.). In 17 cases choledochostomy was employed. Frangenheim's statistics are better still, since 10 of his 11 patients recovered. As regards indications for operation, the author maintains that all cases of intrahepatic or hepatogenous jaundice which show a progressively unfavourable character should undergo operation. The earlier it is performed the more favourable the prospects of a disappearance of the hepatic changes and an escape of the flow of bile.

476. Contractures due to Burns.

S. L. KOCH and A. B. KANAVEL (*Journ. Amer. Med. Assoc.*, January 26th, 1929, p. 277), from an experience of seventy-seven patients with contractures following burns, advocate treatment with free full thickness grafts and pedunculated flaps; the grafts are employed when the essential loss involves the superficial tissues, and the flaps when it is necessary to cover important structures or to restore the normal contour. The free full thickness graft operation is completed in one stage, thus affording a minimum risk of infection and avoiding prolonged immobilization of the part. It is said to be of the greatest value in covering fresh raw surfaces over which firm pressure can be maintained—as, for example, on the hand, and the flexor surfaces of the wrist, elbow, and knee. After complete removal of the scar tissue, undermining the surrounding skin edges, and arresting the haemorrhage, a graft of the exact size and shape of the defect is separated (while tension is maintained upon it) from the underlying subcutaneous tissue of the abdomen or inner aspect of the thigh, and accurately attached over the raw surface with fine horsehair sutures. This is perforated in several places with a sharp-pointed scalpel in order to allow the escape of any serum, and the part is fixed in a position of complete extension, moderate pressure being maintained over the graft with clean moist sea sponges. The authors hold that the pedunculated flap should be used when important structures, such as tendons, nerves, vessels, or bones, are exposed in the floor of the wound, or in cases where subcutaneous tissue is needed to restore contour, as in burns of the face, and in which it is difficult to maintain prolonged pressure. As in the case of the full thickness graft, complete excision of the scar tissue and undermining of the edges of the defect are important; the flap is cut to the shape of the defect, but is one-third larger to allow for contractions. Only a thin layer of subcutaneous tissue is left attached to that portion of the flap which is to cover the raw surface, but sufficient subcutaneous tissue should be left attached to the pedicles to safeguard its blood supply. The authors found that both grafts and flaps tended to keep pace with the growth of the affected part, and that function and range of movement constantly increased, since the removal of the superficial restricting scars rendered progressive relaxation of the deep structures possible.

477. Dislocation of the Outer End of the Clavicle.

F. B. VALENTINI (*Il Policlinico*, Sez. Chir., March 15th, 1929, p. 117) remarks that the degree of dysfunction caused by dislocation of the outer end of the clavicle depends very much on whether the dislocation is complete or incomplete. He discusses the complete dislocations, and, after describing some of the more recent suggestions as regards their treatment, he reports a method which he tried with complete success in a recent case. The essential detail is the use of a thread of elastic to fix the parts and replace the broken ligaments; the elastic is boiled for fifteen minutes in a 2 per cent. carbolic solution. He illustrates the steps of the operation. The patient recovered complete functional use of the arm, and when seen more than a year later could move the limb freely in all directions.

Therapeutics.

478. Thallium Treatment of Ringworm.

V. PARDO-CASTELLO, J. J. MESTRE, and E. RIO (*Arch. Derm. and Syph.*, March, 1929, p. 409) record their experience in the treatment of tinea of the scalp in 32 children by the administration of the protoxide of thallium acetate given orally in one dose of from 7 to 8 mg. for each kilogram of body weight. All were cured except one in whom the disease recurred because of the early restoration of the hair before the infected hair had been completely eliminated. The authors conclude from experiments on animals that this drug acts through the endocrine system, as shown by the atrophy of the thyroid and suprarenals and by arrested growth; they add that it cannot be administered with safety to patients over the age of 14, since in adults it causes intense symptoms of endocrine dysfunction. No severe reaction occurred, though a few of the children showed slight symptoms of intolerance, such as diarrhoea, sialorrhoea, and leg pains. The authors believe that the drug produces a temporary arrest of the trophic action of the endocrine glands upon the growth of hair, and, while regarding it as comparing favourably with the use of x rays in epilation, they point out that, owing to its dangerous action upon the glands of internal secretion, its use in treatment should not be undertaken without full recognition of its limitations, possibilities, and contraindications. In their opinion x-ray depilation is the method of choice, in spite of the simplicity of thallium treatment, since it has yet to be determined whether the apparently temporary effects of the latter are followed by any permanent injury to the endocrine sympathetic system.

479. Potassium Sulphocyanate in Essential Hypertension.

R. C. LOGEFEIL (*Minnesota Med.*, March, 1929, p. 151), impressed by the results obtained at clinics in Germany in 1925 by the use of potassium or sodium sulphocyanate in the treatment of essential hypertension, or hyperpiesia, records his own experience in twenty-four cases treated with potassium sulphocyanate. The cases were mostly ambulatory, the blood pressure readings being taken with the patient in a sitting position, the first after resting for from five to ten minutes and a second from five to ten minutes later, the average from the two being regarded as the blood pressure for that day. All patients were placed on a moderately low protein and salt diet. One drachm of an 8 per cent. solution of potassium sulphocyanate in distilled water was given in a whole glass of water three times a day after meals; it was continued for a fortnight if no unfavourable symptoms, such as weakness, nervousness, or dermatitis, developed. At the end of a fortnight the drug was discontinued for two days and then started again, omitting two days in each week. After four weeks, or sooner according to the drop in pressure and general symptoms, the dose was reduced to twice a day, and on this basis was continued indefinitely, being omitted on two or three days each week as the case demanded. By this means accumulation was avoided, and in most cases the blood pressure was kept at a much lower level than it would have been without the drug. Renal and myocardial degeneration are said to be contraindications for its use. Logefeil regards potassium sulphocyanate as the most valuable drug known for reducing blood pressure, and claims that under proper precautions no unfavourable symptoms should result.

480. Plasmoquine in Malaria.

C. U. LEE (*National Med. Journ. of China*, February, 1929, p. 38) gives a report of the treatment of eight cases of malaria with plasmoquine, the synthetic product which is said to possess an antiparasitic action considerably greater than that of quinine. Its chief use is in its destructive action on the crescents in subtertian infections. Since quinine has little or no effect in removing the gametocytes of *Plasmodium falciparum* from the blood, and since the spread of the malignant form of malaria is due to the presence in the community of crescent carriers, it appears to Lee that plasmoquine might have a definite prophylactic value. The dosage advised for tertian and quartan malaria is 0·02 gram three to four times a day; administration is continued for four or five days after the temperature has become normal, and then for three days weekly for the subsequent four to six weeks. The disadvantage of its use has been the appearance of cyanosis, which is said to be due to the formation of methaemoglobin. Spleen puncture as a means of diagnosis is advocated in certain cases of malaria in which a prompt decision is desirable, and where repeated blood examinations fail to reveal the parasites. In certain cases this procedure was followed by febrile reactions and the appearance of parasites in the peripheral blood.

Radiology.

481. X-Ray Treatment of Prostatic Hypertrophy.

E. WOENCKHAUS (*Roentgen-Praxis*, March 15th, 1929, p. 89) reviews the literature, and records the results of *x*-ray treatment of fourteen cases of enlarged prostate at the Roentgen department of the Giessen Medical Clinic in the last two years. The ages of the patients ranged from 55 to 81, and the majority also suffered from other morbid processes, such as arterio-sclerosis, emphysema, spondylitis, obesity, and cardiac insufficiency. Although a diminution in size of the prostate could not be detected in any case, seven showed distinct improvement, but whether this was due to cure of a spasmodic condition or to a diminution of the hyperplasia which could not be detected clinically, or to a favourable effect on the chronic inflammatory process, could not be determined. The improvement was shown by a marked diminution of the amount of residual urine and complete disappearance of difficulty in micturition. In all the cases which were refractory to treatment the prostates were large and hard, and there was a considerable quantity of residual urine in the bladder; in two of the patients the condition was aggravated by *x*-ray treatment. Woenckhaus could only partially confirm the view expressed by several writers that it is chiefly the soft enlargements which are benefited by *x*-ray treatment. He found it impossible to say in advance whether it would be beneficial or not in a grave case of prostatic hypertrophy. Early cases, which offer the best chances of success, are likely to improve under other methods of treatment. Woenckhaus's conclusion, however, is that in early cases and in soft enlargements of the prostate without serious bladder complications *x*-ray treatment is a valuable, harmless, and conservative method which is often highly successful.

482. Lipiodol in Chest Diagnosis.

B. H. NICHOLS (*Radiology*, January, 1929, p. 1) considers that lipiodol introduced into the lungs is chiefly useful in the diagnosis of bronchiectasis and lung abscess; it is also of great value in the differentiation of lesions in the pleural cavity from lesions of the lung tissue. The outline of the trachea after the injection of iodized oil may aid in the definition of a mediastinal tumour or aneurysm. In pulmonary fistula the injection should be made under fluoroscopic control. The most important contraindications are: (1) hyperthyroidism or an idiosyncrasy to iodine; (2) advanced cardiac lesions; (3) pulmonary tuberculosis; except where considerable fibrosis has taken place; and (4) a marked elevation of temperature. The author favours the catheter method of injection under fluoroscopic observation for a large percentage of cases. He recommends the bronchoscopic method for haemorrhage without tuberculosis, the insufflation method for lesions at the hilus, and the transglottic route when dealing with cardiac cases. Injection through the cricothyroid membrane is stated to be the most desirable method in children. Whatever procedure is used care should be taken to avoid the entrance of much lipiodol into the gastro-intestinal tract, as dangerous absorption of the iodized oil may result.

483. Treatment of Rheumatic Carditis by X Rays.

R. L. LEVY and R. GOLDEN (*Amer. Heart Journ.*, December, 1928, p. 127) have treated 30 patients suffering from varying grades of rheumatic carditis with *x*-ray irradiations to the heart. Usually four applications, each representing 10 per cent. of an erythema dose, were given at fortnightly intervals; some patients received two or more such courses, a month's interval elapsing between each. The following alterations in the electro-cardiogram were observed: inversion or deepening of the T-waves in 18 cases; inversion or flattening of the P-wave in 9 cases; change in the electrical axis in 7 cases; occasionally alterations in the QRS complex; and extrasystoles and changes in the PR and RT intervals. Of the 30 patients, 21 showed clinical improvement at the end of the follow-up period. In some patients the improvement appeared to be definitely related to *x*-ray therapy, and it was found that early cases in the first attack of rheumatic fever were most likely to derive benefit. The five cases terminating fatally were all instances of progressive active rheumatism with severe lesions and consequent failure. It was observed also that 5 out of 7 patients complaining of severe chest pain were relieved by *x*-ray treatment. Orthodiagraphy showed no changes in the size or shape of the heart after irradiation, nor were there any evidences of unfavourable effects upon the course of the disease, although such symptoms as nausea, headache, and chest pain arose in several instances. Four patients suffering from subacute bacterial endocarditis were treated by this method, but in no case was there any improvement. The authors suggest that *x* rays act by desensitizing the tissues of the heart which have become allergic to certain toxins produced by the rheumatic virus. They also suggest that in a first attack of rheumatism *x*-ray therapy may minimize the danger of cardiac involvement.

484. Radio-diagnosis of Cerebral Tumours.

A. BÉCLÈRE (*Journ. de Radiol. et d'Électrol.*, December, 1928, p. 570) advocates simple radiography as the method of choice for diagnosing obscure cerebral conditions. Applied to the cranium, it differentiates such bony lesions as syphilitic osteitis of the inner table, acromegaly, changes due to marked intracranial hypertension, localized lesions caused by tumours adjacent to the meninges, enlargement of the internal auditory meatus or of the optic foramen in tumours of those nerves, and alterations in the sella turcica. Applied to the brain, evidence of displacement of the pineal gland, so frequently calcareous, would afford indirect proof of the presence, and perhaps the site, of a tumour. Meningiomas, gliomas, and suprasellar tumours of the pouch of Rathke, when sufficiently calcified, may be directly revealed. Other methods are the insufflation of the cerebral ventricles with air after withdrawal of all or part of their liquid contents (Dandy), and the introduction of lipiodol into the cerebral ventricles (Sicard), of sodium iodide into the cerebral arteries (Moniz), and of lipiodol into the cranial venous sinuses (Sicard). The last two methods are too recent for their value to be judged, but the former two have been well tried, and the air method is much to be preferred. In the brain the lipiodol method is not nearly so satisfactory as it is in the cord. Its introduction into the ventricles is painful, dangerous, and often uncertain. The insufflation method is not without danger and may terminate fatally. By it are revealed the form, position, and dimensions of the ventricles as altered by an adjoining tumour mass. The picture presented may be far from clear and its interpretation very difficult.

Obstetrics and Gynaecology.

485. Treatment of Vaginal Prolapse.

D. BISSELL (*Surg., Gynecol. and Obstet.*, April, 1929, p. 549) remarks that the term "fascia lapping," as applied to the tissues of the vaginal wall, is a misnomer. He shows, from a series of studies of the tissues removed at operations for all forms of vaginal prolapse, that the so-called fascia is not of that nature, or that, if it was originally a fascia, it has undergone some pathological change rendering it incapable of giving serviceable support in any reconstruction for such prolapse. It is pointed out that it is the vaginal musculature which constitutes the chief resisting tissue of the vagina, and that the normal vesico-vaginal septum derives its strength from the intimate union of the muscle tissues of the walls of the vagina and bladder. When it is necessary to correct a cystocele the anterior vaginal wall must be completely separated from the bladder, so that a fresh union can be established between the musculatures of their walls, and in order that the vaginal wall may be doubly strengthened by the lapping of its musculature. Bissell regards the etiology of cystocele as the loss of such complete and intimate muscle union of the walls of the bladder and vagina that each structure has to resist separately, and thus fails to maintain its normal position.

486. Parathyroid Treatment of Menorrhagia.

E. ALLEN and H. C. GOLDTHORPE (*Amer. Journ. Obstet. and Gynecol.*, March, 1929, p. 344) have been investigating the employment of parathyroid extract in excessive menstrual bleeding, with a view to making use of the increased coagulability of the blood which is encountered in hypercalcaemia. A series of fourteen young women were so treated; all had been subjected previously to the usual haemostatic remedies, such as oxytocics, injections of foreign proteins, and operations, but without benefit. Good results were obtained from parathyroid treatment in five patients, fair results in six, and poor results in three cases. The optimum daily dose seemed to be about 40 units, which was injected intramuscularly over a period of five days. A combination of this medication with the daily administration of 120 to 180 grains of calcium carbonate or calcium lactate by the mouth proved to be most effective; calcium levels bordering on the hypercalcaemic state were obtained only five times, and only by this combination. Patients in whom there was such a high blood calcium content usually complained of headache, nausea, and a rapid pulse, but the bleeding ceased. The authors believe that intravenous injections of the parathyroid extract are inadvisable; they remark that the same condition which causes the menorrhagia seems to predispose towards sterility. They add that a direct effect can be produced on

the endometrium by radium in patients where this medication fails, the ovaries being protected by the insertion of a lead screen.

487. Foetal Post-maturity.

C. HOLTERMANN (*Zentralbl. f. Gynäk.*, March 23rd, 1929, p. 711) defines protraction of pregnancy beyond term (foetal post-maturity) as the carrying on of gestation, in a person with a regular twenty-eight days' menstrual cycle, five or more days beyond the normal 280 days' period; further, he regards it as proved that death of the post-mature foetus frequently occurs before or during labour, and is almost inevitable when protraction of pregnancy is accompanied by abnormally large weight of the foetus. As a result of a series of six cases, seen within three months, of death of the post-mature child before or during labour (the weights ranged from 2,200 to 4,000 grams and term had been passed by from fourteen to sixty-two days), the attention of the Cologne Universitäts-Frauenklinik was directed to preventive measures in these cases, and the present article embodies the conclusions reached with regard to prophylaxis and treatment. Both are said to be dependent on regularly and frequently repeated auscultation of the foetal heart; death of the post-mature foetus is preceded by repeated attacks of arrhythmia, which may or may not be accompanied by bradycardia. Such attacks point to the necessity of accelerating delivery in the quickest and safest manner, but in protracted gestation prophylactic induction of labour by medical means will both obviate possible foetal danger and diminish the likelihood of operative intervention being required. Since the mortality of foetuses which have passed not more than ten days beyond normal term is little greater than that of normal vertex presentations (3.85 per cent., compared with 3.3 per cent. according to Frigyesi), induction of labour by medical means (hydrotherapy, administration of castor oil, and pituitary extracts) should be tried after five days' post-maturity. If this treatment, repeated, fails, recourse should be had to the rectal balloon, or even to vaginal intervention—by uterine bougie, for example. When cases of protracted gestation first come under observation after the tenth day or during labour, careful and frequent examination of the foetal heart should be made. Two attacks of arrhythmia, in cases in which previous pregnancies have resulted in death of the post-mature foetus, are said to justify immediate termination of pregnancy (preferably by abdominal Caesarean section), but in a primipara, aged 34, five arrhythmic phases were noted before hysterotomy was successfully performed. After ten days' gestation beyond term Caesarean section is advised if the presence of an abnormally large foetus is certain. Holtermann records three cases in which the life of the post-mature child appears to have been saved by Caesarean section, indicated by auscultation of the foetal heart, and one case of habitual protraction of gestation in which unavoidable postponement, for forty-five minutes, of Caesarean section (decided on by reason of foetal arrhythmia) led to loss of the child. With regard to the etiology of post-maturity in the foetus, it is noted that this is a condition which often recurs in successive pregnancies, and that characteristic alterations have been described in the placenta; these may be etiologically connected also with the attacks of foetal arrhythmia.

Pathology.

488. Significance of the Negative Phase during Vaccine Treatment.

G. RAMON (*C. R. Soc. de Biologie*, April 8th, 1929, p. 783) calls attention to the fact that if an animal which is being actively immunized with toxin is given a fresh injection of antigen a fall occurs in the antitoxin content of the serum. This phenomenon appears to be analogous to the so-called negative phase which is supposed to occur during vaccine treatment. The fall in the antitoxin content of the serum does not appear to be due to a simple combination of the antitoxin with the injected antigen, because there is no quantitative relationship between the two bodies. Working with horses undergoing immunization against diphtheria, the author found that the extent of the fall in antitoxin varied in different animals; that it was greater after the injection of toxin than of anatoxin; that it was appreciable only after large doses of antigen; and that even with large doses it did not exceed one-eighth of the previous titre. Seeking for the explanation of this phenomenon, the author noticed that horses injected with large amounts of antigen, particularly toxin, developed a local oedema, which contained about 4 or 5 litres of fluid. The oedema fluid had approximately the same antitoxin content as the serum. Since this fluid was pent up in the connective tissue, it is reasonable to argue that the blood volume must be brought back to its previous level by the absorption of water from the intestine; the dilution of the serum with this amount of fluid would cause a fall in the antitoxin titre. The author states that there was a correspondence between the fall in the titre of the serum and the extent of the oedema; as the oedema fluid was absorbed, the antitoxin titre of the serum gradually rose. He points out that after the intravenous injection of antigen there is a great congestion of certain organs, especially the liver, which may be doubled in volume. He considers, therefore, that the oedema after subcutaneous injection, or the intense congestion after intravenous inoculation, results in a local accumulation of fluid rich in antitoxin, and that the fall in the antitoxin titre of the serum is due to dilution with absorbed water. In favour of this explanation it was found that non-specific substances capable of causing oedema resulted in a similar fall in antitoxin. The author concludes that during the so-called negative phase there is no increase in the subject's susceptibility; his immunity is neither less nor more than immediately previous to the injection of the antigen.

489. Etiology of Infantile Choleraic Diarrhoea.

A. DUFOURT (*Journ. de Méd. de Lyon*," February 20th, 1929, p. 137) suggests that the most probable origin of summer diarrhoea is a thermostabile toxin contained in cows' milk. When diarrhoeic stools were filtered through paper and then through a Chamberland L 3 filter a dose of 2 to 5 c.cm. of the filtrate, injected into rabbits on alternate days, caused the death of the animals in from six to twelve days. The same result followed injections of the filtrate after it had been heated to 60° C. for two to twelve hours. When the filtrate was boiled for one minute the injections were better tolerated, but the animals still suffered from profuse diarrhoea. When, however, the filtrate was sterilized in an incubator at 120° C. for ten minutes the injections were much less noxious still. These experiments were repeated in goats with precisely similar results. Dufourt endeavoured to immunize the animals by injecting at first boiled filtrates, followed by filtrates heated to gradually diminishing temperatures. When the animals appeared to be doing well, sudden violent diarrhoea occurred occasionally. During the summer of 1927 Dufourt treated some children with immunized rabbit serum, but in 1928 he used goat serum. In fourteen cases recovery followed serum treatment. Five children died and two others were removed by their parents in a moribund state. Dufourt believes that these experiments prove that there are toxic products in the intestines of children suffering from choleraic diarrhoea which is not due to increased virulence or multiplication of intestinal saprophytic flora, except that in a few cases the virulence of *B. coli* appeared to be increased.

490. Cellular Division in Relation to Cancer.

E. MCDONALD (*Science*, February 15th, 1929, p. 175) remarks that, when unrestrained, the tendency of cells is to grow and multiply, and that the resting condition of adult tissue depends on the composition of the fluids surrounding it—that is, on its environment. Cancer is a disease characterized by division and multiplication of cells, and by more or less suppression of normal balanced cell activities with accentuation of cellular multiplication. Inhibition gives place to the embryonic characteristic of multiplication. In a normal cell four parts may be recognized: the alkaline nucleus (about *p*H 7.5); the acid protoplasm (about *p*H 6.6-6.8); the semi-permeable cell membrane; and the environmental liquid, which in the human body is the blood plasma and tissue juices with a normal *p*H of 7.36-7.38. Carrel and others have shown that cell division is dependent on environmental influences, and, because cancer is a disease of cell division, the study of the cancer-cell environment—that is, of the plasma—is of considerable importance. Since this cell differs so little from the normal cell, it is hopeless to expect to destroy it alone and not the surrounding normal cells also. Reding discovered that there was a low hydrogen-ion concentration of the serum in cancerous patients, together with a diminution in the ionized calcium and the total calcium content of the plasma. It has also been found that, after effective *x*-ray or radium treatment, the *p*H shifts to the alkaline side of the normal, and the ionized calcium is increased in amount; this treatment thus produces conditions in which cell division is hindered. McDonald suggests that by altering the environment of the cell (the blood plasma) such effects may be obtained as an aid to or a substitute for radiation in preventing cell division. Substances that may benefit in this disease will be those which restrain cell division without complete destruction of cell function, and those which will permit the cell to mature from its embryonic condition to that state where the inhibitions or restraint of the gradients are once more effective. H. O. NOLAN (*ibid.*, March 22nd, 1929, p. 330), commenting on McDonald's paper, attributes to Dr. Maude Menken the first discovery of the low hydrogen-ion concentration in the serum of cancerous patients.

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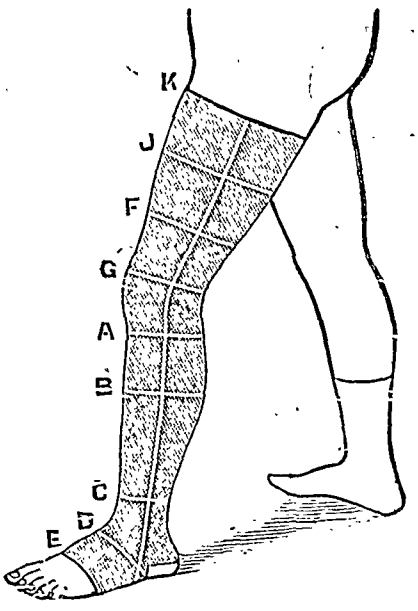

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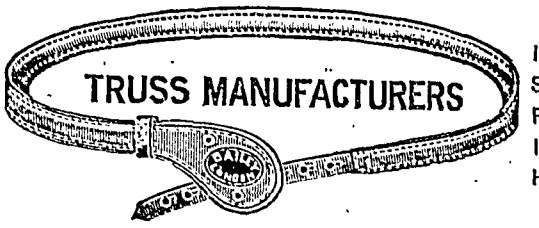

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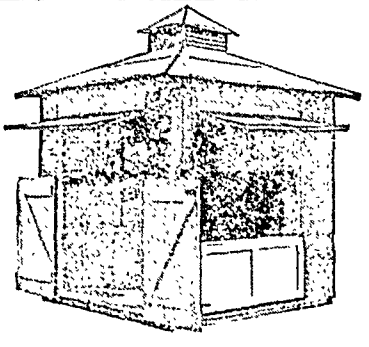

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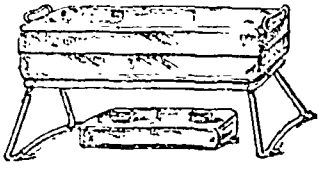

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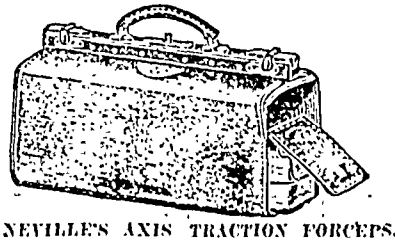

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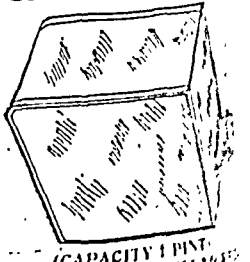

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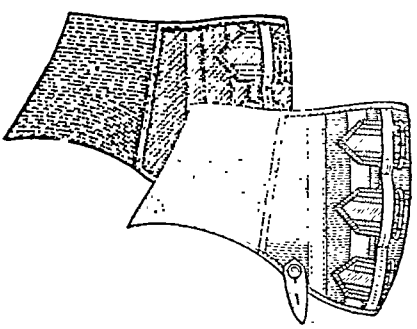

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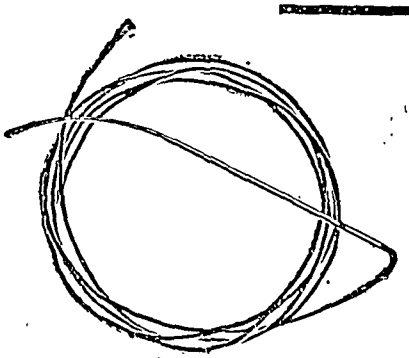

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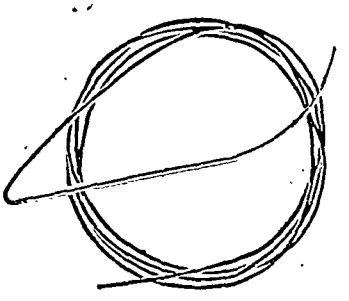

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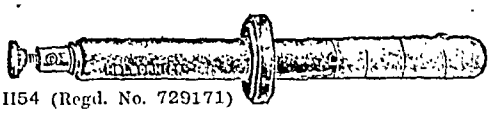

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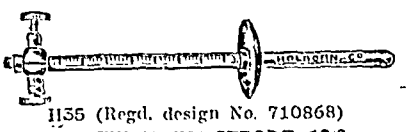

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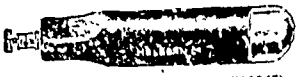

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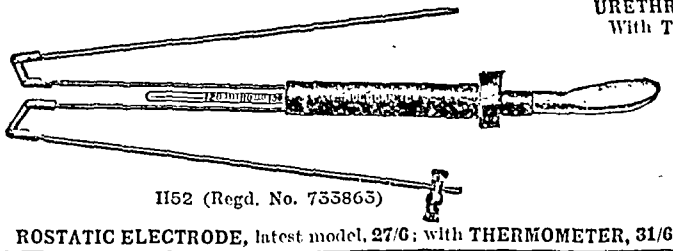

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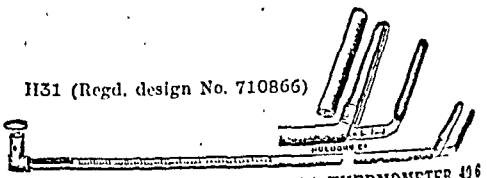

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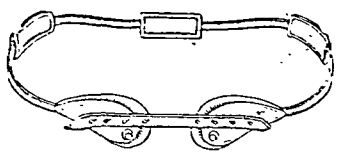

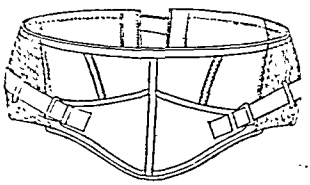

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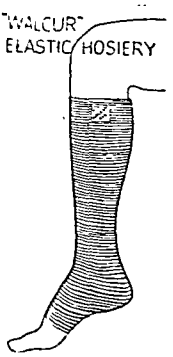

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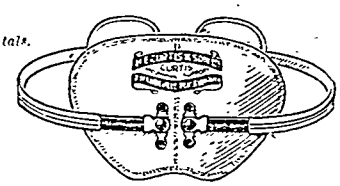

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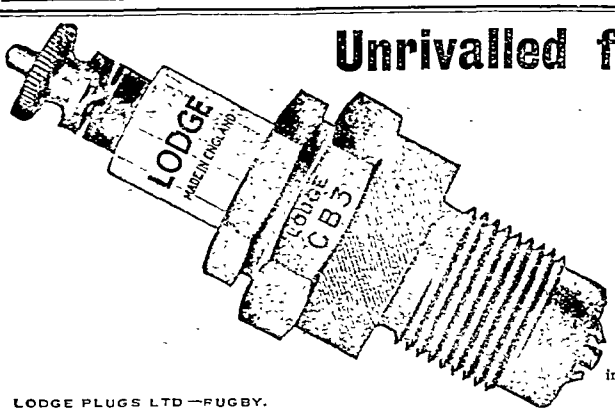

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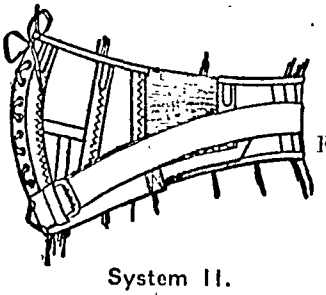

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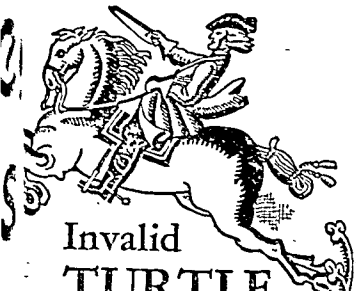

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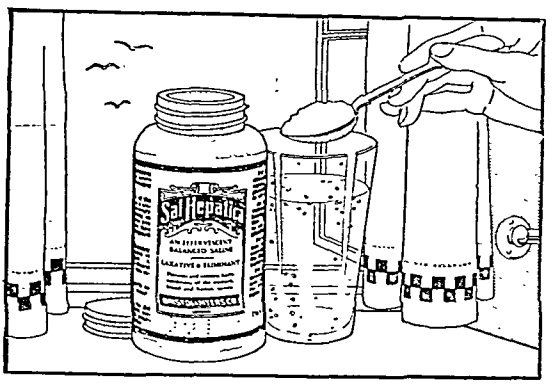

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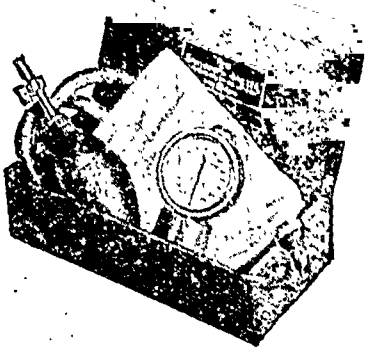

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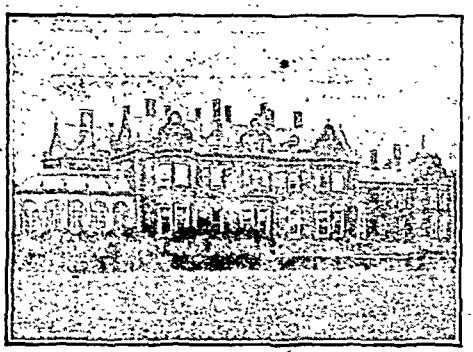

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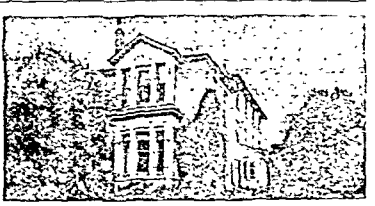

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Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0888.

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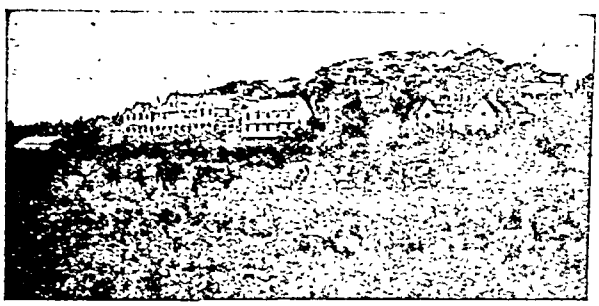

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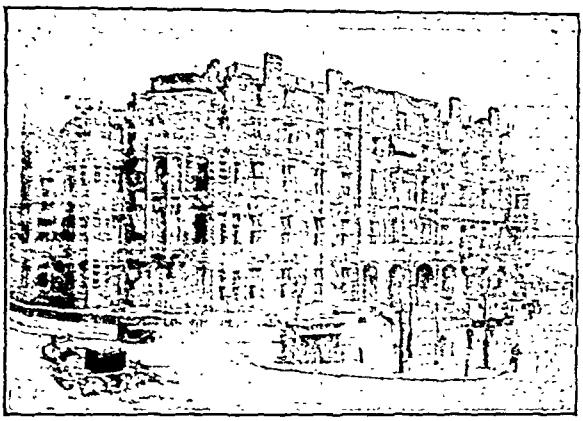

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A TUTORIAL CLASS, with Museum Demonstrations, for the next Examination will commence shortly. Correspondence tuition if desired.—FRED GRAHAM, M.D., F.R.C.S.(Edin.), Surgeons' Hall, Edinburgh.

Wanted. — Expert Radiologist to give PRACTICAL LESSONS in RADIOLOGY and MEDICAL ELECTRICITY to a private Practitioner.—Address, stating essential particulars, No 2916, B.M.A. House, Tavistock Square, W.C.1.

LONDON SCHOOL OF DERMATOLOGY,

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN,
LEICESTER SQUARE, W.C.2.

Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals. Lectures and Demonstrations every Tuesday and Thursday, at 5 p.m., from October to March, and four times weekly during May. Clinics daily at 2 p.m. and 6 p.m., Saturdays, 2 p.m. only. Pathological Laboratory for Instruction or Research Work.
For further particulars, fees, etc., apply to A. C. ROXBURGH, M.D., Dean.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.
MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications.
PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.
PRIVATE WARDS for paying patients.

TAUNTON SCHOOL,

TAUNTON.
A PUBLIC SCHOOL FOR BOYS.

Boys are regularly prepared for the First M.B. Examination, University Scholarships in Chemistry, Biology, etc.
Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology.
New Science Buildings, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1925. Prospectus from Head Master.

SCHOOLS for BOYS and GIRLS.

TUTORS FOR ALL EXAMS.

Messrs. J. & J. PATON, having an up-to-date knowledge of the BEST SCHOOLS and TUTORS in this Country and on the Continent, will be pleased to AID PARENTS in their choice by sending (free of charge) prospectuses and TRUSTWORTHY INFORMATION and ADVICE.
The age of the pupil, district preferred, and rough idea of fees should be given.
J. & J. PATON, Educational Agents, 143, Cannon St., London, E.C.4. Tel.: Mansion House 5053.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 7th, and for the Diploma in Tropical Hygiene on January 12th and April 26th. (Candidates for the D.T.H. must possess the D.T.M. of this University.)
For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to **The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5,** for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics. For further particulars, fees, etc., apply to the Secretary.

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam. will commence shortly. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

Will Edmonds Clinical Research FUND.

Applications are invited for a FELLOWSHIP under the above Fund. The Fellow elected will receive a salary of £500 per annum, and must devote his whole time to clinical research in a Metropolitan Hospital. He will be eligible for re-election annually up to 5 years. Formal applications must be received on or before June 1st.
Further particulars may be obtained from the Hon. Sec., 68, Great Cumberland Place, W.1.

Lady wishes to be Coached for ANATOMY and PHYSIOLOGY.—Write "E.D.," c/o CHARLES BARKER & SONS, LTD., 31, Budge Row, E.C.4.

Workmen's Compensation Act, 1925.

MEDICAL BOARD FOR SILICOSIS.

It has been arranged between the Home Office and the industries concerned that the periodic and other medical examinations required under the Refractories Industries (Silicosis) Scheme, 1925, and the Sandstone Industry (Silicosis) Scheme, 1929, shall be carried out by a joint Medical Board, the members of which will be allotted to certain centres, and which will have its central office at Sheffield. The Home Secretary proposes to nominate at once, in addition to the two whole-time Medical Officers already working under the Refractories Scheme, TWO MEDICAL PRACTITIONERS as Members of the Board.
The duties of the Medical Board, which are fully explained in the First Report of the Departmental Committee on Compensation for Silicosis, are to visit the different areas in which the Refractories and Sandstone Industries are carried on and to carry out jointly the periodic and other examinations and grant the necessary certificates under the two Schemes.
The scale of salary of the additional officers will be £750, rising by £25 a year to £900. The appointments will be for a definite term—not less than three years—and will be capable of renewal, but will be subject to termination at the discretion of the Secretary of State. Travelling expenses and subsistence allowances will be paid.
The salaries and expenses of the Medical Board are payable by the Refractories and Sandstone Industries Compensation Funds, but the Board work under Instructions issued by the Secretary of State and are directly responsible to him.
Further particulars and forms of application may be obtained from the Industrial Division, Home Office, Whitehall, S.W.1.
Applications should be made not later than May 31st.
Home Office,
Whitehall, S.W.1. May 7th, 1929.

Middlesex Hospital Medical SCHOOL

(University of London),
London, W.1.

Wanted, a SECOND DEMONSTRATOR (non-medically qualified) for the Department of Physiology.
The Demonstrator will be expected to carry out research under the direction of the Professor, and ample time and facilities will be afforded for this work.
He will, in the first instance, be appointed for one year, and be eligible for re-appointment on the recommendation of the Professor. Salary to commence at £[illegible] per annum. Applications, together with [illegible], should be sent to the School Secretary, Middlesex Hospital Medical School, London, W.1, not later than June 5th, 1929.

All Saints' Hospital for Genito-Urinary Diseases,

49/55, Vauxhall [illegible], S.W.1.

DEMONSTRATIONS IN CYSTOSCOPY are held on:

Wednesdays ...	Mr. Coyte ...	1.30 p.m.
Thursdays ...	Mr. Attwater ...	1.30 p.m.
Saturdays ...	Mr. Loughnane...	1.30 p.m.

Special classes and tuition by arrangement.

Society of Apothecaries of LONDON.

MASTERY OF MIDWIFERY.

The next Examination will take place on Monday, November 18th, and following days.
For regulations apply to—
FRANK HAYDON, Secretary

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

City of Salford.

INFECTIOUS DISEASES HOSPITAL.

Applications are invited for the post of JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER (male). Salary £200 per annum, plus board, residence, and laundry. The appointment will be for one year. Form of application may be obtained from the Medical Officer of Health, 145, Regent Road, Salford, to whom it must be returned, endorsed "Junior Assistant Resident Medical Officer," not later than May 25th.
L. C. EVANS, Town Clerk.

County Council of Middlesex.

DENTAL SERVICE.

ASSISTANT DENTAL OFFICER.

The County Council invite applications for the post of Assistant Dental Officer. Applicants must be fully qualified and registered Dental Surgeons.

The duties of the post are the dental inspection and treatment under the Education and Maternity and Child Welfare Acts.

The candidate appointed will be required to devote his or her whole time (including Saturday mornings) to the duties of the post, will not be allowed to engage in private practice, will be under the supervision of the County Medical Officer and the Senior Dental Officer, and must be prepared to reside in such district as may be required.

The officer appointed will be entitled to one month's holiday annually.

Salary £500 per annum, rising by annual increments of £25 to £700. (No bonus.)

The appointment will be during the pleasure of the Council, and subject to one month's notice on either side.

The successful candidate will be required to pass such medical examination as the County Council may direct, and to contribute to the County Council's Superannuation Fund.

Applications, setting out (1) age, (2) qualifications, and (3) experience, together with copies of three recent testimonials, should be forwarded to the undersigned so as to reach this office not later than June 1st. No special application forms are provided.

Canvassing will disqualify.

Middlesex Guildhall, Westminster, S.W.1. May 10th, 1929. ERNEST S. W. HART, Clerk of the County Council

County of London.

The London County Council invite applications for appointments as EIGHTH ASSISTANT MEDICAL OFFICER (male) in its Mental Hospital Service. Candidates must be under 35 years of age and be registered to practise both in Medicine and Surgery in England. Salary £300 a year, rising by annual increments of £25 to £400 a year, plus fluctuating temporary additions, the present total commencing remuneration being approximately £423 a year. No emoluments. Charges made for board, lodging, etc. (at present £2 9s. weekly), if required to be resident. Candidates appointed will be pensionable under the Asylums Officers Superannuation Act, 1909. Form of application, on which full particulars are given, can be obtained from the Acting Chief Officer, Mental Hospitals Department, The County Hall, Westminster Bridge, S.E.1. Completed applications must be received by Friday, May 24th. Canvassing disqualifies.

MONTAGU H. COX,
Clerk of the London County Council.

City of Birmingham.

MATERNITY AND CHILD WELFARE DEPARTMENT.

RESIDENT MEDICAL OFFICER.

A Resident Medical Officer is required on July 1st next, for a period of six months, for the City Babies' Hospital (50 beds). Salary at the rate of £150 per annum, with board and laundry. Previous experience in a Children's Hospital desirable. Apply, giving all particulars of qualifications, age, and experience, to the Medical Officer of Health, the Council House, Birmingham, on or before May 25th next.

Manchester Victoria Memorial

JEWISH HOSPITAL,
CHEETHAM, MANCHESTER.

APPOINTMENT OF HONORARY PHYSICIAN.

Applications are invited for the office of Honorary Physician to the above Institution. Applicants should be Fellows or Members of one of the Royal Colleges of Physicians of the United Kingdom, and should be in Consultant Practice.

Applications, in duplicate, marked "Honorary Physician," stating age, qualifications, and experience, together with copies of at least three testimonials, to be forwarded to the Chairman at the Hospital not later than May 31st.

Bradford Royal Infirmary.

Wanted for June 1st, HOUSE SURGEON (male). Candidates must be single and legally qualified. Salary £150 per annum, with board, residence, and washing. There are 215 beds and six resident officers.

Applications, stating age, qualifications, and previous experience (if any), with copies of recent testimonials, to be received by the undersigned not later than May 23rd

J. J. BARRON, Secretary-Supt.

Liverpool County Borough.

LOCAL EDUCATION AUTHORITY.

JUNIOR ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited for a Junior Assistant School Medical Officer in the Department of the Medical Officer to the Local Education Authority, at a salary of £600 per annum.

Applicants must be registered medical practitioners, with at least three years' experience. It is desirable that they should have had some special experience in school hygiene and in diseases of children.

The officer appointed will be require to devote his whole time to the service of the Education Authority, under the direction of the Medical Officer of Health, who is also the Medical Officer to the Education Authority. He will not be allowed to undertake private practice, and will be required to contribute to the Liverpool Corporation Superannuation Scheme as required by the standing orders of the City Council.

Applications, stating age, qualifications, etc., together with copies of not more than three recent testimonials, endorsed "Junior Assistant School Medical Officer," must be delivered at the office of the Town Clerk, Municipal Buildings, Liverpool, on or before May 28th.

Canvassing of members of the Committee or the City Council is strictly prohibited and will be considered a disqualification

WALTER MOON,
Municipal Buildings, Liverpool. May 8th, 1929. Town Clerk and Clerk to the Local Education Authority.

City of Norwich.

ASSISTANT MEDICAL OFFICER OF HEALTH and ASSISTANT SCHOOL MEDICAL OFFICER. He will be required to reside and carry out the duties at the Isolation Hospital. Salary £450 per annum, with rooms, board, attendance, and washing (emoluments valued at £150 per annum). Board allowance at the rate of £60 per annum when absent from Hospital on leave.

Candidates must possess a Diploma in Public Health. The officer selected will be under the direction and supervision of the Medical Officer of Health, who is also the School Medical Officer. He will be required to undertake any medical duties of the Public Health Department, including work under the School Medical Service and the Maternity and Child Welfare Scheme. Age not to exceed 40.

The appointment will be subject to the terms and conditions of the Local Government and Other Officers Superannuation Act, 1922, and the successful candidate will be required to furnish a medical certificate of fitness.

Applications, stating age, qualifications, experience, and when at liberty, accompanied by copies of not more than three recent testimonials, must be sent on or before May 24th.

Canvassing, directly or indirectly, is prohibited and will disqualify.

Churchman House, Norwich. V. F. SOOTHILL, M.A., M.D.

County of Zetland.

Wanted, for the County of Zetland, a whole-time official to perform the duties of SCHOOL MEDICAL OFFICER, Medical Officer of Health for the County, the Mainland District, and the Burgh of Lerwick, Tuberculosis Officer for the County, and Superintendent of Maternity and Child Welfare and other Public Health Schemes in County and Burgh.

Salary £700 per annum, free of office and travelling expenses. Applicants must be duly qualified and registered medical practitioners, who possess a Diploma in Public Health.

Four copies of letter of application (at least one in applicant's own handwriting), stating fully age, qualifications, and experience, accompanied by four copies of testimonials, to be lodged with the undersigned not later than June 1st next.

WM. WILLIAMSON,
Brantham Place, Lerwick. May 9th, 1929. Clerk to Joint Committee of Appointing Authorities.

Hertford County Hospital.

Applications are invited for the post of HONORARY SURGEON to the above Hospital.

Candidates should possess a Degree in Surgery of a British University or the Fellowship of one of the Royal Colleges of Surgeons.

Applications, together with copies of testimonials, should be made by Monday, June 3rd, to the undersigned.

PERCY G. BROOKS, Secretary.

H[illegible] County Hospital.

[illegible]eded shortly. Salar[illegible]ium, and washing. [illegible]etc., to

[illegible]
County Hospital, Huntingdon.

Parish of Stepney.

RESIDENT ASSISTANT MEDICAL OFFICER.

The Guardians invite applications from duly qualified medical practitioners for the vacant post of Resident Assistant Medical Officer at their ST. GEORGE-IN-THE-EAST HOSPITAL, Raine Street, Old Gravel Lane, London, E.1. Salary £450 per annum, together with full residential emoluments.

Candidates must have previously held a "House" [illegible]ital, and the person [illegible]red to work generall[illegible] the Medical Superintendent.

The appointment is for a probationary period of six months in the first instance, and is subject to a medical examination as to physical fitness before commencing duties, and also to any provisions affecting officers in the Local Government Act, 1929.

Forms of application may be obtained from the undermentioned address upon receipt of a stamped addressed foolscap envelope, or by personal application to the Medical Superintendent at the Hospital, and must be returned to this office by not later than Saturday, May 25th.

By Order,
Administrative Offices, Bancroft Road, Mile End, E.1. May 4th, 1929. S. McCLELLAND, Clerk to the Guardians.

City of Aberdeen.

PUBLIC HEALTH DEPARTMENT.

The Town Council of Aberdeen are prepared to receive applications for the post of MEDICAL OFFICER OF HEALTH. Salary £1,100 p.a.

A Memorandum of Duties may be had (on application) from the Town Clerk. Applicants must be registered medical practitioners, holding a qualification in Public Health or State Medicine. Particulars as to qualifications, present position, and previous experience must be given by the candidates

The office is an established post under the Local Government and Other Officers Superannuation Act, 1922, and the successful candidate will be required to pass a medical examination.

Applications, accompanied by twenty copies of testimonials, and endorsed "Medical Officer of Health," to be lodged with the undersigned not later than 31st instant.

Town House, Aberdeen. May 9th, 1929. G. S. FRASER, Town Clerk.

The London Lock Hospital,

91, Dean Street, W.1.

The Board of Management invite applications for the post of HOUSE SURGEON at the Male Lock Hospital. Candidates must be doubly qualified and duly registered. Salary at the rate of £200 per annum, with furnished flat, full board, and laundry. The appointment to be for six months. Duties to commence July 1st. Applications, enclosing copies (only) of three recent testimonials, to be sent to the undersigned at the Male Lock Hospital, 91, Dean Street, W.1, on or before June 3rd.

By Order of the Board,
H. J. EASON, Secretary.

Royal Westminster Ophthalmic

HOSPITAL,
Broad Street, Holborn, W.C.2.

PHYSIO-THERAPEUTIST.

The Hospital is about to open a Department for the Treatment of Eye Cases by means of light, diathermy, etc. The services of an Honorary Medical Officer are required for this purpose. A knowledge of Ophthalmology is not essential, but a degree in Radiology is desirable. Applications, together with copies of testimonials, should be submitted to the Secretary on or before May 31st.

North Riding Infirmary,

MIDDLESBROUGH.
(General Hospital. 150 Beds.)

JUNIOR HOUSE SURGEON (gentleman) wanted to take up duties early as possible. Six months' appointment. Salary £150 per annum, with board, residence, and laundry.

Applications, with three testimonials (copies), stating age, qualifications, experience, and nationality, to be sent forthwith to the undersigned.

CHARLES POSTGATE, Secretary-Supt.

Lowestoft and North Suffolk

HOSPITAL.

HOUSE SURGEON (male) preferably with knowledge of X-ray. Salary £120 p.a., with board, residence, and laundry.

Applications, with copies of three recent testimonials, to the Honorary Medical Supt.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A RESIDENT MEDICAL OFFICER at the COUNTRY BRANCH, WORTH COURT, for June 14th.

Gentlemen are invited to send in their applications to the Secretary before 12 o'clock on Monday, June 3rd, accompanied by copies of not more than three testimonials given specially for the purpose.

The appointment is made for six months, but the successful candidate will be eligible for re-appointment.

Salary at the rate of £250 per annum, with board-residence in the Hospital, laundry allowance at the rate of £10 per annum, and on re-election for a further period of six months, £18 18s. for the purpose of providing a substitute during annual leave of a maximum of four weeks.

Candidates must be unmarried and possess a legal qualification to practise, and must have held a responsible resident appointment at a General Hospital.

All candidates must be in attendance on Wednesday, June 5th, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
Secretary.

May, 1929.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A HOUSE SURGEON and a HOUSE PHYSICIAN are required on July 1st.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, June 3rd, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment.

The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, June 5th, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY,
Secretary.

May, 1929.

Northampton General Hospital,
APPOINTMENT OF HONORARY ANÆSTHETIST

The Board of Management invite applications for the appointment of Honorary *Anæsthetist*, either sex.

Candidates must be registered medical practitioners, and shall agree to confine themselves to their specialty.

Full particulars of the appointment may be obtained from the undersigned, to whom applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, should be sent on or before Wednesday, May 29th.

H. ST JOHN WOOD,
Secretary-Supt.

May 17th, 1929.

Hove Hospital (Carr-Burton Memorial), Sackville Road, HOVE.

A RESIDENT MEDICAL OFFICER (male) is required, who must be unmarried and under 40 years of age. The Hospital contains 24 beds.

The appointment affords excellent opportunity for surgical experience and time for reading.

Salary £150 per annum, with board, apartments, and laundry.

Candidates should state when they could take over the duties. Expenses not exceeding one guinea will be paid to any applicant invited to attend for interview.

Applications must be sent in by May 25th, addressed to the General Secretary, 115, Queen's Road, Brighton.

Altrincham General Hospital,
CHESHIRE.

Applications are invited for the post of HOUSE SURGEON. Salary £125 per annum, with board, residence, and laundry. The appointment is for six months in the first instance.

Applications, stating age and experience, together with copies of [illegible] to be sent in not later than [illegible] to Mr. WILLIAM MOODY, [illegible] Street, Altrincham, Cheshire.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the following *resident appointments*:

HOUSE SURGEON to the Senior Surgeon and to the Surgeon in charge of the Throat, Nose, and Ear Beds.
SECOND HOUSE SURGEON.
THIRD HOUSE SURGEON.
FIRST HOUSE PHYSICIAN.
HOUSE PHYSICIAN to the Children's Dept.
GYNÆCOLOGICAL HOUSE SURGEON, commence July 1st.
OBSTETRIC HOUSE PHYSICIAN, ASSISTANT. Salary £100 per annum.
CASUALTY OFFICER (male). Salary £150 per annum.

Duties to commence August 1st.

Of these posts one *House Surgeon appointment* and one House Physician are open to male candidates. The other appointments are reserved for former Students of the London (Royal Free Hospital) School of Medicine for Women.

Candidates must be duly qualified registered medical practitioners and must submit applications, stating age, and accompanied by copies of three testimonials, to the undersigned on or before June 1st.

REGINALD R. GARRATT, Secretary.

Taunton and Somerset Hospital
TAUNTON. (104 Beds.)

SENIOR and JUNIOR HOUSE MEDICAL OFFICERS (males) required.

The Senior must have held a Hospital resident appointment for six months. Appointment one year, option of re-election for a second year. Charge of Surgical beds. Junior appointment six calendar months. Charge of Medical and Eye beds.

Appointments approved by University of London for purposes of M.S. and M.D. examinations. Salaries at the rate of £150 and £100 per annum respectively, with board, residence, and laundry. House Medical Officers retain certain fees.

Applications, with testimonials, to—
F. J. J. STACEY, Secretary.

South London Hospital for WOMEN,
South Side, Clapham Common, S.W.4.

APPOINTMENT OF ASSISTANT PHYSICIAN.

The Board invite applications from fully qualified men for the appointment. Candidates must be Members of the Royal College of Physicians, England, or obtain the Membership within twelve months from the date of appointment. Further particulars may be obtained from the Secretary, with whom the Board is not [illegible] Secretary copies of testimonials [illegible] at the Hospital not later than the first post on Monday, June 10th.

Blackburn and East Lancashire ROYAL INFIRMARY.

FOURTH HOUSE SURGEON (male) required for Casualty Department, etc., at a salary of £130 per annum, with board, residence, laundry, etc., the appointment to be for six months.

The Hospital contains 240 beds, with X-ray, Massage, V.D., Eye, Ear, Nose, and Throat Departments, Pathological Laboratory, etc. There is no outside work.

Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent at once to the undersigned.

NATHAN A. SMITH,
Royal Infirmary, Blackburn. Gen. Supt. & Secretary.

District Infirmary,
ASHTON-UNDER-LYNE. (200 Beds.)

Applications are invited from registered medical practitioners resident in the district for the post of HONORARY ASSISTANT RADIOLOGIST to the above Infirmary. Applicants should possess a Diploma in Radiology or show evidence of special experience in radiological work.

Applications should be sent to the undersigned.

FRANK OLIVER,
May 14th, 1929. Gen. Supt. & Secretary.

Coventry and Warwickshire HOSPITAL. (307 Beds.)

RESIDENT HOUSE SURGEON (male) wanted. Salary £125 per annum. Board, lodging, and attendance provided. Candidates must be duly qualified and registered. Applications, stating age, and enclosing copies of recent testimonials, should be sent to the Secretary on or before May 23th

(Miss) R. HOOPER, Secretary.

North Staffordshire Royal INFIRMARY, STOKE-ON-TRENT. (350 Beds.)

The General Committee invite applications for the post of HOUSE SURGEON for Ophthalmic and Aural Departments. Salary £150 per annum, with board, residence, and laundry. The appointment will be for twelve *months*. Applications to be sent to the undersigned immediately, together with two or three copies of recent testimonials. Preference will be given to candidates having had previous Hospital experience in Ophthalmic and Aural Departments. There are six residents—two medical, four surgical.

North Staffs Royal Infirmary, Stoke-on-Trent. W. STEVENSON, Secretary and House Governor.

North Staffordshire Royal INFIRMARY, STOKE-ON-TRENT. (350 Beds.)

The General Committee invite applications for the post of ASSISTANT HOUSE PHYSICIAN. Salary £125 per annum, with board, residence, and laundry. The appointment will be for a period of twelve months.

Applications to be sent to the undersigned immediately, together with copies of two or three recent testimonials. Preference will be given to candidates having had previous Hospital experience.

There are six Residents (2 Medical, 4 Surgical).

W. STEVENSON,
Secretary and House Governor

North Staffordshire Royal INFIRMARY, STOKE-ON-TRENT. (350 Beds.)

The General Committee invite applications for the post of HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry. The appointment will be for a period of twelve months. Applications to be sent to the undersigned immediately, together with copies of two or three recent testimonials. Preference will be given to candidates having had previous Hospital experience. There are six residents two *medical*, four *surgical*.

North Staffordshire Royal Infirmary, Stoke-on-Trent. W. STEVENSON, Secretary & House Governor.

King Edward VII Hospital,
RIVELIN VALLEY ROAD.
(Crippled Children.) (130 Beds.)

HOUSE SURGEON (RESIDENT).

Applications are invited for the above post which falls vacant on July 1st. Preference will be given to applicant with previous Hospital experience.

The appointment is for six *months*, with possible extension for a further six *months*.

Salary £75 p.a., with board, residence, and laundry. Applications and testimonials should be *received* not later than June 3rd, and should be sent to Medical Superintendent, King Edward VII Hospital, Rivelin Valley Road, Sheffield.

King Edward VII Hospital,
WINDSOR.

Applications are invited for the post of JUNIOR HOUSE SURGEON from July 1st to December 31st, 1929.

Applicants must have had experience in Ear, Nose, and Throat work, and be fully qualified *women*, and preferably have held a resident appointment in a General Hospital.

Salary at the rate of £100 *per annum*, with board-residence.

Applications, with copies of testimonials, to be sent not later than May 31st to the Secretary

King Edward VII Hospital,
WINDSOR.

Applications are invited for the post of SENIOR HOUSE SURGEON from July 1st to December 31st, 1929.

Applicants must have had experience in Ear work and be fully qualified women, and preferably have held a resident appointment in a General Hospital.

Salary at the rate of £120 per annum, with board-residence.

Applications, with copies of testimonials, to be sent not later than May 31st to the Secretary.

General Hospital, Nottingham.

RESIDENT CASUALTY OFFICER (male) required. Appointment for *six months*, with salary at the rate of £200 a year, with board, residence, and laundry. Candidates are required to send applications at once to the undersigned, stating age, experience, and qualifications, with copies of testimonials

P. M. MACCOLL,
House Governor & Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CITY OF PLYMOUTH: EDUCATION DEPT. *(Woman Deputy Assistant Medical Officer.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society) (Workmen's Medical Scheme.)*	COUNTY TYRONE EDUCATION AUTHORITY. *(School Medical Officer.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	COUNTY BOROUGH OF WIGAN. *(Clinical Tuberculosis Officer and Assistant Medical Officer of Health.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1. By Order of the Council of the British Medical Association.
May 15th, 1929. ALFRED COX, Medical Secretary.

Queen's Hospital for Children,
Hackney Road, London, E.2.

CASUALTY OFFICER required on July 12th. A six months' appointment. Salary £100 a year, with board, residence, and washing. Preference given to candidates who have previously held Resident appointments. Applications must be made on forms to be obtained from the Secretary, and must be sent in, with copies of not more than four testimonials, on or before May 30th.

T. GLENTON-KERR,
May 3rd, 1929. Secretary.

Queen's Hospital for Children,
Hackney Road, London, E.2.

HOUSE PHYSICIAN required on June 30th. Six months' appointment. Salary £100 a year, with board, residence, and washing. Preference given to candidates who have previously held Resident appointments.

Applications must be made on forms to be obtained from the Secretary, and must be sent in, with not more than four testimonials, on or before May 30th.

T. GLENTON-KERR,
May 3rd, 1929. Secretary.

Queen's Hospital for Children,
Hackney Road, London, E.2.

HOUSE SURGEON (male) required on June 30th. Six months' appointment. Salary at the rate of £100 a year, with board, lodging, and washing.

Applications must be made on forms to be obtained from the Secretary, and must be sent in, with copies of not more than four testimonials, on or before June 8th.

T. GLENTON-KERR,
May 10th, 1929. Secretary.

The Royal Sea-Bathing Hospital,
MARGATE (For Surgical Tuberculosis).
(300 Beds.)

Applications are invited for the post of ASSISTANT MEDICAL SUPERINTENDENT at the Royal Sea-Bathing Hospital, Margate, at a salary of £500 a year, with furnished quarters, light, fuel, and laundry. The appointment is tenable for two years.

Candidates must be unmarried and have held a resident surgical appointment in a General Hospital. He should have had some experience of Pathology and Orthopædic Surgery. He will be required to take up his duty at the end of September.

Applications, with three recent testimonials, should be sent on or before May 31st to the R.S.B.H. Office, c/o A. NASH, Esq., Watergate House, York Buildings, Adelphi, W.C.2.

Birkenhead General Hospital.
(156 Beds.)

Applications are invited for the post of CASUALTY SURGEON (male) at once, salary £100, with board and residence, to take up duties immediately.

Applications, stating qualifications, experience, and nationality, with three copies of recent testimonials, to be sent to the Secretary-Superintendent as early as possible.

Liverpool & Samaritan Hospital
FOR WOMEN.

HOUSE SURGEON wanted for period of six months from July 1st. Salary at rate of £100 per annum. Applications, with testimonials, to be addressed to the undersigned before May 31st.

31, Rodney St., J. ST. GEORGE WILSON,
Liverpool. Hon Sec., Cons. Med. Board.

Royal Sea-Bathing Hospital,
MARGATE (For Surgical Tuberculosis).

A Male HOUSE SURGEON is required to take up duty on June 1st next. The salary is at the rate of £100 per annum, with board, residence, attendance, and laundry.

Candidates for the post must be legally qualified and registered.

The appointment is for six months.

There are 300 beds for adults and children, which afford special opportunities for the study of Surgical Tuberculosis.

Applications, stating age and previous appointments, with copies of three testimonials, should be sent to the Secretary, R.S.B.H. Offices, 15, York Buildings, Adelphi, London, W.C.2.

The Hospital for Epilepsy and
PARALYSIS, Maida Vale, W.9.

Applications are invited for the post of MEDICAL REGISTRAR. They should be accompanied by copies of not more than three recent testimonials, and should reach the undersigned by May 22nd.

An honorarium of £100 is attached to this appointment, which is for one year, and further particulars can be obtained on application.

H. W. BURLEIGH,
Secretary and General Superintendent.

The Willesden General Hospital
(Incorporated), N.W.10.

Applications are invited from general practitioners for appointment as REGISTRARS. Several vacancies exist, and a copy of the regulations governing such appointments can be obtained from the Secretary, to whom detailed applications should be addressed not later than Monday, June 3rd.

April 30th, 1929.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
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ASSISTANCIES.

Wanted immediately, experienced Male ASSISTANT, Scotch preferred, to manage Country Branch within 25 miles. Excellent prospects. Commencing salary £400, and £50 for transport. House (six rooms) and rates. Essential particulars only, with photograph.—Address, No. 2450, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, young energetic ASSISTANT, with view early Partnership; ex H.S. or H.P., with some experience of general practice preferred; in old-established Practice in industrial area, West Riding, Yorkshire Panel over 2,800. Usual bond, photo, and testimonials required.—Add., No. 2902, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately. — Indoor ASSISTANT, male, in large panel and private Practice, near Manchester; cyclist; English or Scotch. Salary £23 per month. Usual bond.—Address, stating age, photo, references, and experience, No. 2934, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Indoor and Outdoor ASSISTANTS (male), with and without view. Also LOCUM TENENS. Good salaries offered. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted by June 1st, Assistant (indoor or outdoor), in pleasant part of South Wales (9 miles from Cardiff). Good salary to suitable man able to take charge.—Address, No. 2949, B.M.A. House, Tavistock Square, W.C.1.

Wanted.-Experienced Assistant, keen and energetic, for non-dispensing good-class private and panel Practice. Salary £400, with rooms and attendance. Car provided. Partnership in short time to suitable man. State age, height, experience, etc.—Add., No. 2920, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.-Indoor Assistant, male, for mixed panel and private Practice in Midland town. Suitable for young single man. Commencing salary £250 per annum, all found. State full particulars and send photograph.—No. 2928, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant at once, private and panel Practice, single, young. Scotch or English preferred. Salary to commence £250 to £300, according to experience. University Town.—Address, No. 2710, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, single, abstainer, for panel and colliery Practice, with prospects; work light; time for reading. *Dispenser and Chauffeur kept.* Rooms, light, attendance, etc., provided. State full particulars, salary, experience. — Address, No. 2926, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Lady Assistant, *in Country Practice in Cotswolds.* Desiderata: tact, insight, facility of managem't, with exp. and up-to-dateness. Spare time and opport. for tennis and socialities. Photo, age. —No. 2946, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Woman Assistant, indoor, Country Practice, Devonshire. Cyclist. Experience not essential.—Address, with full particulars, testimonials, and photograph, No. 2939, B.M.A. House, Tavistock Square, W.C.1.

Wanted, qualified Assistant (male) in a general Practice in South Wales. Salary £365 p.a., with furnished room, coal, light, and attendance.—Address, No. 2903, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Part-time Assistantship or LOCUM, any locality, M.R.C.S., L.R.C.P., doubly qualified, Scotch extraction; experienced panel and private. Working for higher degree. Married, no children. Hospitality Locum entert. if small remuneration.—No. 2924, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistant, male (indoor), cyclist. Nice easy Practice. Plenty of time for reading or recreation. Near London. Salary £250 to £300, according to experience.—Address, No. 2918, B.M.A. House, Tavistock Square, W.C.1.

Wanted by Woman M.B., B.Ch., B.A.O., D.P.H., ASSISTANTSHIP, 3½ years qualified, experienced in private, panel, and club, ante-natal and maternity work (Rotunda). Excellent testimonials. State salary. —No 2942, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship or Part-time work by Woman M.B., Ch.B., desiring study for higher degree. 4½ years' post-graduate experience (hospitals, private and panel); knowledge E. N. & T. work. Accustomed assist operations. Motorist. Free July.—Add., No. 2919, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship by Woman M.B., Ch.B.(*Aberdeen*). Recently qualified. No experience.—Address, No. 2927, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view Partnership or Succession, by London Graduate, æt. 27; 4 years' experience G.P. Had own practice. Brighton or London suburb preferred. Free now.—Address, No. 2937, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted for Colliery Practice in Monmouthshire. Work light. Salary £300, with rooms and attendance. Give nationality, age, height, experience, and references. Usual bond.—Address, No. 2910, B.M.A. House, Tavistock Square, W.C.1.

Assistantship, with immediate Partnership, on easy terms, offered to experienced man in an industrial Practice in Lancashire; ex H.S. preferred. Work light. Good house. Wanted at once.—Address, No. 2932, B.M.A. House, Tavistock Square, W.C.1.

Outdoor Assistantship in a County Practice, with a view to Partnership to one who is suitable. A Welshman would be preferred, but this is not essential. Applicants should not be over 30 years of age, and communications in the first instance should be addressed to Messrs. R. SUMNER & Co., Ltd., Manufacturing Chemists, Liverpool.

Tyneside. — Wanted, Assistant for July 1st, male, single, Protestant, under 30. State age, qualifications, and other essential particulars. Usual bond.—Address, No. 2909, B.M.A. House, Tavistock Square, W.C.1.

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Dispensers supplied to Doctors at short notice, without fee. *Qualified and exper. in priv. and panel prac. Perm. and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.*—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 87, *Holborn Viaduct House*, 12, Holb. Viad., E.C.1.

Doctors requiring qualified *Dispensers*, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Gerrard 2699, THE DISPENSERS' BUREAU, 145, Shaftesbury Avenue, London, W.C.2.

Graduate, active, experienced, relinquished Practice, would undertake RESPONSIBLE WORK, regular or occasional, Works' clinic, institution, examinations, travel, etc. Highest references.—Address, No. 2921, B.M.A. House, Tavistock Square, W.C.1.

M.B., D.P.H., Scotsman, aged 33, with own practice in London, W., would undertake MEDICAL WORK in any capacity during afternoons for small salary.—Address, No. 2935, B.M.A. House, Tavistock Square, W.C.1.

M.B., B.Chir. Camb., M.R.C.S., L.R.C.P., desires position as PATHOLOGIST or ASSISTANT PATHOLOGIST to an institution [illegible] in this work. S[illegible] science —Add., No. 2915, B.M.A [illegible] W.C.1.

Part-time work required, immediately, within easy reach of West London, by medical man, aged 32, studying for F.R.C.S. Has held Hospital appointments. 3½ yrs.' experience panel and general practice.—No. 2906, B.M.A. House, Tavistock Sq., W.C.1.

Part-time Work wanted in London by M.B., D.P.H. Highest references. Free 2 to 6 p.m. daily. Insurance work preferred. Write terms.—Address, No. 2941, B.M.A. House, Tavistock Square, W.C.1.

Qualified Masseuse required for 2—3 *months' work in the country.* Swede preferred. — Apply to Mrs. G. LIDELL, 45, Vineyard Hill Road, London, S.W.19.

The Royal Army Medical Corps ASSOCIATION. — If you require men *trained in all branches of hospital work.*—Dispensers (capable of undertaking returns, clerical work, etc., connected with Ministry of Health), Clerks, *Laboratory Assistants*, general hospital duties, Porters, Caretakers, etc.—Apply, Secretary, 76, Claverton Street, S.W.1.

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FOR LOCUM TENENS APPLY TO
Mr. PERCIVAL TURNER, *Ltd.*
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As Locum.—Experienced Doctor, had own practice, now doing some 10 locums ann., desires further ENGAGEMENTS; now free. Terms 6 gns. p.w. London preferred. If country, where car and driver available. Good refs. —"MEDICUS," 24, Colville Road, Bayswater, W.

Holiday Locum. — Hospitality offered Medical Man and wife for taking charge of small Practice near Southsea June or July (2 weeks). No midwifery. Work very light. — Address, No. 2911, B.M.A. House, Tavistock Square, W.C.1.

Lady Locum wanted, in August, for six or eight weeks, in Country Town, N. Wales.—Address, No. 2948, B.M.A. House, Tavistock Square, W.C.1.

Locum desires Engagements. Free June. An experienced reliable G.P., Obstetrician, M.R.C.S., L.R.C.P.Lond.; ex H.S. Abstainer. Refs. Fees £6 6s. p.w. and return fare. Own car, when essential; terms.—Write, "DOCTOR," 4, Hanbury Rd., Clifton, Bristol.

Locum wanted, June 24th, four weeks. Hospitality to wife, etc. Should bring car. Four guineas, oil and petrol. Beautiful country, Kent village, forty miles London. Work very light.—Address, No. 2917 B.M.A. House, Tavistock Square W.C.1.

HOLIDAY LOCUMS.

THE MEDICAL AGENCY has pleasure in announcing that lists are now being prepared for Locum engagements for the *forthcoming* Holiday Season. Principals requiring a RELIABLE SUBSTITUTE are advised to make early application.—Address, W. H. GLASS, The Medical Agency, Watergate House, Adelphi, W.C.1. Tel.: Gerrard 8954 and Riverside 1254 (*night calls*).

PARTNERSHIPS.

Lancashire Town.—Partnership. Half share in old-estab. Practice. Average cash receipts £3,000. Panel 2,516. Excellent house for sale, 5 bedrooms, garage, and garden. Price £1,000. Premium—Practice—1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

N. E. Coast.—Seaside Town.— PARTNERSHIP in good-class Practice. Cash receipts 1928, £7,085. Panel 700. 1/5 share (about £1,400) for disposal at 2 years' purchase. House available.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Partner (Third) wanted in sound industrial and middle-class Practice near Newcastle-upon-Tyne. Purchaser must be well qualified and experienced G.P., and should have held Hospital appointment. Average cash receipts over £4,000. A 3/10 share for disposal at 2 years' purchase. Suitable house and surgery available.—Address, No. 2443, B.M.A. House, Tavistock Square, W.C.1.

Partner wanted for Country Practice, Home County. £1,000 to £1,200 at 2 years' purchase, great scope. Cottage Hospital. Charming house and garden, rent £100 Hospital experience essential. Married Physician preferred. — Address, No. 2716, B.M.A. House, Tavistock Square, W.C.1.

Partner wanted in sound old- established Practice averaging £3,000 in first-class residential town and health resort, N.W. Coast. Either Physician or Surgeon. Splendid opening for latter One-half share for sale (one-third for first year) at 1½ years' purchase. Capital essential.—Address, No. 2624, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES.

Wanted.—Good-class PRACTICE or PARTNERSHIP in town or on, or near, Coast of Southern, South-Western, or South-Eastern County. Advertiser has ample capital, and higher qualifications. Strict confidence. Private advertisement.—Address, No. 2931, B.M.A. House, Tavistock Square W.C.1.

Wanted. — Small Practice, £400 to £1,000, any healthy country, seaside, or town district, but not North. With some garden or land preferred. Can purchase house, cash available, or could offer New Forest bungalow in part exchange.—Address, No. 2921, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Good general PRACTICE, £1,500—£2,000, in Home or Southern Counties. House to rent preferred. Good educational facilities. Capital available.—Address, No. 2922, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Practice, London or near suburb, W. or S.W. preferred. Considerable panel essential. Income £600 to £800. Capital available. — Address, No. 2929, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.D.Cantab., F.R.C.S.Eng., Public School, better-class PRACTICE or PARTNERSHIP, within 100 miles London, or good-class suburb. Ample capital. —Address, No. 1505, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—We have innumerable applicants for sound investments in all districts, incomes from £600 to £4,000, with and without panel. Correspondence invited from prospective Vendors. — THE MEDICAL AGENCY (W. H. Grant), Watergate House, 15, York Buildings, Adelphi, W.C.2.

Wanted. — Large well-estab. non-panel PRACTICE within 100 miles London (main line). Income not less £2,500. Suitable house at rental desired in first instance. Advertiser is free to negotiate. Capital available. — Address, No. 2314, B.M.A. House, Tavistock Square, W.C.1.

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Wanted. — Good-class non-dis- pensing, non-panel PRACTICE in West End of London. Capital available.—Address, No. 2945, B.M.A. House, Tavistock Sq., W.C.1.

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Ear, Nose, and Throat Practice wanted by F.R.C.S.Ed., or PARTNERSHIP or suitable opening for this work.—Address, No. 2912, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Easily worked Panel, Private, and Contract PRACTICE, Colliery district in Yorkshire. Good house and land and large garden. Scope for increase. Estab. seven years. Average income £500 per annum from all sources. Purchase price 1½ years House, land, and garden, £650. Must sell end of May. — "A. J.," c/o FERRIS & Co., Ltd., Bristol.

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Nursing Home for Disposal.— Excellently equipped premises. Accommodation for 21 cases—Surgical, Medical, or Midwifery. Operating Theatre, up to date. One acre of garden. Situate 20 mins. of West End. Vendor retiring will either sell or let furnished as it stands. — For full details, apply to PERCIVAL TURNER, Ltd., 4, Adam Street, W.C.2.

Nursing Home, modern and up to date in every respect, about to be built in quiet situation close to Harley Street; perfect accommodation; over 50 rooms; convenient north lighted theatre; lift; central heating. Long lease for disposal.—For plans and particulars apply BEDFORD & Co., 10, Wigmore Street, W.1.

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To Purchasers. — Do not buy without expert assistance. With 40 yrs.' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Gerrard 0599. Telegrams: "Epsomian, London."

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University Graduate, aged 36, 10 years' experience G.P., desires OPENING in good-class PRACTICE. Good house essential (preferably rented). Income £1,500 upwards. Not free for six months.—Address, No. 2509, B.M.A. House, Tavistock Sq., W.C.1.

Warwickshire.—Old- established country PRACTICE. Receipts £1,700 p.a., good panel. Good house for sale with practice. Premium for house and practice moderate. Vendor has had operation.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

X-ray Practice for Sale, healthy Seaside Town. Established 1923. Price (including freehold house and plant) £5,000. Part could remain on mortgage. Accountant's figures available.—Address, No. 2908, B.M.A. House, Tavistock Square, W.C.1.

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Wanted, use of well-equipped DENTAL SURGERY in Mayfair or Harley Street district. One day a week. Door plate. — Address, No. 2901, B.M.A. House, Tavistock Square, W.C.1.

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Excellent opportunity to buy charming CORNER HOUSE in growing middle-class suburb, with nucleus of Practice, worth at present £150 p.a. Capable of great expansion. Owner leaving for private reasons. House can be mortgaged.—Address, No. 2713, B.M.A. House, Tavistock Square, W.C.1.

For Sale. — Country Residence (6 miles from Witney and 14 from Oxford), 4 reception, 6 bed., bath, usual offices, and buildings. Tennis court and grounds, garden, and paddock. Suitable for Country Nursing Home or similar establishment. Price £4,000, or would be let.—Full particulars from HOBBS & CHAMBERS, Chartered Surveyors, Faringdon, Berks.

Golders Green. — Corner House, just off the main road and shopping parades, eminently suitable for Doctor or Dentist. Six bedrooms, tiled bathroom, 3 good reception rooms, large hall, light and modern domestic offices. Detached garage. Good gardens. Lease 79 years. Ground rent £14 per annum. Price £3,750.—For appointment to view apply LESLIE RAYMOND, F.S.I., F.A.I., The Estate Offices, Golders Green, N.W.11. Telephone: Speedwell 1601 (3 lines).

Ground Floor Consulting ROOM to Let in Devonshire Place. Waiting room, attendance, etc. Also bedroom and breakfast if desired.—Address, No. 2933, B.M.A. House, Tavistock Square W.C.1.

Swansea. — Opening for G.P. Commodious RESIDENCE, fronting main road approach to recently developed residential West-End estate. Redecorated throughout. Elec. light. Bargain price. Mortg. arr'gd.—ASTLEY SAMUEL & SON, F.A.I., Central Hall, Swansea.

Thaxted. — Owner going abroad for 12 months June 14th, and would LET FURNISHED HOUSE situated in the town of Thaxted; very charming district; two reception, kitchen, billiard room (full-size table), 5 bedrooms, bath, inside sanitation; central heating. Pretty, secluded garden, with fountain and fish pool. Garage. Maid would stay on. London 40 miles; Cambridge 20 miles; Clacton-on-Sea 40 miles. Price: 6 months 5 gns., 12 months 3 gns., per week. Come and view.—Apply, W. BENNETT, Thaxted.

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X-Ray and Electro - Medical APPARATUS (SECOND-HAND), by the best makers, in stock. Re-conditioned and in perfect working order. Very moderate prices. Write for list, stating requirements.—The Cox-... Co. (1924), Ltd., 105, ... London, W.1.

APPOINTMENTS.—Contd.

Bootle Borough Hospital
(General, 100 Beds),
Derby Road, Bootle, LANCASHIRE.

Applications are invited from medical men for the two posts of JUNIOR MEDICAL OFFICER for the period ending September 30th. Salaries at the rate of £125 per annum, with board, residence, and laundry. Duties in one case to commence immediately, and in the other on July 1st. Applications, stating age and qualifications, with copies of testimonials, to be sent to the undersigned not later than May 25th.
J. A. BEARDSALL, Secretary Supt.

Victoria Hospital, Burnley.

Wanted, a HOUSE SURGEON (male). Appointment will be made for six months. Salary £125 per annum, with board, etc. Particulars of appointment can be had from the Hon. Secretary, to whom applications should be sent in at once, endorsed "House Surgeon."
7, Grimshaw St., F. A. HARGREAVES,
Burnley. Hon. Secretary.
N.B.—This Hospital is approved by the London University for the purpose of the M.B. and M.S. examinations.

Royal London Ophthalmic
HOSPITAL (Moorfields Eye Hospital),
City Road, E.C.1.

SEVEN OUT-PATIENT OFFICERS

Applications are invited for the post of Out-patient Officer, to attend on two mornings each week as follows:
Monday and Thursday;
Tuesday and Friday;
Wednesday and Saturday.
Candidates must be registered medical practitioners. Salary at the rate of £100 per annum. The Out-patient Officers will be appointed for a period of one year from July 1st, and will be eligible for re-appointment. Six of the present Out-patient Officers are applying for re-appointment.
Copies of regulations governing the appointment can be obtained on application.
Applications, with testimonials, stating age and qualifications, must be received not later than May 31st by—
ARTHUR J. M. TARRANT, Secretary.

The Guest Hospital and Eye
INFIRMARY, DUDLEY.
(General Hospital, 104 Beds.)

Applications are invited for the posts of HOUSE SURGEON and ASSISTANT HOUSE SURGEON. Duties include Medical, Surgical, Eye, Ear, Nose, and Throat, and Venereal Diseases work. Salary £175 and £150 per annum respectively, with furnished apartments, board, and laundry. Candidates must be fully qualified and registered.
Applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, should reach the undersigned not later than June 4th.
H. RAYMOND HURST, Secretary.

Nuneaton General Hospital,
WARWICKSHIRE.

HOUSE SURGEON (male) required, to commence duty on June 18th. Salary £120 per annum, with board, lodging, and laundry. The appointment is tenable for six months, but application may be made for an extension of this period.
Candidates must be registered according to the provisions of the Medical Act and be Members of one of the Medical Protection Societies.
Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the Medical Secretary not later than June 1st.

City of London Hospital for DISEASES OF THE HEART AND LUNGS,
Victoria Park, E.2.
('Bus, tram, and rail, Cambridge Heath, L. & N.E.R.)

Applications for a post of HOUSE PHYSICIAN (male), with copies of recent testimonials, are invited to be sent to the undersigned by Monday, June 10th.
The appointment will be for six months from July 1st. Salary at the rate of £100 per annum, with board, residence, and laundry provided.
GEORGE WATTS, Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1

Applications are invited for the appointment of ASSISTANT MEDICAL OFFICER in the Female V.D. Clinic. Intending candidates should submit applications, stating age and experience, with copies of three recent testimonials, to the undersigned on or before June 1st.
The appointment is tenable for 18 months in the first instance. The hours of duty average 33 weekly. Salary £500 per annum.
REGINALD R. GARRATT, Secretary.

Napsbury Mental Hospital,
NAPSBURY, ST. ALBANS, HERTS

PROBATIONER NURSES (female) wanted. Commencing wage 39s. 3d. per week, after obtaining certificate of mental nursing, and on promotion, rising to 60s. per week, from which deduction of 22s. 2d per week is made for board, lodging, and washing. Application to the Medical Superintendent.

Samaritan Free Hospital for WOMEN, Marylebone Road, N.W.1.

Additional ANÆSTHETIST required. Specialist preferred. Honorarium £30 per annum.
Applications, stating age, accompanied by copies of testimonials, must be sent in by May 24th to the Secretary at the Hospital.
G. H. HAWKINS, Secretary.

CAVENDISH NURSES (Male and Female)

Head Office: 54, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

A very convenient form of telephone message pad sent free on application to the Secretary.

Branches: *MANCHESTER*: 176, *Oxford Road.* *GLASGOW*: 28, *Windsor Terrace.* *DUBLIN*: 23, *Upper Baggot Street.*

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Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling and all cases. Nurses reside on the premises, and are always ready for urgent calls *Day and Night*. Skilled Masseuses, Masseurs, and good Valet attendants supplied.

Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

City of Birmingham Mental HOSPITAL.

The Committee of Visitors invite applications from duly qualified and registered lady doctors under 35 years of age for the post of Full-time JUNIOR ASSISTANT MEDICAL OFFICER at the City Mental Hospital. Preference will be given to candidates who have held a Resident appointment in a General Hospital.

The commencing salary will be £350 per annum, together with emoluments (board, residence, and laundry). Subject to twelve months' satisfactory service an increase of £50 will be granted at the end of that period. The appointment will be terminable by three months' notice on either side, and the selected candidate will be required to join the Asylums Officers Superannuation Scheme.

Applications, accompanied by copies of three recent testimonials, should be marked "Junior Assistant Medical Officer," and addressed to the Medical Superintendent, City Mental Hospital, *Winson Green, Birmingham, so as to be received* by him not later than May 31st

F. H. C. WILTSHIRE,
Council House, Clerk to the
Birmingham. Committee of Visitors.

Kensington, Fulham, & Chelsea GENERAL HOSPITAL.

HONORARY RADIOLOGIST.

The Board of Management invite applications from gentlemen engaged in the practice of Radiology. This Hospital is in the process of re-building and will be fully equipped from the Radiological point of view. There will eventually be 112 beds, which will include a number of private beds for paying patients. The Radiologist appointed will be expected to undertake the organisation of his Department and the ordering of suitable apparatus, etc., during the next 18 months, at the end of which time the clinical work will begin. Applications, accompanied by copies of three recent testimonials, should be forwarded to the undersigned not later than Monday, May 27th.

L. MAY NORTON, Superintendent.

The Cancer Hospital (Free)

(Incorporated under Royal Charter),
Fulham Road, London, S.W.3.

The Committee are prepared to receive applications for the post of HOUSE SURGEON. Salary at the rate of £100 per annum.

The appointment is for six months and subject to rules, a copy of which may be obtained from the Secretary.

Previous experience as a House Surgeon is indispensable.

Applications, with three (copies only) testimonials, to be sent to the undersigned not later than the first post on Wednesday, May 29th.

J. COURTNEY BUCHANAN, Secretary.

Swindon and North Wilts VICTORIA HOSPITAL, SWINDON, WILTS.

Required, a RESIDENT MEDICAL OFFICER (male). Salary £100 per annum, with board, residence, and laundry. Appointment for a minimum of six months.

Candidates must be registered under the Medical Act. Applications, stating age, qualifications, and experience, accompanied by copies of three testimonials, should be sent to the Secretary at the Hospital on or before Wednesday, May 22nd

Selected candidates will be required to appear before the Medical Committee for interview.

Prince of Wales' Hospital, CARDIFF.

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry.

Candidates, who must have had previous Hospital experience, and possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the Secretary.

Appointment is for six months, but candidates are eligible for re-appointment for a further period.

GILBERT D. SHEPHERD, Secretary.

Staffordshire General Infirmary.

APPOINTMENT OF HONORARY SURGEON.

The Committee invite applications for the appointment of Honorary Surgeon.

Candidates must possess one of the following qualifications—viz., (*a*) the Fellowship of the Royal College of Surgeons of England, Edinburgh, or Ireland; (*b*) the Degree of Master in Surgery of an English University; (*c*) Member of the Royal College of Surgeons, England, or *Graduate in Surgery of any* University of the United Kingdom, together with satisfactory evidence of adequate recent experience in the practice of Surgery.

Applications, stating age, accompanied by copies of three recent testimonials, should be sent to reach me not later than Thursday, the 30th inst.

Stafford A. E. COLLINS,
May 13th, 1929. Secretary.

Bolton Infirmary & Dispensary.

SECRETARY'S OFFICE.
(233 Beds, including Auxiliary Hospitals.)

Applications for the appointment of RESIDENT SURGICAL OFFICER (gentleman), salary £250 per annum; HOUSE SURGEON (gentleman), salary £150 per annum; and an ASSISTANT HOUSE SURGEON (lady), salary £100 per annum, with apartments, board, and attendance, are invited from ladies and gentlemen having a registered Medical and Surgical qualification. The appointment will be for twelve months from July 1st.

Applications, *stating age*, with copy of testimonials, should be forwarded to the undersigned (from whom further particulars may be obtained) not later than Wednesday, May 29th

The appointments will be made on Thursday afternoon, June 6th, at 4 o'clock.

ALBERT E. BRISCOE, *Secretary.*

Manchester Northern Hospital FOR WOMEN AND CHILDREN,

Park Place, Cheetham Hill Road, Manchester.

The Committee of Management require the services of a SENIOR HOUSE SURGEON and JUNIOR HOUSE SURGEON, both duly qualified, who are to commence duties on July 1st.

Senior House Surgeon, salary £150 per annum, with board and residence; Junior *House Surgeon, salary £100 per annum, with* board only.

Applications, stating age and experience, with copies of recent testimonials, to be sent to the Secretary, Mr. JAMES C. DANIELS, 58, Barton Arcade, Manchester, not later than May 31st.

Elizabeth Garrett Anderson HOSPITAL, 144, Euston Rd., N.W.1.

Applications from fully qualified medical *women are invited for the following posts*: HOUSE PHYSICIAN, OBSTETRIC ASSISTANT, Three HOUSE SURGEONS. Salary at the rate of £50 per annum, with board, residence, and laundry. Appointment from July 1st next for six months. Applications, with testimonials, must be sent to the Secretary on or before May 27th.

IMOGEN H. MURPHY, Secretary.

Ancoats Hospital, Manchester.

HOUSE SURGEON required to commence duty on July 1st, for a period of six months. Salary at the rate of £100 per annum, with board, apartments, laundry, etc. Applications, stating age, qualifications, experience, if any, with copies of three recent testimonials, to be forwarded to the undersigned on or before May 31st.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Leeds Public Dispensary.

Wanted, JUNIOR RESIDENT MEDICAL OFFICER. Salary £150 per annum, with board, residence, and four shillings weekly for laundry. Separate sitting room. Applications, with copies of three recent testimonials, to be addressed to the Secretary of the Faculty, Public Dispensary, North Street, Leeds.

The General Hospital, BIRMINGHAM.

The Board proposes to appoint Two RESIDENT SURGICAL REGISTRARS, and applications are invited for the posts.

Each Registrar will be attached to two Surgical Units and to either the Gynæcological or Throat and Ear *Department. The salary will* be £100—£20—£140.

The appointment will be made for one year in the first instance, and be subject to renewal for two further years. Candidates must have had previous surgical experience.

Applications, giving full details of qualifications and experience, and accompanied by testimonials, should reach the undersigned by May 27th.

A. H. LEANEY, House Governor.

The Manor House Hospital, Golders Green, London, N.W.11.

(112 Beds.)

Applications are invited for the post of JUNIOR HOUSE SURGEON. Salary at the rate of £200 per *annum, with board, residence, and* laundry. Appointment for six months, renewable if mutually agreed. Preference given to one having held six months previous appointment as a House Surgeon. Candidates (male and unmarried) must be fully qualified and registered. Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, should reach the undersigned not later than the first post on Saturday, May 25th.

JAMES W. LINKHORN, *Secretary.*

West London Hospital, Hammersmith Road, W.6. (226 Beds.)

Required, One HOUSE PHYSICIAN, One *HOUSE SURGEON, and One AURAL AND OPH*THALMIC HOUSE SURGEON (males). These three appointments are tenable for six months from July 1st next, subject to one month's notice on either side. Salary at the rate of *£100 per annum, with board, lodgings, and* washing allowance. Applications (which must be made on printed forms obtained from me) must reach me not later than Friday, June 7th. Selected candidates will be required to call upon such Members of the Medical Staff as directed, to be in attendance at a Meeting of the Medical Council on Friday, June 21st, at 4 p.m., and the House Committee Meeting at 4.45 p.m. the same day, when the appointments will be made.

H. A. MADGE, *Secretary.*

St. Peter's Hospital for Stone, Henrietta Street, Covent Garden, W.C.2.

A Pathological Department is being established and the services of a part-time CLINICAL PATHOLOGIST are required to organise it, and remain in charge.

Hours of attendance necessary and detailed rules are not yet defined, but it is proposed to pay a commencing salary at the rate of £250 per annum.

Applications for this appointment, which should be accompanied by eight copies of not more than three recent testimonials, will be received by the undersigned not later than Tuesday, May 21st.

BEECHEY ROGERS, Secretary.

Swansea Hospital. (316 Beds.)

HOUSE SURGEON wanted, gentleman, single. Salary £150, with board, residence, and laundry. Duties to commence June 1st.

Applications, stating age, nationality, qualifications, and experience, with copies of three recent testimonials, to be forwarded to the undersigned on or before May 22nd.

O. C. HOWELLS, Secretary.

County Mental Hospital, PRESTWICH.

LOCUM TENENS required from June to September. Salary £7 7s. per week, with board, furnished apartments, attendance, and laundry. Apply, stating full particulars, to Medical Superintendent.

Eye, Ear, and Throat Hospital
FOR SHROPSHIRE AND WALES.

APPOINTMENT OF HOUSE SURGEON.

The Board of Management invite applications for the post of House Surgeon at the Eye, Ear, and Throat Hospital, Shrewsbury.

Candidates (either sex) must be unmarried and have a registered qualification in Medicine and Surgery.

Salary £200 per annum, with board, lodging, and laundry.

Applications, with copies of testimonials, to be sent in sealed envelopes, marked "House Surgeon," to the Chairman of the Board of Management, not later than the 31st instant. The appointment will be vacant about the middle of June.

CLOTHIER, WATKINS, & RIDDELL,
Secretaries.

Tunbridge Wells and Counties
GENERAL HOSPITAL.

Wanted, HOUSE SURGEON, male. Candidates must be unmarried and duly qualified in Medicine and Surgery. (Two Residents.) Vacant June 3rd. May be required to lecture to the Nursing Staff.

In-patients number over 1,400 yearly. *Out-patients* 6,000, with 50,000 attendances.

Salary £160 per annum, with board, residence, etc., in the Hospital.

This Hospital is approved by the University of London for the purposes of the M.D. and M.S. examinations.

Applications, stating qualifications, with certificate of registration and copies of testimonials, should be sent to the undersigned on or before May 27th next.

J. J. WEBB, Secretary.

The Royal Portsmouth Hospital.

Applications are invited for the posts of:

SENIOR HOUSE SURGEON (male). Salary at the rate of £175 per annum, with board, etc. Candidates must have held appointment as House Surgeon at a General Hospital.

HOUSE SURGEON (male). Salary at the rate of £130 per annum.

Both officers must be qualified and will be required to commence on June 1st. Six months' appointments, and eligible on completion of term for extension or other resident posts.

Applications, stating age, nationality, and full details, with copies of three recent testimonials, to be sent to the undersigned on or before May 21st, from whom all particulars can be obtained.

B. WAGSTAFF, Secretary.

Wigan Infirmary.
(173 beds.)

Wanted July 1st, for six months, a THIRD HOUSE SURGEON (male). Salary £150 per annum, with board, apartments, and washing. Doubly registered. Candidates may be requested to remain to take the appointments of Second House Surgeon and Senior House Surgeon, each for period of six months, subject to satisfactory service.

Applications, stating age, nationality, and qualifications, with copies of three testimonials, should reach the undersigned *as soon as* possible.

A. STANLEY BRUNT,
May 13th, 1929. Gen. Supt. & Secretary.

Royal Sussex County Hospital,
BRIGHTON. (225 Beds.)

HOUSE SURGEON (male) required about the end of June, 1929, with charge of beds, part casualties, and anæsthetics. Salary £150 per annum, with board, residence, and laundry. *Candidates must hold* Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of testimonials, should be sent immediately to the undersigned.

L. L. W. LANCASTER-GAYE,
Secretary-Supt.

Royal Sussex County Hospital,
BRIGHTON. (225 Beds.)

Required, a CASUALTY HOUSE SURGEON (male). Salary £120 per annum, with board, residence, and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should be sent immediately to the undersigned.

L. L. W. LANCASTER-GAYE,
Secretary-Supt.

Walsall General Hospital.

The Committee invite applications from men or women for the *posts of*:

HOUSE SURGEON. Salary £125 per annum.

JUNIOR HOUSE SURGEON. Salary £100 per annum.

Candidates, who must be registered under the Medical Acts, must have had experience in the *administration of Anæsthetics*, and produce three recent testimonials. The appointments will be for six months.

The Hospital contains 100 beds and is equipped in all Special Departments.

Applications must be received by the undersigned *not later than the first post Tuesday, May 21st.*

WALTER FRANCOMBE,
May 6th, 1929. Secretary.

Walsall General Hospital.

Applications are invited for the post of HONORARY CONSULTANT PHYSICIAN to the Institution.

Applicants must have obtained a Medical Degree at one of the Universities of the United Kingdom and be Fellows or Members of the Royal College of Physicians of London.

The appointment is for five years, renewable at the end of that period.

Applications to be addressed to the undersigned, from whom further particulars may be obtained.

WALTER FRANCOMBE,
May 13th, 1929. Secretary.

Walsall General Hospital.

Applications are invited for the post of HONORARY CONSULTANT SURGEON to the Institution.

Applicants must be Fellows of the Royal College of Surgeons of England.

The appointment is for five years, renewable at the end of that period.

Applications to be addressed to the undersigned, from whom further particulars may be obtained.

WALTER FRANCOMBE,
May 13th, 1929. Secretary.

Wolverhampton Poor Law
INSTITUTION AND HOSPITAL.

ASSISTANT RESIDENT MEDICAL OFFICER *required.*

Applications from single gentlemen, qualified, are invited for the above appointment. Salary at the rate of £250 per annum, with apartments, board, etc.

Applications, stating age, qualifications, and experience, and accompanied by copies of recent testimonials, to be sent to—

A. G. ALDRIDGE,
Wolverhampton. Clerk to the Guardians.

Radcliffe Infirmary and County
HOSPITAL, OXFORD.

Applications are invited for the post of HONORARY ASSISTANT PHYSICIAN to the Dermatological Department of the above Hospital.

Twenty-five copies of applications and testimonials, which will be forwarded to members of the electing Committee, must be sent to the undersigned, from whom further particulars may be obtained, not later than Monday, May 27th.

A. G. E. SANCTUARY, Administrator.

Royal Aberdeen Hospital for
SICK CHILDREN.

The Board have resolved to appoint an HONORARY ASSISTANT SURGEON, who would be attached to the Wards of the *Second Surgeon* and the Ear, Nose, and Throat Surgeon. *Applications, along* with one copy of testimonials, *should be lodged* with the Hon. Secretary, MR. A. S. B. BRUCE, 12, Dee Street, Aberdeen.

Aberdeen. May 1st, 1929.

Warneford General Hospital,
LEAMINGTON SPA.

RESIDENT HOUSE PHYSICIAN and RESIDENT HOUSE SURGEON required at the beginning of June. Salaries £165 per annum each, with board and laundry.

Applicants, who must be qualified and registered and single men, should apply at once to the undersigned, and send copies of three recent testimonials.

W. RUSSELL RUDALL,
House Governor & Secretary.

The Sheffield Royal Hospital.

RESIDENTS *required* for temporary duty commencing *June 17th*. Salary at the rate of £80 per *annum*, with board, residence, and *laundry*. Applications, with testimonials, to be sent to—

W. H. BOOTH,
May 13th, 1929. Supt. & Secretary.

THE OLDEST AND LEADING MEDICAL AGENT

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13 HUNTS. — Steadily increasing Country PRACTICE about £1,200 in attractive agricultural district. Panel 880. Beautiful house (5 bedrooms), garden, and paddock, to rent. Premium £1,850, to include drugs, etc.

14 YORKSHIRE COAST. — Practice averaging £1,850 p.a. (some Eye work) in pleasant seaside town. Panel 80. Modern double-fronted house (9 bedrooms) for sale. Premium £2,400.

15 N.E. COAST.—Partnership in sound Practice in rapidly growing and attractive seaside town. Panel about 700. Suitable house available. Share of about £1,400 for disposal at 2 years' purchase. Partner aged about 30 and well qualified, who has held resident Hospital appointments.

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18 LONDON S.E. — Practice about £800 in populous district. Panel 800. No midwifery. House (5 bedrooms) to rent. Premium 1½ years' purchase.

19 SUSSEX.—Partnership in Country Practice, £2,750, in residential district (appointments and panel about £1,000). Good house (5 bedrooms and 3 attics) with large garden. To rent. One-half share at 2 years' purchase.

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30 DEATH VACANCY.—London, S.W.—PRACTICE about £200 p.a., with good scope for increase. Panel 30. House, with 3 bedrooms for sale.

31 GLOUCESTERSHIRE. — Partnership in Country Practice about £2,300 p.a. Panel nearly 1,000. Applicant should be English or Scotch, aged 28 to 30, and have held Hospital appointment. One-third share at 2 years' purchase, after preliminary assistantship.

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44 DEATH VACANCY. — Northants. — Country PRACTICE of £1,200 p.a. Panel between 700/800.

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46 EAST ANGLIA.—Country Practice about £1,470 p.a., easy reach of important town. Panel about 1,000. Nice house (10 bed and dressing rooms), with electric light, etc., for sale. Premium 1½ years' purchase.

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48 GLOUCESTERSHIRE. — Partnership in Country Practice about £3,600 p.a. Applicant should be aged 35 to 45 and have held resident Hospital appointments. Share of £1,000 at first at 2 years' purchase.

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53 S.E. COAST. — Third Partner required in Practice £3,750 p.a. in favourite summer resort. Panel 3,976. Share up to one-third at 2 years' purchase.

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61 KENT. — Practice averaging £1,030 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, practice, £1,500.

62 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 13 acres of land for sale. Premium, practice, 1½ years' purchase.

63 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. One-third to two-fifths share at 2 yrs.' pur.

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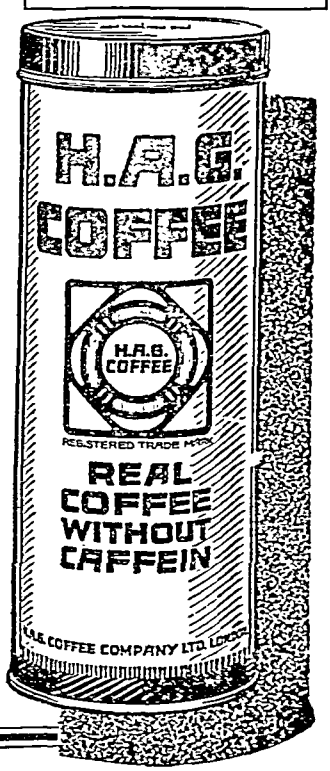

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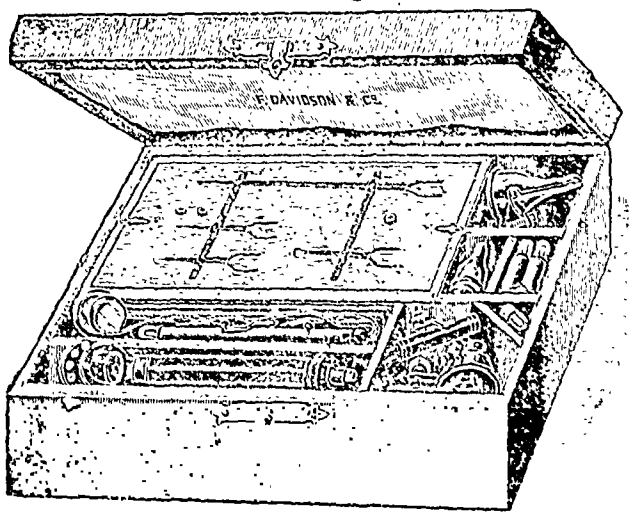

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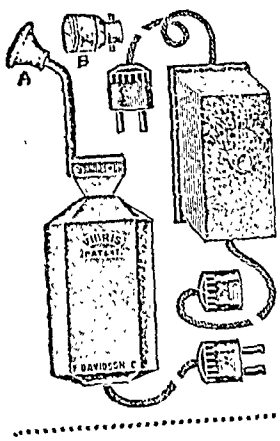

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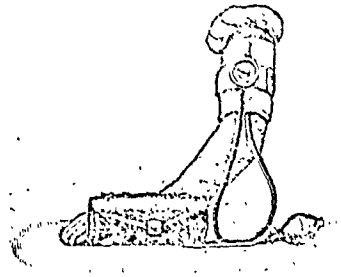

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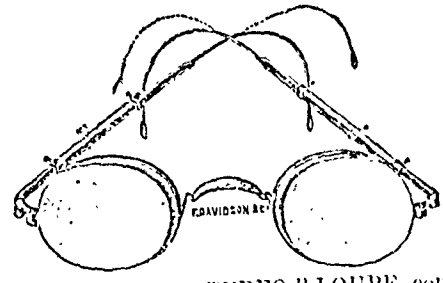

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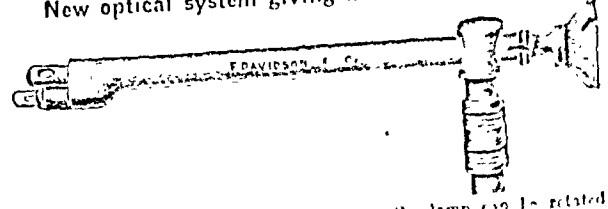

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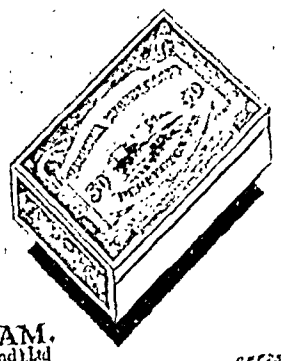

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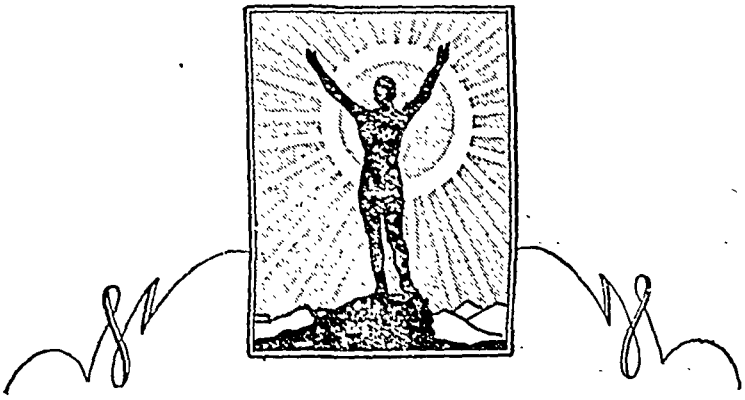

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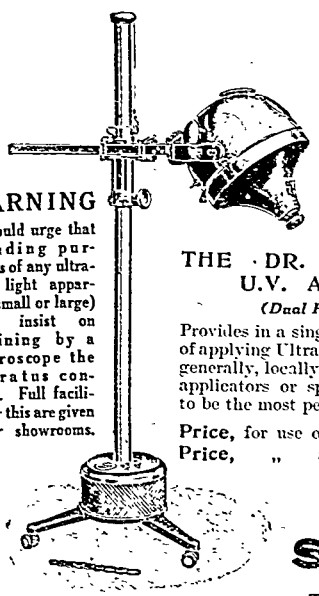

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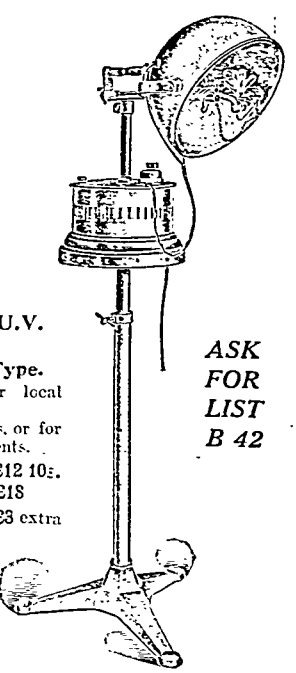

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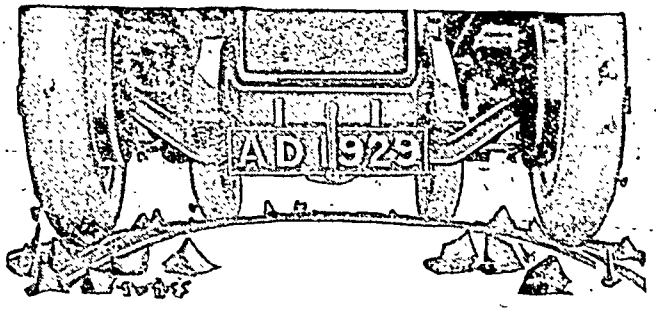

LET US SHOW YOU HOW FREE OF CHARGE

For a few shillings all your tyres can be made puncture-proof in 20 minutes. Let us show you—free of charge and obligation—how Hewsons Compound does this, one treatment outlasting the life of a tube, and increasing tyre mileage. Hewsons is an entirely original preparation, not the old mica and cork-dust mixture.

Fill in the Coupon below and post to-day.

POST THIS COUPON

TO *HEWSONS (1928) Ltd.,*
West Lodge Works,
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Please send your representative to demonstrate tyres with Hewsons Puncture Sealing Compound.

Name.....

Address.....

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Most suitable time and date	*Number & Size of tyres to be treated*
.....	.....

HEWSONS
PUNCTURE SEALING COMPOUND

ROLLS-ROYCE

The Best Car in the World

"Everything is so perfectly blended, whether you want to use the car for a promenade or whether you want to go at high speeds on Continental roads. The Rolls-Royce does either with the maximum of comfort and the maximum of efficiency.

Anyone who habitually drives all kinds of motor cars, as I do, cannot help thinking that the Rolls-Royce stands in a class by itself, because it does every kind of motoring in the best possible way."

Owner's Letter, ref. 2014

ROLLS-ROYCE LIMITED
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DISTINCTION ALWAYS MERITS ATTENTION

The Ascot Six

The car of distinction and merit.

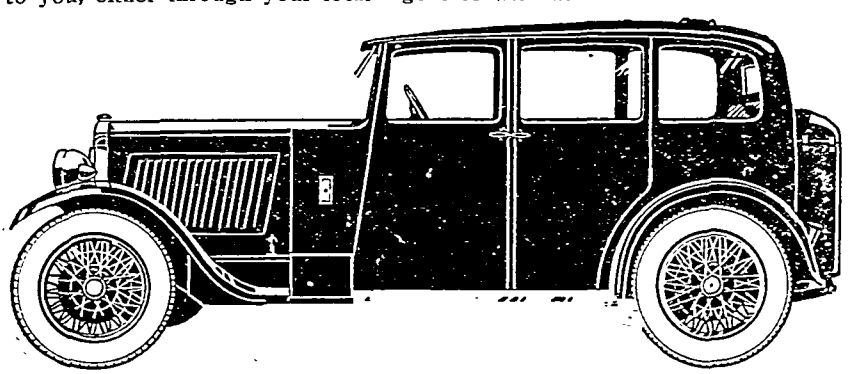
Designed and constructed for the requirements of the owner driver.

How often one hears the expression—cars are built for the care and attention of mechanics only. We refute that statement when applied to THE ASCOT "SIX."

Special care and attention has been given to accessibility, ease of control, reliability, with a minimum of required attention and a low cost of maintenance and upkeep.

The MOTOR TRADER says: "The chassis shows simplicity carried, surely, to the limit."

Before you purchase your new car, may we demonstrate THE ASCOT "SIX" to you, either through your local Agent or with us direct.



THE ASCOT MOTOR & MANUFACTURING CO. LTD., DEPT. B
LETCHWORTH HERTS
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DEMANDS THE PERIODIC CHANGE OF MEDICAMENT.

ATTENTION IS DRAWN TO

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PSYLLIUM SEEDS (BELL)

"CAVENDISH A" BRAND.

A MILD VEGETABLE LAXATIVE, almost tasteless. In action fulfilling in a twofold manner the functions for which they are prescribed, namely—

(a) In the Stomach. The action is mechanical, assisting in the sub-division of solid food, stimulating the gastric juices, without impairing digestion.

(b) In the Intestines. Setting up a laxative action by means of their natural oil and Mucilageneous content.

Usual dosage for Adults one to two tablespoonfuls.

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In emphasising the care necessary in the choice of a lysol, the makers of Lysolats are repeating a warning that has been made time and again by medical men. The cresylic acid used in the cheap liquid lysols is often deficient in Meta-Cresol, which, as doctors know, is the most actively bactericidal of the isomers.

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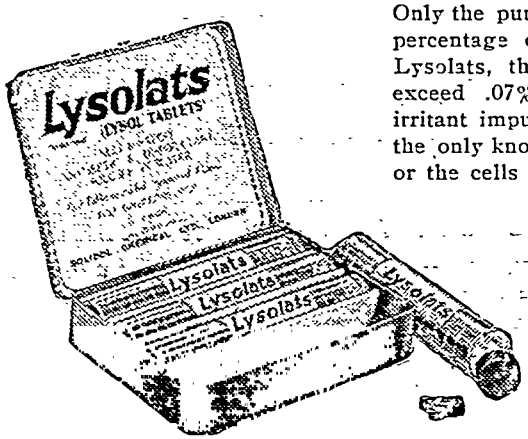

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PATENT 118667 (LYSOL TABLETS)

Lysolats are packed in handy tins containing 40 and 80 tablets (at 1/3 and 2/- respectively), and also in tins of 1,000 tablets.

Famous as The Food of Royal Infants

also for invalids, the aged, and all persons of weak digestion

ROBB'S NURSERY BISCUITS have no equal. Easy of assimilation, a nourishing and sustaining diet, its appetising flavour is greatly appreciated by both young and old. Very welcome as a substitute for the ordinary bread-and-milk diet. Can also be lightly baked, with eggs and milk, to supply a delicious custard pudding.

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Highly recommended by eminent Accoucheurs and Physicians throughout the world as the most reliable food for Infants over six or seven months.

ROBB'S NURSERY BISCUIT POWDER is recommended when a feeding bottle is to be used, also as a diet for invalids.

ROBB'S DIGESTIVE RUSKS, TOPS and BOTTOMS, GINGER NUTS, and CHARCOAL BISCUITS are specially recommended for invalids and convalescents.

Send for large free sample and descriptive booklet, etc.

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Prescribed in numerous cases *of nervous and heart disorders, also rheumatic conditions, etc.*

The active substances of the extracts from cone-bearing pine trees (Pinus silvestris, Abies alba, Pinus montana) is found in an oily substance commonly known as pine oil.

Novopine Sparkling Pine Bath Tablets contain this oil in a convenient form and an effervescence is introduced to facilitate successful solution in the bath. Their therapeutic value lies in their action on skin, lungs, and heart. For, in addition to the direct action through the pores of the skin, the ozonic aroma given off is automatically inhaled during the taking of a hot bath.

Besides their general cleansing and health-giving properties, they have been found especially beneficial as a remedy against nervous heart diseases and kindred disorders

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Novopine
Sparkling Pine Bath Tablets

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SALVITAE BRAND

A FORMULA THAT DEMONSTRATES ITS SCIENTIFIC VALUE

INTESTINAL SUBINFECTION

SALVITAE is the key whereby the physician may control elimination and alkalinization, thus dealing fundamentally and effectively with Intestinal Subinfection, Toxæmia, Acidosis, Uricacidæmia, Constipation, and a large number of disorders characterized by, and more or less dependent upon, faulty metabolism, imperfect elimination, and disturbances of the acid-base equilibrium of the body.

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FOR HYPODERMIC, INTRAMUSCULAR AND INTRAVENOUS USE AND FOR INHALATION

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Free from any disagreeable taste or odour.

Each fluid drachm (4 c.c.) contains:

Strontii Bromidi	5 gr.	Tinct. Adonis Vernalis	5 m.
Tinct. Valer. Deodorat.	10 m.	Tinct. Visci Alb.	5 m.

Useful for functional nervous affections, particularly in controlling epileptic seizures.

PRICE 5/- lb.

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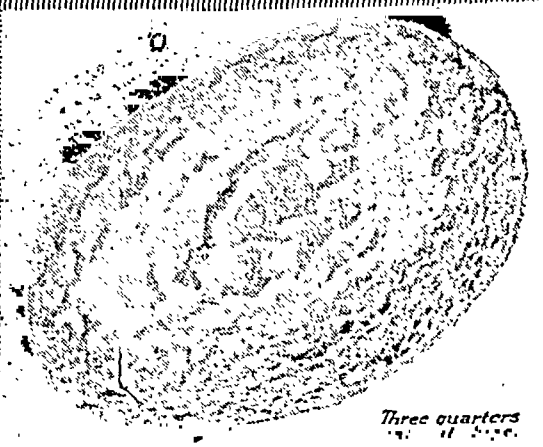

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Scores of letters from grateful mothers

Made by

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Ample proof of the value of Acriflavine "B. D." Brand as a wound antiseptic was afforded during the war. Subsequently it was shown to be an antiseptic of wide application for a variety of conditions.

Acriflavine "B. D." Brand is non-toxic in spite of its powerful antiseptic action; moreover, it possesses the unique advantage of an augmented bactericidal activity in the presence of serum.

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The best results are assured when the "B. D." Brand is specified

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TRADE 'ROCHE' MARK
"ALLONAL"
Brand
ALLYL-ISOPROPYL-BARBITURATE OF PHENYL-DIMETHYL-DIMETHYLAMINO-PYRAZOLON

Issued in Bottles of 12 and 100 Tablets.

For the relief of

PAIN & INSOMNIA
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Headaches	Tabetic Pain
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Purposeless, Tickling Cough!!

Researches at DAVOS have recently shown that Morphine can advantageously be replaced by 'ALLONAL,' which allays the cough, gives the patient sleep, and the irritated mucous membrane rest for repair.

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This nourishing and sustaining food drink is helpful to nursing or expectant mothers

NOT only hundreds, but literally thousands of cases are recorded in which this well-known preparation — Horlick's Malted Milk — has proved its efficiency as a body-building food.

It is particularly valuable as an addition to the diet of the expectant and nursing mother. For Horlick's is a perfectly balanced food containing fat, proteins and soluble carbohydrates combined together in correct nutritive ratio. It is prepared from fresh, full-cream cows' milk, selected wheat and malted barley — and, during manufacture, is partially predigested to ensure easy assimilation.

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Taken during pregnancy, it builds up the mother and helps to maintain her vitality. A cupful taken regularly first thing in the morning frequently abolishes and almost invariably alleviates the discomfort of morning sickness.

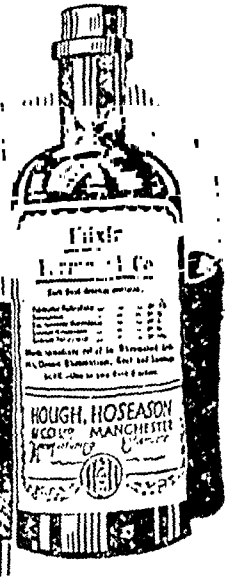
Horlick's is now obtainable in two forms — the original, natural-flavoured Malted Milk, and the new Chocolate Flavoured form — identical in its constituents with the original Horlick's, but flavoured with fine chocolate. Horlick's is sold in sealed glass bottles, price 2/-, 3/6, 8/6, 15/-. Also in tablet form.

Further details may be obtained from Horlick's Malted Milk Co., Ltd., Slough, Bucks.

RHEUMATOID ARTHRITIS
LUMBAGO SCIATICA
NEURITIS

ALL THESE CONDITIONS YIELD RAPIDLY TO A COURSE OF

ELIXIR FORMASAL Co.
AND
TAB. ARTHRITONE



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The results that are being obtained by the profession are very striking, and no practitioner can afford to be without a supply

Please note, our preparations are not advertised to the public.

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ELIXIR FORMASAL Co. 4/3 lb. WINCHESTER 4/- lb.
TAB. ARTHRITONE 4/6 Per 100 — 32/6 Per 1,000.

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PHARMACEUTICAL SPECIALISTS TO THE MEDICAL PROFESSION.

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Colloidal Hydroxide of Aluminium

THE increasing prevalence of gastric ulcer and hyperchlorhydria has produced an advance in the treatment of these diseases.

"Alocol" (Colloidal Hydroxide of Aluminium) provides an antacid medicament far superior to subnitrate of bismuth, bicarbonate of soda and other alkalis. These merely afford a certain degree of ease, without bringing about a permanent relief of the condition.

"Alocol" absorbs the excess of hydrochloric acid without interfering with the normal antiputrefactive function of the gastric juice or harmfully affecting the processes of nutrition.

"Alocol" has been subject to extensive clinical trial, and literature giving full particulars of the results will be gladly sent to medical men on request.

For Acute or Chronic Cases of Hyperacidosis

For Gastric Duodenal or Pyloric Ulcers

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M232

FRANK COOPER'S OXFORD MARMALADE

By Appointment. *By Appointment.*

A One-pound Jar of Cooper's "Oxford" Marmalade will be sent free to any medical practitioner on request.

FRANK COOPER LTD.
Victoria Works,
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The Certificate of the International Institute of Physiology and Hygiene states:

"This marmalade is prepared from the highly esteemed Seville orange and pure sugar. It represents a table commodity of the highest possible dietetic value and scientific skill in manufacture. It is entirely free from added colouring or flavouring bodies, and contains no injurious preservative material. It presents the delicate and slightly bitter flavour so much appreciated in home-made marmalade, and possesses stimulating and gustatory properties of a high order. The use of such marmalade as the kind under consideration is highly beneficial, for it promotes a healthy appetite and a natural flow of the digestive juices, and acts generally as a tonic to the stomach and liver."

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"FOR NERVOUS DEBILITY"

6 c.

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35 c.

"Given to my little girl for general debility and loss of appetite. About three weeks after commencing to take it there was a marked improvement in her appetite and general liveliness." **M.R.C.S., L.R.C.P.**

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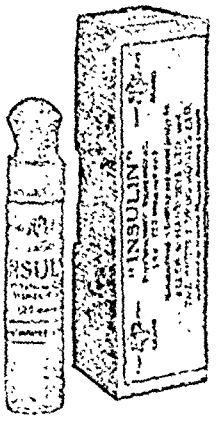
"A.B." Insulin connotes:

Uniformity of unitage.
Full potency and stability in all climates.
Purity and complete sterility.
Absence of reaction-producing proteins with consequent noteworthy freedom from unpleasant by-effects.

The activity of "A.B." Insulin is guaranteed by the most complete physiological tests and standardisation on the basis of the accepted unit. Before issue, each batch is passed under the authority of the Medical Research Council.



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Packed in bottles containing:

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A highly concentrated extract of FRESH LIVER specially prepared for the treatment of

PERNICIOUS ANÆMIA

Made by a process tested and found efficient by the Medical Research Council. *(See B.M.J. & LANCET, MARCH 16th, 1929).*

Supplied in vials each equivalent to ½ lb. Fresh Liver.

PRICES: Single Vial - 3/- Box of Ten - 30/-

Obtainable from all branches of Boots

Prescribe 'Mistol' for the Nose and Throat.

MISTOL has proven especially efficacious in coughs and colds, simple, congestive, and catarrhal rhinitis, hoarseness, bronchitis, and laryngitis.

Mistol consists of menthol, eucalyptol, camphor, and chlorbutynol carefully combined in proportions recommended by leading nose and throat specialists. A specially prepared petroleum base keeps the soothing, healing ingredients in direct contact with the mucous membrane for a considerable length of time. Moreover, it prevents it being easily washed away by the natural secretions.

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Sold in original sealed cartons containing a—

Mistol
(Registered Trade Mark)

Two-ounce Bottle and Mistol Dropper.

Made by Nujol Laboratories

Distributors: **ANGLO-AMERICAN OIL CO., LTD., Albert Street, Camden Town, London, N.W.1**

ANTISEPTIC
DUSTING POWDER

COMPOSED OF ZINC OLEATE & BORIC ACID

Duncan

IN COMBINATION WITH PURE WHEATEN STARCH

This powder is useful for dusting irritated and ulcerated surfaces, for burns and scalds, and for excessive perspiration. It is an excellent preparation for the toilet and an essential adjunct to the nursery.

Supplied in ½-lb. and 1-lb. enamelled tins; also in 2-oz. enamelled tins with dredger tops.

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For **Quieting** the **Irritable Stomach** and **Aiding** the **Tired Digestive Organs,** for **Refreshing** the **Fever Patient** and for **Restoring** and **Strengthening** when Other Food Fails, **Valentine's Meat-Juice** is used in **Hospitals** and prescribed by many leading Physicians and Surgeons.

Physicians are invited to send for Clinical Reports from Hospitals and General Practitioners in all parts of the world.

For sale by European and American Chemists and Druggists.

VALENTINE'S MEAT-JUICE COMPANY,
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(Prof. ALBERT ROBIN of PARIS)

Compound Syrup of Hypophosphites

TRADE **"FELLOWS"** MARK

"The Standard Mineralizing Tonic"

—combines the nutritive action of the Chemical Foods Calcium, Sodium, Potassium, Iron, Manganese, and Phosphorus, with the dynamic properties of Quinine and Strychnine

Literature and Samples sent upon request

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A safe and simple antacid which is also a gentle laxative must necessarily be of great value to medical practitioners when administering to ladies and children and all who are constitutionally delicate.
May we, therefore, venture to remind you of

DINNEFORD'S

PURE FLUID MAGNESIA

which has been extensively prescribed and used by the Medical Profession for a Century, and is still the best and safest means of administering Magnesia.

When prescribed for the nursery, too, Dinneford's Magnesia has always proved immensely useful as a corrective, and when mixed with infant's food it prevents many of the troubles which are due to acidity, flatulence, etc.

We are confident that you will find in Dinneford's Fluid Magnesia a reliable and safe solution which may be freely used for many ailments, and we would request your kind consideration of its use as occasion offers.

Dinneford's Pure Fluid Magnesia possesses antacid and laxative qualities which are incomparably better than those of any of the various preparations of Magnesia, in powder, now being introduced.

It cannot harm the most delicate constitution and is at all times a safe and effective aperient.

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A pure, finely divided Magnesium Hydroxide ($Mg(OH)_2$), suspended in water. A simple antacid and valuable laxative. Digestive troubles and gastric conditions, indicating the necessity of a corrective of this type, quickly respond to treatment with Regesan Cream of Magnesia. It does not gripe nor cause discomfort, and is mild in action.

PRICE 1/3 PER BOTTLE

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OBTAINABLE FROM

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OVER 800 BRANCHES IN GREAT BRITAIN

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During the past year "HEMOLAC" has been used with excellent results in cases of anæmia in infants. This new preparation results from the fact that the addition of Iron Ammonium Citrate to a basis of Cow and Gate Milk Food is often a highly beneficial form of treatment.

HEMOLAC

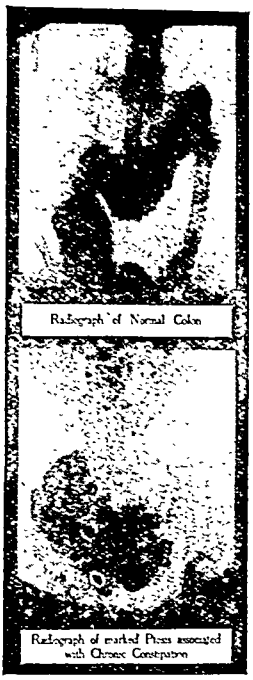
Full Cream Dried Milk with Iron Ammonium Citrate

"HEMOLAC" is therefore placed before the Medical Profession that they may observe personally its effect in this department of modern practice. Conveniently packed for private practice, also for Welfare Centres, and supplied direct on application. Professional enquiries, as to this and our other standard products, are cordially welcomed.

The manufacturers will gladly supply Samples and any further information, if required, and wish to remind Members of the Medical Profession that the Cow & Gate Laboratories are always at their disposal for experimental work in connection with Milk Foods.

Cow & Gate Milk Food

COW & GATE Ltd.
GUILDFORD SURREY



Radiograph of Normal Colon

Radiograph of marked Ptosis associated with Chronic Constipation

Intestinal stasis, according to a world-famous surgeon, "is the cause of all the diseases which we have acquired as the result of civilization."

"CHRISMOL"
Liquid Paraffin

For the Rational Treatment of Constipation and Stasis by Lubrication.

"Chrismol"

The Ideal Lubricant

Unirritating and universally applicable.
Does not interfere with digestion or absorption.
Effectively overcomes mechanical friction from hardened fæces.
Does not cause griping or gaseous distension.
Continued use does not produce "habit," lead to chronic gastro-intestinal catarrh or lose its effect as purgatives are liable to do.

Perfectly pure and innocuous.

Conforms to higher standards than those of the B.P.

Viscosity determined at body temperature to produce maximum lubricating effect.

Tasteless, colourless, odourless.

Descriptive literature and a clinical trial sample will be sent post free to members of the medical profession.

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"Byno" Hæmoglobin
The Pre-Eminent Hæmatinic in the Anæmias

Disadvantages of Inorganic Iron

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Variability of Therapeutic Effect

Superiority of Hæmoglobin

No Gastro-Intestinal Disturbances
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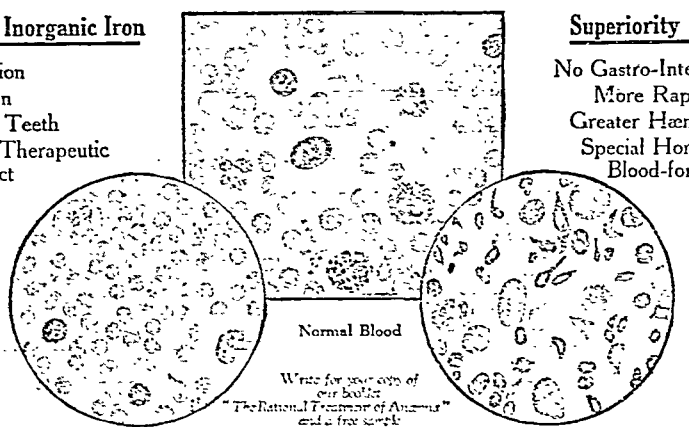

Blood in Chlorosis

Normal Blood

Blood in Pernicious Anæmia

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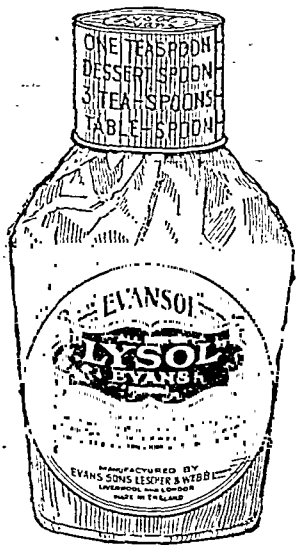

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ON

CARCINOMA OF THE STOMACH.

DELIVERED BEFORE THE SOUTH-WEST WALES DIVISION ON APRIL 17TH, 1929,

BY

A. J. WALTON, M.S., F.R.C.S.,
SURGEON TO THE LONDON HOSPITAL.

Of the 262 patients with carcinoma of the stomach that have sought my advice, 9, and 9 only, have survived for a long enough time for me to regard them as probable cures. These figures are sufficiently startling to make us realize that all is not well with our methods of diagnosis and treatment of this disease. In other varieties of carcinoma somewhat better results are obtained, but they are still far from satisfactory, and for this reason no one disease has at any stage in the history of the medical world attracted so much attention as has cancer to-day. I therefore feel very sensible of the honour which your committee has done me in asking me to consider with you some of the problems which confront us in dealing with the difficult subject of carcinoma of the stomach. On all sides efforts which are almost feverish in their activity are being made to discover its cause and cure, and although there have been no startling discoveries, it is satisfactory to realize that methods which are more or less empiric are little by little adding to our store of knowledge and are steadily improving our results. In some forms of cancer, indeed, the use of radium and x rays has been a great advance on the older methods.

ETIOLOGY.

Carcinoma of the stomach is so difficult to diagnose in its early stages that any improvement in our results must of necessity be slow, and can only be recognized if we have accurate statistical knowledge of the present-day position of the disease. It is generally believed that it is increasing in frequency, but, as I have previously pointed out,[6] my figures do not support this view. They are small in number, but are of value in that every case has been proved by operation, supported either by microscopic examination or by careful observation of the after-progress of the patient. The figures (see Chart 1) show

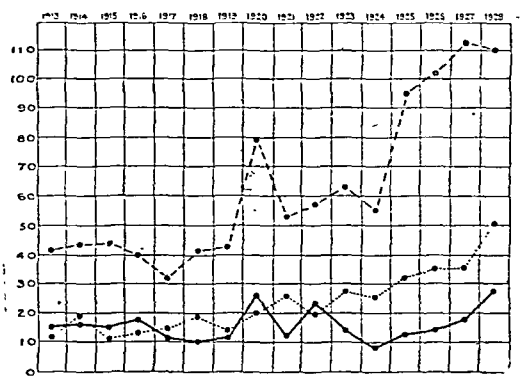

CHART I.—Frequency of carcinoma and chronic ulceration. Total cases of carcinoma 262 (males 191, females 71). Total cases of chronic ulcer 1,141 (males 850, females 291). Continuous line=carcinoma; interrupted line=all ulcers; dotted line=lesser curve ulcers.

a considerable variation in the number of cases treated each year, but no steady or regular rise since 1913. The interesting point is also noticeable that the numbers have remained more or less steady in spite of the fact that the chronic ulcers for which they are often mistaken have shown a very marked and rapid increase in numbers. There has thus been a relative decrease in the numbers of carcinomata, so that whereas in 1913 they formed about one-third of all my gastric operations, they now form only about one-sixth. The explanation which I have given for this, and which I still believe to be correct, is that a large number of cases of carcinoma of the stomach are prevented because they are operated upon while they are still benign ulcers. An apparent increase in the Registrar-General's figures may be due to the fact that the average age of the population is being raised, for the disease is most common between the ages of 50 and 60, more than three-quarters of the cases occurring between the ages of 40 and 70. Nevertheless, it must always be remembered in considering the diagnosis of a gastric lesion that carcinoma may occur at a much younger age. In my own series 3 cases occurred under the age of 30 (Chart 2), but Sullivan,[5] who reported a proved example of the disease in a patient of 22, was able to collect from the literature 21 patients under the age of 25.

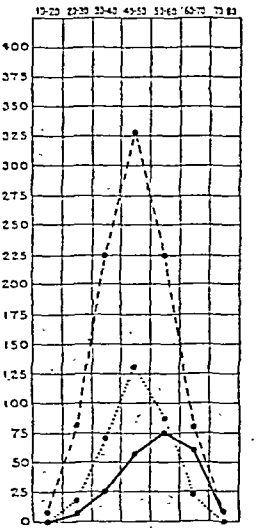

CHART II.—Age incidence of carcinoma and chronic ulceration. Continuous line=carcinoma; interrupted line=all ulcers; dotted line=lesser curve ulcers.

One of the most interesting facts of carcinoma as a whole is the varying sex incidence in the different varieties of the disease. With carcinoma of the stomach the male sex is much more frequently affected. Thus, in my own series of 262 cases, 191 were males. This may to a certain extent be due to the fact that some of the carcinomata are secondary to chronic ulcers, for with chronic peptic ulcers the incidence in males is even more marked. There were, for instance, in my own series of 1,141 chronic ulcers, 850 males.

PATHOLOGY.

Carcinoma of the stomach is almost wholly a primary disease. A few rare cases which are secondary—most frequently to carcinoma of the breast—have been reported, and there are others where the disease has spread to the stomach by direct extension from the gall-bladder, colon, or pancreas. In the viscus itself some of the carcinomata at the cardiac end are squamous in character, and have then almost certainly spread from the oesophageal opening. The softer, more medullary types of such disease may, instead of constricting the lower end of the oesophagus, spread down along the lesser curve and cardia, and give rise to a neoplasm which clinically is gastric rather than oesophageal. To-day this distinction is not of great importance, but if the operation of removal of the cardiac end of the oesophagus becomes more general, the differentiation of these two types will become of considerable practical importance.

The common variety of carcinoma of the stomach arises from the glandular elements, and the different types, therefore, depend upon varying degrees of differentiation of the cells, or upon secondary changes in the host. If the cells are well differentiated they may become columnar in shape and grouped into the form of immature gland tubules. Such a type is spoken of as an adenocarcinoma, and generally forms a fungating mass in the region of the pylorus. There is, however, no sharp line of differentiation between this variety and the more common types. Usually a combination of some columnar cells grouped into incomplete tubules with masses of cuboidal cells is found.

An interesting variety is that in which the cells show a colloidal change to form semi-transparent globules visible to the naked eye. The change appears to be inherent in the epithelium, for it is not only visible in the primary growth, but also in the cells of the secondary deposits. Occasionally masses of unchanged cells are seen lying in large spaces formed of colloid material. Although this

change is generally spoken of as a colloidal degeneration, there is no evidence that it is relatively benign. In the cases in my own series there have usually been large masses of secondary deposits in the coronary glands. Stimson,[4] who studied 121 examples of this variety occurring at the Mayo Clinic, found that they formed about 5 per cent. of all gastric carcinomata, and that the percentage living three and five years after operation was about the same as with the non-colloidal types.

The common pathological types vary in their appearance, if not in their prognosis, according to the reaction of the host and the consequent fibrosis. Those in which there is but little fibrosis are usually described as medullary types. These most commonly occur on the lesser curve, and form large, soft, raised, fungating masses which widely infiltrate the wall of the stomach and frequently ulcerate. There is, however, an interesting variety to which I have on several occasions directed attention. It occurs on the greater curvature of the stomach, grows relatively slowly, and forms a large mass projecting into the stomach, but seems to be relatively benign, and is only associated with secondaries comparatively late (Fig. 1). It is of considerable practical importance in that it may give rise to a relatively enormous tumour, which, because of its size, may be regarded as inoperable, but if an operation be undertaken is found to be easily removable. Owing to its site and rather abnormal characters, it would seem most likely that it occurs as a malignant change in a simple papilloma.

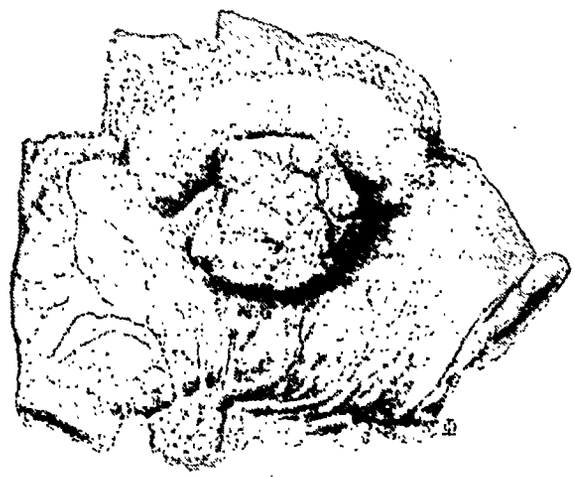

FIG. 1.—Massive carcinoma of the greater curvature of the stomach, posterior aspect.

The scirrhous types with more massive fibrosis are most commonly found at the pylorus, and form smaller masses which infiltrate and replace the walls of the stomach. The fibrous tissue contracts and leads to stenosis, and the mucous surface undergoes shallow ulceration. When situated at the lesser curve it tends to spread round the walls of the stomach, and thus gives rise to an hour-glass deformity, which differs from the common type secondary to an ulcer in that the constricted passage is relatively long and irregular and is centrally placed, so that the greater curve is not drawn up to the lesser as with an ulcer.

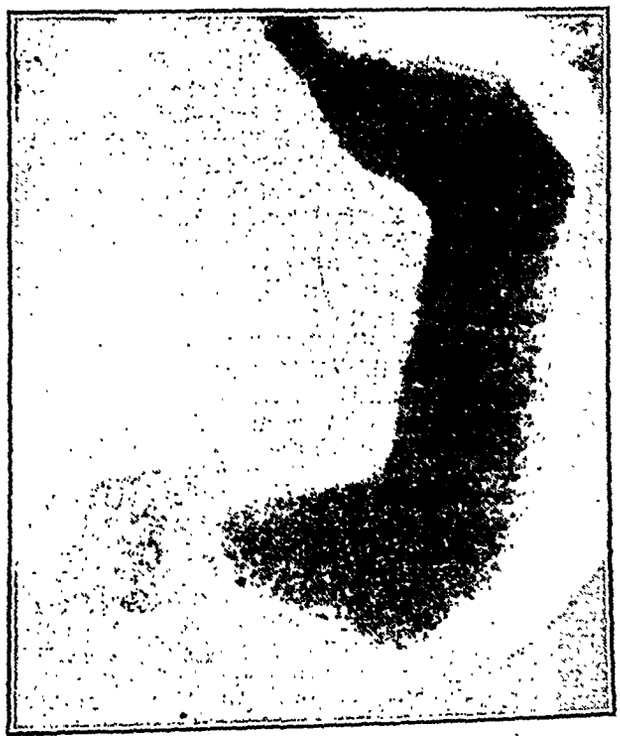

FIG. 2.—Radiogram of "leather bottle" stomach.

This variety of hour-glass constriction may occur with either sex, while the simple type is almost, if not indeed entirely, limited to females, and hence if a male patient is found to have an hour-glass deformity of the stomach a carcinoma should always be suspected. These variations in the reactions of the host are, however, no indication of the malignancy of the condition. A scirrhous carcinoma of the pylorus is not infrequently seen which from its local characters admirably lends itself to resection, but which is associated with widespread secondary changes in the liver or in other viscera. The massive carcinoma of the ovaries, known as the Krukenberg tumour, is usually secondary to a small scirrhous growth of the stomach.

The most extreme degree of reactive fibrosis is found with the condition known as "leather-bottle stomach," or "linitis plastica." It is relatively rare, and my own series only includes four examples. There has been much discussion as to its nature, and a certain amount of evidence has been produced to show that it may occur secondary to an ulcer and be benign in type. Every example in my own practice and in the hospital has, however, been carcinomatous in nature. Sometimes so widespread is the fibrosis that small groups of isolated carcinoma cells may only be found in the stomach wall or in the glands after many microscopic sections have been made. I am therefore of the opinion that all true cases of this condition are of the nature of an atrophic scirrhous carcinoma. The affected stomachs show a remarkable similarity. In the diffuse type the whole viscus is much contracted (Fig. 2), and the wall is enormously thickened and rigid. The peritoneal surface is usually normal in appearance, or may show scattered white patches of infiltration. The change is abruptly limited to the pylorus, and may extend right up to the oesophagus or leave but a small area at the cardia unaffected. Although the stomach lesion is so widespread the change is relatively benign, so that the glands may be but little affected, and the operation of complete gastrectomy, although associated with a high mortality, may hold out hopes of a cure.

FIG. 3.—Stomach from case seen in Fig. 2 after removal (complete gastrectomy).

One of the most important facts which will influence us in the treatment, and especially in the preventive treatment, of carcinoma is its relation to chronic gastric ulcer, a relation which of late years has been the subject of much diversity of opinion. As far back as 1839 Cruveilhier and

Rokitansky first suggested that there might be such a relationship, and later Osler and others found that about 5 per cent. of the carcinomata had originated in such ulcers. Some years later—that is to say, about fifteen years ago—the relationship was regarded as much more close, MacCarty suggesting that some 70 per cent. of all carcinomata commenced in this way. This figure was manifestly too high, and, being disproved, has tended to make opinion sway too far in the opposite direction—an opinion which is fostered by those who believe in the medical treatment of gastric ulcers, for it is evident that if there were a danger of the ulcer becoming malignant the routine use of medical treatment would be a dangerous procedure. Stewart's[3] careful pathological figures are very helpful. He came to the conclusion that 9.5 per cent. of chronic ulcers became malignant, and that 17 per cent. of the cases of cancer originated in an ulcer. I have previously reported a carefully analysed series of 229 of my own cases of carcinoma from this point of view, and have only grouped as having an origin in an ulcer those which fulfilled the following requirements:

1. They must have a history of many years' standing in which the earlier symptoms were periodic.
2. They must have at the time of operation a relatively high test meal.
3. They must present at operation the characteristic appearance of an ulcer.
4. The pathological report must strongly suggest that the carcinoma was secondary to an ulcer.

Twenty-five cases fulfilled these requirements—that is, 10 per cent. of the total—but, as the inoperable cases could not be included, this is almost certainly an underestimate. The more important consideration, however, to us is the percentage of cases which, although not truly benign ulcers, are at first diagnosed as such and later become carcinomatous, for it is in these that the great mistake may be made in continuing medical treatment until the condition is hopelessly inoperable. Scott[2] has laid stress upon this, and has found that 16 to 20 per cent. of clinically diagnosed ulcers become malignant. The importance of the pathological relationship lies in the fact that if we can remove, while they are yet benign, those ulcers which, if left, would become malignant, we shall do much to prevent the onset of carcinoma and to lessen the mortality of this dread disease. Moreover, in our clinical investigations, and in our operations, we must always consider the possibility of such a complication, and if there be any suggestion of its presence a more extensive operation must be performed.

SYMPTOMS.

The symptomatology of carcinoma of the stomach has had so much attention directed to it that it might be thought that it was unnecessary to consider it in detail, but the cases are so often slow and insidious in their onset that they are still frequently overlooked, and it is only by careful consideration of the finer points of the symptoms that an accurate diagnosis can be made, or that even a suspicion of the presence of the disease is aroused. The most frequent variety of carcinoma of the stomach is that which arises in the body of the viscus, and in this position the disease may present itself slowly and insidiously, or arise with a sudden onset, or the symptoms of a gastric ulcer may slowly and gradually change to those of a carcinoma. In the first two varieties the most important factor is without question the presence of a short history of dyspepsia occurring in a patient of middle age who has previously been free of all gastric symptoms, and I am always in the habit of teaching that such a patient must be regarded as having a carcinoma until he can be proved to be free from it. If the onset is slow and insidious, the first symptoms are usually other than gastric. The patient will complain of a general weakness, loss of energy, and inability to concentrate upon his work, a certain amount of sleeplessness, and possibly some loss of weight. It may, indeed, only be on cross-examination that he will acknowledge that there is a loss of appetite, and at a later stage there will be a feeling of discomfort after meals, which may even develop into definite pain. Rarely does this become severe, but it tends to persist throughout the day, although it may be exaggerated by the taking of food. The loss of appetite increases, and is nearly always a marked symptom, until it becomes an absolute distaste for all food.

Vomiting is rarely marked, and frequently only amounts to the regurgitation of a small amount of fluid, which the patient will describe as being foul or offensive in character. Regurgitation of food gives little or no relief to the pain. Blood in the vomit is extremely variable, and is often absent to naked-eye investigation. It is only in a relatively small proportion of cases that the presence of altered blood giving the typical coffee-ground vomit is apparent. A severe haemorrhage is not uncommon, although it is perhaps more frequently found in those cases with a sudden onset. If use is made of chemical investigation blood will be found in a much higher percentage of cases. As the disease progresses the patient will show a steady loss of strength and the onset of anaemia. In some cases the latter is a very marked factor, so that the weakness, the depression, and the loss of appetite are regarded as symptoms of a primary anaemia, and indeed at times the blood count may more closely simulate a primary than a secondary anaemia.

On examination, beyond the anaemia, weakness, and wasting, but little may be found. If there is a tumour it is, of course, suggestive of the presence of a carcinoma, but it must never be forgotten that a considerable proportion of these cases have the lesion high up on the lesser curve, so that a tumour may not be felt until the patient is in the last stages of the disease. On the other hand, the presence of a tumour itself is no indication that the condition is inoperable. Such a mass will be most easily felt when the lesion is seated at the pylorus, and it is this type of case which gives the best possibility of a partial gastrectomy. If the case has been of sudden onset, the patient will much more frequently complain of severe pain. He may be able to date this back to some specific meal, but the pain never disappears, as it would if due to an error of diet. In other cases the sudden onset is due to the presence of severe haematemesis, or, more rarely, to a perforation. The important point always to remember, however, is that, whatever the nature of the onset, carcinoma is much the more likely cause of a dyspepsia arising for the first time in a patient at or about the age of 40. If, therefore, with simple medical treatment, such symptoms have not disappeared completely in a fortnight's time, the patient must not be watched until the diagnosis makes itself evident by the onset of severe symptoms and the presence of a tumour, but immediate investigation with a test meal and x rays must be carried out.

When the disease has arisen secondary to an ulcer, even these methods of investigation may fail, for they may present the characters of the pre-existing ulcer rather than those of a secondary carcinoma. To those of us who believe, as I most certainly do believe, that a persistent chronic ulcer should always be treated by surgical measures, there is much less chance of making a mistake. A careful analysis of the symptoms will reveal the fact that the pain is becoming more continuous though less severe; that the appetite is beginning to fail; and that the pain is not relieved by vomiting. In such circumstances there will be a tendency, which may be increased by the appearance of the lesion at operation, to perform a partial gastrectomy rather than a local operation upon the ulcer.

Test Meal.—In cases of doubt a careful investigation of the test meal will often be of very great help. There is no condition which is associated with so early and complete a loss of the free acid and a diminution of the total acidity. It is true that a gastritis commencing in a man of middle age will often have an achlorhydria, and it may require very careful clinical investigation and consideration of all the evidence at our disposal to make a differential diagnosis. Although more difficult to carry out, a fractional test meal undoubtedly supplies more information than the ordinary Ewald meal, for the acidity is not only low, but there is a complete absence of free hydrochloric acid throughout the whole period of the investigation. The value of this test, if taken for the first time on the patient, must be discountenanced when there has been a previous chronic ulcer. I have had the opportunity on several occasions of examining a test meal on patients who have had a previous meal taken when they still had

a chronic ulcer, and in every case there has been a marked diminution of the acid, but the important point to remember is that although there has been this diminution the acid may still be above normal, and hence if this had been the first meal taken there would have been no indication of the presence of carcinoma.

X-ray Investigation.—It is necessary to-day to issue a warning as to the indiscriminate use of *x*-ray investigation. If the investigation is carried out by a skilled observer and a careful report made of the findings on screening, this is one of the most valuable means of diagnosis at our disposal, but if, as is so often done to-day, one or two films are taken by a man but little versed in the method, the findings are not only useless, but may be positively misinforming and dangerous. In the early stages of the disease an investigation, although performed by a skilled technician, may reveal but little. The most useful sign at this stage will probably be the absence of peristaltic waves over a small portion of the stomach. These may be revealed on the screen, or several films may be superimposed and may show that, whereas the general contour of the stomach is altered, there is a small area which remains absolutely unchanged. In the later stages filling defects, irregularities of the lesser or greater curve and the presence of a large irregular meniscus will, of course, be self-evident signs. A difficulty often arises in the cases that have followed a benign ulcer. There will be a typical picture of the chronic ulcer, and there is therefore a danger that the minor changes, such as occur with the early onset of carcinoma, may be overlooked. It is in such cases that it is so important for the clinician, who has had his suspicions aroused by a slight change in the symptoms, to warn the radiologist of the possibility of the onset of early carcinoma, so that his attention may be directed towards the possibility of slight irregularities in the outline of the ulcer crater.

When the disease commences at the pylorus it will, as a rule, whether of the fungating or scirrhous type, give rise to obstruction, and the symptoms then are no longer characteristic of a carcinoma, but are those of mechanical obstruction; that is to say, there will be the feeling of discomfort and fullness coming on immediately after meals, a certain loss of appetite owing to the secondary gastritis, and the onset of vomiting, which will soon become large in amount and occur at relatively long intervals. Here again the important point to remember is that a carcinomatous pyloric obstruction will only have been present for a relatively short time, whereas one due to an ulcer may have been in existence or have been slowly developing over many years. In any case, obstruction of the pylorus, of whatever nature, should be subjected to early operation.

Carcinoma situated at the cardiac orifice will in the same way lead to œsophageal obstruction, although if the growth has commenced in the stomach rather than in the œsophagus itself there will probably be a period in which the symptoms are those of a neoplasm of the body of the stomach.

TREATMENT.

In spite of a great deal of work that has been done along medical lines, there can be no question that at present such methods hold out no hopes of success. The use of the various colloidal metals—and more especially the theoretically fascinating treatment with colloidal lead—has been relatively widely tried, but cannot yet be said to have made sufficient progress to warrant their general use. Owing to the depth and inaccessibility of the growth, the treatment by massive doses of *x* rays or radium emanations has not yet sufficiently advanced to hold out a very great hope. Possibly in the near future the use of the radium cannon may revolutionize our ideas in the treatment of such growths, but so far this method is in the experimental stage. It may therefore be said that unquestionably the only treatment to be advocated at present is by operation. Because this is an accepted fact, there is rather a tendency to believe that the outlook with such a method is satisfactory. Unfortunately, careful statistics show that even with an operation the results leave much to be desired. To a very large extent the fault of this lies on our shoulders. Of my 262 cases, 171, or 65.2 per cent., were found at operation to be too far advanced for removal, and although early diagnosis is often a matter of great difficulty, we must make every effort to lessen so high a percentage. It is true that many patients show so insidious an onset of the disease that they are in an inoperable stage when they first seek medical advice, but that this percentage can be reduced is shown by my own figures. In the first five years there were 81 cases, 60 of which (74.1 per cent.) were inoperable. In the second 5-year period there was a very satisfactory improvement: of 91 cases, 50, or only 56.1 per cent., were inoperable. In the last five years there has been a slight lapse: of 90 cases, 60, or 66.6 per cent., were inoperable. I cannot help but think that this lapse is due, in part at least, to the recent exalted claims of the value of the medical treatment of chronic gastric ulcers, for so many of this last series had been diagnosed as chronic ulcer and treated medically until they were inoperable.

It is possible that a more extended trial of the method of treating the exposed growth by massive doses of *x* rays, as advocated by Digby Chamberlain,[1] may convert some of the apparently inoperable growths into conditions which can be removed with a good prospect of permanent cure. Even when the growth is removable the end-results are capable of much improvement. The published figures of such results show a remarkable diversity, some having claimed 40 per cent. of three-year and 26 per cent. of five-year cures, whereas others have found that only about 1 per cent. of the operated cases have lived for five years. I have already stated that of my 262 cases only 9 can be regarded as possible cures, and in a series I have previously recorded, of 117 cases carefully followed for a minimum of four years, of whom 62 were treated by partial gastrectomy, only 4—that is, 6.4 per cent.—were still alive and well fifteen, twelve, ten, and seven years respectively after operation, although several of the others who had died of recurrences had lived in comfort for as long as three and four years. It is very doubtful whether this percentage of recurrences can in any way be prevented by the use of more extensive operations. It is my own custom to perform as wide a partial gastrectomy as possible, so that very often only one or two inches of the fundus of the stomach are left, and in many cases the glands are removed from around the coeliac axis. It is in the combined use of radium with partial gastrectomy that at present I am looking for more hopeful results. If only a small percentage of these recurrences can be prevented much may be done to improve the operative results.

Indications for Operation.

Since it is by operating in the earliest possible stage that we can best hope to improve our results and to make it possible to perform a partial gastrectomy in the 66 per cent. of cases which at present are inoperable, we must consider carefully upon what grounds other than a definite diagnosis we are justified in advising operation. It is self-evident that if a patient of middle age presents himself with a short history of persistent and progressive dyspepsia having the characters described above, which has not yielded to a week's medical treatment, and more especially if the test meal shows an absence of free hydrochloric acid, he must be regarded as probably, if indeed not certainly, suffering from carcinoma of the stomach, and an operation should be advised at the earliest opportunity. If the *x*-ray findings are positive or suggestive, the diagnosis may be regarded as certain, but it is especially in these early cases that the *x*-ray appearances may be so nearly normal that a wrong conclusion may be drawn. Although, if an operation be advised with a negative *x*-ray photograph, the patient may occasionally be found to have only a gastritis, yet his relief on being definitely assured that no carcinoma is present is so great that it will do much to help his recovery. In suggesting such a course of treatment one is aware of the danger of advocating a routine exploratory laparotomy, a course which is strongly to be deprecated. It is only after a very careful consideration of the symptoms and of the danger of overlooking a carcinoma that an operation should be advised. If the case has been one with a sudden onset and presents the more serious symptoms of haemorrhage or severe pain, operation can even more confidently be advocated. The condition is then

almost certain to be one of carcinoma, or in a very few cases where there has been an error of diagnosis the underlying condition is most probably one which can only be treated by operative measures.

When the patient has been suffering from a chronic gastric ulcer which has undergone a change in the symptoms suggestive of the onset of carcinoma the course to be pursued is definite. So long persistent an ulcer giving such definite symptoms ought never to have reached this stage before an operation was undertaken, and the difficulty before the surgeon will be, not whether to operate, but whether to carry out a more extensive partial gastrectomy because of the suggestive symptoms. In this type of case the test meal may still be normal, and the radiogram may be characteristic of an ulcer; but there should be no hesitation whatever, if there is the slightest suggestion of a carcinomatous change, either because the symptoms have become more persistent or less severe, or the appetite has begun to fail, or the vomiting has altered in character and does not relieve the pain, in performing a partial gastrectomy on the assumption that a carcinomatous change is present. I have unhesitatingly pursued this course, and have never had reason to regret it. In some 10 cases the removed portion of the stomach has shown to the naked eye a characteristic chronic gastric ulcer, but subsequent microscopic investigation has revealed the presence of a carcinomatous change, and the operation therefore has given the patient the chance of a permanent cure. If there is pyloric obstruction, operation must always be performed at the earliest opportunity, for it is evident that if a patient of middle age has developed a mechanical obstruction nothing but surgical treatment can overcome the trouble. Nevertheless, cases are still seen where medical treatment, including lavage and diet, has been carried out for some weeks or months until the condition has become hopelessly inoperable. In this variety, as in the last, a careful consideration must be given to the symptoms, and if there is the slightest suggestion that the obstruction is carcinomatous in origin a partial gastrectomy must be carried out rather than a gastro-enterostomy. The only difficulty which will arise is in those cases where there has been a long past history of a pyloric ulcer, for a short history of pyloric obstruction in an adult is almost certainly carcinomatous. When secondary to an ulcer the main points upon which a differential diagnosis will be made are the rapidity of the onset of the obstruction, the relatively early fall in the acid in the test meal, the loss of appetite, and the presence of a tumour.

The mere presence of a tumour in the region of the stomach is no counter-indication to operative treatment, nor, indeed, is its size or apparent mobility. It may be thought that the tumour is so big that it is certain to be inoperable, but massive carcinomata may occur on the greater curvature which give rise to a tumour 3 to 4 inches in diameter and yet are easily removable. The only counter-indication to operation in a tumour of this nature is the definite evidence of secondary deposits. Most frequently they show themselves as nodules in the recto-vesical pouch, which can be felt by rectal examination, as enlargements of the liver, or in the presence of ascites. It is true that the larger the tumour and the more fixed it appears to be the more likely is the case to be inoperable, but it has always been my experience that in doubtful conditions it is wiser to carry out the operation. Should this not be performed the relatives will always feel, after the death of a patient, that if only an operation had been carried out he might have been saved, whereas when it has been performed and the condition found to be inoperable they will consider that at least every attempt had been made to save him.

Of the technical steps in performing the partial gastrectomy I need say but little. There should be a wide and free removal of the lesser and greater omenta. The subpyloric glands around the head of the pancreas must be carefully dissected away. The coronary group of glands must be removed as high as possible, and it is my own custom in cases of doubt to dissect the glands from around the coeliac axis. The resection of the stomach should in all cases include about seven-eighths of the viscus, and the anastomosis can be best performed by the end-to-side method of Polya. It is my own custom to do this by the old method of bringing a loop of jejunum up through the mesocolon, and making the anastomosis some 4 to 5 inches from the flexure. Many surgeons have abandoned this method and make the antecolic anastomosis, but in my hands the posterior method—if a small loop is left—is so satisfactory that I have seen no reason to change it.

It will naturally be thought that with the modern progress of radium treatment some use may be made of this form of therapy, but with our present uncertainty of the results of this method of treatment it has seemed useless to attempt to use it in the advanced and inoperable cases, for this would mean a wide application to the stomach, to the glands, and probably to the liver, but it does hold out a hope that if used in combination with operation it might do something to prevent or lessen the high recurrence rate. It has been my experience that the cases which recur usually show a large deposit either around the head of the pancreas or in the neighbourhood of the coeliac axis. I have therefore in my more recent cases been using radium after all partial gastrectomies, and have been inserting 12 milligrams around the coeliac axis and 8 milligrams around the head of the pancreas. These tubes are left *in situ* for four days. It is, of course, at present impossible to say what the value of this method will be, and indeed we shall not have any accurate statistics until at least five years have elapsed. Our present experience does show, however, that the insertion of the tubes may cause a little post-operative vomiting, but so far this has not been sufficient to make us abandon its use, and we still have high hopes that satisfactory results will ensue and that the number of lasting cures will be considerably increased.

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SERUM TREATMENT OF THE PNEUMOCOCCUS PNEUMONIAS.*

BY

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CLINICAL classification of the pneumonias in accordance with their probable pathological findings seems to be useful only in so far as they suggest the etiology. Such classifications may prove clinically disastrous, as when a diagnosis of broncho-pneumonia or "influenza pneumonia" is made, and the actual condition is Type I pneumococcus pneumonia. Such cases are common. Two were recently investigated by us; both proved fatal, and were due to pneumococcus Type I, and therefore probably amenable to serum therapy. They were not typed until they came under our observation very late in their course.

Etiological classification of the pneumonias is of value if it helps to determine treatment and prognosis. Until it was definitely demonstrated that serum treatment was useful in at least one of the pneumococcus pneumonias a further subdivision of the miscellaneous types of organisms that constitute the miscellaneous group, or Group IV, was, for practical men, scarcely worth the effort involved in separating them.

As the result of the carefully controlled experiment at Harlem, Bellevue, and New York Hospitals, carried on under the direction of Dr. William H. Park, it has been shown statistically that in Type I pneumonias the mortality can be reduced by the use of the refined antibacterial serum now available, so that instead of one patient in three, one

* Read before the Eastern Medical Society, February 8th, 1929. From the Medical Service, Harlem Hospital (Lewis K. Neff, Director) and the Littauer Pneumonia Research Fund of New York University.

patient in five dies. Though the statistics are not as definite in Type II cases, instead of one patient in three, one patient in four dies. A relatively useful serum for Type III pneumonia is not available.

As the result of the studies of Dr. Park and Miss Cooper, the patients at Bellevue and Harlem Hospitals are classified according to type; for this purpose thirteen different types are recognized. Dr. Park, Dr. Rosenblüth, and I gave the statistics of our service during the past two years at Harlem Hospital, and the other hospitals associated with us, in a paper in the *Journal of the American Medical Association* of November 17th, 1928. In brief, our results showed,—in Type I cases, a reduction of fatality of 42 per cent., with a ratio of difference to standard error of 3.7 (regarded by statisticians as statistical proof), and in Type II cases a reduction of mortality of 22 per cent., with a ratio of difference to standard error of 1.9.

At Harlem Hospital we have treated alternate patients in the order of their admission, rating them on their arrival in the ward, and we have employed a standard method of management which applied to both the serum-treated cases and the cases not treated with serum.* As the result of our observations we were convinced not only that there were fewer deaths in the serum-treated cases, but that we saved patients who were more seriously ill, and shortened the time of their illness.

Satisfactory as were our results in the hospital and private practice, there can be no great reduction in pneumonia deaths in general until the serum is promptly applied by the physicians in practice throughout the community. It is only a relatively small number of pneumonia sufferers that are at the present time taken from their homes. While physicians were without any effective therapy to offer to their patients a policy of watchful waiting, with so-called supportive treatment, was justified, and, depending upon his limited experience in the particular season, the practitioner has felt either that his efforts were of value, or that the disease was especially virulent.

So long as it was necessary to spend hours desensitizing patients to unrefined horse serum, when frequent and severe serum sickness was the rule, and when large quantities of horse serum of unknown titre had to be injected, it was only to be expected that the serum treatment would remain a procedure limited in application to those hospitals in which exceptional facilities were available. Unless the diagnosis of Type I infection (for which the serum was intended) was made, injection of the serum was unjustified. At present there is in use a serum of strong titre, freed from most of its deleterious ingredients, and concentrated so that an efficient dose can be administered in the home after brief preliminary tests; the serum treatment has thus become available for the general practitioner.

With the successful introduction of the serum treatment of pneumonia we may hope for results equivalent to those which followed the employment of antitoxin in diphtheria —a marked reduction of the death rate from the pneumonias and a great improvement in the technique of preparing serum, with an increased skill in application; in other words, better typing and dosage. At present polyvalent serum is available in titres as strong as 3,000 units of Type I, and 15,000 units of Type II, and I have used serums as strong as 5,000 units per c.cm. A well-refined high titre serum, which has been freed of all chill-producing substances, is the aim of serum manufacturers. The Research Laboratory of the Department of Health, the Littauer Pneumonia Fund of New York University, and the Harriman Fund are directing their efforts to the production of such serums. The methods of refining are technical chemical processes which little concern the clinician.

With increased knowledge and with more funds, therapeutic serums for the more recently separated types will become available, and will no doubt prove as efficient in practice as they are in laboratory experiments. As long as we depend upon type specific therapy, methods for improving and hastening the determination of the invading type of pneumococcus must occupy our attention.

Recently one of our workers, Mr. Albert B. Sabin, a student in the medical school of New York University, has developed an important improvement in the typing of pneumococci which may, in the 90 per cent. of cases apparently insusceptible to typing by the Kumwiede method, shorten the time of typing to as little as three hours. This method requires only few organisms. It has the further advantages that it requires little serum and can be performed without the elaborate arrangement of tubes and controls required in the usual agglutination and precipitation tests. The method, which will be published shortly, depends entirely upon the microscopic agglutination of organisms on a slide; it has been used in upwards of 100 cases and carefully checked with the older methods, and up to the present time there has been complete agreement.

This brings us to a discussion of the whole question of typing. Occasionally a report is received of one organism having been obtained from the sputum and another from the blood stream of the mouse, but it is most important to realize that, although the finding of one organism in the sputum may be reported, yet the patient is invaded by a different organism. For this reason blood cultures should be taken from all patients suffering from pneumonia, and the organisms recovered should be typed. In our experience* a positive blood culture has been found in 22 per cent. of all cases. The information thus obtained is not one of mere theoretical interest. A positive blood culture in a patient definitely defines the type of the invading organism, and also determines the need for increased intensity of treatment, if the invader be a Type I or Type II organism. Rosenblüth showed that the greatest benefit from serum, in our cases, was in the patients in whom a bacteriæmia was demonstrable. However, in the absence of a positive blood culture the sputum should be typed; and when that is not available, swabbing from the gagged throat should be typed, because lung secretion may not be expectorated but swallowed after passing through the larynx.

In the absence of a positive blood culture and of evidence that there is a type specific invasion, or before it has been definitely proved that the organism recovered from the mouse's heart's blood is not Type I or Type II, for which the polyvalent serums are available, it seems safest, in the interest of the patient, to administer the serum we have for Types I and II, until antibody for these types appears. The very rapid disappearance of one antibody suggests its utilization by an invading organism. The administration of serum has apparently done no harm to those for whom it was not beneficial.

In our general experience more than 55 per cent., or more than half of the cases, are Type I or Type II. During the thirty-six hours which may elapse before the typing can be definitely determined valuable time and even life may be lost. There is nothing so disheartening as to find that a patient for whom a serum was available has died untreated with serum. It is just the same as if one were to withhold diphtheria antitoxin pending a throat culture report. Just as one sees patients die of diphtheria when the throat culture is reported negative, so one finds cases of Type I or Type II pneumonia get into such a condition that serum is unavailing when the report from the mouse peritoneum is Miscellaneous or Type X, and serum has been therefore withheld. On our service at Harlem Hospital serum, as stated above, is given to alternate cases on admission, and continued until the report from the typing of the mouse blood culture has been received. It is discontinued only when that is reported Miscellaneous or Type X.

There are errors inherent in the usual gross method of typing, as a result of which serum is occasionally given uselessly. These may be corrected by the more refined techniques. Some of these problems will be solved in time, and inaccuracies of diagnosis will become less frequent.

The Sabin microscopic typing method promises to prove a useful instrument, but more important than its use in

* The serum used is so concentrated that it contains usually 1,000 units of each of Type I and Type II per c.cm.; 10,000 units of each type is injected intravenously; the dose is repeated every eight hours until the temperature is below 102° F., or the presence of the specific type of agglutinin can be demonstrated by the Sabin method. Severe cases have larger and more frequent doses.

* The method of blood culture is described by Rosenblüth in his paper.

the diagnosis of type is the converse application—that is, the detection of antibody in the patient's serum with blood obtained from a finger puncture, and of the presence of sufficient antibody of the types for which the serum is intended. In this way serum may be injected more frequently or continued less long, and possibly, if the typing is reliable, crises may be predicted. It is true that this method depends upon the assumption that protection and agglutination are present simultaneously. It has not been our experience that agglutinins have not been present in the absence of protection. A case will be described later which illustrates this point, in which serum was administered and the formation of antibody by the patient was demonstrable later in the disease. It is waste of time to continue to use serum after there is ample protection present, for that is all that the serum can do. The patient may die from anoxaemia, from pulmonary oedema, or collapse, or from other causes, but after protection is present in the blood the administration of further serum is utterly wasteful.

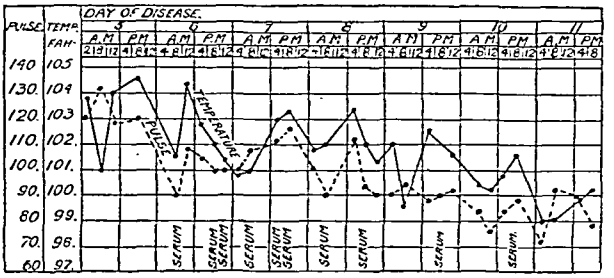

CHART 1.—Case IV.

The serum treatment is not yet perfected; there are still patients who die in spite of serum, and it is these patients who are especially important for further study.

I give below the case records of a number of patients treated at the Harlem Hospital, so that you may understand our difficulties, and realize our satisfaction with what is being accomplished by the use of serum: and understand, too, our eagerness to have the serum treatment penetrate into private practice, so that the death rate from pneumonia shall be lessened. There were 9,951 deaths from this disease in New York City during 1928. If only 30 per cent. were amenable to, and treated with, Type I and Type II serum, the saving would be impressive. The time must come when the serum will be provided by the municipalities, and there is no reason why, with the present widespread use of intravenous medications, blood cultures should not be taken by practitioners and studied for them at the municipal laboratories.

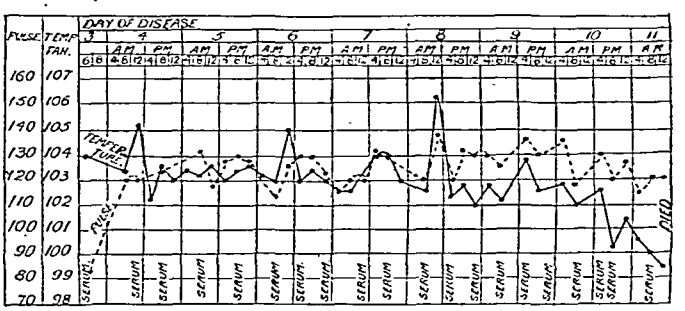

CHART 2.—Case VI.

CASE I.—*Type I without Bacteriaemia.*

An obese female, aged 30, came into hospital on the fourth day of illness with a temperature of 104.6° F. Her blood culture was negative. She received 30,000 units of Type I, and 15,000 units of Type II antibody, in a single 10 c.cm. intravenous injection. The serum was administered before determining the type—both peritoneal exudate and mouse's heart's blood were Type I. This case shows the result to be expected with a large dose of serum.

CASE II.—*Type I with Bacteriaemia.*

This patient, a physician, came in on the third day of his infection with a temperature of 106° F. His blood culture showed fifteen and three colonies per cubic centimetre on two agar plates. He received 14,000 units of Type I antibody that day; his temperature fell after the first dose. The next day he received, in three doses, a total of 48,000 units; the following day he received 24,000 units. On the sixth day of his illness, antibody, by the gross (Arlyle-Noble) method, was positive. He received on that day 63,000 units. The report came too late for us to be guided. The blood culture, taken on the second day, was negative. After the sixth day he was convalescent. The sputum was Type I in mouse peritoneum and heart's blood.

CASE III.—*Type I with Bacteriaemia.*

This patient came in originally as a non-serum case. (We are still alternating patients, but patients with Type I pneumococcus bacteriaemia are now being given serum, as we have already adequate proof of its value to them.) The culture taken on admission was positive in the broth; the next day he received three doses of 30,000 units of antibody. The blood culture, taken before serum was begun, showed five and four colonies per cubic centimetre. His temperature fell to normal on the fourth day, but rose that evening. His blood culture continued negative. Nevertheless, as his temperature was much elevated, he received an additional 120,000 units during the next two days. At that time we were using a temperature above 102° as the exclusive guide to repetition of dose.

CASE IV.—*Type I with Bacteriaemia.*

This was also a non-serum case. He had five colonies in one plate, and the broth was positive on the fifth day. The next day he received serum in divided doses, 76,000 units. His blood culture was positive in the broth. On the seventh day his blood culture was negative. He received 76,000 units the first day, 60,000 units the second day, and 20,000 units after that. The serum given on the ninth and tenth days was unnecessary; but we did not know that the blood taken for antibody on the ninth day had ample agglutination and protection. This case apparently reveals a late invasion of the blood stream followed by recovery, showing the value of serum later in the disease. (See Chart 1.)

CASE V.—*Type I.*

This patient came in as a serum case. His blood culture was negative. He received 30,000 units of Type I antibody, and on the eighth day was still so ill that he was placed in the oxygen chamber. His temperature continued elevated. He was delirious. His pulse was of poor quality—128 per minute. On the ninth day of his illness, at 10 a.m., he received 30,000 units; at 6 o'clock that evening, when the next dose was due, a Sabin microscopic antibody test was performed. It showed agglutination of Type I antigen, and also of Type II. There was more clumping at 8.45 p.m., and still more at 11 o'clock that night. Serum was withheld. The next morning the temperature was normal and the patient was clear. This patient was thus shown to be developing his own antibody.

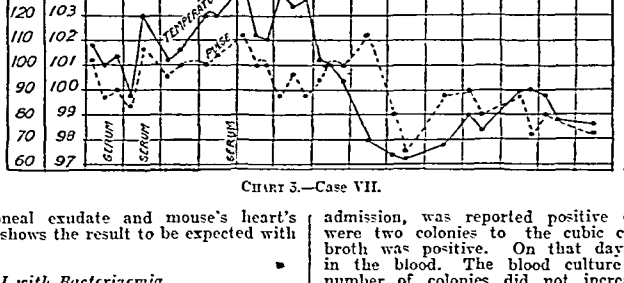

CHART 3.—Case VII.

CASE VI.—*Fatal Type I Bacteriaemia treated with Serum.*

Not so fortunate is the result in the next patient. He received serum from the day of admission. The dosage was not large; he was given 15,000, 22,000, 24,000, and 20,000 units. The blood culture, taken on the day of admission, was reported positive on the seventh day. There were two colonies to the cubic centimetre of blood, and the broth was positive. On that day no antibody was detectable in the blood. The blood culture continued positive, but the number of colonies did not increase. In spite of the large dosage there was no antibody detectable on the eleventh day, the day on which he died. In this case it is probable that the antibody was used up as fast as it was introduced. With the Sabin method it may become possible to give antibody so rapidly that an excess will be detected and patients saved. (See Chart 2.)

CASE VII.—*Type V Bacteriæmia with Recovery.*
This case belonged to Type V; the blood culture was positive the eighth day, though the temperature was below 102°. This tient either sterilized his own blood, or there was sufficient otection for Type V associated with the Type II serum. There ere probably only 400 units of Type V protection given in the rum. (See Chart 3.)

CASE VIII.—*Type V Bacteriæmia mistaken for Type II: Fatal.*
This patient was a married woman who, on the third day of r illness, had a positive blood culture and sputum; the organism as reported from another laboratory as Type II. On the fourth ay she had a miscarriage at eight months. She received large oses of Type I and Type II serum. On the fifth day there was mple antibody for Types I and II. Her blood culture continued ositive; the serum was unavailing. The original blood culture, hich had been reported Type II, was then re-typed, as well as blood culture after ample antibody for Type I and Type II ad been administered and was demonstrable in the blood, and vas found to be actually Type V.

CASE IX.—*Type II Bacteriæmia: Fatal—"Influenzal Pneumonia."*
This patient came in on the influenza service of the hospital. When a consolidation was discovered on the sixth day a blood ulture was taken. He was given 15,000 units of Type II serum, nd was placed in the oxygen chamber. Serum was administered more actively—as much as 60,000 units, 80,000 units, and 30,000 units being given. In spite of this intensive treatment antibody was not detectable in his blood. The colonies in his plate did not increase, but he continued to become more poisoned, and finally died on the twelfth day of his disease. It is probable that, in this case, if more intensive treatment had been given at the very onset, sufficient to produce a positive agglutination test and maintain it, the result might have been different.

It will be seen from these cases that the problems connected with the serum treatment of pneumonia are numerous. Many of them are unsolved. Those of us who are working in hospitals, with ample laboratory assistance, have much for which to be grateful. I have shown the difficulties so that it should not be assumed that the serum treatment of pneumonia is a finished chapter; but I have also shown the triumphs, so that practitioners may be impelled to use serum in the treatment of their patients. If it is employed generally, so that the toll of pneumonia is lessened, as I believe it will be, the purpose of the Littauer Pneumonia Research Fund of New York University will be accomplished, and those who have devoted themselves to these problems will know that they have not worked in vain.

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THE CARE OF RHEUMATIC CHILDREN.*

BY

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For the past three years I have held, both at the Liverpool and the Birkenhead Children's Hospital, a special out-patient clinic for rheumatic children; to this clinic school medical officers have sent considerable numbers of cases, and practically all children have been recommended by doctors. Through the co-operation of the respective child welfare associations home conditions have been investigated and reported upon, and regular supervision of the children obtained. Most of the children have passed through one or more of the in-patient branches of the Liverpool or Birkenhead hospitals, and their supervision continued thereafter. Acute cases have mainly been dealt with in the city hospitals, while long-continued residential care has been carried out in the Heswall and West Kirby institutions. Most of these latter cases have been at the Heswall Hospital, some for many months, and all have had the benefits of special schooling and graduated exercises in addition to medical and nursing care. The physical condition of the children has been investigated as fully as possible, and attention paid both to general treatment and as regards points of focal infection. Reports have been sent to the respective chief school medical officers dealing with the actual physical condition—and particularly the condition of the heart—and recommendations made as to the desirable nature of school attendance or type of school.

Up till March 31st of this year 540 children had attended, a few of them since before the commencement of a special clinic and the others for varying periods since. At this date (March 31st) these cases could be classified thus: 321 children with apparently no permanent cardiac lesion, 119 children with an apparently established cardiac lesion but with satisfactory myocardial response, 25 children in whose cases I was still uncertain as to whether cardiac damage was permanent or not, 41 children with cardiac lesions and failing heart, 9 cases of death from rheumatic carditis, 9 children suffering from acute rheumatic fever, and 16 cases of congenital heart deficiency.

Excluding cases of congenital heart deficiency and all cases suffering at the date (March 31st) from acute rheumatic fever, the outcome of whose illness hung in the balance, and giving the benefit of the doubt in prognosis to all cases of doubtfully permanent cardiac lesion, I find that of 515 cases medically recommended to the clinic as rheumatic, and accepted by me as such, 346 could be regarded as suffering from no permanent heart lesion, 119 definitely had a permanent lesion but showed good response, 41 showed evidence of failing heart muscle, and 9 had died. In other words, 50 children—10 per cent. of cases—had died or were unlikely to survive childhood, and another 119 children—25 per cent. of cases—were permanently crippled to a greater or less extent.

I put forward these figures with no further object than to show that rheumatic infection in childhood is a common and dangerous disease on Merseyside, and I cannot be accused of making a case for the rheumatic child, as these children were all sent to me as rheumatic or suspected rheumatic. During the first three months of this year—to March 31st—273 children attended the clinic on one or more occasions, and the average attendance was about 25.

In all, approximately 400 reports have been sent to the chief school medical officers, the form of each report being as follows:

RHEUMATISM AND ACQUIRED HEART DISEASE.

Name..... *Sex*..... *Date of Birth*.....
Address..... *School*.....
Place of Examination.....
History, symptoms, and physical signs.....
.....

CLASSIFICATION OF CASE:

A.—Acute pyrexial rheumatism.
B.—Acute chorea, i.e., chorea of less than two months' duration.
C.—(1) Rheumatism or chorea other than that included in A or B; with no heart lesion, or apparently curable heart lesion.
(2) Apparently permanent acquired heart lesion—good prognosis.
(3) Apparently permanent acquired heart lesion—bad prognosis.

RECOMMENDATIONS:

1.—Fit for Public Elementary School.....
A.—No restrictions.
B.—No violent games.
C.—No drill or gymnastics.
2.—Fit for Special P.D. School.....
A.—Day School.
B.—Residential School.
3.—Not fit for any School..... Period of exclusion.....

Signature of Examiner.....
Date of Examination.....

* A paper read at a meeting of the Liverpool Division of the British Medical Association.

These recommendations are sometimes not acted upon by the authorities because the facilities do not at present exist, but I hope they may assist ultimately in the framing of schemes for administrative advance. The number of cases is large, and their continued supervision a matter of very considerable difficulty.

The serious figures I have given, showing that in 35 per cent. of the cases death or permanent cardiac crippling supervened, may be subjected to criticism from two aspects. In the first place, it can be urged that chiefly serious cases were sent to the clinics, and this is no doubt true to some extent. But it is not altogether so, because school medical officers were informed that it was *rheumatic* children with whom it was desired to deal, and they knew that the underlying effort was the prevention of heart disease. The other criticism that can be put forward is that these children were not efficiently cared for. This criticism I also, regretfully, accept in part, and shall deal with some details in a moment; but this must now be said—that exceptional care and attention have been paid to these children, no pains have been spared in their treatment, and in many instances the degree of their improvement has been remarkable. I am definitely of opinion that the development of specific rheumatic clinics with associated home visitation and regular supervision has improved the prognosis.

There are some cases in which we are forced, in spite of every conceivable form of treatment and all facilities, to watch the child passing from the early infected period to that of grave cardiac disease and ultimately death. But such cases should be rare, and are rare if the early signs of the first active infection are noted and dealt with. When these early signs are noted close care for a prolonged period is essential. But in a series of 52 consecutive cases of acute rheumatism recently admitted to the Children's Hospital, Liverpool, in only 18 instances was it possible for direct transference to another institution—country hospital or convalescent home—to be carried out, while of the total 52 cases 75 per cent. were retained in the City Hospital for only a month or less. Efficient therapeutic prophylaxis was here evidently not carried out; but, owing to the need for beds in town for acute cases, it is impossible to retain these children in city hospitals, and sufficient accommodation is not provided for them in country hospitals. Many patients have to wait months for admission to the Heswall Hospital, and frequently such waiting period leaves marks of serious damage.

The new Local Government Act will bring about many changes and open up many possibilities. I am sure that no more important development can occur than the setting aside of specific beds or wards for the prolonged care of rheumatic children.

As regards the active care of the children, I would lay great stress on the removal of infected tonsils. Of the 531 rheumatic children alluded to in this paper, 130 underwent tonsillectomy in hospital and 22 at a school clinic; in 4 cases parents refused permission for operation, and in 67 cases operation is desirable and probable. Thus in 213 out of 531 children—or about 40 per cent. of cases—I have considered tonsillectomy advisable.

Contrary to what some may think, I consider that in being responsible for these figures I have acted in a conservative manner. I have considered as indications for operation:

1. Obviously unhealthy tonsils—irrespective of size.
2. The presence of rheumatism with a history of tonsillitis as initial symptom.
3. The presence of rheumatism with recurring attacks of nasopharyngeal catarrh associated with exacerbations of active rheumatism.
4. Cases of active rheumatism running a prolonged course resistant to all medical measures, whatever the appearance of the tonsils.

In none of the cases operated on did unfavourable symptoms develop from the operation, however active the rheumatic symptoms at the time; while in most cases obvious and marked benefit accrued. It is, however, impossible to consider the operation as an isolated factor in treatment, as good results from it can only be justly expected when enucleation is complete, when the immediate after-care of the child is as thorough as after a major operation—which this is—and when, after suitable institutional care, home supervision is so prolonged as to tend to prevent or at least deal early with subsequent intercurrent infections.

I cannot but feel that the term "acute rheumatism" in childhood has been stressed unduly in the effort to obtain accurate delimitation. Our foe is *active* rheumatism, and, perhaps unfortunately, its symptoms are not always acute. It is usually easy for the clinician to make a diagnosis between rheumatic infection and the varied rheumatoid conditions; and syphilitic cardiac conditions are rare at this age. It is the early diagnosis of active rheumatic infection which is so important, which is sometimes difficult, and which, I think, is sometimes delayed because of the common use of the term "acute" rather than "active."

The early diagnosis and suitable care of active rheumatism give good results. Fortunately for the children of the well-to-do, frequent medical supervision and constant educated home care serve to prevent acute ebullitions and disastrous end-results even without the need of accurate diagnosis. For, however, the children of the hospital class, once they show symptoms of active rheumatism, and whether they have been previously classed as "dyspeptic," "hypoglycaemic," "pre-acidotic," "intestinal," "toxic debilitated," or simply "pre-rheumatic," I consider the value has been fully demonstrated of specific hospital clinics and associated home visitation and prolonged supervision by private practitioner or through the clinic.

I also consider that tonsillectomy, efficiently carried out and succeeded by suitable and prolonged care, takes a very important place in treatment, and that the need of adequate institutional beds for prolonged care is clamant.

HYSTERO-SALPINGOGRAPHY IN THE DIAGNOSIS AND TREATMENT OF STERILITY AND PELVIC DISEASE.*

BY

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In a previous paper on the subject of sterility[17] I emphasized the great importance, in all cases where no definite cause could be found for lack of conception, of ascertaining the patency of the Fallopian tubes before treatment was begun. At that time I was using the Provis-Rubin method of CO_2 insufflation, and I instanced two cases of pregnancy following on the clearing of the so-called "sticky tube"; since that date I have met with four further successful cases, in each of which the patient became pregnant within six weeks of the insufflation. The object of this paper is to further the claims of a method of diagnosis and treatment which is, in my opinion, far superior to the gas insufflation, good though that is. This procedure consists of injecting lipiodol into the uterus and tubes under the control of an *x*-ray screen, and then the taking of a series of skiagrams. It is equally valuable in diagnosis and treatment.

Before coming to the technical details it may be of interest to give a short history of this method of diagnosis. As far back as 1914 Carey[6] in the United States attempted to pass collargol through the tubes, but got no practical negatives, while Dimier in Paris recorded a death while using the same procedure. These results caused the method to be abandoned. In 1915 Rubin[15] published a paper on collargol injections. In 1923 Kennedy[13] made use of sodium bromide, and in the same year we also tried it at the Bristol Royal Infirmary: but these methods gave poor and unreliable results, and a few cases of peritonitis were recorded.

The discovery of the suitability of lipiodol for the injection material was the means of establishing this technique on a sound basis. Carlos Hueser[11] and Carelli,[5] during

* From a lecture with lantern slides delivered to the Bath and Bristol Branch, February 27th, 1929.

1924 and 1925, produced a series of beautiful photographs of the injected uterus and tubes, and soon afterwards this method of diagnosis was taken up enthusiastically on the Continent and in America. Gynaecologists in this country, with the notable exception of Forsdyke,[10] have, for some reason, fought shy of this most useful help to diagnosis and treatment. A flood of literature has recently resulted, especially in France, where Béclère[2, 3] has produced several papers and a most useful and indeed invaluable monograph[4] on the subject. As a few typical papers I would mention those of Cotté,[7, 8] Sicard and Forestier,[9] Randall,[14] Rubin,[15, 16] and Jarcho.[12]

Complete details of technique and results, and a very full bibliography, can be found in Béclère's book. He quotes 168 authorities, and I am much indebted to this very complete list of authors. It is of interest to note that I have been able to find only three cases of any ill results following lipiodol injections, one reported by Rubin, and two by Béclère in the *Bulletin de la Société Obstétrique et de Gynécologie de Paris* for February, 1929.

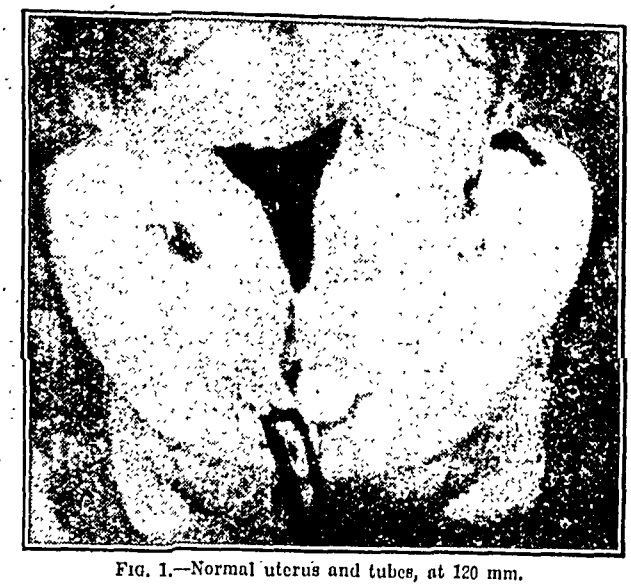

FIG. 1.—Normal uterus and tubes, at 120 mm.

Technique.

The patient requires no special preparation unless an anaesthetic is to be given, but it is most important to make the test at least a week from the beginning or end of a menstrual period. Pregnancy, purulent cervicitis, and active salpingitis are contraindications. Although the discomfort is not very great, and is a most useful check on the pressure used, I employ a general anaesthetic for nulliparae and for very nervous patients, for the reason that the whole test may be spoiled if the patient jumps and the lipiodol runs out from the vagina and up her back, thus making a dense shadow to the x rays. In many cases I find a small dose of morphine and scopolamine a great assistance. I use a special syringe made for me by Messrs. Allen and Hanburys, modified from that of Dr. Bloch-Wormiser. It consists of a 25 c.cm. metal syringe, with a screw-in piston, which delivers 1 c.cm. of lipiodol to each complete rotation of the handle. The pressure is registered on a manometer, which has a luminous dial, so that it can be read in the dark of the x-ray room. There is an oil lock with sliding piston between the lipiodol and the anaeroid, thus preventing the latter being injured by the lipiodol. The oil lock is kept full of liquid paraffin, and this occasionally needs refilling owing to seepage. A swinging side tube with a three-way tap action permits the syringe to be refilled without removing the nozzle from the cervix, which is most useful in dealing with enlarged uterine cavities—for example, fibroids. The nozzle itself is strongly made of metal, and is quite short and blunt, with the hole at the side and not at the tip; the taper of the cone allows it to fit well in cases of laceration of the cervix, and the short tip gives rise to no trouble if the uterus is sharply anteflexed. To perform the test the syringe and nozzle are filled with lipiodol at blood heat (warming it lets it run much more easily). The patient is then placed upon the x-ray screening couch, lying on her back. If an anaesthetic is now given it is essential that an experienced anaesthetist should be in charge, as the room is often in darkness for seven or eight minutes. The legs are now raised by a nurse, and the cervix is caught with a bullet-forceps vulsellum, and the cervix and os are swabbed with a Playfair probe dipped in tincture of iodine. The nozzle is inserted into the cervical canal, and kept firmly in place by combined pull on the vulsellum and pressure on the syringe; this causes very little, if any, discomfort to the conscious patient. The legs are now placed flat again.

It is an advantage if the observer can adjust his eyes, by closing them, or wearing special spectacles for three minutes before the actual test, as the filling of the tubes will then be seen easily on the screen.

The lights are now turned out, the screen is placed on the patient's abdomen, and the current switched on. The nozzle and vulsellum will now be plainly seen. The piston is then screwed in so as to deliver 5 c.cm. of lipiodol, and the uterine cavity will at once become obvious as a triangle, apex downwards. This triangle is roughly equilateral if the uterus is in normal position, but becomes almost crescentic from foreshortening if the fundus is retroverted or anteverted. The injection is now slowly continued, while the pressure is watched carefully. There is usually a short delay before the tubes begin to fill; this is caused by the presence of the sphincters at the cornual ends of the tubes, described by Hueser and Bakke.[1] Then, in a normal case, the tubes will suddenly fill, and the lipiodol can easily be seen running out along them, and forming a small collection in the peritoneal cavity. If the tubes are obstructed this process may be seen to a greater or less degree on either side, or no lipiodol at all may enter the tubes. When it is suspected that the tubes are blocked the manometer must be watched with care. A conscious patient will complain of pain when the pressure is between 180 and 250 mm. Hg, and I do not think it safe to let the pressure rise above 250 mm. when the patient is anaesthetized.

In any case, as soon as the tubes are filled up, or as soon as the pressure reaches 250 mm., a radiogram is taken, and a second one when the maximum pressure has been reached. The patient is now turned on to her side (the nozzle still *in situ*),

FIG. 2.—The same two minutes later at 150 mm. Lipiodol passing into peritoneal cavity.

FIG. 3.—The same twenty-four hours later. Lipiodol well diffused; tubes empty.

and a lateral-view film is exposed. This last one is most important.

The procedure is now finished, and the patient rests for a short time, and can then go home. In no case have I heard any

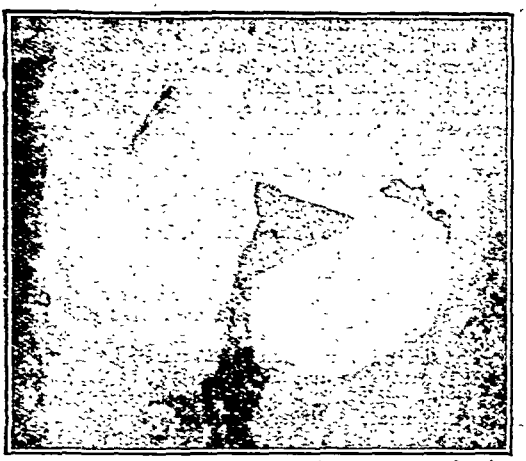

FIG. 4.—Obstruction at the fimbriated ends of both tubes. Lipiodol did not pass at 250 mm.

complaint of the typical pain caused by the CO_2 method when the patient stands up. After twenty-four hours another radiogram should be taken. It is surprising how, in some cases where the lipiodol did not seem to pass through the ends of the tube into the peritoneal cavity, it will be found there next day, and this "twenty-four-hour film" is a valuable check on negative results.

The radiographer needs considerable experience to produce the best results, and Dr. Mayes, the radiologist to the Bristol Royal Infirmary, tells me that high amperages are needed, the average exposure being about 1 to 2 seconds for front views and 3 to 5 seconds for lateral. A Potter-Bucky apparatus produces most beautiful *x*-ray films, but renders screening very difficult, unless specially made for this purpose, and I have found that the ordinary screening couch apparatus produces films quite good enough for ordinary diagnosis. The whole procedure does not take more than ten or twelve minutes, and is no great tax on

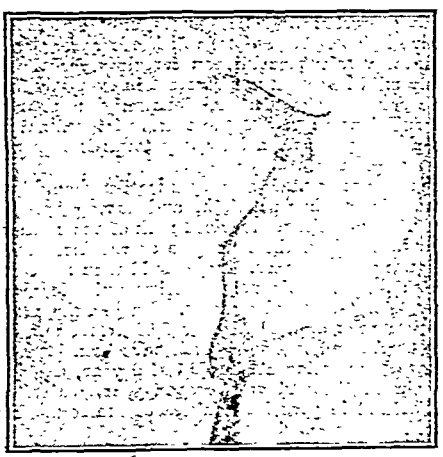

FIG. 5.—Fibroid; typical distortion of uterine cavity; obliteration of both tubes, stump of left tube showing.

the radiologist or gynaecologist, but I must extend my sympathy to the anaesthetist, if one is employed.

The advantages derived from this simple operation fall into two groups—diagnostic and curative. Although the injection of CO_2 is of the greatest value, I think anyone who has tried the lipiodol method will agree that it is very greatly superior, for the following reasons.

1. It will demonstrate the exact position of any tubal block, even if only one tube is obstructed, and in conditions of obstruction of both tubes the prognosis is entirely dependent on the site of the obstruction. Any operation for freeing the tubes is almost useless unless the obstruction lies at the

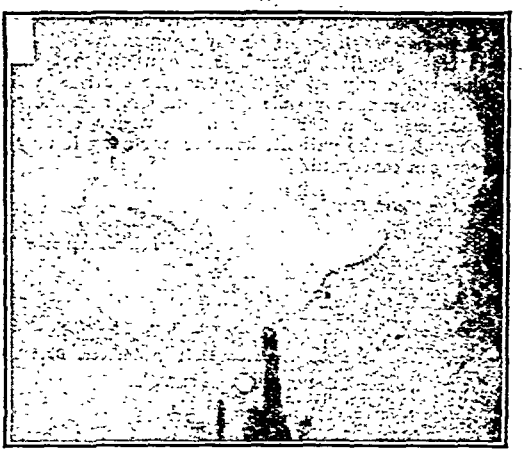

FIG. 6.—Uterus bicornis-unicollis; severe chronic salpingitis both sides, but lipiodol passed on the right. (Verified at operation.)

fimbrial ends, in which case the prognosis as to pregnancy is fairly good after operation.

2. It will demonstrate the fact that a uterus is not pregnant, a difficult question in the early months.

3. It will show the presence of interuterine growths, such as myomata or carcinomata, in cases of metrorrhagia with a big uterus, and so distinguish them from "fibrosis uteri."

4. It gives a very good idea as to the ease or otherwise of an intended myomectomy.

5. It will decide whether a pelvic tumour is of a gynaecological nature or not—for example, in a case of carcinoma of the colon which had become adherent to the fundus both tubes were normal.

With regard to its use in treatment, I feel sure that the heavy oily lipiodol is a better clearer of the so-called "sticky tubes" than is gas. In many of my cases the lipiodol did not pass until 180 or 200 mm. were registered, but the

FIG. 7.—Normal pregnancy showing the lipiodol lying round the sac and in the lower segment.

twenty-four-hour film showed complete emptying into the peritoneal cavity. In two cases gas insufflation had previously failed, but the tubes opened up to lipiodol. Jarcho[12] claims that the iodized oil is a most useful therapeutic agent, and quotes several authors to this effect; I have had no personal experience of this.

It would seem that in the lipiodol injection, when

properly controlled by *x ray*, we are possessed of an invaluable method of diagnosis in cases of sterility, far superior to any previous technique. Its only contraindications are septic cervicitis or pregnancy, and the latter is quite disregarded by Huesor,[11] but Béclère[1] advises against using this method of diagnosis owing to the bad effects of the x rays (not the lipiodol) on the pregnancy.

Apart from sterility, I think it is a useful, but by no means necessary, adjunct to diagnosis, for the reason that a pelvic tumour usually calls for operation, and the mistaken diagnosis of a fibroid for a parovarian cyst is of small moment to the patient, however annoying it may be to the surgeon concerned.

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THE PRODUCTION OF IMMUNITY TO TUBERCULOSIS IN MAN AND ANIMALS.*

BY

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BEFORE discussing the problem of immunity to tuberculosis it will be necessary to consider very briefly some of the outstanding facts about this disease. Tuberculosis, unlike other infectious diseases, advances slowly and progressively, and though it may be arrested in its march at the lymph glands—the first natural barrier—only to become active again later, its progress, as in pulmonary tuberculosis, is more often continuous. It is probable that in addition to the human, bovine, and avian tubercle bacilli there are certain intermediate types, and that the human body may be attacked by a mixture of types. Each type of tubercle bacillus is selective and can live only in the host to which it has become accustomed for centuries.

From twenty-five years' experience of subculturing and growing tubercle bacilli, I am inclined to the opinion that the bovine bacillus is the original and true tubercle bacillus, and that the other types have evolved from long residence in different hosts. This view cannot be proved by investigations on animals, as they are generally not susceptible to infection by human bacilli. The human body is readily infected by both human and bovine bacilli; avian bacilli, which infect chicken and birds, do not infect the human subject. In the light of our present knowledge we cannot determine with certainty the exact origin of every infection of the human body by tubercle bacilli. Cytological differentiation between human and bovine bacilli is not possible; mankind, from its consumption of milk, butter, and cheese, has become so accustomed for centuries to infection from cattle that the bovine bacilli have adapted themselves to their new environment and grow well in human tissues; yet the human bacilli will not grow in the tissues of cattle.

In studying tuberculosis it is necessary to consider what may happen to an invading organism in a foreign host. Bovine bacilli introduced into the body of a child may, after a few years, undergo a modification of type; their virulence may be reduced and they may assume the characteristic properties of the human bacilli. Should such modification occur it would obviously be difficult by ordinary laboratory methods to determine with accuracy whether or not the bacilli belonged to the human or the bovine type. A child infected with bovine bacilli in infancy might possibly be certified ten or fifteen years later as suffering from a human infection, owing to the transmutation of the organism in human tissues.

In 1901 I published a paper in the *British Medical Journal* stating the following views. (1) That human and bovine infections produce separate and distinct diseases in the human body, and that they are antagonistic to each other. (2) That human bacilli cause primary pulmonary tuberculosis, while the bovine type cause enlarged glands, mesenteric disease, bone and joint lesions, etc. (3) That patients suffering from pulmonary tuberculosis rarely develop bone, joint, or gland lesions, and vice versa; in fact, that the human subject is protected by one infection against the other. (4) That cattle and pigs are immune against infection by the human bacilli, but that the human subject is susceptible to both. It was evident to me at that time that it would only be possible to immunize animals by using human bacilli. A series of animals were tested in this way, but the bacilli used were too virulent and every animal was killed.

In 1906 I decided to attempt attenuation of bacilli by repeated subculturing and thus reduce their virulence and lower their toxicity. The only certain method of permanently attenuating virulent cultures of tubercle bacilli is by long-continued and systematic subculturing spread over a number of years. For this purpose I used a pure culture on glycerin agar of human bacilli from a virulent case of pulmonary tuberculosis, a virulent bovine culture from the mesenteric glands of a cow, and a culture of avian bacilli from the liver of a chicken. These cultures have been grown on glycerin potato and transferred to glycerin agar every month for twenty-two years, the present growths representing the two hundred and sixtieth generation. The growths are still profuse and true to type, but they are now completely non-pathogenic to animals. Every year since 1906 I injected these bacilli into animals, and until the year 1913—that is, until the eighty-fourth generation of subcultures—I observed no change in their virulence. After that time attenuation became marked, and in a series of animal inoculations carried out in 1914 the subcultures were observed to be avirulent.

A further series of animals was inoculated a year ago with a protective vaccine prepared from attenuated cultures of human bacilli, and these animals, together with unprotected controls, were given each half a milligram of virulent bovine bacilli. All the unprotected animals rapidly developed general tuberculosis and died within four months, while the protected animals showed only local and non-progressive lesions. An animal which can resist the laboratory dose of virulent bacilli can certainly resist the comparatively mild infection it may meet in everyday life. If, then, we can produce artificial immunity in man and in animals sufficient to enable them to resist ordinary infection we shall have gone a long way towards stamping out tuberculous infection.

Calves that are to undergo immunization should be separated from the mother at birth, and having been fed on healthy milk or on the pasteurized milk of the mother for a week should be given the first dose of vaccine, the second dose following a week later. They should then associate with the other animals. This method of immunization is applicable only to non-infected animals. During the past three years it has been applied to over 2,000 calves in valuable pedigree herds, and careful records have been kept. These calves have been tested at the end of a year, and in many cases again at the end of a second year, with Pasteur's tuberculin, and in practically all cases the result has been negative.

The production of immunity in the human subject is complicated by the fact that children are susceptible both to human and to bovine infection. A year ago, at the request of their parents, I inoculated all the children—about one hundred—living in a large tuberculosis colony, where all the male parents were suffering from pulmonary tuberculosis, with two doses of protective vaccine prepared from bovine bacilli. So far these children appear to be quite healthy, and though it will require years of observation before we can form any opinion as to the efficiency of the vaccine, I believe that in time it will be possible to

* Summary of paper read before the Liverpool Medical Institution, March 21st, 1929.

immunize children, especially those who are directly exposed, against tuberculous infection.

Since 1902 tuberculin has fallen into disrepute, but I have no doubt that it will come into its own again, and that preparations from non-virulent attenuated cultures which produce no reactions will be recognized to be of the greatest service in the treatment and prevention of all forms of tuberculosis. Attenuated cultures retain the quality of producing tuberculin, and, being deprived of their virulence and toxicity, are perfectly safe in use. A very small amount of vaccine prepared from such cultures is sufficient to protect a person from infection. Professor Calmette, in his prophylactic treatment of infants a few days after birth, uses a living attenuated culture of bovine bacilli to produce immunity against human infection. It is still too early to estimate correctly the results of his work, but there is a fundamental objection to using a living bacillus, as we do not know whether or not it may be reactivated after long residence in the human host.

In my view, all cases of tuberculosis should be treated by some form of tuberculin, which is the natural specific remedy; but this tuberculin should be prepared from attenuated, avirulent, non-toxic cultures. Pulmonary tuberculosis should be treated with tuberculin prepared from bovine cultures, and surgical tuberculosis with tuberculin from human cultures. Given in early cases of pulmonary tuberculosis tuberculin seems to limit the spread of the infection and to enable the patient to resist the disease. In no case can its administration do the least harm, and given scientifically it has often produced wonderful results. I have treated a large number of cases in this way, and have never seen any untoward effects. The best results are only seen in early cases. The method of stamping out tuberculosis is to immunize children of tuberculous parents and to produce active immunity in early cases of tuberculous infection.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CALCANEAL SPURS OF TRAUMATIC ORIGIN.

IT is suggested in the lecture of Professor Fraser, in the issue of March 2nd (p. 383), that calcaneal spurs are the result of a trauma. On the other hand, Mr. A. H. Tubby, in his contribution on deformities in the *Encyclopaedia Medica* (second edition, vol. iii, p. 380), states that the general conditions associated are gonorrhoea, subacute gout, rheumatism, arthritis deformans, excessive standing, and, rarely, epiphysitis, tuberculous and syphilitic, of the os calcis. The two cases described below were recipients of compensation, and the questions to be decided in arbitrations under the Workmen's Compensation Acts were what final settlements were to be awarded.

The first case was that of a stevedore, who was working, on October 20th, 1925, in the hold of a lighter receiving sets of timber. A set which was being lowered got out of hand, and crushed his left ankle and foot against timber already in the hold. Swelling and pain were caused, and he ceased work. Subsequently he tried to do light work, but had to knock off owing to pain. He was examined on July 23rd, 1926, when the case came up on arbitration. Slight pain was complained of on extreme flexion of the left ankle, and some tenderness on pressing the middle of the left heel. Applicant was slightly lame, and, with his heel on the ground taking the weight of his body (13 st.), everted the foot. X rays showed on the left os calcis a small spur, situated on the fore part of the inferior surface, not on the most dependent part. There was also a second spur at the insertion of the tendo Achillis. The onus was on the applicant to prove that the condition was due to injury arising out of, and in the course of, his employment, but the case was settled on payment of £275 and costs offered by the respondent.

In the second case a workman who fell from a height of 11 feet badly bruised his heels, and was said to have fractured both calcanea. This accident occurred early in 1925. X rays showed enlargement of these bones, opacities, spurs on the inferior surface, and thick spurs at the insertion of both the tendines Achillis. The effect was to produce pain on standing and inability to work. A final settlement of £425 and costs was made on March 8th, 1928.

It would appear that these cases drag on, compensation being paid all the time; medical men advising those concerned would be justified in suggesting an early settlement, since otherwise the mental element comes in, and it is difficult, even after treatment similar to that recommended by Professor Fraser, to get the workman to return to full work. Both patients were middle-aged men, and no signs of rheumatism or arthritis could be found.

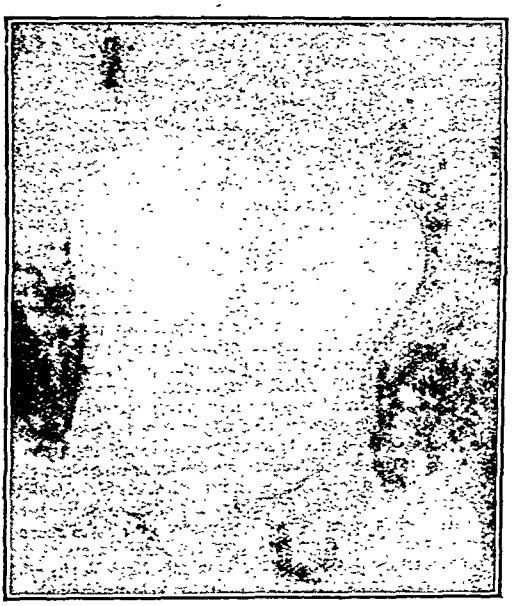
J. S. WARRACK, M.A., M.D., D.P.H.,
Barrister-at-Law.
Gravesend.

FIBRO-SARCOMA OF ISCHIUM TREATED WITH RADIUM.

THE following case seems worth recording, not only on account of its rarity in such a position and the success attending treatment, but on account of the history.

A healthy boy of 15 was sent to me in April, 1926, by Dr. V. Ll. Jones of St. Clears, with a somewhat tender swelling about the size of a small walnut connected with bone in the right perineum at or behind the junction of the pubic and ischial rami.

The history was that of a so-called chill in the previous December, with pains in the lower limbs, for which he stayed in bed two or three days. On getting up he suffered from acute pain in the right perineum and inner side of the right thigh, for which he was kept in bed a further three or four days. After



this he continued to get the same pain, though less severely, on walking or running. The swelling could be distinctly felt per rectum, though not so pronounced as through the perineum. X-ray examination showed the bone to be expanded in cyst-like form. He walked with a limp, there was some atrophy of the thigh muscles, the movements of the hip were free, and jarring on the heel caused pain in the right perineum. The diagnosis was cyst of bone or chronic abscess.

On April 19th the swelling was exposed by incision, the shell of bone broken into, and the contents, evidently new growth of tough consistence, removed with a sharp spoon. The wound was closed round a small drainage tube, the deep end of which occupied the cavity. The growth was examined by Dr. A. F. Sladden, director of the Beck Laboratory, Swansea Hospital, who reported that sections showed "mainly organized fibrous tissue with areas of fibro-sarcoma, specially in relation to bony tissue; order of malignancy low."

On April 22nd 25 mg. of radium screened by 5 mm. of silver were introduced along the track of the tube into the bony cavity and left for twenty-four hours.

The boy has enjoyed perfect health since. Nothing is now felt per rectum, and only some slight irregularity of bone in the perineum.

From the way in which the bone had been expanded the growth must have been of considerably longer duration than three months, and at first certainly benign in character. It would seem that at the time of the onset of the symptoms the sarcomatous elements had suddenly begun to assert themselves, and by growth caused increased tension in the bone cavity, with pain and lameness.

The patient and the microscopic specimen were shown at a clinical meeting of the South Wales and Monmouthshire Branch of the British Medical Association at Swansea on February 7th last.

Swansea. W. F. BROOK, F.R.C.S.

Reports of Societies.

SURGERY AND RADIUM IN CARCINOMA OF THE CERVIX.

AT a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on May 17th, with Dr. J. S. FAIRBAIRN in the chair, Mr. VICTOR BONNEY opened a discussion on the results of surgery compared with the results of radium in carcinoma of the cervix. The discussion was really a continuation of the one which took place at the recent visit of Professor Heyman to the society (*British Medical Journal*, March 9th, p. 449).

Mr. Victor Bonney said that up to the end of 1923 he had performed Wertheim's operation for carcinoma of the cervix on 265 patients out of 420 seen. There were 105 five-year survivals, so that his relative cure rate was 39.6 per cent., and his absolute cure rate 25 per cent. These figures would be higher had he not reckoned as dead of cancer 21 cases lost sight of or dying of other diseases within the five-year period. Of the 265 patients operated on, the regional glands removed were carcinomatous in 113—a gland-involvement rate of 42 per cent. Of those whose glands were involved, 27 survived operation for at least five years; of the 152 without carcinomatous glands, 78 survived. After pointing out that radium applied to the vagina did not reach out to the regional glands, he stated that out of every hundred unselected patients presenting themselves at a radium clinic, roughly forty were beyond the scope of radium, having carcinomatous glands. About the same proportion of those presenting themselves at a surgical clinic were beyond the scope of surgery on account of gross extension of the growth to parts operatively irremovable. The two groups of forty were not, of course, identical; the surgeon, however, could distinguish his 40 per cent. of inoperable cases by an exploratory opening of the abdomen, whereas the radiologist could not detect his refractory cases beforehand. Mr. Bonney then contrasted his own five-year results in surgery with those of Heyman, from the Radiumhemmet, Stockholm, and of Gray Ward, from the Women's Hospital, New York, which were the most favourable to radium yet published. To the objection that a larger proportion of patients with advanced disease were sent to radium than to surgical clinics, Mr. Bonney answered that this weighed not at all in communities where operation had been entirely superseded by radium, for the cases there presented for radium treatment were as representative of the cases in the community at large as those attending a gynaecological clinic. The cases *in extremis* in Heyman's and Gray Ward's series were in no larger proportion than those which came the way of the gynaecologist. The comparative figures were as follows:

	No. of Cases Seen.	No. of Cases Treated.	Five-year Survivals.	Absolute Cure Rate (per cent.).	Relative Cure Rate (per cent.).
Bonney ...	420	265*	105	25.0	39.6
Heyman ...	467	444†	106	22.7	23.8
Gray Ward ...	138	131†	31	22.4	23.1

* Operated. † Radiated.

This comparison was not fair to radium, because while only 63 per cent. of his own patients had been operated on, 95 per cent. of the others had been radiated, and it was obvious that the cure rate would be higher the smaller the percentage of cases treated. A fair comparison was obtained by contrasting the results in his group of gland-free cases operated on (representing a selection of 36 per cent. from all the cases he had seen) with the results Heyman and Gray Ward had obtained in certain clinical groups of cases in which the growth was limited to or had only slightly passed beyond the cervix. The number of gland-free cases on which he had operated was 162, and the number of growth-limited cases radiated by Heyman was 186, and by Gray Ward 32. The five-year survivals for the three workers respectively were 78, 76, and 17. Again, while sixty-three out of every hundred presented to him were operated on, sixty out of every hundred presented to the radium workers were within the scope of radium treatment, their glands being uninvolved at the time. The results, therefore, might be set out in another table.

	No of Cas. s Seen.	Cases within Scope.	Percentage of Total Cases.	Five-year Survivals.	Percentage of Cures.
Bonney ...	420	265	63	105	39.6
Heyman ...	467	280	60	106	37.8
Gray Ward ...	138	82	60	31	37.7

If there were no such thing as glandular involvement radium would give better results than surgery. It was in the gland-involved cases that surgery attained its numerical superiority in absolute cure rate over radium. His own figures for the 40 per cent. of gland-involved cases showed a cure rate of 16 per cent., whereas with the two radium workers in this category of cases the cure rate was *nil*. These facts and considerations, Mr. Bonney maintained, showed that his results with Wertheim's operation were numerically better than those obtained by radium. Moreover, owing to the facilities enjoyed by the Radiumhemmet, none of Heyman's patients had been lost sight of, whereas he had lost sight of thirteen patients, all of whom were counted for the purposes of this comparison as having died of recurrence. His figures also included patients operated on many years ago, when his operative mortality rate was 20 per cent., instead of 11 per cent. as in his last hundred cases. He had kept no record of the cases abandoned as inoperable. Had it been possible to have treated some of the earlier ones by radium as they would be treated now, a certain proportion would have been cured. If allowance were made for these considerations, he thought the results of his total cases would be far superior to anything afforded up to the present by radium treatment alone. He had confined himself in these estimations to the results of operation on the one hand and of radium applied from the vagina on the other. No evidence was yet available as to the results capable of being attained by radium applied through the abdomen as well as through the vagina, or of radium applied through the vagina in combination with operative extirpation of the regional glands. At the present time, in spite of the improved results of radium treatment, a greater number of lives would be saved by subjecting to operation all patients whose growths were removable by an expert in this branch of surgery, and treating the remainder by radium, than by using radium to the exclusion of surgery.

Dr. J. S. FAIRBAIRN said that he was glad that Mr. Victor Bonney had made out such a good case for surgery, because at the present moment there was a danger of the pendulum swinging too violently to the radium side.

Mr. SIDNEY FORSDIKE considered Mr. Bonney's figures to be remarkable as showing the state of treatment of cancer of the cervix, but asked whether he remained content with a 25 per cent. cure rate for all cases. He thought that Mr. Bonney had put his finger on the weakness of the Stockholm method when he pointed to the number of cases with gland involvement which remained

uncured. The speaker had treated a number of cases on the Stockholm plan, and the majority of the advanced cases never cleared up from the vagina at all; the ulcer would heal, but the growth was still present in the vaginal vault. In about 30 per cent. of the cases, at the end of three or four months, nothing could be observed but a thickening in the roof of the vagina, the nature of which was not clear. In this class of case the majority of recurrences were high up in the pelvis, which the Stockholm method could not attack. He thought Heyman's method must necessarily fail unless some different strategy were adopted.

Dr. A. J. WRIGLEY gave some figures showing the operation results in carcinoma of the cervix in 148 cases admitted to hospital for treatment between 1918 and 1922. Of this number 18 per cent. were considered operable, 20 per cent. borderline, and 60 per cent. inoperable. Trace was lost of only seven of the cases. The absolute five-year cure rate on the 148 cases was 15 per cent. Of the operable cases 60 per cent. were alive at the end of five years, and just under 30 per cent. of the borderline cases. The cases were treated in two ways, either by Wertheim's hysterectomy or by total hysterectomy with application of radium to the operation site in the pelvis. He mentioned the large number of the borderline cases which died in the second or third year.

Dr. HERBERT SPENCER mentioned that Döderlein recently gave particulars of 1,443 cases treated by radium and x rays, with an absolute cure rate of 15.4 per cent.

Mr. MALCOLM DONALDSON said that last year at the Cancer Congress he had ventured to say that it was a difficult matter to compare the results of radium and of operation. Mr. Victor Bonney had replied that it was very easy; but what he had shown that evening had convinced him (Mr. Donaldson) that he was right in claiming that it was difficult. Mr. Bonney assumed that the cases sent to a radiological clinic like that of Stockholm were the same as the cases now sent to surgical clinics. That was a very big assumption to make. He could not but believe that where Mr. Bonney was there would be a very high percentage of early cases sent in order that Wertheim's operation might be performed. The results with operation and with radium approximated so closely that it seemed to him that radium treatment, which was at present only in its infancy, ought to be followed. He believed that the figures would be very much better in the course of the next five years.

Mr. W. GILLIATT said that since 1923 he had dealt with carcinoma of the cervix by treating all cases, both operable and inoperable, with radium, and submitting the operable to a Wertheim's hysterectomy between four and six weeks afterwards. The total number of cases was very small; he had performed Wertheim's hysterectomy on thirty-two occasions after the use of radium. He thought there was very little doubt that the cases on which it was possible to operate did better after the preliminary use of radium; the effect of the radium was to cause an atrophy of the growth. Of the thirty-two cases mentioned, one died of operation, seven of recurrence, one could not be traced, and the remainder were alive and well. In addition to these, he had to abandon the operation in eight cases on account of involvement of parts operatively irremovable.

Mr. DUNCAN FITZWILLIAMS thought that Mr. Bonney's figures had proved that radium did almost as well as surgery, and radium was in its infancy. The results of radium treatment in future years, proceeding from the basis of the results obtained to-day, would outstrip those of surgery. Radium must go ahead, but he thought it unfortunate that the three centres of radium in Europe—Copenhagen, Brussels, and Paris—or at least the latter two, which he had visited, were becoming extraordinarily stereotyped. More radium centres were wanted—at least ten or fifteen—and advance would then be rapid.

Mr. VICTOR BONNEY, in reply, said that he had tried to put the case for radium and surgery as fairly as possible. He was certainly not content with an absolute cure rate of 25 per cent. He described carefully, in answer to a question by Dr. Herbert Spencer, how he arrived at his operability rate of 63 per cent. He gave reasons for believing it difficult for anybody to operate on more than 63 per cent. of the cases seen. With regard to radium, he felt that the wave of enthusiasm passing over the country at the present time was a very foolish thing, and bound to end in disappointment. Finally, he quoted some operation figures which had been given him by Mr. Fletcher Shaw: 106 operations, with 23 deaths due to operation (a mortality of 21 per cent.), 35 recurrences in less than five years, and 40 five-year survivals.

Contraindications to Radium Treatment.

Dr. GILBERT I. STRACHAN (Cardiff), at the same meeting, read a short paper setting out some contraindications to radium treatment. In a number of centres, he said, radium was now used in preference to radical removal, and many striking cases were cited in which advanced growths of the cervix were treated by this means. It was desirable, therefore, to indicate the conditions which rendered radium unsuitable, or even dangerous. In an extreme degree of general emaciation and cachexia radium was likely to produce rapid deterioration and early death; radium treatment should be postponed until the general condition improved, if it was going to improve. Extreme anaemia, repeated or severe haemorrhages, or toxic absorption from a foul cervix were contraindications. There was a tendency for radium itself to produce a certain degree of anaemia, and this, added to a previously existing anaemia, might reduce the blood count to a dangerously low level. Other contraindications might be classified under the heading of extension and metastases. The presence of a fistula into the bladder or rectum was an absolute contraindication, also the presence of any inflammatory pelvic lesion, or a foul and sloughing condition of the growth. The presence of salpingitis, pyosalpinx, or inflammatory abscess was a contraindication, owing to the likelihood of peritonitis being set up. If there was evidence of impaired metabolism, and especially of defective excretion of nitrogenous waste products, radium should be withheld. The indiscriminate application of radium in cases exhibiting some of these contraindications had led in certain cases to unfortunate or even disastrous results. One unhappy result of the great amount of attention given to radium as a cure for cancer might be that men without qualification or experience would attempt to apply radium in unsuitable cases, with disappointment to themselves and detriment to their patients.

Dr. FAIRBAIRN believed general cachexia to be a very important contraindication.

Mr. MALCOLM DONALDSON thought the warning given in the paper was very timely. The wave of enthusiasm for radium which was spreading over the country made it likely that people would expect too much, and in the reaction radium would be undeservedly condemned.

Dr. EDGAR HAYDON (Newton Abbot) said that much was written about the beneficial effect of radium without consideration being given to the serious conditions under which the radiologist employed it. In a large number of cases, especially where there was considerable sloughing of the cervix, it was impossible to find the canal until a small dose of radium had been used on the surface. The danger of salpingitis had not been overestimated; indeed, to overestimate it would be difficult. He himself had been using radium in a small hospital for fourteen or fifteen years. The benefits derived from it were very great, and the dangers, on the whole, were overestimated.

A Straight-rod Pelvimeter.

Dr. HERBERT SPENCER exhibited a new pelvimeter, a model of which he had presented to the obstetric unit of University College Hospital. It consisted of a straight steel rod, pointed at one end and rounded at the other, with two uprights having movable slides so as to enable the positions of the rod to be indicated on a sheet of paper. By joining up the dots obtained corresponding to the pubic and sacral promontories, in a manner he illustrated, it was possible to measure the true conjugate.

THE ACTION AND USE OF EPHEDRINE.

At the meeting of the Section of Therapeutics and Pharmacology of the Royal Society of Medicine, on May 14th, a discussion took place on the action and use of ephedrine.

Constitution and Physiological Action.

Professor J. A. GUNN, president of the Section, reminded the meeting that ephedrine was an alkaloid obtained from the plant *Ephedra vulgaris*, decoctions of which had been used in ancient times by the Chinese as a circulatory stimulant and diaphoretic. The alkaloid was isolated in 1887, but did not attract very much attention for a long time until, perhaps five or six years ago, its constitution was disclosed and the resemblance of its chemical structure to adrenaline was noted. There were two varieties of ephedrine, the original alkaloid and pseudo-ephedrine, an alkaloid isomeric with the first; this explained a good deal of the confusion which had arisen with regard to the action of the drug.

Dr. J. H. THOMPSON, who had been investigating the action of ephedrine on normal human subjects, said that so far his results were incomplete, but a few interesting facts had emerged. He had found, in the first place, that there were a considerable number of people who failed to respond to ephedrine. This could not be put down to inactivity of any of the samples of ephedrine used. He had made oral, subcutaneous, and intramuscular administrations in the same individuals, with no response so far as alteration of blood pressure was concerned. He could not find anything abnormal about these people, except that there was definite evidence of failure of full development of secondary male characteristics. In other persons subjected to the investigation he noticed a definite latent period before the rise in blood pressure which normally took place. On subcutaneous or intramuscular injection, this latent period was from 2½ to 3 minutes, and on oral administration, from 7 to 10 minutes. During this latent period the blood pressure often exhibited an initial fall, quite irrespective of the mode of administration. The rise of blood pressure which succeeded was very much greater if the administration was by injection than if it was by mouth. The oral effect, less marked though it was, was increased if the ephedrine was given on an empty stomach. The eventual rise of blood pressure in these cases was somewhat striking. It had been freely stated that after the injection of ephedrine the blood pressure for a considerable period was well maintained, but the experiments which the speaker had made contradicted that view. There was, first of all, well-marked rise of blood pressure which persisted only for a few minutes (7 or 8), and then there was a return to normal blood pressure. This was succeeded by a second rise, and it might be there were five or six such rises of blood pressure occurring over a period of one hour to one hour and a quarter. If the drug was administered intramuscularly or subcutaneously, the rise of blood pressure was greater, and the rises more rapid than with the oral method, though not so many rises occurred. Another interesting factor was that the blood pressure, after a series of rises, fell below the normal—that is to say, there was a marked after-fall. In one experiment the blood pressure was maintained at the low level of 109 for forty minutes, and an hour later it had risen only to 117—a very slow recovery. These facts—namely, that there was a tendency to an initial fall, and always a definite after-fall—would indicate the need for some caution in the administration of ephedrine. Another interesting fact was the form of the rise, which frequently exhibited a step or dip in the curve, such as was obtained from stimulation of the splanchnic nerve; he was unable to state the significance of this.

In Relief of Asthma.

Mr. FRANK COKE said that, for better or worse, the use of ephedrine had spread throughout the world of asthma in a very few years. The real treatment of asthma, of course, consisted in the discovery of the cause and its removal or neutralization, but anyone who saw an asthmatic in full distress was naturally pleased to have any drug which would do some immediate good. The particular type of case in which he had used this drug had been that in which the attacks were occasional, although perhaps fairly severe. Such attacks, though occurring after long intervals, were dreaded by the patient, and might come at very inconvenient times. The knowledge that this drug was available was a great relief to the patient. A young naval lieutenant had infrequent but severe attacks of asthma; he kept a tube of ephedrine in his pocket, and it restored his confidence and perhaps averted an attack when the time was singularly inconvenient. There was, of course, a danger in these easy methods of administration, but he had always looked upon the asthmatic as a very sensible person, and not likely to form drug habits. Ephedrine had advantages over adrenaline, one of the chief being that it was given by the mouth and not only by the hypodermic syringe. Another great advantage was that it extended the immunity from attack, which with adrenaline was for a period of two or three hours, to double that time, so that it was possible for the victim to carry out a business engagement or have an evening's entertainment. According to some observers, ephedrine had an extraordinary effect on the nasal mucous membrane. This was a thing which could be watched, and the effect of the administration of ephedrine, either by the mouth or by painting it on the mucous membrane, was to reduce the turgescence of the membrane. The disadvantage of ephedrine was that in certain patients, after full administration, there might be tremor, palpitation, and insomnia, though he had not noticed this last himself. It had been used as an antidote for morphine and scopolamine. A peculiar symptom had been noticed by some American observers after the injection of ephedrine hypodermically—namely, agonizing pain in the head, in the suboccipital region. He had noticed the same thing one or twice with adrenaline. There was much mention in literature of diuresis following ephedrine. This, however, was very common in attacks of asthma, so that he would not attach great value to it. A far more frightening thing was inability to micturate at all. The patients sometimes felt no urge to micturate, and any attempts to do so were entirely futile. With this drug one would seem to get a paralysis not only of the bronchial and the intestinal muscles, but of the bladder also. Asthmatics were, of course, extraordinary people, and there might be something in the nature of idiosyncrasy to the drug. He urged that the chemists should make up quarter-grain instead of half-grain tablets, or that resort should be had to the liquid form, which would enable the minimum dose to be given.

Dr. JOHN FREEMAN started using ephedrine about three years ago, and tried it on difficult asthmatic cases. After a time he gave it up. His experience was that at first it seemed to do a great deal of good, but afterwards one was not quite so sure that it was doing any good at all. For about two years he did not use it, and then, quite lately, he had started it again, and had used it on several cases, getting much the same results as before. The first dose seemed to act marvellously; subsequent doses did little or nothing. He recalled one case in particular—that of a very asthmatic woman, who was put on half a grain a day. At first the result was proclaimed by the nurse as splendid, but after a day or two she was less sure. Then it was decided to give ephedrine one day and a dose of normal saline the next day. There did not appear to be any distinction between the effects. The ephedrine was then given on one day and the salt solution on two succeeding days, still with the same result, until now the patient was having ephedrine one day a week, and on the other days normal saline, and no difference was perceptible. With asthmatic patients, of course, if the doctor or nurse was excited about any new treatment, the excitement was readily communicated to the patient, with perhaps deceptive results. Thus the first effects of any new therapy had to be discounted.

Uses in Obstetrics and Gynaecology.

Dr. J. H. HANNAN mentioned the use of ephedrine in gynaecology and obstetrics. Obstetric shock and collapse were almost invariably associated with considerable loss of blood. He had given ephedrine in these cases—1 grain in

8 c.cm. of normal saline intravenously—and had been able to get the patient into a satisfactory condition. He had on occasion given 2 grains of ephedrine with no ill effect. He had also found it useful in obstetric shock in the newborn. In gynaecological cases he had as a routine given 1 grain of ephedrine one or two hours before any operative procedure in which shock might be anticipated. With regard to the use of ephedrine in women at the menopause, he had shown that women at that period, while strangely sensitive to adrenaline, were very tolerant to ephedrine.

Professor GUNN mentioned that one of the great claims for ephedrine was that it was far less readily oxidized than adrenaline. The fact that it was not readily oxidized was supposed to explain why it acted by the mouth. With regard to tolerance, adrenaline produced tolerance, and the same thing had been shown both in animals and man with ephedrine, but apparently the tolerance was produced more quickly with ephedrine than with adrenaline. Ephedrine had been used in shock in a variety of conditions—largely, in America, to avert the shock in spinal anaesthesia. Insomnia was evidently quite a characteristic effect with ephedrine. Sweating apparently occurred only with very large doses. Profuse sweating was a sign that the dose given was too large. He thought that no deaths with ephedrine had been recorded, but there were some quite serious collapse cases.

Dr. J. H. HANNAN mentioned three cases in which toxic effects were seen; one of them showed slight bladder irritation with a dose of 1½ grains three times a day, the other two simply complained of perspiration. These were the only symptoms of overdose that he had had. The general statement of the patient testified to a sense of well-being, of definitely increased strength and vigour—a kind of euphoria. This lasted only for the hour or so during which the blood-pressure rose.

Dr. PHILIP HAMILL asked whether anyone had reported discomfort after the administration of ephedrine by the mouth. On making observations on animals one found that the auriculo-ventricular interval was shortened. After giving a fairly large dose of strophanthin in an isolated heart, the addition of a small quantity of ephedrine would cut down the prolongation of the interval by one-half, bringing it back to what it was before strophanthin was given. With regard to its use in asthma, he knew one asthmatic lady who was always compelled to carry with her half a dozen handkerchiefs, but as a result of ephedrine now carried only one. With a quarter-grain dose she had not developed tolerance. He had noticed in one case of exhaustion with low blood pressure a definite slight improvement lasting some little time after ephedrine—whether the result of suggestion or not he could not say.

Dr. J. H. THOMPSON said that in decerebrate animals small doses of ephedrine—about 0.15 grain—repeatedly given produced a fall in blood pressure without any subsequent rise. These falls might eventually become so profound that the circulation failed to recover and the animal died. In human subjects, when the dose had been repeated, what he had described as the after-fall was very much greater—the fall following the previous rise was almost precipitous.

Dr. GEORGE GRAHAM had seen two colleagues who had suffered from hay fever, and had considerably benefited by the use of ephedrine. One of them had been in America, where he was extensively inoculated against hay fever without benefit. He took a grain of ephedrine twice a day, and was very much better. Possibly for hay fever the drug might have a big future.

Dr. E. P. POULTON recalled one very bad case of asthma which was untouched by ephedrine. But fairly recently he had seen an Austrian physician who had a very bad attack of asthma as soon as he landed in this country. This man had some ephedrine with him, and "swore by it." Since then the speaker had seen other cases which gave favourable results. He thought it was in the occasional attack that it was of benefit, not in attacks which came on night after night.

Professor GUNN said that he had been interested in the statement with regard to euphoria, especially in view of the fact that ephedrine was employed to remove the morphine habit.

"ANTIVIRUS" THERAPY.

AT the annual general meeting of the Section of Tropical Diseases and Parasitology of the Royal Society of Medicine, held at the Society's House on May 15th, with Dr. J. B. CHRISTOPHERSON, the president, in the chair, a paper by Professor A. BESREDKA of the Pasteur Institute was presented, on antivirus therapy in infectious diseases. Owing to influenza, Professor Besredka was unable to attend, but his paper was read in his absence. The following is a summary of his argument.

The name "antivirus" was given to substances of microbic origin capable of local vaccination without the introduction of antibodies. Like the organism from which they were derived, the antiviruses were selective in their action, and affected only certain cells, called receptives; thus staphylococcus vaccine had an affinity for the cells of skin and mucous membrane, cholera antivirus for the lining membrane of the intestine, and so on. The antivirus had an immediate action, and was confined to cells with which it came into contact. As a direct result of absorbing the antivirus, these cells became impervious to the action of corresponding organisms. It might, however, also give rise to a general immunity, as in typhoid and anthrax. In the former, as soon as the intestine became refractory, the whole body might be said to be refractory also, since the other organs were not subject to typhoid. In anthrax, in guinea-pigs, the organism had an exclusive affinity for the skin; once saturated with antivirus, bacteria might be inoculated into any organ. Local vaccine treatment of the intestine at first met with considerable opposition, and it was not until the necessity for a sensitizing agent, such as bile, was realized in such diseases as typhoid and cholera (although not in dysentery) that the idea was accepted. During the past decade there were many publications to show that oral vaccination against dysentery had notably reduced both the morbidity and mortality of the disease, for both preventive and curative purposes. The effect of oral vaccination upon the development of an attack of dysentery was at least as beneficial as that of a subcutaneous injection of the specific serum. Oral antityphoid vaccination was now taking its place in ordinary practice, and was quite as effective as subcutaneous inoculation. This method was also used in cases where the disease had already manifested itself in order to prevent the gradual spread of the bacillus to the healthy cells of the intestine. Oral vaccines had similarly been tried in cholera epidemics, using bile as a sensitizing agent, and reports were favourable. It was certain that *B. coli* often played an important part in entero-colitis, and a close analogy existed between coli infections and typhoid and cholera. Zlatogoroff prepared a combined vaccine, containing the dysentery bacilli, *B. proteus*, and *B. coli*, called pentavaccine. Its use in man had been promising, both in prevention and in cure, and administration of vaccine by the mouth was being more and more commonly prescribed in serious cases of colitis. Urinary infections could not be considered wholly apart from colitis, and the commonest organism in the urine was *B. coli*, although other intestinal organisms were also found. Clinical results had justified the use of oral vaccines in this case also, although only some cases yielded to this treatment. In pyelonephritis, cystitis, and pyelitis local application of vaccine had given successful results.

Turning to a consideration of the eye, Professor Besredka remarked that this had little or no part in a general infection, and was only mildly affected by the development of general immunity. Various ocular affections in man had been treated by vaccine therapy. In blepharitis antivirus had been very successful, either by simple instillation or as an ointment. Similarly, in dacryocystitis, local vaccine therapy had given good results. The local use of antivirus in ear diseases had been equally successful. Furunculosis had reacted with astonishing effects to the application of antivirus: pain disappeared, and the boil rapidly healed. Other ear conditions had been treated in a similar manner, as also had nasal infections and suppurations of the sinuses. The local application of vaccine to the laryngo-pharynx had been the subject of numerous experiments and clinical observations, and it was possible that local vaccine therapy might some day be applied to the lung

itself. There were various oral conditions which manifested themselves in frequent suppuration and pain which could be successfully treated with local vaccine therapy applied by means of compresses. In pyorrhœa alveolaris the local application of antivirus produced a complete disappearance of pain, a return of the gums to normal, and a tightening of the teeth, but it alone did not cure the condition. The method had also been used in gynæcological affections which were due to local infections; antiseptics could be usefully replaced by antivirus, and many examples of this use were adduced. The pyogenic infections of the skin could also benefit from local vaccine treatment, and boils and carbuncles had been successfully treated. There were two methods in common use—intracutaneous injections and cutaneous dressings—the latter being the more commonly employed. Erysipelas had been favourably treated by a similar application of a streptococcal antivirus applied as a cream or a liquid, while soft chancres and buboes had been likewise improved, using an antivirus from Ducrey's bacillus. Professor Besredka concluded by observing that antivirus therapy was being more and more employed in surgical cases. Its uses in veterinary practice were as varied as in human medicine, and the application of anti-vaccination in anthrax in animals—the starting-point of all antivirus therapy—was to-day universally adopted as part of the ordinary routine of farming.

In the discussion which followed the reading of Professor Besredka's paper there was a general feeling that it was unfortunate that the exact nature of "antivirus" had not been fully described or the technical details of its preparation explained.

Major-General HARVEY pointed out that the army had conducted a considerable amount of research into similar methods. It had been tried for gonorrhœa, for example. At first, old filtered or centrifuged cultures had been instilled into the urethra, but this method had been discarded as too toxic. Later young cultures had been used, and finally these had been given intradermally. Twenty years ago they had tried it against typhoid. Glycerin-killed cultures were swallowed, but with very irregular results so far as antibody production was concerned. The oral dysentery vaccine had been used in the Shanghai force, and in two years only 76 out of 9,000 had developed the disease during the season. These results could not be regarded as conclusive, however, as there were no controls. There were, however, 400 cases of enteritis. Some of these might be mild cases of dysentery; on the other hand, if they were not, it suggested that the oral dysentery vaccine might be specific.

Mr. A. FLEMING believed that the antivirus was equivalent to the inhibitory substances found in exhausted cultures. He had grown moulds on broth for a week to ten days, and found that the filtrate had a greater inhibitory effect than antivirus on the growth of the pyogenic cocci. The results of its application to suppurative conditions were favourable, although it was not a specific effect.

Professor LEDINGHAM considered that, while oral anti-typhoid vaccination was effective, it was not more so than the normal method.

GASTRO-INTESTINAL INFECTION FROM ORAL SEPSIS IN MENTAL DISORDER.

AT a meeting of the Section of Psychiatry of the Royal Society of Medicine on May 14th, with Sir MAURICE CRAIG in the chair, a paper was read by Dr. W. M. FORD-ROBERTSON, of St. Andrew's Hospital, Northampton, on gastro-intestinal focal infection in relation to oral sepsis, with special reference to anaerobes, occurring in cases of mental disorder.

Dr. Ford-Robertson said that this investigation covered 114 cases of mental disorder. Its object was to ascertain the relationship of oral sepsis to gastric function in this class of patient, the disorders presented, and the state of the intestine, especially the colon, consequent upon these conditions. The technique of the fractional test meal employed had been the same in all cases. The chemical analysis consisted, in the first place, in the estimation of free and combined HCl. He described the state of the teeth and tonsils in the patients examined: eleven of the patients were edentulous; and many others nearly so, and in few cases could the state of the gums be said to be healthy. In all but a few of the cases the dental or tonsillar resting juice and intestinal cultures had been systematically studied. Out of the 114 cases 92 cultures of the resting juice were made. In 60 cases where the first culture was positive, the resting juice was allowed to stand at room temperature for twenty-four hours in order to test its germicidal power and then recultured and the growth, if any, compared. Of 47 cases having free HCl in the resting juice, 63.8 per cent. were sterile in the immediate culture and 94.4 per cent. were negative when cultured a second time. Providing free HCl was present in the resting juice, even in moderate degree, bacteria were effectively destroyed, but the story was very different when there was no HCl in the resting juice. The work illustrated the possibility of losing the teeth and maintaining the same infection elsewhere. Gastric function varied from time to time according to the physical and mental state of the individual. Positive variations would in most cases be to his advantage, but loss of secretory function might bring him for days or months into the danger zone of partial anacidity. The analyses of the fractional test meal results in the 114 cases (whose average age was 41 years) were as follows:

Achylia gastrica	5 cases.
Achlorhydria	9 "
Hypochlorhydria	35 "
Normal	53 "
Hyperchlorhydria	12 "

A special group with no free acid in the resting juice numbered 58 cases. Of these 114 patients 46.5 per cent. came within the normal range of acidity, while 80 per cent. of normal individuals came into this same normal group. The author said that from the relationship established between the state of the resting juice and the gastric function in general, it might be expected that severe gastric infection would predispose to the descent of streptococci into the bowel, but, curiously enough, this was not the case. The tracing of the descent of the anaerobes to the colon was very difficult, but in some cases he had been able to follow them from their origin in the tonsils or teeth to the resting juice and into the intestine. Almost 90 per cent. of the cases showed intestinal infection by one or a mixture of three anaerobic species of bacteria—in other words, the infection in the majority of cases was severe. His experience of the examination of the non-mental patient was that severe anaerobic infection was uncommon, but neurasthenic and borderline cases showed a picture approximating to those found in this investigation.

Dr. Ford-Robertson's general conclusions were that in mental disorder gastric dysfunction, especially hypochlorhydria, was present to a much greater extent than in normal individuals; that the importance of free HCl as a bactericidal barrier had been proved; that oral sepsis could be traced through the alimentary canal; that the degree of gastric infection did not increase the expectation of invasion of the intestine; and, finally, that anaerobic methods were essential if the full significance of these special types of infections present in mental disorders was to be realized.

There was no discussion on the paper, but, instead, Dr. Ford-Robertson showed a large number of excellent colour microphotographs of cultures illustrating some of the cases.

DIETARY CAUSES OF PEPTIC ULCERATION.

A MEETING of the Aberdeen Medico-Chirurgical Society was held on May 2nd, with the vice-president, Dr. CHARLES FORBES, in the chair, when Dr. H. E. MAGEE of the Rowett Institute contributed a paper on diet and peptic ulcers in laboratory animals, based on experiments by himself and his colleagues.

Dr. Magee said that the experiments were designed principally to test whether deficient diets had a remote effect on the movements of the isolated intestine. Guinea-pigs were fed on diets which earlier trials had shown to give rise to a high incidence of ulcers in the gastric and duodenal mucosa in these animals, so that the results fell into two categories—physiological and pathological. The diets consisted chiefly of cereals with, in some groups, small

amounts of greenstuff, and in others additions of various inorganic salts. They were, in the former, poor in calcium, sodium, and chlorine; in the latter in potassium; and in both groups the fat-soluble vitamin content was very low. No clear distinction was evident in the results from the respective groups. The animals fed on these diets went rapidly downhill from the start, and in time developed definite signs of malnutrition. When this happened they were killed, their intestines excised, and the movements recorded when suspended in a special nutrient fluid at 38° C. The tracings showed a marked degree of irregularity and disorganization of rhythm. Two types of irregularity were distinguished—hyposensitive and hypersensitive. In the former the range of movement was relatively small as compared with that obtained from the intestines of control animals fed on adequate diets, and the response to adrenaline subnormal. In the latter the movements were relatively very large, and often violent in character, and the response to adrenaline was much exaggerated. The responses to bicarbonates and phosphates also differed from those obtained from normal animals. A large proportion of the animals showed haemorrhages and ulcerative changes in the mucous membrane in the pyloric region, circulatory disturbances round the ileo-caecal valve, stasis of an atonic or spastic type in the same region, and congestion, haemorrhages, or excessive cellular vacuolation in the adrenal cortex. These findings confirmed, in many respects, those of McCarrison and others, and showed that the segmenting movements, of myogenic origin, could be disorganized by improper food. Rowlands having shown that deficient diets caused defective emptying of the bowel, it was the speaker's opinion that the intestinal stasis in his experiments was the result of disorganization of the segmenting, as well as of the more highly developed peristaltic, movements. It was also suggested, in accordance with the findings of Carlson, that the stasis would induce pylorospasm. Agreement was expressed with the view of Cramer that the lesions in the adrenals were due to over-stimulation by the absorption of protein decomposition products, among which were probably histamine, or bodies of a similar type. Mention was also made of the work of Dale and others, who showed that adrenalectomized animals were abnormally sensitive to injections of histamine, and also that the changes produced in the blood by histamine poisoning closely resembled those found in adrenalectomized animals. Further relevancy was added to the citation of these findings by those of Stewart and Rogoff, and of others, who found a high incidence of peptic ulcers in adrenalectomized animals. These results suggested a close relationship between the functions of the adrenals and of the alimentary canal, and further experiments were performed to investigate this point. It was found that the isolated intestines of adrenalectomized rabbits responded to adrenaline in either a hyposensitive or a hypersensitive manner, as in the case of the deficiently fed guinea-pigs. The responses to the potassium and calcium ions also departed from the normal. It was found, moreover, that the response of the intestines of adrenalectomized animals to calcium in bicarbonate containing nutrient fluids was exactly the same as that of the intestines of normal animals in bicarbonate-free fluids, a result which appeared to be correlated with the lowered bicarbonate content of the blood of adrenalectomized animals.

SPIROCHAETAL EMPYEMA.

AT a meeting of the Section of Pathology of the Royal Academy of Medicine in Ireland in the Royal College of Physicians, on April 19th, with the president, Dr. T. T. O'FARRELL, in the chair, Dr. J. MCGRATH showed a patient with spirochaetal empyema.

A farmer, robust in appearance, was admitted to St. Vincent's Hospital on February 8th. He gave a history of "never being sick in his life" until he felt ill on December 23rd, 1928, when his local medical attendant sent him to bed for several days, telling him that he was suffering from influenza. He was out and about again after Christmas, but grew progressively weaker as time went on. On his admission to nospital the temperature was 101° F., the pulse 80, and the respirations 20 per minute. There were no physical signs indicative of chest or other trouble; the urine had a slight trace of albumin, but the sediment contained no pus, blood, or casts. For the succeeding few days his temperature was normal, but at the end of a week it was 99.5° F. in the evening for four days. After February 17th, when he was operated on, the temperature remained continuously normal, the pulse 72, and respirations 20. On February 16th there was slight dullness at the base of the left lung; it was needled and a small amount of brownish red pus was withdrawn. This pus contained many cells and moderately numerous spirochaetes. No other organisms were seen in the smear preparations, and on culture no growth appeared either aerobically or anaerobically. The spirochaetes found were then non-motile and stained easily, being Gram-negative; they were 4μ to 10μ long, rather thick, and with two to eight undulations. They resembled *S. refringens*, but several of them appeared too short and too regularly curved to be this spirochaete. A blood count on February 17th showed red cells 4,120,000 per c.mm. (82 per cent.), haemoglobin 55 per cent., colour index 0.7, white cells 15,680 per c.mm. The red cells showed very slight anisocytosis, and of the white cells 79 per cent. were polymorphonuclear leucocytes, and 1 per cent. were eosinophils. Tubercle bacilli could not be found in the sputum, nor could spirochaetes (which are sometimes to be found in large numbers in bronchiectasis); the Wassermann reaction was negative. On February 17th two ribs were resected, and several pints of tomato-soup-like fluid were evacuated; this fluid gave similar results to the small specimen first examined. A drain was left in. The pleural cavity was still draining, but on April 12th the fluid showed no spirochaetes, and produced a growth of pneumococci and a coliform organism. The patient was given injections of novarsenobenzol, and a vaccine had been prepared from the last cultures of the fluid. The urine, on April 17th, contained a considerable amount of albumin, several hyaline and some granular casts; but the patient's condition appeared to be good.

Dr. MCGRATH said that few cases of spirochaetal empyema appeared to be recorded, especially where not associated with gangrene of the lung and without other organisms. A case with spirochaetes in an empyema but with gangrene of the lung had been recorded by some French observers in May, 1928, but Dr. McGrath had been unable to obtain the original paper. In the present case he was assured that there was no suggestion of gangrene of the lung. The patient's teeth were in good condition, but showed one small and one moderately large cavity. In view of the fact that it had been stated that in cases of tropical bronchopulmonary spirochaetosis the *S. castellanii* could nearly always be isolated from bad teeth, smear preparations of scrapings from the patient's teeth cavities were examined. There were very numerous micro-organisms present, but *spirochaetes could not be found.*

The PRESIDENT said he had never seen a similar condition to that shown by Dr. McGrath. He thought at first that the spirochaete might have come from a cavity in the lung, but understood that clinicians who had seen the case said that this was not so. Professor J. W. BIGGER stated that spirochaetes were found in gangrenous conditions, but nearly always in association with other organisms. It was rare to find them confined to the pleural cavity. Professor BEATTIE drew attention to the large number of spirochaetes present, and their thickness, and thought that they might possibly have come from the teeth, but apparently this was not the cause.

Intestinal Obstruction due to Gall-stone.

Mr. J. L. KEEGAN showed a gall-stone which had caused *intestinal obstruction.*

A woman, aged 70, had had severe pain in the right upper abdomen twelve months previously with vomiting lasting three days; after that she had enjoyed good health until March 7th, when she had severe pain, vomiting, and complete constipation. The vomiting was continuous and she could not pass flatus.

On examination she was collapsed, weak, and with almost imperceptible pulse, anxious facies, an abdomen distended but not rigid, and pain on pressure. On the diagnosis of acute intestinal obstruction the abdomen was opened on the right side with a view to caecostomy to give immediate relief to the obstruction. Finding the caecum collapsed but the ileum distended, a coil of the latter was delivered and a large hard mass was felt in the ileum, which was removed. The transverse colon was intimately adherent to the liver and obscured any sight of a gall-bladder. The patient's condition did not permit any examination to see how the stone had entered the intestines; it weighed 18.15 grams, and formed a complete cast of the gall-bladder.

The PRESIDENT had never seen a case in which gall-stones had caused absolute intestinal obstruction, and asked if there was any history of typhoid fever. Mr. F. J. HENRY said that clinically he had never seen a case of gall-stone obstruction, or a specimen of gall-stones which had caused obstruction. From a perusal of the literature the impression was gained that gall-stone ileus was now much more rare than it had been ten or fifteen years ago, the reason for this being, presumably, that patients now came for treatment earlier than they used to. The gall-stone in this case was an example of the pure cholesterin type, and

the reason why gall-stone ileus was nearly always caused by this type of stone was because the stone could not find any other way out of the gall-bladder except through a fistula. Referring to the site of impaction of the stone, he asked if it had been found at the upper end of the small gut or down below at the ileum. It was stated by most surgeons that obstruction occurred comparatively high up in the small gut, and for that reason vomiting was a very early and very pronounced symptom. Dr. R. A. Q. O'MEARA remarked that hypercholesterinaemia occurred in other conditions besides pregnancy; he thought it possible that there was some other factor in pregnancy which acted in conjunction with hypercholesterinaemia to account for the formation of gall-stones.

MR. KEEGAN, in replying, said that there had been no history of typhoid. The gall-stone was found in the lower third of the ileum, near the ileo-caecal valve.

Colloids in Urine.

Dr. JESSOP, in a communication on colloids in urine, remarked that Weiner had observed that urine contained a factor which inhibited the precipitation of urea nitrate when an equal volume of concentrated nitric acid was added. This factor was investigated in normal and pathological urines, using a technique which had been carefully worked out. The inhibitory factor was found to be present in all the specimens examined. In a certain proportion of urines this inhibition was small; the difference between the solvent power of a 50 per cent. aqueous-acid solution and that of a similar urine-acid solution corresponded to from 0.08 to 0.16 per cent. urea. In other urines the inhibition was sufficient to prevent the formation of any precipitate from concentrations of 2 per cent. urea. A saline solution corresponding in composition to urine gave a small inhibition. Various concentrations of NaCl up to 6 per cent. gave no inhibition. On adding various strengths of colloid solutions to 2 per cent. aqueous solutions of urea an inhibition was observed. In some specimens the inhibition partially disappeared when the coagulable protein was removed.

The PRESIDENT suggested that if the urine were taken by ureteral catheter it would be possible to form a more reliable idea of the amount of colloids it contained than if the urine were passed in the ordinary way.

Dr. WILLIAM FEARON dealt with the nature, amount, and function of the urinary colloids. He pointed out that male urine contained a higher proportion of colloid than female, and raised the question of the relation of urinary colloids to calculus formation. He suggested that the normal colloids of the urine exerted a beneficial action in keeping the less soluble solid constituents of urine in solution. Dr. J. MCGRATH thought that colloids in urine might be specific, in that they kept the urea in solution; he had found that other colloids did not act as well as urinary ones for this purpose. As regards the origin of the colloid, if it came from the capillaries it was doubtful how it passed through them. Dr. R. A. Q. O'MEARA agreed with Dr. Fearon that the normal colloids in urine possibly acted as a protective mechanism against calculus formation. Normal urine contained no irreversible colloids, since these only gained entry when the kidney or urinary tract was inflamed. In addition, a crystalline nucleus for calculi was very common, and urinary calculi not infrequently originated without previous inflammation. He discussed the relation of vitamin A deficiency to calculus formation, and suggested that defective formation of normal urinary colloid following such deficiency might explain the occurrence of calculi in experimental animals fed on a vitamin-deficient diet. Professor BEATTIE mentioned that some of the urine examined had been from cases of diphtheria and some from cases of whooping-cough; in all of these cases a toxin was being absorbed, and the urine might contain toxin.

Dr. FEARON, replying, said he believed that colloids came from several sources, and that some were actually excreted by the kidney. Probably a great deal came from the bladder, and he agreed with the president that it was advisable sometimes to compare the colloids in urine taken by catheter with that passed in the ordinary way. He looked forward to the time when it would be possible to take kaolin precipitates and trace the adsorbed colloid.

Reviews.

BLOOD-VESSEL TUMOURS OF THE BRAIN.

A somewhat large monograph[1] of about 200 pages on the rare lesions of blood-vessel tumours of the brain, by CUSHING and BAILEY, has just reached us. The book is in the main a retrospective investigation of those lesions which have been treated in Dr. Harvey Cushing's clinic, with a thorough review of the subject in the light of more recent knowledge. In addition, a wide survey has been made of the literature, which in many cases is scanty and incomplete, and the whole subject has been placed on a practical basis; this should clear up many obscurities, and serve as a basis for future investigation.

To bring out a book of this kind requires a vast amount of work, and its production is very costly. The authors are to be congratulated on the high standard of the former, and have been singularly fortunate with regard to the latter, in that the expenses have been defrayed through the offices of a grateful patient. The subject is dealt with in detail entirely from the clinical, surgical, post-operative, pathological, and histological points of view. The aim of the authors has been certainly achieved, although they naively suggest that it may appear Victorian in character to a younger generation of physicians and surgeons, whose tendency is to forsake the post-mortem and dissecting rooms to worship at the shrines of experimental physiology and biochemistry.

The substance of the work has been divided into two parts: (1) the angiomatous malformations, (2) the angioblastomas or true neoplasms of blood-vessel elements. The angiomatous malformations are considered to be of congenital origin, and are clearly distinguished from the blood-vessel tumours by the fact that compressed nervous tissue is invariably present between the loops comprising them. The malformations are further subdivided up into (1) telangiectases, (2) angioma venosum, (3) angioma arteriale. They occur predominantly in the cerebral hemispheres, and often provoke epileptiform attacks. The venous angiomas are sometimes associated with cutaneous trigeminal naevi, whereas the arterial angiomas are often recognized by an audible bruit, sometimes a choked disc, and unilateral exophthalmos. Surgical treatment is unsatisfactory. The angioblastomas are composed of angioblastic elements. Their site of election is in the cerebellum, and they are largely cystic, and when properly stained show a network of reticulum, which serves to distinguish them. One interesting group of these tumours, which is often associated with an angiomatous condition of the retina, angiomas of the cord, and cystic lesions in other organs and may show a familial tendency, was described and differentiated by Lindau, and the recent appearance of his monograph has evidently suggested to Cushing and Bailey a review of their material. The tumours should be treated by extirpation, and when cystic tumours are encountered care should be taken to remove the mural nodule, otherwise recurrence of the cyst is to be expected.

It would appear that one of the main purposes of this study was to explore Lindau's work, and the conclusion of the authors is that Lindau came to regard these lesions associated with angiomatosis of the retina as of more common occurrence than they actually are. It must be noted that in this series only one out of eleven cases was a true case of Lindau's disease, although in six of the living patients their fundi were only examined for this condition at a later date. In the extensive bibliography we are struck by the paucity of references to work emanating from this country. Sargent and Greenfield have done something to remedy this defect by collecting some of their specimens for a paper in the course of publication; but, speaking generally, there is a tendency among British workers to isolate their work in watertight compartments, which hinders any semblance of organized co-operation or mass production. As a product of concerted effort and unified

[1] *Tumors Arising from the Blood-vessels of the Brain.* By Harvey Cushing and Percival Bailey. London: Baillière, Tindall and Cox. 1928. (6½ × 9½, pp. x + 219; 159 figures. 21s. net.)

control Cushing and Bailey's book is an excellent example, and it should stimulate our special hospitals to devise better schemes for a more fruitful exhibition of their labours.

HYGIENE AND PUBLIC HEALTH.

WE reviewed the sixth edition of PARKES and KENWOOD'S *Hygiene and Public Health*[2] on March 2nd, 1918 (p. 261). The eighth edition of this textbook, so well known to students for the diploma of public health, makes its reappearance with Dr. HAROLD KERR as co-author in place of Dr. Louis C. Parkes; Dr. H. M. Hanschell has been called in to assist in regard to that part of the book dealing with the tropics. The task of revision, and especially of addition, has been well performed. There is perhaps more of a tendency to introduce sanitary law—many of the older generation of readers regret the omission, several editions ago, of an excellent summary of public health legislation as it was then. There is also perhaps a tendency to quote more from special reports, a feature all to the good when the reading, labour, and care that have been devoted to their writing are borne in mind.

The authors are generous in mentioning the works of their fellow writers. We note that they agree with Dr. W. G. Savage in holding that Professor v. Ostertag's scheme for segregating and slaughtering only open cases of tuberculosis among bovines, while reducing milk infection, cannot eliminate tuberculosis among these animals. Unfortunately, however, in spite of the publication of sound English and German work on this point, they insist on teaching that pasteurization of milk kills tubercle bacilli. Another dictum of the authors is to the effect that there is probably no relationship between spirochaetal jaundice and the ordinary epidemic form which occurs in this country. As regards methods of treatment of sewage, they state that probably every one of the methods referred to may be made to give satisfactory results; questions of economy of plant and time, of working and maintenance, and of the relative applicability of the process to local wants and facilities must and will ultimately determine the choice.

In a number of places throughout the book we seem to detect an absence of the critical faculty: we are certainly not always told the opposite side, which is surely advisable in post-graduate teaching and in the presentation of a subject to administrative colleagues. The plan of one part of the book appears to be to present to the reader an account of a very considerable number of appliances and methods, some of which, at any rate, would not be considered when arranging for new installations; condensation or omission would provide space useful for the instilling of principles. We are given very few footnotes which might contain references to papers useful to fellow administrators. The information given on tropical diseases, if occasionally a trifle dogmatic, is very sound. The relatively small cost of the book is doubtless responsible for its comparatively uninteresting and undistinguished format. A number of useful new illustrations have been included; the index has withstood satisfactorily a substantial test by the reviewer.

A perfect textbook on public health would take years to write and would probably have to be issued at a prohibitive price. Here we have a quarry of concise information valuable to students and practical workers, a bargain at the price asked for it.

APPLIED ENTOMOLOGY.

PROFESSOR WARDLE is already well known as the joint author, with the late P. S. Buckle, of the *Principles of Insect Control* (1923). He has now produced a second book, not unlike the first, entitled *The Problems of Applied Entomology*,[3] in which he brings his account of the subject up to date. In the first 250 pages or so he discusses a great range of general topics: for instance, the behaviour of insects, their resistance to climate, and their relations to food plants and hosts; also more practical problems, such as the composition and action of insecticides and fumigants, and methods of cultivating plants so as to make them resistant to the attacks of insects. In this part of the book the author shows that he has read very widely and that he can write a fair and balanced summary. It is delightful also to see that he is not afraid of going to the very root of the matter, for he considers what is fundamental to the spreading power of insecticides and their toxicity, and the mathematical aspect of the increase of a population of parasites at the expense of a population of hosts. Then, again, in discussing the relation between the length of life of an insect and the temperature, the author pursues the matter right out of the range of entomology, and discusses the facts in relation to the laws of Van't Hof and other physicists. In his discussion on the relation between insects and the climate in which they live the author is dealing with a subject of particular complexity and of very great practical importance, and he manages to combine the results of field observations and controlled experiments in laboratories, and to present the whole in a balanced and compact way.

The second part of the book deals with the principal entomological problems of the world. Professor Wardle divides the surface of the earth into ten main areas, which are discussed in turn. In the nature of things this part of the book is rather a collection of abstracts, but it is certainly useful for reference, and we have been unable to discover grave omissions in it. In these pages a medical man can find a short account of the carrier of plague in India, or the Anopheles of the Mediterranean, etc. It will be understood that the applications of entomology to medicine are not discussed by themselves, and that no one part of the book is of particular interest to the medical reader, but it is clear that the author's reading has included medical entomology in its scope.

It might be wished that Professor Wardle had shown a little more of his personal feeling in selecting his material. The book is an able summary of the literature, but it is rather cold and impersonal; though it is useful, it does not rouse our enthusiasm in any particular part. The medical entomologist will find a few errors in fact: for instance, it is misleading to say that the relapsing fever of Africa, which is carried by *Ornithodorus moubata*, is due to *Spirochaeta berbera*. It is curious that the account of malaria in India contains no reference to Christophers, whose work is probably of much greater importance than that of any other individual. The book abounds in wrongly spelt scientific words. With the ordinary words the printer's proof reader has dealt quite carefully, but we think he must have left all the italicized words to the author.

SPECIFIC TREATMENT OF PNEUMONIA.

DR. F. T. LORD'S Harvard Health Talk on *Pneumonia*,[4] which was reviewed in our issue of September 15th, 1923, now summarizes in a second edition the advances, especially those in specific treatment, since 1922. Felton in 1921 found, by the simple method of diluting multivalent antipneumococcal serum with water, that from the resulting precipitate a concentrated antibody solution, containing small quantities only of horse serum, could be made, and that this is effective not only against Type I but probably also against Type II pneumococcus infection. This antibody solution, being concentrated, is given intravenously in doses of 5 to 10 c.cm., as contrasted with 100 c.cm. of the unrefined serum against Type I pneumococcus, and, being multivalent, can be given early before the type of the infecting pneumococcus has been determined. The three forms of reaction that may follow injection of serum are clearly described; they are: an immediate shock-like reaction; a thermal reaction, not uncommon after Felton's antibody solution, coming on usually within an

[2] *Hygiene and Public Health* (Parkes and Kenwood). Eighth edition. revised by Henry R. Kenwood, C.M.G., M.B., F.R.S.Ed., D.P.H., and Harold Kerr, O.B.E., M.A., M.D., D.P.H. London: H. K. Lewis and Co., Ltd. 1929. (Demy 8vo, pp. xii + 823; 91 figures. 21s. net.)

[3] *The Problems of Applied Entomology.* By Robert A. Wardle, M.Sc. Manchester: Manchester University Press. 1929. (5½ × 9, pp. xii + 587; 51 figures. 30s. net.)

[4] *Pneumonia.* By Frederick Taylor Lord, A.B., M.D. Second edition. Harvard Health Talks No. 9. Cambridge, Massachusetts: Harvard University Press; London: Milford, Oxford University Press. 1929. (Fcap. 8vo, pp. 84. 4s. 6d. net.)

hour of the injection and characterized by transient rise of temperature and the pulse and respiration rates; and the serum disease appearing a week or more later.

In our present issue (p. 943) Dr. J. G. M. Bullowa, professor of clinical medicine in the New York University, gives an account of his experiences with serum treatment of the pneumococcus pneumonias at the Harlem Hospital. It will be seen that he is convinced not only that there were fewer deaths in the serum-treated cases, but that the administration of serum shortens the time of illness in severe cases. Another article on the same subject by Professor Bullowa appears in the April issue of the *Bulletin of the New York Academy of Medicine*. He recognizes that serum treatment, with its frequent injections, its careful typing, its blood cultures, and its antibody tests, requires expert and special skill. He hopes, however, that the technique may be simplified, and that better and cheaper serum will become available as the demand increases and more horses are immunized. "It is only by early diagnosis and prompt use of the serum in the hands of general practitioners that the dramatic results we have witnessed can be extended, and mortality from pneumonia gradually reduced."

CLINICAL NEUROLOGY.

DR. NEUSTAEDTER in the preface to his *Textbook of Clinical Neurology*[1] states that he has endeavoured to arrange his material in a manner different from that usually employed in textbooks of neurology. In place of the customary pathological classification he has sought to present an account of diseases under the headings of symptoms. This is an attempt which was bound to fail, for the reason that there are few diseases of the nervous system which have only one symptom, and symptomatological classification thus becomes purely arbitary. Dr. Neustaedter has, indeed, made the worst of both worlds. When he is consistent he is saddled with an arrangement which leads to the inclusion of tabes dorsalis, tumour of the cerebellopontine angle, and disseminated sclerosis in one chapter as "ataxias." But for the most part he is inconsistent, and reverts to the time-honoured plan of neurological textbooks, with the familiar "tail" of endocrine disorders, some of which cannot by any stretch of imagination be described as neurological, and lastly hysteria and neurasthenia. Unfortunately the material arranged is no more satisfactory than the arrangement, being in many respects inadequate and in places inaccurate. Thus we are told that a lesion limited to the pyramidal tract produces only a hemiparesis, and that in complete hemiplegia tecto-spinal, vestibulo-spinal, and rubro-spinal tracts are also involved. It is also stated that "pituitary neoplasms are always accompanied by bitemporal hemianopia." The views expressed on "optic neuritis" and "papilloedema" are hard to follow, and it is difficult to make sense of the statement that "optic neuritis is a constant accompaniment of choked disc, and often precedes papilloedema." Treatment by induced malaria is described under "cerebral syphilis" and merely alluded to under "general paralysis." In the account of Schilder's encephalitis there is no mention of the cardinal symptom, loss of vision; and no reference is made in the book to congenital intracranial aneurysm.

NOTES ON BOOKS.

MACCALLUM'S *Text-Book of Pathology*[2] is now in its fourth edition. This work, which has been well received in this country, differs from most textbooks on the subject in the point of view adopted by the author in his exposition. No division is made into general and special pathology, but the whole work is constructed upon the idea that all pathological disturbances are the result of some form of injury or of the immediate or remote reactions of the body to injury. Thus the primary classification is that of various types of injury—traumatic, bacterial, and so forth. This point of view has its advantages; it assists in keeping the relation of causes to pathological processes in the foreground, and thus obviates the tendency towards a mere descriptive anatomy of lesions. Another feature which has furthered the popularity of the book is the great beauty of the illustrations, which are not surpassed, possibly not equalled, by those in any other textbook on the subject. The present edition shows evidences of extensive revision in almost every section. It has been deemed desirable to shorten or omit chapters on so [illegible] immunity, the acid-base equilibrium, and [illegible] and this has permitted of the introduction of new matter without increasing the size of the volume to any considerable extent. The additions, which include discussions on recent advances in our knowledge of bilirubin production, calcium metabolism, yellow fever, goitre and cretinism, vitamins, rickets, allergic reactions, and the reticulo-endothelial system, serve to bring the volume well up to date.

The second number of the new series of the *Annals of Medical History*,[3] which now comes out every other month, opens with Dr. S. C. Harvey's account of haemostasis, the history of which he traces through the ages with a number of illustrations of instruments used in the arrest of haemorrhage, some from Fabricius Hildanus, whose portrait adorns the cover. The frontispiece represents John Coakley Lettsom, of whom Sir StClair Thomson wrote in the January number. A letter to Lettsom forms the opening paragraph of Dr. George C. Peachey's interesting article in this number, entitled "John Fewster, an unpublished chapter in the history of vaccination." Dr. W. S. Miller of Wisconsin writes with information of an interesting personal nature about William Beaumont, Alexis Bigigan, better known as St. Martin, who survived for sixty years the accident which caused the famous gastric fistula, and Elisha North (1771-1843), who gave the first description in America of cerebro-spinal fever, and had two deaths only among more than 200 cases. In the account of Dr. James and his medical dictionary, Dr. C. W. Burr of Philadelphia mentions that the author of the dictionary was the grandfather of G. P. R. James the novelist. In an attractively written sketch of Gabriel Honoré de Riquetti, Count of Mirabeau, Dr. R. A. Moore concludes that his death, at the age of 42, was due not to poisoning, but to cardiac infarction supervening on arteriosclerosis and chronic nephritis. In his biography of Arnold Adolf Berthold (1802-1861) Dr. Homer P. Rush shows that in 1849 he anticipated Brown-Séquard's conception of an internal testicular secretion in 1889. Dr. T. N. Toomey draws attention to Venegas's *Compendio de la Medicina*, published in Mexico in 1788, as the earliest general medical treatise to appear in the Western hemisphere. The travels of Garcia da Orta in India and the East enabled him, as Lieut.-Commander L. H. Roddis, M.C., U.S.N., shows, to write, in 1563, in Portuguese, "Colloquies on the drugs and spices of India," and thus to be the first European writer on tropical medicine and a pioneer in pharmacognosy. A memorial group of the Harvey family is described by Sir D'Arcy Power, who reproduces the portraits occupying one wall of the drawing room at Rolls Park, Chigwell, Essex, belonging to the Lloyds, descendants of Eliab, the brother of William Harvey. Among the book reviews are those of the fourth edition of Garrison's great *History of Medicine*, and two works by Dr. Charles Singer.

The alkaline reserve,[4] by AMBARD and SCHMID, contains an account of the opinions of the Strasbourg Medical School on all the questions concerning respiratory, circulatory, and renal function and pathology that are associated so closely with the central problem of the factors governing the alkaline reserve. The subject is one of the most complex in modern chemical pathology, and the volume makes difficult reading. Professor Ambard's views, however, although original, are always definite and clear. The volume is one that will repay study by all who are interested in this problem.

[1] *Textbook of Clinical Neurology*. By M. Neustaedter, M.D., Ph.D. With an introduction by Edward D. Fisher, M.D. Philadelphia: F. A. Davis Company. 1929. (Med. 8vo, pp. xx + 602; 228 figures. 6 dollars net.)

[2] *A Text-Book of Pathology*. By W. G. MacCallum. Fourth edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1928. (6¼ × 9¼, pp. xv + 1177; 606 figures. 45s. net.)

[3] *Annals of Medical History*, New Series, Vol. I, No. 2, March, 1929. Edited by Francis R. Packard, M.D. New York: P. B. Hoeber, Inc.; London: Baillière, Tindall and Cox. 1929. (Imp. 8vo, pp. 127-252; illustrated. Subscription in Great Britain £2 5s. per volume of six numbers.)

[4] *La Réserve Alcaline*. Par L. Ambard et F. Schmid. Paris: G. Doin. 1928. (6¼ × 9¼, pp. 155. 18 fr.)

PREPARATIONS AND APPLIANCES.

A POCKET ELECTRIC OTOSCOPE.

AN "auriscope" adapted for use with the fountain pen type of electric torch has been manufactured by Messrs. *John Smith and Son, Ltd.*, 26, Gibson Street, Hillhead, Glasgow. It can also be used as a throat lamp, and facilitates various diagnostic and operative procedures. A lens at the back of the apparatus can be removed, admitting the passage of instruments through the speculum; various sizes of specula are supplied. The apparatus is adapted to clip in the waistcoat pocket, and is transportable without inconvenience. Its price is 32s. 6d. complete; in connexion with it a Lucae's myringotome for paracentesis operation can be supplied, and also a tongue depressor can be fitted to the torch.

British Medical Journal.

SATURDAY, MAY 25TH, 1929.

THE CONDITIONED REFLEXES.

IT is now almost sixteen years since there appeared in the *British Medical Journal*[1] an account—one of the first in English—of the investigations on what were there called the conditional reflexes, but for which the name of "conditioned reflexes" is now most commonly used. That address was, however, by no means an early one in the history of the development of the subject, which, since 1901, has been steadily growing in the hands of Professor Pavlov and his numerous colleagues and pupils. A further large mass of data has since been accumulated, the main outlines have been incorporated into some modern textbooks of physiology,[2] and a comprehensive treatise on conditioned reflexes has now appeared as a book of some size,[3] which was reviewed in these pages on October 1st, 1927 (p. 596), so that the essentials of the subject, both as regards methods and results, are now reasonably accessible to English-speaking readers. The subject is, however, so interesting and important, and so much of its literature is in Russian, that any fresh addition to the literature in the English language is invariably welcome. It is therefore with especial pleasure that we welcome an English edition of a collection of Professor Pavlov's various lectures and addresses.[4] The book has a personal note which should make it especially valuable to many who, though in a sense his followers, have not had the advantages of actual contact with Professor Pavlov. For instance, a most attractive feature is the opening biographical sketch by Dr. Horsley Gantt, which gives us a very good introduction to Professor Pavlov and some incidents in his remarkable career.

Almost without exception Pavlov's experiments have been carried out on the dog—"this faithful and friendly representative of the animal world." The opinions of so great a physiologist on the subject of animal experimentation are therefore especially interesting: "As is known, vivisection has excited in many countries of Europe an energetic objection from the uninitiated. These protests have at times seriously interfered with the progress of biological investigation (for example, in England). But what is the basis for this? The feeling of pity. . . . But the experimenter also has this feeling. . . . The human mind has no other means of becoming acquainted with the laws of the organic world except by experiments and observations on living animals. . . . If we consent to the torture and killing of thousands of even our fellow men in wars, then how can we object to the sacrifice of a few animals on the altar of the supreme aspiration of man for knowledge in the service of a high ideal, the ideal of attaining to truth?" Passion for truth is indeed Pavlov's outstanding characteristic, and "in his own words," to quote Dr. Gantt, "uttered with a reverberation of his whole being and with such awe-inspiring force that it compelled silence during protests made to unwelcome statements in one of his lectures, 'I am speaking only the scientific truth, and whether you will or no you must hear it.'"

The history of the development of the subject as given by Pavlov is most valuable and interesting. "I entered this field under the influence of a powerful laboratory impression," he writes. "For many years previously I had been working on the digestive glands. . . . I began to investigate the question of psychic secretion with my collaborators Drs. Wolfson and Snarsky. . . . Snarsky . . . undertook to analyse the internal mechanism of the stimulation from the subjective point of view—that is, he assumed that the internal world of the dog—the thoughts, feelings, and desires—is analogous to ours. We were now brought face to face with a situation which had no precedent in our laboratory. In our explanation of this internal world we diverged along two opposite paths. . . . Snarsky clung to his subjective explanation of the phenomena, but I, putting aside fantasy and seeing the scientific bareness of such a solution, began to seek for another exit from this difficult position. . . . I decided finally . . . to remain in the role of a pure physiologist—that is, of an objective external observer and experimenter, having to do exclusively with external phenomena and their relations." From this point onwards the general trend of the investigations steadily confirmed the correctness of this attitude, though when obstacles were met with there was at first a tendency, which got less and less, to apply psychological explanations.

The view that the cerebral activities were essentially reflex in nature originated with "the father of Russian physiology," I. M. Setchenov, in 1863, and it was to the reading of Setchenov's book during his youth that Pavlov attributes the direction of his thoughts along these lines. The conviction has steadily increased that "along this path will be found the final triumph of the human mind over its uttermost and supreme problem—the knowledge of the mechanism and laws of human nature" which "will deliver man from his present gloom, and purge him from his contemporary shame in the sphere of interhuman relations." "Why," he asks, "had we formerly, like cowards, returned to the old subjective methods? The secret is simple: because the subjective method is the method of thinking without considering real causes, because psychological reasoning is indeterminate reasoning, recognizing phenomena, but knowing not whence they come nor whither they lead."

The story unfolds as we read these lectures in the order in which they were given. First the bare account of the fundamental phenomena, and some lectures dealing with removal of parts of the cerebral cortex. Steadily the importance of inhibitory phenomena is recognized, and thus the need arises for specially constructed laboratories in which to carry out the experiments. In 1909 Pavlov announces "with a feeling of pride . . . that my native country has answered promptly my call for a new type of laboratory." The construction and equipment of this was delayed by war and revolution, and although the Soviet Government appears to have done all in its power to assist Pavlov, the institution was not properly completed and equipped until 1925. In other lectures the processes of inhibition and differentiation, particularly with regard to sleep, are developed. The experiments on sleep arose out of the observation that some of the animals habitually fell into a deep sleep at certain stages of the experiments, and on

[1] An Address on the Investigation of the Higher Nervous Functions, given by Professor I. P. Pavlov at the International Physiological Congress on September 5th, 1913. Adapted into English by C. Lovatt Evans. *British Medical Journal*, October 18th, 1913, p. 973.

[2] *Recent Advances in Physiology*. By C. Lovatt Evans. Churchill, 1928. Starling's *Principles of Human Physiology*. Fourth edition. Churchill, 1929. Bayliss's *Principles of General Physiology*. Longmans, 1924.

[3] *Conditioned Reflexes*. By I. P. Pavlov. Translated by G. V. Anrep. Oxford University Press, 1927.

[4] *Lectures on Conditioned Reflexes*. Twenty-five Years of Objective Study of the Higher Nervous Activity (Behaviour) of Animals. By I. P. Pavlov, M.D. Translated from the Russian by W. Horsley Gantt, M.D., B.Sc., with the collaboration of G. Volborth, M.D., and an introduction by Walter B. Cannon, M.D., Sc.D. London: M. Lawrence, Ltd. 1928.

following up the subject it became clear that there is a very close relation between the states of inhibition, hypnosis, sleep, and certain pathological states.

Altogether this group of papers represents an interesting and valuable addition to our literature of the subject, and Dr. Horsley Gantt is to be congratulated on the work which he has done in making it available. Our readers will recall that Dr. Gantt contributed to this *Journal* a series of articles entitled "A Medical Review of Soviet Russia," which appeared periodically from June, 1924, to October, 1927. In more than one of these Pavlov's work on conditioned reflexes was dealt with; the article published in the issue of June 11th, 1927 (p. 1070), being almost entirely devoted to that subject. Mention might also be made of his lecture given to the International Physiological Congress held in Edinburgh in 1923, a report of which was published in the *Journal* of August 11th of that year.

THE ACTION OF THALLIUM.

IT was long after the depilatory action of thallium was discovered that its use for denuding the scalp was popularized on the Continent by Buschke. Quite a voluminous German literature, however, had accumulated before any considerable use of thallium was made in the English-speaking world, and it is only in the last year or two that the therapeutic value of salts of that metal has been discussed in the medical journals of Great Britain and America. Published accounts of the mode of action of thallium are scarce, and the toxicologists, if the latest edition of Taylor's *Medical Jurisprudence* is a guide, have not much to say on the subject. Thallium was brought prominently to notice lately when, by accidental overdose, it was the cause of three deaths. In those cases the dose given seems to have been 5.6 times that intended, and the fact that it was such gross overdosage which caused disaster may perhaps have masked, for those not already familiar with the drug, its great toxicity even when given in dosage accurately prescribed and measured in proportion to naked body weight and with regard to the patient's age.

The obvious advantages of thallium are great: its use requires no costly and elaborate apparatus, and it has never caused permanent baldness. The difficulties attaching to its administration are, however, considerable. It appears that the minimum effective dose is one which may, and quite frequently does, produce undesirable even if not serious symptoms. In recorded series of cases the occurrence of bone and joint pains, often severe and requiring treatment in bed, is frequently mentioned. Polyneuritis, myalgia, hyperaesthesia, and other symptoms have been observed. Fuld[1] describes severe poisoning in a boy aged 12 with no signs of puberty, where dosage was accurately given at 8 mg. per kilo of body weight. Pain in the knee, and later polyneuritis, developed, involving the sciatic, tibial, and peroneal nerves. The pains were extremely severe, very resistant to treatment, and lasted for three weeks; for months afterwards the boy was in a debilitated condition. Fuld quotes Divella-Bary and Pasini as recommending the abandonment of thallium, and, while not going quite so far himself, he thinks that, at least until an effective antidote is discovered, the use of the metal should be strictly confined to children under 10 years of age. He also gives an analysis of the symptoms noted in a long series of published cases of mild poisoning. There seems to be no way out of the difficulty by repeating very small doses until either the desired effect is produced or warnings to discontinue appear, for the poison is cumulative, and a poisonous dose may have been given before the first sign of trouble arises. The greater need for caution and further study would seem to be indicated by Dixon's[2] demonstration that the action of thallium is not locally upon the hair follicles, but upon the cells in the course of the fibres of the autonomic system, which are affected by thallium much in the same way as are the spinal ganglia by strychnine, allowing stimuli to pass much more readily and forcibly than normally. There is reason to believe that some influence is exercised upon the endocrine glands by the close association of the suprarenals with the sympathetic. The danger of thallium after puberty admits of no doubt.

Serious acute poisoning has been studied in the case of a woman who attempted suicide by thallium rat poison (celiopaste).[3] After some days she had severe pains in the legs and back, neuritis with partial paralysis, the reaction of degeneration, and disturbances of the function of bladder and rectum. Eosinophilia and lymphocytosis occurred; there were wasting, albuminuria, and reduction of the gastric hydrochloric acid. The last has also been reported in chronic cases. In experimental acute poisoning changes in the spinal ganglia and peripheral nerves have been reported.[4] Chronic poisoning by thallium in industrial work has provided opportunity for study of its effects. Buschke[5] and Teleky[6] report lymphocytosis and eosinophilia as characteristic, and both have observed optic atrophy. The former noticed interference with bone development, and the latter records the case of a workman whose loss of hair only occurred after two and a half months of exposure. A more detailed study of chronic poisoning, experimentally produced in animals, has been made by Buschke and others.[4] They found optic atrophy and some degenerative changes in the kidney tubules and liver, but no definite changes in the endocrine glands.

The acetate of thallium is the salt employed in therapeutics, but various others have been tried in animal experiments. The chloride is insoluble, but all the others injected subcutaneously have the same effect. Dixon noted that the depilatory effect was not exercised if thallium acetate was applied to the skin, but Lutz,[7] using ointment of thallium acetate in 5 per cent. strength, found that in rabbits and guinea-pigs a fatal result followed in four days. He states that cumulative action occurs with small doses by this method, and advises gloves in the handling of thallium salts.

THE CLEVELAND DISASTER.

A CATASTROPHE unparalleled in recent years occurred at Cleveland, Ohio, on May 15th, when, as a result of a series of explosions, the Clinic Hospital founded by Dr. George Crile was destroyed by fire, and 127 persons, including patients, nurses, and doctors, lost their lives. The first explosion occurred in the basement used for the storing of *x*-ray films; the second in the chemical laboratories, where it blew out all the windows on one side of the building and released the poisonous fumes which had been generated as a result of the first explosion. Immediately afterwards

[1] Fuld, J.: Ueber Thalliumvergiftung beim Kinde, *Muench. med. Woch.*, 1928, vol. 75, 1124-1127.

[2] Dixon, W. E.: Thallium, *Proc. Roy. Soc. Med.*, 1927, vol. 20, No. 8, 1197 (Section of Dermatology, p. 77).

[3] Grering, R., and Gagel, O.: Polyneuritis nach akuter Thalliumvergiftung, *Klin. Woch.*, 1928, vol. 7, 1323-1325.

[4] Buschke, A., Löwenstein, L., and Joel, W.: Weitere histologische Befunde bei experimenteller chronischer Thalliumvergiftung, *Klin. Woch.*, 1928, vol. 7, 1515.

[5] Buschke, A.: Ueber gewerbliche Thalliumvergiftungen, *Med. Klin.*, 1928, vol. 24, 1012-1014.

[6] Teleky: Gewerbliche Thalliumvergiftung, *Wien. med. Woch.*, 1928, vol. 78, 506-508.

[7] Lutz, G.: Die giftigkeit der Thalliverbindungen, *Zent. f. Gewerbehyg. u. Unfallverhütung*, 1928, vol. 15, 172-174.

fire broke out, and in a few minutes the whole building was enveloped in flames. Many persons were killed directly by the explosions; others, including passers-by in the streets, by the poisonous fumes. So rapidly did the fire spread that, notwithstanding the efforts of the firemen and of numerous rescue parties, it was impossible to save many of the patients, and they perished in their beds. Even some who were not bedridden or overcome by poison gas found their escape cut off by fire, and their dead bodies were discovered in one part of the hospital by the rescue parties. At the time of the first explosion there were over 350 persons in the hospital, and the immediate death roll was no fewer than 95. Later on it was reported that this number was steadily increasing, and that the medical staff had little hope of saving some of the survivors who were suffering from the effects of poison gas. The cause of the disaster is at present unknown, and will naturally be the subject of an official inquiry. The theory generally supported is that the spark causing the first explosion was generated from the crossing of two wires in an *x*-ray apparatus, and that the fireproof safety door of the room containing *x*-ray films had, contrary to rules, been left open. The combustion of *x*-ray films released dense clouds of hydrocyanic acid and bromine, which were diffused rapidly through the building and into the neighbouring streets. Near the *x*-ray films there were cylinders of oxygen, whose contents, released by the explosions, added to the intensity of the flames, which within two hours reduced the hospital building to a mass of ruins. Rescue work was carried out with gallantry and efficiency, and many of the patients were conveyed to safety by firemen and volunteer workers who were protected by gas masks. Fleets of motor cars were commandeered as emergency ambulances, and all the medical and nursing staff of the clinic, with doctors residing in its neighbourhood, devoted themselves to rendering first aid to the rescued. Among the measures adopted to save the lives of those who were overcome by poison gas were the administration of oxygen and blood transfusion, though, unfortunately, with very little success. Several members of the staff, doctors and nurses, died while engaged in rescue work; in all, six of the staff physicians, including Dr. John Phillips, one of the founders of the clinic, lost their lives. At an inquest held on May 16th the coroner announced that blood tests had proved a large number of deaths to have been caused by the inhalation of hydrocyanic acid and bromine. On May 17th it was reported from New York that the number of dead had reached 127, and about twenty of the victims were still in danger. The deepest sympathy of the British medical profession will go out to Dr. Crile and his colleagues, and to all those who have suffered as a result of this appalling calamity.

ROYAL SOCIETY CONVERSAZIONE.

THE spring conversazione of the Royal Society was held on the evening of May 15th, in the society's rooms at Burlington House, when the guests were received by the president, Sir Ernest Rutherford, O.M. One of the most interesting exhibits was that of Mr. Bryan Matthews, who demonstrated the moving iron oscillograph and its use in recording sensory nerve action currents. When a nervous message passes along a nerve trunk changes of potential occur at its surface; these changes are in strength about 20 microvolts, and last about two thousandths of a second. The apparatus for recording them includes non-polarizable electrodes, which lead off the potentials from the nerve to the grid of a valve amplifier by four resistance capacity coupled valves. The amplified potentials are then applied to the grids of four five-electrode valves, which drive the oscillograph. The moving system has a natural frequency of vibration of 6,000 per second, and in this way an exact physical record is obtained of the impulses which constitute a sensation on their way to the brain. Further details of this apparatus, which will possibly prove to be of great diagnostic value, are to be found in the *Journal of Physiology*, June 25th, 1928. In a later article (ibid., March 20th, 1929) Mr. Matthews describes a method of recording under identical conditions the electrical responses accompanying single impulses from skin and muscle receptors, and of distinguishing between them. A paper on the physics of the instrument will be published shortly. From the Strangeways Research Laboratory, Cambridge, were sent illustrations of the latest work in connexion with tissue culture. Dr. R. G. Canti and Mr. F. G. Spear demonstrated the effect of radium and low temperature on mitosis *in vitro*. Tissue cultures were exposed for a short time to radium and subsequently incubated. It was found that irradiation caused first a reduction in mitosis, which was most marked eighty minutes after the removal of the radium. This was followed by a compensatory increase, which reached a maximum in just under three hours; after six hours mitosis had fallen to the normal. A strikingly similar effect was produced by the temporary exposure of cultures to a low temperature. Mr. Spear also demonstrated the delayed lethal dose of radium on tissue cultures, and showed that the prolonged irradiation of tissue inhibited cell division and also the wandering out of cells from the explant. Two excellent cinematograph demonstrations were given during the evening by Dr. Canti, illustrating dramatically cell structure and division, wandering cells and fibroblasts, and phagocytosis in malignant growths. Dr. R. J. Ludford provided a collection of microscopical preparations and enlarged photographs, demonstrating the relation of nerve fibres to normal and malignant epithelium. The occurrence of free nerve endings among the normal epidermal cells was clearly visible, and the connexion of these with a subepithelial nerve plexus was traced. No such nerve endings were present among the cells of cancerous growths produced by the application of tar to the skin of the mouse, although they were to be seen in the thickened epidermis characteristic of the early stages of tar painting. Contrary to views previously held, there appeared to be no innervation of the actual tumours. Sir Almroth Wright gave a demonstration of the phenomena of "intertraction" between serum and saline solutions, water and saline and sugar solutions, and alcohol and water. He demonstrated the connexion between molecular diffusion and intertraction, and the conversion of the one into the other by altering the surface tension. The Cambridge Instrument Company exhibited a portable electro-cardiograph, which enabled four films to be exposed without resorting to the dark room; the records produced were comparable with those obtained from the standard Einthoven galvanometer. Dr. Tattersfield of the Rothamsted Experimental Station showed tropical leguminous plants which are poisonous to fish and insects, and preparations of the active principles of English-grown pyrethrum; also an apparatus for determining quantitatively the toxicity of contact insecticides. The exhibits of more general interest included a portrait in wax of Sir Isaac Newton, lent by Sir Richard Glazebrook, and some photographs by Professor W. A. Bone and Mr. R. P. Fraser of flames travelling horizontally through gaseous explosive mixtures. One interesting point brought out was the importance of moisture, which functioned as a catalyst, and the similar action of a magnetic field. Mr. Campbell Swinton showed photographs of eminent men of science, including a wet-plate photograph, which he had taken as a boy in 1877, of Professor Huxley. The Marine Biological Association illustrated their herring investigations at Plymouth by specimens and diagrams, indicating how an increasing knowledge of the habitat and growth of young herrings, and the spawning and migrating habits of the more adult fish, was leading towards the ultimate explanation of the violent fluctuations to which

commercial fisheries are subject. Mr. George H. Gabb showed the silver pocket sundial of the first Duke of Marlborough, whose arms and motto are engraved upon it, together with the latitudes of such towns in his campaigns as Antwerp, The Hague, and Frankfort. Pocket sundials were often carried to regulate the time of their owners' watches, and the present exhibit was no doubt used by the Duke for this purpose.

THE TREATMENT OF CATARACT.

CATARACT is not so common in this country as certain other diseases that threaten the sufferer with blindness, but it has the inestimable advantage in that for the majority of patients there is a good prospect of recovery of sight by appropriate operative measures. It is natural that with operations of such delicacy and of such critical importance to the patient there should be much consideration of ways and means, and that different operators should find they obtain their best results by different methods. All aim at the removal of the obstructing cataract from behind the pupil, all aim at removing it with the minimum of disturbance to the eye, and all aim at securing the greatest freedom from risk of subsequent decline of vision. There is also a common measure of agreement that a form of operation that does the least damage to the eye and removes the cataract most completely is the one that will secure the best vision and the greatest freedom from untoward sequelae, both immediately after the operation and in subsequent years. A second and enlarged edition[1] of Colonel Henry Smith's book *The Treatment of Cataract* stimulates interest in a review of the situation. India is the country where cataract is more common, perhaps, above all other countries. The experience that is there obtained of operative measures, so far as quantity goes, cannot be rivalled. In quality also there is unrivalled manipulative skill, though it must be acknowledged that mere quantity in opportunity does not necessarily secure this. The skill of European operators is well recognized, although, happily for our Western peoples, cataract is not common, and is probably getting less common as standards of living improve. The earliest known form of operation is that styled "couching." By means of an instrument introduced into the eye the cataract was pushed bodily from its position behind the pupil down to the floor of the posterior chamber of the eye. The effect was immediate: a clear open pupil with restoration of vision. But, alas! the effect was not permanent, for, even when the operation was performed with perfect surgical cleanliness, the dislocated lens within the eye acted as a foreign body, which set up chronic inflammatory changes and ultimately irremediable blindness. Such were the results of perfect technique; the effects that follow the dirty methods of peripatetic bazaar practitioners in India may well be imagined. Couching, therefore, is barred; the cataract must be removed from within the eye. Grave and prolonged consideration has been given in India, in Europe, and in America to the respective advantages and disadvantages that attend removal of the cataract with its capsule entire, and removal leaving the capsule within the eye. On the face of the proposition the capsule should go with the cataract, but the ease with which the cataract will leave its capsule is greater than the ease with which the whole structure can be detached by rupture of the lens ligaments. Colonel Henry Smith is the protagonist of intracapsular extraction. In the new edition of his book he sets out his technique with much detail and with a wealth of illustrations. He discusses the results obtained and the points of criticism that have arisen. He notes also the recent alternative operations whereby removal of the lens is obtained with the aid of suction pumps and special forceps. There is a most interesting chapter on the old operation of couching; and one of the appendixes is a translation of M. Daviel's original paper in the Memoirs of the Royal Academy of Surgery, Paris, of 1748, done by the late Dr. D. W. Greene of Drayton, Ohio.

[1] *The Treatment of Cataract and Some Other Common Ocular Affections.* By Lieut.-Colonel Henry Smith, C.I.E., M.D., I.M.S.(ret.). London and Calcutta: *Butterworth and Co., Ltd.* 1929. (Demy 8vo, pp. xiii + 287; 68 figures. 15s. 6d. net.)

DENTITION AS A MEASURE OF MATURITY.

UNDER the direction of Professor Walter F. Dearborn a series of inquiries are being made into the growth of school children in the State of Massachusetts. All former inquiries of this kind have demonstrated that children of exactly the same age, as measured in years, vary widely in stature, weight, epiphyseal formation, mental development, and in tooth eruption. Whatever may be the subject of inquiry—whether mental or tooth development—it is necessary to establish a scale which represents the normal, and, having obtained this standard, then to measure the degree of departure found in any child in terms of months or years. Thus, a child which is 7 years of age by the calendar may have a mentality of 5 years, a stature of 6, a dentition of 7, and an epiphyseal development of 8 years. In the case of tooth eruption many attempts have been made to find a suitable and simple way of establishing a normal scale. Miss Cattell,[1] in dealing statistically with the data gathered from over 11,000 school children between the ages of 5 and 14, has adopted one which has the merit of simplicity. As twenty-eight permanent teeth come into place between the fifth and fourteenth years she divides the process of eruption during that period into twenty-eight stages, each new tooth representing a fresh stage. Seeing that the permanent teeth tend to rise into place in groups of four, one sees theoretical objections to Miss Cattell's proposals, but in practice these objections are not manifest. The one feature which becomes particularly striking in Miss Cattell's results is the extent to which every one of the twenty-eight teeth may vary as to the time it comes into place. The second upper molars are the most regular, and yet they may be in place as early as the end of the tenth year or they may not come into place until the end of the fourteenth year, the norm lying in the twelfth year. The first upper premolars and lateral incisors are most irregular; their appearance ranges over a period of five years. Reckoned on Miss Cattell's scale, tooth eruption in girls moves nearly six months ahead of that of boys. Stated in another way, a girl is "dentally" six months older than a boy of the same calendar age. A racial difference was also observed; in tooth eruption Jewish children moved some months ahead of children of North European descent, while Italian children were as much behind them as the Jews were in front. Many other observations of interest were made: it was found that the time which may elapse between the first appearance of a crown in the gum and its final growth into place is as short as three months in some cases or as long as eighteen months in others. The teeth of the right side have no precedence over those of the left, except in the case of the first upper premolar; that of the right side has often precedence over the left. So far as concerns the main object of Miss Cattell's investigation the result was negative. The point reached by the eruption of the teeth of a child gave no sure index of the physical development—the degree of maturity of its body. Nor was there any close correlation between "dental" age and mental development, but it was found that in "dull normal" children tooth eruption lagged a month or two behind the

[1] *Dentition as a Measure of Maturity.* By Psyche Cattell. Research Associate, Psycho-Educational Clinic, Harvard University. Harvard Monographs in Education, No. 9. Cambridge, Massachusetts: Harvard University Press; London: Milford, Oxford University Press. 1928. (Sup. roy. 8vo, pp. 91; 36 figures. 4s. 6d. net.)

standard of the normal. Miss Cattell's final conclusion, as regards tests for estimating the physical age of a child, is that the old-fashioned "chronological age is probably the best measure of physical maturity that is available."

THE SECRET OPERATION ON PRESIDENT CLEVELAND.

THAT grand old man of surgery Professor W. W. Keen has lately collected into a small volume[1] some half a dozen papers and speeches delivered in the last eleven years. All are of interest, but the first is perhaps the most striking, for it deals with an incident which has been little noticed in England, although it caused great excitement in the United States. The facts are, shortly, as follows. In the year 1893, when Mr. Grover Cleveland was President, the agitation in favour of bimetallism or, as it was popularly called, "free silver," had terminated in the passage of the Sherman Act three years before. The result of this Act and of the "demonetization" of silver in Europe had produced a most alarming financial crisis in the United States. In its repeal lay the only hope of staying the panic, and to secure this the health of the President was vital, for the Vice-President, who would succeed him in case of death or disablement, was "a pronounced silver man." It was in these circumstances that in June, 1893, the medical attendant of Mr. Cleveland discovered evidence of malignant disease of the upper jaw, for which immediate operation was strongly recommended. It was thought that if the public became aware of the condition of the President the effect on the financial situation would be disastrous. Accordingly he went ostensibly for a pleasure cruise on Commodore Benedict's yacht *Oneida*. There, on July 1st, while the vessel steamed slowly up the East River in New York State, the upper jaw, with the exception of the orbital plate, was removed from inside the mouth without external incision, by Dr. Bryant and Professor Keen. After a secondary cauterizing operation the President appeared at the special section of Congress, on August 5th, wearing an artificial palate and upper jaw, and unaltered in appearance and speech. In October the Sherman Act was repealed and all was well. Naturally the disappearance of the President for more than a month excited newspaper comment, and reporters swarmed round his summer villa near Cape Cod. The Secretary of State for War, Colonel Lamont, put them off with the partial truth, that the President was having his teeth attended to and was suffering from rheumatism in his legs; but at the end of August a correspondent of the *Philadelphia Press* published a substantially accurate account of the operation. Dr. Bryant, however, minimized the importance of the operation and conveyed the impression to the reporters that there was no truth in the statement. The unchanged appearance and speech and obvious good health of the President helped the deception, and the correspondent of the Philadelphia paper was branded as "faker," "calamity liar," and other such terms of abuse. It was not till 1917, five years after the death of Mr. Cleveland, that the truth came out in the *Saturday Evening Post* of September 22nd of that year.

AUTUMN MIGRATION OF MOSQUITOS.

IT IS known that, whereas aphides breed parthenogenetically during the summer, at the end of autumn they develop sexual forms which are better able to secure the survival of the species through the winter. Observations lately made in Palestine by Drs. R. Reitler and H. Saliternik, of the Haifa Malaria Research Unit,[2] suggest that mosquitos, which hibernate too, feel the menace of imminent cold weather and leave their breeding places for safer retreats further afield. Whereas, state these observers, the females of *Anopheles clutus* found in Galilee never wander more than two miles from their breeding places in summer, in the late autumn they will travel as far as six miles to find comfortable winter quarters, confident, apparently, that the rains will provide them with breeding places in the spring. Patient observations made in June, August, September, and November of the breeding places, larvae, and imagines found in and about the south-west sector of the "Waters of Merom," which is fringed with marshes and surrounded by a plateau whence ravines five or six miles long lead down to the lake and to the valley of the Jordan which emerges from it, showed that mosquitos, at first frequent in the marshy and ravine regions, decreased in both as the summer progressed. Weekly enumerations made in October showed, however, that the larvae, and later the mosquitos, were increasing near the lake, the rise in the number of imagines spreading next to the ravine villages three miles away, where a distinct increase was recorded on October 18th, a fall on October 25th, and a further rise on November 7th. This rise in number was found to extend even to the village of Rosh Pina, seven miles away on the plateau. It was noted, moreover, that whereas on October 18th males constituted 35 per cent. of the total number of mosquitos studied, on November 7th their proportion was only 15 per cent. By the middle of November larvae were found only by the lake; and imagines, here fewer in number, were more numerous in the ravine villages and on the distant plateau, though no breeding places could be found in their neighbourhood. By this time also the mosquitos had settled themselves more definitely in the village, having left the houses for the cellars and stables, which they prefer as winter quarters. The authors suggest that the autumnal migration occurs in two stages, the earlier swarms including many males, the later the mass of the females. Fertilization, they suggest, may occur early, but the correlated development is delayed till after winter. What causes this migration? It is not due to the action of winds, for though it was measured only in the south-western sector of the lake it was found to occur in others also. During the summer developing ova were found in a majority of 357 dissected females; in 381 examined in October they were rare, but filling the abdominal cavity there was a fatty body whose presence suggested that the insect's driving impulse was no longer reproduction, but for the time being self-preservation. It is noteworthy that if the migrating females are infected with malaria they will, during the autumn, carry the infection further than usual; indeed, in a malarial outbreak which occurred in Rosh Pina a fortnight after the migrating swarm had reached it the mosquitos found to be carrying the infection were the *A. clutus* which had arrived from the lake.

INTER-STATE POST-GRADUATE ASSEMBLY.

AN interesting programme of lectures, clinics, and receptions has been drawn up for the party of American and Canadian members of the Inter-State Post-Graduate Assembly of North America which will visit London on May 27th, 28th, and 29th. The mornings will be occupied by a series of lectures, to be delivered at the House of the Royal Society of Medicine, 1, Wimpole Street, by Sir John Bland-Sutton, Dr. James Collier, Mr. Victor Bonney, Dr. Henry Semon, Sir John Broadbent, Mr. J. E. H. Roberts, Dr. Ronald Canti, Sir William Willcox, Sir W. Arbuthnot Lane, Dr. Donald Hunter, and Mr. Donald Armour. Beginning at 2 p.m. each day demonstrations of cases and operations will be held at various London hospitals. Members of the Assembly and the ladies accompanying them are invited by the director, Mr. Henry S. Wellcome, to a reception which will be held at the Wellcome Historical

[1] *The Surgical Operations on President Cleveland in 1893, together with Six Additional Papers of Reminiscences.* By William W. Keen, M.D. London: J. B. Lippincott Company. 1928. (Demy 12mo, pp. 251. 6s. net.)

[2] *Arch. fur Schiffs- u. Tropen-Hygiene*, vol. xx, 33.3 (March, 1929), p. 170.

Medical Museum on May 28th at 8.30 p.m., and there will be a reception at No. 1, Wimpole Street, on May 29th at 8.30 p.m. By courtesy of the president and the committee of the American Women's Club, all ladies are accorded honorary membership during their stay in London, and a reception will be held on their behalf at the English-Speaking Union on May 28th, at Dartmouth House, 37, Charles Street, W.1, from 4 to 6 p.m.

THE ANNUAL MUSEUM.

THOSE members of the British Medical Association taking part in the sectional work of the Annual Meeting next July who propose to show specimens in the museum are requested to forward a description of their specimens as early as possible, and certainly before the end of May, to the honorary secretaries, Drs. William Susman and H. L. Sheehan, Department of Pathology, The University, York Place, Chorlton-on-Medlock, Manchester.

THE Croonian Lectures before the Royal College of Physicians of London will be given on June 4th, 6th, and 11th by Dr. H. H. Dale, F.R.S., on "Some chemical factors in the control of the circulation."

AMONG those upon whom the University of Glasgow will confer the honorary degree of LL.D. at a graduation ceremony on Wednesday, June 19th, is Dr. C. O. Hawthorne, Chairman of the Representative Body of the British Medical Association.

THE late Lord Rosebery was the only surviving layman, not a member of the Royal Family, to enjoy the distinction of Honorary Fellowship of the Royal College of Surgeons of England, having been elected on July 12th, 1900, the year in which he was appointed a Trustee of the Hunterian Collection.

THE nominations for the new House of Commons were completed on May 21st. In all 1,729 candidates were nominated for 615 seats, this being the largest number of candidates on record. A further "record" was also created by the fact that only in seven instances were candidates returned unopposed. Among the unopposed candidates elected to the new Parliament is Professor Thomas Sinclair, C.B., F.R.C.S., who again represents Queen's University, Belfast. Women candidates number 69, as compared with 27, the previous highest figure. Polling takes place on Thursday, May 30th, and the results will be declared on May 30th and 31st; the new Parliament meets on June 25th.

THE MALCOLM MORRIS LECTURE.

FIFTY YEARS OF DERMATOLOGY.

THE third of the Malcolm Morris Memorial Lectures, forming one of the Chadwick Trust series, was delivered at the House of the Royal Society of Arts on May 16th by Sir NORMAN WALKER, whose subject was the progress of dermatology over half a century. The chairman, Sir STCLAIR THOMSON, introduced the lecturer as one after Malcolm Morris's heart, seeing that he was no "mere specialist," but one who took the widest interest in medicine, and especially in medical education.

Sir NORMAN WALKER, after an expression of gratification at being associated in this remembrance of his old and valued friend, said that Malcolm Morris's connexion with dermatology began about half a century ago, very near to the time when he himself began his medical studies. In those days but little interest was devoted to dermatology in the medical schools of London and Edinburgh. The important progress in this field which had been made since then was to be attributed to several causes working together or separately. Not least among these was the general advance in civilization, housing, and cleanliness; also the better education of the community, the improvement in medical education, the greater degree of specialization, and the co-operation of workers in this branch with those in other branches of medicine. In almost all centres now, said Sir Norman Walker, there was a closer co-ordination between the clinician and the laboratory worker, and the exceptions where such co-ordination did not exist would become fewer as its advantages were appreciated. Still another cause of progress was the institution of inspections of school children, a measure resisted at first in many places by parents and others, but gradually winning in its favour the vast body of public sentiment, especially when the excellent results which followed came to be understood. The lecturer then discussed in turn some of the more familiar diseases, and the steps of progress in regard to each of them. He grouped them into categories, beginning with those in which the cause was definitely known—for example, skin tuberculosis, leprosy, venereal diseases, and fungous diseases, as well as several industrial dermatoses, where the relations between cause and effect were not always so clear. To lupus he devoted a large part of his lecture, describing the frequent scraping and some of the cruder methods of treatment practised in the earlier part of the period which he had taken for his survey. Great hopes arose from the introduction of tuberculin, but when large doses were given severe reactions occurred, and the results were such that only the very stern-hearted could persevere with the treatment, which was abandoned by most of the leading radiologists. The x-ray treatment of lupus at first appeared to offer a very satisfactory means of dealing with these cases, but here, again, dangers and disappointments were revealed, and x rays showed that they could produce delayed effects of a very serious kind. Actinotherapy then presented itself as a very valuable means of treatment, and a satisfactory alternative to the very potent x-ray tube, but it had to be admitted that of the possible late effects of light treatment no more was known to-day than was known of the late effects of x rays at the beginning of this century, and it had been shown that excessive exposure to light was not without its grave dangers. The truth was, said Sir Norman Walker, that although there had been an enormous increase in the armoury of the dermatologist of the present day, many of the new weapons, like x rays, radium, and light, were double-edged, and needed the utmost care and knowledge for their use. After discussing rodent ulcer, and also, in another group, various urticarias and erythemas, of which the cause was still unknown or in dispute, he referred more specifically to Malcolm Morris's work in connexion with several of these conditions, and, in a wider aspect, to his work on venereal diseases, attributing to him much of the credit for the changed and more candid attitude towards that subject.

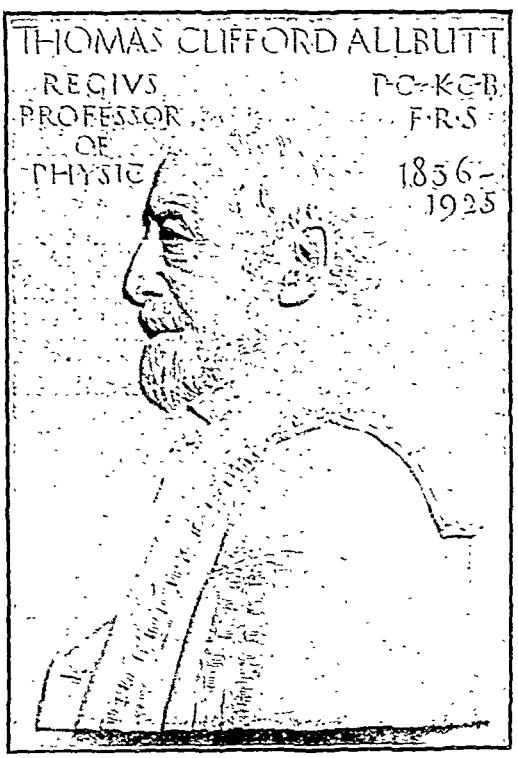
In conclusion, Sir Norman Walker counselled the younger generation not to neglect altogether the old remedies, still less the principles underlying them. Whatever new gifts physics or chemistry or bacteriological science might bring to the dermatologist, it was still a good thing to clean the skin and to give a chance to Nature to do its recuperative work. The dermatologist of the future had a wide field before him, but he must go into it well equipped, trained thoroughly, and able to appreciate the work of experts in every branch.

A vote of thanks to the lecturer was accorded on the proposition of Dr. E. GRAHAM LITTLE, seconded by Sir Malcolm's son, Sir HAROLD MORRIS, K.C.

MEMORIAL TO SIR CLIFFORD ALLBUTT.

UNVEILING CEREMONY AT CAMBRIDGE.

A BRONZE bas-relief portrait in profile of the Rt. Hon. Sir Clifford Allbutt, K.C.B., M.D., F.R.S., Regius Professor of Physic, 1892–1925, and President of the British Medical Association, 1916–1921, has been erected in the Allbutt Library of the Cambridge Medical School. The unveiling ceremony was performed on Saturday, May 18th, by Sir James Crichton-Browne, in the presence of Lady Allbutt and a group of personal friends. A photograph of the plaque is reproduced on this page. The mural tablet is surmounted by the professorial coat of arms, and a small metal plate beneath it records that this portrait is a gift from Lady Allbutt to the Medical School, of which her husband was the head.



Sir HUMPHRY ROLLESTON, Bart., Regius Professor of Physic, in a short introductory speech, said that they were gathered together that afternoon to see unveiled the portrait of a scholar-physician, a great humanist, and a beloved leader, which would be an inspiration to generations of Cambridge men to carry on his traditions. Clifford Allbutt's life pilgrimage fell into three main periods. The first comprised school days at St. Peter's, York, a classical scholarship at Caius College, Cambridge, medical studies at St. George's Hospital, and a year in Paris; the second comprised twenty-eight brilliant years as a consulting physician at Leeds and three years in London; followed by the third and last period of thirty-two years at Cambridge as Regius Professor. They were fortunate to have with them that day a friend whose intimate association with the man whose memory they were honouring began in the middle period, as long ago as 1865. Dr. Crichton-Browne (as he then was), by throwing open to Allbutt the clinical wealth of the West Riding Asylum at Wakefield, helped him in no small degree to build up his great store of knowledge and experience.

Sir JAMES CRICHTON-BROWNE said that he was indeed a contemporary of Clifford Allbutt in the full sense of the word; their friendship lasted without a break for sixty years. Those who knew him in the early days at Leeds foresaw that Allbutt would become the most distinguished and most brilliant physician in this country. His chief title to fame was his work on the circulation—on the heart, the aorta, and blood pressure—and the editing, in association with Sir Humphry Rolleston, of his great *System of Medicine*. Yet Allbutt's early work was not less valuable. It was he who, in 1868, invented the short clinical thermometer now in use, and when a young physician he made ophthalmoscopic observations of fundamental importance to neurological and general medicine. During his busy years in Yorkshire, as hospital physician, clinical observer, and teacher, Allbutt constantly found time to visit the West Riding Asylum, where the speaker had organized the first research laboratory of its kind, and he gave enthusiastic support to every improvement then being effected in the asylum. Later, as Commissioner in Lunacy for three years, he did much to encourage progress in mental hospital administration and the scientific study of insanity. It would be presumptuous, Sir James Crichton-Browne said, for him to praise Clifford Allbutt before a Cambridge audience. He would only recall how zealously Allbutt, as Regius Professor of Physic, promoted those biological studies for which Cambridge was renowned, and how in his academic years he became the great and venerated leader of British medicine. Allbutt in a singular degree combined Yorkshire grit with Southern polish; kindly and gracious, yet a most trenchant critic when occasion required. Sir James Crichton-Browne then asked leave to dispose once and for all of the long-standing legend or fable that Clifford Allbutt was the prototype of Tertius Lydgate in George Eliot's *Middlemarch*, and in drawing a contrast between the two characters and careers—one real, the other fictitious—he touched off some of Sir Clifford's outstanding traits, and paid a charming tribute to his happy married life.

Sir James Crichton-Browne then unveiled the portrait, and remarked on the success with which the artist, Mary G. Gillick, had conveyed the spirit of a great man whom she had never seen; he understood that Mrs. Gillick had taken immense pains to make up for this disadvantage by studying all the portraits and biographies. A many-sided man deserved many kinds of memorial, and it was appropriate that this memorial in a university building should be placed in a room dedicated to the use of books. Clifford Allbutt had always insisted that medicine must be broad based on a liberal education: that *skill without culture was not* enough.

Professor G. H. F. NUTTALL proposed a vote of thanks to Sir James Crichton-Browne for his eloquent and memorable address on a memorable occasion. Clifford Allbutt, he said, was a man so noble that all who knew him could not help but love him. Sir James had once again displayed his wonderful gifts of oratory and the perennial vigour of his mind in this glowing tribute, and they were grateful to their late chief's oldest living friend for his presence and his words that day.

The vote of thanks was accorded with enthusiasm, and Sir JAMES CRICHTON-BROWNE, in a brief acknowledgement, recalled that he himself was now 89, just the age at which Allbutt ended his life of great achievement.

The acting Vice-Chancellor (the Rev. G. A. WEEKES, Master of Sydney) conveyed the thanks of the University to Lady Allbutt for her generous gift of this medallion in memory of a great son of Cambridge, who was not merely the possession of the Medical School, but the pride of the whole University.

Sir HUMPHRY ROLLESTON, replying on Lady Allbutt's behalf, thanked those present for attending, and expressed her gratitude to Professor Nuttall and Dr. W. E. Dixon for arranging the ceremony.

The company included Sir Francis Champneys, Lady Rolleston, Lady Crichton-Browne, Lady Woodhead, Professor H. R. Dean, Master-elect of Trinity Hall, and Mrs. Dean, Professor Barcroft, the Master of Caius and Mrs. Cameron, Dr. and Mrs. W. E. Dixon, Professor Okey, Dr. Louis Cobbett, Dr. C. S. Myers, Dr. G. S. Haynes, Dr. C. G. L. Wolf, and the Editor of the *British Medical Journal*.

Nova et Vetera.

THE SUPPLY OF ANATOMICAL "SUBJECTS."

THE study of practical anatomy as a part of the medical curriculum is of comparatively recent introduction. A real detailed acquaintance with the anatomy of the human body was first made general by the publication of the great work of Vesalius, *De Humani Corporis Fabrica*, in 1543. Before that time anatomy had been studied on animals other than man, but evidence of any acquaintance with human anatomy is scarcely to be found. The Greeks did not dissect, nor, so far as is known, did the Egyptians or Assyrians or any of the other peoples of ancient historical or prehistorical times.

In the two centuries following the death of Vesalius human anatomy was learnt from plates or a smattering attained by attendance on public demonstrations, such as that of the muscles of the forearm so finely depicted by Rembrandt in "The Lesson of Anatomy," now exhibited at The Hague, in which the demonstrator is seen surrounded by earnest students. In England and Scotland demonstrations of the anatomy of the human body were given at rather long intervals by the Company of Barber-Surgeons of London and the Company of Surgeons of Edinburgh. By the Act of Henry VIII, xxii, c. 12, the Company of Barber-Surgeons of London had the right to claim four bodies annually of persons executed for felony. Such a public "anatomy" is shown in the last plate of Hogarth's "Four Stages of Cruelty." Similarly the town council of Edinburgh had, as early as 1505, ordered that there be handed over to the surgeons "anis in the yeir ane condampnit man after he be deid, to make anatomea of, quairthrow we may heif experience, ilk ane to instruct utheris, and we shall do suffrage for the soule." With the body and the soul each thus thoughtfully provided for, the felon's future would seem to have been assured. William Hunter, the founder of the celebrated Windmill Street School of Medicine in London, who died in 1783, described the professors of the most celebrated schools at home and abroad, before his time, as employing in each course of lectures not more than one or at most two subjects, and as demonstrating the performance of the operations of surgery not on human bodies, but on those of brutes. He represented students of medicine and surgery as never exercising themselves in the practice of dissection, because they had no opportunities of so doing. W. Hunter established complete courses of anatomical lectures, and opened a regular school of anatomy where students dissected.

It is obvious that many more bodies than four a year were needed if the medical students of London were to learn their anatomy practically, which, however, was attempted by few of those who afterwards became general practitioners. Those few were driven, in most other countries as well as in Great Britain, to supply themselves from cemeteries and churchyards. Recorded instances of this practice are not many, but they are significant. The well-known Basle physician Felix Platter, who studied at Montpellier at and after 1552, has given an interesting account of how he and some fellow students "resurrected" bodies for dissection. They generally had confederates connected with the cemetery, who helped instead of preventing their activities. At that time there were no means of preserving cadavers during dissection, and a body would only last a few days, so that a comparatively frequent renewal of the supply was necessary. Similar proceedings are on record in other countries. Mr. Henry Lonsdale, in his *Sketch of the Life and Writings of Robert Knox*, the anatomist, says that soon after 1705, when a professor of anatomy had been appointed in Edinburgh to teach the chirurgeon-apothecaries (at a salary of £15 a year), "the supply of subjects was so inadequate that the surgeons' apprentices and young barbers determined upon the adventurous step of procuring them from graveyards." We may add that this practice continued until the Anatomy Act rendered it unnecessary. In 1711 the College of Surgeons in Edinburgh recorded in a minute that "of late there has been a violation of sepulchres in the Greyfriars churchyard, by some who most unchristianly have been stealing, or at least attempting to carry away, the bodies of dead out of their graves." Ten years later they ordered that a clause should be put into the indentures of all apprentices forbidding violation of the churchyards. The iron cages or "mortsafes" still visible in the Greyfriars churchyard bear mute but eloquent witness to the futility of these prohibitions. Sir Robert Christison in his autobiography describes graphically the doings of the exhuming students. At Glasgow things were much the same.

The Select Committee of the House of Commons appointed to inquire into the means of supplying subjects to the schools of anatomy reported in July, 1828. Its chairman was that well-known advocate of medical reform Mr. Henry Warburton, F.R.S., M.P. for Bridport. The evidence put on record in this report was given by a number of well-known surgeons and anatomists, and by some of the most daring and successful resurrection men, or "exhumators," as they are less profanely called in its pages. A former demonstrator at Glasgow told the committee that there the students had to raise subjects: "Every public teacher" (of anatomy) "had what he called his private party; this consisted generally of eight students, and these young gentlemen went out themselves and exhumed the body." No other students had any opportunity of dissection. The English provincial schools were in a like case. Mr. J. B. Estlin of Bristol gave evidence to the effect that "to procure the bodies in a fair state for dissection, young men generally dig them up themselves at the risk of their lives, their health, and their credit in society." There were at that time eight schools in the provinces in which anatomy was taught.

At the end of the eighteenth century no doubt many, if not most, surgeon-apothecaries, having served their apprenticeships and "walked the hospitals," went into practice without having themselves performed dissections, and only a minority of students who were more enthusiastic, or had prospects of obtaining surgical appointments at hospitals, worked at the dissecting table. All this was changed by the passing of the Apothecaries Act of 1815, under which no one was allowed to practise as an apothecary without the licence of the company, which was granted after examination and certification of the candidate's having regularly dissected. At once the demand for subjects was much increased, and the amateur was superseded by the professional resurrectionist or body-snatcher. For a time it seems that subjects were procurable through these men at a moderate price and in sufficient numbers, but as the demand increased, and the risks incurred were also increased by the more stringent enforcement of such laws as were applicable, a deadlock seemed to be in sight. Sir Astley Cooper told the committee that he reckoned that in 1823 there were a thousand students of medicine in London, but that owing to scarcity of subjects many now went abroad, reducing the number to some 800, of whom only 500 actually dissected. The committee reported that:

> "The duration of their studies in London is usually sixteen months, and during that time the number of subjects with which every student of surgery ought to be supplied appears from the evidence (although there is some difference in this point) to be not less than three, two being required for learning the structure of the body and one the mode of operating. The total number of subjects actually dissected in the schools of London in one year is stated to be not greater than from 450 to 500, which is after the rate of less than one subject for each dissecting student; a proportion wholly insufficient for the purposes of complete education."

The Society of Apothecaries had felt compelled to suspend the rule exacting certificates of dissection from candidates. The number of annual certificates thus granted exceeded four hundred.

The report also stated that:

> "When in 1763 Dr. [W.] Hunter proposed to build an anatomical theatre and to endow it with his Museum" (now at Glasgow) "and a salary for a professor, provided the Government would grant him a site of ground for the institution and his late Majesty would extend to it his countenance and protection, he met with a violent refusal. It was therefore only by stealth, and by means not recognized by law, that the teacher was enabled to procure subjects."

Such means were principally disinterment, but, of late, stealing before burial and personation of relatives so as

to obtain unclaimed bodies had occasionally been had recourse to.

The committee seems to have explored all avenues likely to lead to a solution of the problem. Proposals to import bodies openly by agreement with the French authorities were considered, but dismissed as impracticable. Finally, as is well known, the Anatomy Act, which was based upon this report, made it lawful for executors or any person having lawful possession of a body (other than undertakers) to give it up for dissection. Teachers of anatomy were to be licensed. Unfortunately this Act was permissive, and not compulsory. Its framers could not be expected to foresee that some Poor Law guardians and others, instead of as then being only too glad to be relieved of the expenses of burial, would pander to sentiment, and seek easy popularity by refusing to give up unclaimed bodies for dissection.

At the present time the supply of subjects for dissection and the practice of operative surgery in London is quite inadequate. In reply to an inquiry, Professor T. Baillie Johnston of Guy's Hospital Medical School writes as follows:

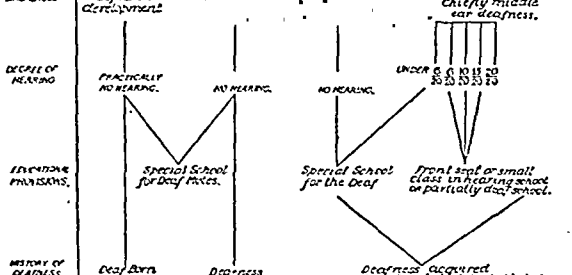
"In London, at the present time, we are getting a sufficient number of bodies to enable all medical students to take part in the dissection of the whole body. Only a small margin is left for classes of operative surgery on the cadaver, which must always take second place in the distribution of subjects. In order to make the number of subjects go round, I have to allocate four students to each abdomen, four students to each head and neck, and two students to each limb.

"As the law stands at the present time, unclaimed bodies *may* be sent to the schools for dissecting purposes, but this involves no legal obligation on the part of boards of guardians, heads of asylums, etc. As a result, partly of prejudice and partly of ignorance, bodies are buried at the expense of the guardians and so lost to the schools. I believe that, if all unclaimed bodies had to be sent to the schools, our supply would be adequate."

E. M. L.

A CLASSIFICATION OF THE DEAF FOR EDUCATIONAL PURPOSES.

THE medical committee of the National Institute for the Deaf has prepared a scheme of classification in order to bring into prominence certain facts in relation to the cause and history of various forms of deafness in children, and so to indicate what educational measures are desirable in any particular case. This scheme, which is illustrated in the form of a diagram, records various degrees of loss of hearing; the normal is represented as a fraction—$\frac{20}{20}$—implying that whispered speech can be heard at a distance



of twenty feet. The various stages of diminished hearing are similarly indicated by fractions up to the point of total deafness, and the most suitable educational treatment is denoted in each case. The committee hopes that this classification will be found useful by medical practitioners, teachers, and others who are concerned with giving advice as to the form of teaching best adapted to the several types of deaf children according to the history and degree of their deprivation of hearing. The office of the National Institute for the Deaf is at 2, Bloomsbury Street, New Oxford Street, W.C.1.

India.

The Calcutta School of Tropical Medicine.

WHEN the Calcutta School of Tropical Medicine opened in 1921 Colonel J. W. D. Megaw, I.M.S., was the first director; in April, 1928, he retired to take up the post of inspector-general of the Punjab civilian hospitals and was followed in the directorship by Lieut.-Colonel H. W. Acton, I.M.S., whose first report has been received. Colonel Acton pays a high tribute to his predecessor for *co-ordinating and encouraging research in the school* and laying sound foundations for future extension. Attention is drawn in the report to the fact that, among other important discoveries made with the assistance of the Indian Research Fund Association, the probable mode of transmission of kala-azar was brought to light at the school by Lieut.-Colonel Knowles, Dr. Napier, and Assistant Surgeon Smith—an observation which was later fully confirmed and extended, *though absolute proof of transmission by* the sandfly is still lacking. The problem is being attacked hopefully from different standpoints, and the diagnostic methods in this disease have been improved. Lieut.-Colonel Chopra, who has been studying the indigenous drugs of India, has shown that many Indian plants are at least as potent as, sometimes more potent than, the corresponding European species; many Indian firms are therefore using them instead of importing. He has also been able to *suggest the employment of certain indigenous drugs, similar* in action to those imported, but less expensive. Spirochaetosis is being investigated by Lieut.-Colonel Knowles with a view to determining why a disease, such as relapsing fever, occurs only at certain times of the year. He has obtained a considerable amount of information about the changes in morphology which spirochaetes undergo in the transmitting insect. Dr. J. P. Bose, in conjunction with the director of the Calcutta School, has obtained evidence that differences in potency of the same sample of insulin depend on the coloration of animals. Work on similar lines is being continued in human beings who show an increased or diminished output of adrenaline. Colonel Acton has also prepared a large collection of illustrations of the various parasitic fungi which grow in the skin; he hopes that it may be published eventually as an atlas. He comments on the relations of clinical research and medical treatment, and mentions how it was originally found necessary to open special out-patient departments in the school in order to obtain a sufficient supply of clinical material. This has now resulted in the staff being kept so occupied with clinical work that they are being seriously handicapped in carrying on research; numerous inquiries are also received daily on a large variety of medical subjects. The extent of the services rendered by the Calcutta School of Tropical Medicine, with which is incorporated the Carmichael Hospital for Tropical Diseases, can be appreciated from these brief references to an interesting report.

Cholera in Bombay.

A severe epidemic of cholera prevailed in the Presidency of Bombay from March to November, 1927, and resulted in over 26,000 deaths. In the years 1925 and 1926 there were 57 and 73 deaths respectively from this cause, and an outbreak comparable with that in 1927 has not occurred since 1919, when more than 50,000 deaths were reported. Previous bad cholera years were: 1912 (with over 64,000 deaths); 1909 (28,000), 1906 (46,000), and 1900 (163,000). The disease appeared to have died out after 1924, but it was noticed that the cases reported in the two subsequent years were not limited to any one part of the Presidency, and therefore the danger was obviously still generally present. In his report for 1927 Lieut.-Colonel H. Melhuish, director of public health for the Presidency of Bombay, comments upon these facts, and adds that there was a scarcity of water in many of the most affected areas, as a result of the failure of the late monsoon of 1926. He remarks that this epidemic has gone far to confirm the theory enunciated by Sir Leonard Rogers, which bases the recrudescence of cholera epidemics on the following factors: an absolute humidity figure of less than 0.4; scarcity of water,

owing to failure of the preceding late rains; freedom from outbreaks during the preceding years; and fairs and pilgrimages. Colonel Melhuish states that the absolute humidity figure in the Deccan and Karnatak—the two most seriously affected areas—was in agreement after the month of March with the standard fixed by Sir Leonard Rogers; the fairs common at that time of the year seem also to have played their part in several of the local outbreaks. The heaviest incidence of cholera was in the southern registration district, the central being the next most affected. Active preventive measures were taken from the first manifestation of the epidemic; voluntary cholera committees were formed to promote prophylaxis and treatment in all districts, and educational leaflets were distributed. All the wells were treated with potassium permanganate, and, in the absence of other disinfectants, lime was used with success in many places.

Kashmir Mission Hospital.

The problems raised by the increasing prevalence of tuberculosis in Kashmir have been mentioned previously in these columns. The bovine, or surgical, type has always been common, and in the annual report of the Church Missionary Society's Hospital in that city for 1928 it is stated that sometimes nearly a quarter of the cases in the wards are due to the infection. Pulmonary tuberculosis was, however, almost unknown there until 1890, but during the last two decades it has been extending very rapidly; this is probably attributable to the better facilities for travel, which are popularizing Kashmir as a summer resort for consumptives in all stages of the disease. In 1912 Dr. E. F. Neve, medical superintendent of the hospital, urged the adoption by the Kashmir State authorities of vigorous anti-tuberculosis measures, including the provision of a hospital for advanced cases and a sanatorium for patients in the early stages. Up to the present, however, no active steps have been taken in this respect, and, owing to the poor sanitation in this populous centre, the disease is being enabled to spread. The mission hospital serves a population of 142,000 city dwellers, and six or seven times this number of the rural population. Open-air treatment has been practised for the past forty years, since for nine months each year the beds of patients can remain out on the broad verandahs. The value of fresh air and sunlight has been marked, not only as regards tuberculous patients, but also in medical and surgical cases of all kinds. Dr. Neve comments that there appears, therefore, to be little need in Kashmir for the ultra-violet apparatus. He expresses his deep regret that the leper hospital founded by him thirty-six years ago has now been transferred compulsorily to the State authorities. We mentioned two years ago the excellent work of this institution, and since then a home has been provided for the segregation of the healthy children of lepers; this remains under Dr. Neve's control. It is stated in the report that although cancer—apart from the kangri-burn type—is rare, there is some evidence in support of the view that carcinoma is due to the overgrowth of tissues which, owing to continued irritation, have escaped from the controlling influence of the trophic nerves. As in his previous reports, Dr. Neve includes interesting details of his work in the surrounding country districts, and in the present issue there are good photographs of the Mission Hospital and its surroundings.

Scotland.

Autumn Post-Graduate Course in Glasgow.

As in previous years the Glasgow Post-Graduate Medical Association has arranged a special course of instruction in that city during the last two weeks in August and the first fortnight of September. The mornings will be devoted to general medicine, surgical diagnosis, and minor surgery, lectures and demonstrations being provided in the Victoria Infirmary and the Western Infirmary. In the afternoons teaching in special subjects will be provided at various special hospitals and the special departments of general hospitals. A syllabus has been issued in connexion with this course, and may be obtained from Dr. James Carslaw, the secretary of the Glasgow Post-Graduate Medical Association, 9, Woodside Terrace, Glasgow, C.3. Some clinical assistantships are available in a number of the hospitals during the summer months as well as at other times in the year. Graduates desiring to take advantage of these appointments are advised to enrol for a period of three months, and to devote to the work either the whole or part of the day according to the terms of the particular clinical assistantship; graduates with less time at their disposal may, however, be accepted for shorter periods. Further information with regard to these assistantships may be obtained from Dr. Carslaw.

New Department of Zoology at Edinburgh University.

Prince George visited Edinburgh on May 15th and opened the new Department of Zoology, which has been erected by the University of Edinburgh at the King's Buildings. The Natural History Department, in which the teaching of zoology has hitherto been carried on, forms part of the old college. For many years the premises have been wholly inadequate to meet the needs of the students and of the post-graduate workers in the department. In addition to providing instruction for science students extending over four years, and for medical students in their final year, the work of the department includes post-graduate courses in medical entomology, protozoology, and helminthology for the diplomas in tropical medicine and public health. The history of the new department began with the sympathetic interest of the late Mr. Laurence Pullar, LL.D., of Bridge of Earn. Since the early seventies Mr. Pullar had been keenly interested in marine zoology, particularly in those aspects of the subject investigated by his friend the late Sir John Murray. In 1923 Mr. Pullar visited the old college, and the adverse conditions under which teaching and research were being carried on made such a deep impression on him that shortly afterwards he offered a sum of £20,000 towards the erection of a new department, stipulating that it should be considered as from an anonymous donor. In 1926 the Trustees of the Carnegie Trust for the Universities of Scotland set aside a sum of £18,000 for the same purpose. Later in the same year all doubts as to the adequacy of the money in hand were set at rest by the munificent gift of £74,000 by the International Education Board, founded by Mr. John D. Rockefeller, jun., in 1923. The co-operation of the representative of the board, Professor Augustus Trowbridge of Princeton University, did much to make this very generous gift possible. Work on the site at King's Buildings was begun in June, 1927, the architects being Sir Robert Lorimer and Mr. John F. Matthew. The building, of sandstone from Blaxter quarry in Northumberland, consists of a central part and two wings. The panels between the windows of the ground and first floors in both wings bear oval medallions of animal subjects representative of the principal zoogeographical regions; these medallions were modelled in clay by Miss Phyllis Bone, and subsequently cast in concrete, and they add greatly to the attractiveness of the frontage. "Fitness for purpose" has been the keynote of the design throughout. A special feature is the lighting of the building; the depth has been restricted so that the rooms on each side of the central corridor receive ample light. The laboratories and research rooms face north or north-east, and their exceptionally large windows extend from bench-level to the ceiling. The cupola of the museum has been provided with a special glass, which excludes the ultra-violet rays and so diminishes the fading of the colours of the specimens. At the same time it disturbs colour values to a very slight degree, and diffuses the light in such a manner as to make blinds unnecessary. The production of this glass has been the result of consultation between Sir Herbert Jackson, F.R.S., and Messrs. Chance of Birmingham. On the ground floor is a room for aquaria and vivaria, equipped with an automatic pump for supplying compressed air to the aquaria. The Vice-Chancellor of the University, Sir Alfred Ewing, who presided at the opening ceremony, remarked that the chair of the subject in Edinburgh dated from 1770. In his own student days the professor was Wyville Thomson of *Challenger* fame, the professor was Wyville Thomson of *Challenger* fame. His successor was Professor Cossar Ewart, still happily with them, who in turn was succeeded by the present holder, Professor J. H. Ashworth. It was mainly to the reputation as a scientific worker, to the personality, and to the

unsparing efforts of Professor Ashworth that they owed the gifts which had enabled them to erect that building. The new Institute of Zoology was the second of "The King's Buildings," an extension of the University which was already closely associated with the Royal House. The foundation of the first of these buildings, the department of chemistry, was laid nine years ago by the King; it was opened by His Royal Highness the Prince of Wales in 1924. It was with particular pleasure that he invited another representative of the Royal Family to perform the same ceremonial office for the new building, which was soon to be followed, they confidently hoped, by a series of others. After Prince George had declared the building officially open, he accepted the honorary degree of Doctor of Laws, the capping ceremony being performed by the Vice-Chancellor. The new extension of the University occupies an open site on the southern outskirts of the city to the east of Blackford Hill. It is a source of gratification that the building has been completed in time to allow of its official opening before the retirement of the Vice-Chancellor at the end of the present term. He thus leaves the extension scheme, for the inception of which he was responsible, in an advanced state of development.

Royal Edinburgh Hospital for Sick Children.

The seventieth annual general meeting of contributors to the Royal Edinburgh Hospital for Sick Children was held on May 15th. Mr. Colin M. Black, chairman of directors, who presided, reported that the ordinary income had fallen short of the expenditure incurred in the hospital and convalescent home by £8,107, and that this sum had to be found from legacies and special donations. The average daily number of patients treated during 1928 was 117, and the average duration of residence 17.3 days. The total number of in-patients was 2,762, and of attendances at the various sections of the out-patient department 33,833. More than half of the in-patients came from outside the area of the city. In the hospital 1,065 operations were performed, and in the out-patient department 1,852 minor operations. In the medical part of the report it is stated that 37 per cent. of the in-patients were aged 2 years or under, and that 72 per cent. of the total deaths (which numbered 265) occurred during the same age period. The frequency and heavy death rate of pneumonia in young children in the Edinburgh area is commented upon. During 1928, 284 cases of pneumonia and its complications, 50 of them fatal, passed through the wards. Tuberculosis accounted for about 11 per cent. of the total admissions. Stress is laid upon the very satisfactory results which have followed the adoption some years ago by the surgical staff of the tannic acid method of treatment of burns; only 5 out of 58 admissions for burns in 1928 proved fatal. The chairman intimated that a new ward for ear, nose, and throat cases was almost ready for occupation.

Inverness Hospital Extension.

The laying of the foundation stone of the reconstructed Northern Hospital at Inverness by Dr. Walter E. Elliot, Under Secretary of State for Scotland, was reported in the *British Medical Journal* on May 19th, 1928 (p. 872). Almost exactly a year later, on May 17th, the Duke of York, accompanied by the Duchess, performed the opening ceremony of the children's wing of the new infirmary. The Duke and Duchess, who also bear the titles of Earl and Countess of Inverness, received a great ovation from a crowd, which must have numbered 30,000, drawn from all parts of the Highlands. The Mackintosh of Mackintosh, chairman of directors, presided. Provost Macewen welcomed the Royal visitors, and said that the Northern Infirmary was not primarily an Inverness hospital, but a hospital for the whole of the Northern Highlands. There were many people living in isolated districts who were too poor or too ill to undertake the long journey to one of the larger centres, and for these the enlarged hospital would prove a very great boon. After the Duke had declared the new children's unit open, the Duchess of York named the main ward "The Princess Elizabeth of York Ward." Lord Lovat expressed the great appreciation of the people of the North of the auspicious start given by their Royal Highnesses to the new hospital, which developments, in connexion with the recent Local Government (Scotland) Act, were likely to make increasingly important.

England and Wales.

Health and Industry.

THE report for the year 1928 of the Industrial Health Education Society indicates an increasing tendency on the part of the workers to avail themselves of the help the society has to offer them. During the year the society received requests for 398 health talks, an increase of 115 over the number in 1927. Sometimes groups of workers have asked for as many as two, three, or even five separate lectures, each relating to a different health subject. This year the council has for the first time entered Wales, and its work, made possible by a grant of £500 from the Miners Welfare Committee, and of £250 from the Carnegie Trust, has grown rapidly in the mining villages. The Central Miners Welfare Committee has offered £500 to enable the council to conduct a campaign in seventeen mining areas where the society so far has not given any health talks. There has been a great demand from workers in building trades, in the iron and steel trades, and from a number of national health insurance committees, for the leaflet prepared by Professor Collis. Dr. Prosser White's pamphlet on mule-spinner's cancer has also been in great demand among the cotton spinners in Lancashire and Yorkshire. The leaflet on health hints to miners, prepared by Sir Thomas Oliver and Professor Collis, has been distributed free whenever engagements among miners were held. Further important extensions of the society's work have been the introduction of health films, so far only in mining centres, and the creation of a women's committee for the purpose of arranging health talks with women workers in the London area. The finances of the society, however, are not keeping pace with the developments of its work, and the council hopes that employers will support the society in its propaganda and in the endeavour to increase the strength and efficiency of the worker.

Royal Sanitary Institute Congress.

The preliminary programme of the fortieth congress of the Royal Sanitary Institute, which is to be held at Sheffield from July 13th to 20th, has now been issued. The president of the congress, Earl Fitzwilliam, will deliver his inaugural address on Monday, July 15th. Sir Allan Powell will lecture on some aspects of the food problem, and Professor W. W. Jameson will give the popular lecture. In all, 750 delegates have been appointed by 430 authorities at home and abroad. Among the subjects arranged for discussion are: mental hygiene of the child and of the adult; maternity and child welfare services; the Local Government Act and how it will affect these services; cremation; health education; national health insurance services; hospital and convalescent treatment and after-care; food hygiene; industrial welfare; smoke abatement; housing and regional planning; rivers pollution; refuse disposal; main drainage; water supply. The Lord Mayor of Sheffield is the chairman of the local committee, and the town clerk and the medical officer of health, Professor F. E. Wynne, are joint honorary local secretaries.

Chailey Heritage Hospitals.

Dr. G. Murray Levick has published an illustrated report of the experimental treatment of marasmic babies at the hospitals in connexion with the Heritage Craft Schools, Chailey. The general principle underlying his system includes some modification of the usual therapeutic measures in such cases. The infants were nursed in the open air from the time of their arrival, so as to promote sensory stimulation of the skin and ensure the preservation of atmospheric humidity in the inbreathed air. Each child was fed on the diet that it had been receiving before admission during the first three days in hospital, while it was being acclimatized to its new surroundings; then, in every case, unheated and non-citrated cow's milk was given, thus preserving the vitamin C. The necessary iron was supplied by green vegetables cooked for a short time in as little water as possible, and with marmite. In the case of very young and debilitated infants artificial light treatment was administered from the first, due care being taken to establish tolerance; otherwise natural sunlight,

whenever available, was utilized in preference to artificial radiation. In this connexion Dr. Murray Levick comments on the danger of placing treatment by artificial light in unskilled hands, particularly in the case of very young infants, whose tissues are delicate and relatively translucent. Very rapid and satisfactory progress is said to have resulted in all cases treated at Chailey by this combination of moving undried air, dieting, and artificial light.

Salford Venereal Diseases Treatment Scheme.

The report for the year 1928 of the venereal diseases scheme of the City of Salford deals only with the last nine months of the year, as it was not until April 1st that the municipal clinic came into existence and a venereal diseases medical officer took up his official duties. These arrangements differed so much from those hitherto existing that on April 1st practically a new venereal diseases scheme was created in Salford. In the report, which is signed by Colonel E. T. Burke, venereal diseases medical officer, an assessment is made of the number of infected persons in Salford based upon the estimated prevalence of the venereal diseases in England and Wales. On the assumption that 14 per cent. of the total population is venereally infected, it is calculated that there are at least 30,000 persons in Salford suffering from syphilis and gonorrhœa, 1,000 fresh infections occurring each year, with a mortality from syphilis of at least 200. The economic loss from venereal disease may be realized from the fact that whereas the average duration of disablement from all diseases of members of approved societies is 7.2 weeks, the average disablement from venereal diseases is 19.9 weeks. These striking figures are rightly held to justify the expenditure of £5,600, which was the estimated gross cost of the clinic during the first year of its working. The new municipal clinic differs from the superseded treatment centre held in the out-patient department of Salford Royal Infirmary in the following important respects: it has a whole-time staff; a clinical director, responsible to the medical officer of health, to co-ordinate the work of the department; and treatment is given in premises specially equipped for venereal disease work alone for no less than seventy-one and a half hours weekly for each sex, a far longer period than was devoted to this end at the Salford Royal Infirmary. The main principle upon which the clinic is organized is that the unit to be treated is not the individual, but the family; thus every effort is made to get the patients and other members of the family of a child suffering from venereal disease to attend for examination and, if necessary, for treatment. In the case of extra-marital infection, the patient is asked to persuade the party alleged to have conveyed the infection to come for examination. So successful has been the organization employed that during its nine months of working the clinic has dealt with more new patients and has registered more attendances than any other treatment centre covering a similar size of population. When it was proposed to move the treatment centre from the hospital to the clinic it was objected that unless a clinic is attached to hospital premises patients will refuse to come to it. In point of fact, whereas the average annual number of new cases attending for treatment at the hospital centre during the period 1919-27 was 795, the number attending the clinic during the nine months of its working was 1,220. The difference between the numbers of intermediate attendances is even more striking, being 5,719 in the former and 26,155 in the latter. The average number of attendances per patient attending the clinic, calculated as total attendances divided by the number of new patients, has been 39.3, or, including non-venereal cases, 29.1. During the period under review there have been 433 defaulters, representing 30 per cent. of new patients. To deal with the serious social problem created by these individuals, the clinic sent out follow-up letters, in response to which 116 of the patients returned and still attend, ten returned for a period only, six returned and were transferred, and twenty-eight returned and were discharged. In Colonel Burke's view the question of compulsory treatment is one which must soon claim the attention of all local authorities, who at present provide a great deal of money which is being wasted by the defaulter. He deplores the fact that more advantage is not taken of the valuable clinical material at the clinic by those who are in general practice, and suggests that it would be to the interest of both patient and practitioner if the latter would occasionally take a course of instruction at the clinic, so as to keep himself abreast of recent methods of investigation and treatment.

Correspondence.

THE DISTRIBUTION OF RADIUM.

SIR,—In your issue of May 11th there appear two letters dealing with the distribution of radium for the treatment of cancer. In reading this and other correspondence one is struck by the exclusive use of the word "surgeons" as indicating those who should be in control of future supplies. I agree, of course, with Mr. Duncan Fitzwilliams when he deplores the haphazard way in which radium is sometimes obtained and applied by practitioners who have no experience whatever of this form of treatment; but it appears to me strange that the professional radiologist, who has borne the burden and heat of the day, and who upheld the use of radium when most surgeons opposed it, should now be ignored. It is not many years since I heard a surgeon, now prominent as an advocate of radium, publicly classify *x* rays and radium in malignant disease with the violet leaf poultices, *et hoc genus omne*, of the herbalist "cancer-curer."

For a quarter of a century those in charge of the *x*-ray departments of the large general hospitals have been coping with a never-ending stream of inoperable and recurrent cancer cases. Snowed under with masses of the most unpromising material, they have nevertheless striven with success to relieve pain and prevent or mitigate external ulceration; and in certain cases—relatively few, but in the aggregate, considerable in number—have restored to active life the apparently incurable. Nor is there any sign of lessening of the flood, nor likelihood of its abatement in the immediate future. If the radiologists in charge of such departments have an experience of radium which is small compared with their knowledge of *x* rays, this is due to no fault of theirs, but to the cost and scarcity of this therapeutic agent. It can scarcely be denied that *x*-ray therapy departments should be liberally dealt with in the allocation of any public supplies of radium. There must be many radiologists in this country who, in the past ten years, have treated, not hundreds, but thousands of cancer cases; and these almost all of advanced type—an experience which cannot be paralleled by any other class of worker.

The medical public should not be led to believe that the present surgical methods of using radium represent a final stage of technique. While they will always be used to some extent, they are in great measure a compromise. They represent in many cases the best possible procedure with the amounts of radium at our disposal. But already in France and Belgium their limitations are being recognized. Dr. Régaud, director of the Paris Radium Institute, has pointed out that radium therapy at a distance is the ideal to be aimed at. He recognizes that this is a return to the technique of deep *x*-ray therapy, and expresses the opinion that it is impossible to say at the present time whether gamma ray treatment will in future be given by large quantities of radium used at a distance of 15 cm. or more from the skin, or by *x*-ray tubes excited by currents of the order of 2,000,000 volts.

In attempting to envisage their respective possibilities, it should be remembered that the present value of the radium necessary for such "distance treatment" is between £50,000 and £75,000 in a single "bomb." On the other hand, experimental *x*-ray tubes have already been constructed to withstand over a million volts. It is therefore probable that, ultimately, the choice between naturally or artificially produced gamma rays will be determined by financial considerations only. But while this is true as between such super-*x* rays and gamma rays from radium

element, the former would have the advantage over "radon" for constancy of output. As pointed out by Mr. R. K. White, it is quite unjustifiable to assume that, where long exposures are concerned, the therapeutic effects of radon and radium element are in all respects similar, although the mathematical expressions representing a given dosage may be identical.—I am, etc.,

London, W.1, May 15th. F. HERNAMAN-JOHNSON.

CATARRHAL VACCINES.

SIR,—You have allowed me to record in the *Journal* during the last few years some statistics relating to the use of vaccines against colds and catarrhs in a public school, and the following figures obtained last Easter term may be of interest to some. The total number of boys concerned was 525; of these 148 (28 per cent.) were inoculated, and 377 (72 per cent.) were not.

	Inoculated.	Not Inoculated.
Colds reported (out-patients, 193)	45 (30%)	148 (32%)
Influenza, feverish chills (in-patients, 256)	56 (37%)	200 (52%)
Average days lost	9.5	10.2
Second attacks or relapses	7 (4.7%)	20 (5.3%)
Complications	10 (18%)	60 (30%)

Analysis of the complications shows that all the serious cases were among the non-inoculated—for example: 4 cases of frontal sinusitis; 8 of cervical adenitis (including 2 abscesses with operation); 10 of acute otitis (including 2 mastoid operations); 1 of lobar pneumonia; and 5 of myocarditis. None of the inoculated boys suffered from severe complications, though two were incapacitated for some time by subsequent debility.

In addition to the usual circular to parents, sent out at the end of December, special letters were written to the parents of known susceptible boys urging the use of vaccines, but in only 10 cases was this form of protection adopted; of these, 2 were affected with influenza, referred to in the paragraph above. Of the remaining 20 who were not inoculated 15 were affected, 9 of them severely, with complications.

Parke Davis's anticatarrhal vaccine was generally used—two-thirds of the administration during the Christmas holidays, one-third at the beginning of the Easter term. Three doses were given as a rule, 0.25, 0.5, and 1 c.cm., irrespective of age or weight. (In previous years rather smaller doses were given to the younger boys.) In no case was there any reaction of importance, a slightly sore arm for twenty-four hours being the worst.

In this continued attempt to estimate the value of preventive inoculation against endemic catarrh it is unfortunate that epidemic influenza, and of a severe type, should have again appeared, since I am not of the opinion that this latter is affected by the vaccine used. However, the figures given seem to show once more a slight but definite advantage in favour of the inoculated, both as regards the number affected and more particularly as regards the number and severity of the complications.

It will be noted that only 28 per cent. availed themselves of this method of protection—less than in previous years—and it is evident that the majority of parents of this class are not convinced of the value of vaccines or even prepared to give them a trial. It must be admitted that there is no overwhelming evidence in its favour, judging by mere numbers, though from a knowledge of the individuals concerned I am convinced that there is a very definite advantage.

But if, as I believe, the main safeguard against endemic catarrh lies in vaccines, it must be admitted that finality is not reached by the present methods, and the results are not good enough to convince the sceptic. It may be that the preparation and the dose (in number, amount, and time) may be improved. Compulsion is not practical politics, and it is useless to advocate wholesale inoculation to parents during the September term, when good health is the rule.

My own view is that the results, though far from perfect, are more than good enough to justify continued effort, particularly in the cases of the known susceptibles to catarrhal infection.—I am, etc.,

L. R. LEMPRIERE,
May 14th. Medical Officer, Haileybury College.

"YEAST AND PUFFERY."

SIR,—Referring to your article under the above heading in the *Journal* of April 27th, 1929 (p. 780), it may interest and amaze your readers to hear of my experience with reference to the advertising of yeast.

On April 3rd of last year my secretary made an appointment for me to see a Miss E. She duly appeared, not, however, in the guise of a patient, but in that of an advertising agent for a well-known brand of yeast. Her proposition to me, made most charmingly, but in the best American business manner, was that I should write a testimonial extolling the virtues of yeast, this testimonial, together with my name and photograph, to appear in magazines, newspapers, and (or) in other advertising media published in the United States of America and Canada.

For doing this I was to receive the sum of £150. To quiet any scruples I might have against so doing, I was informed that four members of my profession in London had already signed the agreement, a copy of which is here appended. The confiding lady even informed me what each of them had told her they proposed to do with this money so nobly earned!

I hope that it is scarcely necessary to add that, while showing her the door, I replied to her importunities by saying that there were things in this life that I valued more than one hundred and fifty pounds, and that they were my own self-respect and the respect of my fellow members of the medical profession.—I am, etc.,

London, W.1, May 14th. DONALD ARMOUR.

Date
Address
City

In consideration of the sum of £150, receipt whereof is hereby acknowledged, I hereby give permission to the —— Company to use, in the advertising of ——'s yeast in magazines, newspapers, and (or) in other advertising media, published in the United States of America and Canada, my name, photograph, and (or) the letter I have submitted, or any part thereof.

It is understood that the —— Company is in no way obliged to use any of the material covered by this release.

Signature

Witness

WHAT IS STELLWAG'S SIGN?

SIR,—In an article on early Graves's disease by Dr. Hannan in your issue of May 11th (p. 848), stress is laid on the importance of Stellwag's sign, which is defined as "widening of the palpebral fissure caused by a spasmodic retraction of the upper eyelids."

The sign is thus defined in most of the current textbooks, notably Osler, Taylor (Poulton), Conybeare, Tidy's *Synopsis*, as well as in Purves-Stewart's *Diagnosis of Nervous Diseases*, and Campbell Thomson's *Diseases of the Nervous System*. On the other hand, in Price's textbook it is described as infrequent and incomplete blinking; in Osler and McCrae's *System*, as staring with a diminished frequency of reflex winking; and in Allbutt and Rolleston's *System*, as "retraction of lids and consequent widening of the palpebral slit, with which is associated infrequency and incompleteness of nictitation."

Finally, in Swanzy's *Diseases of the Eye* (edited by Werner) Stellwag's sign is given as "incompleteness and diminished frequency of the act of involuntary nictitation"; "an abnormal widening of the palpebral fissure" is described as Dalrymple's sign, and it is stated that this sign is often erroneously attributed to Stellwag or included in his sign. The same distinction between Stellwag's and Dalrymple's signs is made in three other textbooks on the eye which I have been able to consult.

Although the eye signs of Graves's disease are largely of academic interest they have become one of the traditions of medicine and are taught to successive generations of students; and uniformity in their nomenclature is therefore desirable.—I am, etc.,

Oxford, May 20th. W. T. COLLIER.

CHRONIC DEAFNESS.

SIR,—Your leader on chronic deafness in the issue of May 11th (p. 864) has drawn attention to what is indeed a change of heart. Only two years ago, at the Royal Society of Medicine, it was boldly stated, with little numerical opposition, that chronic middle-ear deafness was non-existent, that there was only one form of chronic deafness—namely, oto-sclerosis—and that this was incurable. Removal of the tonsils and nasal septum, even when advisable on general surgical principles, as a means of improvement of deafness, was scouted and stated to be almost immoral, and the results of treatment, although evidence to the contrary was produced, were treated with scepticism.

There is now, however, reason for caution lest the pendulum swing too much the other way. For oto-sclerosis which has become definitely established there is still no cure, and from its pathology it is difficult to see how there can be. Its prevention is another matter, and constitutional treatment would appear to hold out some hope. Oto-sclerosis is not, however, by any means the chief cause of chronic deafness, the common one being a pure middle-ear deafness predisposed to by septic infection of the tympanum and deformities of the nose; and the essential objects of treatment—not at all founded on empiricism, but on a logical pathological hypothesis—are to induce reabsorption of the products of chronic inflammation in the middle ear, and re-educate the dormant centre of hearing. As a preliminary all septic foci must be removed and deformities rectified. I have advocated and practised treatment for these purposes for the past eight years, and was able to report at the meeting to which you refer that 96 per cent. in a series of recent cases, not specially selected, were cured or greatly relieved.

I do not think any real difficulty exists as to testing hearing for practical purposes. The important thing for the patient is that he is cut off from the amenities of life by his deafness, and if, after treatment, he can join in conversation and listen to a sermon, concert, or play, then from his standpoint he is greatly improved or cured. It is comparatively unimportant whether he can hear a watch tick well or a tuning-fork hum correctly, and he is not interested in the niceties of the audiometer, however interesting or valuable it may be from an academic or investigation standpoint.—I am, etc.,

Bath, May 16th. H. NORMAN BARNETT.

IMMEDIATE ENUCLEATION FOR QUINSY.

SIR,—For twenty-five years I have performed this operation in peritonsillitis, and during my period of service as laryngologist at the Melbourne Hospital, the Children's Hospital, and St. Vincent's I have operated on many hundreds of patients with unvarying success. I always strip up the anterior pillar from below with an elevator, as figured in Dr. Dan McKenzie's book. It is nearly always free from adhesions at this point.

Mr. R. Wallace's method of "finger" enucleation[1] causes too much unnecessary bruising. In my opinion it is not necessary to wait three or four days, as advised by Mr. Wallace. At the first sign of oedema operate and save your patient days of agony or discomfort. As regards local anaesthesia in tonsillectomy I gave it up more than ten years ago because I found secondary haemorrhage was not a rare sequel.

For the past twelve months I have been treating all adults with diathermy, and I never use any other method excepting in cases of peritonsillitis. At first I used the monopolar method, but with more experience I have adopted the bipolar method. Using a weak voltage and a high frequency and placing the large indifferent electrode on the calf of the patient, no severe reaction will follow; the important point is not to attempt too much at a time. The active terminal is a blunt needle, and if there are definite septic foci I bury the needle in these to begin with. In adults with septic manifestations it may be sufficient to destroy these without completely removing the tonsil. As diathermy machines vary so much it would be as well to try the effect on a piece of raw steak and estimate that the effect on a tonsil would be twice as great. In the thirteen months only two patients have missed a meal. The number of treatments varies according to the tonsil, the patient, and the effectiveness of local anaesthesia. I always use Wyatt Wingrave's formula. The interval between treatments is at least a week, sometimes three weeks.—I am, etc.,

Melbourne, April 4th. W. KENT HUGHES.

[1] *British Medical Journal*, February 16th, 1929, p. 296.

HOSPITAL RADIOLOGICAL SERVICES.

SIR,—It appears to me as a practising radiologist that the Council of the British Medical Association is to be heartily congratulated and thanked by radiologists for Appendix X of the Annual Report relating to hospital radiological services (*Supplement*, April 20th, 1929, p. 129), and, in the interests of the private radiologists, widest attention should be drawn to this memorandum.

As a radiologist whose fees are determined according to the potentialities of the district of the practice, I have felt the very unfair competition of hospital radiology, the overhead charges of which are invariably borne by the charitable side of the hospital, which also has the advantage of benevolent local rates, while the private radiologist is heavily rated at normal rates.

An erroneous view appears to exist that it is cheaper if the patient is sent as a paying patient to a hospital than if sent to a private radiologist. This view is fostered by the circulars sent out by hospitals soliciting private *x*-ray work. For example, one before me states, "These facilities will only be available for patients who are not eligible for hospital benefit and who are unable to pay the fees of a private radiologist." As the list of fees given range up to six guineas many private radiologists would be quite willing to cater for such patients.

The incorrectness of a plea of cheapness is at once seen by a comparison of my own private fees with those taken from the scale of fees from two local hospitals and the hospital which broadcasts the circular mentioned above. The fees are in guineas:

	Private Fee.	Hospital I.	Hospital II.	Hospital III.
Wrist or hand	1	1½	1-2	1½
Ankle or knee	1	1½	1-2	1½
Thorax screen and film .	2	2	2-3	2
Screen examination for foreign body	½	1	Not given	Not given
Barium meal	5-7	5	4-6	5
Urinary tract	2-3	3	2-3	2-3
Bladder	1	1½	Not given	1½
Foot	1	1½	1-2	1½
Cervical spine	2	2	1½-2½	2
Skull	2	2	2½	2
Barium enema	2-3	3	2-3	3
Oesophagus	1-1½	2	2-3	2

The only instance in which the hospitals' fee is lower is in that of a barium meal. I have seen an example of a barium meal examination made at one of these hospitals, in which one 15 by 12 in. and one 10 by 12 in. film was taken, a gastric ulcer was entirely missed, and the films were almost unintelligible; five guineas was charged. Later the patient came to me and by means of eight 15 by 12 in. films (fee seven guineas) a gastric ulcer was displayed.

What is not realized is that much of this hospital barium meal work is seen only once, if at all, by the radiologist, and the rest of the examination is carried out by a lay radiographer—in contrast with the work of a private radiologist, who screens the patient at least six times, and usually has some knowledge of the physiology and pathology of the intestinal tract.

The private radiologist for practically the same fee has to provide comfortable waiting rooms, whereas at a hospital the patient has invariably to sit for hours on a hard bench and is often treated in a supercilious manner by lay assistants and attendants. Also the patients are seen by appointment, usually at their own convenience, by the private radiologist, whereas hours of waiting and several days' delay are often entailed in a hospital. If an error is made responsibility is definitely fixed in the case of the private radiologist, whereas in hospital work there is abundant opportunity of shifting the responsibility for bad work and error. Further, the private radiologist invariably rings up the practitioner and gives him the result immediately after examination and sends the films within twenty-four hours, whereas, to my knowledge, practitioners have waited a week for a hospital report, and then had only a brief written report and no opportunity of seeing the actual films. The private radiologist has, in his own interest, to watch the interests of the practitioner sending the case to him, but it is not unknown in hospitals for some lay assistant to make derogatory remarks regarding the practitioner's provisional diagnosis.

Whether a charitable hospital is justified in charging the above fees is a matter for considerable doubt. Very often the visiting radiologist receives one-half of the fee, and in the Memorandum two-thirds of the fee is stipulated. From the hospital side this one-third of the fee hardly covers the cost of the films; and overhead charges, such as assistants' salaries, capital cost, and upkeep and depreciation of tubes and plant are being borne by the charitable side of the hospital. These, however, are being used for the advantage of the visiting radiologist, who often comes from a considerable distance and is entering into unfair competition with a local radiologist, who has to pay rent, rates, light charges, etc., serious items with which the hospital radiologist has no concern.

As a hospital radiologist of some years' standing I have seen many paying patients at hospitals, but the fees in their entirety have gone to the hospital, as my own view is that the radiologist has no right to use hospital apparatus and accommodation for his private gain, particularly while a hospital is appealing for charitable subscriptions. The radiologist is fully entitled to a salary for often onerous duties. The willingness of many radiologists to accept a hospital post to which no salary is attached, with the intention of starting what is really a local private practice with the hospital's facilities, explains why radiological posts advertised tend more and more to offer no salary or honorarium. Such an exploitation of hospital facilities has no moral warrant, and if generally known would undoubtedly lead to a loss of charitable subscriptions.

In contrast, we have the hospital which offers the radiologist a small honorarium and then exploits his services to its financial advantage. For several years I examined cases for the London County Council and various borough councils. As these patients were admitted with out-patient notes bearing the hospital's name only, I was not, until too late, aware that my services, given for charitable patients, were actually being exploited for the benefit of municipal bodies well able to pay for them. A computation showed that at least £500 should have been paid by the borough councils under the British Medical Association resolution of 1921, or £125 per annum, additional to an honorarium of fifty guineas per year for services to the charitable side of the hospital. Not only was the hospital exploiting these practically honorary services, but, if the hospital had not used its x-ray department supported by voluntary subscriptions for this purpose, the various borough councils would each have found it necessary to install a plant and pay radiologists the recognized fee of £150 per year per attendance per week.—I am, etc.,

May 9th. A HOSPITAL AND PRIVATE RADIOLOGIST.

MATERNAL MORTALITY.

SIR,—The Minister of Health has stated that medical practitioners are being asked to supply information from their experience which may suggest means for the reduction of the high maternal mortality. In spite of better trained midwives and medical men, a more general application of the principles of antisepsis and asepsis, and less meddlesome midwifery, the percentage of mortality remains practically constant. Perhaps my own experience as a rural practitioner since 1898 may throw light on this apparent anomaly.

During my first twelve years of country practice in North Derbyshire I was only rarely able to obtain the services of a trained nurse or a certified midwife; in general, the nursing was done by a neighbour, and, in spite of the pressure I brought to bear, the standard of cleanliness was often not very high. But I do not remember losing a single case from sepsis. It was a healthy district; the women led active, healthy lives, grew their own vegetables, and drank pure water from the hills. The majority were able to help themselves in labour.

I find to-day that women have become less able to face labour and to help themselves; they are exhausted early in labour, cry out for chloroform long before they should have it, and, above all, they are more liable to sepsis. Moreover, I know cases where the patient delivered herself before the nurse or doctor had time to do anything, where everything was perfectly clean, and yet sepsis developed. My experience suggests that in a very high percentage of cases the patient, even before labour, is suffering from sepsis, which is ready to flare up when her vitality, already low, is still further lowered by the exhaustion of labour. Many women who develop puerperal sepsis are suffering from pyorrhœa or septic tonsils; the majority suffer from chronic constipation with auto-intoxication. My view is that the ultimate cause is bad feeding and bad hygiene. Notwithstanding all that we have learned about the importance of vitamins in the diet, many people consume vitamin-deficient foodstuffs in large quantities—white bread, pastry, steamed puddings—and when they have loaded their stomachs with these they have no appetite left for natural foods such as vegetables, fruits, rice, and oatmeal, all of which are rich in vitamins. Inevitably with such a dietary they suffer from intestinal stasis and are exposed to its consequences. I believe that good feeding and the prevention of constipation will go far to prevent maternal mortality, and that it is the duty of the medical attendant of the pregnant woman to supply her with a suitable diet sheet and instructions about personal hygiene which will serve to promote her own welfare and that of the unborn child.—I am, etc.,

J. A. BENSON, L.R.C.P. and S.Ed.

Green Hammerton, York, May 3rd.

HEROIN AFTER ABDOMINAL OPERATIONS.

SIR,—With reference to Mr. Woolf's article on the use of heroin after abdominal operations, which was published on March 16th (p. 499), it may be of interest to record a case I had recently under my care.

A man, aged 35, was suffering from great pain from lumbago of obscure origin, so that he lay groaning in his bed. He begged me not to give him morphine, as it had nearly killed him before, so I gave him one-sixth of a grain of heroin hydrochloride. About half an hour later I was called back by a very anxious messenger, who told me the man was dying. I found him cyanosed and apparently not breathing at all, but the heart was still beating, so I waited, and after a few minutes he gave a deep snoring breath, much to my relief. I performed artificial respiration, apparently without avail, and in the meantime another doctor was called in, without my knowledge. I reassured the people as much as possible, and told them to hold the jaw well up to avoid the awful snore when at last the breath should come, as it was sure to do, I said. I then left the case in the hands of my colleague, while I gave an injection of strychnine hydrochloride 1/12 grain—a big dose, for I felt that a desperate case required desperate measures. After a few minutes cramps followed, and I was afraid I had poisoned him with strychnine, but fortunately in about two hours' time the breathing improved and he went off into a quiet sleep.

While my colleague was looking after him I went home to hunt up the known toxicity of heroin, and I found that this

was very much less than that of morphine; moreover, I found that as much as nine grains had been taken accidentally, with recovery. So I felt greatly relieved, and went back and confidently assured his weeping wife that her husband would recover. Perhaps lobeline might have been useful as a respiratory stimulant. The condition was undoubtedly alarming, as he became quite black during the lapse of fully three minutes, when another deep breath was taken. Perhaps it will be safer in future never to begin with more than the maximal pharmacopoeial dose of one-eighth of a grain.

I should mention that just at that time I happened to be treating a young man in the last stage of consumption who was suffering from very severe pains in the legs, for which he had been æ-rayed and examined by the best nerve specialists in the land without avail. Nobody could find out the cause of these pains, but as they were quite unbearable I had been obliged to give morphine up to 2 grains, which made him too dry and sick, so that I had been compelled to give heroin, in 2-grain doses, hypodermically. I once gave it intravenously, but as the effect was somewhat alarming I afterwards always administered it hypodermically, often twice a day. After a few minutes he was quite normal and cheerful, taking a lively interest in current events, whereas before he had been crying piteously, unable to swallow any food or even to speak.

It would be interesting to know if heroin is really as dangerous as it looks, judging by its profoundly depressing influence on the respiration. What is the minimum lethal dose?

I am strongly under the impression that the very violent measures taken by Mr. Woolf to restore normal respiration, causing dislocation of the arm, were superfluous. The respiratory centre wanted a strong stimulus; filling the lungs with air by artificial respiration would diminish rather than increase that stimulus, or so it would seem to me. In my case, when I gave up interfering with the respiration (reassured by the fact that even nine grains had failed to kill!) the breathing soon began to improve, though how far this may have been caused by the strychnine is difficult to say. After the respiratory centre has already been depressed by a general anaesthetic, it is probably wise not to give more than 1/12 grain, especially to elderly women, as the cases quoted. As a rule 1/12 grain is not enough to relieve pain, but it depends very much on the body weight and the severity of the pain.—I am, etc.,

S. J. D. ESSER.

Rustenburg, Transvaal, April 23rd.

DEFECTIVE HYPODERMIC NEEDLES.

SIR,—In the recent annual report of the London and Counties Medical Protection Society, Limited, attention was called to the extraordinary number of cases referred to the society in which litigation had been threatened owing to the breaking of hypodermic needles. I suggest, Sir, that many of these cases are due not so much to carelessness on the part of the doctor as to the presence on the market of a certain number of badly made needles. Personally I have so little confidence in the reliability of steel needles that I have almost entirely abandoned them, and for the last two years have used platinum-iridium instruments. No doubt manufacturers, as a rule, endeavour to turn out good quality material, but I doubt if some of them quite realize the trouble and anxiety which may be caused by, say, 1 per cent. of bad hypodermic needles.—I am, etc.,

T. W. PRESTON, M.D.

London, W.1, May 21st.

The Services.

DEATHS IN THE SERVICES.

Major-General William Wallace Kenny, C.B., Army Medical Staff (ret.), died at Clifton, York, on May 11th, aged 74. He was born at Killeshandra, co. Cavan, on July 14th, 1854, the son of the late Randal Young Kenny, and was educated at Trinity College, Dublin, where he graduated as B.A. and M.B. in 1876, after taking the L.R.C.S.I. in 1875. Subsequently he became F.R.C.S.I. in 1889. Entering the R.A.M.C. as surgeon on August 5th, 1877, he attained the rank of colonel on April 1st, 1904, and surgeon general on June 8th, 1908, and retired on December 4th, 1914, but was immediately re-employed from the same date, and served to the end of the war in 1918. He took part in the Afghan war in 1879-80, serving on the Khaiber line (medal); in the Sudan campaign of 1885, at Suakin, and in the actions at Hashin, Tofrek, and Tamai (medal with two clasps, and Khedive's bronze star); in South Africa in 1900, as P.M.O. of the 10th Division, in the operations in Cape Colony, including the action at Ruidaur (Queen's medal with two clasps); and in the recent war of 1914-18 (medal, star, and victory medal). In 1903-4 he was superintending medical officer in Jamaica, chairman of the Board of Health, and member of the Legislative Council. As surgeon general he served in the York Command. He was appointed honorary surgeon to the King in 1910, received the C.B. in 1917, and was also a Knight of Grace of the Order of St. John of Jerusalem. In 1882 he married Catherine Jane, daughter of E. B. Steedman, Esq., of High Ercall Hall, Wellington, Salop. She died in 1920; he leaves two daughters.

Surgeon Commander James Walter Octavius Underhill, R.N. (ret.), died in the London Hospital on April 29th. He was educated at Edinburgh, where he graduated as M.B. and C.M. in 1884, and entered the navy as surgeon on August 20th, 1885, becoming staff surgeon after twelve years' service, fleet surgeon in 1902, and retiring in 1907. The title of his rank was changed in October, 1918. He had served in H.M.S. *Boadicea*, from 1888, when she was flagship of Rear-Admiral the Hon. Sir Edmund Fremantle in the East Indies. Later he served in the battleships H.M.S. *Duncan* in the Mediterranean, and H.M.S. *Hindustan* in the Atlantic fleet. He rejoined for service when the war began, in August, 1914, and was appointed principal medical officer of the *Excellent*, gunnery school, Portsmouth, and served there till January, 1916.

Major Stephen Harry Creagh, R.A.M.C. (ret.), died at Haughley House, Suffolk, on May 6th, aged 74. He was born on August 14th, 1854, and entered the army as surgeon on July 30th, 1881, became major after twelve years' service, and retired with a gratuity on August 23rd, 1899.

Lieut.-Colonel George Edward Weston, R.A.M.C. (ret.), died at Exmouth on May 2nd, aged 72. He was born at Maiden Newton, Dorset, on July 5th, 1856, was educated at St. George's, and took the M.R.C.S., L.S.A., and L.R.C.P.Ed. in 1880. Entering the R.A.M.C. as surgeon on July 30th, 1881, he became lieutenant-colonel after twenty years' service, and retired on July 17th, 1909. He served in the Bechuanaland campaign of 1884-85; in the campaign of 1887 on the Egyptian frontier (medal and Khedive's bronze star); and in the South African war in 1902, taking part in operations in Cape Colony and the Orange River Colony, receiving the Queen's medal with three clasps. He was also re-employed during the recent war, from June 17th, 1915.

Universities and Colleges.

UNIVERSITY OF OXFORD.

IN Convocation on May 21st a decree was passed recording the gratitude of the University to Mr. Gilbert Varley for his offer to place at its disposal the sum of £6,000, subject to a life annuity, for the furtherance of medical research, in accordance with the wishes of his brother, the late Richard Stanley Varley.

UNIVERSITY OF LONDON.

Lord Dawson of Penn, Mr. H. L. Eason, and Sir Cuthbert Wallace have been elected the representatives of the Faculty of Medicine on the newly constituted Senate of the University.

The Dunn Exhibitions in Anatomy and Physiology for 1929 have been awarded respectively to Mr. W. Mushin of the London Hospital Medical College, and Mr. B. Gilbert of St. Thomas's Hospital Medical School.

Dr. Winifred Cullis, C.B.E., Professor of Physiology in the University, has been elected Deputy Chairman of Convocation.

UNIVERSITY COLLEGE.

The examination for the Bucknill Scholarship (160 guineas) and for two Exhibitions, value 55 guineas each, will begin on June 25th. The subjects of the examination are chemistry, physics, botany, and zoology. The scholarship and the two exhibitions are tenable at University College, London. Application for entry forms should be made to the Secretary of University College, Gower Street, W.C.1, not later than June 1st.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE following 30 successful candidates (out of 85 entered), having passed the requisite examinations, were admitted Fellows on May 15th:

H. Abernethy, R. E. Austin, H. S. Bilcliff, B. B. Blomfield, D. C. Bowie, R. P. Chari, W. N. Chisholm, J. G. A. Davel, G. A. Davies, H. G. Estcourt, J. L. Farquharson, D. J. D. Henderson, R. A. Highmoor, A. E. King, M. G. Kini, E. R. Lange, C. G. Lewis, A. J. G. Mackay, Y. S. Moholkar, S. Newson, W. J. Pannell, L. M. Park, L. V. Pearson, L. S. Rogers, M. G. Saincher, C. G. Schurr, R. N. Sewal, G. G. Talbot, J. R. Wheeler, G. Wood.

The Bathgate Memorial Prize, consisting of bronze medal and set of books, after a competitive examination in materia medica, has been awarded to Mr. Wai Ming Tso.

Obituary.

ARTHUR H. CHEATLE, C.B.E., F.R.C.S.,

Late Aural Surgeon, King's College Hospital, and Lecturer on Aural Surgery, King's College Hospital Medical School.

WE had to announce with deep regret last week the death, at the age of 62, of Mr. Arthur H. Cheatle, which took place in London on May 11th.

Arthur Henry Cheatle, after receiving his early education at Merchant Taylors' School, proceeded to his medical studies first at King's College Hospital, London, and, later, in Vienna. In 1888, having qualified as M.R.C.S., L.R.C.P., he held a number of appointments at King's College Hospital, serving for a time as house-surgeon to Lord Lister, and as assistant house-accoucheur, and later as house-accoucheur to the hospital. In 1892 he proceeded to the Fellowship of the Royal College of Surgeons of England, and after a period devoted to the study of aural surgery in Vienna he returned to England, and was appointed assistant aural surgeon to King's College Hospital. On the retirement of Dr. Pritchard he became aural surgeon. At the Ninth International Otological Congress he was awarded the Adam Politzer prize, and he held, among other positions, the Hunterian professorship of the Royal College of Surgeons, the presidency of the Section of Otology at the International Congress of Medicine in 1913, of the Section of Laryngology and Otology of the British Medical Association when it met at Bath in 1925, and of the Otological Section of the Royal Society of Medicine. For a time he was examiner in laryngology and otology to the Royal Colleges of Physicians and Surgeons. During the war he served as lieutenant-colonel in the medical branch of the Royal Air Force, acting as honorary consultant to the military hospitals of the London and Eastern Command and aural surgeon to the King Edward VII and King George Hospitals. He was for many years a member of the British Medical Association, and held, prior to his presidency of the Section of Laryngology, the office of secretary of that Section when the Association held its last Annual Meeting in Manchester in 1902, and of vice-president of the same Section at the Annual Meeting held in Liverpool in 1912.

ARTHUR H. CHEATLE, F.R.C.S.
(Photograph by Malcolm Arbuthnot, London.)

Perhaps Arthur Cheatle's greatest contribution to aural surgery was in his preparation of specimens—over 700 in number—to illustrate the variations in the anatomy of the mastoid region, and the influence of the anatomical type on the clinical features and progress of middle-ear infection. This collection he presented, in 1911, with a descriptive catalogue written by himself, to the Museum of the Royal College of Surgeons of England, as a supplement to the famous Toynbee collection, continuing, in later years, to add many other preparations and to keep the catalogue up to date. Cheatle's specimens illustrate the age and sex variations in the form and structure of the temporal bone; they provide the basis of anatomical fact on which rest the present-day operations on the mastoid region. He proved that the dense mastoid was not, as was commonly held, the product of chronic inflammation, but a normal anatomical type of bone which is causative indirectly of chronic suppurative middle-ear disease.

From his publications one may single out for mention *Sight and Hearing in Childhood* (with the late R. Brudenell Carter); *A Report on the Examination of the Ears and Throats of 1000 School Children*; *Gun Deafness and its Prevention*; Hunterian Lectures on "The surgical anatomy of the temporal bone"; the "Petro-squamosal sinus, its anatomy and pathological importance," published in the *Transactions* of the Sixth International Congress of Otology, and the "Symmetry of the temporal bone," in the *Transactions* of the Ninth International Congress.

Arthur Cheatle was a man of shy and retiring disposition, slow to make friends, but deeply admired by those who had the privilege of his friendship. So scrupulously did he avoid publicity that others received credit for discoveries in aural surgery which he himself had made. As a worker he was patient, careful, and indefatigable, making all the preparations in his collection with his own hand. His death is a great loss to aural surgery. On behalf of many colleagues in the medical profession we offer sympathy to his brother, Sir G. Lenthal Cheatle, senior surgeon to King's College Hospital.

DR. PERCY FREDERIC BARTON, who died on May 11th, aged 60, received his medical education at Cambridge and St. Thomas's Hospital. He obtained the diplomas M.R.C.S., L.R.C.P., in 1896, and graduated M.B., B.Ch. in 1899. After conducting a large general practice for many years he devoted himself with increasing interest to psychotherapy, and was appointed physician to the Tavistock Clinic for Functional Diseases. He was a member of the British Medical Association and of the British Psychological Society. Dr. H. Crichton Miller writes: Dr. Barton joined the staff of the Tavistock Clinic in October, 1921, one year after its foundation, bringing to the treatment of functional nervous disorder the ripe experience of a mature and successful general practitioner. He had been interested in psychotherapy for many years, and finally he decided to give up the work of a lifetime in favour of specialization. He underwent analytical treatment, and threw himself with zest into the work of the clinic. For about six years he was one of the most industrious and helpful members of the staff, but, latterly, the demands of private practice precluded him from regular attendance at the clinic, and when the category of honorary physicians was instituted, his name was one of the first four to be inscribed. I should like to record my own impressions of a dear personal friend and a very valued colleague. He was an extraordinarily social man, who made friends everywhere, and it was the breadth of his human interest and sympathy that underlay all his psychotherapy. His convincing sincerity, his simplicity, and his magnanimity contributed to the attraction of the man and the success of the physician. He was no "brittle intellectual," but his mentality ran rather to a certain common-sense downrightness that was impatient of needless elaboration and subtlety. What is perhaps of most interest to us as psychotherapists is the elasticity of a mind that after middle life could assimilate, as his did, views in many ways so divergent from those of the rigid school in which he had been brought up. I cannot help feeling that he was able to achieve this by reason of that sense of humour which never deserted him, and which helped him to maintain a wholesome self-criticism at an age when most of us have settled down into

complacent self-acceptance. Finally, Dr. Barton was a man devoid of any streak of cynicism. Many a time he has described to me with peals of boyish laughter some absurd case of human fatuity, and yet one was conscious that through it all the man was "vigorous with spiritual purpose."

The death took place suddenly, on May 3rd, of Dr. D. J. PENNEY, who had an extensive practice in Rothesay. Born in 1866, he graduated M.B., C.M. at Glasgow University in 1887. After a period spent as resident surgeon in the Western Infirmary of Glasgow, he settled in Rothesay, and became medical officer of health for the Bute district. He was also Admiralty surgeon and agent, and took a great interest in the local territorial artillery, and was mobilized as a major in the R.A.M.C. during the period of the war. He held the Territorial Decoration for length of service. Dr. Penney was an active member of the British Medical Association and a Fellow of the Glasgow Obstetrical and Gynaecological Society.

The death occurred, on May 12th, of Dr. JOHN STOTHART BELL, at his residence, The Green, Lockerbie, Dumfriesshire. Dr. Bell was 70 years of age, and graduated M.B., C.M.Ed. in 1887. In the following year he settled in his native county at Lockerbie. In addition to carrying on an extensive practice, he was parochial medical officer for Applegarth, and held other public appointments. Keenly interested in education, he was for many years a member of the old Dryfesdale School Board. He is survived by one son, Dr. Douglas Bell, who succeeds him in the practice, and two daughters.

We regret to record the death of Dr. ROBERT INCH, which took place at his residence, *Stobmills House*, Gorebridge, Midlothian, on May 12th. Dr. Inch, who was 69 years of age, graduated M.B., C.M. at the University of Edinburgh in 1883. For more than forty-five years he had been in practice at Gorebridge. His practice covered a wide area, and entailed, in the earlier years particularly, a great deal of travelling and hardship. Dr. Inch was medical officer of the Newton Loan Hospital for Infectious Diseases, parochial medical officer for the Cockpen and Temple districts, and chairman of the Panel Committee for the county of Midlothian. A keen volunteer, he was medical officer and lieutenant in the 1/1 Midlothian Volunteers. He took a great interest in educational affairs. For many years he was a member of the old School Board, and for a period he was chairman. When the School Board ceased to function he was elected the first chairman of the Midlothian Education Authority, and on the occasion of his retirement recently was entertained by his colleagues. He was also a justice of the peace for Midlothian. Dr. Inch is survived by his wife, a daughter, and a son, Dr. T. Douglas Inch, *M.C.*, who has assisted his father since the war. A younger son was killed in the war. There was a large attendance of the general public at the funeral service in Stobhill Parish Church and at the graveside in Cockpen churchyard. Many of the public bodies with which Dr. Inch had been associated were represented.

The following well-known foreign medical men have recently died: Dr. BALZER, a prominent Paris dermatologist, honorary physician of the Hôpital St. Louis, and member of the Académie de Médecine; Dr. VAN DIEST, principal medical officer of the Belgian Congo; Dr. AUGUST PÜTTER, professor of physiology and director of the Institute of Physiology at Heidelberg, aged 50; Professor ROBERT ASCH, a leading gynaecologist and obstetrician of Breslau, aged 70; Professor JACQUES LOUIS REVERDIN of Geneva, aged 86; Professor S. T. SÖRENSEN, formerly director of the Blegdams Hospital, Copenhagen, and a leading authority on acute infectious diseases; Dr. JOSÉ MARIA LOMBANA BARRENECHE, professor of clinical medicine at *Bogota*, and Dr. BILLARD, professor of physiology at the *Clermont-Ferrand* medical school.

Medical News.

THE next meeting of the Society for the Study of Inebriety will be held in the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Tuesday, July 9th, at 4 p.m., when Mr. W. McAdam Eccles will deliver his presidential address on "Some gaps in the study of inebriety," and Sir William Willcox will open a discussion on "The toxic effects of methylated spirits and impure forms of alcohol."

THE St. Cyres Lecture for 1929 will be delivered at the National Hospital for Diseases of the Heart, Westmoreland Street, W.1, on Thursday, June 6th, at 5 p.m., by Dr. R. O. Moon; the subject is "Some observations on diseases of the myocardium." Members of the medical profession are cordially invited.

THE Linacre Lecture, delivered in Cambridge on May 6th by Dr. Peyton Rous of the Rockefeller Institute for Medical Research, is being published by the Cambridge University Press. The title is *The Modern Dance of Death*.

LIEUT.-COLONEL G. S. PARKINSON, D.S.O., R.A.M.C. (ret.), has been appointed assistant director of hygiene (part-time) at the London School of Hygiene and Tropical Medicine. During the late war Colonel Parkinson was deputy assistant director of hygiene with the 1st Army, and later assistant director of medical services. After the armistice he was D.A.D.H. at Gibraltar for five years, and was then appointed assistant professor of hygiene at the Royal Army Medical College, Millbank.

THE second annual meeting of the reorganized Continental Anglo-American Medical Society was held on April 30th in the salons of the new casino at Nice, and was an extremely enjoyable and successful gathering. The honorary secretary of the society is Dr. B. Sherwood-Dunn, 54 Bd. Victor-Hugo, Nice, A/M., France. It is proposed to hold the next annual meeting in Florence.

LISTS of medical practitioners serving as members of local authorities or their subsidiary public bodies in Great Britain were published in our issues of December 8th (p. 1057) and December 29th, 1928 (p. 1190), and February 16th (p. 314), April 13th (p. 702), April 27th (p. 795), and May 11th, 1929 (p. 889). We have since been notified that Dr. G. M. Blnett has for the past three years been the only medical member of the Guildford Board of Guardians, that Mr. H. H. Raw is a member of the Whitby Urban District Council, and that Dr. W. B. Cathcart is [illegible] Urban District Council and [illegible] Committee.

THE third report of the Gas Cylinders Research Committee, which relates to alloy steel light cylinders, has been issued by the Department of Scientific and Industrial Research, 16, Old Queen Street, Westminster, S.W.1, and may be obtained from H.M. Stationery Office at the price of 2s. 6d. The first of these reports, which dealt with cylinders for use in commerce for the transport of "permanent" gases, is out of print, but a summary of recommendations containing revisions from this report is now in the press.

FOLLOWING the congress entitled *Journées Médicales de la Faculté de Paris*, an excursion has been arranged to the health resorts in the Cevennes and Pyrenees, from June 14th to 25th. Places to be visited include: La Malou, the Gorges-du-Tarn, Carcassonne, Luchon, Cauterets, and Lourdes. Relatives of medical practitioners are invited and also medical students. Further information as regards the cost and details of the tour may be obtained from the office of the Voyages Médicaux Pyrénéens, La Malou, Hérault, France.

THE sixth international antitobacco congress was held in Paris on April 2nd, when the following papers among others were read: the pathogenic action of tobacco, by Dr. G. Petit; the offensive alliance between alcohol and tobacco, by Dr. Legrain; and the argument of personal liberty in the anti- [illegible] by M. Stricker, formerly Minister of Public [illegible].

IN connexion with the congress known as the Journées Médicales" of Evian, which will be held on September 14th and 15th, a tour has been arranged through various climatic resorts in the Alps from September 3rd to 14th. The places visited include: Vals, Grenoble, Grande-Chartreuse, Aix-les-Bains, and Chamonix. The cost of the tour is 950 francs; it is open to medical practitioners and to medical students in their final year. Further information may be obtained from Madame Juppé-Blaise, Federation of the Health Resorts of France, 1, Gordon Square, W.C.1.

A COURSE on oto-rhino-laryngology will be held at Strasbourg from July 1st to 14th under the direction of Professor Canuyt, assisted by Drs. Barre, Bellocq, Borrel, Pautrier, Grusett,

Vaucher, and Joublot. The programme will include clinical instruction, demonstration of apparatus, and operations. The fee is 400 francs.

THE late Sir Alexander Ogston has left, in addition to considerable real estate, personal property in Great Britain valued for probate at £40,278.

THE May issue of *The Mission Hospital*, which is published by the Church Missionary Society, contains an interesting account by Dr. G. E. Dodson of the progress made in Persia as regards medical treatment and sanitation during the last twenty-five years. In the same issue there is a memorial note about Dr. E. F. Molony, who went out to Persia as a missionary in 1926 and died in Kerman last February.

RECENT celebrations have included that of the seventy-fifth anniversary of the Spanish journal *El Siglo Medico*, and of the second centenary of the birth of Lazzaro Spallanzani, at Reggio Emilia. In June the University of Toulouse will celebrate its seventh centenary, and the Academy of Medicine of Rio de Janeiro the centenary of its foundation in July.

WE have received the first issue of *Fortschritte der Neurologie, Psychiatrie und ihrer Grenzgebiete*, a monthly journal published at Berlin under the editorship of Professors A. Bostroem and J. Lange. Its object is to provide concise surveys of recent progress in neurology, psychiatry, and allied subjects. The present issue contains articles by Erich Guttmann of Munich, on "Non-systematic diseases of the spinal cord, its roots and meninges"; by Arthur Kronfeld of Berlin, on "Advances in psychotherapy"; and by Gottfried Ewald of Erlangen, on "The endogenous psychoses."

THE issue of the *Wiener klinische Wochenschrift* for May 9th has been dedicated to Professor Julius Hochenegg, director of the second university surgical clinic of Vienna University, on the occasion of his having occupied this position for twenty-five years.

THE Paris Lyons and Mediterranean Railway announces that the through Pullman express between Boulogne and Vichy will commence running on June 15th in connexion with the 9 a.m. service from Victoria.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediocera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

FLUSHINGS.

"EREBUS" asks for any treatment likely to improve a lady, aged 56, who, after hysterectomy and appendicectomy, gets sudden flushings of face and other parts of the body, which make her feel unable to do anything and depress her. The flushings occur at nights and keep her awake; she is anaemic and nervous; ordinary treatment has not availed.

DISSEMINATED SCLEROSIS FOLLOWING PREGNANCY.

DR. E. COLLIER (Felling-on-Tyne) writes: I have at present under my care a case of disseminated sclerosis which has occurred as a sequel to pregnancy. The patient, a young married woman, aged 25, on getting up on the tenth day after her third normal confinement and puerperium, discovered that she was very weak on her legs, and giddy. The symptoms have progressed until now, one month after the confinement, she presents most of the features of disseminated sclerosis. I shall be glad to know if any of your readers have met with similar cases of disseminated sclerosis coming on after pregnancy. I may add that I have ruled out the question of it being a hysterical condition.

SEQUELS OF INJECTIONS OF VARICOSE VEINS.

"M.B., C.M." writes to say that he has had varicose veins in both legs for many years. Lately the varices were successfully occluded by the quinine-urethane solution, but the "tired" feeling still remains after a short walk, and the local oedema, which was always present before, still persists, so that he has to wear elastic stockings, as of yore, to give the desired support. There is no pitting on pressure, and the swelling is quite local. He now wonders if the deep veins are varicose, and is desirous to know of anything that would expedite a cure, if any. He adds that sixteen injections of the solution were made in five days without any untoward results.

AFTER-EFFECTS OF "TWILIGHT SLEEP."

DR. E. CURNOW PLUMMER (London, N.W.) writes: With reference to Dr. Frank E. Kingston's inquiry in the *Journal* of May 18th (p. 938), the amnesia of "twilight sleep" is not a "deliberate forgetting," but a mental state induced by the drugs employed. I have given "twilight sleep" to several hundred patients, some of them twice and three times, and have kept in touch with many of them. Having also dealt with many other patients with various psychoneuroses, I have been on the alert, but in no single instance have I seen any psychoneurosis that could be attributed to "twilight sleep." On the contrary, prospective mothers who had a dread of childbirth almost amounting to an anxiety state have, after a successful "twilight sleep," completely lost their fears and been able to contemplate later pregnancies quite calmly, so being freed from a possible cause of psychoneurosis.

AXILLARY HYPERIDROSIS.

DR. J. J. MARLBOROUGH (Gort, co. Galway) writes in answer to "D. G.'s" inquiry of April 27th (p. 795): I have found a 25 to 30 per cent. solution of aluminium chloride in distilled water perfectly satisfactory in a number of cases of localized excessive sweating. The application is allowed to dry on, and is renewed every second or third day. Three applications at these intervals may be made, and then the parts should be left for a week, or until recurrence shows itself. The lotion should be allowed to dry completely before clothing is resumed. Some slight momentary irritation may be caused by the application.

"X. Y." writes: I suggest the use of liquor formaldehyde saponatus (*B.P.*). This is, I believe, an excellent skin antiseptic in cases of dysidrosis, and has a decided drying effect upon the sweat glands. A few drops rubbed over and allowed to dry on the skin are quite effective.

PAINFUL HEEL.

"G. F. P." writes: I suggest that the condition of "painful heel" complained of by "Giza's" patient (May 11th, p. 890) may be due to constriction of the circulation of the foot resulting from undue flexion of the ankle while operating the accelerator pedal in driving a car. I have recently had puzzling symptoms of the same kind, which were relieved by raising the heel of the right foot by means of a wooden block screwed to the floor boards. The wearing of boots, especially if rather tightly laced, is probably a predisposing cause.

DR. W. JOHNSON SMYTH (Bournemouth) writes: The painful heel condition referred to by "Giza" is probably a peripheral neuritis affecting the calcaneal branches of the posterior tibial and external saphenous nerves. As bone disease is excluded the case is a hopeful one. I find that these cases get well after a few days' treatment by diathermy. The treatment is given twice daily; the heel being wrapped up in chamois leather between the applications. Rest in bed or on a couch is essential. Alcohol to be excluded; 1/4 grain of calomel to be given every six hours before meals.

INCOME TAX.

Depreciation of Car.

"A. E. B." inquires whether he can claim depreciation in respect of a car bought new, not by way of replacement, in 1926; his auditor says "such a change can be made only if and when it is replaced by another car."

*** Yes, he can, and in our opinion should, claim depreciation. On the 15 per cent. basis the amount to be claimed for 1929-30 would be calculated as follows:

Value at December 31st, 1927	£300−£45=£255
,, December 31st, 1928	£255−£38=£217
Depreciation for 1929-30—£217 at 15 per cent.	=£32

It will be seen that "A. E. B." has lost, temporarily, the allowance for 1927-28 and 1928-29, but this will be allowed for when the car is renewed if an "obsolescence" claim is then made.

Car Transactions.

"W. L. T." bought a car in 1923 for £250 and sold it in 1928 for £5, when he bought a car of a different make for £192. The inspector of taxes will allow the cost of renewal—that is, £192−£5=£187, but not depreciation on the new car.

*** We advise our correspondent to accept that view, which has judicial support, but to claim depreciation allowance for the

year 1930–31, the gross liability for which will not be affected by the renewal allowance. Assuming the appropriate rate to be 20 per cent., he will be losing for the time £38, but if he remembers to claim *obsolescence allowance* when he replaces his present car the temporary loss of allowance will then be automatically put right.

"G. B. S." bought a second-hand car in 1926 for £115, and commenced practice in January, 1927. He has been allowed the aggregate amount of £30 for depreciation, and has now sold the car for £30 and bought a new one for £130. What should he claim?

*** (1) Obsolescence allowance £115–£30–£30=£55 and (2) depreciation on the new car £130 at 15 per cent.=£20. Strictly, the former amount—that is, £55—should be reduced by the proportion applicable to the use in 1928, as compared with the amount of use after professional work was commenced, but apparently this would be almost, if not quite, negligible.

Emoluments of Assistant.

"J. H. R." was employed as an assistant. For the first four months he received a cash payment as salary, and the cost of his board and lodging was paid by his principal. Subsequently, as a matter of convenience, the principal "suggested that he should include the cost of board in the monthly cheque paid" to "J. H. R." and that the latter should pay the landlady on the former's behalf. "J. H. R." has been assessed to tax on the total cash payments. What are his prospects of a successful appeal?

*** It is, of course, clear that under the original arrangement "J. H. R." was not liable for the value of the advantages received by way of lodging. The question is whether the change brought him into the position of receiving cash, subject to a compulsory application thereof to the cost of his board, etc. The distinction is, in any case, a fine one, but it will assist our correspondent in his argument if he can show that the cash payments to him fluctuated precisely with the amounts payable to his landlady—that is, that his principal received the advantage of any allowances for absences, etc., and bore the cost of fluctuating extras. If that was the case the argument that the payments by the principal were made to the landlady, "J. H. R." being merely the channel by which they reached her, is strengthened. If this cannot be proved, we fear that the decision would go against "J. H. R.," on the broad grounds that he lacks equity—having had the benefit accruing from the payments—and that, so far as the legal position is concerned, the cash actually passed into his possession.

Occasional Residence in this Country.

"F. F. M." refers to an answer given to "Cerons" in our issue of May 11th, and asks how is income from investments "charged by way of security in favour of the annuity," and also whether "a married person living for any length of time in England (in his wife's flat) is liable to income tax on any income he receives, whether it is paid in England or France."

*** The law dealing with liability arising out of occasional residence in this country is more than ordinarily complicated, and the decision to be arrived at depends usually on a general view of all the circumstances of a particular case, and we cannot undertake, therefore, to give an adequate reply in these columns. Briefly, however, income may be charged in the manner suggested by making it legally payable to trustees appointed to see that the annuity is duly paid, or by giving a lien on the securities themselves. In the circumstances mentioned the husband would become a British resident as soon as he came to the country, but might be regardable as an "occasional" resident if his return to the United Kingdom were not habitual. If he is an occasional resident only, he would not be liable on income accruing abroad from stocks, shares, or rents, but not coming to the country; if he is a resident, and not an occasional resident, he is liable, whether such income is received here or not.

LETTERS, NOTES, ETC.

The Use of the Tonsils.

Dr. F. G. Gardner (Oxford) writes: Several letters have appeared lately under the above heading; without expressing an opinion, may I be allowed to state a relevant fact? In Abyssinia it has been the custom from time out of mind, I believe, to remove the tonsils of all children in infancy. That the custom is without bad after-effects may be inferred from the fact that this people is always described as a "warlike, big, and well-grown race," and England, in sending out diplomatic missions there, has always paid deference to these qualities by choosing men who were also "big and well grown," in order to produce a good moral effect. [illegible] claim that as a nation they have never been [illegible] believe they came very near to subjection in [illegible]. Some time ago I attended a meeting at [illegible] ead by an experienced surgeon on removal of the tonsils, raising the question of the remote effects of total removal on the general health. In the discussion I described the Abyssinian custom as a gigantic "control" experiment spread over a whole people during a very long period; this appeared to be news to the meeting. I stated that I believed the tonsils were removed by means of the index finger-nail. Since then I have been able to obtain a little further information through the kindness of an English resident. I gather that removal is effected by means of a horsehair noose. If this gives way it is left in situ, and the child swallows it, along with the constricted organ when the latter separates. It may be that tonsillitis was once common in the country, and the custom arose out of a determination to eradicate it by removing its seat. I gather that two members of my informant's family have suffered out there from the ailment. I forget where I first read of this practice; I cannot find any reference to it in any of the books at my disposal. Perhaps some of your readers may be able to supplement these scanty notes, for they seem to have a distinct bearing on "the use of the tonsils."

Toxic Plants.

A correspondent recently informed us that a patient had brought him a leaf, suspecting that it was the cause of an attack of conjunctivitis from which he was suffering. The medical man also handled the leaf, and shortly afterwards he himself was attacked with conjunctivitis. He ascertained that the plant belonged to the *Humea* family. We have made inquiries at the Royal Botanic Gardens, Kew, and the Director has been good enough to give us the follo[illegible] He says that it is not unusual for cases of [illegible] contact with leaves of *Humea elegans*, whic[illegible] plant referred to by our correspondent. Instances of injury by this plant, however, appear to be rarer than injury by contact with *Rhus toxicodendron* or *Primula obconica*. A very large number of people appear to be immune from the trouble caused by handling some or all of these plants. All have at one time or another given rise to skin irritation among the gardeners at Kew, though not every year. On one occasion two men and two women employed at the Royal Botanic Gardens were suffering at the same time from dermatitis caused by *Humea elegans*. A correspondent in "Gardening Illustrated" of July 29th, 1911, wrote: "I dread handling this *Humea*, as contact with the leaves quickly brings on severe inflammation of the eyes, which takes some time to recover from. Strange to say, although I have handled *Primula obconica* in large quantities, and in all stages, and have frequently trimmed up *Rhus toxicodendron*, I have never found any inconvenience from either of these." Against this a member of the Kew staff is very susceptible to poisoning from *Rhus toxicodendron*, but has suffered no injury from handling *Primula obconica* or *Humea elegans*.

Cane Sugar in Therapeutics.

Dr. G. C. Pether (Barnet) writes: Hive bees are sometimes fed during winter on syrup. It is asserted by some expert beekeepers that if beet instead of cane sugar is used in its preparation diarrhœa may result, whereas cane sugar is safe in this respect. Perhaps the Ministry of Agriculture could supply information concerning the difference between the two sugars. It is possible that the traditional objection to beet sugar for bee-feeding no longer holds good, the offending substance having, as Dr. Cameron suggests, been removed.

Ovariotomy after Seventy.

Mr. F. Herbert Wallace, F.R.C.S.Ed. (Uppingham), writes: Mr. Williams's account of ovariotomy in a woman over 70 years of age (*British Medical Journal*, April 13th, p. 679) prompts me to describe a similar case. The patient, an active married woman, aged 76, who had had eight children, the last when she was 45, first noticed an abdominal swelling in the summer of 1927, which increased somewhat rapidly during the last six months. She had considerable pain in the left hypochondrium, and wished to get rid of the swelling, as it impeded her in her household duties. On examination a tense and slightly tender swelling, proved to be due to the presence of an ovarian cyst, was found to reach the costal margin. At the operation the cyst was first evacuated by means of a suction pump, and then removed. Convalescence was uninterrupted; the patient was encouraged to move about in bed from the first, and she left hospital, walking well, on the twenty-first day. The cyst showed fairly recent haemorrhage into its interior.

Unusual Symptoms of Prostatic Enlargement.

"Risca" writes: I remember seeing an old lady a few years ago who was suffering from cancer of the cervix uteri; I found her busily soaking her feet in hot water, which, she said, gave relief from the troublesome pain and tingling she had in the soles. After attending to her I was requested to see her brother in an adjoining room, and was surprised to find him similarly engaged. On inquiry it became evident he was an old prostatic case, and that the pain in his feet was due to that trouble. The reason why the cervix and prostate appear to cause pain in the feet seems to be that the innervation of both is, through the sympathetic, by the posterior divisions of the sacral plexus, while the larger anterior divisions from the same root levels supply sensory nerves to the foot—that is, the pain is referred.

Vacancies.

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 42, 43, 44, 45, 48, 49, and 50 of our advertisement [illegible] and advertisements as to partnerships, assistantships, [illegible] at pages 46 and 47.

[illegible] of vacant posts notified in the advertisement columns appears in the *Supplement* at page 203.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

491. The Semeiology of Dengue.

N. G. MACRIDI (*Rev. d'Hygiène*, April, 1929, p. 241) prefaces his report of an epidemic of dengue which occurred in Athens during 1927 and 1928 with some general considerations. In common with all epidemic diseases, dengue presents three periods of evolution: the onset, the stage of established disease, and the period of decline. The onset is sudden without prodromes, and the patient feels acutely ill. Fever, intense frontal headache, arthralgia, myalgia, renal pains, persistent insomnia, dryness of the mouth and pharynx, slight injection of the conjunctivae, and gastro-intestinal troubles are the usual primary symptoms. Bradysphygmia is an almost constant manifestation. Signs of respiratory involvement are absent, which differentiates the condition from influenza. The exanthem, which is often transitory and is sometimes preceded by an enanthem, usually appears on the third day on the neck, back, face, and inner surfaces of the arms. The fever drops on the appearance of the eruption, and then rises to its former level till the end of the attack, when it markedly falls, with profuse sweats. As the disease advances, haemorrhages (epistaxis, menorrhagia, haemoptysis, haematemesis, melaena, haematuria) appear. The gums become swollen and cyanotic; vomiting, sometimes bilious, is frequent, as is also complete anorexia and constipation. The teeth, especially carious ones, fall out, and alopecia is frequently present. Unilateral or bilateral parotitis occurs, and death often ensues from septicaemia following this complication. The respiratory apparatus is rarely involved, though slight laryngitis and pulmonary congestion may occur. Bradycardia is the rule, and the arterial pressure is usually lowered. Albuminuria is often considerable, with a notable diminution of urine. The urinary urea content is unaltered, but the blood urea is markedly increased. The changes in all the affected organs are due to muscle degeneration. The cardio-renal, associated with hepatic, insufficiency is a frequent cause of death from uraemia or eclampsia. The author adds that the virus of dengue is neurotropic, but the complications of the nervous system present no particular features. Convalescence is usually marked by melancholia and a diminution of the mental faculties for several days. Dengue is caused by a markedly virulent filterable virus conveyed by the female of a mosquito, the *Stegomyia fasciata* (*Culex fasciatus*).

492. Sterility in the Male.

L. W. MASON (*Amer. Journ. Obstet. and Gynecol.*, March, 1929, p. 376) discusses those cases of sterility in which no abnormality can be detected in the pelvis of the woman and motile sperms are present in the husband's semen. He urges careful handling in the preparation of slides to show undamaged sperms, and agrees with Moench that some sperms are double-headed while others are double-tailed. He shows that in the seminal fluid of husbands of sterile marriages abnormal sperms are more common, and a much greater variation exists in the length and diameter of the sperm head. Further observation reveals that certain sperms live longer than others in the same surrounding conditions; some specimens show no sperms alive three hours after ejaculation, while in others the sperms are alive at the end of sixty hours. It is concluded that normal sperms live for twenty-four hours under normal conditions of temperature, and that sperms reach the tube in three or four hours. Further investigation suggests that in those specimens where early death occurs the fault is inherent, and cannot be attributed to some hostile element in the prostatic, seminal, or even the vaginal secretions. The more protoplasm a sperm contains the longer it lives. Accordingly, in some cases the surviving sperms are megalosperms or abnormal in some other way; if the ovum is fertilized by such a one, an abnormal embryo is formed and abortion subsequently ensues. Mason suggests that this may be the cause of habitual abortion in some women. Kurzrok and Miller have obtained evidence that semen contains a ferment for the cervical mucus, and that in some seminal fluid this lysin is missing. There is also the possibility that the vaginal acidity may be the explanation of sperms reaching the external os. In some cases where husband and wife are normal the bar to conception is the plug of cervical mucus, and in these cases success has followed insemination about the twelfth day of the intermenstrual period, when, according to Frank, the female sex hormone is most plentiful in the urine.

493. The Etiology of Cardiospasm.

THOUGH the etiology of cardiospasm is obscure, H. W. SOPER and L. D. CASSIDY (*Amer. Journ. Med. Sci.*, March, 1929, p. 386) remark that a review of the literature reveals a remarkable unanimity among all observers that disturbances in the nervous mechanism of the cardia are responsible for the production of the spasm. The present authors concur in this view; they believe that the nervous mechanism controlling the cardia may be disturbed by a large variety of pathological conditions, and that the more closely cases are studied the more rarely will a diagnosis of idiopathic cardiospasm be made. A study of 60 cases of this condition was undertaken by the authors, in 29 of which some pathological conditions in other organs were found. Among the morbid processes associated with the spasm were gastric ulcer and carcinoma, duodenal ulcer, gall-stones, and exophthalmic goitre. The medical treatment of cardiospasm is considered to be useless, and surgery is rarely, if ever, indicated. The spasm yields readily to dilatation by either pneumatic or hydrostatic rubber-balloon dilators, the degree of dilatation depending upon the length of time the spasm has existed.

494. Sprue.

B. M. DEUTSCH (*Acta Universitatis Asiae Mediae*, 1929, Series IX, Medicina, Fasc. 3, p. 1) reports an outbreak of sprue among children in Turkestan. The clinical picture was characterized by an intestinal syndrome, haematological changes, and extreme emaciation with severe anaemia. The author states that in this infection meteorism and intestinal rumbling are pronounced; the tongue is cracked, the liver is atrophic, and the face is puffy. There is atrophy and fibrosis of the whole of the gastro-intestinal tract. The intestinal syndrome is characterized by diarrhoea, with profuse, frothy, acid, and putrid stools; under the microscope the presence of fatty acid and of yeast is easily discernible. The blood shows diminution of the red cells, leucopenia, lymphocytosis, and a normal or high haemoglobin index. In view of the hypocalcaemia and the acidosis Deutsch treated these patients with intravenous injections of calcium chloride, and obtained very good results.

Surgery.

495. Electrical Resection of Neoplasms.

E. N. KIME (*New England Journ. Med.*, March 14th, 1929, p. 532) records the end-results after treatment by "electro-surgery"—a term he prefers to surgical diathermy—in a series of 100 cases of malignant and premalignant neoplasms and infectious granulomata, all of which were operated upon more than a year previously. Though the time is too short to allow of definite conclusions, the results show that the method is of some value. In all the cases of recurrence except three a secondary electro-coagulation was employed with success. In many of the cases of failure, as well as of success, the patients had previously failed to respond to *x* rays or radium, or to both; Kime remarks that both these forms of treatment appear to be of value after rather than before an operation. In the author's procedure of "electro-surgery" a so-called cutting current of undamped or continuous oscillations produces in the tissues beneath the "acusector" a molecular disintegration with an electro-coagulative effect of the wound edges sufficient to seal the lymphatics and the blood vessels of moderate size. While insufficient penetration may allow a greater incidence of recurrence, this may be obviated by a judicious admixture of both the undamped and damped currents; as differentiated from electro-coagulation, this cutting current type of electro-surgery is not only more rapid, but allows of wound closure without drainage and with reasonable chance of primary healing. Kime stresses the point that though the method must be considered as competitive with scalpel surgery in the treatment of malignancy, it is safe only in the hands of an expert for use as an adjunct to, and not as a substitute for, ordinary surgical technique. In addition to sound surgical judgement and operative skill, its administration requires a practical knowledge of the principles underlying the application of the various types of damped and undamped oscillatory high-frequency currents for the electrothermic destruction of pathological tissues. The advantages claimed over ordinary surgery are: greater rapidity in operation owing to better haemostasis; its performance under local anaesthesia with

less chance of acidosis; a minimum of post-operative pain and shock; and, since the lymphatics are closed, less danger of septic absorption.

496. Epithelioma of the Suprarenal Cortex.

L. LANGERON, E. DECHERF, and DANES (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, April 1st, 1929, p. 436) report a case of suprarenal epithelioma in a young woman aged 20. The symptoms were amenorrhoea, virilism with hirsutism, hypertension, albuminuria and glycosuria, and considerable emaciation. The diagnosis was confirmed and the tumour localized radiologically, pneumo-peritoneum being also employed. The tumour was excised, but the patient died thirty-six hours later. In the absence of a post-mortem examination the actual cause of death was not ascertained, but it was ascribed to cardio-vascular reflexes caused by drawing on filaments of the sympathetic nerve during the operation rather than to suprarenal insufficiency. The relation between certain genital manifestations and tumours of the suprarenal cortex is well known, and the symptoms depend on the time of sexual life at which the tumours appear. When the tumour starts in intrauterine life suprarenal pseudo-hermaphroditism occurs. The external genitals are of masculine type, while the internal ones are really feminine. At puberty the secondary sexual characters are predominantly masculine, and the individual lives as a male. The suprarenal lesion is usually a simple hyperplasia or a benign adenoma, compatible with a normal survival. When the neoplasm occurs after birth it is usually malignant, and hirsutism with virilism develops. In girls, the most frequent subjects, an early development of the whole body, with an adult facies, obesity, hirsutism, and sometimes hypertrophy of the clitoris are noted. In boys the symptoms are obesity, very early puberty, pubic and facial hirsutism, and very marked muscular development, with hypersthenia. In young females amenorrhoea is the earliest sign, then appear obesity, glycosuria, hirsutism with virilism; a transient hypersthenia gives place to asthenia with emaciation, and death ensues from the malignancy or a pulmonary complication. At every age the tumour appears nine to eighteen months after the first symptoms, and rapidly grows until it fills the whole hypochondrium. Operation should always be performed in cases of these tumours, even if malignant, since the latter always terminate fatally if untreated. It is difficult to judge of the prognosis. Many writers have reported cure after operation, but the present authors are sceptical about this, especially in malignant cases.

497. Ligature of the Splenic Artery in Haemolytic Jaundice.

P. VALDONI (*Il Policlinico*, Sez. Chir., March 15th, 1929, p. 137) reports a case of haemolytic jaundice treated by ligature of the splenic artery. This is said to be the first case in which this treatment has been tried and the results were satisfactory; hitherto ligature of this artery has been chiefly tried in thrombopenia as an alternative to splenectomy, and good results have been obtained. Valdoni's patient, who was 22 years old, had suffered from birth with jaundice and progressive weakness; the liver and spleen were enlarged. The artery was ligatured under spinal anaesthesia; the jaundice slightly increased in the first week, but six weeks later the icteric tinge in the sclerotic had disappeared, there were no more attacks of pain in the spleen, the red corpuscles numbered 4,800,000, and the haemoglobin percentage was 50. Four months subsequently the general condition was excellent; there was no tiredness, and the weight had increased by 11 lb. There was a slight icteric tinge in the skin; the spleen was smaller, but was still enlarged, reaching the eighth intercostal space in the axilla. The result of the operation was not considered a complete success inasmuch as the jaundice and enlargement of the spleen still continued, but the patient's general condition was much improved. Valdoni describes also certain experiments made by him to determine the anastomoses which follow ligature of the splenic artery, and records the changes found in the blood after this operation.

498. Caecal Volvulus without Obstruction.

M. MAKKAS (*Zentralbl. f. Chir.*, March 30th, 1929, p. 786) has found records of 155 cases of this condition; in many of these the small intestine was involved also, but he reports a case in which this did not occur. A married woman, aged 33, had had one living child and one miscarriage. She was again three months pregnant, and was very exhausted by hyperemesis. One evening she had an attack of severe paroxysmal pain in the appendix region, the paroxysms lasting for two or three minutes; there was no abdominal rigidity nor borborygmi, but slight tenderness was noticed on pressure over the appendix region. The attacks persisted throughout the night. A diagnosis of atypical appendicitis was made and laparotomy was performed next day. The caecum lay in Douglas's pouch, behind the pregnant uterus. It was rotated clockwise upon its axis through 180 degrees. As the ileo-caecal valve was not involved there was no obstruction, but the intestinal wall was thickened and oedematous. Two days later vomiting returned, with severe acidosis, necessitating induction of abortion; the patient made a good recovery. Makkas states that among 42 cases of caecal volvulus in women, 10 of these patients were pregnant. He adds that the possibility of caecal volvulus simulating appendicitis should not be forgotten in cases in which the diagnosis is obscure.

Therapeutics.

499. Gold Salts in Pulmonary Tuberculosis.

As the result of four years' experience of using sanocrysin in the treatment of pulmonary tuberculosis, L. BERNARD and C. MAYER (*Bull. de l'Acad. de Méd.*, March 19th, 1929, p. 403) have come to the conclusion that, though the preparation is not a specific, it does exert a favourable action in this disease, particularly in acute types and in acute and progressing recrudescences. Of 142 acute cases, 62 (43 per cent.) showed improvement after gold treatment—a marked contrast to the less than 5 per cent. of spontaneous amelioration in cases from hospital records. The benefits produced by the gold salt were a fall of the temperature, a regaining of weight, improvement in the general condition, a diminution of the functional symptoms, and a slight amelioration of the physical signs. X-ray pictures showed changes; most frequently a sclerosis was noted, the shadows becoming more marked with a diminution in the extent of the lesions. This treatment was also followed in twenty-nine afebrile cases by excellent results, the improvement lasting from a few months to two or three years. Minor reactions which may be caused by the drug are a small rise in temperature, albuminuria, cutaneous troubles, and digestive disturbances, such as vomiting, abdominal pains, and slight diarrhoea. The treatment is contraindicated in cases of diarrhoea or albuminuria. In febrile cases 0.25 gram is injected during the first week, and 0.5 gram during the second. According to the general condition of the patient this dose is either continued or increased to 0.75 gram. The total amount injected varies from 5 to 7.5 grams. In afebrile cases 0.25 gram is given each week, and this dose should not be increased. Smaller doses should be administered on the resumption of treatment after temporary interruptions owing to unfavourable reactions. E. JEANSELME (*ibid.*, p. 411) reports good results from this drug in erythematous lupus. Starting with an initial dose of 0.1 gram, he increases it to 0.25 gram weekly; this dose is continued until cure results or signs of intolerance appear.

500. Liver Extract in Hypertension.

T. L. ALTHAUSEN, W. J. KERR, and T. C. BURNETT (*Amer. Journ. Med. Sci.*, March, 1929, p. 398) state that continued elevation of blood pressure definitely shortens life, and that the causes of death in hypertension are cardiac, including insufficiency, angina, or pulmonary oedema (46.7 per cent.), uraemic (22.6 per cent.), or cerebral (14.6 per cent.). A study of its effect on the kidneys, heart, and brain shows that the gradual reduction of pressure in hypertension cases is justified and reasonably safe. Since the work of Heidenhein in 1891 it has been known that many organic extracts, including that of the liver, were capable of lowering blood pressure. The active ingredient of liver extract responsible for this depressor effect is unknown, as is its mechanism; but it has been demonstrated that this extract acts independently of the vagus nerve and directly affects the blood vessels, especially those in the splanchnic area. As the result of a study of a series of cases of hypertension, the authors found that liver extract causes a considerable lowering of blood pressure, and affords complete or marked symptomatic relief in the majority of cases. The plan adopted was to inject 0.5 c.cm. three times a week, then 1 c.cm., gradually increasing the dose until at the end of two weeks 5 c.cm. are reached. The final dosage and frequency of administration depends entirely on the individual response. The extract was always injected intramuscularly into the arm and followed by massage of the part. No other treatment capable of influencing the blood pressure was given. After a single injection there was a fall in diastolic and systolic pressure lasting from two hours to a week; there was also in favourable cases a delayed but more lasting reduction following repeated injections. In eight cases the effect lasted from one to two and a half months after the injections were discontinued, and no acquired tolerance to the drug was noted. Age, sex, and the degree of hypertension proved to be immaterial in determining the success

of the treatment, and the presence or extent of cardiac damage was also of no significance. Arterio-sclerosis and its degree were of great importance in predicting the outcome; marked arterio-sclerosis influenced this unfavourably. The urinary findings had no certain bearing on the prognosis. The size of the dose did not affect the success or failure of treatment. No undesirable symptoms referable to the reduction of pressure were observed. Hypertension cases of under two years' duration, without marked arterio-sclerosis, and showing no fixation of specific gravity in the Mosenthal test, offer the best prognosis.

501. Treatment of Tuberculosis.

A. JOUSSET (*Presse Méd.*, March 16th, 1929, p. 353) discusses the treatment of tuberculosis by a bacillary emulsion termed "allergin," and describes in detail his method of preparing it. Allergin is described as an unstable and thermolabile colloid. In the normal healthy animal it excites an inflammatory reaction; it is said to be a good sensitizer, causes being l focal being excellent. Jousset considers that allergin is suitable for all cases of tuberculosis (medical, surgical, and dermatological) unless the patient is cachectic. Its subcutaneous injection is followed by a general reaction eight to ten hours subsequently, or later still in old-standing fibrotic cases; there is a corresponding elevation of temperature. According to the severity of this reaction the therapeutic dosage is regulated. A focal reaction occurs in which the cough, aphonia, and erythema are increased. The local reaction usually disappears in a few days. If, however, the patient is already allergic a necrosis may be produced. The author discusses the amount and frequency of the dosage.

502. Intraperitoneal Blood Transfusion.

W. C. C. COLE and J. C. MONTGOMERY (*Amer. Journ. Dis. Child.*, March, 1929, p. 497) submit a report of 237 intraperitoneal transfusions in 117 children ranging in age from 1 day to 4½ years. Citrated blood from a suitable donor was introduced by gravity, seldom more than five minutes being required to give 4 ounces. That was the usual amount for children under 3 years of age, the therapeutic effect from repeated small transfusions being as good as or better than from a single large one. No untoward effect is reported and reactions are minimized. The authors claim that this method has all the advantages of intravenous transfusion, except the replacement of blood volume. It finds its greatest usefulness in the treatment for secondary anaemia and in the combating of infection.

Anaesthetics.

503. Anaesthesia Produced by Barbituric Acid Compounds.

LATELY some authorities have reported great success in the anaesthesia obtained by the intravenous injection of some of the barbituric acid derivatives, especially with a combination of two hypnotics, di-ethyl barbiturate and allyl-isopropyl barbiturate. The drug is put up in 2 c.cm. ampoules containing 0.1 gram of each constituent in the form of a diethylamine salt, the solution being rendered stable by the addition of small amounts of alcohol and glycerin. J. H. FJELDE (*Anesth. and Analges.*, January–February, 1929, p. 40) discusses the use of this drug, known as somnifen, in obstetrics and surgery. Somnifen seems to act directly on the sleep centre, and is carried by the red cells, for which it has a special affinity. It is fixed with predominance in the nerve centres, is only very slightly retained by the liver, kidneys, and other tissues, and is eliminated unchanged by the kidneys. The drug in non-toxic doses has only a slight effect on the respiratory and cardiac centres; the blood pressure shows very little alteration; and the hepatic and renal functions are undisturbed. In obstetrical cases the drug is withheld until the contractions become painful, when it may be administered orally or intravenously. The average intravenous dose is 6 c.cm. and the anaesthesia lasts six hours; in large women the initial dose should be 8 c.cm. Oral administration is also very effective, and the action, though more gradual, is still comparatively rapid. The initial oral dose is 6 c.cm., and a further 2 to 4 c.cm. are given as required to prolong or deepen the effect. In surgery smaller doses, given only intravenously, are used. The usual surgical dose is 2 to 4 c.cm., depending on the size and susceptibility of the patient. Fjelde uses somnifen in intra-abdominal work, except in gastro-enterostomies or in enterostomies. It is especially valuable in goitre surgery; it has been used with excellent results in psychiatry and in cases, such as pneumonia, where rest is desired. The following are the advantages of somnifen according to Fjelde. In obstetrics it is without equal in the first and second stages of labour; during delivery additional anaesthesia must be used. Reflexes are maintained and labour pains are not lessened, nor is the amount of blood loss affected. The drug can be given in any stage of labour and maintained as long as may be necessary. It can be used in toxic conditions, has no late sequels, and only a very slight effect on the infant. In surgery, somnifen greatly reduces the use of ether, and it may be used with any form of inhalation anaesthesia. The drug increases the margin of safety by lessening the required amount of any other anaesthetic; it reduces post-operative distress and complications, and also the post-operative requirements for morphine.

504. Theory of Gas Anaesthesia.

P. TRENDELENBURG (*Narkose und Anaesthesie*, January 15th, 1929, p. 1) states that such narcotic gases as nitrous oxide, acetylene, ethylene, and propylene are theoretically superior to other anaesthetics because it is possible to avoid with certainty any overdose. The only essential is that an apparatus is used which ensures an exact dosage. The amount of the gas absorbed by the blood has been shown by Henry to depend directly on the tension of the narcotic gas contained in the anaesthetic mixture. How quickly the saturation of the blood necessary for narcosis is reached depends on the narcotic used. Gremels and Krayer, in experiments on themselves, found that the final nitrogen concentration in the alveolar mixture was reached in a few minutes. A narcotic gas, therefore, which has the physical quality of nitrogen only enters the blood in very small quantities and causes a deep narcosis in a few minutes. Narcotics such as propylene and ethylene, with the smallest solubility efficient, are nearest the ideal character of nitrogen, and at the same time exercise a high narcotic effect. The balance between the concentration in the blood necessary for the narcosis and the tension of the inspired air can be reached more quickly by the addition of carbonic acid to the air to be inspired.

505. Spinal Anaesthesia in Strangulated Hernia.

F. D. ALSINA (*Rev. med. de Barcelona*, February, 1929, p. 110) records his observations on thirty cases of strangulated inguinal and femoral hernia in patients aged from 20 to 78 operated on under spinal anaesthesia with only one death. The author remarks that the advantages of spinal over general anaesthesia are very definite. In the first place, it is much less toxic, and, secondly, it re-establishes instead of inhibiting peristalsis. Local anaesthesia has no action on the intestinal motility. The method used by Alsina is based on experiments which he performed on dogs. He found that spinal anaesthesia caused an almost immediate increase of intestinal peristalsis which lasted for a considerable time.

Obstetrics and Gynaecology.

506. Early Diagnosis and Prophylaxis of Cervical Carcinoma.

F. A. PEMBERTON and G. VAN S. SMITH (*Amer. Journ. Obstet. and Gynecol.*, February, 1929, p. 165) remark that long experience in the microscopical study of cervical tissue is necessary if one is to decide in a given instance whether cancer of the cervix is present or not. It is essential that the changes which occur in the cervical epithelium during the early active and later healing processes of cervicitis be clearly kept in mind. In the early stages of cervicitis ("erosion") the surface of the cervix is denuded, except in certain areas, of its squamous epithelium. Later, when a "pseudo-erosion" is formed, cylindrical epithelium grows down from the cervical canal and partially covers the bare area. Still later, as the inflammation subsides, the cylindrical epithelium loses its vitality and the squamous epithelium, proliferating underneath it, gradually forces it off. Occasionally the squamous epithelium plugs the duct of a gland, and the microscopical picture in cross-section is apt erroneously to suggest carcinoma. During the later stage of healing by regeneration of squamous epithelium gross areas of leucoplakia may be seen; hypertrophy may proceed to polyp formation; the squamous cells may show irregularity, especially in the transitional layers; occasional mitoses are found; and prolongation into the stroma and formation of epithelial pearls may occasionally occur. If these are tokens of a precancerous condition, the authors remark, then every lacerated or injected cervix is in a precancerous state. Pathologists differ as to when the boundary between benign and

malignant conditions is reached, but Pemberton and Smith feel justified in calling the condition one of early carcinoma when the squamous epithelium shows a basal layer which is undifferentiated from the transitional cells, consists of irregularly arranged cells with mitotic figures, has no basement membrane, and sends into the stroma prolongations surrounded by inflammatory infiltration. It is stated that of 669 cases of cancer of the cervix at the Boston Free Hospital 2.39 per cent. were diagnosed by microscopic examination. It is suggested that treatment of diseased cervices may be an important prophylactic measure as regards the incidence of carcinoma; none of 1,400 patients whose cervices were cauterized, none of 740 whose cervices were amputated, and only 5 out of nearly 4,000 patients in whom trachelorrhaphy was performed are known to have developed carcinoma. Similarly, of 669 patients with cervical carcinoma, none had had amputation or cauterization and only 12 had had trachelorrhaphy.

507. Diagnosis of Early Uterine Cancer.

E. NOVAK (*Journ. Amer. Med. Assoc.*, March 6th, 1929, p. 869) asserts that the most important single factor in cancer mortality is the duration of the disease, and that biopsy and diagnostic curetting, associated with competent pathological examination, are the procedures on which dependence must be placed for the recognition of early cases of uterine cancer. Any risk in these measures is more than offset by the valuable information they yield. Simple pelvic examination is not sufficient in these cases; biopsy should be employed in suspicious cervical lesions, and curetting in bleeding from the uterus of uncertain origin. Cervical lesions, such as erosions, endocervicitis, polypi, and ectropion associated with lacerations, are often difficult to differentiate from cancer. On the other hand, a cervical cancer in its earliest stages may appear as only a small, vascular, granular, sometimes indurated area on one or other cervical lip, and, when located at the external os, may differ little in appearance from a simple erosion. In such cases a conservative corrective operation should not be performed unless cancer is eliminated. Selected pieces of tissue should be removed by the knife rather than the cautery, and to avoid disseminating the cancer the edges of the small wound should be seared with the cautery. The most frequent single cause of uterine bleeding is incomplete abortion, others being myomata, hyperplasia of the endometrium, and cancer itself. Even if the uterus is the seat of myomata it must not be assumed that these are the cause of the bleeding, since adeno-carcinoma is of en associated with these tumours. Endometrial hyperplasia is a common condition which has been much overlooked until recently, and can only be differentiated from cancer by diagnostic curetting. Cancer of the body of the uterus is much less common and offers a better prognosis than the cervical type. Though usually occurring in women past the age of 50, in about 25 per cent. of cases it is found in those of the menstruating age. Bleeding in women past the menopause is suggestive of cancer. Ovarian tumours, and especially a certain type of cancer, are sometimes the cause of post-menopausal bleeding. Ovarian cancer of the granulosa type should always be suspected in haemorrhage after the menopause with a hyperplastic endometrium.

508. Biology of Chorion Epithelioma.

E. FELS (*Zentralbl. f. Gynäk.*, February 23rd, 1929, p. 466) found that small amounts of the serum or urine of a patient suffering from advanced chorion epithelioma of the uterus (twelve months after expulsion of a hydatidiform mole) contained in abundance the hormone of the anterior lobe of the pituitary, as demonstrated by the Zondek-Aschheim method of injection into infantile mice; much larger amounts of the urine failed to reveal, by the Allen-Doisy method of injection into castrated mice, the presence of ovarian hormone. Confirmation is given also of Aschheim's finding that the intrauterine fluid in hydatidiform mole is rich in the anterior pituitary hormone. Biologically these results, taken together with those of Zondek and Aschheim and of others, point to a similarity, as regards hyperproduction of anterior pituitary hormone, of (1) early pregnancy, (2) hydatidiform mole, (3) chorion epithelioma. Since the same hormone has been shown to be contained in the placenta, it may be inferred that chorion epithelioma has biological as well as histological similarities to placental tissue. Clinically the combination of hydatidiform mole or chorion epithelioma with the formation of large lutein cysts in the ovaries is not uncommon; such cyst formation is similar in many respects to the changes discovered by Zondek and Aschheim in the ovaries of infantile mice injected with anterior pituitary hormone, and it is possible, therefore, that the lutein cyst formation is due to excessive production of that hormone.

980 D

Pathology.

509. Oxygen Dissociation of the Blood in Graves's Disease.

H. ZONDEK (*Deut. med. Woch.*, March 1st, 1929, p. 345) considers that many forms of Graves's disease originate in abnormal metabolism at the periphery—that is, in the muscles. He has attempted to ascertain what part the secretion of the thyroid gland plays in the increased oxidation in the tissues, indicated by the raised metabolic rate found in all but the mildest cases during rest and exercise. Barcroft has shown that oxygen is normally more readily dissociated from the blood during and after work than before. Bansi, in collaboration with Zondek, found that the oxygen dissociation curve in Graves's disease is much lower than in normal individuals; the resting curve for subjects of this disease, in fact, resembles that found during muscular work in normal individuals—the oxygen appearing to be less firmly bound in the oxyhaemoglobin molecule in this condition than normally. On the other hand, in hypothyroid conditions, such as are found in some forms of obesity and in myxoedema, the resting curve shows that the oxygen dissociation capacity of the blood is diminished. Though many chemical reactions can be accelerated *in vitro* by the addition of ferments, it has never been possible to demonstrate that the thyroid hormone can act thus as an oxidizing catalyst. Zondek therefore considers it probable that thyroidin does not directly increase oxidation, but provides the conditions for increased oxidation. In the early stages of Graves's disease characterized by sweating and tachycardia, when the thyroid gland may not be appreciably enlarged, the oxygen dissociation curve of the blood is normal; only in the more severe cases is the dissociation curve altered. In the mildest cases, however, the output of the heart is increased during muscular work and also during rest. It is suggested that the oxygen tension in the tissues is abnormally high in early Graves's disease; that the blood therefore parts with its oxygen less readily; and that in order to remedy this the heart is stimulated to increased output before the increased thyroid activity facilitates the dissociation of oxyhaemoglobin.

510. Relation between Primary Infection and Clinical Manifestations in Tuberculosis.

O. SCHEEL (*Ann. Inst. Pasteur*, March, 1929, p. 394) has performed the cutaneous tuberculin test on 1,503 subjects in the rural district of Trysil in Norway. The curve depicting the percentage of positive reactors at different age groups was very like that obtained during a similar investigation of the inhabitants of Oslo, but was at a lower level. Thus in Oslo about 70 per cent. of the subjects in the 16 to 20 age group reacted positively, whereas in Trysil only 50 per cent. reacted. A very close relationship was found between the percentage increase in positive reactors and the reported number of cases of pleurisy. The maximum number of cases of pleurisy occurred in adolescents between the ages of 16 and 20, the maximum number of cases of pulmonary tuberculosis in subjects from 21 to 25 years old. The percentage of positive reactors in the 11 to 15 age group was about 27 per cent., in the 16 to 20 age group about 50 per cent., and in the 21 to 25 age group about 62 per cent. The author considers that the maximum number of cases of pleurisy and pulmonary tuberculosis occur at the time when there is a rapid increase in the percentage of positive reactors. In Oslo, Holmbeck found that among the infirmary probationer nurses 31 per cent. of those reacting negatively to tuberculin developed tuberculosis, while only 1.4 per cent. of those reacting positively did so. Taking these facts together the author concludes that in the great majority of cases pleurisy and pulmonary tuberculosis are manifestations of a recent primary infection.

511. A Rat Syndrome Resembling Pink Disease in Man.

AFTER the war cases of pink disease, or erythroedema polyneuritis, were described in this country, and the disease is now well recognized; the micropathology has been closely studied, but no light has been thrown on the etiology up to the present. M. FINDLAY and RUBY STERN (*Arch. Dis. in Childhood*, February, 1929, p. 1) describe the experimental production of a disease in young rats with the same pathological lesions by a vitamin-deficient diet. If dried egg white is the sole source of protein for a young rat a syndrome develops showing muscular weakness, redness of the animal's paws and face, and peripheral sensory neuritis. By feeding with raw potatoes, yeast, and raw albumin or yolk of egg, such a syndrome is prevented. The authors suggest that in the case of breast-fed infants suffering from pink disease a deficiency in the diet of the mother may be present, since they found that if the mother rat was on a vitamin-deficient diet her young developed pink disease.

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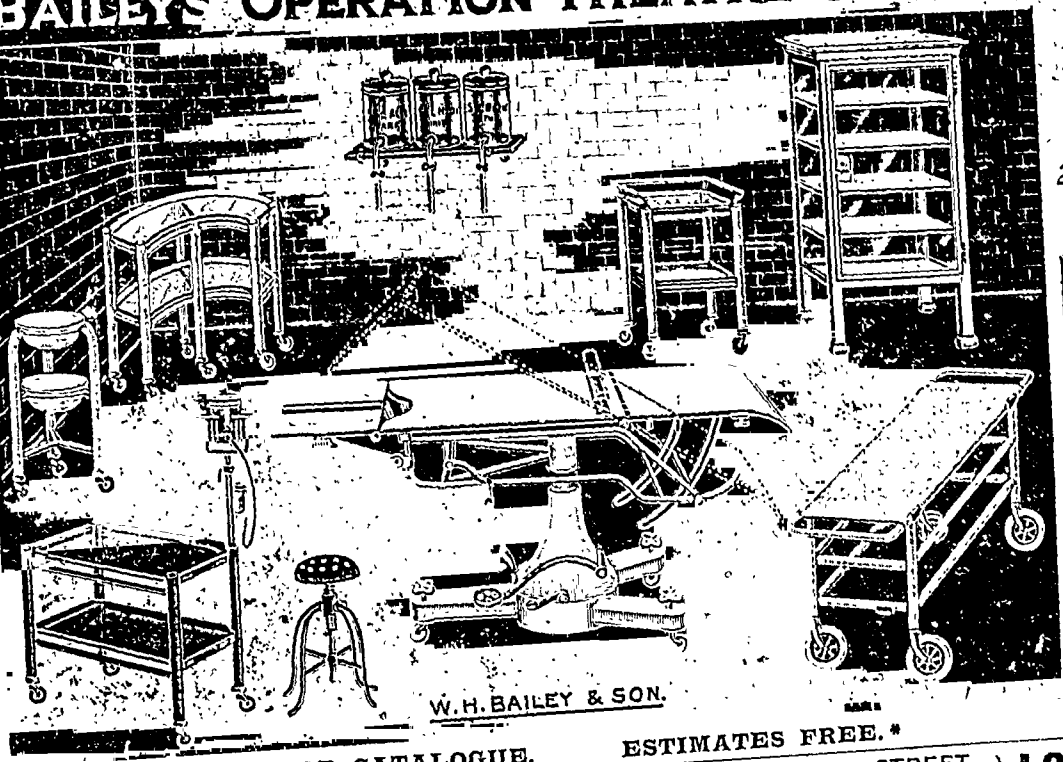

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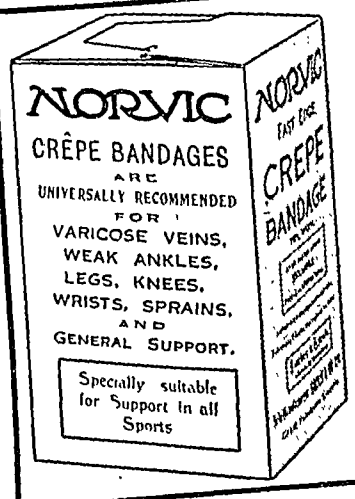

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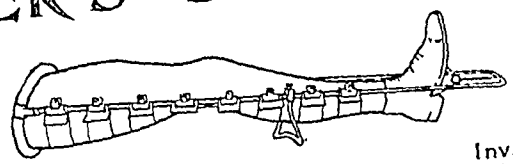

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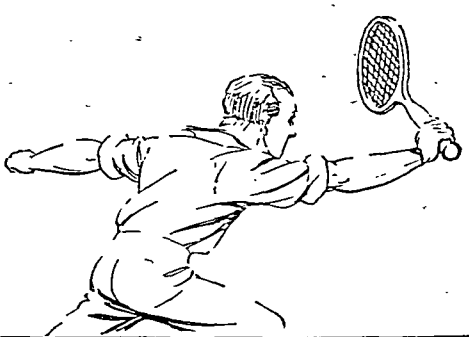

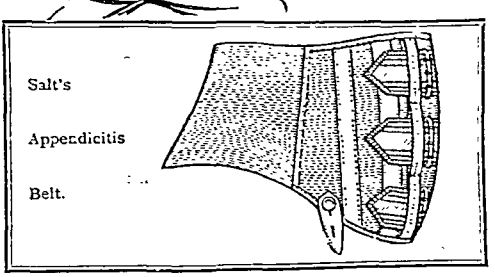

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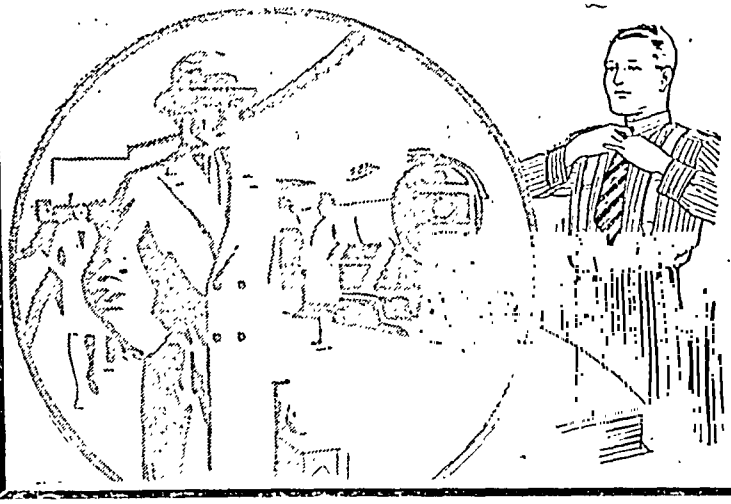

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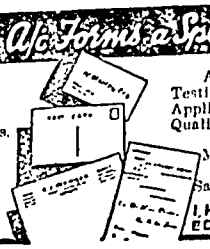

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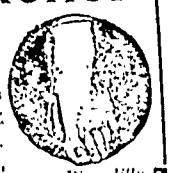

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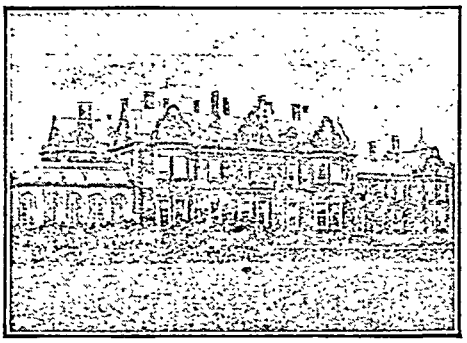

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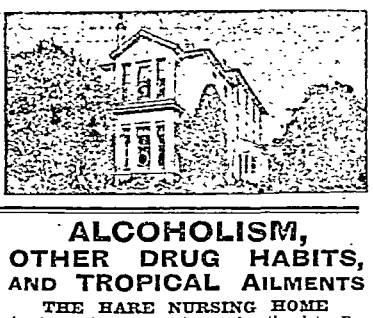

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Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

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For terms and further particulars apply to the Medical Superintendent (Telephone: No 56 Northampton), who can be seen in London by appointment.

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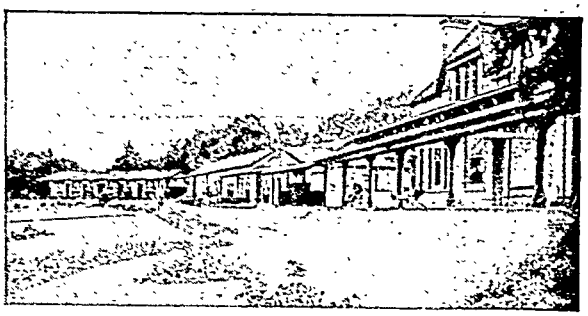

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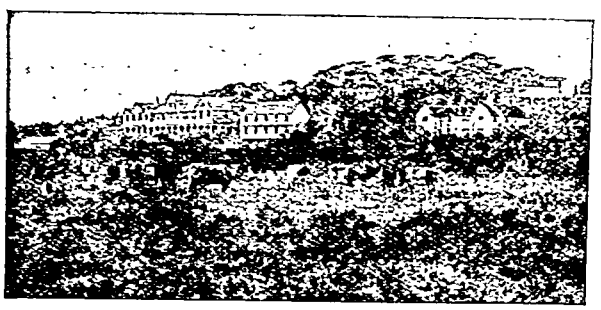

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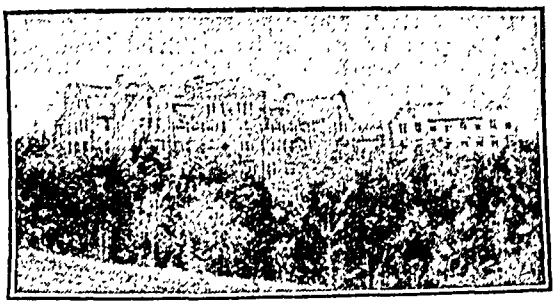

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F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam. will commence shortly. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

Medical and Dental Students.

Special Classes for [illegible] and Dental Exams., Ma[illegible] . . . . . Chemistry, Phys[illegible] . . . . . MANCHESTER 327, Oxford Road, Manchester.

HIGHER MEDICAL QUALIFICATIONS

Are you desirous of obtaining one of the special higher qualifications?

Diploma in Psychological Medicine.
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WE SPECIALISE IN POST-GRADUATE COACHING FOR ALL EXAMINATIONS.

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AN IDEAL PREPARATORY SCHOOL FOR BOYS.

KINGWELL HALL, Timsbury, near BATH. Grounds of 240 acres, between Bath and Wells; 600 ft. above sea; the air bracing, very beneficial to delicate boys. Games (cricket, football, hockey, tennis, golf) and physical training. A fine open-air swimming bath. Particular attention given to health, food, and rest. Four Public School Scholarships in last two years. Prospectus on application. — Headmaster: SYDNEY L. ALLAN, M.A.(Oxon.)

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 7th, and for the Diploma in Tropical Hygiene on January 12th and April 26th. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

(University of London.)

Bacteriology and Immunology.

One year's Course of Study for the Diploma in Bacteriology, beginning in October.

Epidemiology and Vital Statistics.

Special Courses of not less than three months.

Tropical Medicine and Hygiene.

Two Courses yearly, each of 20 weeks, commencing on September 30th, 1929, and February 3rd, 1930.

Diploma in Public Health.

A Course of Study, covering a period of twelve calendar months, beginning in October, 1929

Enquiries for syllabuses, etc., should be addressed to the Secretary, Endsleigh Gardens, London, W.C.1.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.

PRIVATE WARDS for paying patients.

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TAUNTON.

A PUBLIC SCHOOL FOR BOYS.

Boys are regularly prepared for the First M.B. Examination, University Scholarships in Chemistry, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology.

New Science Buildings, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1928. Prospectus from Head Master.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to **The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5,** for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to the Secretary.

National Hospital for Diseases

OF THE HEART,
Westmoreland Street, W.1.

The ST. CYRES LECTURE for the year 1929 will be delivered at the above Hospital on THURSDAY, JUNE 6th, at 5 p.m., by R. O. MOON, Esq., M.A., M.D., F.R.C.P. Subject: *Diseases of the* [illegible] *on* [illegible] of the Medical Profession [illegible] ited.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION.

The following arrangements have been made for POST-GRADUATE TEACHING in Glasgow during the Summer of 1929.

A. A **General Medical and Surgical Course** from August 19th to September 13th. Fee £10 10s. or £6 6s. for first or second fortnight.

B. **Clinical Assistantships** in General and Special Hospitals.

Syllabuses and any other information may be had on application to the SECRETARY, POST-GRADUATE MEDICAL ASSOCIATION, THE UNIVERSITY, GLASGOW.

POST-GRADUATE COURSE IN GENITO-URINARY DISEASES

at ST. PAUL'S HOSPITAL, ENDELL STREET, W.C.2.

LECTURER.	SUBJECT.	On the following dates at 4.30 p.m.
Dr. David Thomson.	Common Infection of the Genito-Urinary Tracts.	Thursday, June 6th.
Mr. H. P. Winsbury White.	The Clinical Aspect of Chronic Infection of the Urinary Tract.	Thursday, June 13th.
Mr. R. H. Jocelyn Swan.	The Examination of a Urological Patient.	Wednesday, June 19th.
Mr. W. K. Irwin.	The Diagnosis and Treatment of some important Bladder Conditions.	Thursday, June 27th.
Sir Thomas Carey Evans.	Stone in the Bladder, with special reference to Treatment by Litholapaxy.	Thursday, July 4th.
Mr. Claude Mills.	Some interesting Urological Cases, with demonstration of pathological specimens and radiograms of same.	Thursday, July 11th.
Mr. Frank Kidd.	The Overflow Bladder.	Thursday, July 18th.
Mr. Kenneth Walker.	The Enlarged Prostate.	Thursday, July 25th.

No fee will be charged for attendance at the lectures, etc. Registered Medical Practitioners and Students are invited to attend any branch of the work in which they are interested. Tea will be served at 4 p.m.

THE FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION,

1, WIMPOLE STREET, LONDON, W.1. Telephone: Mayfair 2233.

POST-GRADUATE SPECIAL COURSES have been arranged for June and July as follows: Diseases of the Chest, Children, Proctology, and Medicine; Surgery and the Specialities; Cardiology and Dermatology. The Fellowship of Medicine provides a General Course in connection with its affiliated Hospitals. Detailed syllabuses and specimen copy of "Journal" may be obtained from the Secretary.

INSTITUTE OF PATHOLOGY AND RESEARCH

ST. MARY'S HOSPITAL, LONDON, W.2

A Course of Lectures on PATHOLOGICAL RESEARCH IN ITS RELATION TO MEDICINE has been arranged for the SUMMER SESSION. These Lectures will be given in the Lecture Room of the Bacteriological Department of the Institute on Thursday Afternoons at 5 p.m. as under:

	SUBJECT.
MAY 30th. Prof. F. W. TWORT, F.R.S. (Superintendent, The Brown Institution) (University of London).	"The Position of Ultra-microscopic Viruses in the Living World."
JUNE 6th. Prof. WILLIAM BULLOCH, M.D., F.R.S. (Prof. of Bacteriology, London Hospital).	"The History of Bacteriology."
JUNE 13th. Prof. J. A. GUNN, M.D. (Prof. of Pharmacology, University of Oxford).	"Variations in Susceptibility to Drugs and Toxins."

These Lectures are open to all Members of the Medical Profession and to all Students in Medical Schools without fee.

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(Camb., Edin., Glasg., Durh., &c.)
SKILLED COACHING, GUIDANCE, and ADVICE.
From Specialist Tutors, in conformity with th... ...us Universities
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19, Welbeck
Street, London, W.1.

STAMMERING, SPEECH DEFECTS.
BEHNKE METHOD. Estab. 1832. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

STAMMERING, CLEFT PALATE SPEECH, LISPING, 39 of Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

THE NORTH-EAST LONDON POST-GRADUATE COLLEGE.
The Prince of Wales's General Hospital, Tottenham, N.15, and Associated Hospitals.
An INTENSIVE REFRESHER COURSE will be held from JUNE 24th to JULY 6th. Lectures, demonstrations, and cliniques in the various general and special departments.
The number is limited to 25.
Enquiries and applications should be sent to the Dean at the Hospital, or to the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

NORTH-EAST LONDON POST-GRADUATE COLLEGE,
PRINCE OF WALES'S GENERAL HOSPITAL, N.15.
The Practice of the Hospital is limited to Medical Practitioners. Particulars from T. H. C. BENIANS, F.R.C.S., Dean

A REALLY GOOD SCHOOL FOR GIRLS.
REASONABLE INCLUSIVE FEES.
MARLBOROUGH COLLEGE,
Tytherington Hall, nr. Macclesfield.
Sound Education. Upper and Lower Schools. Preparation, when desired, for all University Entrance Examinations. Particulars from Sec.
Special Terms to Medical Men.

F.R.C.S.(Edin.).
Prep. Classes and Museum Demons. for next Fellowship Exam will commence shortly. Correspondence course for Sept. and later exams. should begin now. Partics., Mr. H. C. ORRIN, F.R.C.S., at Surgeons' Hall, Edinburgh.

UNIVERSITY OF CAMBRIDGE

Diplomas in (*a*) PUBLIC HEALTH, (*b*) HYGIENE (for foreign graduates), (*c*) TROPICAL MEDICINE AND HYGIENE.

Courses of Instruction in the Subjects of the Examinations commence October 9th, 1929. Full particulars to be obtained from Mr. J. E. PURVIS, Public Health Chemical Laboratory, Medical School, Cambridge.

University of London.

A Course of Two Lectures, with lantern illustrations, on "*T* ... *entia*," will be given (in ... E. D. WIERSMA (Professo... ...n the University of Groningen) at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1) on MAY 29th and 30th, at 5.30 p.m. At the First Lecture the Chair will be taken by Prof. C. E. SPEARMAN, LL.D., Ph.D., F.R.S. (Professor of Psychology in the University).

A Course of Three Lectures on "*Experimental Embryology*" will be given (in English) by Monsieur le Professeur A. BRACHET (Rector of the University of Brussels and Professor of Anatomy) at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on TUESDAY, MAY 28th, WEDNESDAY, MAY 29th, and FRIDAY, MAY 31st, at 5 p.m. At the First Lecture the Chair will be taken by Professor J. P. HILL, F.R.S. (Professor of Embryology in the University).

Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

Workmen's Compensation Act, 1925.

MEDICAL BOARD FOR SILICOSIS.

It has been arranged between the Home Office and the industries concerned that the periodic and other medical examinations required under the Refractories Industries (Silicosis) Scheme, 1925, and the Sandstone Industry (Silicosis) Scheme, 1929, shall be carried out by a joint Medical Board, the members of which will be allotted to certain centres, and which will have its central office at Sheffield. The Home Secretary proposes to nominate at once, in addition to the two ... Medical Officers already working u... Scheme, TWO ... Members of the MEDICAL ... Board.

The duties of the Medical Board, which are fully explained in the First Report of the Departmental Committee on Compensation for Silicosis, are to visit the different areas in which the Refractories and Sandstone Industries are carried on and to carry out jointly the periodic and other examinations and grant the necessary certificates under the two Schemes.

The scale of salary of the additional officers will be £750, rising by £25 a year to £900. The appointments will be for a definite term—not less than three years—and will be capable of renewal, but will be subject to termination at the discretion of the Secretary of State. Travelling expenses and subsistence allowances will be paid.

The salaries and expenses of the Medical Board are payable by the Refractories and Sandstone Industries Compensation Funds, but the Board work under Instructions issued by the Secretary of State and are directly responsible to him.

Further particulars and forms of application may be obtained from the Industrial Division, Home Office, Whitehall, S.W.1.

Applications should be made not later than May 31st.

Home Office,
Whitehall, S.W.1. May 7th, 1929.

Cardiff Royal Infirmary.

Applications are invited for the following resident appointments, falling vacant on June 20th:

(1) HOUSE SURGEON;
(2) AURAL HOUSE SURGEON;
(3) CASUALTY SURGICAL OFFICER.

The appointments are for six months Salary at the rate of £50 per annum, with board and laundry. Applications, with copies of recent testimonials, should be submitted not later than June 3rd to the undersigned, from whom forms of application may be obtained.

R. ARMSTRONG,
May 20th, 1929. Medical Supt.

Liverpool Hahnemann Hospital,

HOPE STREET.

Applications are invited for the post of STIPENDIARY MEDICAL OFFICER to the above Hospital, which falls vacant on May 30th.

Post is non-resident, tenable for six months, renewable. Mornings only. Some visiting.

Salary at the rate of £125 per annum.

Candidates must be willing to study and apply Homœopathy.

Present incumbent is an applicant.

Apply, stating age, sex, experience, and enclosing copies of testimonials, to the Registrar.

Western Australia.

Applications are invited for the position of MEDICAL OFFICER OF HEALTH for Western Australia. The salary, which will commence from the date of taking up duty in Western Australia, ranges from £756 to £960.

Applicants must hold a Diploma in Public Health. They should also state age, whether married or single, and submit full details of previous Public Health and Administrative experience, together with testimonials and a recent photograph.

Transport allowance—£200 for a married man, and £100 for a single man.

Should the successful applicant voluntarily relinquish the position before the expiration of two years from the date of his appointment, he will be called upon to refund the amount of the transport allowance.

Applications, which must be endorsed "Medical Appointment," must reach the Agent-General for Western Australia, Savoy House, 115/6, Strand, London, W.C.2, not later than June 30th.

The Government of Burma

require a DIRECTOR for the HARCOURT BUTLER INSTITUTE OF PUBLIC HEALTH, RANGOON.

Candidates must be fully qualified medical men and experienced bacteriologists, and preference will be given to those possessing a Diploma of Public Health. Salary Rs.1,650 a month, rising by annual increments of Rs.50 a month to Rs.1,850 a month, equivalent approximately to £1,485, rising to £1,665 per annum at current rate of exchange. Five years' agreement. First-class passage out and home. Strict medical examination.

Further particulars and forms of application may be obtained upon request by post-card to the Secretary to the High Commissioner for India, General Department, 42, Grosvenor Gardens, London, S.W.1. Last date for receipt of applications June 15th.

The Sudan Government.

MEDICAL OFFICER FOR PUBLIC HEALTH DUTY.

A Medical Officer is required for Public Health Duty for the Sudan Medical Service.

The candidate should be single, under 36 years of age, and he must have taken the D.T.M. and H.

Pay for the post commences at £E.720, rising by degrees to £E.1,200. On confirmation of the appointment, the accepted candidate will be eligible for Pension Service.

Applications (in writing only), with copies of recent testimonials, should be sent to Dr. HODSON, 24, Welbeck Street, W.1, from whom further particulars can be obtained.

Metropolitan Asylums Board.

The Board invite applications for appointment as JUNIOR ASSISTANT MEDICAL OFFICER in their Children's Service for duty at QUEEN MARY'S HOSPITAL FOR CHILDREN, CARSHALTON, SURREY. A considerable proportion of the cases received are of an orthopædic nature. Number of beds 900. Salary £500 per annum. The candidate appointed will be required to reside in the Hospital and to pay for board, lodging, and washing at the rate fixed from time to time. At present the rate is £130 per annum. There is no accommodation for a married officer.

Application to be made not later than 10 a.m. on Saturday, June 8th, on form obtainable from the Clerk, Metropolitan Asylums Board, Victoria Embankment, London, E.C.4, by forwarding stamped addressed foolscap envelope.

ALLAN POWELL, Clerk to the Board.

Ingham Infirmary, South Shields.

Wanted, SENIOR and JUNIOR HOUSE SURGEONS (male). Salaries £200 and £150 per annum respectively, with residence, board, and washing. No out-visiting. Candidates must hold registered qualifications in Medicine and Surgery. The appointment will be terminable by one month's notice. Applications, stating age and accompanied by copies (which will not be returned) of recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

JOHN POTTER, Secretary.

Royal Westminster Ophthalmic HOSPITAL

(Incorporated by Royal Charter),
Broad Street, Holborn, W.C.2.

Applications are invited for the part-time appointment of PATHOLOGIST to this Hospital.

Duties to commence on July 1st.

Honorarium £75 per annum.

Applications should be sent to the Secretary, from whom further particulars can be obtained, not later than June 1st.

Northamptonshire.

TUBERCULOSIS OFFICER.

The Northamptonshire County Council invite applications for the appointment of Tuberculosis Officer.

The salary will be at the rate of £750 per annum, together with offices, clerical assistance, stationery, and such allowances for travelling and other necessary out-of-pocket expenses as the County Council shall from time to time approve. A periodical review of salaries is made by the County Council, and suitable increments of salary will be given for proved ability and satisfactory service.

The salary will be subject to a deduction of 5 per cent. per annum for superannuation, in accordance with the provisions of the Local Government and Other Officers Superannuation Act, 1922, which the County Council have adopted. The candidate appointed will be required to pass a medical examination.

The officer appointed must reside at a place to be approved by the County Council and devote the whole of his time to the service of the Council.

The officer appointed will be independent clinically, but administratively is on the staff of the Public Health Department under the County Medical Officer of Health. The duties include the charge of the Tuberculosis Dispensaries, and of the care, otherwise than in sanatoria, of persons suffering from or suspected of tuberculosis. The Council maintains its own sanatorium and a Resident Medical Officer is in charge thereof.

The appointment is subject to the approval of the Ministry of Health, and is determinable by three months' notice on either side.

Applications, endorsed "Tuberculosis Officer," with not more than three recent testimonials, giving full particulars of the training, qualifications, experience, and age of the applicant, should reach the undersigned on or before June 7th. Six copies of the application and testimonials should be supplied for the use of the Committee.

Canvassing will disqualify.

County Hall, H. A. MILLINGTON,
Northampton. Clerk of the County Council.

City of Aberdeen.

PUBLIC HEALTH DEPARTMENT.

The Town Council of Aberdeen are prepared to re... ...for the post of MEDICAL OFFI... ...lary £1,100 p.a. A... ...may be had (on application) from the Town Clerk. Applicants must be registered medical practitioners, holding a qualification in Public Health or State Medicine. Particulars as to qualifications, present position, and previous experience must be given by the candidates.

The office is an established post under the Local Government and Other Officers Superannuation Act, 1922, and the successful candidate will be required to pass a medical examination.

Applications, accompanied by twenty copies of testimonials, and endorsed "Medical Officer of Health," to be lodged with the undersigned not later than 31st instant.

G. S. FRASER,
Town House, Town Clerk.
Aberdeen.
May 9th, 1929.

County Borough of Derby.

TEMPORARY ASSISTANT MEDICAL OFFICER (Male).

Applications are invited for the post of Temporary Assistant Medical Officer in the Public Health Department, for a period of four months. Duties will include those of Assistant School Medical Officer, Assistant Tuberculosis Officer, and such other work as the Health Committee and Medical Officer of Health may require.

Applications, stating age, experience, and qualifications, together with copies of not more than two recent testimonials, to be sent to the undersigned. Salary at the rate of £600 per annum.

ALBERT E. BRINDLEY,
Medical Officer of Health.

East Ham Memorial Hospital,

Shrewsbury Road, E.7.

Applications (male) are invited for the following:

1. RESIDENT MEDICAL OFFICER;
2. RESIDENT HOUSE PHYSICIAN and CASUALTY OFFICER.

The appointments are for six months as from July 1st next, with salaries at the rate of £150 and £100 per annum respectively, with board, residence, and laundry. Application, stating age, experience, and full particulars, together with copies of testimonials, should be sent to the undersigned not later than Friday, June 7th.

J. F. MORTON, Secretary.

Nottinghamshire.

ASSISTANT MEDICAL OFFICER FOR SCHOOL MEDICAL INSPECTION AND FOR MATERNITY AND CHILD WELFARE.

Applications for the above-named appointment are invited from duly registered medical practitioners who have had at least three years' experience since obtaining registrable qualifications, and who hold a Diploma in Public Health.

Preference will be given to candidates with previous experience of the work, particularly as regards Mental Deficiency, Refractions, and Ante-natal work.

The salary will be at the rate of £600 per annum, with travelling expenses in accordance with the County Council Scale. The appointment will be a whole-time one. The candidate appointed will be a member of the Staff of the County Medical Officer, will work under his control and direction, will be required to reside in a part of the County to be approved by him, and to carry out such duties as may be prescribed.

The successful candidate will be required to pass a medical examination.

Forms of application may be obtained from the undersigned, and should be returned, accompanied by copies of not more than three recent testimonials, to the County Medical Officer, Shire Hall, Nottingham, on or before May 30th.

Shire Hall, Nottingham. K. TWEEDALE MEABY, Clerk of the County Council.
May 14th, 1929.

Nottinghamshire.

ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified and registered medical practitioners (male) for the appointment of Assistant County Medical Officer of Health. Candidates must have had previous experience of the general administration of a Public Health Department (preferably of a County Council) and possess a Diploma in Public Health. Experience of the administration of School Medical Inspection, Tuberculosis, and Child Welfare Services, together with a knowledge of special Mental Deficiency Examinations and the carrying out of Refractions, will be deemed additional qualifications.

The person appointed must devote the whole of his time to the duties of the office. He will act under the control and direction of the County Medical Officer as his Chief Administrative Assistant, will carry out such duties as the County Medical Officer may assign to him from time to time, and will be required to reside in a part of the County to be approved.

The salary will be at the rate of £750 per annum, rising, subject to satisfactory service, by annual increments of £25 to a maximum of £800 per annum, with travelling expenses in accordance with the County Council Scale, and the appointment will be terminable by three months' notice, in writing, on either side.

The selected candidate will be required to pass a medical examination.

Forms of application may be obtained from the undersigned and should be returned, accompanied by copies of not more than three recent testimonials, to the County Medical Officer, Shire Hall, Nottingham, on or before May 30th.

Shire Hall, Nottingham. K. TWEEDALE MEABY, Clerk of the County Council.
May 14th, 1929

Stoke and Wolstanton Union.

ASSISTANT MEDICAL OFFICER (Male).

Applications are invited for the appointment of First Assistant Resident Medical Officer at the LONDON ROAD INSTITUTION, near NEWCASTLE, STAFFS.

The remuneration assigned to such office is £250 per annum, with board and residence. The period of the appointment will be limited to one year in the first instance, subject to termination by one month's notice on either side. The Institution accommodates about 1,000 inmates, including 600 in hospital (which is recognized as a major training school for nurses) and 150 in mental wards. The medical service to the adjacent Children's Homes is performed by the Institution Resident Staff, who, also, are required to lecture to nurses.

Applications, accompanied by copies of not more than three testimonials of recent date, should be delivered to the undersigned not later than first post on Thursday, the 30th instant. Applicants should state particulars of qualifications or degrees held, the date thereof, when then, and experience since qualifying. Preference will be given to those who have had experience in any of the following subjects—viz., Anæsthetics, Obstetrics, Pathology, and Radiography.

Union Offices, High Street, Stoke-on-Trent. T. WOOD, Clerk to the Guardians.
May 17th, 1929.

County Council of Middlesex.

DENTAL SERVICE.

ASSISTANT DENTAL OFFICER.

The County Council invite applications for the post of Assistant Dental Officer. Applicants must be fully qualified and registered Dental Surgeons.

The duties of the post are the dental inspection and treatment under the Education and Maternity and Child Welfare Acts.

The candidate appointed will be required to devote his or her whole time (including Saturday mornings) to the duties of the post, will not be allowed to engage in private practice, will be under the supervision of the County Medical Officer and the Senior Dental Officer, and must be prepared to reside in such district as may be required.

The officer appointed will be entitled to one month's holiday annually.

Salary £500 per annum, rising by annual increments of £25 to £700. (No bonus.)

The appointment will be during the pleasure of the Council, and subject to one month's notice on either side.

The successful candidate will be required to pass such medical examination as the County Council may direct, and to contribute to the County Council's Superannuation Fund.

Applications, setting out (1) age, (2) qualifications, and (3) experience, together with copies of three recent testimonials, should be forwarded to the undersigned so as to reach this office not later than June 1st. No special application forms are provided.

Canvassing will disqualify.

Middlesex Guildhall, Westminster, S.W.1. ERNEST S. W. HART, Clerk of the County Council.
May 10th, 1929.

Walsall and West Bromwich UNIONS JOINT COMMITTEE.

APPOINTMENT OF RESIDENT MEDICAL OFFICER.

The Committee invite applications from fully qualified male resident medical practitioners for the appointment of Resident Medical Officer for the Institutions at GREAT BARR PARK. The Institutions consist of Children's Homes for approximately 100 children under the age of five years, and a Mental Defective Colony. The number of patients at present at the Colony is approximately 300. This number will be increased to 600.

Preference will be given to candidates who have had previous experience with mental defectives.

The Resident Medical Officer will be responsible to the Visiting Consulting Medical Officer so far as the Children's Homes are concerned, and the Visiting Consulting Medical Officer attends when required at the Colony.

Commencing salary £500 per annum, together with furnished quarters, rations, laundry, and attendance.

The officer appointed must devote the whole of his time to the duties, and the appointment will be terminable by three months' notice on either side.

Canvassing, either directly or indirectly, is strictly prohibited and will be deemed a disqualification.

Applications, stating age, experience, and qualifications, accompanied by copies of not more than three recent testimonials, must reach me not later than Saturday, June 1st.

By Order,
22, Lombard St., West Bromwich. A. H. WARD, Clerk.
May 18th, 1929.

Kingston Union.

APPOINTMENT OF THIRD ASSISTANT RESIDENT MEDICAL OFFICER.

The Guardians of the Poor of the Kingston Union require a thoroughly qualified Third Assistant Resident Medical Officer at the Kingston and District Hospital (age not to exceed 30 years).

The appointment will be for six months in the first instance, and may be extended, subject to satisfactory service.

The salary will be at the rate of £250 per annum, with apartments, rations, laundry, and attendance (valued at £100 per annum for superannuation purposes), and will be subject to the terms of the Poor Law Officers Superannuation Act, 1896.

Applications for the post, stating age, experience, and nationality, together with recent testimonials, should reach me not later than 10 a.m. on Friday, May 31st.

Experience in administration of anæsthetics essential.

Canvassing, either directly or indirectly, will disqualify.

Union Offices, Kingston-on-Thames. W. TAYLOR, Solicitor, Clerk to the Guardians.
May 14th, 1929.

Lancashire County Council.

SCHOOL MEDICAL AND CHILD WELFARE DEPARTMENT.

APPOINTMENT OF THREE ASSISTANT COUNTY MEDICAL OFFICERS.

The Lancashire County Council invite applications from registered medical practitioners for the post of Assistant County Medical Officer.

Applicants must not be over 35 years of age, and must possess the Diploma of Public Health.

The duties of the post include the Medical Inspection of School Children; work under the Maternity and Child Welfare Acts; general Public Health work; and such other duties as may from time to time be imposed by the County Council.

The persons appointed will be required to devote their whole time to the service of the County Council. The salary will be £800 a year, rising (subject to satisfactory service) by annual increments of £50 to a maximum of £1,000 a year, together with first-class railway fares and other reasonable expenses.

The persons appointed will be required to pass a medical examination, and to contribute to the Council's Superannuation Fund.

Applications must be made upon a form which can be obtained, together with further particulars, from the County Medical Officer of Health, School Medical and Child Welfare Department, County Offices, Preston, to whom the completed forms should be returned not later than Saturday, June 15th. All communications must be endorsed "Assistant County Medical Officer."

Any form of canvassing is strictly forbidden, and will disqualify.

County Offices, Preston. GEORGE ETHERTON, Clerk of the County Council.
May, 1929.

Lancashire County Council.

APPOINTMENT OF ASSISTANT TUBERCULOSIS MEDICAL OFFICER for HIGH CARLEY SANATORIUM, Near ULVERSTON.

The Lancashire County Council are prepared to receive applications for the post of Male Assistant Tuberculosis Medical Officer (unmarried) for the High Carley Sanatorium (112 beds). Salary £450, rising by two annual increments of £25 to £500 per annum, together with the following emoluments: board, furnished apartments, fuel, light, and laundry.

Applicants must be registered medical practitioners between 25 and 34 years of age, and the person appointed must devote the whole of his time to the duties as defined by the Council. Candidates must have held House appointments for at least six months in a General Hospital, and have had special experience in the diagnosis and treatment of Tuberculosis.

The possession of a Diploma in Public Health and practical experience in X-ray work will be deemed additional qualifications for the post.

Contributory Superannuation Scheme is in operation, with medical examination for entrants.

Forms of application, terms of appointment, and list of duties can be obtained from the undersigned. Closing date June 10th. All letters must be marked on the outside "Assistant Tuberculosis M.O."

County Offices, Preston. GEORGE ETHERTON, Clerk of the County Council.

County of Zetland.

Wanted, for the County of Zetland, a whole-time official to perform the duties of SCHOOL MEDICAL OFFICER, Medical Officer of Health for the County, the Mainland District, and the Burgh of Lerwick, Tuberculosis Officer for the County, and Superintendent of Maternity and Child Welfare and other Public Health Schemes in County and Burgh.

Salary £700 per annum, free of office and travellin[illegible] be duly qualified [illegible]itioners, who pos[illegible]h.

Four c[illegible] (at least one in [illegible] stating fully age, qualifications, and experience, accompanied by four copies of testimonials, to be lodged with the undersigned not later than June 1st next.

Brentham Place, Lerwick. WM. WILLIAMSON, Clerk to Joint Committee of Appointing Authorities.
May 9th, 1929.

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required. Salary £120 per annum, with residence, board, etc. Applications (with copies of testimonials), endorsed "House Surgeon," to be addressed to the Chairman of the Board of Management not later than May 31st.

H. R. NORTH, Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A RESIDENT MEDICAL OFFICER is required at the COUNTRY BRANCH HOSPITAL, TADWORTH COURT, TADWORTH, SURREY, on June 14th.

Gentlemen are invited to send in their applications to the Secretary before 12 o'clock on Monday, June 3rd, accompanied by copies of not more than three testimonials given specially for the purpose.

The appointment is made for six months, but the successful candidate will be eligible for re-appointment.

Salary at the rate of £250 per annum, with board-residence in the Hospital, laundry allowance at the rate of £10 per annum, and on re-election for a further period of six months, £18 18s. for the purpose of providing a substitute during annual leave of a maximum of four weeks.

Candidates must be unmarried and possess a legal qualification to practise, and must have held a responsible resident appointment at a General Hospital.

All candidates must be in attendance on Wednesday, June 5th, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
Secretary.

May, 1929.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A SURGICAL REGISTRAR is required on June 17th.

Gentlemen are invited to send in their applications, addressed to the Secretary, with copies of not more than three testimonials, given specially for the purpose, before 12 o'clock on Monday, June 3rd.

The appointment is made for one year, but may be held, subject to re-election, for a period of three years.

Salary £300 per annum and allowance for substitute for holiday £18 18s.

Candidates must be registered medical practitioners, and must have held a responsible Hospital appointment and be prepared to take up the duties on June 17th.

All candidates must be in attendance on Wednesday, June 5th, to appear before the Joint Committee at 5 p.m. precisely, if required.

Forms of application, copy of the rules for, and details of the duties of, the appointment, will be supplied on application to the Secretary.

By Order of the Board of Management,
JAMES McKAY,
Secretary.

May 17th, 1929.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A HOUSE SURGEON and a HOUSE PHYSICIAN are required on July 1st.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, June 3rd, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment.

The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, June 5th, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY,
Secretary.

May, 1929.

St. Peter's Hospital for Stone, ETC.,
Henrietta Street, Covent Garden, W.C.2.

CLINICAL ASSISTANTS are required by the following members of the Honorary Staff, who attend the Out patient Department as indicated:

Mr. Swift Joly	Mondays 2 to 5 p.m.
Mr. Clifford Morson	Saturdays 2 to 7 p.m.
Mr. Barrington	Tuesdays 2 to 5 p.m.
	Thursdays 3 to 7 p.m.
Mr. Ogier Ward	Wednesdays 3 to 6 p.m.
	Fridays 2 to 5 p.m. (Women and Children)
Mr. Alban Andrews	Mondays 5 to 7 p.m.
	Fridays 5 to 7 p.m.

Appointments are for six months from July 1st, 1929, a fee of five guineas being payable to the Hospital.

Applications will be received by the undersigned up to the first post on Wednesday, June 5th.

BEECHEY ROGERS, Secretary.

Northampton General Hospital.
APPOINTMENT OF HONORARY ANÆSTHETIST

The Board of Management invite applications for the appointment of Honorary Anæsthetist, either sex.

Candidates must be registered medical practitioners, and shall agree to confine themselves to their specialty.

Full particulars of the appointment may be obtained from the undersigned, to whom applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, should be sent on or before Wednesday, May 29th.

H. ST JOHN WOOD,
May 17th, 1929. Secretary-Supt.

South London Hospital for WOMEN,
South Side, Clapham Common, S.W.4.

APPOINTMENT OF ASSISTANT PHYSICIAN.

The Board [illegible] applications from fully [illegible] men for the appointment [illegible]. Candidates must be Members of the Royal College of Physicians, England, or obtain the Membership within twelve months from the date of appointment. Further particulars may be obtained from the Secretary. Canvassing members of the Board is not allowed. Applications, with copies of testimonials, must reach the Secretary at the Hospital not later than the first post on Monday, June 10th.

City of London Hospital for DISEASES OF THE HEART AND LUNGS,
Victoria Park, E.2.
('Bus, tram, and rail, Cambridge Heath, L. & N.E. Railway.)

The Committee invite applications for the post of ASSISTANT LARYNGOLOGIST.

An honorarium is attached to the post.

Applications, accompanied by copies of testimonials, should reach the Secretary at the Hospital not later than Monday, June 17th.

GEORGE WATTS, Secretary.

Ancoats Hospital, Manchester.

HOUSE SURGEON required to commence duty on July 1st, for a period of six months. Salary at the rate of £100 per annum, with board, apartments, laundry, etc. Applications, stating age, qualifications, experience, if any, with copies of three recent testimonials, to be forwarded to the undersigned on or before May 31st.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

New Sussex Hospital for Women AND CHILDREN. (50 Beds.)
WINDLESHAM ROAD, BRIGHTON.

Applications are invited from fully qualified medical women for the following posts:

(1) HOUSE SURGEON;
(2) HOUSE PHYSICIAN.

Honorarium for each £50 per annum.

Applications, with copies of three recent testimonials, should reach the Secretary on or before June 1st.

Birkenhead General Hospital.
(156 Beds.)

[illegible] are invited for the post of [illegible] (male) at once, salary [illegible] d residence, to take up duties immediately.

Applications, stating qualifications, experience, and nationality, with three copies of recent testimonials, to be sent to the Secretary-Superintendent as early as possible.

Birmingham and Midland [illegible] HOSPITAL AND [illegible]

A vacancy occurs for the post of HOUSE SURGEON at the above Hospital on July 1st.

Salary £150, with board, residence, and laundry.

Applications, stating age and qualifications, accompanied by copies of three testimonials, should be sent to the Secretary at the Hospital by Saturday, June 8th.

Birmingham and Midland HOSPITAL FOR WOMEN.

HOUSE SURGEON wanted (man or woman) for six months from July 1st. Salary to be at the rate of £75 per annum.

Applications, with copies of testimonials, should be sent to Mr. H. C. ASTON, 45, Newhall Street, Birmingham, not later than Saturday, June 1st.

Warrington Infirmary and DISPENSARY.

The Board of Management invite applications for the post of HOUSE PHYSICIAN (male, unmarried). Applicants, who must be of British nationality, must be duly qualified medical practitioners.

Salary £150 per annum, with board, apartments, and laundry. The post is tenable for six months, with probable promotion at the end of that time. The vacancy is due to the promotion of the present staff.

The Hospital has special departments—viz., Orthopædic, Skin, Aural, Genito-Urinary, Gynæcological, etc.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent in at once to the undersigned.

By Order,
HENRY L. BOOT,
May 18th, 1929. Supt. & Secretary.

Taunton and Somerset Hospital
TAUNTON. (104 Beds.)

SENIOR and JUNIOR HOUSE MEDICAL OFFICERS (males) required.

The Senior must have held a Hospital resident appointment for six months. Appointment one year, option of re-election for a second year. Charge of Surgical beds. Junior appointment six calendar months. Charge of Medical and Eye beds.

Appointments approved by University of London for purposes of M.S. and M.D examinations. Salaries at the rate of £150 and £100 per annum respectively, with board, residence and laundry. House Medical Officers retain certain fees.

Applications, with testimonials, to—
F. J. J. STACEY, Secretary.

Walsall General Hospital
The Committee invite applications for the post of HOUSE SURGEON. Salary £150 per annum. Candidates, who must be registered under the Medical Acts, must have had experience in the administration of Anæsthetics, and produce three recent testimonials. The appointment will be for six months. The Hospital contains 100 beds and is equipped in all Special Departments.

Applications must be received by the undersigned not later than the first post Tuesday, June 4th.

WALTER FRANCOMBE,
May 19th, 1929. Secretary.

Harrogate Infirmary.

Applications are invited from British subjects (male) for the post of JUNIOR HOUSE SURGEON, which will become vacant on June 30th, on which date the successful applicant will require to take up the appointment. Salary is at the rate of £100 per annum, with board, lodging, and laundry.

Applications to be made on official form to be had from the undersigned and should be sent in not later than June 8th.

The Infirmary, GEO. BALLANTYNE,
Harrogate. Secretary.

County Hospital, York.
(180 Beds.)

Applications are invited for the posts of:

(1) HOUSE PHYSICIAN;
(2) HOUSE SURGEON.

Salary in each case £150 per annum, with board and residence. Applications, stating age, together with copies of three recent testimonials, to be addressed to the Manager not later than June 6th.

Coventry and Warwickshire HOSPITAL. (307 Beds.)

RESIDENT HOUSE SURGEON (male) wanted. Salary £125 per annum. Board, lodging, and attendance provided. Candidates must be duly qualified and registered. Applications, stating age, and enclosing copies of recent testimonials, should be sent to the Secretary on or before May 28th.

(Miss) R. HOOPER, Secretary.

General Lying-In Hospital
York Road, Lambeth, S.E.1.

RESIDENT MEDICAL OFFICER required for July 1st next. Appointment for three months. £100 per annum, with board. Applications with three testimonials, to be sent to the Secretary not later than June 3rd.

Lowestoft and North Suffol HOSPITAL.

HOUSE SURGEON (male) preferable with knowledge of X-ray. Salary £120 p.a., with board, residence, and laundry.

Applications, with copies of three recent testimonials, to the Honorary Medical Supt.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CITY OF PLYMOUTH: EDUCATION DEPT. *(Woman Deputy Assistant Medical Officer.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	COUNTY TYRONE EDUCATION AUTHORITY. *(School Medical Officer.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	COUNTY BOROUGH OF WIGAN. *(Clinical Tuberculosis Officer and Assistant Medical Officer of Health.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
May 22nd, 1929

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

West London Hospital,
Hammersmith Road, W.6. (226 Beds.)

Required, One HOUSE PHYSICIAN, One HOUSE SURGEON, and One AURAL AND OPHTHALMIC HOUSE SURGEON (males). These three appointments are tenable for six months from July 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodgings, and washing allowance. Applications (which must be made on printed forms obtained from me) must reach me not later than Friday, June 7th. Selected candidates will be required to call upon such Members of the Medical Staff as directed, to be in attendance at a Meeting of the Medical Council on Friday, June 21st, at 4 p.m., and the House Committee Meeting at 4.45 p.m. the same day, when the appointments will be made

H. A. MADGE, Secretary.

Eye, Ear, and Throat Hospital
FOR SHROPSHIRE AND WALES.

APPOINTMENT OF HOUSE SURGEON.

The Board of Management invite applications for the post of House Surgeon at the Eye, Ear, and Throat Hospital, Shrewsbury.

Candidates (either sex) must be unmarried and have a registered qualification in Medicine and Surgery.

Salary £200 per annum, with board, lodging, and laundry.

Applications, with copies of testimonials, to be sent in sealed envelopes, marked "House Surgeon," to the Chairman of the Board of Management, not later than the 31st instant. The appointment will be vacant about the middle of June.

CLOTHIER, WATKINS, & RIDDELL, Secretaries.

City of Birmingham Mental Hospital.

The Committee of Visitors invite applications from duly qualified and registered lady doctors under 35 years of age for the post of Full-time JUNIOR ASSISTANT MEDICAL OFFICER at the City Mental Hospital. Preference will be given to candidates who have held a Resident appointment in a General Hospital.

The commencing salary will be £350 per annum, together with emoluments (board, residence, and laundry). Subject to twelve months' satisfactory service an increase of £50 will be granted at the end of that period. The appointment will be terminable by three months' notice on either side, and the selected candidate will be required to join the Asylums Officers Superannuation Scheme.

Applications, accompanied by copies of three recent testimonials, should be marked "Junior Assistant Medical Officer," and addressed to the Medical Superintendent, City Mental Hospital, Winson Green, Birmingham, so as to be received by him not later than May 31st.

F. H. C. WILTSHIRE, *Clerk to the Committee of Visitors.*

Council House, Birmingham.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the appointment of ASSISTANT MEDICAL OFFICER in the Female V.D. Clinic. Intending candidates should submit applications, stating age and experience, with copies of three recent testimonials, to the undersigned on or before June 1st.

The appointment is tenable for 18 months in the first instance. The hours of duty average 35 weekly. Salary £300 per annum.

REGINALD R. GARRATT, Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the following resident appointments:

HOUSE SURGEON to the Senior Surgeon and to the Surgeon in charge of the Throat, Nose, and Ear Beds.
SECOND HOUSE SURGEON.
THIRD HOUSE SURGEON.
FIRST HOUSE PHYSICIAN.
HOUSE PHYSICIAN to the Children's Dept.
GYNÆCOLOGICAL HOUSE SURGEON.
OBSTETRIC HOUSE SURGEON.
Duties of the above to commence July 1st.
SECOND HOUSE PHYSICIAN.
OBSTETRIC DISTRICT ASSISTANT. Salary £100 per annum.
CASUALTY OFFICER (male) Salary £150 per annum.
Duties to commence August 1st.

Of these posts one House Surgeon appointment and one House Physician are open to male candidates. The other appointments are reserved for former Students of the London (Royal Free Hospital) School of Medicine for Women.

Candidates must be duly qualified registered medical practitioners and must submit applications, stating age, and accompanied by copies of three testimonials, to the undersigned on or before June 1st.

REGINALD R. GARRATT, Secretary.

The Willesden General Hospital
(Incorporated), N.W.10.

Applications are invited from general practitioners for appointment as REGISTRARS. Several vacancies exist, and a copy of the regulations governing such appointments can be obtained from the Secretary, to whom detailed applications should be addressed not later than Monday, June 3rd.

April 30th, 1929.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(Address included.)

Sixpence should be added if replies to a box number are to be posted.

All advertisements must be received not later than first post Tuesday previous to date of publication.

ASSISTANCIES.

Wanted immediately, young energetic ASSISTANT, with view early Partnership; ex H.S. or H.P., with some experience of general practice preferred; in old-established Practice in industrial area, West Riding, Yorkshire. Panel over 2,800. Usual bond, photo, and testimonials required.—Add., No. 2902, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately, Indoor and Outdoor ASSISTANTS (male), with and without view. Also LOCUM TENENS. Good salaries offered. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted immediately, young energetic ASSISTANT, in Contract Practice, S. Wales. Must be sober. Good prospects suitable man. State age, etc.—Address, No. 3028, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant immedi-ately, for Branch, Young Scotsman preferred. Cottage Hospital. Near London. Good prospects. — Address, No. 3024, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, about middle of June; one with some experience of G.P. and able to drive motor preferred. Pleasant Village in Yorkshire.—For further particulars, address No. 3016, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, indoor, in sound private Practice. Refractions. No midwifery. Motor car. Usual bond. £300 p.a. State height, etc. Photo (returnable). Married man preferred. — Address, No. 3020, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — An Assistant with prospect of *Partnership if mutually* agreeable. Salary £300 per annum, plus board, residence, and half midwifery fees. Panel and private. State experience.—Address, No. 3012, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, Scotch or English, Protestant, age under 30. Private and panel practice. Salary £250 to £300, with prospects to a suitable man. Photo and testimonials.—Address, No. 3022, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, for panel and private Practice, near Newcastle-on-Tyne. Salary £250. — Address, No. 3007, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant (outdoor), early in June, in Glamorgan Colliery Practice. Salary £350, with rooms and attendance.—Address, No. 3001, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by M.R.C.S., L.R.C.P.; qualified 1922; ex H.S. and H.P.; æt. 30; single. Good appearance and well received. View considered.—Address, No. 3031, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by Woman M.B., Ch.B.(St. Andrew's), 1926. Aged 25; 2 years' experience in panel and private practice, and also dispensing. Excellent testimonials and refs. Free now. State salary.—No. 3023, B.M.A. House, Tavistock Sq., W.C.1.

A Practitioner in a Glamorgan Colliery Practice *wants an ASSISTANT*, with a view to PARTNERSHIP. An ex H.S. Welsh desirable, but not essential. Salary £400 p.a., with furnished rooms, light, attend nec.—Add., No. 3011, B.M.A., House, Tavistock Square W.C.1.

Outdoor (married) Assistant wanted for Industrial Yorkshire. Prospect of a share to energetic man. House with salary of £360 for first year.—Address, No. 3037, B.M.A. House, Tavistock Square, W.C.1.

Woman Doctor, experienced, doing post-graduate work, wishes ASSISTANTSHIP or PART-TIME WORK.—Address, No. 3025 B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted in August for British HOSPITAL, BUENOS AIRES, young RESIDENT DOCTOR, unmarried. — For particulars, write, "O. Z.," c/o J. W. VICKERS & Co., Ltd., 24, Austin Friars, E.C.2.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Baptist Missionary Society,
19, Furnival St., Holborn, London, E.C.4.

This Society is in urgent need of OFFERS OF SERVICE from well-qualified Doctors for MEDICAL MISSIONARY WORK in (1) a needy district amongst an Aboriginal Tribe in India, and (2) on the Upper Belgian Congo in Central Africa. It is hoped that this double need may appeal to some young Baptist Medical Men.

Further particulars on application.

Correspondence should be addressed to—
Dr. R. FLETCHER MOORSHEAD,
Medical Secretary.

Dispensers supplied to Doctors *at short notice*, without fee. Qualified and exper. in priv. and panel prac. Perm. and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone *Central* 3079, THE RELIANCE BUREAU FOR DISPENSERS, 87, Holborn Viaduct House, 12, Holb. Viad., E.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Gerrard 2699, THE DISPENSERS' BUREAU, 145, Shaftesbury Avenue, London, W.C.2.

Lady Dispenser requires POST with Doctor. Disengaged. Aged 26 years. Hall Certificate. South preferred.—"E. F.," 103, Bower Road, Folkes one, Kent.

M.R.C.S., L.R.C.P., ex H.S. (three hospitals) and H.P., desires PART-TIME POST in South Wales. Experienced private and panel practice. Studying for higher surgical qualifications.—Address, No. 3013, B.M.A. House, Tavistock Square, W.C.1.

Part-time work required, imme-diately, within easy reach of West London, by medical man, aged 32, studying for F.R.C.S. Has held Hospital appointments. 3½ yrs.' experience panel and general practice.—No. 2906, B.M.A. House, Tavistock Sq., W.C.1.

Part-time Work wanted in London by M.B., D.P.H. Highest references. Free 2 to 6 p.m. daily. Insurance work preferred. Write terms.—Address, No. 2941, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS.

Wanted, Locum (male) to do morning and evening surgeries four days a week.—Address, No. 3033, B.M.A. House, Tavistock Square, W.C.1.

HOLIDAY LOCUMS.

THE MEDICAL AGENCY has pleasure in announcing that lists are now being prepared for Locum engagements for the forthcoming Holiday Season requiring a REL advised to make early The V. H. GRANT, W.C.1. Tel.: Gerrard 8954 House, Adelphi, and Riverside 1234 (night calls).

As Locum.—Experienced G.P., disengaged from June 7th. Fees by arrangement. References to annual principals if desired.—Address, "LOCUM," c/o Dr. MANNING, Croft End, Kendal, Westmorland.

As Locum.—Experienced Doctor had own practice, now doing some 10 locums ann., desires further ENGAGEMENTS; now free. Terms 6 gns. p.w. London preferred. If country where car and driver available. Goodrich. —"MEDICUS," 24, Colville Road, Bayswater, W.

As Locum.—Practitioner of long experience desires engagements for June and September. Abstainer. Recent testimonials. 'Phone Childehurst 330.—Address, No. 3035, B.M.A. House, Tavistock Square, W.C.1.

Locum, experienced, wanted August 18th - Sept 12th, for semi-rural Practice near large town in Yorkshire. Must be able to drive Austin Seven.—Address, No. 3031, B.M.A. House, Tavistock Square, W.C.1.

Locum or Part-time Work wanted in June, London, by experienced Graduate. Requires several afternoons off between 12-3 p.m. Good Refractionist. 'Phone Edgware 0070, or address No. 3032, B.M.A. House, Tavistock Square, W.C.1.

Locums or Assistantship wanted by Woman M.B., Ch.B.; Midlands preferred. Ex H.S. and H.P.; experienced, reliable G.P. Now at liberty.—Address, No. 3019, B.M.A. House, Tavistock Square, W.C.1.

Locum. — *Elderly M.D.,* M.R.C.S. England, strong and active, to desire us of HELPING overworked practitioner. Week-ends, holidays, morning or evening surgeries. On 'phone.—Address No. 3017, B.M.A. House, Tavistock Square, W.C.1.

FOR LOCUM TENENS APPLY TO
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PARTNERSHIPS.

Wanted by Scotch Graduate, aged 30, 2 years' general practice, ex H.S., R.M.O., PARTNERSHIP in industrial or mixed Practice. Capital £1,000.—Address, No. 3010, B.M.A. House, Tavistock Square, W.C.1.

A Third Partner required soon for a good class Practice in London. Share worth about £1,600 at 2 years' purchase. Preliminary assistantship. Excellent opportunity for a young man with experience and capital.—o. 2445, B.M.A. House, Tavistock Sq., W.C.1.

Lancashire Town. — Partner wanted, Scotch preferred, in large, old established private and panel Practice; share optional; salaried preferred to commence with. Particulars to include when at liberty. If capital available, rely on. — Address, No. 3014, B.M.A. House, Tavistock Square W.C.1.

N.E. Coast.—Seaside Town.— PARTNERSHIP in good class Practice. Cash receipts 1928, £7,085. Panel 700. 1/5 share (about £1,400) for disposal at 2 years' purchase. House available.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Partner wanted for Country Practice, Home County. £1,000 to £1,200 at 2 years' purchase; great need. Cottage Hospital. Charming house and garden; rent £100. Hospital experience essential. Married Physician preferred. — Address, No. 2716, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES.

Wanted.—Good-class PRACTICE or PARTNERSHIP in town on, or near, Coast of Southern, South-Western, or South-Eastern County. Advertiser has ample capital, and higher qualifications. Strict confidence. Private advertisement.—Address, No. 2931, B.M.A. House, Tavistock Square W.C.1.

Wanted, Practice with large panel and contract showing about £2,000 p.a. or more, or mixt. panel practice in any district. Ample capital. Price, etc.—Address, No. 3020 B.M.A. House, Tavistock Square, W.C.1.

Wanted at once, for cash purchase, Country PRACTICE, with good house and garden, earning from £2,000 to £5,000 a year, preferably in the West of England.—Address, No. 3015, B.M.A. House, Tavistock Square, W.C.1.

Wanted shortly, Practice of about £2,000 p.a., by M.B., Ch.B.Camb., near London. House, with 7 bedrooms, and garden, to rent preferred. Principals only need apply.—Address, No. 3004, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.D.Cantab., F.R.C.S.Eng., Public School, better-class PRACTICE or PARTNERSHIP, within 100 miles London, or good-class suburb. Ample capital. —Address, No. 1505, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—We have innumerable applicants for sound investments in all districts, incomes from £600 to £4,000, with and without panel. Correspondence invited from prospective Vendors. — THE MEDICAL AGENCY (W. H. Grant), Watergate House, 15, York Buildings, Adelphi, W.C.2

Wanted. — Large well-estab. non-panel PRACTICE within 100 miles London (main line). Income not less £2,500. A suitable house at rental desired in first instance. Advertiser is free to negotiate. Capital available.—Address, No. 2314, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — General Practice in Bradford, Yorks. Income £1,500 upwards. Moderate or large panel. Ample capital. — Address, No. 2944, B.M.A. House, Tavistock Square, W.C.1.

Compact Panel Practice desired in London or Home Counties; £500, with some scope up to £1,000. No permanent var. May create house to rent or buy, with 4 bedrooms and no basement.—Address, No. 3036 B.M.A. House, Tavistock Square, W.C.1.

Death Vacancy, Manchester.— Good-class PRACTICE. Cash receipts 1928, £1,248, including income of £330 from appts. Panel 455. Excellent corner house, 2 entertaining, 5 beds., garden. Premium—Practice and house—£2,000, or near offer.—BRITISH MEDICAL BUREAU, 33, Cross St., Manchester.

For Sale.—Easily worked Panel, Private, and Contract PRACTICE, Colliery district in Yorkshire. Good house and land and large garden. Scope for increase. Estab. seven years. Average income £500 per annum from all sources. Purchase price 1¼ years House, land, and garden, £650. Must sell end of May. — "A. J.," c/o FERRIS & Co., Ltd., Bristol.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised Inform free on applic.—4, Adam St., W.C 2

For immediate Disposal. — In- creasing Panel and Industrial PRACTICE, Birmingham.—Address, No. 3010, B.M.A. House, Tavistock Square, W.C.1.

For Sale. — Increasing Practice £1,800 in County Town within 25 miles of London. Panel 1,750. Fees 5/6 to 12/6. Medicine extra. Scope for surgery to one holding F.R.C.S. Suitable corner house for sale.—No. 3008, B.M.A. House, Tavistock Sq., W.C.1.

Immediate Sale.—Panel, Private PRACTICE, Lancs. Annual receipts £4,500 endor going abroad. Panel 2,700. House at £60. One and a quarter years' purchase, or higher offer. Reduced price for book debts, surgery furniture, and cars to facilitate sale. Further information at personal interview by appointment.—Address, No. 2950, B.M.A. House, Tavistock Square, W.C.1.

Immediate Sale.—Private and panel PRACTICE, suburban neighbour hood. Receipts £1,200 increasing; hosp. appt. £52 p.a., transferable. Visits 5/- to 10/6. Corner house; good intro. 1½ years' pur. or nearest offer. —No. 3026, B.M.A. House, Tavistock Sq., W.C.1.

Leicestershire (in small Town).—PRACTICE for disposal. Receipts average £300 p
A good opening.
House owner's.
£600. — Addre
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London, N.W. — Easily worked PRACTICE for sale. Visits 3/6 to 7/6, cons. 5/6. Total receipts £700. Small panel. Premium £850. Nice house, with garden, £1,200. — Address, No. 2905, B.M.A. House, Tavistock Square, W.C.1.

Manchester.—Nucleus in Indus- trial district. Cash receipts £300. Panel 400. House to rent. Premium £200, or near offer. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Medical Practice for Sale.—Good industrial area, easy reach of Glasgow; good panel and contract practice. Growing priv. prac. Modern house, ex. situation. Garage and garden. Personal introd. Good opport. for young Doctor.—*Further partics., D. M.* HUTCHISON & Dow, Writers, 82, West Regent St., Glasgow.

Manchester. — Well-established PRACTICE. Lock-up Surgery, rent 21/- weekly. Receipts over £300, rapidly increasing. Panel 350, with much scope; very compact. Price £300.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

North Wales Coast.—Good-class PRACTICE. Cash receipts 1928, £1,749. Panel 713. Excellent modern house, 4 bedrooms, lawn, also well-fitted surgery and garage, to rent. Good scope. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Near Manchester.—Practice for sale in populous district. Nice semi-detached house, garden, garage, £60. Receipts about £1,400, panel nearly 1,000. Appointments (transferable) £200. Price £1,400, part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Near Manchester. — Good-class PRACTICE. Average receipts last three years, £2,060. Panel 300. Excellent corner house, containing 6 bedrooms, 3 entertaining rooms, garage, and garden. Good introduction. Prem. 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

To Purchasers. — Do not buy without expert assistance. With 40 yrs. experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St, Strand, W.C.2. Telephone: Gerrard 0399 Telegrams: "Epsomian, London."

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X-Ray Apparatus for Sale.— 16-inch Coil. Mercury interrupter. Switchboard. Vertical tube stand, complete with valves, and 10 and 15 milliampere gas-tubes. Delivered and erected free of charge within 60 miles of London. Price £100.—Apply, "B. & B.," 60a, Portland Place, W.1.

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Fourteen bedrooms (h. and c. basins in several), large sun-ward, fine reception, and large dance or recreation room (parquet floors). Ample staff accommodation. Four bathrooms. Electric light. Central heating. Secluded grounds. Garage. Long lease. Price, including fixtures, £4,000.

Address, No. 3021, B.M.A. House, Tavistock Square, W.C.1.

For Sale. — School for High- Grade MENTALLY DEFECTIVE BOYS. Receipts over £4,000. Rent £160. Rates low. —Address, No. 3005, B.M.A. House, Tavistock Square, W.C.1.

Harley Street.—Two Consulting ROOMS (large or small) to let in large, modern house. Good attendance.—Address, No. 3009, B.M.A. House, Tavistock Square, W.C.2.

Part use furnished Consulting ROOM to let, Harley Street. Plate, telephone, hot and cold water, heat, etc. Inclusive rent £135 p.a.—Address, No. 3006, B.M.A. House, Tavistock Square, W.C.1.

Piccadilly. — Consulting Rooms in Dental Surgeon's office. Exceptionally well equipped and furnished, fitted for Ophthalmic and Sunlight work. Receptionist, service, light, telephone, all inclusive £12 per month.—No. 3002, B.M.A. House, Tavistock Sq., W.C.1.

Small Room, with use of Waiting ROOM, plate, and attendance, in Woman Doctor's house. New estate, S.W. Suit Specialist.—Address, No. 3003, B.M.A. House, Tavistock Square, W.C.1.

Small Surgery to Let (2 rooms). Occupied by Doctor several years. Favourable opportunity. Rental £78 per annum; small premium.—GOULD, 100 Richmond Road, Earl's Court, S.W.5. 'Phone Kensington 8143.

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Kent (11 miles London).—Commodious RESIDENCE, containing 5 bedrooms, bathroom, 2 reception rooms, usual offices. Large garden. Admirably suitable for professional purposes.—Apply, ARTHUR KENT & Co., 126, Broadway, Bexleyheath. 'Phone, 285.

APPOINTMENTS.—Contd.

Chester Royal Infirmary.
(211 Beds.)

Wanted, HOUSE SURGEON (male), to commence duties June 21st. Salary £120 per annum, with board, lodging, and washing. Candidates must be doubly qualified and registered.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than June 6th.

J. ROWSE MITCHELL,
May 20th, 1929. Secretary.

Newcastle-upon-Tyne Eye HOSPITAL, St. Mary's Place.

JUNIOR RESIDENT HOUSE SURGEON (female) required early in June. Salary £100 per annum, with board, residence, and laundry.

Applications, stating age, also experience (if any), together with testimonials, to be sent in as soon as possible to—

CHARLES E. V. UPTON,
St. Mary's Place, Secretary.
Newcastle-upon-Tyne.

General Hospital, Nottingham.

RESIDENT CASUALTY OFFICER (male) required. Appointment for six months, with salary at the rate of £200 a year, with board, residence, and laundry. Candidates are required to send applications at once to the undersigned, stating age, experience, and qualifications, with copies of testimonials.

P. M. MACCOLL,
House Governor & Secretary.

West Kent General Hospital, MAIDSTONE.

RADIOLOGIST.

Applications are invited for the post of Radiologist to the above Institution. Applications should be sent to the undersigned, from whom further information may be obtained.

EDWARD J. GREGG,
House Governor & Secretary.

Ancoats Hospital, Manchester.

ANÆSTHETIST required for Thursday and Friday mornings at the above. 10/6 per attendance is allowed. Applications to be forwarded on or before May 31st, accompanied by not more than three recent testimonials.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

The Mental Hospital, Berrywood, NORTHAMPTON.

LOCUM TENENS MEDICAL OFFICER (male) wanted for about 13 weeks, beginning June 30th. Salary 7 guineas per week, together with residence, board, and laundry. Applications, stating age, qualifications, nationality, and copies of recent testimonials, to be sent to the Medical Superintendent.

Urban District Council of BARKING TOWN.

ASSISTANT MEDICAL OFFICER.

Applications are invited from qualified medical practitioners (preferably women) for the combined appointment of Assistant Medical Officer of Health and Assistant School Medical Officer under the Public Health and Education Committees of the above Council. The officer appointed will be required to devote his or her whole time to official duties and to reside within the district. The principal duties will consist of maternity and child welfare and school clinic work and the medical inspection of school children, to be carried out under the direction of the Medical Officer of Health, who is also the School Medical Officer. The appointment will be subject to one month's notice on either side. Salary £500 per annum, inclusive of all bonus, rising after one year's satisfactory service to £600 per annum.

The person appointed will be required to pass a medical examination and to contribute to the Council's Superannuation Fund.

Forms of application may be obtained from the undersigned, to whom they should be returned, endorsed "Assistant M.O.H.," with copies of not more than three recent testimonials, not later than June 7th.

H. HARGREAVES,
Public Offices, Clerk to the Council.
Barking.
May 17th, 1929.

Leicestershire County Council.

ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified registered medical practitioners (male) for the appointment of Assistant County Medical Officer.

Candidates must possess a Diploma in Public Health; experience in School Medical Inspection and Tuberculosis work will be deemed an additional qualification.

The person appointed must devote the whole of his time to the duties of the office and will carry out such other duties as the County Medical Officer may assign to him.

The salary will be at the rate of £650 per annum, rising, subject to satisfactory service, by annual increments of £25 to £700 per annum, with travelling expenses according to the County Council scale.

The appointment is subject to the Local Government and Other Officers Superannuation Act, 1922.

The appointment will be terminable by three months' notice on either side.

Forms of application may be obtained from the undersigned, and should be returned, accompanied by copies of not more than three recent testimonials, by Monday, June 3rd.

W. J. FREER,
10, New Street, Clerk of the Council.
Leicester.
May 18th, 1929.

Salop County Council.

MEDICAL INSPECTION OF SCHOOL CHILDREN AND MATERNITY AND CHILD WELFARE.

Applications are invited from registered (male) for the post of . . . . OFFICER to work under £600 per annum, rising by annual increments of £25 to a maximum of £700, with travelling and out-of-pocket expenses on a fixed scale.

The salary will be subject to a deduction of 5 per cent. for Superannuation under the Local Government and Other Officers Superannuation Act, 1922, and the candidate selected will be required to pass a medical examination.

Candidates must possess a Diploma in Public Health, and experience in Refraction work will be considered an important additional qualification.

Applications should be received on or before Saturday, June 8th, by the County Medical Officer of Health, College Hill House, Shrewsbury, from whom forms of application, conditions of appointment, list of duties, and any other information can be obtained.

Blackburn and East Lancashire ROYAL INFIRMARY.

FOURTH HOUSE SURGEON (male) required for Casualty Department, etc., at a salary of £130 per annum, with board, residence, laundry, etc.

The Hospital contains 240 beds, with X-ray, Massage, V.D., Eye, Ear, Nose, and Throat Departments, Pathological Laboratory, etc. There is no outside work.

Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent at once to the undersigned.

NATHAN A. SMITH,
Royal Infirmary, Gen. Supt. & Secretary.
Blackburn.

County Borough and Port of GRIMSBY.

ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited for the above appointment from medical men. Applicants must be duly qualified and registered practitioners of at least three years' standing, and possess the Diploma in Public Health.

The duties will be chiefly in connection with Tuberculosis, but the successful candidate will be required to undertake duty in any such of the Health Services, including the Port (Inspection of Aliens).

Candidates must have had experience in Tuberculosis work, and preference will be given to those who have held a resident Hospital appointment (General, Sanatorium, or Fever). Salary £700 per annum.

Application, stating age, qualifications, and experience, accompanied by copies of three recent testimonials, should reach me, endorsed "Assistant Medical Officer of Health," not later than June 10th.

JOHN W. JACKSON,
Municipal Buildings, Town Clerk.
170, Victoria St.,
Grimsby. *May 21st, 1929.*

Queen Charlotte's Maternity HOSPITAL, Marylebone Road, N.W.1.

ASSISTANT RESIDENT MEDICAL OFFICER (male) required to commence duty on July 1st. Applicants must be registered. Appointment for three months. On completion of this appointment the selected candidate will be expected to proceed to the post of Senior Resident Medical Officer (for three months) on the recommendation of the Medical Staff. Salary of the Assistant Resident Medical Officer is at the rate of £80 per annum and of the Senior Resident Medical Officer £100 per annum, with board, residence, and washing allowance (4/- weekly). Applications, with copies (not originals) of not more than three testimonials, will be received by the Secretary up to June 10th.

ARTHUR WATTS, Secretary.

Lancashire County Council.

RIDDELPH GRANGE ORTHOPÆDIC HOSPITAL.

Applications are invited for the post of JUNIOR HOUSE SURGEON (*woman*) at the above Hospital, which contains 87 beds. Salary is at the rate of £150 a year, together with board, residence, and laundry.

The appointment will be for a period of six months in the first instance, and for a further period of six months at the option of the Council.

Candidates must be duly qualified and registered. Preference will be given to candidates who have held resident Hospital appointments and who are competent Anæsthetists.

Applications, with copies of two recent testimonials, should be sent not later than June 15th to Dr. J. J. BUTTERWORTH, School Medical and Child Welfare Department, County Offices, Preston.

GEORGE ETHERTON,
Clerk of the County Council.

Hull Royal Infirmary

Applications are invited for the post of CASUALTY HOUSE SURGEON (male, married), at present vacant.

Applicants must be fully qualified. Period of appointment six months in the first instance. Salary at the rate of £130 per annum, board and residence.

Applications, together with copies of testimonials, should be sent to the undersigned.

R. J. CABLESS,
May 23rd, 1929. House Governor.

Victoria Hospital, Blackpool
(132 Beds.)

HOUSE SURGEON (Second), male, 12 months. Salary £120 per annum, with residence, board and washing. Applicants (who must be duly qualified and registered) are requested to state in their applications, stating age, qualifications and experience, with three recent testimonials, not later than June 3rd, and endorsed "House Surgeon," to—

JOHN HACKING, Hon. Sec.

Liverpool Heart Ho

MAURICE STERN RESEARCH FELL

Applications are invited for the post of Research Fellow (£150 per annum). Particulars apply to the Secretary, Mr. 14, Cook Street, Liverpool.

CAVENDISH NURSES (Male and Female)

Head Office: 54, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

A very convenient form of telephone message pad sent free on application to the Secretary.

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TELEGRAMS: Tactear, London. Surgical, Glasgow. Tactear, Manchester. Tactear, Dublin.

TELEPHONES: London, 1277 Welbeck. Glasgow, 477 Douglas. Manchester, 3152 Ardwick. Dublin, 531 Ballsbridge.

Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling and all cases. Nurses reside on the premises, and are always ready for urgent calls Day and Night. Skilled Masseuses, Masseurs, and good Valet attendants supplied.

Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

St. James' Hospital, Leeds.

Applications are invited for the filling of a vacancy in the Staff of HOUSE PHYSICIANS and SURGEONS at the above Hospital. Applicants must be fully qualified and registered. The Hospital is one of 1,126 beds, with special departments for Radiology, Pathology, Midwifery, and Diseases of Children. There are, in addition, 320 beds in separate Mental wards. The staff consists of a Medical Superintendent, a Resident Medical Staff of six, a Pathologist, a Radiologist, and Visiting Physicians and Surgeons.

The successful applicant will be required to act as House Physician and Surgeon under the Medical Superintendent and the Visiting Staff, and to perform such other duties as the Medical Superintendent may direct. The term of appointment is limited to two years.

Salary £200 per annum, with board, apartments, and attendance, subject to deductions under the Poor Law Officers Superannuation Act, 1896.

Applications, stating qualifications, and giving particulars of present and prior occupations, together with copies of three recent testimonials, must be received by me not later than 10 a.m. on Saturday, June 1st, endorsed "House Physician and Surgeon."

Selected candidates will receive due notice to attend.

Poor Law Offices, South Parade, Leeds. May 17th, 1929.

JAMES H. FORD, Clerk to the Guardians, Township of Leeds.

Queen Mary's Hospital for the

EAST END, Stratford, E.15.
Telephone: Maryland 2616.

Applications are invited from *fully qualified and registered medical men for the following* posts:

One RESIDENT MEDICAL OFFICER. Salary £200 p.a.
One HOUSE PHYSICIAN. Salary £120 p.a.
Two HOUSE SURGEONS. Salary £120 p.a.
One OBSTETRIC HOUSE SURGEON. Salary £120 p.a.
One HOUSE PHYSICIAN and CASUALTY OFFICER. Salary £150 p.a.

The Hospital contains 213 beds, including 46 Maternity, and other special departments.

Candidates, who should have previously held Hospital appointments, must send applications, accompanied by testimonials, to the undersigned not later than Tuesday, June 4th.

RAPHAEL JACKSON (Major), Secretary.

The Royal Sea-Bathing Hospital,

MARGATE (For Surgical Tuberculosis). (300 Beds.)

Applications are invited for the post of ASSISTANT MEDICAL SUPERINTENDENT at the Royal Sea-Bathing Hospital, Margate, at a salary of £500 a year, with furnished quarters, light, fuel, and laundry. The appointment is tenable for two years.

Candidates must be unmarried and have held a resident surgical appointment in a General Hospital. He should have had some experience of Pathology and Orthopædic Surgery. He will be required to take up his duty at the end of September.

Applications, with three recent testimonials, should be sent on or before May 31st to the R.S.B.H. Office, c/o A. NASH, Esq., Watergate House, York Buildings, Adelphi, W.C.2.

The Cancer Hospital (Free)

(Incorporated under Royal Charter), Fulham Road, London, S.W.3.

The Committee are prepared to receive applications for the post of HOUSE SURGEON. Salary at the rate of £100 per annum.

The appointment is for six months and subject to rules, a copy of which may be obtained from the Secretary.

Previous experience as a House Surgeon is indispensable.

Applications, with three (copies only) testimonials, to be sent to the undersigned not later than the first post on Wednesday, May 29th.

J. COURTNEY BUCHANAN, Secretary.

Gravesend and North Kent

HOSPITAL.

JUNIOR HOUSE SURGEON.

Applications are invited from fully qualified men for the above post.

The Hospital contains 72 beds and cots (extensions will bring this number up to 100 by July), and has a large Casualty, Out-patient, and Ophthalmic Department.

Owing to the unique situation of the Hospital at the Entrance to the Port of London, many accidents and interesting cases are treated, and the posts affords an excellent opportunity for Surgical experience.

The appointment is now vacant, and will be for twelve months. Salary at following scale, with addition of board, lodging, and washing: £80 p.a. for first six months, £150 p.a. for second six months as Senior House Surgeon, payable in equal monthly instalments. There is also a possibility of the successful applicant being retained for a further six months as *Resident Medical Officer at the rate of £200 p.a.* Three weeks' holiday at end of first six months, and three weeks' holiday at end of second six months if appointed R.M.O., both on full pay.

The Hospital is fully equipped with modern X-ray and other apparatus.

Applications, with one copy of three recent testimonials, to be sent to the undersigned immediately.

C. E. CHAPMAN, Secretary.

April 27th, 1929.

King Edward VII Hospital,

RIVELIN VALLEY ROAD.
(Crippled Children.) (130 Beds.)

HOUSE SURGEON (RESIDENT).

Applications are invited for the above post which falls vacant on July 1st. Preference will be given to applicant with previous Hospital experience.

The appointment is for six months, with possible extension for a further six months.

Salary £75 p.a., with board, residence, and lau ionials should be d, and should be King Edward VII Hospital, Rivelin Valley Road, Sheffield.

Manchester Northern Hospital

FOR WOMEN AND CHILDREN,
Park Place, Cheetham Hill Road, Manchester.

The Committee of Management require the services of a *SENIOR HOUSE SURGEON* and JUNIOR HOUSE SURGEON, both duly qualified, who are to commence duties on July 1st.

Senior House Surgeon, salary £130 per annum, with board and residence; Junior House Surgeon, salary £100 per annum, with board only.

Applications, stating age and experience, with copies of recent testimonials, to be sent to the Secretary, Mr. JAMES C. DANIELS, 38, Barton Arcade, Manchester, not later than May 31st.

Stockton and Thornaby Hospital,

STOCKTON-ON-TEES. (140 Beds.)

The General Committee invite applications for the vacant post of HONORARY OPHTHALMIC SURGEON.

Particulars as to qualifications, duties, etc., may be had on application to the Secretary.

Canvassing of the Governors, directly or indirectly, is prohibited, and will disqualify.

Applicant should state when he can take up duties.

Applications, in writing, stating age, qualifications, and experience, together with copies of two or three testimonials, should reach the undersigned not later than June 1st.

J. WILKINSON, Secretary.

Royal Victoria Hospital, Dover.

Wanted, HOUSE SURGEON (male, unmarried), doubly qualified and registered. Salary £180 a year and board, lodging, and laundry. 45 beds.

Applications to be received on or before June 8th by the Hon. Secretary, Royal Victoria Hospital, Dover, on a form to be obtained from him.

North Staffordshire Royal

INFIRMARY, STOKE-ON-TRENT.
(350 Beds.)

The General Committee invite applications for the post of HOUSE SURGEON for Ophthalmic and Aural Departments. Salary £150 per annum, with board, residence, and laundry. The appointment will be for six months, renewable.

Applications to be sent to the undersigned immediately, together with two or three copies of recent testimonials. Preference will be given to candidates having had previous Hospital experience in Ophthalmic and Aural Departments. There are six residents—two medical, four surgical.

North Staffs Royal Infirmary, Stoke-on-Trent. W. STEVENSON, Secretary and House Governor.

North Staffordshire Royal

INFIRMARY, STOKE-ON-TRENT.
(350 Beds.)

The General Committee invite applications for the post of ASSISTANT HOUSE PHYSICIAN. Salary £125 per annum, with board, residence, and laundry. The appointment will be for a period of twelve months.

Applications to be sent to the undersigned immediately, together with copies of two or three recent testimonials. Preference will be given to candidates having had previous Hospital experience.

There are six Residents—two Medical, four Surgical.

W. STEVENSON, Secretary and House Governor.

North Staffordshire Royal

INFIRMARY, STOKE-ON-TRENT.
(350 Beds.)

The General Committee invite applications for the post of HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry. The appointment will be for a period of twelve months. Applications to be sent to the undersigned immediately, together with copies of two or three recent testimonials. Preference will be given to candidates having had previous Hospital experience There are six residents—two medical, four surgical.

North Staffordshire Royal Infirmary, Stoke-on-Trent. W. STEVENSON, Secretary & House Governor.

The London Lock Hospital,

91, Dean Street, W.1.

The Board of Management invite applications for the post of HOUSE SURGEON at the Male Lock Hospital. Candidates must be doubly qualified and duly registered. Salary at the rate of £200 per annum, with furnished flat, full board, and laundry. The appointment to be for six months. Duties to commence July 1st. Applications, enclosing copies (only) of three recent testimonials, to be sent to the undersigned at the Male Lock Hospital, 91, Dean Street, W.1, on or before June 3rd.

By Order of the Board, H. J. EASON, Secretary.

Hertford County Hospital.

Applications are invited for the post of HONORARY SURGEON to the above Hospital.

Candidates should possess a Degree in Surgery of a British University or the Fellowship of one of the Royal Colleges of Surgeons.

Applications, together with copies of testimonials, should be made by Monday, June 3rd, to the undersigned.

PERCY G. BROOKS, Secretary.

Hertford County Hospital.

Applications are invited for the post of HOUSE PHYSICIAN (male). Duties commencing June 17th. Salary £150 per annum, with board, residence, and laundry. Some knowledge of Pathology desirable. The appointment is for *six months in the first instance.*

Applications, with copies of three recent testimonials, should be sent to the undersigned and be received not later than June 8th.

PERCY G. BROOKS, Secretary.

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W. J. HICKS, *Secretary.*

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Applications to be sent immediately to the Medical Director.

Prince of Wales' Hospital,
CARDIFF.

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry.

Candidates, who must have had previous Hospital experience, and possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the Secretary.

Appointment is for six months, but candidates are eligible for re-appointment for a further period.

GILBERT D. SHEPHERD, Secretary.

Queen's Hospital for Children,
Hackney Road, London, E.2.

HOUSE SURGEON (male) required on June 30th. Six months' appointment. Salary at the rate of £100 a year, with board, lodging, and washing.

Applications must be made on forms to be obtained from the Secretary, and must be sent in, with copies of not more than four testimonials, on or before June 5th.

T. GLENTON-KERR,
May 10th, 1929. Secretary.

The Manor House Hospital,
Golders Green, London, N.W.11.
(112 Beds.)

Applications are invited for the post of JUNIOR HOUSE SURGEON. Salary at the rate of £200 per annum, with board, residence, and laundry. Appointment for six months, renewable if mutually agreed. Preference given to one having held six months previous appointment as a House Surgeon. Candidates (male and unmarried) must be fully qualified and registered. Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, should reach the undersigned not later than the first post on Saturday, May 25th.

JAMES W. LINKHORN, Secretary.

City of London Hospital for
DISEASES OF THE HEART AND LUNGS,
Victoria Park, E.2.
(Bus, tram, and tail, Cambridge Heath, L. & N.E.R.)

Applications for posts of HOUSE PHYSICIAN (male), with copies of recent testimonials, are invited to be sent to the undersigned by Monday, June 10th.

The appointments will be for six months each from July 1st and August 1st. Salary at the rate of £100 per annum, with board, residence, and laundry provided.

GEORGE WATTS, Secretary.

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Birmingham.—About £2,300 p.a. Panel 1,700. Mids. from 2 gns. Visits 3/6 up. Good house, 4 beds., etc. Large garden. Two branches. Suitable for two.—No. 8466.

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Wilts. — Unopp. — About £850 p.a. Appts. about £100 p.a. Panel about 600. Visits 3/- up. Mids. 3 to 10 gns. Good house, nice garden, rent £52.—No. 8447.

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10. S.E. COAST.—Partnership in steadily increasing Practice about £2,600 in popular watering-place. Panel 1,850. Convenient house (6 bedrooms), garden, and garage, to rent. Premium one-half share 2 years' purchase.

11. SUSSEX. — Small Country Practice in delightful part near coast. Receipts past 12 months £346. Picturesque house (5 bedrooms), with nice garden to be sold or let. Premium £350.

12 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. Premium one third share 2 years' purchase.

13 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work

14 N.W. COAST. — Non-dispensing Practice over £850 p.a. in seaport town. No panel and very little night work. Excellent semi-detached residence (5/6 bedrooms) for sale. Premium 1½ years' purchase.

15 YORKSHIRE (W.R.). — Partnership in Practice about £2,400 in one of the chief towns. Panel over 900. Partner should be a Protestant. One third share at 1½ years' purchase after preliminary assistantship.

16. S.W. of ENGLAND.—Partnership in Practice about £3,000 in market town. Panel 1,100/1,200. Detached house (5 bed and dressing rooms), in 3/4 acre garden, for sale. Premium one-half share 2 years' purchase.

17 YORKSHIRE (N.R.). — Practice about £1,000 in small country town. Panel 450. House (5 bedrooms), garage, and garden, to be sold or let. Scope. Premium £1,250.

18 HOME COUNTIES.—Practice about £1,000 p.a., with great scope, in beautiful country district under 35 miles from London. No house available, but could build. Premium 1½ years' purchase.

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26 LONDON, W. — Practice about £1,200, largely from the panel. Two Surgeries. Premium £2,300 cash.

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29 BUCKS. — Small Country Practice over £300 p.a. Panel 250. Very nice attractive house (8 bedrooms), garden and garage, for sale. Premium—Practice—£300.

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31 LEEDS. — Practice £1,800 p.a. Panel 1,400. House (3 bedrooms) for sale or rent. Premium £2,600, to include drugs, etc.

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39 DEATH VACANCY.—London, S.W.—PRACTICE about £200 p.a., with good scope for increase. Panel 30. House, with 3 bedrooms for sale.

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52 DEATH VACANCY. — Northants. — Country PRACTICE of £1,200 p.a. Panel between 700/800.

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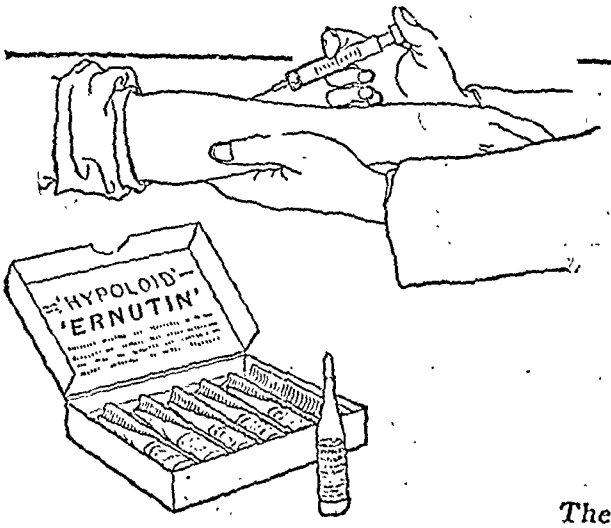

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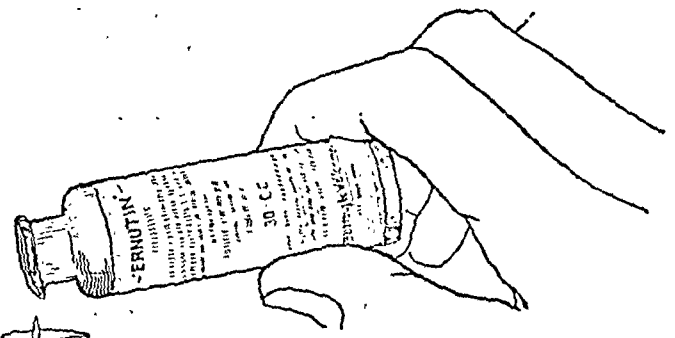

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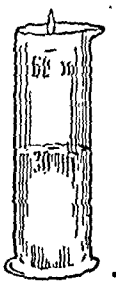

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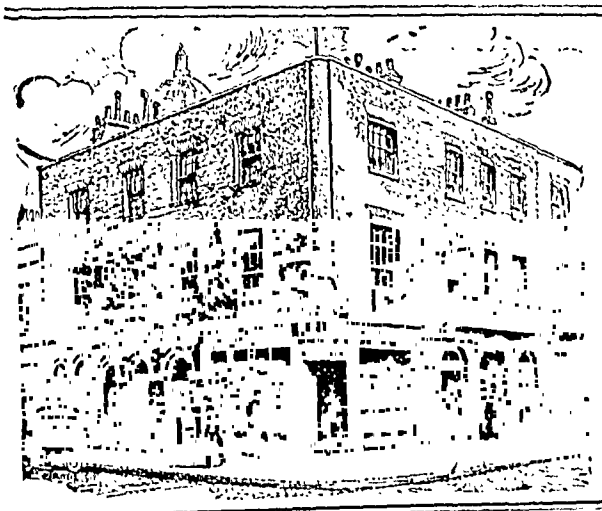

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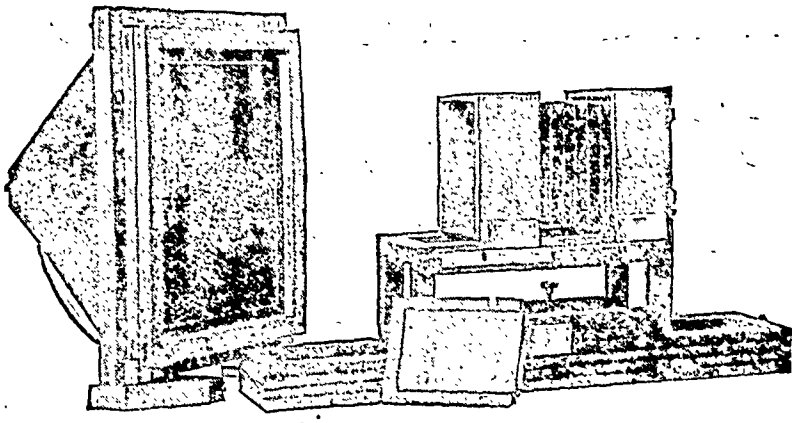

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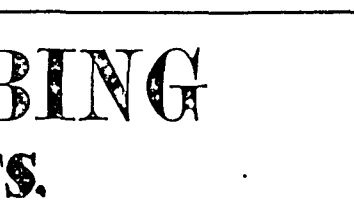

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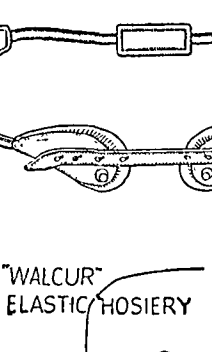

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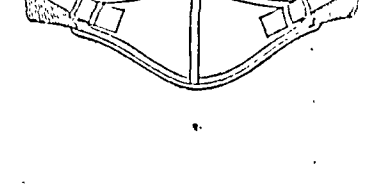

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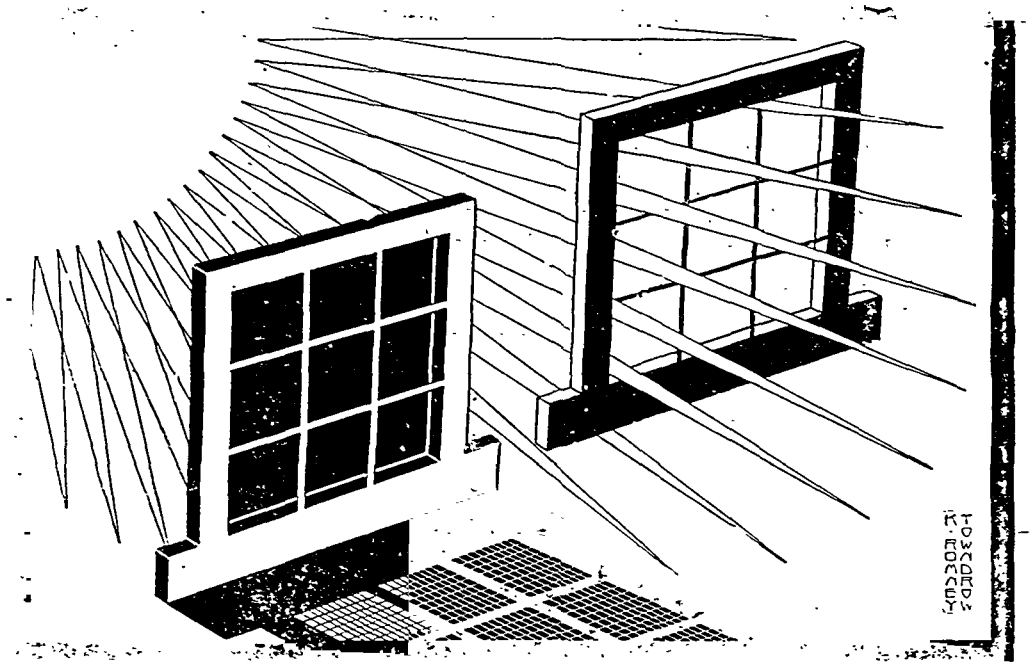

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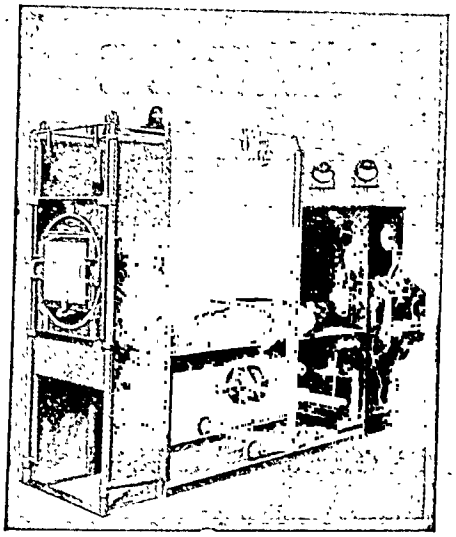

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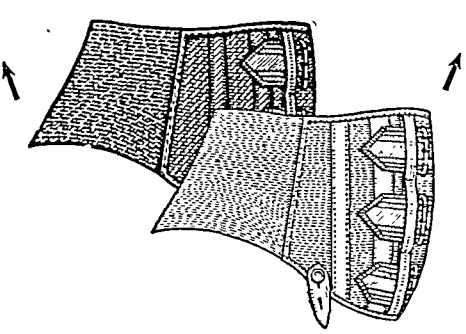

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97th Annual Meeting

British Medical Association

MANCHESTER

JULY 22nd to JULY 26th, 1929, inclusive.

THE

ANNUAL EXHIBITION

OF

SURGICAL INSTRUMENTS and APPLIANCES, DRUGS, FOODS, BOOKS, Etc.,

will be held in the

City Exhibition Hall, Deansgate, Manchester

EXHIBITION HOURS

Mon., July	22nd.	2 p.m. to 6 p.m.
Tues., „	23rd.	9 a.m. to 6 p.m.
Wed., „	24th.	9 a.m. to 6 p.m.
Thurs., „	25th.	9 a.m. to 6 p.m.
Fri., „	26th.	9 a.m. to 6 p.m.

FORMAL OPENING BY PRESIDENT-ELECT

The Exhibition will be formally opened by the President-Elect, accompanied by other Officers of the Association and the Members of the Representative Body, on Tuesday, July 23rd, at 9 a.m.

Reception Room and Information Bureau.

The Reception Room and Information Bureau will also be situated in the CITY EXHIBITION HALL, where all Members will register their attendance at the Meeting, obtain all tickets for functions, and receive information in connection with the Meeting.

Plan of Exhibition, with full particulars, now available.

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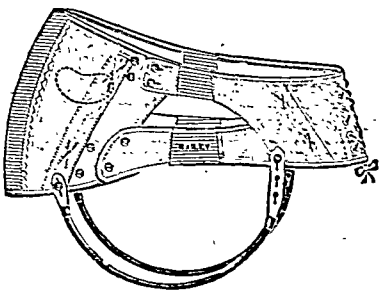


No. 5a BELT (Bailey's Patent)
FOR FLOATING KIDNEY.

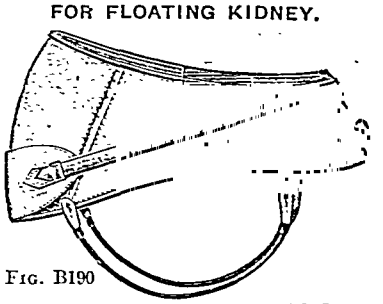
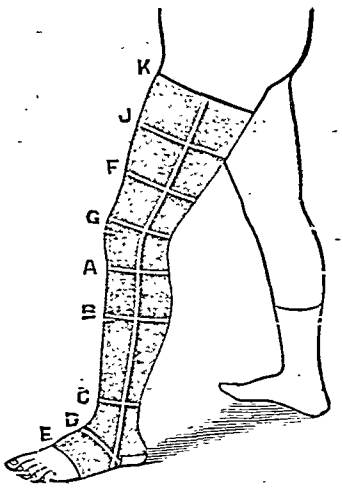


FIG. B190
BELT FOR ENTEROPTOSIS.



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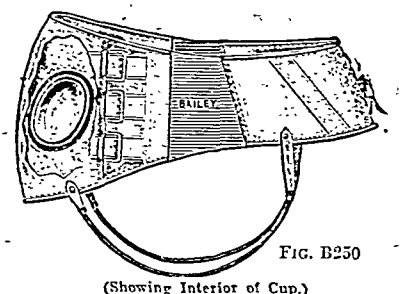
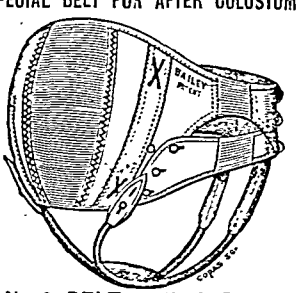


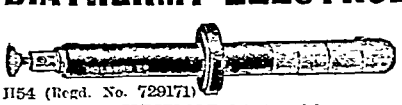
FIG. B250
(Showing Interior of Cup.)
SPECIAL BELT FOR AFTER COLOSTOMY.



No. 3. BELT (Bailey's Patent)
for PROLAPSUS UTERI.

DIATHERMY ELECTRODES by Drs. CUMBERBATCH & ROBINSON

As used at St. Bart's Hosp



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H35 (Regd. design No. 710868)
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With THERMOMETER, 15/6

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26 mm. diameter, 10/6
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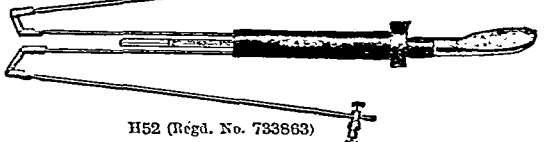
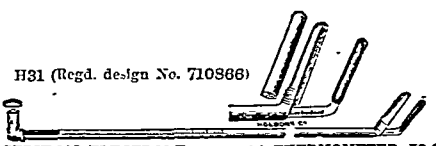


H52 (Regd. No. 733863)
PROSTATIC ELECTRODE, latest model, 27/6; with THERMOMETER, 31/6

Further Particulars on application

H31 (Regd. design No. 710866)



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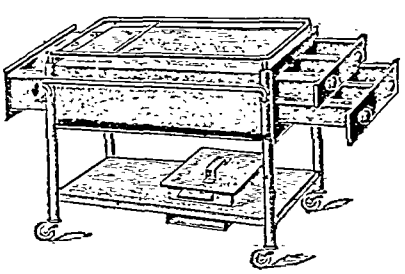

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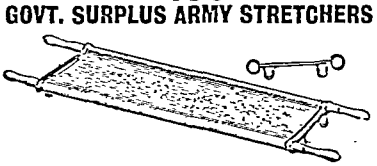

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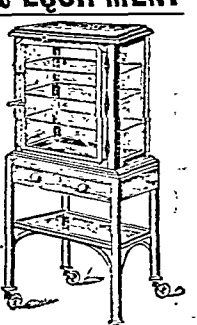

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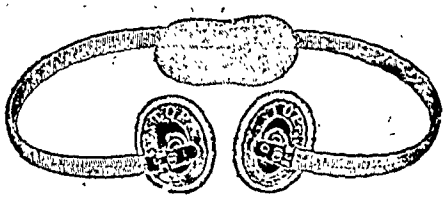

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Especially efficacious in coughs and colds, simple, congestive, and catarrhal rhinitis, hoarseness, bronchitis, and laryngitis.

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Made by Nujol Laboratories

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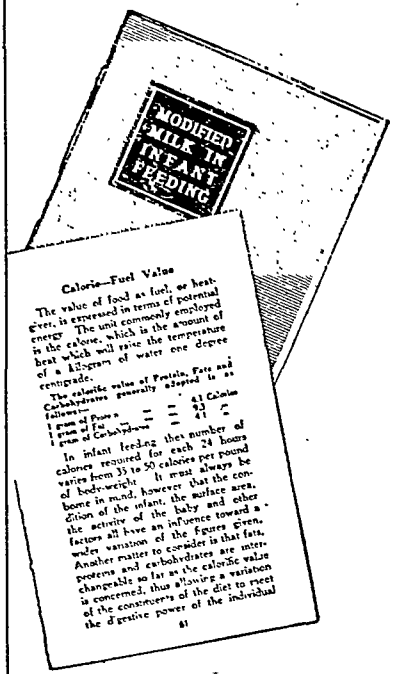

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in the special dietary of under-weight babies. Its effects are attributable to the high percentage of Malto-dextrin and to its action upon the casein of the cow's milk with which it is mixed for use.

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Kalzana is dispensed by Chemists in air-tight packets containing 50 and 100 tablets. Free from harmful by-effects and is pleasantly flavoured.

Kalzana

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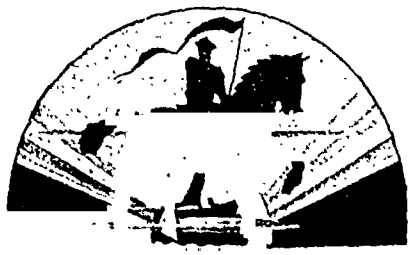

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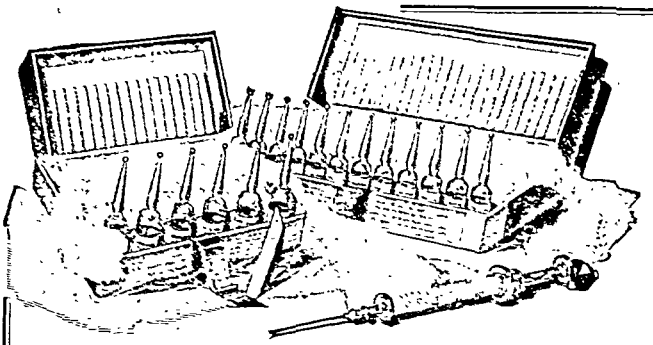

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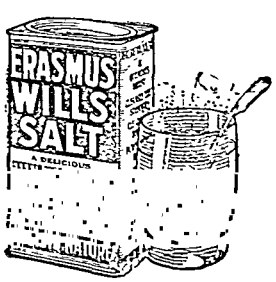

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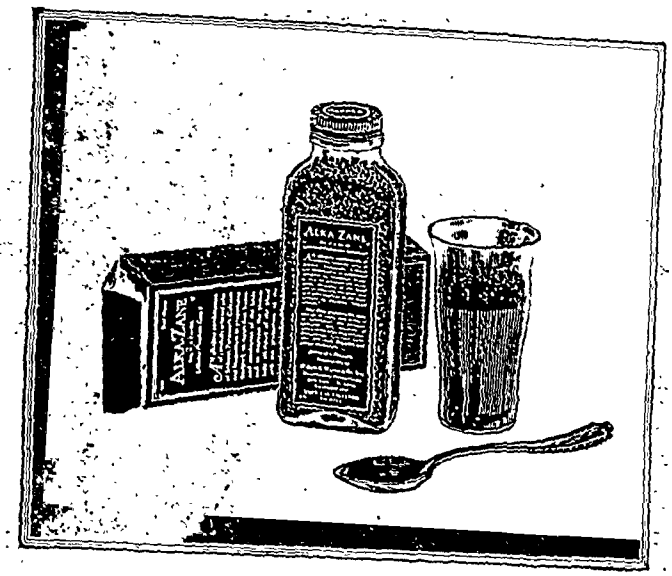

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A brief trial will demonstrate the efficiency of

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Note on Infections of the Naso-Pharynx

In these latter days of medicine when people expect the profession to recommend something simple to keep them well rather than take mixtures when they are ill, a preparation which can prevent infection of such an important area as the naso-pharynx should appeal to every practising physician, and especially to Medical Officers who are responsible for the safeguarding of the health of great numbers of children.

The following extract from a recent report speaks for itself with regard to the value of Dimol Snuff—its potency and reliability—in cases of diphtheria carriers, and what has been found a practical solution for the elimination of this troublesome bacillus should be as applicable to the Pneumococcus, Bacillus influenzæ, Meningococcus, Micrococcus catarrhalis, etc.—

> "We are getting very excellent results with Dimol Snuff in the treatment of diphtheria carriers (12 weeks positive cultures) and 'pre-carriers' (6 weeks positive cultures): the latter, of course, with the idea of preventing them reaching the carrier stage.
>
> "Taking both classes together, we consider that we have been successful in about 90% or more cases.
>
> "Most of the failures we find due to some definite chronic nasal disease.
>
> "As a routine we use Dimol Snuff twice a day with an insufflator. If a failure occurs and it is apparently the nose itself and not a question of adenoids then we increase the treatment to six times a day. The children do not appear to suffer any harm from the powder even in these extreme doses.
>
> "The treatment is continued until the child has had negative swabs twice a week for 3 weeks and then another 3 weeks without snuff.
>
> "One more point which is established is that dirty noses are all cleared up, with one exception; in this case I suspect an antrum and shall examine him for such, as he is a big boy." —— —— F.R.C.S.

Children can be taught to take the snuff easily and efficiently in small pinches, or from the back of the hand, and soon learn actually to enjoy the mild warmth induced in their nostrils.

The last paragraph of the quoted Report is testimony which should easily appeal to every Medical Officer.

Dimol Laboratories, Limited, 40, Ludgate Hill, London, E.C.4

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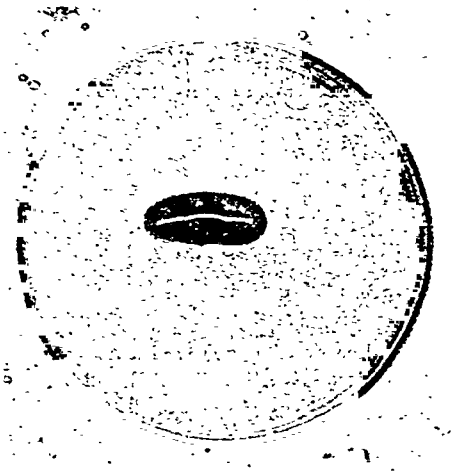
The LONDON HOSPITAL BINIODIDE CATGUT

(Morley's Process)



"A short length of London Hospital Biniodide Catgut was placed in agar-agar thickly sown with aerobic spores and incubated. The inhibiting action of Biniodide in the catgut not only prevented invasion but exerted a local bactericidal action in the infected agar-agar for a distance of from 5 m.m. to 9 m.m. round the ligature."

Members of the profession are invited to visit the department at the London Hospital, Whitechapel, to inspect the process of manufacture throughout.

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The London Hospital Catgut may be obtained from all the leading Surgical Equipment Houses

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Sulphostab (BOOTS)

DIOXYDIAMINOARSENOBENZOL SODIUM FORMALDEHYDE BISULPHITE

Specially prepared for subcutaneous and intramuscular injection in the treatment of syphilis and other spirochætal diseases. Exhaustive clinical trials, both with children and adults, have proved highly satisfactory.

SULPHOSTAB (BOOTS) is practically painless in use, and its high therapeutic activity has been fully demonstrated.

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0·050 gm.	0·15 gm.	0·45 gm.
0·075 gm.	0·20 gm.	0·60 gm.

In single ampoules and in boxes of ten ampoules.

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Local Anæsthesia in Surgical Practice

EPITHELIOMA

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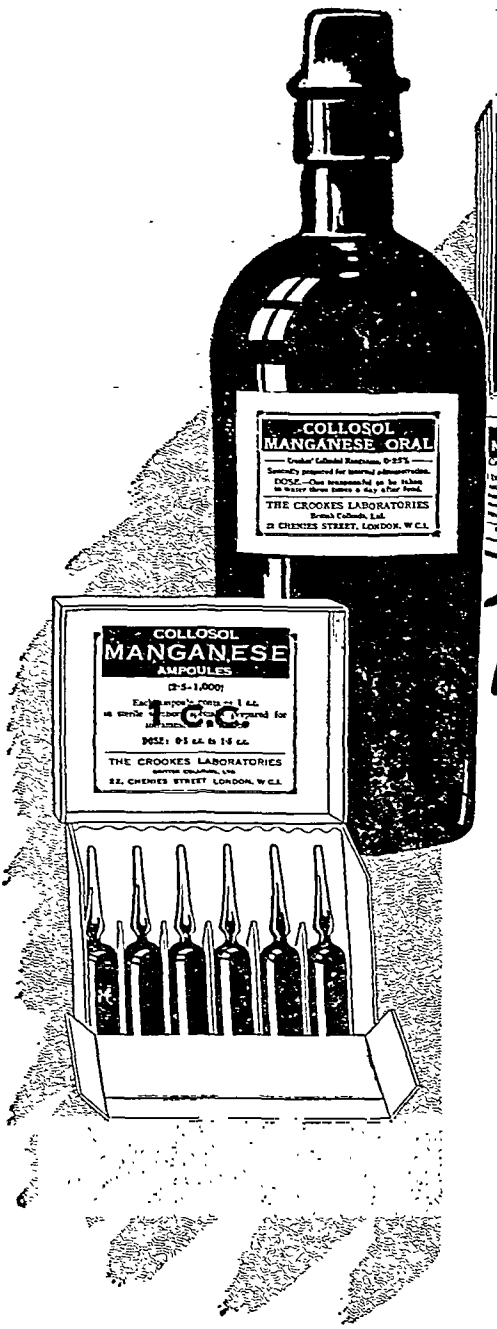

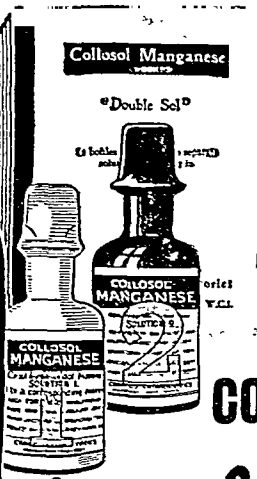

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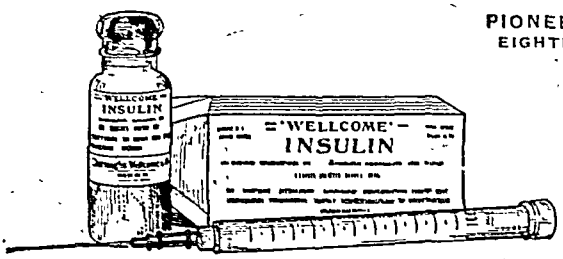

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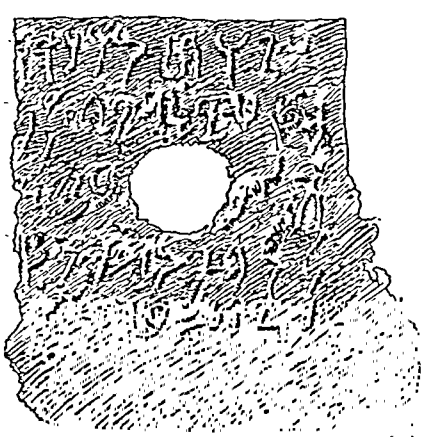

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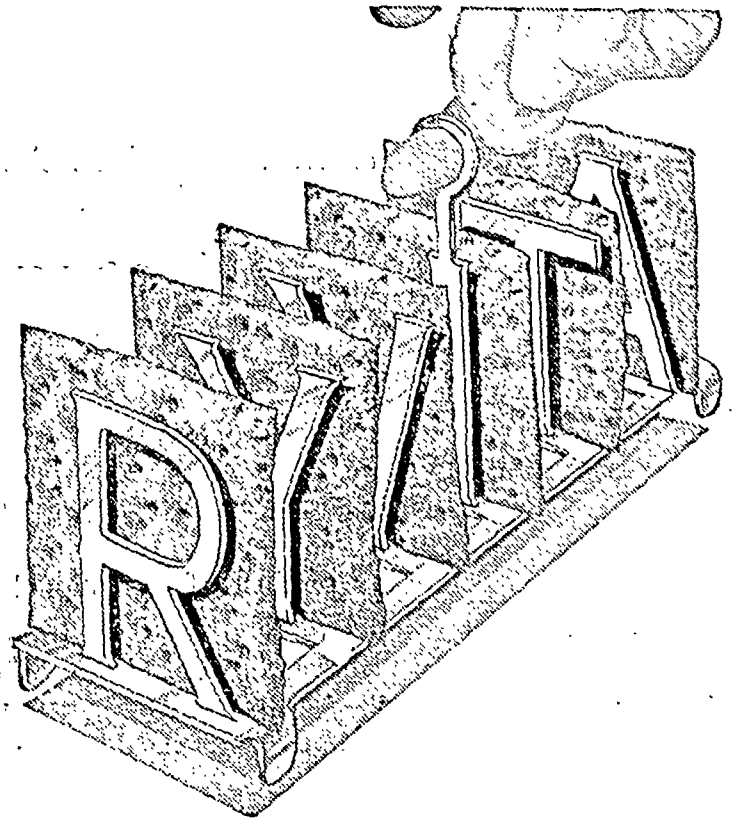

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A Lecture ON THE PRINCIPLES OF SPA TREATMENT.

DELIVERED BEFORE THE DUNDEE DIVISION OF THE BRITISH MEDICAL ASSOCIATION

BY

WILFRID EDGECOMBE, M.D., F.R.C.P., F.R.C.S.,

CONSULTING PHYSICIAN TO THE HARROGATE INFIRMARY.

THE use of natural mineral waters and baths in the treatment of disease is of great antiquity, dating back to Greco-Roman times, or even earlier. Founded originally on pure empiricism it has gradually emerged on to a higher plane by reason of the scientific work that has been done on the subject, mainly during the last century, and it may now be said to rest on a more or less scientific basis. In spite of this there lingers in the mind of the medical profession at large a mild suspicion as to the real utility of spa treatment, though the laity are well persuaded of its value. Perhaps the main reason for this distrust lies in the advertising of spas by the lay managements, for in Great Britain all the spas are under municipal or private control. Abroad many of the spas are under State control, and advertisement of them proceeds on similar though usually more intensive lines. The claims made by most spas are apt to be extravagant. Lay advertisement, on commercial lines, of the general amenities of a spa, is permissible, but the advertising of the purely medical aspects needs revision, and should be rigidly controlled by the medical profession, and no statements should be put forward that cannot be abundantly justified on clinical or experimental grounds.

Spa treatment may be regarded from two widely different angles: that of the general practitioner or the consulting physician who is desirous of, or in the habit of, sending his patients for treatment to a spa; and that of the practitioner on the spot to whose care the patient is committed. Each views the subject in a different way. The general practitioner, at the outset of his career, is frankly ignorant of spa treatment, what it can do, the principles underlying it, and the types of diseases likely to be benefited thereby. This is not surprising, for in his crowded curriculum there is no room for any instruction on the subject. Older practitioners who have some acquaintance with spa treatment include, first, those who accept the valuation put upon the spas by interested parties and are content to send their patients in the hope of relief or cure without troubling to inquire for themselves the rationale, if any, underlying the treatments; secondly, those of more inquiring mind who are rightly sceptical and desire to know the scientific grounds, experimental or clinical, on which the claims for the efficacy of spa treatment are based; and, thirdly, those, in the minority, who have made such inquiries and are satisfied that there is adequate reason for the faith that is in them. It is to the first two groups that my statement of principles is directed.

The outlook from the standpoint of the spa-physician varies according to the type of individual. There are those of the ultra-rational school who have an abounding faith in the curative properties of mineral waters and baths in general, and of the water and baths of their own resort in particular; claiming that they have special virtues inherent in them that are not capable of mensuration by the methods of science, and that experimental work has not succeeded, and cannot succeed, in elucidating these intangible properties. When asked to furnish evidence of their faith they point to clinical results, claiming that a mode of treatment that has stood the test of centuries cannot be devoid of foundation, whether rational or ultra-rational. And there is something to be said from their point of view. On the other hand, there are those of the rational school, who maintain that the admittedly good results often achieved by spa treatment are explicable on rational grounds; that the waters are to be regarded as compound drugs whose pharmacological action can be ascertained by experimental methods; that spa treatment rarely consists solely in the administration of waters—other factors, baths, exercise, diet, climate, etc., coming into play; and that the effects are obtained by the application of certain general principles of treatment that are followed in greater or less degree at all spas.

THE ESSENTIALS OF SPA TREATMENT.

At the outset it is necessary to define what is meant by a spa. By a spa is understood a health resort having, as its leading feature, a natural mineral water, or waters, of a distinctive type. Spa treatment connotes the interplay of many factors. It embraces the use, singly or combined, of many agents, physical and psychical.

The physical agents comprise: (*a*) natural mineral waters, used internally by drinking, and externally as baths; (*b*) special baths and douches of various kinds—massage douches and needle douches, etc.; (*c*) accessory physical methods, such as massage, exercise, mechano-therapeutics, inhalations, and various electrical procedures; and (*d*) climate, diet, and general regimen. The psychical factors include: (*a*) change of scene and environment; (*b*) absence from business worries; and (*c*) recreation and general amenities. It is not only the taking of this or that water, or the use of any special bath, but the summation of the whole that constitutes spa treatment.

MINERAL WATERS OF BRITISH SPAS.

The chief British spas are, in alphabetical order, Bath, Buxton, Cheltenham, Droitwich, Harrogate, Leamington, Llandrindod, Strathpeffer, Trefriw, and Woodhall Spa; which together comprise the British Spa Federation. To these may be added certain lesser-known resorts: Llangammarch, Llanwrtyd, Moffat, Bridge of Allan, Tunbridge Wells, Matlock Bath, and others. The chief types of mineral waters occurring in Great Britain are as follows:

1. *Simple thermal waters*, issuing hot, of low mineral content, and radioactive in varying degree. They contain a relative excess of calcium salts, and little sodium chloride. They are exemplified by the waters of Bath, Buxton, and Matlock Bath. Their action is mainly diuretic, and changes are excited in nitrogenous metabolism, as evidenced by alterations in the urinary output. It is claimed that the radioactivity of the water is largely responsible for its effect, but this is as yet unproved.

2. *Saline waters*, issuing cold, highly mineralized, and having little or no radioactivity. They are subdivided into three groups:

> (*a*) *Muriated*, containing sodium chloride in large amount. For example, the waters of Droitwich, which contain 31 per cent., or ten times as much as sea water, and those of Nantwich and Northwich. They are only used externally for bathing purposes, and are heated by steam. A milder saline water, used internally, is found at Llangammarch.
>
> (*b*) *Muriated sulphated*, containing, in addition to sodium chloride, the sulphates of sodium and magnesium. Such are the waters of Cheltenham, Leamington, and Bridge of Allan. They have an aperient action on the bowel, and are also diuretic.
>
> (*c*) *Muriated alkaline*, containing sodium bicarbonate in relative excess, in addition to sodium chloride. The only example of this water in Great Britain is the Pittville Spring at Cheltenham.

3. *Sulphur waters*, issuing cold, highly mineralized, and radioactive in low degree. They are subdivided into two groups:

> (*a*) *Saline sulphur*, containing sodium chloride in excess, with many other salines, and sulphur in the form of sulphides and sulphuretted hydrogen gas. Examples are found at Harrogate, which has a great range of saline-sulphur waters, strong and mild: at Strathpeffer, in whose waters the sulphuretted hydrogen is in relatively large amount: at Llandrindod, where the waters belong to the mild saline-sulphur class; and at Llanwrtyd and Moffat. The action of the stronger members of the group is aperient on the bowel and stimulating to the liver, while the milder members act mainly on the kidneys. Both provoke changes in metabolism.
>
> (*b*) *Alkaline sulphur*, containing carbonates in addition to chlorides and sulphides. Examples of these occur at Harrogate, where they are chiefly used for bathing purposes in skin cases.

4. *Chalybeate waters*, issuing cold and containing iron in addition to salines in various amounts. They are subdivided into two groups:

(*a*) *Saline iron*, containing sodium chloride and other salines, with iron as carbonate, chloride, or protosulphate.

(*b*) *Pure chalybeate*, containing iron as their chief constituent, with minimal quantities of other substances. Examples are found at many spas—Buxton, Harrogate, Llandrindod, Strathpeffer, Trefriw, Llanwrtyd, and Tunbridge Wells.

5. *Bromo-iodine waters*, issuing cold, containing small amounts of bromine and iodine, in addition to other salines such as sodium chloride, *calcium, and magnesium*. The only example in Great Britain is the water of Woodhall Spa.

Pharmacological Action of Spa Waters.

In considering the pharmacological action of these waters it must be borne in mind that they are not single drugs, but complex solutions of multiple chemical substances in a state of ionic dissociation, and in many instances in a colloidal form. To attribute the action of a water to any one constituent is fallacious; each must be regarded as a compound drug and its pharmacological action assessed as the resultant effect of the whole contents. Large clinical experience has made us familiar with the broad effects of these waters, and more recently experimental work undertaken from time to time at certain of the spas has explained these effects and furnished for them a scientific rationale.

The general effects of mineral waters, as contrasted with the effect of an equivalent quantity of plain water, are (1) the stimulation of metabolism, giving rise to increased oxidation, diminished formation, and increased elimination, of waste products; (2) the antiseptic action of the sulphur group; (3) the action on the thyroid of the iodine group. There is no evidence that any of these waters have a truly specific effect in any disease—specific in the sense that quinine is a specific for malaria, emetine for amoebic dysentery, or the heavy metals, mercury and bismuth, for syphilis. Some waters act mainly on the kidneys, some on the bowels, some on the liver, in an analogous way to other drugs, simple or compound, but no true specificity has been shown to exist.

Baths and Accessory Treatments.

The next factor in spa treatment is the use of baths. These may be divided into baths particular to each spa, and those common to all.

The particular baths are the natural mineral water baths of each place given as immersion baths or swimming baths —for example, the sulphur baths of Harrogate, the immersion baths of Buxton and Bath, the saline bath of Droitwich. Here again there is no convincing evidence of any specific action. The effects are due to: (*a*) temperature and its influence on the circulation and the nervous system; (*b*) the hydrostatic effect of the weight of the water pressing on the body; (*c*) the stimulation of the nerve endings of the skin by the salines in solution, and the resultant reflex effect on the vessels; (*d*) the inhalation of radium emanation, when present, or of carbon dioxide, as in the aerated baths.

The baths common to most spas are: (*a*) the massage douches—Aix, Vichy, and trough massage; (*b*) douches without massage—local douches, needle douches, Scotch douches, sitz douches.

Various special baths are peat, brine, Nauheim, hot air, radiant heat, vapour, Turkish, whirlpool, paraffin wax, liver packs, local packs of peat or fango mud.

The physiological effects of these baths have in most cases been well worked out. The fundamental action of them all is the excitation of changes in the circulation, general or local, leading to improved blood and lymph supply to the tissues, and accelerated interchange of tissue fluid; the raising of the resistance of the body to infection by the production of bactericidal substances in the blood, and the flooding of local parts with fresh blood and lymph charged with antibodies; and the effects, sedative or stimulant, of temperature, percussion, massage, etc., on the nervous

Accessory treatments include intestinal lavage on the Plombières system, a mineral water more or less isotonic with the blood being used; massage in its different forms; mechano-therapeutics; and electrical treatment by means of high-frequency, faradic, galvanic, and static currents. On the other factors—climate, diet, change of environment etc.—it is not necessary to lay stress.

Claims Made for Spa Treatment.

When we come to consider the claims made by the various spas, British, French, and other European, of their efficacy in the treatment of disease, and to examine critically the lists of diseases it is desired should be sent to them, we are at once struck by the extraordinary resemblance of these lists to each other. I have tabulated lists of the diseases claimed to be treated at the British spas taken from the *Handbook of the British Spa Federation* of the chief French spas taken from the *Spas of France issued by the Medical Commission of the Thermal Resorts of France*; and the Middle European spas, taken from the *Bade-Almanack*. Examples of each group may be quoted and contrasted. In the British group, Buxton and Harrogate have very dissimilar waters. Here is Buxton's list of diseases:

Gout; gravel; rheumatism; fibrositis; sciatica; neuritis; rheumatoid arthritis; osteo-arthritis; high arterial tension; arterio sclerosis; cardiac affections; skin diseases; colitis; anaemia.

Here is Harrogate's list:

Gout and other metabolic disorders, glycosuria, obesity. Functional liver derangement, and early cases of cirrhosis, cholelithiasis and cholecystitis. Chronic skin diseases. Synovitis, fibrositis sciatica, and other forms of neuritis. Arthritis—rheumatoid chronic rheumatic, and toxaemic varieties. Mucous colitis, chronic dysentery, constipation, and intestinal toxaemias. Anaemia in its various forms. Nervous diseases, neurasthenia, and hysteria Hyperpiesia. Sequelae of tropical diseases.

You will note the very close resemblance between the two. Much the same is true of the other British spas.

In the French group, Aix and Contrexéville have waters presenting striking differences between them. Aix claims to treat the following:

Chronic rheumatism—articular, muscular, neuralgic. Articular gout, polyarthritis deformans, and osteo-arthritis. Sciatica neuritis; syphilis; dermatoses, etc.

The list for Contrexéville is as follows:

Nephritis; gravel; urinary disorders; gout; hepatic disorder diabetes; arterial hypertonus and early sclerosis; arthritic disorders.

It is true that there are certain other spas in France notably La Bourboule, Mont d'Or, and Bagnoles de l'Orn whose claims are narrowed to limited groups of disease but these are the exception. I will cite one further list this time from Marienbad, in the Mid-European group:

Disorders of metabolism—obesity, gout, diabetes. Anaemia Disease of the digestive organs—stomach, bowel, and liver Diseases of the respiratory and circulatory organs—pulmonary catarrh, fatty heart, arterio-sclerosis. Affections of the urinary organs; of the female genital organs; of the nervous and locomotor systems. Sciatica, peripheral neuritis, chronic rheumatism

Now either one of two conclusions may be drawn from these facts: there is no escape. Either the claims made are extravagant and cannot entirely be substantiated, in which case they stand urgently in need of revision; or they are in the main true, in which case it must follow that there is nothing truly specific in spa treatment in general.

It is absurd to suppose that such diverse waters as those of Buxton and Harrogate, Aix and Contrexéville, can be equally specific for the average case of gout, or for the group of chronic rheumatic diseases which they all claim to treat; and similarly through the list of diseases. If we attempt to formulate clear and precise indications as to which case of gout, arthritis, rheumatism, colitis, or any other disease should be sent to which spa, great difficulty is encountered. These indications can only be stated in a general, somewhat nebulous, way; no definite rules can be laid down owing to the absence of specific data to serve as a basis, for the claims founded on clinical experience also are apt to be too vague and too wide. If, on the other hand, we grant that the claims made are in the main justified, we are driven to the conclusion that spa treatment, if it be beneficial in the variety of diseases for which

its value is claimed, must be so by reason of certain broad general principles on which it is founded.

It will be noted first that the diseases enumerated in the lists belong to the chronic order; secondly, that the diseases are mainly of the chronic metabolic or nutritional type, the chronic diathetic disorders, and the chronic infections. Now chronic nutritional disease may be brought about by prolonged disturbance of one or all of the three stages of the process of nutrition, which are sequentially dependent each on the other. The primary or alimentary stage is governed by the character of the food ingested, and the capability of the digestive organs. The intermediate stage of storage depends on the functional activity of the liver and its power of destroying toxins. The third, or distributive stage, depends on the proper interchange of fluid between the tissues and tissue fluid, and between the latter and the blood; and this in turn depends largely on the soundness of the blood vessels and on their capability of contraction and dilatation—in other words, it depends largely on the changes in blood pressure. The first two stages may be studied clinically by various means; the performance of the last stage cannot be directly observed, but may be inferred from the changes that take place in the capillary circulation as deduced from observation of the arterial and venous blood pressure.

Aims of Spa Treatment.

In spa treatment the main factors consist of the administration of waters, of baths, appropriate dieting, and exercise, active or passive. Three of these influence the body primarily by changes induced in the circulation: (1) waters, largely by their diluent effect on the blood, apart from the action of their medicinal constituents on various organs, and the metabolic changes they excite; (2) baths, entirely by the changes they excite in the circulation and the nervous system, for there is no proof that mineral constituents of waters used for bathing are absorbed by the skin; and (3) exercise, by stimulating the circulation and promoting the flow of lymph. Diet, though it mainly concerns the primary or alimentary stage of nutrition, has a marked effect on the blood pressure, and through the blood pressure it influences the final or distributive stage.

In chronic infective disease the first step is to locate and remove, if possible, the source of infection; secondly, to build up the natural resistance of the body to infection; and thirdly, to attack the local residual conditions resulting from infection—for example, arthritis—by balneological and other measures, to improve the local blood and lymph supply.

I would state the broad principles as follows: the aim of spa treatment is to regulate faulty tissue interchange, rendered abnormal by excessive or defective intake, by defective or excessive output, by lack of exercise and fresh air, or by the action of poisons, chemical or bacterial. Improvement of interchange between blood and body fluids leads to improved metabolism, increased resistance to disease, and increased power of recovery. The modes of effecting these aims are:

1. The securing of increased elimination of waste products through the bowel, by means of waters having an aperient action; through the kidneys by waters having a proved diuretic effect; and through the skin by means of baths having a diaphoretic action.

2. Improvement in the circulation and acceleration of the flow of tissue lymph, thereby enhancing the rate of dislodgement of waste products from the tissues and the supply of fresh nutriment from the blood. Such quickened metabolic changes are brought about by mineral water baths, massage douches, and other bathing procedures.

3. Through the resulting changes in general metabolism, securing increased resistance to disease and increased power of recovery. Recent research tends to show that the bactericidal power of the blood may be raised by radiant light and heat baths, by ultra-violet rays, and by procedures such as the liver pack, that cause a powerful stimulation and reddening of the skin.

4. The regulation of the intake of food according to the needs of the particular case.

5. The regulation of the amount of exercise or rest.

6. The securing of conditions having a psychological effect, such as change of scene and surroundings, absence from work and worry, and suitable congenial occupation or recreation.

7. Lastly, the removal, where possible, of the cause of the disease—for example, the removal of any discoverable source of local infection.

Types of Spa Treatment.

On these principles, then, there are three broad types of treatment applicable to the various chronic diseases:

1. The anabolic type, where the aim is to build up a deficient metabolism by increasing the intake, by promoting assimilation, and by avoiding the production of excessive output. Examples of cases suitable for this type of treatment will readily suggest themselves: (*a*) convalescence from acute diseases; (*b*) anaemia and general debility; (*c*) post-tropical conditions; (*d*) functional nerve disorders; (*e*) chronic infective diseases such as rheumatoid arthritis.

2. The metabolic type of treatment for cases in which metabolism is not necessarily deficient or excessive, but is defective and faulty and requires "alterative" treatment. Such are: (*a*) the gouty; (*b*) the worn-out and jaded from overwork and lack of exercise; (*c*) the hyperpietic; (*d*) the functional disorders of the liver; and (*e*) a large proportion of the chronic rheumatics and fibrositics.

3. The katabolic type of treatment, where the aim is to promote over-stimulation of the metabolic processes, and allow tissue waste to overbalance tissue regeneration, as in the obese, the overfed, and the under-exercised.

Most of the diseases scheduled in the various lists quoted above will be found fundamentally to fall into one or other of these three groups, and to be amenable to treatment on the principles I have laid down for each. These principles may be carried out equally well at most spas in possession of the necessary equipment. Naturally, spas will differ in their modes of application of the principles—one having waters more suitable for eliminant action by the kidneys; another, waters which act on the bowel; another, waters which have a proved action on the liver, and so on. Also the factors of climate, geographical situation, and time of year must be considered in the choice of a spa. But the principles remain the same, and are acted upon in so far as the resources of a given spa permit.

General Conclusions.

My argument leads me to this conclusion: that in the present unsettled state of our knowledge of the precise action of mineral waters and baths, physicians who practise at spas should lay no claims to the successful treatment of chronic disease by the specific action of these agents, but should rather stress the fact that they claim to treat these diseases on broad general principles; that they act as general physicians, making use largely of physical methods, in addition to ordinary therapeutic treatment, rather than as purely spa physicians, putting their faith in the specific action—as yet unproved—of any particular water or bath.

Far be it from me to say that natural mineral waters have no action beyond that of mere diluents. Many of them—notably the strong sulphur water of Harrogate—are potent drugs whose pharmacological action has been well ascertained. My point is that none of them has been proved to be a truly specific remedy in any specific disorder—as, for example, gout, rheumatoid arthritis, or chronic rheumatism. It may be said that my conclusion shakes the foundation on which the edifice of spa treatment is supposed by many to rest. On the contrary, I am seeking to replace insecure foundations, constructed of unproved material, by others of a more durable character.

That spa treatment has a real utility in the management, both preventive and curative, of chronic disorders I am fully convinced. The important thing is to get the cases early enough while the disease is still incipient and amenable to cure or arrest. Too often they are sent in a hopeless condition—for example, advanced cases of arthritis—when miracles are expected and disappointment inevitably ensues, to patient, to physician, and to spa practitioner.

VITAMIN A AS AN ANTI-INFECTIVE AGENT.

ITS USE IN THE TREATMENT OF PUERPERAL SEPTICAEMIA.

BY

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(Preliminary Communication.)

LAST year we published an account of an experimental investigation on animals, which suggested that an important function of vitamin A was to raise the resistance—either local or general, or both—to bacterial infection.[1] Animals deprived only of this vitamin died ultimately with multiple foci of infection, whereas control animals receiving vitamin A remained in good health, free from infection. Animals which had developed infective lesions, if given in time abundant vitamin A, usually recovered completely. In the publication referred to we dealt with the work of other investigators on the subject, and this will not be repeated here. Reference may, however, be made to one fact which has been described since that date. A discussion has ranged round the question of whether in animals deprived of vitamin A the epithelial hyperplasia precedes the local infection in the same position or vice versa. Tyson and Smith have found histological evidence of infection preceding the epithelial changes in the tongue and kidney.[2]

THE BASIS OF THE INVESTIGATION.

The results of our animal experiments seemed to be sufficiently impressive to warrant an investigation to determine whether vitamin A had any specific action in human infection. Some general clinical evidence in various types of infection, and particularly in pneumonia, lent support to the idea that preparations rich in vitamin A had a definite effect in increasing the general resistance and in promoting recovery, but we were met with the usual difficulty in clinical work of assessing the value of the remedy in diseases which often have a low mortality rate whatever the treatment given.

In the publication referred to above we suggested specially that a deficiency of vitamin A in the body might play an important part in the etiology of puerperal sepsis. It is generally recognized that many sections of the community, and, indeed, many individuals of all classes, receive an allowance of fat-soluble vitamins in their diet well below the optimal. The pregnant woman is in still greater danger of a deficiency of this nature, for she has not only to supply her own body but also that of a rapidly growing organism. The growing animal, whose metabolic rate is relatively much greater than that of the adult, is known to make greater demands on its stores and supplies of vitamin A than is the slow-growing or adult animal. It is probable, therefore, that, unless her intake of vitamin A is high, the liver stores of the substance in a woman are gradually diminished during pregnancy, so that, if vitamin A plays the part in raising the resistance to infection indicated by the animal experimental results, she might be expected to be more susceptible to sepsis at this time. A somewhat analogous phenomenon is seen in the increased dental caries experienced by women during pregnancy, due most probably to the sacrifice of vitamin D, the calcifying vitamin, to the developing foetus. In any case, it was obviously possible to test this hypothesis of the relationship of puerperal sepsis to a deficiency of vitamin A. We are at present engaged upon such a test at the Jessop Hospital, Sheffield, with the assistance of the registrar, Miss Pindar. Out-patients attending the hospital in the prenatal period are being given a supply of a preparation rich in vitamin A two weeks prior to and one week after confinement, and the regards the development of sepsis with those in an equal number of patients not receiving this addition. It is obvious that work of this type must involve large numbers of patients, and at the present time the numbers are not sufficiently large to warrant publication, although it may be stated that the results obtained are definitely in favour of the hypothesis that vitamin A has a prophylactic anti-infective action when given under these conditions.

In the meantime we thought we could get evidence on this point more rapidly, and possibly more dramatically, by studying the action of vitamin A in puerperal septicaemia. For if the deficiency of vitamin A in the body is responsible for the lowered resistance to infective organisms seen in puerperal septicaemia, then the exhibition of large doses of the same vitamin to patients suffering from this condition would be expected to have some curative effect. This prophylactic and curative relationship of small and larger doses is seen in the case of vitamin C in scurvy and vitamin D in rickets, and the same would be expected of vitamin A in infective conditions if the hypothesis of its anti-infective function were sound. The choice of puerperal septicaemia, where the blood infection is usually due to a haemolytic streptococcus, had the advantage that the mortality rate is so high that the series of cases in which complete cure is brought about need not be large in order to allow a decision as to whether the remedy tested is having a beneficial effect. In the present communication, which is of a preliminary nature, the number of cases treated only allows the claim that the administration of preparations rich in vitamin A has had some beneficial result. Whether this form of treatment is specific for septicaemia, and possibly bacterial infections in general, can only be decided after the subject has been investigated on a much larger scale.

The Method Adopted.

The treatment consisted, so far as we are concerned, of the administration of preparations containing vitamin A. Two preparations were used, X and Y. In order to give some idea of their content of vitamin A, it may be said that, using the colorimetric method of Carr and Price, preparation X gave a dilution test of 1 in 20,000 to 1 in 30,000, and preparation Y of 1 in 300,000. An average specimen of cod-liver oil will give a corresponding figure of 1 in 2,000, so that X, on the average, was about 15 times and preparation Y about 150 times as rich in vitamin A as cod-liver oil. (It has not yet been definitely proved that the antimony colour reaction is specific for vitamin A, but all evidence tends to show that this is the case.)

When the condition of the patient was such that X could be administered it was usual to give 2 drachms (about 7 c.cm.) twice daily. On the basis of the above colour test figures this is equivalent to about 5 ounces of cod-liver oil. In some cases (vide Cases iv and v later) it was impossible to give X by mouth owing to vomiting, and it was necessary to give preparation Y in doses of 2 minims hourly in a teaspoonful of orange juice for twelve doses daily. When Y was thus given, about 1½ c.cm. was the total daily dose. This is equivalent, on the above reckoning, to 225 c.cm. of cod-liver oil—namely, 8 ounces. In another case, treated before Y was obtainable, the preparation X, since it could not be taken by mouth, was injected subcutaneously in 1-drachm doses for two days. This procedure was not continued, however, for although the injected doses were apparently absorbed fairly rapidly, and gave rise to no local sepsis, we did not think this mode of administration desirable.

It may be well to add that, since the patients were not under our direct charge, the treatment in some cases was not confined to the administration of vitamin A preparations. In one case (Case ii) the patient received quinine, another case (Case v) received a course of intramuscular metarsenobillon. It is difficult to appraise the value of these additional forms of treatment, but in view of the fact that they had been used on similar cases over a number of years at the same hospital with results which cannot be considered good, it is possible that, as curative agents, they are not of great value, and did not influence the course of the disease to any great extent. Except for the

applications, Cases i, iii, and iv received only the vitamin A treatment recorded above.

Preparation X is radiostoleum, kindly supplied for this investigation by British Drug Houses Ltd. Preparation Y, the very potent concentrate of vitamin A, was placed at our disposal by Lever Brothers, Port Sunlight. To both of these firms we wish to express our thanks.

Analysis of Results.

At the Jessop Hospital, Sheffield, and its annexe for septic cases at Norton, the results obtained in puerperal cases of haemolytic streptococcal septicaemia during the past two years are as follows:

	Prior to Vitamin A Treatment.		Vitamin A Treatment.	
	1927.	1928.	1929 (3 months).	
Number of cases... ...	8	16	5	
Number of recoveries ...	2	0	5	

Of the 24 cases not receiving the vitamin A treatment, 22 died, giving a mortality of 92 per cent. In the 5 cases receiving vitamin A there were no deaths, and all made a complete recovery.

Reference to the case notes given below will show how the different cases responded to the treatment. It would appear that the effect of vitamin A is rather to increase gradually the general resistance than to act suddenly, as might be expected in the case of a substance having a specific bactericidal or antitoxic effect. It will be noted that blood cultures in all cases became sterile, and although the number of cultures made in each case were too few to allow the determination of the exact time required for this development, it was usually found that about a fortnight after the beginning of administration of vitamin A no organisms could be grown from the blood. Nothing immediate and dramatic in the effect of this form of treatment has been noticed. It may be added that we have also treated a number of other cases of severe puerperal sepsis by the same means, but since their blood cultures were negative we have not considered them in this publication. Of all these cases the only failures were two of severe peritonitis.

CASE I.

The patient, a primipara aged 30, was delivered at her own home by means of forceps on January 6th, 1929. Two days later she had a temperature of 100° F., and, on January 12th, perineal sutures were removed owing to sepsis. On the 13th she was admitted to hospital with a history of delirium.

On admission she was pale and had an anxious expression; the temperature was 100.6° F., pulse rate 126, respiration rate 26. The edges of a large perineal tear, extending almost to the sphincter, were sloughing. On January 15th she had tenderness and rigidity on the left side of the abdomen, and swabs from the perineum and cervix showed pus and Gram-positive diplococci. On the 17th her temperature was 101.6° F., pulse rate 120, and on the following day she received the first of a series of intrauterine injections of glycerin and glauramine.

On the 21st her temperature was 102.4° F., pulse rate 120, and the administration of preparation X by mouth, in 2-drachm doses twice daily, was started. In a blood culture made on the 22nd *Streptococcus haemolyticus* was grown in twenty-four hours; on the other hand, the perineum was much cleaner and the abdomen less tender. On the 23rd the temperature was 104° F., and the pulse rate 122. On the 24th she had pain and tenderness in the right loin, but the perineum was healing. Fever continued on the 25th, the temperature being 102° F., the pulse rate 124; but on the 28th the temperature subsided slightly and the abdomen felt less tender. On the 30th and on February 1st the temperature was 100° F., and the pulse rate about 120; tenderness developed in the gall-bladder region. On February 6th the temperature was down to 99° F., though the pulse rate remained at 120; she was tender in the left iliac fossa, but less tender over the gall-bladder.

From this time on the temperature and the pulse came down to normal; the blood culture became sterile, and by the 16th the perineum was healed, the uterus involuted, and the patient felt well. Administration of preparation X was discontinued and the patient was discharged on February 22nd. The total quantity of X, at the rate of 2 drachms given twice daily for twenty-seven days, was 13½ oz.

CASE II.

The patient, a primipara aged 24, had a normal labour at her own home on January 15th, 1929; there was a perineal tear. The next day her temperature was 100° F., and on the 17th the perineal sutures were removed owing to sepsis.

She was admitted to hospital on the 18th, her temperature then being 102.6° F., her pulse rate 124, respiration rate 26; she was very thin, with flushed cheeks, had diarrhoea, and complained of a dull ache in the lumbar region. A perineal swab showed the presence of *Staphylococcus albus* and *Streptococcus haemolyticus*; a swab from the cervix showed *Streptococcus haemolyticus*, and *Streptococcus haemolyticus* appeared in a blood culture in twenty-four hours. Quinine hydrochloride (5 grains in 10 c.c.m.) was administered intravenously every other day for three doses, and 5 grains in 1 c.c.m. intramuscularly on four alternate days.

Administration of preparation X by mouth in 2-drachm doses twice daily was started on the 21st; on the 22nd the patient had a rigor followed by drowsiness; she was tender in the right iliac fossa. On the 24th the temperature was 102° F.; the right wrist, the dorsum of the right hand, and the right elbow were swollen and tender. On the 29th an abscess over the right wrist was incised and thin yellow pus was evacuated. Shortly after, tenderness was noted over the right thigh, and though the wrist healed the pulse remained rapid and the temperature at about 102° F. On February 11th there was a swinging temperature from 99° F. to 103° F., the pulse rate being 120. Blood cultures were sterile on the 12th, but on the 18th an abscess over the right hip was aspirated and thin yellow pus was obtained. On the 20th the abscess was incised and a large quantity of pus was evacuated. The patient's temperature was still swinging, and on the 24th it rose to 104° F., the pulse rate being 140. She began to have pain in the left hip and swelling over the left buttock. On the 28th this swelling began to subside, but the temperature still swung from 98° F. to 102° F.

On March 2nd the temperature was normal for twenty-four hours. The wound over the right hip started to heal rapidly and was healed on the 15th, when the temperature had been normal since March 1st. On March 16th the patient was discharged, having taken in all 21½ oz. of preparation X.

CASE III.

The patient, a primipara aged 18, was delivered of an anencephalic monster at her own home on February 1st, 1929, and eight hours later admitted to hospital with a retained placenta. Immediately after the manual removal of the placenta her temperature rose to 101° F., and 30 c.cm. of anti-streptococcal serum were administered. On February 3rd her temperature had risen to 101.4° F., her pulse rate to 108, and the lochia were profuse and offensive. A perineal swab taken the following day showed on culture the presence of *Staphylococcus aureus*, *B. coli*, and *Streptococcus haemolyticus*, and *Streptococcus haemolyticus* was grown from a blood culture in twenty-four hours. Her temperature was now 103.6° F., pulse rate 126. On the 6th a course was started of intrauterine injections of glycerin and glauramine, but on the 10th the temperature and pulse rate were still rising, being 102.2° F. and 138 respectively.

Administration of preparation X in 2-drachm doses twice daily was begun on the 11th; on this day her temperature was 102° F., pulse rate 140, and respiration rate 30. The following day she had pain and tenderness on the left side of the abdomen, and on the 15th follicular tonsillitis, and complained of stiffness in the joints. The following and succeeding days the stiffness in the joints continued and she had a swinging temperature, rising as high as 103° F. On the 18th, however, the blood culture was sterile and she felt better. From now, moreover, the temperature came down, becoming normal on March 3rd. On March 6th the administration of X was discontinued, and on the 16th, the temperature and pulse having been normal for several days, the patient was discharged. The total quantity of X administered was 12 oz.

CASE IV.

The patient, a primipara aged 23, had normal labour at her own home on March 1st, 1929, there was a perineal tear which was sutured. The following day she complained of feeling cold and of abdominal pain, and these symptoms continued until the 4th, when she was sent to hospital. On admission she had a temperature of 104° F., pulse rate 120, respiration 22, flushed cheeks, shooting abdominal pains, abdominal tenderness, most marked in the iliac fossae, distension, and diarrhoea. The lochia were profuse and offensive. On March 6th the perineal swab culture showed the presence of *Streptococcus viridans*, *B. coli*, and diphtheroid organisms, and *Streptococcus haemolyticus* was grown in a blood culture after forty-eight hours. On the 8th she had diarrhoea, marked dyspnoea, a temperature swinging from 100° to 104° F., a pulse rate of 140, and respiration rate of 48. On the 10th, the oral administration of preparation X having failed through the patient vomiting, a drachm was injected subcutaneously into the buttock. The temperature now was 104° F., and the pulse rate 128: the following day the temperature was 101.4° F., the pulse rate had risen to 160, and the patient complained of pain in the right chest. On the 15th subcutaneous injection of 1 drachm X was repeated, on the following day the patient's pulse was very poor in volume; she had marked dyspnoea and her condition was critical. Preparation Y was given by mouth, 2 minims hourly for twelve hours. Examination of the sputum showed the presence of pus, pneumococci, and non-haemolytic streptococci. On the 15th the respiration rate was 62 and respirations were very shallow. She had a troublesome cough, and the temperature and pulse remained high. On the 20th there was still dyspnoea, the bases of both lungs were dull on percussion, there was bronchial breathing, and fine crepitations were heard at both bases. On the 22nd blood cultures were sterile, and the patient began to feel better, had no pain, and less dyspnoea. Signs of consolidation of both lungs persisted, and on the 23th there was absolute dullness at both bases, tubular breathing at the left base, and moist rales and faint breath sounds at the right base. On the 31st administration of preparation Y was discontinued and capsules each containing 2 minims of X were given once hourly for twelve hours over a period of eight days. On April 2nd there was absolute dullness over the

right base, and breath signs were very faint. The temperature ranged from 97° to 99°, the pulse rate was 90, and the respiration rate 20. On April 9th pus was aspirated from the right chest and a portion of rib was resected for an empyema. On the 12th and following days the empyema wound drained freely, and on the 15th the temperature was normal. On May 1st the temperature was still down, the wound was draining slightly, and the patient's general condition was good. Altogether she had 2 drachms of preparation X subcutaneously and 3½ by mouth. Of preparation Y she had approximately 24 minims daily for seventeen days.

CASE V.

The patient, a primipara aged 23, had a normal labour at her own home on March 4th, 1929. She was well until the third day, when her temperature rose to 104° F., after which it ranged from 99° to 103° F. until March 22nd, when she was admitted to hospital. On the 23rd her temperature was 103.6° F., and her pulse rate 128; preparation X, given by mouth, was vomited. On the 24th a swab from the cervix showed the presence of *Streptococcus haemolyticus* in pure culture, and *Streptococcus haemolyticus* was grown in a blood culture in twenty-four hours. Two minims of preparation Y were given hourly by mouth for twelve hours, and an arsenobillon course was started; she was very drowsy. On the 26th her condition was brighter; her temperature was 102°, and the pulse rate 100. On April 3rd a blood culture was sterile, but the temperature was still swinging from 98° to 103° F., and the pulse rate was 100; on the 11th the temperature ranged from 98° to 102° F., but on the 14th it came down to normal and administration of Y was discontinued. On the 24th the temperature and pulse were still normal, and the patient was discharged on the 27th. Preparation Y was given in 2-minim doses for twelve hours during twenty-nine days; the total amount being 1 oz. Arsenobillon was given intramuscularly in doses of 0.3 gram, three being given on the first day, two on the second, and one each on the third, fifth, and seventh days. The total quantity was 2.4 grams.

It is clear that, impressive as are the results described, they are too few in number to allow the deduction that this form of treatment is specific in its nature for septicaemia. They do, however, warrant the belief that the animal experiments pointed correctly to the hypothesis that vitamin A plays a part as an anti-infective agent to bacterial infection, and has the property of raising the resistance of the body to such infection. The fact, observed above, that the administration of these preparations does not produce an immediate beneficial effect, and that this only becomes obvious after a week to a fortnight, according to the severity of the case, from the beginning of treatment, suggests that the fulminating type of septicaemia, which proves fatal in a few days, may not benefit by this treatment in its present form. This view can only be tested, however, by further investigation. If vitamin A should ultimately prove, as the result of further tests, even to approach in efficacy the standard obtained in the present work, it is obviously of great value as a therapeutic agent. Nor is there reason to believe that this anti-infective action, if established clinically, would only be of importance in streptococcal infections, and it is most probable that the same increase in bodily resistance would be found in many other types of infection. We think it desirable that clinical trials should be made in other bacterial infections. It is probable that the dosage of vitamin A and the mode of administration we have used can be improved upon by further trial.

Finally, if vitamin A should prove to have anti-infective qualities of a curative nature, as this work suggests, it must also be of inestimable value in its prophylactic effect. Indeed, it is possibly essential for the natural defence of the body against infective agencies, and, if so, it is incumbent to see that the body under all conditions, but especially in times of special stress, as in pregnancy, should receive an adequate and large supply of this substance by the inclusion in the diet of natural foods which contain it. Such foods include egg-yolk, green vegetables, milk, butter, and cheese. Cod-liver oil also contains vitamin A in abundance.

Summary.

On the basis of animal experiments which indicated that vitamin A is an anti-infective agent, we have treated five cases of puerperal septicaemia from whose blood haemolytic streptococci were grown, with preparations rich in vitamin A. All made complete recoveries, thus indicating that vitamin A, when given therapeutically, can raise the resistance of the human body against septic and infective micro-organisms.

The cases described were under the care of Mr. Ki... Mr. Chisholm, and Mr. Stacey, members of the honora... staff of the Jessop Hospital, Sheffield, and to them we w... to express our indebtedness. We wish also to thank Professor Miles Phillips for his interest in the work, and Miss Moore, the resident house-surgeon.

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APPARENT RECURRENCES OF SCARLET FEVER.

BY

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THE difficulties which attend the diagnosis of mild types of scarlet fever can best be appreciated by those whose experience in this disease is greatest and who have been impressed with the need of maintaining very careful observation before arriving at a decision. The Dick test and the Schultz-Charlton reaction, though valuable, have not removed all diagnostic difficulties. A negative Dick reaction does not always exclude scarlet fever, nor when during the course of a disease the patient develops no immunity, as evidenced by failure to react to the Dick toxin, may it necessarily be assumed that he is convalescing from scarlet fever.

It is a well-established fact that a susceptible individual placed in a community which contains carriers of the diphtheria bacillus, or in which fairly frequent outbreaks of diphtheria occur, will develop immunity in a comparatively short time. May not, then, a susceptible person in an environment of scarlet fever acquire, through subinfective doses, a similar immunity? It is incorrect to assume that a person with a scarlatiniform erythema and a Dick-positive reaction who, in the course of two or three weeks among scarlet fever patients, fail to react to the Dick toxin is necessarily suffering from erythema due to the toxin of the scarlet fever streptococcus. Furthermore, it is usually in those cases where its help is most needed—cases, for example, with transient rashes—that the Schultz-Charlton reaction fails, though other signs present at the time and later developments may serve to indicate that the case was actually one of scarlet fever.

There are bound, therefore, to be many erythemata the nature of which cannot be established by the Schultz-Charlton reaction or a Dick test, and whose diagnosis must depend on an observation of the course of the disease over a fairly lengthy period. Valuable diagnostic aids are the occurrence of complications, such as albuminuria, cervical adenitis, arthritis, or otitis media, and a study of the appearance, order, and nature of the desquamative process. Even here, however, there are pitfalls. Many mild but undoubted attacks of scarlet fever, generally recognized only by their occurrence during an epidemic, are followed by little or no desquamation. On the other hand, there are many scarlatiniform erythemata which produce skin changes practically indistinguishable from those of true scarlatinal peeling.

DIAGNOSIS OF SCARLATINIFORM ERYTHEMATA.

The diagnosis of scarlatiniform erythemata prodromal to certain of the exanthemata will generally not cause difficulty for more than a day or two. These erythemata are generally followed by some other sign or symptom which helps to establish their nature. Similarly in the case of drug rashes the history, the disproportionate constitutional

disturbance, and the absence of enlarged tongue papillae, help to establish the diagnosis; moreover, these rashes are generally followed only by slight desquamation. The same points are of value in the investigation of erythemata suspected to be due to the action of certain food substances, additional help being sometimes afforded by the appearance of urticarial patches. The majority of enema and serum rashes may be diagnosed without difficulty. Perplexity is sometimes caused by the scarlatiniform rash, which may be seen on the second day of the rubella eruption, though the rubella which is marked enough to be mistaken for scarlet fever can, in the absence of other signs, usually be distinguished from it by the mild or absent throat signs and the appearance of the tongue. Later on the appearance of desquamation, which in rubella is never present on the palms and soles, and on the trunk is almost invariably of a branny or powdery nature, would usually clear up any difficulty.

The cases whose diagnosis may cause the greatest difficulty are those of recurrent scarlatiniform erythema. Associated with the erythema there may be slight pyrexia and a reddened throat; desquamation is usual, but is frequently of a branny type, beginning earlier and not lasting so long as the desquamation of scarlet fever. There may be a history of several similar attacks, and it is possible, therefore, that some of the cases of alleged recurrent scarlet fever recorded in the literature may have been of this type. Acute exfoliative dermatitis is similar, but the rapidity with which desquamation appears, and its coarse nature, are usually sufficient to differentiate this affection.

RECURRENT SCARLET FEVER.

Clinicians differ very much in their views as to the possibility of recurrence in scarlet fever. Goodall,[1] who has never seen more than two attacks in one person, doubts whether three or four infections ever occur. Foord Caiger has personally observed three genuine attacks. Rolleston[2] believes that recurrences may occur, and gives instances where competent observers have recorded third and fourth attacks. Everard[3] cites the case of a woman in whom he observed what was supposed to have been her fifth attack of the disease; in this woman the first attack occurred when she was 3 years old, and Everard mentions that it was complicated by chicken-pox and measles, all three rashes being present at the same time. As, however, measles may be associated with a papillated tongue, and chicken-pox and measles with prodromal scarlatiniform rashes, it must, in the circumstances, have been difficult to establish the diagnosis of scarlet fever. In this patient the second infection occurred when she was 7 years old, and the third and fourth, which appeared after an interval of nine and ten years respectively, were complicated by rheumatism. The fifth attack was observed by Everard personally and appears to have been genuine scarlet fever, as the patient and her niece developed the disease on the same day, a week after they had been in contact with an established case. Fielding[4] records a case of a blacksmith said to have had five attacks in twelve years, the first occurring during an epidemic. On each occasion the syndrome comprised sore throat, strawberry tongue, intense rash, fever, and complete desquamation.

In view of the above observations it is interesting to record the case of a young woman who, in February of this year, was admitted to the South-Western Fever Hospital with what was alleged to be a fifth attack of scarlet fever.

This patient was first admitted in October, 1913, when she was 3 years old. She had a very bright rash, severe throat symptoms, and submaxillary adenitis. Desquamation, which was profuse, began at the tips of the fingers. Three weeks after admission she developed faucial diphtheria. She was in hospital for nine weeks, and I find from the case register that her case was diagnosed as one of scarlet fever.

In December, 1922, she was readmitted to a scarlet fever ward, and her case sheet records a general punctate erythema which appeared on the day of admission and was preceded by a sore throat, inflamed but clear fauces, and a furred tongue. The next day the rash was very intense, but confined principally to the trunk. The throat, though clear, was very congested, and the tongue was peeling at the tip and edge. There was no adenitis. Twenty-four hours later the erythema was unchanged, but the tongue had almost finished peeling. Ten days after admission there was peeling of the chest, and, at the beginning of the fourth week, of the legs and feet. Desquamation appears to have finished at the end of the fourth week, when the patient was transferred to the convalescent home from which she was discharged as recovered two weeks later. The diagnosis was scarlet fever.

In August, 1926, the patient was admitted to the Grove Fever Hospital with an erythema confined to the trunk and legs. The Schultz-Charlton reaction was negative. The temperature was 100° F.: she had a sore throat, slight faucial injection, a furred tongue, and circumoral pallor. The next day the temperature was 102 F., but two days later the rash had faded, the tongue was clean, and the papillae were enlarged. Desquamation began at the end of a fortnight, and was general by the middle of the fourth week. There were no complications, and the patient was discharged at the end of seven weeks. The diagnosis was again scarlet fever.

The next attack, which appears to have been a mild one, occurred in December, 1927, and the patient was admitted to the Joyce Green Hospital. On the previous day she had suffered from headache and general pains, but made no complaint of sore throat. The rash appeared first on the neck, and when the patient was seen on admission she had a general punctate erythema, a coated tongue, a clean but injected throat, and a temperature of 99° F.; there was no adenitis. By the next day the rash had faded, and nothing else occurred worthy of note until about three weeks after admission, when desquamation appeared on the hands and feet. The patient was then transferred to the Southern Hospital. There were no complications, and she was discharged at the end of the fifth week—her case diagnosed as one of scarlet fever.

On February 23rd of this year she was again admitted to the South-Western Hospital. Two days previously she had had a slight rigor, followed on February 22nd by backache. On the morning of the 23rd she complained of headache and nausea, and a rash appeared on the neck which, on admission that evening, had developed into a general punctation, with a more discrete appearance on the face. The limbs were unaffected; glands in the posterior cervical fossa were palpable, but nits were present on the scalp. There was no sore throat, but the fauces were slightly injected; the temperature was only 99° F. On the following day the circumoral region was invaded; also the limbs. Here the rash appears to have been paler, though still of a punctate character. The tongue was coated, and the papillae at the tip were enlarged The Schultz-Charlton reaction was negative. Five days later desquamation was noted on the neck, and twelve days after the patient's admission desquamation of the pinhole type was seen on the legs, with a coalescence into larger patches, and was followed the next day by peeling of the fingers. Desquamation rapidly assumed the character typical of scarlet fever, involving every part, with the exception of the terminal phalanges and the backs of the hands. The peeling on the hands was profuse and lasted for about three weeks; the toes and soles of the feet were not involved. There were no complications, and the patient was discharged after five weeks in hospital.

CONCLUSIONS.

There would appear to be no doubt as to the genuineness of the first attack, and in the second also the signs and symptoms present warranted the diagnosis of scarlet fever. There seems to be some slight doubt about the nature of the rash in the third attack, but the subsequent peeling conformed more to the scarlet fever type than to that of recurrent scarlatiniform erythema. The fourth attack was very mild, but though the rash was fleeting there was no doubt about its character. Most practitioners have seen cases of undoubted scarlet fever in which the rash, accompanied by a few symptoms and signs, has shown itself for just as brief a period. As for the final attack, few observers, seeing it for the first time after desquamation had started and watching its progress, would have failed to arrive at a diagnosis of scarlet fever.

The patient's history gives no reason to implicate drugs or enemata in the causation of her attacks. In the intervals she never suffers from rashes of any description, nor does her skin ever show signs of dryness or of definite peeling. Her work is very light and insufficient to give rise to desquamation from the hands during prolonged periods of rest. Her previous illnesses include measles, chicken-pox, and whooping-cough. There are several young persons in the family who, it appears, have not suffered from scarlet fever.

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BLOODLESS TONSIL ENUCLEATION.

A MODIFIED TECHNIQUE AND A NEW GUILLOTINE.

BY

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TWENTY years ago Whillis and Pybus published their now classical technique of guillotine enucleation by the reversed method. It has been universally adopted, though often incorrectly ascribed to Sluder, and its position remains unchallenged and is likely so to continue.

Some three years ago it occurred to me that if "traction" could be applied to the posterior aspect of the tonsil during the dislocation manœuvre of the Whillis and Pybus technique, the deep fibrosed or so-called "difficult" cases could be more easily dealt with. To this end I had the distal rim of the fenestra of my guillotine made in the form of a series of miniature sharp chisels. The guillotine head is inserted from below upwards, behind the tonsil and in front of the posterior pillar. The lower pole of the tonsil is threaded through the fenestra, and the tonsil is elevated to bulge the anterior pillar in the usual way (Fig. 1). The little chisels have now dug themselves into the postero-lateral aspect of the tonsillar capsule, and fix it in a harpoon-like manner. The next step is designed to pull the tonsil out of its bed, thereby stretching the peritonsillar tissue; the tonsil, being fixed, will not slip off the guillotine, and traction is applied to it by retracting the guillotine towards the mid-line and slightly forwards—that is, away from the posterior pharyngeal wall (Fig. 2). Slight counter-pressure is exerted with the thumb over the tonsil. With the guillotine maintained rigidly in this position the whole tonsil is inverted through the fenestra and the blade driven home behind the anterior pillar (Fig. 3). It will be seen that apart from the "traction" the whole manœuvre, which takes but a few seconds, is the ordinary Whillis and Pybus technique.

FIG. 1.

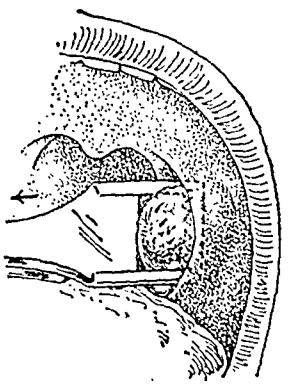


FIG. 2.

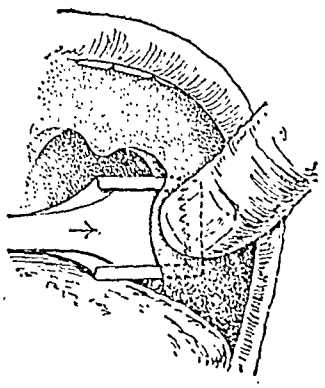


FIG. 3.

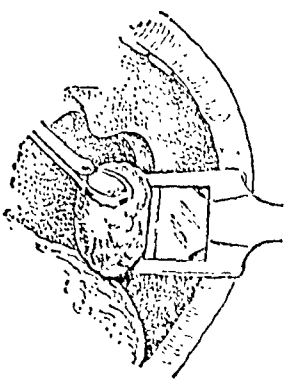


FIG. 4.

Up to this point the operation is bloodless if a blunt guillotine is used. By the ordinary method the tonsil is now severed from its bed—and, according to the nature of the case, the bleeding may be more or less severe. Whether the mode of severance be in the nature of torsion or avulsion, the stump is invariably torn away deep to its crushed portion, hence the inadequate haemostasis.

A single blade cannot be expected to perform both the functions of crushing and of cutting. For this purpose a well-designed two-bladed guillotine is essential. I have made use of such an instrument, and, as is indicated by the main title of this communication, the whole operation can be rendered bloodless.

Where the ordinary guillotine technique *plus* "traction" is employed many tonsils, which in the ordinary way would call for dissection, can be dealt with by the guillotine. The surgeon, however, will prefer to dissect—especially adult cases—unless he can be sure that the immediate haemorrhage incidental to ordinary guillotine procedure can be controlled.

The question which must be decided is not "Can one guillotine?" but "Should one guillotine?" I think it can be fairly stated that guillotining is the cleanest method, and, if haemorrhage is slight, recovery is rapid and healing perfect. The latter is only natural when one reflects that with the guillotine there is the minimum handling and trauma of tissues as compared with even the most immaculate dissection.

When we examine the peritonsillar tissue in a case of chronic tonsillitis we find masses of fibrous tissue with vessels running through it. Obviously, when cut through, these would gape. In the child the peritonsillar tissue is loose and elastic; the vessels here involute naturally, and bleeding is minimal.* The decision as to whether to guillotine or dissect tonsils therefore rests very largely on the question of the amount of bleeding anticipated.

It is obvious that where there has been peritonsillar fibrosis considerable force is required to crush the vessels adequately. In the instrument presently to be described such crushing force can be exerted. There are a certain number of cases where the tonsil is so firmly bound down that it is impossible to invert it completely through the fenestra of the guillotine. Here, of course, dissection is the only method.

When the blade of the guillotine is driven home the tonsil lies isolated, separated from its bed by the blade, the crushed stump intervening (Fig. 4). This stump, in the properly performed operation, consists of the circumferential reflection of mucous membrane surrounding the *equatorial area of the tonsil* at the junction of its embedded and non-embedded portions, together with some areolar and fibrous tissue, and vessels of the tonsillar bed.

There are several types of two-bladed guillotines incorporating crushing and cutting blades. I have found them most satisfactory, particularly that of La Force. In this guillotine a very powerful crushing force can be applied, to which I ascribe the perfect haemostasis that is obtained. The mode of bringing its crushing and locking action into play is clumsy; furthermore, the fact that the cutting blade requires to be carefully reset after each tonsil has been removed is a grave fault, and no doubt these two disadvantages account in a large measure for its lack of popularity in this country.

I have developed the two-bladed guillotine illustrated, the crushing power of which is very great and instantaneous. It locks automatically; moreover, no strain is put on the surgeon's memory. The cutting blade sets itself back automatically when the crushing blade is released, the recoil being utilized as in the Maxim gun. This is an extremely important feature—as the cutting blade is merely a convenience and must at no stage of the operation obtrude itself or add to the complexity of handling the instrument—if one is to claim that this two-bladed guillotine is almost as simple to use as the ordinary single-bladed type. The cutting blade in the instrument cannot be sent home first—a procedure that would negative the bloodless object of the operation.

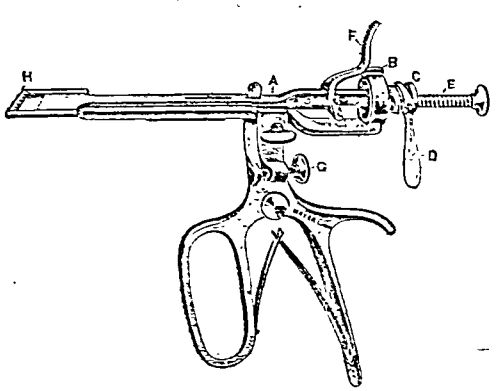
The principle of the guillotine is similar to that of the guillotine devised by Ballenger, Elphick, Howarth,

* See author's article in the *Journal of Laryngology and O*. September, 1926.

La Force. There are two blades, one the crushing blade (A), and the other the cutting blade, which lies between the bed plate and the crusher and works close up to it. The crusher, which grasps the stump of the tonsil, is primarily actuated by the handles with such pressure as may be brought to bear by the strength of the grip of the hand. This action automatically engages the mechanism (BCD) for the final crush—a useful time-saving feature.

This mechanism is in the form of a pair of double cylindrical circumvolutes, the internal or female (B) being attached to the bed of the guillotine, and the external or male (C), which has a lever (D) attached, is fitted and rotates freely on the crushing blade and is kept in position by means of a spring (E).—A quarter turn of the lever (D) tends to drive the crusher further forward and exerts extra pressure and automatically locks it and completes the crushing operation. The mechanical advantage being about 1 to 14, the crushing effort is very great. The cutting blade is attached to the crusher, and the final cutting is performed by the depression of a lever (F) which drives the cutting blade forward. The releasing of the guillotine brings the lever (F) of cutting blade in contact with the stop on (B) and automatically throws it out of action and sets the cutting blade ready for the next operation.

It will readily be seen that it is not possible for the cutting blade to be brought to action until the crushing



blade has done its work. Miniature sharp chisels are on the distal rim of the fenestra (H). The purpose of screw (G) is to set the blades at any desired position in order to vary the size of the fenestra. Thus one guillotine will do for all cases except for children under 2 years. The guillotine is shown set for a small tonsil.

The actual handling of the guillotine is simplicity itself. When the tonsil has been completely inverted (Fig. 3) the crushing blade is sent home by compressing the handle, and lever (D)—already partly engaged—is pushed over to its limit with the free hand in a clockwise direction. After a suitable period the tonsil is secured with a vulsellum and is cut off the guillotine by depressing lever (F) (Fig. 4). Lever (D) is then returned to its original position and the guillotine will spring open and be already set for the other tonsil.

It is obvious that if the crushing pressure is maintained until coagulation has taken place an added safeguard is incorporated. Accordingly I crush the stump for three to five minutes before removing the tonsil. If the mouth is large enough and a second guillotine available the other tonsil can be dealt with while the first still crushes its stump. There will be no bleeding—merely a moistness of the tonsillar bed.

If desired, the stump can be ligatured in a dry field—an easy matter. The whole operation in adults takes ten minutes at the outside. In children, where the peritonsillar tissue is soft and elastic, momentary crushing suffices to secure complete haemostasis. I have used the instrument illustrated for almost a year at the Royal Ear Hospital, University College Hospital. In not a single case has there been any primary reactionary or secondary haemorrhage.

Irwin Moore, quoting McNab, and referring to two-bladed guillotines, complains that the anterior pillar is frequently removed. The type of guillotine used is not stated. I can only say that with the technique indicated I have not been able to emulate this. The anterior pillar comes through the ordeal uninjured—provided the fenestra of the guillotine is not too large for the tonsil. Even in that case the expert will manage not to invert it completely through the fenestra. It is, however, definitely an advantage to adjust the fenestra slightly on the small side, which can be done instantly in the instrument illustrated.

The criticism has been made that reactionary haemorrhage occurs a few hours after the operation with two-bladed guillotines. I have not encountered this, and can only assume that the instrument used did not allow sufficient crushing force to be applied to the stump.

Children whose tonsils have been removed by this method show no, or only very slight, rise of temperature. This I attribute to the obliteration (by crushing) of the lymphatics and subsequent minimal toxic absorption from the open tonsillar wound.

I wish particularly to acknowledge my indebtedness to my friend Mr. Phelps, of Messrs. Mayer and Phelps, and to their technical staff, for the great assistance and the facilities extended to me.

TONSILLECTOMY.

BY

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IT is not desirable that one method, and one method only, of performing the operation of tonsillectomy should be adopted for patients, whether adults or children. Each case is a law to itself, and should be judged on its merits. If this mental attitude is adopted it will save the unwary and the comparatively inexperienced operator from many pitfalls.

To attempt to remove the deeply embedded adherent tonsil which has been the site of many attacks of tonsillitis, and perhaps the subject of abortive attempts at removal, by the guillotine only, or even with a finger on the pillar, or traction by tonsil forceps, will only lead to disappointment for the patient and the operator. For the tonsil will not move by finger pressure, and the forceps will take away a superficial piece of tissue, but will not remove the main mass of the gland from its strong anchorage.

Another subdivision of this sort of tonsil, met with in even young children, is that in which the pillars have met in the median line in front, and are indistinguishable from the underlying tonsil. This type is also the product of long-continued chronic inflammation with interludes of acute tonsillitis. The tissues are usually very septic, and the tonsil when reached is generally found to be lying in a pool of pus. For such tonsils dissection or partial dissection should be employed.

It is of advantage to employ a tonsil forceps, such as that made for me by Messrs. Mayer and Phelps. The

FIG. 1.—The Author's tonsil forceps.

advantage of this instrument is that it need not be removed during the operation, since, by means of the ratchet, it retains its hold, thus freeing a hand. Moreover, the handles will pass through the ring of the guillotine, if it is desired to use this instrument. (Fig. 1.)

The dissector best suited for this type of tonsil is one with a short curve and a cutting edge, the other end being

blunt and having a large curve. The pattern illustrated is also made for me by Messrs. Mayer and Phelps. (Fig. 2.)

If the pillars meet in a continuous fold in the median line an incision should be made at about the mid-point, each pillar in turn being held by special forceps and gently dissected off the tonsil for a short distance; the forceps then grasp the tonsil and traction is made upon it. If the pillars do not join in the median line, the tonsil forceps may be applied at once, and traction exerted till the line between the capsule and the posterior tissues is seen, when the curved cutting edge is inserted firmly, but with care, and the capsule separated from the surrounding tissue with short sweeps. When this has been accomplished the instrument is reversed, and the blunt large

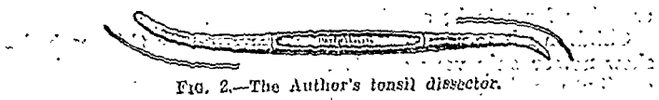

FIG. 2.—The Author's tonsil dissector.

curved end is used in the same manner to separate the posterior part of the tonsil; the guillotine is threaded on to the tonsil over the handles of the forceps, and the final enucleation is effected by that instrument. This combination of the dissector and guillotine I find to be more satisfactory than complete removal by dissection. It is more rapid, and leaves a smoother surface to heal; the parts are more comfortable after operation, while there is less likelihood of haemorrhage. If, for any reason, however, the guillotine is not desired, the dissection may be completed in the ordinary way, bleeding being controlled by pressure forceps.

For the type of tonsil which is prominent and not adherent, and in which the pillars of the fauces are easily separated, the guillotine is the instrument of election. Dissection is unnecessary, and even mischievous, for it requires deeper and more prolonged anaesthesia, with more dragging on and handling of the pillars; the parts are more uncomfortable after the operation, and heal more slowly. In this type of tonsil the guillotine alone may be used for enucleation, or, again, its action may be aided by the tonsil forceps. The guillotine should be very blunt, and if it be sufficiently so the need for the expensive complicated crushing guillotines does not seem to exist. The most useful form probably is Heath's modification of Mackenzie's pattern.

A good deal depends on the illumination and view of the parts for successful operation, and these will be best secured by wearing an efficient headlight and using Spencer's gag, a tongue clip, and a strong tongue depressor with a long handle, such as Seymour Jones's.

Haemorrhage is a constant source of discussion in tonsil operations. If it is confined to slight capillary bleeding it may be disregarded during the operation, and in very septic conditions is beneficial. If it impedes operation it may be mopped or removed by suction with a suction-anaesthetic apparatus. After the tonsil has been removed the bed should be immediately filled with a firm sponge or mop, and pressure kept on for a short time. On removal of the pressure there will, as a rule, be no haemorrhage; if, however, a main artery is bleeding, a ligature should be applied, while if multiple capillaries are still bleeding the pillars should be stitched. If bleeding is profuse from a large number of vessels owing to low coagulation power of the blood, pressure should be continued while 10 c.cm. of horse serum and 1/12 to 1/4 grain of morphine, according to age, is injected. When such haemorrhage is controlled the pillars may be stitched, though this, as a rule, is not necessary. In bleeding of this type recurrence in a modified degree may take place, when a second or even a third dose of horse serum may be injected.

If the anaesthesia is to be short the second tonsil may be proceeded with while pressure is kept up in the bed of the first; but with long anaesthesia the first tonsil bed should be dealt with where necessary before enucleation of the second tonsil is begun. The best anaesthetic for removal of adherent buried tonsils in adults and children is ether, or ether three parts to chloroform one part, by the open method. In children ethyl chloride is an admirable anaesthetic when the tonsils are prominent and not adherent, or adherent only to a moderate extent; in certain adult tonsillectomies also, when the tonsils are very free or rapid short anaesthesia is required for any reason, ethyl chloride may be recommended.

It is frequently found that the turbinate bodies obstruct the airway in those with enlarged septic tonsils, and a routine examination for this should be carried out. When found, submucous fracture should be done. A convenient

FIG. 3.—The Author's instrument for submucous fracture of the turbinate bones.

form of instrument for this purpose is that made for me by Messrs. Mayer and Phelps. If this is done it is not, as a rule, necessary to remove the posterior ends of the turbinate bodies.

The operation of tonsillectomy, by whatever method, should be considered as a major procedure and left in the hands of the specialist. It is, however, recognized that circumstances often lead to its being performed by others, and to them the following suggestions are made.

Never approach the operation as a small easy procedure devoid of danger. Use ether, or one part chloroform to three parts of ether, as the anaesthetic, rather than ethyl chloride, as the latter requires an expert anaesthetist, trained assistance, and a special inhaler. Lower the head on an inclined plane. Don't hurry, but calmly examine the extent of the tonsil to be removed by strongly depressing the tongue. Grasp the tonsil with a strong pair of tonsil forceps passed through the ring of the guillotine, draw it from its bed, and thread the guillotine on to the tonsil from below, upwards and outwards. Press the distal end of the instrument firmly into the tonsil bed. Push down the blade of the very blunt guillotine to compress strongly the neck of the tonsil. Remove the forceps; carry the handle of the guillotine across the mid-line of the body and then twist the instrument half round. These movements get the tonsil from its bed and compress and twist the vessels that supply it. Drive the blade home and remove the tonsil. Insert at once a mop on a long holder in the tonsil socket, and keep up pressure for a couple of minutes; then gradually remove the mop. If, as is usually the case, there is no haemorrhage, proceed to remove the second tonsil, giving a little more anaesthetic first if required. If there be haemorrhage, deal with it by ligature, stitching the faucial pillars, or by injections of horse serum and morphine as circumstances demand.

A NOTE ON THE TREATMENT OF ASTHMA.

BY

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CASES of hypersensitiveness, of whatever kind, have of late been brought more closely into union. Some pathologists considered that anaphylaxis and anaphylactoid shock were entirely different phenomena. But physicians are bringing them into near relationship. Kolmer suggests that "enough acceptable data have now been accumulated to permit of at least a partial classification and house-cleaning of terms and ideas." He thinks that for all cases of hypersensitiveness the best term is "allergy," and objects to any classification based on our ability or inability to transfer passively the antibody, as it may be present only in the cells. He adds that "we may safely assume that precipitin and allergic antibody are not identical." I came to the same conclusion long ago.[1]

Barber and Oriel[2] remark that

"the important fact is that many of the symptoms to which sensitized persons are liable are identical with those to

animals suffering anaphylactic shock, for example, contraction of the pilomotor muscles with erection of hair follicles, sneezing and coughing, pruritus, urticaria, respiratory distress," etc.

Again, Dale and Kellaway[4] found that the injection of an anaphylactic guinea-pig (to egg albumen) with agar sol in a small dose resulted, within a minute following the injection, in symptoms "presenting in their type and rapidity of their fatal issue a close resemblance to true anaphylactic shock." Then the work of Lewis[5] shows that in all anaphylactic and anaphylactoid reactions a fundamental factor is the liberation of an H-substance, which is probably histamine. Pickering,[6] in his recent work on blood plasma, says:

"In many respects the condition of the blood in anaphylactic shock resembles that produced by the intravascular injection of peptone. The shed blood is clotted by the passage of CO_2, by dilution with water, by acidification, and by the addition of tissue extracts. . . . The capacity of the plasma to aggregate platelets is increased and may be evident *in vivo*. Parallelism of behaviour is also apparent in the suppression of anaphylactic and peptone shock. The previous intravascular injection of hirudin, of sulphate of atropine, or of chlorhydrate of choline, prevents or mitigates both these reactions."

Zinsser[7] says:

"It would be a pity if the erection of a fence of division at the present time should influence investigators to overlook fundamental similarities, although we are faced with a large variety of supersensitive states."

Sometimes the animals inoculated are more sensitive to the poison than are the controls; they have become allergic. He considers this allergy a "paradox phenomenon," and a most ingenious adaptation of the side chain theory was applied to it by Krietz in 1902 and by Wassermann in 1904—namely, that in the state of allergy the receptors had not been cast off from the cells, these sessile receptors rendering the cell more exposed to toxic action than it was normally, and more susceptible to injury.

Perhaps I may be allowed to state that I published the same view in 1901.[8] In my investigation of the pneumococcus at the old Embankment Laboratories, I found that no antitoxin was produced by injection of the toxin, in whatever quantity, but that, on the other hand, the animals were allergic. I remark:

"Why is no antitoxin produced, and what is the immediate cause of the sensitiveness? So far as our knowledge goes, these phenomena must be regarded as mutually dependent. On Ehrlich's theory we must have an excessive accumulation of side chains in the susceptible cells, and likewise *the failure to cast them off into the blood as antitoxins*. Such overloading of the cells would, of course, cause their injury and so render them more susceptible to fresh doses of the toxine. . . . It may be legitimate to consider that the short time which elapses between the anchorage of the haptophore group, and the coming into play of the toxophore group, in the case of the toxine of pneumonia, may prevent the cell from acquiring the power of throwing off its side chains in a sufficiently free manner."

Diet and Protein Testing.

It must be remembered that in cases of allergy, although one particular part seems to be affected, the whole body participates. Hence local measures are not usually of much use. I am entirely opposed to the idea that asthma is a neurosis. My asthmatical patients are much less neurotic than normal individuals. As Freeman[9] remarks, we have the Kustner-Praussnitz reaction; how do the psychopathists explain this? M. Walzer[10] states that a detectable amount of certain types of protein enters the blood from the digestive tract regularly in the average normal individual. The same thing was noted by Freeman[11] on himself. He punctured his middle turbinal with the serum of a person sensitive to eggs, and some time after ate an egg. Shortly the punctured nostril showed great irritation, indicating that the albumen had passed through his blood. When the protein is entirely digested the sensitized site remains unaltered. From this it will be seen how important is the diet of the asthmatic. He should be limited in his proteins, and whatever he eats should be tested on his skin, although this test is not by any means sure. He should take light meals and nothing after 7 or 7.30 p.m., if possible. Also, the bowels should be kept open. I usually test the skin with sixty to seventy different proteins in groups of five (Warren Vaughan says the scratch should be three-eighths of an inch), but it is remarkable how many adults give no reaction, although, of course, they may be sensitive to some substance which may be revealed on making careful inquiry into their lives.

Peptone and Serum Peptone.

Last summer I made some very careful experiments with serum peptone. I added the peptone to the drawn blood, mixed it slowly, and incubated at exactly 37° C. for two hours. I let it stand until the next day, when a beautifully clear serum peptone had come out. The next time I tried it the serum peptone made under exactly the same conditions had coagulated. This was disappointing, as I had a high opinion of the serum peptone. Several different bloods were tried, and some came out well, others did not, so I usually made agar serum peptone, but with this difference, that instead of adding phenol as a preservative I now always employ chloroform, as it gives a clear mixture for a considerable time. I may add that the patient should be without food for five hours previously. The drawn blood is kept at room temperature until the next day, when the serum is pipetted off and mixed with solution of agar in very minute quantity (one-fifth of a 1 in 1,000 solution to four-fifths of serum). The agar serum solution is put in the incubator for two hours at 37° C. Then peptone (4 c.cm. of a 30 per cent. solution or 6 c.cm. of a 20 per cent. solution) is mixed with each ounce, and three or four drops of chloroform are added; mix with half its volume of water before injecting. It is not so much the serum as the anaphylatoxin produced which influences the patient. It was shown by Dr. Anrep at University College that the agar serum so prepared was poisonous to guinea-pigs, while ordinary serum was not. Full details will be found in former papers of mine.[12]

It may be hardly necessary to add that while some patients respond well to peptone others do not. This may be owing to the state of disintegration of the colloidal particles of the blood and tissues in allergy. Pickering[13] states that "peptone unites with plasma and forms a relatively stable compound which resists disintegration." This colloidal stability may be overcome in some cases, but not in others. I have clearly stated the sort of asthma cases which resist peptone, and I need not repeat them here. An American physician[14] lately published a paper in which he condemned my peptone treatment and also that of all other observers. He took five patients with asthma and gave 0.5 c.cm. of peptone 5 per cent. to them intravenously once a week for four weeks; to another five he gave 1 c.cm. intravenously once a week for eight weeks. He says there was some improvement in those treated in this way, but not in those treated by other methods. Now how can anyone expect to reduce asthma in this mechanical manner, with only four and eight doses, and such small ones? One must begin with a small dose (0.3 c.cm.) and work up to 3 or 3½ c.cm., and only in cases suitable for the treatment.

If intravenous treatment by peptone is not very successful, agar serum peptone should be tried (1 c.cm. up to 4 c.cm.). In a good many cases a cure has been effected by the latter substance after peptone had failed. If a patient is nervous about having his blood drawn the serum of another healthy person about the same age will suffice, though it may be as well not to inform the patient of this.

Ultra-violet Rays and Radiostol.

Last summer I began to use the ultra-violet rays in several ways. I irradiated the agar serum peptone for a quarter of an hour at a distance of eighteen inches from the mercury vapour light. If there is any blood in the serum it may coagulate. The results of this I believe were good. I also irradiated the chests and backs of the patients in a number of cases, and my opinion of this treatment was very favourable. I give it in all cases now when possible. The mercury vapour lamp I use is a Cemach stand model, which gives a powerful general light; and for an applicator there is the special mounting devised by Dr. Cemach of Vienna for the Kromayer lamp, providing both vertical and horizontal travel of the hood and burner by an independent rack and pinion movement in both directions, facilitating the delicate technique necessary for orificial application. For intranasal treatment, which

is all I use it for, this is quite satisfactory, and it is unnecessary to use a Kromayer lamp.

For general treatment I begin by exposing the chest and back twice a week to the light at three feet distance. The first time 1 minute, the same for the back; the next time 1½ minutes, then 2 minutes, then 2½ minutes, then 3 minutes, then 3½, then 4, then 4½, then 5, then 5½, then 6, then 6 minutes. Some patients easily take somewhat longer periods, but I doubt if it is any use. This is the first course. Then the patient waits for a month, when the second course of twelve treatments is given. One of the most successful cases I had was that of an elderly lady who had been treated by me and others for many years with all sorts of things, and she would only respond for a short time. Since her second course she has had no asthma. This is now nearly four months ago. She had no other treatment. In another case a lady who had spasms practically every night was relieved for two months, when the spasms returned. She also took 50 tablets of radiostol, nothing else. In many other cases I have given agar serum peptone and radiostol. The radiostol I first used was a glycerin solution in 1 c.cm. ampoules. A few drops of water were mixed at the time of using, and it was then sucked into the syringe. To this the agar serum peptone was added, and it gave very good results. I shortly afterwards gave one tablet of radiostol daily. The radiostol is not equal to the ultra-violet rays, although both (and especially radiostol) much increase, amongst other things, the phosphorus in the blood, which is favourable for asthma.

Glucose and Insulin.

It is well known that the liver plays a part in asthma, as by it the toxic products of bacteria with undigested protein are rendered non-toxic, and it transforms albuminous products into urea, etc. It was suggested by Barber and Oriel[13] that the giving of glucose would in many cases strengthen the general function of the liver, enabling it to assimilate glycogen, etc. Some time previous to their paper, the giving of glucose was suggested to me by Dr. Parkes Weber. I have given it in a good many cases, and I believe with advantage. It may be given alone or with a little insulin. Several have noted the benefit derived from insulin; there is an increase of appetite and a sense of well-being in non-diabetic cases. MacLean finds it excellent in cases of malnutrition. He gives five units twice daily—before breakfast and before dinner. Along with this he gives one ounce of glucose, mixed with an equal part of orange juice at intervals of an hour after each dose of insulin. A good deal of starch is given with meals. The insulin is gradually increased to ten or twelve units, and the treatment kept up for three or four weeks. I have often given the glucose and insulin in this manner, along with ultra-violet rays and agar serum peptone, and in some cases the mixed coliform vaccine, in small doses twice a week, as recommended by Coke. I usually found this very good. The vaccine seems to act prophylactically. In one case, in the St. Marylebone Hospital[*] I treated a very thin woman, aged 37 (who for many years has had violent attacks of asthma near her menses), with glucose and insulin, ultra-violet rays, ovarian extract 5 grains daily, thyroid 1 grain daily, and her own blood (autohaemotherapy), 5 c.cm. of which mixed with 1½ c.cm. of peptone was injected immediately into the upper arm. She also had weekly doses of the vaccine. She practically recovered and was sent to a convalescent home.

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[*] I desire to thank Dr. Basil Hood, the medical superintendent, who for a long time has kindly permitted me to examine and treat all cases of asthma and other allergies admitted to the hospital.

A CASE OF CUTANEOUS DIPHTHERIA AS THE CAUSE OF AN OUTBREAK.

BY

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AND

GLADYS J. C. RUSSELL, M.B., D.P.H.,

LEEDS.

To Chomel is credited the first reference (in 1759) to *dermatitis diphtheritica*. Some seventy years later Trousseau made fuller investigation of the disorder, Neisser first explored the condition bacteriologically, Jenner[1] mentions a case of diphtheritic infection supervening upon a chronic pemphigus, also two cases of ulcer of the leg with superimposed diphtheria. Slater[2] recorded a case of chronic cutaneous diphtheria. Knowles and Frescoln[3] collected reports of cutaneous diphtheria cases, which incidentally illustrate the diversity of clinical appearances capable of being presented by the condition. Barber and Knott[4] and, later, Perry[5] described cases of chronic diphtherial ulceration of the skin. Greenbaum[6] contributed a case of primary cutaneous diphtheria of the face. Goodall and Washbourn[7] mention cases of primary dermatitis diphtheritica affecting the fingers. The invasion of wounds by Klebs-Loeffler bacilli is a rare occurrence to-day, though at one time not so uncommon.

Dermatitis diphtheritica may be primary or secondary A breach in continuity of the skin is a necessary antecedent. The case now recorded was secondary to a faucial diphtheria, and infection was by auto-inoculation affecting a small area of intertrigo situated behind the right ear The case was responsible for the outbreak of faucial diphtheria outlined below. The outbreak comprised seven patients, all of whom were nurses employed at the Wythe Infants Hospital, Leeds. The bacteriological findings, in respect of the patients and domestic staff of the institution, were negative throughout. The sequence of case was as follows:

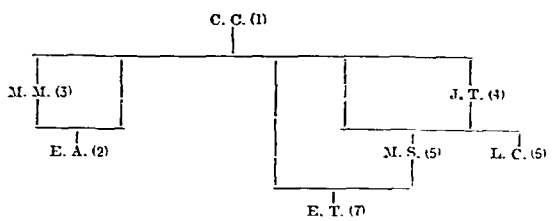
Case.	Patient.	Date Admitted to Isolation Hospital.	Bedroom Previously Occupied at Wyther.	Ward in which engaged at Wyther.	Remarks.
1	C. C.	23.12.28	No. 1	A.	Clinical diphtheria Resumed duty a Wyther on Jan. 23, 19
2	E. A.	15.2.29	No. 1	A.	Clinical diphtheria.
3	M. M.	17.2.29	No. 7	A.	Non-clinical diphtheria
4	J. T.	2.3.29	Sister's separate room.	A.	Clinical diphtheria.
5	M. S.	4.3.29	No. 7	A.	Non-clinical diphtheria
1	C. C.	Readmitted 6.3.29	No. 1	A.	Cutaneous diphtheria (see below).
6	L. C.	7.3.29	Lodgings; separate block.	B.	Clinical diphtheria Nursed Case 4.
7	E. T.	8.3.29	No. 7	A.	Non-clinical diphtheria

C. C. (Case 1) appears as the central figure in the outbreak. She was admitted to isolation hospital on December 23rd, 1928, suffering from faucial diphtheria. On discharge she resumed nursing duties at Wyther on January 20th, 1929. The outbreak proper began with E. A. (Case 2) on February 15th, 1929—that is to say, twenty-six days subsequent to the return to duty of C. C. Other cases followed, and, on March 5th, during the course of investigation, C. C. was found to have an area of intertrigo behind the right ear; it now transpired that this condition had been present, but had escaped notice, at the time of her discharge from isolation hospital on January 20th. The affected area of skin showed no outward manifestation of diphtherial infection, but nevertheless a swab was taken therefrom and was reported upon the next day as follows: "Bacilli present morphologically resembling K.L.B." A subsequent virulence test gave the following result: "On the third day there was a slight erythema around the site of inoculation; the sugar reactions were positive for Klebs-Loeffler bacillus; the result suggests an

organism of low virulence." Throat and nose swabs proved negative. Here, then, was a case of cutaneous diphtheria which the available evidence indicated as the source of infection. The patient was readmitted to isolation hospital on March 6th.

The lapse of twenty-six days between the return of C. C. from isolation hospital and the subsequent occurrence of the next clinical case (2) has to be explained. In this connexion M. M. (Case 3) might well have been infected first by C. C., for, being a non-clinical case, she was only discovered in the course of a general swabbing following the removal of E. A. on February 15th. Moreover, there might conceivably have been delay in the assumption of activity by the organisms of the original case. M. M. was removed on February 17th. At this juncture the swabs of all others were negative. On March 2nd—thirteen days after removal of M. M., J. T. (Case 4) was removed with clinical diphtheria, and a further general swabbing revealed M. S. (Case 5) as a case of non-clinical diphtheria, and the patient was removed on March 4th. As related above, C. C. was exposed on March 6th as a case of cutaneous diphtheria and was readmitted to hospital. L. C. and E. T. (Cases 6 and 7) followed on March 7th and 8th respectively, and there the outbreak ended. L. C. probably contracted infection from J. T., whom she had nursed prior to removal.

There appears to be no doubt that C. C. gave origin to the outbreak. Owing to the occurrence of certain non-clinical cases in which the date of initial infectivity was not determinable, it is difficult to outline the passage of infection from case to case, although it is essayed to do so in the tree below.



Our thanks are due to Professor J. Johnstone Jervis, medical officer of health, ...eds, for permission to publish the above particulars relating to an interesting case and its sequel.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

STRANGULATION OF OVARY IN AN INGUINAL HERNIA ASSOCIATED WITH CONGENITAL ABNORMALITY OF THE KIDNEY.

THE interest of the case here recorded lies in the close developmental relationship between the kidney and the ovary, in that they both arise from the Wolffian body. As it seems highly probable that a congenital abnormality of the one organ should be associated with an abnormality of the other, I should be glad to hear if any similar cases have been reported, or whether cases are on record of abnormalities of the kidney associated with an imperfectly descended testicle. It would also be interesting to know what the prognosis would be in this case should pregnancy occur at some future date.

A female child, aged 5 years, was admitted to the Royal West Sussex Hospital complaining of a tender swelling in the left groin. The mother stated that the child had had a rupture since birth, which for the past two years had been kept back by a truss. Eight hours before admission the child complained of pain in the left groin, and it was found that the swelling had become tender, and could not be pushed back. Five hours before admission the patient vomited partially digested food. The bowels had not been open for twenty-four hours.

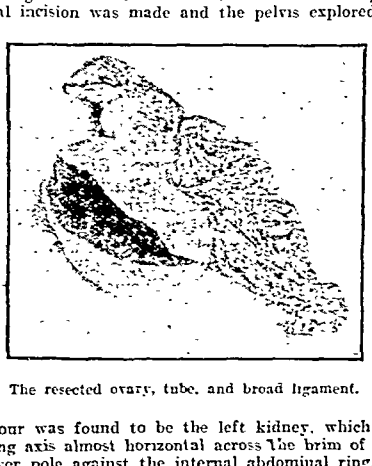
The patient, a well-built child, appeared to be in great pain. Temperature 97.6° F., pulse 140, respirations 24. Nothing abnormal was found on examination of the heart and lungs. The abdomen showed some rigidity over the whole of the left iliac fossa. In

Pyelograph taken when the patient was convalescent, showing the site of the left kidney.

the region of the central portion of the left inguinal canal was a firm, exquisitely tender, irreducible swelling, oval in shape, and about three-quarters of an inch in diameter. There was no impulse on crying. The skin over the swelling was hot, red, and oedematous. It was at once remarked that if only the patient had been a male the diagnosis would have been torsion of an imperfectly descended testicle. In the circumstances, however, the more obvious diagnosis of strangulated inguinal hernia was made.

Treatment.

One hour after admission, under general anaesthesia, an incision was made over the swelling. This was found to consist of a hernial sac containing blood-stained fluid and a strangulated gangrenous left ovary, tube, and broad ligament. Strangulation was found to be due to a torsion of the tube and broad ligaments, which were both markedly elongated. The gangrenous organs were then resected. Subsequently a smooth, rounded tumour of firm consistency was felt lying in the pelvis close to the internal abdominal ring. As this could not be identified a left paramedian suburnbilical incision was made and the pelvis explored.



The resected ovary, tube, and broad ligament.

The tumour was found to be the left kidney, which was lying with its long axis almost horizontal across the brim of the pelvis, and its lower pole against the internal abdominal ring. The left ureter was about two and a half inches in length. (This is well shown in the pyelogram taken when the child was convalescent.) In addition to its normal blood supply the kidney had an aberrant artery and vein communicating between its lower pole and the left common iliac vessels. The right kidney and ureter, the uterus, and right appendages were normal, though the uterus was displaced slightly to the left of the mid-line. Both wounds were then closed, and the child made an uneventful recovery.

Chichester. ARTHUR C. LIESCHING.

HAEMOPHILIA IN THE NEWBORN.

CASES of haemophilia in the newborn are sufficiently rare to warrant recording the following case.

A primipara, aged 23, was delivered after an uneventful pregnancy of an apparently healthy male child, weighing 8 lb. She suffered from a well-compensated mitral regurgitation (following rheumatic fever in childhood) and had been operated on for gastric ulcer.

I saw the child again six hours later and noticed it was tongue-tied. I divided the fraenum linguae, and there was no appreciable haemorrhage. The next morning I was told that the tongue had not stopped bleeding. I found blood still oozing from the region of the fraenum, and applied cotton-wool soaked in 1/1000 solution of adrenaline chloride, without success. Blood was also oozing from a slight abrasion at the tip of the nose, where I presume the infant had scratched himself. There were several ecchymoses on the back along the spine, and in the flexures of the arms and legs, presumably the parts exposed to pressure. There was a slight oozing from the base of the cord. Melaena was also present.

The child's hands were protected with gloves, and, as it was unable to suckle on account of the buccal haemorrhage, it was put on one-ounce feeds of cold barley water every three hours; two grains of calcium chloride was added to each feed. Milk was avoided so as not to stimulate intestinal haemorrhage. One minim of 1/1000 adrenaline chloride solution in a teaspoonful of water was given every hour for three hours, and then continued three-hourly. The child took these feeds well, but the oozing from the mouth, nose, and cord continued till the end of the fourth day.

After the haemorrhage had stopped for twelve hours the child was given a one-ounce feed of cow's milk and water at midday of the fifth day, and another at 3 p.m. I was hastily summoned at 4.30 p.m., when I found the child bleeding profusely from the base of the cord, which had not yet separated. The child was cold, the respirations were shallow, and the pulse was weak. I packed the wound with horse serum, and injected 10 c.cm. subcutaneously. The bleeding stopped in about five minutes. The child was wrapped in blankets, and hot-water bottles were placed in the cot. At 9 p.m. the child was quite warm, and there was no haemorrhage. Another injection of 10 c.cm. normal horse serum was given, and adrenaline by mouth continued. At 5.30 a.m. on the sixth day the child died. There was no necropsy.

I cannot trace any definite family history of haemophilia, but I was told that the mother's grandmother on the paternal side had had twin sons who died at birth of some "blood disease."

London, S.W.11. J. L. BLONSTEIN, M.R.C.S., L.R.C.P.

Reports of Societies.

BRITISH PAEDIATRICS: PAST, PRESENT, AND FUTURE.

AT the annual meeting of the Section of Disease in Children (Royal Society of Medicine), on May 24th, Dr. F. JOHN POYNTON delivered his address from the chair, taking for his subject some phases in paediatrics as viewed by a general physician.

The earlier part of Dr. Poynton's address was occupied with some interesting reminiscences of consulting physicians and surgeons to the Great Ormond Street Hospital with whom he had been associated—Sir Thomas Barlow, the late David Bridge Lees, the late Edmund Owen, and others. In an earlier generation, from 1852 to 1862, Sir William Jenner was physician to that hospital. Dr. Poynton, who had always thought that Jenner's portrait showed a formidable personality, once asked Sir Thomas Barlow how Jenner managed children, and he was interested in the reply that, when Jenner was among sick children, all that was good and benign in his nature seemed to radiate from him, and he was at his very best. Among surgeons whom he had known, Edmund Owen (formerly Chairman of Council of the British Medical Association) had always remained in his memory as the greatest teacher of students he had ever met. It was possible that his direct and forceful methods would prove too terrifying for the modern student, but no one could drive essential and practical instruction into the head with more incisiveness. Three men among others to whom Dr. Poynton was house-surgeon, and to whom he was deeply indebted, were Sir Thomas Barlow, Dr. Lees, and Sir Archibald Garrod. To Lees he owed more than he could say. He always thought of Lees as of a Roman gladiator combating with straightforward weapons an antagonist with a net and short dagger. Lees hurled his clear mathematical intelligence upon his foe—disease—but sometimes he was ensnared by the other with devious strategy. Another consulting physician at Great Ormond Street of whom he had memories was Walter B. Cheadle, and here he showed the Section some interesting photographs illustrating Cheadle's historic journey with Viscount Milton across North-West America in the sixties, when not a few privations were endured. He remembered being shown by Cheadle the belt he wore at that time, with the holes which he drew in one by one. Cheadle was the first to define infantile scurvy, which he ascribed to artificial foods containing no antiscorbutic element.

In those earlier days, in children's diseases, there was a great field in which to work. Surgical opportunities were perhaps not so striking as medical ones, but disease in all its complications was to be seen in a children's hospital. The amount of special knowledge which was simmering in the children's hospitals in the days he was recalling, but which had not quite reached articulate expression, was also remarkable. Those days were now disappearing, and the position of the man interested in children's diseases rather resembled that of a collector who had at first come upon many rare specimens, but now was continually meeting with duplicates, and had great difficulty in usefully extending his collection. In the particular Section he was addressing Dr. Poynton felt that there was an increasing tendency to demand cases of extreme rarity to stimulate a jaded appetite. It was not true to say that in the old days research was not in evidence. It was easy enough to underrate the value and originality of the work of the old clinicians because it was done in hospital wards and not in laboratories, and because often it only directed a line of investigation, and did not explain the facts which it had extracted from the tangled skein of human disease. In these days there was often a tendency to suppose that research—a term woefully misused—was the prerogative of the laboratory. Nevertheless, as purely clinical research diminished in its scope, laboratory research became more necessary. This stage was now being reached, and its developments were to be seen in all directions. Much of the present order of research demanded highly skilled training, with the result, as he saw it, that specialism in children's diseases would continue to develop, and the general physician would hesitate to attempt researches which were so prolonged and special. It was interesting to speculate whether the trend of specialism would stop at its present phase or whether, fifty years hence, if he could look in at the Section for the Study of Disease in Children, he would find children's specialists in cardiac disease, in nervous disease, in dietetic disorders, and so forth. If this development should take place it would mean a great waste of intelligence, for brilliant minds would be spending themselves on small details and within narrow limits, and missing many interactions and co-ordinations. One might even foresee a still further stage in medical thought when the specialist to be called for would be one who had a general knowledge of human disease. Dr. Poynton said that he himself belonged to a closing chapter in the history of paediatrics. The general physician with a special interest in children was disappearing. The scope of the subject had become so great that the expert was finding that all attention must be devoted to this one subject. The public demanded a children's specialist, and, the first necessity of life being to make a living, there was a steady pressure in that direction. The establishment of paediatrics had been one of the great steps in the history of medicine. Although it seemed an inappropriate observation from one who was the president of the Section, he could not help regretting the disappearance of the Society for the Study of Disease in Children, which was its forerunner. The change was inevitable, but some personal touch was lacking in the new order. Looking back over the years spent among sick children, he did not think that to-day men worked harder than their predecessors, or with more enthusiasm; but there had been a distinct improvement in the social condition of the poor, and the terrible cases formerly seen were by no means so frequent. The work to-day was more accurate and detailed, the resources were greater, but the breadth of experience was in danger of disappearing.

Turning from this retrospection to the immediate future, Dr. Poynton said that changes were taking place which

would greatly influence the study of paediatrics. One outstanding event had been the establishment of the Ministry of Health, and no branch of medicine would feel the influence of the Ministry more surely than this. The Ministry, of course, was more intent upon prevention than upon the intricate study of disease, but inevitably the organization for the care of children must more and more pass under the control of the Ministry, while the study of disease remained the province of the hospitals, and between the two there must be an active intermediary, maintaining touch with the Ministry on the one hand, and with the hospitals on the other. On many sides the children's hospitals were already feeling the difficulties which were developing. There were special provisions for fever cases, for surgical tuberculosis, for syphilis, for many other diseases affecting children. He was in no way criticizing this inevitable development, but the result was to bring about a certain lack of continuity in the treatment of the child as an individual. Another, perhaps somewhat sordid, consideration came in. As the state extended its activities, there would be a standard of payment for State medical officers on the one hand, whereas on the other the honorary officers of hospitals received no remuneration. Little by little the able physician or surgeon would become doubtful whether the liberty of action of the honorary officer, which the older men at all events knew how to value, was not being gained at too great a price. But one essential factor in the whole position was that there were in this country two great systems, one the Ministry of Health, where preventive organization was paramount, and the other the great hospitals whose success was based on very many years of experience and teaching. The hospital organization possessed the precious asset of a system of education based on the experience of years, which gave remarkable freedom of thought and action, and opportunities for doing the best kind of work to those who were bent on the service of medical science. The blending of these two great features, the hospitals and the Ministry, was the problem of the future, so that each, while maintaining its proper sphere, might help the other. Dr. Poynton also sketched future possibilities in the work of the Section.

In proposing a vote of thanks Dr. J. D. ROLLESTON drew attention to the official printed announcement of the address, which bore the American spelling "pediatrics." He hoped that this would not receive the sanction of the Royal Society of Medicine, especially as the *British Medical Journal* now adopted the proper form, with the diphthong.

THE DICK TEST IN PUERPERAL FEVER AND PYREXIA.

AT a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on May 24th, with Dr. S. MONCKTON COPEMAN in the chair, Dr. ALEXANDER JOE read a communication on puerperal fever and pyrexia, and related particulars of a series of cases coming under his observation at the North-Western (M.A.B.) Hospital.

Dr. Joe placed his 219 cases into six categories as follows: (1) uterine infections; (2) pelvic or general peritonitis; (3) pelvic cellulitis; (4) general infections of the blood stream; (5) infections of the urinary tract; (6) miscellaneous, including mental disturbances, constipation, breast troubles, and other conditions consequent on the puerperal state. The detailed classification was as follows:

Category.	Number of Cases.	Deaths.	Recovered Cases.	
			Average duration of pyrexia in days.	Average number of days in hospital.
1	71	Nil	4·5	20.5
2	47	17	16.8	37.1
3	11	1	10·1	46.2
4	20	15	26.5	74·0
5	12	Nil	13.5	32·9
6	58	1	(Not estimated)	

Of the 47 cases in Class (2) (peritonitis), 23 had pelvic peritonitis and 24 the general condition; all the deaths were among the latter. The 20 cases in Class (4) (general infections) included 12 septicaemias (10 deaths) and 8 pyaemias (5 deaths). Of the 32 puerperal deaths, 7 were the result of septic conditions following upon abortion, directly attributable, save for an infinitesimal fraction, to instrumental intervention; this was a conservative estimate. Of the remaining 25 deaths, 11 had occurred in primiparae and 13 in multiparae (one was uncertain). Among the primiparae, 8 of the deaths followed instrumental labours, with severe laceration in 5; in the three unaided labours there had been bad tearing of the birth canal in one, slight tearing in another, and the third, undamaged, had retained placenta. Normal labours had taken place in 9 of the multiparae who died, and instrumental labours in 4. He thought that the group of multiparae might be regarded as a sort of control upon the group of primiparae, and these figures were interesting from the point of view of trauma as a factor in the production of sepsis. Dr. Joe then gave an analysis of the 116 recovered cases in the first four categories of puerperal infections as follows:

Category:	1.	2.	3.	4.
Number of cases	71	30	10	5
Vaginal examination before labour:				
None	21	13	5	2
Uncertain	4	3	—	1
Labour:				
Instrumental	11	5	3	3
Normal	41	21	6	—
Result of Pregnancy:				
Healthy child	47	26	9	4
Dead child	4	—	—	—
Abortion	19	3	1	1
Unknown	1	1	—	—

Dr. Joe went on to describe how, following upon the work of Dr. Burt-White with regard to the Dick test and streptococcal infection in the puerperium, he had made a number of Dick tests in the puerperal fever ward at the North-Western Hospital. Patients were tested on admission by intracutaneous injections of Dick toxin. Altogether, 103 practically consecutive cases of puerperal sepsis were taken, of which number 26 were found to be positive and 77 negative to a 1 in 1,000 dilution; 39 of the 103 were positive to a 1 in 200 dilution. The percentage of positive reactors in this series of puerperal infections was almost identical with the figure obtained by Dr. Burt-White. Out of these 103 cases he had taken 22 from which he had isolated the haemolytic streptococcus; of this number 7 were Dick-positive and 15 Dick-negative. The analysis was as follows:

Infection.	No. of Cases.	Dick-negative.	Dick-positive.
Local uterine infection	12	8	4
Pelvic peritonitis	4	2	2
General peritonitis	2	1	1
Blood infection (septicaemia 3, pyaemia 1)	4	4	—

It would appear, therefore, that invasion by the haemolytic streptococcus was not restricted to Dick-positive cases.

The CHAIRMAN said that an enormous amount of work from the bacteriological and epidemiological point of view had been undertaken recently on this subject, more especially by his colleagues in the Ministry of Health and in various associated laboratories. The general outcome had seemed to be that there was only one specific type of organism concerned in all the infections, and therefore it was all the more important to learn from Dr. Joe that apparently this had little bearing on the question of treatment in these puerperal fevers and puerperal pyrexias. With regard to treatment, the speaker referred to a book written by Edward Copeman of Norwich in 1860, and entitled *Illustrations of Puerperal Fever*. The author, who was a well-known gynaecologist, drew attention to a method of treating puerperal fever which he ascribed to a Dr. Brennan in Dublin about 1814. It consisted in the use of turpentine internally as a medicine or an enema, or externally as stupes; he reported a number of cases in which certainly the effects appeared to have been exceedingly

good. Dr. Copeman declared that seven out of his last eight patients recovered, and as he was strictly a consultant—one of the first of the provincial consultants, who rigidly refused to have anything to do with patients who had not come to him in the ordinary way of consultation—the cases must have been pretty bad ones.

Dr. FOORD CAIGER remarked that it was extremely disappointing to realize what little benefit seemed to have resulted from the amount of work done clinically and in the laboratory in connexion with puerperal sepsis. He remembered that when he was resident accoucheur at St. Thomas's Hospital, forty years ago, he had had 600 confinements and lost *only one*, while the number of cases of puerperal fever was very small. At a recent conference at Zürich he had been interested to find that in Switzerland they did not seem to be any more successful than in this country, but they seemed to adopt a more passive attitude. The great principle there appeared to be to wait until the result of the blood examination was apparent, and then to begin to treat. It never seemed to occur to them to put the unfortunate patient into a position which might be favourable to recovery to start with, and then to call upon the bacteriological expert to make his report. As regards the treatment they did employ in Switzerland, the great thing seemed to be to safeguard the patient against thrombosis, and to that end she was subjected to gymnastics, even at a very grave stage of the illness.

Dr. LEONARD COLEBROOK congratulated Dr. Joe on his careful Dick-testing work. It did not surprise him to hear the result, because he had gathered that from other parts of the country similar results were forthcoming; it seemed as if the idea that a Dick test could be regarded in the same light as the Schick test in diphtheria would have to be abandoned. He concluded that it was necessary to look to treatment primarily of the bacterial invasion, and that no satisfactory cure for this would be forthcoming in the immediate future. Not enough was yet known of the factors governing the invasion of the *streptococcus*.

Mr. HAROLD B. BUTLER referred to the possibility of faecal *contamination*. It appeared from the researches of Hurst that 4 per cent. of people had achlorhydria, and did not sterilize the food in the stomach, so that organisms from the tonsil or elsewhere could be found in the faeces. Might it not be, therefore, that infections from the stool explained a number of these cases?

Dr. PHYLLIS DIXON asked whether the cases dealt with by Dr. Joe had been in any way selected, and Dr. J. A. H. BRINCKER whether, in addition to the testing for *Streptococcus haemolyticus*, work had been done on other types of organisms. Dr. JOE, in reply, said that the cases received were not selected in any way. It was evident that in the vast majority of these cases the *Streptococcus haemolyticus* was the primary factor. He agreed that the hope for success in treatment lay in some method which would prevent the pyogenic manifestations of the streptococcus. The only thing which he had seen so far to have any beneficial effect was, in certain cases with general peritonitis, to operate and *drain* the peritoneal cavity; here there had been one or two successes.

ACUTE ARSENICAL POISONING.

AT a meeting of the Medico-Legal Society, on May 23rd, a discussion took place on the subject of acute arsenical poisoning. It was opened by Sir WILLIAM WILLCOX, who also occupied the chair.

Sir William Willcox, after pointing out that it was an unwritten law of the society that no reference should be made to cases which were *sub judice*, said that he proposed to confine himself to recent advances in the technique of investigation and to certain recent cases the public proceedings in which were concluded. There had been during the last few years striking advances in chemical analysis and in the procedure of *post-mortem* examination with a view to the discovery of arsenic. From the cloudy swelling and degenerative changes in the liver and other organs and the condition of the gastro-intestinal tract and of the blood, it was almost possible to say that the case was one of acute *arsenical poisoning* without calling for the discovery of the arsenic. Much experience of the action of arsenic had been derived from the employment of the drug therapeutically in disease. Organic compounds of arsenic, the best known of which was salvarsan, one of the arsenobenzol derivatives, had been used in treatment to an enormous extent. Not long ago the speaker was called to a serious case of rat-bite fever with recurring symptoms extending over a long period; rat-bite fever was caused by an organism very like that which produced syphilis, and the patient was cured after one dose of salvarsan administered intravenously. Sometimes these therapeutic substances had a toxic action. One patient died with cirrhosis of the liver after eleven doses of salvarsan. But all this work had helped greatly in adding to the knowledge of the action of arsenic in the body. Arsenic in minute amounts was really one of the body's normal constituents. It occurred also in certain foods. In 1900, there was an epidemic of arsenical poisoning traced to the drinking of beer in the brewing of which there had been used a commercial glucose made from starch by treatment with sulphuric acid which contained appreciable amounts of arsenic. As a result of the Government inquiry which followed it was found that a number of foodstuffs contained arsenic, and the departmental committee laid down certain limits which must not be exceeded in foodstuffs offered to the public. Since that time there had been very few cases of arsenical poisoning from foods. About ten years ago a few cases (none of them, he thought, fatal) occurred as a result of drinking some soluble cocoa treated with potassium carbonate containing some arsenic which had been overlooked. It had recently been shown that certain kinds of fish contained appreciable quantities of arsenic; flatfish such as soles and plaice contained up to 0.1 mg. in 100 grams, probably not in the form of the arsenious acid, As_2O_3, which was used by persons with homicidal tendencies, but nevertheless absorbed by those who partook of *this diet*, and excreted in the urine. Crustaceans, such as lobsters and shrimps, contained relatively large amounts—from 20 to 40 parts per million, which was far above the limit (1.4 parts per million) officially permitted in foodstuffs. In the recent Llewellyn case, which created some stir in Wales, the deceased person, who was found to have *in the heart* and in the liver 0.4 part per *million*, and in the kidney 0.6 part, had been partial to plaice and other fish, and this long-continued diet was sufficient explanation of the arsenical traces which were found, with the result that the verdict was "natural causes." Arsenic had been from time immemorial the principal poison chosen by homicidal persons, for the reason that it was almost tasteless, was toxic in small amounts, and produced clinical symptoms which few medical men could distinguish from those of natural disease. Its description as an irritant poison was unfortunate; it was true that it had irritating effects, but it was really a tissue poison, affecting all the organs of the body, so that persons suffering from arsenical poisoning might die of heart failure, of toxic jaundice, or of badly damaged kidneys. Those who did not die might be permanently damaged. Sir William Willcox then discussed the familiar circumstances of the Pace case tried at Gloucester assizes in 1928. The deceased had had at least *five* fatal doses of arsenic. Enormous quantities of arsenic were found in the body—altogether 9.4 *grains in the* organs examined. Pace was a sheep-farmer, and it was probable that the arsenic was derived *from* sheep-dip.

Professor I. WALKER HALL then took up the story and described the properties and action of sheep-dip. The substance could be obtained easily by anyone who was known to have the care of sheep, and was in the form of a yellow granular powder containing fragments of arsenic dioxide, sodium carbonate, and coarsely ground sulphur. Each packet of sheep-dip contained about 1,400 minimum fatal doses. It was prepared in solution, and in making or handling the solution there was really very little danger. The idea of the cutaneous absorption of arsenic still remained a bogy which it was almost impossible to lay. The speaker described how he had experimented on himself. He rubbed a fatal dose of arsenic thoroughly over the extensor surface of his hand, letting it stay there for thirty minutes; then he soaked the hand in water and allowed it to dry in the air. He experienced no local irritation of the skin, no local symptoms of any kind, and the urine showed no extraordinary quantity of arsenic. He repeated the experiment, with the same result. He

next undertook certain experiments to determine the effect of single and repeated doses of sheep-dip solution introduced into the stomach of the rabbit, the animals being killed after twelve or twenty-four hours. Practically the whole of the fatal dose of arsenic in a soluble form could pass into the tissues of a rabbit in twelve hours. Professor Walker Hall also showed photographs illustrating the action of the material upon the stomach, the intestines, the liver, and the heart. The heart muscle at first showed striations, and eventually practical disintegration; and at a very early stage after the administration of arsenic from sheep-dip to rabbits one could discern definite changes in the blood vessels.

Dr. J. H. RYFFEL referred to one form of acute or chronic arsenical poisoning not previously mentioned—namely, that produced by arseniuretted hydrogen, which would appear to cause haemolysis of the blood. In the early days of submarines there were cases of such poisoning; the sulphuric acid of the accumulators contained arsenic, and in the charging of the accumulators arseniuretted hydrogen was evolved in small doses. A special feature of this arseniuretted hydrogen poisoning was jaundice, to which there was always a tendency in poisoning by arsenic. The action of arsenic on the liver in causing necrosis of the liver cells was also very remarkable. This could be demonstrated in salvarsan jaundice, where a person had been overdosed with salvarsan or had some idiosyncrasy towards the drug. Many attempts had been made at devising tests for the function of the liver. One of the great drawbacks in such tests was the largeness of the organ and the difficulty of demonstrating deficiency in function. If the hepatic deficiency was sufficiently marked, however, the levulose test met the case quite well.

Mr. EDWARD HINKS gave a technical description of the chemical analysis for arsenic, and discussed the merits of Reinsch's test, the Marsh-Bezelius test, and others. Most of the developments in the last few years had taken place in connexion with the electrolytic modification of the Marsh test, in which recently a mercury cathode had been used with great success. He exhibited a set of arsenic "mirrors" thus obtained. For toxicological purposes the Marsh electrolytic test was the safest and most satisfactory. These highly refined methods, however, owing to their very delicacy, were subject to a serious percentage of error, and where the concentration of arsenic was at all high it was preferable to use the ordinary mineral graphometric method, with which, given higher quantities, the margin of error was nothing like *plus* or *minus* 10 per cent., as it was with the more refined methods. He was still of opinion that the detection or determination of arsenic in the human tissues remained—to borrow a phrase from surgery—a "major operation." In reply to a question, he said that there was no spectroscopic test available.

The hour did not permit of any further discussion, but one or two questions on technical details were answered by Sir WILLIAM WILLCOX and Professor WALKER HALL. One of these related to the presence in apples of arsenic derived from the spray used on the trees before the fruit was formed. Cases of this kind were known, though not, Sir William Willcox thought, in home-grown or even in Dominion produce.

THE USES OF SCARLET FEVER ANTITOXIN.

AT the annual meeting of the Fever Hospital Medical Service Group of the Society of Medical Officers of Health, held at the House of the Society on May 24th with Dr. E. H. R. HARRIES in the chair, a short discussion took place on the uses of scarlet fever antitoxin.

Dr. W. MAIR MACFARLANE of the City Hospital, Birmingham, brought forward analyses of more than 800 cases of indubitable scarlet fever; some of the patients had had serum treatment and others had not. Among the total cases six deaths occurred (a case mortality of 0.7 per cent.), but one patient was moribund on admission and another had diabetes. Only seven of the cases could be brought within the category of septic scarlet fever, and all the patients recovered except the one who was moribund. Cases were selected for serum treatment on the ground of clinical suitability; among those so treated the incidence of complications was 19.2 per cent., and among those not so treated it was 25.2 per cent. The only really significant difference between the two categories appeared on the first and second days of the disease, when the percentage of complications among the serum-treated was about 18, and among those not treated by serum 31 per cent. In 74 patients who were severely ill, though without sepsis, and all of whom were treated with serum, there was uneventful recovery in all except 11, who had complications. Of the patients treated by serum 1.5 per cent. relapsed, as did 2.3 per cent. of those not so treated. The speaker gave some account of commencing cases which had aborted after the prophylactic use of 5 or 10 c.cm. of serum. With regard to serum reactions, out of 325 cases, 93 showed reactions and 232 (71.4 per cent.) no reactions. The majority of the reactions were quite trifling, but in 23 instances there was an intense general rash, and in 10 severe multiple symptoms.

Dr. H. S. BANKS of the Isolation Hospital, Leicester, said that last year he had to deal with a rather considerable epidemic of scarlet fever, which taxed the hospital accommodation to the utmost. He used antitoxin intravenously, and found it so successful and convenient that he now used it in this manner as a routine for definite cases of scarlet fever, with very few exceptions. He had so treated 486 cases during the last twelve months, giving to children from 5 to 10 c.cm. of the (Parke Davis) serum, and to adults from 10 to 20 c.cm., according to the severity of the disease. As to the immediate serum reaction, about 60 per cent. of the patients had rigor and hyperpyrexia lasting for about half an hour, but he had seen no fatality directly resulting. In the acute stage quite dramatic results might be claimed for the serum. There had not been a single case of the more important complications of scarlet fever—namely, otitis media, acute nephritis, and acute arthritis. The complications were limited to fourteen trivial septic occurrences, including adenitis and nasal discharge, and also one case of intermittent albuminuria, which was probably functional. Serum rashes appeared to be of smaller incidence than with intramuscular injection. In 300 cases, extending over the last seven months, the average stay in hospital for the cases so treated had been sixteen days. Adults did so well that they were discharged after, on the average, eight or nine days. Desquamation was generally absent or trifling—a powdering of the hands. He had a system whereby the patients reported at the public health office in the city a week or so after their discharge; they came willingly, appearing to regard this as a sort of clearing-off certificate. Return cases had worked out at 1.7 per cent. The great advantage of the treatment was that it enabled half the ward accommodation formerly devoted to scarlet fever to be devoted to other purposes. The cost of serum treatment worked out at an average of 15s. per case.

Dr. ALEXANDER JOE (North-Western Hospital, London) confined his remarks to prophylaxis; the doses of serum ordinarily recommended were 2.5 and 5 c.cm. This might well apply to the fairly large group of cases which would be Dick-negative and resistant to the disease, but, in his experience, when a case of scarlet fever had occurred in a ward, if the exposed population gave a reaction under 20 mm. in diameter, 5 c.cm. were customarily given, and above that, 10 c.cm. In an adult case he thought that, to be absolutely certain of results, 10 c.cm. should be given. To be on the safe side, in all cases at least 5 c.cm. should be given, and, unless there was going to be careful control by the Dick reaction, this should be exceeded up to 10 c.cm.

The CHAIRMAN said that he was rather hesitant about the short period which Dr. Banks gave for residence in hospital; he himself insisted on twenty-eight days in hospital for the uncomplicated case. He was also a little dubious about a dose which induced a rigor, and, altogether, in mild cases of scarlet fever he was not prepared to introduce antitoxin intravenously.

Dr. R. A. O'BRIEN pointed out some puzzling features which emerged from a review of the literature of the subject. There were instances of patients giving a severe reaction to a minute amount of serum, and later on being given serum without any reaction at all. He also spoke of the difficulty, in intravenous administration, of ensuring that the serum actually entered the vein, and exactly at the body temperature; one or two physiologists had said that this was of importance in relation to the subsequent reactions.

TUBERCULOSIS FROM A SURGICAL STANDPOINT.

AT a meeting of the Kidderminster Medical Society, held on May 10th, Mr. J. LIONEL STRETTON read a paper entitled "Tuberculosis viewed from a surgical standpoint."

Mr. Stretton said that if it was true, as had been stated, that tuberculosis was introduced into the body through the lymphatic system, the surgeon should be interested in its treatment and in its prevention. If phthisis was the end-result of lymphatic infection, it seemed obvious that the best way to prevent it was to guard the lymphatic system, and to treat any infection of that system at the earliest possible moment. There was no proof that tuberculosis of the respiratory tract had ever been contracted primarily by the direct inhalation of tubercle bacilli. Experienced veterinary surgeons knew that lung tuberculosis in cattle was secondary to tuberculosis in the mesenteric glands; probably the same was true of human beings. It was said that inoculation of a wound with tubercle bacilli, or their accidental entry through a skin abrasion, led to a local lesion only, for the skin constituted the chief tissue of defence. He knew of no proof that human beings had contracted phthisis as the result of skin infection with human or bovine tubercle bacilli. Tuberculous meningitis, he continued, was commonly due to the bovine type of organism, which supported the view that the disease was secondary to infection of the abdominal lymphatics, the infecting organism being usually of the bovine type. The human type of bacillus occasionally found in the abdominal lymphatics was probably introduced with food which had been handled by consumptives, their hands being hardly ever free from tubercle bacilli. This might be the reason why the offspring of tuberculous parents more often developed the disease than did those produced by healthy stock. Some authorities were of opinion that human bodies might possess a tendency to develop tuberculous disease, and, furthermore, that this tendency was hereditary. At present this was a debatable point. The fatty covering of the bacilli enabled them to resist the digestive action of the gastric juice, so that they had no difficulty in reaching the intestinal tract. The most common situations of the infected glands were the mesentery and the neck. The lecturer believed that infection was more frequent in the former, but being far more difficult to diagnose it was often overlooked. McFadden (*British Medical Journal*, December 24th, 1927, p. 1174) had stated that of 6,000 to 7,000 cases of mesenteric lymphadenitis only 45 had been correctly diagnosed. During the past ten years Mr. Stretton had operated upon 57 children with tuberculous glands of the neck and 84 with tuberculous glands of the mesentery. These figures supported the view that infection of the mesenteric glands was commoner than infection of the glands of the neck. Furthermore, enlarged cervical glands, or evidence of their previous existence, were seldom found in patients suffering from phthisis, so if it was true that phthisis was secondary to lymphatic infection almost certainly the lymphatics of the mesentery were responsible.

It had been suggested that enlarged glands in the mesentery were tuberculous in only a few cases. An alternative suggestion was that their enlargement was generally due to septic infection. If this were true the symptoms would be more acute and suppuration would not be uncommon. Why, moreover, were enlarged glands so seldom found in the mesentery in cases of acute appendicitis? It was not always possible from a microscopical examination to state that a lymphatic gland was tuberculous, but when the glands were caseous everyone would admit that they were tuberculous. Caseous glands, said the lecturer, were present in more than half of the children he had operated upon, and in his opinion it would be wise to regard all enlarged mesenteric glands as tuberculous, unless it could be proved that the infection was due to another organism. To lessen tuberculosis the lymphatic system had to be watched, and primarily the lymphatic system of the mesentery. The bacilli were supposed to gain entrance to the lymphatics of the mesentery through glands in the intestine, especially in the distal portion of the ileum. He suggested that the chief portal of entry was the appendix. In the patients he operated upon he found that the appendix was often old adhesions in its vicinity. Its removal led to immediate improvement in health. The diagnosis of these cases was difficult, and the symptoms were often indefinite. There was usually a long history of abdominal pains, irregular action of the bowels—which sometimes were constipated, at others relaxed—variable appetite, and usually some loss of flesh. Vomiting was not common, and the temperature did not usually rise above 101° F. The abdomen was often distended; it moved freely, and as a rule was not rigid or tender. The enlarged glands could usually be felt by a practised hand, but this was not easy. When the abdomen was opened some free fluid was usually present, but not enough to have been diagnosed before the operation. It was his custom to remove the appendix, and sometimes a gland too, for examination by the pathologist, but it would be unwise, if not impossible, to remove all the glands. In ten years he had operated upon 84 children, of ages varying from 9 months (one) to 11 years. The results, so far as could be ascertained, were as follows: 7 had died, 2 from subsequent tuberculosis; 39 were well; 3 were weakly, but had no definite tuberculosis; 15 could not be traced, and 20, operated upon within the last six months, were so far satisfactory.

Dealing with the prevention of tuberculosis, Mr. Stretton said that whereas many efforts had been made to secure a food supply free from tubercle bacilli, the persons engaged in the distribution of food had been overlooked. The only means of eliminating tuberculosis were to enact that no sufferer from tuberculosis should be allowed to assist in the food distribution of the country, and that all persons who did so assist should be periodically examined. He felt confident that in the future it was the lymphatic system that would be watched, and primarily the lymphatics of the abdomen.

AT a meeting of the London Jewish Hospital Medical Society, held on May 16th, with Dr. A. GOODMAN LEVY in the chair, discussions took place on the acute abdomen and on the acute ear. Mr. E. G. SLESINGER stressed the heavy mortality, still running into thousands every year, for which the acute abdomen was responsible. These deaths were partly due to technical difficulties, partly to some circumstances outside professional control, and several other factors, but mainly to delayed surgical intervention. Masterly inactivity finds no place in the treatment of the acute abdomen, except when applied by a master under ideal conditions and supervision; in other circumstances it is a policy which swells the mortality returns. In no other branch of medical practice was vaccillation so disastrous. Mr. M. SOURASKY, speaking on the acute ear, recalled the fact that 1,200 deaths are reported annually from this cause. But these were the dramatic consequences of the poor treatment of the acute ear. The less dramatic consequences were the people afflicted with deafness, unbearable tinnitus, and chronic ill health, with danger to life from everlastingly discharging ears. Inefficient treatment of the acute ear maimed rather than killed. The deaths and the chronic sequelae were the result of the cavalier treatment usually accorded to the acute ear conditions; they represented nothing less than collective professional malpraxis. Nothing was less difficult and uncertain than the treatment of the chronic ear conditions and their acute complications, and nothing easier than the treatment of the source of these troubles during its acute stage. Acute otitis media treated on rational lines—catheterization in the catarrhal variety, and paracentesis in the purulent type—subsided quickly, and the formidable array of sequelae were thus avoided. Should mastoid tenderness develop a free paracentesis would probably cure the condition, but in frank mastoid infection antrotomy would be necessary. Any acute otitis media which kept on discharging, whether through a spontaneous or a surgical opening of the drum, for more than four weeks after appropriate treatment ought to have a mastoid operation. Only thus could the appalling cases of chronically discharging ears, with all their possible complications, be avoided. It was much easier to prevent the establishment of chronic infection throughout the territory of the middle ear than to eradicate it. The great frequency of incurable chronic ear conditions must not be ascribed to the otologist; it was rather the result of the treatment by the profession as a whole of the acute ear conditions as if they were a nuisance, and the failure of most hospitals to supply the trouble, and the failure of most hospitals to supply the surgeons with anything but a niggardly number of beds.

Reviews.

OESOPHAGEAL OBSTRUCTION.

UNTIL a few years ago affections of the oesophagus remained somewhat of a barren theme, and it is only with the wider development of endoscopy in recent times that the subject has attracted specialist workers who have advanced our knowledge materially and embodied their results in various monographs and textbooks. A recent work[1] from the pen of a general surgeon, Mr. LAWRENCE ABEL, views the subject from another angle, and it appears at an opportune time. Based on the Jacksonian Prize Essay of the Royal College of Surgeons for 1924, which has been extensively revised, largely rewritten, and added to, it contains as well an account of a considerable amount of experimental work upon animals with reference to the surgery of the thoracic oesophagus.

Prefacing his survey by a detailed description of the anatomy of the parts, the author lays stress on the fact that the gullet is an extremely delicate organ liable to be ruptured by any sudden or injudicious stretching, as with an instrument. In the chapter on bacteriology he emphasizes the significance of the large numbers of micro-organisms in the upper food tract and the presence of certain of the more virulent which live only when teeth, and especially carious teeth, are *in situ*, a consideration which renders imperative a scrupulous toilet of the mouth before operations lower down are undertaken. For the purposes of diagnosis, whilst radiography in the right oblique position is advocated, the value or even necessity of supplementing it by x-ray films taken in other planes, notably when dealing with foreign bodies, might well have been insisted on. The author favours a large-bore oesophagoscope with proximal or distal illumination and the patient in the dorsal recumbent position.

Considerable detail is devoted to the important subject of spasm. At the upper end of the gullet the author regards it as due to tonic contraction of the cricopharyngeus. At the lower end a true sphincter is held to exist in the oesophageal wall at the level of the diaphragm, and here spasm occurs; and he proceeds to claim that hypertonicity or spasm produces local passive congestion resulting in fibrinous induration, such as forms the "pecten band" in the anal canal, often a precursor of rectal cancer. This fibrinous deposit at the opening of the gullet by limiting its expansibility gives rise to painless dysphagia, which may terminate in hypopharyngeal malignant disease. A similar change occurs at the cardiac sphincter in cases of cardiospasm. The account of upper spasm with its syndrome of dysphagia and anaemia is, on the whole, disappointing, and omits the important fact that it is confined to the female sex. On the other hand, cardiospasm, which is regarded as a spasm of the cardiac sphincter, receives full discussion as to its symptoms and clinical examination, and its treatment by dilatation with the rubber bag is warmly endorsed from the author's experience.

In cancer of the oesophagus Mr. Abel regards the lack of success as due to late diagnosis, and urges recognition of its earliest symptoms and a direct examination on the first signs of discomfort. As a palliative measure moderately early gastrostomy is advised. Intubation, radium, diathermy, and deep x-ray therapy are fully discussed and their limitations defined. But it is to the radical removal of the disease that one of the most valuable and suggestive chapters is devoted. The author holds that in the absence of any contraindication—for example, metastases or extreme emaciation—it ought to be attempted, and this applies not only to the cervical oesophagus, but also to the thoracic part. As the disease long remains localized and glandular metastases are the exception early recognition is important, and we are on promising ground in enlisting the help of the general practitioner.

The book has good illustrations, and without pretending to be exhaustive may claim a cordial welcome for more than one reason. The general practitioner will find an admirable account of the subject, which cannot fail to awaken an interest where his co-operation is urgently needed, and, on the other hand, the specialist will derive material for thought as to the possibility of help from general surgery in his most pressing problems.

[1] *Oesophageal Obstruction: Its Pathology, Diagnosis, and Treatment.* By A. Lawrence Abel, M.S.Lond., F.R.C.S.Eng. Oxford Medical Publications. London: Milford, Oxford University Press. 1929. (Sup. roy. 8vo, pp. ix + 234; 152 figures, 2 plates. 30s. net.)

CARDIO-VASCULAR DISEASE.

A MORE complete list of references, old and new, to the literature of the subject than that included in the work on diseases of the heart and the vessels,[2] by Professor ERNST EDENS, does not exist, and the author has thus rendered his book indispensable to students of the circulation; there is scarcely any branch of cardio-vascular disease the position of which is not clearly defined in terms of the latest publications of the subject. This very universality of treatment has its disadvantage that many of the older ideas about valvular heart disease are reproduced in the text by the side of newer considerations, and the general reader may not understand that this branch of cardiology is now viewed from another angle. It is a surprise to find that a writer who boldly, and probably rightly, bases his prognosis in angina pectoris on the response to effort has not with equal courage discarded these conceptions of the influence of valve lesions on the structural and functional future of individual chambers of the heart which had their inception almost exactly one hundred years ago, and have in the course of the past twenty-five years been found unreliable. For we do not know exactly what influence a slight stricture of the mitral orifice, for example, has on the heart. Nature's experiments are not designed to solve our academic problems, which are created largely, as Bergson pointed out, by man as *Homo faber*, who has no alternative (owing to the nature of his intellect) to dividing the continuous, and to dealing individually with the parts separated off, it may be, in a way which admits of no recombination.

This book is beautifully produced on excellent paper and contains many diagrams. There are 750 pages of text and nearly 250 pages of references to the literature; an index of authors is appended. The opening chapters on the history and on the development, anatomy, and physiology of the organs of the circulation are followed by a most comprehensive chapter on the methods of investigating the functions of these organs. The nature and effects of endocarditis are described, leading up to heart failure in its many aspects; we are told how the adaptability of the circulation to effort can be examined clinically. The author devotes 100 pages to the treatment of heart failure, and describes in detail the employment of a great variety of drugs, exhibiting considerable optimism in translating pharmacology into therapeutics. Then a chapter is allocated to the mechanical effects of valve lesions on the heart itself, a chapter which the reader would be ill advised to regard as inspired. Only a short chapter is concerned with congenital heart disease, but it is a pleasure to note that co-arctation of the aorta is no longer enshrined amongst the extremely rare abnormalities. That there is a separate chapter on diseases of the heart muscle may perhaps be justified on systematic grounds, but it is none the less an anachronism; the theories of the nature of "hypertrophied" myocardium are fully stated. The relation of the heart to the body in general and to the ductless glands is sufficiently discussed. An interesting chapter follows on the effects of exercise, of high tension, and of diseases of the chest on the heart; but the reflex physiological regulation of blood pressure by the splanchnic vessels is not introduced into the description of pure high tension, and in consequence an important fallacy in this conception remains unexplored.

Cardiac irregularity—defects of rhythm—is thoroughly described in all its aspects, and this chapter may be recommended to English readers, since the views of the Viennese school on conduction in the auricle are thrown into a prominence, probably undeserved, but favouring a balanced appreciation of the position. A chapter on diseases of the pericardium is followed by a long description of the maladies of the blood vessels, including an

[2] *Die Krankheiten des Herzens und der Gefässe.* Von Dr. Ernst Edens. Berlin: J. Springer. 1929. (Sup. roy. 8vo, pp. viii + 1057; 239 figures. R.M.66.)

account of recent work on the reaction of the skin vessels to cutaneous injuries. An admirable chapter on angina pectoris is worthy of detailed study. It is noteworthy that Professor Edens does not sharply divide, for purposes of description, his cases into primary and secondary forms, as we are accustomed, rightly or wrongly, to do. The text finishes with a few pages on cardio-vascular neuroses, including the "effort syndrome."

HUMAN ANATOMY.

WE must confess to being at a loss to account for the fact that Professor JOHN B. DEAVER applied the epithet "Surgical" to his great book[3] on anatomy, for it has long seemed to us that it has no special claim to that adjective. *Gray's Anatomy*, for instance, contains at least as many, and as extensive, references to the bearing of anatomical facts on surgery as does Professor Deaver's in proportion to its size. This criticism does not imply, of course, that this work has not been or is not of great value to surgeons. A work of three quarto volumes, containing 2,168 pages superbly and profusely illustrated, cannot fail to be of great value for its illustrations alone, let alone the commentary on them in the text. The frequent references to steps to be taken in dissection, however, seem to confirm the impression that this is really a systematic work on descriptive anatomy.

Vol. i, of which the first edition was noticed in our columns in 1900 (*vol. i, p. 454*), deals with the scalp, cranium, brain, face, mouth, throat, and the organs of the special senses, with 124 plates, of which those representing the eye and its surroundings are specially numerous and instructive. Vol. ii, the first edition of which we noticed in 1901 (vol. i, p. 1083), *treats of the upper extremities* [*sic*], neck, shoulders, back, and lower extremities. Vol. iii is concerned with the joints of the lower extremities, chest, thorax, abdomen, and perineum. We are still of the opinion that in a work of this size more space and at least one plate *should have* been devoted to so surgically important a subject as the lymphatic vessels and glands of the pectoral region, even if two large plates, at present set apart to show the carrying angle of the elbow, were sacrificed to make room for it. The same remark applies to large plates the sole use of which is to show lines of skin incisions for *dissection* of the hand and some other parts. We have failed to find any plates illustrative of the *surgical* anatomy of inguinal or femoral hernia or any reference to congenital dislocation of the hip, the sacro-iliac joint, or troubles of the lumbo-sacral joint such as spondylolisthesis. The author states that the "spines of the vertebrae should lie in a straight line." Doubtless in a perfect spine they should do so, but he gives not so much as a hint that they very often do not, and that an irregularity of the line is not to be taken as a sign of injury or disease. The posterior superior spine of the ilium is mentioned, but we have failed to find any mention of the posterior inferior spine of the same bone. The line of incision for excision of the hip occupies one plate, but no notice is taken of the various incisions which have been recommended and used by various surgeons in order to obtain access to the hip-joint and for the performance of various procedures for dealing with arthritis and injuries of the joint and its neighbourhood.

We do not pretend to have given an account of more than a few features of this huge work. Were it a small portable volume we should expect omissions from want of space, but these three volumes weigh eighteen pounds, and it is grievous to think that much useful true surgical anatomy has been omitted to make room presumably for some rather elementary pathology and such descriptive anatomy as is to be found more readily in the standard works on human anatomy. What has the method of dissection of various parts to do with surgical anatomy, if that term has the same meaning in the United States as it has in Great Britain?

[3] *Surgical Anatomy of the Human Body.* By John B. Deaver, M.D., Sc.D., LL.D., F.A.C.S. In three volumes. London: W. Heinemann (Medical Books) Ltd. (8 × 11, vol. i, pp. xv + 551, 124 plates; vol. ii, vol. iii, pp. x + 763, 160 plates. Eight guineas the

THE ADRENALS.

DR. MAX A. GOLDZIEHER, formerly professor of pathology in the University of Budapest, and now director of the laboratories of the United Israel Zion Hospital, Brooklyn, New York, has rather opportunely written a comprehensive monograph on *The Adrenals: their Physiology, Pathology, and Diseases*,[4] which will be invaluable as a source of reference, and contains a bibliography occupying nearly one-fourth of the volume. Every subject connected with these glands is considered in such detail that the work is a mine of information. Following an account of their development and anatomy, the physiology of the suprarenal glands is exhaustively discussed in more than one-third of the volume, and their pathological anatomy in a section about half that length; the diseases of the gland are dealt with under the heading of patho-physiology, and in conclusion there is a chapter on organotherapy.

The discussions on high blood pressure and arterio-sclerosis are of special interest. High blood pressure is classified in two groups, renal and essential, the latter being attributed to a disorder of the vaso-regulatory mechanism which comprises the whole vegetative nervous system. It is argued that all the known etiological factors of genuine hypertension stimulate the adrenals, and that both the cortex and the medulla of the adrenals, together with the concomitant changes in other endocrine glands, are concerned in the production of raised blood pressure. The author very definitely states and illustrates his own observations and conclusions that in arterio-sclerosis and chronic renal disease the adrenal medulla is hyperplastic, and, further, that in renal disease and high blood pressure the muscular coats of the adrenal veins are greatly hypertrophied, and thus point to prolonged overactivity of the adrenals. A description is given of the varying size of the cortex of the adrenals in arterio-sclerosis—enlarged as a store of lipoids, or, when depleted and exhausted, small. In the full account of Addison's disease support is given to von Neusser's contention that it is due to impairment of the sympathetic system as a whole, and that whether the morbid process occurs in the end-organ—*that is*, the adrenals—or involves the impulse-conducting nerves or the spino-cerebral centres, the result is the same—namely, chronic insufficiency of the adrenals. The structure and clinical manifestations of primary tumours of the cortex and of the medulla are dealt with in full detail, and it is pointed out that bony metastases are rare in tumours of the cortex in contrast to what occurs in so-called renal hypernephromas or Grawitz tumours which are not of adrenal origin. Sexual precocity is said to be almost confined to females with cortical hypernephromas, three cases only in boys being admitted. In the account of tumours of the medulla the now familiar misprint of the Hutchinson (for Hutchison) type occurs. Reasons are given for regarding glaucoma as being due to endocrine disturbance.

In the concluding chapter on organotherapy the use of interrenin, the cortical hormone, fully discussed in the section on physiology, is advocated in cases of the genito-adrenal syndrome, menstrual disorders, infantilism, Graves' disease, and diabetes, but rather, it would seem, on hypothetical grounds than on the results of much clinical observation, for the author admits that experience is far too limited to form any idea of the contraindications of this form of treatment.

MEDICAL BACTERIOLOGY.

IN his preface to his manual of medical bacteriology Professor A. PHILIBERT expresses the view that in the study of bacteriology there is an increasing tendency to pay too much attention to the behaviour of bacteria on artificial media under laboratory conditions and too little to their manner of existence in the human body; according to this view the lesions and symptoms of disease are a better guide to the physiology of the microbe than its growth

[4] *The Adrenals: their Physiology, Pathology, and Diseases.* By Max Goldzieher, M.D. London: J. and A. Churchill. 1929. (Demy 8 pp. x + 436; 73 figures. 30s.)

[5] *Manuel de Bactériologie Médicale.* Par André Philibert. Paris: Masson et Cie. 1928. (5½ × 8, pp. xi + 551; 120 figures, 21 plates. 45 sans majoration.)

a culture. There is, however, nothing peculiarly revolutionary to be found in his teaching in the text, but the author does amply redeem his promise to write mainly from the point of view of the practising physician. Part 1 describes the methods to be adopted in examining all the different forms of pathological material—pus, buccopharyngeal exudates, cerebro-spinal fluid, blood, urine, etc. This is very well done; the directions are clear, and many seemingly small points, both in the collection of specimens and in subsequent manipulations which, if neglected, may lead the unwary to disaster, are wisely stated. In Part 2 the pathogenic organisms are described separately, particular attention being given to clinical bacteriology. Part 3 is devoted to general subjects such as immunity and anaphylaxis; this section is very briefly treated, and is the least satisfactory part of the book. The illustrations are nearly all coloured; they are very numerous and for the most part excellent.

PULMONARY TUBERCULOSIS.

THE attempts made during the last quarter of a century to control tuberculosis, even if the results have been disappointing, have at least produced a body of men trained in observation of the disease who, by intensive study, may ultimately find some solution of the problem. This specialization, however, seems to be leading to some disadvantages, to which Dr. R. C. WINGFIELD calls attention in the preface to his *Text-Book of Pulmonary Tuberculosis for Students*.[6] He points out that it is the general practitioner who supplies the State tuberculosis service with its material, but that the segregation of consumptives for observation and treatment in municipal dispensaries, special departments of hospitals, and special institutions has removed tuberculosis from the general departments of teaching hospitals just when it is important that every student should have the chance of studying the disease. Dr. Wingfield thinks that in the future the student may have to face a compulsory course in tuberculosis, but it is to be hoped that the position is not quite so serious as that. It is difficult to imagine it possible to teach examination of the chest in the out-patient room of a hospital without meeting with consumptive patients; the ubiquity of the disease guarantees such a supply, and even if the student has little time to master modern refinements in assessment and treatment, the general practitioner has little difficulty in applying general principles. The national scheme provides him with vast resources in trained specialists; while, if he prefers it, he may rely on the admirable textbook with which Dr. Wingfield has furnished him.

The book itself suggests to us another important question—namely, what is it that is really expected from tuberculosis schemes? We believe that in the minds of many people the object is the prevention of tuberculosis. The facts marshalled by Dr. Wingfield seem to indicate that such an object is hardly attainable on present lines. If it be true that tuberculosis is an acute infectious disease from which nearly 90 per cent. of the population suffers, mostly in infancy, and that, in general, phthisis is not the immediate product of an exogenous infection, but a recrudescence of infection from an existing tuberculous lesion in the lung or some other part of the body, it follows that the bulk of the work of those tuberculosis schemes which concern themselves with the adult population can have little effect in preventing pulmonary tuberculosis. The antituberculosis campaign can hardly claim to have produced any sudden change in the previous steady rate of decline of mortality from the disease; the value of the campaign appears to have been mainly evident in the relief of individual suffering. The benefits to the community, though real, are indirect, and not in themselves sufficient to result in the stamping out of phthisis.

Notwithstanding the network of tuberculosis officers and health visitors spread throughout the country, the detection, a large part of the treatment, and some measure of the prevention of the disease must continue to be the concern of the general practitioner. His most important function is early diagnosis; and for this he should be able to learn the principles as a student in hospitals with or without special tuberculosis departments. Thereafter his main function will be to fit the right treatment to the means and position of his patient. This is a matter upon which hospital training will not help much, but he has available two sources of information. The local tuberculosis scheme should be able to afford him help in the disposal of his patient. Unfortunately, while some of these schemes are working satisfactorily, others are still extremely inefficient. In the latter case the practitioner will be well advised to turn to such a book as that of Dr. Wingfield, from which he will obtain a sane estimate of what can, and what cannot, be done for a tuberculous patient; he will learn to appreciate the true function of the sanatorium, discriminating between patients suitable for treatment in hospital, in sanatorium, or in institutions for advanced cases; and he will discover that his main resource, apart from surgical intervention in special cases, is rest, coupled at suitable stages with graduated exercise. Dr. Wingfield quotes usefully a statement of Powell and Hartley that "good results are obtained in patients who have never been higher than the galleries of the Brompton Hospital." Equally good results have been achieved in patients who have been consigned to homes for the dying in London! But, however good these temporary results may be, Dr. Wingfield points out that when a physician undertakes a case of phthisis he undertakes the supervision of the case for the patient's whole life—or for as long as the patient continues to employ him. Arresting statements such as this should make Dr. Wingfield's book valuable not only to medical practitioners, but also to many other people who long for the prevention of tuberculosis, especially if they remember that nearly 40,000 people die annually from the disease.

[6] *A Text-Book of Pulmonary Tuberculosis for Students.* By R. C. Wingfield, M.B.Oxon., F.R.C.P. London. Constable and Co., Ltd. 1929. 5½ × 9, pp. xvi + 401; 92 figures, 52 plates. 31s. 6d. net.)

THE METABOLISM IN PHTHISIS.

IN his admirable volume on the disturbances of the nutritive exchanges in pulmonary tuberculosis,[7] Dr. MONCEAUX gives an elaborate résumé of the literature of the subject, mainly physiological and chemical in its general nature, backed by over five hundred references to original papers dealing with its many aspects. Beginning with the metabolism of the proteins and their products of decomposition, he brings forward good evidence to prove that in phthisis there is a defect in the processes of oxidation: the patient with advanced disease produces less urea and a larger figure for the total nitrogen excretion than the normal, an excess of urinary amino-acids in the urine, and an excess of oxalic acid in the blood, and the same is true even in the earlier stages of the disease, though naturally in a lesser degree. Discussing next the metabolism of the fats, he shows that the utilization of the fats in the food is inadequate, and that the liver, found to show fatty infiltration or degeneration in about 70 per cent. of the cases, fails to deal in a normal manner with the fats reaching it from the intestine. Here, again, Dr. Monceaux finds a flagrant insufficiency of oxidation; and he argues that in patients with well-developed phthisis there is also a deficiency in the amount of cholesterin in the blood, though in early cases this amount is above the normal. He finds little evidence to show that there is any loss in the power of oxidizing carbohydrates, speaking generally, but gives reasons for recommending the use of malted foods in phthisis. He discusses the gaseous exchanges and the acid-base equilibrium of the body at some length, and in the sixth section of his book drives another nail into the coffin of the "decalcification" theory in pulmonary tuberculosis that was so widely supported twenty years ago, while pointing out that at least 2 grams (31 grains) of calcium oxide a day are required in the diet of a phthisical subject. Discussing the pigment carotin, Dr. Monceaux points out that there are reasons for believing that it is oxidized less readily than in health, and so tends to accumulate in the tissues of patients with pulmonary tuberculosis, giving rise to the straw-yellow tint so often seen in their skins. The last two sections of the volume deal with the general conclusions to be drawn from

[7] *Troubles des Echanges Nutritifs dans la Tuberculose Pulmonaire.* Par R. Monceaux. Saint-Cloud: Girault. 1929. (Roy. 8vo, pp. 445; 12 figures, 8 of which are coloured. 75 fr.)

the preceding sections, and the light they throw on the therapeutics of phthisis. It is argued that metabolism in general is slowed down, and that the processes of oxidation are diminished rather than exaggerated; the activities of the liver, the thyroid gland, and the suprarenals are much impaired in anabolism as well as in catabolism.

It is impossible to summarize the therapeutic suggestions to which Dr. Monceaux has been led by his elaborate study of the metabolism in phthisis, and the thirty pages in which he sets them out should be read by all medical men who are interested in this most important subject. The author evidently believes that it is in dieting rather than in drugs that progress in the treatment of pulmonary tuberculosis is to be made. The book is well and temperately written, and contains a mass of interesting information.

NOTES ON BOOKS.

A BOOK which has reached a seventh edition hardly needs a review, at least in the way of recommendation. It is obvious that it has acquired a reputation and a public of its own, whose advocacy is more effectual than any review. The seventh edition of *Birch's Management and Medical Treatment of Children in India*[8] is also the thirteenth edition of H. H. Goodeve's *Hints for the General Management of Children in India*. This little work was published on March 15th, 1844, and thus, if we consider the present to be the same book as Goodeve's, it is probably the oldest medical work still in constant use. It is true that there is not much in common between Goodeve's original little book of about a hundred pages, which would go in a small pocket, and the present large octavo of nearly 500 pages; but the last is a direct descendant of the first. The seventh edition of Goodeve's tiny booklet, published in 1879, was entirely rewritten by the late Surgeon Major E. A. Birch, and for several editions was known as Birch's *Children in India*, little of Goodeve's original work being left. Goodeve's name was dropped out of the title long ago, and now Birch's name remains only as one word on the title-page. The book has been carefully and thoroughly brought up to date by the present editors. Chapters have been contributed on diseases of the ear, nose, and throat by Dr. N. J. Judah, and on snake-bite by Lieut.-Colonel R. Knowles, I.M.S. The general get-up, paper, type, and illustrations are good, and we have noticed only three misprints.

The Constitution of Sugars[9] is the title of a little work by W. N. HAWORTH discussing the results of newer researches on the sugars. Dr. Haworth has been himself a notable contributor to research in this domain, and has studied closely the possible inferences to be deduced from the work done. He is thus well qualified to present a discussion of the available evidence for and against alternative views of constitution. His exposition of the subject will be welcomed by the various group of sugar chemists as a most useful summary of the accepted facts combined with a stocktaking of the debatable questions.

Dr. CHARLES RICHET, jun., in his *Précis de Pathologie Expérimentale*,[10] gives in a minimum space an extensive survey of recent research in pathology from a point of view that is not usual in English books. It should be of interest to candidates for the M.D. or M.R.C.P. The illustrations are simple and instructive. The triple index (authors, subjects, and chapters) is useful in a reference book of this kind. The few misprints are too evident to be misleading, but (as in so many Continental publications) the binding is far from substantial.

A monograph on *The Development of the Psycho-Analytical Theory of the Psychoses*,[11] by Dr. JOHN RICKMAN, has been published as a supplement to the *International Journal of Psycho-Analysis*. The book is a reprint of a series of papers which have appeared in the *British Journal of Medical Psychology*. In a short preface Dr. Ernest Jones observes that the psycho-analytical contributions to psychiatry are so scattered in the general literature that the onerous task of collating and presenting the results in an intelligible form is one which earns our gratitude. The reader will endorse this statement. Dr. Rickman's [illegible] references to no fewer than 500 papers [illegible] of the material is admirable, and the highly complex subject-matter is lucidly presented. Appended to this work is a table of psychical mechanisms showing their relation to the various forms of mental disorder. This authoritative compilation will be found useful to the psychiatrist as well as to the psycho-analyst.

The official first-aid handbook[12] of the St. John Ambulance Association was originally written by the late Sir James Cantlie in 1901 and subsequently revised by him in 1908, and by a committee in 1917. The manual has now been brought up to date by another committee, and before beginning the revision criticisms and suggestions were invited from lecturers, examiners, and "first-aiders" in all parts of the world. The thirty-eighth edition thus produced is an up-to-date volume, still retaining its conveniently small bulk, and still of the same general character as its forerunners, but otherwise an authoritative modern textbook of all that is best and most useful for first aid to the injured.

The first series of *Instructions for Patients*, drawn up by Dr. T. T. B. WATSON, was noticed in our issue of November 3rd, 1928 (p. 799). Further leaflets (Nos. 10, 12, 13, 14) have now been issued by the publishers, Messrs. H. K. Lewis and Co., Ltd., 28, Gower Place, W.C.1. (25 for 1s.; holders to fit, 9d. each.)

[8] *Birch's Management and Medical Treatment of Children in India.* Seventh edition, by V. B. Green-Armytage, M.D., F.R.C.P., Lieutenant-Colonel I.M.S., and E. H. Vere Hodge, M.D., M.R.C.P., Major I.M.S. Calcutta and Simla: Thacker, Spink and Co. 1929. (Demy 8vo, pp. x + 482; [illegible] 10.)

[9] *The Constitution of Sugars.* By Walter Norman Haworth, D.Sc.Ma[illegible] F.R.S. London: E. Arnold and Co. 1929. (Med. 8vo, [illegible] figures, 2 plates. 8s. 6d. net.)

[10] *Précis de Pathologie Expérimentale.* Par le Dr. Charles Richet fils. Bibliothèque du Doctorat en Médecine. Paris: J. B. Baillière et Fils. 1929. (5 × 7½, pp. xi + 331; 89 figures. 40 fr.)

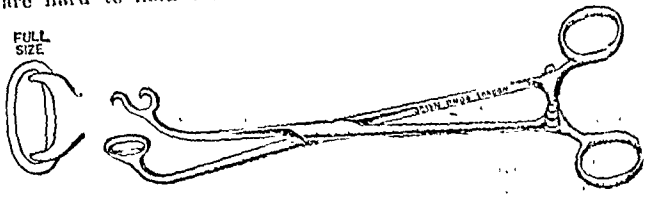
[11] *The Development of the Psycho-Analytical Theory of the Psychoses, 1893–1926.* By John Rickman, M.D. Supplement No. 2 to the *International Journal of Psycho-Analysis*. London: Baillière, Tindall and Cox. 1928. (7 × 10½, pp. 89. 6s. net.)

[12] *First Aid to the Injured.* Originally compiled by the late Colonel Sir James Cantlie, K.B.E., M.B., F.R.C.S., V.D., and revised by committees. Thirty-eighth edition. London: The St. John Ambulance Association. 1929. (Demy 16mo, pp. 250; 105 figures.)

PREPARATIONS AND APPLIANCES.

A TONSIL-HOLDING FORCEPS.

MR. HAROLD E. RAWLENCE, F.R.C.S., writes: Many more enucleations of tonsils are now being performed, and, with experience, the surgeons find two varieties of tonsil which are hard to hold while enucleation is taking place. The first

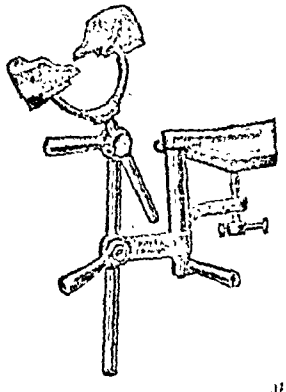


is the big, very soft, spongy, and friable tonsil; the second is the retracted and buried tonsil, which is often very septic and adherent.

The forceps now made by Messrs. Down Bros. for me, and here illustrated, will, I hope, overcome both these difficulties. The length, the curve, and the area of the grip have all been carefully calculated in order to obtain a quick, firm hold.

HEADREST FOR BRONCHOSCOPY.

Dr. LESLIE POWELL (aural surgeon, Royal Berks Hospital, Reading) writes: The headrest for bronchoscopy and oesophagoscopy shown in the accompanying illustration has been made for me by Messrs. Mayer and Phelps. It consists of a dental headpiece placed so that the (normally) lateral pieces are anterior and posterior and the edge of the anterior piece fits into the occipito-atlantal angle. This is attached through rods and two universal joints to a plate and screw, by which it can be fixed to any flat table. With two pillows under the shoulders the desired position can easily be attained. I have used this apparatus for many cases, and find it most efficient, and no holding by an assistant is required. It is particularly useful for those who, like myself often have to work without skilled assistance.



ANTISEPTIC JUJUBES.

"Eumenthol" jujubes are pastilles prepared by Hudson Eumenthol Chemical Company of Sydney, N.S.W. They contain a variety of antiseptic volatile oils, the chief of which is oil of eucalyptus. The manufacturers quote analysts' reports showing that the jujubes have a carbolic acid coefficient of 4.1, and also describe experiments which prove that the essence exercises bacteriostatic action at a concentration of 1 part in 1,280 parts of bouillon.

PROVISION FOR THE CARE OF EPILEPTICS.

AN INTERNATIONAL SURVEY.

It is the duty of a local education authority in Great Britain to ascertain the number of epileptic children in its area, and to make suitable provision for the education of those among the number who are unable for any reason to profit by the education given in the ordinary elementary school. Such children may, however, be sent to a residential school or institution only with the consent of their parents, such consent not being unreasonably withheld. It is the duty of the guardians of the poor to deal suitably with those epileptics, whether children or adults, who need communal care by reason of their destitution. In addition, there are several voluntary agencies which concern themselves in helping sufferers from epilepsy; and, inasmuch as this condition is often associated with feeble-mindedness, all the provisions which the law has made for dealing with the latter condition are available for feeble-minded epileptics. Under these various auspices a good deal of provision has been made, but accommodation in homes, colonies, or schools can scarcely be described as adequate, and its suitability for its purpose varies very considerably. In the Annual Report of the Chief Medical Officer of the Board of Education for 1927 the following paragraph appears:

"The number of children ascertained by local education authorities to be unfit by reason of severe epilepsy to attend the public elementary schools in 1927 was 2,652. For the accommodation of cases of severe epilepsy there are six residential special schools, providing between them for 525 epileptic children. It is manifest accordingly that there are many epileptic children for whom residential accommodation is required, but for whom it is not forthcoming. Many of these children are capable of profiting from the education provided in a residential school, and apart from this there are many for whom it is quite impossible for the parents to give the required attention in the home without sacrificing the interests of other children in the family. It is much to be desired, so soon as financial circumstances allow, that the local education authorities should take steps to secure the suitable medical and educational treatment of the children of this group."

It is probably true that the segregation of epileptic children of approximately average intelligence is, except in the most severe cases, undesirable. Dr. Auden, the school medical officer for Birmingham, has pointed out that with such children "there is very generally a peculiarly self-centred mental outlook which is readily intensified by exclusion from the ordinary pursuits of their fellows." If, however, these children are, wherever possible, retained in the ordinary elementary school they require some special attention and supervision, and should be placed on a special register and re-examined medically from time to time.

If a census of epileptics throughout the country could be secured it would almost certainly reveal that the magnitude of the problem is considerably greater than is commonly recognized. Such a census within the area of the county of Surrey has, in fact, been made by the Permanent Committee on Epileptics, and the results are disquieting. This committee, under the auspices of the Charity Organization Society, consists of representatives of a number of homes, colonies, hospitals, and associations interested in the subject, and it has now performed a further useful service by making an inquiry through correspondents in various parts of the world as to the provision that is made for the care and treatment of epileptics. The best previous information with regard to this was to be found in the evidence submitted to the Royal Commission on the Feeble-minded, whose report was published in 1908. A summary of the results of the recent inquiries by the Permanent Committee is therefore of much interest and importance.

Provision in the United States and Holland.

It was in Holland and in certain of the United States of America that practical steps for the special care of epileptics were first taken. As long ago as 1879 an attempt in this direction was made in Ohio, but it was not till 1893 that a State hospital was actually opened for patients in Gallipolis. Other colonies or hospitals speedily followed in New York State, in Massachusetts, and in New Jersey, and later still institutions of a similar nature were founded in a number of other States. In very many of the States, however, no special provision of any kind is yet made for epileptics, and State legislation makes no reference to their needs or to the problems raised by the existence of the condition. As the report of the committee says: "The tendency in the United States appears to be to combine the care of epileptics with that of the mentally defective In some States admission to the special institution fo epileptics can be gained only on committal, as in the cas of the feeble-minded. The marriage of epileptics is fo bidden by the laws of certain States, and in at least o instance epileptics are included in the provisions of t sterilization law." The general condition as to incide and care is thus set out:

In the United States of America the institutional care of feeble-minded and epileptic is very largely a public matter. ... the census of feeble-minded and epileptics in institutions under taken by the Federal Census Bureau in 1923, it was found that of the 51,751 resident patients for whom schedules were received, only 7.5 per cent. were in private institutions; 90 per cent. were in State institutions, and 2.6 per cent. in other public institutions.

This was the first special census of epileptics taken by the Census Bureau, and showed 8,777 epileptics in institutions for epileptics, 4,159 in institutions for the feeble-minded, 10,016 in institutions for the insane, and 1,066 in almshouses (workhouses), making a total of 24,018 epileptics under institutional care. It is stated in the census report that no adequate data exist relative to the number of epileptics in the population at large, but that it is believed, however, that the number greatly exceeds the number in institutions. It is added that available data also give no clue as to the probable increase or decrease of epilepsy.

It is of interest to note that of the 8,777 patients in institutions for epileptics, 98 per cent. were whites, and only 2 per cent. were negroes. It is stated that this very low ratio of negroes is probably due to the fact that in many States negroes are not admitted to the institutions as readily as are whites.

The total number of institutions covered by the census was 139. Of this number, 122 were institutions for the feeble-minded and 17 were institutions for epileptics. In addition, 3 State and 12 Federal hospitals for mental disease returned schedules for epileptics.

For centuries the people of the Netherlands have been conspicuous for the provision they have made, usually of a voluntary charitable nature, and often in connexion with Protestant or Roman Catholic Church organizations, for the needy or afflicted, especially among children and old people. It is in accordance with their tradition that perhaps the earliest society for the actual care of epileptics was founded in Holland. As the committee's report tells us:

There are two societies in the Netherlands concerned with the care and treatment of epileptics:

1. The Christian Society for the Nursing of the Epileptic at Haarlem. This society was founded in 1882 at a time when epilepsy had but rarely been studied. It devoted itself at first to the care of the chronic cases, but latterly it has concerned itself more and more with the study of epilepsy and its treatment. Its establishments (at Haarlem for women and at Heemstede for men) are now centres of research as well as treatment. These institutions are organized on the lines of colonies, and the inmates are, where possible, doing profitable work. The homes act also as training schools for nurses. The society is managed on a Protestant-Christian basis. It receives no subsidy from State or municipal funds, but is maintained by voluntary contributions and by the payments of patients. The municipalities contribute towards the maintenance of indigent patients. The admissions and discharges during 1927 were as follows:

	Men.	Women.	Total.
Resident on January 1st, 1927	192	218	410
Admitted during 1927	51	25	56
Discharged during 1927	36	220	407
Remaining at December 31st, 1927	187		

2. The Netherlands Society for Epilepsy, founded at The Hague in 1902, has as its object the scientific examination of the origins of the different forms of epilepsy and methods of prevention and cure. Its methods differ from those of the older society. It maintains a hospital at Amsterdam (built in 1922), with up-to-date equipment and with a capacity of 40 beds. There is no intention of retaining patients for the rest of their lives. They are kept at the hospital for a few months only, treatment being continued afterwards at local clinics, which have been established at Amsterdam (in connexion with the hospital), Rotterdam, The Hague, Utrecht, and Zwolle. The society has corresponding

physicians at Arnhem, Heerlen, 's-Hertogenbosch, Hilversum, and Maastricht. The Amsterdam Hospital has an after-care department and a school for nurses. The society receives a Government subsidy up to a maximum amount of fl. 15,000 per annum, which about covers the deficit between expenditure and other income. Its other income is derived from patients' payments and voluntary contributions. The maintenance of patients is sometimes paid for by the municipal authorities. Admissions and discharges at the Amsterdam Hospital during 1927 were as follows:

	Men.	Women.	Children.	Total.
Resident at January 1st, 1927	8	11	11	30
Admitted during 1927	30	31	37	98
Discharged during 1927	34	34	32	100
Remaining at December 31st, 1927 ...	4	8	16	28

At the Rotterdam Clinic 1,388 patients were treated during the year 1927, their total attendances amounting to 7,288.

No legislation has been enacted in Holland with special reference to epileptics. Epileptic children are taught, if necessary, at schools for backward children. Epileptics are to be found in all mental hospitals in Holland and at the institution for imbeciles at Leur.

France and Germany.

In France and in Germany the position is as follows:

In France, by the provisions of a law passed in July, 1905, epileptics are placed in the same category with invalids and incurables, and are entitled, where necessary, to assistance from public funds, either by being placed in a hospital or asylum or by being given a monthly allowance; the allowance is fixed at a maximum of 70 francs for Paris, and is given to those of 16 years and upwards. There is no other special reference to epileptics in the French law.

If an epileptic is sane, or suffers from mental deficiency, he may be admitted to a regional institution or private asylum subsidized by the State. There are two regional hospitals in Paris where epileptics are received: La Salpêtrière and Bicêtre. There are 39 institutions in the provinces. Of these, 35 admit feeble-minded and imbeciles, and have a special section for epileptics. The following four institutions admit epileptics exclusively: L'hospice d'épileptiques de Haut Barieux (Allier); l'hospice d'épileptiques de la Devoze (Cantal); l'asile privé de la Teppe, Tain (Drome); les asiles John Bost, La Force (Dordogne).

Until 1923 no provision was made for the treatment of epileptics living at home with their families. In that year, however, Dr Toulouse, senior physician of La Clinique de l'Asile Ste Anne, and director of the mental and neurological prophylactic service, instituted neuro-psychological consultations. New neuro-psychiatric clinics are shortly to be opened in Paris, Lyons, and Bordeaux.

The public assistance authorities of Germany possess wide powers for the care of the sick, including epileptics. They are required, where necessary, to provide institutional care. The following public institutions receive epileptics only: Berlin-Wuhlgarten Municipal Home for Epileptics; Kork (Baden) Home for the Treatment and Care of Epileptics; Johannisthal bei Suchteln (Rhine Province); Breslau Municipal Home for Epileptics (Herrenprotsch).

At the first-named institution there are now 1,298 adults and 172 children. There is a resident staff of nine medical officers. Occupation for patients is provided in domestic work, gardening and agricultural work, carpentry, bookbinding, tailoring, brush-making, and strawplaiting. Most of the patients are paid for by the municipal authorities; a few are maintained by the national health insurance authorities up to a maximum period of twenty-six weeks, after which the municipal authorities usually become responsible. Patients of all mental grades are admitted, including the insane.

There are other institutions, partly supported by the local authorities and partly by private charity. A number of homes are maintained by the German Caritas-verband and by the Central Committee for Home Missions of the Evangelical Church. At Bielefeld in Westphalia is situated the famous colony, founded by Pastor von Bodelschwingh in 1867, which has served as a model for the modern epileptic colonies in both England and America.

For epileptic children there are some special institutions, which are usually attached to homes for adults. The Berlin-Wuhlgarten home is stated to have a specially good department for children.

In Belgium no legislation has been enacted with special reference to epileptics, but epileptic men are cared for by the Brothers of Charity and epileptic women by the Sisters of Charity, who maintain several institutions, one of them for children. Only those of normal mentality are received, and dangerous cases are transferred to a separate institute.

In Switzerland there are five institutions for epileptics, receiving both children and adults. All are maintained by voluntary contributions, except that one (in Zürich) receives some subsidy from various cantonal authorities. There is no Swiss federal law concerned with epileptics apart from those who are also mental defectives, but the Swiss c[illegible] on parents the obligation to provide education for their children according to their means and to the mental and physical condition of the child.

It will be seen, therefore, that on the Continent of Europe the most interesting development is taking place in Holland; that Belgium, France, and Switzerland rely largely on voluntary enterprise to deal with the same epileptic; that in Germany, while some institutional provision is made by the authorities, much is still done by voluntary agencies; and that in the newer countries of post-war Europe little has as yet been done for the epileptic.

This report of the Permanent Committee on Epileptics, while admittedly and almost necessarily incomplete, certainly justifies their hope that "what has been obtained will be not only of interest but of service as some indication of what is being done abroad to-day to deal with the epileptic."

SMALL-POX.

STATEMENT BY MINISTRY OF HEALTH.

As there appears still to be some misunderstanding in this country and America regarding the prevalence of small-pox in England, the Ministry of Health has considered it advisable to issue the following statement on the subject dated May 23rd.

Small-pox of mild degree has been more than usually prevalent in England and Wales since 1922. The actual figures and deaths have been as follows:

Year.	No. of Cases.	No. of Deaths.	Mortality (per cent.).
1922	973	27	2.77
1923	2,504	7	0.28
1924	3,797	8	0.21
1925	5,354	6	0.11
1926	10,141	11	0.11
1927	14,787	36	0.24
1928	12,420	53	0.43
*1929	3,283	8	0.25

* First quarter (provisional figures).

The distribution of these cases has been chiefly in certain industrial areas in South Wales, Durham, Derbyshire, and the West Riding of Yorkshire, where vaccination among adolescents and adults has been relatively neglected. The increased movement of the people, together with the extreme mildness of degree of infection, has, of course, also tended to disseminate this malady.

The small-pox cases which arose from infection from the *Tuscania*, which reached England from Bombay at the end of March, numbered 51 (out of 1,554 passengers and crew), 35 of which cases occurred in England and 16 in Scotland. Ten cases proved fatal. These cases, unlike those referred to above, were of severe degree, and were imported. There have been no further infections from the *Tuscania* since April. Public opinion may therefore be reassured that the *Tuscania* outbreak, which was in any case narrowly restricted, has definitely terminated.

Small-pox of mild degree has been prevalent in Europe and America during the last few years, but now shows signs of abatement; and in England we are in this respect no worse off than we have been for a quinquennium.

The general health of Great Britain is exceptionally good and compares favourably with that of other great nations and its own past records. Indeed, the total death rate of 11.7 per 1,000 is within 0.1 per cent. the lowest on record. The infantile mortality, always a living and susceptible index of national health, is 65 per 1,000 births, the lowest ever recorded. The total number of deaths from all forms of infectious disease in 1928 was 83,660 (including all forms of tuberculosis, pneumonia, etc.), as compared with 96,571 in 1927. With a declining general mortality, a declining infant mortality, and a falling zymotic death rate, it may be said that the health of England is satisfactory.

Previous statements issued by the Ministry of Health have appeared in the *British Medical Journal* of April 20th (p. 742) and May 4th (p. 816); and a report on small-pox cases from the *Tuscania*, by Dr. A. S. M. Margetson, medical officer of health for Glasgow, was printed in the issue of May 11th (p. 874).

THE WORKING OF A PRIVATE PATIENTS' WARD.

A YEAR'S EXPERIENCE AT THE NORFOLK AND NORWICH HOSPITAL.

WE are indebted to Dr. A. J. Cleveland, O.B.E., F.R.C.P., honorary physician to the Norfolk and Norwich Hospital and medical officer in charge of the electrotherapeutic department, for the following instructive account of the organization and management of a ward for private patients.

A private ward was opened at the Norfolk and Norwich Hospital on April 20th, 1928, for patients whose incomes came within the following limits:

1. Single persons with an annual income under £350.
2. Married couples without children under the age of 16 and an income of £450 per annum.
3. Widows and widowers with a child or children under 16 and an income of £450 per annum.
4. Married couples with a child or children under 16 and an income of £550 per annum.

The object of the ward is to provide "hospital treatment" for those who cannot afford to pay the ordinary private nursing home fees, but whose financial position places them above the class for which the general wards are intended.

In connexion with this private ward an insurance scheme was instituted. An annual payment of 30s. entitles the subscriber, his wife, and children to full in-patient "hospital treatment," and to certain out-patient treatment, provided his income comes within the above limits. Before admission a consultation between the subscriber's doctor and a member of the hospital staff must take place, the fee for which is not included in the subscription. No patient shall remain in for more than four consecutive weeks without the sanction of the managing committee; maternity, mental, and infectious cases are not admitted. There are no "extras." The patient can be examined or treated in any of the special departments of the hospital without further payment.

Patients who have not joined the insurance scheme, but whose incomes fall within the same limits, can be admitted to the ward on payment of £4 per week, *plus* a fee for the physician or surgeon in charge, which shall be inclusive, but which shall not exceed fifteen guineas. All patients in the private ward must be under the care of a member of the medical staff of the hospital. The provision in this private ward of hospital treatment for patients of the financial position specified has enabled the hospital board of management to refuse treatment in the general wards to anyone with an income of over £300 per annum. Anyone whose income exceeds that amount should either go into the private ward or, if his income comes above the standard laid down for that, into a private nursing home.

The private ward is apart from the main hospital buildings, and consists of separate single rooms. The original number was twelve, but, on January 5th, 1929, two additional ones were added. As the ward has been open for a year it is possible to give an account of its working.

The number of patients admitted during the twelve months was 249; of these, 44 were members of the insurance scheme and 205 came in under the £4 per week scheme. The number joining the insurance scheme is a little disappointing; 760 have joined up to date. The reason why this figure is not greater ; that there has been difficulty in getting the scheme known; ut the steady rate of increase in subscribers gives ground for belief that this is the only reason, and the satisfaction which the patients express with the accommodation and treatment provided is an effective, if somewhat slow-acting, method of advertising.

Taking the insurance part of the scheme first; no patient can receive treatment until six months after the payment of his first premium. The amount subscribed is distributed as follows:

A first charge of £4 per week per in-patient is paid to the hospital. A second charge of an equal amount, but not exceeding a total of fifteen guineas per patient, is paid to the medical officer in charge. At the end of the year the baiance in the insurance fund is divided into three equal parts: (1) one to the hospital; (2) one to a reserve fund; and (3) the other to the honorary medical staff. Estimating the sickness incidence as 4 per cent. per annum, and allowing for each patient to be in for three weeks, there would be for the year a surplus of £405 after payment of the first and second charges (with a total of 750 subscribers). It is not possible to give an accurate figure for the sickness rate during the first year, as the number of subscribers has been steadily increasing all the year, but it has certainly not exceeded 4 per cent. at three weeks per patient, which is equivalent to twelve weeks' occupation of a bed for every 100 contributors. There is therefore every reason to believe that this part of the scheme is financially sound.

With regard to those coming in on the £4 per week basis the financial success of the scheme depends on whether the payment of that amount is sufficient to meet the cost of treatment and maintenance provided by the hospital. The average cost per in-patient for 1928 for the whole hospital, including those in the private ward, was £2 16s. 1d. A careful estimate of the extra cost of a patient in the private ward over that of one in the general ward brings the total for the former up to £3 19s. 1d. per week. The chief items in which an increase occurs are nursing, food, heating and lighting, and furniture. It has been decided to raise the charge to four guineas per week. This slight increase will scarcely be noticed by the patients, and the extra charge will leave a small surplus, which can be put to the capital account.

In starting this private ward the chief financial difficulty was the capital outlay. Fortunately a building was available. The amalgamation of the Norfolk and Norwich Eye Infirmary with the Norfolk and Norwich Hospital and the provision of an "eye ward" in the hospital proper left the premises of the Eye Infirmary vacant. The cost of making this building suitable for the private ward came to £1,600, and to meet this outlay by the hospital the honorary medical staff guaranteed half this sum out of the fees they would receive; eight members of the Board of Management very generously guaranteed the rest. It will not be necessary to call up this latter part of the guarantee, as by giving 25 per cent. of their fees towards paying off the capital expenditure the medical staff will have paid off the whole amount in three years; if the surplus from the contributory members' payments remaining after their maintenance and treatment costs have been paid is placed to the capital account the debt will be cleared in two years. That the scheme has been a success is shown by the fact that there has rarely been a bed empty, and the waiting list has varied from 2 to 17.

Many acute cases have had to be accommodated at first in the general ward, so that for the hospital to derive full benefit from the private ward it will have to be enlarged, and the provision of a further six beds is contemplated. From the patients' point of view the insurance scheme is a very cheap one; in fact, considering what is provided, it has been suggested that the premium of 30s. per year is too small. But the object of the scheme was not to make money; it was, as has been stated, the provision of hospital treatment for those who could not afford full nursing home fees, but who were able to pay for their maintenance and a small sum for their treatment. All fees are paid by the patients to the house governor of the hospital, and he does all the secretarial work connected with the scheme, for which the honorary medical staff pay him an honorarium based on a percentage of their fees. It is estimated that two-thirds of the patients admitted would otherwise have gone into the general wards, and the remaining third could only have afforded the lowest fees charged for treatment in a private nursing home.

The management of the private ward is in the hands of a committee of eleven, appointed by the Board of Management of the hospital, on which are two members of the honorary medical staff.

It is the custom in Norwich and Norfolk, as elsewhere, for all accident cases to be taken at once to the hospital, whatever the financial means of the patient may be. If the case is serious it is admitted straight to the general ward, and many patients have been treated for nothing who could quite well have paid and would willingly have done so, but that their condition precluded the possibility of their being moved to a nursing home. If the private ward is enlarged sufficiently to allow of one or two beds being kept free for emergencies, these patients will have the advantage of a private room, and the hospital and the medical staff will be paid adequately for their services.

British Medical Journal.

SATURDAY, JUNE 1ST, 1929.

THE MOTT MEMORIAL VOLUME.

SIR FREDERICK MOTT died during his year of office as president of the Royal Medico-Psychological Association, and at a meeting of members shortly after his death it was felt that some appropriate way of expressing gratitude for all that he had done for them and for psychiatry must be found. A mere memorial in bronze or stone appeared to the members to be insufficient, and Dr. Frederick Golla, who was present, spoke of the custom abroad whereby all who so desired could contribute to a publication some fragment of appreciation or some useful piece of work inspired by the master they wished to commemorate. Dr. J. R. Lord, who succeeded Sir Frederick Mott as the president of the association, was captivated by this suggestion, and took the necessary steps to carry it out. A committee came into existence to see the matter through, and the result is the Mott memorial—a volume, edited by Dr. J. R. Lord, entitled *Contributions to Psychiatry, Neurology, and Sociology*,[1] and dedicated to Sir Frederick Mott by his colleagues, friends, and former pupils.

Those who are interested in the problems of psychiatry, neurology, and the physiology of the nervous system will naturally feel impelled to make themselves acquainted with the contents of this memorial volume. The editor and the committee are to be congratulated on the result of their efforts. The subject-matter covers a wide range, and many distinguished observers have been glad to make their contribution in honour of the memory of a great teacher, investigator, and physician. The diversity of topics discussed in this volume serves to remind its readers of the breadth of Mott's activities and of the extent to which he was responsible for definite additions to knowledge. The majority of contributors refer directly to his work, and many of the papers have been stimulated by his researches or are elaborations of his views. In a striking tribute to Mott, whom he happily terms "this splendid man," Professor C. von Monakow gives an estimate of his friend's life and career—a summary which affords us glimpses into the greatness of his achievements. Monakow points out that Mott, with all his extensive scientific work, maintained his very high position as a physician, and not only took a great and undiminished interest in his practical professional activities, but devoted much time to them. Furthermore, as regards psychiatry, he applied himself with much zeal and enthusiasm to the study of problems that extend into the fields of general biology and psychology, problems that have scientific, medical, and social significance. Thus he was particularly interested in the question of the early treatment of mental disorders. This is recognized by Sir Hubert Bond, who, very appropriately, begins his impressive contribution on the prevention and early treatment of mental disorder with the following quotation from an article by Mott: "Every effort should therefore be made to induce the patient, the friends, and the practitioner to seek skilled advice or treatment with as little delay as possible. This can only occur if the fear of certification and of being sent to an asylum be removed, and by the provision of greatly increased facilities for early treatment in clinics attached to the general hospitals or suitable hospitals affiliated with the general hospitals." We all know how strenuously the writer of these words worked to bring about the necessary facilities for treating the early case. To his unremitting efforts, enthusiasm, and capacity for overcoming obstacles the success of the Maudsley Hospital—the first psychiatric clinic on a large scale in this country—is in a large measure due. No one who has been associated with this hospital will be in any doubt as to the value of his services in its early days. In other directions also he had helped this movement, and, in her contribution to this volume, Dr. Helen Boyle observes that Sir Frederick Mott's illustrious name is at once brought to mind when one thinks of the early treatment of mental and nervous disease. She refers in this connexion with gratitude to his encouragement and support of the Lady Chichester Hospital in the struggles of its youth, by sending patients to it, by supporting it in public, and by many kindly words in private.

To think of Mott only as a neurophysiologist and pathologist would be to lose sight of the extent of his activities. He was a great force in psychiatry, and influenced its development in all directions. He was always deeply concerned in the welfare of the patient, and insisted on the necessity of active treatment with a view to bringing about recovery. He was equally the friend of the chronic asylum patient: he deplored stagnation, monotony, and inactivity, advocating individualized study and carefully and scientifically planned occupation therapy. Thus he will be remembered not only as a scientist, but also as a physician with a deep interest in the welfare of the sick in mind or body. By his large circle of friends in this country and abroad—for his reputation stood high in foreign countries as well as at home—he will always be affectionately remembered on account of his personality. He was essentially human and kindly, uncomplicated, understandable, simple and direct in the expression of his views, and without trace of affectation.

Frederick Mott was a man who will certainly be remembered by those who knew him quite as much for his personal qualities as for his scientific achievements. For this reason the memorial volume will be very much valued. It will not only enrich the mind but, in the case of many of its readers, it will stimulate pleasant memories of an old and valued friend. To such readers the many personal references in the volume will be particularly welcome. Professor W. D. Halliburton gives some delightful recollections of his long and intimate friendship with Mott, which lasted well over half a century. The volume opens with this personal appreciation, and appropriately concludes with the one by Professor C. von Monakow to which we have already referred. This eminent Swiss neurologist finishes his article with an impressive tribute, which will give much pleasure to his English colleagues: "Sir Frederick Mott," he writes, "was not only a distinguished neurologist and physician. He was refined, noble, and modest, and a kind and loyal colleague. Wherever he worked, and with whomsoever he came in contact, he won admirers and friends. To those whom he honoured with his most intimate friendship he remained faithful and constant to the end of his life."

[1] *Contributions to Psychiatry, Neurology, and Sociology.* Dedicated to the late Sir Frederick Mott, K.B.E., Hon. LL.D., M.D., F.R.C.P., F.R.S., by his Colleagues, Friends, and Former Pupils. Edited by J. R. Lord, C.B.E., M.D., F.R.C.P.E., on behalf of the Mott Memorial Committee. H. K. Lewis and Co., Ltd. 1929. (Sup. roy. 8vo, pp. xiv + 401;

THE LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

THE issue of a pamphlet describing the course of study for the Diploma in Public Health arranged by the authorities of the London School of Hygiene and Tropical Medicine for 1929–30 is a reminder that the coming session will find in full activity another centre of medical teaching and research in London. Several years have passed since the munificent gift of the Rockefeller Foundation made it possible to realize the ideal of the Athlone Committee, to found an imperial school of hygiene and tropical medicine. The magnificent building which H.R.H. the Prince of Wales will open in July, and the reputations of the men who have been appointed to the various chairs, are earnest that the Senate of the University and the Board of Management of the School have used the time well. An account of the progress of the new organization, with a view of the building, was given in our issue of December 8th, 1928 (p. 1045).

But even a well-equipped building and an intellectually distinguished staff will not ensure the success of a teaching institution. Still more important is a real sympathy between teachers and students, a genuine *esprit de corps*. Whether the soil of Keppel Street is favourable for the growth of this tender plant time will show; a perusal of the course of study for the Diploma in Public Health at least convinces us that the staff of the school have overcome one serious danger. The very eminence attained as research workers by the directors of the various divisions in which the school is organized might well have tempted them to exaggerate the importance of their own fields of work, and to forget that they were training future public health officers, not embryo specialists in bacteriology, statistics, or chemistry. Although the demands made upon the student's time and attention are large (290 hours of instruction in bacteriology—including medical entomology—chemistry, physics, meteorology, and climatology, and at least 170 hours in hygiene, public health administration, epidemiology, and vital statistics), pains have been taken to harmonize the different parts of the curriculum. The student will not be set to hard labour in a succession of prisons labelled "Bacteriology," "Chemistry," "Vital Statistics," and so on, but will be shown how the methods of investigation of these various disciplines may be brought to bear upon the problems of etiology and prevention, to attempt to solve which will be his lifework. "The aim of those responsible for drawing up the curriculum has been to present the teaching in a logical sequence, and to co-ordinate the teaching of the different departments mainly concerned." A course of education planned in that spirit carries within itself a better guarantee of success than even fine laboratories and eminent teachers can offer. As we said six years ago,[1] "the task before Dr. Balfour and his future colleagues is not a light one: they do not inherit the prestige of a long series of illustrious predecessors; they have behind them no tradition—they themselves must create what shall become a tradition."

No wise man would prophesy the success of any school; the psychological imponderables are too many. But, so far as human foresight reaches, the future of the London School of Hygiene and Tropical Medicine is promising. The highest duty of the school is to raise the standard of scientific education, to convince men and women who should have outgrown the dogmatic stage of teaching that the profession they have chosen offers as many opportunities for research and requires as much intellectual discipline as the work of any "pure" scientists. Displays of intellectual fireworks please adolescents, but where students as well as professors are adult, intellectual honesty and mutual comprehension are much more important qualities than even brilliance. That is the spirit of the programme. The successors, now perhaps undergraduates, of the present teaching staff have, we believe, a good prospect of enjoying the advantage of a high tradition which the work of this generation is about to establish.

[1] *British Medical Journal*, November 3rd, 1923, p. 825.

THE ETIOLOGY AND PROPHYLAXIS OF INFLUENZA.

IT is a matter for surprise to the layman that the causation of a disease of such manifest social importance as influenza, which has swept the world with devastating epidemics on several occasions, should still remain obscure. He is even inclined, being ignorant of the difficulties of the problem or unable to appreciate them, to be a little contemptuous of medical science because of its inability to find a solution, and sympathy with his point of view is not altogether unknown in the medical profession. Yet in a recent addition to the monographs of the Pasteur Institute Dr. Dujarric de la Rivière, writing on the etiology of influenza, finds it necessary to close an excellent critical survey[1] of the available knowledge with the following words: "Le chapitre sur l'étiologie de la grippe, déjà riche en travaux intéressants, reste ouvert à l'activité des chercheurs."

There are several claimants to the role of etiological agent. Is influenza due to the bacillus of Pfeiffer, to the filter-passing organism, *Bacterium pneumosintes*, of Olitsky and Gates, or to a member of the so-called ultra-microscopic viruses, as the work of Gibson, Bowman, and Connor, of Nicolle and Lebailly, of Ishiwara, and of Gordon would suggest? Probably the last of these three alternatives has the most adherents, but the question cannot readily be put to the test of experiment owing to the lack of a suitable experimental animal. Man alone would appear to be susceptible to influenza, but experiments carried out on human volunteers have been few in number and inconclusive. These experiments are further open to the criticism that they were made with a spontaneously susceptible animal in the midst of epidemics. For experimental investigations on human beings to be of any value it would be necessary to recruit volunteers prior to an expected epidemic, and to house them temporarily, together with the team of investigators, in some isolated part of the country, where, cut off from their fellows, they could be observed and preparations made for experimentation when the epidemic appeared. This may appear a somewhat fantastic scheme, and probably difficult of realization, but without such elaborate precautions experiments on man are bound to remain inconclusive.

While still ignorant of the etiology of influenza, and therefore not in possession of a method of specific prophylactic immunization, what can be done to diminish the ravages of this disease? Dujarric de la Rivière discusses the possible measures, the majority of which have been debated in medical journals, and even in the lay press, during recent epidemics. The individual may lessen his chance of contracting influenza by keeping up his general bodily resistance,

[1] *Etiologie et Prophylaxie de la Grippe.* Par R. Dujarric de la Rivière. Paris: Masson et Cie. 1929. (Med. 8vo, pp. 103; 15 plates, 6 figures. 32 fr.)

observing simple hygienic precautions (such as spraying the nose and throat with some mild antiseptic solution), personal cleanliness, and avoiding as far as possible ill-ventilated rooms, particularly where large numbers of people are congregated. The social measures may be summed up in the dictum: isolate affected individuals at the earliest possible moment of infection. Dujarric de la Rivière would like to see a skeleton service of hospitalization and mobile laboratories organized in readiness for mobilization as soon as an epidemic makes its appearance. Though ideal, it may be questioned whether such a scheme would not be too costly to put into practice. Much, however, might be done in this direction by educating the public and pointing out to them the necessity for isolating themselves in their own homes as soon as symptoms of influenza appear.

PARLIAMENTARY CANDIDATES AND ANIMAL EXPERIMENT.

IF an ordinary citizen is opposed to vivisection it is not a matter of great moment. He is not called upon to carry out experiments on animals, and when he is sick there is no likelihood of his failing to consult a doctor equipped with knowledge and skill and apparatus gained as the result of such experiments. It is more than probable that the motives underlying his beliefs are beyond reproach—a love of animals and of humanity, and a horror of wanton cruelty—and that he has been driven to hold them by a propaganda which represents vivisection as the *mutilation* of agonized unanaesthetized animals, carried out by sadistic persons revelling in the infliction of pain. We may, and do, deplore a propaganda which wilfully subjects sensitive persons to unnecessary suffering; we may, out of a love for truth and intellectual honesty, deplore the dissemination of error on any matter, especially one that so vitally affects the well-being of the community; but it is impossible to ignore the fact that the greater part of the propaganda of antivivisectionists reaches only those who prefer to regard the calm, unhurried *scientist in his* laboratory as a fiend, *and who deliberately* shut out knowledge that *would represent* him otherwise. When, however, *an individual* who aspires to legislate on his *country's behalf goes* to the trouble of announcing in his *election address* that he is "in utter opposition to vivi*section and all forms* of cruelty to animals" one may take it that he is not merely assuring the electorate that he personally would not undertake experiments on animals, but is seeking from them a mandate to prevent others from doing so. His personal inconsistencies are not our concern; we may assume that if he had to seek the services of a doctor he would not first enjoin him to put out of his mind all the knowledge he may have gained directly or indirectly through experiments on animals. "No doctor," said Professor C. Lovatt Evans in his presidential address delivered in 1928 before the Section of Physiology of the British Association, "can use a stethoscope, feel a pulse, take a blood pressure, administer a hypodermic, give an anaesthetic or a transfusion, perform any modern operations, or indeed take any steps in diagnosis, prognosis, or treatment, without utilizing at every turn knowledge derived from the results of animal experimentation and obtainable in no other way." We find it hard to believe that the antivivisectionist candidate for parliamentary honours would refuse an anaesthetic merely on the ground that its administration has been made safe and pleasant as a result of experiments on animals, or that he would, on similar grounds, refuse to avail himself of the advantages of an aseptic technique, or of an operation planned in accordance with the physiological knowledge such experiments have given us. It is improbable that he would forgo, after the operation, the relief from pain afforded by an injection of morphine, or that if he were suffering from surgical shock he would refuse the injection of saline. It is more than likely that he does not forbid the presence of vitamin-containing foods on his table because our knowledge of the action of vitamins and of the methods and indications for their administration has been gained in a manner he cannot approve; if he had diabetes he would not refuse insulin; he would take the Minot-Murphy liver diet if he had pernicious anaemia; and—dare we say it?—he would not advise any of his constituents to refuse the diagnostic aid of the Wassermann reaction or treatment by salvarsan should the voter be so unfortunate as to become infected with syphilis. These inconsistencies, let us repeat, are unimportant, except, perhaps, in so far as they are instrumental in keeping the candidate and his family alive and healthy. We are, however, deeply concerned with the danger that would accrue to the public health and to the future of medical research if these views on animal experiment were made effective in legislation. The British Medical Association seeks no pledge on the subject from Parliamentary candidates; it asks them merely not to be driven by interested bodies to promise their vote on one side or the other, but to hold themselves free when the matter comes before the House to be guided entirely by the facts brought to their notice and the arguments they hear in the course of debate.

AMBLYOPIA AND THE ARTIFICIAL SILK INDUSTRY.

IN the early days of vulcanization of rubber by the "Parkes" or "cold cure" process—dipping the article into a solution of sulphur chloride dissolved in carbon bisulphide—all those so engaged suffered from its harmful effects; and very serious they were—headache, paralysis especially of the leg muscles, mental hebetude, impotence acute mania, and not infrequently amblyopia. Laudenheimer in 1899[1] published the histories of fifty cases of mania in rubber workers. Of the first three cases described in Great Britain by A. Bruce[2] two suffered from amblyopia. Nettleship[3] described a similar case in 1885. So prominent indeed, did this symptom become that the Ophthalmological Society appointed a committee to investigate the action of the vapour of carbon bisulphide and sulphur chloride on the sight and health. This committee tabulated twenty-four cases, in five of which there was little or no improvement even after giving up the work. Many other references could be given. A story was current in Salford about 1899 of a maniacal rubber worker rushing about the factory brandishing a carving knife. Imagine the effect of this on two hundred factory girls. The Dangerous Trades Committee which reported in 1896 recommended special rules, the principal of which were: (1) downward exhaust ventilation, the vapour being more than twice as heavy as air; (2) enclosed machines for waterproofing cloth; (3) no spells of work to last more than two and a half hours without a break of one and a half hours; (4) monthly medical examination of the workers by the certifying surgeon. So successful were the special rules drawn up on these lines that little more was heard of CS_2 until new uses were found for it, and especially in the artificial silk industry by the viscose process. Stress has been laid on the severity of the symptoms in the absence of scrupulous attention to detail in precautionary measures. It is disquieting to hear of a case of amblyopia contracted in an artificial silk factory, and to read, in a recent report of the Chief Inspector of

[1] *Die Schwefelkohlenstoffvergiftungen der Gummi Arbeiter unter besonderer Berücksichtigung der psychischen und nervosen Störungen und der Gewerbehygiene.* Leipzig, 1899.
[2] Chronic Poisoning by Carbon Bisulphide. *Trans. Med.-Chir. Soc. Edin.*, 1883-84, pp. 145-153.
[3] *A Case of Amblyopia with Partial Optic Atrophy and General Nervous Depression and Emaciation caused by the Vapour of Carbon Bisulphide; Partial Recovery. Trans. Ophthal. Soc. United Kingdom*, 1885.

Factories, of a severe case involving "headache, vomiting, delirium, loss of muscular power, and almost complete loss of sensation." The trouble occurs in what is called the "churn" room, where the alkali-cellulose is treated with carbon bisulphide in a hermetically sealed mixer or churn. After the process is stopped at the desired point a negative pressure is maintained in order to remove the vapour. The workman, however, is then compelled to put his head inside the churn to remove the orange-coloured sticky mass. Few workers in the churn room are free from the slighter symptoms, attributable to carbon bisulphide; nor is this surprising, seeing that 0.3 part per 10,000 of air will produce them. Efforts should be made to find a substitute for carbon bisulphide. This, however, is not the only risk run in the artificial silk industry. Extreme discomfort is caused by the sharp pain, photophobia, and conjunctivitis set up by traces of sulphuretted hydrogen gas generated at the spinning troughs. The gas may not be present in a proportion greater than 1 part in 10,000 of air, but such small amounts are just those to cause the distressing symptoms mentioned. We recall that in the change over from the manufacture of yellow phosphorus to the sesquisulphide a manager of a works confessed that his life was made miserable to him by incessant conjunctivitis until he had placed every bin for the storage of the stuff under a negative pressure. Another manager of a chemical works in those days was visiting weekly (without improvement) an ophthalmic surgeon for chronic conjunctivitis limited to one eye. This eye it was that he applied periodically to the peep-hole of a vat, otherwise closed in, in which H_2S gas was given off. The artificial silk industry starts with a tremendous advantage in the experience already gained as to the effects of the toxic agents used or evolved. The day in, day out exposure to them by the workpeople should never be forgotten.

RECURRENT SCARLET FEVER.

In this week's issue (p. 986) Dr. W. H. Kelleher reports an interesting case of a patient who, between the ages of 13 and 28, had five apparently definite attacks of scarlet fever, for which she was detained in various Metropolitan Asylums Board fever hospitals for periods never less than five nor more than nine weeks. The description given of each attack is sufficiently convincing to justify the diagnosis of scarlet fever on each occasion. Cases of the kind must be extremely rare, as not only are most authorities agreed that second attacks of scarlet fever are uncommon, but it is also exceptional for the diagnosis of repeated attacks in the same patient to be confirmed by experts in the diagnosis of scarlet fever, as occurred in Dr. Kelleher's case. Although probably more frequent than a relapse—that is, a recurrence of the characteristic symptoms of the disease while the patient is still under treatment—a second attack of scarlet fever some months or years after the first is not a common event, even if it is less exceptional than a second attack of certain other acute infections. Why is it that some infectious diseases, such as measles, small-pox, or typhus, are rarely followed by second attacks, whereas other infections, such as influenza, erysipelas, and gonorrhoea, are particularly liable to recur on exposure to fresh infection? It is difficult to account for the occurrence of such cases, and it is little more than a confession of ignorance to say that most recurrent attacks are due to a constitutional inability to form antibodies to the disease in question. In a recent article on relapses in scarlet fever Burton and Balmain[1] have pointed out that there appears to be a definite class of individuals whose blood is unresponsive to the toxin of scarlet fever, and while such patients recover from a mild attack they are liable to a relapse or to have two or more attacks. It is noteworthy that one of their patients, who was Dick-positive after an attack of scarlet fever, and again after a relapse, was again Dick-positive when tested three weeks after active immunization with the maximum dose of scarlatinal toxin.

[1] *Lancet*, 1928, i, 1060.

THE NATIONAL PHYSICAL LABORATORY.

THE National Physical Laboratory's report for the year 1928[1] is a quarto volume of close upon three hundred pages which describes in detail the work of the six departments at Teddington, where so many problems confronting science and industry are being worked out. A new building for the physics department—hitherto both scattered and cramped—is being constructed, and is to embody features noted at universities and industrial laboratories in many different countries. During the year the erection of the million-volt transformers in the high-tension building has been completed, and it is expected that this plant will prove invaluable for dealing with a number of urgent problems of electrical industry, particularly in relation to the new national electricity scheme. Representatives of the laboratory have taken part during the year in a number of important conferences directed to the establishment or maintenance of international uniformity in the standards of measurement employed for various purposes. One of the most interesting parts of this report is a statement on the various standards at the laboratory and their history. All measurements of radium made at the laboratory are referred to the British radium standard, one of the secondary standards prepared on the basis of the official standard, which belongs to the International Radium Standard Commission and is preserved at Sèvres. The secondary standard, which has been at the laboratory since 1913, was then tested by Madame Curie and others, and found to contain 21.13 mg. of anhydrous radium chloride. A correction is made periodically to allow for the decay of the radium, and the present value of the standard is taken as 20.99 mg. of radium chloride, equivalent to 15.98 mg. of radium element. The value of the radium received by the laboratory for testing last year exceeded £125,000; it included some 10 grams of radium element tested on behalf of the Australian Government, in the form of needles, tubes, and plaques to the number of 1,350. The standard of x-ray intensity employed at the laboratory is the international unit adopted by the recent Congress of Radiology at Stockholm, and to be referred to as the "röntgen" or r unit. Steps have been taken to evaluate in r units the provisional ionization standard set up some years ago in the laboratory for the routine testing of barium platinocyanide pastilles. It is stated that the co-operation of the physics department with the X-Ray and Radium Protection Committee has been actively maintained, and the assistance of the laboratory has again been sought by a number of hospitals in London and the provinces. "There are many indications," says the report, "that the publication of the recommendations of the committee, together with the facilities provided by the laboratory [for the testing of protective materials] have resulted in very marked improvements in the standard of protection attained by British makers of x-ray apparatus." Among the many branches of work undertaken by the laboratory during the year has been research on acoustics of buildings.

[1] H.M. Stationery Office. 9s.

PLAY CURES.

IT has long been recognized that amusement in the widest sense of the word has its value in the restoration of the invalid to normal health. The very word "recreation," which has been used in this sense for five hundred years, implies as much, and all therapeutists, in varying degree, have employed both mental and physical games in their

lists of remedies. The children of the last century were familiar with Dr. Watts's verses on the "little busy bee," with its recommendation of "books and work and healthful play." It is, however, to America that since the war we have looked for the systematic scientific application of play in the building up of the moral and physical strength of the sick and injured. At the great convalescent hospital of the Burke Foundation at White Plains in New York State, Dr. Frederic Brush, who is its medical director, has made a serious study of the application of play to purposes of physical improvement. In a pamphlet on "Recreational therapy in convalescence and allied subnormal health conditions" (issued through the Sturgis Fund) he briefly sets forth the principles on which amusements are organized at White Plains. For fourteen years, he says, the play cure has been made predominant at the Burke Foundation's country recuperative institution in addition to occupational therapy. Golf stands at the head of his list of games, and in order to bring it within the scope of all, special short and easy courses have been laid out, the simplest of which have holes from 10 to 70 yards in length, the whole course being not more than 600 yards in length and without any steep gradients. He considers that "As an exercise in these substandard health states it well-nigh fulfils the ideal—comprising outdoor walking and exercise of the entire body." So highly does he rate the game that after consultation with other physicians—particularly Dr. J. H. McCardy, head of the School of Physical Education at Springfield College—it was decided to start an elaborate research into the effect of golf upon convalescents. This work was entrusted to Dr. Peter V. Karpovich of Springfield, whose report, with many tabular illustrations, was published last year (A Study of some Physiological Effects of Golf, *American Physical Education Review*, November, 1928, vol. xxxiii, No. 9). There were 120 people examined at the Burke Foundation, 90 of them thoroughly. These latter were 16 men and 26 women golfers, 40 men patients and 8 women patients, 20 of these being cardiac cases. The details are far too voluminous to be quoted here. The results did not essentially differ from other recorded observations of the effects of muscular and nervous effort on the pulse rate and blood pressure, and the conclusions arrived at strongly supported Dr. Brush's opinion of the value of the game, although Dr. Karpovich records his belief that disgust and anger, which are said to increase the blood pressure, characterize the most common mood among golfers. If this belief is justified, surely the effects of playing golf are not wholly beneficial. Dr. Brush says: "To appreciate its growing importance in the field to [*sic*] recreational therapy one must acknowledge that the game of golf is rapidly advancing toward the first sports place in Western civilization." Golf has hitherto been, in both England and America, only within the reach of the well-to-do, and Dr. Brush finds that his less wealthy patients take on the game with scarcely *any urging*, and with a feeling of having somehow advanced socially as well as physically. This feeling may be called snobbish, but yet may have its value in recreational therapy. Walking in parties and combined with nature study, bowls, quoits, horseshoe throwing, snowballing, and tobogganing, and, indeed, every *game has* its place in Dr. Brush's armamentarium. However crippled a patient may be, a beginning can be made with the help of others. Thus a patient on crutches may begin to play golf or bowls by getting another to do the stooping for him. The claim is made: "We store away more discarded crutches than the most popular religious curative shrine." When the weather does not allow outdoor games, all manner of indoor amusements are utilized; even smoking in moderation and eating sweets are included in the list. *Dancing*, both out of doors and in, occupies a high position. Ballroom dancing nowadays is not necessarily a vigorous exercise, and a beginning can be made by quite severely crippled persons with the help of a more active partner. In this, as in most other recreations, Dr. Brush rates high the value of intermingling of the sexes, "which results also in the holding of a considerable percentage of the younger patients to completion of convalescence who would otherwise become restless and leave." Gambling on competitions is sternly forbidden; it is said to have had a wholly bad effect on convalescence. No doubt there is great value in many of Dr. Brush's recommendations, which, it must be remembered, are the outcome of years of observation and experiment. In the past many a convalescent, after the first lassitude was over, must have felt bored and weary for want of occupation, but the greatest tact must be employed by those in control if the patient is to escape the feeling that instead of taking part in a voluntary game he is asked to perform an irksome duty. It has sometimes seemed to us that the accounts of mass training and investigations in American universities showed an amount of docility and a readiness to submit to discipline which would be found wanting in anything like the same degree in this country.

OPHTHALMIC HOSPITAL IN JERUSALEM.

IT is satisfactory to learn that the work of the Ophthalmic Hospital in Jerusalem continues to extend, and that the equipment has been improved in several respects. Although there has been a considerable increase in the numbers of new cases and total consultations, fewer in-patients were admitted during 1928, owing to the fact that a large number of intraocular cases have been dealt with, necessitating a longer stay for each. In his annual report for 1928 the warden, Lieut.-Colonel J. C. Strathearn, M.D., attributes the "record" number of patients dealt with during this year to the fact that, for the first time in the history of the hospital, an open and unrestricted clinic has been conducted on six days in the week, thanks to additional voluntary surgical assistance which has been obtained temporarily. Remarkably severe ophthalmia epidemics have been occurring in Egypt and Palestine during the last few years, and have had much to do with the rise in the number of cases of blindness in both countries. The warden remarks that these epidemics have been increasingly severe since 1926, coinciding with shortage of rains in the winters. The incidence of trachoma has also risen, possibly owing to the large number of Moslems attending the hospital as compared with the Jews, who are the least infected of the local population. The warden believes that an additional factor is the spread of trachoma by serious epidemics of acute conjunctivitis such as those of the last three years. The clinic scheme in connexion with the hospital—to which previous reference has been made in these columns—continues to work well. Unfortunately visits for supervision could only be paid to these valuable institutions once in the year; it is hoped that in 1929 each clinic will be visited quarterly, thus enabling even more effective treatment to be given. At present six of these clinics, which were instituted by the Palestine Government, are in operation at Acre, Beersheba, Gaza, Nablus, Ramleh and Tulkarem respectively. Over 18,000 new cases were seen at them, and nearly 150,000 consultations were given. Of the 2,500 operations performed at the clinics the majority were for trichiasis, thus reducing a little the pressure of these cases on the hospital in Jerusalem. Alterations and improvements in the existing hospital building have been effected, and a new south block is to be built, designed to receive on the upper floor paying patients, and to increase the general accommodation for poorer patients. This institution, we may remind our readers, is owned and managed by the Order of St. John.

INDUSTRIAL CONDITIONS OF THE DEAF AND DUMB.

THE National Institute for the Deaf have issued the report of an investigation into the industrial conditions of the deaf and dumb.[1] It is accepted that in the United Kingdom there are some 40,000 persons deaf from birth or early infancy—that is, about 1 per 1,000 of the population. This figure takes no account of those who become deaf or hard of hearing in youth or adult life. Under the Education Act of 1895 the training of the youthful deaf has greatly improved. The cost is great; but it is encouraging to note that modern methods have shown that linguistic and cultural retardation does not represent a corresponding backwardness in general intelligence, for in actual performance tests the deaf and dumb have been found to compare favourably with normal children of similar ages. But, for all that, the linguistic difficulty, even when overcome by artificially acquired speech, is very great, and leaves the deaf at a disadvantage. Viscount Gage, speaking for the Government in the House of Lords in 1928, said: "The Board of Education, so far as its information goes, is under the impression that the deaf child who has attended a special school up to the age of 16 is able to obtain and retain reasonably good and remunerative employment." The report indicates that this is too hopeful a view. The school "leaver" is usually *qualified* for employment, but there is extreme difficulty in placing him in it; between 30 and 50 per cent. of leavers during the last three years had not been placed. Modern industry requires speed in work and complete understanding between fellow workers. Further, the Trades Boards' requirement of payments according to age in several skilled occupations operates adversely to the deaf. At 16 the normal youth has had two years of training when the deaf makes his start. Various Employers' Liability Acts and Workmen's Compensation Acts are often cited by employers as reasons for preferring normal workers to the deaf. Apart from trades necessitating dangerous machinery the deaf are said to be as immune to accident as those who hear, but none the less companies are inclined to demand higher premiums of insurance. Much good work is done by the after-care committees attached to elementary schools in placing leavers, but they are unable to take effective action in widely remote districts from which pupils may be drawn. The report urges that the time has come when there should be an official inquiry into the general industrial conditions of the deaf and dumb with a view to the amelioration or removal of the difficulties from which they now suffer. The latest returns, gathered unofficially, show that in the case of men workers some 40 per cent. are either not employed or only casually occupied; and in the case of women some 47 per cent. are in a similar unsatisfactory position. The cases of elderly deaf and dumb persons who become unemployed are especially hard, because advancing age, added to deafness, makes finding fresh employment almost impossible. It is believed that this constitutes a strong claim to the lowering of the qualifying age for old age pensions for those so afflicted.

INTERNATIONAL LEAGUE AGAINST RHEUMATISM.

SOME account of the founding of the International League against Rheumatism by the International Society of Medical Hydrology has already been given in these columns.[2] Among the activities which were proposed for the league was the publication of a periodical, and the second number of the *Acta Rheumatica* has now been issued *in statu nascendi* as a loosely bound collection of typescript papers. This publication contains reports of national meetings on the subject of rheumatism, such as that of the American committee, held in Boston in October, 1928, and the statutes drawn up for a German association and for a Belgian association. As was mentioned in the first number of the *Acta Rheumatica*, the scheme of inquiry of the British Ministry of Health has been adopted, and suggested standard forms of inquiry for use in different clinics throughout the world are set out so that a real international methodical study of the disease will be possible as material is collected. The preliminary programme for the International Congress on Rheumatism, which is to be held at Budapest in October, 1929, is also included. Two main subjects will be discussed: the relation between acute and chronic rheumatism in the various countries and the significance of serological and blood examinations in rheumatic diseases. The *Acta* also contains a list of all books, papers, etc., dealing with rheumatism received or reviewed by the bureau during the first quarter of 1929.

RARE MEDICAL WORKS.

A SMALL number of very old and rare medical works are included in Messrs. Sotheby's sale during the week commencing June 3rd, mainly on June 5th. One is a manuscript on vellum, believed from certain peculiarities in the spelling to have been written in the North of England, and containing a note of ownership by one Richard Burton of Lancaster, vicar of that city from 1466 onwards. It is a treatise on the urine in its medical significance, and the opening sentences show the quaint character of the document: "Uryne ys as mekyll to say yn ynglische as on in ye Reynys. Reynys frenche Renes latyn lendys in englysche yf you wyttyn urine by what ar in ye reynys. . . ." Another is a French version, dated 1569, of Vesalius's *Anatomy*, edited by Jacques Grevin and published in Paris by André Wechel. The auctioneers observe that the plates are the same as those in the 1545 edition issued by Thomas Gemini, London, and suggest that the identical copperplates were probably sold to the Paris publisher. Just as interesting for its original fine vellum binding as for its contents is a manuscript *Compendium Medicinæ*, probably to be ascribed to 1494. The first part contains the general principles of medicine, the second deals with remedies made from herbs and from animals, while the third deals with special branches of medicine, beginning with fevers and ending with the diseases and affections of the skin. There are also a number of very old books and MSS. dealing with alchemy in the same sale.

FERRIER MEMORIAL LECTURE.

THE contributors to a fund to commemorate the late Sir David Ferrier and his pioneer work upon the functions of the brain requested the Council of the Royal Society to accept the sum of £1,000 in trust for the institution of a David Ferrier Lecture. The Council, in accepting the trust, decided that the lecture should be given triennially on "a subject relating to the advancement of natural knowledge of the structure and function of the nervous system." The first David Ferrier Lecture will be delivered by Sir Charles Sherrington, O.M., G.B.E., on Thursday, June 20th, at the rooms of the Royal Society, Burlington House, at 4.30 p.m. The title of the lecture will be "Some functional problems attaching to convergence."

LORD BEAVERBROOK, in a letter to the dean of St. Mary's Hospital Medical School, has announced that, in order to assist in the future welfare of the school, he is prepared to undertake, for a period of seven years from May 25th, to contribute the annual sum of £9,000. The effect of this munificent gift will be to augment the funds of the school by a total amount of £63,000.

THE Morison Lectures before the Royal College of Physicians of Edinburgh will be given by Dr. R. Dods Brown on June 3rd, 5th, and 7th at 5 p.m.; their title is "Some observations on the treatment of mental diseases."

[1] The Industrial Conditions of the Deaf and Dumb. Report of an Inquiry by the National Institute for the Deaf. London, 1929. Price 6d. 2, Bloomsbury Street, W.C.1.

[2] *British Medical Journal*, August 18th, 1928, p. 319.

A REGISTER OF BIOPHYSICAL ASSISTANTS.

THE British Medical Association has long given serious consideration to the problem of protecting the public from the untrained and unqualified physiotherapist. It will be recalled that on July 20th, 1928, at Cardiff, the Representative Body of the Association, in discussing the risks involved in the unskilled administration of actinotherapy, recommended that immediate steps be taken to place this form of treatment under the control of the medical profession, and indicated the general lines along which such control should be exercised. In the form of a resolution it expressed the opinion that suitable courses of training should be organized under medical direction for persons who wished to administer treatment by electricity and radiation; that persons who had satisfactorily followed such a course should be entitled to have their names entered on an approved register; that a condition for inclusion on the register should be abstention from the treatment of any patient except on the responsibility and under the general supervision of registered medical practitioners; and that persons requiring electrical or radiation treatment should be referred only to persons so registered.

Following on this resolution the Council of the Association appointed a special committee composed of members of the Science and Medico-Political Committees to consider in detail the method or methods by which these recommendations could be made effective, and at a meeting of the Council held on December 12th, 1928, Mr. H. S. Souttar, on behalf of this committee, expressed the opinion that the only method which held out any immediate prospect of success was by voluntary action, probably in the form of the institution by a recognized authority of a diploma qualifying lay persons as dispensers of physiotherapeutic treatment. He stated that both the British Institute of Radiology and the Chartered Society of Massage and Medical Gymnastics had approved the principles underlying the Association's proposal.

When the Council met again on February 6th, 1929, it was announced that, on the proposal of Professor W. E. Dixon (a member of the committee), informal conversations had been held with representatives of the Society of Apothecaries of London, which had agreed to set up a standard to which persons practising physiotherapeutic treatment should attain, and to establish a diploma and a register on lines conforming to those laid down in the resolution of the Representative Body. The Council agreed that Dr. C. B. Heald should be nominated as the Association's representative on the standing committee of the Society of Apothecaries which, it was understood, was being constituted to administer the scheme. The committee has met on a number of occasions, and the first-fruits of its deliberations have recently been issued by the Society in the form of a pamphlet embodying regulations for admission to the roll of registered biophysical assistants.

Training and Examination.

An approved course of training, the committee states, will be necessary for all who desire to be placed on the roll, and all applicants after May 31st, 1930, will be required to pass an examination. In order, however, that injury should not be done to those persons who are already qualified and are engaged in administering treatment by electricity and radiation, it is proposed that admission may also be obtained by those applying not later than May 31st, 1930, who produce satisfactory evidence of experience in the following subjects: ultra-violet radiation, light and heat, high-frequency current, including diathermy, faradism, direct and sinusoidal currents. This evidence should consist of (*a*) not less than two years' supervised and practical experience at a teaching hospital or at any approved institution with a special physiotherapy department under a specially appointed medical officer, or (*b*) a certificate signed by two medical practitioners who are on the senior medical staff of a voluntary hospital, stating that from their personal knowledge they know that the applicant has had not less than three years' practical experience in the therapeutic administration of each of the above-mentioned forms of treatment.

If an applicant who applies before May 31st, 1930, has not had experience in one or more of the subjects, the Society is prepared to consider certificates from a medical officer in charge of an approved institution, stating the course of training the applicant has undergone. The Society may, during the period ending May 31st, 1930, require any applicant to submit himself or herself to an oral and practical examination in any of the subjects.

Applicants for registration will be required to undertake that they will not (*a*) treat any patient except under the direction and control of a registered medical practitioner; (*b*) advertise in a professional sense except in the recognized medical and nursing papers, or sell goods to patients in a professional capacity or accept secret commissions on the sale of goods; (*c*) act in such a manner as in the opinion of the Society is considered derogatory to the honour of their profession. The registration fee will be two guineas, and there will be an additional annual payment of five shillings for continued inclusion in the register.

Registered persons will be designated biophysical assistants, and be entitled to use the registered letters B.P.A. They will receive from the Society of Apothecaries a certificate of registration and a book containing the regulations. In concert with the British Medical Association, which recognized from the first that the scheme would depend for its success on the co-operation of the medical profession, the Society under takes to advise medical men by every means in its power to employ only registered biophysical assistants in the treatmen of their cases. The register will be circulated widely each yea to registered medical practitioners, to medical and publ libraries, and to public medical officers, so that it may b available for reference in every district of the country. A annual conference of biophysical assistants will be arrange at Apothecaries' Hall, Blackfriars, for professional and soci purposes.

Certificate of Registration.

The certificate of registration, to be issued over the signatu of the Registrar, reads as follows:

"Know all men by these presents that.....has be approved by L. D. Bailey, M.C., Major-General D. J. Colli C.B., C.M.G., M.D., W. E. Dixon, F.R.S., M.D., C. B. Hea C.B.E., M.D., M.R.C.P., F. D. Howitt, M.D., M.R.C.P., J. M B.A., M.B., B.Ch., Lieut.-Colonel C. Sammann, Master of Apot caries' Society, and Sir William Hale-White, K.B.E., M. F.R.C.P., the Committee appointed by the Master and Ward of the Society of Apothecaries, as a fit and proper person reason of his/her knowledge and skill to be placed on the of Biophysical Assistants. In Testimony whereof the Regis of the said Society by the Authority of the Master and Ward has hereto set his hand."

Applications for registration should be made to the Regist Society of Apothecaries, Water Lane, Blackfriars, E.C.4.

INTER-STATE POST-GRADUATE ASSEMBI

SIR JOHN BLAND-SUTTON'S INAUGURAL ADDRESS.

THE party of between fifty and sixty members of Inter-State Post-Graduate Assembly of North Am which has been visiting London gathered for the fi three morning sessions at the House of the Royal Soci Medicine on May 27th. The names of the lecture this and the two subsequent mornings and the other of the programme were announced in our last issue (p

Sir JOHN BLAND-SUTTON, Bt., in opening the proce and welcoming the visitors, recalled that in the autu 1927 he attended an excellent meeting of the As in Kansas City, and contributed to the proceeding realized then the great importance of this organi It had never been so necessary as it was at presen

men in active practice should keep themselves abreast of the arts and sciences ancillary to modern medicine. The proud position of surgery to-day was in no small degree due to discoveries in chemistry which placed in the hands of surgeons the power to induce anaesthesia. Then came the conquest of sepsis, which raised surgery from a mere craft into a beneficent art. Improvements in the microscope had enabled the minute organisms which provoked disease to be discerned, and there followed the astounding revelation that the germs of disease and death were hidden in the smallest of living things, and conveyed by unsuspected carriers. Another noteworthy advance was the invention of special instruments for examination, which had laid the foundation of many of the specialties. Among these instruments were the ophthalmoscope and the laryngoscope; the inventors of both were non-medical men, Helmholtz, the philosopher, and Manuel Garcia, the singer. It was said that when von Graefe first saw the fundus of the human eye with the ophthalmoscope he flushed with excitement and said, "Helmholtz has unfolded for us a new world." The speaker related how he himself went to Vienna in order to become facile with the ophthalmoscope, because he realized that that instrument was to be of diagnostic value for diseases arising elsewhere in the body than in the eye. There was now no hollow organ in the body into which the incandescent lamp could not throw its light. The x rays, again, had made the human body diaphanous to surgeon and physician alike. No surgeon who valued his reputation or his patient's welfare would trust entirely to his own tactile sense in detecting fractures. He would have recourse to the x-ray picture, which, incidentally, could be studied by the patient himself, by his friends, or, worse still, by his solicitor. Improvements in optical glass were now so great that he felt sure it would be possible soon to see the living cell elements of the body—to see the red corpuscles whirling through the capillaries as in the familiar experiment on the circulation in the foot of the frog. When he was a boy, sixty years ago, a kind aunt made him a present of a microscope, and he was much interested in the red corpuscles, because there was at that time a good deal of argument among physiologists as to their shape. To-day, when reports were received from the laboratory with regard to the patient's blood, there were recognized as many varieties in the red corpuscles as there were races of men. But with all their knowledge and skill, physiologists could not yet say how long the red corpuscle lived absorbing and carrying oxygen. Then he bade them think of phagocytosis, again a non-medical discovery. Metchnikoff's experiments with starfish larvae at Messina had laid the foundation of the study of defensive cell mechanism. At the time that discovery was published he (Sir John Bland-Sutton) was investigating the dead bodies of animals at the Zoological Gardens, and when it became his duty to deliver some lectures at the Royal College of Surgeons he ventured to describe inflammation as a warfare between the cells and the bacteria. That was forty years ago, but in that very room on the morrow Dr. R. G. Canti would show one of the most striking films he had ever seen, illustrating the combat between bacteria and leucocytes. Sir John Bland-Sutton believed that by a combination of x rays and magnifying apparatus it would be possible some day to see the exotic fauna of the blood—to see floating through the capillaries, jostling the red cells, the spirochaetes, the trypanosomes, the filaria. Indeed, he believed an acute observer had succeeded in seeing the guinea-worm wriggling through the subcutaneous tissue, like an eel creeping through the grass meadows from one stream to another.

"This Inter-State Assembly," said Sir John Bland-Sutton, "meets once a year, and that will give you all opportunities of hearing masters of medicine describe progress and new procedures. It will enable you to hear surgeons describe their own method of attack. Surgery is progressing at such a rate to-day that textbooks on operative surgery really become like time-tables, which are useful only for a season. This Assembly will do a great good by keeping you informed of these almost kaleidoscopic changes which are taking place in our profession."

The ordinary business of the session then proceeded.

Nova et Vetera.

SICK AND WOUNDED IN THE ARMIES OF CROMWELL AND CUMBERLAND.

NEARLY thirty years have passed since Professor C. H. Firth delivered his Ford Lectures at Oxford on Cromwell's army. The great war has since eclipsed the doings of the small forces of the seventeenth century, but the recent publication of Sir John Fortescue's *Historical and Military Essays* reminds us once more of the lot of the sick or wounded soldier in the last war waged in this country. Professor Firth gave a very full account of the medical organization in the armies of the Civil War and the Commonwealth.

No doubt the medical arrangements at the beginning of the Civil War were rather haphazard, but it was to be expected that in the better ordering of Cromwell's new model army the medical department would share with the combatant forces in the improvement. When Cromwell set out for Scotland in 1650 the army was provided with regimental surgeons and what may be called physicians and surgeons on the general's staff. Each regimental surgeon was allowed £15 to pay for a chest of drugs and instruments, and £10 for a horse to carry it. His pay was six shillings a day. In the list of the staff of the new model army are the names of four medical officers, and the armies in Ireland and in Scotland each had a physician-general, a surgeon-general, and an apothecary-general, which posts were maintained after the Restoration. Of course, there were no stretcher-bearers or hospital orderlies for many years after the '45. So late as the battle of the Alma in 1854 only the bandsmen were allowed to attend to the wounded. Combatants were strictly forbidden to do so, lest soldiers with little stomach for the fight should make assistance to a wounded officer an excuse for retirement out of fire. Professor Firth, however, shows that the idea of an ambulance corps is very old. He quotes the following passage from the *Stratioticon* of Digges, written in the sixteenth century.

> "It were convenient to appointe certaine carriages and men, of purpose to give their attendance in every skirmishe and incounter to carry away the hurt men to such place as surgions may immediately repayre unto them, whiche shall not only greatly incourage the souldior, but also cause the skirmishe to be the better maintained, when the souldiors shal not neede to leave the fielde to carry away their hurte men. These were called among the Romans 'Despotati.' And this among other laudable Romane orders have the Spaniards at this day revived and put in practice, whereby also they conceale from the enemie what losses in any skirmishe they have received."

In the Civil War (or the Great Rebellion, as it was officially called) the surgeons and men of the victorious army cared as best they could for their own wounded, and then usually leave was given to the people of the neighbourhood to do, of their charity, what they could for the enemy's wounded who were left on the field. The more fortunate among the wounded of both sides were taken into houses near by and cared for by the occupants, and claims for payment for such care were made and paid by Parliament. There is a bill in the Record Office from a civilian practitioner, one George Blagrove, for ten shillings for "curing a sore brused leg. Cut over the eye and a sore thrust through the arme, twenty shillings." This bill also includes a charge of £5 for curing the wounds of twelve cavaliers (no doubt prisoners) of whom most were "sore cut in their heads and thrust in the back."

Similarly accounts were sent in to the authorities a century later for attendance on sick soldiers left behind on the line of march. In his article "Sick Soldiers of the 'Forty-five"[1] Sir John Fortescue includes two accounts sent in by a Scottish surgeon, of which the first runs as follows:

> "David Brodie, of Elgin, for professional attendance on George Recuby, of Cobham's Dragoons [now called the Tenth Hussars]

[1] *Historical and Military Essays.* By the Hon. Sir John Fortescue, LL.D., D.Litt. Macmillan and Co., Ltd. 1928.

left in a country village dangerously ill on April 16 [1745, the very day of the battle of Culloden].

			s.	d.
April 16.	To a bleeding		1	0
	A box of *pectoral linctus*		1	0
	A pectoral mixture		1	6
„ 17.	A glass of *febrifuge drops*		1	0
	A pound of cooling mixture		1	6
	A *blistering plaster*			6
	2 lb. of pectoral infusion		1	6
„ 24.	2 lb. of emulsion...		1	0
„ 25.	Do. do. repeated		1	0
„ 26.	The same		1	0
„ 30.	4 lb. white decoction		2	0
	4 dozen febrifuge powders			9
	To wine to make *sack whey*, sugar, milk, barley, *rice*, tea, and other nourishment, furnished him from 16 April to 1 May		7	0
	Payed for a coffin *and mort-cloth* and to the grave-digger		7	0
		£1	7	9

"N.B.—Any cloathes *that the man had lyes in a village called* Oldmilns; his landlady took his money out of his pocket, which she says *was only* six shillings, and says she expended it on *aqua vitae*, which I *am persuaded* hurt him."

If, as Sir John Fortescue suggests, this was a case of pneumonia, it would appear that the landlady, like the physicians of fifty years ago, regarded brandy as the only hope, while Dr. Brodie must have been 150 years before his time in dispensing with its use. In the rather similar case of Francis Hazle-Dick, Dr. Brodie's bill contains similar drugs, but there is no charge for victuals in this case. The total, including funeral, was only 17s. 6d. sterling. Both patients were blistered, but that was the common lot at that time, from which no medical case could hope to escape. Charges were low in those days and in that country, and we are not as much surprised as Sir John Fortescue to find that the inclusive charge "for hanging seven deserters" was £2 5s.

ROYAL MEDICAL BENEVOLENT FUND.

At the recent meeting of the committee fifty-one grants were made, amounting to £1,204 3s., the largest sum of money voted in any one month since the Fund was founded. It is a clear indication of the increasing number of applications for assistance which are being made to the committee.

It is the hope of the committee that financial help will never be refused to a deserving case, but to be in a position to meet the ever-increasing demand the committee urgently appeal for the support of new subscribers. Subscriptions and donations should be sent to the Honorary Treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, Cavendish Square, W.1.

In addition to the grants voted above, the committee elected five beneficiaries to "Alexander Lawrence Annuities," the annuities being £70, £65, £60, £60, and £52.

The following are short notes on five of the cases helped by grants.

Widow, aged 50, of M.R.C.S., L.R.C.P. On the death of her husband, in June, 1928, the widow was left with an income of £50 a year and two daughters to educate. Her husband had served throughout the war, and during service contracted a disease which undermined his health, and which led to his death at the age of 51. The Officers' Association will contribute £30 yearly towards the school fees of one child, and the Fund has voted £40 for the school fees of the other. The widow is trying to augment her income by taking paying guests.

M.R.C.S., L.R.C.P., aged 60, is suffering from general paralysis. His wife and child of 5 are dependent on him. Private income £128 a year. Voted £40.

Daughter of L.R.C.P., aged 61, has supported herself through life as governess and companion. Of late years she nursed and kept house for a delicate married sister, who has now died, and she is left dependent on her brother-in-law, who is suffering from advanced tuberculosis. Voted emergency grant of £10 and £26 in four instalments. Two other professional charities will also co-operate and help this case, which is one of complete destitution.

Widow of L.R.C.P., aged 72, on death of her husband was left with an income of £67 a year. Voted £36.

Widow of M.R.C.S., aged 80, is very feeble and in very straitened circumstances. Since the death of her husband in 1912 she has had to use up her capital; she has now sold her last security, which realized £220, and this is all she has left to live on. Voted £36.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing, especially for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles. The gifts should be sent to the Secretary [illegible] gh Street, W.1.

France.

[FROM OUR OWN CORRESPONDENT.]

The B.C.G. Controversy.

THE B.C.G. controversy, to which so many refere have been made in the columns of the *British Me Journal*, is far from being closed. At a recent mee of a Paris medical society Professor Albert Calm brought forward some new statistics. He insisted such a state as immunity to tuberculosis did not exist in the adult, as Professor Marfan had shown f years ago, and that the tubercle bacillus when tre with bile was sufficiently attenuated and might used as a vaccine. He asserted that children exp to infection showed a death rate from tubercu of 15.9 per cent.: if vaccinated with B.C.G. rate fell to 3.4 per cent. According to him, cli experiments had proved that B.C.G. could not re its virulence in the organism, and that a hu being thus vaccinated at the ages of 1, 3, 7, and years should be finally immune against tubercul but this is at present no more than hypothetical, experience only can prove the case. Professor Le Lan has systematically administered B.C.G. to every infan his maternity ward at the Bouciaut Hospital. H convinced now of the value of this method, having tre thus 2,649 cases from 1926 to 1928. Dr. Weil-Hallé re mends its extension to all nurses and medical stude The Secretary of State, M. Loucheur, is organizing sy matically its adoption throughout the country, lea full liberty to doctors and midwives, the vaccine b distributed by the Pasteur Institute, where it is prepa Nevertheless, the opposition of Professor Liguières is strong, and no doubt it is serving useful purpo Pasteur, himself, would not have been Pasteur if he not had to resist fierce opposition.

Law v. Surgery.

A curious lawsuit has moved opinion in the medi world. One of our best-known surgeons, on the P Hospital staff, was asked by a hospital patient to impr the "aesthetics" of her leg. She was a couturière, her success depended on the smartness of her perso appearance. The surgeon operated, but the unexpe happened, and the result was infection, and, fina amputation. A lawsuit followed, and damages up 200,000 francs were awarded. This is a very unfortu case. There appears to be general agreement as to legality of the consequences; but the comments of magistrate have given rise to considerable feeling. based his verdict, not on any mistake by the surge whose skill is beyond suspicion, but on the fact that operation was not justified from any pathological ca But is the judge qualified to come to a conclusion with expert advice? Some time ago a surgeon lost his case won on appeal) against a patient who had had a fractu leg shortened by an inch after reparation. Supposing t spirit prevailed in court, would it not be a strong temp tion for the surgeon to abstain from any operation w there is a risk to be run? Professor J. L. Faure, in inaugural speech at the Congress of Surgery two years a drew attention to this new form of antagonism between and medicine. The case has stirred opinion to such extent that the General Medical Association of Fra has decided to follow up the case, and has asked ev medical society to join in, so that cosmetic surgery sho not be barred by law. The case is going to appeal bef long.

A Court of Medical Ethics.

A few recent scandals have aroused medical opin at large to protest that we are unable to carry o our own policy against undesirable members of the p fession. It is proposed that, just as with barristers, *ordre des médecins* should be created; this would allo to erase from the register men whom we do not esteem be qualified to practise medicine. Up to now the prop has met with strong opposition. But times are chang

rapidly, and the new law of social medicine is manufacturing quite a new type of doctors, who will be best guarded against temptation if they feel that their very practice may be controlled by their colleagues. The drawback to this new departure is that this *ordre des médecins* must act with the most liberal spirit, and must never be biased as regards new therapeutic measures which may seem heterodox or antiscientific. Perhaps the proposals will include restrictions so as to apply solely to social medicine. There is so little liberty left nowadays that there must still remain some free land where medicine may remain a liberal profession. And, after all, out of 24,000 members of the profession in France, some 23,988 do not seem to need any other control than that of their own conscience.

Malaria Therapy.

Professor Claude advocates the creation of centres of malaria therapy for the treatment of general paralysis of the insane. The results are very gratifying, and a special kind of *Plasmodium vivax* has been cultivated by Bouman and Lee for the purpose. It is used against all severe forms of syphilis of the central nervous system, and very likely it is merely by raising the temperature of the body that malaria counteracts the spirochaete. Professor Claude hopes that this new form of therapeutics will be applied in all cases of general paralysis throughout France, and the Academy of Medicine has adopted his views.

Sequels of Vaccination Against Typhoid Fever.

Professor Achard, who has just been elected a member of the Académie des Sciences in succession to the late Professor Widal, has given his experience in the late results of vaccination against typhoid fevers. In his ward there were far more cases of paratyphoid infection than of true typhoid in 1925 and 1926; it was the reverse in 1928. The mortality was 8.5 per cent. in paratyphoid, against 15 per cent. in typhoid fever. The benefit of preventive vaccination was proved by the fact that women patients greatly outnumbered men, the male population having been vaccinated during the war. The proportion was 4 to 1, and the males were under 21, therefore no vaccination immunization seems to last after the age of about 16. Professor Chauffard maintains that everyone should be vaccinated against enteric fever three times: in early childhood, at the age of 10, and at 15. In the recent epidemic in Lyons women were infected in the ratio of 5 to 1 man, and practically none of them had been vaccinated.

Two New Members of the Academy of Medicine.

Professor Gustave Roussy of Geneva, who has claimed his rights of French citizenship, is a descendant of the old Huguenot stock; he has been elected a member of the Academy of Medicine. He succeeded the late Professor Letulle in the chair of anatomo-pathology. He studied first in Geneva, and came to France to work under Dejerine and Pierre Marie. He is well known for his work on experimental medicine, and regards pathology not so much as being a pure morphological science, but rather as a dynamic science, linking morbid anatomy to it. Since the war he has been studying cancer, and has created the Cancer Institute of the Medical Faculty of Paris; he is considered the protagonist in the fight against cancer in France, and his election has met with unanimous approval. Sir StClair Thomson's election as a corresponding member of the Academy of Medicine is the highest honour that can be bestowed in France on a medical man. The election has been most cordially approved by the profession, happy to greet a man who is as popular in France as he is in Great Britain, and who is in every sense of the word quite at home on this side of the Channel. We trust that his perfect knowledge of French may allow him, from the Academy platform, to maintain and develop the links holding together the British and French medical schools. We call our academicians "les immortels"; Sir StClair is highly qualified to add to immortality a quality that it may sometimes seem to have lost—perpetual youth.

G. MONOD.

Scotland.

Scottish Association for Mental Welfare.

THE annual meeting of the Scottish Association for Mental Welfare was held in Edinburgh on May 18th. Sir Henry S. Keith, who presided, mentioned that the association had a membership of 375. Unfortunately a large number of the bodies at present represented would disappear when the Local Government (Scotland) Act came into operation. Professor G. M. Robertson, physician-superintendent, Royal Edinburgh Hospital for Mental Disorders, and professor of psychiatry, gave an address on the supervision of the mentally defective, with special reference to the Jordanburn Nerve Hospital and Psychological Institute. The aims and scope of this new departure received notice in the *British Medical Journal* of March 9th (p. 468). Professor Robertson said that the number of defectives in Scotland was estimated to be about 40,000. The class which gave rise to most anxiety and trouble was that of young adult defectives of the higher grades. In the absence of help and friendly supervision, these were apt to develop into criminals or social failures of one kind or another. Preventive measures must depend on early detection and appropriate training when young, a suitable occupation, and protection from unequal competition when adult life was reached. Steps were now being taken to meet these needs, and in this connexion Professor Robertson mentioned the Gogarburn Institution, of which (as recorded below) the foundation stones were laid by the Duke and Duchess of York on May 22nd. Two recent developments in Edinburgh University were commendable, as they indicated a long overdue realization of the importance of laying stress in medical training on the mental factor in disease. They were the appointment of Dr. Clarkson of Larbert as lecturer on mental deficiency, the first post of the kind in any university in this country, and the compulsory attendance of all medical students at a course of lectures on psychology. The opening of the Jordanburn Hospital by the managers of the Royal Mental Hospital was important in relation to these two academic measures. It was a voluntary hospital for the treatment of a group of disorders of the nervous system not otherwise specially catered for—borderland cases like hysteria and obsessions, mild psychoses like depressive and delusional states, mental subnormalities like high-grade defect, and abnormalities of disposition and personality. It was a teaching hospital, connected with the University and Medical School. A notable feature was the connexion between the hospital and the psychology department of the University under Dr. James Drever. The number of in-patients that could be accommodated was fifty, but its most useful sphere of activity would probably be in the treatment of out-patients.

New Edinburgh Institution for Mental Defectives.

The Duke and Duchess of York laid the foundation stones of the Gogarburn Institution for Mental Defectives, now under construction by the Edinburgh District Board of Control, on May 22nd. The institution, which is situated about three miles west of Edinburgh, is the first mental defective colony in this country to be built under the Mental Deficiency Act, 1913, and as a pioneer institution presents many interesting and novel features, both in design and in equipment. It will eventually accommodate 1,000 persons, drawn from Edinburgh and the south-east of Scotland. The site comprises the estates of Gogarburn and Kellerstain, and extends to 420 acres. The colony has been designed as a small village, with houses or blocks, each to accommodate fifty patients under the supervision of a housekeeper or nurse. The principal entrance leads direct to the administrative and admission block, which will dominate the colony in every direction. Near-by are the hospital and isolation block, staff accommodation for nurses, kitchen, stores, laundry, and power-house. There are also two residential blocks for higher and two for lower grades of patients. On the south side of the Gogar Burn the remainder of the residential blocks will be grouped around a large campus running east and west. The

division between the male and female groups is formed by the school, church, and recreation hall. At either end of the campus will be situated the various occupational buildings, where patients will be trained and employed in various trades and crafts. The southern portion of the estate contains two farms. Already some of the roads and essential administrative portions are nearing completion, and it is anticipated that two homes, each housing fifty patients, will be ready for occupation in August of this year. The whole scheme is expected to take seven years to complete. The existing Gogarburn House was adapted for the temporary housing of patients some years ago, and there have been about sixty patients in residence for some time.

Royal Visits to Edinburgh Institutions.

The time-honoured visits to medical and nursing institutions in the city of the Lord High Commissioner to the General Assembly of the Church of Scotland and his lady have this year had a special significance. It was regrettable that a mild outbreak of infection prevented the first of these, to the Royal Edinburgh Hospital for Sick Children. On the forenoon of May 23rd the Duchess of York visited the headquarters of the Scottish Branch of the Queen's Institute of District Nursing in Castle Terrace. Her Royal Highness, who has recently succeeded Princess Louise, Duchess of Argyll, as president of the Scottish Branch, was welcomed by the Countess of Mar and Kellie, chairman of the council. The latter recalled that their first president had been Lady Rosebery, a fact that came to them just then with a poignant significance as they mourned the passing of Lord Rosebery. During the forty years of the Institute's existence 722 nurses had been trained in that building, and had then found their way as missionaries of health to all parts of Scotland. The Duchess, in reply, expressed the pleasure it gave her to become president of the Institute, and to know that the splendid work of the Queen's Nurses was appreciated in Scotland. Five nurses who had served the Institute for twenty years in different parts of the country were presented with long-service badges. On the afternoon of the same day the Duke and Duchess of York spent a busy hour at the Royal Infirmary, visiting a surgical and a medical ward, inspecting the massage department, and presenting prizes to the nurses. Sheriff Brown, on behalf of the managers, in formally thanking Their Royal Highnesses for their visit, referred to the impending celebration, in the autumn of this year, of the two hundredth birthday of the Royal Infirmary, and of the fiftieth anniversary of their occupation of the present buildings.

Ireland.

Amalgamation of Hospitals in Dublin.

SIR WILLIAM DE COURCY WHEELER has recently suggested in a published statement that the limitations imposed on the hospitals by charters and vested interests could be overcome by a short Act of the Dáil. To set the Dublin hospitals on their feet in a great amalgamation scheme probably £1,000,000 would be required. If the basis for a general agreement could be found—an agreement approved by the Government—there was little doubt that the money would be forthcoming from such a generous mine of wealth as the Rockefeller Trust. Amalgamation of hospitals did not imply of necessity the fusion of all the existing hospitals. Two large centres would be equally effective—one for the north and the other for the south side of the city. Alternatively, the smaller hospitals might amalgamate, and the larger, if they so desired, could continue and extend their admirable work as separate units. Dublin hospitals, Sir William Wheeler added, were pulling their weight in the face of difficulties and contributing their quota to the knowledge of the world.

Mr. William Doolin, at the annual meeting of the Coombe Linen Guild, defended the system of small hospitals in Dublin. He said that if the aim of the teaching authorities was to produce a few outstanding specialists by intensive training, at the expense of the bulk of the students, then he granted amalgamation was the best way to achieve their end. He cited the French and German hospitals, whose educational systems had just such an outcome, to the regret of their own more thoughtful teachers. They in Ireland were a small and poor people. Their unit was the small farmer community on the land. Ought they not to cut their coat according to their cloth? Their medical educational system was by no means perfect; so far from having exhausted their teaching resources, they failed to make full use of what they had at their disposal. Yet each year their small hospitals—by virtue of their intimacy and their number—actually turned out a more than sufficient number of well-trained general practitioners, of a higher average value to their national community than the products of any other training centre of his acquaintance. Their resident student system and their midwifery teaching system were the envy of many educational authorities in England and on the Continent.

Medical Inspection of School Children in Dublin.

Dr. Molly O'Leary, assistant medical officer of health, Dublin, in a recent statement on the medical inspection of school children in the city of Dublin, said that out of 12,000 children inspected during the year 1928, 262 were found to have heart lesions. In 50 per cent. of cases there was a history of previous illness, but the fact that the growing child's heart is easily dilatable was borne in mind, and the parents were warned against allowing them to be unduly fatigued or over-exerted; the high tenement houses and high-storied buildings were not favourable for this type of child. The remaining cases were of organic disease, and though a history of diphtheria or scarlatina was elicited in some cases, the greater number were rheumatic in origin. Rheumatic children generally gave a history of growing pains and repeated sore throats, and were usually nervous, anaemic, and poorly nourished. General attention to hygiene and diet, to the value of milk, the care of teeth, the removal of septic tonsils, and the avoidance of damp localities and clothing were impressed upon their parents. Constant supervision and inspection of children exhibiting rheumatic tendencies were desirable. In the course of the year's inspection fourteen children were found to be suffering from chorea, and their parents were quite unaware that it was a rheumatic manifestation. During the past year 959 children were treated for dental defects at the various hospitals and at the dental clinic, while 330 had their septic tonsils removed. These figures did not include those who went to their own dentists and doctors. The dental clinic of two sessions per week, which was instituted in October last, had now been extended to three sessions. Every effort was made to send children from the ages of 5 to 7 years for conservative treatment in order to avoid wholesale extractions in later years.

The Story of the Rotunda Hospital.

The Rotunda Hospital, Dublin, which is now making an appeal for funds, is the subject of an article by Mr. Frederick Miller, which appeared in the Dublin *Sunday Independent* on May 19th. The Rotunda, Mr. Miller recalls, was founded by Bartholomew Mosse, a native of Maryborough, in the Queen's County, who practised medicine in Dublin in the early part of the eighteenth century. His work among the poorer sections of the population made him acutely aware of the wretched plight of women who had to undergo their confinement without medical aid, and he resolved to do all in his power to establish a hospital in which poor patients could receive free nursing and treatment. After a period devoted to the study of hospital systems in France, Holland, and other European countries, he returned to Dublin in 1745, and having furnished a house in St. George's Lane (now South Great George's Street), he opened it as the first hospital of its kind in the British Isles. To meet the cost of the undertaking Mosse contributed his own money and organized lotteries, plays, concerts, and oratorios. Handel was invited to Dublin, and is said to have conducted there the first performance ever given of his *Messiah*, for the benefit of the hospital. In 1748, finding the accommodation—namely, twenty-four beds—inadequate, Mosse, at a cost of £

£2,000 of his own money, laid out a garden and promenade on a piece of waste ground which he had secured in Great Britain Street, and used the revenue from admission fees paid by the nobility and gentry living in Dublin for the purpose of building the Rotunda Hospital. He started to build with only £500 in hand, but though by the end of 1755 he had collected £11,694, he found that this sum, as well as the whole of his personal fortune, was insufficient for his purposes, and on March 23rd, 1756, in response to his petition, the Irish Parliament allowed him an additional grant of £6,000. On November 11th Parliament gave him yet another £6,000, with £2,000 for himself as a reward for his labours in the cause of humanity. On December 8th, 1757, the building being nearly completed, the upper floor, furnished with fifty beds, was opened by the Duke and Duchess of Bedford. Mosse fell ill in the winter of 1758, and died in the following February. If in 1750 the Rotunda Hospital benefited to the extent of £4,000 by the concerts held in the gardens, Mr. Miller suggests that, by similar means, it should be possible in 1929 to raise part of the funds at present required for the upkeep of this world-famous institution.

England and Wales.

Health Statistics for the First Quarter of 1929.

THE abnormally cold weather experienced during February and March has left its trace in the form of an increased mortality rate, as is shown by the return of the Registrar-General, in which it is stated that during the first quarter of the year the deaths registered in England and Wales numbered 204,293, which is 67,978 in excess of that for the corresponding quarter of 1928. This represented a death rate of 21 per 1,000 of the estimated population, which was 7.1 per 1,000 above that recorded during the first quarter of last year. With the single exception of the March quarter of 1919, when, owing to the influenza epidemic the rate rose to 21.3, the figure for 1929 was the highest recorded in any first quarter of the present century. This high mortality figure is attributable in a large measure to influenza and various respiratory and circulatory diseases favoured by the low temperature. Influenza was stated to be either an immediate or a contributory cause of death in 23,763 cases, or 11.63 per cent. of the total deaths registered. This may be compared with the results of the previous influenza epidemic in the March quarter of 1927, when the figures were 17,931 and 10.62 respectively. The mortality of infants under the age of 1 year was equal to 111 per 1,000 of registered live births. This rate was 14 per 1,000 above the average of the ten preceding first quarters, and is the highest rate recorded in any quarter since the first one in 1919. The natural decrease of population by excess of deaths over births was 44,112; in the corresponding quarter of 1926 there was an increase in this respect of 43,386, in 1927 a decrease of 1,786, and in 1928 an increase of 31,611. The highest death rates from influenza in 107 of the larger towns last quarter were: 4.18 in Norwich; 4.32 in Stoke-on-Trent; 4.39 in Doncaster; 4.41 in Leeds; 4.42 in Worcester; 4.84 in Walsall; and 5.99 in Oldham. During the quarter small-pox was mentioned as a cause of death in eight cases. The Registrar-General's report contains a supplementary table showing the distribution of the cases of small-pox notified during the thirteen weeks ending March 30th.

The Order of St. John and the British Red Cross Society.

The ninth report of the Joint Council of the Order of St. John of Jerusalem and the British Red Cross Society—the first to deal with a calendar year—covers the period from January 1st to December 31st, 1928. The Council records that the total number of cases helped by the auxiliary hospitals for officers' department is now 17,923; of these, 355 officers, including 125 new cases, received help during the twelve months under review. Most of the cases at present are ex-officers suffering from tuberculosis. Owing to the lapse of time since the war, tuberculous ex-officers find it increasingly difficult to satisfy the Ministry of Pensions that their disability is due to war service, and the department has supplied a real need in coming to their assistance where immediate aid has been essential pending the investigation of their cases by the authorities concerned. The department has in many instances met the full sanatorium fees, though, whenever it was necessary, the Officers' Association has generally helped to the extent of one-half. The officers' hospital at Brighton continues to do good work, 86 ex-officers (40 coming through the Ministry of Pensions) having received in-patient treatment during the year. In May, 1928, the Joint Council considered and approved a proposal that its hospital and medical services department should become a central bureau of hospital information, under the auspices of the British Hospitals Association of the Joint Council. The formation of such a bureau had been advocated for some time, and the Joint Council feels assured that, now the bureau is established upon a sound basis, its value to the voluntary hospitals will regularly increase. During the period under review 755 provincial and voluntary hospital reports have been received and analysed, and the ninth annual report of the voluntary hospitals in Great Britain (excluding London) for 1927 has been compiled and issued. The bureau aims further at collecting and summarizing the data concerning all matters of administrative interest to those engaged in hospital management, to undertake inquiries with the object of obtaining facts from those responsible for guiding hospital policy, to establish a library where literature dealing with matters of hospital administration, construction, and equipment can be consulted, and to act as a clearing house of information in order that all the experience acquired might be made generally available. The Christmas gifts provided for ex-service pensioner patients in hospital on Christmas Day, 1928, numbered 5,774, at a total cost of £1,441, of which £932 4s. 6d. was administered direct by the Joint Council, and the remainder through the Ministry of Pensions. Approximately 16,000 ex-service pensioner patients in hospital have been provided with motor drives by the Drives and Entertainments Fund. The Emergency Help Committee set up by the Joint Council in December, 1920, continues to administer a scheme for providing relief to thousands of sick and disabled ex-service men and their dependants. During 1928, 26,913 new cases were assisted or otherwise dealt with, the present average monthly expenditure on grants being about £6,000. During the year the committee received £8,053 in voluntary refund of advances made under the scheme. In November, 1924, the committee undertook the administration of a grant for the purpose of providing motor attachments to the invalid chairs of disabled service pensioners, and up to the present 464 men have been loaned motors, the number in actual use on the last day of 1928 being 354. During the twelve months the Games and Comforts Fund made 298 grants of additional comforts and articles of recreation to applicants from Ministry of Pensions hospitals and other institutions treating ex-service pensioner patients. The Home Ambulance Service is extending the range of its activities, and an account of its work during the year was published in our issue of May 18th (p. 924). The work done in the stores department has been steadily maintained, air-beds and water-beds, first-aid cabinets, sterilizers, furniture, and many other necessities having been supplied to hospitals, nursing institutions, child welfare centres, and medical supply depots. In July last the Joint Council Committee of Management decided to dissolve the Tuberculosis Subcommittee on the grounds that the individual needs of officers and men were now met by other committees, and following upon this dissolution the administration and management of Scio House were taken over by the House Committee, thus ensuring no break in the continuity of the work. Grants for ward industries work were given to nine hospitals, six of which were Ministry of Pensions institutions, and during armistice week articles made by patients doing ward industries in hospitals in London and the provinces were displayed as part of the exhibition and sale of ex-service men's work held at the Imperial Institute. The Finance Committee reports that the expenditure for the year has exceeded income by £814, which compares

with a deficit of £1,025 for the previous nine months. The council hopes that, with an improvement in industrial conditions, its income may grow, and that the present annual depreciation in its resources may come to an end.

Proposed Thank-offering Fund in Jersey for the King's Recovery.

A representative meeting of the inhabitants of Jersey was held on May 18th to inaugurate a local thank-offering fund for the recovery of the King, who is also Duke of Jersey. The Lieutenant Bailiff, who presided, expressed the opinion that the money collected in Jersey should be used for the relief of the local sick, and recalled that when in 1897 a collection was made for the erection of the Victoria Cottage Homes the amount obtained was doubled by the States. He suggested that on the present occasion it would be a good plan to purchase radium. Dr. C. H. B. Avarne commented on the value of radium in the treatment of cancer, which he thought was more prevalent in Jersey than in communities of the same size on the mainland. In his opinion an adequate local supply of radium would be of very great value and could be effectively used by the island surgeons. Dr. A. E. Hind doubted whether radium had yet passed beyond the experimental stage, and mentioned that the results following its use in England had not been invariably encouraging. In any case he held that its administration should be localized in a large institution, and be entrusted to experts. [A letter from Dr. Hind on this subject is printed at page 1020.] Dr. P. J. Marett thought that the money, when obtained, would be better expended on a clinic for the treatment of the prevalent lung infection in Jersey. It was eventually agreed that the money collected in the island as a thanksgiving for the King's recovery to health should be retained in Jersey and form the nucleus of a fund for combating disease. The hope was expressed that the States would double the amount raised. A general committee was appointed, and, though it was decided that the collecting should not start until July, it is announced in the *Jersey Evening Post* that an offer of 100 guineas has already been received.

London School of Hygiene and Tropical Medicine.

The pamphlet recently issued by the London School of Hygiene and Tropical Medicine, and discussed in a leading article this week (p. 1007), confines itself to a consideration of the school from the standpoint of a school of hygiene, there being a separate prospectus and calendar to deal with its duties as a school of tropical medicine. The school is intended to serve both as a teaching and research institution, and to train post-graduate students, more especially those proceeding to degrees and diplomas in public health, in all branches of preventive medicine. It consists of the following divisions: (1) public health, which includes the section of physiology as applied to hygiene; (2) epidemiology and vital statistics; (3) bacteriology and immunology; (4) biochemistry, including a department of chemistry as applied to hygiene; (5) medical zoology, including departments of protozoology, helminthology, and entomology; (6) tropical medicine and tropical hygiene. All these divisions are fully equipped to provide post-graduate instruction to medical men and women who desire to enter the public health services or to be trained in methods of research, or to undertake actual investigations within the fields covered by the divisions. The staff of the school being in contact with other official research organizations, students will have exceptional opportunities of acquiring experience of the way in which large-scale investigations on public health problems are planned and conducted. The course of study for a diploma in public health extends over a period of twelve calendar months, divided into three terms of twelve weeks each. The directors of the school, while hoping that students will as far as possible devote the whole of their time to the work, have decided to meet the needs of students not in a position to attend both in the morning and in the afternoon by arranging the course so that those prepared to give five afternoons weekly from 2 to 6 will be able to comply with all the conditions laid down by the General Medical Council. Students who can attend three afternoons a week may still comply with these conditions by spreading the course of study over two years, but only at the expense of rendering less effective the efforts that have been made to co-ordinate the teaching of the various divisions of the school. Whole-time students will be given extra-tutorial and practical work in the mornings, and will be encouraged to make arrangements with medical officers of health to obtain additional practical public health experience. Included in the syllabus are some forty special lectures by recognized experts on various public health problems, and a similar number of visits to selected places of outstanding public health interest. Students will do practical work under a medical officer of health in two selected areas, and attend institutions of the Metropolitan Asylums Board for three months' instruction (at least thirty attendances of two hours each) in infectious disease and hospital management. The course in applied physiology will comprise twelve lectures and demonstrations, and in sanitary engineering twenty lectures and practical classes. Those responsible for drawing up the curriculum have aimed at presenting the teaching in a logical sequence and at co-ordinating the work of the different departments, and to accord with this aim a uniform date of entry is regarded as essential, students being expected to start work at the beginning of the autumn term. The composition fee for the year's course has been fixed at fifty guineas, payable at the time of enrolment. This fee includes payments in respect of work in a public health department and of instruction in infectious diseases and hospital management.

Gas and the Public Health.

London members of the Society of Medical Officers of Health were entertained at luncheon by the Gas Light and Coke Company on May 24th, and afterwards visited the company's research laboratories and training centres. Sir David Milne-Watson, chairman of the company, who presided, after welcoming the guests as advisers of local authorities on the ever-widening range of subjects connected with public health, reminded them that the headquarters of the company at Horseferry Road, Westminster, where the luncheon took place, was a *locus classicus* of the gas industry, being the original home of gas in the metropolis. Gas was made on that very spot in 1812, when Pall Mall was lighted by gas, an illuminant to which it still remained faithful. Dr. J. B. Howell, chairman of the metropolitan branch of the society, in acknowledging the hospitality, said that there could be no doubt that the diminution in the intensity and frequency of London fogs was due largely to the more common use of gas for heating and cooking. It was always the domestic chimney, not the factory chimney, which was the principal agent in atmospheric contamination. Another point mentioned by Dr. Howell was the value of the residual products, especially coke, with which one medical colleague of his was heating his house entirely, thereby eliminating ash and smoke, lessening labour, and securing a higher and more uniform heating effect than with raw coal. Dr. Charles Porter, medical officer of health for Marylebone, spoke of the great help which medical officers received from those engaged in gas manufacture and distribution. Mr. G. S. Elliston, secretary of the society, added a few words on the contribution of the gas industry to smoke abatement. The company were then taken to Watson House, Nine Elms, where they witnessed the testing of appliances in special laboratories, and the methods of research, always going forward, on the fundamental problems of the combustion of gas and coke, including the character of the fuel and of the products of combustion and their removal, the transfer of heat from the products and its conservation, and the question of ventilation. Some work now proceeding relates to the corrosion of pipes by water, and the protection of mains by a suitable coating when they are laid in soils excessively acid or alkaline. The visitors also inspected the welfare department, which includes provision for training in first-aid and the prevention of accidents. The Gas Light and Coke Company serves 265 square miles of the metropolitan area and consumes 23 million tons of coal a year.

Correspondence.

THE INTRODUCTION OF PERCUSSION INTO ENGLAND.

SIR,—Absence abroad has prevented my seeing, till yesterday, Mr. J. F. Fulton's letter in the *Journal* for April 13th (p. 708).

Who first practised percussion in this country I do not know, but it was an Englishman who first noticed Auenbrugger's discovery, which he announced in 1761. Ronald S. Crane[1] has recently brought to light the very interesting fact that Auenbrugger's book was introduced into England by Oliver Goldsmith, who wrote a review of it in the year of its publication—namely, 1761. Being himself a physician this he was qualified to do. Goldsmith gives an admirable abstract of the book, and concludes: "Such are the outlines of this new discovery; whether it may be of use to society or not there is no necessity for me to pretend to determine; only this may be observed: that the lungs are often, in the most healthy state, found to adhere to the pleura, and in such a case I fancy the sound would, in that part, deceive the practitioner; however, I shall not pretend to set up my conjecture against his experience." The first French notice of it was the publication, in 1770, of a translation by Rozière de la Chassagne.—I am, etc.,

London, May 22nd. W. HALE-WHITE.

THE VOLUNTARY HOSPITALS AND THE BRITISH HOSPITALS ASSOCIATION.

SIR,—I think it would be satisfactory if we could have some information as to the position of the voluntary hospitals and the British Hospitals Association in the matter of the organizations that the latter undertook to set up in the English counties for establishing the fullest co-operation between the voluntary and the statutory hospitals. It would be an advantage to know how far these organizations have been carried through, and under whose control they are to be. Are they to be managed by the British Hospitals Association? And to whom are they to report? So far, this has not been made clear.

As regards Scotland, the organization that has been created in the West of Scotland hospital area by the Scottish Regional Committee—now to be called "The Scottish Branch of the British Hospitals Association"—is in a most unsatisfactory position, as there has been no announcement of the names of the committee. The secretary of the Scottish Liaison Committee, when applied to some weeks ago for a list of the members of this West of Scotland Regional Committee, could not furnish this, as it had apparently not been supplied to him. Matters have been further complicated by this West of Scotland Regional Committee assuming to itself the name of "The Scottish Regional Committee of Voluntary Hospitals in the West of Scotland." There are no grounds to justify this being done. This regional committee has not been elected by the voluntary hospitals, nor has any mandate been given by the voluntary hospitals of the West of Scotland area to the British Hospitals Association to form such a committee. The committee, when first formed by the Scottish Regional Committee of the British Hospitals Association, was a Hospitals Association committee, and was to consider how best to establish the fullest co-operation between the voluntary and the new statutory hospitals, and to lay its views before the Scottish Health Committee; its opinions were not those of the voluntary hospitals in the area, but of the members of the committee. To call itself, as it has done, 'The Regional Committee of the Voluntary Hospitals of the West of Scotland Area" is to assume a title to which it has no claim, and to take up a position that it has no authority to occupy.

The point that ought not, at present, to be lost sight of is that the changes in our English and Scottish hospitals services introduced by the new Local Government Reform Act chiefly affect the interests of our teaching hospitals with medical schools. Consequently, the relations between them and the statutory hospitals should be discussed and considered by representatives of the physicians and surgeons who form the staffs of these teaching hospitals. Co-operation between the two groups of hospitals involves delicate negotiations, which do not lie within the sphere of work of the British Hospitals Association, which has not the necessary knowledge in the matter, as it is largely composed of lay members, and as it was established to consider questions of hospital management and to furnish provision for instruction in administrative hospital work. It is very important that the teaching hospitals connected with the medical schools should recognize this fact, both in England and in Scotland, and that the medical and surgical staffs are the proper bodies to be consulted in settling this co-operation. One need hardly point out that such co-operation would materially assist the medical schools, as the voluntary hospitals would be able to draw on an enlarged field of clinical material, and with an interchange of staffs should find their usefulness strongly reinforced.—I am, etc.,

Glasgow, May 27th. GEORGE THOS. BEATSON.

[1] Crane, Ronald S.: New Essays by Oliver Goldsmith. Chicago, 1927. The review by Goldsmith was published in the *Public Ledger*, August 4th, 1761, and is reprinted in full by Crane.

IMMUNITY TO TUBERCULOSIS.

SIR,—I feel I must comment on a statement in Dr. Nathan Raw's paper on "The production of immunity to tuberculosis in man and animals" (May 25th, p. 950), although it is with considerable diffidence that I venture to criticize any remarks made by one with such wide experience as Dr. Raw. He says that "patients suffering from pulmonary tuberculosis rarely develop bone, joint, or gland lesions, and vice versa; in fact, that the human subject is protected by one infection against the other." Although this may be true in certain parts of the country, it is certainly not the case among adults in a large industrial city such as Sheffield. I have always a considerable number of patients under my care with tuberculous bones, joints, and glands who have also lung lesions, as proved by clinical, radiographic, and bacteriological examination.

Perhaps the reasons for the difference in our two views may be understood by examining another of the statements made by Dr. Nathan Raw, that "human bacilli cause primary pulmonary tuberculosis, while the bovine type cause enlarged glands, mesenteric disease, bone and joint lesions, etc." It is true that in 1912 Fraser found that 65.6 per cent. of bone and joint cases in Edinburgh were bovine in origin, and that in 1916 Griffith determined that of 25 cases in Scotland 32 per cent. were bovine. But in the same year Griffith found that of 103 patients living in England and Wales only 15.5 per cent. had bovine infection.

In 1924 Drs. Edington and Guest, working with pus from 33 Sheffield children, found that 84 per cent. were due to the human type of organism. Indeed, in Sheffield it could hardly be otherwise, for the opportunities for infection with the human bacillus are so numerous, whereas the chance of infection with the bovine type is insignificant, since so little milk is drunk here. It has been estimated that the amount of milk entering the city allows only about a quarter of a pint per head daily, comparatively little of which will, of course, be available for the poorer inhabitants. Also, the milk supply of Sheffield is singularly free from tuberculosis infection compared with that of many other big towns.

Therefore it may be definitely stated that in Sheffield: (1) many adults with primary pulmonary lesion due to the human type of bacillus do develop secondary bone affections; and (2) many cases of bone tuberculosis in children are due to the human type of organism.—I am, etc.,

C. LEE PATTISON,

May 27th. Surgical Tuberculosis Officer to the City of Sheffield.

GROWTH RECOVERY AFTER INHIBITION BY LEAD.

SIR,—I am not quite clear what was the object of Dr. Hammett's communication in the *British Medical Journal* of May 18th (p. 886). Was his chief concern to dissociate his findings with any application of them to the clinical treatment of cancer with lead? If so, he will be hard put to it to do so, for the mere fact that lead inhibits mitosis, as described by Dr. Hammett, is of great

importance in this connexion. In any case, there is nothing new in many of his findings or in his qualification that recovery from the inhibitory effect of lead applied for a short time to vegetable growth takes place. This has already been stated by us (cf. W. J. Dilling, *Ann. App. Biol.*, 1926, xiii, 160); but Dr. Hammett does not appear to have read this and other of our papers, published long before he commenced his own investigations.

Perhaps Dr. Hammett will extend his observations to hyacinths and use stronger solutions for a much longer time—say, three to six months; he will then probably be able to find lead in the bulbs, as Patterson did, and to observe in those immersed in lead-free water some months later that the fresh root-growth is also stunted (vide W. Blair Bell, *Lancet*, 1924, i, 267, and W. Blair Bell and J. Patterson, *Ann. App. Biol.*, 1926, xiii, 157).

It is very wise of Dr. Hammett to infer that animal tissues may be even more permanently affected than vegetable. There is a considerable literature on the subject; but space forbids detailed reference to it.

We have also repeatedly mentioned in our clinical papers (cf. W. Blair Bell, *British Medical Journal*, 1929, i, 431) that arrest of growth in a neoplasm may be followed by regenesis after the cessation of lead administration, and we have in consequence recommended a more protracted period of treatment in certain cases. The "whole story," as propounded by Dr. Hammett, is, indeed, a very small fraction of the complete account.—I am, etc.,

Liverpool, May 22nd. W. BLAIR BELL.

DISTRIBUTION OF RADIUM.

SIR,—I would be very grateful for an authoritative opinion on a point of policy. Jersey, with its population of about 50,000, wishes to raise a thanksgiving fund for the King's recovery, the money to be spent in Jersey, the purpose proposed being relief of suffering. A public meeting was held on May 18th, and one member of our profession ardently advocated that such money as was collected should be used for the purchase of radium for local use. I opposed this as being possibly premature. First, on the ground that, the supply of radium being limited, such as is available could be used better elsewhere—that is, in large institutions and in the hands of skilled men. Secondly, that the use of radium was not yet quite out of the experimental stage, and that at some future time our present estimates of its value may have to be reconsidered. I thought that some scheme of preventive medicine would be more advisable.

It is quite possible that my views were wrong; but I did not feel justified in supporting the radium scheme in the circumstances. Of course, we would like to have unlimited radium to experiment with; but I do not think we are justified in asking a confiding public to subscribe. Some of my colleagues are attacking me in the public press for what they consider antiquated views. I do not mind that so long as my opinion is right. I think that in inexperienced hands more harm than good might result from the use of radium, as the temptation to use it in hopeless cases would be great.

Would it not be cheaper for a small community such as ours to hire radium as required? Sarcoma cases are not of everyday occurrence, nor a cancer case in a condition to be cured by radium; London is not very far off, and the suitable cases could go there.—I am, etc.,

Jersey, May 22nd. ALFRED E. HIND, F.R.C.S.Ed.

STELLWAG'S SIGN AND THE CERVICAL SYMPATHETIC.

SIR,—Dr. W. T. Collier, in your issue of May 25th (p. 973), refers to my advocacy of Stellwag's sign as a valuable diagnostic aid in early Graves's disease (*British Medical Journal*, May 11th, p. 848), and asks for some further information.

Stellwag's sign is the phenomenon of widening of the palpebral fissure due primarily to a condition of increased tonus which occurs in a thin sheet of unstriped muscle (Müller's palpebral muscle), which is anatomically associated with the levator palpebrae superioris muscle of the upper eyelid. The levator palpebrae superioris derives its motor supply from the oculo-motor, whereas Muller's muscle derives its motor supply from the cervical sympathetic. The point which I wished to make in my article is confirmed by this anatomical fact—namely, that in early Graves's disease sympatheticotonicity is a symptom which can be detected at any early stage of Graves's disease, and that improvement results from administering sodium veronal, a drug which I have shown elsewhere[1] overcomes the sympatheticotonicity which is frequently associated with the menopause.

It would seem that the eye is peculiarly affected in all conditions of sympatheticotonicity, since I have shown[2] that some women and most animals at the menopause have pupils which dilate when adrenaline is instilled into the conjunctival sac, a phenomenon which does not occur in normal individuals, but may occur in Graves's disease. Finally, in order to complete my thesis I would say that I have found Stellwag's sign present in three women at the menopause unassociated with Graves's disease.

Some success has attended operations on the cervical sympathetic for Graves's disease, notably those recorded by Mr. Cunliffe Shaw in this *Journal* (March 16th, p. 495). In Case ii of his series he refers to the general improvement which occurred after cervical sympathectomy, and noted the remarkable improvement which occurred in the condition of spastic retraction of the upper eyelids, which was a marked feature of the case prior to operation. It would seem that I have obtained similar results by administering a drug which has a powerful sedative action on the sympathetic nervous system generally.—I am, etc.,

London, W.1, May 24th. JOHN H. HANNAN.

Obituary.

HUGH LATHROP MURRAY, F.R.C.S.Ed., F.R.C.P.Ed.,

Honorary Medical Officer in Charge, Physiotherapy Department, Melbourne Hospital.

THE news of Dr. Hugh Lathrop Murray's death, on March 17th, in his sixtieth year, at his home near Melbourne, will be received with deep regret by his friends in this country and elsewhere. He was born at Ararat, Victoria, the second son of Kynaston Lathrop Murray, a former commissioner of the Victorian railways, and was educated at Queen's College, St. Kilda, Melbourne, and at Melbourne University. In his school and college days he was a very fine all-round athlete. While an undergraduate he won championships at swimming and putting the weight, and played lacrosse for Victoria against South Australia, New South Wales, and a visiting team from Canada. At 21 he threw the lacrosse ball 163 yards 2 feet, which remained the world's record until it was beaten by the present holder, his brother Cecil. Hugh Murray studied the later subjects of the medical curriculum at Edinburgh, where he obtained the triple qualification in 1892. He was then appointed resident physician to the late Dr. Andrew Smart at the Royal Edinburgh Infirmary, and in 1893 acted as medical superintendent of the Edinburgh Provident Dispensary. He obtained the diplomas of F.R.C.S.Ed. and M.R.C.P.Ed. in 1894, and was elected a Fellow of the Royal College of Physicians of Edinburgh in 1904.

On returning to Australia in 1895 he settled in East Malvern, a residential suburb of Melbourne, where he built up an extensive and successful general practice, and at the same time began to specialize in the then greatly developing fields of medical electricity and x-ray work. He was examining medical officer to the Victorian railways from 1898 to 1903, and in the latter year published an ophthalmological paper in the *Intercolonial Medical Journal*, embodying his experience and suggesting improvements in the tests for acuity of vision and hearing among railway employees. In 1901 he received the appointment of honorary medical electrician and lecturer on medical electricity at the Melbourne Hospital. At that time the department was housed in a single room, and run by him

[1] Hannan: *Practitioner*, October, 1927.
[2] *British Medical Journal*, November 24th, 1928, p. 931. Ibid., June 2nd, 1927, p. 14. *Endocrinology*, 12, 1928, pp. 59-64.

and an assistant attending on two afternoons weekly. Under Hugh Murray's regime, and due almost entirely to his efforts, it gradually developed into the present magnificent department of physiotherapy, occupying one complete wing of the hospital, having a staff of twelve assistants, and dealing with an average of 400 patients weekly. About 1909 the *x*-ray department was placed under a separate head, Murray having contracted an exposure dermatitis, which, although a constant source of annoyance, fortunately remained stationary, and his appointment on the staff was specially altered in name to that of honorary medical officer in charge of the department, whose growth under his supervision will be a lasting memorial of his fine record of service for the hospital and the community of Melbourne. Hugh Murray's professional and social activities, however, sought wider fields. He was the founder of the Australian Massage Association, and under his leadership the Victorian Branch succeeded, after repeated attempts, in inducing the State Parliament to pass a Massage Registration Act, regulating the practice of physiotherapy, and requiring the registration of all those engaged therein, including masseurs, physical culturists, medical electricians, and ultra-violet ray administrators. He was chairman of the Massage Registration Board from the passing of this Act until the end of 1928, in which year he published in the *Medical Journal of Australia* a notable paper based on his experience and life-work, and entitled "A plea for physiotherapy." During the war he served in 1916 as regimental medical officer with Australian battalions in Egypt, and in France with the 2nd Australian Division, and in 1917 in England, where, as captain A.A.M.C., he organized and was in charge of the department of medical electricity at No. 3 Australian Auxiliary Hospital. On his return to Melbourne he was promoted to major, and finally to lieutenant-colonel, A.A.M.C., medical officer in charge of the physiotherapy department of No. 11 General Hospital, Melbourne, where he carried on his army work till 1921, and successfully treated many cases requiring muscle re-education. During his years of war service his practice had suffered, and his efforts to re-establish it on his return undoubtedly had a good deal to do with the sudden break-up of his health in 1923. Hugh Murray always looked back on his student and hospital days in Edinburgh as among the happiest of his life, and no notice of his career would be complete without a picture of him as he then was in the prime of early manhood. He was a man of splendid physique, standing well over 6 ft., with the muscularity and the strength and also the activity and grace of movement of the all-round athlete, with handsome aquiline features and dark curly hair and moustache, and with the happy smiling eyes and cheerful voice that always bespoke the warmth and sincerity of the camaraderie and humanity of his nature. Among his many and quite exceptional endowments of body and mind, which he utilized well and faithfully, he will always be specially remembered by his old friends for the delightful experience and treats which he gave to them by his glorious singing. He was a really gifted singer, and was much in request in the Edinburgh days at public concerts and private social functions.

His eldest son is Dr. Hugh M. L. Murray, now working at University College, London; and his second son is Flying Officer Lee Murray, R.A.F., who with his wife recently flew in his Moth aeroplane from Peshawar to Camooweall, Queensland, en route to Melbourne.

C. C. E.

The death occurred, at the age of 60 years, of Dr. GEORGE BELL ANDERSON on May 15th, at his residence at Canonbie, Dumfriesshire. Dr. Anderson received his medical education at Edinburgh University, where he graduated M.B., C.M. in 1893. He succeeded to an extensive general practice at Canonbie on the death of his father (Dr. James Rae Anderson) in 1896, and, like his father, successfully carried on the practice single-handed until his death. He literally "died in harness," having visited patients to within a few hours of his decease, although he had been very ill since the previous Sunday. Dr. Anderson was a member of the British Medical Association, medical officer to the Canonbie Colliery, and medical officer and public vaccinator for Canonbie Parish. He was of a cheery disposition, endowed with indomitable pluck, and inured to the hardships inseparable from the life of a country practitioner. His high sense of honour earned the respect of his colleagues, and his innate kindness of heart endeared him to all. Much sympathy is felt for his widow and only child, a son who is studying medicine at Edinburgh University.

Dr. WILLIAM HANDCOCK, who died on May 17th, at the age of 63, was one of the most widely and deeply esteemed medical practitioners in Bradford, where he had been in practice for thirty-five years, building up a constantly increasing connexion which necessitated his taking first one, and later a second, partner. He received his medical education at Leeds, obtaining the diploma L.S.A. in 1892, and the L.R.C.P.I. in 1893. He took little part in public work, but was one of the general practitioners chosen to serve on the medical committee of the Bradford Municipal Hospital when it was established in 1920, and as long ago as 1904 he was president of the Bradford Medico-Chirurgical Society, being elected to this office at a younger age than any other man who has received the honour. He was unmarried. Mr. James Phillips, senior surgeon to the Bradford Royal Infirmary, writes: Handcock was one of the best type of general practitioner, a friend to all his patients—rich and poor alike—as well as a physician. He had an old-world courtesy of manners, which was appreciated even by the most up-to-date and "off-hand" of his younger patients, and he possessed the knowledge and self-confidence in his powers of diagnosis which inspired confidence in his patients. Throughout his busy life he was constantly keen on acquiring knowledge of advances in treatment, and he appeared to have an almost uncanny power of "spotting" the useful newer remedies and eschewing those which, however highly vaunted, a short experience later showed to be of little value. He could very rarely be persuaded to contribute to the programmes of the local medical society, but that he held very definite opinions and had the ability and courage to express them cogently and clearly was shown when he delivered his presidential address on the demerits of alcohol as a therapeutic agent.

Dr. GEORGE SKELTON STEPHENSON, who died on May 18th in his eighty-first year, studied under Lister at Edinburgh in the seventies; his neatly written note-books of those lectures are still carefully preserved. Many years subsequently he produced a delightful little book, *Reminiscences of a Student's Life*, in which he has many tales to tell of the great men of those days, and of his fellow students; among those who graduated M.B. with him in 1875 were Sir W. Watson Cheyne, C. S. Ryan, and Professor Rutherford Morison. From Edinburgh he went to Vienna for a further year's study of pathology and physiology under Brücke, but he also attended the skin clinics of Hebra and the surgical demonstrations of the celebrated Billroth, who was accustomed to sit in state while a student, summoned from the crowd, performed the day's operation under his instruction. There he developed a love for the German language and literature which persisted to his latest years. He returned to settle in his native place, Grimsby, at a time when there were few, if any, other doctors there, and he has related that he had to deal with no fewer than eight confinements in his first forty-eight hours of practice. He graduated M.D. in 1889. A colleague writes: Dr. Stephenson belonged to one of the oldest Grimsby families, and at one time took a great part in the public life of the town. He was a governor of the Old Clee Grammar School, and a magistrate for twenty-six years. As medical officer to the Post Office and a medical referee for North Lincolnshire he rendered long and excellent service, and for twenty-five years was senior surgeon to the Grimsby Hospital, retiring under the age limit. Although in failing health for some time, he continued his duties as public vaccinator to within three weeks of his death, when he was still

officially surgeon to the Admiralty. His interests were unusually various; he had a collection of stamps, was something of a connoisseur of old prints and furniture, was expert in the compounding of sauces and in other gastronomic lore, and his store of varied experiences and keen observations made him the best of company. I can speak very gratefully of the steady encouragement and constant generous kindness that in so many ways he invariably showed me, both as a student and as a beginner in general practice; a humanity which makes him well worthy to be ranked as a typical "doctor of the old school."

The following well-known foreign medical men have recently died: Dr. GEORGES GÉRARD, professor of ophthalmology at Lille, Dr. TRUC, honorary professor of clinical ophthalmology at Montpellier, aged 72; Dr. ZINOVY PETROVITCH SOLOVIOV, president of the Russian Red Cross, professor of social hygiene at Moscow and chief of the sanitary service of the Red Army; Dr. BAEZ, formerly president of the Republic of San Domingo and rector of the University; Dr. CHARLES TALAMON, a Paris physician who described the pneumococcus in 1883, and one of the earliest writers on appendicitis, aged 78; Professor PAUL JUNGMANN, director of the first medical clinic of the Charité Hospital, Berlin, and one of the founders of the *Klinische Wochenschrift*, aged 42; and Dr. José SEGOVIA of Caballero, professor of surgical pathology at Valencia, aged 31.

The Services.

DIRECTOR-GENERAL A.M.S.

MAJOR-GENERAL HAROLD B. FAWCUS, C.B., C.M.G., D.S.O., at present Deputy Director-General Army Medical Services, at the War Office, has been selected for the appointment of Director-General, in succession to Lieut.-General Sir Matthew Fell, K.C.B., C.M.G., who is retiring at his own wish in September next.

Colonel W. R. BLACKWELL, C.M.G., late R.A.M.C., has been selected to succeed Major-General Fawcus as Deputy Director-General A.M.S.

Major-General H. B. Fawcus was born in 1876, and has been D.D.G.A.M.S. since 1926. He graduated M.B., B.S.Durh. in 1899, entered the R.A.M.C. in the following year, and took the D.P.H.Camb. in 1905. He was assistant professor at the Royal Army Medical College, 1912–14, and instructor to the School of Army Sanitation, 1914. He served in the South African campaign, 1900–2, receiving the Queen's medal and four clasps and the King's medal and two clasps, and also in the European war, 1914–18, when he was mentioned six times in dispatches and awarded the C.M.G., D.S.O., and the Croix de Guerre.

Colonel W. R. Blackwell entered the R.A.M.C. in 1899, and served during the South African campaign, 1899–1902, when he was mentioned in dispatches, and in the European war, 1914–18 (dispatches thrice). He also served in the Afghanistan campaign, 1919–20. He was D.A.D.G.M.S. at General Headquarters, France, in 1918, and A.D.M.S., Army Headquarters, India, in 1919–23.

OSBORNE CONVALESCENT HOME FOR OFFICERS.

THE KING has approved the appointment of the following to the consulting staff of King Edward VII Convalescent Home for Officers at Osborne, Isle of Wight: Sir Cuthbert Wallace, K.C.M.G., C.B., F.R.C.S., Professor George E. Gask, C.M.G., D.S.O., F.R.C.S., Professor C. C. Choyce, M.D., F.R.C.S., E. Rock Carling, M.B., B.S., F.R.C.S., Sir William H. Willcox, K.C.I.E., C.B., C.M.G., F.R.C.P., C. H. Miller, C.B.E., M.D., F.R.C.P., H. Morley Fletcher, M.D., F.R.C.P., Sir James Purves-Stewart, K.C.M.G., C.B., M.D., F.R.C.P.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

At a congregation held on May 24th the following medical degrees were conferred:

M.D.—V. D. Wigglesworth, L. B. Winter.

M.B., B.Chir.—J. R. H. Towers, H. W. Nicholson.

THE BRITISH MEDICAL JOURNAL

Medical News.

THE Prince of Wales, as President of King Edward's Hospital Fund for London, has appointed Mr. Edward Robert Peacock as Treasurer of the Fund and Chairman of the Finance Committee, in succession to the late Lord Revelstoke.

THE Duke of Connaught will present the prizes to successful students at St. Thomas's Hospital Medical School on Tuesday, June 11th, at 3 p.m., in the Governors' Hall.

THE Section of Surgery of the Royal Society of Medicine holding its next meeting at Sheffield on Wednesday, June 12t from 2 to 6 p.m.

THE Lord Mayor of London, as President of the Metropolitan Hospital Sunday Fund, announces that it has been arranged that the collections on Hospital Sunday, June 2nd, will form part of the Thank-offering Fund for the King's recovery. The whole of the amount paid into the Hospital Sunday Fund collection will be distributed to the hospitals and medical charities of London by the committee of that Fund in the usual way.

SIR Arthur Stanley and Sir Harold Pink, the president and chairman, respectively, of the British Hospitals Association, have addressed a letter to the lord mayors and mayors in the provinces with reference to the collections to be made in places of worship on June 16th, as a thanksgiving for the King's recovery. They suggest that appeals should be opened in the local press in this connexion by the mayors for the benefit of local hospitals, it being made clear that those who respond are in fact taking part in the national thanksgiving. They add that if these subscription lists are closed on Saturday, June 15th, this will allow the total amount collected this means and through the church offertories to be ascertained and announced early in the following week. Donors who wish to help provincial hospitals generally without especially marking their donations for any particular institution are invited to send them to the president of the British Hospitals Association, at 19, Berkeley Street, W.1. Such moneys will be administered in accordance with any wishes expressed by the donors.

THE Fellowship of Medicine announces that a course for M.R.C.P. candidates is now in progress at the Medical Society of London, 11, Chandos Street, Cavendish Square; lectures are delivered twice weekly on Tuesdays and Fridays at 8.30 p.m. Professor Hugh MacLean will lecture on June 4th on nephritis, with special reference to cardiovascular involvement, and on June 7th on recent views on diabetes and insulin. On Thursday, June 6th, at 3.30 p.m., Dr. Willmott Evans will give a clinical demonstration at the Hospital for Skin Diseases, Blackfriars Road, and on Saturday, June 8th, Mr. F. D. Saner will give a clinical demonstration on fractures, at 10.30 a.m., at the Royal Northern Hospital, Holloway Road. There is no fee for attendance at either of the demonstrations. From June 3rd to 22nd, at the Royal Westminster Ophthalmic Hospital, there will be a course consisting of clinical instruction and operations from 2.30 p.m. onwards, and at 5 p.m. on Mondays Thursdays, and Fridays special classes will be given. From June 10th to 22nd there will be a special course in gynæcology at the Chelsea Hospital for Women consisting of instruction by operations and lectures, including pathological demonstrations. During the same period a course in diseases of the chest will be held at the City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, comprising special demonstrations in the wards and out-patient departments, and formal lectures by the staff. The entire practice of the hospital is open to those taking the course. A week's whole-day course in proctology will be available at St. Mark's Hospital from June 24th to 29th. An intensive course in medicine, surgery, and the specialties will be held at the Prince of Wales's General Hospital, from June 24th to July 6th, in conjunction with the North Middlesex Hospital and other associated hospitals. The Children's Clinic, in association with other hospitals, such as the Royal Waterloo Hospital and the National Heart Hospital, will conduct a two weeks' course in children's diseases from June 24th to July 7th. All information regarding the foregoing courses and particulars of the general course can be obtained from the secretary of the Fellowship, 1, Wimpole Street, W.1.

LORD MESTON, Chancellor of the University of Aberdeen, presided over the Congress of the Royal Institute of Public Health, at Zürich, from May 15th to 20th. At the inaugural session he thanked the president of the Swiss Republic for the cordial welcome extended to the congress, and commented on the contributions to modern civilization made in Zürich in the past as well as in the present. The president, in his reply, emphasized the value of applying the model

discoveries of science in connexion with hygiene to communal life in a State. The delegates, in addition to sessional discussions, visited the local centres of interest, particular attention being paid to the notable efforts of the local authorities to ensure the preservation of the public health.

AT the thirtieth annual meeting of the Lebanon Hospital for Mental Diseases, which was held on May 21st, at the Friends House, London, Dr. Fortescue Fox, who was in the chair, mentioned his recent visit to Syria, and emphasized the importance and magnitude of the task of caring for the insane in that country. He described the work undertaken by the Lebanon Hospital (to which reference was made in the *Journal* of August 20th, 1927, at page 331) and announced that the hospital had now become to a great extent self-supporting, but it still looked to the Central Committee in London and affiliated committees for money for such capital expenses as new buildings and structural improvements. Dr. E. W. G. Masterman, chairman of the London Committee, stated that authority had been telegraphed to proceed with the provision of additional private rooms for acute female cases at a cost of £300, but two new houses were needed, one for men and one for women. A proposal was under consideration for erecting a New Zealand memorial house with fifty beds. Other speakers supported the claims of this hospital, of which the London office is at 139, Marylebone Road, N.W.1.

WE are informed by Professor O. S. Gibbs, M.B., of Dalhousie University, Halifax, Nova Scotia, that Messrs. Parke, Davis and Co. have given a donation of £300 to the department of pharmacology to enable an assistant to investigate the action of the separated pituitary principles on the renal function of the fowl, following up some work already published. This gift, purely for research, is the first of its kind to the medical school in Nova Scotia. Messrs. Parke, Davis and Co. have previously presented drugs and specimens for teaching.

AT the last meeting of the House Committee of the Royal East Sussex Hospital at Hastings it was reported by the secretary that during April accidents to motor drivers and their passengers cost the institution £102 2s. 8d.; the amount received from the injured in acknowledgement of the help given was only £12 1s. 6d.

THE Minister of Health has issued a circular (No. 989) to food and drug authorities in England and Wales calling their attention to the Artificial Cream Act, 1929, which comes into operation on June 1st. This Act provides that cream substitutes hitherto known as reconstituted cream, and usually prepared by emulsifying butter, dried skimmed milk, and water, shall not be sold under a designation including the word "cream" unless this word is immediately preceded by the word "artificial." Receptacles must be similarly labelled, and premises manufacturing or selling artificial cream must be registered with the local authority.

AN account of sclerosis of the retinal vessels was contributed by Dr. N. Pines to the March, April, and May issues of the *British Journal of Ophthalmology*. This has been reprinted as a pamphlet by the publishers of that periodical, Messrs. George Pulman and Sons, Ltd., 24, Thayer Street, W.1.

BURROUGHS WELLCOME and Co. (Australia) Ltd. have removed their offices and warehouses from Kent Street, Sydney, to Victoria Street, Waterloo, Sydney, where commodious premises have been built near the company's works and laboratories.

THE Home Office has recently issued a second edition of its memorandum on First Aid and Ambulance for Factories and Workshops (Welfare Pamphlet No. 4, H.M. Stationery Office, price 4d.) for the guidance of overseers of factories and workshops in establishing a satisfactory first-aid and ambulance service.

A REPORT on the school of midwifery of Hong-Kong University was published by Professor R. E. Tottenham in the *Caduceus* for November, 1928, and a reprint has now reached us. It is illustrated by numerous photographs of the large Tsan Yuk Maternity Hospital, for the founding of which the late Dr. Alice Hickling was largely responsible. Professor Tottenham gives details of the satisfactory progress of obstetrical and gynaecological treatment and training in the island, and supplies a statistical account of the maternity and gynaecological departments of this hospital and the special wards in the Government Civil Hospital.

THE Water Pollution Research Board of the Department of Scientific and Industrial Research has issued a further summary of current literature relating to water supplies, sewage, trade waste waters, river pollution, and miscellaneous subjects. The booklet has been placed in the Library of the British Medical Association, where it may be consulted.

A NEW Scandinavian journal with the title *Nordisk Medisinsk Tidsskrift* has been started by a group of well-known medical men in Denmark, Finland, Norway, and Sweden. It is published weekly in Stockholm (Eriksbergsgatan 1 A, Stockholm) and is printed in one or other of the Scandinavian languages. In the second number, a biographical sketch of Richard Sievers is followed by three signed original articles, and by abstracts from other Scandinavian journals. There are already many medical journals of high standing in the Scandinavian countries, but their output of scientific work is so great that the need was felt for a journal which would unite the Scandinavian research workers on common ground.

THE following appointments have recently been made in foreign faculties of medicine: Professor G. C. Riquier has been transferred from Sassari to the chair of neuropathology and psychiatry at Bari, Professor J. Staeheliu has succeeded Professor H. Rudin in the chair of psychiatry at Basle, Professor K. Reuter of Hamburg has been appointed professor of legal medicine at Breslau, Professor L. Preti has been transferred from Catania to the chair of medical pathology at Parma, and Professor C. Lotti has been transferred from Cagliari to the chair of medical pathology at Pisa.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediocra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

INTRACTABLE DIARRHOEA IN A DIABETIC PATIENT.

"R. M." asks for suggestions for the treatment of persistent and uncontrollable diarrhoea—occurring at intervals during sleep—in a man aged about 60, who is a diabetic, and is taking insulin. None of the usual remedies appear to have any lasting effect. X-ray examinations have proved negative. The stools show only lack of digestion of fat and meat fibres. Pancreatic extract tablets, emetine-bismuth iodide, small doses of castor oil, bismuth, etc., have all failed to control this very distressing disability. The condition has lasted for eight months; the loss of flesh and weakness are getting more marked. The insulin has not been taken very regularly.

DURATION OF LIVER TREATMENT OF PERNICIOUS ANAEMIA.

"W. L." asks for advice regarding treatment of pernicious anaemia. Is it necessary to continue the administration of liver extract when the blood picture has become nearly normal, and, if so, how often per week?

MALARIA IN SOUTHERN RHODESIA.

DR. F. T. ANDERSON (Cheltenham) writes: Can any reader tell me if malaria and blackwater fever are prevalent throughout Southern Rhodesia? In the article on education and the prevention of malaria (May 18th, p. 919) it is stated "blackwater fever which has been such a bane to white colonists in Southern Rhodesia."

SEQUELS OF INJECTIONS OF VARICOSE VEINS.

DR. A. HINES (Manchester) writes: The statement of "M.B., C.M." on May 25th (p. 979) is quite correct. Many of my patients have had injection operations on both legs. The "tired" and "heavy" feeling, local oedema, and eczematous skin persist, and may even get worse. I find an Unna's paste legging of great benefit, but it has to be worn always when getting about.

PAINFUL HEEL.

"A. G. N." writes: "Giza" (May 11th, p. 893) should exclude an earlier wearing away of the boot heel at a particular part from method of walking. I found this to be the case with me. The *left* postero-lateral part of my boot heel wears away first, and if this is not soon repaired I get a most painful foot. I have had several cases of *painful heel due to this simple cause, and in each*, as soon as the boot was repaired early, the pain disappeared. I *never have it now*, owing to the early attention, but I am warned as soon as the boot wears down. An easy method of relieving pain of the heel when in bed is *simply to let it lie* outside on the edge of the mattress.

INCOME TAX.

Depreciation of Motor Car.

"D. D. M." bought a £330 car in February, 1926; what can be claim for depreciation allowance?

*** Depreciation should be claimed at the time the return is *made for assessment*, or, *at any rate*, within the time limited by *statute for the lodging of appeals—that is, within twenty-one days from the issue of the notice of assessment. We gather* that in the present case the inspector of taxes is willing to make an allowance for the year 1928-29, but not for earlier years. On that basis the allowances, etc., work out as follows:

1926-27—£330 at 15 per cent.—that is, £50 not allowed.
1927-28—£330 − £50 = £280 at 15 per cent.—that is, £42 not allowed.
1928-29—£280 − £42 = £238 at 15 per cent.—that is, £36 allowed.
1929-30—£238 − £36 = £202 at 15 per cent.—that is, £30 to be allowed.

It will be seen that "D. D. M." has definitely lost, so far as the depreciation allowance is concerned, the first two years' amounts —that is, £50 + £42 = £92. But this can, no doubt, be picked up when his car is replaced, by the operation of the obsolescence allowance; for instance, suppose he sells the car in 1929 for £120 and buys another to replace it, then he will be able to claim the obsolescence allowance in computing his taxable *profits* for *assessment* for 1930-31, the allowance being £330 − (£36 + £30 depreciation allowances *granted*) − £120 (received for the car), net allowance, £144. If he had received the depreciation allowances for the two early years the obsolescence allowance would have been £330 − (£50 + £42 + £36 + £30) − £120—that is, £52.

Obsolescence Allowance.

"M. S." bought a motor-cycle combination in 1922 for £150, and by 1929-30 the depreciation allowances had reduced that amount to £62. He then sold the combination for £22 and bought a car for £135. He has claimed a *deduction* of £62 − £22 = £40 "for replacement" (strictly it should be for obsolescence), but the claim is refused on the ground that "no allowance can be made for the *loss on replacement* . . . as this is a capital loss."

*** "M. S." *should* write pointing out that the claim should *be regarded as one* for "obsolescence allowance." We are quite clear that that claim should be admitted, and if it is still refused we suggest that our correspondent should put the facts before the authorities at Somerset House and ask for their ruling on the matter.

"T. C. L." bought a car in 1925 for £435, and for the three years ending April 5th, 1929, received depreciation allowances amounting in the aggregate to £213. He sold the car on March 28th, 1929, for £90, and bought a new car for £315. What should he claim?

*** (1) Obsolescence allowance £435 − £213 − £50 = £172, and (2) depreciation on the new car £315 at 20 per cent.—that is, £63. We have assumed that "T. C. L." makes his accounts up to March 31st or April 5th; if the date chosen is earlier than March 28th—for example, December 31st—the allowances stated above will affect his liability for 1930-31 and not 1929-30, and the depreciation allowance for 1929-30 will be £222 at 20 per cent. = £44, and the obsolescence allowance, affecting the 1930-31 liability, will be £435 − £257 − £50 = £128.

Purchase of Share in Partnership.

"T. D. M." has bought a one-fifth share in a partnership as from April, 1928. His cash income for his first year was about £700, but his share of the partnership tax has been calculated on the basis of approximately £900, the other £200 representing the *value of his share of* outstanding debts at the end of the first year.

*** The basis on which the £900 is calculated is correct. Income tax is payable on the amount of the earnings *of the year*, whether received in cash or still due.

LETTERS, NOTES, ETC.

ANTIBACTERIAL POTENCY OF THE BLOOD IN PREGNANCY.

DR. A. W. CRAWFORD (Bolton) writes: I was much interested by the communication on the bactericidal property of the blood *during pregnancy made by* Drs. Miller and Whittaker, and *reported* in your issue of May 18th (p. 904). The following quotations are taken from a pamphlet published years ago by me in relation to serums which had been used by Cabanis and Foulquier: "Those *patients suffering from* cancer and other various diseases were calling upon the reparative powers of the system which *most likely* were making a supreme effort to withstand the invasion of foreign and poisonous materials thrown into the blood, and that the blood of pregnant women is highly charged with formative material which is embryonic in character." "Those serums have in some way stirred up the formative material of *cancerous subjects*." I have said before that it is this formative material of the blood which is defective in pernicious anaemia, and is analogous to the *defective* epithelial *substance in cancer*. It is the corpuscles of the blood which are attacked by poisonous invasion. Their defence and increase are carried on by the formative material—namely, *platelets*, *plasma*, or polymorphs—and they are of epithelial origin. The above bears out my theory of cancer. What researchers have now to look for is the influence which *retards* or prevents the growth of this formative material at its very source. There is a point I should like to draw your attention to. After delivery the *antibacterial and nutritive* power disappears in ten days. Thereafter there is a temporary increase of a substance which is purely *antibacterial*, as the nutritive element is not required for the sustenance of the child. In the last paragraph of the paper the authors admit there is some, as yet, [illegible] which stimulates activity of *growth and* [illegible] *nracter*. Dr. Leitch has said he intended [illegible] to activity of growth, as the germ theory had no foundation.

CHRONIC ACNE.

DR. STEPHEN M. LAWRENCE (Trinidad) reports the following two cases of acne of long duration. The first was a young man who suffered severely from pustular acne; he was treated with *x rays*, without success, small abscesses *forming from time to time*. About a year ago a large abscess over the jaw was opened, after which *acute inflammation spread to the neck*, with a considerable cellulitis. Free incision and the removal of sloughing tissue brought about rapid improvement, which included the disappearance of the acne spots, the skin having since remained quite smooth. The second patient was a young woman, aged 21, who had had acne indurata *since the age of* 18. The use of a liquid soap gave only temporary relief. Under vaccine treatment there has been great improvement. The initial dose of combined acne vaccine *injected was 2,000 million—ten times* the normal dose. *No reaction followed*, and within a week an injection of half this dose was given. As there was only slight fever and malaise the doses were repeated, and, finally, the maximum dose of 2,000 million was *given twice a week*. The pimples now only return occasionally and soon disappear. Dr. Lawrence considers that vaccine therapy might be more effective if larger doses than usual were employed, especially when the disease is of long standing.

A WARNING.

DR. DONALD F. JOHNSTONE (Chatham) *writes to warn readers* against a man describing himself as a Canadian doctor who consults medical practitioners in England, presumably in order to obtain morphine by false pretences. "His procedure is to state that he has a severe renal colic and haematuria, and then ask for morphine to relieve the pain. He gives a distant address, and refuses offers of treatment at home, in case it may alarm his wife. He talks so convincingly that I was completely deceived, and his simulation of a renal colic is excellent. He is shabbily dressed, but talks with an educated Canadian accent, and he is quite au fait with all matters medical. There are two scars on [illegible] from some gall-bladder operation and [illegible] out that immediately after obtaining a dose of morphine [illegible] atropine from me he consulted two other doctors near by and obtained further supplies from them. In all three cases the story was the same, and we were all promised a box of Canadian apples for our kindness. Needless to say, these have not arrived."

THE USE OF THE TONSILS.

DR. J. MCNAMARA (Kensington) writes: Dr. Gardner (May 25th, p. 980) says that in Abyssinia it is *the custom* to remove the tonsils of all children, without evil results. It is highly improbable that the native of Abyssinia, *by a horse-hair noose*, can remove the whole or even half of a tonsil. Even if the whole of the tonsil were removed without evil results in the children of a *people living* in the healthy, sun-swept mountain atmosphere of Abyssinia, it does not follow that similar results would attend a similar operation in the children of people living in the polluted atmosphere *of our cities*. As an argument against the theory *that the* tonsils are useless after 5 years of age, I may mention that in animals of mucky habits, like the pig, the defensive ring of tonsillar tissue around *the throat* is highly developed.

THE Editor of the *Cambridge University Medical Society Magazine* asks *us to* state that communications should be addressed to him *care* of Messrs. Heffer and Sons, Ltd., 4, Petty Cury, Cambridge.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals, will be found *at pages* 42, 43, 44, 46, 47, 50, 51, 52, and 53 of our advertisement columns, and advertisements as to partnerships *and locumtenencies* at pages 48 and 49.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 211.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

512. The Clinical Syndrome of Coronary Obstruction.

P. GOVAERTS (*Le Scalpel*, March 9th, 1929, p. 253) asserts that coronary obstruction should be recognized as a clinical entity, though in many textbooks its description is lost among details regarding angina pectoris. Both ventricles receive branches from both coronary arteries, but the apex of the left ventricle derives its blood supply exclusively from the descending branch of the left coronary artery—a vessel which is, of all those supplying the heart, most nearly an "end artery." The nodes of Keith and Tawara have a variable blood supply, sometimes from one and sometimes from the other of the main coronary trunks; hence the inconstancy of rhythmic disturbance following obstruction. The extent of the anastomoses between terminal branches of the main coronary trunks is variable; it is sometimes so great that occlusion of a main trunk may give rise only to trifling clinical disturbance. The anastomosis is never so complete, however, as to prevent altogether some degree of necrosis in the area supplied by the occluded vessel, though the area of necrosis may be much reduced. The cause of coronary obstruction is most commonly arterio-sclerosis; sometimes a syphilitic aortitis may cause a gradual occlusion of the coronaries at their origin, but obstruction by embolic fragments from endocardial vegetations is more rare. Obliteration of minor vessels may give rise to small degrees of cardiac insufficiency with occasional attacks of pain; in the case of larger vessels there is usually sudden violent pain referred chiefly to the left precordium and the epigastric region, and death may be instantaneous or may follow an aggravation of pain. If recovery ensues after obstruction of a major vessel it is usually slow, and a more or less serious cardiac insufficiency persists. Govaerts lays stress on the diagnostic importance of the sudden onset of pain in major coronary obstruction and also its character, particularly its frequent reference to the epigastrium, but he notes that sometimes the pain may not be very severe, though in these cases the occurrence of a sudden dyspnoea, followed by signs of cardiac insufficiency, should indicate the diagnosis. The results of obstruction depend on the extent of the fibrosis which follows the inevitable necrosis of a greater or less area of the cardiac muscle. Occlusion of the descending branch of the left coronary artery—the "site of election" in coronary obstruction—may result (if instant death from ventricular fibrillation does not ensue) in the formation of a cardiac aneurysm from dilatation of the large area of fibrosis in the heart wall. Among the signs and symptoms of cardiac insufficiency lowering of blood pressure is the most constant; dyspnoea is common, and there may be typical pulmonary œdema or renal and hepatic stasis. The electro-cardiograph may indicate modifications, even in the absence of rhythmic disturbance, and without gross irregularities the pulse may show a remarkable instability of rate. The signs of infarction are a moderate leucocytosis of 12,000 to 15,000, and the occurrence of pericardial friction. Infarction more commonly reaches the endocardium than the pericardium; in the former case emboli may be formed, lodging in the pulmonary circulation if from the right side of the heart, or in the brain or other regions of the systemic circulation if from the left side. Differential diagnosis may have to be made from acute abdominal conditions and angina pectoris; in anginal attacks the blood pressure is frequently high and may become higher during the attack. Other simulating conditions are pulmonary embolism secondary to venous thrombosis, and rupture of the aorta; this rare condition seldom occurs without preceding signs of aneurysm. The prognosis is not invariably bad, but the general resistance to disease is always lowered, and cardiac arrhythmia, if it happens to result, frequently persists. The most important part of treatment is rest. For the immediate cardiac collapse camphor and strychnine are of service, and for the later persistent insufficiency digitalis and strophanthus are indicated.

513 A Para-dysentery Epidemic.

S. A. LARSEN (*Ugeskrift for Laeger*, April 18th, 1929, p. 309) gives an account of the first milk-borne para-dysentery epidemic described in Denmark. It occurred in a small town of between four and five thousand inhabitants, and altogether 116 cases were examined. The onset was sudden, 59 persons suffering from sanguineous and mucous diarrhoea between June 10th and June 15th, 1927. After June 24th the number of new cases fell to an average of one or two a day, until the epidemic ceased on July 13th. The milk supply of the town came from three dairies and a certain number of private farms. It was ascertained that 103 of the 116 patients had consumed milk from the same dairy, which supplied barely 30 per cent. of the town's total milk supply. Of the 59 patients whose symptoms began on or before June 15th, as many as 58 had consumed milk from the dairy in question. Of the 40 patients who fell ill between June 16th and June 25th, 36 had consumed milk from this dairy. Of the 16 who fell ill between June 26th and July 13th, 8 had consumed milk from the same dairy. It will thus be seen that in the initial stage of this epidemic, while it was still a "vehicle epidemic," the infection could be traced to one and the same source in almost every case, whereas the longer the epidemic lasted the more did it assume the character of a "contact epidemic," with several new sources of infection. It transpired that two girls, living on one of the six farms supplying the dairy, had suffered from violent blood-stained and mucous diarrhoea, one of them falling ill on June 11th, the other on June 17th. The latter was found still to harbour Sonne's para-dysentery bacillus in the faeces when they were examined about the end of June. The same bacillus was isolated at the Serum Institute in Copenhagen from all the six samples of faeces of the first acute cases examined bacteriologically on June 22nd.

514. The Cardio-vascular System in Typhus Fever.

P. DECOURT (*Paris Méd.*, April 13th, 1929, p. 357) states that the heart is one of the organs most frequently affected in typhus, though often only in a mild degree. During the first two days the pulse is strong, regular, and about 90, but on the third or fourth day it tends to become soft and not infrequently dicrotic. There is often a dissociation between the pulse and the temperature at this stage, the pulse being 90 and the temperature 104°. By the sixth or seventh day the pulse is between 110 and 130 in every case, and subsequently follows the temperature. Towards the twelfth day, shortly before the temperature falls, the pulse becomes softer and there are frequently extra-systoles and inequality of the radial pulses. As the temperature drops the symptoms become more marked and may persist for two or three days after the temperature has become normal. Moreover, there is often at this stage a dangerous cardiac instability, the pulse, which has become normal, suddenly showing a fresh acceleration as the result of a slight effort. The blood pressure is lowered in typhus as in all grave infections. At the onset the depression is slight, but subsequently tends to increase, especially towards the twelfth or fourteenth day, when there is a rapid fall of blood pressure, chiefly affecting the maximum tension. The blood pressure generally rises again as the temperature falls, but often remains low for a very long time after the temperature has dropped. The cardiac complications of typhus chiefly resemble those of typhoid fever, and consist in extra-systoles, tachycardia, and collapse, giving rise to sudden death.

515. Syphilitic Pancreatitis.

M. CAMPAGNA (*Journ. Amer. Med. Assoc.*, March 16th, 1929, p. 894) remarks that syphilis is occasionally masked by manifestations of some other disease symptom-complex; he reports a case of syphilitic pancreatitis which exactly simulated diabetes. A man, aged 28, who had previously been healthy and gave no evidence of venereal infection, received a severe injury to the right foot. On examination a moderate degree of arterio-sclerosis and complete sloughing of the right great and second toes were noted. The pain was intense. The blood sugar reading was 175 mg. per 100 c.cm. of blood, and the Wassermann reaction was negative. With diabetic diet and insulin the blood sugar dropped to 80 mg., but no improvement occurred in the foot, which was accordingly amputated. The stump did not heal satisfactorily, and the blood sugar rose to 150 mg. Rigid antisyphilitic treatment with neoarsphenamine was then instituted with dramatic results. The unhealthy unhealed stump began to granulate rapidly, and before the third weekly injection the old indolent sore had completely closed. For sixteen months there has been no rise of the blood sugar above normal; the weight has increased, and the patient has been able to resume work without diet restriction and without insulin. The Wassermann reaction remained negative throughout. Campagna emphasizes the fact that there were no physical signs of syphilis, and that before the onset of the gangrene the patient considered himself healthy. Apparently the pancreas was the only organ involved.

516. **Hepatitis in Influenza.**

T. VIEGNER and O. WELLNER (*Med. Welt*, May 4th, 1929, p. 647) record a case of influenza complicated by mild diffuse hepatitis in a man aged 40. The symptoms were rise of temperature, painful enlargement of the liver, subicteric discoloration of the skin and sclerotics, with large quantities of laevorotatory sugar and acetone in the urine. The patient recovered. The authors remark that no previous cases of this complication have been recorded.

517. **Syphilis as a Cause of Accidents.**

O. D. MEYER (*Rev. Sud-Amer. de Endocrin.*, March 15th, 1929, p. 186) maintains that when a person is suffering from syphilis, congenital or acquired, his fitness in a mental, moral, and physical respect is impaired, and he is more susceptible to accidents than normal persons. In his own experience he has found that syphilitic persons have shown a greater percentage of accidents and accidental injuries than the non-syphilitic. Unlike other patients the syphilitic are usually ambulatory, and ordinarily assume the responsibilities of life, with the result that owing to general forgetfulness and lack of alertness and intelligent attention to details they are the constant victims and perpetrators of accidents.

518. **Massive Pulmonary Atelectasis.**

H. K. MOHLER (*Amer. Journ. Med. Sci.*, April, 1929, p. 507) reports two cases of pulmonary atelectasis; one of these occurred during pneumonia and the other was associated with cancer of the stomach. He thinks that pulmonary atelectasis occurs more frequently in association with non-surgical and non-traumatic cases than is generally recognized, and he considers it a definite clinical entity which can be readily diagnosed by the physical signs and clinical course. Displacement of the heart and mediastinum towards the affected side is usually the [illegible] in making the diagnosis, but when the [illegible] the lobules of the lung it may be necessary to verify the clinical findings by x-ray examinations. Mohler believes that the prognosis is generally good; he attributes any unfavourable results to the condition with which the collapse is associated rather than to the collapse itself; he adds, however, that the prognosis is less favourable if the collapse is bilateral and persistent. He favours the mechanical obstruction theory as regards its etiology.

519. **Urethritis not Due to Gonorrhoea.**

ACCORDING to J. WENDLBERGER (*Wien. klin. Woch.*, March 21st, 1929, p. 358) non-gonorrhoeal urethritis is not very rare. He has recently seen three cases in young men who denied any previous venereal infection. Bacteriological examination of smears and cultures showed the presence of staphylococci and streptococci, pneumococci, and *B. coli*, as well as other bacteria which occurred occasionally. Less uncommon were pseudo-diphtheria bacilli, accompanied by a greyish-white discharge. In the first case diphtheria bacilli were associated with staphylococci and pseudo-diphtheria bacilli. No gonococci could be found on repeated examination of smears and cultures. In every case the urethritis was very intractable, and each patient exhibited similar symptoms and bacteriological findings. The author considers that the discovery of true diphtheria bacilli in the male urethra is deserving of attention, and the possibility of this infection should not be overlooked. He refers to the analogous cases of diphtherial conjunctivitis and of diphtherial vulvo-vaginitis in little girls.

520. **Multiple Sclerosis.**

THOUGH multiple sclerosis does not occur with sufficient frequency in families to justify calling it a familial disease, many cases have been noted in different members of the same family, and G. W. ROBINSON, sen. and jun. (*Journ. Amer. Med. Assoc.*, March 16th, 1929, p. 892), report eight cases of this disease in three generations of one family. In addition to the patient himself, a brother, three sisters, and three children of the brother have had multiple sclerosis, while the father and three aunts apparently suffered from the same disease. In these cases the disease usually developed about the age of 30; no trace of syphilis was found, and the spinal fluid and blood were normal. The incidence (2 to 3 per cent.) of multiple sclerosis is not as high as that of other organic nervous diseases. It usually begins between the ages of 25 and 35, and is probably due to some infection resulting in an inflammation of the nervous system. The duration varies from six to twenty-five years, and usually from eight to ten years is the limit of life after the disease can be diagnosed definitely by the symptoms. The treatment is unsatisfactory. The arsenicals are helpful, and very striking improvement has followed antityphoid inoculation. Good results also have been obtained from spinal drainage and the injection of arsphenaminized blood serum intraspinally—a treatment similar to the Swift-Ellis method of treating cerebro-spinal syphilis.

Surgery.

521. **Dilatation of Oesophagus for Cardiospasm.**

E. S. JUDD, P. P. VINSON, and D. G. GREENLEE (*Surg., Gynecol. and Obstet.*, April 1929, p. 494) report two recent cases, a man aged 60 and a woman aged 52, in which dilatation of the oesophagus for cardiospasm was performed from below through a gastrostomy opening. Treatment from above with the hydrostatic dilator, guided over a previously swallowed silk thread, 20 to 24 feet water pressure being used, gave good results in approximately 700 cases at the Mayo Clinic. The method was classed as effectual in 75 per cent. of the cases; recurrence was expected within a year in the remaining 25 per cent., necessitating further dilatation. In the two cases recorded, after several unsuccessful attempts with the hydrostatic dilator from above, the cardia was dilated from below by passing first one and then two fingers into it through an opening on the anterior wall of the stomach, a guiding thread having been previously swallowed. The opening in the stomach was finally closed with chromic catgut and interrupted silk sutures. In the case of the man there was a mild recurrence of symptoms after nine months, but it was then perfectly easy to pass the hydrostatic dilator from above and to stretch the cardia; this afforded complete relief. In the case of the woman, three weeks after operation, x rays showed diminution of the previous oesophageal dilatation and tortuosity and a good-sized opening into the stomach; in three months she was eating all types of food without difficulty. In these cases failure to dilate from above was due to marked angulation of the lower oesophagus, but it is added that the majority of such cases generally yield to treatment with the hydrostatic dilator without resort being necessary to dilatation from below. It was found that the silk thread was as valuable a guide to manual dilatation from below as it was to dilatation from above, and that, though seldom necessary, manual dilatation from below was successful when needed.

522. **Pulmonary Infarction and Embolism.**

C. E. FARR and ROSE SPIEGEL (*Ann. of Surg.*, April, 1929, p. 481) define pulmonary embolism as the metastasis of suspended abnormal elements in the blood, through the right heart, to the lesser circulation, with the resultant effects due to impaction in a pulmonary artery. It may occur in typhoid fever, chronic cardiac valvular disease, lobar pneumonia, tuberculosis, leukaemia; it may also be post-operative. The etiology of thrombosis is summarized as changes in the blood plasma and formed elements, changes in the blood stream, and changes in the vessel wall. Coagulation thrombi depend on the release of fibrin by the interaction of fibrinogen, prothrombin, and calcium salts in the plasma, with thrombokinase from injured leucocytes, blood platelets, or tissue cells; trauma predisposes to thrombosis by the release of thrombokinase from the injured tissue cells. Stagnation thrombi are attributed to local stasis above venous valves, in varices and aneurysms, and in the cardiac chambers, and resemble post-mortem clots. A thrombus is most dangerous when it juts into a larger lumen at the point of junction of a tributary. The proximal part of the femoral vein and the pelvic plexus are the favourite sites, and in abdominal surgery thrombosis originates most often in the left femoral vein. The onset of symptoms is accompanied by a sharp rise in temperature without proportionate changes in pulse and respiration. In pulmonary infarction the early condition is one of hyperaemia followed by local consolidation, and sometimes, by pleural involvement before the terminal cicatrization and formation of the wedge-shaped area. The prognosis is more favourable when phlebitis accompanies the pulmonary symptoms due to the anatomy of the thrombosed vein. Sometimes peripheral phlebitis apparently follows a pulmonary infarction and may be due to the same cause. The symptoms of pulmonary infarction are pleural pain, discomfort in breathing, cough, frothy sputum with bright or clotted blood, sharp rise in temperature, friction rub, small area of slight consolidation, and slightly diminished resonance. The condition can occur at any age, and out of 61 cases recorded 33 were fatal. It was found to be nearly twice as frequent in males as in females, and observations showed that pulmonary embolism predominated in the months of unstable weather.

523. **Appendix Operation Statistics.**

J. JESSEN (*Ugeskrift for Laeger*, April 25th, 1929, p. 329) has been prompted, by the recent agitation in Denmark in favour of the conservative treatment of appendicitis, to publish the records of a large provincial hospital for the 11-year period 1917–27, with a view to confounding the advocacy of conservative treatment and justifying operative treatment. Of the 910 cases of appendicitis admitted in this period, 751 were operated on, 513 *à chaud* and 238 *à froid*. Of the 49 deaths, as many as 47 occurred among the patients operated on *à chaud*; the remaining 2 deaths (both from embolism) belonged to the *à froid* operations. Among the *à chaud* cases there were 177 which were operated on within twenty-four hours of the onset of symptoms, and the mortality was only 1.1 per cent. (2 deaths). It rose to 9.9 per cent. when the interval between the first symptom and the operation was between one and two days. It rose to 17.4 per cent. when this interval was between two and three days, and to 27.2 per cent. when it was three to four days. Among 170 out of 177 cases operated on *à chaud* within the first twenty-four hours of the onset of symptoms, there were as many as 36 in which the appendix was already gangrenous, and 29 (17 per cent.) in which perforation and peritonitis were already demonstrable. By the time the symptoms had lasted three days before an operation *à chaud*, as many as 15 out of 29 patients in this category were found already to be suffering from perforation peritonitis. Of the 513 patients operated on *à chaud*, there were 464 suited for the following analysis: 212 cases of simple appendicitis with a mortality of 2.3 per cent.; 106 cases of gangrenous appendicitis with a mortality of 6.5 per cent.; and 146 cases of perforation appendicitis with a mortality of 23.9 per cent. Of the 47 deaths among the *à chaud* operations, there were only five cases in which simple appendicitis was found; in 7 cases it was gangrenous, and in 35 there was perforation with peritonitis at the time of the operation.

524. **Tuberculosis of the Mesenteric Glands.**

DELIVET (*Bull. et Mém. Soc. Chir. de Paris*, March, 1929, p. 187) discusses a case reported by Dervaux of primary tuberculosis of the mesenteric glands in a girl, aged 18, the symptoms of which led to a diagnosis of appendicitis or tuberculous infection arising in the genital organs. The patient complained of discomfort and pain in the right iliac fossa, with fatigue, loss of appetite and weight, and very marked constipation. She had ceased to menstruate for about three months, but had a purulent white discharge. Examination showed abdominal distension with tenderness over the appendix, and a hard round mass in the region of the right ovary. The temperature was 101.4° and the pulse 100. A right lateral laparotomy disclosed a healthy appendix, but numerous enlarged glands were found in the meso-appendix, round the caecum, and the terminal portion of the ileum. Since these were, in most cases, adherent to vessels, and the glands were so numerous, it was considered dangerous to remove them. Appendicectomy appeared too limited an operation to be of any use, and a radical operation was impossible, so intervention was confined to a simple exploratory laparotomy with exposure of the parts to the air for several minutes. The patient made a good recovery, with the complete disappearance of functional disorders and a rapid gain in weight.

525. **Treatment of Varicose Veins by Injection.**

ELIZA A. MELKON (*New England Journ. Med.*, April 4th, 1929, p. 690) describes the method she uses when treating varicose veins by injection. Four solutions have been employed: (1) sodium salicylate 20 to 40 per cent.; (2) metaphen 1 in 500; (3) sodium chloride 18 to 25 per cent.; and (4) quinine hydrochloride and urethane. When the skin is healthy she prefers the first of these, but when the veins are surrounded by unhealthy skin quinine and urethane is said to give more satisfactory results, and this solution is effective also in cases of haemorrhoids. The patient is kept recumbent when the veins are large, but when they are small the injection is given in the sitting posture. Thin-walled sacs should be avoided, a quick puncture be made, and the fluid injected slowly. Treatment is generally repeated two or three times a week. There are rarely any marked after-results, though occasionally a mild cellulitis occurs due to leakage of the fluid into the surrounding tissues; this clears up in about a week. This type of treatment is said to be contraindicated where there is extensive oedema; when the patient is cold and in poor health; in cases of cardio-renal disease; or where there has been recent phlebitis. The patient is able to continue at his daily work. The author believes that this method will supersede surgical methods on account of its safety, ease of administration, relative inexpensiveness, and satisfactory results.

526. **Malignant Lymphoma.**

M. GOLDENBURG (*Amer. Journ. Ophthalmol.*, February, 1929, p. 116) describes a case of this condition. A woman, aged 56, had noticed for the previous five months a thickening of the left lower eyelid. On examination the left lower lid bulged forward to some extent, but there was no redness or oedema. The lower punctum was not in apposition with the eyeball. On retraction of the lower lid two rolls of greyish-pink tissue were to be seen extending across the whole length of the lower fornix. This mass on palpation was found to be fairly hard, circumscribed, and extending back into the orbit. The overlying conjunctiva was freely movable. A Wassermann test was negative. A small section of the growth was removed for microscopical examination, and showed a dense lymphocytic accumulation beneath the epithelium. Under local anaesthesia the neoplasm was removed. The pathologist reported that there was an extensive accumulation of large lymphocytic cells, with tendency to infiltrate the surrounding tissue. The growth was quite vascular, but the stroma was delicate, and a diagnosis of malignant lymphoma seemed to be warranted. The wound healed satisfactorily, and subsequently four applications of radium were made. There has been no recurrence since the operation two and a half years ago.

Therapeutics.

527. **The Treatment of Diabetes.**

ACCORDING to L. I. BRAUN (*Journ. Med. Assoc. of South Africa*, March 23rd, 1929, p. 151) diabetic cases fall into four groups according to age: childhood, in which it is always grave; from 15 to 40; from 40 to 55; and the aged. The third group of cases (40 to 55) is the one most commonly encountered and most easily controlled. Insulin is not often necessary in these patients unless acute signs arise, and the treatment of a typical patient, aged 42, is outlined; he should be carefully examined for oral sepsis, pulmonary tuberculosis, cataract or retinitis, and for arterial degeneration in the legs. The first step, then, is to free the patient from excess of sugar; this can be done in one of three ways: by starvation, which Braun never employs; by the early use of insulin, which he follows only in very severe cases; or by a basal diet, which is one which will supply all the necessary bodily energy and heat without loss of weight. The patient is kept on such a diet for a week. If he becomes sugar-free by the fifth day he does not require insulin; if he is not free on the sixth day he is a borderline case; and if not by the eighth he will certainly need insulin. When the blood sugar figure, estimated after a meal and not fasting, reaches a normal level the diet is increased; Braun usually allows 30 calories per kilogram of body weight. In cases needing insulin small doses are usually given once a day, and these are gradually increased until the maximum effect, without over-insulinization, is reached with this one dose. If possible the case should be controlled with one injection daily, though it is rarely advisable to administer more than 20 units in one dose. It is wiser not to give insulin at night as hypoglycaemia may occur during sleep. The author has found that the use of insulin may safely be discontinued, dependent on the severity of the condition. If coma supervenes, as much fluid as possible should be given and insulin be injected in large doses. Carbohydrate in two forms, milk and glucose, is also advised, 1.5 grams of carbohydrate for each unit of insulin. In surgical cases the patient must be rendered free of sugar and acid bodies before operation. Insulin is nearly always essential, since mere dieting will not suffice owing to the lowered tolerance due to the suppuration.

528. **Therapeutical Value of Blood Transfusion.**

R. B. LLOYD (*Indian Med. Gaz.*, March, 1929, p. 121) defines four groups of cases in which blood transfusion is indicated: (1) acute anaemia, caused by sudden and grave haemorrhage; (2) anaemia of gradual onset; (3) haemorrhagic diseases, such as haemophilia and melaena neonatorum; and (4) general toxaemias. In the second and last groups blood transfusion is not entirely devoid of risks. In ascertaining the compatibility of different bloods, importance is attached to the procedure of direct matching. Lloyd groups separately the red cells and serums of the donor and recipient by means of stock grouping serums and cells of known groups. If the cells and serums of both prove to belong to the same group a direct match is made—that is, the serum of the recipient is tested against the donor's cells, and *vice versa*. If both these reactions are negative for agglutination, the two persons are of the same group and their bloods are compatible. Slight risks are attached to the employment of universal (Group IV) donors. Despite the great dilution of the donor's blood when

injected, the titre of the iso-agglutinin, on the presence of which the reaction depends, may be abnormally high in the case of a particular Group IV serum, and be extremely active even after dilution by the recipient's blood. This explains the occasional occurrence of severe reactions after transfusion of blood from a universal donor. Diseases may be communicated by transfusion; the most important of these is syphilis, and every donor should have his Wassermann reaction tested. Groups are inherited according to the Mendelian law, and the near relations of patients are not necessarily of the same blood group. The investigations of Happ have shown that the blood group of the infant is frequently different from that of the mother, and therefore it is unsafe to transfuse an infant from its mother without first performing grouping tests. The symptoms following incompatible blood transfusion resemble those of anaphylactic shock. The mode of action of a successful transfusion is not fully known, but, from the improvement in the red cell count, it is obvious that the action is far more than merely mechanical, and transfusion evidently acts as a powerful stimulant to the marrow. The questions as to whether the possession of a particular blood group implies any special immunity from or liability to disease, and whether the blood group ever changes, are discussed. Lloyd insists that both grouping and direct matching should always be performed where possible, but that the essential procedure is the direct match, which should never be omitted.

A Morphine Derivative.

529. W. NONNENBRUCH and E. RISCHAWY (*Deut. med. Woch.*, February 22nd, 1929, p. 305) report on the clinical uses of acetyl-dimethyl-dihydrothebaine (acedicon), which is administered by the mouth in the form of small tablets containing 0.01 gram, or subcutaneously, 1 ampoule of 1 c.cm. containing the same dose. Injected subcutaneously it is said to be free from irritation, and the effect commences within fifteen minutes. Taken by the mouth the action is less pronounced and is delayed for half an hour. Unpleasant complications are not met with. The most suitable dose was 0.01 gram, but in cases of severe pain, or if sleep was needed, 0.02 gram may be given. The drug has no noticeable injurious influence on the frequency or depth of breathing, but acts favourably on different kinds of dyspnœa. Given for cough the amount of sputum is not diminished, but the incentive to cough is lessened, and the paroxysms of coughing are rarer though stronger; it is useful in haemoptysis. In cases of diarrhœa or colitis the pain is often relieved, but the action of the bowels is not restrained. The analgesic action of 0.01 gram of acedicon subcutaneously is about the same as that of morphine, though the hypnotic action is 50 per cent. less; the cough-restraining action is similar but seems to last longer. A dose of acedicon represents four times the dose of codeine, and generally its analgesic and hypnotic action is incomparably greater than codeine. Compared with opium extract acedicon is said to have markedly less effect on the digestive tract, but its cough-restraining and hypnotic actions are greater. The sleep-inducing action of acedicon is very subject to individual idiosyncrasy; the patient is easily awakened, and without the unpleasant effects associated with morphine. Given by the mouth it rarely induced sleep.

Scarlet Fever Antitoxin.

530. N. T. WELFORD (*Amer. Journ. Dis. Child.*, March, 1929, p. 553) records his observations on 492 cases of scarlet fever admitted to the Municipal Contagious Diseases Hospital, Chicago, within a period of six months. Of these, 217 were treated with antitoxin and 275 received no serum. Approximately 60 per cent. of the severe cases showed some improvement after antitoxin, the average dose of which was 10 c.cm. intramuscularly. The incidence of complications in the group treated with scarlet fever antitoxin was 41 per cent., as compared with 32 per cent. in the group not treated with serum. When, however, the severe cases only were considered, 56 per cent. of the group treated with serum developed complications, as compared with 62 per cent. of the controls. In the mild and moderate cases no favourable effect was observed, and the use of antitoxin unnecessarily exposed the patients to the risk of severe serum reactions. The mortality rate of the severe cases in the group that did not receive antitoxin was almost double that of the group in which antitoxin was used.

Indications for Using Acetyl Choline.

531. M. VILLARET and L. JUSTIN-BESANÇON (*Med. Journ. and Record*, March 20th, 1929, p. 343) review briefly the present knowledge of acetyl choline and the conditions in which it can be beneficially used. (See *Journal*, April 13th, p. 691.) The anhydrous hydrochloride salt, stabilized with glucose, is employed, but certain precautions are necessary in its administration. It must be pure, prepared immediately before use, and its activity be physiologically controlled; it can then be safely injected subcutaneously or intramuscularly; such injections are painless and produce no local or general reactions. If given intravenously the drug is said to be dangerous, and its oral administration is useless. The chief action of acetyl choline is to lower blood pressure, but it also influences the heart, muscles, blood, and humoral equilibrium. Its therapeutic indications are numerous owing to its vaso-dilating property and to its effect on the vago-sympathetic equilibrium. The drug can be used with marked benefit in Raynaud's disease, in gangrene arising from arteritis (whether presenile, senile, or diabetic), and in other troubles of like nature; it favourably influences the arterial pressure in hypertension. The dilating property of acetyl choline has been found of value in ocular conditions due to spasm or thrombosis of the retinal artery, and in hypertonicity of the globe; it has also a remarkably effective action on the profuse sweats of tuberculosis. Owing to the way in which it modifies the calibre of the arteries and arterioles acetyl choline has been tried in angina pectoris, habitual constipation, lead colic, and in cerebral spasms (transitory hemiplegia).

Laryngology and Otology.

Osteomyelitis following Sinus Infections.

532. G. CANUYT (*Arch. Internat. de Laryngol.*, December, 1928, p. 1153) reviews the etiology, pathology, and treatment of spreading osteomyelitis of the cranial bones. The condition is rare as a post-operative complication; suppuration of the maxillary sinus, and above all of the frontal sinus, is the most frequent cause. The infection is carried along the venous system into the dura mater. Usually the case is one that has been operated on for mastoiditis, maxillary sinusitis, or more usually for frontal sinusitis. Several days after the operation the patient is found to be suffering from fever, acute headache, and abundant suppuration. Further intervention is resorted to, but the infection spreads to neighbouring bones and, by the formation of extradural abscesses, leads to meningitis, septicæmia, or encephalitis, which nearly always terminates fatally. Bacteriological examination shows a varied flora—streptococci, staphylococci, pneumococci, and enterococci—but the infection is chiefly streptococcal in origin. The number and perfect formation of the streptococcal chains were marked features of the author's cases, and the organisms were of the haemolytic variety. Canuyt points out the value of radiography in these cases as showing the extent to which necrosis has attacked the cranial bones. He also used vaccino-therapy in all his cases, both by subcutaneous injection and local application to the seat of the infection. Large doses of antistreptococcal serum were tried without result, and treatment with salts of silver and iodine also proved valueless. The author adds that he has no experience of deep radiotherapy which may be worth trying. Surgical treatment consists in keeping the maxillary and frontal sinuses well opened and drained. Retention of pus is to be avoided at all costs, but once the sutures have been passed by the invading infection further surgical interference is of no avail.

The Physiology of Vestibular Reflexes.

533. A. C. IVY (*Arch. of Otolaryngol.*, February, 1929, p. 129) reviews recent work on the physiology of vestibular reflexes as shown by movements of the eyes, and records the view held now that the slow component, or deviation, is due entirely to stimulation of the vestibule. Considerable doubt has been thrown on the part played by the semicircular canals in the production of deviation. The canals have been ligatured, removed, and their position has been altered, but the response to stimulation has remained the same. The more modern theory is that the changes in inertia of fluid in the utricle cause changes of pressure and tension in the cristæ of the ampullæ and thus provoke the deviation of the eyeballs. The nystagmus is controlled by some subcortical centre—probably in the oculo-motor group—over which the cerebrum exerts control. It is possible that the deviation of the eyeball stimulates sensory nerve endings in the orbit and that these provoke the quick return. It has been shown that both deviation and nystagmus occur after decerebration, and that nystagmoid movements are more marked after hemidecerebration when the deviation is to the side opposite to the lesion. When deviation is to the same side as the lesion nystagmus is either absent or reduced. These results confirm the finding that the cerebrum exerts an inhibitory action on nystagmus.

534. The Tonsil and Throat Infections.

A. DELLA CIOPPA (*Rif. Med.*, January 26th, 1929, p. 131) has examined 220 children (120 boys and 100 girls) between the ages of 4 and 12, in the antituberculosis institute in Naples, and has noted the normal and abnormal conditions of their tonsils in relation to the presence of lymphadenitis of the neck, more especially of the suprahyoid region and the angle of the maxilla, and their predisposition to tuberculosis. He found the tonsils were normal in 23 per cent., but hypertrophied in 77 per cent. Of those with normal tonsils, 43 per cent. showed cervical lymphadenitis and 27 per cent. with suprahyoid adenitis. Of those with abnormal tonsils, 92 per cent. had cervical adenitis and 86 per cent. infection of the suprahyoid glands. In the 51 cases with normal tonsils there were adenoid growths in the nasopharynx in 19 (37 per cent.), and among the 169 with abnormal tonsils 107 (63 per cent.) had adenoid growths. Among the 51 normals, 11 (24 per cent.) gave positive Pirquet reactions, and among the 169 abnormal tonsils 80 (51 per cent.) were Pirquet positive. The high percentage of lymphadenitis and positive Pirquet reactions met with in those children with abnormal tonsils indicates the importance of inflammation of the tonsil in relation to invasion by tuberculosis.

535. Diagnosis of Disease in the Paranasal Sinuses.

R. H. FRASER (*Radiology*, January, 1929, p. 6) dilutes lipiodol with paraffin or olive oil, reducing it to 14 per cent. iodine content, for sinus use. The two main methods of introducing the oil are direct injection and suffusion; the former is used most frequently, particularly following irrigation for discharge, in chronic suppuration of the maxillary antrum. Complete fillings are obtained. The indirect method, in which the nasal fossa is used as a reservoir from which to fill the sinuses by gravity, the patient's head being more or less inverted, is advisable for ethmoid, frontal, sphenoid, and early maxillary antrum cases. Evidence is obtained of choked sinus or filling defect, or delayed emptying. From a purely roentgenographic point of view the lipiodol method (1) reveals incipient changes earlier, demarcating soft tissue growths; (2) multiplies the number or extent of separation lines, rendering them capable of interpretation; (3) results in the reporting of thicknesses and masses as well as density.

Obstetrics and Gynaecology.

536. Circulatory Changes in Pregnancy.

D. C. HARE and M. N. KARN (*Quart. Journ. Med.*, April, 1929, p. 381) record the results of a clinical investigation of the blood pressure, pulse rate, and response to exercise during normal pregnancy, with some observations after confinement. Most of the patients were examined several times at about monthly intervals, while other records were from patients seen only once, 106 making 468 attendances and 145 being seen once or twice only. A more limited study during the six months following confinement was based upon 203 records. The conditions of examination were uniform, the patients being seen in the morning, and, after resting recumbent for twenty minutes, the pulse rate and right and left arm readings of the blood pressure were recorded. These observations were repeated after sitting upright for five minutes, and the pulse rate standing was then taken for two consecutive minutes in four half-minute records. A light exercise test was made by stepping to a metronome thirty times in sixty seconds on to a stool seven inches high, moving the feet consecutively (right up, left up, right down, left down) so that the whole body weight was raised and lowered to complete one step. Four half-minute counts of the pulse were then taken with the patient sitting. The average systolic pressure of healthy pregnant women was found to be lower than that of non-pregnant women, with a tendency to a lower pressure in the middle period than in the early weeks, and a slight rise in the last three months, any considerable rise being associated with the onset of some toxic condition. No significant difference was found between the mean diastolic pressure in pregnant and in non-pregnant women. The pulse pressure is lower than that of non-pregnant women, and falls as pregnancy advances; the pulse rate is not significantly altered, and after exercise does not differ from the controls. No evidence was noted of embarrassment of the circulation during the later months of pregnancy. The authors state that the mean systolic pressure remains during the first week after parturition at the same level as in the last months of pregnancy, subsequently reaching a low mean and returning slowly to the control figure; the diastolic pressure falls to normal from the raised figure of the last weeks of pregnancy and varies but little subsequently. The mean resting pulse rate following parturition becomes lower than at any period of pregnancy, and remains below the control figure.

537. Prevention of Cancer of the Cervix.

R. R. HUGGINS (*Amer. Journ. Obstet. and Gynecol*, April, 1929, p. 589) contrasts the reduction in tuberculosis mortality with the slight increase in cancer and the little change in puerperal sepsis. He attributes this failure in dealing with cancer and puerperal sepsis to a lack of understanding and appreciation of the causative factors. He urges that problems relating to the cervix should be surveyed from the viewpoint of preventive medicine. In the region of the cervix the epithelium is of four types. The secretion from the uterine body differs from that of the cervix, and accordingly infection may differ in its effects in these two situations. While normally the cervical mucosa is impervious to organisms, the minor injuries of labour cause an epithelial displacement. Cells which in the healthy state are bathed in an alkaline medium, in disease are swamped in a strong acid which assists a coincident infection in producing an erosion. Huggins believes that subinvolution, though due sometimes to uterine infection, may also result from cervical spread, and he advises that every puerperal patient should be kept under observation until the cervix is healed. Students should be carefully taught the pathology of erosion, should be able to identify microscopically the changes which precede malignancy, and should be fully conversant with the appearances of early malignancy. Irritation, in the form of an acid secretion playing on a cervical erosion, may be an important factor in the etiology of cervical carcinoma; and in this connexion Huggins points out that the changes present in the cervix, resulting from injury, irritation, and chronic inflammation, differ very little from those of early cancer. Hunner's method of treatment by cauterization is highly commended. In cases where the cervical infection is deep-seated and chronic the entire area must be excised under anaesthesia with a cautery or an endotherm knife. In the last ten years he has treated 2,985 chronic cases in this way, and in the series there has been no case of cervical carcinoma. Acute erosion is treated by the small cautery without an anaesthetic. In conclusion, he states that 85 per cent. of women who had borne children have cervicitis, and it is by treating the cervix carefully in the puerperium and afterwards that carcinoma cervicis and puerperal sepsis will very probably be lessened.

538. Uterine Evacuation under Spinal Anaesthesia.

P. BALARD and R. MAHON (*Gynécol. et Obstét.*, February, 1929, p. 91) report six cases in which the cervix was manually dilated under spinal anaesthesia, and the method of Delmas employed with immediate delivery of the child following internal version. Under spinal anaesthesia the cervix can be dilated fully with subsequent extraction of the child, even when the patient is not in labour. The indications for intervention in the six cases recorded were: placenta praevia in two cases; pelvic contraction in two cases; albuminuria in one case; and prolapse of the cord in the last case. There were five foetal deaths, but the authors believe that the results would have been the same in this respect had any other method been adopted. They point out that in three cases where the weight of the child exceeded 4 lb. severe cervical laceration, extending into the vaginal vault, occurred, and also that the ease with which version was performed depended largely on the size of the child and on the amount of fluid in the uterus. The puerperium was normal in all, but the authors point out the consequences that might result from injuries to the soft parts, such as their patients received. According to Balard and Mahon this method is not one of choice for the contracted pelvis either in a primipara or a multipara. In cases of prolapsed cord, with the cervix practically closed, it should only be preferred to a low Caesarean operation if conditions are unsuitable for the latter. In cases of central placenta praevia it should only be used when dealing with a premature child, and when the maternal blood pressure is not too low to be a contraindication. Lastly, in cases of albuminuria, where the life of the child may be already in jeopardy, and where the maternal blood pressure is high, Delmas's method seems very commendable.

539. Neo-natal Sequels of Maternal Pyelitis.

F. VOZZA (*Ann. di Ostet. e Ginecol.*, March, 1929, p. 251) remarks that although *B. coli* pyelonephritis in pregnancy is accompanied in about one-quarter of cases by premature labour and foetal death, little is known of the pathology of the infants who survive such conditions. A certain number of cases have been recorded in which infants born of mothers suffering from pyelitis have manifested *B. coli* septicaemia or *B. coli* infections of the gastro-intestinal tract, and in the present paper three instances are described in which the infants suffered from ophthalmia due to a colon bacillus morphologically, biologically, and culturally identical

with that recovered from the maternal urine. The conjunctivitis, which was attended with much palpebral oedema and pus formation, was noted from the twenty-fourth to the forty-eighth hour after birth; it yielded readily to treatment by lavage and instillations of protargol or zinc sulphate. Vozza concludes that a transplacental transference of *B. coli* in these cases is improbable, and that the conjunctiva was infected either from the liquor amnii (in one case *B. coli* was obtained in almost pure culture from the purulent lochia) or directly from the urine involuntarily voided during childbirth. In two cases, however, prophylactic instillation of silver nitrate into the conjunctival sacs had been carried out in the routine way after the birth.

Pathology.

540. The Basal Metabolism in Hypertension.

E. HAYASAKA (*Tohoku Journ. of Exper. Med.*, February 15th, 1929, p. 270) reviews the question of the basal metabolism in patients with raised blood pressure, and gives an account of the research work on this subject conducted by him in the laboratory of Professor Kato's medical clinic at the Tohoku Imperial University. The estimation of the metabolism was carried out by means of Benedict's portable respiration apparatus, and the results are shown in percentages of the normal values prepared by Sanborn. Controls were taken of seven normal subjects and of ten mild cases (gastritis, neurasthenia) with normal blood pressure. The normal subjects approximated Sanborn's standards; the mild cases showed an average basal metabolic rate of − 15.9. In fourteen cases of benign hypertension the rate was occasionally slightly increased, the average being − 6. In six cases of malignant hypertension the basal metabolic rate was increased, the average being + 18. In these cases the systolic blood pressure ranged from 181 to 270 mm. Hg, and there was definite hypertrophy and dilatation. It was found that in the same individual the basal metabolic rate varied almost proportionately to the blood pressure. In seven cases of secondary contracted kidneys there was a reduced rate (average − 14), but in the uraemic state this rose to + 27. No definite relation was found between the basal metabolic rate and the retention of non-protein nitrogenous substances in the blood. The author concludes that in patients with hypertension, whose renal function remains normal, the basal metabolism may be almost normal, while in the majority of cases of hypertension, in which the renal function is injured (primary and secondary contracted kidney), it is apparently changed.

541. Cancer and Tuberculosis.

T. CHERRY (*Med. Journ. of Australia*, February 9th, 1929, p. 160) has collected statistical evidence supporting the view that with few exceptions a high or low incidence of pulmonary tuberculosis between the ages of 25 and 45 was followed by a corresponding high or low incidence of cancer in all subsequent age periods, and that in all deaths above the age of 25 in each successive five-year period the combined deaths from the two diseases have always constituted 20 per cent. of the total deaths, the increase in cancer compensating for the reduction in phthisis. These facts suggested to Cherry the idea that cancer might attack those persons who were hyper-resistant to tuberculosis, and that the factor which precipitated the crisis in the life-history of the cells of the body was a fresh invasion by the bacillus. A series of experiments was made along the lines of this theory, mice being used as the test animals, since they are liable to spontaneous cancer and are also highly resistant to tuberculosis. After the inoculation of small numbers of tubercle bacilli beneath the cuticle, the 6 per cent. incidence of tumours in these mice rose to 55 per cent. in the males and 71 per cent. in the females. About one-third of these tumours were mesoblastic and two-thirds epithelial. In type and situation these neoplasms differed materially from any hitherto recorded in mice. Tumours were found in the thyroid, pylorus, colon, pancreas, prostate, and bladder, organs in which they had never been observed in this animal. The mice also exhibited an associated syndrome of lymphoid changes; the relationship of these to leukaemia and pseudo-leukaemia and to lympho-sarcoma, and the etiology of the condition, are discussed. Death occurred on the average in eight and a half months after inoculation. The results, so far as diversity of type is concerned, approximated more nearly to cancer in man, particularly with regard to the selection of the pylorus by nearly half the tumours. These facts, Cherry thinks, afford strong presumptive evidence that the tubercle bacillus was the indirect but essential agent in the promotion of neoplastic growth in the mice.

542. Cultivation of the Foot-and-mouth Virus.

P. RINJARD and Mlle CORDIER (*C. R. Soc. de Biologie*, April 19th, 1929, p. 977) describe a method by which they have been able to cultivate the virus of foot-and-mouth disease in the sheep. It consists in producing an artificial oedema by the injection of croton oil into the subcutaneous tissues, and thus providing a suitable medium in which the virus is able to multiply. Their technique was as follows. Into the right side of the thorax of a sheep they inoculated 100 c.cm. of saline, four drops of croton oil, and 5 c.cm. of serum taken from a guinea-pig which had been inoculated with foot-and-mouth virus, and the blood of which was shown to be virulent. Into the left side they inoculated saline and croton oil, but no virus. Twenty-four hours later blood was taken from the jugular vein of the sheep and lymph from each site of inoculation, and titrated for virulence on a number of guinea-pigs. A similar titration was repeated twenty-four hours later, when the animal was killed. The results showed that at the twenty-fourth hour the lymph from the right side alone was virulent. At the forty-eighth hour the lymph from the right side was infective in a dilution of 1/400; the lymph from the left side in a dilution of 1/4, but not in 1/400; the blood proved virulent, but in what dilution is not stated. It would appear, therefore, that the virus, introduced in the form of guinea-pig's serum, is able to multiply abundantly in a sterile oedema, and may invade the blood stream. The authors hope that by this method it will prove possible to cultivate the virus in a pure condition in large quantity.

543. Effects of Massive Doses of Irradiated Ergosterol.

I. J. KLEIN (*Journ. Amer. Med. Assoc.*, February 23rd, 1929, p. 631), having produced rickets in albino rats with a low phosphorus rickotogenic diet, placed them in three groups. One group, which served as the control, was exposed to reflected daylight. The second group received, in addition, 2 per cent. cod-liver oil. The third group was given daily 20,000 to 100,000 times the dose of irradiated ergosterol in sesame oil necessary to cure rickets. The experiment lasted for one month, during which the rickotogenic diet was continued. The author found these massive doses of ergosterol caused: (1) anorexia and loss of weight; (2) the blood calcium concentration to be 50 per cent. higher than in the other two groups, while the phosphorus remained approximately the same; and (3) the protein concentration of the serum to be less and the albumin-globulin ratio higher than in group (2). The bones of all the animals in group (3) were healed, but the results indicate that these greatly excessive doses did harm.

544. M. COMEL (*Biochemica e Terapia Sperimentale*, March 31st, 1929, p. 81) has observed the effects of large doses of irradiated ergosterol administered subcutaneously to healthy and to rachitic rats. Rickets was induced by MacCallum's diet No. 4025. After five weeks' feeding, six severely rachitic rats, of which three were more than 5 weeks old, were given 5 mg. of a 1 per cent. solution of irradiated ergosterol subcutaneously on alternate days, receiving in all seventeen injections. They soon reacted to the treatment, and after twenty days showed no signs of rickets either clinically or radiographically, and increased by two-thirds of their original weight. A control group of rats, healthy and of the same age, received the same dose, and similarly increased in weight. Two groups of older rats (three months), one healthy, the other with induced rickets, were given 10 mg. of radiated ergosterol subcutaneously on alternate days, receiving in all ten doses; the animals showed no ill effects and increased in weight. One of the healthy group gave birth to young which were unaffected by this enormous dose of ergosterol. The author finds that the doses employed had no injurious or toxic action, but there was a marked curative and calcium-fixing effect. There was no evidence of precipitation of insoluble calcium salts in the tissues and organs.

545. Bacteriology of Epidemic Sore Throat.

E. S. ROBINSON (*Journ. Bacteriol.*, January, 1929, p. 53) compared the streptococci isolated from patients suffering from epidemic sore throat with those isolated from the milk of a cow which was suspected of being responsible for the outbreak. Both organisms were capsulated haemolytic streptococci, which produced acid in glucose, lactose, sucrose, and salicin, but not in [illegible] inulin, or raffinose, and which belonged to the lo[illegible]oup (pH 5.3-5.7) in glucose broth. Be[illegible] virulent for mice. There appeared to be no difference between the human and the bovine strains, and there seemed to be little doubt that the cow's milk was responsible for the human epidemic.

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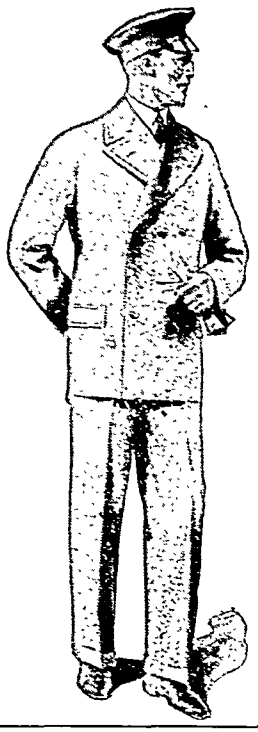

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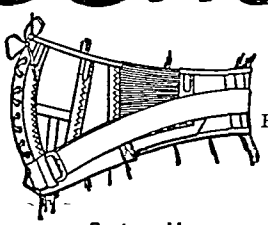

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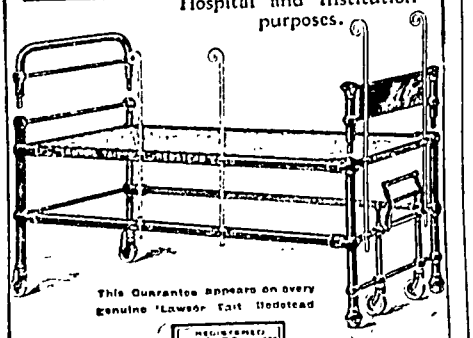

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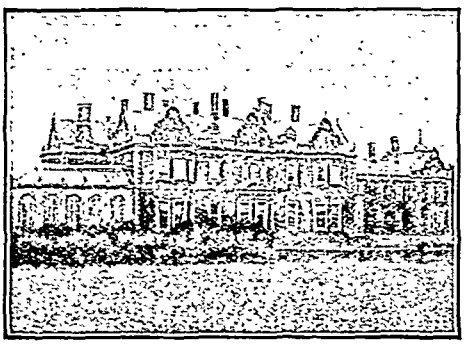

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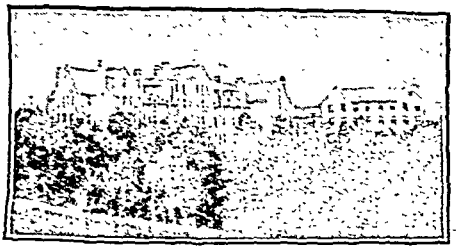

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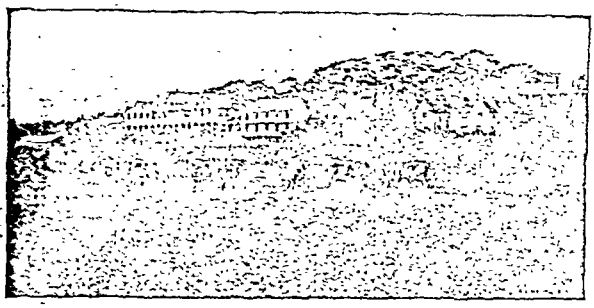

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The Examiners for the Final Examinations will be invited as occasion arises to take part in the Higher Examinations, but the Senate have resolved that in certain cases in which the work is heavy they shall not be required to do so.

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Biology. Chemistry. Physics.

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NOTE.—One of the two Examiners appointed in Anatomy will be required to act for Science Examinations also.

For Final and Higher Examinations for Medical Degrees.
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Applications will also be invited for Associate Examiners in Medicine, Obstetric Medicine, Pathology, and Surgery. A separate application form must be used for Associate Examinerships and the word "Associate" must be written on it.

Application form (or forms if more than one Examinership is applied for) and particulars of the remuneration and duties can be obtained from the External Registrar.

Candidates must send in their names to the External Registrar, GEO. F. GOODCHILD, M.A., B.Sc., with any attestation of their qualifications they may think desirable on or before Monday, July 7th, 1929. (Envelopes should be marked "Examinership.")

The Senate desire that no application of any kind be made to individual members.

If testimonials are submitted one copy only of each is required. In no case should original testimonials be submitted. If more than one Examinership is applied for a separate and complete application must be forwarded in respect of each Examinership. The appointments will be made by the Senate in November. Applicants who desire that the result should be communicated to them are requested to enclose a stamped and addressed envelope with their applications.

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The second three months must be spent in London, where courses of lectures are given at the British Institute of Radiology, and are combined with clinical instruction in the large teaching hospitals.

The third three months may be spent in recognized hospitals in London or elsewhere, the student acting as clinical assistant or in similar capacity.

Further information as to the Courses may be obtained from:

G. STEAD, M.A., Secretary for the Diploma, and Lecturer in Physics as applied to Medical Radiology, Cavendish Laboratory, Cambridge.
A. E. BARCLAY, O.B.E., M.A., M.D., Lecturer in Radiology, Department of Radiology, Medical School, Cambridge.
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Enquiries and applications should be sent to the Dean at the Hospital, or to the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

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REASONABLE INCLUSIVE FEES.

MARLBOROUGH COLLEGE,
Tytherington Hall, nr. Macclesfield.

Sound Education. Upper and Lower Schools [illegible] when desired, for all University [illegible]. *Particulars from* Sec. [illegible] *to Medical Men.*

M.D. THESIS
(Camb., Edin., Glasg., Durh., &c.)
SKILLED COACHING, GUIDANCE, and ADVICE.
From Specialist Tutors, in conformity with the Regulations of the various Universities
Apply for *particulars and free* booklet, "Hints on Writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

University of Sydney.

The Senate invites applications from gentlemen qualified to hold the CHAIR OF PHYSIOLOGY, the duties of which commence on March 1st, 1930. The salary is £1,100 per annum, subject to a deduction of 5 per cent. for the Professorial Superannuation Scheme. Applications (8 copies) should reach the undersigned *by June 8th*, 1929. A memorandum giving further particulars may be obtained on request.

Australia House, Strand, London, W.C.2. AGENT-GENERAL FOR NEW SOUTH WALES.

EPSOM COLLEGE.

(Established in 1855 as a Public School, with a *Royal Medical Foundation.*)

NOTICE is hereby given that the ANNUAL GENERAL MEETING of the Governors will be held at the Office, 49, Bedford Square, W.C., on *Friday, June 28th, at 4 p.m., when* the result of the Voting for Pensioners and Foundation Scholars will be announced.

In accordance with the provisions of the Acts of Parliament, the following members of the Council will retire at this Meeting, *and it will* be proposed that they be re-elected for a further period of three years: Mr. Douglas C. Bartley, Sir John F. H. Broadbent, Bart., Mr. Arthur Chudleigh, Sir Ernest Goodhart, Bart., Dr. E. Climson Greenwood, Mr. Æneas Mackay, Dr. Harold Spitta, Sir StClair Thomson Mr. T. Hallis Walker, K.C., and Dr. W. Essex Wynter.

The Council will propose (*a*) that Sir Frederic G. Hallett, Colonel Norman C. King, and Mr. P. D. Leake be re-appointed Auditors for the ensuing year; (*b*) that the fee payable to the Professional Auditor, Mr. P. D. Leake, be increased to 100 guineas a year; and (*c*) that various amendments be made in the By-laws, particulars of which can be obtained at the office.

All voting papers must be returned to the office by the night of Saturday, June 22nd, at latest, or the votes will be lost.

By Order of the Council,
49, Bedford Sq., W.C.1. May 27th, 1929. J. BERNARD LAMB, Secretary.

Royal College of Physicians of London.

The next ordinary PROFESSIONAL EXAMINATION for the MEMBERSHIP will commence on Friday, July 12th, 1929.

Candidates are required to give twenty-one days' notice in writing to the Registrar of the College, to whom all certificates and testimonials required by the By-laws must be sent at the same time.

Candidates who propose to submit published work under the Regulations now in force should apply in writing to the Registrar, without delay, for detailed instructions as to the procedure they should follow.

Pall Mall East, S.W.1. RAYMOND CRAWFURD, M.D., Registrar.

Royal College of Physicians of LONDON.

Dr. H. H. DALE, C.B.E., F.R.S., will deliver the CROONIAN LECTURES on June 4th, 6th, and 11th, at 5 p.m., at the College, Pall Mall East, S.W.1.

Subject: "*Some Chemical Factors in the Control of the Circulation.*"

Any Member of the Medical Profession admitted on presentation of card.

By Order of the President,
H. M. BARLOW, Bedell & Secretary.

County of London.

The London County Council invite applications for appointment as EIGHTH ASSISTANT MEDICAL OFFICER (male) in its Mental Hospitals Service. Candidates must be under 35 years of age and be registered to practise both in Medicine and Surgery in England. Salary £300 a year, rising by annual increments of £25 to £400 a year, plus fluctuating temporary additions, the present total commencing remuneration being approximately £423 a year. No emoluments. Charges made for board, lodging, etc. (at present £2 9s. weekly), if required to be resident. Candidates appointed will be pensionable, under the Asylums Officers Superannuation Act, 1909. Form of application, on which full particulars are given, can be obtained from the Acting Chief Officer, Mental Hospitals Department, The County Hall, Westminster Bridge, S.E.1. Completed [illegible] must be received by Friday, Ju[illegible] squalifies.

[illegible]ON,
Clerk of [illegible] Council.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

Darlington General Hospital.

SENIOR HOUSE SURGEON wanted, male, British nationality, fully qualified, unmarried. Salary £150 per annum, board, residence, etc. *Applications, stating experience*, with copies of two recent testimonials, to be addressed to me forthwith.

A. RIDDLE, Secretary.

P. & O. CADETS.

THE PENINSU[illegible] NAVIGATION C[illegible] June 27th, hol[illegible] offices for the ex[illegible] to their future [illegible] Company's service. Candidates must be approximately 15 years of age (not over 16) and must pass the Company's Medical Inspector. The successful candidates will be entered the following September for two years' training on board the "Worcester," the Company paying one-half of their annual educational fees. After the "Worcester" Course they can be appointed to serve the usual apprenticeship of three years (unpaid) on board the Company's steamers wi[illegible]

to the Secretary,
[illegible]an Navigation Co.,
[illegible] London, E.C.3.

Sudan Government.

MEDICAL DEPARTMENT.

TWO MEDICAL OFFICERS are required immediately for the Sudan Medical Service. Candidates must be single and under 30 years of age, and they must have held a Resident appointment (preferably House Surgeon) in a large General Hospital.

Pay commences at £E.720 a year, rising to £E.1,200 after thirteen years' service. On confirmation of their appointments the selected candidates will be eligible for pension service.

Applications (*in writing only*), with copies of recent testimonials, should be made to Dr. HODSON, 24, Welbeck Street, W.1, from whom, and from the Secretaries and Deans of the principal Medical Schools, further particulars can be obtained.

West Bromwich Union.

HALLAM HOSPITAL, WEST BROMWICH.

RESIDENT HOUSE PHYSICIAN.
RESIDENT HOUSE SURGEON.

Applications are invited from fully qualified male registered medical practitioners for the above appointments.

Preference will be given to applicants for the appointment of House Surgeon who have had previous surgical experience.

Salary £250 per annum.

Furnished quarters, rations, laundry, and attendance will be provided by the Guardians.

Further particulars can be obtained from the undersigned.

Canvassing, either directly or indirectly, is strictly prohibited and will be deemed a disqualification.

Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, must be forwarded so as to reach me not later than first post on Tuesday, June 11th.

By Order,
22, Lombard St., West Bromwich. May 28th, 1929. A. H. WARD, Clerk.

Holborn Union, London.

HOLBORN AND FINSBURY HOSPITAL, Archway Road, N.19.

The Guardians of the Holborn Union invite applications for the post of SECOND ASSISTANT MEDICAL OFFICER at their Holborn and Finsbury Hospital, Archway Road, Upper Holloway, N.19. Salary £300 per annum, with board, furnished apartments, etc.

The gentleman appointed will be required to devote the whole of his time to the duties of the office and to act under the direction of the Medical Superintendent.

The appointment will be subject to the approval of the Ministry of Health, and to the provisions of the Poor Law Officers Superannuation Act, 1896.

Application, by letter only, stating age, qualifications, experience, etc., together with copies of not more than three recent testimonials, must reach me on or before June 6th.

By Order,
CHAS. J. CROSS, Clerk to the Guardians.

Swindon and North Wilts

VICTORIA HOSPITAL, SWINDON, WILTS.

HOUSE SURGEON required. Salary £100 per annum, with board, residence, and laundry.

Appointment for a minimum of six months.

Candidates must be registered under the Medical Act.

Applications, stating age, qualifications, etc., accompanied by copies of three testimonials, should be sent to the Secretary at the Hospital.

THE MEDICAL AND DENTAL DEFENCE UNION OF SCOTLAND, LIMITED.

Secretaries and Registered Office: Millar, Thomson & Dunlop, C.A., 113, St. Vincent Street, Glasgow.

ANNUAL SUBSCRIPTION £1. ENTRANCE FEE 10/-.

No entrance fee to those joining within 12 months of obtaining qualification. Benefits include defence of claims for alleged negligence in professional work, including indemnity of £2,500 and costs, and advice on professional difficulties.

Particulars and forms of application can be obtained from the Secretaries at the above address.

Lancashire County Council.

SCHOOL MEDICAL AND CHILD WELFARE DEPARTMENT.

APPOINTMENT OF THREE ASSISTANT COUNTY MEDICAL OFFICERS.

The Lancashire County Council invite applications from registered medical practitioners for the post of Assistant County Medical Officer.

Applicants must not be over 35 years of age, and must possess the Diploma of Public Health.

The duties of the post include the Medical Inspection of School Children; work under the Maternity and Child Welfare Acts; general Public Health work; and such other duties as may from time to time be imposed by the County Council.

The persons appointed will be required to devote their whole time to the service of the County Council. The salary will be £800 a year, rising (subject to satisfactory service) by annual increments of £50 to a maximum of £1,000 a year, together with first-class railway fares and other reasonable expenses.

The persons appointed will be required to pass a medical examination, and to contribute to the Council's Superannuation Fund.

Applications must be made upon a form which can be obtained, together with further particulars, from the County Medical Officer of Health, School Medical and Child Welfare Department, County Offices, Preston, to whom the completed forms should be returned not later than Saturday, June 15th. All communications must be endorsed "Assistant County Medical Officer."

Any form of canvassing is strictly forbidden, and will disqualify.

County Offices, Preston. May, 1929. GEORGE ETHERTON, Clerk of the County Council.

Lancashire County Council.

BIDDULPH GRANGE ORTHOPAEDIC HOSPITAL.

Applications are invited for the post of JUNIOR HOUSE SURGEON (woman) at the above Hospital, which contains 87 beds. Salary is at the rate of £150 a year, together with board, residence, and laundry.

The appointment will be for a period of six months in the first instance, and for a further period of six months at the option of the Council.

Candidates must be duly qualified and registered. Preference will be given to candidates who have held resident Hospital appointments, and who are competent Anæsthetists.

Applications, with copies of two recent testimonials, should be sent not later than June 15th to Dr. J. J. BUTTERWORTH, School Medical and Child Welfare Department, County Offices, Preston.

GEORGE ETHERTON, Clerk of the County Council.

City of Birmingham.

FOURTH ASSISTANT MEDICAL OFFICER required at the CITY HOSPITAL FOR INFECTIOUS DISEASES, LITTLE BROMWICH. Previous resident Hospital post essential. The appointment will be made for 12 months only. Duty to commence not later than August 1st.

Salary £300 per annum, together with board, residence, and laundry.

Forms of application may be obtained from the Medical Superintendent, and should be returned to him on or before Saturday, June 15th.

Norfolk and Norwich Hospital,

NORWICH. (350 Beds.)

Applications are invited for the post of HOUSE SURGEON Salary £120 per annum, with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment. Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned, not later than Tuesday, June 11th.

June 1st 1929. FRANK INCH, House Gov. & Secretary.

Lancashire County Council.

APPOINTMENT OF ASSISTANT TUBERCULOSIS MEDICAL OFFICER for HIGH CARLEY SANATORIUM, Near ULVERSTON.

The Lancashire County Council are prepared to receive applications for the post of Male Assistant Tuberculosis Medical Officer (unmarried) for the High Carley Sanatorium (112 beds). Salary £450, rising by two annual increments of £25 to £500 per annum, together with the following emoluments: board, furnished apartments, fuel, light, and laundry.

Applicants must be registered medical practitioners between 25 and 34 years of age, and the person appointed must devote the whole of his time to the duties as defined by the Council. Candidates must have held House appointments for at least six months in a General Hospital, and have had special experience in the diagnosis and treatment of Tuberculosis.

The possession of a Diploma in Public Health and practical experience in X-ray work will be deemed additional qualifications for the post.

Contributory Superannuation Scheme is in operation, with medical examination for entrants.

Forms of application, terms of appointment, and list of duties can be obtained from the undersigned. Closing date June 10th. All letters must be marked on the outside "Assistant Tuberculosis M.O."

County Offices, Preston. GEORGE ETHERTON, Clerk of the County Council.

County Borough of Birkenhead.

MEDICAL OFFICER'S DEPARTMENT.

ASSISTANT MEDICAL OFFICER (Resident).

Applications are invited for the above appointment from duly qualified men (unmarried) holding a Diploma in Public Health, who have had experience as residents in Hospitals for Infectious Diseases.

The appointment carries with it a salary of £450 per annum, residence at the Infectious Diseases Hospital, board and washing.

The successful candidate will be required to pass a medical examination, and a deduction of 5 per cent. will be made from salary towards the Council's scheme under the Local Government and Other Officers Superannuation Act, 1922.

e will be required to undertake the treatment of patients in the Hospital, to assist at the Municipal Venereal Diseases Clinic, and to carry out such other duties as may be assigned to him by the Medical Officer of Health.

Canvassing members of the Town Council, either directly or indirectly, will disqualify.

Particulars of the appointment and form of application may be obtained from D. MORLEY MATHIESON, Esq., M.A., M.D., Medical Officer of Health, 9, Hamilton Square, Birkenhead.

Applications must be received not later than *June 17th.*

Town Hall, Birkenhead. May 22nd, 1929. E. W. TAME, Town Clerk.

Salop County Council.

MEDICAL INSPECTION OF SCHOOL CHILDREN AND MATERNITY AND CHILD WELFARE.

Applications are invited from registered medical practitioners (male) for the post of ASSISTANT MEDICAL OFFICER to work under these Schemes. Salary £600 per annum, rising by annual increments of £25 to a maximum of £700, with travelling and out-of-pocket expenses on a fixed scale.

The salary will be subject to a deduction of 5 per cent. for Superannuation under the Local Government and Other Officers Superannuation Act, 1922, and the candidate selected will be required to pass a medical examination.

Candidates must possess a Diploma in Public Health, and experience in Refraction work will be considered an important additional qualification.

Applications should be received on or before Saturday, June 8th, by the County Medical Officer of Health, College Hill House, Shrewsbury, from whom forms of application, conditions of appointment, list of duties, and any other information can be obtained.

Birmingham Union.

SELLY OAK HOSPITAL.

CASUALTY OFFICER (Male).

'rom fully qualified
he appointment of
t the Selly Oak

mmodation is 550
Medical, General
Surgical, Gynæcological, Obstetrical, Children and Infectious sections. There is a completely equipped Pathological Laboratory, also X-ray, Electro-therapeutic, Massage, and Sunlight Departments. Over 2,500 operations are performed annually.

The appointment will be for a period of six months in the first instance, but may be extended at the end of that time.

The person appointed will be required to assist at operations, administer anæsthetics, and undertake casualty work, and such other duties as may be assigned to him by the Medical Superintendent, and, should occasion arise, to assist at any of the other Institutions under the control of the Guardians.

The salary attached to the appointment is at the rate of £200 per annum, together with full residential emoluments (rations, apartments, laundry, and attendance)

\ deduction of 2 per cent. will be made from the salary and value of emoluments under the provisions of the Poor Law Officers Superannuation Act, 1896, and for this purpose the emoluments are valued at £200 per annum.

Further particulars of the appointment may be obtained from the Medical Superintendent, Mr. R. P. STANLEY KELMAN, M.B., F.R.C.S. (Eng. and Edin.) at the Selly Oak Hospital.

Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, must be forwarded so as to reach me not later than Wednesday, June 12th.

Union Offices, Edmund Street, Birmingham. May 24th, 1929. C. P. BEECH, Clerk to the Guardians.

Northamptonshire.

TUBERCULOSIS OFFICER.

The Northamptonshire County Council invite applications for the appointment of Tuberculosis Officer.

The salary will be at the rate of £750 per annum, together with offices, clerical assistance, stationery, and such allowances for travelling and other necessary out-of-pocket expenses as the County Council shall from time to time approve. A periodical review of salaries is made by the County Council, and suitable increments of salary will be given for proved ability and satisfactory service.

The salary will be subject to a deduction of 5 per cent. per annum for superannuation, in accordance with the provisions of the Local *Government and Other Officers Superannuation* Act, 1922, which the County Council have adopted. The candidate appointed will be required to pass a medical examination.

The officer appointed must reside at a place to be approved by the County Council and devote the whole of his time to the service of the Council.

The officer appointed will be independent clinically, but administratively is on the staff *of the Public Health Department under the* County Medical Officer of Health. The duties include the charge of the Tuberculosis Dispensaries, and of the care, otherwise than in sanatoria, of persons suffering from or suspected of tuberculosis. The Council maintains its own sanatorium and a Resident Medical Officer is in charge thereof.

The appointment is subject to the approval of the Ministry of Health, and is determinable by three months' notice on either side.

"Tuberculosis Officer,"
recent testimonials,
e training, qualifi-
of the applicant,
on or before June
lication and testi-
for the use of the

Canvassing will disqualify.

County Hall, Northampton. H. A. MILLINGTON, Clerk of the County Council.

Metropolitan Asylums Board.

APPOINTMENT OF BACTERIOLOGIST AT THE BOARD'S ANTITOXIN ESTABLISHMENT.

The Board invite applications for the appointment of Bacteriologist at their Antitoxin Establishment, Belmont Laboratories and Stables, Sutton, Surrey.

The candidate appointed will be responsible, under the Director, for the Bacteriological and Serological work of the laboratories. He will be required to make himself acquainted with the general running of the laboratories, and so be in a position to take charge, when required; and also, subject to the approval of the Director, to carry out research in connection with the work of the laboratories.

Candidates must be qualified by law to practise Medicine and Surgery in England, and should possess a sound knowledge of "immunity" and practical acquaintance with immunological methods.

The commencing salary is at the rate of £700 per annum.

Application forms containing full particulars of the appointment may be obtained, by sending stamped addressed foolscap envelope, from the Clerk, Metropolitan Asylums Board, Victoria Embankment, London, E.C.4, to whom completed applications must be returned not later than 10 a.m. on Wednesday, June 19th.

ALLAN POWELL, Clerk to the Board.

Metropolitan Asylums Board.

INFECTIOUS HOSPITALS SERVICE.

APPOINTMENT OF ASSISTANT MEDICAL OFFICERS.

Applications are invited for appointments as Junior Assistant Medical Officers in the Infectious Hospitals Service.

Candidates must not exceed 30 years of age, and must be duly registered and qualified by law to practise both Medicine and Surgery in England. Junior Assistant Medical Officers are subject to annual re-election.

Salary £500 per annum. Married quarters are not available.

Assistant Medical Officers are required to reside in the Hospitals, and to pay for board, lodging, and washing at the rate fixed from time to time by the Board's Finance Committee. At present the rate is £130 per annum.

Application to be made not later than 10 a.m. on Wednesday, June 19th, on form obtainable by sending stamped addressed foolscap envelope to the Clerk, Metropolitan Asylums Board, Victoria Embankment, London, E.C.4.

ALLAN POWELL, Clerk to the Board.

Metropolitan Asylums Board.

The Board invite applications for appointment as JUNIOR ASSISTANT MEDICAL OFFICER in their Mental Hospitals Service. Salary £500 per annum, rising after three years' approved service to £560. Candidates must be under 40 years of age, and should hold, or should be prepared to undertake to read for, the Diploma in Psychological Medicine. The appointment is renewable annually and is made in the first instance to March 31st, 1930.

If the candidate appointed is required to reside in the Institution to which he is allocated, a charge fixed by the Board's Finance Committee will be made for such residential allowances as may be authorised.

Forms of application may be obtained by sending stamped addressed foolscap envelope to the Clerk to the Board, Metropolitan Asylums Board, Victoria Embankment, E.C.4, to whom they should be returned not later than June 12th.

ALLAN POWELL, Clerk to the Board.

Metropolitan Asylums Board.

The Board invite applications for appointment as JUNIOR ASSISTANT MEDICAL OFFICER in charge of the Out-Patient Department for duty at QUEEN ELIZABETH HOSPITAL FOR CHILDREN, CARSHALTON, SURREY. A considerable proportion of the cases received are of an orthopædic nature. Number of beds 900. Salary £500 per annum. The candidate appointed will be required to reside in the Hospital and to pay for board, lodging, and washing at the rate fixed from time to time. At present the rate is £130 per annum. There is no accommodation for a married officer.

Application to be made not later than 10 a.m. on Saturday, June 8th, on form obtainable from the Clerk, Metropolitan Asylums Board, Victoria Embankment, London, E.C.4, by forwarding stamped addressed foolscap envelope.

ALLAN POWELL, Clerk to the Board.

Huntingdon County Hospital.

Male HOUSE SURGEON wanted at once. Salary at rate of £125 per annum, and washing. Applications, etc., to Senior Surgeon, County Hospital, Huntingdon.

Parish of Portsmouth.

THIRD ASSISTANT RESIDENT MEDICAL OFFICER.

The Guardians of the above-named Parish invite applications for the appointment of Third Assistant Resident Medical Officer for SAINT MARY'S HOSPITAL, INSTITUTION, AND CHILDREN'S HOME.

The appointment will be made for a period not exceeding two years, and will be subject to one month's notice on either side. Salary £250 per annum, with furnished apartments, rations, and all other allowances.

The appointment will be subject to the provisions of the Poor Law Officers Superannuation Act, 1896, for which purpose the value of the emoluments has been fixed at £125 per annum.

Candidates must be single gentlemen, duly registered, and possessing the qualifications required by the Orders of the Ministry of Health, and preference will be given to candidates having a knowledge of the treatment of Mental Diseases.

A Resident Medical Superintendent is in attendance.

Applications to be made on printed forms, which may be obtained at the Guardians' Offices, 1, St. Michael's Road, Portsmouth, and must be returned to me, accompanied by not more than three recent testimonials, and description of diplomas, certificates of degrees, licences, and other instruments held by the candidate, by 10 a.m. on Monday, June 17th.

Selected candidates will have notice to attend and third-class railway fare and reasonable personal expenses will be allowed.

By Order,
W. E. GODFREY,
May 27th, 1929. Clerk to the Guardians.

Carshalton Urban District Council.

MATERNITY AND CHILD WELFARE SERVICES.

MEDICAL OFFICER OF CLINICS.

The above Council invite applications from duly qualified medical practitioners (male or female) for the appointment of Medical Officer of Clinics.

Sessions are held at the Rochester Road Centre on Thursday afternoons weekly, and at Stanley Road Centre on Friday afternoons weekly. Ante-natal Clinics being held prior to the ordinary sessions.

The salary will be as follows:
Rochester Road Clinic—£100 per annum;
Stanley Road Clinic—30/- for each attendance; together with travelling expenses (to be fixed when the appointment is made).

The person appointed will be required to work under the general direction of the Medical Officer of Health for the District.

Applications, giving full details of qualifications and experience, accompanied by copies of not more than three recent testimonials, must be delivered to the undersigned not later than 12 noon on June 19th.

Canvassing, either directly or indirectly, will be deemed a disqualification.

By Order,
District Council Offices, J. WM. WRIGHT,
The Grove, Clerk to the Council.
Carshalton. May 28th, 1929.

Romford Union.

OLDCHURCH HOSPITAL.

RESIDENT THIRD ASSISTANT MEDICAL OFFICER.

The Guardians of the Romford Union invite applications for the appointment of a Third Assistant Resident Medical Officer (male) at their Oldchurch Hospital, Romford, which has a present accommodation of 550 beds. The Hospital is situated 12 miles from London.

Applicants must be single, and preference will be given to one who has held the position of House Surgeon or House Physician in a General Hospital.

The appointment is governed by the regulations laid down in the Orders of the Ministry of Health.

The salary will be at the rate of £250 per annum, subject to deductions under the Poor Law Officers Superannuation Act, 1896, with furnished apartments, maid, rations, and laundry.

Forms of application may be obtained from the undersigned upon receipt of a stamped addressed foolscap envelope, and must be returned not later than Monday, June 10th.

By Order,
Union Offices, R. H. MASON,
Romford. Clerk to the Guardians.
May 23rd, 1929.

Administrative County of Essex.

APPOINTMENT OF MALE ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

The County Council of the Administrative County of Essex invite applications for the above post from registered medical practitioners specially qualified in the treatment of Tuberculosis, School Medical Inspection, and Maternity and Child Welfare, holding a Diploma of Public Health, and not over 45 years of age.

Preference will be given to candidates who have had at least three years' experience in Public Health work subsequent to their medical qualification. The salary attached to the appointment will be £600 per annum and travelling expenses. The person appointed will be required to devote his whole time to the service of the Council, and to perform such duties and to furnish such advice and assistance appertaining to his office as may be required, and to reside in such district of the County as the Council may decide. The appointment will be subject to three months' notice on either side.

Applications on the prescribed form, obtainable from the undersigned, and accompanied by copies of not more than three testimonials, which will not be returned, should be addressed to me and delivered at the Shire Hall, Chelmsford, not later than 10 a.m. on Monday, June 10th.

Shire Hall, JOHN H. GOOLD,
Chelmsford, Clerk of the County
May 24th, 1929. Council.

Urban District Council of Barking Town.

ASSISTANT MEDICAL OFFICER.

Applications are invited from qualified medical practitioners (preferably women) for the combined appointment of Assistant Medical Officer of Health and Assistant School Medical Officer under the Public Health and Education Committees of the above Council. The officer appointed will be required to devote his or her whole time to official duties and to reside within the district. The principal duties will consist of maternity and child welfare and school clinic work and the medical inspection of school children, to be carried out under the direction of the Medical Officer of Health, who is also the School Medical Officer. The appointment will be subject to one month's notice on either side. Salary £500 per annum, inclusive of all bonus, rising after one year's satisfactory service to £600 per annum.

The person appointed will be required to pass a medical examination and to contribute to the Council's Superannuation Fund.

Forms of application may be obtained from the undersigned, to whom they should be returned, endorsed "Assistant M.O.H.," with copies of not more than three recent testimonials, not later than June 7th.

Public Offices, H. HARGREAVES,
Barking. Clerk to the Council.
May 17th, 1929.

County Borough of Wolverhampton.

VISITING SURGEON.

The Wolverhampton Corporation propose to appoint a GENERAL OPERATING SURGEON, practising exclusively as such, for the Borough Infectious Hospital.

The gentleman appointed will be required to carry out all surgical work, consultative and operative, for which his services may be requested.

A retaining fee of 25 guineas per annum is offered, together with special fees for all operations performed by him.

As the scheme is experimental the appointment will be for one year only, and at the end of that period the position will be reviewed.

Any further details will be furnished on request.

Applications, endorsed "Visiting Surgeon," should be forwarded to the undersigned not later than June 12th.

Town Hall, J. BROCK ALLON,
Wolverhampton. Town Clerk.
May 30th, 1929.

King Edward VII Hospital,

Rivelin Valley Road, SHEFFIELD.
(Surgical Tuberculosis.) (130 Beds.)

HOUSE SURGEON (Resident).

Applications are invited for the above post, which falls vacant on July 1st. The appointment is for six months, with possible extension for a further six months. Salary £75 p.a., with board, residence, and laundry.

Applications and testimonials should be sent as soon as possible to the Medical Superintendent, King Edward VII Hospital, Rivelin Valley Road, Sheffield.

WEST AFRICAN MEDICAL STAFF

VACANCIES exist for MEDICAL OFFICERS and MEDICAL OFFICERS OF HEALTH in the BRITISH WEST AFRICAN COLONIES.

SALARIES.

Medical Officers receive salaries at the rate of £660 a year, rising by annual increments of £30 to £720 a year, and then on confirmation £720 a year, rising by annual increments of £40 to £960 a year, together with a seniority allowance (payable only in West Africa) at the rate of £72 a year. After three years' service on £960, the salary may be raised to the scale of £1,000 a year, rising by annual increments of £50 to £1,150 a year, together with a seniority allowance at the rate of £100 a year.

Medical Officers of Health receive salary on the above scale beginning at £800 a year, together with seniority allowance of £72 a year. They also draw staff pay at the rate of £150 a year, half of which is payable during leave.

QUARTERS.

Free furnished quarters are provided or an allowance in lieu.

OUTFIT ALLOWANCE.

An outfit allowance of £60 is granted on first appointment.

PASSAGES.

Free first-class passages are provided on first appointment, and when proceeding on or returning from leave.

PENSIONS.

All appointments are pensionable; a minimum service of seven years is required to qualify for a pension. An officer may retire on reaching the age of 50 and may be called upon to retire at the age of 55. Officers of the West African Medical Staff are permitted to retire if they wish with a gratuity of £1,000 or £1,250 after nine or twelve years' approved service respectively, but in that event they receive no pension.

TOURS OF SERVICE AND LEAVE.

A tour of service in West Africa lasts from twelve to eighteen months at the discretion of the Colonial Government, and is followed by leave at the rate of one week for each completed month of residential service. Leave begins on the date of arrival in England.

PROMOTION.

There are good prospects of promotion in the West African Medical Staff.

COURSE OF INSTRUCTION.

Selected candidates are required to attend courses of instruction in tropical medicine and hygiene at either the London School of Hygiene and Tropical Medicine or the Liverpool School of Tropical Medicine or the University of Edinburgh.

Further information regarding the conditions of service, pensions, etc., may be obtained from the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1, to whom applications should also be addressed.

Chesterfield and North-Derbyshire Royal Hospital.
(190 Surgical and Medical Beds.)

CASUALTY OFFICER AND HOUSE SURGEON TO EAR, NOSE, AND THROAT DEPARTMENT.

Applications are invited from fully qualified men for the above post.

Candidates must have held at least one previous Hospital appointment of six months. The selected candidate will act as deputy to the Resident Surgical Officer. The Resident Staff number five.

The appointment is for a period of six months. Salary at the rate of £200 per annum, with board, apartments, and laundry.

Applications, stating age, and when at liberty, with copies of three recent testimonials, should be sent to the undersigned on or before Tuesday, June 4th.

G. SUNNUCK,
May 27th, 1929. Supt. & Secretary.

Ilford Emergency Hospital
to be extended as a General Hospital to serve a wide area on the Eastern outskirts of London, and renamed

KING GEORGE HOSPITAL.

Applications are invited for the posts of:
HONORARY PHYSICIANS (Two).
HONORARY SURGEONS (Three).
HONORARY AURAL SURGEONS (Two).
HONORARY GYNÆCOLOGICAL SURGEONS (Two).
HONORARY OPHTHALMIC SURGEON.

Candidates, who must be Fellows or Members of the Royal College of Physicians or Fellows of a Royal College of Surgeons, may obtain further particulars from the undersigned, to whom applications, with copies of testimonials, should be sent not later than June 29th.

G. AUSTIN HEPWORTH, Secretary.

Addenbrooke's Hospital,
CAMBRIDGE.

Applications are invited for the post of HOUSE PHYSICIAN. The appointment will be for six months from July 1st, but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £130 per annum, with board, residence, and laundry. Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned on or before Wednesday, June 12th.

W. H. HEAD, Secretary-Supt.

Addenbrooke's Hospital,
CAMBRIDGE.

Applications are invited for the post of RESIDENT ANÆSTHETIST (male). The appointment will be for six months from July 1st, and may be renewed for a further period of six months, but is terminable at any time by one month's written notice on either side. Salary at the rate of £180 per annum, with board, residence, and laundry. Candidates, who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four recent testimonials, to the undersigned on or before Wednesday, June 12th.

W. H. HEAD, Secretary-Supt.

Miller General Hospital,
Greenwich Road, S.E.10.

[AMENDED ADVERTISEMENT.]

OUT-PATIENT OFFICER (male and unmarried) required to see Medical and Surgical cases. Attendance daily (except Sunday) from 9 to 1; Tuesdays 9 to 5. Salary £150 per annum and lunch. The appointment is for six months. Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent as soon as possible to the Secretary.

May 27th, 1929.

Ancoats Hospital, Manchester.

ASSISTANT PATHOLOGIST (Part-time). Salary £150 p.a. Lady or gentleman. Appointment for 12 months. Applications, stating age, experience, and appointments held, together with copies of three recent testimonials, to be forwarded not later than June 11th to the undersigned.

HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Warrington Infirmary and Dispensary.

The Board of Management invite applications for the post of HOUSE PHYSICIAN (male, unmarried). Applicants, who must be of British nationality, must be duly qualified medical practitioners.

Salary £150 per annum, with board, apartments, and laundry. The post is tenable for six months, with probable promotion at the end of that time. The vacancy is due to the promotion of the present staff.

The Hospital has special departments—i.e., Orthopædic, Skin, Aural, Genito-Urinary, Gynæcological, etc.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent in at once to the undersigned.

By Order,
HENRY L. ROOT,
May 18th, 1929. Supt. & Secretary.

Royal Northern Hospital,
Holloway, N.7.

Applications are invited for the following posts:

HOUSE SURGEON for nine months (six months as House Surgeon and three months as Casualty Officer) from July 15th.

RESIDENT MEDICAL CASUALTY OFFICER AND ANÆSTHETIST for 7½ months from July 15th.

Salary in each case at the rate of £70 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent by June 8th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER, Secretary.

Hampstead General and North-West London Hospital,
Haverstock Hill, N.W.

APPOINTMENT OF A HOUSE SURGEON.

Applications are invited from unmarried medical men for an appointment of House Surgeon, vacant on July 1st next. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on June 15th next.

Hampstead General and North-West London Hospital,
Haverstock Hill, N.W.

APPOINTMENT OF HOUSE PHYSICIAN.

Applications are invited from unmarried medical men for the appointment of House Physician, vacant on July 1st next. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on June 15th next.

Lady Chichester Hospital, Hove.
(For Early Nervous Breakdowns.)
(50 Beds.)

Medical Woman required as HOUSE PHYSICIAN for six months, commencing July 15th. Salary at the rate of £100 per annum, with board, lodging, and laundry.

Also JUNIOR required, with board, lodging, and laundry, and honorarium at the rate of £50 per annum. The present Junior Officer is an applicant for the Senior post.

Applications must be made in writing and be accompanied by testimonials, and sent to the Secretary, Mr. A. F. GRAVES, 117, North St., Brighton, not later than Thursday, June 13th.

Chelsea Hospital for Women,
Arthur Street, S.W.3.

There will be a vacancy for a JUNIOR HOUSE SURGEON (male) on July 1st. Appointment for six months. Salary £100 per annum. He will be expected to proceed to the Senior post (six months, salary £120 per annum) at the end of his term of office. Candidates must be duly registered and preferably unmarried.

Applications, accompanied by copies of three testimonials, should be sent not later than Thursday, June 6th, to the Secretary, HERBERT H. JENNINGS.

North Staffordshire Royal Infirmary, Stoke-on-Trent.
(350 Beds.)

The General Committee invite applications for the post of HOUSE SURGEON for Ophthalmic and Aural Departments. Salary £150 per annum, with board, residence, and laundry. The appointment will be for six months, renewable.

Applications to be sent to the undersigned immediately, together with two or three copies of recent testimonials. Preference will be given to candidates having had previous Hospital experience in Ophthalmic and Aural Departments. There are six residents—two medical, four surgical.

North Staffs Royal Infirmary, Stoke-on-Trent.
W. STEVENSON, Secretary and House Governor.

North Staffordshire Royal Infirmary, Stoke-on-Trent.
(350 Beds.)

The General Committee invite applications for the post of ASSISTANT HOUSE PHYSICIAN. Salary £125 per annum, with board, residence, and laundry. The appointment will be for a period of twelve months.

Applications to be sent to the undersigned immediately, together with copies of two or three recent testimonials. Preference will be given to candidates having had previous Hospital experience.

There are six Residents—two Medical, four Surgical.

W. STEVENSON,
Secretary and House Governor.

North Staffordshire Royal Infirmary, Stoke-on-Trent.
(350 Beds.)

The General Committee invite applications for the post of HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry. The appointment will be for a period of twelve months. Applications to be sent to the undersigned immediately, together with copies of two or three recent testimonials. Preference will be given to candidates having had previous Hospital experience. There are six residents—two medical, four surgical.

North Staffordshire Royal Infirmary, Stoke-on-Trent.
W. STEVENSON, Secretary & House Governor.

Royal Isle of Wight County Hospital, Ryde.

RESIDENT HOUSE SURGEON wanted for July 1st, either sex, unmarried. Single-handed appointment. Doubly qualified and registered. State age and nationality. Salary at the rate of £130 yearly, with board, residence, and laundry. There are three Special Departments: Ophthalmic, X-Ray, and Aural. Preference to candidate with experience in these branches.

Apply, enclosing copies of testimonials, to Secretary before June 13th. Third-class return fare from London for selected candidates.

A. S. GORDON,
June 1st, 1929. Secretary.

Torbay Hospital, Torquay.

Notice is hereby given, in accordance with Rule 8, that the Court of Governors will meet on July 4th next to elect an HONORARY SURGEON.

Candidates are required to be registered under the Medical Act.

Applications (16 copies), accompanied by 16 copies of not more than three testimonials, should be sent to the undersigned not later than Friday, June 28th next.

E. L. GRIST,
May 27th, 1929. Secretary.

Royal Asylum of Montrose.

Wanted, JUNIOR ASSISTANT MEDICAL OFFICER, male, single, with general hospital experience preferred. Commencing salary £325 per annum, with board, lodging, and laundry.

Applications, stating age and qualifications, with copies of testimonials, to be sent to the Physician-Superintendent.

The Sheffield Royal Hospital.

RESIDENTS required for temporary duty commencing June 17th. Salary at the rate of £80 per annum, with board residence, and laundry.

Applications, with testimonials, to be sent to—

W. H. BOOTH,
May 23rd, 1929. Supt. & Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CITY OF PLYMOUTH: EDUCATION DEPT. *(Woman Deputy Assistant Medical Officer.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society)* *(Workmen's Medical Scheme.)*	COUNTY BOROUGH OF WIGAN. *(Clinical Tuberculosis Officer and Assistant Medical Officer of Health.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*	

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1. By Order of the Council of the British Medical Association.
May 2 th, 1929. ALFRED COX, Medical Secretary.

St. Peter's Hospital for Stone, ETC.,
Henrietta Street, Covent Garden, W.C.2.

CLINICAL ASSISTANTS are required by the following members of the Honorary Staff, who attend the Out-patient Department as indicated:

Mr. Swift Joly	Mondays 2 to 5 p.m.
Mr. Clifford Morson	Saturdays 2 to 7 p.m.
Mr. Barrington	Tuesdays 2 to 5 p.m. *Thursdays 3 to 7 p.m.*
Mr. Ogier Ward	Wednesdays 3 to 6 p.m. Fridays 2 to 5 p.m. (Women and Children)
Mr. Alban Andrews	Mondays 5 to 7 p.m. Fridays 5 to 7 p.m

Appointments are for six months from July 1st, 1929, a fee of five guineas being payable to the Hospital.

Applications will be received by the undersigned up to the first post on Wednesday, June 5th.

BEECHEY ROGERS, Secretary.

County Hospital, York.
(180 Beds.)

Applications are invited for the posts of:
(1) HOUSE PHYSICIAN;
(2) HOUSE SURGEON

Salary in each case £150 per annum, with board and residence. Applications, stating age, together with copies of three recent testimonials, *to be addressed to the Manager not later than* June 6th.

Lowestoft and North Suffolk HOSPITAL.

HOUSE SURGEON (male) preferably with knowledge of X-ray. Salary £120 p.a., with board, residence, and laundry.

Applications, with copies of three recent testimonials, to the Honorary Medical Supt.

West London Hospital,
Hammersmith Road, W 6. (226 Beds.)

Required, One HOUSE PHYSICIAN, One HOUSE SURGEON, and One AURAL AND OPHTHALMIC HOUSE SURGEON (males). These three appointments are tenable for six months from July 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodgings, and *washing allowance. Applications (which must* be made on printed forms obtained from me) must reach me not later than Friday, June 7th. Selected candidates will be required to call upon such Members of the Medical Staff as directed, to be in attendance at a Meeting of the Medical Council on Friday, June 21st, at 4 p.m., and the House Committee Meeting at 4.45 p.m. the same day, *when the appointments* will be made.

H. A. MADGE, Secretary.

Newcastle-upon-Tyne Eye HOSPITAL, St. Mary's Place.

JUNIOR RESIDENT HOUSE SURGEON (female) required early in June. Salary £100 per annum, with board, residence, and laundry.

Applications, *stating* age, also experience (if any), together with testimonials, to be sent in as soon as possible to—

St. Mary's Place, Newcastle-upon-Tyne. CHARLES E. V. UPTON, Secretary.

The Mental Hospital, Berrywood, NORTHAMPTON.

LOCUM TENENS MEDICAL OFFICER (male) wanted for about 13 weeks, beginning June 30th. Salary 7 guineas per week, together with residence, board, and laundry. Applications, stating age, qualifications, nationality, and copies of recent testimonials, to be sent to the Medical Superintendent.

East Ham Memorial Hospital,
Shrewsbury Road, E.7.

Applications (male) are invited for the following:
1. RESIDENT MEDICAL OFFICER:
2. RESIDENT HOUSE PHYSICIAN and CASUALTY OFFICER.

The appointments are for six months as from July 1st next, with salaries at the rate of £150 *and £100 per annum respectively, with board,* residence, and laundry. Application, stating age, experience, and full particulars, together with copies of testimonials, should be sent to the undersigned not later than Friday, June 7th.

J. F. MORTON, Secretary.

Birmingham and Midland HOMŒOPATHIC HOSPITAL AND DISPENSARY, EASY ROW, BIRMINGHAM.

A vacancy occurs for the post of HOUSE *SURGEON at the above Hospital on July 1st.*

Salary £150, with board, residence, and laundry.

Applications, stating age and qualifications, accompanied by copies of three testimonials, should be sent to the Secretary at the Hospital by Saturday, June 8th.

Hull Royal Infirmary.

Applications are invited for the post of CASUALTY HOUSE SURGEON (male, unmarried), at present vacant.

Applicants must be *fully qualified. Period of* appointment six months in the first instance. Salary at the rate of £130 per annum, with board and residence.

Applications, together with copies of testi*monials*, should be sent to the undersigned.

R. J. CARLESS, House Governor.

May 23rd, 1929.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(Address included.)

Sixpence should be added if replies to a box number are to be posted.

All advertisements must be received not later than first post Tuesday previous to date of publication.

ASSISTANCIES.

Wanted immediately, young energetic ASSISTANT, with view early Partnership; ex H.S. or H.P., with some experience of general practice preferred; in old-established Practice in industrial area, West Riding, Yorkshire. Panel over 2,800. Usual bond, photo, and testimonials required.—Add., No. 2902, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately, Assistant PHYSICIAN (male) for Private Sanatorium. Salary £250, with board and residence. Please state qualifications, experience, and age.—Address, No. 3318, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Indoor and Outdoor ASSISTANTS (male), with and without view. Also LOCUM TENENS. Good salaries offered. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted immediately. — ASSISTANT, indoor, Leeds. Partnership likely ultimately. Send photo, detailed essential particulars. Motorist, recently qualified suitable.—Dr. SUTHERLAND, Lytham House, Low Wortley, Leeds.

Wanted immediately, experienced indoor ASSISTANT, with view to early Partnership. Old-estab. County Practice, Yorks Englishman about 30, and Protestant pref. Usual bond, photo., and tests. required.—No. 3224, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately. — ASSISTANTS, with view to Partnership, in large mixed Practices near Manchester. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted shortly, male Assistant, with view; English or Scotch; ex H.S. or H.P. or some experience of G.P. Cyclist or motor cyclist. Usual bond. Mixed Practice near Manchester. Dispenser kept. £280 p.a., indoor, with increase. Age, exper., photo, etc.—No. 3203, B.M.A. House, Tavistock Sq., W.C.1.

Wanted by June 1st, Assistant (indoor or outdoor), in pleasant part of South Wales (9 miles from Cardiff). Good salary to suitable man able to take charge.—Address, No. 3201, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, indoor, for panel and private Practice in South Wales. Suit young, energetic man. Salary £250. — Address, No. 3227, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Permanent Assistant, single, age 25—30 years. Used to panel and private practice. Salary £300 per annum, plus board.—Address, No. 3234, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Lady Assistant, in small mixed Practice. Work very light. Time for Post-Graduate work at Teaching Hospitals in city. Board, residence, and small salary to commence. Suit recently qual. woman. Give all essential particulars and photograph. —No. 3202, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Lady Assistant, Country Practice, Cotswolds. Desiderata: tact and insight, facility of management, with exp. and up-to-dateness. Spare time and opport. tennis and socialities. Photo and age requested. —No. 3315, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, lady, strong and healthy, willing to cycle. Excellent opportunities to gain experience. State essential particulars, with photo, which will be returned.—Address, No. 3317, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, single, for Country Practice in Glos. Must have car. Public School man pref. Easy work, with time for reading. Salary £300, all found. Photo and full partics.—Address, No. 3205, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.-Experienced Assistant, keen and energetic, for non-dispensing good-class private and panel Practice. Salary £400, with rooms and attendance. Car provided. Partnership in short time to suitable man. State age, height, experience, etc.—Add., No. 3219, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — An Assistant in a Glamorgan Colliery Practice. Salary £350 per annum, with furnished rooms, light, and attendance. Usual bond.—Address, stating age, references, etc., No. 3226, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — An Assistant with prospect of Partnership if mutually agreeable. Salary £300 per annum, plus board, residence, and half midwifery fees. Panel and private. State experience.—Address, No. 3012, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, Scotch or English, Protestant, age under 30. Private and panel practice. Salary £250 to £300, with prospects to a suitable man. Photo and testimonials.—Address, No. 3221, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, young, single, for panel and private Practice in Midland Town. Commencing salary £250, all found.—Address, stating age, photo, references, No. 3236, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Indoor Lady ASSISTANT, Country Practice, Gloucestershire. Able cycle, drive car. Work light. Panel, general. £150 per annum. Tennis, country amenities. Photo, age, experience.—Address, No. 3223, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant. £250, all found. Very light work. Mixed Practice. Cyclist. Increase of stipend with increase of work. — Write, Messrs. FERRIS & Co., Union Street, Bristol.

Wanted. — Indoor Assistant, male, for panel and private Practice, near Newcastle-on-Tyne. Salary £250.—Address, No. 3007, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—A well-qualified indoor ASSISTANT, to manage Branch Practice. No midwifery or night work. Liberal terms to a suitable man.—Address, No. 3309, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship or PART-TIME WORK by an Indian Doctor. Experienced in panel and private practice. Preferably London or University town. Free July. — Address, No. 3215, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistantship, Part-TIME or LOCUM, by Woman M.B., B.Ch., D.P.H., qualified 1924. Good experience in panel, private, and Poor Law. Free now, in London. Interview. State salary.—Address, No. 3308, B.M.A. House, Tavistock Sq., W.C.1.

Assistants Urgently Required for the following vacancies:

1. YORKS.—Health Resort.—Either indoor or outdoor, with view to Partnership. Experienced, with good personality and knowledge of surgery or eye work. Good salary.
2. CORNWALL.—Outdoor. £400 p.a. Experienced and able to give anæsthetics.
3. BRISTOL.—Indoor. £250, with increase later. Able to cycle. Light work.
4. HANTS.—Indoor. £300 p.a., with view to Partnership. Must be Scotch or English.
5. GLOS.—Indoor. £250—£300 p.a. Pref. London or Edinburgh. Grad., with own car.
6. LONDON, S.E.—Indoor. £300 p.a., with view to Partnership. Age 28 to 35, and experienced.
7. LONDON, S.W.—To manage Branch. English or Scotch. Good salary.
8. LONDON, S.W.—Outdoor, with view to Partnership. £450 p.a. Capital available for purchase of share in three months.
9. NORFOLK BROADS.—Indoor. £250. Pref. English or Scotch.
10. SOMERSET. — COUNTRY PRACTICE. — Indoor. £250 p.a. Light work.

Apply, with full particulars, to ROYAL MEDICAL AGENCY, 10/13, Bedford St., W.C.2.

Assistant (male) wanted. Easy access West End. Large panel and private Practice. Two Partners with two Assistants. Rooms and board provided. Work exceptionally light during nine months of year. State essential particulars, and if several free afternoons preferred, experience, etc.—Address, No. 3313, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted for Lancashire Industrial Practice. Bond. Abstainer. Principal provides furnished flat, coal, electric light, and £40 towards maid's wage. References and essential particulars.—Address, No. 3216, B.M.A. House, Tavistock Square, W.C.1.

Assistant (thoroughly exper.) wanted for Branch Surgery in Co. Durham. Age 30 to 45; married man not objected to. Salary £300 p.a. and rooms. Work light.—Address, giving full particulars, No. 3314, B.M.A. House, Tavistock Square, W.C.1.

Assistant (part-time) for panel and private Practice near the City. Agreement for one year.—Address, No. 3310, B.M.A. House, Tavistock Square, W.C.1.

Assistant (male), energetic, capable, for panel and private Practice, Newcastle-on-Tyne. Excellent house. Salary £350 first year. Prospects for suitable man. Full particulars.—Address, No. 3228, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted for Panel Practice in Monmouthshire. Salary £300, with rooms and attendance. Give full particulars. Usual bond.—Address, No. 3230, B.M.A. House, Tavistock Square W.C.1.

Honours Graduate, M.R.C.S., L.R.C.P., desires ASSISTANTSHIP, with view, preferably in town district within reach of Liverpool. Experience of Hospital and general practice. English, unmarried. Free now.—No. 3301, B.M.A. House, Tavistock Sq., W.C.1.

Indoor Assistant wanted, male, Finsbury Park. Panel and private Practice. £300 and half midwifery fees. Furnished rooms, heat, light, and attendance. Most afternoons free. Usual bond.—Address, No. 3302, B.M.A. House, Tavistock Square, W.C.

Indoor Assistant wanted, Manchester district. Experienced; some capital, with view. Full particulars.—Address, No. 3319, B.M.A. House, Tavistock Square, W.C.1.

Woman M.B., Ch.B., æt. 30, 3½ years' Hospital experience, competent Anæsthetist, requires ASSISTANTSHIP, in or near London preferred. Free now.—Address, Dr. REEVES, Haslemere, Hutton, Essex.

Woman Doctor, experienced hospital and general practice, doing post-graduate work, wishes ASSISTANTSHIP or PART-TIME WORK in London or near.—Address, No. 3303, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted at once by fully trained Nurse (Doctor's Widow), post as NURSE-ASSISTANT to Doctor or Dentist. — CAPPER, 323, Mansfield Road, Nottingham.

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Application, together with copies of testimonials, should be sent to the undersigned, marked "R.M.O.," by June 24th.

ANGELA LOPEZ, Secretary.

Seamen's Hospital Society, Greenwich, S.E.

RESIDENT MEDICAL OFFICER required at ALBERT DOCK HOSPITAL, Connaught Road, E.16, for *six months from July 1st. Salary* £110 per annum and a proportion of fees, *with board, residence and washing.* Applications, with copies of three testimonials, to be sent in by June 17th to the undersigned.

R. E. V. BAX,
May 27th, 1929. Secretary.

Bootle Borough Hospital, Derby Road, Near LIVERPOOL.

The Committee invite applications for an ANÆSTHETIST to attend three afternoons weekly. An honorarium of £50 per annum is attached to the post.

Candidates are requested to send particulars of their qualifications and experience, accompanied by testimonials, addressed to the undersigned not later than Saturday, June 8th.

J. A. BEARDSALL, Secretary-Supt.

King Edward Memorial Hospital Mattock Lane, Ealing, W.13.

Applications are invited for the appointment of CONSULTING OPHTHALMIC SURGEON to the above Hospital.

Applications should be sent to the undersigned not later than June 10th.

R. A. MICKELWRIGHT,
Secretary-Superintendent.

City of London Maternity HOSPITAL, *City Road, E.C.1.*

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Twenty copies of application (giving age and qualifications) and of three testimonials should be sent to the undersigned by June 18th.

RALPH B. CANNINGS, Secretary.

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By Order of the Committee of Management,
H. C. S. SMITH,
May 20*th*, 1929. Secretary-Supt.

The Royal Portsmouth Hospital. (Five Resident Medical Officers.)

HOUSE PHYSICIAN, male (qualified), required to commence on or about June 17th. Salary at the rate of £130 per annum, with board, etc. Six months' appointment, and eligible on completion of term for extension

Applications, *stating* age, nationality, and full details, with copies of three recent testi*monials, to be sent to the* undersigned on or before June 10th, from whom all particulars can be obtained.

B. WAGSTAFF, Secretary.

Princess Louise Kensington HOSPITAL FOR CHILDREN, North Kensington. (*42 Beds, pending* completion.)

The Board of *Management invite applications* for the post of HON. ASSISTANT SURGEON to the Nose, Throat, and Ear Department. Candidates must hold the Diploma of F.R.C.S. (Eng.), and will be required to attend the Hospital on Tuesday afternoons, and also on one day towards the end of the week, the latter day being open to arrangement. Details as to application from the Secretary of the Hospital, St. Quintin Avenue, W.10, and formal application *should be sent* in not later than June 26th.

Seamen's Hospital, Greenwich, S.E.

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, for six months from July 1st. Salary £110 per annum, and a proportion of fees, with board, residence, and washing. Candidates must be male. Applications, with copies of three testimonials, to be sent in by June 17th to the undersigned

Greenwich. R. E. V. BAX,
May 25th, 1929 Secretary.

South Devon and East Cornwall HOSPITAL, PLYMOUTH. (210 Beds.)

HOUSE SURGEON (male) required. Salary £100 per annum, with board, residence, and laundry. Appointment is tenable for six months, and is subject to renewal. Duties to commence July 1st. Candidates must be registered under the Medical Acts.

Applications, stating age and qualifications, together with copies of recent testimonials, to *reach the undersigned by June 14th.*

ARTHUR R. CASH,
May 27th, 1929. Gen Supt. & Secretary.

Chester Royal Infirmary. (*211 Beds.*)

Wanted, HOUSE SURGEON (male), to commence duties June 21*st*. Salary £120 per *annum, with board, lodging, and washing. Candidates must be doubly qualified and* registered.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than June 6th.

J. ROWSE MITCHELL,
May 20th, 1929. Secretary.

City of London Hospital for *DISEASES OF THE HEART AND LUNGS*, Victoria Park, E.2. ('Bus, tram, and rail, Cambridge Heath, L. & N.E. Railway.)

The Committee invite applications for the post of ASSISTANT LARYNGOLOGIST.

An honorarium is attached to the post.

Applications, accompanied by copies of testimonials, should reach the Secretary at the Hospital not later than Monday, June 17th.

GEORGE WATTS, Secretary.

CAVENDISH NURSES (Male and Female)

Head Office: 54, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

A very convenient form of telephone message pad sent free on application to the Secretary.

Branches: *MANCHESTER*: 176, *Oxford Road*. *GLASGOW*: 28, *Windsor Terrace*. *DUBLIN*: 23, *Upper Baggot Street*.

TELEGRAMS: Tactear, London. Surgical, Glasgow. Tactear, Manchester. Tactear, Dublin.

TELEPHONES: London, 1277 Welbeck. Glasgow, 477 Douglas. Manchester, 3152 Ardwick. Dublin, 531 Ballsbridge.

Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling and all cases. Nurses reside on the premises, and are always ready for urgent calls Day and Night. Skilled Masseuses, Masseurs, and good Valet attendants supplied.

Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

Salford Royal Hospital.
(263 Beds.)

Applications are invited for the following vacancies which will occur in the Resident Medical Staff (male) on June 30th next:

HOUSE PHYSICIAN. Salary at the rate of £125 per annum.

HOUSE SURGEON (attached to the Genito-Urinary Department). Salary at the rate of £125 per annum.

HOUSE SURGEON to Gynæcological, Aural, and Skin Departments. Salary at the rate of £125 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

Forms of application, which may be obtained from the undersigned, must be delivered without delay.

By Order of the Board,
GEORGE RUDDLE,
Gen. Supt. & Secretary.

Salford Royal Hospital, Manchester.
May 27th, 1929.

Royal London Ophthalmic
HOSPITAL (Moorfields Eye Hospital), City Road, E.C.1.

EAR, NOSE, AND THROAT SURGEON.

Applications are invited for the office of Ear, Nose, and Throat Surgeon to the above Hospital.

Candidates must be Fellows of the Royal College of Surgeons of England.

Canvassing is not permitted. Candidates are requested to send copies of their application and testimonials to the members of the Committee of Management and the Honorary Medical and Surgical staff, whose names and addresses can be obtained on application to the Secretary.

Applications, stating age, with copies of testimonials, must be received not later than June 10th by—

A. J. M. TARRANT, Secretary.

Harlow Wood Orthopædic
HOSPITAL, Near MANSFIELD, NOTTS.

Applications are invited for the post of RESIDENT SURGICAL OFFICER at the above Hospital, at a salary commencing at £250 for the first year (with board, lodging, and laundry), the successful candidate being eligible for re-election.

The duties will include attendance at the associated Out-patient Clinics, and will commence on September 1st. Selected candidates will be expected to attend a meeting of the House Committee on Friday, June 14th, at 3.0 p.m., in Nottingham.

Applications, stating age and qualifications, with copies of recent testimonials, should be received on or before June 11th by the Hon. Sec., 17a, Park Row, Nottingham.

The London Lock Hospital,
91, Dean Street, W.1.

The Board of Management invite applications for the post of HOUSE SURGEON at the Male Lock Hospital. Candidates must be doubly qualified and duly registered. Salary at the rate of £200 per annum, with furnished flat, full board, and laundry. The appointment to be for six months. Duties to commence July 1st. Applications, enclosing copies (only) of three recent testimonials, to be sent to the undersigned at the Male Lock Hospital, 91, Dean Street, W.1, on or before June 3rd.

By Order of the Board,
H. J. EASON, Secretary.

Rochdale Infirmary and
DISPENSARY. (110 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male). Salary £175 per annum, including board, residence, and laundry.

Applications, stating age, nationality, etc., together with copies of three testimonials, to be sent to the Secretary, endorsed "House Surgeon." Conditions of the appointment may be had on application to the Secretary.

W. WYNNE, Secretary.

Infirmary Office, Rochdale.

London Homœopathic Hospital
(Incorporated by Royal Charter), Great Ormond Street and Queen Square, Bloomsbury, W.C.1. (172 Beds.)

The Board of Management are prepared to receive applications for the following appointment:

[illegible] of the Orthopædic Dept.

must be, or become within a limited period, a Fellow of one of the Royal Colleges of Surgeons, and be, or become, a Member of the British Homœopathic Society.

Candidates canvassing Members of the Board, Medical Council, or Medical Committee are thereby disqualified.

Candidates may be required to attend a Meeting of the Medical Committee.

Applications, stating age, with 35 copies of application and 35 copies of each testimonial, should be sent addressed to the Secretary, of whom further particulars may be obtained.

EDWARD A. ATTWOOD, Secretary.

May, 1929.

The Gloucestershire Royal
INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (145 Beds.)

Applications are invited for the post of RESIDENT SURGICAL OFFICER (male). Salary £175 per annum, with board, residence, and laundry.

Good opportunity for surgery for experienced man. The appointment is for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be received by the undersigned not later than Wednesday, June 12th. The appointed candidate will be required to enter upon his duties on Monday, July 1st.

F. J. SYMONS, Secretary.

May 23rd, 1929.

East Suffolk and Ipswich
HOSPITAL, IPSWICH. (260 Beds—Seven Residents.)

Wanted on July 1st, a CASUALTY OFFICER. Commencing salary £150 per annum, rising after one year to £200, with board, residence, and laundry. Previous experience essential. Also Two HOUSE SURGEONS, each at a salary at the rate of £120 for six months' contract, with board, residence, and laundry. (British, male.)

Applications, stating age, qualifications, and experience, and accompanied by copies of three recent testimonials, to be sent to the undersigned on or before June 11th.

ARTHUR GRIFFITHS, Secretary.

The Hospital, Ipswich.
June 1st, 1929.

Kensington, Fulham, and
CHELSEA GENERAL HOSPITAL, 194, Finborough Road, Earl's Court, S.W.10.

The Board of Management invite applications from fully qualified practitioners for the post of CASUALTY (Resident) MEDICAL OFFICER. This Hospital, the In-patient Department of which is in process of re-building, has an extensive Out-patient Department still working, and General and Special Out-Patients' Clinics. The appointment to be held for six months from July 1st. Salary £100 p.a. Applications, accompanied by three testimonials, should be forwarded to the undersigned not later than June 17th.

South Devon and East Cornwall
HOSPITAL, PLYMOUTH. (210 Beds.)

RESIDENT SURGICAL OFFICER (male) required. Salary £150 per annum, with board, residence, and laundry. The appointment is tenable for six months and subject to renewal. Duties to commence July 6th.

Candidates must be registered under the Medical Acts.

Applications, stating age and qualifications, together with copies of recent testimonials, to reach the undersigned by June 14th.

ARTHUR R. CASH, Gen. Supt. & Secretary.

May 23rd, 1929.

Queen Mary's Hospital for the
EAST END, Stratford, E.15. Telephone: Maryland 2616.

Applications are invited from fully qualified and registered medical men for the following posts:

One RESIDENT MEDICAL OFFICER. Salary £200 p.a.
One HOUSE PHYSICIAN. Salary £120 p.a.
Two HOUSE SURGEONS. Salary £120 p.a.
One OBSTETRIC HOUSE SURGEON. Salary £120 p.a.
One HOUSE PHYSICIAN and CASUALTY OFFICER. Salary £150 p.a.

The Hospital contains 215 beds, including 46 Maternity, and other special departments.

Candidates, who should have previously held Hospital appointments, must send applications, accompanied by testimonials, to the undersigned not later than Tuesday, June 4th.

RAPHAEL JACKSON (Major), Secretary.

Taunton and Somerset Hospital
TAUNTON. (104 Beds.)

SENIOR and JUNIOR HOUSE MEDICAL OFFICERS (males) required.

The Senior must have held a Hospital resident appointment for six months. Appointment one year, option of re-election for a second year. Charge of Surgical beds. Junior appointment six calendar months. Charge of Medical and Eye beds.

Appointments approved by University of London for purposes of M.S. and M.D. examinations. Salaries at the rate of £150 and £100 per annum respectively, with board, residence, and laundry. House Medical Officers retain certain fees.

Applications, with testimonials, to—

F. J. J. STACEY, Secretary.

Derbyshire Hospital for Women,
DERBY. (Gynæcological and Obstetrical Hospital.) (50 Beds.)

Applications are invited for the post of HOUSE SURGEON (male).

Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for 12 months, with a possibility of extension for a further period of 6—12 months. Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of not more than three testimonials, to be sent to the undersigned not later than June 15th. Duties will commence on July 1st.

W. T. COCKER, Secretary.

May 23rd, 1929.

Birkenhead General Hospital.
(156 Beds.)

VACANCY FOR HONORARY DERMATOLOGIST.

The General Committee invite applications for the post of Honorary Dermatologist at the above Hospital.

Applications, stating age, qualifications, and full details of experience and posts held, together with copies of three testimonials, to be sent to the undersigned not later than June 4th.

W. H. DANIELS, A.C.I.S., Secretary-Superintendent.

Birkenhead General Hospital.
(156 Beds.)

Applications are invited for the post of CASUALTY SURGEON (male) at once, salary £100, with board and residence, to take up duties immediately.

Applications, stating qualifications, experience, and nationality, with three copies of recent testimonials, to be sent to the Secretary-Superintendent as early as possible.

Grampian Sanatorium,
KINGUSSIE.

The post of RESIDENT will shortly become vacant. Preference will be given to applicants who have some experience of Pneumothorax and Sanocrysin treatment.—For particulars, apply to Dr. FELIX SAVY.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A RESIDENT MEDICAL OFFICER is required at the COUNTRY BRANCH HOSPITAL, TADWORTH COURT, TADWORTH, SURREY, on June 14th.

Gentlemen are invited to send in their applications to the Secretary before 12 o'clock on Monday, June 3rd, accompanied by copies of not more than three testimonials given specially for the purpose.

The appointment is made for six months, but the successful candidate will be eligible for re-appointment.

Salary at the rate of £250 per annum, with board-residence in the Hospital, laundry allowance at the rate of £10 per annum, and on re-election for a further period of six months, £18 18s. for the purpose of providing a substitute during annual leave of a maximum of four weeks.

Candidates must be unmarried and possess a legal qualification to practise, and must have held a responsible resident appointment at a General Hospital.

All candidates must be in attendance on Wednesday, June 5th, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
May, 1929. Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A SURGICAL REGISTRAR is required on June 17th.

Gentlemen are invited to send in their applications, addressed to the Secretary, with copies of not more than three testimonials, given specially for the purpose, before 12 o'clock on Monday, June 3rd.

The appointment is made for one year, but may be held, subject to re-election, for a period of three years.

Salary £300 per annum and allowance for substitute for holiday £18 18s.

Candidates must be registered medical practitioners, and must have held a responsible Hospital appointment and be prepared to take up the duties on June 17th.

All candidates must be in attendance on Wednesday, June 5th, to appear before the Joint Committee at 5 p.m. precisely, if required.

Forms of application, copy of the rules for, and details of the duties of, the appointment, will be supplied on application to the Secretary.

By Order of the Board of Management,
JAMES McKAY,
May 17th, 1929. Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A HOUSE SURGEON and a HOUSE PHYSICIAN are required on July 1st.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, June 3rd, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment.

The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, June 5th, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY,
May, 1929. Secretary.

Hertford County Hospital.

Applications are invited for the post of HOUSE PHYSICIAN (male). Duties commencing June 17th. Salary £150 per annum, with board, residence, and laundry. Some knowledge of Pathology desirable. The appointment is for six months in the first instance.

Applications, with copies of three recent testimonials, should be sent to the undersigned and be received not later than June 8th.

PERCY G. BROOKS, Secretary.

London Skin Hospital.

HONORARY DERMATOLOGIST.

[illegible] for the above
[illegible]ted to forward
[illegible]nd experience,
[illegible] to the Hon.
[illegible], 40, Fitzroy
Square, W.1.

PROSPECTIVE PURCHASERS

OF PRACTICES

and those seeking

PARTNERSHIPS

should consult

The

BRITISH MEDICAL BUREAU

at

12, Stratford Place,
Oxford St., London,

or its Northern Branch at

33, Cross Street, Manchester,

or its Newcastle Branch at

7, Windsor Place,
Newcastle - on - Tyne.

Those requiring additional

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B.M.A. House, Tavistock Sq.,
London, W.C.I.

MR. HERBERT NEEDES,
31, Bedford Street, Strand, W.C.2.
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This Agency (the oldest in the Kingdom) undertakes the SALE of PRACTICES and PARTNERSHIPS, AUDITS, and VALUATIONS, and the SUPPLY OF LOCUMS and ASSISTANTS.

No Charge to Purchasers. All Business receives Mr. NEEDES' personal attention.

Accrington Victoria Hospital.

The Governing Body of this Hospital invite applications for the post of HOUSE SURGEON.

Candidates may be of the male or female sex and duly qualified and registered. Number of beds 50.

Salary £150 per annum, with board and lodging.

Conditions of appointment and particulars of duties may be obtained from the undersigned, to whom application, with copies only of testimonials, should be sent on or before the 9th instant. There are two Honorary Anæsthetists on the staff who attend on regular operation days.

Town Hall, Accrington. W. H. WARHURST, Hon. Secretary.

Royal Edinburgh Hospital for SICK CHILDREN.

Wanted for this Hospital, FIVE HONORARY RESIDENT MEDICAL OFFICERS (three Resident House Physicians and two Resident House Surgeons), to enter on October 1st next. Information as to duties, etc., can be obtained from the Ordinary Physicians and Surgeons at the Hospital. Thirty copies of applications and relative testimonials to be lodged on or before July 20th with Messrs. HENRY & SCOTT, W.S., 56, Frederick Street, Edinburgh. No applications will be received after that date.

London Jewish Hospital,
Stepney Green, E.1.
(General Hospital—168 Beds.)

CASUALTY OFFICER required (male or female). Applications should be sent immediately to the Secretary, accompanied by copies of three recent testimonials. Salary at the rate of £150 per annum, with luncheon and tea. Appointment for six months. The holder will be required to attend the Out-patient Department daily (Monday to Friday) at 9 a.m.

THE OLDEST AND LEADING MEDICAL AGENT

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Lancs.—1/3 or 1/2 share of over £2,400 after prelim. assistancy. Panel £500. Mixed class. Good house, with 4 bed., 2 attics, etc.—No. 8454.

Bucks.—About £2,800 p.a. 1/2 share for sale. Appts. nearly £200 p.a. Panel over 1,900. Visits 3/6—10/6. Mids. 2—5 gns. House, 4 bed., etc., to rent. Prem. 1½ years.—No. 8443.

Surrey.—About £600 p.a. Residential. Small panel. Visits 5/- to 10/-. Good house, 6 beds., etc., to rent or sell. Premium £650, or offer.—No. 8481.

N. E. Coast.—Over £7,000 p.a. 1/5 share for sale, increasing to 1/3. Appts. £70 p.a. Panel 750. Mids. 5—4½ gns. Visits 5/- to 10/6. Good house, 8 bed., etc. —No. 8473.

Suffolk.—Over £1,000 p.a., unopp. Old-estab. Panel 530. Appts. £50 p.a. Usual fees. Good house, large gard.—No. 8479.

Sussex Coast.—About £1,400 p.a. Good-class, non-panel, non-disp. Visits 5/- to 15/-. House to rent £125 p.a.—No. 8476.

Lancs Town.—1/2 share of about £3,000 p.a. Panel over 2,500. Excellent house, good garden. Five bedrooms. Separate surgery. Premium 1½ years.—No. 8472.

S. W. County. — 1/2 share of about £3,000 p.a. Appts. £125 p.a. Panel about £520 p.a. Fees up to 21/-. Good house, 4 bed., etc., large gard. Sep. sgy.—No. 8470.

Western Suburb.—About £1,300 p.a. Non-panel, non-disp. Mids. 5 gns. up. Visits 5/- up. Good house, gard.—No. 8443.

Home Counties. — Country PRACTICE. About £1,000 p.a. Panel about 400. Appts. over £50 p.a. Visits 3/6 to 10/6. House, 5 bed., etc. Extensive grounds.—No. 8408.

Birmingham.—About £2,300 p.a. Panel 1,700. Mids. from 2 gns. Visits 3/6 up. Good house, 4 beds., etc. Large garden. Two branches. Suitable for two.—No. 8466.

N. W. Coast Town.—Over £3,000 p.a. *Old-established.* Panel over 1,500. Usual fees. Medium house to rent.—No. 8465.

Staffs.—About £1,200 p.a. Good-class non-panel PRACTICE. Visits 5/- up. Good house available.—No. 8464.

Wilts. — Unopp. — About £850 p.a. Appts. about £100 p.a. Panel about 600. Visits 3/- up. Mids. 3 to 10 gns. Good house, nice garden, rent £52.—No. 8447.

Kent. — £1,500 share in non-panel, non-dispensing Practice. Appts. about £1,200 p.a. Visits 5/- to 7/-. Mids. 5 to 10 gns. Large house to rent.—No. 8460.

Glos.—Unopp. — About £1,270 p.a. Mids. 2 to 8 gns. Visits 3/6 to 21/-. Panel 1,100. House, 3 bed, etc., large garden. House and Practice £2,500.—No. 8455.

Eastern Suburb.—About £1,100 p.a. Panel about £250. Visits 4/-. House, 5 bed., etc.—No. 8458.

Co. Durham. — Half Share of about £2,800 p.a. Panel 2,600. Appts. £300 p.a. Mids. from 30/-. Visits 2/6 to 7/6. House, 5 bed., etc.—No. 8453.

N. Wales Coast.—About £1,750 p.a. Panel and appts. about £400 p.a. Mids. 2 to 5 gns. Visits 3/6 to 31/6. House, 4 bed., etc. Separate surgery.—No. 8451.

Home Counties.—Aver. £2,800 p.a. Up to 2/5 share for sale, short Assistancy, possible early succession Appts. £90 p.a. Small panel. Visits 3/6 up. Mids. 2 gns. up. House, 5 bed., etc, to rent.—No. 8441.

SPECIAL NOTICE.

FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants prepared to pay part of purchase money down and balance by instalments over 7 years (on the security of a Life and Sickness Policy).

Full particulars on application to Mr. Percival Turner.

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(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

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The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

NORTHERN BRANCH.

The Manchester Medical Agency, lately under the control and management of the Manchester Medical Committee, has now been taken over by the British Medical Bureau as their Northern Branch.
Medical Practitioners in the North requiring the services of the Bureau are recommended to consult the Branch Manager, at the Offices, 33, Cross Street, Manchester.
Telephones: CENTRAL 3925; after Office Hours: RUSHOLME 2549.
Telegrams: "LOCUM, MANCHESTER."

Practices and Partnerships for Disposal. Full particulars sent free.

1. SOUTH OF ENGLAND. — Unopposed Country PRACTICE of £1,800 p.a. in manufacturing village. Panel about 1,400. Nice detached residence (5 bedrooms) to be let or sold. Sport. Premium £2,700.

2. SOUTH OF ENGLAND.—Partnership in non-dispensing Practice £4,200 p.a. in attractive watering-place. Panel about 1,500. Incoming Partner must be F.R.C.S.Eng. or Edin., or M.D.Lond., Oxon., or Camb. One-fourth share at 2 years' purchase. (Preliminary assistantship.)

3. DEVON.—Practice about £800 in small delightfully situated town on coast. Panel under 400. Detached house (4 bedrooms), in own grounds, to rent. Excellent up-to-date Cottage Hospital. Premium £1,300.

4. ISLE OF WIGHT.—Easily worked PRACTICE of £1,340 p.a. (including clubs and appointments worth £300) Panel 500. Convenient modern house. Garden and garage. Scope. Premium, Practice and house, £3,800.

5. ESSEX.—Partnership in mixed-class Practice £4,400 p.a. Panel over 2,200. Small house (3 bedrooms) to rent. One-fourth share at 2 years' purchase.

6. ITALY.—Season (March to October) PRACTICE in famous city. Receipts average £563 p.a. No midwifery or night work. Up-to-date Hospital. Premium £563.

7. BUCKS.—Practice about £800 in small country town. Panel 741. Nice detached house (4 bedrooms), garden and garage, to rent. Premium £1,200.

8. LIVERPOOL. — Cash and Panel Practice about £865 p.a. in working-class district. Panel over 1,200. Large house to be sold or let. Great scope. Prem. 1½ yrs.' pur.

9. S. WALES.—Non-dispensing Practice in large seaport town. Receipts for past 3 years averaged £1,543 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,300.

10. KENT. — Practice averaging £1,030 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, Practice, £1,500.

11. MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 13 acres of land for sale. Premium, Practice, 1½ years' purchase.

12. N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. One-half share for sale (one-third first year) at 1½ years' purchase.

13. EAST ANGLIA.—Country Practice about £1,470 p.a., easy reach of important town. Panel about 1,000. Nice house (10 bed and dressing rooms), with electric light, etc., for sale. Premium 1¼ years' purchase.

14. GLOUCESTERSHIRE. — Partnership in Country Practice about £3,600 p.a. Applicant should be aged 35 to 45 and have held resident Hospital appointments. Share of £1,000 at first at 2 years' purchase.

15. DEATH VACANCY.—DEVON.—Country PRACTICE. Receipts, 1928, £1,266. Panel about 700. Modern house (7 bed and dressing rooms) in grounds of 2 acres. Price £4,000.

16. S.E. COAST.—Practice averaging £1,127 p.a. in favourite resort. No panel. Very good semi-detached house (6 bedrooms) for sale. Scope. Premium 1¼ years' purchase.

17. SOUTH OF ENGLAND. — Practice of £2,230 p.a. (carried on by two men in partnership) in charming residential country district. Panel over 1,800. Two houses to be purchased. Excellent sport. Premium 1½ years' purchase.

18. NORTH GLOUCESTERSHIRE.—Country PRACTICE in delightful part. Cash receipts £560. Panel 460. Modern house (6 bed and dressing rooms), with garden 1 acre. Premium, house and Practice, £3,000.

19. SUSSEX. — Small Country Practice in delightful part near coast. Receipts past 12 months £346. Picturesque house (3 bedrooms), with nice garden to be sold or let. Premium £350.

20. MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first-rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. Premium one-third share 2 years' purchase.

21. EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

22. N.W. COAST. — Non-dispensing Practice over £850 p.a. in seaport town. No panel and very little night work. Excellent semi-detached residence (5/6 bedrooms) for sale. Premium 1½ years' purchase.

23. YORKSHIRE (W.R.). — Partnership in Practice about £2,600 in one of the chief towns. Panel over 900. Partner should be a Protestant. One-third share at 1½ years' purchase after preliminary assistantship.

24. S.W. of ENGLAND.—Partnership in Practice about £3,000 in market town. Panel 1,100/1,200. Detached house (5 bed and dressing rooms), in 3/4 acre garden, for sale. Premium one-half share 2 years' purchase.

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25 YORKSHIRE (N.R.). — Practice about £1,000 in small country town. Panel 430. House (5 bedrooms), garage, and garden, to be sold or let. Scope. Premium £1,250.

26 HOME COUNTIES.—Practice about £1,000 p.a., with great scope, in beautiful country district under 35 miles from London. No house available, but could build. Premium 1½ years' purchase.

27 SOUTH AFRICA. — Compact unopposed Village PRACTICE of about £1,000 p.a., in attractive part of Cape Colony. Exceptional house (4 bedrooms) and about 2 acres ground. Price £1,000. Excellent climate. Premium £500.

28 SURREY.—Partnership in non-dispensing Practice £3,600 p.a. in first-rate residential town. Panel 3,800. House (6 bedrooms) to rent. Two-fifths share at 2 years' purchase. Partner must be experienced, aged 30/40, and be a good Surgeon.

29 HOME COUNTIES. — Country Practice about £425, in beautiful part about 40 miles from London. Small panel. House and about 50 *acres farm land.* Price, Practice, House, Farm, etc., £4,250.

30 YORKSHIRE COAST. — Practice averaging £1,850 p.a. (some Eye work) in pleasant seaside town. Panel 80. Modern double-fronted house (6 bedrooms) for sale. Premium £2,400.

31 N.E. COAST.—Partnership in sound Practice in rapidly growing and attractive seaside town. Panel about 700. Suitable house available. Share of about £1,400 for disposal at 2 years' purchase. Partner aged about 30 and well qualified, who has held resident Hospital appointments.

32 LONDON S.E. — Practice about £800 in populous district. Panel 800. No midwifery. House (5 bedrooms) *to rent.* Premium 1½ years' purchase.

33 SUSSEX.—Partnership in Country Practice, £2,750, in residential district (appointments and panel about £1,000). Good house (5 bedrooms and 3 attics) with large garden. To rent. One-half share at 2 years' purchase.

34 BUCKS. — Small Country Practice over £300 p.a. Panel 250. Very nice attractive house (8 bedrooms), garden and garage, for sale. Premium—Practice—£300.

35 LONDON, W.—Steadily increasing PRACTICE in rapidly developing Western District. Receipts average £1,033 p.a. Panel 750. House (5 *bedrooms*), with nice garden, for sale. Ample scope. Premium £1,500.

36 LEEDS. — Practice £1,800 p.a. Panel 1,400. House (5 bedrooms) for sale or rent. Premium £2,600, to include drugs, etc.

37 SOUTH AFRICA.—Old-established PRACTICE in one of the pleasantest towns, with beautiful climate, in the Cape Province. Receipts average £2,900 p.a. House (4 bedrooms) to rent. Purchaser should be able to do major surgery. Premium £2,500.

38 SOUTH AFRICA.—Well-established PRACTICE, £1,200 p.a., in the Orange Free State. House in best position in centre of town. Rent £10 per month.

39 SOUTH OF ENGLAND.—Partnership in Practice £2,280 in first-rate County town. Small panel. Well-built house (6 bedrooms) *to rent.* Premium *one-half share* 1½ years' purchase.

40 NORTH DEVON.—Country Practice £775 p.a. in a most beautiful part. Panel 340. Detached house (7 bed and dressing rooms), with old-fashioned garden, for sale. Scope. Premium 1½ years' purchase.

41 NORTH-EAST COAST. — Ophthalmic PRACTICE of about £400 p.a., capable of increase, in favourite watering-place. *Large house in best part, which need not be* taken. Prospects of Hospital appointment. Premium £500.

42 MIDLANDS.—Non-dispensing Practice in prosperous town. No panel, clubs, or midwifery. Receipts 1928, £1,200, including small amount from Electro-therapy. House (5 bedrooms) for sale. Scope. Prem. £1,500, to include apparatus.

43 LONDON, W.—Middle-class Practice £730 p.a. in residential Western Suburb. No panel. House, with 5 bedrooms and garden, to rent. Premium £1,100.

44 SHEFFIELD. — Non-dispensing Practice about £800. No panel. Conveniently situated house (6 bedrooms). Premium, Practice and house, £2,000.

45 EAST COAST. — Partnership in Practice over £2,000 p.a. in small rapidly growing popular watering-place. Panel 700. Partner should be aged 25 to 30, single, with English *qualifications*, and have held Hospital appointment. Preliminary assistantship. One-third share at 2 years' purchase.

46 LANCASHIRE.—*Practice of about £2,000* in semi-rural district, easy distance of several good towns. Panel returns about £520 p.a. Nice house (6 bedrooms), with garage *and garden.*

47 MONMOUTHSHIRE. — Practice between £1,400 and £1,500 (*£1,100 from panel and contract work*) *in* progressive area. Modern six-roomed house, with garden, to rent. Small cottage hospital. Premium one year's purchase, part by instalments if desired.

48 LONDON, E. — Practice over £700 in populous district. Panel nearly 500, rapidly increasing. Shop-fronted house for sale or rent. Premium 1½ years' purchase.

49 HOME COUNTIES.—Partnership in Practice between £4,000 and £5,000 p.a. in first-rate residential town. Panel 1,900. One-fourth share at 2 years' purchase.

50 S. WALES.—Better-class Practice, nearly £2,000 p.a., in important and rapidly growing town. Panel 500. Large house, in own grounds, to rent. Scope for increase. Good Hospital and scope for major Surgery.

51 N. DEVON. — Partner required (after *preliminary assistantship*) in Practice worth £3,000 p.a. in first-rate country town. Panel over 2,100. Well-equipped Hospital. One-third share to suitable man at 2 years' purchase.

52 N. WALES.—Very old-established, £1,346 p.a. in small town. Panel 716. House (6 bed and dressing rooms) to rent. Premium 1½ years' purchase.

53 LONDON, N.—Rapidly increasing Cash and Panel PRACTICE. Cash receipts last year £715. Panel 510. Shop-fronted Surgery. Rent £53. Premium £800.

54 HOME COUNTIES. — Partnership in Practice about £2,800 p.a. in good town about 30 miles from London. Practically no panel and very little midwifery. Suitable house to rent or purchase. Partner should be experienced, and have held Hospital appointments. One-third share at 2 years' purchase after preliminary assistantship.

55 SOUTH COAST.—Non-dispensing Practice over £1,800 p.a. in residential town. No panel.

56 S.E. COAST.—Partnership in sound Practice £3,700 p.a. in important town. No panel. House with 5/6 bedrooms to let. Partner should be aged about 30, married, and interested in medicine. Premium five-twelfths share 2 years' pur.

57 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. Panel over 1,400. Partner should be good at midwifery. Premium *one-half share* 2 years' purchase.

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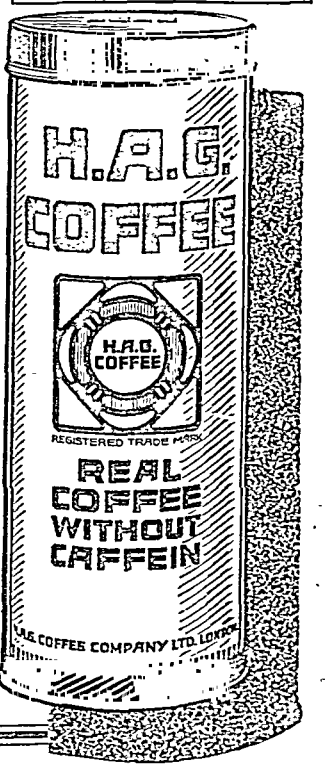

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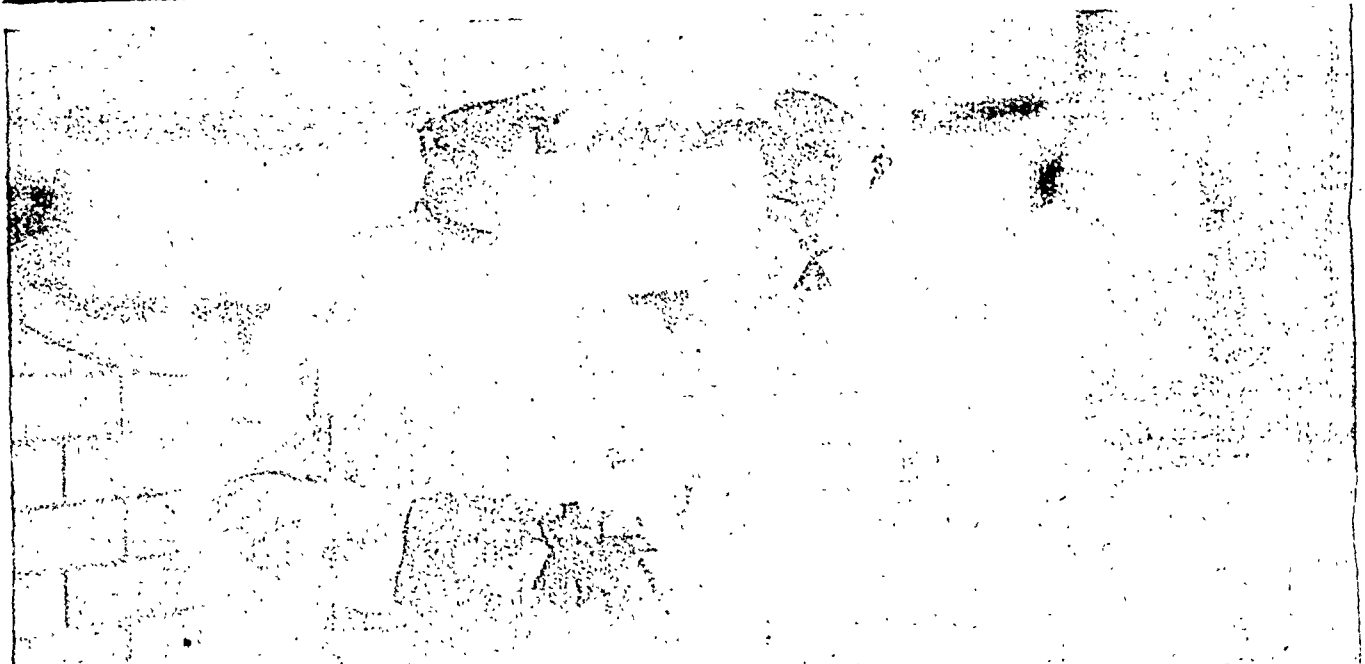

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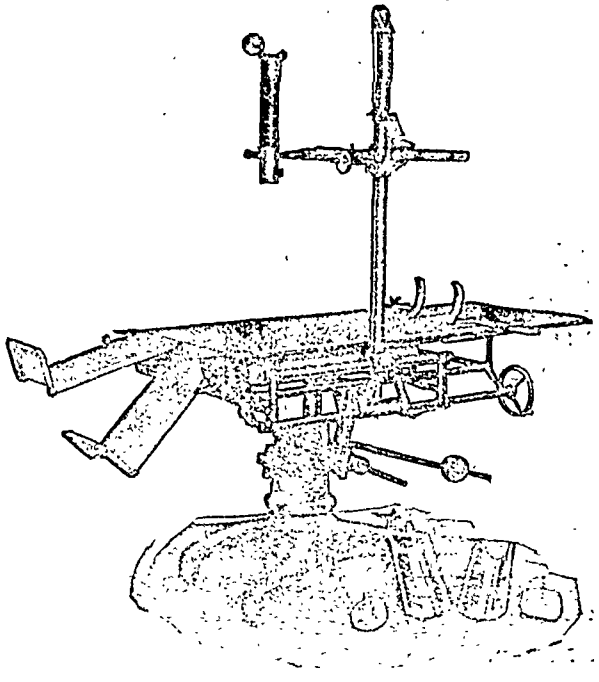

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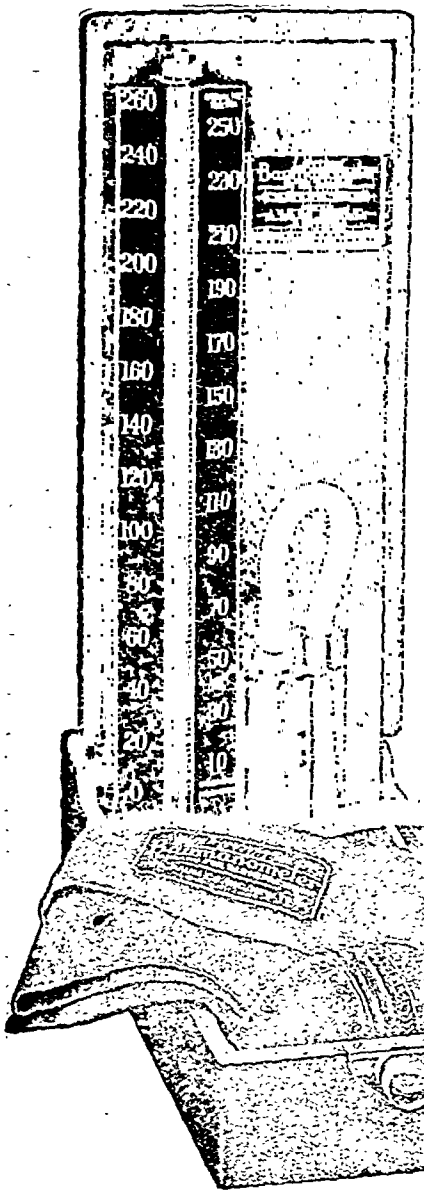

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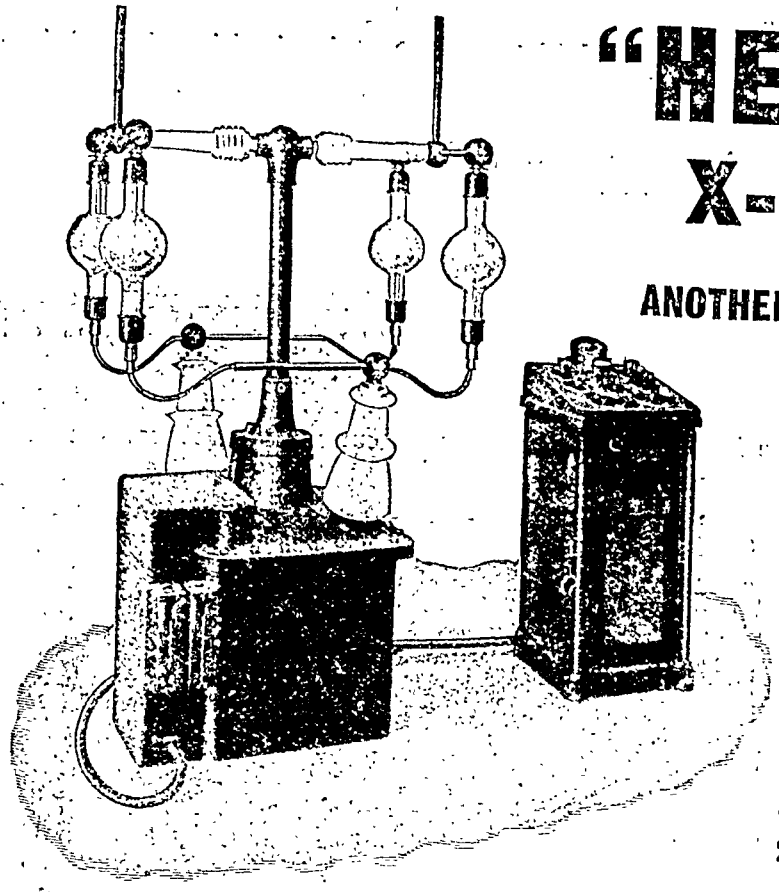

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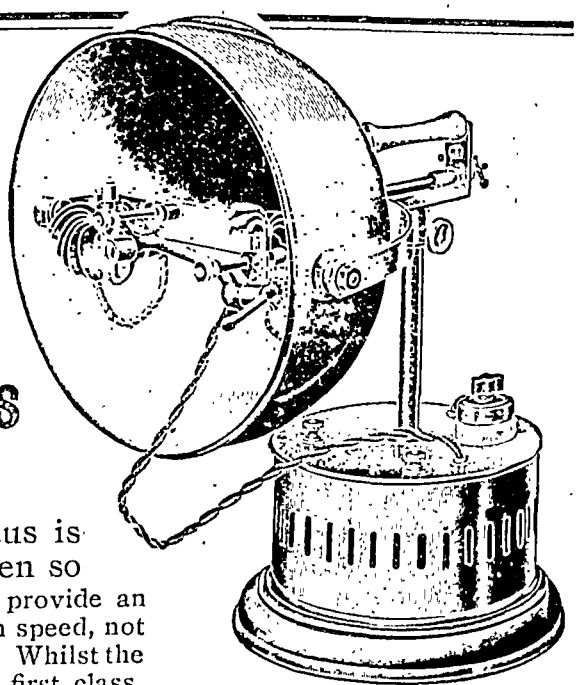

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Free from any disagreeable taste or odour.

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Strontii Bromidi	5 gr.	Tinct. Adonis Vernalis	5 m.
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Useful for functional nervous affections, particularly in controlling epileptic seizures.

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"A.B." Insulin was the first British Insulin available for use by the Medical Profession and after almost five years retains its reputation as the Insulin which can be relied on to give consistently satisfactory results. The supremacy of "A.B." Insulin is due entirely to the stringently high standards of purity, therapeutic efficiency and stability self-imposed by its manufacturers.

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Full potency and stability in all climates.
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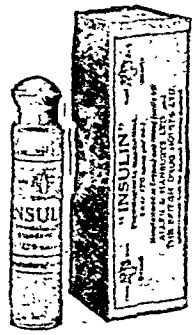

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M233

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"A suitable mixture is prepa loids Limited known as 'T EMULSION,' which is a co antiseptic Trichlorophenylme contai oidal a suitable adjuvant. or thrice daily emulsion in brea ext

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T.C.P. SOLUTION 3/- 8-oz. bottle. T.C.P. Bª COLLOIDAL

INTERNALLY T.C.P. is better administered under the form of Colloidal Emulsion. It is **ENTERITIS, GASTRO-ENTERITIS, HYPERTENSION, ARTERIO-SCLEROSIS, etc.**

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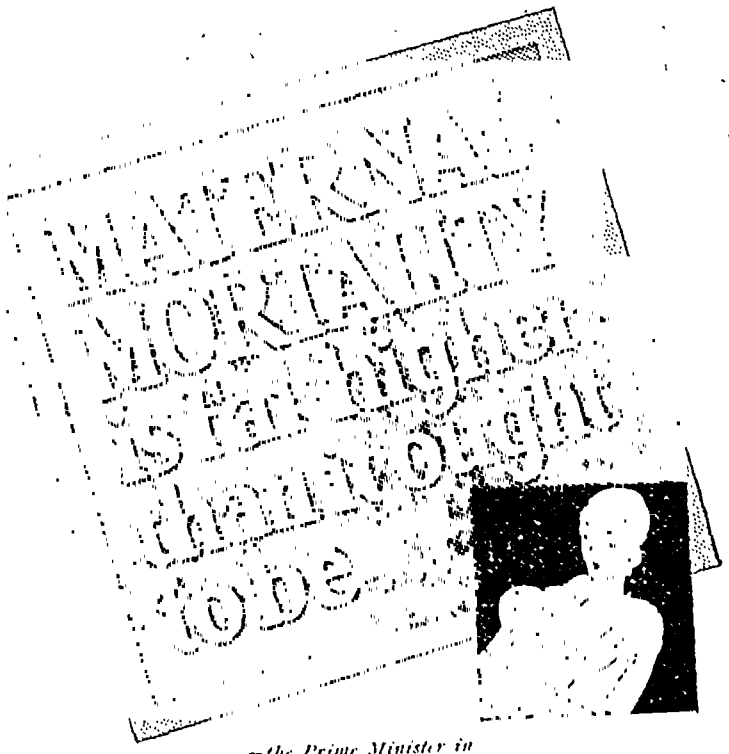

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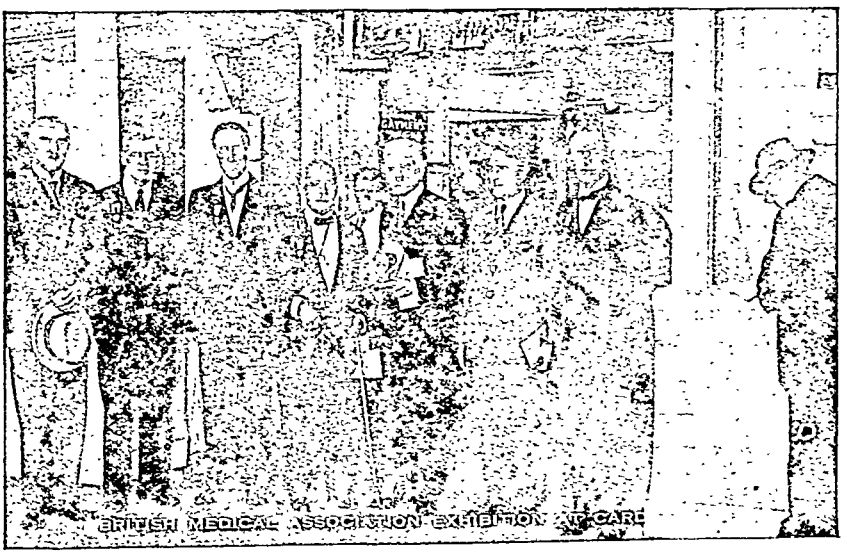

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The scientifically-standardised extra-dietary product containing Radiostoleum (Vitamins A and D) and concentrates of Vitamins B_1 and B_2.

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Telephone: Nottingham 45501
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Invaluable as a Galactagogue

This nourishing and sustaining food drink is helpful to nursing or expectant mothers

NOT only hundreds, but literally thousands of cases are recorded in which this well-known preparation — Horlick's Malted Milk — has proved its efficiency as a body-building food.

It is particularly valuable as an addition to the diet of the expectant and nursing mother. For Horlick's is a perfectly balanced food containing fat, proteins and soluble carbohydrates combined together in correct nutritive ratio. It is prepared from fresh, full-cream cows' milk, selected wheat and malted barley — and, during manufacture, is partially predigested to ensure easy assimilation.

Horlick's is rich in valuable malt-sugars, but contains neither cane sugar nor free starch. It is therefore extremely easily digested, and highly productive of energy.

These characteristics make it valuable as a galactagogue. Its abundant nutriment supplements any deficiencies in the mother's regular diet, and promotes a regular and nourishing supply of milk, and its easy digestibility makes it acceptable when other forms of nourishment are unwelcome.

Taken during pregnancy, it builds up the mother and helps to maintain her vitality. A cupful taken regularly first thing in the morning frequently abolishes and almost invariably alleviates the discomfort of morning sickness.

Horlick's is now obtainable in two forms — the original, natural-flavoured Malted Milk, and the new Chocolate Flavoured form — identical in its constituents with the original Horlick's, but flavoured with fine chocolate. Horlick's is sold in sealed glass bottles, price 2/-, 3/6, 8/6, 15/-. Also in tablet form.

Further details may be obtained from Horlick's Malted Milk Co., Ltd., Slough, Bucks.

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Most nourishing Bread

After all the discussions as to the relative values of white, wholemeal, and various brown breads, it is satisfactory to have conclusive evidence at last.

Following many experiments by various research workers it is shown that no bread contains so large a percentage of Vitamin B as HOVIS, or is such an active agent for healthy growth when forming the basis of the diet.

As is now well known, even a partial deficiency in Vitamin B in the diet, if lasting for any length of time, impairs health, and, with children, prevents perfect development.

HOVIS, even in small quantities, provides sufficient vitamin in a digestive form as no other bread does, and it is liked by all.

Richest in Vitamin B

HOVIS Bread consists of White Flour with the wheat germ incorporated. It is this which gives it its special value, since the germ is the part richest in the Vitamin.

The "brownness" of bread is not a measure of its vitamin content. HOVIS does not contain bran, and is easily digestible.

Note the following figures showing the Vitamin B content of milling products and yeast in 100 g. dried bread:

White Bread	200
Wholemeal Bread	1,450
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The evidence is conclusive. For providing the maximum of nourishment economically no bread equals HOVIS.

HŌVIS

(Trade Mark.)

Best Bakers Bake it

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ONE OF THE NEW GENATOSAN DENTAL PRODUCTS

GENOZO

BRAND

ANTI - PYORRHŒTIC TOOTHPASTE

The immunizing results obtained by Besredka and others by applying locally to the skin and mucous membrane wet compresses of dead bacteria have been confirmed by many competent bacteriologists. It is obvious therefore that a constant application of a vaccine containing the dead germs of pyorrhœa will produce a powerful local resistance in the gum tissues against pyorrhœtic and other purulent infections.

Based on these undisputed discoveries Genozo has been compounded by a surgeon dentist (also an M.D.) in co-operation with a distinguished bacteriologist. This toothpaste contains a special detoxicated vaccine, which is harmless and absolutely sterile, for the purpose of developing a local resistance of the gums to pyorrhœa. The other ingredients of Genozo harmonize with the recent findings of the profession on the injurious effects of certain substances contained in many dentifrices.

Because of the solvent action of strong alkalies on the tissues, soap has been excluded from Genozo, and as acids inflame the gums and put the teeth on edge by partially dissolving their lime salts this new toothpaste is non-acid. Genozo contains a polishing substance of a very fine nature and is powerfully antiseptic but entirely non-irritant. The daily use of Genozo leaves a high polish on the teeth without injuring the enamel and soon renders the gums firm and healthy.

A full-size Professional Sample of Genozo brand Tooth paste and samples for distribution to patients will be forwarded to any dental practitioner on request. The first Genatosan Dental Bulletin has already been sent to all registered dentists, but those whose copies have miscarried can still obtain a copy by writing to the Dental Products Department of:—

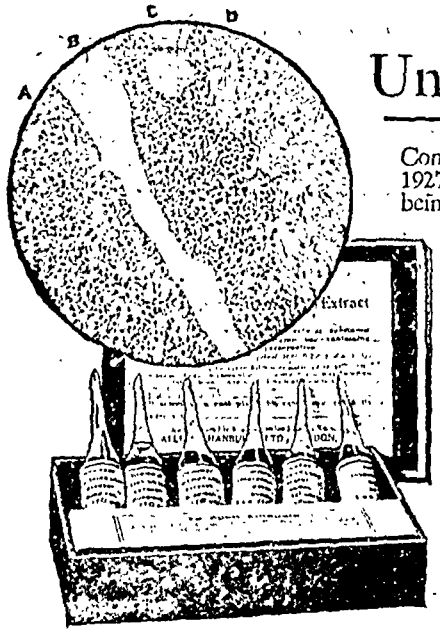
GENATOSAN LTD., LOUGHBOROUGH, LEICESTERSHIRE

L.P.G. 13]

Trade **'PITIBULIN'** Mark

Denotes

Unvarying Pituitary Extract



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As heretofore, 'Pitibulin' maintains the stringently high criteria of therapeutic efficiency, safety in use and stability, self-imposed by its manufacturers—qualities which have given it its high place in the esteem of physicians.

'Pitibulin' retains its reputation as the Pituitary Extract which can be relied on in emergency.

Micro-photograph of section of Pituitary showing

(A) pars anterior
(B) inter-glandular cleft
(C) pars intermedia (posterior lobe)
(D) pars nervosa (posterior lobe)

'Pitibulin' is supplied in Ampoules containing 2.5, 5, and 10 units.

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The 'Allenburys'

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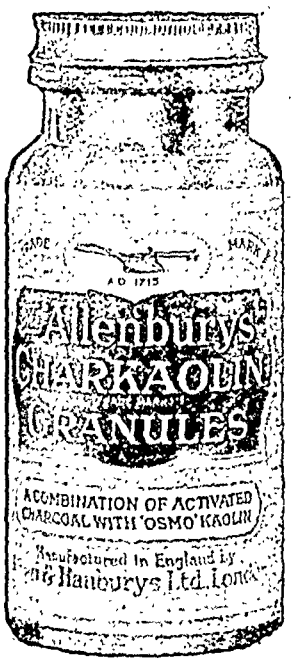

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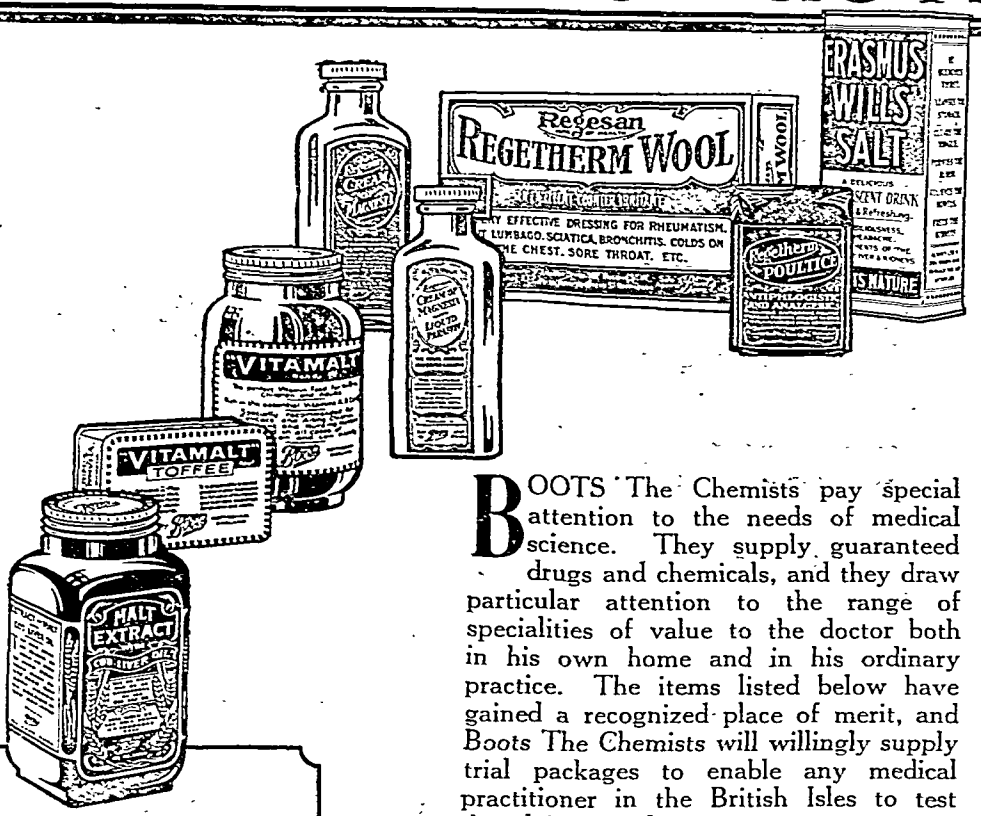

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MALT EXTRACT WITH
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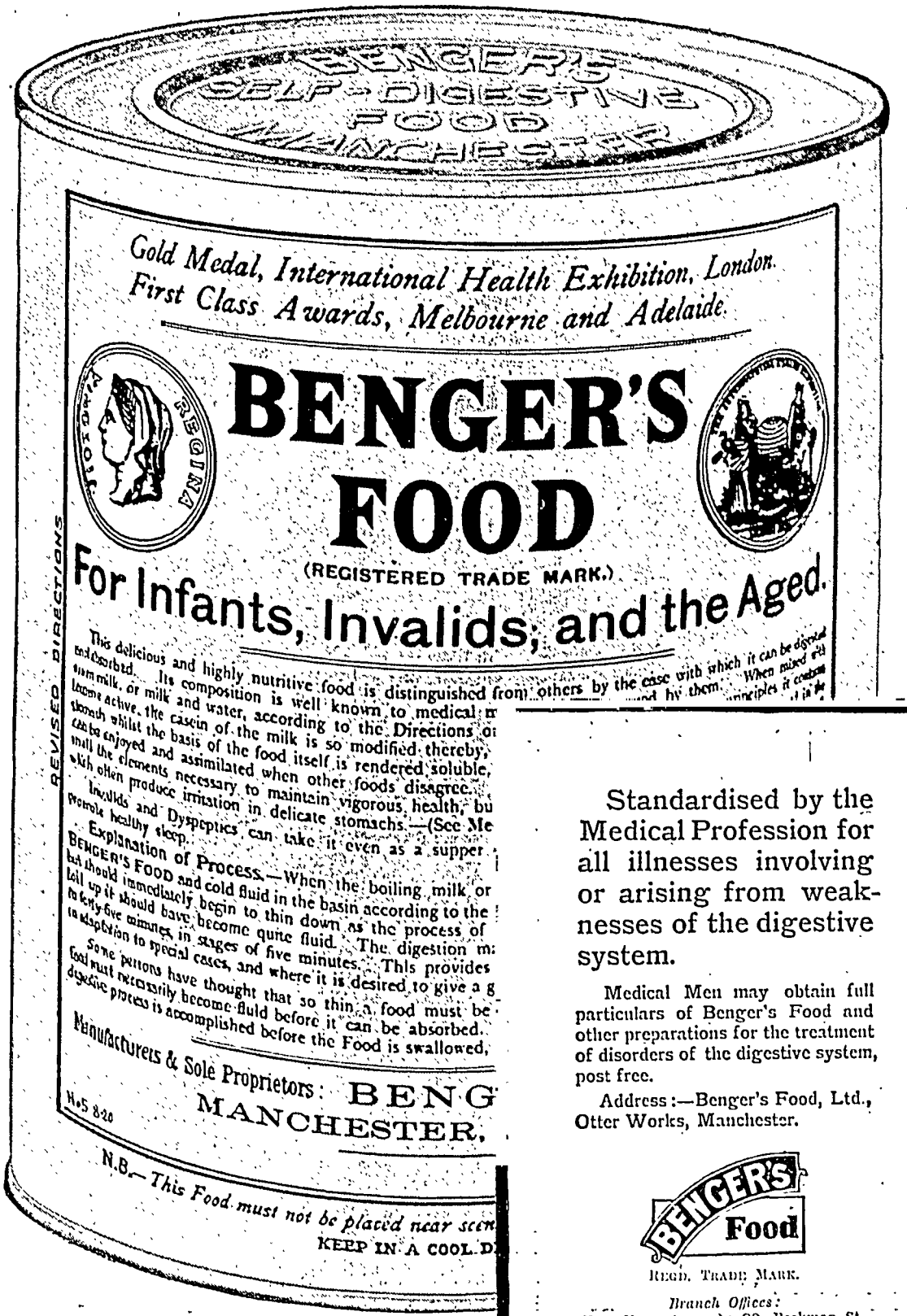

Standardised by the Medical Profession for all illnesses involving or arising from weaknesses of the digestive system.

Medical Men may obtain full particulars of Benger's Food and other preparations for the treatment of disorders of the digestive system, post free.

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SYDNEY (N.S.W.): 350, George St.
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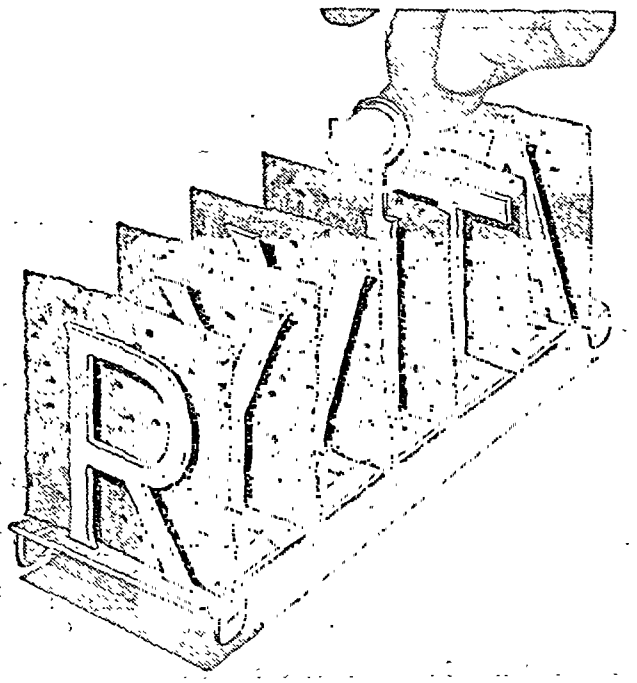
M.143.



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The "RYVITA RACK" has displaced the old-time toast rack

Every day, more and more people are discovering how much more delicious, how much better than toast is "Ryvita Crispbread," the wonderful daily bread of Sweden.

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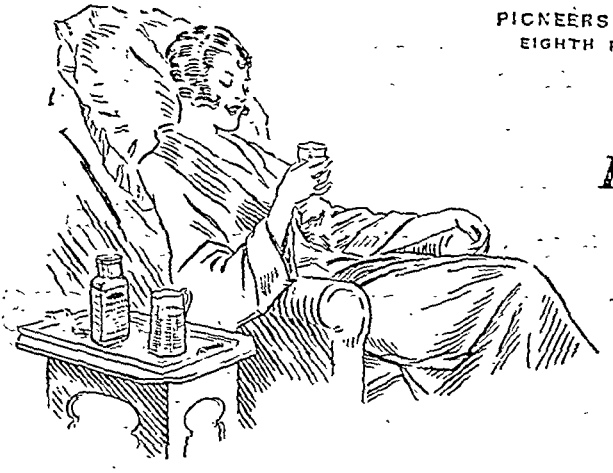

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A Lecture
ON
THREE CASES OF SPONTANEOUS SUBARACHNOID HAEMORRHAGE:
WITH ESPECIAL REFERENCE TO THE OCCURRENCE OF MASSIVE ALBUMINURIA AND KORSAKOW'S SYNDROME.*

BY
ARTHUR J. HALL, M.A., M.D., D.Sc., F.R.C.P.,
PROFESSOR OF MEDICINE, UNIVERSITY OF SHEFFIELD.

(*With Special Plate.*)

DURING recent years the subject of spontaneous subarachnoid haemorrhage has received increasing attention. Lumbar puncture has shown that this may occur without being necessarily fatal, and that its occurrence is indicated by a symptom-complex which in itself may be diagnostic. With this knowledge fresh cases are being more frequently recorded.

In each of the three following cases the diagnosis was made, not only by the characteristic mode of onset, but also by finding blood diffused through the cerebro-spinal fluid. Two were fatal. In one of these the diagnosis was confirmed at post-mortem examination, in the other a necropsy could not be obtained.

CASE I.

On the evening of November 10th, 1926, a young man, aged 26, was admitted to the Montagu Hospital, Mexborough, under the care of Dr. J. A. R. Lee, with the following history. He was returning home from his work as a bank clerk, and whilst walking along the street is said to have stepped off the footpath to allow someone to pass. In so doing he slipped and fell. It is also said that he had his hands in his pockets at the time and that he fell heavily head forwards. He did not attempt to get up. He was found to be unconscious, and was at once removed to hospital.

On admission he was completely unconscious; the limbs were in a condition of extreme rigidity. The arms were flexed across the chest so tightly that his clothes had to be cut off—the right arm being more rigid than the left. The legs were extended. The pupils were contracted. There was thought to be a slight facial paralysis, but this was uncertain. He remained in the same condition during the night.

The next morning his temperature was slightly raised (above 100° F.). There was some vomiting, and occasional twitching of the face. At 9 a.m. he was more conscious, looked about, but did not respond to questions. He is said to have spoken once. A sample of urine drawn off was found to contain a good deal of albumin.

When I saw him in consultation, about 10 p.m. of November 11th, the condition was as follows. He lay quietly on his back. The eyes were open and he looked about with a vacant confused expression. He did not show any response to questions or orders. The pupils were equal, of medium size, and reacted to light. There was occasional fibrillary contraction in the muscles of the left side of the face. The arms were flexed across the front of the chest, and any attempt at extension was strongly resisted. This was more marked on the right than on the left. No reflexes could be obtained in the arms. The abdominal reflexes were absent. The legs were rigidly extended—the right more than the left. The knee-jerks were brisk, also the ankle-jerks.

The plantar reflexes were markedly and briskly flexor on stimulation of the inner sole, and as markedly and briskly extensor when the outer margin was stimulated. In the right foot this persisted on repeated trials; in the left foot toe extension disappeared after a few repetitions. On simultaneous stimulation of the inner and outer parts of the sole the big toe remained motionless; the remaining toes were flexed.

The systolic blood pressure was 120, pulse 104. There was incontinence of urine. A catheter specimen showed a very heavy cloud of albumin. Except for a slight abrasion on the forehead, there was no evidence of any injury to the head. Lumbar puncture showed greatly increased pressure. The fluid was deeply blood-stained throughout. Unfortunately the specimen of cerebro-spinal fluid came to grief in transit to the laboratory, and therefore we have no detailed report on it.

On November 13th the temperature rose to 101° F. and remained there. The rigidity persisted. On November 15th the report was: "He answers 'Yes' and 'No' sometimes when questioned, but I think he does not understand the questions. He is taking a fair amount of milk and water. The urine yesterday contained less albumin and to-day only a faint trace."

He remained in much the same condition until death on November 18th, just a week after the attack.

A necropsy was made on November 19th by Drs. J. A. R. and R. T. Lee, who report as follows:

"We examined the skull very carefully and could not find any fracture. The whole surface of the brain was congested evenly, not in patches. There was some dark blood at the base of the skull in the region of the pons. It was clotted, and seemed recent. Nothing was found abnormal in any other organ."

A careful examination of the brain by Professor Douglas failed to show any aneurysm. His report is as follows:

"Generalized congestion of the pia mater, chiefly on the vertex. On the whole, the congestion is more marked over the surface of the left hemisphere than the right. It is more intense in the region of the left *motor area, comparatively slight* over the right. On the mesial surfaces the vessels are engorged rather more on the right side than on the left. The appearance is suggestive of acute changes in the meninges over the left frontal lobe. Similar changes are seen in the [illegible] and on the anterior part of the pons. [illegible] at the basal surface of the frontal lobe [illegible] marked on the right, where there is definite haemorrhage under the surface of the pia mater. No recent bleeding was seen in any of these parts. On cutting through the cerebellum a recent clot of blood about the size of a pea, and sharply defined, was found in the region of the inferior vermis, apparently just above the fourth ventricle in the middle line. It was semiliquid, and did not appear to be intimately mixed with tissue substance."

Portions of the brain from various parts were examined microscopically by Miss E. C. Eaves, M.D., who reports as follows:

Pathological Changes.

The vessels in the meninges were congested, and haemorrhages had occurred in different regions, most marked in the frontal lobe. In some areas the clot had become partly organized, but elsewhere the haemorrhage was apparently very recent, and extended a little way into the substance of the brain. Multiple small haemorrhages were present in the brain substance or around small or medium-sized vessels. The possibility has to be considered that the blood had tracked down the adventitial sheath of the vessel from the meninges. There were, however, situations in which a leakage of blood from the vessel could be observed. Haemorrhages were present in the corpus striatum and optic thalamus, as well as in the frontal lobe.

The changes in the tissue may be described as: (*a*) secondary to the haemorrhage; (*b*) primary changes.

(*a*) *Secondary.*—Some parts of the cortex appeared softer than normal. Microscopically there were numerous cells of the mesoglia type, and in some places there were groups of Körnchenzellen. The function of the latter is probably to aid in the removal of the debris of the softened nervous system. Friedmann,[1] in his experimental studies on the nervous system, has shown that these cells may appear in two or three days. The nerve cells exhibited a considerable degree of chromatolysis.

(*b*) *Primary Changes.*—The vessels of the meninges were thickened and stained in an abnormal manner with methylene blue (Fig. 3), as did some of the vessels in the nervous system. It was considered worth while to make an analysis of the cerebral cortex to ascertain if an unusual amount of calcification had occurred. The calcium amounted to 19.8 mg. per 100 grams of cerebral cortex, an amount about five times in excess of that found normally at the age of this patient,[2] and four times that found in old age accompanied by arterio-sclerosis. In some parts of the frontal cortex the vessels, and particularly the capillaries, seemed unusually numerous, even allowing for the fact that the congested and dilated condition would make them appear so. (Fig. 1.) This increased number of vessels was, however, limited to certain areas, and here the vessel walls were markedly different from the normal. There was proliferation both of the tunica intima and adventitia, and plasma cells were present. (Fig. 2.) There were many cells of mesoglia type in apposition to or near the vessel wall. Some of the blood vessels, and especially the very dilated ones, exhibited a thinning of the wall at intervals, although the vessel wall was elsewhere thickened. There was a slight increase of neuroglial cells.

The pathological findings are similar to those of a syphilitic arteritis. In this disease intracranial aneurysms may occur even in a young adult, and cause death from haemorrhage (Aldren Turner[3]). The limited area of the increased number of vessels is, however, difficult to explain. Nissl[4] has shown also that plasma cells are not pathognomonic of general paralysis, nor of syphilitic disease of the brain, but that they may be produced by any slight irritation, and are present in many diseases of the brain.

It is necessary to refer also to the experimental work of Friedmann.[1] He found that a destruction of [illegible] tissue may act as an irritant to the mesodermal tissues. In as little time as five to ten days the vessels of the irritated area [illegible] in number, and are thickened by proliferation of the [illegible] wall. The softening of the nervous tissue brought about by the haemorrhage could therefore act as an irritant and bring about a new formation of vessels in a limited area.

The possibility of an angiomatous condition may be considered. Calcification may occur to an unusual degree in this condition, as in two cases described.[2] However, haemorrhage was not a feature in these cases, although the patients, being epileptics, had numerous falls.

* Delivered before the Chesterfield Division of the British Medical Association.

The histological report shows that, although this man was thought to be in sound health prior to his fall, his intracranial arteries were definitely and considerably abnormal. The changes found in them are, in Miss Eaves's opinion, not inconsistent with a syphilitic origin. Unfortunately, owing to the loss of the specimen of cerebro-spinal fluid in transit to the laboratory, the means of confirming this or otherwise is wanting. At any rate, whether syphilitic or not, no aneurysm was found after a careful search of the hardened specimen, and the distribution of the blood did not point to one single focal origin. The presence of so large an amount of calcium in the brain points to changes of rather wide extent and long development.

Relation of Trauma to Haemorrhage.

This raises a point of much practical importance. Had this fall occurred whilst the man was at his work the question of compensation would almost certainly have arisen.

The history is that "he was walking along the road and, the footpath being narrow, he stepped off it to allow a lady to pass; that in so doing he slipped, and fell forward. As he had his hands in his pockets he could not save himself, and fell on to his forehead." There was only a slight abrasion on the forehead, and a careful examination of the skull showed that there had been no fracture or obvious injury to the skull. It is obvious that immediately before he stepped aside there had been no intracranial haemorrhage, for this does not begin without symptoms. On the other hand, immediately after he had fallen he was found to be unconscious and made no attempt to pick himself up, so that within that short time the haemorrhage must have been considerable.

Probably the immediate cause of the haemorrhage was the sudden muscular effort in trying to save himself when he slipped. This would be quite in keeping with the history often recorded in cases of spontaneous subarachnoid haemorrhage, in which the seizure occurs with surprising suddenness whilst lifting something comparatively slight, such as a coal-pan, or, as in a case under my care some years ago, hitting a four at cricket. If that is so, the actual fall would be not merely due to the slip but to the onset of haemorrhage, and with this rapidly extending he quickly became unconscious and rigid.

The second point of interest is that within a few hours of the attack this patient showed transient massive albuminuria. This sign was first recorded by Widal in 1903,[5] and since then has been observed from time to time. It is by no means always present. Symonds[6] points out that, although there is good physiological evidence that this may be due to disturbance of nervous centres concerned with renal secretion, hitherto in such cases the absence of renal disease has never been clearly established on clinical or post-mortem evidence. In this case the clinical evidence is that the albumin practically disappeared in a few days, and at necropsy the kidneys were found to be healthy.

In the second and third cases the point to which I would call attention was the presence of typical Korsakow's syndrome.

CASE II.—*Spontaneous Subarachnoid Haemorrhage in a Healthy Man of 36: Prolonged Pyrexia: Korsakow's Syndrome: Recovery.*

A married man, aged 36, always very strong and active, on January 6th, 1928, in the evening, whilst visiting at a house, felt a sudden intense pain in the back of the neck, much more severe than anything he had ever felt before. With great difficulty he managed to walk home. He vomited several times, but the pain persisted. Next day there was a temperature of 100°, headache, pain in the eyeballs, and stiffness of the neck.

With rest in bed he improved during the next day or two. On January 9th he came downstairs, but still felt pain and stiffness in the neck. The next day he stayed in bed and took a purgative as he had been somewhat constipated. After the bowels had acted he fell asleep and was sleeping quietly at 11.30. About 2 p.m., when food was taken to him, it was found that he could not be roused, and, in fact, was comatose.

I saw him about 3.30 p.m. He was deeply comatose, the respirations were noisy and irregular, of Cheyne-Stokes type. He was pale, slightly cyanosed, the eyes half closed, pupils small, divergent squint. The pulse was soft, small, and showed increased frequency. The legs were flaccid; no knee-jerks could be obtained, and no Kernig's sign. There was slight toe extension on the right foot, no response on the left.

The diagnosis of subarachnoid haemorrhage, due to a leaking aneurysm, was made. Lumbar puncture showed a free flow at rather increased pressure, deeply blood-stained throughout. The Wassermann reaction was negative.

On January 11th he was rather better; he had had a restful night, sleeping most of the time; he would wake up and respond vaguely when spoken to, but was very dull and heavy. The pupils were normal in size, equal, and reacted normally; there was no cranial palsy, and no head retraction. He passed urine voluntarily. Knee-jerks were still absent. Toe flexion on both right and left. The next day his condition was much the same—he was rather more restless. There was slight toe extension on both sides. Lumbar puncture again gave blood-stained fluid at slightly increased pressure.

During the next ten days his condition did not change very much; there was pyrexia every day, with a pulse always about 130. At one period catheterization was necessary, and this was followed by some cystitis, which soon passed off. During all this time the knee-jerks were constantly absent, whilst the plantar response varied. He was chiefly in a lethargic stuporose state, but could be roused, and he recognized those around him in a confused way.

On January 20th there was some ptosis and nystagmus, also slight Kernig's sign. The temperature returned to normal on January 25th; pulse 84, still very lethargic but clearer in between. A faint knee-jerk was obtained in the right leg for the first time on this day.

At the beginning of February he was having restless nights and sleeping all day. When aroused he was in a state of complete euphoria. He would smile, and say he was quite well; he had no idea of time or place; would begin an answer sensibly and at once wander off into confused nonsense. No nystagmus was present, and the fundi were normal. Knee-jerks were present, though very feeble.

He improved gradually, and by February 23rd he was coming downstairs each day. Mentally he presented the features of Korsakow's syndrome. There was smiling euphoria, together with unblushing accounts of what he had done, which were quite imaginary. Thus, in the presence of his wife and doctor, when asked what he did yesterday, he said at once that he had been out walking in the garden, although he had not been out of the house for six weeks. When corrected by his wife, he said, "Oh, didn't I?" and did not seem at all bothered. This mental condition continued for several weeks.

On June 20th, 1928, he was going about as usual, and driving his motor car for long distances (100-mile runs). He was sleeping and eating well. Slight headache and vertigo were present at times. His speech was slow and deliberate, with definite hesitation for words at times. Memory for recent events was not very good. His expression was rather fixed; there was slight tremor of the lids, but no nystagmus; knee-jerks were still only obtained on reinforcement.

At the present time, more than a year after his attack, he has been able to resume his full work, which involves a good deal of public speaking. He finds that for this he is obliged to rely on notes such as he did not require previously.

As regards the possible cause which set the bleeding going in this case it is said that just before going to make the call where it happened the man had been playing very vigorously with his little child—throwing it up in the air and lifting it on to his shoulders, etc. The second haemorrhage was no doubt set going by the effort connected with the act of free purgation. It emphasizes the importance of complete and prolonged rest after even the slightest subarachnoid haemorrhage.

This case appears to have been one of leaking aneurysm in which there was a primary small leak and a secondary larger but not fatal one.

The last of the three cases I have to record proved to be primarily a case of chronic granular nephritis, of which the subarachnoid haemorrhage was only an item. The presence of Korsakow's syndrome showed itself in rather a striking way.

CASE III.

A woman, aged 44, was brought into my ward on a stretcher on August 7th whilst I was going round, and before leaving I looked at her and asked some questions. She was rather confused, but said she had suffered from fits for several years, and that she was quite accustomed to them. I assumed that one had occurred in the street, and that she had been brought in because she was in a state of post-epileptic confusion. The next day when I saw her my house-physician said that lumbar puncture

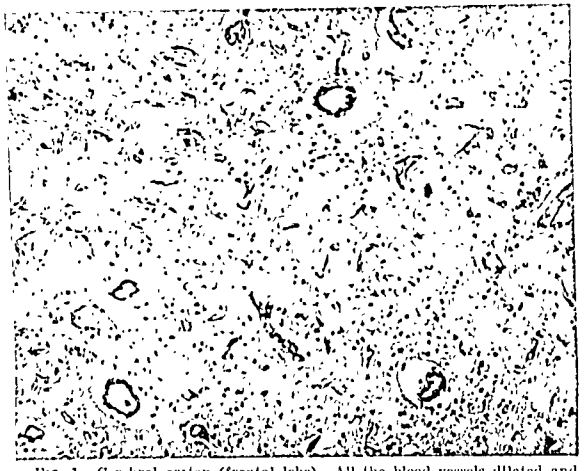

FIG. 1.—Cerebral cortex (frontal lobe). All the blood vessels dilated and more numerous apparently than normal. The spaces round the vessels may be due to faulty fixation. Magnification 60.

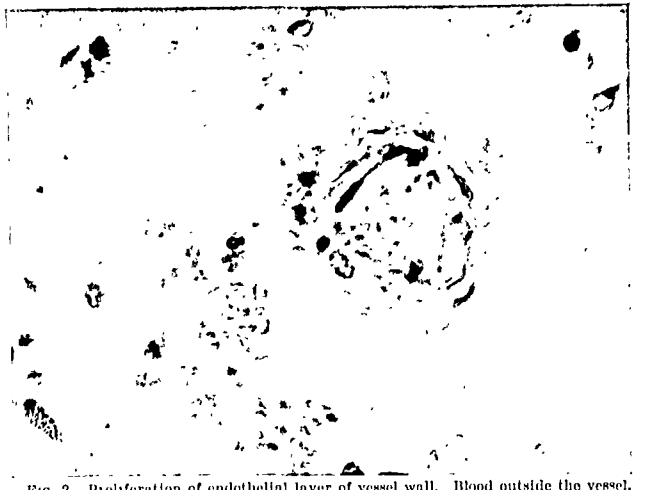

FIG. 2.—Proliferation of endothelial layer of vessel wall. Blood outside the vessel. There are two or three large microglia cells, only the nuclei of these being distinctly stained. Magnification 510.

FIG. 3.—Apparently calcified vessels, near corpus striatum; similar vessels in meninges. Magnification 60.

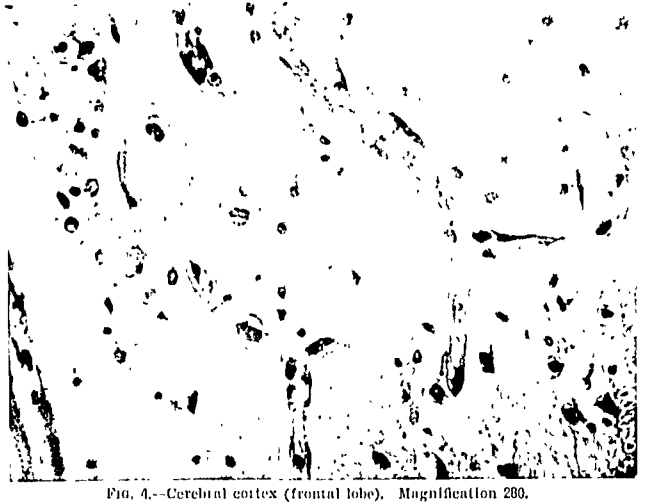

FIG. 4.—Cerebral cortex (frontal lobe). Magnification 280.

From microscopic sections prepared by Miss E. C. Eaves, M.D., Lecturer on Physiology, University of Sheffield.

T. K. MENON AND T. B. MENON: COEXISTENCE OF LYMPHADENOMA AND TUBERCULOSIS.

FIG. 1.—Photograph of the intra-thoracic glands with the foci of necrosis. (By the courtesy of Captain Barnard, Radiologist, General Hospital, Madras.)

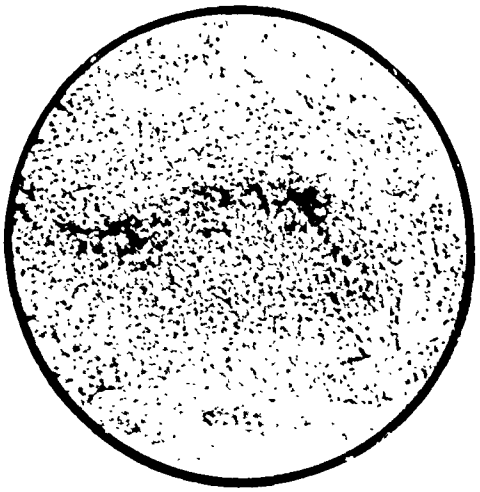

FIG. 2.—Showing the lymphoid areas surrounded by dense fibrous tissue. (× 82.)

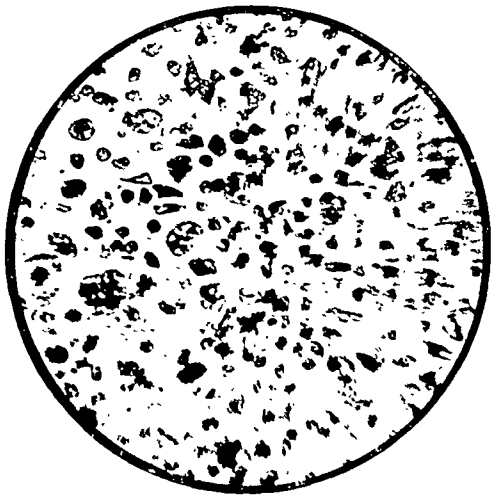

FIG. 3.—Showing the endothelial giant cells and multinucleate endothelial cells. (× 720.)

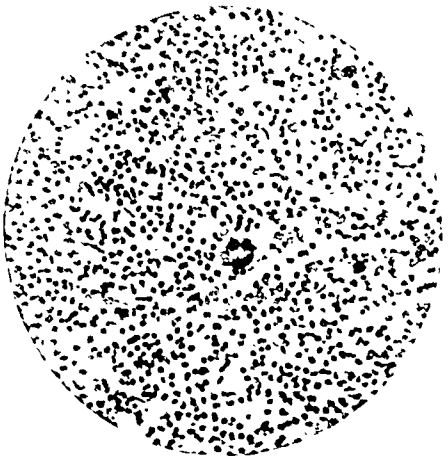

FIG. 4.—Showing an endothelial giant cell with large nuclei arranged round the periphery. (× 450.)

R. MORTON: RAPID HEALING OF A GASTRIC ULCER.

FIG. 1.

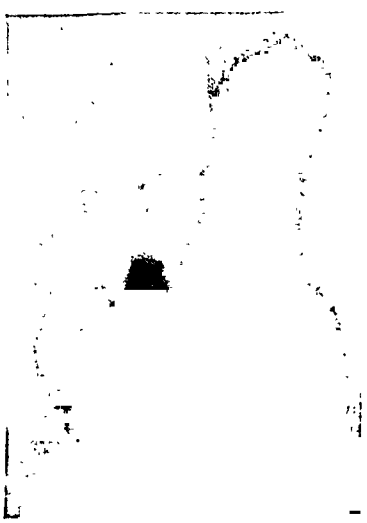

FIG. 2.

FIG. 3.

showed a blood-stained fluid at increased pressure, and that he had obtained the following history from her husband.

Three weeks previously she had sudden excruciating pains in the nape of the neck, with severe headache and vomiting for three days. After that she had pain behind the eyes, and headache. The evening before admission she had another sudden pain in the head, fell down unconscious, and remained so until shortly before coming in. She had never been subject to fits, and her statement to me the day before was entirely a confabulation.

During the next few days this condition of Korsakow's syndrome persisted; she would at any time, when asked what she had for dinner, give a detailed account of an ordinary plain dinner, with particulars elaborately filled in, although taking nothing but liquid food.

Further haemorrhages occurred, and she died on August 18th. She had albuminuria, retinal haemorrhages, and a blood pressure of 200/125. No necropsy was allowed.

The occurrence of Korsakow's syndrome in subarachnoid haemorrhage has been emphasized by more than one observer. Herman[7] of Warsaw, in a paper based on eighteen cases of subarachnoid haemorrhage seen in Flatau's Clinic, writes: "Chez ces malades apparait fréquemment le syndrome net de Korsakow." He states that it was first noted by Goldflam, and later by Mackiewicz.

Goldflam,[8] writing in 1923, says:

"In nearly all cases, at the height of the illness, certain psychic disturbances are observed, such as disorientation as regards time, places, and persons. These are generally neither severe nor constant. In some cases these disturbances come to the fore from the beginning, and consist of delirium, motor unrest, and confabulation, corresponding with Korsakow's syndrome; a good description is given by Flatau. This psychosis may outlast the fever and meningeal symptoms by weeks. Gradually the patient recovers from his delirium, corrects his confabulation himself, and the psychic symptoms disappear completely in, say, six weeks, as occurred in one case. In their place there remains for a time forgetfulness of actions just performed—for instance, the patients tell the same story many times over without realizing it. On the whole, it may be said that memory is well retained in such cases for events previous to the illness, but there is more or less complete amnesia, either for the whole duration of the illness, or for the first few days.

"It is known that Korsakow first described his syndrome in cases of polyneuritis, hence the name 'polyneuritic psychosis.' Since then the syndrome has been observed in a number of different conditions, from toxic and infectious diseases to cerebral contusion and incurable diseases, such as progressive paralysis and senile dementia. So far as I know, it has been described in subarachnoid haemorrhage only by Flatau, and yet it is present in all cases, more or less distinctly, not infrequently in a quite typical form. (It may be mentioned in passing that it is not found in cerebral apoplexy.) Whereas the prognosis in many of the conditions mentioned is absolutely bad, or grave, it is good in subarachnoid haemorrhage, for the psychic disturbances disappear completely. It may be assumed that the anatomical changes in these cases are of a temporary nature, and that the alterations in the cortex brought about by the extravasations of blood are capable of complete regression."

Mackiewicz's paper appeared in a Polish publication which I have not been able to obtain, nor has it been possible to trace the exact reference to Flatau's publication said to have been made in 1917.

The question of prognosis was of considerable importance in the second case. The somewhat prolonged persistence of mental symptoms caused considerable anxiety, as the patient held a highly responsible position involving much speaking in public, and his whole future depended on being able to continue this. In his case Flatau's views have been fully confirmed.

Symonds[6] has divided the cases into four clinical groups, on the following lines.

Group 1.—Sudden large haemorrhage leading to coma and death within a few hours.

Group 2.—Initial haemorrhage sudden and severe, but it is checked; initial coma gives way to mental confusion with severe headache; ends in recovery or further attack and death.

Group 3.—Initial haemorrhage small; headache and vomiting may lead to confusion, coma, and death; or the patient may recover.

Group 4.—Slow leaking; gradual headache and vomiting. [This group is somewhat hypothetical.]

Of the cases here recorded No. 1 would come under Group 2, whilst Nos. 2 and 3 would come under Group 3.

If there is extensive and advanced general arterial disease, syphilitic or other, there is no *a priori reason* why a vascular rupture should not occur in a meningeal vessel just as it does in one that is intracerebral. So also if the case is one of some general disease in which a tendency to haemorrhages is a recognized feature, such as purpura, haemophilia, scurvy, leukaemia, etc. Also in cases of embolic aneurysms due to septic infection the possibility of a meningeal bleeding must be always present. In all the above circumstances subarachnoid haemorrhage may occur, and the reason why it does so less commonly than intracerebrally is due to various factors which need not concern us here.

In some of the above groups of cases the immediate source of the bleeding has been a pre-existing aneurysm demonstrable at necropsy. In others, although no aneurysm is found, the site of bleeding is strongly indicated by the appearance of the meninges at and around some particular area, and even the ruptured vessel may be found—usually a very difficult matter. Apart from these groups, which together form the bulk of the cases of subarachnoid haemorrhage met with at necropsy, cases occur from time to time which cannot be included under any of these headings. Such cases have certain features in common. Thus they often occur in comparatively young people—early adult life; they usually come as bolts from the blue in persons thought to be in excellent health; they are accompanied by pyrexia for the first week or so; there may be subretinal haemorrhages. In a considerable number of the fatal cases of spontaneous subarachnoid haemorrhage of this class an aneurysm at the base of the brain has been found, and it has been suggested that such would be found more often were the examination made with sufficient care. These have been termed "congenital aneurysms," and it is assumed that they have arisen from some localized defect of development at this particular point, usually in the circle of Willis.

Parkes Weber[9] has pointed out that the term "congenital aneurysms" is inaccurate, and does not express what is meant, and that the assumption that there is an aneurysm in all these cases, whether it is found or not, overlooks the fact that a rupture may occur without necessarily being preceded by an aneurysmal dilatation, such as might occur in undue fragility of vessels or in a naevoid angiomatous condition, either of which might give rise to a spontaneous subarachnoid haemorrhage under some slight extra strain. Such alternatives seem to fit in rather better with some of those cases in which there are recurrent attacks of "leaking aneurysm" without a fatal result occurring. It is difficult to think that an actual aneurysm at the base of the brain which has once leaked can be in such a physical condition as to leak repeatedly at considerable intervals without a fatal bleeding ere long. On the other hand, it is quite conceivable that slight ruptures of vessels might arise in different parts of the meninges from fragile vessels or from a naevoid condition, and each in turn be sealed up and permanently closed.

The point at issue seems to be, are these cases of leaking "congenital" aneurysm occurring in younger persons merely a defect at one point of otherwise normal vessels, or are they a localized manifestation of a wider defect of intracranial vessels, possibly of developmental origin? If the latter, then whether the haemorrhage is preceded by an aneurysmal dilatation or not would appear to be a matter of more or less secondary importance, the primary cause being an abnormal state of the vascular development. So far as we have been able to review the literature of these cases we have found very few records as to the microscopical condition of the intracranial vessels other than some of the basal arteries. As a rule the pathological information available is limited to the naked-eye changes found at necropsy or the microscopic examination of the aneurysm itself. Case i, which clinically conformed in every point with the classical description of spontaneous subarachnoid haemorrhage, is therefore recorded because a detailed examination of the whole brain has been made and definite evidence of rather widespread vascular changes

has been found. It suggests that we are dealing with such a widespread abnormal vascularization of the intracranial area. My thanks are due to Professor Douglas and Miss Eaves for their valuable help in the pathological investigation of this case.

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POST-ENCEPHALITIC DELINQUENCY.*

BY

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IN a recent book[1] I recalled that during the war, from September, 1915, to February, 1916, first at Commercy and later at Verdun, as medical officer in charge of the neuro-psychiatrical services, I was struck by several cases of encephalomyelitis presenting peculiar mental symptoms. It was these mental forms of the disease that first put me on the road to discovering epidemic encephalitis, which, along with Moutier and Calmettes, I then called subacute encephalomyelitis. In a series of 208 patients studied at Commercy and Verdun, three had attracted my attention by their symptoms of fever, delirium, and mental confusion, which, without investigation, had been attributed to typhoid fever. One of these patients, suffering from amnesia, affective indifference, transient excitation, followed by asthenia and indolence, suggestibility, faulty judgement, stereotyped gestures, and negativism, resembled a case of dementia praecox. A fourth patient, a few weeks after influenza, had become almost demented and suffered from somnolence and intellectual collapse. A fifth had difficulty in speaking, an uncertain gait, headache, intention tremor, hemiparesis, and hemianaesthesia of the right side. A sixth, whose illness at the inception resembled, but was proved not to be, typhoid fever, suffered from diminished vision, clonic spasms of the eyes, unaccompanied by lesions of the fundus, and opisthotonos. Finally, a seventh had been seized with epileptic crises, with progressive mental deterioration, speech defects, and other symptoms too discordant to be attributed to cerebral tremor.

Eight further cases observed afterwards at Bar-le-Duc showed ill-defined mental symptoms—for example, impaired memory, intellectual deterioration, hebetude, and somnolence, but unassociated with modification of the cerebro-spinal fluid. In most of these cases an infectious state was noted, accompanied by febrile reaction, delirium, fatigue, inertia, and rigidity. Although the cause of the condition, in spite of researches then being carried out, was unknown, the patients improved under treatment, but several, after the acute phase had passed, had a fixed expression, slackening down of their actions and thought processes, and in some cases a tremor—symptoms which are singularly allied to those of what is now called epidemic encephalitis. As well as these purely mental forms I described convulsive choreic, meningitic, hemiplegic, ponto-cerebellar, ponto-medullary, acute ataxic, and anterior poliomyelitis forms. Of this polymorphism Professor Achard wrote:

"It might at first be believed, and was as a matter of fact believed for some years, that the disease described in France and in Austria in April and May, 1927, respectively, was not the same, so different were the two pictures drawn of it. Our fellow-countrymen had described a disease of very *diverse forms*; the Viennese author a disease very simple in its symptoms. . . . It was not until later that it was noticed that the disease could assume varied, changing, and unexpected aspects, and that this very diversity appeared to be one of its essential attributes. . . . Von Economo's description represents only one type of the disease. In strict justice it is the most exact description that has the greater merit, and it is Professor Cruchet's publication, which preceded von Economo's by a few days, that takes priority."

I cite these remarks less to return to the question of priority than to emphasize the importance of the polymorphism of encephalitis, a character which I considered essential from the beginning. This polymorphism, which is found in all the clinical forms of encephalitis, is an attribute of the mental forms with which I wish to deal more particularly.

The commonly described clinical syndromes of mental disorder can be recognized only with difficulty in epidemic encephalitis. The maniacal, melancholic, and chronic delirious syndromes are never clearly defined. I have known encephalitic patients with delusions of persecution, but modified, unobtrusive, and unaccompanied by auditory hallucinations. Much the same is true of the cases of megalomania, and of those patients whose psychoses assume the obsessive form. The most common type resembles dementia praecox, but even then with sufficiently marked differences.

I will cite a case representative of the conditions I have mentioned.

THE CASE OF ALIX.

This patient was aged 10 when, on February 10th, 1920, the first symptoms presented themselves; his teachers noticed that his eyelids drooped, and that he had a vacant expression. His vision was blurred and he had diarrhoea. On February 13th, at about 6 o'clock in the evening, he fell asleep during evening preparation. He had a raised temperature and was taken to the school *infirmary*, where, though he went on sleeping at night, it was observed that his body would every now and then move spasmodically. The next day he went to chapel, but fell asleep there. The fever, spasmodic movements, and blurred vision persisted, and that same evening he was taken to his home in a motor ambulance. On his arrival he was put to bed. He was febrile, delirious, restless, and the spasmodic movements continued. He had no sickness and the diarrhoea stopped.

On February 15th he was very tired and his tongue was parched; movement of the head was accompanied by pains at the back of the neck; his eyes were almost closed and staring upwards; he seemed blind, and could recognize neither the doctor nor his parents. His breath was very fetid, and he could only be roused from sleep with difficulty. Owing to pains in his neck and his loins he was unable to sit up in bed. Kernig's sign was slightly positive. An examination of his blood yielded no relative information. The next day his condition was worse; his teeth were clenched, and he had difficulty in swallowing. For a few moments during the morning vision returned, but he soon fell into a state of *torpor*.

On February 17th he was able to read a few lines from a newspaper, though it seemed to him to be printed in very small letters. His condition improved; the attacks of sleepiness were shorter, trismus was not so pronounced, his tongue less parched, and he was able to drink some milk without too much difficulty. He had, however, rather restless nights. On February 18th and 19th the fever increased, and restlessness once more became marked, but on the 20th improvement became evident and continued until the 22nd, when he was allowed up for a little while. Delirium was still present, but occurred for shorter periods and less frequently. During the following days he improved so rapidly that he was able to go out and ride a bicycle during the first week in March. He still had attacks of sleepiness, however.

Six Weeks Later.

When I examined him about six weeks later he seemed much better. He would get up about 6 or 7, ride his bicycle, and live a normal life till about 5 or 6 in the evening, when he would go to bed tired and fall asleep. At 7 he would be awakened for dinner, but sometimes he would be so overcome with sleepiness that he would keep mouthfuls of food in his mouth without swallowing them. Occasionally he would fall asleep after each mouthful. On certain days he had to be carried upstairs, undressed, and put to bed; his sleep was restless, and sometimes he was even seized with somnambulism.

The changes in his character were very remarkable; he had become irritable and insolent, and had violent outbursts of anger which were followed immediately by sleepiness. He would repeat the same thing over and over again, and would constantly put the same questions. When a story was read to him he would ask for the explanation of each word, even when he knew it quite well. He was unstable and changed his games frequently. Before his illness he was, if anything, mentally advanced for his age; now he was rather backward. His memory appeared to have deteriorated and his intelligence to have slackened. He complained of fatigue and headache at the slightest mental

* Abstract of a lecture delivered in English at the Universities of Glasgow and Edinburgh, on the invitation of Professor Currie and Professor Edwin Bramwell, April 22nd and 29th, 1929.

effort. His words were those of a child younger than himself; he spoke of going on a steamer or of becoming a naturalized American. He often had phobias. One day he thought that a heap of dust was a dead man and was afraid to approach it. If his sister's food fell on the ground he was worried that she might poison herself; if she had no hat, she was sure to get sunstroke, and so on.

On examination, his left eyelid was seen to be slightly drooping; the right eyelid was normal, but the droop in the left had noticeably increased since his recent illness. The left pupil was smaller than the right, which was slightly affected with mydriasis. Reaction to light was weak and vision blurred—in the right eye more than the left. There was no diplopia. Right eye vision was 10/10, left eye 3/10. His patellar reflexes were brisk.

It is needless to discuss the diagnosis. The case was one of encephalitis, of the lethargic type, such as was seen above all during the winter of 1919–20, the period of the first great French epidemic. The attacks of sleepiness, with their curious associated symptoms, were pathognomonic. It is worth considering the later stages of Alix's illness. As he grew he became more difficult and unmanageable; his physical development made rapid strides, but his mental state became increasingly unsatisfactory.

Three Years Later.

When I saw him in 1923 Alix was 13 years old, but so well developed physically that he looked 16. He was no longer affected with somnambulism, but his character had become progressively worse. He was irritable, insolent, quarrelsome, argumentative, boastful, would listen to no reproof, and insisted on having his own way in everything. In his narratives, shooting, fishing, rifle shots, and knife thrusts no longer had any terrors for him. He was, in fact, an excellent swimmer, and would plunge without hesitation into the Gironde, and, in spite of the strong current, remain in the water for hours on end, at the risk of drowning; or he would go out among the rocks, climbing the most impracticable places without realizing the danger.

This Hotspur had phobias in singular contrast to his intrepid nature. He was terribly afraid of microbes and had a mania for cleanliness; he was for ever washing his hands and scraping the soap he had used with a knife for fear that it had become contaminated. He changed towels immediately after using them, and if anyone else touched his towel he would throw it on the ground and immediately take another. He was afraid of spiders and saw them in his nightmares; he accused them of having urinated into his bed from the ceiling of his room. He had similar phobias for rats. He had become not only unpleasant in his behaviour—even spitting into the faces of people beside him—but often actually indecent.

A Year Later.

A year later, in 1924, a new factor appeared: he began to have spasmodic torticollis, which became progressively worse. At first there was no spasm when he was lying down, a little rigidity when he sat up, and twisting of the head and neck towards the right side only when he stood upright and began to walk. Any effort—for example, riding a bicycle—that brought into play the muscles in his arms and trunk exaggerated the condition. At this same period he experienced real difficulty in speaking, and was not always well understood. His instability, impulsiveness, and lack of will-power remained, and though for some time he was apprenticed to a locksmith, it was found impossible to teach him a trade. At the slightest reprimand from his mother he would become spiteful; sometimes he would strike her, being afterwards seized with remorse; or he would engage in a violent physical struggle with his father, become recklessly destructive, and shortly afterwards cry bitterly and make exaggerated manifestations of affection towards his parents. His petty indecencies were frequent, and he became gluttonous.

Present Condition.

We come now to March, 1929. Alix is 19 years old, tall, robust, full of physical energy, but his neuropsychic condition has scarcely altered. Neither the spasmodic torticollis nor the mental state has been modified by the numerous treatments followed for the past five years; these have included five pilgrimages to Lourdes, vibratory massages at the hands of various quacks, electrical, *x*-ray, and actinotherapeutic measures at a neurological centre, and the prescriptions of many doctors and specialists. Splints have not been successful as a remedy for the torticollis.

As soon as one meets Alix one is struck by this spasmodic torticollis. His head is turned to the right and droops in front, the chin resting on the collar-bone. The left sterno-mastoid muscle seems to be stretched, hard, and hypertrophied. With great effort he can lift his head and move it towards the left, but soon, by successive jerks, it turns again towards the right shoulder. To lessen the fatigue resulting from the constant effort to keep his head lifted, he presses on the right side of his forehead, or on the right superciliary ridge, but his hand gets tired in its turn, and he has to support it by leaning his elbow on some fixed point. This antagonistic gesture is well known to neurologists. The phenomenon is certainly of central origin, as I pointed out at the Annual Meeting of the British Medical Association in Edinburgh in July, 1927, when S. A. Kinnier Wilson read a paper to the Section of Neurology on tics and allied conditions. I stated that in 1907 I had already noticed the occurrence of Brissaud-Meige's "efficacious antagonistic gesture" in spasmodic states of non-mental origin, and that I had recently seen it in several cases of torticollis following epidemic encephalomyelitis.[2]

Alix's speech is muddled and explosive, and, especially at the end of the day, it is often difficult to understand him. He complains of getting tired fairly quickly; though he has retained his vigorous brute strength he has lost some of his agility and suppleness.

He eats at all times of the day, gluttonously, without control, and messily; at meal times he sits down to table, but every two minutes gets up, goes away, and returns, never satisfied. He is in constant conflict with his neighbours, before whom he behaves coarsely and without restraint. He likes to play the rich young man, changing his clothes and shoes as often as ten times a day. He loves the company of distinguished persons, to whom he writes ardent letters which he takes seriously. He spits wherever he happens to be, and has other objectionable personal habits. He is still quarrelsome, and if crossed will shriek aloud and roll on the ground, simulating a state of lethargy.

Discussion and Diagnosis.

All the post-encephalitic cases with psychic disorder, in children or adolescents, seem almost copied from each other. The true pervert, unlike the post-encephalitic pervert, displays an original evil impulse, which remains the same or becomes aggravated with age. He is persistent, incorrigible, cynical, and content to give himself up to his taste for morbid spitefulness. He delights in the refinement of suffering, remaining cold and insensitive to the moral pain he inflicts on those around him. He is often given to violence, thieving, lying, and pretence.

The post-encephalitic patient, on the other hand, becomes perverted only after his illness: his perversity is relative, as unstable as his character, irregular and fanciful. It is a question of playing pranks rather than of doing real evil. His cruelty is never coldly systematic, and it is unpremeditated. He is, moreover, affectionate, sensitive to reproof, and penitent. If he steals, lies, has violent fits of anger, or practises indecencies, it is more out of thoughtless imitation than of genuine vice. If he simulates, it is more like a capricious child acting without discrimination than knowingly to deceive those about him. His appearance, too, is very different. The look of the real pervert is hard, icy, deceitful; that of the post-encephalitic is gentle, sometimes shy or self-satisfied, smiling—the marks of a character which easily unburdens itself. Professors Euzière and Pagès[3] (Montpellier) have rightly insisted on the significance of this sensation of well-being, which, as they say, is so characteristic of Cruchet's disease.

The mental condition of the post-encephalitic delinquent strongly reminds one of dementia praecox: lazy, impulsive, incoherent, suggestible, and yet negativistic, given to affection, sudden escapades, offences against decency, and disconcerting failures of memory and judgement. His mental state at a given phase in his illness undergoes a sort of regression, but it is not a regression which goes on increasing until it ends in dementia; it stops at a period which varies according to the intensity of the encephalitis. Thus a child of 10 may regress to the mental age of 6 or 7, or even younger; a child of 15 or 16 may fall back to the intellectual level of 10 or 12. In certain cases, when the illness is over, the patient gradually recovers the abilities temporarily lost, and starts again on the upward grade towards the normal state. In other cases the psychic condition becomes fixed at the point of regression reached by the patient, or else it becomes stabilized at the age of the child at the time of its illness. Thus Alix's mother said, "In my opinion my son's brain has not progressed; it has remained as it was when he was 10, the age when he took encephalitis."

It must be added that the disease frequently implants in these children, even those stabilized at a given age, a form of morbid agitation and perversity, of which a weak

character is the essential sign. But if it be admitted that this perversity may remain markedly identical to that of the age of the beginning of the disease—for instance, as in the case of Alix—one can quite conceive its seeming considerably exaggerated when the patient has become an adolescent of 18, a young man of 25, and, with all the more reason, a man of mature age. One is thus tempted to see deep instinctive perversity where there exists only the puerile perversity of a weak-minded person. There lies the capital phenomenon, which it is easy to recognize as soon as attention has been drawn to it.

The perversity of the congenital pervert, in fact, increases with age; in the case of the post-encephalitic it may get better, or sometimes worse; most frequently it remains identical through the different periods of his life, but—and this is the essential point—with a mental debility which is henceforth constitutional. This state may improve in some cases, but frequently it changes for the worse or remains stationary; one is then obliged to put such patients in schools for nervous and abnormal children, like the one of which I am the head at Le Bouscat, near Bordeaux, or in reformatories when they are too difficult to look after and watch over. But in any case it is the state of mental debility which dominates the clinical picture.

Conclusions.

To sum up: what must be remembered is the variability of the post-encephalitic delinquent case, the fundamental basis of which is, above all, mental debility. One does not meet with distinct, unmistakable, categorical types of delinquents; they are irregular, undefined, and do not fit into any of the nosographic classifications which have been established up to the present. It would seem that the morbid histological diffusion of the encephalitic virus, which is so evident, involves a sort of regrouping of mental clinical states, which, for the moment, disorientate the mind and bring to it an impression of disorder.

And, finally, there can be recognized even in the enumeration of the descriptions of the mental clinical forms themselves, and of delinquency in particular, the polymorphism of encephalomyelitis, to which I drew attention in 1917, and which, after having been ill understood and rejected at that time, has to-day become a classic datum which is no longer even questioned.

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3 J. Eurière et P. Pagès: L'Euphorie dans la Maladie de Cruchet, *La Médecine*, February, 1929, p. 89.

THE PATHOLOGY AND TREATMENT OF CERVICAL GLANDS IN CHILDREN.

A REVIEW OF 330 CONSECUTIVE CASES.

BY

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WHATEVER may have been the advance in social legislation in recent years, any surgeon connected with a children's hospital in Scotland must have been struck with the prevalence of cervical adenitis. It is proposed in this paper to consider the pathology and to give, if possible, the true indications for conservative and operative treatment. It is essential to picture the distribution of the cervical glands and to understand their structure. Figs. 1 and 2 may suffice.

Children up to 12 years of age are treated in the Royal Aberdeen Hospital for Sick Children; 330 cases of cervical adenitis were treated during the period reviewed—March, 1923, to March, 1927. Enlarged cervical glands were found to be more common in girls than in boys. The numbers were 183 and 147 respectively. The present series has been followed up for two to six years after leaving hospital. They may be divided into two main groups: (*a*) Acute and subacute non-tuberculous adenitis—74 cases (22.4 per cent.). (*b*) Chronic tuberculous adenitis—256 cases (77.6 per cent.).

Acute and Subacute Non-tuberculous Adenitis.

Although poor general health and defective hygienic surroundings are undoubtedly contributory factors, enlargement of glands is usually secondary to some local focus of inflammation. The primary causes were:

Infections of the nasopharynx, including the exanthemata	28
Infections of the scalp	24
Chronic otitis media	8
Dental caries	6
Septic abrasions of the face	6
Unknown	2
	74

Infections of the Nasopharynx.—The jugulo-digastric and neighbouring deep cervical glands are usually involved, the prevailing organism being the haemolytic streptococcus.

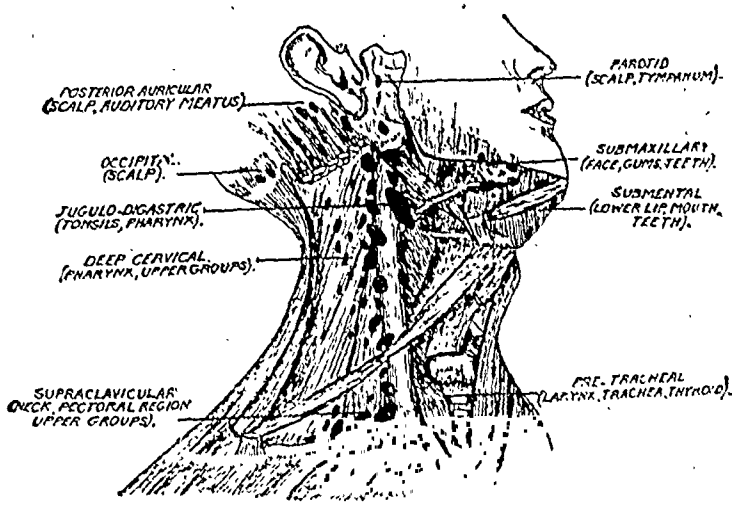

FIG. 1.—Distribution of the cervical glands.

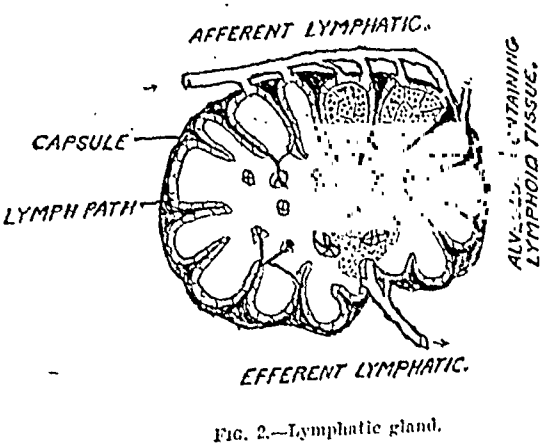

FIG. 2.—Lymphatic gland.

Infections of the Scalp.—Septic abrasions following trauma or chicken-pox and impetigo contagiosa commonly cause enlargement of the occipital and posterior auricular glands. They tend to suppurate rapidly. The infection is most frequently staphylococcal. In the poorer classes pediculi and "nits" account for many cases. It has been said that the swollen glands are secondary to abrasions caused by scratching, or to infection entering the skin by the biting of lice. Such views are open to doubt. The glands affected are usually the jugulo-digastric and upper deep cervical group. They are oedematous to the touch, and differ in type and distribution from glands secondary to suppuration in the scalp. Whether they are toxaemic in origin or not, it is exceptional to isolate organisms from the glands. "Nit-glands" readily subside on treat-

ment of the scalp with sassafras oil, but soon become necrotic if the scalp is left untreated.

Chronic Otitis Media.—Disease of the middle ear, unless tuberculous in origin, does not appear prone to cause enlargement of glands. Occasionally a chain of small glands is found along the posterior border of the sterno-mastoid muscle.

Dental Caries.—It is surprising how few cases of cervical adenitis can be traced to this cause. Glands are usually secondary to a suppurative periostitis. A single gland of the submaxillary or submental group is most commonly found.

Septic Abrasions of the Face.—Swelling of the submental and submaxillary glands is common in children under 3 years of age. Suppuration rapidly takes place, with a local cellulitis of the neck. Staphylococci from abrasions about the chin and lips account for most of the cases. The average duration of acutely inflamed glands when first seen was twelve days. They may be divided into two clinical groups.

Group A.—Glands which have appeared suddenly—a simple parenchymatous enlargement without any appreciable pathological change in response to a peripheral focus of infection. They feel soft, elastic, and are freely movable, in contradistinction to glands which are hard, solid, and adherent—the invariable signs of necrosis and commencing suppuration. There are no reliable means of judging the bacteriology of glands which recover with conservative treatment, although some idea may be formed from the type of primary focus present. Active treatment of any infected area is our mainstay. Local applications are of little value, and remind one of the days of charms and love potions. Operation can be deferred indefinitely, provided the glands show no progressive change, but they should steadily subside after a few weeks' treatment.

Group B.—Glands which have gone on to abscess within a few days of onset. They are common in very young children, and follow some febrile disturbance or untreated septic focus. The inflammatory process is usually limited to the anterior triangle of the neck. In the fulminating cases suppuration takes place in a few days, and the outline of the glands is soon marked by an astonishing degree of periglandular infiltration. The picture becomes that of a cellulitis of the neck.

The child's general condition and throat require careful attention: glycerin of borax is useful in babies, glycothymoline in older children. Iodine, ichthyol, mercurial ointments, etc., applied over acutely inflamed glands can be of no possible value, and frequently hasten destruction of the skin. Fomentations are most useful in acute cases. On any sign of fluctuation or impending respiratory distress the neck should be incised and free drainage established. Pathological tonsils should be removed later. The results of treatment of non-tuberculous glands are noted in Table I. The single fatal case ended with a streptococcal septicaemia.

TABLE I.—*Results, Non-tuberculous Glands (74 Cases).*

	Peripheral Focus only Treated.	Dissected	Incised.
Number of cases	32	5	37
Number traced	32	5	34
No glands remaining	24	3	27
Small glands, non-pathological	4	—	3
Recurrence of inflammation	4	2	3
Died	—	—	1

A child aged 2. Three days previously swollen glands were discovered in the right side of the neck. The mass rapidly increased in size, and symptoms of acute toxaemia with dyspnoea became evident. The neck appeared purplish-red, brawny, and indurated; this was particularly marked in the submaxillary region. On incising the neck no pus was found. The child died in forty-eight hours of an acute streptococcal septicaemia.

CHRONIC TUBERCULOUS GLANDS.

It is noteworthy that a family history of tuberculosis was only occasionally elicited. Many gave no history of antecedent disease. Infections of the fauces and nasopharynx, alone or in association with the exanthemata, preceded the occurrence of a very large number, scarlet fever, measles, or whooping-cough acting as predisposing causes to tubercle or lighting up quiescent tuberculous deposits. Haemolytic streptococci appear closely related to the activities of the tubercle bacillus. The following table gives the previous history in 256 cases.

No history of previous illness	99
Disease of the pharynx or nasopharynx	90
Dental caries	17
Measles	16
Scarlet fever	13
Whooping-cough	11
Chronic otitis media	5
Diphtheria	3
Retropharyngeal abscess	2

It is interesting to note that, with the exception of a few cases of tuberculous otitis media and mediastinal tuberculosis, no case gave a history or exhibited a sign of tuberculous disease elsewhere.

Tuberculous adenitis is frequently ushered in by acute symptoms during the course of some of the exanthemata when the outline of the glands is at first obscured by periglandular swelling. The latter gradually subsides, leaving typical discrete chronic glands. The slight improvement so frequently witnessed with conservative treatment at this stage does not herald a recovery in the gland tissues, but rather suggests that the infection has simply been localized within the capsule. When glands remain enlarged, necrosis has probably taken place in the alveoli during the original acute attack. It is common to find typical destructive tuberculous lesions after a history of three to four weeks. The more chronic type commences as small glands which gradually increase in size and number.

Bacteriology.

Mitchell[1] of Edinburgh, from his investigations into the prevalence of the bovine type of tubercle bacillus, found that cow's milk containing tubercle bacilli was clearly the cause of 90 per cent. of the cases of tuberculous glands in Edinburgh and district. He found the tonsils tuberculous in 35 per cent. The tonsils may be large, pale and obviously diseased, or small, embedded beyond the pillars of the fauces, and apparently normal. It has been proved that organisms may pass through the portals of the tonsils without the latter being diseased. Wood,[2] in an experimental study of the lymphatic drainage of the faucial tonsils, demonstrated, on injecting the tonsils by Gerota's method (Berlin blue and pure spirits of turpentine), that efferent lymphatic vessels from the tonsils passed directly to the jugulo-digastric and neighbouring deep cervical glands.

It is interesting to contrast the findings of Howarth and Gloyne[3] in the London area: they state that tuberculous changes in the tonsils were found in 5 per cent., and that tuberculosis of glands is a late infection and follows a previous invasion by the streptococcus. It appears probable that the prevalence of the bovine and human varieties of tubercle and the numbers of streptococcal cases

TABLE II.—*Distribution of Tuberculous Glands.**

	No. of Cases.	Jugulo-digastric and Upper Deep Cervical	Jugulo-digastric and Submaxillary.	Submaxillary and Submental	Deep Cervical, Upper Group	Deep Cervical, Lower Group.	Parotid.	Posterior Auricular.	Occipital.	Pretracheal
Simple enlargement	2	2	—	—	—	—	—	—	—	—
Caseated glands .	121	95	4	9	5	4	—	2	—	2
Caseated glands with abscess	111	78	4	6	9	6	3	3	—	2
Caseated glands with sinus	22	14	3	1	2	2	—	—	—	—
Total . .	255	189	11	16	16	12	3	5	—	4
Percentage ..		73.8	4.3	6.3	6.3	4.7	1.2	1.9	0.0	1.5

* Proved to be tuberculous on histological and bacteriological examination.

vary widely in different localities. This fact may well account for the extreme diversity of opinion regarding the treatment of cervical adenitis.

Tubercle bacilli reach the cervical glands along the course of the lymphatics from peripheral foci or find an entrance through the blood stream. (See Table II.)

Lymphatic Infections.—Of the 256 cases, 232 (90.6 per cent.) were considered lymphatic infections, as the distribution of the glands—jugulo-digastric group (78.1 per cent.), upper deep cervical (6.3 per cent.), submaxillary and submental (6.3 per cent.)—corresponded to drainage from local tuberculous lesions in tonsils, adenoids, and carious teeth. Further, it was found that no case belonging to this group showed signs of tubercle elsewhere either before or after operation.

Blood Infections.—The remaining 24 cases (9.4 per cent.) suggested blood infections from the glands involved—lower deep cervical (4.7 per cent.), pretracheal (1.6 per cent.), posterior auricular (1.9 per cent.), parotid (1.2 per cent.)—with associated tuberculous lesions in the mediastinal lymph nodes and the middle ear. Poirier and Cunéo[4] have pointed out that the supraclavicular glands receive no afferent vessels from the mediastinal glands. In tuberculous otitis media the parotid and upper deep cervical glands are usually enlarged. Swelling of the pre-auricular is more commonly found in tuberculous otitis media than in any other condition. Blood infections are more common in very young children under 3 years of age, and multiple tuberculous abscesses are of frequent occurrence. The prognosis is decidedly more unfavourable, particularly in glands secondary to otitis media, in infants. The only two deaths, occurring some time after operation, came under this group.

Pathological Changes in Tuberculous Glands.

In lymphatic infections the most marked pathological changes are found in the alveoli near the periphery; in blood infections the medulla is the first portion of the gland to suffer. In the early stages no change may be seen with the naked eye in a sectioned gland, but soon multiple greyish-white foci appear, caseation rapidly takes place, and each area becomes filled with semi-solid pultaceous debris or liquid pus. It is most important to bear in mind that a lymphatic gland is not a unilocular structure. During an attack of lymphadenitis the entire gland is swollen, but identical pathological changes do not take place in the whole gland nor in an equal degree in the different alveoli. Areas of caseation are multiple and so small that no sign of softening or fluctuation can be found. It is unusual for such areas to become completely confluent and for the gland to form a unilocular pus-sac exhibiting signs of fluctuation. More frequently only a few alveoli suppurate, while the intervening portions of the gland are replaced by a dense proliferation of endothelial and connective tissue cells. This accounts for the loss of elasticity and increased hardness of a pathological gland. It is surprising how universally clinicians fail to appreciate this danger signal.

Caseous material may lie quiescent within the capsule for several years before an extracapsular abscess forms; nevertheless it is well to remember that tubercle is not always chronic in its manifestations and that identical changes may occur in a few weeks' time. While the small septic foci steadily increase in size and threaten to involve the thickened capsule, successive attacks of periadenitis tend to bind the glands together and to form adhesions to the sterno-mastoid and digastric muscles, the deep veins, and the parotid and submaxillary salivary glands. Adhesions may be very dense where caseous material has locally eroded through the capsule. Ultimately the latter completely gives way, allowing the escape of pus and debris into the surrounding tissues and the formation of an extracapsular abscess. It is only after this catastrophe that "softening" can be appreciated. Signs of healing such as fibrosis and calcification, may be seen in an excised gland, but just as often areas of suppuration are found in other sectors of the gland. A natural recovery should never be assumed if the gland remains hard and palpable.

Clinical Types.

GROUP A. Simple enlargement ...	2 (0.8 per cent.)
GROUP B. Caseated glands ...	121 (47.3 per cent.)
GROUP C. Caseated glands with extracapsular abscess ...	111 (43.3 per cent.)
GROUP D. Caseated glands with sinus	22 (8.6 per cent.)
	256

An average of one year elapsed before a patient came for surgical treatment. Bilateral glands were present in 6.4 per cent. of cases. Gross destructive changes had taken place in 99.2 per cent.

GROUP A.—Tuberculous glands without alveolar caseation are rare. Only two cases were seen—large solid glands which persist in spite of treatment and which cannot be distinguished from caseated glands. On section they exhibit excessive endothelial proliferation. The numerous small glands found during the dissection of a large caseated gland may not show signs of caseation, yet the vast majority, when examined microscopically, show invasion by the tubercle bacillus.

GROUP B.—Caseated glands may be of any size from a pea to a hen's egg. They feel firm and solid, occasionally hard and knotty, certainly not elastic or soft. In them a definite and, I maintain, appreciable pathological change has taken place. The typical picture is an enlarged jugulo-digastric gland near the angle of the jaw with a few smaller glands along the posterior border of the sterno-mastoid muscle. The larger gland stands out prominently in the neck. The swelling waxes and wanes with the child's general condition, the state of the nasopharynx, and the changes in the glands themselves. Alternate attacks of swelling and periods of quiescence are almost diagnostic of intracapsular necrosis and caseation; the increase and decrease of the swelling corresponding to the onset and recovery of successive attacks of periadenitis.

I have never seen a gland, showing clinical signs of caseation, recover with any form of conservative treatment. Some time ago I referred a considerable number for heliotherapy, rather against my better judgement. The glands persisted or went on to abscess. Glands may appear to shrink to half their previous size with any form of treatment as the periadenitis subsides, but it is surprising how large a caseated mass may be delivered from the deep surface of the sterno-mastoid when only a suspicion of swelling is present.

Most of the tragedies of prolonged conservative treatment result from the failure to picture the pathology of such glands. How often has one heard it said that he or she thought it quite safe to leave glands because they were still hard and showed no sign of "softening"! Ninety-nine per cent. of all glands which have persisted for three months and have attained the size of a hazel nut show signs of caseation when removed by dissection. Solid glands frequently contain pus although they have lain quiescent for twelve months. The fact that they do not change is surely a plea for removal rather than for a further period of conservative treatment; moreover, favourable occasions for successful surgical measures do not remain so indefinitely. Unsightly incisions are too often the "late" cases. Here the patient or the medical attendant is at fault; the latter should set the time limit and be competent to say when the pathological changes preclude a natural cure—and he should be capable of doing so before gross abscess formation stares him in the face.

GROUP C.—"Nature is often hidden, sometimes overcome, seldom extinguished." Caseated tuberculous glands go on to abscess whether they be treated by the carbon arc lamp, tonsillectomy, or by local applications. The following clinical types are found. (*a*) A small slowly developing abscess beneath the platysma in relation to a chronic gland, a round swelling not adherent to the skin and standing out prominently in the neck. The mass may be freely movable, and is apt to be mistaken for an enlarged gland unless fluctuation be elicited. (*b*) A large group of glands with a small superficial abscess. (*c*) An infiltrated mass in which the outline of the glands is lost in the surrounding inflammatory reaction. The sterno-mastoid is usually,

densely involved, and fluctuating areas may be found in front of and behind the muscle. (*d*) A reddish-purple prominent swelling, the typical tuberculous abscess with the skin almost at bursting point.

Dissection is ideal, but often impracticable in the presence of gross suppuration. A surgeon has no qualms about embarking on a difficult dissection, and it is easy for him to be radical in his attack; but can he promise his patient the three essentials of success—no risk from haemorrhage, no injury to important nerves, no disfiguring scar? Provided the surrounding infiltration is not too great, the condition of the skin is the deciding factor. If he anticipates a soundly healed incision he should dissect. Scraping will cure many cases of abscess secondary to a single caseous gland. A large fluctuating mass should be thoroughly evacuated with a sharp spoon, and as much of the primary gland removed as possible. Residual masses may present a comparatively easy dissection at some later date. The removal of a few drops of liquid pus by aspiration is a method of treatment scarcely worthy of consideration. An infiltrated swelling, which precludes all question of radical treatment, may be benefited by heliotherapy.

GROUP D.—The clinical picture varies from a sinus leading down to a small indefinite mass of cicatricial tissue to one surrounded by an area of reddish-purple skin with large glands in the depths. "Sunlight" is worth a trial if no glands are palpable. Dissection is the proper procedure in most cases, as caseous glands await removal in the deeper planes of the neck. It may be difficult to secure a satisfactory scar if suppuration has undermined a large expanse of skin. Time may allow the skin to recover in a marvellous way, but mixed infections are common and skin recovers slowly.

Impressions on Conservative Treatment.

The armamentarium at a patient's disposal is truly amazing: a variety of paints and ointments, Bier's congestive treatment, Klapp's suction cups, cervical collars, tuberculin, tonsillectomy, *x* rays, radium, and heliotherapy. It is little wonder that many cases are far advanced and complicated by abscess when they have run the gamut of palliative measures and come at last for radical surgical treatment.

Surface Applications.—Nature is a powerful healer, and deserves most, if not all, the credit paid to iodine, ichthyol, mercurial ointments, etc. Counter-irritation is a myth. It is surprising that such applications are still in vogue. It was pointed out by Marnoch[5] twenty-three years ago that "when local applications reduced the size or caused the disappearance of swollen glands, it was very probable that one had to deal with glands which were not tuberculous at all, but which became inflamed from some irritation in the area drained by them, and that the decrease in size was due to the subsidence of the irritation and not to the applications."

Tonsillectomy.—We can take it for granted that the tubercle bacillus reaches the jugulo-digastric group via disease of the tonsils, and it is logical to attack the primary cause; pathological tonsils should be removed at the earliest possible moment. Nevertheless it is equally illogical to expect tonsillectomy to have any curative effect when advanced tuberculous changes have taken place in the glands. There are risks in dissecting with tonsils *in situ* if they are inflamed or harbour the all-too-prevalent haemolytic streptococcus.

Heliotherapy.—The brilliant results of Rollier in Switzerland have made many of us pause and wonder if surgical tuberculosis has not passed beyond our province. Treatment in the open air with exposure to the rays of the sun is always beneficial; unfortunately suitable periods are of brief duration. Artificial sunlight with the carbon arc or mercury vapour lamp improves a child's general condition, and small glands may disappear. Locally "sunlight" appears to hasten Nature's efforts at cure—that is, it accelerates the breaking down of caseous glands, abscess formation, and the discharge of pus. Taylor[6] quotes satisfactory figures in certain types, and comments on the more variable results in large solid glands. There is a risk of suppuration if caseated glands are irradiated, and one naturally hesitates to take that risk when a clean dissection is possible. I have removed glands after many months' irradiation and have found no change in typically caseated glands. This is not surprising, as the capsule is enormously thickened and there is no intimate vascular relation between a grossly pathological gland and the surrounding tissues. Heliotherapy is worth a trial in very early cases. Dr. Margaret Tod,[7] reviewing a series of cases treated in Edinburgh, states: "It will be noted that in no case has a cure been claimed, 'greatly improved' being the best result tabled."

Treatment Advocated.

The prophylactic and general treatment of tuberculosis lie beyond the scope of this paper. In deciding whether glands are tuberculous or not, one commences by excluding septic absorption from drainage areas corresponding to the glands involved—for example, treatment of the scalp in occipital and posterior auricular glands, tonsillectomy and amygdalectomy in the jugulo-digastric group, attention to the middle ear in the parotid group, removal of carious teeth, and attention to the hygiene of the mouth in submaxillary and submental glands. Palliative treatment, combined with every effort to improve a child's general condition, may be continued for two to three months if the glands steadily decrease in size. If they persist, it is highly probable that they are tuberculous. Mild cases may subside with prolonged rest in the country or after a course of heliotherapy. Whenever signs of caseation appear the glands should be removed during the earliest period of quiescence. One usually finds a single group, the jugulo-digastric series, and a complete absence of tuberculous disease elsewhere. Why risk the gradual involvement of other glands, an abscess which will endanger the symmetry of the neck, or a general dissemination of tubercle, when the single tuberculous lesion may be safely removed? Totally erroneous ideas have arisen from the comparison of tuberculous cervical adenitis, a local manifestation in 90 per cent. of cases, with tuberculous disease of bone, joints, and peritoneum—conditions which presuppose a general infection and which cannot be eradicated by operation. The universal improvement in a child's general health and freedom from tuberculous disease are good grounds for advocating radical treatment.

Surgical Treatment.

Tuberculous disease may transform the neck into a veritable maze of Daedalus. Dissections of cervical glands always require scrupulous care, are often difficult, and may be exquisitely dangerous in inexperienced hands. The operation can be safely performed at any age if the condition of the glands warrant their removal.

It is not sufficient to excise only the large masses, nor all palpable glands. Certain areas should be systematically explored: there are always glands behind the internal jugular vein and in the submaxillary region—they should be diligently sought for and removed. "Block excision" of large masses and chains of glands provides admirable museum specimens and may suggest the acme of surgical skill; unfortunately, such may be acquired at the expense of a segment of the spinal accessory nerve. It is often safer to split up large masses and to expose the nerve. The actual gland capsule should never be caught with forceps, as the larger glands contain pus and are easily ruptured. Tuberculous pus may be innocuous, but a streptococcal infection is occasionally superadded, and the less a surgeon smears his wounds with pus the better his results will be.

Dissections of glands complicated by abscess or sinuses may present formidable difficulties and may prove a very real test of skill and knowledge of pathological anatomy. Clear exposure and gentle handling will usually save the larger veins and spinal accessory nerve from injury.

Dissections in the Anterior Triangle.—The sterno-mastoid muscle stands out prominently in the neck. Between its anterior border and the line of the jaw lies an area in the shade crossed by two creases almost transverse in direction; here a scar may be almost invisible. The incision follows a skin crease and is made sufficiently long to ensure gentle handling and accurate dissection under full vision. The subcutaneous tissue and platysma are divided, leaving

a small portion of tissue over the convexity of the glands if there is any possibility of encountering pus. An elliptical incision surrounds a sinus or small superficial abscess. The external jugular vein is divided between ligatures. The sterno-mastoid muscle and surrounding structures are dissected away from the glands with a sharp scalpel. A small Mayo's scissors may be useful in exposing important nerves, but blunt and rough dissection with the finger or scissors in the depths is unsafe and liable to cause serious haemorrhage. The glands now lie in close relation to the digastric and stylo-hyoid muscles, the common facial and internal jugular veins, and the spinal accessory nerve. The internal jugular vein is exposed at a slightly lower level where the tissues are perfectly normal, the glands are elevated with forceps and are dissected off the veins, keeping the latter continually in view and catching small tributary branches before division. The wound is kept dry and free from staining. The spinal accessory nerve is found immediately beneath an enlarged jugulo-digastric gland. The deep glands along the outer border of the jugular vein remain to be tackled. A layer of fascia along the corresponding sector of the vein is divided in a parallel direction; two glands are usually found above the spinal accessory nerve and a long chain below. Although the wall of the vein may be in direct relation to the caseous interior of the gland, it is rarely necessary to remove a segment of the internal jugular vein. The submaxillary region is now explored. The salivary gland is frequently adherent to suppurating lymphatic glands, but is seldom grossly implicated. The whole gland or the most superficial portion may be excised. Care is taken of the mandibular branch of the facial nerve which passes along beneath the ramus of the mandible. Although Wood failed to trace an efferent lymphatic vessel from the tonsil to the posterior gland of the submaxillary group, I have frequently found this gland enlarged while dissecting the jugulo-digastric series. If the submaxillary glands are markedly involved, the submental region should also be cleared. All bleeding points are tied off with fine catgut and the wound is drained by a thin piece of corrugated rubber. Spaces in the neck cannot be obliterated by suture, and a collection of serum is fatal to a perfect surgical scar. The platysma is sutured with a continuous catgut stitch, which catches up a fraction of the subcutaneous tissue. The skin is closed with a subcuticular stitch of "gossamer" silkworm-gut. One or two interrupted sutures of the same material make the incision more secure. The drain is removed on the second day, and the skin stitches on the seventh day.

Dissections in the Posterior Triangle.—Care must be taken of the spinal accessory nerve, which crosses superficially from the posterior border of the sterno-mastoid to the trapezius. It is well to remember that the thoracic duct is liable to injury in a low dissection. Fortunately it is more often in the form of a delta than a single channel.

Scraping of Cervical Glands and Abscesses.—A small incision is made immediately beneath the abscess, not across the convexity of a red area of skin. The primary gland must be attacked in addition to the actual confines of the abscess cavity. The bad results so frequently quoted are not surprising, as such cases are often left to those of little or no experience. The cavity is packed with a narrow strip of gauze, which is removed on the second day. Pathological tonsils should invariably be removed. One expects to have to dissect later in cases of multiple glands, or where a large gland has broken down locally to some slight degree.

Immediate Operative Risks. (See Table III.)

Mortality.—The risk of a fatal issue following the dissection of neck glands appears negligible.

Haemorrhage.—Troublesome haemorrhage occurred on two occasions; in both the bleeding point was ultimately caught with forceps and ligatured. The usual causes of haemorrhage would appear to be inaccurate vision and rough handling.

Injury to the Thoracic Duct.—The duct or a tributary was injured in one case. The surrounding tissues were gently approximated by a purse-string suture, and no fistula resulted. Judd[8] reports 10 cases in a series of 668 dissections; all recovered, although one lost 60 lb. before the fistula closed. Edington[9] quotes one death and two recoveries. A further series of wounds of the thoracic duct have been reported by Cushing.[10]

TABLE III.—*Immediate Operative Risks.*

	Dissected.	Scraped.
Number of cases	167	79
Mortality	—	—
Haemorrhage	2	—
Injury to thoracic duct	1	—
Injury to nerves:		
Spinal accessory	—	—
Hypoglossal	—	—
Mandibular branch of facial	4	—
Wound suppuration	9	—

Injury to Important Nerves.—I have never been conscious of cutting the spinal accessory nerve, although I have often perilously nearly done so, nor have any of my cases to my knowledge suffered from paralysis of the sterno-mastoid or trapezius muscles. The removal of large masses of glands *en bloc* adds greatly to the risk. Clute[11] reports 12 cases of injury to the nerve in 140 dissections, and comments on the danger of "mass dissection." Judd[12] states: "We have injured and sutured the nerve on several occasions with no deformity resulting." In the present series the mandibular branch of the facial nerve was injured on four occasions. All recovered completely. Farr[13] states that the nerve can always be preserved by making a transverse incision three-quarters of an inch below the jaw and incising the deep fascia till the vessels and submaxillary gland are exposed. This is only true in cases where the glands are not adherent to the jaw or complicated by abscess.

Suppuration.—Nine cases developed an acute post-operative infection of the neck. Haemolytic streptococci were grown from the wound and tonsils in all cases; streptococci had also been isolated from a few of the glands. This distressing complication would appear to arise from operating on children while they harbour an active infection of the nasopharynx. One case had an acute streptococcal septicaemia which almost proved fatal.

This patient was a boy aged 9. Cervical glands had been present for six months, and they had rapidly increased in size. The neck showed an enlarged jugulo-digastric gland with two superficial abscesses. Pus was encountered during a difficult dissection, and the wound was drained. Signs of acute sepsis were manifest in a few days, and haemolytic streptococci were grown from the wound and tonsils. His condition steadily deteriorated, with daily rigors and the onset of a pleural effusion. Cultures from the blood stream and pleural cavity were positive. The wound was opened up and treated by the Carrel-Dakin method. Treatment in the open air, combined with massive doses of anti-streptococcal serum, ultimately defeated the infection. The pleural effusion yielded to aspiration.

End-Results following Dissection.

Number of cases	167
Number traced	183
Alive and well	183
Developed tuberculous disease elsewhere	0
Recurrence of cervical glands	6

The danger of generalized tuberculosis would appear immeasurably greater in allowing tuberculous deposits in the neck to run a natural course than by removing glands by dissection. Demmè,[14] reviewing twenty years' work in the Jenner Children's Hospital, Bern, treated 692 cases of cervical adenitis by constitutional measures, and found that 29.2 per cent. developed other forms of tuberculosis. All surgeons are agreed that the outlook is infinitely more favourable in children than in adults. Dowd[15] states that the incidence of pulmonary tuberculosis following dissection of neck glands in children is about 1 per cent., whereas Judd,[16] reviewing 600 dissections in adults, found that 5 per cent. developed tuberculosis of the lung.

Recurrence of Glands.—In the present series 6 cases showed post-operative glands; 3 of these required further

surgical treatment. Most of them were not true recurrences, but dated from the time of one's apprenticeship to surgery, when dissections were not so thoroughly performed. Excision of the gland-bearing fascia with a sharp scalpel is preferable to blunt dissection of individual glands with a Mayo's scissors. One case reported with several large glands in the anterior triangle after two previous dissections by a competent surgeon. On removing the glands for a third time a small abscess was found deep to the digastric muscle, and extending towards the pharyngeal wall. Any focus of infection may act as a stimulus to recurrence, and small particles of lymphoid material may grow and ultimately function as glands. It has also been said that lymphadenoid tissue, metamorphosed into fat, may resume its original lymphadenoid structure.

Condition of Scars following Dissection (see Table IV).—In 84 per cent. fine linear scars were present, with no suspicion of redness or surface prominence; of these, 40 to 50 per cent. were practically invisible unless the neck was closely inspected. A few broad scars are to be expected in cases reporting with abscesses or sinuses when the subcutaneous tissue had largely sloughed away. No case of keloid was seen. The pathology of this condition is still wrapped in mystery. The following are in my opinion contributory factors: an active untreated primary focus, a "bevelled" incision, inaccurate closure of the skin, the use of catgut skin sutures, and any swelling leading to stretching of the scar. The skin incision should be closed by a subcuticular stitch, which coapts the edges so accurately that they immediately adhere. No raw area should remain to ooze or heal by a process of superficial granulation.

TABLE IV.—*Condition of Scars following Dissection.*

	Cases.		Scars		
	Dissected.	Traced.	Fine linear.	Slightly prominent.	Broad or adherent.
Simple enlargement	2	1	1	—	—
Caseated glands	121	120	107	12	1
Caseated glands with abscess ...	46	44	33	7	4
Caseated glands with sinus ...	18	18	13	3	2
Total	187	183	154	22	7
Percentage			84.2	12.0	3.8

Results of Curettage.

Of 111 tuberculous glands complicated by abscess, 32 were dissected,* the remainder were scraped, with the following results:

No glands remaining	38
Small glands, non-pathological	13
Required dissection later	14
Pathological glands still present	7
Untraced	5
Died later	2
	79

Two infants, suffering from tuberculous mastoiditis with secondary glands and abscesses, succumbed to tuberculous meningitis a few months after operation. The spread to the meninges would appear to have taken place directly from the petrous bone. In neither case was any radical operation performed on the ear or mastoid cells.

I find that 50 per cent. of tuberculous glands complicated by abscess ultimately require dissection, that 34 per cent. recover completely after curettage, and that the remainder have small palpable glands which do not appear pathological. Cases of chronic abscess arising from a single caseous gland have a reasonable prospect of cure, as the smaller associated glands subside if safeguarded from further bouts of infection by removal of tonsils, etc. One naturally wonders if a follow-up period of two to six years is not rather brief, but end-results in tuberculous adenitis are akin to malignant disease—there is no time limit to recurrence. It is by no means easy to be dogmatic about small glands remaining after curettage, as I find the jugulo-digastric glands palpable as small ovoid bodies about the size of a haricot bean in 85 per cent. of healthy children, and smaller glands along the posterior border of the sterno-mastoid are not uncommon. Dowd,[17] commenting on similar nodules, remarks: "I have watched nodes of this kind year after year, and have hardly ever seen them increase in size and have frequently seen them subside, a few have been removed and almost without exception have proved to be hyperplastic."

I maintain that minute glands which are perfectly soft and not larger than a bean can be safely left to Nature; other observers might deem them pathological—then they present the easiest of dissections if one is obsessed with the idea of removing the last shred of palpable lymphatic tissue from the neck.

CONCLUSIONS.

1. As seen in a surgical out-patient department 10 per cent. of glands are likely to recover with treatment of a peripheral focus of infection. Such glands are probably not tuberculous.

2. Necrosis and caseation take place rapidly in tuberculous glands.

3. The signs of caseation are increased hardness and loss of elasticity, not "softening" as is generally thought. Softening or fluctuation indicates an extracapsular abscess.

4. Palliative measures may allow the subsidence of periadenitis, but have no influence on the intracapsular substance of the gland.

5. The fact that 51.9 per cent. of tuberculous glands are complicated by an abscess or sinus suggests that conservative treatment is usually unduly prolonged.

6. Tuberculous glands should be removed by dissection whenever signs of caseation become manifest; the presence of an abscess is no contraindication.

7. Curettage gives satisfactory results in selected cases.

I have to acknowledge my indebtedness to Dr. E. A. Johnston and Dr. T. O. Morrison for their help in arranging the "follow-up" of patients, and to Miss Kathleen I. Stewart for her assiduous care and skill in the post-operative treatment of my cases.

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* I now dissect a much larger proportion.

SOME ASPECTS OF THE TREATMENT OF RHEUMATOID ARTHRITIS.

BY

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In briefly outlining the most important forms of treatment of rheumatoid arthritis, I would draw attention particularly to the benefit ensuing from consideration of the mechanical aspects of the affliction. Drug and vaccine therapy are scarcely considered, for both are strongly represented in current literature, and neither has proved of much efficacy.

So long as it is held that the presence of focal sepsis is the chief or only etiological factor, so surely shall we make no progress in the treatment of the disease. Prior to the advent of the wave of enthusiasm for bacteriology, clinicians directed their attention to the constitutional abnormalities of the individual as a whole. Resulting therefrom came the masterly accounts of the disease, such as that of Kent Spender,[1] unsurpassed in accuracy of clinical observation by modern writings. When the medical mind focused on the dangers of dental and tonsillar sepsis, the concurrent

diathetic and acquired widespread deviations from the normal were overlooked. The result is that the outlook for the rheumatoid patient is little, if any, better to-day than it was fifty years ago. Too many of our patients have been rendered edentulous only to suffer the miseries of disturbed digestion and steadily stiffening joints. Such failures may be explained by postulating the presence of microbes in the interstices of the jaw, and operation advised to remove doubtfully infected bone. Pulmonary abscess is then a common sequel.

If, however, we pause to review the aggregation of cases loosely termed "chronic rheumatism," we find that as a rule they may be separated into three clinical types.

1. Rheumatoid or atrophic arthritis, a disease occurring largely in females of reproductive age and characterized by little or no pyrexia, low blood pressure, and unstable pulse rate,[2] scattered pigmentation of the skin,[1] on a basic waxy pallor, generalized wasting in addition to pronounced atrophy of the muscles about the affected joints, visceroptosis, hypochlorhydria, exaggerated tendon reflexes, and symmetrical swellings of smaller joints, particularly those of the fingers. The skin over the affected articulations is pale and atrophic, and local tenderness to pressure is never a striking feature. With the exception of increased translucency, bony change is absent for months or years.

2. Infective arthritis (excluding pneumococcic, gonococcic, etc.) occurs with equal [illegible] sex. It is usually associated with [illegible] sepsis in the mouth or maxillary antra. Pyrexia is the rule, and the affection is asymmetrical, involving larger joints—for example, wrist, ankle, and knee—than those attacked in the atrophic type. There is local redness and tenderness of considerable degree, but none of the general constitutional abnormalities noted in the first class. The condition clears up spontaneously, or is greatly ameliorated, on elimination of the infected foci.

3. Osteo-arthritis, or hypertrophic arthritis, occurs usually after the age of 40, and attacks otherwise robust and commonly obese individuals who exhibit good muscular and visceral tone. The acid content of the gastric juice is a high normal. The joints commonly affected are those of the knee, hip, and fingers, but there is early enlargement of the bones with osteophytic outgrowths, and obvious lipping of the articular margins is demonstrable by *x* rays. There is no constitutional disturbance, and the disease progresses slowly and often painlessly for many months.

Predisposing Factors.

Inquiry into the previous history of patients with rheumatoid arthritis reveals a series of deviations from the normal, such as is not found in the other types. Thus the subjects have always been of spare build, intellectually efficient, but lagging behind their fellows in physical prowess. They have suffered from the cold, and chilblains on blue, clammy extremities have recurred with monotonous regularity winter after winter. Llewellyn[3] has drawn attention to the frequency of mucous colitis, urticaria, blanching of the fingers, and erratic sweats which characterize childhood and adolescence. It is difficult to determine the point at which rheumatoid arthritis actually develops. Loss of weight and vigour often precede the onset of joint swellings by many months, and when articular involvement is finally apparent it is usually at first transient in nature, a feature of differentiation from the proved infective forms.

Metabolic Errors.

Metabolic changes have been demonstrated in rheumatoid arthritis. The chief of these is deficiency in the oxidative processes occasioned, it is believed, by the existence of large areas of vaso-constriction and capillary stasis. Resulting therefrom are decreased sugar tolerance and relative increase of neutral or imperfectly oxidized sulphur in the urine.[4] It is stated[5] that these abnormalities can be corrected by the use of vaso-dilators. If this be the case, it supports the theory that the fundamental disturbance of the disease is that of sympathetic instability. It has been postulated that the basis of the sympathetic instability lies in a disturbance of the endocrine system, particularly in the direction of hypothyroidism. The arguments are suggestive, but not yet convincing, for many of the symptoms of rheumatoid arthritis are rather those of hyperthyroidism, and I have rarely found a basal metabolic rate of abnormally low level.

Space does not permit of a full discussion of this interesting problem, but enough has been written to emphasize the fundamental truth that rheumatoid arthritis is a disease developing on a grossly abnormal soil, and that inattention to this fact must militate against the production of effective cure.

TREATMENT.

Diet.—In the acute stage a bulky diet poor in nutritive value should be prescribed. Such consists largely of fresh fruit and green vegetables. After two weeks, fish, chicken, and red meat may be added, but starchy and saccharine foods should form a small proportion of the total in view of the noted inability to deal adequately with glucose.

Drugs.—Medicinal treatment is of small value. Apart from symptomatic treatment for the relief of pain, preparations of iodine and thyroid gland are chiefly favoured. The effect of the latter in stimulating the sluggish metabolic processes explains any improvement which may follow its use.

Elimination of Sepsis.—The utmost caution should be exercised before advising the removal of teeth or tonsils suspected of infection. In a disease presenting abnormalities of skin, gastro-intestinal, muscular, and vascular systems, it is scarcely to be expected that healthy teeth would be found in an otherwise diseased individual. Recession of the gums, the formation of pockets, and *x*-ray appearances of early infection are the result, not the cause, of rheumatoid arthritis, and to advise wholesale extractions is as illogical as to counsel removal of the colon on account of sluggish peristalsis. Both conditions subside *pari passu* with recovery from the general disease. On the other hand, frank sepsis should be eliminated, for its presence will lower the bodily resistance, and the absorbed toxins may act indirectly, through damage of the endocrine system, in producing arthritis. It is of peculiar interest to note that Pemberton[5] found infected foci in 70 per cent. of his 1,100 cases of chronic arthritis, but the number of recoveries was three times as great in those in which sepsis was allowed to remain as in cases from which it was eliminated.

Application of Heat.—Probably the relief derived from thermal treatment by radiant heat baths, diathermy, dry air baths, and hot wax applications is largely referable to the improvement which they produce in the peripheral circulation. I have achieved the best results by the use of a cabinet heated by electric light bulbs and into which air, previously dried by passage through chemicals, and impregnated with a volatile rubefacient, is pumped. The patient is given one-tenth of a grain of pilocarpine hypodermically before entering the cabinet. Profuse sweating occurs, but, owing to the dryness of the air, the perspiration evaporates rapidly, and the patient emerges refreshed rather than in the state of sodden exhaustion produced by many other forms of heat. General massage is carried out immediately after each treatment. Within a few weeks there is a noticeable improvement in the condition of the skin and joints, and the patient is relieved from the wearying pains and insomnia which have caused so much distress in the past. The method of application of hot paraffin wax has gained prominence of recent years, and bids fair to supersede many of the older forms of thermal treatment. Owing to the non-conducting nature of this substance, it can be applied at temperatures of 120° to 170° F. to the entire body without producing a burn. Additional safety is ensured by the fact that a cushioning effect is produced by the inclusion of a thin layer of air between the wax and skin. Heat loss is very slow, thus a constant high temperature can be maintained for half an hour or more before the solidified casing is removed and the abundant sweat wiped off.

Use of Splints.—Mechanical appliances for the control of joint movements are required (*a*) in the acute stage of the disease in order to prevent contractures and to allay pain; (*b*) in the late stages when the patient suffers from the crippling effects of periarticular and intra-articular

adhesions. In the former case light splints should be applied to hold the shoulders abducted, elbows semiflexed, forearms incompletely supinated, wrists dorsiflexed, fingers extended with radial deviation, thumb slightly flexed and adducted. As regards the lower extremity, if the hip-joints are affected the patient should lie flat. Great care must be exercised to avoid hyperextension at the knee-joints; the foot should be held at right angles to the leg. Once the limbs are immobilized, muscular spasm subsides and relief from pain invariably follows. After a week it is usually advisable to remove the supports daily and to apply gentle massage and cautious passive movements in order to avoid stiffness. With this one must be content until the acute symptoms have subsided, when treatment by dry air baths, massage, and active movements may be instituted.

In the late stages of the disease little or no activity is present, and we are confronted with the mechanical disabilities resulting from the ravages of an affection now almost extinct. If the joints have been allowed to become fixed by fibrous tissue their mobility must be restored by graduated manipulation. In the case of the lower limbs, however, this process is useless unless the weight of the body be subsequently transmitted through callipers from pelvis to ground. Various appliances have been devised for this purpose, and may incorporate an adjustable extension for the knee-joint. By their use the patient is enabled to walk with little or no pain, and the previously atrophied muscles rapidly regain their lost bulk and tone.

Manipulation.—This is an essential adjunct to the mechanical treatment in all save the acute stage. It must be borne in mind that pain and swelling in a joint are not necessarily signs of active disease, but commonly result from the irritating action of adhesions. It is, in fact, remarkable how soon symptoms subside after the affected joints are moved with rupture of these bands. Patients apparently hopelessly bedridden are restored to relatively painless activity by a procedure which is still regarded by many as fraught with danger. Actually, instead of lighting up the disease by forced movements, the very reverse takes place, provided, of course, that the manipulation is carried out by those versed in its technique and aware of its dangers.

The ground gained by these procedures must not be lost *by inattention to the details of after-treatment.* It is essential that the increased range of movement be preserved, and this is best attained by encouraging active movements, which, in certain joints, may be aided by taking advantage of the inertia of a weight tied to the distal end of the limb. All these exercises must be watched and controlled by a masseuse, on whom the onus of producing a cure rests almost as heavily as on the physician.

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RAPIDITY OF HEALING OF A GASTRIC ULCER.

BY

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(*With Special Plate.*)

THE following case is worthy of publication in the light of the recent discussion with regard to the rapidity of healing of a gastric ulcer under intensive alkali treatment.

A shop assistant, aged 24, was admitted to Louth Hospital on November 23rd, 1928. His story was the typical one of pain after food, on and off, for over a year. He had recently become progressively worse, and at the time of admission stated that he had not been free from pain during the preceding ten days. He was emaciated, weighing only 7 st.—his usual weight being about 9½ st. He was tender on palpation in the epigastric region, and presented the general appearance of having suffered a good deal.

The radiograph taken the day after admission (Fig. 1) shows a large ulcer on the lesser curvature of the stomach. He was put on a rigorous diet (Sippy[1]), combined with intensive alkali treatment as described by Professor MacLean.[2] Under treatment he improved rapidly. In about three days he was free from pain, but tenderness persisted for about three weeks.

A second plate was taken a little over a month later, and this (Fig. 2) shows that the crater is rapidly filling up.

A third plate, taken one month later, shows that the lesser curvature of the stomach has almost regained its normal contour.

The patient now enjoys absolute freedom from pain, can take normal diet, and his weight has increased to 9 st. 7 lb.

Here we have a large ulcer which has rapidly been brought into a quiescent state; I shall not at such an early date say *healed. It illustrates the fact that* large ulcers can be rapidly brought into a healing condition under intensive alkali therapy; but in my opinion such ulcers are not of a deep or penetrating variety. I agree with Barclay[3] that it is impossible to tell from a radiograph whether an ulcer is of a penetrating variety or not; much of the appearance of penetration is due to heaping of the gastric mucosa combined with surrounding inflammatory exudate. The extent of the disease can only be judged in such cases by correlating the radiographic appearances with the actual clinical symptoms and signs.

I take it that the cases described by Professor MacLean which rapidly responded to intensive alkali treatment were of this nature. At the same time I agree with Lord Moynihan[4] that real penetrating ulcers would not thus rapidly disappear in a month or so.

Intensive alkali treatment combined with dieting and rest certainly does give relief in cases of early or shallow ulceration, but in the case of large penetrating ulcers surgical intervention is still the only hope of cure.

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COEXISTENCE OF LYMPHADENOMA AND TUBERCULOSIS.

BY

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(*With Special Plate.*)

THE possibility of lymphadenoma and tuberculosis coexisting is well recognized. Ewing has pointed out that tuberculosis follows in the wake of lymphadenoma, and Ziegler estimated that 20 per cent. of these patients died of miliary tuberculosis. It has, indeed, been held that the two diseases are identical. Sternberg first put forward the view that Hodgkin's disease was a form of tuberculosis, due, probably, to infection with an attenuated form of the tubercle bacillus. Clinically, cases occur in which the two diseases are almost indistinguishable. In the morbid histology of tuberculous adenitis a type is recognized without definite giant cell systems and in which endothelial hyperplasia is the characteristic feature. It is well known that an endothelial hyperplasia may be the sole feature of early lymphadenoma, a point which is emphasized by Christian and Warthin. Even Andrewes, though he denies the identity of the two diseases, considers it is difficult to *distinguish atypical lymphadenoma from a typical* tuberculosis.

We do not intend to lay any great stress on this view, but the occurrence of tuberculosis in cases of Hodgkin's disease is of great interest, since both may present lesions which are difficult to allocate. This is particularly so since there occur in lymphadenomatous glands in the late stages certain yellowish-white areas which are referred to by Ewing as "necrotic foci" and by Longcope as "areas of necrosis." The difficulty arises in distinguishing them from areas of caseation, and the question may be asked

whether these necrotic foci are really due to a mixed infection with the tubercle bacillus, or whether there is in lymphadenoma a type of "caseation" similar in certain aspects but differing in others. This latter view is of importance since, if this is so, the analogy with other infective granulomata like syphilis, tubercle, and actinomycosis becomes more striking, for in all these conditions we have alteration of the normal structures by endothelial and lymphoid tissue with the presence of giant cells, followed later on by "caseation" and by sclerosis.

The following case of coexistent Hodgkin's disease and tuberculosis is of interest since these necrotic foci were present in the glands.

A man, aged 30, was admitted under the care of one of us in the General Hospital, Madras, on August 28th, 1927, with a history of enlargement of the glands in the neck, pectoral region, and axilla of five months' duration. He was sent to the surgical ward for excision of a gland for pathological report. The report was "lymphadenoma," and the patient was subsequently readmitted to the medical wards on September 11th. He was then complaining of difficulty in swallowing, possibly from pressure of the glands in the neck. The glands in the parotid region were also enlarged. There was, however, no dyspnoea, loss of voice, or enlargement of the superficial veins, or any feature suggestive of a mediastinal growth. The chest was, however, asymmetrical and there was slight fullness in the second and third interspaces on the left side. From the first a dullness on percussion of both sides of the chest was noticed and on auscultation a few rales could be heard. The heart showed a slight softening of the first sound in the aortic and pulmonary areas. Throughout his stay in hospital there was a remittent pyrexia, with, however, no periods of apyrexia. Puncture fluid from one of the glands showed marked eosinophilia. The Wassermann reaction was negative.

The blood on admission showed 1,720,000 red blood cells per c.mm., 58,000 white corpuscles, haemoglobin 56 per cent. The differential count revealed polymorphonuclears 88 per cent.; lymphocytes 8 per cent., myelocytes 3 per cent., eosinophils 1 per cent. The second examination of the blood showed 3,748,000 red blood cells, 56,250 white corpuscles; with polymorphonuclears forming 86 per cent., myelocytes 3 per cent., lymphocytes 9 per cent., and eosinophils 1 per cent. Poikilocytosis was a well-marked feature. Biochemical investigations indicated a blood calcium figure of 8.6 mg. in 100 c.cm., and blood fragility was complete in 0.4 per cent. of saline; van den Bergh's test gave a direct negative and an indirect weak positive reaction. The blood pressure was 110 mm. systolic, and 70 mm. diastolic. The patient was submitted to a course of deep *x*-ray therapy, under which the leucocyte count came down to 7,800, and the haemoglobin to 42 per cent. The patient died after a fit on September 13th.

The necropsy showed marked enlargement of the anterior and posterior chains of the glands in the neck. There was a swelling in the middle line of the neck, which on incision was found to be an abscess of the size of an orange, with a well-defined wall; it contained yellow pus. There were a number of smaller glands in the axilla, which were discrete and slightly movable; a group of glands could be felt also in the groin. Obliterating pleural adhesions were present on the right side, while in the left pleural cavity there was an empyema pushing down the diaphragm and causing a pressure collapse of the base of the left lung, which was adherent above, completely shutting off the empyema. There was some oedema of the tissues of the superior mediastinum. A lump of matted glands formed a large swelling surrounding the bronchi and the aortic arch, filling up the shoulder girdle, and extending behind the heart. There was no infiltration of the pericardium. The left lung was oedematous at the apex, the base was collapsed; the pleura was thickened and adherent, shutting off the empyema. The tracheo-bronchial glands were enlarged and pigmented; they showed foci of caseation. The right lung showed pleural tubercles near the hilum suggestive of lymphatic spread. Microscopically, thickening of the pleura was found, and miliary tubercles were seen. The heart showed brown atrophy. In the liver there were a few miliary tubercles, underneath the capsule as well as inside the organ; there was also acute congestion. The spleen was not enlarged, but was smaller than normal; there were white opaque areas of variable size which, on microscopical examination, proved to be caseating and conglomerate tubercles, with well-developed giant cell systems and commencing caseation. There was marked fibrosis. Both kidneys contained pyaemic abscesses and a few retention cysts. The other organs were healthy, except that the peri-pancreatic glands were enlarged. The periosteum of the right clavicle was infiltrated, and the marrow of the bone itself was involved.

The glands on section presented those curious yellowish-white opaque flecks which resembled tuberculous caseous material, but were rather more firm, more opaque, and discrete; they stood out prominently from the surrounding tissue. Some glands showed a number of these tiny opaque flecks which were not fused together like tuberculous caseous material. Other glands showed marked enlargement, and on section no necrotic areas were found, but there were typical gelatinous areas with strands of fibrous tissue running into the gland from the capsule. There was some peri-adenitis in the intrathoracic group, but very little in the smaller glands.

Microscopically the glands that were uniformly enlarged showed well-marked fibrous transformation; here and there a few groups of lymphoid cells were seen, but the differentiation of the gland into lymph sinuses and follicles was entirely lost. There was, however, no diffuse endotheliosis, but well-marked fibrosis of the sclerosing type, with fully formed fibrous tissue. The lymphoid accumulations between these strands were found to be composed of a few endothelial cells, with rather pale large nuclei arranged in a cluster in the centre, so that the protoplasm formed only a scanty rim round them—a picture which Andrewes has defined as quite distinct from that of tuberculous lymphadenitis. The nuclei were mostly oval, with a ring of distinct nuclear membrane, and one or two dark chromatin nodes. Eosinophils were very scanty in the sclerosed glands, but numerous in the soft ones. The lymphoid cells were of the large and small lymphocytic type.

The presence of myelocytes in the blood is interesting and unusual. It will be remembered that the earlier authors have described cases of lymphadenoma with a myelocytic blood picture, and Cohnheim first applied to it the term "pseudo-leukaemia," assuming that it was a form in which the leukaemic blood picture was absent. Rolleston holds that the presence of leukaemic blood changes would now, with our modern accuracy of haematological methods, rule out a diagnosis of Hodgkin's disease. But in this undoubted case of Hodgkin's disease the presence of a few myelocytes indicates response of the bone marrow, showing that the process is not very far removed from a real leukaemic hyperplasia. It may be added that Fabian has recorded a few myelocytes in cases of Hodgkin's disease, but they were too few to estimate. The presence of myelocytes may indicate involvement of the bone marrow, since undoubted involvement of the clavicle was found in the case mentioned above.

The hyperleucocytosis of 56 per cent. is evidently a reaction to sepsis from the empyema and abscess in the gland. The polynuclear leucocytosis of Hodgkin's disease is both absolute and relative, but the counts seldom exceed 20,000.

The occurrence of an abscess in one of the glands in the neck is unusual, and raises the question whether these necrotic foci are the starting point of the abscesses. This, again, may suggest the view that lymphadenoma is a secondary infection—a view which is emphasized by Horder—an infection supervening on some previous chronic lymphadenitis.

With regard to the eosinophilia, Longcope holds that it is most common where there are necroses in the glands. Bunting, on the other hand, contends that eosinophils are low in the blood in the active stages of the disease, seeing that they all emigrate into the lymphatic glands, the destruction of the lymphocytes there apparently serving as a stimulus. In this case it is noticeable that necrosis in the glands was well marked, but the eosinophilia was slight.

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OBSERVATIONS ON TWENTY-THREE CASES OF CARCINOMA OF THE BLADDER TREATED BY RADIUM.

BY

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THE consensus of opinion on the Continent appears to be that malignant disease of the genito-urinary organs, apart from the penis, reacts unfavourably to radium treatment. In the majority of cases the method of surface application has been adopted in preference to what is termed the surgery of access.

Research on the treatment of bladder carcinoma by buried radium needles has been carried out by me at St. Peter's Hospital since 1925. Twenty-three cases of inoperable carcinoma have been so treated during this period, and kept under careful observation.

The figures which are given in this short communication might produce a misleading impression of the value of irradiation without a study of the clinical aspects of each case both before and after treatment. So ill were some of the patients when first examined that death appeared

imminent. In two cases blood transfusion had to be resorted to in order that the patients might be kept alive during the operation of suprapubic cystotomy. The bladder haemorrhage was controlled within a few hours of the onset of the radium exposure.

It is necessary to stress the point that all the twenty-three patients, before treatment was commenced, were profoundly ill from either sepsis or profuse haemorrhage.

Three of these patients died in hospital within one month of irradiation. The remainder, twenty, were discharged from hospital in fair health, with their suprapubic wounds firmly healed, at periods ranging from three to five weeks.

One patient survived three years, and one two years.

Two patients treated in 1927 are alive, one of whom shows no recurrence of the growth, the other writing to say he is in poor health. A third patient is dead.

The remaining fifteen cases have been treated during the year 1928. Five have died since discharge from hospital. Ten are in fair health, and continue under observation.

In all cases of carcinoma of the bladder haemorrhage can be controlled by irradiation. In the presence of severe cystitis the prognosis is always bad.

The suprapubic wounds, without exception, have healed rapidly. In those cases where sepsis has been absent both general and local conditions have improved for about six months after irradiation. Improvement after this period has not been maintained apart from one or two exceptional cases.

One case of carcinoma of the female urethra invading the bladder, treated twelve months ago, remains a clinical cure. Previous to treatment there was complete incontinence of urine. *Micturition is now normal.*

The radium technique which has been adopted is as follows.

First a suprapubic cystotomy is performed, and the extent of the growth determined by palpation. Five milligrams of the element, in platinum tubes 25 mm. in length and with a screenage of 0.5 mm., are then inserted 2 cm. apart into the periphery of the tumour on its mucous surface, and also on its external aspect. The tubes remain in position for twelve to twenty-four hours. Each tube is threaded with silkworm-gut, and at the termination of the period of exposure is easily withdrawn from the bladder through the suprapubic wound. The silkworm-gut is used in preference to silk on account of its strength, and less likelihood of being torn when pulled on.

The fact that improvement, both in the general state of health and also in the local condition, occurred, in practically all the cases is encouraging. Increase in weight in every patient was noted for six months after the radium exposure.

OVARIOTOMY FOR UNUSUALLY LARGE OVARIAN CYST IN A WOMAN OF 73: RECOVERY.

BY

WILLIAM EVERETT, M.B., F.R.C.S.ED.,

CARDIFF.

ATTENTION was drawn to the comparative rarity of the operation of ovariotomy in women over 70 years of age by Leslie Williams (see the *British Medical Journal* of April 13th, page 679), who cites two personal cases, bringing the total of recorded cases up to 155.

Very large ovarian cysts are not now often met with, for the simple reason that surgical facilities exist to-day for their removal before they attain to the size pictured in the textbooks of a generation ago. Now and again a case appears where the patient has been content to put up with things and live with her cyst, undismayed by its increasing size, even although advice for its surgical removal has been given. The following case is therefore recorded both on account of the rarity already mentioned and also because of the unusual size of the ovarian cyst removed.

The patient, who was 73 years of age, was seen by me on October 27th, 1927, in consultation with her family doctor, with a view to advising upon operation for an enormous swelling of the abdomen, thought to be caused by an ovarian cyst.

The patient was a woman of small stature, very cheerful and intelligent. She had had several children, and the menopause had occurred when she was about 50 years of age. When she was 65 she became conscious of her abdomen enlarging, but had decided not to worry about this misfortune until, eight years later, when she was 73, the swelling of the abdomen had become so great as to interfere seriously with her breathing and getting about. She then complained of abdominal and sciatic pains, fatigue and breathlessness upon exertion, palpitation, sleeplessness, constipation, and inability to hold her water.

She was lying upon her side in bed when I saw her, and when she lay upon her back she was unable to see the top of the bedrail at the foot of her bed. She was a little cyanotic, with dilated venules about the nose, was troubled with slight bronchitis, and had a small degree of oedema round the ankles. Her heart action was arrhythmic and the sounds were feeble, although the valves were competent.

Examination of the abdomen revealed an enormous dull swelling rising from the pelvis and filling the whole abdomen as far as the xiphisternum, with changing areas of resonance to percussion on either flank. The fluid thrill was easily elicited. A diagnosis of large ovarian cyst was made, and preliminary puncture and drainage was advised, to be followed at a later date by ovariotomy.

Paracentesis was performed on October 29th, 1927. On this date an area midway between the umbilicus—which was protruded—and the pubic symphysis was anaesthetized with 1 per cent. novocain, and the cyst punctured by a large trocar and cannula. A long rubber tube was then attached to the cannula and led beneath the bed into a 10-gallon zinc wash-bath, and the fluid contents, which resembled pea-soup, were thus slowly removed. The joy of the old lady increased as her abdomen diminished, and her happiness seemed complete when she raised her head and saw her toes! It was considered best to withdraw the cannula without pressing upon the cyst, in view of possible leakage when the flow had almost ceased. The 10-gallon bath was approximately half full, and upon later measurement the amount of fluid totalled nearly 40 pints.

Two weeks later she came into a nursing home, and on November 17th was operated upon for the removal of the sac. Ovariotomy was performed under chloroform and ether, attempts to introduce the needle for spinal anaesthesia having failed. Slight adhesions were encountered, but after bringing the cyst to the surface of the wound and withdrawing about ten pints of fluid which had again collected, the huge sac slipped out of the abdomen with gentle traction. Blood vessels the size of adult fingers spread over its surface from the pedicle, which was situated upon the right side. The pedicle was securely ligated and the cyst removed, the operation giving rise to no difficulty and being completed in twenty-five minutes.

The specimen was an ovarian cystadenoma, with smooth, tough, and evenly thick walls about three-eighths of an inch thick, except at the base, where there were septal remains.

The patient made an uninterrupted recovery, and left the nursing home at the end of twenty-one days, and now, at 75, enjoys very good health.

I regret that a photograph was not taken before operation, and that the weight of the cyst and its contents was not ascertained by recording the weight of the patient before paracentesis and after ovariotomy.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TWO CASES OF OVARIOTOMY IN WOMEN AGED 84 AND 77 RESPECTIVELY.

IN view of the article by Mr. Leslie Williams in the *Journal* of April 13th, I should like to record the following two cases.

CASE I.

Mrs. X., aged 84, a patient of Dr. Mitchell of Guildford, was, on May 1st, 1918, operated on for a large ovarian cyst, the size of a full-term pregnancy. The tumour was a huge, simple cyst of the right ovary, and was removed entire without previous tapping. The patient made an uninterrupted recovery and has remained well ever since. She is now 95 years of age and in good health.

CASE II.

Miss Y., aged 77, was a patient of Dr Cliff-Hodges of Godalming. She was a very frail old lady, crouched, and bent in her bed, and was toothless except for two old stumps. She had been an invalid for years, but had lately suffered from intestinal obstruction, which at the time of my visit had been partially relieved by enemata, and the vomiting had ceased. Her temperature was 100°, and her pulse was rapid and feeble. The abdomen was filled with a huge, irregular, tender solid tumour, which had recently been wedged into the pelvis; but Dr. Cliff-Hodges had partially dislodged it and thus to some extent relieved

the situation. She was an exceedingly bad operative risk, apart from the fact that the tumour was likely to prove malignant and inoperable. She was therefore advised that operation would be very risky and that it would be better, seeing that her obstruction had been relieved, to continue with palliative treatment. She, however, took a different view, and said that she could bear the pain no longer, and insisted on operation, whatever the risk might be.

The operation was performed on June 13th, 1928. There was much free fluid in the abdomen; the tumour was greenish-black in colour and loosely adherent to the bowels; the adhesions were separated and the tumour was found to be a large fibroid springing from the left broad ligament and twisted two complete turns on its short pedicle. The tumour was removed. A solid tumour of the right ovary, the size of an orange, was also removed.

The patient made a wonderful recovery from the operation and enjoyed very good health, and was able to get about for seven months. Since then she has been in failing health, and is now reported to be dying, with symptoms of intestinal obstruction.

Unfortunately, through some misunderstanding, the specimens were not submitted to the pathologist.

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ELEPHANTIASIS NEUROMATOSA.

WITH reference to the case of elephantiasis neuromatosa reported in your issue of March 30th, I beg to forward photographs of a case I came across shortly before returning home from India this year.

I was travelling from Poona to Dehra Dun, and my train had been held up for some time at a halting place just outside the station of Dholpur, when the unfortunate subject of the photograph appeared. As the train was already signalled to proceed I employed the few moments at my disposal in exposing two films from the carriage door.

The affection was apparently limited to the right shoulder, arm, and hand—it is unlikely that any other such source of income would have been hidden, if present—otherwise the subject appeared to be no different from his mendicant confreres. It is interesting to note how the forearm has escaped in comparison with the rest of the limb, and to compare the girth of the calves of the legs with that of the two massive fingers; presumably these are the index and middle fingers, with the ring finger hidden.

The affected hand was carried on the top of the head during "business hours," partly, no doubt, on account of the weight, and partly for the more advantageous display of the abnormality; on the departure of the train, however, it was allowed to fall to the side. The presence of voluntary movement of the joints may be seen by comparing the two views.

On my return journey, a few days later, I was disappointed to find the lad absent from his post, and my endeavours to trace him, for the purpose of fuller investigation, proved fruitless. It is hoped, however, that the photographs alone may be of interest, and it is extremely doubtful whether, if it had been advised, he would have consented to the loss of the limb, the value of which may be gauged by the weighty condition of the small pocket on his shirt, which pocket contained, presumably, the takings from that one train only.

R. BOULTON MYLES,
Major R.A.M.C.

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CONGENITAL ABSENCE OF THE STERNO-COSTAL PORTION OF THE PECTORALIS MAJOR MUSCLE.

CONGENITAL absence of the pectoralis major muscle is rare enough to lend interest to the case shown in the accompanying photograph. The patient is a boy, aged 7, with absence of the greater part of the sterno-costal portion of the pectoralis major muscle of the *left* side. The sterno-clavicular portion of the muscle and the portion taking its origin from the first and second ribs are present, the lower border of the muscle being in line with the upper border of the second rib when the arm is extended outwards. The digitations of the serratus magnus muscle are by no means marked, but this condition is probably due to insufficient development. An article which appeared in the *British Medical Journal* on July 10th, 1926 (p. 59), records a similar case and is furnished with a useful bibliography.

A. G. NEWELL, M.D., D.P.H.

St. Leonards-on-Sea.

A CASE OF PSEUDO-HERMAPHRODITISM.

IT is unusual for it to be discovered, as in the case reported below, that a woman has been brought up as a man; more often the position is reversed—a man is brought up as a woman. Economically, it was a serious decision to have to make, but there appeared to be no other course, and the result has been to give comfort to the patient where previously there was distress.

In male attire, the patient gave her age as 17 years. As stated above, she had been brought up and educated as a male, in humble circumstances in the country. Latterly she had earned her living as the boy employed to assist the driver of a wagon for the distribution of petrol. To show that she had done her work well it may be recorded that on one occasion she won a prize at a show for the best turned out lorry; on another occasion she was left, snow-bound, in charge of the wagon on a lonely moor for three nights, while the driver went to seek help. That she was a woman was not suspected. She found it inconvenient to have to sit to make water, but it was not until she began to menstruate at the age of 17 that she sought the aid of the district nurse.

Her doctor sent her to see me because he considered that she was a woman, and that it would be necessary to stop her from living as a man. The skin of the face was smooth, and the voice was that of a woman. The figure was boyish. The breasts were those of a woman and well formed. The pubic hair was of the female distribution. The clitoris was large, and of the size of the penis of a baby. The labia majora were fused in a median raphé, giving to the parts an appearance of a scrotum devoid of testes. At the anterior end of the bag was an orifice, through which urine was passed with difficulty.

It was decided that since, physically and psychologically, the patient was more woman than man, it would be inadvisable to permit her to remain in male attire to continue living as a man. Accordingly, having entered hospital in male attire, she was provided with female bed attire and admitted as a woman to a female ward. Her Christian name was changed to the nearest feminine equivalent, but no change could be made in the particulars of the birth registration.

Under general anaesthesia the median raphé was divided, and the edges were sutured to form labia. The urethra opened high up in a tiny vagina, which admitted the end of the little finger. In the vault was a rudimentary cervix. By combined rectal and abdominal examination a rudimentary uterus was palpated, and small ovaries, as they were taken to be.

Since discharge from hospital the patient has been employed as a female domestic servant. She has menstruated regularly for three days at a time. She says that she is much happier living as a woman. Not uncomely, she is fond of wearing becoming clothes, and looks and behaves like a woman.

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Reviews.

SURGICAL DIAGNOSIS.

A Text-Book of Surgical Diagnosis,[1] edited by Mr. A. J. WALTON with the assistance of thirty-six collaborators, is written for both the general practitioner and the surgeon, and aims at improving bedside diagnosis rather than stimulating test-tube research. It includes, however, a well-balanced chapter on the diagnostic value of laboratory methods, in which Dr. Panton describes the tests in use and assesses their significance. As in most books by a number of separate contributors, there is some overlapping, and occasionally it happens—for example, in the passages dealing with rodent ulcer—that when several authors treat of the same disease they do not say the same thing. The contributors, to all of whom Mr. Walton states he gave a free hand, approach their subject in various ways, some through diseases, some through symptoms, others through pathology. The majority of contributors have taken the first way, but the second has much to commend it. To use a book like this for reference it is often necessary to make a diagnosis before finding the section in which the method of diagnosis is described. It is difficult to see how the variety of approaches could have been avoided without altering the plan of the work and converting it into an index of symptoms. None the less, more might have been done on the lines of Chapter xxiv, in which Messrs. Gordon-Taylor and Hudson discuss lesions of the intestines by way of the symptoms they produce.

Most of the chapters are excellent, and will repay careful study. Mr. Harry Platt writes admirably on injuries and diseases of nerves, with just the right mixture of anatomy, physiology, well-chosen diagrams, and bibliography. Spinal cord lesions are successfully handled by Mr. Jefferson, the brain and skull by Drs. Riddoch and Russell Brain. Mr. Lockhart-Mummery's twenty-two pages on the rectum and anus contain the wisdom of a ripe experience. His remarks on history-taking and the examination of the patient are particularly interesting. He does not mention polyp as a cause of rectal prolapse, and dismisses cancer of the rectum in a page and a half, but his article is none the less admirable. Recent developments find a place, and there are *x*-ray photographs showing the use of lipiodol in the diagnosis of thoracic and spinal conditions, and of sodium tetraiodophenolphthalein in gall-bladder disease. Much of the work has devolved upon the editor, and he is responsible for seven of the fifty-two chapters. He has mainly concerned himself with the abdomen, but chapters in this section have also been contributed by Messrs. Cope, Wilkie, Gordon-Taylor, and Perrin. The book covers all the ordinary special subjects, and even includes separate chapters on tropical diseases, gynaecology, and glanders. Mr. Victor Bonney, Mr. Sydney Macdonald, and Mr. Norman Patterson write on their own specialties, and bones and joints are considered by Messrs. Fairbank, Bankart, Driberg, Milne, and Timbrell Fisher.

Within its self-imposed limits the book is sound and authoritative. On the whole it is well produced, but there is only one index to the two volumes and misprints are rather frequent. The illustrations, of which there are 570, all bear on the art of diagnosis.

GENERAL ANAESTHESIA.

IT is interesting to compare two standard textbooks on anaesthesia, one originating in this country, the other of transatlantic origin, and the opportunity has arisen by the recent appearance of STUART ROSS and FAIRLIE'S *Handbook of Anaesthetics*[2] and FLAGG'S *Art of Anaesthesia*,[3] the former in its third, the latter in its fourth edition.

Complete comparison is impossible, since the British volume is much smaller than the American, and naturally does not go so deeply into the subject; but allowing for this fact, one is able to make some comparison between the teaching in the two countries. On the whole, there appears to be a tendency in America to use elaborate apparatus and dosimetric methods to a larger extent than in this country. In England private surgical practice is conducted mostly in nursing homes of small capacity and in private houses. The anaesthetist is therefore compelled to work with apparatus that is easily carried about, and most apparatus used with dosimetric methods is bulky, heavy, delicate, and transportable with difficulty. In America, on the other hand, most surgical operations are performed in large hospitals and clinics, and apparatus need not be moved about to anything like the same extent. The student in this country has therefore to be instructed in methods and with apparatus of the simpler type, much of his teaching necessitating only the use of "the rag and bottle." This method, however, is absolutely necessary to the beginner, and no one can hope to become a specialist in the art of anaesthesia without proper grounding in the simpler methods of administering the various anaesthetics.

In both volumes a prominent place is given to the value of nitrous oxide-oxygen anaesthesia. It would appear, however, that some American surgeons are willing to work under conditions of semi-relaxation of the abdominal muscles which would draw protests from most British surgeons, and it is at least questionable whether the risks of ether anaesthesia are greater than those of nitrous oxide-oxygen anaesthesia pushed to the extreme limit. No doubt in the hands of experts a very great deal can be done with nitrous oxide-oxygen alone, but many operations have to be carried out with the aid of average anaesthetists who do not devote a large portion of their time to anaesthetic work, and in their hands ether is safer than nitrous oxide-oxygen pushed to the limit. Both volumes emphasize the dangers of chloroform, but agree that it has its uses in special cases. The use of ethylene is described in both volumes, and Flagg's account stresses the risks of explosion in the presence of any naked flame, electric spark, or even static sparks, when the drug is used with oxygen. On the whole both authorities agree that ethylene has a definite value in selected cases, and that it should only be used where the operation is to be of short duration. Intratracheal methods of administration are described in both volumes. There is not much difference in the methods or apparatus advocated by the two schools. As regards preliminary medication with drugs, such as atropine and morphine, the teaching of both schools is much the same, though the British authors condemn without reservation the use of morphine preliminary to the administration of chloroform. Local and regional anaesthesia are dealt with in both volumes somewhat briefly, but no mention of sacral anaesthesia is made in the American volume. It is impossible adequately to deal with local and regional anaesthesia in a short space, and in our opinion students should be referred to the larger textbooks for the minutiae of technique. Neither volume mentions the technique of local and regional anaesthesia for operations on the teeth.

The physiology of anaesthesia, shock, anoxaemia, etc., is well explained in each of these books, and due consideration is given to the preparation of the patient. Curiously enough, synergistic analgesia is mentioned in the English but not in the American volume, though the method is used mainly in America. The illustrations in both volumes are well chosen, but naturally the American volume, being larger, has many more. In our opinion both may be recommended to the student, the British one to the beginner as inculcating first principles, the other to the more advanced student as representing the teaching of the American school.

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[1] *A Text-Book of Surgical Diagnosis.* Edited by A. J. Walton, M.S., F.R.C.S., B.Sc., M.B. In two volumes. London: E. Arnold. 1928. (Demy 8vo, pp. 1121; 570 figures. 63s. net the two volumes.)

[2] *Handbook of Anaesthetics.* By J. Stuart Ross, M.B., Ch.B., F.R.C.S.E., and H. P. Fairlie, M.D. With an introduction by the late Hy. Alexis Thomson, C.M.G., M.D., F.R.C.S.E. Third edition. Edinburgh: E. and S. Livingstone. 1929. (Cr. 8vo, pp. xvi + 339; 66 figures. 8s. 6d. net.)

[3] *The Art of Anaesthesia.* By Paluel J. Flagg, M.D. Fourth edition, revised. London: J. B. Lippincott Company. 1928. (Med. 8vo, pp. xviii + 384; 135 figures. 21s. net.)

KAUFMANN'S PATHOLOGICAL ANATOMY.

KAUFMANN'S Special Pathological Anatomy, a translation[4] of which has been prepared by Dr. STANLEY REIMANN, director of the Research Institute of the Lankenau Hospital, Philadelphia, is one of the best known and most widely valued works on that subject. It was, apparently, intended primarily as a textbook for students, but from the comprehensive treatment of the subject, the inclusion of every type of lesion revealed by an exhaustive study of the literature, and from the author's concise and orderly exposition, the book has obtained a world-wide reputation as a work of reference for all who are interested in pathological anatomy. Its classified bibliography alone, occupying 225 large pages of closely printed references, is in itself a work of great value to those requiring information on the history and recent advances in any particular branch of the subject. The original, being in German, is probably not familiar to many English readers; Dr. Reimann's translation will now bring it within the reach of all. The translation appears to adhere closely to the original text, and Dr. Reimann may be congratulated on the completion of what must have been an arduous task. The two volumes of the eighth German edition have been expanded into three volumes, chiefly through the adoption of one uniform type, the small type extensively used in the original being dispensed with. The inclusion of a large number of new illustrations also consumes considerable space; these are all good, and improve the work, although no criticism is to be made of Kaufmann's figures, which have the special merit of having been drawn by himself. The translator has thought it desirable to add paragraphs on some recent advances. Notes on subacute bacterial endocarditis, on the effects of short-circuiting the blood stream from an artery to a vein, and on tularaemia, have been inserted. Several pages are devoted to a discussion of the complicated histological changes met with in goitre; the translator considers that it would simplify matters to regard the enlargement as occurring in stages—a stage of hypertrophy or change to the cylindrical form of cell, of hyperplasia or cell proliferation with reduction of the lumina, and a colloid stage in which the cells undergo atrophy leaving larger or smaller colloid vesicles. Combinations of these stages would account for the complex appearances. Reference is made to the extreme difficulty experienced in some cases in making a histological diagnosis of carcinoma of the thyroid; it would seem that in some instances the only certain criterion of malignancy may be the invasion of blood vessels and tumour thrombosis, and that all other microscopical pictures, no matter how atypical, may be those of a benign growth. Mention is made of the recent explanation of the greater liability of the right lobe of the liver to amoebic abscesses; it is supposed that the streams from the splenic and superior mesenteric veins retain their relative positions, without intermingling, in passing through the portal vein, "analogous to the condition of the Mississippi below the point where it is joined by the Missouri." This American touch is exhibited to some extent also in the general orthography of the work; such forms as fetus, edema, and amebic are familiar to, and to some extent adopted by, English writers, but it is doubtful whether divertículi and diverticulae will prove acceptable as forms of the plural of diverticulum. Mallory's view is mentioned, that haemachromatosis and bronzed diabetes are caused by copper-poisoning, from metal derived from cooking utensils; and a note on scarlet fever expresses some doubt in regard to a streptococcus as the cause of the disease, and to the skin test, antitoxin, and immunization. Paragraphs added are in every case noted as additions, and, not being numerous, in no way alter the general character of the work. It will be noticed that the title differs from that of the original, but the latter would seem to be the more appropriate, since the work is essentially one on special pathological anatomy. The three handsome volumes reflect great credit upon the publishers.

[4] *Pathology for Students and Practitioners.* By Dr. Edward Kaufmann. Translated by Stanley P. Reimann, M.D. In three volumes. London: H. K. Lewis and Co., Ltd. 1929. (Sup. roy. 8vo, pp. 2452 + lxii; 1072 figures. £6 6s. net the three volumes.)

PROTOZOOLOGY.

DR. J. G. THOMSON and Dr. A. ROBERTSON, director and lecturer respectively in the department of protozoology of the London School of Hygiene and Tropical Medicine, have written a book on *Protozoology*[5] which is admirably adapted to the needs of doctors engaged in the practice of tropical medicine and students preparing for examination in this subject. The authors present brief and clear descriptions of the protozoal parasites of man, together with an account of the pathology of the lesions they produce. The volume opens with a general introduction on the structure and nature of the cell, and on the classification of the protozoa generally. Descriptions follow of the malarial parasites of man, coccidia, amoebae, the human flagellates, including leishmania and trypanosomes, and the ciliates. In each case the parasite, its biology, transmission, and host reactions, are carefully and clearly explained, the authors holding that an accurate conception of the parasitic nature of an organism is attainable only by reference to the tissue and other reactions of the host. Chapters are included on examination of the blood and faeces and the interpretation of such examinations, on various organisms of a vegetable or doubtful nature (for example, spirochaetes and rhinosporidium), on parasites in other mammals and in birds, and on technique, derivations, and definitions. Several good books on protozoology have appeared in English within the past few years, but most of them have been too large for the student. The present volume, while making no pretence at being exhaustive or encyclopaedic, is probably the most suitable that has yet been published for the ordinary medical man in the tropics. It contains all the information he is likely to require in everyday practice, and, in addition, descriptions of the pathology of the protozoal diseases which he could otherwise obtain only from a study of a number of large textbooks and monographs. The volume is profusely illustrated with drawings and photomicrographs, and with four excellent coloured plates.

[5] *Protozoology.* By John Gordon Thomson, M.B., Ch.B., and Andrew Robertson, M.B., Ch.B. London: Baillière, Tindall and Cox. 1929. (Cr. 4to, pp. xvi + 376; 220 figures, 4 plates. 30s. net.)

THE CONCISE OXFORD DICTIONARY.

IT is now nearly eighteen years since we first commended to the notice of our readers the *Concise Oxford Dictionary of Current English*,[6] prepared for everyday purposes by H. W. and F. G. FOWLER, and founded by them on the principles of the great *Oxford English Dictionary*, at that time four-fifths completed. Distinguishing features of this work, whose merits have been so widely recognized, were the large amount of space given to common words and colloquialisms, the copious use of illustrative sentences, and the brief treatment of uncommon words or those better fitted for the encyclopaedia than the dictionary. In compiling it the authors kept closely to the idea that a dictionary must be concerned primarily with words and phrases as such, and not, except so far as is needed to ensure their right treatment in speech, with the things those words and phrases stand for. The object they set before themselves was to present as vivid a picture as the small dictionary could be made to give of the English that was being spoken and written at the time. By general consent the outcome of their labours was, for its size, by far the best English dictionary ever produced—full, accurate, informative, and judicious in its choice of technical terms. In the intervening years the game of word-coining and phrase-making went on apace, so that many additions and some alterations became necessary if the book was to preserve its character as a dictionary of current English. Francis George Fowler died in 1918, and the work of revision has been carried on by his brother. As the surviving author remarks in his preface, a living language does not remain unchanged through twenty years and a great war: "Our picture has needed, and received, a good deal of retouching

[6] *The Concise Oxford Dictionary of Current English.* Adapted by H. W. Fowler and F. G. Fowler from the *Oxford Dictionary*. New edition; revised by H. W. Fowler. Oxford: The Clarendon Press. 1929. (Cr. 8vo, pp. 1434 + xvi. 7s. 6d net; thin paper 10s. 6d.)

before being again exhibited in public, and its owners, the Clarendon Press, have thought it worthy of a slightly larger and more handsome frame." Thus, while the aims and methods of the dictionary remain what they were, detailed changes in the text are very numerous, and the general format has been modified in several respects. Some 400 pages have been added, but the columns are narrower, there are fewer lines to the page, and a pleasanter and more legible type is used. The short list of those to whom Mr. H. W. Fowler makes acknowledgement for special help in the preparation of the second edition includes the name of our late Editor. We know that Sir Dawson Williams's appreciation of the "*C.O.D.*" survived the test of sixteen years' daily use, and a cursory examination of the new edition assures us that it would have met with his critical approval. A fresh lease of popularity can be predicted for this admirable work of reference.

BOOKS FOR NURSES.

MR. COMYNS BERKELEY'S well-known book on *Gynaecology for Nurses and Gynaecological Nursing*,[1] now in its fifth edition, is a complete and well-written volume that has proved of the greatest service to members of the nursing profession ever since its first edition appeared nearly twenty years ago. It is divided into six parts. The first five of these deal with the anatomy and physiology of the female organs, with pregnancy, with parturition, and with the diseases of the reproductive tract. The sixth part, extending to some 160 pages, is devoted to gynaecological nursing. The book is thoroughly up to date, well illustrated, and well turned out. It may be warmly recommended to the attention of all nurses in search of instruction in the subjects with which it deals. In the volume by Miss L. OAKES, entitled *Essentials of Gynaecology for Nurses*,[2] is set out a brief course of questions and answers for examination candidates that might well be used as a test of their knowledge by nurses who have been through Mr. Comyns Berkeley's more elaborate and informative text-book. Miss Oakes has written her book primarily for the general nurse, and chiefly as an aid in the preparation for the State examinations. It takes the form of questions and answers throughout; and, in addition, nine test papers are set, the answers to the questions in them being given at the end of the volume. The book is clearly written, and should prove of real value to nurses studying gynaecology. A further example of the application of the method of question and answer in the teaching of nurses is provided by an American volume from the School of Nursing at St. John's Hospital, Cleveland, Ohio: *Questions and Answers for Nurses*,[3] by Miss I. V. KELLEY. The first few pages of this book set out the recent improvements in the style and method of examinations that take the form of what are described as "objective (new type) examination questions," of the "recall type," in which the examinee may complete a skeleton statement, or make a pertinent statement about a word presented to her, and of the "recognition type." Here the examinee is offered complex statements which must be identified as true or false; or must choose the correct answer from the number offered to her; or must set the correct answer side by side with the appropriate question (much as one may have to do in the more elaborate acrostics or cross-word puzzles); or must identify the corresponding members in the analogies that may be drawn in anatomy, bacteriology, and so forth. The bulk of the volume is more commonplace, and is devoted to the "essay (old type) examination questions" of the old-fashioned sort. This is designed to enable a nurse to review all the subjects in the curriculum of the various schools of nursing, and appears to fulfil its purpose in a tolerably satisfactory fashion. The third edition of Dr. H. C. RUTHERFORD DARLING'S *Surgical Nursing and After-Treatment*[10] gives an excellent account of the subject with which it deals, and is intended for the use not of nurses only, but also for students and dressers and the junior members of the medical profession. The first half of the book deals with general surgical nursing, the second half with regional surgical nursing. There is a great deal of information in Dr. Darling's book, which is well written and adequately illustrated; we wish it the success it deserves. *Nutrition in Health and Disease for Nurses*,[11] by Drs. LENNA F. COOPER and EDITH M. BARBER and Miss HELEN S. MITCHELL, gives a full account of the principles of nutrition and of the details of diet in disease. It is divided into four parts, treating respectively of the principles of nutrition, the selection of foods, diet in disease, and cooking for the sick and convalescent, at approximately equal length. There is a great amount of up-to-date information in this volume, and it should appeal to a far wider audience than the nursing profession; it may be recommended also to physiologists, medical men, and all who are interested in the principles and details of scientific feeding as it is understood in America. The fourth edition of Dr. RUTHERFORD DARLING'S *Elementary Hygiene for Nurses*[12] gives a soundly written account of the subject that may well be placed in the hands of anyone seeking an introduction to the principles of hygiene in house and town. It has a number of excellent illustrations, and the author has adopted what may be called English standards in writing it. *Applied Bacteriology for Nurses*,[13] by JEAN WHITE, endeavours to supply nurses with such practical knowledge of bacteriology as may be of service to them in their daily round, and outlines for them a scheme of laboratory work. It should be useful to such nurses as have the opportunity to study the subject in any but a superficial manner. Dr. I. J. SANDS's book on *Nervous and Mental Diseases for Nurses*[14] gives a short and sufficient account of the various forms of mental disease and neurological disorders that nurses may meet with in their patients, and sets out the ways in which the nurse may help the medical man in their treatment. It can be recommended to those readers for whom it is designed.

NOTES ON BOOKS.

THE *Manual of Otology*[15] by Dr. GORHAM BACON, with whom Dr. T. L. SAUNDERS is now associated in the preparation of the eighth edition, is perhaps less known and appreciated in this country than it deserves. The number of editions issued is sufficient evidence of its success in America. It is a book which presents the study of otology in a sane, balanced, and practical fashion. The manner in which it is written, and the frequent references to first-hand experience, stamp it with the personality of the authors, who prove themselves free from fads and to be sound guides in the pathology and the surgery of the ear. The arrangement of the different sections and the general approach to the subject are in a conventional style, but the book has been brought thoroughly up to date in all points concerning the labyrinth and intracranial extensions of aural disease by the additions made by Dr. Saunders. We recommend this book warmly as an excellent manual for house-surgeons, clinical assistants, and practitioners.

The first volume of the twenty-eighth edition of the late Professor Strumpell's textbook of pathology and therapeutics[16] has now appeared. Professor C. SEYFARTH, who is responsible for the revision, contributes a short preface. New subjects dealt with in this edition include undulant and dengue fevers, abscesses of the lung, and ulcerative colitis. The new edition is conspicuous for its many and good illustrations, and for the excellence of its subject-matter.

Dr. F. F. MARTÍNEZ's work[17] on intestinal occlusion, which, as we learn from the preface, is not intended for beginners but for experienced practitioners, is divided into three parts, dealing respectively with the diagnosis, etiology, and treatment of intestinal obstruction. A list of the writer's publications is appended.

[1] London: Faber and Gwyer, Ltd., The Scientific Press. 1929. (7s. 6d. net.)
[2] London and New York: G. P. Putnam's Sons. 1928. (6s. net.)
[3] Philadelphia and London: W. B. Saunders Company. 1929. (12s. net.)
[10] London: J. and A. Churchill. 1928. (8s. 6d.)
[11] London: J. B. Lippincott Company. 1928. (12s. 6d. net.)
[12] London: J. and A. Churchill. 1929. (5s.)
[13] New York: The Macmillan Company. 1929. (12s. net.)
[14] Philadelphia and London: W. B. Saunders Company. 1928. (6s. net.)
[15] *A Manual of Otology.* By Gorham Bacon, M.D., F.A.C.S., and Truman Laurence Saunders, M.D., F.A.C.S. Eighth edition, thoroughly revised. Philadelphia: Lea and Febiger. 1928. (Post 8vo, pp. vi + 575; 120 figures, 2 plates. 4.50 dollars.)
[16] *Strumpell-Seyfarth Lehrbuch der Speziellen Pathologie und Therapie der inneren Krankheiten.* Achtundzwanzigste, neu bearbeitete Auflage. Erster Band. Von Dr med. et Phil. C. Seyfarth. Leipzig: F. C. W. Vogel. 1929. (6¾ × 9¾, pp. xiii + 880; 177 figures, 12 plates. 34.25.)
[17] *El Problema de la Oclusión Intestinal.* Fidel Fernández Martínez. Madrid: Javier Morata. 1928. (5½ × 8¼, pp. 137; 39 figures.)

For the benefit of the layman Dr. IAN THOMSON has "potted" medicine into a booklet of little more than 100 pages, under the title *Good Health*.[18] He combines the art of compression with the faculty of clear exposition; so well, indeed, that Sir ARTHUR KEITH seems justified in saying in his preface that the mantle of Professor Arthur Thomson has fallen upon his son. Perhaps the layman will find difficulty in digesting the five-page digest of hormones; and a glossary of medical terms might be useful as an adjuvant to some of the potions of knowledge; but there is nothing deleterious in the ingredients, nor anything that need produce nightmare in the most neurotic of readers.

The ninth volume issued by *The Medical Department of the United States Army in the World War*[19] is devoted to communicable and other diseases. The diseases discussed include the enteric group, inflammatory diseases of the respiratory tract, tuberculosis, cerebro-spinal meningitis, encephalitis lethargica, anthrax, diphtheria, venereal diseases, the diarrhoeal group of diseases, the acute exanthemata, mumps, infectious jaundice, typhus, trench fever, Vincent's disease, malarial fevers, diseases caused by intestinal parasites, diseases of the skin, and neuro-circulatory asthenia. The text is illustrated by numerous tables of the incidence, mortality, and complications of the various diseases. A list of references, mainly to American publications, is appended to each chapter.

We have received a copy of Dr. GABRIEL LANGFELDT's prize essay[20] on the clinical examination of the visceral nervous system. It contains a criticism of the various tests in common use, such as the intravenous adrenaline test, the pilocarpine reaction, the atropine reaction, the oculo-cardiac reflex, and the cilio-spinal reflex. The Norwegian text is followed by summaries in German and English.

Under the auspices of the well-known French journal *La Presse Médicale*, a pamphlet[21] on medical education and registration in France has been compiled for the use of those interested, whether in France or other countries. It contains detailed information about the educational facilities in Paris and some general notes about those in the provinces.

A booklet[22] describing spas in the centre of France has been prepared incorporating descriptions by several authors and a preface by Professor CARNOT. A brief account of each place is given, with notes of the pathological conditions for which the waters are specially recommended. The booklet will be of considerable assistance to those who wish to know the therapeutic possibilities in that neighbourhood.

[18] *Good Health*. By Ian S. Thomson, M.D., D.P.H. With a foreword by Sir Arthur Keith, M.D., LL.D., F.R.S. London and New York: Longmans, Green and Co. 1929. (Cr. 8vo, pp. v + 122. Paper cover, 2s. net; cloth, 3s. 6d. net.)

[19] *The Medical Department of the United States Army in the World War*. Prepared under the direction of Major-General M. W. Ireland. Vol. IX, Communicable and Other Diseases. By Lieut.-Colonel Joseph F. Siler, *M.C.*, U.S. Army. Washington: U.S. Government Printing Office. 1928. (Sup. roy. 8vo, pp. 628; 53 charts. 2 dollars.)

[20] *En oversikt over den kliniske undersökelse av det viscerale nervesystem og en kritikk av de forskjellige prövers praktiske verdi stöttet paa egne undersökelser*. By Gabriel Langfeldt. Bergen: J. W. Eides Boktrykkeri A/S. 1929. (6 × 9, pp. 134.)

[21] *L'Enseignement Médical en France à l'Usage des Médecins et Etudiants Français ou Etrangers*. Paris: La Presse Médicale. 1929. (Demy 8vo, pp. 76.)

[22] *Stations Thermales de la Centre de la France*. Préface par M. le Professeur Carnot. Paris: L'Expansion Scientifique Française. 1929. (5¼ × 7¼, pp. v + 79; 1 map. 12 fr.)

PREPARATIONS AND APPLIANCES.

VITAMINS IN MARGARINE.

MESSRS. LEVER BROTHERS have drawn our attention to the results of tests on the vitamin content of certain of their margarines that have been carried out at two independent laboratories in this country. The margarines tested were special brands which had been activated by the addition of vitamin concentrates.

The manufacture of a margarine with an adequate vitamin content is a matter of considerable economic importance, for, until recently, animal fats have been the chief source of vitamins A and D, and the relatively high price of such fats has been an important factor in causing deficiency in these vitamins in the diet of the children of the poorer classes. The tests on margarine made by Dr. Katherine Coward have already been published (*Lancet*, October 6th, 1928, p. 726). She concluded that the particular brands of margarine that she tested were equal to the best summer butter in their vitamin A and D content, and that they were superior to many samples of butter tested.

Messrs. Lever Brothers have submitted to us the results of a second series of tests carried out in another laboratory. These show that the vitamin concentrates used in manufacture have a satisfactory vitamin content, and also confirm Dr. Coward's finding that the finished margarine has a vitamin content equal to that of good butter.

BIRTHDAY HONOURS.

THE Honours List issued on June 3rd, on the occasion of His Majesty's birthday, includes the names of the following members of the medical profession.

Order of Merit.

ROBERT BRIDGES, M.A., M.B., D.Litt., LL.D., F.R.C.P., Poet Laureate. In recognition of his eminent position in the world of literature.

Privy Councillors.

BERTRAND EDWARD, BARON DAWSON OF PENN, G.C.V.O., K.C.B., K.C.M.G., M.D., F.R.C.P., Physician in Ordinary to His Majesty the King.

The Hon. EARLE CHRISTMAS GRAFTON PAGE, M.B., Ch.M., Treasurer of the Commonwealth of Australia.

G.C.V.O.

Sir HUMPHRY DAVY ROLLESTON, Bart., K.C.B., M.D., F.R.C.P., Physician in Ordinary to His Majesty the King; Regius Professor of Physic in the University of Cambridge.

Baronets.

Sir EDWARD FARQUHAR BUZZARD, K.C.V.O., M.D., F.R.C.P., Physician Extraordinary to His Majesty the King; Regius Professor of Medicine in the University of Oxford.

Sir HUGH MALLINSON RIGBY, K.C.V.O., M.S., F.R.C.S., Serjeant Surgeon to His Majesty the King.

K.C.B. (Civil).

Sir FREDERICK STANLEY HEWETT, K.C.V.O., K.B.E., M.D., Surgeon to His Majesty the King and Surgeon Apothecary to His Majesty's Household.

K.C.V.O.

FRANCIS EDWARD SHIPWAY, M.D., Senior Honorary Anaesthetist to Guy's Hospital.

K.B.E. (Civil).

RICHARD RAWDON STAWELL, M.D., President of the Melbourne Hospital; for services to the Commonwealth of Australia.

Major-General THOMAS HENRY SYMONS, C.S.I., O.B.E., Honorary Surgeon to His Majesty the King; Director-General, I.M.S.

Knights Bachelor.

Professor WILLIAM COLIN MACKENZIE, M.D., F.R.S., Director of the National Museum of Australian Zoology.

ROBERT STANTON WOODS, M.D., M.R.C.P., Physician in charge of the Departments of Physiotherapy and Electrotherapy, London Hospital.

C.B. (Military).

Surgeon Rear-Admiral HENRY CADMAN WHITESIDE, M.R.C.S., L.R.C.P.

Major-General HAROLD PERCY WALLER BARROW, C.M.G., D.S.O., O.B.E., K.H.S. (late R.A.M.C.), Director of Hygiene, the War Office.

C.B. (Civil).

MAURICE ALAN CASSIDY, M.D., F.R.C.P., Chief Medical Officer of the Metropolitan Police.

C.M.G.

WILLIAM JAMES DEACON INNES, M.R.C.S., L.R.C.P., West African Medical Staff, Director of Medical and Sanitary Services, Gold Coast.

OLIVER FRANCIS HAYNES ATKEY, M.B., F.R.C.S., Director of the Sudan Medical Service.

C.I.E.

Major-General RICHARD WILLIAM ANTHONY, I.M.S., Surgeon General with the Government of Bombay.

CHARLES ALBERT BENTLEY, M.B., C.M., Director of Public Health, Bengal.

C.V.O.

HAROLD KINGSTON GRAHAM HODGSON, M.B., B.S., Radiologist to King's College Hospital.

FRANK DUTCH HOWITT, M.D., M.R.C.P., Physician in charge of Physiotherapy Department, Prince of Wales's General Hospital.

LIONEL ERNEST HOWARD WHITBY, *M.C.*, M.D., M.R.C.P., Assistant Pathologist, Middlesex Hospital.

M.V.O.

EDWARDS CHARLES DODDS, M.D., M.R.C.P., Professor of Biochemistry in the University of London.

C.B.E. (Military).

Colonel A. H. SAFFORD, V.H.S. (late R.A.M.C.), Assistant Director of Medical Services, Baluchistan District, India.

C.B.E. (Civil).

DONALD MACKENZIE MACRAE, M.D., Principal Medical Officer, Bechuanaland Protectorate.

Lieut.-Colonel JOHN WILLIAM WATSON, C.I.E., I.M.S., Civil Surgeon, Ajmer, and Chief Medical Officer, Rajputana and Ajmer-Merwara.

O.B.E. (Military).

Surgeon Commander FRANK LEWIS SMITH, R.N.
Major DOUGLAS GORDON CHEYNE, *M.C.*, M.D., R.A.M.C., Deputy Assistant Director of Hygiene, China Command.
Captain PETER FIFE ATCHINACHIE GRANT, M.B., I.M.S.
Major JOHN CLERK PYPER, M.B., I.M.S., late Medical Officer, Equitation School, Saugor, India.
Squadron Leader (Hon. Wing Commander) EDGAR HUNTLEY, M.B., B.S., R.A.F.

O.B.E. (Civil).

ALEXANDER SANDISON, M.B., Principal Medical Officer, Ministry of Pensions.
Major JAMSHEDJI NUSSERWANJI DUGGAN, I.M.S., Professor of Ophthalmic Medicine and Surgery, Grant Medical College, Bombay, and Superintendent of the Sir Cowasji Jehangir Ophthalmic Hospital, Bombay.
PIEDADE FELICIAN MATHIAS, Madras Medical Service, Superintendent, Government Royapuram Hospital, and Lecturer in Surgery, Royapuram Medical School, Madras.
IRVING DANIEL RAMSAY, M.D., Civil Surgeon, Ministry of Interior, Iraq.
GEORGE STUART, M.A., M.B., Ch.B., Assistant Director, Laboratories, Department of Health, Palestine.

M.B.E. (Military).

Medical Warrant Officer, *3rd Class Assistant Surgeon* ALFRED BACKMAN, Indian Medical Department, attached Iraq levies.

M.B.E. (Civil).

THOMAS FAWSITT, M.R.C.S., L.R.C.P. For public and charitable services in Oldham.
WILLIAM PATRICK SMYTHE MITCHELL, Indian Medical Department, Medical Officer, Bastar State, Central Provinces.
JAMES HERBERT THEODORE, Indian Medical Department, King Institute, Guindy, Madras.
SOCRATES NORONHA, Medical Officer in charge, Anti-Venereal Department, Bombay Municipality.
CHARLES ROBERT PHILIP, M.B., East African Medical Service, Medical Officer, Kenya.

Kaisar-i-Hind Medal (First Class).

GEORGE BARNES ARCHER, M.D., Medical Officer, Medical Mission, Dayabari, Ranaghat, Nadia, Bengal.

The honour of Knighthood has been conferred also upon JAMES R. JACKSON, M.R.C.V.S., Chief Veterinary Officer, Ministry of Agriculture and Fisheries, and upon P. CHALMERS MITCHELL, C.B.E., M.A., LL.D., D.Sc., F.R.S., Secretary of the Zoological Society.

THE GENERAL ELECTION.

MEDICAL MEMBERS OF THE NEW PARLIAMENT.

THE following nine medical men who were members of the last Parliament have been re-elected to the House of Commons at the recent General Election:

Dr. A. VERNON DAVIES (C.), Lancaster (Royton).
Dr. W. E. ELLIOT (C.), Glasgow (Kelvingrove).
Dr. F. E. FREMANTLE (C.), Hertfordshire (St. Albans).
Dr. H. C. HASLAM (C.), Lincolnshire (Horncastle).
Dr. E. GRAHAM LITTLE (Ind.), London University.
Dr. ALFRED SALTER (Lab.), Bermondsey (West).
Professor THOMAS SINCLAIR (C.), Queen's University, Belfast. Returned unopposed.
Dr. DRUMMOND SHIELS (Lab.), Edinburgh (East).
Dr. J. H. WILLIAMS (Lab.), Carmarthen (Llanelly).

The following eight members of the medical profession have also been elected; several of them have sat as members of the House of Commons in previous Parliaments.

The Right Hon. CHRISTOPHER ADDISON (Lab.), Swindon.
Dr. ETHEL BENTHAM (Lab.), Islington (East).
Dr. ROBERT FORGAN (Lab.), Renfrew (Western).
Mr. SOMERVILLE HASTINGS (Lab.), Reading.
Dr. JOSEPH HUNTER (L.), Dumfries.
Dr. H. B. MORGAN (Lab.), Camberwell (North-West).
Dr. J. H. *MORRIS-JONES (L.), Denbigh.*
Dr. G. E. SPERO (Lab.), Fulham (West).

Of the seventeen successful medical candidates, nine belong to the Labour party, five are Conservatives, two are Liberals, and one is an Independent. Dr. Ethel Bentham has the distinction of being the first medical woman to enter Parliament.

Sir George Berry (C.), who was one of the three representatives of the combined Scottish Universities in the late Parliament, is standing again, and another medical candidate for that constituency is Dr. J. Kerr (Lab.). The result has not yet been declared.

Polling Figures.

The following are the polling figures at all the contested elections in which medical candidates were successful. An asterisk denotes that a candidate sat in the last Parliament.

SWINDON (WILTS):	
Dr. C. Addison (Lab.)	16,885
*Sir R. Mitchell Banks (C.)	14,724
F. C. Thornborough (L.)	7,060
ISLINGTON (EAST):	
Dr. Ethel Bentham (Lab.)	15,199
*Major R. I. Tasker (C.)	13,541
E. C. Middleton (L.)	11,136
LANCASTER (ROYTON):	
*Dr. A. Vernon Davies (C.)	15,051
H. Derbyshire (L.)	13,347
A. E. Wood (Lab.)	10,763
GLASGOW (KELVINGROVE):	
*Dr. W. E. *Elliot (C.)*	17,037
J. Winning (Lab.)	15,173
W. Reid (L.)	2,623
RENFREW (WESTERN):	
Dr. R. Forgan (Lab.)	14,419
A. T Taylor (C.)	12,183
F. S. Anderson (L.)	2,682
R E. Muirhead (Scottish Nat.)	1,667
HERTFORDSHIRE (ST. ALBANS):	
*Dr F. E. Fremantle (C.)	20,436
Miss M. Whateley (Lab.)	11,699
G G. Honeyman (L.)	10,299
LINCOLNSHIRE (HORNCASTLE):	
*Dr. H. C. Haslam (C.)	12,837
F. C. Linfield (L.)	10,168
J. R Sanderson (Lab.)	3,683
READING:	
Mr. Somerville Hastings (Lab.)	23,281
*H. G Williams (C.)	22,419
D. Macfadyen (L.)	7,733
DUMFRIES:	
Dr. J. Hunter (L.)	16,174
*Brig.-General J. Charteris (C.)	12,984
W. H. Marwick (Lab.)	6,637
UNIVERSITY OF LONDON:	
*Dr. E. Graham Little (Ind.)	5,859
W. T. Layton (L.)	2,923
Sir John Gilbert (C.)	2,179
CAMBERWELL (NORTH-WEST):	
Dr H. B. Morgan (Lab.)	12,213
*E T. Campbell (C.)	9,808
H. Harcourt (L.)	5,559
DENBIGH:	
Dr. J H. Morris-Jones (L.)	21,305
A. Graham (C.)	13,116
BERMONDSEY (WEST):	
*Dr. A. Salter (Lab.)	13,231
L. J. Stein (L.)	4,855
Lieut.-Colonel H. C. Butcher (C.)	3,852
EDINBURGH (EAST):	
*Dr. Drummond Shiels (Lab.)	13,933
T. P McDonald (L.)	8,587
R. C. Thyne (C.)	6,639
FULHAM (WEST):	
Dr. G. E. Spero (Lab.)	16,190
*Sir Cyril Cobb (C.)	13,979
G. A. Gale (L.)	5,920
CARMARTHEN (LLANELLY)	
*Dr. J. H. Williams (Lab.)	28,595
R. T. Evans (L.)	15,065
J. P. L. Thomas (C.)	3,999

Unsuccessful Candidates.

The following members of the medical profession were defeated at the polls. Several of them had previously represented or contested either the same or other constituencies. An asterisk denotes that a candidate sat in the last Parliament.

Dr. C. W. Brook (Lab.), Wandsworth (Balham and Tooting).
Dr. F. G. Bushnell (Lab.), Birmingham (Moseley).
Dr. Stella Churchill (Lab.), Brentford and Chiswick.
Dr. J. D. *Cooke (C.), Camberwell (Peckham).*
Dr. C. R. Cooke-Taylor (L.), Camberwell (Dulwich).
Dr. R. Dunstan (Com.), Bethnal Green (South-West).
Dr. L. Haden Guest (C.), Salford (North).
Dr. A. B. Howitt (C.), Preston.
*Sir Henry Jackson (C.), Wandsworth (Central).
Dr. J. W. Leech (C.), Newcastle-upon-Tyne (West).
*Sir Richard *Luce (C.)*, Derby.
Dr. R. Lyons (Lab.), Middlesex (Hendon).
Dr. R. A. Lyster (Lab.), Hampshire (Winchester).
Dr. R. O. Moon (L.), Oxford.
Dr. J. Fraser Orr (L.), Linlithgow.
Dr. Joseph Robinson (Lab.), Manchester (Withington).
Dr. J. V. Shaw (L.), Derbyshire (Ilkeston).
Dr. W. H. Summerskill (L.), Wandsworth (Balham and Tooting).
*Sir Thomas Watts (C.), Manchester (Withington).

British Medical Journal.

SATURDAY, JUNE 8TH, 1929.

ENCEPHALITIS LETHARGICA AND JUVENILE DELINQUENCY.

THE age-long problem of troublesome youth has within the last ten years been complicated to some extent by the intrusion of encephalitis lethargica into the list of organic diseases which seriously disturb the mental processes of the patient and profoundly alter his character and conduct. Fortunately, in respect to the population at large, the individuals who are each year seriously attacked by this disease are few in number; and, although some 30 to 40 per cent. of such persons, in greater or less degree, become changed in character, they do not swell the sum of delinquency to any serious extent. Thus a recent report issued by the Home Office[1] shows that at the end of 1926 there were 6,871 boys and girls under reformatory training in Home Office schools, whereas the total number of juveniles sent to these schools on account of post-encephalitic delinquency during the period 1920–27 numbered only 108; in Borstal institutions and prisons also the post-encephalitic subjects do not form a large proportion of the inmates as a whole. But in the general lump of juvenile delinquency, wherever it may be found—in special schools, reformatories, mental hospitals, or penal places—the post-encephalitic constituent is an active and disquieting leaven. There are several reasons why, in spite of their relatively insignificant numbers, post-encephalitis delinquents—chiefly children and adolescents, with males preponderating—should attract special attention. In the first place, the causes and circumstances of their plight are different from those which obtain in the case of certain other classes of delinquent. Thus it is by no means usual to find any strong antecedent evidence of mental instability either in the delinquent or his parents; still less frequently can the home environment of the patient be said to have contributed materially to his condition; and among school children it is notorious that the mentally backward or temperamentally troublesome scholar does not succumb to the disease so often as does the well-behaved child of good or exceptional ability.

The failure to adapt themselves to their social environment which certain sufferers from encephalitis lethargica share with other types of delinquents seems to arise mainly from a condition of irritability combined with motor restlessness (especially marked at night) and emotional instability; there is a loss of volitional control, and, generally speaking, the changes appear to be regressive in character and associated with various forms of misbehaviour of a primitive and instinctive type. McCowan and Cook[2] are inclined to agree with Auden[3] that the behaviour changes in encephalitic subjects are partly brought about by "regression due to removal or suppression of the epicritic control over the protopathic instinctive tendencies." In [illegible] most observers consider that the [illegible] equal to the best summer butter tested.

Messrs. Lever Brothers have submitted to us the [illegible]'s Branch, a second series of tests carried out in another laboratory, to show that the vitamin concentrates used in manufacture [illegible] a satisfactory vitamin content, and also confirm Dr. Coward's finding that the finished margarine has a vitamin content equal to that of good butter.

[illegible] content, and that they were superior [illegible] impairment of their intellect, and, as one authority puts it, "the encephalitic is almost invariably intellectually superior to his conduct."

The changes in behaviour—which some authors, like Wimmer,[4] consider show uniformity in different patients, but which Shrubsall[5] thinks are coloured by the individual patient's previous experience—are manifold and often strange, while they vary in importance from an unnatural irritability to homicidal tendencies. Irritability may show itself in general restlessness, interference with others, teasing, abusive language, destructiveness, and in many other ways; motor restlessness seeks an outlet in wandering—especially at night—truancy, queer antics, fighting, and occasionally in acts of daring involving some degree of personal courage. Emotional disturbances are reflected in fits of laughter or crying, and in such directions as general noisiness, rowdyism, etc. The more serious effects of a loss in volitional control which bring the subject within the arm of the law are such malpractices as lying, thieving, arson, sexual offences, assault, and even homicide. But in association with such examples of misbehaviour and crime, many of which apply to other forms of delinquency, there are certain temperamental and physical attributes of the encephalitic delinquent which have attracted attention. Thus Shrubsall[5] has pointed out the encephalitic child's desire to attract notice, and the same morbid craving for attention is reported of encephalitis lethargica patients in the West Park Mental Hospital; a child in another institution would, as a matter of routine when visitors were present, let herself fall from a ladder during a physical exercise class in order to attract attention. Another characteristic trait in encephalitic delinquents is their readiness to express, and to show, sincere contrition for their misdemeanours, which they recognize as such, and to the committal of which they say they are overwhelmingly compelled; moreover, there is sometimes the wish, if not the will, to improve, as in the case of a girl of 13 at Winchmore Hill, who would say: "Can I stay upstairs by myself until school time? I feel I am going to fight." At the same time, other patients are less honest with themselves, and furnish all sorts of ingenious, if not ingenuous, excuses.

Professor René Cruchet, in his graphic narrative which appears at page 1028 of our present issue, illustrates in the case of one of his patients several of the points touched upon above. He also emphasizes the fact that, with the progressive deterioration in conduct as the boy grew up, there was no arrest in physical development and strength. In this connexion we may recall that T. R. Hill[6] has found that when the physical symptoms of Parkinsonism supervene the tendencies to delinquency begin to decline, and then to disappear when this condition becomes pronounced.

The encephalitic delinquents as a class are remarkable for the special difficulties which their treatment and after-care involve. They apparently do not react satisfactorily to the reformative treatment which in Home Office schools and Borstal institutions has proved successful in the case of other types of youthful offenders. As mental patients McCowan and Cook[2] consider that "the encephalitics are the most troublesome and pugnacious children in the ward." The prospects of a thorough reformation in character seem, indeed, to be remote in many of the graver cases of post-encephalitis. But this should not yet discourage

[4] Wimmer, A.: *Chronic Epidemic Encephalitis*, London, 1924.
[5] Shrubsall, F. C.: The Sequelæ of Encephalitis Lethargica, *Journ. Med. Psychology*, 1927, vol. vii, Pt. 2.
[6] Hill, T. R.: The Problem of Juvenile Behaviour Disorders in Chronic Epidemic Encephalitis, *Journ. Neurol. and Psychopathol.*, 1928, ix, xxxiii, 1.

the laudable efforts at salvage and the patient research work which is being carried on at such institutions as the Northern Hospital, Winchmore Hill, the West Park Hospital, Epsom, the Southmead Hospital, Bristol, and others; nor can the special value of such comprehensive and informative case-histories as that given by Professor Cruchet be overestimated. A ray of hope has recently been emitted from the Winchmore Hill Unit, where Hill[7] has been able apparently to improve the habits and general conduct of certain patients by the use of bulbocapnine, a drug related to apomorphine.

THE TREATMENT OF TUBERCULOUS ADENITIS.

"PLUS ça change plus c'est la même chose" is an adage which, if not true of all medical problems, can certainly be applied to the methods of treating tuberculous glands in the neck. Some thirty years ago a radical enucleation of the glands was the accepted routine practice; there followed a vogue of conservative methods, of which the most important was based on removing the supposed primary focus of infection and relying on the natural or stimulated resistance to overcome infection in the glands. Other procedures were often empirical, but in general fell into line with methods used in the treatment of other types of tuberculous infection. Conservative measures have been given a fair trial, and still have ardent advocates; if, however, we accept the evidence which Mr. Gordon Bruce gives in our present issue (p. 1030), it would appear that the full circle has been turned, and that surgical treatment is once again to be regarded as the method of choice for the majority of established infections. Mr. Bruce, basing his conclusions on a study of 330 cases of cervical adenitis treated during four consecutive years at Aberdeen, strongly advocates the radical excision of glands diagnosed as tuberculous in which there is clinical evidence of caseation. From his investigations he is satisfied that this condition is present in all glands which have been subject to alternate attacks of swelling and periods of quiescence. He finds that removal of diseased tonsils has no marked effect on the glandular condition, and is frankly sceptical of the value of heliotherapy in relation to the local condition of all but early cases. In support of the latter view he quotes Dr. Margaret Tod, who, in surveying a group of cases treated by this means in Edinburgh, stated that in no case had it effected a cure.

If these gland infections are recognized as being local rather than systemic in nature, the radical removal of the diseased tissue, so far as is practicable, presents itself as a sound procedure. Mr. Gordon Bruce is clearly of the opinion that few cases of tuberculous adenitis are blood infections, adducing as evidence the fact that in 90.6 per cent. of his series the infection was apparently limited to the gland area operated on. In no case belonging to this group was there found evidence of tuberculous infection elsewhere before or after operation. The argument for radical excision is further supported by the view that once caseation is well established complete resolution without operation does not occur. In this event removal of a primary focus of infection, such as the tonsil, cannot be expected to do more than prevent further infection. There is no doubt that in many cases apparently cured by conservative methods the infection in the glands has been not tuberculous, but streptococcal. Streptococcal infections may precede or accompany tuberculous infection in some instances, or they may be the sole lesion in chronically enlarged glands. In general they are present in the early stage, but may remain dormant for a considerable time, causing a flare-up in the wound after a radical operation. It is interesting to note that in 187 operations performed by Mr. Bruce 9 patients developed secondary streptococcal infection of a severity which was thought worth recording.

It has been a matter of discussion how far conclusions based on the results obtained in the treatment of tuberculosis in Scotland are valid in England. There is evidence that the clinical course of tuberculosis in Scotland differs from that in the south; moreover, in Scotland, in both bone and gland disease, there is a higher incidence of infection with the bovine organism. In his report to the Science Committee of the British Medical Association, published in the *British Medical Journal* of January 17th, 1914 (p. 125), Philp Mitchell made the following statement: "Cow's milk containing bovine tubercle bacilli is clearly the cause of 90 per cent. of the cases of tuberculous cervical glands in infants and children residing in Edinburgh and district, and is responsible for by far the larger proportion of tuberculous cervical glands in children during the milk-drinking period of life (0 to 5 years)." There does not appear to be any conclusive evidence as to the exact type of organism responsible for adenitis in the southern area of Britain.

Mr. Gordon Bruce's most important conclusions are that glands in the neck remaining persistently enlarged after three months are nearly always tuberculous in nature, and that if there is clinical evidence of their having undergone caseation the most satisfactory results are obtained by their enucleation. The complications of extracapsular abscess and sinus formation handicap the surgeon in his dissection; they do not contraindicate operation, but lead to a lower standard of final results, both as to scar condition and permanency. These views are worth careful study; certainly most surgeons at the present time, though they would probably give conservative methods a trial for longer than three months, tend to conform to them. The surgery of the radical operation is not simple; injuries to important nerves and major blood vessels have not always been avoided, and in this connexion Mr. Bruce's paper contains a considerable amount of interesting detail.

[7] Hill, T. R.: Juvenile Behaviour Disorders in Epidemic Encephalitis, *Lancet*, 1929, i, 968.

NEUROLOGY AND LIFE.

THE Earl Grey Memorial Lecture[1] recently delivered by Sir Farquhar Buzzard offers a pleasing educational opportunity to any who may be inclined to limit the range and influence of medicine to technical and professional ends. Equally, the lecture may be commended to those who are disposed to think that physiological investigations and the doctrines that result from these are remote from medical practice and the life of the world. A third group of readers may be invited—namely, all those who appreciate the presentation of a scientific record in a systematic fashion, and with logical sequence and literary charm. Alike to the medical and the lay reader, Sir Farquhar's lecture will be both a welcome and an instructive experience. The lectureship was established as a tribute to the memory of a statesman and administrator who made a large contribution to the wise policy on which are laid the foundations of the British Empire, and the text of the lecture is expected to be a topic of educational or social importance. Sir Farquhar Buzzard's thesis is that the developing

[1] *An Outline of Neurology and its Outlook*. By Sir E. Farquhar Buzzard, K.C.V.O., M.D., F.R.C.P. London: Milford, Oxford University Press. 1929. (Med. 8vo, pp. 24. 1s. net.)

knowledge of neurology and the outlook thus created form a theme that comes within this definition. In a singularly lucid and masterly fashion he describes how step by step and through the centuries the truth about the structure and functions of the nervous system has been acquired, and how anatomy, physiology, pathology, clinical observation, and, more recently, psychology have made their several contributions to this end. This historical sketch forms the main portion of the lecture, and is presented with a degree of competence and clearness that deserves grateful recognition. Then comes the outlook and the argument. From the structural facts and domestic activities of the nervous system of the human body we are invited to pass to the proposition that "education and sociology alike are based, or should be based, on what knowledge we possess of the individual and communal reactions of the nervous system to external influences." It is on the truths of physiology, and not on benevolent emotions, that the educationist and the sociologist must build would they have for their policies a secure foundation. At present there are hindrances. First, the full significance of certain physiological facts cannot yet be accurately defined. In the second place, there is no large public equipped with the elementary knowledge and sense of responsibility necessary to the profitable reception of "the rich harvest of scientific facts and laws which is now being reaped." Physiology in some of its departments has yet to gain in precision, and, still more, public opinion has to be informed and educated until it is ready to face facts and to "abandon a mediæval faith in miraculous cures." To the clinician and the pathologist Sir Farquhar Buzzard gives credit for definitely showing that the brain is the organ of mind, and that all forms of mental disorder are related to changes in the highest part of the nervous system. Pavlov's studies of the conditioned reflex he regards as offering an opportunity for the investigation of the higher levels of the cerebral activities, and here he anticipates results which "must sooner or later disturb the peaceful dreams of educationists." As a further illustration of the relation between education and cerebral structure and function he quotes the alterations in moral and mental attributes that may follow an attack of encephalitis lethargica, where what has been attained by years of mental and moral training may entirely disappear as a result of structural cerebral changes. Such an experience, he recognizes, "makes it difficult to preserve quite intact older conceptions of a soul or of a conscience, and almost impossible to draw a clear line of demarcation between body and spirit." Again, another approach to the workings of the mind is opened by studies in psychology and psycho-pathology, and Freud's work and teaching have, in Sir Farquhar's judgement, thrown much light "on the obscure origin of many forms of minor mental disorder." Between physiological inhibition on the one hand, and the psychological repression of Freud on the other, there may be suggested a relationship which "dimly foreshadows the ultimate conciliation of two separate attempts to solve the same great problem—the workings, ordered and disordered, of the human mind." In all this there is abundant proof that neurology includes within its scope truths to which the educationist and the sociologist must needs give ear, and the audience may even be enlarged by the addition of the philosopher and the theologian.

HAIR DYES.

IT is true that the harassed medical student has not yet to be "signed up" in hair dyeing before he may satisfy his examiners that he is fit to practise, but the subject is by no means devoid of medical interest. Never before in the history of the world would people seem to have been so reluctant to accept philosophically the approach of old age; never so much as to-day have the resources of the chemist been made to serve the desire to maintain a youthful appearance. While, however, the chemist may take some pride in the efficiency of the innumerable dyes which have been devised to mask the presence of white hairs—so shattering, apparently, to the illusion of youth—the physician's interest is engaged by the fact that many of the chemicals employed are far from harmless and that his services are sometimes invoked to treat cases of poisoning brought about by their application. Notwithstanding the efforts of the practitioners of cosmetic arts to veil their proceedings in mystery, a great deal of information bearing on the subject may be gleaned from the trade publications serving the members of the hairdressing profession and from scattered papers in various chemical journals. We welcome, however, the publication of the book which bears the intriguing title *Blonde or Brunette?*[1] for within its small compass the authors have collected, and presented, simply yet scientifically, all that the medical man needs to know about this subject. It is interesting to read that henna, which has enjoyed a high reputation since Biblical times, and is still largely used for cosmetic purposes, might be considered the ideal hair dye, but for the fact that it requires more skill in its application than some other substances. Successfully applied, it gives a wide range of good colours, and has the great advantage of being perfectly harmless. To-day the ideal hair dye must not only produce with safety a permanent colour, natural in appearance, but it must not render the hair less responsive to the treatment known as permanent waving. In this respect the metallic dyes fail, though all of them which depend for their action on the reduction of silver or some other metal by a solution of pyrogallol are in other respects quite satisfactory. It is on account of this unfortunate defect in the metallic dyes that hairdressers are greatly tempted to employ the convenient dyeing agent paraphenylenediamine (known to the trade as "para"), which is endowed with all the attributes of the perfect hair dye, except that it is extremely toxic to susceptible persons. In these it produces a virulent dermatitis, which may extend far beyond the area of its application, and has even been known to affect the whole cutaneous surface. If, moreover, the victim of an attack is so foolhardy as to risk further contact with the exciting substance she will suffer even more severely than she did the first time. The fact that only 1 per cent. of healthy persons are susceptible encourages many hairdressers to risk using this chemical without testing their client's sensitiveness. The test is carried out quite simply, by applying a small quantity of "para" to the skin behind the ear and waiting twenty-four hours for the possible development of erythema. If the skin remains normal in that time the dye may be applied with safety. The fact that paraphenylenediamine gives the required tint almost instantaneously, while pyro-reduction dyes require forty-eight hours to achieve their effect, is an additional source of temptation to the hairdresser, especially when a client demands cosmetic treatment before attending a social function the same evening. The toxic qualities of "para" are so well known to the trade that hairdressers have occasionally tried to escape the wrath of poisoned clients by denying its use, alleging that they had applied a dye of the pyro group; this defence, however, can never deceive those who know the instantaneous tint produced by the former and the delayed action of the latter. Pyro-reduction dyes are irritant only if the pyrogallol solution is of excessive strength. Medical men who desire to know more of the technique of hair dyeing, the chemistry of the dyes used, and their effects on the health and appearance of the hair, would do well to consult this concise treatise.

[1] *Blonde or Brunette?* By H. Stanley Redgrove, B.Sc., A.I.C., and Gilbert A. Foan, President of the Hairdressers' Trade Parliamentary Committee. London: W. Heinemann (Medical Books) Ltd. 1929. (Demy 8vo, pp. xii + 182; 28 figures. 7s. 6d. net.)

GOLDSMITH AND MEDICINE.

AMONG the numerous celebrations of this and last year one of unusual interest from a medical point of view, on account of some debatable details, is the bicentenary of Oliver Goldsmith (1728-1774). In our issue of March 9th (p. 469) we reported an address full of detailed information delivered by Dr. T. P. C. Kirkpatrick, Registrar of the Royal College of Physicians of Ireland, and the outstanding authority on the history of Irish medicine, on "Goldsmith in Trinity College and his connexion with medicine."[1] Dr. Kirkpatrick asserted that (contrary to a widely held belief) Goldsmith, rejected for the Church and for a short time considering the study of law, began his medical studies not at Trinity College, where he graduated in arts in 1750, but two years later, first in Edinburgh, then at Leyden, Paris, and elsewhere. There appears to be no sound foundation for Frankfort Moore's suggestion that Goldsmith intended to adopt "the profession of a medical student," a practice which was not uncommon in the following century, and, indeed, then often seemed adequately to fill a man's lifetime. The question of where Goldsmith obtained his M.B. degree has been much discussed and investigated; at the Section of the History of Medicine of the Royal Society of Medicine in 1914 it was suggested that he deceived the University of Oxford when, on February 14th, 1769, he got an *ad eundem* degree of M.B. by describing himself as an M.B. of Dublin. Dr. Kirkpatrick, after careful consideration of all the circumstances—among them the fact that medical degrees were sometimes granted by the University of Dublin without examination, as occurred in the case of Richard Brocklesby, also a friend of Dr. Samuel Johnson—suggests, though without dogmatism, the possibility that Goldsmith may have had the M.B. degree of Dublin University conferred upon him *in absentia*. Unfortunately, after his visit to Oxford, his interest in physic became mainly that of the patient rather than of the practitioner. There must always be some doubt about the nature of his final illness and his own responsibility for its termination. Against the advice of Drs. Hawes and George Fordyce, he obstinately persisted in dosing himself with Dr. Robert James's fever powder, though Dr. Kirkpatrick believes that neither the powder nor any other treatment employed can be justly blamed, and cautiously suggests that Goldsmith's chief complaint was some form of chronic nephritis, which terminated in uraemia.

WELSH NATIONAL SCHOOL OF MEDICINE.

AFTER a year of discussions and negotiations between the various interested parties, there seems every prospect that the Welsh National School of Medicine will be able to make a fresh start in the autumn. It will be remembered that last summer, owing to the refusal of the staff of the Cardiff Royal Infirmary to co-operate in the teaching of the final-year subjects, the senior students of the school had to leave Cardiff and continue their studies elsewhere, and the school was finally shut down when the Royal Infirmary definitely closed its doors to all students. It was unthinkable that an educational institution of such promise should be allowed to founder in this way, and we are very glad to learn that an agreement has been reached between the University of Wales, Cardiff College, and the Royal Infirmary which will enable the school to reopen once more, and, it is hoped, guard against the repetition of last year's catastrophe. The agreement, which is for seven years in the first instance, accepts the principle of the unit system, establishes a board of clinical studies by which considerable executive responsibility is given to the hospital staff, and, most important of all, provides that all the beds in the Infirmary shall be available for teaching. This last is really the vital point, for the clinical facilities at the Infirmary are by no means excessive, and unless they can be utilized to the full it would not be possible to provide for a comprehensive clinical training. Since the Cardiff students usually combine the Welsh degree with the degrees of London University or the diplomas of the English Conjoint Board, these authorities are naturally concerned with the facilities for clinical teaching available at Cardiff; they demand that all the resources of the Infirmary shall be utilized to the full, and this implies the active co-operation of all the members of the staff, for, speaking generally, it is not possible for one man to teach on another man's patients. At the meeting of the Infirmary Board of Management when the agreement was ratified there appeared somewhat disquieting indications that the medical members were still unwilling to assent to the principle that a staff appointment should carry with it the obligation to teach. The lay members, however, were emphatic on this point, and it was laid down quite clearly that the clause in the agreement which places all the Infirmary beds at the disposal of the school must also be taken to mean that every member of the staff shall co-operate in the work of the school. The agreement appears to offer a sound working basis, and it is sincerely to be hoped that all the contracting parties will faithfully observe it in the spirit as well as in the letter. The Welsh School of Medicine could hardly survive another breakdown, and if this agreement fails to solve the problem at issue the future outlook is black indeed. Modern medical education is such a costly matter that a reduction in the number of existing schools would seem a more justifiable policy than the creation of additional ones. Only by carefully fostering all its resources can the Welsh School of Medicine hope to succeed; the continuation of internal dissension must inevitably lead to a final collapse.

TRAFFIC IN DRUGS OF ADDICTION.

AFTER the day's work many of us enjoy an hour or two's relaxation in a world terrorized by international gangs of crooks and dominated by sinister geniuses with an anti-social complex. It is not a little startling when the amenities offered by sensational fiction are paralleled in a sober essay describing dispassionately what is actually happening around us. Yet the writer of fiction, jealous of his reputation for plausibility, would scarcely venture to strain our credulity with a picture as amazing as that presented by Dr. F. Redlich, who, in his book on drug intoxication and addiction,[1] tells us how international organizations, with agents all over the world, skilfully make use of every loophole in international laws and agreements to carry out their odious but profitable trade. He describes, for example, an organization controlled by two Russian merchants and a Russian doctor in Berlin, and a merchant in Reval, which worked east to Japan and west to Valparaiso. They bought drugs openly in Germany, and apparently dispatched them from Berlin to Rumania with all due legal formality. Once the forms were filled in, what they did was to remove the drugs from the packages through false bottoms, substitute inert chemicals, and dispatch these to the confederate in Rumania, who would then duly acknowledge their receipt. The drugs thus released from bond were disposed of in various ways; some were peddled in Berlin and Paris, some were sent to Russia and Persia, both of them countries outside the Opium Convention. The remainder were dispatched to the free port of Copenhagen, where they were coloured with charcoal, mixed with spirit, packed up attractively as cosmetics, shoe polish, etc., and sent to the Far East by way of Russia. The scale of the profits is indicated by

[1] *Irish Journ. Med. Sci.*, 1929, Sixth Series, No. 40, pp. 142-162.

[1] *Rauschgifte und Suchten.* Von Dr. phil. Fritz Redlich. Bonn: Kurt Schroeder. 1929. (Med. 8vo, pp. 88. M.4.50.)

the fact that cocaine bought in London for £20 was sold in the Far East for over £100; some of the drugs passed on from the Far East to America. The shipment of drugs from Chinese ports to America is controlled by organizations commanding large capital; one such organization in Hong-Kong is said to have a monthly turnover of 200,000 dollars. In 1927 a single shipment of drugs worth £5,000 was seized on a Canadian vessel. The profits from this amount may be estimated from the fact that the price of illicit drugs in Canada is nearly ten times the legal price, and the successful smuggling of a pound of cocaine would represent a profit of £250. Cuba and the islands of St. Pierre and Miquelon, on the east coast of America, are centres of illicit drug trade, but most of the smuggling is done across the Canadian border by bootleggers, who, for so profitable an industry, have practically unlimited funds at their disposal. Into China, the greatest market in the world for drugs of addiction, alkaloids and opium are smuggled through every conceivable route. We are not surprised to learn that Macao and Vladivostock are centres of this trade, but it is curious to read of opium smuggled on pony-back from Persia across Afghanistan to Chinese Turkestan, where each pony load fetches £160. The new motor track across the Syrian desert is already being used for the smuggling of cocaine into Baghdad. According to Dr. Redlich, morphinism and cocainism are spreading steadily in Asia, morphine addiction in particular having penetrated far into the interior of China, and being a greater danger to that country than the opium habit.

MORE FRUIT.

ACCORDING to a Chadwick lecturer, Mr. H. V. Taylor, commissioner of horticulture in the Ministry of Agriculture and Fisheries, every person in this country eats, on the average, 100 apples a year, 72 oranges, and 30 bananas. Indeed, from Mr. Taylor's lecture, which was delivered in the delightful old Chelsea Physic Garden on May 31st, one might almost suspect that we are becoming a race of fruitarians. Twenty years ago the annual production of fruit in this country was something like 400,000 tons; to-day it exceeds that figure by at least 100,000 tons, and in the meantime the supplies of imported fruit have increased enormously. Certain fruits and vegetables, now ranked as ordinary articles of diet, have appeared for the first time on our tables practically within the last generation. At the beginning of this century the cultivation of tomatoes, cucumbers, and other garden plants under glass was so small as not to be recorded; to-day the annual value of this industry exceeds five million pounds sterling. In the childhood of many of us the tomato was used only for pickling and the making of soups and sauces. Nowadays, thanks to cheap glass and facilities for keeping the temperature of glasshouses at a constant level, a million hundredweights of tomatoes a year from English gardens, another million from the Canary Islands, and not far short of a third million from the Channel Islands go to the making of salads, are consumed raw, or served in various appetizing ways. Five or six times as many bananas, again, are eaten now as was the case thirty years ago. The banana excited little interest before 1900, though the first box of this fruit came to this country about the middle eighties. Later a shipping company was formed for bringing bananas from Jamaica to Bristol, and now we spend three million pounds sterling on this product. As for apples, thanks now to methods of storing in ships which preserve their vitality during transport, we get apples all the year round. Not so long ago there was a part of the year (from April until the end of July) when apples were not forthcoming. Our own orchards supply three million hundredweights of apples annually, and seven or eight million hundredweights reach this country from the Dominions and elsewhere. Orange production is increasing enormously; wherever this popular fruit grows—as, for example, in Spain, Egypt, Palestine, and South Africa—increased plantations are being laid out, and within a year or two the imports of the orange bid fair to multiply exceedingly. Mr. Taylor exhibited a pipless orange, also a coreless apple, but said that this production, for which there was some demand, entailed a certain loss of flavour. The lecturer drew attention to the value of all these fruits, not so much as represented by calories, but in respect to vitamin content, "roughage," and mineral salts. He thought there could be no doubt that the increased consumption of fruit must be exercising a very beneficial effect upon the health of the people.

THE HONOURS LIST.

THE honours conferred on June 3rd, on the occasion of His Majesty's birthday, include a considerable number of awards to members of the medical profession; the full list of these will be found at page 1044. Our readers will share the general feeling of pleasure at the recognition which has been given to the services of those medical men who were concerned in the treatment of the King during his long illness—namely, Lord Dawson of Penn, Sir Humphry Rolleston, Sir Farquhar Buzzard, Sir Hugh Rigby, Sir Stanley Hewett, Dr. Francis Shipway, Dr. Robert Stanton Woods, Dr. H. K. Graham Hodgson, Dr. F. D. Howitt, Dr. L. E. H. Whitby, and Professor E. C. Dodds. Our colleagues in Australia will especially welcome the honours accorded to the Hon. Mr. E. C. G. Page, Commonwealth Treasurer, to Dr. Richard Stawell of Melbourne, and to Professor W. Colin Mackenzie, director of the National Museum of Australian Zoology, henceforth to be known as the Australian Institute of Anatomy. The principal Service distinction is the K.B.E. conferred upon Major-General Thomas H. Symons, formerly Surgeon-General, Madras, and now Director-General of the I.M.S. Although Dr. Robert Bridges, the Poet Laureate, long ago gave up the practice of medicine, his admission to the Order of Merit reflects honour upon the calling which first claimed the fruits of his pen.

THE annual general meeting of the Research Defence Society will be held at the House of the Medical Society of London, 11, Chandos Street, W.1, on Wednesday next, June 12th, at 3 p.m., with Lord Lamington in the chair. Professor A. V. Hill, F.R.S., will deliver the third Stephen Paget Memorial Lecture on "Enemies of knowledge." Tea and coffee will be served after the meeting.

THE KING.

ON May 31st it was announced from Windsor Castle that the King was confined to bed with a feverish attack. A bulletin issued on the following day stated that an abscess had formed on the right side of the chest, and was now draining; that His Majesty's general condition remained good; and that, though he would need to remain in bed, he would be able to transact public business. A later bulletin stated that the abscess was "so far following the normal course, which in the nature of things must be tedious." In accordance with the opinion of His Majesty's medical advisers, the Thanksgiving Service fixed for June 16th has been postponed.

The news of this interruption to His Majesty's recovery has been received with universal regret; but it does not give rise to anxiety, since the trouble has a local origin.

NINETY-SEVENTH ANNUAL MEETING of the British Medical Association, MANCHESTER, 1929.

THE ninety-seventh Annual Meeting of the British Medical Association will be held in Manchester this summer under the presidency of Mr. Arthur H. Burgess, F.R.C.S., Professor of Clinical Surgery in the University of Manchester, who will deliver his address to the Association on the evening of Tuesday, July 23rd. The sectional meetings for scientific and clinical work will be held, as usual, on the three following days. The Annual Representative Meeting, for the transaction of medico-political business, will begin on the previous Friday, July 19th, at 9.30 a.m. The provisional programme for the nineteen Scientific Sections is published in the *Supplement* this week, and further details of the arrangements for the Annual Meeting will appear from time to time in later issues. We publish below the fourth of a series of descriptive and historical notes on Manchester and neighbourhood written for the occasion by Dr. E. M. Brockbank. The first article appeared on December 1st, 1928 (p. 1003), the second on January 26th, 1929 (p. 167), and the third on April 27th (p. 781).

THREE MANCHESTER LITERARY CELEBRITIES.

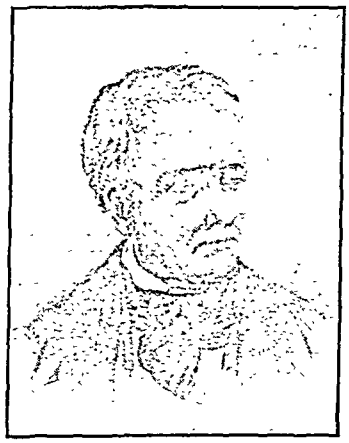
THREE widely read authors who were born or lived in Manchester—Thomas De Quincey, William Harrison Ainsworth, and Mrs. Gaskell—are specially interesting to us because their writings more or less intertwine with our medical history, fact or fiction.

THOMAS DE QUINCEY.

De Quincey was chiefly an imaginative essayist; he was born in Manchester in 1785, educated partly at the Grammar School, and spent most of his life, he said, in trying to get away from the town. But whatever his objection to Manchester may have been, it was not the cause of his opium eating. As a boy he knew Charles White and Thomas Percival, and had a certain amount to say about both which gives some insight into their personalities. White he met when he was attending professionally a lady to whom De Quincey was giving lessons in French. He writes of his visit to White's museum, about which he only remembered what he called the humanities in it—namely, a mummy and a skeleton. He tells us how one of White's lady patients left him £25,000 on condition that on her death he would have her body embalmed and put in a case with a veil over the face, and that once a year he and two witnesses of credit should withdraw the veil. The lady was placed in a common clock-case with the usual glass face, but a veil of white velvet obscured from all profane eyes the silent features behind. The clock he saw as a child and gazed on it with "inexpressible awe." Rumour named a certain lady as having left the bequest in her will, but a lawyer of Manchester about the end of the last century, after I had myself helped to perpetuate the rumour, found the lady's will at Chester, and there was nothing of the kind in it. However, the story suited De Quincey's taste for imaginative romance. The other humanity was the skeleton of a highwayman who had been executed for murder, and he interests us as he was a Knutsford man, Higgins by name, who formed the central character in Mrs. Gaskell's tale "The Squire's Story."

Another note about White was in connexion with De Quincey's sister who died at the age of 9. She was of "premature intellectual grandeur," and White, who was specially interested in craniology, pronounced her head to be the finest in development of any that he had ever seen. It must have been an unusually large head, because De Quincey, not wishing to mislead his readers, says she died of hydrocephalus. De Quincey also gives us an interesting sketch of Dr. Percival, who attended him, his brothers and sisters in their childish ailments. They all liked him very much, but their mother disliked him equally, and feared his "tolerant" views on religious matters, which he used to discuss with her, Percival being a Unitarian.

De Quincey was a prolific writer, almost entirely for journals. His *Confessions of an English Opium Eater* are well known to medical readers.



THOMAS DE QUINCEY.

HARRISON AINSWORTH.

William Harrison Ainsworth was born in Manchester in 1805, but lived most of his life in London. He was cousin to Dr. James Ainsworth, one of the early teachers of medical students here. In somewhat flamboyant style he wrote many very readable historical novels, the most widely known of which are *Guy Fawkes*, *Windsor Castle*, *Old St. Paul's*, *The Tower of London*, and *The Lancashire Witches*. Other tales about Lancashire incidents have a more local interest. Part of the action in *Guy Fawkes* takes place in Manchester, but that of the less known and less powerful *Manchester Rebels*, which has for its theme the '45, is almost entirely concerned with real and fictitious Manchester people, and the part they played in the Young Pretender's visits to the town on the march of the Highlanders cocking their bonnets to Derby, and during the army's retreat thence with fallen hopes.

Many young Manchester men joined the army, and the Manchester Regiment was formed of them. One of the Loyalist citizens was Dr. Peter Mainwaring, physician to the Infirmary, whose house, built in 1736, still exists in a fine state of preservation in King Street, and is a beautiful example of brickwork. It is now occupied by a branch of the District Bank. Amongst those who joined the Manchester Regiment was a son of Dr. Deacon, who had a small practice in the town, and Thomas Sydall. These, amongst other Manchester men, were hanged and quartered in 1748, and their heads sent to Manchester, where they were spiked on the first Exchange. There they remained as a warning to disloyal persons until 1749, when they

suddenly and mysteriously disappeared one night, having been removed (as we shall see in a moment) by a young Jacobite medical student, Edward Hall, afterwards surgeon to the Infirmary. They were buried in the Halls' garden at the top of King Street, and there they rested until the death of his sister, a staunch Jacobite, in 1828. When she knew for certain that she was dying she revealed the mystery by telling Dr. (afterwards *Sir*) *James Lomax Bardsley*, her medical attendant, the facts about the removal of the skulls and their burial, asking him to have them interred in consecrated ground, which he did, in St. Ann's churchyard.

A charming account of these times has been left us in her diary by a spirited Manchester girl, at heart an admirer of the Bonnie Prince, Elizabeth or Beppy Byrom, who is introduced into Ainsworth's novel amongst the incidents of the Scots' visit to the town. Her father, *Dr. John Byrom*, was a well-known literary man and poet, but not a medical man. He wrote the hymn "Christians Awake" and the celebrated blessing,

> "God bless the King, I mean the faith's defender;
> God bless—no harm in blessing—the Pretender;
> But who Pretender is, or who is King—
> God bless us all—that's quite another thing."

He was Jacobite, too, at heart, but evidently a careful one.

In those days many Manchester men, like many others, when drinking the toast of their King passed their glasses over a water jug or bottle—"the King over the water."

A romantic tale of Ainsworth's of local interest is *The Lancashire Witches*, which is concerned with the abortive Pilgrimage of Grace, its tragic consequences to John Paslew, last abbot of Whalley, and the part the witches of Pendle Forest were reputed at the time to have played in both. It is of general interest to know that claim is made in the tale for Hoghton Tower, near Blackburn, as the place where the "surloin" of beef—then known by such an anatomical description—was formally knighted by James I as being entitled to such an honour; and who will say that there is no "damned merit" in a sirloin, whatever one of the Victorian premiers might have thought of the K.G.? Almost as many places and kings lay claim to such an honourable act as there were birthplaces of Homer—Smyrna, Chios, Colophon, Salamis, Rhodos, Argos, Athenae, as they are stated in his metre. Unfortunately, in this matter Lancashire cannot lay claim with the same confident assurance that it so often does to having led in a national event, for it is stated with equal certainty that Henry VIII, after an episode with the Abbot of Reading, forestalled his sister's great-grandson and us in the matter.

HARRISON AINSWORTH.

There is no special interest to medical practitioners unless, may be, to psychologists, in the story of the Lancashire Witches; but perhaps it is only fair to repeat the warning to those visitors who have not been to our county before, of the last few lines of this romantic tale:

"Jennet was the last of the Lancashire Witches. Ever since then witchcraft has taken a new form with the ladies of the county—though their fascination and spells are as potent as ever. Few can escape them—few desire to do so. But to all who are afraid of a bright eye and a blooming cheek, and who desire to adhere to a bachelor's condition, to such I should say, Beware of the Witches of Lancashire."

ELIZABETH CLEGHORN GASKELL.

MRS. GASKELL.

The writer most identified with Manchester, and of most interest to us in recreation hours, was Elizabeth Cleghorn *Gaskell*, who was born on September 29th, 1810, in Chelsea. She was the daughter of William Stevenson, formerly a Unitarian minister, but later in life Keeper of the Records to the Treasury of London. He was a man of rare attainments, which his daughter inherited. Her mother was a daughter of Mr. Holland of Sandlebridge, near Knutsford, a member of a well-known county family. Many years of her early life were spent at Knutsford, which she has immortalized in her books, and in 1832 she was married there to the Rev. William Gaskell, minister of the Unitarian Chapel, Cross Street, Manchester. In 1844 she lost her only son, who died of scarlet fever. To divert her mind from grief at her great loss her husband suggested that she should try and write a story about her experience among the poorest classes in Ancoats, and this she did. *Mary Barton* was the result; and it was returned unread by the publishers to whom she first sent it. More successful on her second venture, the book was published anonymously and met with a great reception. She "awoke one morning to find herself famous," so to speak.

She wrote, in all, thirty-six long and short stories, all of which dealt with simple characters. Many of her tales are about the labour problems of her day, written with a heartfelt sympathy for the workers, but, as the masters thought, without fully appreciating their own difficulties in the hungry forties and during the great increase in the use of machinery in their factories. She lived all her married life in Manchester, but died suddenly and unexpectedly from heart failure when chatting with her daughters in 1865 at Acton in Hampshire, where she had just bought a house, after only a short period of ill health.

Mrs. Gaskell was related to doctors, and thereby hang three tales. Her uncle Peter Holland, who was the father of Sir Henry Holland, court physician and grandfather of the present Lord Knutsford, was a country surgeon. He resided at Sandlebridge and practised there and in Knutsford and the neighbourhood. It was at his house that Lord Clive spent some boyhood holidays, and where the story of his early daring originated, for he liked to terrify the Hollands by jumping from the ball on the top of one of the gateposts to its fellow on the other side. Mrs. Gaskell used to accompany Peter Holland on his rounds. Whilst she did not take him as her model for her finest medical character Dr. Gibson (one of her daughters saying that no two people could be more unlike each other), she could hardly have helped forming some of her knowledge of country doctors from Uncle Holland's practice and patients. A doctor is the chief character in her novels *Mr. Harrison's Confessions* and *Wives and Daughters*, and another is a prominent figure in *Cranford*, and all the scenes are sketched from Knutsford, Sandlebridge, and neighbourhood.

The first essay at portraying a country practitioner is in *Mr. Harrison's Confessions*, a short story of seventy pages or so. Here we have the experiences of a young doctor who began practice as assistant to Mr. Morgan, an elderly bachelor surgeon in a country town, with many spinsters amongst his patients. Mr. Morgan urged Mr.

Harrison in his visits to patients to strive to acquire an attentive anxious politeness, combining ease and grace with a tender regard and interest. This he did so well that within a few months he was supposed, by local gossip, to be engaged to three different ladies at one and the same time. Mr. Morgan was much perturbed and rather peevish at what he thought was Mr. Harrison's mismanagement of affairs, until he found that he himself was reported to be engaged to another lady. There was nothing for it but two sets of wedding bells, and so all ends happily.

The illness of a child and the anxiety which it causes in the village reflects the authoress's experiences of the death of her only son. The book was written some years before *Cranford*, and has the appearance of a prentice hand working at a subject which she later perfected. It introduces, partly as an unintentional mischief-maker, a student friend from London, somewhat of the Bob Sawyer-Ben Allen type.

Cranford is outstanding in literature for its delicate, kindly, and humorous description of the ways of life and foibles of elderly ladies, of aristocratic minds but ill-lined pockets. Into such a society she introduces, as a contrast, a breezy vigorous doctor, who "sups on bread and cheese and beer every night," the genteel society has reason to believe. As a further contrast he is called Mr. Hoggins, probably to emphasize the shock to the society's ideas of propriety when the wolf got into its fold and won the hand of its only titled lady, the widow of an impoverished Scotch baron. Not much is seen of Mr. Hoggins's practice, the main character in the book being the elderly Miss "Matty" Jenkins—and what character in literature can compare with her, with her simple, child-like faith, her trustful nature, and her genteel expedients to eke out her small income, nearly all lost for a time?

Her finest doctor character is Dr. Gibson in her most finished—but, alas! unfinished—work, *Wives and Daughters*. The scene is again Knutsford and neighbourhood. The late Sir Adolphus Ward, Master of Peterhouse College, Cambridge, wrote of the book:

"In *Wives and Daughters* Mrs. Gaskell's later manner asserts itself with genial amplitude and with irresistible grace and ease, ranging from the most charming playfulness of humour to a pathos which softens, subdues, and endears. Were it a fragment, it would be invaluable for its beauty; but, complete as it is, to all intents and purposes, it can hardly be refused recognition as Mrs. Gaskell's masterpiece."

Much of the book is about the doctor's troubles with the womenfolk of his second marriage, and of the contrast in nature between his stepdaughter and his own child Molly.

Professor George Saintsbury, in his preface to an edition of *Pride and Prejudice*, says:

"In the novels of the last hundred years there are a vast number of young ladies with whom it might be a pleasure to fall in love; there are at least five with whom, as it seems to me, no man of taste and spirit can help doing so. Their names are, in chronological order, Elizabeth Bennet, Diana Vernon, Argemone Lavington, Beatrice Esmond, and Barbara Grant. I should have been most in love with Beatrice and Argemone; I should, I think, for more occasional companionship, have preferred Diana and Barbara. But to live with and to marry, I do not know that any one of the four can come into competition with Elizabeth."

Each man to his fancy, but many a humbler critic must rejoice that the professor did not want Molly Gibson for his true love.

George Sand observed to Lord Houghton shortly before her own death:

"Mrs. Gaskell has done what neither I nor other female writers in France can accomplish; she has written novels which excite the deepest interest in men of the world, and yet which every girl will be the better for reading."

Her life of Charlotte Brontë is one of the masterpieces of biographical writing. She pictures so well the life at Haworth Vicarage, where the three frail sisters worked in a small room, in a house bordered on two sides by an extensive graveyard, with a father so dyspeptic that he had all his meals by himself—and the less he saw of the family the better was he pleased—and a brother who spent most of his time in the nearest public-houses. Who that has seen Haworth Vicarage can wonder that its novels, with the exception of *Shirley*, are so full of gloom and shadow, or can wonder that the three sisters all died of a decline? What a contrast there is between its books and the sunny, cheerful, humorous ones of the Manchester clergyman's home written "by one of the most charming, exquisite writers of English fiction that has ever lived, in grace of her style and the quaintness of her humour reminding one of Charles Lamb," to quote another critic writing in the *Nineteenth Century* (1897).

It is of some interest to know that Charlotte Brontë brought her father to Manchester to consult William James Wilson, one of the founders of the Eye Hospital, about his eyesight.

Mrs. Gaskell has not only left an endearing and abiding memory with Manchester and other readers, but the deep feeling for suffering, shown in all her novels, has been given a practical memorial in Manchester by her daughters, who founded and endowed the Gaskell Nursing Home for the benefit of surgical patients between the hospital and the expensive nursing-home classes.

The portrait of de Quincey is reproduced from A. and C. Black's 4th edition of his writings, and that of Ainsworth from *Chambers's Encyclopaedia of Literature*. The portrait of Mrs. Gaskell was supplied by the Warwick Brookes Studios.

Ireland.

Parliamentary Medical Representation.

Of the four members representing the Queen's University, Belfast, in the new Parliament of Northern Ireland, one, Mr. R. J. Johnstone, M.D., F.R.C.S.Eng., is a medical man. He is a member, and was chairman of the commission appointed by the Government of Northern Ireland to take evidence on the Poor Law system and cognate subjects. He will have the best wishes of the profession, who feel that their interests are safe in his hands. Dr. Morrison, co. Londonderry, who, to everyone's regret, was prevented by ill health from allowing his name to go forward, died during the election.

Mr. Thomas Sinclair, C.B., M.D., F.R.C.S.Eng., Emeritus Professor of Surgery in the Queen's University, Belfast, who has again been returned unopposed as the University representative in the Imperial Parliament, commands the confidence both of the University authorities and of the medical profession in Ulster.

Annual Report of the Rotunda Hospital.

Reference was made in a leading article in the *Journal* of May 18th (p. 916) to the encouraging decline in maternal morbidity in the British Islands during the last twenty years, and it is of interest to note in this connexion the statement in the recently received annual report of the Rotunda Hospital, Dublin, that the percentage rates of morbidity during the year ending October 31st, 1928, fell to 3.3—a "record" in the history of the hospital. This figure was calculated according to the British Medical Association standardization; the corresponding "Rotunda rate" was only 2.1 per cent. The Master of the Rotunda, Dr. Bethel Solomons, remarks that so excellent a result was not obtained in palatial buildings or by any complicated means; he attributes it to the zealous care and loyal co-operation of the medical and nursing staffs. He adds that the hospital was fortunate enough to escape any influenza epidemic, and he thinks this freedom was probably assisted by the exhibition of printed notices in the wards asking husbands and other visitors to refrain from coming when suffering from colds. During the year there were only 69 morbidity cases, of which 33 were associated with operative deliveries, so that only 36 non-operative deliveries were morbid out of 2,346 women admitted to the wards of the hospital and 2,062 confinement cases. A total of 1,717 patients received attention in their own homes, and the number of abnormalities in the extern maternity service showed an increase. Dr. Bethel Solomons remarks that, while this type of case is better treated in the wards of a hospital, some of these patients are found to be too ill to be moved, and it is important, moreover, that students should be taught how

to deal with difficulties under more adverse conditions than are to be found inside a maternity hospital. There has been delay in constructing a proposed new operating theatre on the north side of the institution. It is intended to erect a two-storied building, the ground floor of which will provide the much-needed accommodation for nurses and maids, while the first floor will be devoted to the theatre and sterilizing arrangements. It is hoped to increase the accommodation also for ante-natal patients if an adequate response is received to the appeal being made for financial support. The annual report contains also the usual interesting clinical details and tabular statements; on the gynaecological side the number of plastic vaginal operations was large. For the first time in the history of the hospital a report of the *x*-ray department is submitted, in which the immense value of its services is emphasized.

Tuberculosis Scheme for County Wicklow.

The County Wicklow Board of Health has recommended for the approval of the county council (provided it can be financed without any undue burden on the rates) a tuberculosis scheme in County Wicklow, as outlined by Dr. S. Berry, Local Government Medical Inspector. Dr. Berry said that in County Wicklow there were about 800 cases of tuberculosis, with an annual death rate of between 80 and 90 persons. In the County Home, County Hospital, and Sanatorium 23 uninsured persons were receiving treatment; 24 insured persons were getting institutional treatment. The gross cost of that treatment in the year—not all off the rates—was £1,059, for which 83 cases were treated. They were treating fewer cases in Wicklow than were actually dying from the disease, and their death rate was one of the highest in Ireland. He said a central dispensary could be established in Wicklow town, with branches at Bray, Arklow, Blessington, Newtownmountkennedy, Baltinglass, and Tinahely. These dispensaries would give opportunity to all persons in the county suffering from tuberculosis to obtain treatment from a tuberculosis officer and the services of a skilled nurse. Newcastle Sanatorium could be made available, and circulatory hospitals, such as the Memorial Hospital at Arklow, Wicklow Hospital, and Dublin, could be made available for treating surgical cases. For bad cases Shillelagh Fever Hospital could be utilized.

Antituberculosis Campaign.

At the recent Congress of the Royal Institute of Public Health at Zürich, Sir William Thompson, ex-Registrar-General for Ireland, in his presidential address to the Tuberculosis Section, drew attention to the results ensuing from the antituberculosis campaign initiated in Ireland in 1906. He stated that in the Free State there were 4,138 fewer deaths from tuberculosis in 1928 than in 1906, and that there were 40,000 to 50,000 fewer persons suffering from the disease. He drew attention to the important work of the National Health Association in Ireland.

Health Statistics in Northern Ireland.

During the quarter ending March 31st, 6,324 births were registered in the twenty-seven Superintendent Registrars' districts in Northern Ireland, this number representing an annual birth rate of 20.2 per 1,000 of the estimated population. The comparable figure for England and Wales is 21.0, and for Scotland 21.9. The rate in Northern Ireland is 0.8 below that for the corresponding quarter in 1928, and 2.6 below the average rate for the first quarter of the ten years 1919 to 1928. The deaths registered during the quarter numbered 7,708, or an annual rate of 24.7 per 1,000 of the estimated population. This rate is 7.6 above that for the corresponding quarter of 1928, and 5.5 above the average rate for the first quarters of the ten years 1919 to 1928. The urban mortality from the principal epidemic diseases recorded during the quarter was equivalent to an annual rate of 1.4 per 1,000 of the population, comparing with a figure of 0.4 for the remainder of Northern Ireland.

Cinematographic Demonstration.

The president and council of the Leinster Branch of the British Medical Association have issued invitations to members and non-members of the Association to be present at a cinematographic demonstration of living tissue cells cultivated *in vitro*, including the action of radium on them, to be given by Dr. R. G. Canti (St. Bartholomew's Hospital), in University College, Earlsfort Terrace, Dublin, on Friday, June 14th, at 8.15 p.m.

Scotland.

Reconstruction of Edinburgh University Medical Buildings.

REFERENCE was made in the *Journal* of May 11th (p. 879) to the decision to reconstruct the University New Buildings in Teviot Place, Edinburgh, at a cost of £60,000. It has now been announced that promised gifts for this purpose include one of £35,000 from the Rockefeller Foundation, and another of £20,000 from Sir William Dunn's trustees, making a sum of £55,000 in all. This, together with other money which is available, now secures the carrying out in its entirety of a scheme drawn up by the architect, Mr. Balfour Paul, in consultation with the heads of the departments concerned, and the work will be begun in the summer vacation. The external aspect of the buildings, erected in 1880 from designs by the late Sir Rowand Anderson, will remain unaltered. Certain portions of the reconstructed building will in future be associated with the name of Sir William Dunn in recognition of the generous gift from his estate.

Puerperal Pyrexia in Aberdeen.

The report on the incidence of puerperal pyrexia in the city of Aberdeen during 1928, included in the annual report of the medical officer of health, is worth studying in connexion with the official document issued by the Scottish Board of Health on maternal mortality in Aberdeen, 1918–1927,[1] which was the subject of an article in our columns on January 12th (p. 79), and of editorial comment on January 19th (p. 115). During the year 73 cases of puerperal pyrexia, of which, however, 25 were found to be due to bacilluria, pyelitis, mastitis, etc., were notified as having occurred in the city. Of the remaining 48 cases of true puerperal sepsis, 8 occurred in the practice of midwives, with 1 death; 21 in the practice of medical practitioners, with 4 deaths; and 19 in the practice of public institutions, with 5 deaths. Forty-three cases were treated in public institutions and 5 at home. In 7 of the cases pregnancy terminated in abortion, with a fatality in only 1 case. In January an outbreak of septicaemia occurred in a maternity institution with twenty maternity beds and eight beds for ante-natal cases. On investigation it was found that twelve mothers had developed puerperal fever within a period of five weeks, and that four had died, two with other grave puerperal complications. Bacteriological examination proved the outbreak to be due to haemolytic streptococcal infection. At the same time there was an outbreak of icterus neonatorum, which resulted in the deaths of seven infants; in two of these cases post-mortem examinations were carried out and the cause of death was shown to be septicaemia due to *Streptococcus haemolyticus*. Some seventeen mothers who had been in contact with the cases of puerperal sepsis were subjected to bacteriological examination. Haemolytic streptococci were isolated from both the uterine and throat cultures of one of the contacts, from the uterine cultures of four contacts, and from the throat cultures of three others. Throat cultures obtained from the staff of twelve nurses gave positive results in five. It was not possible to determine the original source of the infection, though the admission of a case of septic abortion just before the outbreak was regarded with suspicion. Unfortunately the infection had spread and the outbreak was fully developed before the intervention of the health department was able to put an end to it. The Aberdeen statistics of puerperal sepsis indicate that in the institution concerned similar outbreaks of puerperal sepsis, spread by gross contagion, had occurred in 1922 and in 1924.

[1] Report on Maternal Mortality in Aberdeen, 1918-27, with Special Reference to Puerperal Sepsis. 1928. H.M. Stationery Office. Price 1s.

Sanitation and Health.

At the annual conference of the Sanitary Inspectors' Association held recently at Paisley, Mr. Allan Ritchie, chief sanitary inspector, Edinburgh, gave a presidential address on the Chadwick outlook, surveying this pioneer sanitarian's influence. The records, he said, showed wonderful achievements in the past fifty years, during which the death rate had been halved. Some infectious diseases, which carried off thousands half a century ago, were now almost unknown. Children had a better chance of life, and there was less tendency to ill health in later life. The speaker was convinced that the real major health services of the present day were not so much hospitals and clinics as well-constructed sanitary dwellings, open spaces with sunlight, plentiful water supply, good food, and playing fields. Slum clearance must be one of the main efforts of the future. The purity of water and milk supplies had now reached a very high level, but it was also important that high standards should be reached in purity of food and air supplies, which at present showed far too much avoidable contamination. He thought that it was surely time that more strenuous efforts were made to prevent the smoke screen which hindered the action of health-giving rays.

Harveian Festival at Edinburgh.

The one hundred and forty-second Harveian Festival was held in the Royal College of Physicians of Edinburgh on May 31st. This year's president of the festival, Dr. Lewis Bruce, M.C., of Murthly, delivered the oration on "Life and Customs in the Time of William Harvey," drawing a graphic picture of domestic and social customs and of political events in the seventeenth century. At the banquet which followed a number of neophytes were initiated. The toast of "The Immortal Memory" was proposed by the president, and the minutes of the previous year's proceedings were read by Mr. J. W. Dowden. Dr. Douglas Miller proposed the health of the guests, and a reply was made by Lieut.-Colonel J. Cunningham, C.I.E., a son of the late Professor D. J. Cunningham, who has recently been appointed to the post of superintendent of the Astley-Ainslie Convalescent Institution in Edinburgh. The president's health was proposed by Dr. Derek Melville Dunlop. It was announced that next year's president would be Professor G. Lovell Gulland.

Central Midwives Board for Scotland.

At the examination of the Central Midwives Board for Scotland, held simultaneously in Edinburgh, Glasgow, Dundee, and Aberdeen, just concluded, out of 154 candidates who appeared for examination 133 passed. Of the successful candidates, 23 were trained at the Royal Maternity Hospital, Edinburgh; 55 at the Royal Maternity Hospital, Glasgow; 7 at the Maternity Department, Royal Infirmary, Dundee; 4 at the Maternity Hospital, Aberdeen; 16 at the Elsie Inglis Memorial Hospital, Edinburgh; 6 at Stobhill General Hospital; 6 at the County Maternity Hospital, Bellshill; 6 at Barshaw Maternity Hospital, 2 at the Eastern District Hospital, 2 at the Western District Hospital, Glasgow; and 2 at the County and City of Perth Royal Infirmary.

England and Wales.

Medical Education in South Wales.

THE long dispute between the Welsh National Medical School and the Cardiff Royal Infirmary came to an end on May 29th, at a fully representative meeting of the Infirmary board of management, when an agreement between it and the Cardiff College and Welsh National University authorities was accepted unanimously. For some time a draft scheme of co-operation has been under consideration, and its salient points were indicated in our issue of December 29th, 1928 (p. 1187). There were many difficulties to be overcome, and the final agreement, which contains twenty-four paragraphs, is in some degree a compromise, a fact which indicates the highly commendable desire on both sides to yield as far as may be legitimate in order to bring to a close a period of uncertainty and disorganization which has lasted about twelve months. It is now agreed that the medical school shall be conducted on the "unit system," and have at its disposal for clinical teaching all the existing beds of the Infirmary. Each professorial unit or clinic will rank as one of the hospital clinics or firms. Beds are to be allocated to the University professors of the College, who thereby become honorary members of the Infirmary staff, the professor of medicine receiving thirty beds, the professor of surgery forty-six, and the professor of obstetrics and gynaecology eleven. The professor of pathology, on appointment, will similarly become an honorary member of the Infirmary staff and an honorary pathologist to the institution enjoying facilities at the Infirmary for the necessary pathological work in connexion with the teaching. A board of clinical studies is to be formed, consisting of all the recognized clinical teachers and part-time lecturers who are members of the honorary medical staff of the Infirmary; the lecturers in radiology and anaesthetics, together with the professors of medicine, surgery, obstetrics and gynaecology, and pathology; and such other teachers as may be recommended by the board and approved by the authorities of the school. The board will organize the clinical teaching of the non-professorial clinics at the Infirmary to conform to the regulations and courses of study required for the degrees and qualifications of the University of Wales and other licensing bodies. It will have the right of direct access to the board of medicine and will be able to report to it on any important matter connected with the clinical teaching at the University. One practical difficulty has been settled by making a change with regard to appointments—especially of senior assistants—and arranging for their due recognition as members of the staff of the hospital. The agreement had been previously approved by the councils of the University College and University; its ratification by the Infirmary board, therefore, completed the necessary formalities, and it is hoped that the school will now be able to open its doors again to all classes of students in September and resume its interrupted development.

Professor Wardrop Griffith.

The Court of the University of Leeds has recommended the conferment of the honorary degree of doctor of science on Dr. T. Wardrop Griffith, who was professor of anatomy in the University from 1887 to 1910, professor of medicine from 1910 to 1925, and representative of the University on the General Medical Council from 1918 to 1927. Dr. Wardrop Griffith graduated M.B., C.M. in 1882 at the University of Aberdeen, and proceeded M.D. in 1888; the honorary degree of LL.D. was conferred upon him in 1922. On graduation he was appointed demonstrator of anatomy and, subsequently, resident medical officer to the General Infirmary at Leeds; he joined the honorary staff in 1892 and was elected full physician in 1905, becoming a member of the consulting staff twenty years later. He is also consulting physician to the Leeds Public Dispensary. During the war he was stationed at the 2nd Northern General Hospital, and was promoted brevet lieut.-colonel in 1918; he was honorary consultant on cardiac affections for Yorkshire to the Ministry of Pensions. In 1918 he received the honour of Companionship of the Order of St. Michael and St. George. He is the author of numerous articles on diseases of the heart and circulatory system.

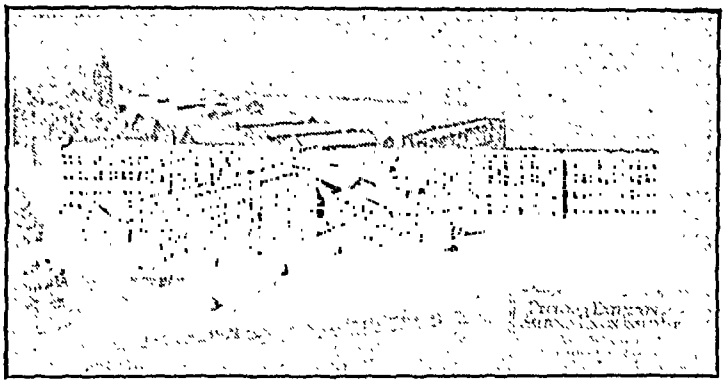
University College Hospital Medical School.

With the close of the academic year 1927–28 University College Hospital Medical School has completed one hundred years of its existence, first as part of the medical faculty of University College, and then, for the last twenty-one years, as a separate school for advanced medical studies controlled by the corporation of University College Hospital. The dean, Dr. A. M. H. Gray, records in his annual report that during the session the total entry of students was 152, of whom fifty were students taking the full course; and that the total number of students in attendance was 269. The construction and rearrangement of the wards in the hospital is now completed, making some 520 beds available for clinical instruction. Of these, 415 beds (357 allocated to adults and 58 to children) are in the main general hospital, 75 in the obstetric hospital, and 31 (20 for adults and 11 for children) in the Royal Ear Hospital. There

are beds specially set aside for the treatment of skin cases, venereal cases, tuberculosis, ophthalmic cases, and neurological and psychological cases. The new clinical laboratories, which have been formed by the reconstruction of the old operating theatres in the hospital, are ready for use. All floors in the central block of the hospital have been reconstituted, and on each of the first, second, and third floors a large central clinical laboratory has been built, with two smaller rooms annexed for special work. These groups of laboratories, which serve the wards (four on each floor, with which they are in close relation), have been allotted two to the medical department and one to the surgical. On the fourth floor has been established a central record room, with side offices for the medical and surgical registrars. The addition of these laboratories not only renders possible routine and special clinical investigations by the students and resident officers without interference with the more advanced work carried out by the clinical pathologist, but it allows of pathological demonstrations to be combined with ward visits in a way that was not previously attainable.

Extension of Salford Union Infirmary.

Plans have been approved for the extension of the Salford Union Infirmary, situated at Pendleton on a secluded spot overlooking a stretch of country towards Worsley. The original building, erected nearly fifty years ago, can no longer meet the needs of the city, whose population is now about a quarter of a million, and the pressure on its accommodation in recent years has been so great that extension has become imperative. The new building, for which the proposed schemes have been sanctioned by the Ministry of Health, will contain 1,500 beds, as well as 500 beds in adjoining buildings for the use of aged and infirm persons. It will comprise a children's hospital, wards and theatres for the treatment of surgical cases, accommodation for paying patients, *x*-ray rooms and a radiological treatment room, and a separate block of buildings for the nursing staff. The wards have been designed to admit the maximum amount of sunlight, and each block will have a flat roof to which patients can be easily moved to enable them to benefit by fresh air whenever the weather permits. On the ground floor are examination rooms for both sexes, with bathrooms attached; there is a separate entrance for patients, with a covered portico for ambulances. The radiological department is situated on the ground floor, and comprises two *x*-ray rooms and dressing rooms, a waiting hall, a dark room, and a film-viewing room; there are also two diathermy and *x*-ray treating rooms, and a sunroom. In the basement is accommodation for the storage of electrical apparatus connected with the *x*-ray instruments, so as to avoid any noise being heard during treatment. Two large operating theatres, facing north, occupy the ground floor of the operating block; one of these can be darkened for special ophthalmic and other operations. The new buildings will be connected to the existing hospital by extension of the corridor at the western end. This new addition constitutes only a part of the contemplated scheme, which will eventually comprise a children's hospital, accommodation for the treatment of acute surgical cases, sufficient room for the reception of paying patients, and, in conjunction with the existing buildings, which contain 850 beds, will provide for the treatment of all other cases of sickness and accident for which public hospital accommodation may be necessary. The existing separate accommodation for a nursing staff, numbering about 250, will be extended to meet the additional requirements. The hospital will serve the city of Salford only, when the Local Government Act, 1929, comes into force.



PROPOSED EXTENSION OF SALFORD UNION INFIRMARY.

National League for Health, Maternity and Child Welfare.

The National League for Health, Maternity and Child Welfare, which went into voluntary liquidation in order to facilitate a certain measure of reorganization required by the Carnegie Trustees, came to an end on December 31st last. It has transferred all its functions and its assets to its two daughter societies—the Association of Infant Welfare and Maternity Centres, and the National Association for the Prevention of Infant Mortality. In its report for the year ended December 31st, 1928—the last it will publish—is included a general survey of the league's activities since the date of its foundation in 1905. The league began life under the title of the National League for Physical Education and Improvement, with the aim of uniting all existing associations and societies devoted to child welfare, the training of children and youths, and strengthening the population physically, mentally, and morally. From the first it found itself obliged to promote legislation in aid of its objects, and in 1905, having failed to secure from Mr. Birrell, then President of the Board of Education, a promise to incorporate provision for the medical inspection of school children in the new Education Bill, it devoted itself to propaganda work, aimed to this end, which culminated in 1907 in the passing of the Education (Administrative Provisions) Act. The necessity for obtaining a pure milk supply was urged by the league from 1906 onwards, and in 1910 it inaugurated a clean milk campaign, which prepared the way for the passage of the Milk and Dairies Act in 1915. By the passing of the *Fabrics (Misdescription)* Act in 1913, the league, single-handed, secured legislation to minimize the loss of life due to the wearing of inflammable makes of flannelette. It played an active part in promoting the Maternity and Child Welfare Act, 1918, and the Ministry of Health Act, 1919. In pursuance of its policy to co-ordinate societies having aims similar to its own, it succeeded in 1917 in uniting in a single federal movement no fewer than nine societies to form the National League for Health, Maternity and Child Welfare. Among the subjects investigated and reported on by the league may be mentioned health visiting, infant welfare centres, organized play, sick clinics, open-air clinics, ante-natal clinics, artificial light clinics, and dental clinics. In 1914 and throughout 1915 workers trained by the league, acting in co-operation with the local health authorities, succeeded in starting 154 new infant welfare centres, of which 27 were entirely municipal; in 1915 it initiated six experimental ante-natal clinics, and in the same year it set on foot an extensive anti-fly and vermin campaign; in 1918 it opened the still flourishing residential home for babies of the middle class whose mothers were dead or whose fathers were unemployed after the war. Four maternity homes set up by the league are actively engaged in good work. Other ventures have been the establishment in 1919 of a small nursing home for mothers with babies, in 1920 of the Tired Mothers' Holiday Fund, and in 1922 of a guest house for mothers with young babies. The National League has come to an honourable end, full of vigour and good repute, and solvent.

School Medical Inspection in Bournemouth.

Dr. H. Gordon Smith, in his annual report for 1928 as school medical officer for Bournemouth, remarks that there appears to be evidence of an increasing influence for good during pre-school life, since the proportion of entrants found to require treatment in 1928 was 10 per cent., as compared with 12 per cent. for the previous year. He attributes this to the work of the maternity and child

welfare centres. Similarly, the percentage of those leaving school who require treatment has dropped from 17 to 15, and the school medical service seems to be responsible for this improvement. Dr. Gordon Smith emphasizes the point that a serious gap exists in the care of the health of children during the two or three years before they enter school, and regrets that the nursery schools foreshadowed by the Education Act of 1923 have not yet materialized. Many children admitted at the age of 5 have physical defects which could have been either prevented or cured. A certain amount of the defective vision of children is thought to be due to inadequate window space and placing in some schools, where such defects have been found to be more common than in the better planned and more hygienic schools; regrouping of desks will not solve the difficulty, in Dr. Gordon Smith's opinion. The rarity of rickets in Bournemouth is attributed to the large amount of sunshine, purity of the atmosphere, the number of parks and open spaces, and the housing, which is for the most part good. There has also been improvement in the spread of knowledge about diet and general health matters. Children wishing to be employed out of school hours are examined by the assistant school medical officer with reference to their physical fitness to undertake work. In all satisfactory cases certificates are granted stating that the employment will not be prejudicial to the child's health or physical development, and will not interfere with education. The children are also examined at the request of the Juvenile Employment Committee with regard to their physical fitness to undertake a specified employment on leaving school.

Correspondence.

THE CLEVELAND DISASTER.

SIR,—The *X*-Ray and Radium Protection Committee met this afternoon under the chairmanship of Sir Humphry Rolleston. It is the intention of this committee, as further facts reach it, to pursue investigation into the whole question of possible danger from *x*-ray films, and to draw up such recommendations as are considered advisable.

In the meantime, the committee makes the following common-sense suggestions:

1. Care should be taken to ensure that *x*-ray films, whether exposed or unexposed, are stored and handled in such a manner as to reduce to a minimum the danger of fire.

2. Films should not be left lying about, but should be stored in filing cabinets or cupboards in such a way as to limit the number of films actually lying open during reference.

3. On no account should smoking or naked lights be permitted in proximity to any film store.

4. In the case of large hospitals or institutions where considerable numbers of films may be accumulated, a special store, preferably isolated, should be arranged solely for such films.

—We are, etc.,

SIDNEY RUSS,
STANLEY MELVILLE,
Honorary Secretaries.

London, W.1, May 29th.

"YEAST AND PUFFERY."

SIR,—I observe a paragraph in your issue of April 27th (p. 760), headed "Yeast and puffery," in which I am greatly interested.

I presume that this paragraph refers to advertisements which are appearing every week in some thirty to forty magazines and periodicals published in the United States and in Canada. I enclose one of the last I have seen, published this month, "featuring" a medical man of repute in Great Britain who, I had imagined, could not possibly have been guilty of such bad judgement.

I may say that great pressure was brought to bear on me to allow my photograph and opinion to be published as an advertisement to further the interests of this business concern. A considerable sum of money was offered in payment. Needless to say, I declined.

Because of the numbers of prominent men in various parts of the world who have allowed their names to appear already, or in future issues of these periodicals, I am tempted to ask, "Have the ethics of our profession changed?"

From my point of view it seems reprehensible to prostitute the good reputation of the profession by any of its members sanctioning the use of their names for commercial purposes. Of course, it is a cheap way to earn notoriety, but it leaves a nasty impression, even if only because everyone knows that such advertisements are paid for. As your paragraph indicates, right-thinking people regret to see such "puffery," which brings the profession into ridicule. Where will it end? The names and reputations of those who had yielded to temptation were used as a lever to try to get me to yield also. "If these famous men have done it, why should not you?" I will not insult the general practitioner, be he town or village doctor, by suggesting that he may now be influenced by bribes from his grocer or butcher to give his name in support of locally made candy or sausages, and so forth. But the difference is only in degree.

I feel, further, that this trafficking for support of specialists of repute by business concerns for their own gain will, unless it is nipped in the bud (already a large one), be disastrous to the interests of the public for whom the medical profession has assumed health guardianship, and will be equally disastrous in the dishonour accruing to that profession.—I am, etc.,

Montreal, May 21st. HENRY M. W. GRAY.

PUERPERAL SEPSIS AND THE GENERAL PRACTITIONER.

SIR,—I have been ten years in private practice. My practice is of the mixed town and country kind, and includes all classes. In the ten years I have attended 550 maternity cases. My experience may be worth relating, as it includes cases attended in the maternity ward of the Westmorland County Hospital, in a nursing home, and in private houses. My patients include an abnormal proportion of difficult cases transferred by other doctors.

I have notes of six cases of puerperal sepsis, and they present features which call for explanation.

Case 1.—The baby was born before the arrival of doctor or nurse. The patient was a multipara. There had been no examination and no laceration. She was removed to hospital; nothing was found in the uterus, and this patient, after a long period of pyrexia, eventually recovered.

Case 2.—This case was delivered in a nursing home. A multipara, she delivered herself without intervention by doctor or nurse, the baby being born as I entered the room. In this case the patient had a slight cold and a temperature of 99° on admission. On the third day she had a rigor; her pulse and temperature rapidly rose, and the case soon presented all the features of a virulent septicaemia. This case terminated fatally after developing multiple pyaemic abscesses.

Case 3.—I was asked to see this case by a colleague. He told me that the baby was born in the house before he arrived, and he was met at the door by a hysterical patient, carrying the baby in her arms, and the placenta *in situ*. She was removed to a nursing home, the temperature when I saw her on the fifth day being 104°. Examination revealed a hard band of thrombosed veins, stretching, in the base of the left broad ligament, from uterus to pelvic wall. No laceration was found in the cervix and nothing in the uterus. Again, after a prolonged period of pyrexia, this patient recovered. In her case septic tonsils and bad teeth were both present.

Case 4.—This case I was asked to see by a colleague in a remote country practice. It was a forceps case conducted in a farmhouse. The temperature rose on the third day, and when I saw the patient she presented a picture of septic infection. She was removed to hospital. No laceration was found, and nothing retained. A catheter specimen of the urine was obtained; pus was found in it, and culture showed it to be heavily infected with *B. coli*. This patient eventually made a good recovery.

Case 5.—This was a bad case of total placenta praevia, transferred to me by a colleague. Repeated haemorrhages had taken place, and, in view of the fact that the mother was an elderly primipara and rather small, it was decided that Caesarean section offered the best chance for both mother and child. The vaginal examination was made in the home under strict surgical precautions, and the vagina and cervix were cleaned with spirit and iodine before operation. The operation was performed at 11 a.m. I should say that the patient was a week under observation, and no temperature was recorded before operation. At 6 p.m. the

temperature was 102°, and she ran a temperature for five weeks, developing a pyaemic abscess in the left thigh. The uterus involuted normally, and the wound healed by *first intention*.

Here was a case where, clearly, an infected clot had been disturbed in separating the placenta, and septicaemia resulted. The obvious conclusion, in the light of present teaching, is to say that the placental site had been infected from without. Well, it may have been, but I doubt it. Examination was conducted under the strictest precautions, the placenta could not be felt through the cervix, and, in view of the fact that the teeth were in a very septic condition, I have little doubt that they were the cause of the trouble.

Case 6.—This case is at present under my care in the Westmorland County Hospital. Again the baby was born before I arrived, and no examination had been made. On the third day the patient had a rigor, and rapidly presented the picture of an acute septic infection. Nothing was found in the uterus on examination, but a catheter specimen yielded a urine heavily loaded with *B. coli*, and containing a few round and epithelial cells. Here we have to deal with, apparently, a *B. coli* infection of the kidney, although the patient did not complain of the lumbar pain so commonly associated with that condition. She, too, is making a good recovery.

Now the present teaching is that puerperal sepsis is a *preventable disease*. We are told that if all births were conducted on strictly surgical lines under good conditions puerperal sepsis should not occur, and the practitioner of to-day is roundly accused of incompetence and of not knowing his job. In other words, the dictum is that sepsis is introduced from without.

I have mentioned my cases of puerperal pyrexia and septicaemia. They are few in number, but each tells a story of infection from within. What of the cases I have *successfully delivered under bad conditions*? I have one case in my mind where I delivered with forceps a small woman of four living children in a farmhouse, under hopeless conditions from the point of view of maintaining surgical asepsis. Why, why does such a case not go septic? Again, I have twice performed that dreadful operation craniotomy in country cottages, when I was called in to find the patient had been many hours in labour, the water drained away, and a face presentation impacted in the pelvis in one case and the head above the brim in the other.

Time and time again, if infection were brought from without, as we are taught, I have had cases which should have developed sepsis, the type of case with which every practitioner is familiar, where there are a deficient water supply, bad light, insanitary conditions, and inadequate help. Why not?

Again, we are told that maternal mortality has remained constant in spite of the advance in medical science. Now *no one will deny that the medical man of to-day is much* more surgically clean in the conduct of his cases than his predecessor *of forty years ago. Surely, if the doctrine* of infection from without is true, we should have seen some *indication in the mortality figures. Does the experience* of surgery offer any clue to the source of infection in puerperal sepsis? I have *operated on 150 cases of acute* appendicitis in the last three years. In that series I have had two cases complicated in convalescence by a virulent infection of the kidney with *B. coli*, obviously a haematogenous infection. Here we have a blood infection arising from a focus of local sepsis, and, curiously enough, it closely agrees with my percentage of puerperal sepsis, suggesting a haematogenous origin of puerperal sepsis.

No, as a general practitioner I feel we are not getting fair treatment. If the doctrine of infection from without were true the mortality figures would be vastly higher, and I further believe that teeth, tonsils, and bowels are responsible for more puerperal sepsis than ever resulted from unskilled examination.

We shall not reduce puerperal sepsis by talking piously about improving the education of the general practitioner and providing more and better nurses. By all means let our professors and mentors pursue those laudable objects; but they have been doing so for twenty-five years with no result discernible in statistics. But if a "humble" general practitioner may presume to suggest, let us concentrate on ante-natal work, abolish septic teeth, septic tonsils, and constipation. Let us provide the necessary accommodation and care for the difficult cases in hospital, and I venture to say that the remainder, if healthy at the time of delivery, will take no harm even under the worst of home conditions.—I am, etc.,

Kendal, May 20th. COLIN M. CRAIG, M.D., D.P.H.

ANTE-NATAL CARE.

SIR,—The able article by Sir Henry Simson on maternal mortality in childbirth, in the *Journal* for May 11th (p. 869), should do a great deal of good. But will it? No; for the simple reason that, speaking generally, women are wholly ignorant about ante-natal care. The one thing needful is to tell all women (and men) quite plainly that the time to see the doctor is before the confinement and not at the last minute.

It is cruel that this life-saving care is within the reach of every woman and yet entirely concealed by the mysterious and repellent name of "ante-natal clinic." Women do not know what this means. The general public has the vaguest ideas about ante-natal care, birth control, and abortion; it imagines they are all one and the same, and a rather doubtful proceeding. When we talk plain English and call them by some simple and attractive name, such as centres (or welcomes) for expectant mothers, women will understand at once and ask for advice. I have been for years past telling all women I meet about this; and I find that all classes are ignorant about it and very thankful to learn.

About a year ago, at the Royal Society of Medicine, a speaker raised a laugh by a casual allusion to some colonial officials who thought ante-natal care "was Marie Stopes's ideas." I did not laugh, for I understood at once that the same confusion between "ante" and "anti" is in the minds of many in this country; they hear the word ante-natal and they think it must mean birth control, which many people imagine to be abortion.

This is a matter of national importance; the welfare of the mothers of the nation is at stake. Let us drop our Latin and speak the common tongue, understanded of the people, as the Prayer Book says. Let the less wealthy mothers know that maternity benefit depends on seeing the doctor before the confinement, and let all the general public see and understand what maternity hospitals are like. We shall then get the confidence of the mothers (and fathers), and trust will replace the present miserable apprehension and secrecy.—I am, etc.,

May 28th. P. W.

GALL-STONES AND PREGNANCY.

SIR,—In his interesting address on "The woman damaged by child-bearing," published in your issue of May 18th (p. 891), Dr. James Young refers to the supposed influence of pregnancy on gall-bladder disease. It is true that gall-stones are found with equal frequency in men and in childless women, and that for every childless woman with gall-stones there are four women with gall-stones who have had one or more children. But, as I pointed out in an address on "The constitutional factor in disease," which you published on May 7th and May 14th, 1927, it is also necessary to remember that about four women out of every five have one or more children before they die. It follows that, apart from any special liability to the disease, four women who have had children will have gall stones for every one woman who has had no children. The relatively much greater incidence in women than in men cannot therefore be due to the hypercholesterolaemia of pregnancy.

My views on the subject have been recently confirmed by Dr. Desirée Gross from the Leeds post-mortem records.* She found that 89.7 per cent. of 218 women over 25 with gall-stones were married, compared with 87.2 per cent. of 626 women over 25 without gall-stones; and whereas only 7.1 per cent. of 5,319 men had gall-stones, 21.5 per cent. of 106 single women and 27.6 per cent. of 739 married women had gall-stones. Statistically the small differences between the single and married women are of no appreciable importance.—I am, etc.,

New Lodge Clinic, Windsor Forest, May 26th. ARTHUR F. HURST.

* Dr. Gross's paper on the subject will shortly be published in the *Journal of Pathology*.

EPHEDRINE IN ASTHMA.

SIR,—The report in the *Journal* of May 25th of the Royal Society of Medicine's discussion on ephedrine (p. 954) prompts me to record the results that I have obtained from the study of a series of forty-eight patients suffering from asthma treated by this drug. The cases were entirely unselected, except that the great majority were obtained from "hospital practice." The period of trial varied from a few weeks to fifteen months, and the dosage from gr. 1/4 b.d. to gr. iii t.d.s. The cases can be divided into five groups according to the degree of response to treatment, as follows.

Group A: 13 cases (27 per cent.), in which the drug was employed with unqualified success, the patients being absolutely free of attacks whilst taking the drug. The fact that in five of these cases discontinuance of the drug was followed by recurrence of symptoms—the period of trial extending in each case for more than five months excluding coincidence as a plausible explanation, and the fact that only one of these patients was an adult making a psychological explanation untenable—points in no uncertain way to the efficacy of ephedrine in these instances.

Group B: 13 cases (27 per cent.), in which the benefit was most marked, an occasional attack (of modified severity) breaking through the barrage of the ephedrine defence, causing this group to be separated from the first group.

Group C: 4 cases (8.5 per cent.), in which only slight benefit was obtained.

Group D: 5 cases (10.5 per cent.), in which the issue was inconclusive.

Group E: 13 cases (27 per cent.), in which there was no apparent benefit.

These results are distinctly less flattering than those reported in the American literature.

Twenty-six of the total number of patients were children of 12 years and under, and it is interesting to note that these are proportionately represented in each of the groups. Neither the frequency nor the severity of the attacks seemed to afford the least clue as to the benefit that might be expected from the employment of the drug, excepting that in those attacks that resisted an injection of adrenaline ephedrine was equally powerless. Seven patients complained of symptoms referable to taking the drug. Three complained of sleepiness, one only of insomnia, two of vomiting (one severe), and one of nervousness, sweating, and palpitations. Only in one case was it necessary to discontinue the drug, while in only one of the nine patients in Groups A and B who were treated for a period of longer than six months was there any suspicion of acquired tolerance.—I am, etc.,

E. G. RECORDON,
House-Physician, St. Bartholomew's Hospital, E.C.1.

May 29th.

THE HOLLOW SURGICAL NEEDLE.

SIR,—In surgery, as in other arts, useful methods and practical devices may come into being, be practised sporadically and intermittently by the individual, and fall into disuse "unwept, unhonoured, and unsung." Among such is the hollow surgical needle. In principle it lays no claim to recent invention, for it has long been adapted to serve special branches of surgery; furthermore, it materialized many years ago in the form of a hollow needle for general purposes, but this has never found its way into the routine of daily surgery.

It is to the general practitioner that the use of the hollow needle is most likely to commend itself. The operating surgeon might find it of use, but will probably reject it as an encumbrance to his armamentarium, for he usually operates on patients under general anaesthesia: the question of pain does not concern him, therefore, and further, he does not run the risk of coming face to face, in his daily rounds, with an almost invisible wound cicatrix flanked by a double row of very obvious suture scars. Thus, in his case, the *raison d'être* of the hollow needle practically vanishes.

In your issue of April 8th, 1905 (p. 808), you published a letter from Dr. Gubb advocating the use of a hypodermic syringe needle for the insertion of superficial wire sutures. The advantages claimed for the device, as compared with the method in current use, were that the pain of insertion was reduced to that of a hypodermic needle puncture, and that there was no scarring, such as results from the incision made by the cutting edge of an ordinary suture needle. Shortly after I read the letter a child with a split lip was brought to me; I closed the wound with a suture inserted in the manner suggested, using, however, horse-hair instead of wire.

In recent years I have often had to treat superficial wounds of conspicuous parts without a general anaesthetic. This revealed the need of a curved hollow needle, since a straight one is useless when the wound is situated in a sulcus or depressed part of the surface. I submitted the problem to Messrs. Allen and Hanburys, suggesting a hollow, semicircular needle, about 1 in. in diameter and without a cutting edge. Shortly afterwards I received samples in three sizes—1 in., 1⅛ in., and 1¼ in. in diameter—the larger ones carrying a somewhat heavier suture than the smaller. I now have a supply of these needles, which I keep ready threaded with horse-hair or silkworm-gut, and immerse such as I am about to use in a solution of iodine or mercurochrome. Incidentally, I have never seen stitch sepsis occur in connexion with these sutures—a result probably due to following Dr. Bernhardt's practice of exposing wounds to the air—for dressings render the subjacent tissues weak and soggy, thereby furnishing a soil favourable to the growth of vegetable organisms, which are further encouraged to germinate by the induced warmth and moisture of their surroundings.

The procedure recommended is as follows:

Paint the skin area for a suitable distance around the wound with a 2 per cent. solution of mercurochrome—an antiseptic that does not cause smarting. Apply wool soaked in apothesine or other cocaine derivative to the raw surface of the wound. Pick the needle out of mercurochrome with artery forceps or needle holder. Withdraw the suture till the end is within the eye of the needle. If more than one suture is necessary, work from the middle of the wound towards the ends. Introduce the needle on that side of the wound where the skin is more mobile, and let it emerge on the more fixed side

When the point of the needle emerges, push the suture through it from the other end and pull through a sufficient length on the distal side to tie. Withdraw the needle from the tissues and along the suture till there is sufficient length on the near side to tie. Cut the suture at the point of the needle, so that this remains threaded ready for the next stitch. Secure accurate apposition and tie. Proceed with the next suture, remembering always to introduce the needle on the more mobile side of the wound and to let it emerge on the more fixed side—a direction which may be reversed in successive stitches. After the patient has recovered from the first shock of the injury, rest or not is prescribed according to the position and severity of the lesion. Paint the wound area daily with mercurochrome and remove the stitches on the fifth day.

The advantages of the hollow needle are those mentioned thirty years ago by Dr. Gubb.

There are one or two general principles incidentally involved in the suturing of wounds which it may be of use to mention. It is good practice to lubricate all instruments used to puncture or cut living tissues. Blood should be thoroughly removed from parts away from the wound but not from the bleeding surface itself, where it plays an important part in the process of repair. As it issues from the vessels blood is aseptic, it helps to promote union by gluing wound surfaces together, while a continuous scab maintains intimate approximation along the line of contact of wound edges. By clotting it tends to arrest haemorrhage and affords a stroma for the development of cicatricial tissue. The sutures serve to arrest haemorrhage from more important vessels, and to squeeze out any excess of blood which may be present between wound surfaces.—I am, etc.,

STUART TIDEY, M.D., M.R.C.P.

London, W.14, May 18th.

APPENDICITIS AS A COMPLICATION OF BILHARZIAL INFECTION.

SIR,—In your issue of May 4th (p. 810) a memorandum by Dr. H. E. Harris records a case of appendicitis, presumed to be caused by the presence of bilharzia ova in the organ, as an unusual occurrence.

We would take the opportunity of indicating that the deposition of bilharzia ova in the appendix is far from uncommon in Egypt. In over 50 per cent. of the appendices removed at operation for subacute or chronic

appendicitis and submitted to us for histological examination we find a similar picture to that described in the note in question. In several cases enormous numbers of ova are demonstrable in every field of the microscope, and completely encircle the glandular layer of the organ. It is questionable, however, whether the inflammatory process is due in all cases to the presence of these sources of irritation.—We are, etc.,

Public Health Laboratories, Cairo, May 23rd. H. MARRIAN PERRY. HAROLD J. BENSTED.

RELATIONSHIP OF ALASTRIM (VARIOLA MINOR) TO SMALL-POX (VARIOLA MAJOR).

SIR,—With all due deference, I would like to suggest to Dr. Killick Millard that, perhaps after all, the above two diseases are one and the same, and that the mild course run by those suffering from alastrim is entirely due to the fact that vaccination has now been extensively practised in Great Britain for over a hundred years. Some little time ago I read an article in *Nature* in which it was stated that immunity is hereditary provided five generations have been immunized, and that this had been clearly demonstrated recently. So when we think of the immunity to malaria found among the native races of Africa and other malaria-infested countries, is it not conceivable that vaccination extending over five generations of our people is beginning to tell in the end, even though some of the people recently infected were never vaccinated? They are benefiting by the vaccination carried out on their parents and grandparents. It would be interesting to see what would happen were alastrim to break out in a mixed population, many of whom had not had ancestral protection.—I am, etc.,

Little Island, County Cork, June 2nd. E. G. FENTON.

PRIMARY VACCINATION OF SCHOOL CHILDREN.

SIR,—It should be widely known among general practitioners that cases of post-vaccinal encephalitis are occurring at the present time in England.

Among the few known points in the etiology of this disease are: (1) it appears to be confined to primary vaccinations of children of school age; (2) it cannot be connected with the use of any particular brand of vaccine lymph. Further, the mortality rate is high. On the other hand, the latest mortality rate of the prevailing epidemic of small-pox is very low, being 0.25 per cent.

There is therefore a heavy responsibility on medical practitioners in deciding at this time whether to proceed with the primary vaccination of children of school age. But there is nothing to suggest that there is any undue risk in proceeding with revaccination, or with the vaccination of infants and adults.—I am, etc.,

London, E.16, June 3rd. PERCY ROSE.

ASSOCIATED CONGENITAL ABNORMALITIES.

SIR,—In the course of Dr. Liesching's interesting memorandum, in your issue of June 1st (p. 993), on strangulation of ovary in an inguinal hernia associated with congenital abnormality of the kidney, he comments on the probability of a congenital abnormality of the one organ being associated with an abnormality of the other, and asks if any similar cases have been reported.

During a recent investigation, not yet published, into the literature of congenital solitary kidney, I have come across details that may be of interest.

Bolaffio (*Zeit. f. Geb. u. Gyn.*, 68, Heft 2, 1911), in an investigation of 99 cases of defects of female genitalia associated with renal anomalies, concluded that female genitalia defects occurred much more frequently in connexion with complete lack of development of the kidney than in association with any other renal anomaly.

Winter (*Arch. klin. Chir.*, vol. lxix, p. 611, 1903), in a collection of 237 cases of solitary kidney, noted an absence of an ovary in four of them.

Campbell (*Annals of Surgery*, July–December, 1928) mentions a case which he encountered in which congenital absence of one kidney was associated with retroperitoneal and atrophic testicle on the involved right side.—I am, etc.,

Glasgow, June 3rd. ALBERT SHARMAN.

THE NEW PYLORUS OPERATION.

SIR,—When Dr. C. D. Mayo was last in England I communicated with him on the subject of the above-mentioned operation; and pointed out that the ordinary posterior no-loop operation for gastric or duodenal ulcer was a perpetuation of a physiological error. Also that after the no-loop operation, done by the ordinary surgeon, the majority of the patients have to be meticulously careful in their diet, and are frequently under the care of a physician; whereas after the new pylorus operation the patients have a normal digestive apparatus and require no dietetic or medical treatment.

As a result of this letter Dr. C. D. Mayo informed his surgical staff at the Mayo Clinic, and one of the Mayo Clinic surgeons, after reading my previous articles in medical journals[1] on the subject of the new pylorus operation, did seventy-five cases in this way. He had two jejunal ulcers in the seventy-five cases—one of whom he said was cured, and the other was receiving treatment at the time of his writing (1926).

A diagram of this operation can be seen in the *British Medical Journal*, April 24th, 1926 (p. 738).—I am, etc.,

G. G. GILLON, F.R.C.S.Ed.

*** The correspondence between the Mayo Clinic and Mr. Gillon can be seen at the Library of the British Medical Association by those interested.

RURAL HYGIENE.

Proposed Memorial to Vivian Poore.

SIR,—The first steps are now being taken to carry out a suggestion of the Council of the National Homecroft Association to raise a homecrofting memorial cottage to that eminent rural sanitarian the late Dr. George Vivian Poore of University College Hospital, London, Milroy Lecturer for 1899, author of *Rural Hygiene* and other works.

A letter from Dr. N. Macfadyen on garden city sanitation appeared in the *British Medical Journal* of December 1st, 1923 (p. 1070), and in your issue of February 9th, 1924 (p. 250), an article was published by Dr. Lionel Picton, medical officer of health for Winsford, Cheshire, on the economic disposal of excreta, on Poore's principles. It is evident that the subject is very much alive in the rural districts, where sanitation is still a serious problem; and the experience of the homecroft movement suggests that a still wider interest is needed on the part of the medical profession.

A committee to assist the Homecroft Association Council in the institution of the experimental cottage memorial is now being formed. The first task is to obtain names and addresses of all old friends and associates of Dr. Poore and readers of his writings who might be interested in the work of the committee or care to join it, together with the names and addresses of any interested in developing homecrofting as a national movement. In order that the committee may be made a large and representative one, names and addresses should be sent to me.—I am, etc.,

J. W. SCOTT,

38, Charles Street, Cardiff, May 31st. Honorary Secretary, National Homecroft Association Ltd.

THE INTERNATIONAL LEAGUE AGAINST RHEUMATISM.

SIR,—Referring to your annotation under this heading on June 1st (p. 1011), may I say that some copies of the second issue of *Acta Rheumatica* are now available in this office for medical men or women who are engaged in the investigation and treatment of rheumatic diseases. The *Acta*, in their present provisional form, may, it is hoped, be of some service to students of these diseases in the countries where they are being especially studied. A copy may still be had on receipt of threepence for postage; also particulars of the next conference of the league, which will be held in Hungary in October, in conjunction with the annual meeting of the International Society of Medical Hydrology.—I am, etc.,

International Society of Medical Hydrology, 139, Marylebone Road, N.W.1, June 2nd. R. FORTESCUE FOX.

[1] *Practitioner*, June, 1920; *Lancet*, January 21st, 1920; Epitome, *New York Med. Journ.*, 1920; *British Medical Journal*, April 22th, and May 29th, 1926.

Medico-Legal.

ALLEGED ILLEGAL OPERATION: CHARGE OF MANSLAUGHTER.

REX v. H. WINDSOR BELL.

At the Central Criminal Court, on May 31st and June 4th, before Mr. Justice McCardie, Dr. Hugh Windsor Bell of Oakley Street, Chelsea, was charged on an indictment of manslaughter arising out of an alleged illegal operation. The defendant pleaded "Not guilty."

Mr. H. D. Roome, for the prosecution, said that in April last a young woman named Kelly went to Dr. Bell regarding her pregnancy, and a few days later, at a house in Kensal Rise, Dr. Bell, the Crown alleged, performed an illegal operation to procure abortion. An accident occurred at the operation, and Dr. Bell afterwards told the girl's sister that he had "made a hopeless mess of it." Distressed at the girl's condition, he had her removed to a nursing home in Welbeck Street, and called in Dr. Richardson, who performed an operation in the attempt to save the girl's life, but without success. It was further alleged that, before the operation attempted by Dr. Bell, he received £75 from the girl, being part of £100 which she had been given by a man friend to cover the expenses.

Evidence as to these allegations was given by the prosecution.

On the second day of the trial Dr. Bell gave evidence. In reply to Sir Henry Curtis-Bennett, his counsel, he said that he qualified in 1914. He had specialized in anaesthetics, and was anaesthetist to several London hospitals. He was also in general practice, and had 1,400 insured persons on his list. The girl Kelly was brought to him by a Mrs. Capper, whom he had known when she was secretary to a colleague of his in a former practice in West London. Kelly wanted to know whether she was pregnant; she had been to another doctor, who thought she was not. She told him that her periods had stopped since November, and it was then April. She also told him that she had taken drugs, and had syringed herself with hot soap and water. He found signs of pregnancy, but on making a bimanual examination the size of the uterus did not appear to him as large as he would have expected, judging from the time for which the menstrual periods had ceased, and he discovered also the fact of some blood-stained discharge. He came to the conclusion that the membranes must have ruptured, and that a miscarriage had started. He told her that she ought to go into a nursing home, but she was horrified at the idea because she was an unmarried woman and her family would learn of her condition. It was therefore arranged that Mrs. Capper should take her into her house.

The judge asked questions with regard to the syringe the girl had used. He pointed out to the jury that the effect of drugs was to stimulate movement, and possibly to cause expulsion of the foetus; in addition, a syringe at the mouth of the uterus might cause irritation, and that by itself might cause the muscles to move.

Continuing, the defendant said that he told the girl that with commencing miscarriage she might have to be up for a fortnight or more. She gave him the name of someone who, she said, was a very wealthy man, and who had given her £100, and she offered him (Dr. Bell) £75 as an inclusive fee. During the next day or two he became rather worried about her condition. There was pain and blood-stained discharge, and on April 8th—the girl had first seen him on April 4th—hearing by telephone that she was in a very distressed state, he went to see her, and after examination came to the conclusion that he ought to remove the foetus. He gave her chloroform, and first put in a speculum, and after grasping the neck of the womb with the forceps, he inserted in turn about six dilators of increasing size. Unfortunately, one of the dilators made a puncture in the anterior wall of the uterus; the uterus was in malposition, or such a puncture would not have been possible. Unaware that the puncture had taken place, he put in the forceps for extracting the uterine contents. He brought down a limb of the foetus, and then, inserting the forceps again, they slipped from whatever they held, and, trying a second time, he brought down something which he realized was a portion of intestine. He immediately telephoned Dr. Richardson, and got the girl into a nursing home.

In cross-examination by Mr. Roome, Dr. Bell agreed that his contention was that Miss Kelly actually performed an illegal operation on herself with a syringe and hot soapy water. He explained that he had not told the full story at the inquest or the police court proceedings because he had been advised by his solicitor to reserve his defence. He would not say that the £75 fee was enormous. He expected to attend the girl for a fortnight or longer. Asked why, if there was nothing to hide, he did not ask a colleague to give the anaesthetic, he said that being an anaesthetist himself he did not look upon the giving of an anaesthetic quite as an ordinary doctor would. He usually gave a little chloroform at the end of a maternity case, and did not call in anyone else.

Mr. Aleck W. Bourne, gynaecologist, practising in Harley Street, said that the combination of drugs with local interference as by syringing might, and did occasionally, induce abortion. If the doctor was satisfied that a miscarriage was inevitable it was a common practice to expedite it should there be undue delay or other complications. The medical man must decide on the circumstances before him. The procedure depended on the case, but he could quite imagine speculum and dilators being necessary. It was difficult to understand how a wound could be made in the front of the uterus if it was in normal position, but if it was turned backwards a puncture in that part of the wall would be likely to occur in the hands of a man unaccustomed to deal with such emergencies. If such a puncture were made it was common for the uterus to contract and push the foetus out through the hole thus made, enlarging the hole to a very great extent. He agreed that in a pregnancy of eighteen weeks it would be difficult for drugs alone to induce miscarriage, but if syringing were used and the syringe nozzle caused any injury at or about the mouth of the womb miscarriage might occur.

Mr. Justice McCardie's questions to this witness led Mr. Roome to remark, "Your lordship is more expert than the experts."

The Summing-up.

His lordship said that Mr. Roome had remarked that the defendant, who admittedly bore a very good character, was fortunate in escaping a charge of murder. The judge was glad that no such charge had been brought. The essence of murder was intent to kill, and he was glad that no attempt had been made to present against this defendant any charge based on the harsh, mediaeval, and repulsive doctrine of constructive murder. The charge was manslaughter; it was not negligence, and therefore in substance the question was whether he performed an illegal operation. It was vital to notice that word "illegal." Certain operations were legal and necessary in the last stages of pregnancy to save the life of the mother, and if possible the life of the child, but there was a stage before that when an operation to bring away the foetus might be legal, and not only legal but imperative from the medical point of view. If once the sac which contained the foetus were broken, and the liquid escaped, blood poisoning might ensue should the foetus not be removed. According to the defence it was this necessary operation which Dr. Bell performed.

There were different methods of procuring abortion. The reluctance of doctors to state those methods might be right; no one would desire to spread the knowledge of abortive methods, but in a court of justice it was essential that every item of experience should be laid before the jury. A very simple process might lead to the commencement of a miscarriage; for example, the syringe itself might set up a local irritation which induced movements of the uterus. One factor in this case ought not to be overlooked—namely, the anxiety of the girl herself, finding that she, without the sanction of marriage, was pregnant.

As to what happened at the operation there was no direct evidence except that of the defendant himself. The Crown had made a point of the secrecy with which the operation was conducted. The girl went to a private house; he agreed it would have been better if she had gone into a nursing home. On the other hand, in a nursing home she would have had to give certain particulars about herself; and whether she contemplated undergoing an illegal operation or whether a miscarriage had commenced, she would still desire to have secrecy. It was asked why Dr. Bell did not call for the help of an anaesthetist. But it should be remembered that he had himself a singularly high record as an anaesthetist; moreover, the girl might not wish more than one doctor to be acquainted with her misfortune. Medical men had certain obligations with regard to secrecy, and had insisted again and again that their efficacy as medical men in many aspects of their practice depended upon the confidence of their patients that secrets would not be divulged. Again, there was the fact of the £75. It was a really substantial sum. It had been suggested that the services of a first-rate obstetric surgeon might have been obtained for that sum. But, of course, it was an inclusive fee for services which might have extended over a fortnight or more. Mr. Roome had also made a point of the fact that the defendant had made no record of this case in his books. To this there were two answers: that he was arrested at an early stage, and, again, that the question of confidence arose; if the £75 had been entered in his books it would have been seen by anyone who audited them.

The words used by Dr. Bell after the operation were equally consistent with the commission of a surgical blunder or with a crime. There were certain points to be considered in his favour. As soon as this unfortunate piercing of the wall of the uterus was discovered, he might have said, "Let her stay here" (in Mrs. Capper's house), and have tried to hush up the affair, but instead he immediately arranged for her to go to a nursing home and for Dr. Richardson to perform an operation. He said at once that he was responsible. If he had performed an illegal operation as distinct from committing a surgical blunder, would he have been so frank in stating his responsibility for it? A very important witness was Mrs. Capper. She was a witness for the prosecution

not for the defence, and some of her evidence was not favourable to the defendant, but if she was telling the truth the case for the defendant was enormously strengthened. Mrs. Capper had stated that the girl had asked her for a towel or cloth because she had a discharge; also that before Dr. Bell arrived and performed the operation the girl was in such great agony that she begged her (Mrs. Capper) not to leave her. This pain was indicative of commencing miscarriage. Finally, the judge reminded the jury that the burden rested upon the prosecution of producing satisfactory proof of Dr. Bell's criminal intention, and if in doubt upon the matter the jury were entitled—nay, bound—to remember that up to the present Dr. Bell had enjoyed the highest possible reputation.

The Jury Disagree.

After more than an hour's retirement the jury failed to agree. The case was postponed to next sessions, Dr. Bell being released upon his own recognizances.

ALLEGED RECEPTION OF LUNATICS IN AN UNLICENSED HOUSE.

ON May 30th, at the South-Western Police Court, the magistrate, Mr. Kenneth Marshall, following a conflict of medical testimony, dismissed summonses against two persons accused of receiving five lunatics into a nursing home at North Side, Clapham Common, not licensed for the purpose under the Lunacy Acts.

At a previous hearing Mr. Gerald Dodson, on behalf of the Director of Public Prosecutions, had stated that the nursing home carried on by the defendants, was a perfectly respectable and reasonably conducted house, but produced medical evidence to the effect that five female inmates were certifiable lunatics. One of the medical witnesses called by the prosecution admitted that these patients were not dangerous to themselves or others, though he would except one in whom there were suicidal tendencies. The patients' own medical attendants stated that they were not, in their judgement, certifiable, and there was no reason why they should be put under restraint. One of the defendants stated that she had conducted the home for fourteen years, and her patients, principally elderly people, were all attended by their private doctors. She made a practice of sending any patient of whose condition she felt suspicious to St. John's Hospital for observation, and added that the Lord Chancellor's Visitor for Lunacy had certified none of the patients as lunatics.

The magistrate, in dismissing the summonses, said that he could not but express surprise that it had been found necessary to take proceedings against the defendants; even an expert in mental disorder called on behalf of the prosecution had hesitated in asserting that the patients were certifiable. The medical attendants of the patients themselves, though not experts, were, in his view, qualified to give an opinion; they saw the patients frequently, whereas the specialist had seen them only once. In face of the evidence he would be doing wrong to say that the five persons were lunatics.

The Services.

INDIAN MEDICAL SERVICE DINNER.

THE annual dinner of the Indian Medical Service will be held at the Trocadero Restaurant on Wednesday, June 19th, at 7.15 p.m. Lieut.-Colonel D. G. Crawford, "the historian of the service," has been invited to take the chair. Tickets, and all particulars, may be obtained from the joint honorary secretary, Major Sir Thomas Carey Evans, *M.C.*, 31, Wimpole Street.

DEATHS IN THE SERVICES.

MAJOR-GENERAL CHARLES EDWARD POLLOCK, C.B., C.B.E., D.S.O., Army Medical Service (ret.), died at Northwood, Middlesex, on May 18th, aged 61. He was born on April 16th, 1868, at Paisley, the son of Mr. Alexander Pollock of Greenhill, Paisley, and was educated at Wellington College and at Guy's Hospital, and took the M.R.C.S. and L.R.C.P.Lond. in 1891. He entered the army as surgeon lieutenant on January 30th, 1893, attained the rank of colonel on December 26th, 1917, became major-general on June 1st, 1922, and retired on June 1st, 1926. He served in the Tirah campaign on the North-West Frontier of India in 1897-98 (medal with two clasps); in the South African war in 1902, in operations in the Orange River Colony and Cape Colony (Queen's medal with two clasps); and in the war of 1914-18, as A.D.M.S. of the 15th Division, and as D.D.M.S. of the 4th and 6th Corps (mentioned in dispatches, in the *London Gazette* of January 4th, May 29th, and December 24th, 1917). He was awarded the D.S.O. in 1917, the C.B.E. in 1919, and the C.B. in 1921. He was the author of a report on venereal diseases and scabies in the army, submitted to the Advisory Board for Medical Services in 1904. He married Winifred, daughter of Mr. C. E. H. Jay of Felixstowe, and leaves a son and two daughters.

Obituary.

ROBERT WELSH BRANTHWAITE, C.B., M.D.,

Director of Medical Services, Stoke Park Colony; formerly Medical Commissioner, Board of Control.

THE announcement early this week of the death of Dr. R. W. Branthwaite, director of medical services at the important colony for the care and treatment of mental defectives at Stoke Park, Bristol, will have occasioned a sudden sense of loss to many, and even to the few who knew that, with the cheerful courage which ever distinguished him, he was carrying on his good work almost up to the day of his death, notwithstanding symptoms which had occasioned anxiety to others.

The son of Harrison Branthwaite, F.R.C.S., of Harlesden, Robert Welsh Branthwaite was born on May 27th, 1859, and thus died a few days after he had completed his seventieth year. Educated at Heighington Grammar School, at Charing Cross Hospital Medical School, and at Brussels University, of which he was a Doctor of Medicine, he took the diploma of M.R.C.S. in 1881 and the L.R.C.P. in 1884. His interest in mental diseases was manifested early in his professional career, and in 1882 he was appointed an assistant medical officer to the Chester County Mental Hospital at Parkside. After two years' work there he was appointed, at the early age of 24, to the medical superintendentship of Dalrymple House, Rickmansworth, where for fifteen years he ably administered that institution and two similar establishments under the Habitual Drunkards Act.

Photo by Army and Navy C.S.S., London.

In 1899, in recognition of his grasp of the subject and his marked ability, Dr. Branthwaite was appointed by the then Home Secretary, Sir Matthew White Ridley, to the Home Office staff as inspector under the Inebriates Act, and was engaged in the organization and establishment of reformatories for the care and treatment of criminal and recidivist drunkards under the Inebriates Act. To enable him to assist in the management of State reformatories he was appointed an inspector of prisons, and for four years acted as medical adviser to the Reformatory and Industrial Schools Department. His work under the Home Office continued until the beginning of 1914, and during this period of a life of incessant activity he made many valuable contributions to the subject of which he was a master, and attended as an official delegate several international congresses, including the International Home Relief Congress in Edinburgh (1904), the International Congress of Alcoholism at Stockholm (1909), London (1910), and The Hague (1911). He was also an active member of the Departmental Committee on the Inebriates Act (1909).

In February, 1914, Dr. Branthwaite joined the Board of Control for England and Wales as an inspector, and in November, 1916, was appointed a Commissioner of the Board, in which capacity he remained until he retired under the age limit in the autumn of 1926. During his years of office in the Board of Control, interrupted by two years of military service, he interested himself especially in two matters—namely, infectious diseases in mental hospitals and the dietaries of the patients in public mental hospitals—and it is not too much to say that his investigations and the work of the departmental committees over which he presided have been largely instrumental in bringing about the improved conditions which obtain

to-day. He was an active member also of the Departmental Committee on Morphine and Heroin Addiction. Unsparing of himself, whatever he did he did with all his might. On leaving the Board of Control, and desirous, even at the cost of a well-earned leisure, to place his special knowledge and experience at the service of the community, he accepted the medical directorship of the colony for mental defectives at Stoke Park. Here his loss will be severely felt by patients and staff alike; and, though only for a brief time we hope, his plans for the employment of the colony as a place for special study and research in mental deficiency, in association with the University of Bristol Medical School, have been interrupted.

Dr. Brauthwaite leaves a widow and one daughter, to whom we tender our sympathy. Many will mourn his loss, for he had friends all over England and Wales. Courage and sincerity, say his friends and colleagues of the Board of Control, were the dominating characters of his life and work. In early and middle life he met and overcame difficulties which would have daunted most men. When the war came, although well on in the fifties, he went to France as regimental surgeon, was present at three engagements, was mentioned in dispatches, was wounded, and finally incapacitated for further overseas service. In private life his relations with all with whom he came in contact were marked by unusually clear insight and consequent sympathy. He was a great and true friend, and there are many to whom his death will mean a blank that cannot be filled. His friends will remember him as one who had "courage and gaiety and a quiet mind."

DR. HUGH SMITH MORRISON died on May 21st, at his residence at Blackhill, Coleraine, and deep regret will be felt, both by the profession and by the general public, in Ulster. He had not been in good health for some years, and had gradually retired from his large practice and numerous public offices which his activity and ability had really forced upon him. Hugh Morrison was born in 1853, and graduated M.D. from the old Royal University of Ireland in 1884, obtaining also in the same year the diplomas L.R.C.S. and L.M.R.C.P.I. He began his professional life in County Londonderry, where he made for himself a name and gained the trust and affection of his patients in a very large private practice. Nothing could withstand his energy, and he was placed by the profession and the public in numerous positions of responsibility and honour. Among other posts he was chairman of the South Londonderry Unionist Association, and of the County Londonderry Branch of the Irish Unionist Alliance. He was nominated by the medical association of the county as candidate for Queen's University of Belfast in the Northern Parliament of Ireland in 1925; the selection was unanimously adopted, and he sat in the Northern Parliament for many years. Possessing a good voice and many of the qualifications of a keen debater, he was no silent member, but made many valuable contributions to debates on social matters and education. His caustic criticism and unfailing good humour were appreciated on all sides and by all parties; he never omitted to lend a hand in the solution of agricultural problems, wherein he had practical knowledge. As secretary of the medical societies in County Derry, and as a member of the North-East Division of the Ulster Branch of the British Medical Association, he gave wholehearted support to medical reform. Dr. Morrison was a keen Presbyterian, and often spoke in the meetings of the General Assembly. As coroner for the Coleraine division of Derry he discharged his duties with great care, ability, and tact. He was the author of *Modern Ulster: its Industries, Customs, and Politics*. Few have lived such an active, full life; still fewer have left such an empty space, and one so hard to fill.

DR. ROBERT WISE, who died on May 17th, aged 63, received his medical education at the University of Edinburgh, where he graduated M.B., C.M. in 1888, and proceeded M.D. four years later. His life was spent in general practice. He took particular interest in obstetrics, being a member of the Obstetrical Section of the Royal Society of Medicine, and in former years a Fellow of the Obstetrical Society of London. He designed a special type of uterine forceps for use in cases of soft cervix, and published articles on practical obstetrics. During the war he was employed by the War Office for medical examination of recruits, and subsequently for pension assessments. Dr. Wise was a member of the British Medical Association. He leaves a widow, one son, and two sisters.

THE LATE MR. ARTHUR CHEATLE.

MR. H. NORMAN BARNETT writes: As one who was brought into close touch with Arthur Cheatle during the preparation for and the holding of the 1925 Annual Meeting at Bath, and on many subsequent occasions, I would like to bear record to the memory of this truly great man who has passed from us while still in his prime. His wonderful brain power and capacity for investigation are, of course, widely known. To these was added an unfailing courtesy and very real kindness of heart, which I personally experienced on many occasions. The truth in scientific research was a passion with Cheatle. His simple and rather shy manner was the badge of his true greatness. His loss to his colleagues in otology will be hard to replace, and his memory will be enshrined in many hearts, but I would be glad to see something tangible done to perpetuate it.

Universities and Colleges.

UNIVERSITY OF LONDON.

DR. H. W. C. VINES has been recognized as a teacher of the University in pathology at Charing Cross Hospital Medical School.

The regulations for the M.B., B.S. Examination are to be amended by the substitution for paragraph (b) (i) on page 243 of the Red Book, 1928–29, and page 230 of the Blue Book, September, 1928, of the following:

> (i) An examination of a patient, and a written report thereon, three-quarters of an hour being allowed for the former and one hour for the latter.

The matter to be reconsidered after one year.

The regulations for the M.D. Examination, Branch IV, have been amended by the substitution for the words "*n. clinical* examination" (Red Book, 1928-29, p. 247, and Blue Book, September, 1928, p. 234) of the following:

> A practical and clinical examination, including reports (either written or verbal, or both) on clinical cases, pathological and other specimens, and other material suitable for an examination of a practical character.

Regulation 3 of the examination for the Diploma in Psychological Medicine has been amended to read as follows:

> The examination for the diploma is open to any candidate whose name is in the *Medical Register*, provided that, before being admitted to Part B, the candidate shall either (a) have held for not less than six months a resident or whole-time appointment at an institution [illegible] for mental diseases recognized for the purpose; less than twelve months the practice of ions), or such other practice as may from the University.

Dr. A. M. H. Gray and Professor William Wright have been appointed members of the new Senate under Statute 43 (iii) (c), as representatives of the deans or chief executive officers of the general medical schools.

Applications for the William Julius Mickle Fellowship must reach the Principal of the University not later than the first post on October 1st. It is of the value of at least £200, and is awarded annually to the man or woman who, being resident in London and a graduate of the University, has, in the opinion of the Senate, done most to advance medical art or science within the preceding five years.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

The examination for the two Goldsmid Exhibitions, entitling the holders to the final course, will be held on July 19th and 20th. They are open to students preparing for the degrees of the Universities of London, Oxford, Cambridge, Durham, or other British universities, or for the diplomas of the Royal Colleges of Physicians and Surgeons, or for the licence of the Society of Apothecaries. Notice to compete must be received by the secretary at the office of the Medical School on or before July 6th.

The examination for the Buckmill Entrance Scholarship will be held on June 25th. The holder is entitled to the course of intermediate medical studies (including Part II of the Preliminary Scientific) at the University of London, University College, and the final course at University College Hospital and Medical School.

Further particulars can be obtained on application to the Secretary, University College Hospital Medical School, Gower Street, W.C.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—W. T. Ellis, A. Freitag, J. D. B. Games, W. St. A. Hendricks, L. G. E. K. Lewis, B. J. Niall.

MEDICINE.—F. W. Crossley-Holland, A. Freitag, K. E. Gallaher, K. M. Seedat.

FORENSIC MEDICINE.—P. S. Balachandran, A. Freitag, K. E. Gallaher.

MIDWIFERY.—A. Campbell, B. H. El Sawy, B. L. Fishout, A. Freitag, C. Parthasarthe, A. Scher.

The diploma of the Society has been granted to Messrs. F. W. Crossley-Holl[illegible] Freitag, and K. E. Gallaher.

Medical News.

THE summer dinner of the Australian and New Zealand Medical Association in England will be held at the Trocadero Restaurant, Piccadilly, on Friday, June 14th, at 7.45 for 8 p.m., with Mr. F. F. Muecke in the chair. Mr. W. Sampson Handley and Professor F. R. Fraser will be the official guests of the Association. All medical visitors from Australia and New Zealand, whether members of the Association or not, are invited to be present. The cost of the dinner is 10s. 6d., payable at the table. Communications should be addressed to Mr. P. J. Jory, 26, Queen Anne Street, W.1.

THE annual dinner of the Cambridge Graduates' Medical Club will be held at Jesus College on Friday, June 28th, at 7 p.m., with Sir Humphry Rolleston, Bt., President of the Club, in the chair. The honorary secretaries are Mr. Reginald Vick and Dr. F. G. Chandler.

THE annual dinner of the Harveian Society of London will be held on Thursday, June 13th, at 7.30 for 8 o'clock, in the Connaught Rooms, Great Queen Street, W.C.

A SYMPOSIUM on some diseases of Jews is being opened by Sir Humphry Rolleston on Thursday, June 13th, at 3 p.m., at the London Jewish Hospital, Stepney Green, E.1. The following will take part in the discussion: Drs. J. Burnford, W. M. Feldman, and J. Brander, and Messrs. A. H. Levy, M. Sourasky, and A. Sourasky.

AT a special meeting of the Odontological Section of the Royal Society of Medicine on Wednesday, July 17th, at 5.30 p.m., a bust of the late John Howard Mummery will be unveiled, and will be presented to Dr. A. D. Black, professor of special pathology and operative dentistry in the North-Western University, Illinois. Professor Black will receive the bust on behalf of the North-Western University as a gift from its London alumni.

THE provincial meeting of the Section of Disease in Children of the Royal Society of Medicine will be held at Nottingham on Saturday, June 22nd.

A SESSIONAL meeting of the Royal Sanitary Institute will be held on Friday, June 21st, in the Festival Hall, at the North-East Coast Exhibition, Newcastle-upon-Tyne, when discussions will take place on the problem of feeding the premature infant, the need for a maternity service, the importance of ante-natal supervision, eliminating the tuberculous cow, hygienic milk supplies, and clean milk in the Northern counties. The chair will be taken at 2.30 p.m. by Dr. Charles Porter. In the evening a public lecture on smoke pollution will be given at 8 o'clock by Professor Leonard Hill, F.R.S., and followed by an open discussion.

AT a meeting of the Optical Society to be held at the Imperial College of Science and Technology, South Kensington, on Thursday, June 13th, from 5.30 to 10 p.m., experiments, demonstrations, and exhibits will be on view, arranged by the Technical Optics Department of the Imperial College.

THE general board of the National Physical Laboratory, Teddington, will hold its afternoon reception this year on Tuesday, June 18th, when visitors will be received by the chairman, Sir Ernest Rutherford, O.M., President of the Royal Society, at 3 o'clock.

A CLINICAL meeting will be held at the East London Hospital for Children, Shadwell, E., on Wednesday next, June 12th, at 4.15 p.m., when a discussion on neurological diagnosis in children will be followed by a demonstration of cases of interest in the wards. Tea will be served at 4 p.m.; all practitioners are cordially invited.

A PUBLIC lecture on some aspects of protoplasmic membrane will be given in the department of anatomy and embryology of University College, Gower Street, W.C.1, by Professor Robert Chambers of the department of biology, Washington Square College, New York, on Monday next, June 10th, at 5 p.m. The chair will be taken by Professor J. P. Hill, F.R.S. The lecture is open without fee to students and others interested in the subject.

THE following lectures in the series for the M.R.C.P. course arranged by the Fellowship of Medicine will be given at the Medical Society, 11, Chandos Street, Cavendish Square, at 8.30 p.m.: Tuesday, June 11th, Dr. Bernard Myers, on the differential diagnosis of splenomegaly, with the treatment of the diseases concerned; Friday, June 14th, Dr. L. S. T. Burrell, on bronchiectasis, abscess of lung, and empyema. A lecture will be delivered at the Queen Mary's Hospital, Stratford, E.15, on June 12th, at 2.30 p.m., by Dr. A. A. Osman, on debility in children and adults. An aural clinical demonstration will be given at the Royal Ear Hospital, Huntley Street, W.C.1, on June 13th, at 2 p.m., by Mr. E. A. Peters. A course in ophthalmology is in progress at the Royal Westminster Ophthalmic Hospital, Broad Street, Holborn; it includes lectures and clinical work every afternoon. At the Chelsea Hospital for Women, Arthur Street, there will be a course in gynaecology from June 10th to 22nd, and a special whole-day course in diseases of the chest will be held at the City of London Hospital for Diseases of the Heart and Lungs from June 10th to 22nd. Three courses will begin on June 24th—namely, one in general medicine and surgery lasting a fortnight at the Prince of Wales's Hospital, Tottenham, and another of the same duration in diseases of children at the Children's Clinic and associated hospitals. The third course, which is in proctology and lasts for one week, will be held at St. Mark's Hospital, City Road. Copies of syllabuses for all courses, the complete list of special courses for 1929, and information on general post-graduate work is obtainable from the secretary of the Fellowship, 1, Wimpole Street, W.1.

THE Medical Research Council has issued a report (No. 132) on the early treatment of syphilis, embodying a survey of records from St. Thomas's Hospital by Colonel L. W. Harrison. Two points of special interest in it are: a reference to the diversity of individual responsiveness to treatment; and the apparent increase in liability to subsequent neuro-syphilis when arsenobenzene compounds are used in the earlier weeks of treatment without mercury or bismuth. Detailed reference will be made to this report in our next issue.

THE Council of Epsom College will shortly award a Sir Walter Buchanan Scholarship, the value of which is about £38 a year. The rule fixed by the founders of the scholarship is as follows: The Sir Walter Buchanan Scholarship is primarily intended for the sons of deceased or prematurely invalided officers of the Indian Medical Service, or, failing any such candidates, for the sons of legally qualified medical men of pure British parentage in necessitous circumstances who have practised medicine for at least five years in India. Forms of application can be obtained from the Secretary, Mr. J. B. Lamb, 49, Bedford Square, W.C.1.

THE nineteenth French congress of legal medicine will be held in Paris from June 24th to 26th under the presidency of Professor Sorel, when the following subjects will be discussed: sudden death, introduced by MM. Hoger-Gilbert of Brussels and Laignel-Lavastine of Paris; cruelty to children, introduced by MM. Parisot and Caussade of Nancy; the pre-nuptial certificate, introduced by MM. Vervaeck of Brussels and Leclercq of Lille; and the responsibility of epileptics, introduced by M. Collier of Paris. Further information can be obtained from M. Piédelièvre, 24, Rue Gay-Lussac, Paris.

THE International Labour Office has published nine leaflets, Nos. 141 to 149, dealing with calcium and calcium carbide; synthetic camphor; canning and food-preserving industries; cantharides and carbanilide; cements; chlorates and alkaline chlorites; chloroform, chlorpicrine, chromium and chromates; cocaine, cochineal, codeine, colcothar, and colocynthine; and copper boiler-making. They may be obtained from the director of the London office of this organization, 12, Victoria Street, S.W.1.

A NEW quarterly periodical has appeared under the title of *Archives de l'Institut Prophylactique*. The editor, Dr. Arthur Vernes of Paris, contributes to the first number—January to March, 1929—a review of the campaign against syphilis. There is also a joint paper by him and Drs. R. Brico and A. Gager on some experimental work in relation to the serological diagnosis of cancer. The periodical is published by Masson et Cie; the price for countries outside France is 40 fr. for the year.

THE recently published fourth volume of transactions of the Kaiser Leopold Academy at Halle contains papers by twenty-three members from North, Central, and South America, and is dedicated to Professor William Welch of Johns Hopkins University.

MR. ISIDORE D. MORRISON of New York has made a gift of £20,000 and a promise of £2,000 a year for the establishment of an ophthalmic institute at the Hebrew University in Jerusalem.

DR. R. W. MacKenna and Dr. G. C. Mort have been appointed to the Commission of the Peace for the City of Liverpool.

DR. C. H. DURRANT, chief medical officer of the St. Kitts-Nevis Medical Service, has been appointed an official member of the Legislative Council of the Presidency of Saint Christopher and Nevis.

DR. ABRAHAM FLEXNER, director of the Department of Educational Studies of the International Education Board in New York has been elected a doctor *honoris causa* of the Medical Faculty of Berlin.

PROFESSOR ROUSSY and Dr. Lesné have been elected members of the Académie de Médecine.

TESTIMONIAL TO SIR RONALD ROSS.

CONTRIBUTORS TO THE APPEAL FUND.

IN the *British Medical Journal* of May 11th (p. 879) we published a letter from Sir James Barr and others informing our readers that a fund, called the Ross Award Fund, was being started in order to give some recognition to Sir Ronald Ross for his discoveries on the mode by which malaria is carried, and for his lifelong efforts regarding the prevention of that disease. The letter stated that donations should be sent to Lloyds Bank, Ltd., 110, High Street, Putney, S.W.15, cheques to be crossed "Ross Award Fund a/c." The fund was opened with a sum of £344 13s. 6d., subscribed spontaneously by American friends and some personal friends of Sir Ronald Ross in England. The names of these subscribers are printed below, together with a list of donors whose contributions were received up to May 17th. On that date the total amount received was £2,490. The list published below does not include anonymous contributors or contributors whose initials only have been supplied.

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QUERIES AND ANSWERS.

PRODUCTION OF IMMUNITY TO TUBERCULOSIS.

DR. GRIFFITH EVANS (Carnarvon) writes to ask whether the tuberculin recommended by Dr. Nathan Raw (*British Medical Journal*, May 25th, p. 950) is available for general use, and, if so, where it can be obtained.

*** We referred this inquiry to Dr. Nathan Raw, who informs us that the vaccine is prepared and standardized by Messrs. Allen and Hanburys, Vere Street, W.1, from cultures supplied from Dr. Raw's laboratory in the University of London.

INTRACTABLE DIARRHOEA IN A DIABETIC PATIENT.

DR. E. MCPHERSON (Glasgow) writes: "R. M.'s" patient (June 1st p. 1023), in all probability, is suffering from hypochlorhydria, with over-rapid emptying of the stomach, a condition which, by means of gastric analyses, I have found to be present in a large proportion of diabetic patients. Many such cases show marked improvement on the administration of dilute hydrochloric acid; 45 minims or more may be taken in a glass of water with each meal. The fluid, which most diabetic patients learn to enjoy as a refreshing drink, should be sipped slowly during and after the meal. The treatment may be continued for prolonged periods, with or without insulin administration.

DURATION OF LIVER TREATMENT OF PERNICIOUS ANAEMIA.

DR. F. L. RIGBY (Preston) writes: In reply to "W. L." (June 1st, p. 1023), who asks for advice regarding treatment of pernicious anaemia, I may say that, as a sufferer two years ago, when the useful effect of liver was not known, I went into a hospital for transfusion, which was given to me. During my stay there the new treatment became known, and at first a strict liver diet was prescribed, but, as time went on, I found that smaller quantities would suffice, and I am now able to keep a perfectly healthy blood picture by taking about 2 oz. of fried liver with bacon three times a week. While on the strict diet I found the monotony adequately relieved by all kinds of vegetables, sauces, mushrooms, etc., served with the liver. I believe that it is wise to press forward with the ingestion of liver for the sake of its further effects. The nervous troubles (paraesthesia) are, I am sure, gradually relieved by it. I have taken very little "extract," using almost always the actual liver itself, cooked or raw (minced), and served in various ways.

INCOME TAX.

Cessation of Practice: Cash Basis.

"A. B." relinquished his practice last July. His liability up to that date was settled on the cash receipts basis, but he has, of course, subsequently received payment of fees for work done prior to retirement.

*** He is not liable to account for income tax on the fees so received. Income tax is assessable on earnings, whether actually received or not, and his past payments of tax—calculated for convenience on the basis of cash receipts as being over a period of years equivalent to the value of the annual bookings—have covered the whole of his liability. Incidentally his successor will, no doubt, be denied the convenience of the cash basis for his first two or three years—that is, until his annual cash receipts have caught up to the value of his bookings.

Change in Partnership: Cash Basis.

"NOMONE" acquired a share in a partnership as from January 1st, 1928, and inquires as to the method of dealing with his liability.

*** He will have to account for tax on the full amount of his earnings, whether received by him in cash or not, and will not obtain the benefit arising from the operation of that principle until he leaves the practice and then has cash receipts on which he will then already have accounted for income tax.

Depreciation of X-Ray Apparatus.

"RADIO" has been allowed depreciation in respect of his *x*-ray apparatus since 1926, but only at the rate of 5 per cent. Should he have received a larger allowance, and, if so, can he claim for past years?

*** We consider that 10 per cent. at least should be allowed. On a written-down basis it would take twelve years to reduce the value from 100 per cent. to 24 per cent. at that annual rate. "Radio" cannot claim in respect of past years, but should be careful to make a claim for obsolescence if and when he replaces the apparatus, because he will then obtain a larger allowance than he would have done if the higher rate of depreciation had been applied.

Depreciation of Car: Balance Sheet.

"A. E. B." has been advised by his accountant that the depreciation allowance will be given "only where a balance sheet is prepared for the inspector of taxes."

*** We understand that this requirement is usual in the case of manufacturing or trading concerns, but it is not applied to professional profits (the result of personal earnings), and we do not think that the inspector in question is at all likely to require a balance sheet.

Renewal of Car: Improvement.

"W. A. T." bought an F car in 1920 for £404, and sold it in 1928 for £10, when he bought a car of superior grade for £321. He has claimed as an expense £321−£10=£311 (less a deduction in respect of private use), but the inspector of taxes claims to make a further deduction of £80.

*** The £80 presumably is intended to represent that portion of the outlay which went in improving rather than replacing the car equipment. "W. A. T." is entitled as an expense to the amount which would have been incurred in replacing the old car with one of similar grade; anything over that amount is capital expenditure. This may seem harsh, but it arises from the fact that the present price level for cars is below that of 1920, and the converse was the case as regards replacements effected during the high-price period.

Motor Car Transactions.

"R. M. L." has bought two new cars, one at £275 and one at £152, selling for £50 his former car, bought in 1922 for £625. He has throughout been allowed depreciation in respect of this car. What claim should he make?

*** (1) Obsolescence allowance—that is, £625−£425−£152=£48. The £425 is apparently the total amount of depreciation allowance received by "R. M. L." for the financial years 1923-24 to 1929-30 inclusive. (2) Depreciation allowance for 1930-31 on the new cars—that is, £275+£152=£427 at 15 per cent.=£64.

N.B.—"R. M. L." does not state the date to which his professional account is prepared for income tax purposes; we have assumed that the car transaction took place after the closing date of his account for 1928—for example, after March 31st, 1929, if the account is usually prepared to the end of that month.

LETTERS, NOTES, ETC.

POISONING FROM EXHAUST FUMES.

"M.R.C.S." writes: Referring to the note of "M.D., B.S." in the *Journal* of April 20th (p. 752), describing a case of exhaust gas poisoning, it would appear that still another clinical entity will have to be added to the already complicated list of "compensation" disorders. I had a similar case a few weeks ago. The patient was a driver of a motor lorry doing long distances—namely, regular and frequent runs in the road goods service between Newcastle-on-Tyne and London. The story was that there had been complaints to the owners of the lorry with reference to a defective exhaust pipe leaking under the driver's cab. The pipe was not repaired, and on a journey to London the driver had found himself one night, returning from unconsciousness, in a ditch by the wayside. He had apparently been "gassed" to the extent of losing control of his lorry. He was attended to in a local hospital, and returned North in a few days with the same lorry. On reaching Newcastle-on-Tyne he was ill and half collapsed, and obliged to go sick. The outstanding feature of his illness was an acute hyperemesis of three days' duration. He was incapacitated for no less than six weeks, a fact which caused great trouble on account of compensation claims. Employers are naturally reluctant to ask the companies with which they have their men insured under the Compensation Acts to pay compensation money in cases which appear on the surface ordinary national health insurance cases. If these cases of "exhaust gas poisoning of motor drivers" become more frequent, it will be necessary to decide whether they should be dealt with under the provisions of the National Health Insurance Acts or under the Workmen's Compensation Acts. Of similar significance is the stomach trouble found in some of the coal-fields among the miners who use large quantities of explosives to loosen the coal and facilitate its removal and separation from stone. To this "powder reek gastritis" is now added in some mines, where intensive coal-cutting by machines is in vogue, a severe irritation of the mucous membranes of the throat and lungs by the inhalation of mixed coal and stone dust.

ASPIRIN, PHENACETIN, AND DOVER'S POWDER.

DR. J. I. KUIT (Piet Retief, Transvaal) writes: In your issue of [illegible] (p. 628) Dr. Tressie Pires, when writing about aspirin, [illegible] powder for influenza, asks what [illegible] en. I have used this powder for about five years now, ever since I first saw the prescription in your columns. The effect in all forms of fever is good and in some cases almost magical. As a matter of fact, locally the people go to the chemist of their own accord to ask for "flu powders." The claim that was made for it originally, that it would cut short an incipient lobar pneumonia, I can fully endorse. The prescription was aspirin 5 grains, phenacetin 5 grains, pulv. ipecac. co. 5 grains. For children I give 2 to 5 grains, according to age—that is, from 2 years upwards.

TREATMENT OF ASTHMA.

DR. ROLF CREASY (London, W.) writes: Among the treatments proposed for asthma I have not seen any reference to static electricity. I would venture to suggest that great benefit is often derived from this method, which, within the last year or two, has been considerably enhanced by the combined use of infra-red rays. The aim of this treatment is restoration of a healthy condition of the respiratory tract.

MAP OF ROMAN BRITAIN.

DR. J. P. WILLIAMS-FREEMAN'S article in the *Journal* of May 18th (p. 922) on the new edition of the Ordnance Survey "Map of Roman Britain" has brought us inquiries from several readers. We understand that copies of this map can be obtained from H.M. Ordnance Office, Southampton, or through any of the leading booksellers in large towns.

A WARNING.

WE are informed by the superintendent of the Kent County Constabulary that the person described in the paragraph which appeared under the above heading in last week's issue (p. 1024) has been arrested, and on May 31st was remanded in custody for one week.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 73, 74, 75, 78, 79, 80, and 81 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 76 and 77.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 227.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

546. Hyperthyroidism and the Sympathetic Nervous System.

LEMOINE (*Le Scalpel*, April 20th, 1929, p. 421) remarks that it has been demonstrated that iodine is not necessary for the maintenance of the physiological activity of the thyroid, and that the effects of thyroid administration are due to the whole gland and not to any one of the isolated iodized substances—namely, iodothyrin, *thyroglobulin, and thyroxin.* After discussing the pathological anatomy of the gland and the effects on basal metabolism of intravenous injections of its total extract, the author states that all experiments indicate the importance of the thyroid in the nutritive exchanges, and that, though other endocrine glands are factors, it is usual to attribute variations in these exchanges to variations in thyroid functioning. According to his conclusions basal metabolism represents the activity of the organic sympathetic system, since it expresses the minimum output of energy necessary for the maintenance of life. The injection of thyroid extract causes a disequilibrium either of the sympathetic or the parasympathetic, or of both together, single injections producing hyper-excitability of the vagus, while after repeated injections symptoms of hyper-sympathicotomy appear. Each viscus possesses a sympathetic innervation, and this system includes automotor visceral ganglia and extra-visceral nerves. The ganglia ensure the automatic functioning of the organs and lie in their walls, while the nerves are connected with the sympathetic axial centres. Each organ has a double and antagonistic innervation from the central sympathetic and from the parasympathetic, each of which systems possesses an absolute and a relative tonus. Thus normal cardiac rhythm represents the relative tone of the heart and expresses the vago-sympathetic balance of that organ. The blood contains many substances, such as adrenaline and choline, which stimulate both systems and maintain the respective tonus of each; thus functional equilibrium is preserved. Changes in the composition of the blood modify this equilibrium, and the function of the internal secretions is to produce these changes. The author thinks it probable that changes in the thyroid and parathyroid secretions cause the sympathetic symptoms of exophthalmic goitre and tetany. Lemoine maintains that the absolute and relative tonus of the sympathetic nerves should be ascertained in these conditions, this giving valuable indications as to treatment. Hypertony with marked sympathetic predominance justifies operation on the sympathetic. Two cases of exophthalmic goitre are cited in which cure was effected by resection of the right upper cervical and left stellate ganglia, and in which the absolute tonus of the sympathetic was normal or increased, while that of the parasympathetic was entirely reduced.

547. Endemic Cretinism.

F. DE QUERVAIN (*Lyon Chir.*, [illegible] 1929, p. 5) points out that endemic cretinism and endemic goitre and is also allied to a f... of the thyroid gland, though all its manifestations are not explained by a simple hypothyroidism. In endemic cretinism, as in hypothyroidism, a lowering of the basal metabolism is found; also a slackening of all the vital functions, with arrested growth and a reduction of the cerebral functions. There are two types of cretin—those with or without goitre. The latter type, in which from birth or early infancy the children suffer from reduced thyroid activity, is sporadic rather than endemic, while goitrous children benefit during adolescence from the administration of thyroid gland, and may grow to a more normal height than the endemic cretin who has no goitre. The mentality of the cretin is usually childlike, optimistic, and contented, but the intellectual level is very low. Heredity is an important factor in cretinism, though it has not been determined whether it is due to insufficiency in the paternal or maternal parent. It is of interest to note that the skeleton of the cretin has many points in common with the primitive races of mankind, and is also very liable to develop disorders of nutrition, such as Perthes's disease of the head of the femur, osteochondritis dissecans of the condyles of the femur, with the formation of free bodies in the joint and early types of arthritis deformans. Where possible those children afflicted with complete or partial cretinism should be educated in special schools and afterwards segregated in homes where they are only required to do light work in the house or out of doors. Treatment should comprise the administration of thyroid gland extract by mouth, or by injection, or the grafting of a healthy thyroid gland, but complete recovery is not possible. It has lately been suggested that iodine incorporated with the diet may be a preventive method of reducing the number of cretins which, in certain districts, has not decreased in the last forty years. The most simple method of administering this is in the salt used for cooking, the average amount being about 5 mg. of potassium iodide per kilogram of salt, and may be given to the whole population of a cretinous district. At least twenty years would have to elapse before results could be judged.

548. Epididymitis following Typhoid Fever.

G. GREENBERG and M. GREENWALD (*Journ. Amer. Med. Assoc.*, March 23rd, 1929, p. 983), who report a personal case, state that while epididymitis in the course of or in convalescence from typhoid fever is rare, only 102 cases having been reported up to 1909, no previous example had been published of a case which developed four years after typhoid. Their patient was a man, aged 58, who contracted typhoid fever in 1924, complicated by cholecystitis. A year later he had another attack of cholecystitis of a week's duration. For the two years following the attack of typhoid the stools yielded positive cultures, but subsequently became negative. In December, 1927, he had another attack of cholecystitis which lasted only a short time. In October, 1928, he had a fourth attack, and, after subsidence of the gall-bladder symptoms, developed acute epididymitis on the right side. The Widal reaction was positive in 1 in 100, but the stools were negative. Of the 102 cases of epididymitis on record, 17 developed during the height of the fever and 71 in convalescence, while in the remainder the time was not recorded. In 31 the testes alone, in 10 the epididymes alone, and in 43 the epididymes, testes, and cord were involved. Suppuration occurred in 22 instances, and in many cases atrophy of the testes followed. The authors recall that Widal recovered the typhoid bacillus from the testes in many cases of typhoid fever at necropsies.

549. Toxin-antitoxin and Hypersensitiveness to Therapeutic Serum.

J. E. GORDON and S. M. CRESWELL (*Journ. Preventive Med.*, January, 1929, p. 21), as the result of studying 1,556 consecutive cases of diphtheria, of which 283 patients had received toxin-antitoxin, 90 had had previous injections of serum, and 1,183 gave no definite history of injections of horse serum, came to the following conclusions. The majority of persons immunized with toxin-antitoxin mixtures (74.1 per cent.) had serum reactions after subsequent therapeutic serum, as compared with only 18 per cent. of persons not so sensitized and 43 per cent. of persons who had had previous injections of serum. One dose of toxin-antitoxin produced a sensitizing effect comparable to that indicated by a single dose of serum (42.1 per cent.). Reactions from therapeutic serum given after toxin-antitoxin were generally more severe, and included more immediate reactions than after previous serum injections, while reactions in non-sensitized persons were the mildest in type.

Surgery.

550. Lumbo-sacral Backache.

C. E. AYERS (*New England Journ. Med.*, March 21st, 1929, p. 592) illustrates this subject with a series of *x*-ray photographs and reproductions of dissections, and gives an account of 36 cases treated by immobilization of the lumbo-sacral joint by Hibbs's method. The author considers that pathological conditions of the lumbo-sacral joint constitute a more important cause of backache than those of the sacro-iliac joint, and he emphasizes the following anatomical points. (1) There is here a junction between the freely mobile spine and the fixed sacrum. (2) There is a variable "shearing force" according to whether the superior surface of the sacrum is more vertical or horizontal. (3) The articulation in this region (as apart from the synchondrosis) is by two bony facets, the shape of which is liable to alteration by strains; there is, hence, a liability to injury of the fifth (and largest) nerve root, which lies anteriorly to the posterior articulation between the fifth lumbar vertebra and the sacrum. The space between the articular facet and the intervertebral disc is only just large [illegible] the emergence of the nerve

(4) A considerable length of the nerve trunk is unprotected by the arachnoid. Since the publication of an earlier paper in 1927 Ayers has had replies to a questionary from 36 patients treated by operation, and has made a careful analysis of clinical findings, *x*-ray results, and post-operative progress. He considers that the classical signs of lumbo-sacral disease are: a "list" to the affected side; tenderness at the lumbo-sacral junction, unless masked by contraction of the erector spinae; tenderness over the back of the trochanter in the region of the gluteal fold; burning pain felt down the outer side of the thigh, corresponding to the tensor muscle, and, in the severer cases, down the outer side of the calf and beneath the external malleolus to the dorsum of the foot. Backache was present in all Ayers's 36 cases; in 17 there was pain down one leg, and in 4 cases there was pain down both legs. In all cases *x*-ray examination showed either arthritic changes in the articular facets or thinning of the intervertebral cartilage (the latter in 26 cases). In one case there was sacralization of the fifth lumbar vertebra and arthritic changes in the fourth and fifth lumbar facets. Immobilization was always performed by Hibbs's method of arthrodesis between the articular facets of the fifth lumbar vertebra and the sacrum, and also between the fourth and fifth lumbar vertebrae if arthritic changes were present. After ten days in bed without any appliance the patients were fitted with a plaster jacket, a pelvic belt, and straps to secure backward rotation of the pelvis, and so to bring the upper bearing surface of the pelvis as near the horizontal plane as possible; after another six weeks a spring "back-brace" to include the shoulders was fitted. In 13 cases relief from all pain was immediate; in 4 it was found in three to six weeks; in 15 in three to six months; and in 2 in one year. In only one case was no relief at all obtained. No patients operated on before January, 1928, are included in the series; 27 of the patients are engaged in work as hard or harder than before, and 8 in lighter occupations. Ayers lays particular stress on the frequency with which pain typical of "sciatica" was complained of before operation.

551. Latent Cancer.

F. G. GADE (*Norsk Mag. f. Laegevid.*, April, 1929, p. 354) states that during the period 1908-27 in 1,618 necropsies at Oslo City Hospital malignant tumours were discovered. Of these, 183, or 11.4 per cent., were casual findings, and had not been diagnosed during life, while 154 were *carcinomata* with the following distribution: stomach (76 cases), intestine (23 cases), prostate (13 cases), liver and gall-bladder (10 cases), uterus (8 cases), pancreas (7 cases), oesophagus (6 cases), lungs (6 cases), bladder (2 cases), various sites (3 cases). Of the other growths, 5 were gliomata, 1 [illegible] and 6 sarcomata. It was a remarkable [illegible] cent. of the latent cases were found in men, though cancer in Norway is usually preponderant in women. Gade concludes that the return of deaths from cancer in Norway as given in the official statistics should be somewhat increased to give a correct impression of the incidence of the disease in that country, first by 12 per cent. to represent the latent cases, the number of which is likely to be greater away from cities and hospitals, and, secondly, by a figure ranging from 0.8 to 16.7 per cent. to express the percentage of deaths of which the cause was unknown in the rural parts of each county.

552. Surgical Treatment of Quinsy.

D. DE LAMOTHE (*Arch. Int. de Laryngol.*, February, 1929, p. 216) emphasizes the difficulty of successfully opening a peritonsillar abscess when complicated by trismus, and claims that all such cases should be operated upon under general anaesthesia. He describes his own technique, which, he states, has always been successful in his hands. The author inserts a closed Doyen gag between the teeth, and induces anaesthesia with ethyl chloride. The mouth is then widely opened and the throat examined with reflected light. In this way the exact position of the abscess can be seen and the most favourable position for incision selected. Before incision the patient's head is strongly turned to the side opposite to the abscess, and in this position the author claims that no pus or blood can enter the air passages.

553. Recklinghausen's Disease.

L. FECI (*La Chir. degli Organi di Movimento*, January, 1929, p. 235) publishes two cases of this disease, one generalized and the other localized. The main features of the disease are brown tumours, pseudo-cysts, bony deformity, and hyperostosis; of these the cysts are the most characteristic element, hence the great importance of radiography in the diagnosis of these cases. The author discusses fully the differential diagnosis from Paget's disease, osteomalacia, and late rickets. Paget's disease attacks older people, frequently [illegible] the cranium, and is often associated with calcified [illegible]; moreover, the radiographic appearance is very different. The localized form has to be distinguished from new growths such as sarcoma or enchondroma, and from abscess or myeloplaxic tumours. As regards etiology, Feci remarks that trauma will not explain multiple cysts, and of the various theories put forward the only one he is inclined to accept is that which is based on changes of calcification of the bone due to defects in the circulation. In one case a weak culture of *Staphylococcus albus* was made from material removed from the bone, but the patient showed no signs of inflammation and her temperature was never above the normal.

Therapeutics.

554. Gold Salts in Lupus.

W. COLE (*Canadian Med. Assoc. Journ.*, April, 1929, p. 372) observes that, though Koch discovered in 1890 the inhibiting effect of gold compounds in high dilutions on the growth of tubercle bacilli, the use of these substances in the treatment of lupus is comparatively recent. The gold salt most commonly used in this dermatitis is gold and sodium thiosulphate, and the results obtained by various authors are cited. Cole reports a case of typical lupus erythematosus in which complete cure was obtained by the use of this drug. The condition commenced in 1917, and, despite treatment with the quartz lamp, carbon dioxide snow, and *x* rays, gradually grew worse during the following ten years. Gold treatment by intravenous injections of sanocrysin was then instituted, the initial dose being 50 mg. After five months the eruption completely disappeared, the nose is practically well, and normal sensation has returned over the whole area previously involved. The patient received eighteen 50 mg. doses and ten of 100 mg. of sanocrysin. No general reaction occurred after the fourth dose, and at no time was there any immediate severe reaction. The general condition was excellent throughout treatment, which evidently had a tonic effect. In contrast with this, J. F. BURGESS (ibid., p. 392) reports a case of lupus erythematosus in which this salt produced no benefit, but a local activation and acute extension of the disease followed its administration. The drug was therefore discontinued, and intramuscular injections of a 3 per cent. solution of sodium morrhuate substituted for it with striking results. In four months the lesions completely involuted, leaving a mild pigmentation at the side of the plaques and a fine atrophy in some of the older, thicker areas. The initial dose of 0.5 c.cm. was gradually increased to 3 c.cm.

555. Quinine in Pneumonia.

LOLITA M. FLEWELLING (*Med. Journ. and Record*, April 17th, 1929, p. 446) calls attention to the prophylactic and therapeutic action of quinine in pneumonia. By the comparatively painless intramuscular injection of a preparation containing a 3 per cent. oily solution of quinine with camphor and the terpenes a means is afforded of administering basic quinine alkaloid. Within a few minutes of the injection a marked odour of terpenes appears in the breath, pointing to the fact that the drug is conducted to the lungs, where it exerts a considerable antibacterial effect. The author's experience confirms the suggestion that the concentration of quinine in the lungs by such methods is capable by its antibacterial effect of producing favourable reactions in infections and even in tuberculosis; it is said to be of considerable value in prophylaxis and treatment in the earliest types of broncho-pulmonary infection, especially those occurring in influenza. From experience in 27 cases of acute influenzal broncho-pulmonary infections treated with such intramuscular injections it was found that the majority of patients began to improve clinically with the initial dose, and so uniform were the results that a fall in the temperature was the rule after the first injection. These observations agree with those of other observers, and the author hopes for further investigation of the method both as a prophylactic against pneumonia and in the treatment of pulmonary infections.

556. Radiotherapy for Acute Epidemic Encephalitis.

U. NUVOLI (*Il Policlinico*, Sez. Med., April 1st, 1929, p. 177) has treated eighteen cases of epidemic encephalitis in the acute stage with *x* rays. The author finds that to obtain good results the treatment should be commenced as early as possible; the best results were obtained in those cases which were subjected to the *x*-ray therapy within the first fifteen days of the disease; probability of success is lessened if treatment is delayed for a month, and the chances of complete cure are greatly diminished if the lesions are severe. Strong doses were employed—a spark equivalent to 40 cm., an intensity of 2 milliamperes, filtered through 0.5 mm. of zinc and 4 mm. of aluminium, and a focal distance of 23 cm. Having determined the size of the lesion, the radiations were

made to converge as near as possible towards the basal ganglia of the mesencephalon, and to a number of areas 4 by 4 cm. each was administered three-fourths of the erythema dose. The convergence of the rays to the mesencephalon is attained by suitable inclination of the tube to each area. Immediately after the radiation the subjective symptoms are aggravated; there is intense headache, severe vomiting, and raised temperature which persists for five to six days, but need not arouse anxiety. After these more or less severe manifestations have passed the patient commences a gradual and continuous convalescence.

557. Carbon Dioxide Therapy in Hypostatic Pulmonary Congestion.

R. E. BURNS and W. S. MIDDLETON (*Amer. Journ. Med. Sci.*, April, 1929, p. 564) report that in cases of hypostatic pulmonary congestion occurring in the aged and debilitated, as the result of the depressed respiratory motility, the intermittent inhalation of carbon dioxide brings about apparent relief if it is used sufficiently early. The rate and duration of the administration are controlled by the respiratory response and the comfort of the patient. The authors remark that it is important to distinguish between pulmonary stasis resulting from respiratory depression and that which is dependent upon the failure of the right side of the heart, since the use of carbon dioxide inhalations might be strongly contraindicated in the latter condition. Moreover, these inhalations are inadvisable when bronchitis or pneumonia is present, since they may lead to dissemination of infection. The authors suggest that it seems possible that there is some prophylactic value in these inhalations which might well be remembered in any surgical cases which seem to require them.

558. Protein Therapy in Psychoses.

ACCORDING to A. J. ZÁVODNY (*Bratislavské Lekarské Listy*, April, 1929, p. 266), many cases of psychosis are caused by toxicoses, anomalies of the metabolism, and disorders of the endocrine functions. On this assumption he tried injections of typhoid vaccine in twenty cases of general paralysis and in eighty cases of other psychoses with considerable success. The author states that several patients with psychoses were clinically cured, and he adds that in general paralysis the results were as good as those of the malaria treatment. The author attributes the beneficial effects to the active hyperaemia which follows the treatment, increasing the endocrine activity, and favouring detoxication and consequent regeneration of the affected cerebral parenchyma.

Disease in Childhood.

559. Spasmophilic Infantile Convulsions.

P. FONTEYNE (*Le Scalpel*, April 27th, 1929, p. 441) states that infantile spasmophilia or tetany chiefly occurs between the ages of 3 months and 2 years, though cases are sometimes observed in nurslings and at puberty. In primary tetany of the second and older infancies a constitutional neuropathic state is much more evident than in that of nurslings, and thus there is a distinction between the two forms. The latter, the most frequent and often complicated by convulsions, is alone dealt with. Infantile tetany is observed particularly during winter and spring, and seems to have a predilection for the Teutonic and Anglo-Saxon races. As in adult tetany, the infantile form is characterized by a hyper-excitability of the nerves, which is manifested by various isolated or associated symptoms, such as general, or more often localized, muscular contractions; glottic spasm; gastric spasm; and general or partial convulsions. Various pathogenic factors have been suggested as the cause of spasmophilia, including hypocalcaemia, toxins, solar deficiency, and avitaminosis D. A diminution of the blood calcium has often been noted in this disease, and, as tetany is almost always associated with rickets, a disturbance of calcium metabolism is apparently a cause. The occurrence of the malady in poorly nourished infants and in those with gastro-intestinal troubles supports the toxic theory. In spasmophilia the convulsions occur unexpectedly and without apparent cause. Two pathognomonic symptoms are glottic spasm and the sign of Chvostek, which consists in a contraction of the peribuccal muscles and even of all the muscles of homonymous hemi-face or of the entire face obtained by percussion of the facial nerve midway between the otic lobule and the labial commissure. Other signs, such as those of Schultze and Weiss, are mentioned. Electrical reactions are obtained with weaker currents than normally, and a state of chronaxy, characterized by unstable nervous excitability, exists. The prognosis is usually good, though certain authors affirm that infantile tetany predisposes to epilepsy. The most efficient treatment consists in the administration of large doses (6 to 8 grams in 24 hours) of calcium chloride, and in a basic treatment with ultra-violet rays. This may be supplemented with pure, non-medicated cod-liver oil, and good hygienic conditions should be maintained. In urgent cases the usual sedatives (bromides, chloral, gardenal) have been found less effective than calcium salts. The irradiated stearines have also been of little avail in the general treatment.

560. Diabetic Children.

BASING their deductions on an extensive study of diabetic children, E. P. JOSLIN and PRISCILLA WHITE (*Journ. Amer. Med. Assoc.*, January 12th, 1929, p. 143) state that diabetes may be latent in the ancestor when it has appeared in or caused the death of the offspring, and that all diabetes in children may be hereditary; the incidence of a diabetic heredity increases with the duration of the disease and the number of relatives. In twenty-two months the total mortality among 303 diabetic children was 6, or 1 per cent. a year. Coma is almost the only cause of death, and represents neglect. With insulin (10 to 40 units every half-hour until the urine is nearly sugar-free), with gastric lavage for a dilated stomach, salt solution by the rectum, subcutaneously or intravenously, and caffeine for the heart, coma should be averted or conquered. The present condition of the surviving children is good, but those in whom the disease is of long duration usually show glycosuria, which most commonly appears after breakfast and disappears by noon. The best preventive is to give insulin an hour before breakfast, or, if the urine is not sugar-free on rising, to administer 2 to 5 units on retiring the preceding night. Additional aids are a low carbohydrate content at breakfast and a few minutes' exercise before it. Diabetic children mature sexually, and though one-third of the cases remain underweight, this is due to lack of close supervision, a pretuberculous state, or the onset of the disease before the use of insulin. As regards complications, cataracts have not as yet been recognized, arterio-sclerosis was noted in only 5 out of 29 children with a disease duration of five years or more, and in no case was death due to tuberculosis. Among characteristic features of the disease is excessive height at the onset in contrast to overweight in adults. Diabetic children resist all types of infection if there is proper adjustment of diet and insulin. Confusion between coma and appendicitis is easy and serious; if there is any doubt an operation should be performed. The blood cholesterol, a true index of the other lipoids, is below rather than above the normal. Insulin reactions are distressing but hardly ever fatal, and are far less frequent than might be expected. A child with non-diabetic glycosuria appears to conform to that diagnosis in the vast majority of cases.

561. Dermatitis Gangraenosa Infantum.

MULTIPLE disseminated gangrene of infants is a rare and often fatal infection according to C-K. HU (*National Med. Journ. of China*, April, 1929, p. 149), who reports a case in which *Salmonella suipestifer* was isolated from the blood. The majority of cases of gangrenous dermatitis occur in children under the age of 3 years; it apparently affects the well-nourished as well as under-nourished infants, although lowered vitality has been emphasized as a predisposing factor. Other causes have been suggested by various authors, such as tuberculosis, syphilis, and rickets. The lesions may start as vesicles or papules, followed by scab formation in the centre with ulceration at the periphery. Systemic disturbance with fever, leucocytosis, albuminuria, pneumonia, pulmonary abscesses, and pus in the pleural and pericardial cavities have been observed in different cases. In the present one, a male child, aged 25 months, a transient generalized erythema appeared a few days before the onset. Numerous pustules, abscesses, and ulcers, but no vesicles, were noted, especially on the lower jaw and face, a few being found on the scalp, neck, trunk, arms, and legs. These ulcers were discrete, oval or round, with sharp, perpendicular edges. Most of the ulcers penetrated the whole thickness of the skin. In the centre of each was a gangrenous, dried, and adherent scab with an ulcerated zone, discharging foul-smelling pus, at the periphery. There was practically no inflammatory areola. The blood Wassermann test was negative. General treatment, together with local antiseptic applications, resulted in only temporary improvement, and the patient died in about three weeks. The necropsy revealed a bronchopneumonia with multiple pulmonary abscesses and a few haemorrhagic areas. The condition at first suggested smallpox, but the history and course of the case contraindicated this. Syphilis was seen not to be the cause, and, though it is admitted by Hu that there is no proof that the ulcers were directly due to the organism isolated, yet he thinks that the poor general condition and the bacteriaemia may have been predisposing causes of the dermatitis.

Obstetrics and Gynaecology.

562. Induction of Labour at Term.

M. WIDERA (*Zentralbl. f. Gynäk.*, February 16th, 1929, p. 403) records 44 cases in which an attempt was made to induce labour by the administration of castor oil and pituitary extract. All the patients were at or beyond term, and induction was tried either because of foetal post-maturity or for economic reasons. The cases of foetal post-maturity were mostly those of multiparae whose previous gestations had been abnormally prolonged. In the other cases term had been reached and the patients, being anxious to return to their home duties, sought the clinic that labour might be expedited. The procedure adopted, which consisted in the administration of two teaspoonfuls of castor oil, followed an hour later by quarter- or half-hourly subcutaneous injections of small doses of one or other of the pituitary extracts, was successful in three-quarters of the cases. The advantages which have been claimed for this treatment are that it is devoid of danger for the mother and foetus, that it curtails considerably the duration of labour even in primigravidae, and that the third stage of labour is shortened and relatively devoid of haemorrhage.

563. Spinal Anaesthesia in Artificial Induction.

WEYMEERSCH, POULAIN, WODON, and DE GUCHTENEERE (*Bruxelles-Medical*, April 14th, 1929, p. 579) report observations on a series of thirteen cases in which full-term pregnancy was terminated by manual dilatation and forceps under spinal anaesthesia by the method of Delmas. The conditions present were commencing eclampsia, uterine hypotonus, cardiac insufficiency, twins with hydramnios, and complete breech presentation. The anaesthetic used was scurocaine (3 c.cm. of a 4 per cent. solution on three occasions) and tutocaine in powder dissolved in 3 to 5 c.cm. of cerebro-spinal fluid for the remainder. The anaesthesia obtained was uniformly good. Within ten to twenty minutes the vulva and perineum were very markedly relaxed, and the cervix also became supple usually. In cases where there had been previous infection of the cervix, or in which there was cicatricial tissue, the response of the cervix was not so good. These two conditions appeared to be contraindications since tears were likely to result. Manual dilatation was most easily and rapidly performed when normal dilatation had already started. Hypertonus was noted to a greater or less degree in all cases, and to this condition was due the difficulty of performing version. Out of five attempts only three were successful, and in two of these there was hydramnios, which facilitated manœuvres. The puerperia were without incident. There was one case of foetal mortality due to an infected cervix which was not recognized before the procedure was undertaken. All patients were examined for tears; there was one serious one from the cervix to the fornix, three small lateral cervical tears, two bilateral cervical tears, and two small perineal ones. The authors conclude that the use of spinal anaesthesia for artificial induction is to be advocated, but that the contraindications must be strictly observed.

564. Uterine Scars after Cervical Caesarean Section.

J. P. GREENHILL and B. BLOOM (*Journ. Amer. Med. Assoc.*, January 5th, 1929, p. 21) record a study of the histological characters of old uterine scars. In 37 instances, at the time of a repeated Caesarean section, a piece of tissue was removed from the site of the previous incision in the lower uterine segment; in 16 of these the scar was visible to the naked eye. A control observation was arranged by removing a portion of the lower uterine segment from six patients at the time of a first laparo-trachelotomy. The sections were stained by the Weigert-van Gieson method. The results were divided arbitrarily into four groups: those which showed no scar tissue at all (6 cases); those with undoubted scars in the old incision, but in which the integrity of the uterine wall remained essentially unchanged (21 cases); and those in which the changes were striking and consisted of marked thinning of the uterine wall (5 cases). From a review of the literature on cervical operations and from their own investigation the authors suggest that an anatomically weak scar does not necessarily presuppose inability to withstand the distension caused by pregnancy or the strain of labour. An association was noticed between bad scars and the fact of the patient being in labour at the time of the first operation. Oedema and an appearance of stretching were found in a large number of specimens, and were more marked in the densely fibrous scars. As this appearance was also present in the normal uteri, the authors suggest that it is due to varying degrees of tension exerted on the lower uterine segment before and during labour.

Pathology.

565. Functional Relations of the Spleen and Liver.

G. MONTEMARTINI (*Il Policlinico*, Sez. Chir., February 15th, 1929, p. 70) has examined the effect of splenectomy on the functions of the liver. Employing dogs, he found that splenectomy after the administration of ox bile was in no case followed by the appearance of bilirubin in the blood or urobilin in the urine. Experiments for the estimation of nitrogen metabolism were made on four rabbits and three dogs; after removal of the spleen all the animals showed marked fall in body weight, a diminution of the daily amount of urine passed, an increase in the total nitrogen and urea, a diminution in the nitrogen from ammonia and amino-acids, and an increased nitrogen-urea coefficient. A number of observations on the carbohydrate metabolism demonstrated a rise in the amount of glycogen in the liver and in the alimentary hyperglycaemia. From these experiments and also from clinical observation the author affirms a functional correlation between the spleen and the liver in the sense that the healthy spleen has a regulating action on the various functions of the liver. He concludes that before removing the spleen in the human subject it is necessary to investigate fully the functioning of the liver, especially with regard to the nitrogen and carbohydrate metabolism.

566. Serum Diagnosis of Cancer.

B. GRUSKIN (*Amer. Journ. Med. Sci.*, April, 1929, p. 476) advances the hypothesis that each type of normal cell produces a lysin against other types of cells; that is to say, connective tissue cells normally have the property of generating lysins which are antagonistic to excessive growth of epithelial cells, so that, although an inciting factor may be present, carcinoma does not develop. If this lysin is not produced, cancer results when the proper extrinsic factors are present. The opposite cycle also occurs, and if there is a deficiency or lack of lytic agent normally produced by epithelial tissue, sarcoma will result. Based on this conception of the possible cause of malignant disease, Gruskin believed that a lytic agent might be produced by the inoculation of animals with purely embryonic epithelial cells in the case of carcinoma, and connective tissue cells in sarcoma. In this way amboceptors would be developed in the treated animals, and their serums might have the property, when injected into a patient with malignant disease, to destroy epithelial or connective tissue cells in carcinoma or sarcoma respectively. Having demonstrated the specificity of the amboceptor thus produced, the test was used for diagnostic purposes. The technique of the test when amboceptor was used and its modification with alternative use of antigen is described. Of 138 cases of known malignant tumour, only 3 yielded negative reactions; 369 cases of known non-malignant disease gave 12 positive reactions; and 146 normal cases showed 143 negative and 3 faintly positive results. Gruskin maintains that these results prove the test to be of practical importance in the serum diagnosis of carcinoma and sarcoma.

567. Epizootic Lymphadenitis in Guinea-pigs.

E. MEGRAIL and R. N. HOYT (*Journ. Infect. Dis.*, March, 1929, p. 243) describe an outbreak of epizootic lymphadenitis that occurred in the stock of a dealer. Thirty-five guinea-pigs with unruptured abscesses were received for examination, besides a number with draining abscesses or with scars of healed lesions. The abscesses, which varied from 1 to 6 cm. in diameter, were situated mainly in the anterior cervical region, but in a few animals other regions of the body were affected. On aspiration a thick white pus was obtained, which showed the presence of Gram-positive cocci and degenerated leucocytes, mostly of the mononuclear type. From every animal but one examined streptococci of the β or γ type were found in conjunction with staphylococci; in the single exception streptococci alone were present. Experimental inoculation subcutaneously with pure cultures of the streptococci gave rise to abscess production in from seven to thirty-seven days, and from the lesions streptococci were isolated together with staphylococci. Experimental inoculation with staphylococci failed to cause abscess formation. The authors therefore conclude that the primary cause of the natural disease is a streptococcus, and that staphylococci act merely as secondary invaders. The mode of infection was not ascertained with certainty. Feeding experiments with cultures of streptococci, either with or without concomitant injury to the mouth, and inhalation experiments, failed to reproduce the disease. On the other hand, in a certain number of animals inoculated on the skin by the scratch method typical abscesses developed.

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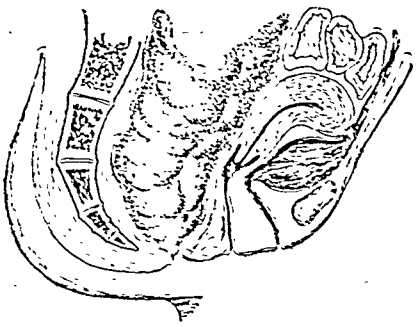

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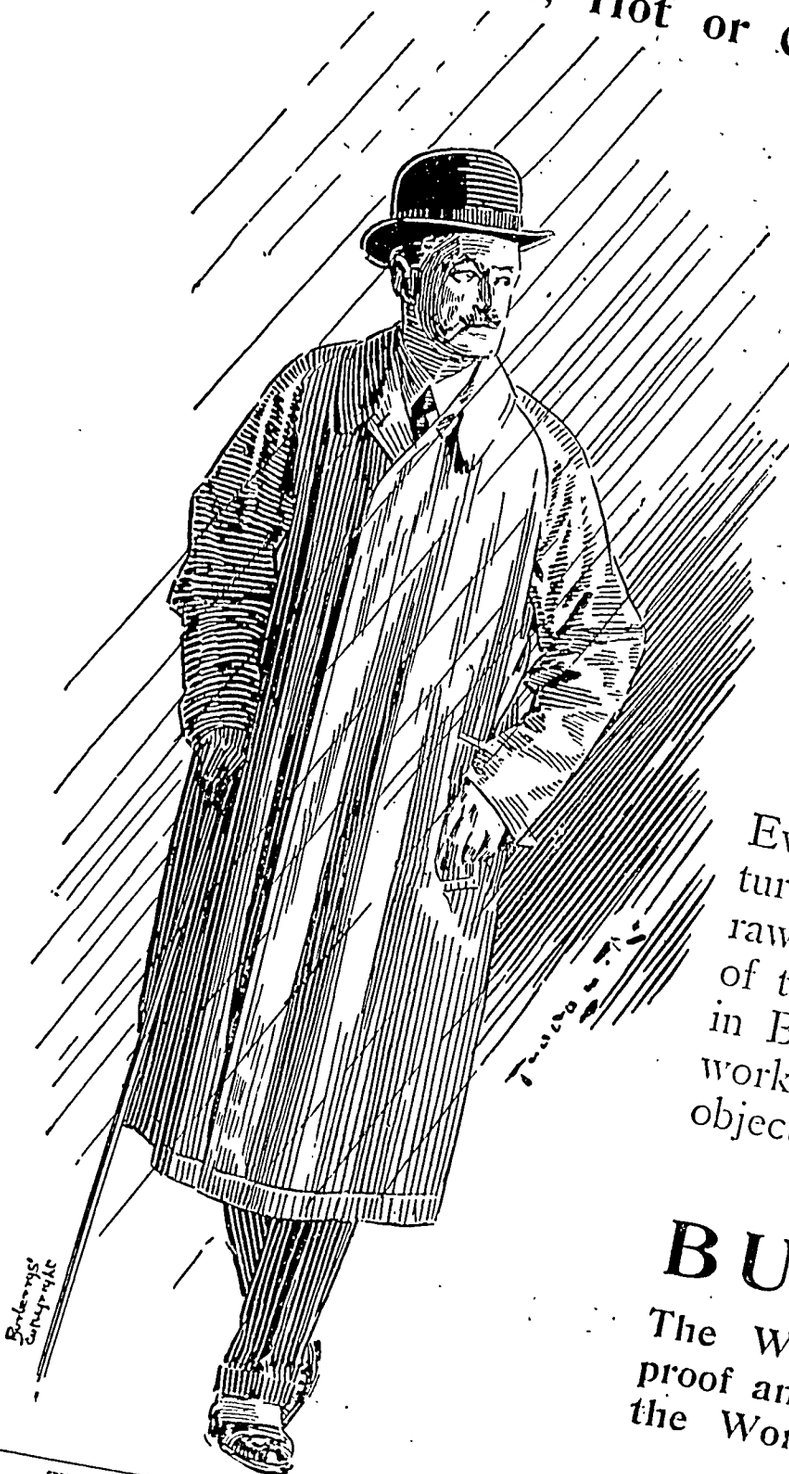

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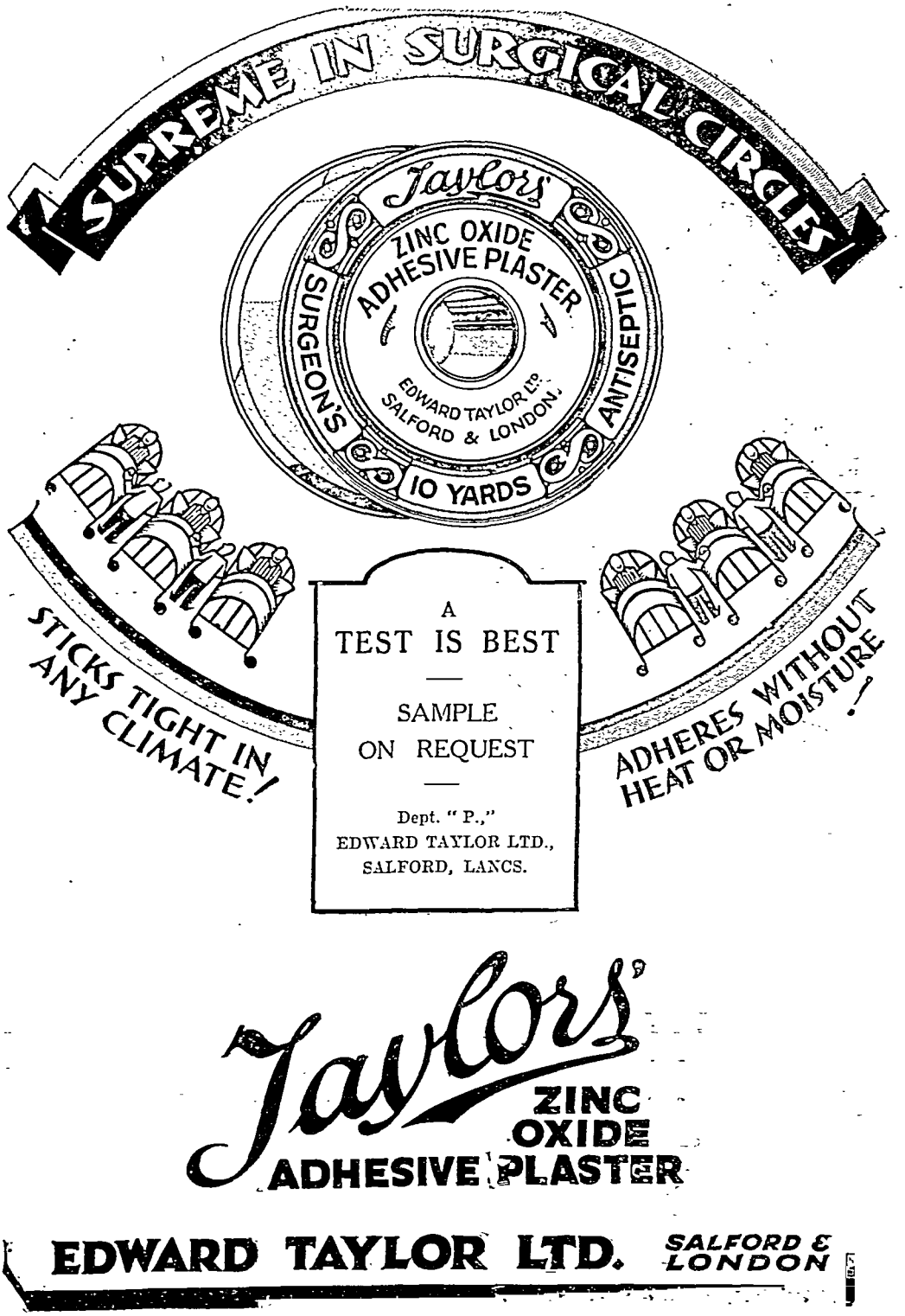
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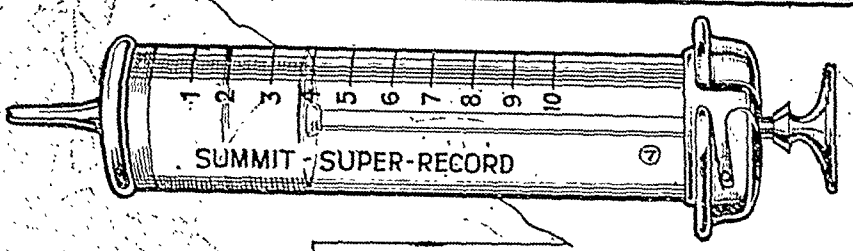

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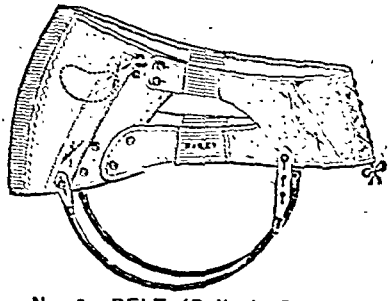

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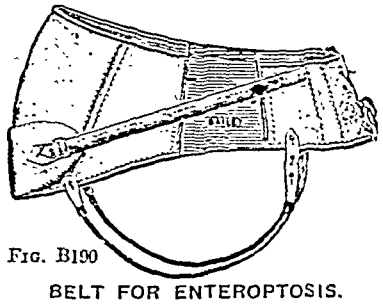
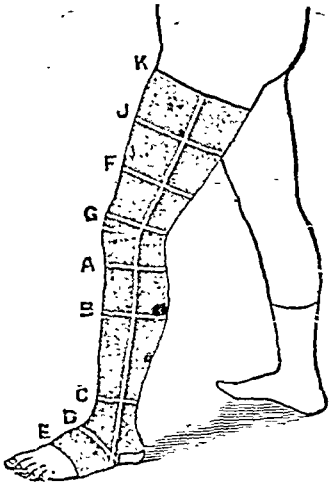


FIG. B190

BELT FOR ENTEROPTOSIS.



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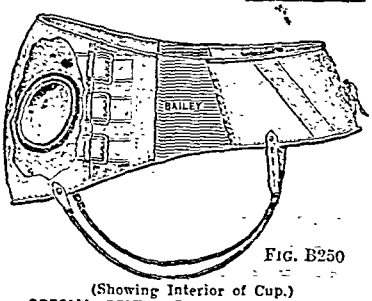

FIG. B250

(Showing Interior of Cup.)

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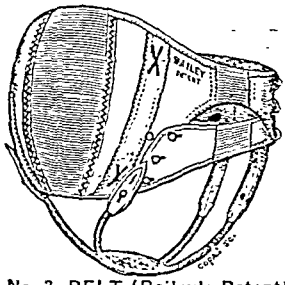

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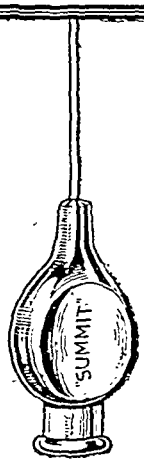

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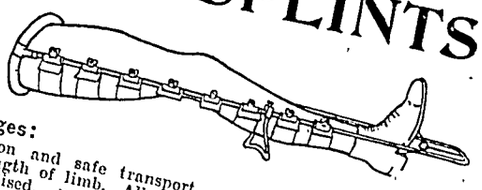

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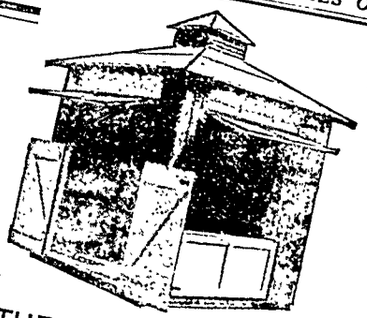

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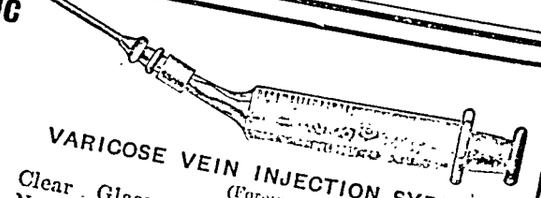

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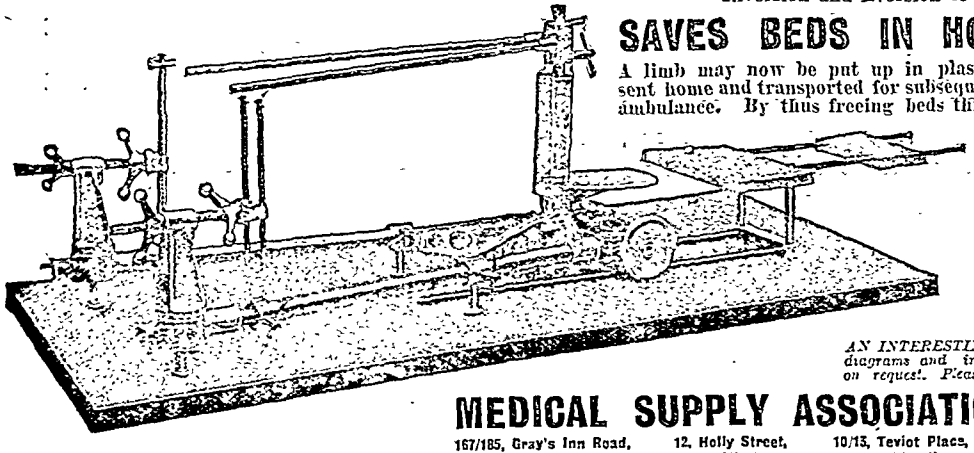

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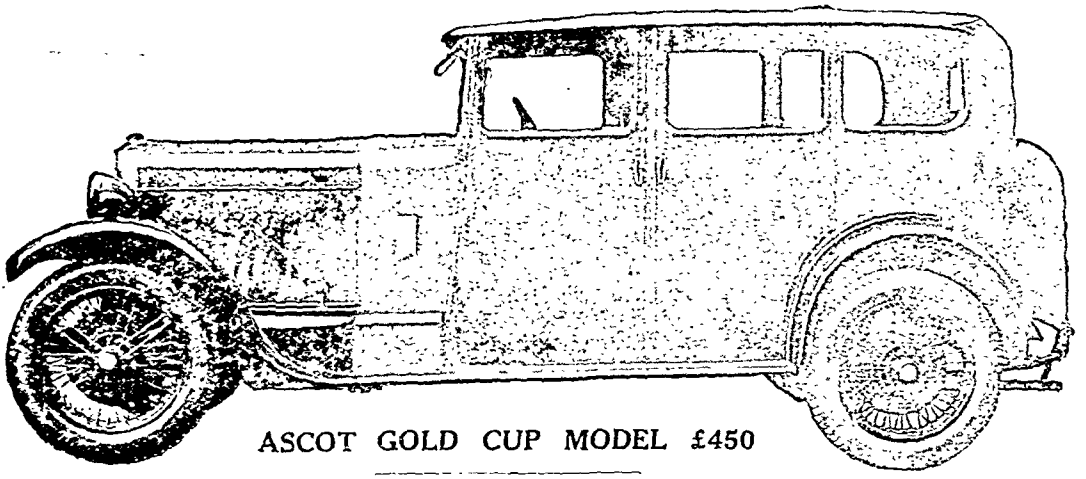

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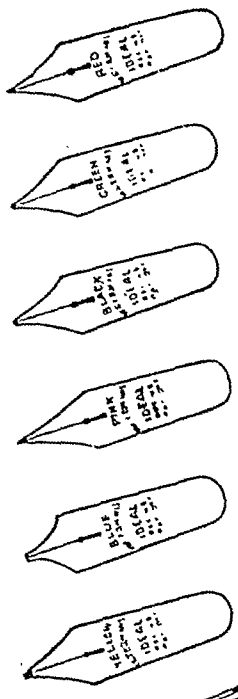

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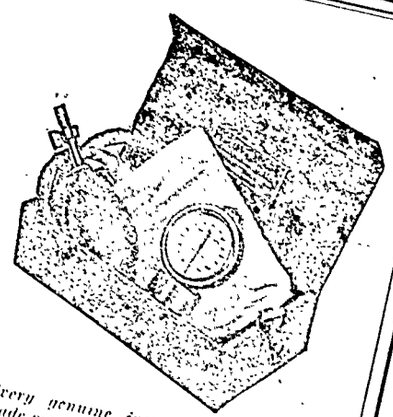

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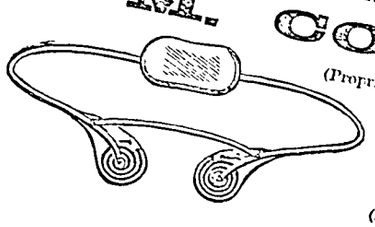

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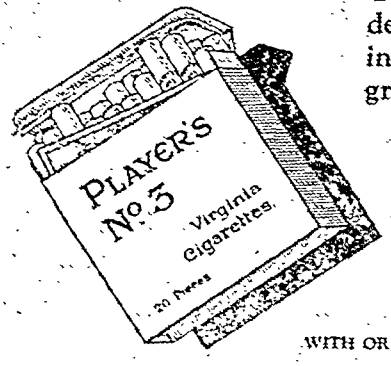

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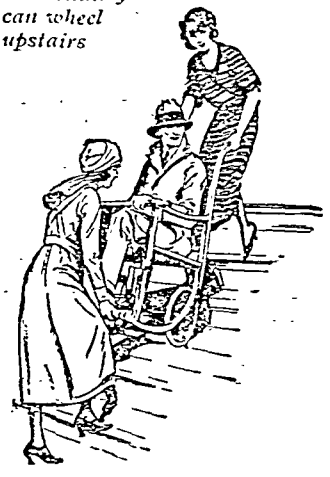

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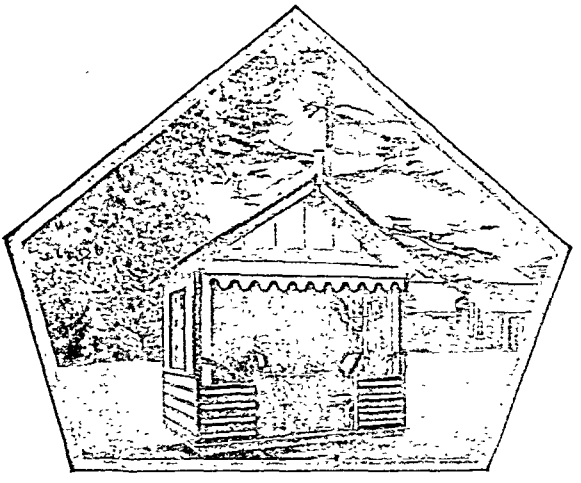

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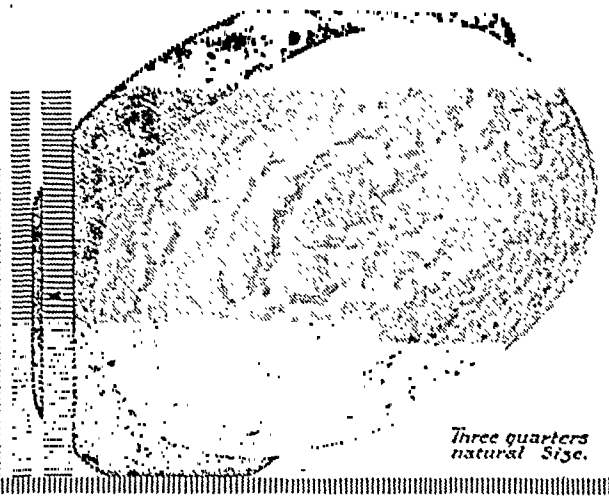
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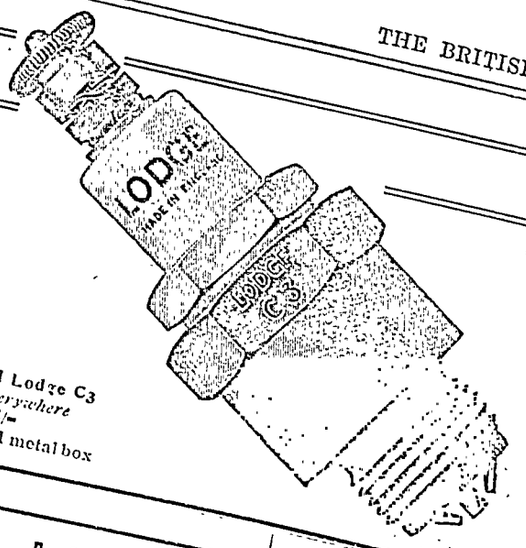

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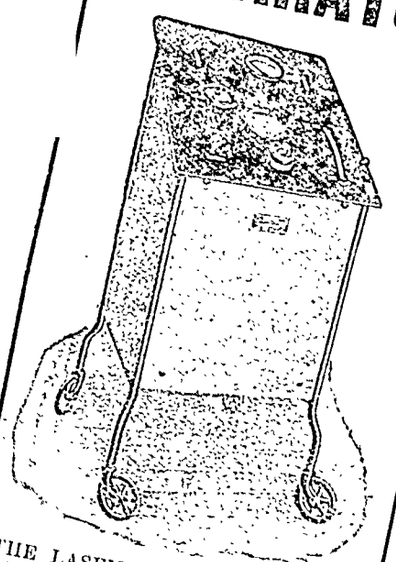

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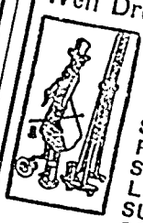

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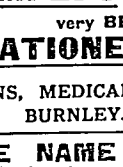

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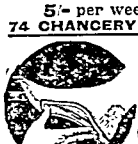

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TABLETS COMPRESSED.

Per 1,000.
Blaud's (Sugar-coated), gr. 5... ... ... 3/10
Nitroglycerini, B.P., gr. 1-50th 5/-
Perchloride of Mercury (Coloured) ... 15/-
One Tablet in 1 pint of water is equivalent to 1 in 1,000.
Thyroid Gland, gr. 5... ... ... 12/6
We can supply smaller quantities at slightly increased rates.

We endeavour to adhere to prices quoted, but as same fluctuate from day to day, they must be considered as subject to change without notice.

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in 5-lb. Bottles.

	B.P.	Aquos.		B.P.	Aquos.
Belladon.	... 4/3	1/6	Hyoscyam.	... 4/3	2/4
Benzoin Co.	4/7	—	Nucis Vom.	3/10	1/4
Camph. Co.	... 3/-	1/6	Opii ...	... 5/7	4/6
Card Co.	... 2/6	1/6	Quin. Ammon.	3/3	—
Gentianae Co.	2/8	1/6	Rhei Co.	... 2/8	1/9

Ung. Acid Boric., B.P., 28 lb. pail @ 11d. lb.
" Hydrarg., B.P., 7 lb. @ 4/6 lb.
" " Ammon., 7 lb. @ 1/11 lb.
" Ichthamolis, B.P.C., 7 lb. @ 1/10 lb.
" Zinci Ox., Benz., 28 lb. @ 1/- lb.

*Minimum quantity at these prices: Home Trade 3, Export 12 Winchester Quarts assorted. We can supply smaller quantities than advertised at slightly increased rates.

BRITISH MEDICAL ASSOCIATION'S ANNUAL MEETING - - MANCHESTER, JULY 1929.

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A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental or Nervous cases are received without certificates as Voluntary Boarders. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. Telephone: 10 P.O., Church Stretton.

PLYMPTON HOUSE,

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This old-established Licensed House offers every advantage that experience can suggest for the care and treatment of mental cases.

For terms, etc., apply to the Resident Physicians: Dr. ALFRED TURNER, Dr. J. C. NIXON. Telephone: No. 2 Plympton.

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Situated in 3½ acres of secluded gardens.

HOME FOR TWELVE MENTAL PATIENTS (LADIES).

Well-appointed private house. Home comforts and Trained Nursing Staff. Eminent Mental Specialist Visiting Physician. A new feature in the Home is the Ultra-violet Ray Treatment. *Station:* Clapham Common Tube. *Telephone:* Brixton 0494. Apply: Mrs. THWAITES.

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Telephone: Clissold 1648.

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of p[illegible] luntary and patier[illegible] ed. For further [illegible]LD JOHNSTON and I[illegible] Physicians.

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A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house with beautiful grounds and park, 5 miles from Sheffield. Station, Grange Lane, [illegible] Telephone: No. 40030 [illegible]ysician: GILBERT E. Mc[illegible]

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PRIVATE HOME for MENTALLY AFFLICTED LADIES. Ten only received. Apply, Medical Officer or Mrs. PEELE. *Telephone:* 2708.

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A Private Home for the care and treatment of a limited number of ladies mentally afflicted. Climate healthy and bracing.
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Rendlesham Hall has 45 bedrooms, and about 450 acres of gardens and park. It has also a private nine-hole golf course, tennis and croquet lawns, and bowling green.

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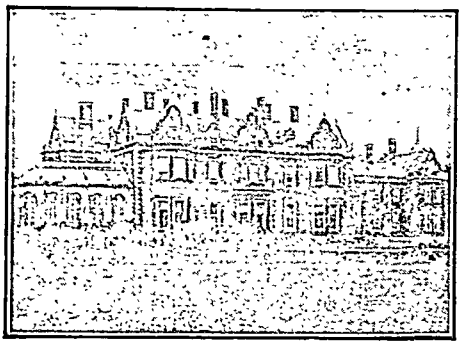
RESIDENT MEDICAL SUPERINTENDENT.

Telegrams and Telephone: Wickham Market 16.



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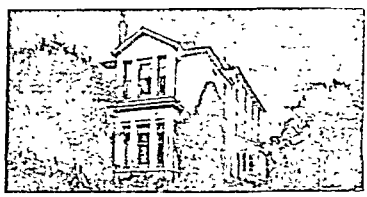
A small comfortable Home charmingly situated in secluded gardens overlooking Torbay. Ladies and Gentlemen treated with a view to a rapid and permanent cure by modern methods, which give excellent results. Ample amusement, billiards, wireless, golf, tennis, etc. Good train service (3¼ hours London). Moderate inclusive terms. Prospectus, report, etc., from—Stanford Park, M.B., CH.B., Res. Med. Supt., Bay Mount, Paignton.



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Apply Medical Superintendent, 21, Cleveland Square, W.2. Langham 1643.

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DRUG ADDICTION & NEURASTHENIA

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At this beautifully situated country mansion residential Treatment of the above afflictions is carried out on the most modern scientific principles, both physical and psychological, under the supervision of the Res. Med. Supt. Dr. A. E. Carver, M.D., D.P.M. Fees Moderate.

Further particulars from the Central Sec., 40, Marsham Street, London, S.W.1. In cases of urgency 'phone NUNEATON 241.

NEURASTHENIA
ALCOHOL
DRUGS

R.M.O., 2, Wilbury Road, HOVE.

ST. ANDREW'S HOSPITAL
FOR MENTAL DISORDERS, NORTHAMPTON

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical baths, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The Seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone: No 55 Northampton), who can be seen in London by appointment.

HAYDOCK LODGE
NEWTON-LE-WILLOWS, LANCASHIRE.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. [illegible] and gardens, in which patients are encouraged to occupy [illegible] loor and out-door recreation. For terms, prospectus, etc., ap[illegible]

NEURASTHENIA
BELVOIR NURSING HOME, ASTON-ON-TRENT, DERBY.

Private Nursing Home for Neurasthenia and allied Functional Nervous Disorders, for general Convalescent Cases, and those requiring Electrical Treatment.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes. In addition to the methods of general medicine [illegible] ment is used extensively in suitable cases. Certifiable cases are n [illegible] eatment, Radiant Heat, X-ray, Ultra-violet Light, and Massage is [illegible] Home. Billiards, tennis, etc Fees from 5 to 12 guineas per week. [illegible] ply to—
Dr. E. M. DOUGLAS-MORRIS, ASTON, DERBY.
Dr. Douglas-Morris can be seen by appointment in London.

THE COPPICE, NOTTINGHAM.
HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.

For terms, etc., apply to the Medical Superintendent.

COURT HALL, KENTON, EXETER,
SOUTH DEVON.

For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.
Resident Physicians: BERTHA M. MULES, M.D., B.S.; ANNIE S. MULES, M.R.C.S., L.R.C.P.
Telephone: *Teignmouth* 289.

THE FLOWER HOUSE,
BECKENHAM LANE, S.E.6.

Telephone: LEE GREEN 1993.
(Eight miles from London.)

A PRIVATE HOME of the highest class for Gentlemen suffering from Mental and Nervous Disorders, both under Certificates and as Voluntary Boarders.

A beautifully furnished old family mansion, thoroughly modernized, and up-to-date.

Twenty-five acres of well-timbered grounds, containing unrivalled flower gardens, cricket and football fields, croquet, tennis and bowls. Billiard room, private theatre, and wireless.

Special suites for suitable patients in new annexe, consisting of private sitting room, bedroom, attendant's room (if necessary), and private bathroom and lavatory.

Station—Beckenham Hill, 3 minutes.
Tram 54 from Victoria to *Southend Village*.

For terms and further particulars, apply—W. F. UMNEY, M.D., Medical Superintendent, or Mrs. A BECKETT, Resident Licensee.

CHISWICK HOUSE.

A Private Mental Hospital for the Treatment and Care of Mental and Nervous Disorders.

Now removed to:

CHISWICK HOUSE,
PINNER,
MIDDLESEX.

Telephone: PINNER 234.

A modern country house, 11 miles from Marble Arch, in beautiful and secluded grounds.

Fees are from 10 guineas a week.

Voluntary Patients received for treatment.

DOUGLAS MACAULAY, M.D., D.P.M

BARNWOOD HOUSE,
GLOUCESTER.

A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN [illegible] NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

[illegible] terms, etc., apply to—
[illegible] M.D., *Resident Supt.*
[illegible] 7 Barnwood.

Preston Deanery Hall,
Northampton.

(3¼ miles from L.M.S. Station.)

This DIETETIC ESTABLISHMENT is equipped for the complete investigation and treatment of patients on rational lines. Own X-ray and Laboratory. Biochemical investigation is made a special feature.

Resident [illegible] Masseurs and Masseuses. [illegible] Fasting on Hydro- ar[illegible] are specially *Scientific* [illegible] qualified to deal with the effects of Metabolism, and provision is made for the treatment of *Tropical Diseases*.

Further particulars from the Secretary, Preston Deanery Hall, Northampton.
Tel.: Hardingstone 6.

SPRINGFIELD HOUSE,
Near BEDFORD. (Phone 3417.)

FOR MENTAL AND NERVOUS CASES.

Physicians: DAVID AND CEDRIC W. BOWES.
Ordinary Terms, Five Guineas per week.
(Including Separate Bedrooms where suitable.)
Interviews in London by appointment.

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For the treatment of Ladies and Gentlemen [illegible] mentally afflicted. Voluntary Boarders received. *Situated 1,200 ft. above sea level,* facing S.; 14 acres of grounds.—For terms, apply to the Resident Medical Superintendent, W. W. HORTON, M.D. Nat. Tel. 130.

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(FORMERLY DUFF HOUSE, BANFF.)

The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiograph, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The Climate is mild and the neighbourhood beautiful. Apply: The Secretary,
Telegrams: Castle, Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: Alleviated, London. Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for the treatment of special and suitable cases adjoin the Institution. There is a seaside branch to which holiday parties are sent during the summer months. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

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Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0588.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "Psycholia, London." Telephone: Rodney 4731—4732.

FOR THE TREATMENT OF MENTAL DISORDERS.

Completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Croquet, Squash Racquets, and all indoor Amusements, including Wireless and other Concerts. Occupational Therapy. Daily services in the Chapel.
Senior Physician: Dr. HUBERT J. NORMAN; assisted by three Medical Officers, also resident. An illustrated Prospectus, giving full particulars and terms, may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON. — A CONVALESCENT BRANCH OF THE ABOVE.

BETHLEM ROYAL HOSPITAL, LAMBETH ROAD, S.E.1.

(For the reception and treatment of cases of nervous and mental disease.) Tel.: Reliance 2182.

President: Colonel and Alderman Sir CHARLES CHEERS WAKEFIELD, Bart., C.B.E.
Treasurer: Sir LIONEL FAYDEL-PHILLIPS, Bart.
PHYSICIAN SUPERINTENDENT: J. G. PORTER PHILLIPS, M.D., F.R.C.P. Assisted by Physicians, a Pathologist, and a staff of Visiting Consultants.

PRESUMABLY CURABLE CONDITION, are eligible for admission. With a view to the early
ED patients are admitted. PATIENTS WHO CAN CONTRIBUTE THREE GUINEAS
AY BE RECEIVED AS VACANCIES ARISE. Treatment is carried out on the most
here is a Convalescent Home on the Surrey hills at Witley.
UPERINTENDENT.

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CHEADLE ROYAL,

CHEADLE, CHESHIRE.

This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of [illegible] the UPPER and MID- [illegible] Boarders received. [illegible] the Medical Superin- [illegible] M.B., who may also be seen in Manchester by appointment.
Telephone: 481 GATLEY.

BAILBROOK HOUSE,

BATH.

A PRIVATE HOME for the care and treatment of persons with mental and nervous disorders.
Voluntary Boarders received in the Villas.
Large Mansion on outskirts of Bath, with 20 acres of grounds (see *Medical Directory*, page 2134).
For terms apply to SAMUEL J. GILFILLAN, O.B.E., M.B., C.M.Edin., Resident Physician.
Telephone No.: Batheaston 8189.

BOREATTON PARK,

BASCHURCH, SALOP.

A first-class Country Mansion especially adapted for the reception of a limited number of ladies and gentlemen mentally affected.

For particulars, apply Dr. Sankey.

TOR-NA-DEE SANATORIUM
MURTLE DEESIDE ABERDEENSHIRE.

Medical Director: David Lawson, M.D., F.R.S.E.

FULLY EQUIPPED WITH EVERY MODERN APPLIANCE FOR THE DIAGNOSIS AND TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.

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Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.

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4,750 Feet——Feet 4,750

TREATMENT of PULMONARY TUBERCULOSIS

English-Speaking Doctors

Climatic Resort patronised by the British Red Cross Society

Apply to: "MANAGER," Sanatorium Grand-Hotel, LEYSIN, Switzerland

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On French side of the Lake of Geneva.

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HIGH CLASS DIETETIC ESTABLISHMENT.

Unrivalled situation in an extensive Park of over 6 acres. AIR, SUN, and REST CURES. SPECIAL DIETS.
Connected with the Hydropathic Establishment by a funiculaire. TENNIS, GOLF, and all other SPORTS.
Season—MAY to OCTOBER. Branch House of HOTEL BELLEVUE, CANNES.

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Germany's greatest Medical Baths. Notable performances in the Kurhaus and State Theatres.
WORLD FAMOUS THERMAL SALT SPRINGS at 150°. CURE GOUT, RHEUMATISM, nervous and metabolic diseases, diseases of the respiratory and digestive organs. Station of Rhine steamers at Wiesbaden-Biebrich.

Salts and Pastilles for export.

GOOD ACCOMMODATION AT MODERATE PRICES.

Hotel lists (8,000 beds) from the Municipal Information Office and Travel Bureaux.

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2,330 FEET ABOVE SEA-LEVEL.

HYDRO AND HEALTH RESORT.

OPEN FROM JUNE TO OCTOBER.

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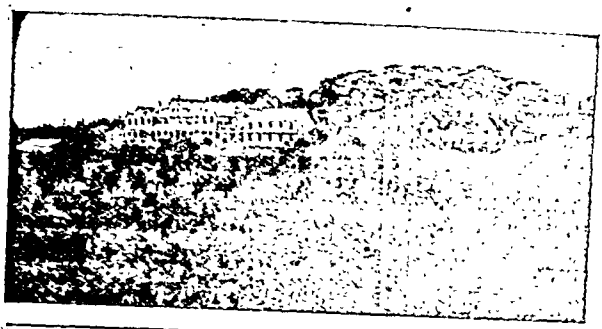

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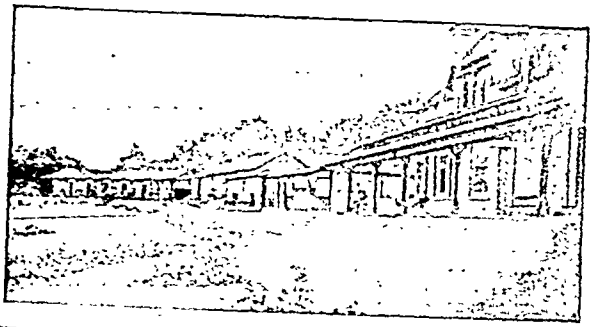

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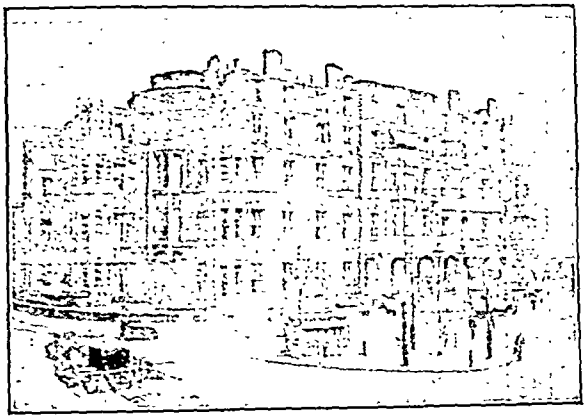

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a.m. 10.30 to 11.30	Cardiac Arrhythmias in General Practice. Dr. Bruce Williamson.	Injection Treatment of Varicose Veins. Mr. Ralph Coyte.	Methods of Orthopædic Treatment. Mr. E. Gillespie.	Dental Sepsis. Mr. E. Spencer Pierrepont.	Selected Cases of Skin Disease. Dr. W. N. Goldsmith.	10.30 a.m. Dr. J. R. C. Laing. "Hallucinations and Delusions." At L.C.C. Mental Hosp. New Southgate, N.
11.45 to 12.45 p.m.	Some Pathological Tests and their uses. Mr. T. H. C. Benians.	Treatment of the Septic Hand. Mr. H. W. Carson.	Estimation of Blood Pressure. (Cases.) Dr. J. Browning Alexander.	Round the Wards. Ear, Nose and Throat Cases. Mr. Wm. Ibbotson.	X-rays in Urogenital Cases. Dr. S. Cochrane Shanks.	
2.15 to 4.0	Medical and Surgical Clinics and Operations:—In-patients and Out-patients work. Special Departments.					
4.30 to 5.30	Treatment of Heart Failure. Dr. A. J. Whiting.	Recent changes in the form of Infection of the Central Nervous System. Dr. L. R. Yealland.	2.15 Every-day Fractures. Lt.-Col. Spencer Mort. 4.0 Types of Rheumatic Disease. Dr. A. W. Gregorson.	Chronic Rheumatism (Physio-therapeutics). Dr. Frank Howitt.	Demonstration of Heart Diseases in Children. Dr. C. E. Sundell.	

Time	Monday, July 1st.	Tuesday, July 2nd.	Wednesday, July 3rd.	Thursday, July 4th.	Friday, July 5th.	SATURDAY, July 6th.
a.m. 10.30 to 11.30	Selected Medical Cases. Dr. Bruce Williamson	Radiography in Thoracic Disease. Dr. A. C. Dixon.	Genito-Urinary Cases. Mr. Ralph Coyte.	Vaccine and Serum Therapy. Mr. T. H. C. Benians.	Laboratory Investigation of Blood Diseases. Dr. A. Keay.	10.30 a.m. Dr. Frederic Thomson. Cases illustrating Early Diagnosis and Treatment of Infectious Fevers. At the N.E. Fever Hosp. (M.A.B.D. St. Ann's Rd., Tottenham
11.45 to 12.45 p.m.	Early Signs of Pulmonary Tuberculosis. Dr. J. Browning Alexander.	Demonstration of Neurological Cases. Dr. L. R. Yealland.	Anæsthetics in General Practice. Dr. G. Edwards.	Ward Round Medical Cases. Dr. A. J. Whiting.	Common Eye Diseases. Mr. Norman Fleming.	
2.15 to 4.0			include Gynæcology, Ear, Nose and diology and Electro-Therapeutics, (Mr. F. L. Provis).			
4.30 to 5.30	The Rôle of the General Practitioner in Acute Abdominal Disease. Mr. H. W. Carson.	Examination of Ear, Nose and Throat Cases. Mr. Wm. Ibbotson.	Obstruction of the large Intestine. Mr. E. Gillespie.	Pain as a Symptom in Gynæcology. Mr. Aubrey Goodwin.	2.15 Diagnosis and Treatment of Gall-Bladder Disease. Mr. R. I. Galloway. 4.0 Medical Aspects of Peptic Ulcer. Dr. J. R. Murdoch.	

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The Examiners for the Final Examinations will be invited as occasion arises to take part in the Higher Examinations, but the Senate have resolved that in certain cases in which the work is heavy they shall not be required to do so.

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For the Second Examination for Medical Degrees

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For Final and Higher Examinations for Medical Degrees.

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Applications will also be invited for Associate Examiners in Medicine, Obstetric Medicine, Pathology, and Surgery. A separate application form must be used for Associate Examinerships and the word "Associate" must be written on it

Application form (or forms if more than one Examinership is applied for) and particulars of the remuneration and duties can be obtained from the External Registrar.

Candidates must send in their names to the External Registrar, GEO. F. GOODCHILD, M.A., B.Sc., with any attestation of their qualifications they may think desirable on or before Monday, July 7th, 1929. (Envelopes should be marked "Examinership")

The Senate desire that no application of any kind be made to individual members.

If testimonials are submitted one copy only of each is required. In no case should original testimonials be submitted If more than one Examinership is applied for a separate and complete application must be forwarded in respect of each Examinership. The appointments will be made by the Senate in November Applicants who desire that the result should be communicated to them are requested to enclose a stamped and addressed envelope with their applications.

University of London, June, 1929. T. FRANKLIN SIBLY, Principal. South Kensington, S.W.7.

Warrington Infirmary and DISPENSARY.

POST-GRADUATE COURSE.

Syllabus of Lectures and Demonstrations.

June 4th. T. R. W. Armour, F.R.C.S. "Management of Fractures in the Neighbourhood of the Ankle."

June 11th. P. G. McEvedy, F.R.C.S. "Diseases of Veins."

June 18th. C. A. Wells, F.R.C.S. "Early Signs of the Diseases of the Urinary Tract and their Pursuits."

June 25th. G. E. Archer, M.B. "Indications for the Use of the Bronchoscope and Oesophagoscope."

July 2nd. R. Coope, M.D., M.R.C.P. "Diseases of Thyroid Gland."

July 9th. P. B. Mumford, M.D., M.R.C.P. "Some Common Skin Diseases of the Face"

The sessions are from June to July 9th, and from the middle of September to the end of October

These lectures are open to members of the Medical Profession without fee.

Bristol General Hospital.

HONORARY CLINICAL ASSISTANTS.

The Committee invites applications for these appointments in the various Out-patient Departments at the Hospital. The appointments are for six months commencing July 1st next, and the holders will be eligible for re-election Candidates must be fully qualified and registered medical practitioners, and applications must be forwarded to the undersigned on or before Monday, June 17th, from whom further particulars may be obtained.

THOMAS W. GREGG, Secretary.

Darlington General Hospital.

SENIOR HOUSE SURGEON wanted, male, British nationality, fully qualified, unmarried. Salary £150 per annum, board, residence, etc. Applications, stating experience, with copies of two recent testimonials, to be addressed to me forthwith.

A. RIDDLE, Secretary.

Southern Rhodesia Medical SERVICE.

GOVERNMENT MEDICAL OFFICER required for Southern Rhodesia Medical Service. Salary at the rate of £500 per annum, rising by £25 per annum to £650 per annum, with private practice. Applicants must be 25 to 30 years of age. Preference will be given to holders of Public Health or Tropical Medicine Certificates. Copies of conditions of appointment to the Southern Rhodesia Medical Service can be obtained from the Secretary, Office of the High Commissioner for Southern Rhodesia, Crown House, Aldwych, London, W.C.2, to whom all applications should be addressed with full particulars of qualifications, mentioning age, whether married or single, past appointments held, etc., with copies of references. Applications should reach that office not later than June 20th.

The Otago Hospital Board.

UNIVERSITY OF OTAGO AND DUNEDIN HOSPITAL, NEW ZEALAND.

The post of RESIDENT SURGICAL OFFICER (Senior) will be vacant in August, 1929. Candidates must hold a degree in Medicine of a British University; must have been qualified for three years; and have held resident Hospital appointments for at least one year.

The duties of the successful candidate will be those of superintending house surgeons, with, in addition, certain tutorial work under the direction of the Professor of Surgery.

Salary for the position to be at the rate of £500 per annum, with board and residence.

Full details may be obtained on application to the High Commissioner for New Zealand, Strand, W.C.2

Otago Hospital, Board, Dunedin, New Zealand. JOHN JACOBS, Secretary. May 28th, 1929.

Sudan Government.

MEDICAL DEPARTMENT.

TWO MEDICAL OFFICERS are required immediately for the Sudan Medical Service. Candidates must be single and under 30 years of age, and they must have held a Resident appointment (preferably House Surgeon) in a large General Hospital.

Pay commences at £E.720 a year, rising to £E.1,200 after thirteen years' service On confirmation selected candidates service. Application copies of recent made to Dr. HODSON, 24, Welbeck Street, W.1, from whom, and from the Secretaries and Deans of the principal Medical Schools, further particulars can be obtained.

Nuneaton General Hospital,

WARWICKSHIRE. (76 Beds.)

HOUSE SURGEON (male) required. Salary £120 per annum, with board, lodging, and laundry. The appointment is tenable for six months, but application may be made for an extension of this period.

Candidates must be registered according to the provisions of the Medical Act and be Members of one of the Medical Protection Societies.

Applications, stating age, nationality, etc., *together* with copies of three recent testimonials, to be sent at once to the Medical Secretary.

Norfolk and Norwich Hospital,

NORWICH. (350 Beds.)

Applications are invited for the post of *HOUSE SURGEON* Salary £120 *per annum*, with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment. Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned, not later than *Tuesday, June 11th.*

FRANK INCH, House Gov. & Secretary.

June 1st 1929.

Swansea Hospital.

(316 Beds.)

HOUSE PHYSICIAN wanted, gentleman, single. Salary £150, with board, residence, and laundry. Duties to commence immediately.

Applications, stating age, nationality, and experience, with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS, Secretary.

County Borough of Birkenhead.

MEDICAL OFFICER'S DEPARTMENT.

ASSISTANT MEDICAL OFFICER (Resident).

Applications are invited for the above appointment from duly qualified men (unmarried) holding a Diploma in Public Health, who have had experience as residents in Hospitals for Infectious Diseases.

The appointment carries with it a salary of £450 per annum, residence at the Infectious Diseases Hospital, board and washing.

The successful candidate will be required to pass a medical examination, and a deduction of 5 per cent. will be made from salary towards the Council's scheme under the Local Government and Other Officers Superannuation Act, 1922.

He will be required to undertake the treatment of patients in the Hospital, to assist at the Municipal Venereal Diseases Clinic, and to carry out such other duties as may be assigned to him by the Medical Officer of Health.

Canvassing members of the Town Council, either directly or indirectly, will disqualify.

Particulars of the appointment and form of application may be obtained from D. MORLEY MATHIESON, Esq., M.A., M.D., Medical Officer of Health, 9, Hamilton Square, Birkenhead.

Applications must be received not later than June 17th.

Town Hall,
Birkenhead.
May 22nd, 1929.

E. W. TAME,
Town Clerk.

Metropolitan Asylums Board.

APPOINTMENT OF BACTERIOLOGIST AT THE BOARD'S ANTITOXIN ESTABLISHMENT.

The Board invite applications for the appointment of Bacteriologist at their Antitoxin Establishment, Belmont Laboratories and Stables, Sutton, Surrey.

The candidate appointed will be responsible, under the Director, for the Bacteriological and Serological work of the laboratories. He will be required to make himself acquainted with the general running of the laboratories, and so be in a position to take charge, when required; and also, subject to the approval of the Director, to carry out research in connection with the work of the laboratories.

Candidates must be qualified by law to practise Medicine and Surgery in England, and should possess a sound knowledge of "immunity" and practical acquaintance with immunological methods.

The commencing salary is at the rate of £700 per annum.

Application forms containing full particulars of the appointment may be obtained, by sending stamped addressed foolscap envelope, from the Clerk, Metropolitan Asylums Board, Victoria Embankment, London, E.C.4, to whom completed applications must be returned not later than 10 a.m. on Wednesday, June 19th.

ALLAN POWELL, Clerk to the Board.

Metropolitan Asylums Board.

INFECTIOUS HOSPITALS SERVICE.

APPOINTMENT OF ASSISTANT MEDICAL OFFICERS.

Applications are invited for appointments as Junior Assistant Medical Officers in the Infectious Hospitals Service.

Candidates must not exceed 30 years of age, and must be duly registered and qualified by law to practise both Medicine and Surgery in England. Junior Assistant Medical Officers are subject to annual re-election.

Salary £500 per annum. Married quarters are not available.

Assistant Medical Officers are required to reside in the Hospitals, and to pay for board, lodging, and washing at the rate fixed from time to time by the Board's Finance Committee. At present the rate is £130 per annum.

Application to be made not later than 10 a.m. on Wednesday, June 19th, on form obtainable by sending stamped addressed foolscap envelope to the Clerk, Metropolitan Asylums Board, Victoria Embankment, London, E.C.4.

ALLAN POWELL, Clerk to the Board.

City of Birmingham.

FOURTH ASSISTANT MEDICAL OFFICER required at the CITY HOSPITAL FOR INFECTIOUS DISEASES, LITTLE BROMWICH. Previous resident Hospital post essential. The appointment will be made for 12 months only. Duty to commence not later than August 1st.

Salary £300 per annum, together with board, residence, and laundry.

Forms of application may be obtained from the Medical Superintendent, and should be returned to him on or before Saturday, June

Birmingham Union.

SELLY OAK HOSPITAL.

CASUALTY OFFICER (Male).

Applications are invited from fully qualified medical practitioners for the appointment of Casualty Officer (male) at the Selly Oak Hospital, Birmingham.

The present Hospital accommodation is 550 beds, divided into General Medical, General Surgical, Gynæcological, Obstetrical, Children and Infectious sections. There is a completely equipped Pathological Laboratory, also X-ray, Electro-therapeutic, Massage, and Sunlight Departments. Over 2,500 operations are performed annually.

The appointment will be for a period of six months in the first instance, but may be extended at the end of that time.

The person appointed will be required to assist at operations, administer anæsthetics, and undertake casualty work, and such other duties as may be assigned to him by the Medical Superintendent, and, should occasion arise, to assist at any of the other Institutions under the control of the Guardians.

The salary attached to the appointment is at the rate of £200 per annum, together with full residential emoluments (rations, apartments, laundry, and attendance).

A deduction of 2 per cent. will be made from the salary and value of emoluments under the provisions of the Poor Law Officers Superannuation Act, 1896, and for this purpose the emoluments are valued at £200 per annum.

Further particulars of the appointment may be obtained from the Medical Superintendent, Mr. R. P. STANLEY KELMAN, M.B., F.R.C.S. (Eng. and Edin.) at the Selly Oak Hospital.

Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, must be forwarded so as to reach me not later than Wednesday, June 12th.

Union Offices,
Edmund Street,
Birmingham.
May 24th, 1929.

C. P. BEECH,
Clerk to the Guardians.

Ministry of Health.

The Minister of Health invites applications from registered medical practitioners (women) for appointment as MEDICAL OFFICER on the staff of the Ministry.

The salary commences at £600 per annum and rises by yearly increments of £25 to £900, and then by yearly increments of £50 to £1,100 per annum. In addition to the salary, a bonus, which varies with the cost of living, is payable; the bonus on the minimum salary is at present £176 7s.

The appointment will be subject to the usual Civil Service conditions as to pension, marriage, holidays, etc.

Candidates must be registered medical practitioners of not less than 7 years' standing and should have had special experience in Obstetrics and of Maternity and Child Welfare work under a Local Authority. Preference will be given to candidates possessing a University Degree in Medicine and a Diploma of Public Health.

Medical Officers are required to devote their whole time to the Public Service and must be prepared to work in any part of England or Wales if required to do so.

Canvassing Members of Parliament or officers of the Ministry will render a candidate liable to disqualification.

Forms of application, with further particulars of the appointment, may be obtained from the Director of Establishments, Ministry of Health, Whitehall, S.W.

No application can be considered unless received on the prescribed form not later than June 25th.

County of London.

The London County Council invite applications for appointment as EIGHTH ASSISTANT MEDICAL OFFICER (male) in its Mental Hospitals Service. Candidates must be under 35 years of age and be registered to practise both in Medicine and Surgery in England.

Salary £300 a year, rising by annual increments of £25 to £400 a year, plus fluctuating temporary additions, the present total commencing remuneration being approximately £423 a year. No emoluments. Charges made for board, lodging, etc. (at present £2 9s. weekly), if required to be resident. Candidates appointed will be pensionable, under the Asylums Officers Superannuation Act, 1909.

Form of application, on which full particulars are given, can be obtained from the Acting Chief Officer, Mental Hospitals Department, The County Hall, Westminster Bridge, S.E.1.

Completed applications must be received by Friday, June 14th. Canvassing disqualifies.

MONTAGU H. COX,
Clerk of the London County Council.

Borough of Ilford.

APPOINTMENT OF WOMAN ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from legally qualified medical women for the office of Assistant Medical Officer of Health, for duties in connection with Maternity and Child Welfare work, School Medical Inspection, and General Public Health work. Candidates must possess the Diploma of Public Health or similar qualification, and have had Post-Graduate experience in Maternity work and Children's Diseases.

The commencing salary of the officer will be £450 per annum, rising, on report of satisfactory service, by annual increments of £25 per annum to £500 per annum (no bonus), and with free board and residence at the Corporation's Isolation Hospital.

The person appointed will be required to devote whole time to the duties of the office, to reside at the Isolation Hosital, and to enter into a contract for the due performance and fulfilment of all the duties and conditions governing the appointment.

The appointment is subject to the approval of the Ministry of Health, to satisfactory medical examination, and to the staff regulations for the time being in force.

The appointment is also subject to the Local Government and Other Officers Superannuation Act, 1922.

Candidates must not be more than 45 years of age.

Applications, which must be made on forms obtainable (with list of duties) from the undersigned, accompanied by copies of three recent testimonials (which will not be returned), endorsed "Woman Assistant Medical Officer of Health," must be received at my office, at the Town Hall, Ilford, not later than Tuesday, June 18th.

Canvassing, directly or indirectly, is prohibited and will disqualify.

By Order,
Town Hall,
Ilford.
June 3rd, 1929.

ADAM PARTINGTON,
Town Clerk.

Lancashire County Council.

APPOINTMENT OF ASSISTANT TUBERCULOSIS MEDICAL OFFICER for HIGH CARLEY SANATORIUM, Near ULVERSTON

The Lancashire County Council are prepared to receive applications for the post of Male Assistant Tuberculosis Medical Officer (unmarried) for the High Carley Sanatorium (112 beds). Salary £450, rising by two annual increments of £25 to £500 per annum, together with the following emoluments: board, furnished apartments, fuel, light, and laundry.

Applicants must be registered medical practitioners between 25 and 34 years of age, and the person appointed must devote the whole of his time to the duties as defined by the Council. Candidates must have held House appointments for at least six months in a General Hospital, and have had special experience in the diagnosis and treatment of Tuberculosis.

The possession of a Diploma in Public Health and practical experience in X-ray work will be deemed additional qualifications for the post.

Contributory Superannuation Scheme is in operation, with medical examination for entrants.

Forms of application, terms of appointment, and list of duties can be obtained from the undersigned. Closing date June 12th. All letters must be marked on the outside "Assistant Tuberculosis M.O."

GEORGE ETHERTON,
County Offices,
Preston.
Clerk of the County Council.

Manchester Babies' Hospital,

Burnage Lane, LEVENSHULME.

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER. Appointment is for six months from August 1st. Salary at the rate of £125 per annum, with laundry. Only candidates with previous Hospital experience need apply.

Application, together with copies of testimonials, should be sent to the undersigned, marked "R.M.O.," by June 24th.

ANGELA LOPEZ, Secretary.

Manchester Babies' Hospital,

Burnage Lane, LEVENSHULME.

Applications are invited for the post of RADIOLOGIST for one afternoon a week.

Applications, together with copies of testimonials, should be sent to the undersigned, from whom further particulars may be obtained, by June 24th.

ANGELA LOPEZ, Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	COUNTY BOROUGH OF WIGAN. *(Clinical Tuberculosis Officer and Assistant Medical Officer of Health.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society) (Workmen's Medical Scheme.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	Dr. E. S. MEYERS (Hon Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
June 5th, 1929

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Hampstead General and North-West London Hospital,
Haverstock Hill, N.W.

APPOINTMENT OF A HOUSE SURGEON.

Applications are invited from unmarried medical men for an appointment of House Surgeon, vacant on July 1st next. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on June 15th next.

Hampstead General and North-West London Hospital,
Haverstock Hill, N.W.

APPOINTMENT OF HOUSE PHYSICIAN.

Applications are invited from unmarried medical men for the appointment of House Physician, vacant on July 1st next. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on June 15th next.

Lowestoft and North Suffolk Hospital.

HOUSE SURGEON (male) preferably with knowledge of X-ray. Salary £120 p.a., with board, residence, and laundry.

Applications, with copies of three recent testimonials, to the Honorary Medical Supt.

Kensington, Fulham, and Chelsea General Hospital,
194, Finborough Road, Earl's Court, S.W.10.

The Board of Management invite applications for the post of ... ASSISTANT ... to the Nose, Throat, and Ear Department. This Hospital ... an extensive Out-Patient ... and General ... for six months. ... Applications, ... should be ... June 17th.

Rochdale Infirmary and Dispensary. (110 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male). Salary, £175 per annum, including board, residence, and laundry.

Applications, stating age, nationality, etc., together with copies of three testimonials, to be sent to the Secretary, endorsed "House Surgeon." Conditions of the appointment may be had on application to the Secretary.

Infirmary Office, Rochdale. W. WYNNE, Secretary.

Seamen's Hospital, Greenwich, S.E.

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, for six months from July 1st. Salary £110 per annum, and a proportion of fees, with board, residence, and washing. Candidates must be male. Applications, with copies of three testimonials, to be sent in by *June 17th to the undersigned.*

Greenwich, May 25th, 1929. R. E. V. BAX, Secretary.

Princess Louise Kensington Hospital for Children,
North Kensington
(42 Beds, pending completion.)

The Board of Management invite applications for the post of HON. ASSISTANT SURGEON to the Nose, Throat, and Ear Department. Candidates must hold the Diploma of F.R.C.S. (Eng.), and will be required to attend the Hospital on Tuesday afternoons, and also on one day towards the end of the week, the latter day being open to arrangement. Details as to application from the Secretary of the Hospital, St. Quintin Avenue, W.10, and formal application should be sent in not later than June 26th.

Royal Edinburgh Hospital for Sick Children.

Wanted for this Hospital, FIVE HONORARY RESIDENT MEDICAL OFFICERS (three Resident House Physicians and two Resident House Surgeons), to enter on October 1st next. Information as to duties, etc., can be obtained from the Ordinary Physicians and Surgeons at the Hospital. Thirty copies of applications and relative testimonials to be lodged on or before July 20th with Messrs. HENRY & SCOTT, W.S., 56, Frederick Street, Edinburgh. No applications will be received after that date.

Birkenhead General Hospital. (155 Beds.)

Applications are invited for the post of CASUALTY SURGEON (male) at once, salary £100, with board and residence, to take up duties immediately.

Applications, stating qualifications, experience, and nationality, with three copies of recent testimonials, to be sent to the Secretary-Superintendent as early as possible.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A.: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(Address included.)

Sixpence should be added if replies to a box number are to be posted.

All advertisements must be received not later than first post Tuesday previous to date of publication.

ASSISTANCIES.

Wanted shortly.—Outdoor male ASSISTANT, single, English or Scotch, in industrial Practice near Birmingham. Suit recently qualified man. Motor cyclist. Initial salary £250, all found, with early rise to suitable man. Dispenser kept. Usual bond. Photo, etc. — Address, No. 3416, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, experienced ASSISTANT, with view to early Partnership, for non-dispensing, good-class private and panel Practice in Liverpool suburb. Salary £400 p.a., with furnished rooms and attendance. Car provided.—Address, No. 3422, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, experienced highly qualified ASSISTANT, view junior Partnership, in residential health resort. Panel 500. Very little night work. Ample golf and tennis. Usual bond. Refs., photo, and early interview. Exceptional prospects to suitable man. — Address, No. 3452, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Indoor and Outdoor ASSISTANTS (male), with without view. Also LOCUM TENENS. Good salaries offered. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted immediately. — Assistant (male), with possible view to Partnership in panel and private Practice in Kent market town. Salary £250—£300 p.a., indoor. Full particulars.—Address, No. 3453, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Assistants, with view to Partnership, in large mixed Practices near Manchester. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Indoor Assistant, male, single, for 12 months, in Glos'shire Country Practice; able to drive car. Easy work, with time for reading. Public School man pref. £250—£300, accord. to exp. Photo and partics. —No. 3205, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, Scotch or English, Protestant, age under 30. Private and panel practice. Salary £250 to £300, with prospects to a suitable man. Photo and testimonials.—Address, No. 3424, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — An Assistant with prospect of Partnership if mutually agreeable. Salary £300 per annum, plus board, residence, and half midwifery fees. Panel and private. State experience.—Address, No. 3012, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — An Assistant in a Glamorgan Colliery Practice. Salary £350 per annum, with furnished rooms, light, and attendance. Usual bond.—Address, stating age, references, etc., No. 3417, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—An Assistant, male, to assist one partner while the other is on holiday for six weeks. Work very light. Salary £5 5s. to £6 6s. a week, all found, according to experience. — Address, No. 3458, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, indoor, all found, for holiday duty in pleasant Midland Town, from July 9th to Aug. 31st incl. Abstainer, cyclist. Competent Obstet. (practically no mid.). Disp. kept.—Add., stating essen. parties., with tests., and photo (if poss.), No. 3465, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistant to help one Partner while other on holiday, for eight weeks from August 7th. Work very light. Salary £5 5s. to £6 6s. per week, according to experience. — Address, No. 3405, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, from July 1st, for Gateshead. Salary £35 per month, live out. State essentials. Usual bond.—Address, No. 3421, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant to manage Branch in Lancashire, married preferred. Salary commencing £400, with prospects. Good house and rates. Usual bond.—Address, No. 3434, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, with or without view. £25 monthly (indoor). No midwifery. Motor car. State available capital. Easy terms. Send photo. Suitable for married man.—Address, No. 3430, B.M.A. House, Tavistock Square, W.C.1.

Assistancy or other remun. APPOINTMENT desired, S. Eng. or S. Coast pref. (or abroad), by M.B., Ch.B., aged 28. Hosp., G.P., and disp. exp. Travelled, well recvd., bilingual, temperate. Son of Coll. Principal. Test. & refs.—No. 3411, B.M.A. House, Tavistock Sq., W.C.1.

Woman Doctor, experienced, wants PART-TIME WORK or LIGHT ASSISTANTSHIP.—Address, No. 3428, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted. — Doctor for Change ISLANDS, NEWFOUNDLAND. PRACTICE returning £800—£1,100 to active man. House or board available, moderate charge.—Apply, CLUNY MACPHERSON, St. Johns, Newfoundland.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES. Preparation for Examinations.—Write, wire, or phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

As Locum. — Dispenser recommended by Doctor. July, Aug., Sept., and Oct.; anywhere. Part-time London; bookkeeping, secretarial work. Ultra violet rays. Good testimonials.—NORTON, "Farme," Leominster.

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Warrington Infirmary and
DISPENSARY.

The Board of Management invite applications for the post of HOUSE PHYSICIAN (male, unmarried). Applicants, who must be of British nationality, must be duly qualified medical practitioners.

Salary £150 per annum, with board, apartments, and laundry. The post is tenable for six months, with probable promotion at the end of that time. The vacancy is due to the promotion of the present staff.

The Hospital has special departments—i.e., Orthopædic, Skin, Aural, Genito-Urinary, Gynæcological, etc.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent in at once to the undersigned.

By Order,
HENRY L. BOOT,
May 18th, 1929. Supt. & Secretary.

LONDON HOSPITAL, E.1.
CARDIOGRAPHIC DEPARTMENT.

The post of PATERSON RESEARCH SCHOLAR in this Department will shortly become vacant. The salary is at the rate of £400 per annum. Further particulars on request.

Applications should be sent to the House Governor not later than June 22nd.

E. W. MORRIS, House Governor

Peace Memorial Hospital,
WATFORD, HERTS.

A RESIDENT MEDICAL OFFICER, male. £150 per annum. Appointment for six months, eligible for re-election. Applications, stating age and qualifications, with at least three recent testimonials, should be received not later than June 12th by the Secretary. No canvassing permitted.

Royal Cornwall Infirmary,
TRURO. (70 Beds.)

HOUSE SURGEON required, with experience of X-ray work and Anæsthetics. Salary £170 per annum, rooms, board, and washing. Apply, with copies of three recent testimonials, to the Secretary, of whom further particulars may be obtained.

Shropshire Orthopædic Hospital,
OSWESTRY.

HOUSE SURGEON (LOCUM TENENS) wanted on June 17th, for about three months.
Apply to the Secretary-Superintendent.

Grampian Sanatorium,
KINGUSSIE.—RESIDENT wanted. Would suit young Graduate anxious to gain experience in Sanatorium work.
Particulars from Dr. SAVY.

Tunbridge Wells and Counties
GENERAL HOSPITAL.

Wanted, HOUSE SURGEON (male). Candidates must be unmarried and duly qualified in Medicine and Surgery. May be required to lecture to Nursing Staff. (Two residents.) Vacant now.

In-patients number over 1,400 yearly. Out-patients 6,000, with 50,000 attendances.

Salary £160 per annum, with board, residence, etc., in the Hospital.

This Hospital is approved by the University of London for the purposes of the M.D. and M.S. examinations.

Applications, stating qualifications, with certificate of registration and copies of testimonials, should be sent to the undersigned on or before first post June 10th next.

J. J. WEBB, Secretary.

The Queen's Hospital for
CHILDREN, Hackney Road, London, E.2.
Telephones: Bishopsgate 6305 and 2534.

The Committee invite applications for the post of SURGEON for the Ear, Nose, and Throat Department.

Attendance required on Monday and Thursday morning for about three hours, commencing at 9.30. Lunch provided and honorarium to cover travelling expenses.

Candidates must be Fellows by examination of the Royal College of Surgeons, England.

Applications, with copies of three recent testimonials, which may be printed or typewritten, should be sent on or before July 8th to the undersigned, from whom further particulars may be obtained.

T. GLENTON-KERR,
May 27th, 1929. Secretary.

Harlow Wood Orthopædic
HOSPITAL, Near MANSFIELD, NOTTS.

Applications are invited for the post of RESIDENT SURGICAL OFFICER at the above Hospital, at a salary commencing at £250 for the first year (with board, lodging, and laundry), the successful candidate being eligible for re-election.

The duties will include attendance at the associated Out-patient Clinics, and will commence on September 1st. Selected candidates will be expected to attend a meeting of the House Committee on Friday, June 14th, at 3.0 p.m., in Nottingham.

Applications, stating age and qualifications, with copies of recent testimonials, should be received on or before June 11th by the Hon. Sec., 17a, Park Row, Nottingham.

Sheffield City Hospitals.
(Infectious Diseases. 460 Beds.)

RESIDENT MEDICAL OFFICER.

Applications are invited from duly qualified registered medical practitioners, with Bacteriological experience, for the post of Resident Medical Officer.

Salary, with three years' experience in professional practice, £350, with board, lodging, and washing.

Applications, stating age, qualifications, and previous experience, with copies of recent testimonials, to be sent to the Medical Superintendent, Lodge Moor Hospital, Sheffield.

King Edward VII Hospital,
RIVELIN VALLEY ROAD, SHEFFIELD.
(Surgical Tuberculosis. 130 Beds.)

HOUSE SURGEON (Resident).

Applications are invited for the above post which falls vacant on July 1st. The appointment is for six months, with possible extension for a further six months. Salary £75 p.a., with board, residence, and laundry.

Applications and testimonials should be sent as soon as possible to the Medical Superintendent, King Edward VII Hospital, Rivelin Valley Road, Sheffield.

London Temperance Hospital,
Hampstead Road, N.W.1.

Applications are invited for the post of CASUALTY OFFICER (male), which will become vacant on July 15th.

The appointment will be for a period of six months, at a salary of £120 per annum. (Ceteris paribus, preference will be given to abstainers).

Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Friday, June 28th, addressed to the Secretary.

Royal Waterloo Hospital for
CHILDREN AND WOMEN,
Waterloo Road, S.E.1.

There will be a vacancy on July 1st for a HOUSE PHYSICIAN (male) at the above Hospital. The appointment is in the first instance for a period of six months. Salary at the rate of £100 per annum, with board and residence. Applications, with copies of testimonials, should be forwarded not later than Thursday morning, June 20th, to the Secretary at the above address, from whom further particulars can be obtained.

St. Andrew's Hospital,
Dollis Hill, N.W.2.

HONORARY SURGEON FOR DISEASES OF THE EAR, THROAT, AND NOSE.

Applications are invited for the post of Hon. Surgeon for Diseases of the Ear, Throat, and Nose. There is no Out-patient Department. Candidates must be Fellows of the Royal College of Surgeons of England.

Applications, with copies of recent testimonials, should be sent not later than June 25th to the Administrator.

The Royal Infirmary, Sheffield.

The Weekly Board of Management invite applications for the post of HOUSE SURGEON.

The salary attached to the appointment (which will terminate on September 30th next) is £80 per annum, with board and residence.

Applications, with copies of testimonials, should be addressed to the undersigned forthwith.

JNO. W. BARNES, F.C.I.S.,
Board Room, Gen. Supt. &
May 30th, 1929. Secretary.

Ingham Infirmary, South Shields.

Wanted, SENIOR and JUNIOR HOUSE SURGEONS (male). Salaries £200 and £150 per annum respectively, with residence, board, and washing. No out-visiting. Candidates must hold registered qualifications in Medicine and Surgery. The appointment will be terminable by one month's notice. Applications, stating age and accompanied by copies (which will not be returned) of recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

JOHN POTTER, Secretary.

Edinburgh Hospital for Women
AND CHILDREN,
WHITEHOUSE LOAN, EDINBURGH.

Applications are invited from qualified women for the post of HOUSE PHYSICIAN at this Hospital. The appointment is for a period of six months from July 1st. Residence, board, and laundry provided.

Applications, with copies of testimonials, should be sent to the Convener of the Medical Committee, at the Hospital, on or before Friday, June 14th.

Bootle Borough Hospital,
DERBY ROAD, BOOTLE.

APPOINTMENT OF HONORARY DENTAL SURGEON.

Applications are invited for the above vacancy. Candidates are requested to send particulars of their qualifications and experience, accompanied by testimonials, to the undersigned not later than June 15th.

J. A. BEARDSALL, Secretary-Supt.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for CLINICAL ASSISTANTS in the Medical, Surgical, and all Special Departments. Intending candidates should submit applications, stating age and qualifications, to the undersigned on or before the 22nd inst. Duties to commence August 1st.

Preference will be given to former Students of the Hospital.

REGINALD R. GARRATT, Secretary.

The Sheffield Royal Hospital.

RESIDENT (male) for temporary duty commencing June 17th. Salary at the rate of £80 per annum, with board, residence, and laundry.

Applications, with testimonials, to be sent to—
W. H. BOOTH,
May 31st, 1929. Supt. & Secretary.

CAVENDISH NURSES (Male and Female)

Head Office: 54, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

A very convenient form of telephone message pad sent free on application to the Secretary.

Branches: MANCHESTER: 176, *Oxford Road.* TELEGRAMS: Tactear, London. Tactear, Manchester. Surgical, Glasgow. Tactear, Dublin. *GLASGOW*: 28, *Windsor Terrace.* *DUBLIN*: 23, *Upper Baggot Street.* TELEPHONES: London, 1277 Welbeck. Manchester, 3162 Ardwick. Glasgow, 477 Douglas. Dublin, 531 Ballsbridge.

Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling and all cases. Nurses reside on the premises, and are always ready for urgent calls Day and Night. Skilled Masseuses, Masseurs, and good Valet attendants supplied. *Terms from £3 3s. Apply to the Secretary or Lady Supt.*

Coventry and Warwickshire HOSPITAL, COVENTRY.

Applications are invited for an HONORARY ASSISTANT PHYSICIAN, who must be a qualified practitioner, and have held a resident appointment for six months in a Hospital containing at least 50 beds.

Candidates shall be resident in the City of Coventry, or within six miles thereof, or shall take up their residence within that radius within six months from the date of appointment.

Canvassing, either directly or indirectly, will be deemed a disqualification.

Applications, with original testimonials and registration certificates, must reach the undersigned on or before June 19th.

Candidates will in due course receive notice of their eligibility or otherwise from the Secretary, and after receipt of such notice eligible candidates are at liberty to send through the post printed copies of their application and testimonials to the Members of the Board of Management of the Hospital, a list of whose names and addresses will be furnished by the Secretary.

No such applications or copies of testimonials shall be sent until receipt of such notification from the Secretary.

The appointment shall be made for twelve months and the candidate appointed shall be eligible for re-election at the end of that period.

The appointment may be terminated at any time by the Board of Management.

By Order of the Board,

June 7th, 1929. (Miss) R. HOOPER, Secretary.

Coventry and Warwickshire HOSPITAL. (307 Beds.)

RESIDENT HOUSE SURGEON (male) wanted. Salary £125 per annum. Board, lodging, and attendance provided. Candidates must be duly qualified and registered. Applications, stating age and enclosing copies of recent testimonials, should be sent to the Secretary on or before June 12th.

(Miss) R. HOOPER, Secretary.

Cheltenham General and Eye HOSPITALS.

The Board of Management invite applications for the post of HOUSE PHYSICIAN (male) at the General Hospital.

Candidates must be unmarried, have a registered qualification in Medicine and Surgery, and produce evidence that they are qualified to administer anæsthetics.

Salary £200 p.a., with board, lodging, and washing.

Applications, with copies of testimonials, to be sent in sealed envelopes, marked "House Physician," to the undersigned by June 22nd.

J. CUMMING SMITH, F.C.I.S., Secretary.

General Hospital, Cheltenham. June 4th, 1929.

General Hospital, Gt. Yarmouth. (72 Beds.)

Applications are invited for the post of JUNIOR HOUSE SURGEON. Salary £100 per annum, with board, residence, and laundry. Candidates (male and unmarried) must be fully qualified and registered.

Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be sent immediately to the undersigned.

T. H. G. GARTLAND, Secretary.

Grimsby and District Hospital.

Wanted, HOUSE SURGEON, to commence duties in July next. Salary £250 per annum, with board, lodging, and washing. Candidates must be qualified.

Applications to be sent to the undersigned immediately, together with copies of recent testimonials.

LEONARD G. R. TURPIN, Secretary-Superintendent.

The Devon Mental Hospital, EXMINSTER, Near EXETER. (1,400 Beds.)

Required, JUNIOR ASSISTANT MEDICAL OFFICER (male). Candidates must be registered medical practitioners, and unmarried. Preference will be given to candidates who either have or are anxious to obtain a Diploma in Psychological Medicine. The Hospital is fully equipped with Operating Theatre, X-ray Installation, Bacteriological Laboratory, etc.

Salary £300 per annum, rising by £25 per annum to £350, with board, apartments, laundry, and attendance.

The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909. Form of application to be obtained from the Clerk to the Devon Mental Hospital, Exminster, which must be completed and returned on or before the first post on Monday, June 24th.

The Gloucestershire Royal INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (145 Beds.)

Applications are invited for the post of RESIDENT SURGICAL OFFICER (male). Salary £175 per annum, with board, residence, and laundry.

Good opportunity for surgery for experienced man. The appointment is for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be received by the undersigned not later than Wednesday, June 12th. The appointed candidate will be required to enter upon his duties on Monday, July 1st.

May 23rd, 1929. F. J. SYMONS, Secretary.

Addenbrooke's Hospital, CAMBRIDGE.

Applications are invited for the post of RESIDENT ANÆSTHETIST (male). The appointment will be for six months from July 1st, and may be renewed for a further period of six months, but is terminable at any time by one month's written notice on either side.

Salary at the rate of £180 per annum, with board, residence, and laundry. Candidates, who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four recent testimonials, to the undersigned on or before Wednesday, June 12th.

W. H. HEAD, Secretary Supt.

Addenbrooke's Hospital, CAMBRIDGE.

Applications are invited for the post of HOUSE PHYSICIAN. The appointment will be for six months from July 1st, but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £130 per annum, with board, residence, and laundry. Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned on or before Wednesday, June 12th.

W. H. HEAD, Secretary-Supt.

Addenbrooke's Hospital, CAMBRIDGE.

Applications are invited for the post of HOUSE SURGEON. The appointment will be for six months from July 1st, but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £150 per annum, with board, residence, and laundry. Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned on or before Wednesday, June 19th.

W. H. HEAD, Secretary-Supt.

Royal Victoria Infirmary, NEWCASTLE-UPON-TYNE.

The Committee invite applications for the post of RESIDENT MEDICAL OFFICER (male).

Candidates must be registered medical practitioners and Graduates of a recognized British University, or Fellows or Members of one of the Royal Colleges of Physicians and Surgeons of Great Britain or Ireland.

The appointment is for one year and is renewable annually for a period not exceeding three years.

Salary £250 per annum, rising by annual increments of £25 to £300 per annum.

Full information can be obtained by application to the undersigned, to whom applications, stating age, qualifications, and experience, accompanied by three recent testimonials, should be sent on or before Saturday, June 15th.

May 31st, 1929. S. DUNSTAN, House Gov. & Sec.

East London Hospital for CHILDREN & DISPENSARY FOR WOMEN, Shadwell, E.1.

Applications are invited for the resident post of HOUSE SURGEON (male). The appointment is for six months. Salary at the rate of £125 per annum, with board, residence, and laundry provided.

Applications, together with testimonials, should be sent to the undersigned not later than June 22nd.

W. M. WILCOX, Secretary.

N.B.—Residents at this Hospital are eligible for the reciprocity scheme with Barnes Hospital, St. Louis, U.S.A.

The Guest Hospital and Eye INFIRMARY, DUDLEY. (General Hospital, 104 Beds.)

Applications are invited for the posts of HOUSE SURGEON and ASSISTANT HOUSE SURGEON. Duties include Medical, Surgical Eye, Ear, Nose, and Throat, and Venereal Diseases work. Salary £175 and £150 per annum respectively, with furnished apartments, board, and laundry. Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, should reach the undersigned not later than June 18th.

H. RAYMOND HURST, Secretary.

The Royal Albert Hospital and EYE INFIRMARY, DEVONPORT.

A vacancy for an ASSISTANT HOUSE SURGEON (unmarried) exists. Applicants must be fully qualified, registered, and the appointment will be for six months. Salary £50 per annum, with apartments, board, and laundry free.

Applications, stating age, accompanied by copies of not more than three testimonials, should reach the undersigned not later than Friday, June 14th.

By Order of the Committee,

June 3rd, 1929. FRANK ROWE, Secretary.

Stockport Infirmary.

Applications are invited from fully qualified gentlemen for the position of HOUSE SURGEON. Salary £175 per annum, with board, residence, and laundry. Applications, addressed to the undersigned, stating age and qualifications, with copies of three testimonials of recent date, to be delivered not later than first post on June 17th. Successful candidate must be prepared to take up duties on July 1st.

EDWIN J. PEARCE, Secretary Supt.

Huntingdon County Hospital.

Male HOUSE SURGEON wanted at once. Salary at rate of £125 per annum, and washing. Applications, etc., to Senior Surgeon, County Hospital, Huntingdon.

Sheffield Union Hospital.

MALE RESIDENT ASSISTANT MEDICAL OFFICER.

The Guardians of the Poor of the Sheffield Union invite applications for the appointment of a Male Resident Assistant Medical Officer at the Union Hospital, Firvale, Sheffield. The Hospital is a large separate Institution containing 840 beds, and is equipped in accordance with modern requirements, and facilities are provided for Pathological and Bacteriological work.

The staff at present consists of a Resident Medical Superintendent, a Resident Deputy Medical Superintendent, and five Resident Assistant Medical Officers, a Visiting Physician, a Visiting Surgeon, and a Visiting Radiologist. The Assistant Medical Officer to be appointed will be required to take duty in such parts of the Hospital or at other Institutions under the control of the Board as may be directed.

Applicants must be duly registered under the Medical Acts, and qualified by law to practise Medicine and Surgery in England and Wales.

The appointment will be limited to two years, the salary being at the rate of £250 for the first year, and £300 for the second year, together with residence, rations, and other usual allowances, the salary being subject to the statutory deductions required by the Poor Law Officers Superannuation Act, 1896.

Letters of application, stating age, qualifications, and experience, together with copies of testimonials of recent date as to professional ability and personal character, to be sent to me without delay.

By Order,
LAWRENCE RICHMOND,
Union Offices, West Bar, Clerk to the
Sheffield. Guardians.
June 6th, 1929.

Devonshire Hospital, Buxton,

DERBYSHIRE. (300 Beds.)
(A Special Hospital for Rheumatism and Allied Diseases.)

ASSISTANT HOUSE PHYSICIAN.

The Committee invite applications for this post. To commence duties on or about June 24th. The successful candidate will be engaged for a period of not less than six months. The appointment is not open to ladies. Salary commencing £150 per annum, rising to £175 after three months' service, with furnished apartments, board (excepting stimulants), and laundry. Applications, with copies of three recent testimonials, endorsed "Assistant House Physician," to be sent in at once. The Medical Staff consists of eight Honorary Physicians, an Honorary Surgeon, a Bacteriologist, a Radiologist, a Biochemist, and two Resident House Physicians. The Hospital contains a Pathological Laboratory, and X-ray Department. This appointment offers special facilities for anyone preparing a thesis or wishing to do research work.

Canvassing will disqualify.

By Order,
TOM. B. HARRISON,
General Superintendent & Secretary.

Salford Royal Hospital.

(253 Beds.)

Applications are invited for the following vacancies which will occur in the Resident Medical Staff (male) on June 30th next:

HOUSE PHYSICIAN. Salary at the rate of £125 per annum.

HOUSE SURGEON (attached to the Genito-Urinary Department). Salary at the rate of £125 per annum.

HOUSE SURGEON to Gynæcological, Aural, and Skin Departments. Salary at the rate of £125 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

Forms of application, which may be obtained from the undersigned, must be delivered without delay.

By Order of the Board.
Salford Royal GEORGE RUDDLE,
Hospital, Manchester. Gen. Supt. &
June 3rd, 1929. Secretary.

Ancoats Hospital, Manchester.

ASSISTANT PATHOLOGIST (Part-time). Salary £150 p.a. Lady or gentleman. Appointment for 12 months. Applications, stating age, experience, and appointments held, together with copies of three recent testimonials, to be forwarded not later than June 11th to the undersigned.

HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

BRITISH MEDICAL BUREAU

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MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

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(In conjunction with the MALE NURSES' ASSOCIATION),
29, York St., Baker St., London, W.1.
Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

ST. LUKE'S HOSPITAL.

FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 25165.

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TRANSFERS and PARTNERSHIPS arranged, and Investigations, Valuations, &c., undertaken. ASSISTANTS & LOCUM TENENS SUPPLIED PRACTICES for Sale. Particulars on application

Derbyshire Hospital for Women,

DERBY.
(Gynæcological and Obstetrical Hospital.)
(50 Beds.)

Applications are invited for the post of HOUSE SURGEON (male).

Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for 12 months, with a possibility of extension for a further period of 6—12 months. Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of not more than three testimonials, to be sent to the undersigned not later than June 15th. Duties will commence on July 1st.

W. T. COCKER,
May 23rd, 1929. Secretary.

Dr. Steevens' Hospital, Dublin.

RESIDENT SURGEON required. Applications (before June 17th) to the Secretary.

MEDICAL PRACTITIONERS' UNION TRANSFER AGENCY, LIMITED,

56, RUSSELL SQUARE, LONDON, W.C.1.

Telephone: Museum 6161.
Telegrams: "Uffabrini, Westcent, London."

PRACTICES. PARTNERSHIPS. ASSISTANTSHIPS.

1. LONDON, S.E.—Panel and private PRACTICE *for sale*. Income between £800 and £900. Number on panel 820. Fees 2/6 up. Shop-fronted premises. Waiting and consulting *rooms, dining* and sitting rooms, kitchenette, bathroom, 3 bedrooms, small garden; electric light and gas fires in all rooms; rent £50 p.a. Premium £1,200.
2. LONDON, S.E.—Old-established panel and private PRACTICE for sale. Income *over* £700, number on panel 630. Fees 2/6 up. Good nine-roomed corner house, long garden, room for garage, to be sold. Premium for house and practice £2,400.
3. DEVON (Death Vacancy).—Old-established panel and private PRACTICE *for sale*. Worked by late owner since 1913. Income £1,500, number on panel 625. Attractive recently built house, lounge hall, surgery, *waiting room*, two reception, six bedrooms, dressing room, bathroom. Two acres garden. House and *grounds* valued £4,000, would consider letting, but if bought would accept premium of £4,500 for house and practice.
4. SHROPSHIRE.—Country Town panel and private PRACTICE for sale, income £1,200. *Number* on panel over 500. Fees 3/6 up. Excellent house, three large reception rooms, *six* bedrooms, bathroom, etc. Large garden, outhouses. To be sold for £1,500, or would *let for £60 p.a.* Premium for practice £2,000. Accept part down, balance by arrangement.
5. *PARTNERSHIP* in high-class Consulting PRACTICE in West London. Receipts over £3,000 per year. Fees 10/6 to 5 gns. One-third or half share for sale at two years' purchase. Payment by arrangement. Suit a young man keen on Electrical work.
6. MONMOUTHSHIRE.—Panel and private *PRACTICE* for sale. Income from contract work £1,100 p.a. Income from private practice £400 p.a. Industrial area. Number on panel 950. All books carefully kept. Small modern house to let, rent £1 2s. 6d. p.w. Cottage hospital in district. Premium £1,400. *Accept £700* down, balance by instalments.
7. BIRMINGHAM.—Panel and private PRACTICE for sale. Income £2,200; number on panel 1,700. All books audited. Middle and working class, fees from 2/- up. Large detached house with big garden and 2 freehold surgeries. Vendor's own properties, for sale. *Little opposition. Premium* for practice 1½ years' purchase
8. LEICESTERSHIRE.—Town PRACTICE *for* sale. Old established. Receipts 1926, £1,039 8s.; 1928, £700. Number on panel 503. Mixed class of patients; fees at surgery 3/6 up. Comfortable house, 3 reception, 4 bedrooms, 2 attics, electric light, gas, central heating, separate surgery. Rent £100 per annum. Premium £950.
9. GLASGOW.—PRACTICE established and worked by vendor 8 years. Receipts £920. £60 on panel. Working-class practice in semi-rural dist. Two surgeries 1½ miles apart. Buyer should be Catholic. Premium £1,020.
10. NEAR *MANCHESTER*.—Good panel and private PRACTICE. Average income £1,600. Number on panel 1,600 Working and *middle*-class patients; fees 2/6 to 10/-. 7-roomed house in first-class condition; 450 square yards of garden back and front. Freehold to be sold, £1,200. Premium for practice 1½ years' purchase.
11. LANCS. Good mixed *PRACTICE for sale*, average income £1,505 4s. Transferable appts. Number on panel 2,044. Fees at surgery 2 6 up. House contains four bedrooms, two reception rooms, boxroom, etc. Rent £34 5s. Premium for practice 1½ years' purchase.
12. *PARTNERSHIP* in large town PRACTICE in Gloucestershire. Average income £2,000. Number on panel 2,475. *At present* worked by two men. A third partner is needed owing to increasing work. One-fourth share for sale for £1,000. Share to be increased to one-third later. Single man with hospital experience preferred.
13. ASSISTANT wanted in panel and private Practice in Essex. Englishman *preferred*. To live out; everything found. Suit newly qualified man. Salary £250 to commence.
14. ASSISTANT wanted for general Practice in Swansea. Indoor. Salary £300.
15. ASSISTANT wanted in panel and private Practice in Leeds. Recently qualified man suitable; not R.C. Salary to commence £250.
16. ASSISTANT wanted for general Practice in S.W. London. Rooms over surgery. Salary £250. Much be Englishman.
17. ASSISTANT wanted for panel and private Practice in co. Durham. Duties to commence end of May. Must be *Protestant*. To live in. Salary £200.
18. ASSISTANT wanted in panel and private Practice in Glam. Preferably Welsh, single, and able to drive car. Salary indoor, £360 to £400; outdoor £500.

British Medical Bureau

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The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

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The business undertaken by the British Medical Bureau is divided under the following heads:—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence. Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

ASSISTANTS AND LOCUMTENENTS.

Assistants and Locumtenents can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out.

RESIDENT PATIENTS.

Medical Men wishing to receive Resident Patients should enrol their names on the books of the British Medical Bureau. A large number of Patients are placed yearly through this medium.

ACCOUNTANCY.

The British Medical Bureau has its own staff of fully qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Books & Accounts, etc.

Practices and Partnerships for Disposal.

Full particulars sent free.

1 LONDON, W. — Partnership in non-dispensing Practice about £2,500 p.a. No panel or appointments. One-third share with view to ultimate succession. Premium 2 years' purchase.

2 SOUTH MIDLANDS. — Partnership in Country Practice of £6,300 p.a. in residential and agricultural district. Panel over 2,200. Suitable house for sale. Hospital. Partner should be 28 to 30 and have held House appointment. Premium one-fifth share £2,510.

3 LONDON, N.—Partnership in well-estab. middle-class Practice, nearly £2,750 p.a., in pleasant outlying suburb. Panel about 800. Suitable accommodation to rent. Premium one-third share 2 years' purchase.

4 SOUTH COAST.—Partnership in Practice of £1,900 in residential town and favourite watering-place. Premium one-half share 2 years' purchase.

5 MIDLANDS. — Partnership (after preluminary assistantship) in good mixed Practice worth £4,000 p.a. in country town. Panel 3,600. House to rent. Hospital and scope for surgery. Partner should be keen on his work and have held H.S. and H.P. appointments. One-third share at 2 years' purchase.

6 YORKSHIRE (W.R.). — Practice averaging nearly £1,350 p.a. in manufacturing town. Panel 995. Detached house (4 bedrooms) for sale. Premium £2,000.

7 EAST ANGLIA.—Partnership (after preluminary assistantship) in country town Practice. House to rent. Share of £1,500 p.a. at 2 years' purchase to suitable applicant, who must be an Englishman (preferably Oxf., Camb., or Lond.).

8 LONDON, E. — Cash and Panel Practice nearly £1,800 p.a. in populous suburban district. Panel about 2,250. House to be sold or let.

9 CARMARTHENSHIRE. — Steadily increasing PRACTICE of £800 in small country town. Panel 645. Small house (5 bedrooms) to rent. Premium 1½ years' purchase.

10 SOUTH OF ENGLAND. — Unopposed Country PRACTICE of £1,800 p.a. in manufacturing village. Panel about 1,400. Nice detached residence (5 bedrooms) to be let or sold. Sport. Premium £2,700.

11 SOUTH OF ENGLAND.—Partnership in non-dispensing Practice £4,200 p.a. in attractive watering place. Panel about 1,500. Incoming Partner must be F.R.C.S.Eng. or Edin., or M.D.Lond., Oxon., or Camb. One-fourth share at 2 years' purchase. (Preliminary assistantship.)

12 DEVON.—Practice about £800 in small delightfully situated town on coast. Panel under 400. Detached house (4 bedrooms), in own grounds, to rent. Excellent up-to-date Cottage Hospital. Premium £1,300.

13 ISLE OF WIGHT.—Easily worked PRACTICE of £1,340 p.a. (including clubs and appointments worth £300). Panel 500. Convenient modern house. Garden and garage. Scope. Premium, Practice and house, £3,800.

14 HOME COUNTY.—Partnership in mixed-class Practice £4,400 p.a. Panel over 2,200. Small house (3 bedrooms) to rent. One-fourth share at 1½ years' purchase.

15 ITALY.—Season (March to October) PRACTICE in famous city. Receipts average £563 p.a. No midwifery or night work. Up-to-date Hospital. Premium £563.

16 BUCKS.—Practice about £800 in small country town. Panel 741. Nice detached house (4 bedrooms), garden and garage, to rent. Premium £1,200.

17 LIVERPOOL. — Cash and Panel Practice about £865 p.a. in working-class district. Panel over 1,200. Large house to be sold or let. Great scope. Prem. 1½ yrs. pur.

18 CARDIFF. — Non-dispensing Practice averaging £1,543 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,000.

19 KENT. — Practice averaging £1,030 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, Practice, £1,500.

20 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600. Large house (9 bedrooms) with over 13 acres of land for sale. Premium, Practice, 1½ years' purchase.

21 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. One-half share for sale (one-third first year) at 1½ years' purchase.

22 EAST ANGLIA.—Country Practice about £1,470 p.a., easy reach of important town. Panel about 1,000. Nice house (10 bed and dressing rooms), with electric light, etc., for sale. Premium 1½ years' purchase.

23 DEATH VACANCY.—DEVON.—Country PRACTICE. Receipts, 1928, £1,266. Panel about 700. Modern house (7 bed and dressing rooms) in grounds of 2 acres. Price of house £3,000.

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FOUNDED (1883.)

12, Stratford Place,
Oxford Street, W.1.

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Practices and Partnerships for Disposal (continued).

24 S.E. COAST.—Practice averaging £1,127 p.a. in favourite resort. No panel. Very good semi-detached house (6 bedrooms) for sale. Scope. *Premium* 1½ years' purchase

25 SOUTH OF ENGLAND. — Practice of £2,230 p.a. (carried on by two men in partnership) in charming residential country district. Panel over 1,800. Two houses to be purchased. Excellent sport. Premium 1½ years' purchase.

26 NORTH GLOUCESTERSHIRE.—Country PRACTICE in *delightful* part. Cash receipts £560. Panel 450. Modern house (6 bed and dressing *rooms*), with garden 1 acre. Premium, house and Practice, £3,000.

27 SUSSEX. — Small Country Practice in delightful part near coast. Receipts past 12 months £546. *Picturesque house (3 bedrooms), with* nice garden to be sold or let. Premium £550.

28 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) *in* first-rate town. Earnings about £2,200 p.a. Suitable house for *sale or rent*. Premium one third share 2 years' purchase.

29 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

30 N.W. COAST. — Non-dispensing Practice over £850 p.a. in seaport town. No panel and very little night work. Excellent semi-detached residence (5/6 bedrooms) for sale. Premium 1½ years' purchase.

31 YORKSHIRE (W.R.). — Partnership in Practice about £2,600 in one of the chief towns. *Panel over 900. Partner should be a Protestant. One-third share at 1½ years'* purchase after preliminary assistantship.

32 S.W. of ENGLAND.—Partnership in Practice about £3,000 in market town. Panel 1,100/1,200. Detached house (5 bed and dressing rooms), in 3/4 acre garden, for sale. Premium one-half share 2 years' purchase.

33 YORKSHIRE (N.R.). — Practice about £1,000 in small country town. *Panel 430. House (6 bedrooms),* garage, and garden, to be sold or let. Scope. Premium £1,250.

34 HOME COUNTIES.—Practice about £1,000 p.a., *with* great scope, in beautiful country district under 35 miles *from London. No house available, but could build.* Premium 1½ years' purchase.

35 SOUTH AFRICA. — Compact unopposed Village PRACTICE of about £1,000 p.a., in attractive part of Cape *Colony*. Exceptional house (4 bedrooms) and about 2 acres ground. *Price £1,000.* Excellent climate. Premium £500.

36 SURREY.—Partnership in non-dispensing *Practice £3,600 p.a. in first-rate residential* town. Panel 3,800. House (6 bedrooms) to rent Two-fifths share at 2 years' purchase. Partner must be experienced, aged 30/40, and be a good Surgeon.

37 HOME COUNTIES. — *Country Practice* about £425, in beautiful part about 40 miles from London. Small *panel. House and about 50 acres farm land.* Price, Practice, House, Farm, etc., £4,250.

38 YORKSHIRE COAST. — Practice averag*ing £1,850 p.a.* (some Eye work) in pleasant seaside town. Panel 80. Modern double-fronted house (6 bedrooms) *for sale.* Premium £2,400.

39 N.E. COAST.—Partnership in sound Prac*tice in rapidly growing and attractive seaside town.* Panel about 700. Suitable house available. Share of about £1,400 for disposal at 2 years' purchase. Partner aged about 30 and well qualified, who has *held resident Hospital appointments.*

40 LONDON S.E. — Practice about £800 in populous district. Panel 800. No midwifery. *House (5 bedrooms) to rent. Premium* 1½ years' purchase.

41 SUSSEX.—*Partnership in Country Prac*tice, £2,750, in residential district (appointments and panel about £1,000). Good house (5 bedrooms and 3 attics) with large garden. To rent. One-half share at 2 years' purchase.

42 SOUTH AFRICA.—Old-established PracTICE *in one of the pleasantest towns, with beautiful climate, in the Cape Province.* Receipts average £2,900 p.a. *House* (4 bedrooms) to rent. Purchaser should be able to do major surgery. Premium £2,500.

43 SOUTH AFRICA.—Well-established PracTICE, £1,200 p.a., *in the Orange Free State.* House in best position in centre of town. Rent £10 *per month.*

44 SOUTH OF ENGLAND.—Partnership in Practice £2,280 in first-rate *County* town. Small panel. Well-built house (6 bedrooms) to rent. Premium one-half share 1½ *years' purchase.*

45 NORTH DEVON.—Country Practice £775 p.a. in a most *beautiful* part. Panel 340. Detached house (7 bed and dressing rooms), *with old*-fashioned garden, for sale. Scope. Premium 1½ years' purchase.

46 NORTH-EAST COAST. — Ophthalmic PRACTICE of about £400 p.a., capable of increase, in favourite watering-place. Large house in best part, which need not be taken. Prospects of Hospital appointment. Premium £500.

47 MIDLANDS.—Non-dispensing Practice in *prosperous town. No panel, clubs, or midwifery. Receipts 1928, £1,200, including small amount from Electro-therapy. House* (5 bedrooms) for sale. Scope. Prem. £1,500, to include apparatus.

48 LONDON, W.—Middle-class Practice £730 p.a. in residential Western Suburb. No panel. House, with 5 bedrooms and garden, to rent. Premium £1,100.

49 SHEFFIELD. — Non-dispensing Practice about £800 (including two appointments worth £155 p.a.). *No panel. Conveniently* situated house (6 bedrooms). Premium, Practice and house, £2,000.

50 EAST COAST. — *Partnership in Practice* over £2,000 p.a. *in small* rapidly growing popular watering-place. Panel 700. Partner should be aged 25 to 30, single, with English qualifications, and have held Hospital appointment. Preliminary assistantship. *One-third share* at 2 years' purchase.

51 LANCASHIRE.—Practice of about £2,000 in semi-rural district, easy distance of several good towns. Panel returns *about £520 p.a. Nice house* (6 bedrooms), with garage and garden.

52 MONMOUTHSHIRE. — Practice between £1,400 and £1,500 (£1,100 from panel and contract work) in progressive area. Modern six-roomed house, with garden, to rent. *Small cottage hospital. Premium one year's purchase, part by* instalments if desired.

53 LONDON, E. — Practice over £700 in populous district. Panel *nearly 500*, rapidly increasing Shop-fronted house for sale or *rent. Premium* 1½ years' purchase.

54 HOME COUNTIES.—Partnership in Practice between £4,000 and £5,000 p.a. in first-rate residential town. Panel *1,900.* One-fourth share at 2 years' purchase.

55 N. WALES.—Very old-established, £1,346 p.a. *in small town. Panel 716. House (6 bed and dressing rooms) to rent.* Premium 1½ years' purchase.

56 LONDON, N.—Rapidly increasing Cash and Panel PRACTICE. Cash receipts last year £715. Panel 510. Shop-fronted Surgery. Rent £53. Premium £800.

57 HOME COUNTIES. — Partnership in Practice about £2,800 p.a. in good town about 30 miles from London. Practically no panel and very little midwifery. *Suitable house to rent* or purchase. Partner should be experienced, and have held Hospital *appointments* One-third share at 2 years' purchase after preliminary assistantship.

58 SOUTH COAST.—Non-dispensing Practice over £1,800 p.a. in residential town. No panel.

59 MIDDLESEX.—Partnership in increasing Town Practice over £2,000 p.a. *Panel over 1,400* Partner should be good at midwifery. Premium one-half share 2 years' purchase.

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7. NOTTS COUNTY. — Panel, Colliery, and Private PRACTICE. Receipts about £440. Panel 340 Good house to rent. Garage.
8. NORTH-WEST MIDLANDS. — £1,000 p.a. Well-estab. PRACTICE. Panel 1,200. Excellent scope. Suitable house.

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„ 8473. N.E. COAST.—Over £7,000 p.a. 1/5 Share for sale, increasing to 1/3. Appts. £70 p.a. Panel 750. Mids. 3—7½ gns. Visits 5/- to 10/6. Good house, 8 beds., etc.

„ 8472. LANCS TOWN.—1/2 Share of about £3,000 p.a. Panel over 2,500. *Excellent house and good garden.* 5 beds., sep. surgery. Prem. only 1½ years' purchase.

„ 8470. S.W. COUNTY.—1/2 Share of about £3,000 p.a. Appts. £125 p.a. Panel about £520 p.a. Fees up to 21/-. Good house, 4 bed., etc., large garden. Prem. £2,000 cash for quick sale.

„ 8466. BIRMINGHAM.—About £2,500 p.a. Panel 1,700. Mids. from 2 gns. Visits 3/6 up. Up to 1/2 Share for sale. Choice of three houses. Assistancy considered.

„ 8460. KENT.—£1,500 share, non-panel, non-disp. PRACTICE of £3,600 p.a. Appts. about £1,200. Visits 5/- to 7/-. Mids. 5 to 10 gns. Large house to rent.

„ 8456. SOUTH COAST.—1/2 Share of about £900 p.a. Panel 900. *Visits 3/6 up. Premium £750 or offer. Lock-up surgery.*

„ 8454. LANCS.—1/3 or 1/2 Share of over £2,400 p.a. Preliminary assistancy. Mixed class. Panel 500. Good house, 4 beds, 2 attics, etc.

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„ 8441. HOME COUNTIES.—*Hospital Town.*—Average £2,800 p.a. Up to 2/3 Share for sale after short assistancy, possible early succession. Appts. £90 p.a. Small panel. Mids. 2 gns. up. Visits 3/6 up. House, 5 bed., etc., to rent.

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„ 8378. SUBURBAN.—Share worth £500 p.a. Visits 5/- up. Panel about 650. Accommodation with *Vendor if single.*

„ 8342. LONDON, S.E.—£1,800 p.a. Cash and panel of 1,845. 1/3 Share for sale. Visits 3/6 up. Very little mids. Small accommodation over Surgery.

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„ 8487. CAMBRIDGESHIRE.—Nearly £600 p.a. Appts. and panel over £250 p.a. Visits 3/6 up. House, 7 bd., etc., good garden, to rent.

„ 8486. LONDON, S.E.—About £800 p.a. Visits 2/6. Panel over 700. Small house, rent £50 p.a.

„ 8485. KENT.—Unopposed.—£2,000 p.a. Panel 735. Appts. £52 p.a. Visits 5/- to 21/-. Good house and garden. Premium only £2,500 on easy terms.

„ 8484. S. WALES.—About £700 p.a. Panel 706. Visits 3/-. Small house, 3 bed., etc. Rent or sell. Prem. £750, or offer.

„ 8481. SURREY.—About £600 p.a. Residential. Small panel. Appt. 5/- to 10/-. Good house, 6 beds., etc., rent or sell. Prem. £650 or offer.

„ 8480. BEDS.—About £600 p.a. Excell. scope. Small panel. Appt. £20 p.a. Visits 3/6 to 10/-. Good house, 6 beds., etc. *Large gard., tennis, etc. Rent £80. Prem. £700, or offer.*

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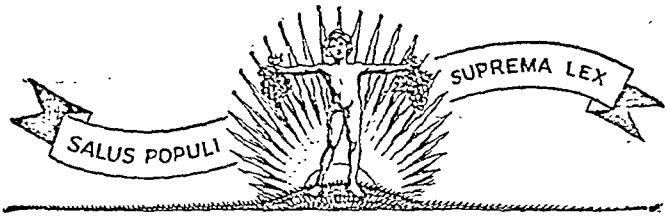

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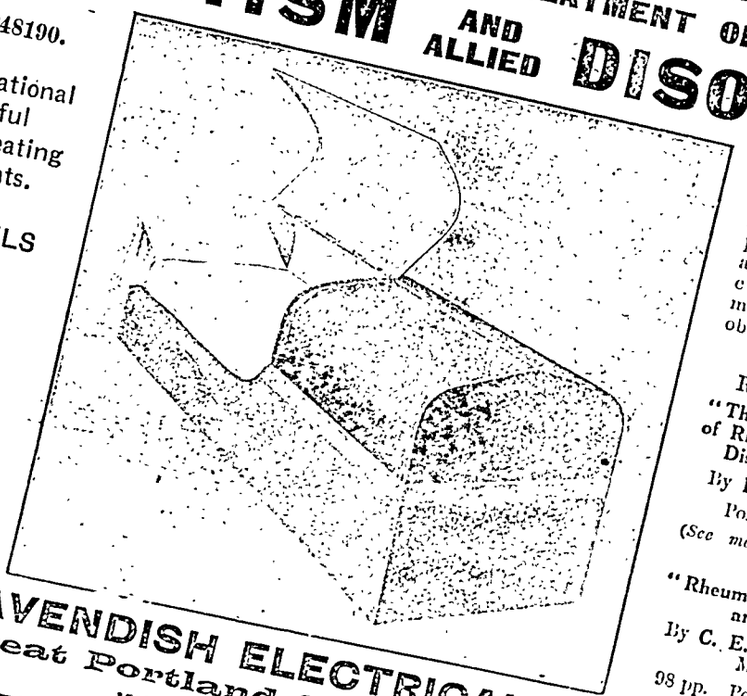

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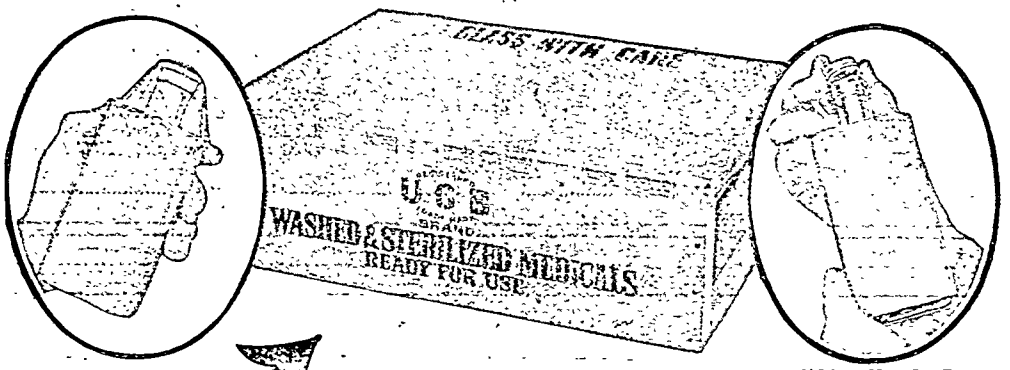

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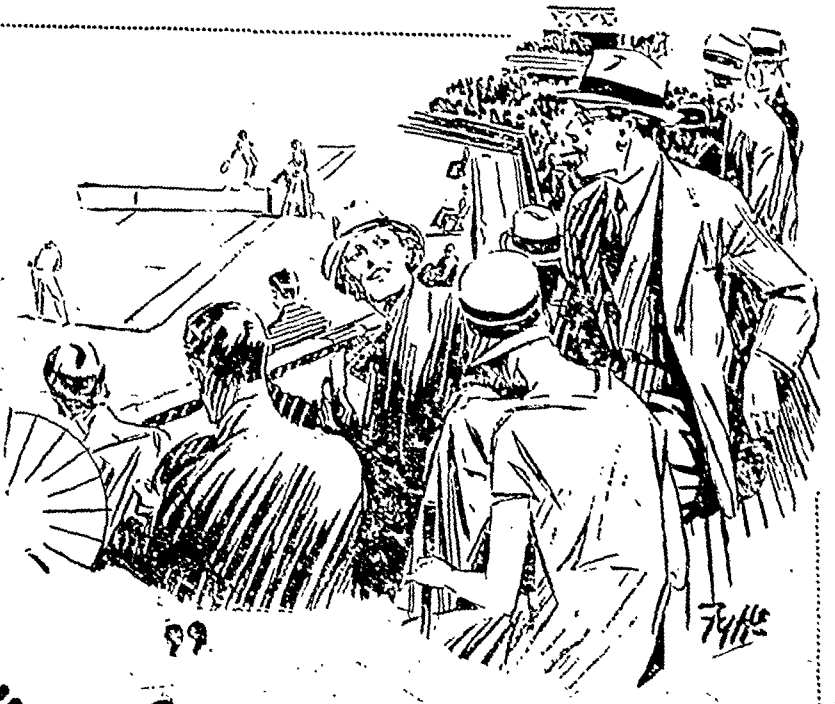

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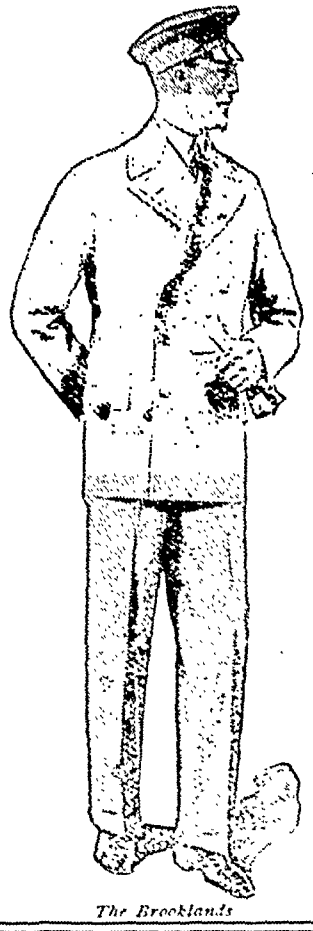

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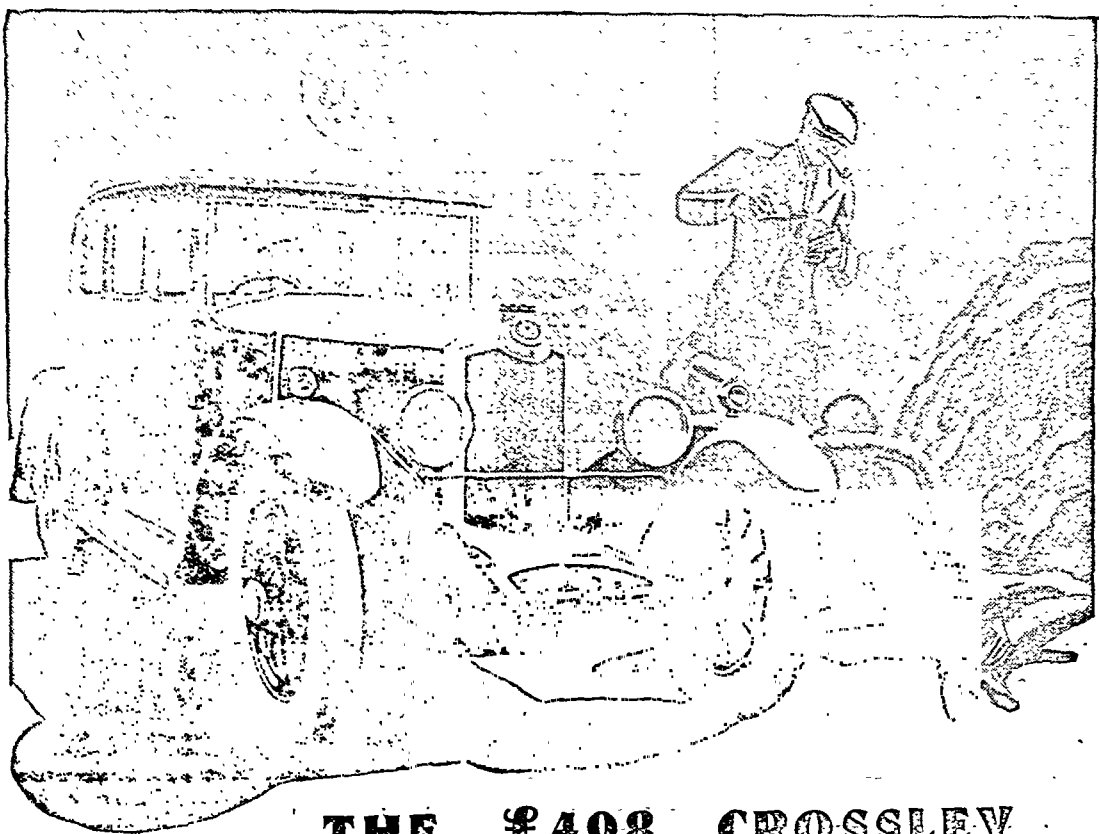

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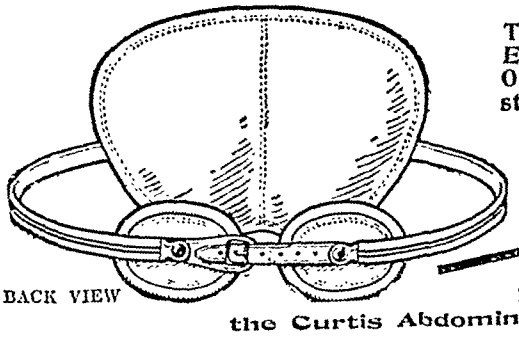

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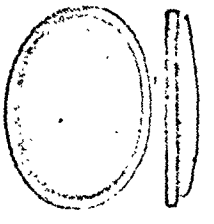

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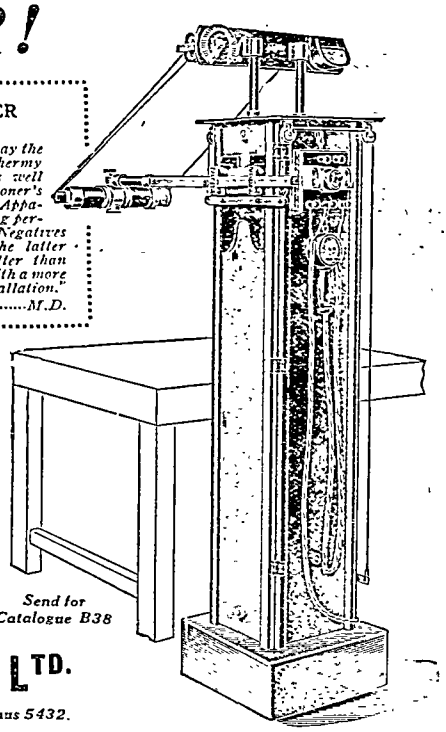

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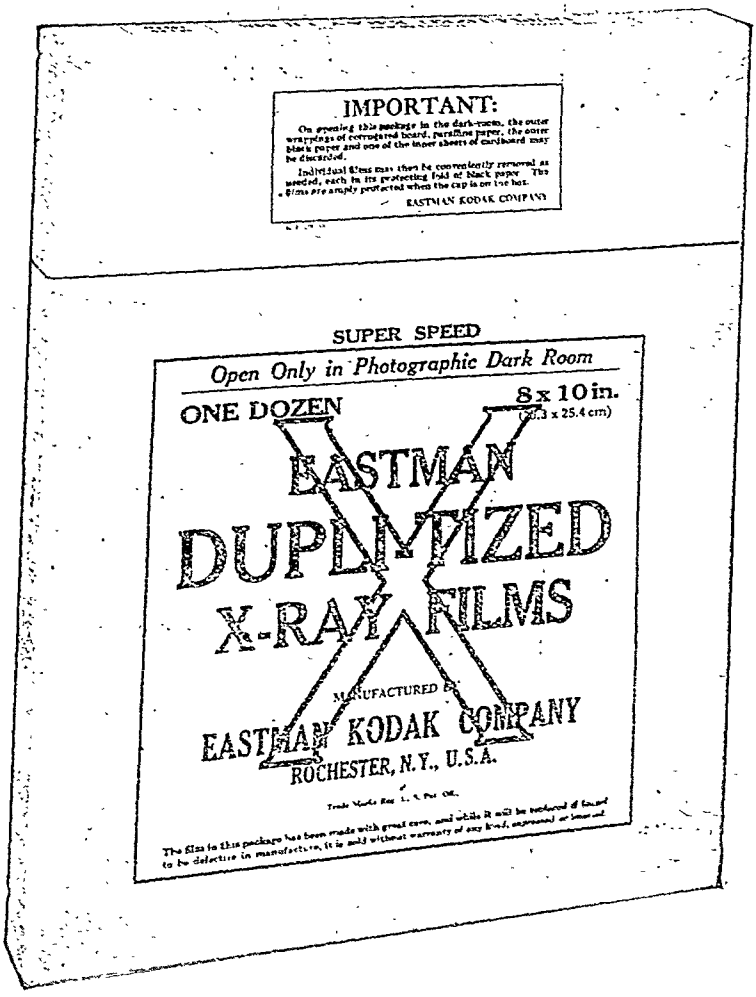

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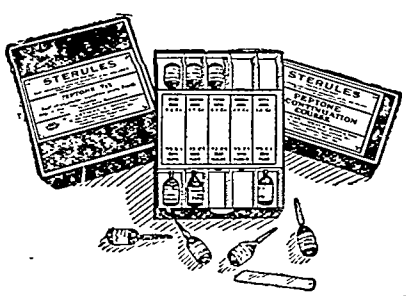

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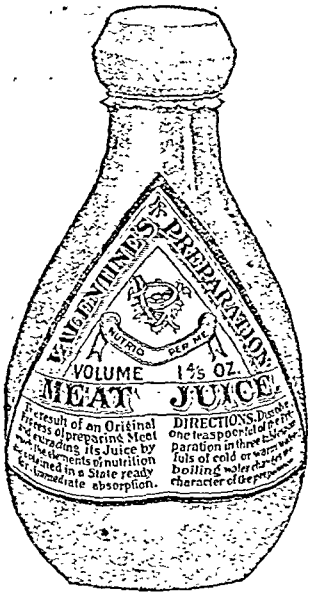

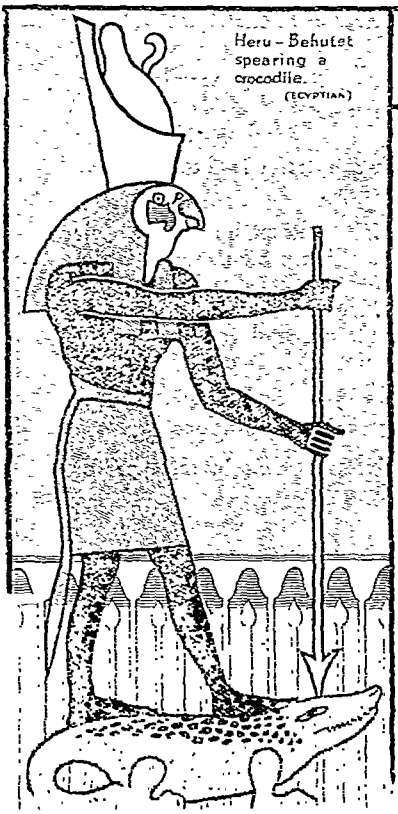

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Of the beef nothing is excluded but the indigestible connective tissue and lipoid. Of the wheat nothing is excluded but the insoluble inert cellulose and silica of the shell of the grain.

'Panopepton' is of a uniform standardized composition; it is highly agreeable; requires no preparation. It is a potent restorative and emergency food in serious straits; a fortunate recourse for the invalid.

Supplied in 12-oz. bottles.

Originated and Manufactured by
Fairchild Bros. & Foster (Inc. N.Y.),
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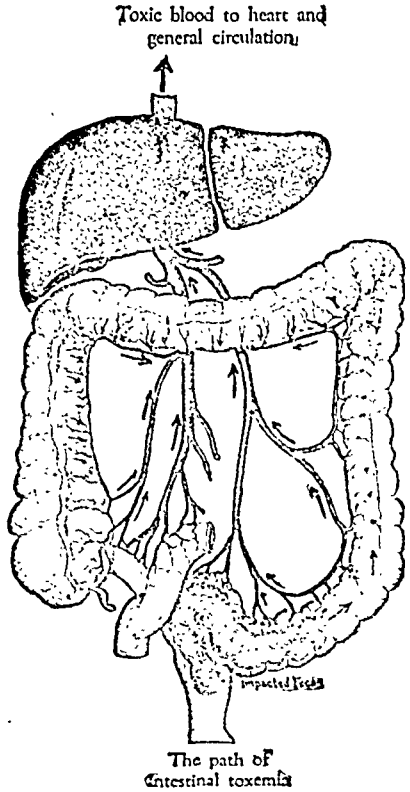
Agents:
Burroughs, Wellcome & Co.,
LONDON, SYDNEY, and CAPE TOWN.

Dissolves Intestinal Toxins



The path of Intestinal toxemia

Not the least valuable of its properties is the behaviour of Nujol toward intestinal toxins.

If a watery solution of indol be shaken up with Nujol, more than half the indol is quickly taken up. Nujol readily dissolves this and other waste and poisonous substances, many of which are more soluble in Nujol than in water. Once absorbed in Nujol they cannot be absorbed by the system, as Nujol itself is non-absorbable.

The brownish colour of Nujol as seen in the stool is partly due to toxins which it holds in solution.

Nujol is a safe and effective treatment in all types of constipation and intestinal toxemia.

Nujol

Registered Trade Mark

NUJOL DEPARTMENT
128, Albert Street, Camden Town, London, N.W.1

UNG. SEDRESOL (Ferris).

A Valuable Sedative Antiseptic and Healing Ointment.

UNG. SEDRESOL is a combination of the products obtained by the destructive distillation of the wood and bark of the *Betula alba* in combination with Oxide of Zinc and Antiseptics.

It is specially indicated in Eczema, Psoriasis, Erysipelas,, Shingles, Erythema, Seborrhœa, Dermatitis, Pruritus Ani and Vulvæ, and in Inflammations and Eruptions of the Skin and in Burns and Scalds.

UNG. SEDRESOL is supplied to the Medical Profession at the following prices:—

¼-lb. Jars, 1/8 each; ½-lb. Jars, 3/- each; 1-lb. Jars, 5/9 each; 2-lb. Jars, 11/- each; 4-lb. Jars, 21/- each. *(Empty Jars allowed for on return.)*

SEDRESOL SOAP (Ferris).

A pure superfatted soap for the skin containing the same medication as Ung. Sedresol.

Price: 10d. per tablet, 9/6 per dozen. 30/- per dozen boxes of 3 tablets.

(The word "Sedresol" is registered under the Trade Marks Act and is the sole property of Ferris & Co., Ltd.)

FERRIS & COMPANY, Ltd.

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Wholesale and Export Druggists and Manufacturing Chemists.

BRAND'S ESSENCE OF BEEF for INVALIDS

has enjoyed the confidence of the medical profession for over 90 years. A nourishing stimulant that demands the least amount of energy in the process of assimilation and increases the means of defence by raising the powers of resistance.

Mark it in your memo book

Brand's Essences are scientifically prepared, in jelly form, from the finest English meats, and contain upwards of eleven per cent. of proteid. The nourishing and stimulating properties are IMMEDIATELY ABSORBED, without residue, in the alimentary canal. No time is lost in process of assimilation. No work entailed by the digestive organs. Absolutely pure. Contains no gelatine, colouring, or preservatives. Good for young and old alike.

BRAND'S ESSENCE OF CHICKEN contains the same nourishing and stimulating properties as Brand's Essence of Beef, and for over 90 years has been recommended by the medical profession when required by prevailing conditions.

Sold by Chemists Everywhere

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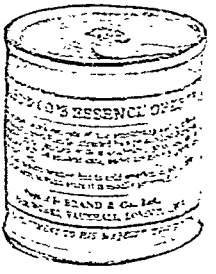

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Indicated in the treatment of

all the gonadal dysfunctions of men and women

Sex gland deficiencies in men and women are successfully treated with Ovacoids, Testacoids and Ampacoids.

Each
OVACOID contains:—
Autacoids representing Fresh Ovary ... ... 5 grs.
Autacoids representing Fresh Anterior Pituitary ... ½-gr.
Indications:—Sex gland deficiencies in the female, such as Amenorrhœa, Dysmenorrhœa, Menorrhagia, Sterility, Chlorosis, Frigidity, Sexual Neurasthenia, Hypertension and Functional or Artificial Menopause. Bottles of 50 Tablets.

AMPACOIDS
Ampacoids aqueous solutions for hypodermatic injection of the autacoids of Ovary, Testicle, and Prostate respectively.
They are physiologically standardized, and are free from all the contaminating substances present in ordinary gland extracts. Boxes of 6 1 c.c. Ampoules.

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Ovacoids-Testacoids
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Manufactured by
REED AND CARNRICK
Pioneers in Endocrine Therapy
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"Byno" Hæmoglobin

The Pre-Eminent Hæmatinic in the Anæmias

Disadvantages of Inorganic Iron

Constipation
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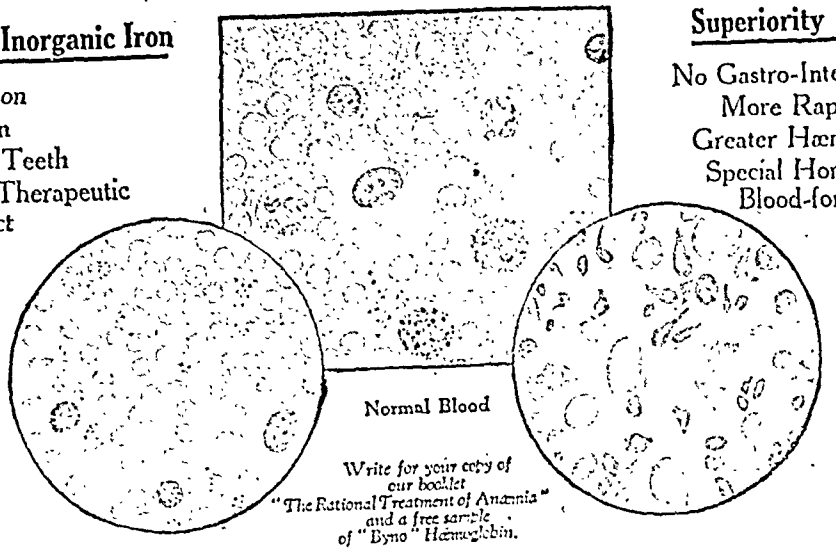
Variability of Therapeutic Effect



Superiority of Hæmoglobin

No Gastro-Intestinal Disturbances
More Rapidly Absorbed
Greater Hæmatopoietic Effect
Special Hormonic Effect on Blood-forming Organs

Write for your copy of our booklet "The Rational Treatment of Anæmia" and a free sample of "Byno" Hæmoglobin.

ALLEN & HANBURYS LTD., Bethnal Green, London, E.2.
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Disturbances of Menstruation and the Menopause

The close association between the efficient action of the ovaries and the blood calcium index, provides a good reason for the administration of Kalzana in these cases.

The chemical composition of Kalzana, calcium - sodium - lactate, is unique, and the special feature of the sodium element is that it raises the blood alkalinity, thereby promoting the retention of the calcium constituent.

Recent clinical notes state:

"I tried Kalzana on a patient who was suffering from anaemia due to disorder of menstruation (Menorrhagia). I obtained the most excellent results with it. The patient regained her original health and the menstrual period was regulated."

"I have now had three patients on Kalzana, all for menorrhagia, and it has benefited all three. One of the three also had acute dysmenorrhoea; this is cured apparently."

Kalzana is supplied in a convenient tablet form, is free from harmful by-effects and is pleasantly flavoured.

Dispensed by Chemists in air-tight packets containing 50 and 100 Tablets.

Kalzana

Exactitude in preparing Milk Mixtures

very often solves the most difficult problems set by the artificially-fed infant. Careful dilution of cow's milk will give the correct percentage of casein, and the addition of Albulactin provides exactly the proportion needed to meet the digestive capacity of the infant. Albulactin is pure soluble lactalbumin—the vital proteid of milk—upon which depends the formation of a fine, flocculent curd in the infantile stomach. Albulactin simplifies the preparation of milk mixtures for all infants, from the premature weakling to the normal healthy baby.

"The British Medical Journal" says:

"A modified milk, prepared by mixing cow's milk, albulactin, and water in such proportions that the casein and albulactin were in approximately equal amounts, formed much less curd when acidified than diluted cow's milk, containing the same proportion of total protein. There appears to be every reason to expect this preparation to be of great value in the hand feeding of infants."

Supplied in bottles at 1/9, 3/6 and 7/-

Albulactin

Made by A. WULFING & CO., Amsterdam, Holland.

Supplies for your own dispensing, and for Hospitals, Sanatoria, etc., are available on special terms. Adequate samples for clinical trials sent with pleasure, upon request.

THERAPEUTIC PRODUCTS LTD. (Dept. B.M.J. 4), 24/27, HIGH HOLBORN, W.C.1.

Wulfing Products

RHEUMATOID ARTHRITIS

Guesses and Gaps in its Ætiology

"The whole story of proteid metabolism consists, at present, mostly of guesses and gaps."—Sir MICHAEL FOSTER.

WHY do thousands of people suffer from various forms of rheumatism, yet tens of thousands escape when living under precisely similar conditions of climate, diet, etc.?

The answer can be found in two sound premises: there is present (1) Pre-existent susceptibility in joints and fibrous tissues to invasion by micro-organisms or toxins; (2) Diminished resistance of these tissues to such invasion.

Bacillary Toxæmia has to be fought throughout the entire gastro-intestinal tract, but it is developed out of all bounds in the colon of man: in that vast nursery more obscure metabolism takes place than can ever be completely investigated.

Laxatives and purgatives relieve a loaded colon, but they have no action upon the intestinal organisms whose toxins are so virulent: *these remain, after the contents have been removed by purgative action, to set up the same disturbance with the next meal.*

It would seem good practice, therefore, to destroy as effectively as we can the pathogenic bacteria of the colon in all forms of rheumatic diathesis, with an efficient, non-toxic bactericide. Such a product is now readily available in the form of Dimol, which for over eight years has been giving most gratifying results in the treatment of putrefactive and other bacterial invasions of the intestinal tract.

Literature and samples may be obtained from the

Dimol Laboratories, Limited, 40, Ludgate Hill, London, E.C.4

Distributing Agents:

SANGERS, Ltd., 258, Euston Road, LONDON, N.W.1

The Treatment of

Puerperal Septicæmia

In a recent paper (*B.M.J.*, June 1st, 1929, p. 984) there is published a report showing that puerperal septicæmia, with haemolytic streptococci, responds in a most remarkable manner to therapeutic doses of

RADIOSTOLEUM

Every case under treatment made a complete recovery

This discovery is naturally of vital importance in obstetrics; indeed, the results indicate that its application in practice is likely to prove a most effective means of reducing substantially the maternal mortality rate.

It would appear that the natural sequence of the discovery is that Radiostoleum therapy will be found of inestimable value, throughout the pre-natal period, in building up a reserve of power to resist the onslaught of infection at the critical period.

Radiostoleum is a liquid which is issued in capsules and in bottles of varying sizes. It is administered

(1) in prophylactic doses—as capsules

(2) in massive therapeutic doses—by the teaspoonful

Particulars of dosage and samples on application

THE BRITISH DRUG HOUSES LIMITED
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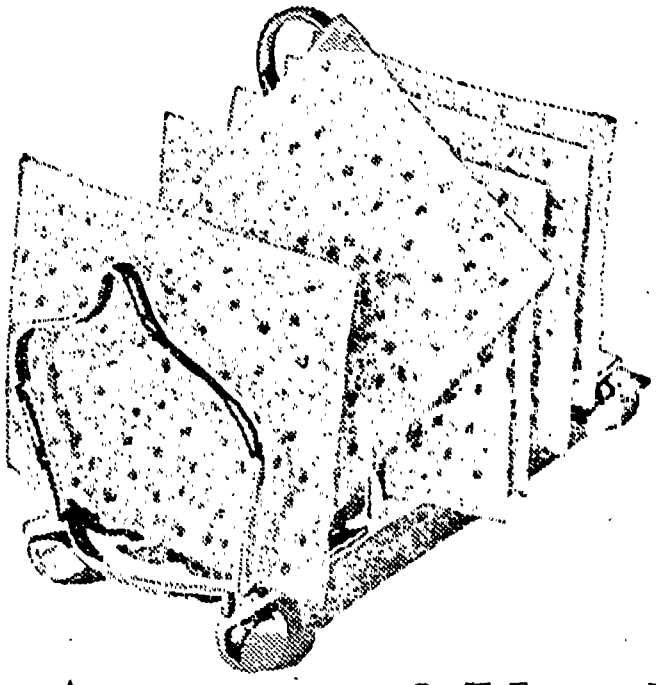
Vit. Pr. 75.



Health Aspects of Vita-Weat

In cases of diet regime a readily acceptable and beneficial alternative to ordinary bread will be found in Vita-Weat—the whole-wheat British crispbread.

The "Lancet's" Report.

Being made from 100% stone-ground whole wheat, Vita-Weat preserves all the vitamins intact. The *Lancet* reports that Vita-Weat is "a valuable foodstuff, more particularly in respect of its content of Vitamin B." Vita-Weat is also rich in Vitamins A and D, in proteins, and in the valuable mineral salts so necessary to health.

Extremely Palatable.

Vita-Weat is extremely palatable, possessing a delicious "crunchiness" and ripe-corn flavour. Its crispness encourages mastication and so promotes a healthy condition of the teeth and gums.

High Calorie Value.

"The calorie value of Vita-Weat," says the *Practitioner*, "is 2,132 per lb., which may be compared with the calorie value of fresh white bread, namely 1,210 per lb." It will thus be seen that Vita-Weat possesses a high physiological fuel value.

To Counteract Constipation.

The branny scales of Vita-Weat act as a stimulant to normal peristalsis, whilst not exerting an undue irritative effect on the intestinal mucous membrane.

To Prevent Obesity.

The starch granules in Vita-Weat are thoroughly disintegrated. No starch passes unconverted into the body to cause obesity and indigestion. Vita-Weat is "completely assimilable," states a report of the Royal Institute of Public Health.

Peek Frean's

Vita-Weat

REGD.

THE *BRITISH* WHOLE-WHEAT CRISPBREAD

A generous Free Sample, together with analysis and reports by various medical authorities, can be had on application to:

PEEK FREAN & CO., LTD., DRUMMOND ROAD, S.E.16

ACHLORHYDRIA IN INFANCY

BABIES suffering from gastro-enteritis, measles, pneumonia, or any severe infection, cannot secrete a gastric juice of sufficient acidity to digest their food. The difficulty of "feeding up" during convalescence is due to this deficiency of acid. These infants have an intolerant digestive tract, but need a considerable amount of food in an easily assimilable form. By acidifying the milk with lactic acid, the buffer substances in the milk are neutralised, and the acid of the gastric juice liberated for peptic digestion.

The manufacturers of COW & GATE have surmounted the great difficulties of preparing lactic acid milk, and are offering to the medical profession two grades of dried milk, each containing one drachm of Lactic acid B.P. to one pint of milk.

LACIDAC

HALF CREAM LACIDAC

Contains 16% Fat.

SEPARATED LACIDAC

Contains 1% Fat.

Lactic acid milk has been employed both in infective disorders and in marasmus with great success. Using Lactic acid milk, one institution has reduced the mortality of marasmic infants from 78% to 26%.

The manufacturers will gladly supply Samples and any further information, if required, and wish to remind Members of the Medical Profession that the Cow & Gate Laboratories are always at their disposal for experimental work in connection with Milk Foods.

COW & GATE Ltd.,

GUILDFORD SURREY

In view of the increasing use of Monsol in clinical practice both in this country and overseas, the following list of standard dilutions has been prepared for the assistance of the Medical Profession:

As an ordinary antiseptic Dressing:—	*1 teaspoonful Monsol to 1¼ pints water (1-200).*
Vaginal Douches and Irrigations:—	*1 teaspoonful Monsol to 3 pints water, gradually increasing to 2 teaspoonfuls Monsol to 3 pints water (1-500 to 1-250).*
Tampons:—	*1 to 2 tablespoonfuls Monsol to ½ pint water (1-20 to 1-10).*
Aerial Spray:—	*1 teaspoonful Monsol to ½ pint water (1-80).*
Packings:—	*1 tablespoonful Monsol to ½ pint water (1-20).*
Instruments, etc.:—	*1 tablespoonful Monsol to ½ pint water (1-20).*
Irrigation & Dressing of Septic Wounds:—	*1 tablespoonful Monsol to 1¼ pints water (1-50).*
In the Sick Room:—	*In all water for washing, for cleaning bedroom vessels, etc., 1 tablespoonful Monsol to 2 quarts of water (1-160).*
Nasal Spray, or Throat Gargle or Mouth Wash:—	*6 to 8 drops Monsol in ½ tumbler of water (about 1-800).*
Cuts, Abrasions, Sores, Stings, etc.:—	*1 teaspoonful Monsol to 1 pint (1-160).*
Midwifery Cases:—	*1 teaspoonful Monsol to 1 pint (1-160).*
In the Bath:—	*1 teaspoonful to a bath full of water.*
Rectal Douching:—	*1 teaspoonful Monsol to 1 pint (1-160).*

Copies of this table may be had by members of the Medical Profession on application to:

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MEDICINAL PRODUCTS
ANIMAL ORIGIN

Adeps Benzoatus
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Insulase
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Meduphites
Multigland
Myelin
Orchitic
Ovarian
Ovarian Residue
Ovo-Testis
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Ox Gall
Pancreas
Pancreatin
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Pepsin
Peptone
Pineal
Pituitary, Whole Gland
,, Anterior Lobe
,, Posterior Lobe
,, Compound
Placenta
Prostate
Red Bone Marrow
Renal Cortex
Spleen
Supra Medulla
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Suprarenal Compound
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GLANOID

Concentrated Fluid Extract of

LIVER

for the treatment of

Pernicious Anæmia, Aplastic Anæmia,
Splenic Anæmia, Secondary Anæmia,
The Anæmia of Syphilis, and of Colitis,
Sprue and allied disorders,
Acne and Furunculosis,
Psoriasis and certain Dermatoses,
The Anæmia of Pregnancy and after,
The Anæmia of Metazoan infection.

ONE OUNCE (the Daily dose) = HALF POUND
FRESH WARM CALF LIVER

PALATABLE, READY to TAKE

The only stabilised FLUID EXTRACT accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in their list of New and Non-Official Remedies.

IMPORTANT.

ANTI-DIABETIC ACTION OF LIVER

Drs. BLOTNER and MURPHY, in the Journal of the American Medical Association, April 20th, 1929-92-1332, give a series of carefully worked out observations showing that the Oral administration of 180 grammes of raw calf liver was equivalent to the subcutaneous injection of 15 Rabbit Units of Insulin in some cases of Diabetes Mellitus.

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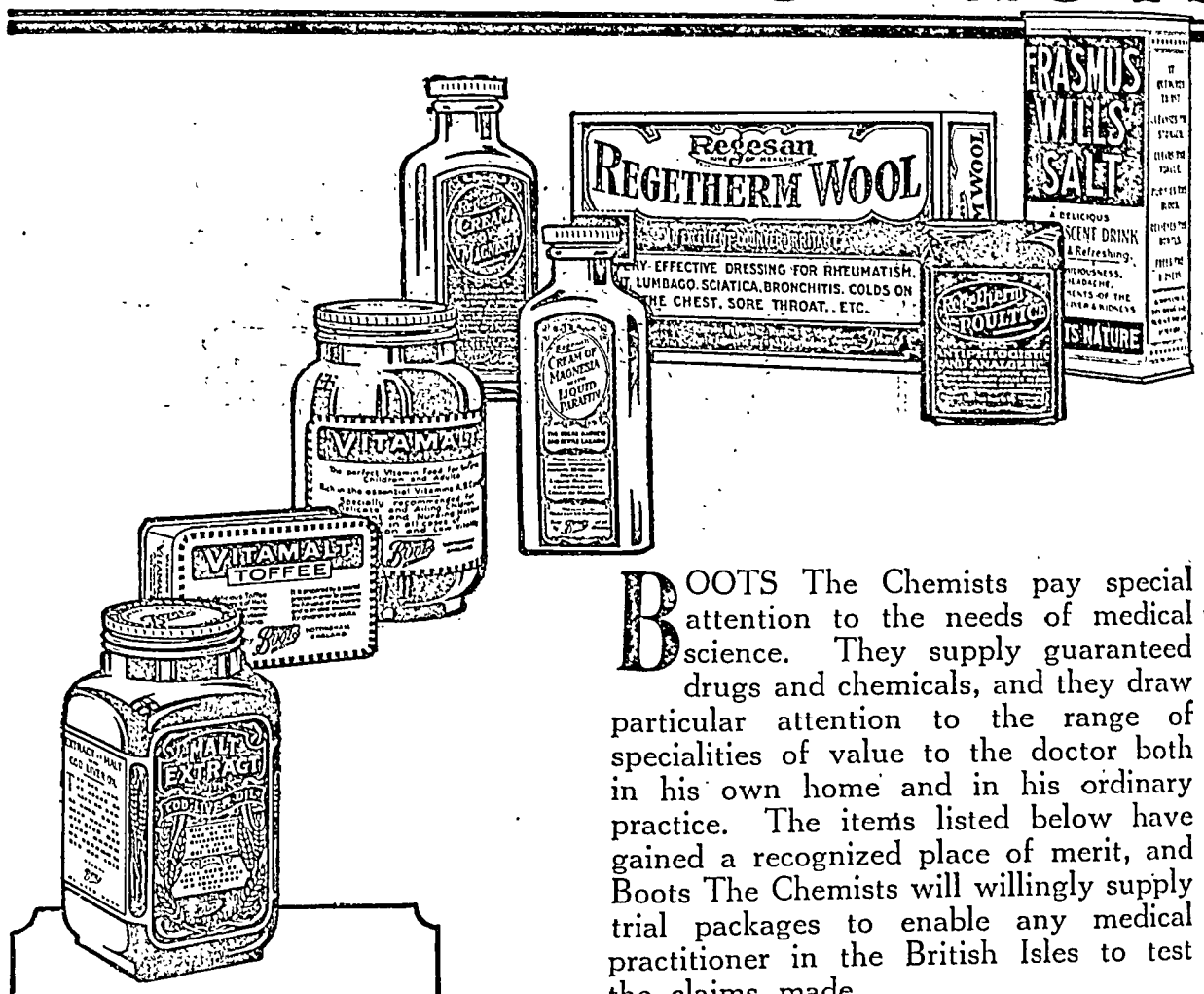

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WITH LIQUID PARAFFIN
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COD LIVER OIL

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Toxæmia of Acute Obstruction and Peritonitis with Ileus

The increasing experience of numerous surgeons who use this Serum as a routine in these cases confirms the suggestion that most of these toxæmias are due to *B. welchii.*

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ANTI-GAS-GANGRENE SERUM (W)

(B. welchii = B. perfringens)

This Serum has been successfully used in abdominal surgery and for prophylaxis when grossly infected wounds are present; it is also indicated in cases of puerperal septicæmia following abortion due to *B. welchii.*

Phials containing 10 *c.c.,* 5/- *each, and* 25 *c.c.,* 10/- *each*

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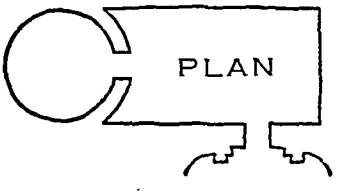

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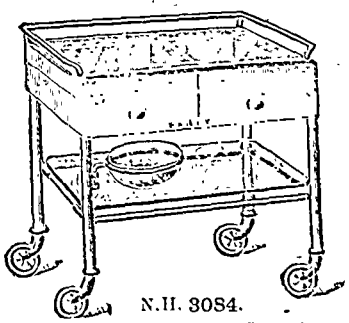

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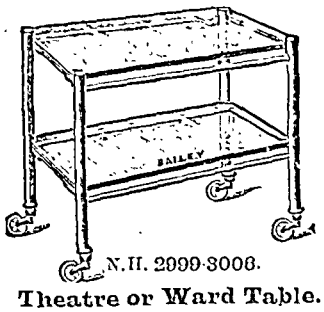
Ward or Theatre Table.
With 2 drawers and Swing Bowl.
30 × 18 × 34. **£7.7.0**



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26 × 16 × 34. **£3.12.6**
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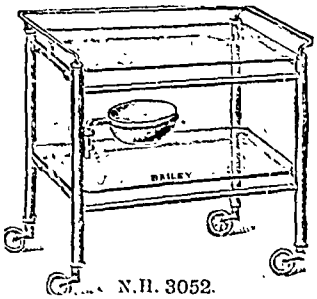

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With Rail round Top and Swing Bowl.
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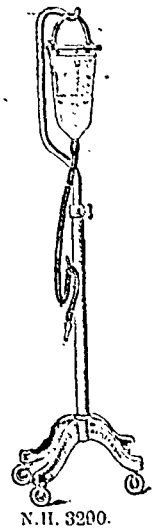

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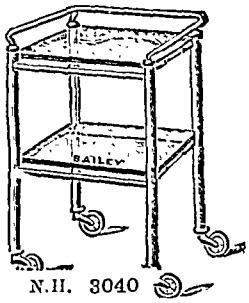

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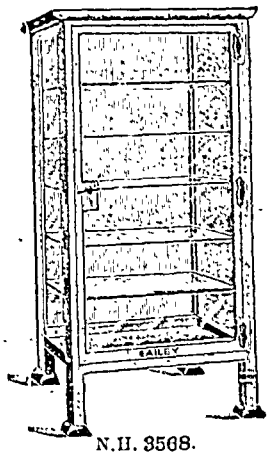

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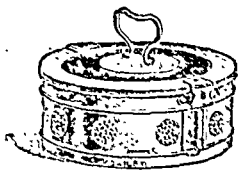

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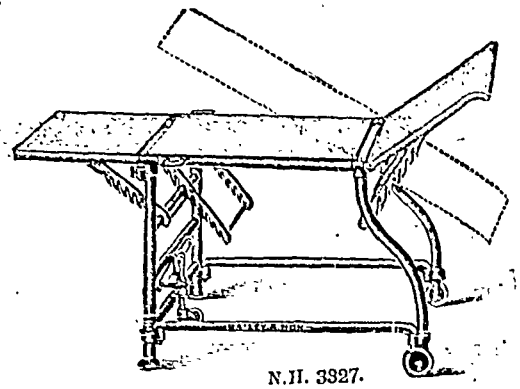

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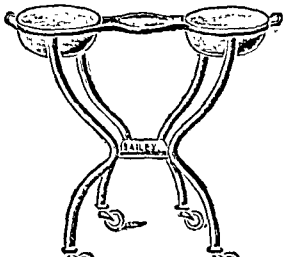

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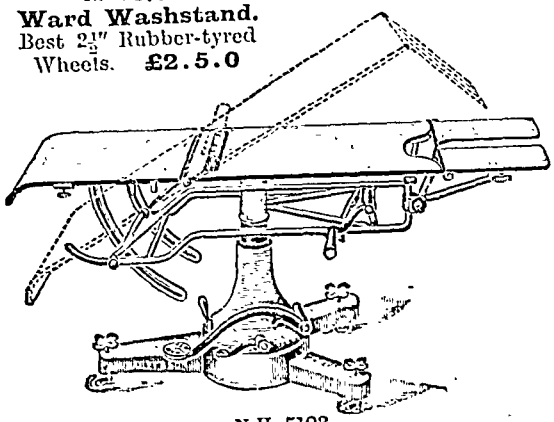

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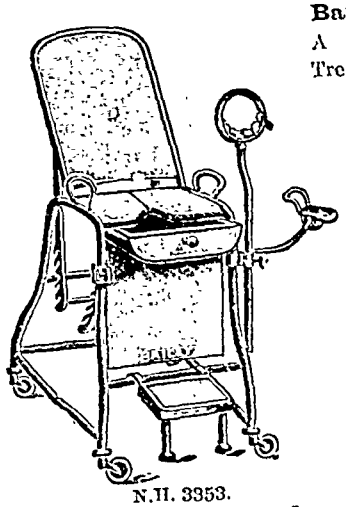

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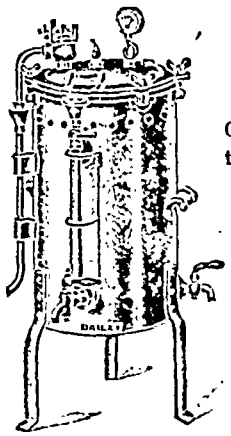

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A British Medical Association Lecture
ON
RHEUMATISM IN CHILDREN.

DELIVERED BEFORE THE DUNDEE BRANCH,
FEBRUARY 5TH, 1929,

BY

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THE reawakening of interest in the subject of rheumatism has been a striking feature of medical history in this country during the past five years. The investigations that had previously been undertaken with characteristic vigour by the American Heart Association were no doubt a factor in the process, but since 1923, when Poynton (who has been an enthusiastic worker on this subject for over a quarter of a century) published a plea for the prevention of rheumatic heart disease, this matter has been constantly before the profession.

The special committee of the British Medical Association appointed to inquire into this subject can also claim some credit for the renewed interest, and in its published reports has helped not a little to clarify the situation and to point the way to further methods of advance. The chief medical officer of the Board of Education in England has repeatedly emphasized the importance of the subject in his annual reports. The Medical Research Council, the Section of Diseases of Children of the British Medical Association, the Society of Medical Officers of Health, the Child Welfare Section of the Sanitary Institute Congress, and the Society of School Medical Officers of Scotland, in addition to numerous Divisions and Branches of the British Medical Association, have all had the matter under discussion. The experiments in after-care carried out by the Invalid Children's Aid Association in their heart homes, and by others in different parts of the country, notably in Birmingham, have demonstrated what can be done in the direction of limiting the devastation of this serious disease.

When one looks up the subject of acute rheumatism or rheumatic fever in some of the older books, description is found of an affection of the joints, which are red, swollen, and painful, exquisitely tender so that even a touch on the bed is feared, usually associated with fever, sweating, and malaise, and with, as a possible complication, heart disease. The description when applied to the adult may be correct, but when transferred to the child is apt to leave a very erroneous impression. The more the disease is studied in the child, the more it is realized that rheumatism is a general infection, of which after all the joint condition is in essence a minor manifestation. The latter is eminently curable, leaves no deformity, and were the disease so limited one would not be so much concerned with its high incidence among the population of this country. In the child the joints seldom occupy the prominent place that they do in the picture of the adult disease, while the heart less rarely escapes from the effect of the general infection.

There may be different explanations offered as to the special susceptibility of the heart in the child, but comparatively recent investigations by Gross and his collaborators in America into the vascularity of the heart afford a possible clue to the problem. It is now generally accepted that rheumatism in the heart is brought to it by the coronary circulation, and not by the blood passing through its cavities. In the child, and for a variable period in adult life, there is a blood supply which can be demonstrated right into the cusps of the various valves. This vascularity tends to disappear first from the arterial valves, and later from the auriculo-ventricular valves, the last cusp to lose its blood supply being the aortic cusp of the mitral valve. It is very suggestive in this connexion that the mitral valve is more frequently involved than the aortic valve, and the cusp more severely damaged as a rule over a series of cases will be found to be the aortic cusp of the mitral. Another point that must be clearly realized at the outset is that rheumatism in its first attack is essentially a disease of childhood. The highest peak of incidence varies slightly, according to different observers, from the seventh to the tenth year of life, the vast majority of primary attacks of rheumatism taking place before the age of 15. When once rheumatism has affected the heart, particularly the valves, it is found that vessels persist in the valves for a much longer period than in healthy hearts, so that in hearts once damaged, even to a slight extent, subsequent attacks of rheumatism are more prone to produce further damage, even in adult life, than in patients who had not had an attack in childhood. If any good, therefore, is to be done towards lessening the prevalence of heart disease, steps must be taken to circumvent the infection in the child. If, with our present knowledge, it is impossible to prevent rheumatism by the study of the disease in the child, it may still be possible to prevent relapses and to lessen the number of cardiac cripples. The aim of anyone interested in this subject must therefore be (1) to determine as far as possible the conditions which produce or predispose to the infection, and (2) to acquire a knowledge of the earliest manifestations which may indicate the presence of the disease. With our present knowledge of the natural history of rheumatism this may be an ideal difficult to attain; this should not hinder the attempt but rather stimulate to further effort.

PREDISPOSING OR EXCITING FACTORS.

Much uncertainty still exists as to the factors which predispose to rheumatic infection. In inquiring into the family history of cases of children suffering from rheumatism, a history is obtained of parents, brothers, or sisters who have been similarly affected in about as great a proportion as is found in the case of tuberculosis, so that the question of heredity in some degree cannot be lightly dismissed. Many believe, and with considerable ground for their opinion, that some children are born with a special liability to acquire rheumatic infection. That children have been born actually suffering from rheumatic endocarditis has been demonstrated, though so rarely as to be hardly worthy of serious consideration in this connexion. Some have gone so far as to suggest that alteration in the balance between the various ductless glands, notably the thyroids, adrenals, and pituitary, has been the basis of the tendency which has been inherited; and there is certainly in many rheumatic children a nervousness and a tendency to tachycardia that make one hesitate before dismissing lightly such a possibility. Such questions, however, have comparatively little practical application, except in so far as helping one generation may be a means of lessening the incidence of rheumatism in the next.

No one, I think, doubts that environment plays an important part in the incidence of this disease, and while statistical evidence as regards dampness is rather contradictory, the spot maps of certain towns in England where a careful inquiry into this question has been carried out are very difficult to explain on any other basis than that dampness in dwellings is a potent factor in predisposing to the disease. Poynton is confident that the rheumatic child fares badly in such surroundings, and that there is a tendency for the rheumatism in such circumstances to become intractable. He states, "I have seen too many examples to be disturbed by any statistics on this point." In addition to the dampness of dwellings, dampness of clothing and footwear should also be considered. These certainly have a direct influence in promoting catarrhal affections, particularly of the nasopharynx. Further, social status apparently plays a part, though the exact factor therein is not obvious. The elementary council or board school provides a much greater percentage of cases than the average boarding or private school.

Sources of Infection.

With regard to the actual infection, little more need be said than that the disease seems undoubtedly to be due to infection of some kind, but that there is still no uniformity of opinion as to whether the micrococcus of Poynton and Payne, or some other organism or symbiosis of organisms, is the exciting factor. Apart from knowledge of the actual

organism, attempts have been made to determine its site of entry into the body, and the one which gains most support is the tonsil. The teeth have also come under suspicion, but with less ground, while some believe that the intestine may harbour the organism after its entry. The results of enucleation of the tonsils have been more or less unsatisfactory. Some of the latest investigations along this line show that relapses are as frequent in the operated as in the non-operated cases. Miller's figures, however, seem to show that removal of the tonsils lessens the liability to rheumatic joint relapses, and that patients who do relapse afterwards usually manifest the infection in the form of chorea. That enucleation of the tonsils is not a preventive against relapses cannot, of course, be used as an argument against their being the site of primary infection, because it is well recognized that once the infection gains entry to internal organs its eradication is a much more difficult problem.

While the last word has not been written on any of these factors, experiments have been carried out over a sufficiently long period, both in this country and in America, to warrant the view that improvement in environmental conditions can affect for the better the prospects of the rheumatic subject.

EARLY MANIFESTATIONS.

Cardiac Rheumatism.

Apart from the comparatively few cases of congenital heart disease, there is no common affection of the heart in childhood except rheumatism, and it should be recognized that the heart may be the first part to show signs of the infection. Mitral stenosis is usually accepted as a typically rheumatic manifestation, and yet in a series of hospital cases with this lesion over a period of ten years 25 per cent. of the males and 31 per cent. of the females gave no history of antecedent rheumatic manifestation. In many of these cases the heart had been quietly damaged without other sign of the disease, for all patients could not have forgotten other symptoms of rheumatism.

We frequently speak of endocarditis, or of pericarditis, but it may be accepted that in neither case does the myocardium escape. The effect which should be sought in this connexion is enlargement of the heart as made out by percussion. We are too apt to ascribe all changes in the size of the heart to pressure effect, but the dilatation is really more dependent on the extent of muscle damage than on the degree of valvular lesion. Likewise in pericarditis with effusion the increase in dullness, which is often ascribed to the fluid, is in many cases due chiefly to the dilated heart. Dilatation of the heart in a child subject to even suspicious rheumatic manifestations would warrant the assumption that the heart was already in the grip of the rheumatic poison. Dilatation of the heart is really the most reliable early sign in a child, as characteristic lesions which would allow one to diagnose valvular involvement, such as mitral stenosis or even aortic incompetence, do not necessarily present themselves early in the disease. Mitral stenosis particularly may take some years before it develops characteristic physical signs. The presence of a systolic murmur at the apex is perhaps one of the most difficult to assess. In the absence of any dilatation of the heart it can usually be neglected if it is the only sign, but in association with dilatation of the heart it is presumptive evidence that the mitral valve is also affected. An aortic systolic murmur is much less common as an early indication of heart involvement, and is rarely present without a diastolic murmur of aortic incompetence as well. The heart rate, in the absence of auriculo-ventricular block, is usually accelerated, but taken as a solitary sign is not of much value in determining implication of the heart, as so many other causes in the young child can produce the same increased frequency. This sign, however, cannot be neglected, and in the absence of any other cause for acceleration, should be reckoned a suspicious feature. Disorder of rhythm in the child is not common. Auricular fibrillation is rare under 15 years of age; heart-block, however, may occur during the acute stage and may be a transient feature. The presence of extra-systoles, generally infrequent in childhood, would suggest some toxaemia.

Mackenzie indicated that the respiratory type of sinus irregularity could be considered as a sign that the heart had escaped. This view is not now generally accepted. Sinus irregularity is not common with a rapid heart action, and consequently its reappearance may be expected if the heart rate becomes slow. This is probably its only significance, as it has been found in association with such a definite muscle lesion as heart-block.

I have purposely placed cardiac rheumatism first on the list, not only on account of its very great intrinsic importance, but because in the child the heart very rarely completely escapes, and also to emphasize the fact that it may be the first part to show signs of the disease.

According to a recently published statistical inquiry covering 500 children in a New York cardiac clinic, the heart was the first part to be affected in 6 per cent. of the patients. Furthermore, some figures which have recently come to light in connexion with disordered action of the heart—irritable heart—suggest that rheumatic infection may lead to this condition in the absence of valvular disease. Thus Parkinson found disordered action of the heart in a higher percentage of cases in men with a rheumatic history without valvular disease than in those with no rheumatic history.

Any of the above signs have a much greater significance when found in association with other typical rheumatic manifestations, and we may now proceed to consider some of these.

Polyarthritis.

Articular rheumatism is the commonest condition, or at least the commonest to be recognized, antecedent to cardiac infection. In the New York series it occurred in 66 per cent. and was the earliest manifestation in 40 per cent. In many cases, of course, there were relapses from one to five times. The diagnosis of these cases presents little difficulty.

Growing Pains.

This is the group to which I would like specially to direct attention. That it is in most cases in the nature of a true rheumatic manifestation seems undoubted. In the New York series it occurred in 67 per cent. of the cases and was the first manifestation in 27 per cent., It should be noted that in 10 per cent. carditis followed without any other polyarthritis or chorea. Until growing pains are considered as worthy of medical treatment, both by the doctor and the parent, many cases will be allowed to drift into the state of cardiac cripples.

Tonsillitis.

It is difficult to present valuable figures for this condition in its relation to heart disease. That tonsillitis is a frequent accompaniment of other definite rheumatic features, that diseased tonsils are more frequent in rheumatic than in other subjects, and that attacks of tonsillitis often accompany or usher in relapses, is undoubted. It was the first manifestation in 14 per cent. of the New York series. Unfortunately the removal of tonsils may also be immediately followed by rheumatic symptoms.

Chorea.

Apart from the chorea which was a feature of lethargic encephalitis at one period of the epidemic, chorea must be considered as rheumatic in origin. It may be the only rheumatic precursor of carditis, and was so in 21 per cent. of the New York series, in which it occurred in 43 per cent. of the cases. It is as frequently followed by severe carditis as is polyarthritis, and its early recognition is important. The fidgety, restless, nervous child requires very special care at school, and it would be an interesting study to determine how much the strain of school examinations is a determining factor in the production of chorea in susceptible children.

Nodules and Other Signs.

I place great stress on the presence of nodules as an aid to diagnosis and treatment. Figures are unreliable, as the nodules must be looked for regularly if their frequency

is to be recognized. Sometimes transient, coming in crops, they are neither painful nor tender, and so may be overlooked. They have a structure similar to that of the submiliary nodules in the heart.

Anaemia, pleurisy, and pyrexia of unknown origin, while also suggestive of tuberculosis, may be early evidence of rheumatic infection.

Clinical Syndromes.

Generally speaking, cases of rheumatic heart disease may be grouped along certain broad lines, as suggested by Poynton. Perhaps the commonest group is associated with polyarthritis, tonsillitis, or growing pains. The second group is that associated with chorea, with or without some of the other manifestations. In either of those the heart may be quietly damaged, and the full effect of the lesion may only be manifest after one or more relapses. In another group, more often also associated with polyarthritis, the heart is the seat of pancarditis, the endocardium, myocardium, and pericardium being involved, and the patient may be very seriously ill from the onset. In still another group without other rheumatic manifestations the heart may be quietly damaged.

Relapse.

This is a well-known feature, and as succeeding attacks rarely fail to increase the cardiac damage, attention to them, or, if possible, their prevention, may do much to lessen the cardiac effects. In the New York series 70 to 85 per cent. of the patients relapsed, the largest figure being found in those in whom the initial attack occurred in very early life. The relapse may be within a year, or delayed for several years. In half the cases in this series the first relapse occurred within one year; in two-thirds within two years; in four-fifths within three years, and in the remainder up to ten years. The susceptibility to infection decreased after the age of 12.

Treatment and Supervision.

In treatment of the rheumatic infection in childhood time and patience are all-important factors, and it is to inability to secure these from all the parties concerned that many of the failures must be ascribed.

The salicylates, while potent in relieving symptoms and fever in joint cases, seem to fail when the heart or brain is involved. Not only so, but some would argue that the rapid amelioration of symptoms in joint cases induces a false sense of security, so that sufficient time is not allowed for the heart to recover its tone. When the heart is actually the seat of infection salicylates seem to be of little value, and relapses of fever are about as frequent with salicylates as without them.

Rest in bed should be demanded till all signs of activity have passed, and for some time thereafter. Fever and pain are definite and easily appreciated indications for rest, but, in their absence, nodules or tachycardia are equally significant. When it is decided to allow the patient to get up the heart rate should be carefully watched, and any undue acceleration accepted as an indication for more rest. Later, gradually increasing exercise, with the same precaution, is of value. Iron and cod-liver oil help to restore vigour to the cardiac muscle, and should be continued for some time. Experience shows that for many of the cases prolonged convalescence, under good hygienic conditions, with fresh air and sunshine, is necessary.

The problem with which we are faced in trying to deal with rheumatic heart disease hinges on the difficulty of securing lengthy treatment. The public (medical and lay) have been educated to face prolonged treatment in tuberculosis, but not yet in rheumatism. Heart disease kills annually as many as tuberculosis, and, like it, the rheumatic type kills early. Looked at as an economic problem rheumatism deserves as much consideration as tuberculosis, but, of course, the question of isolation does not arise in the same way, and so a good argument is lost.

For the well-to-do the doctor and parents can, if alive to the need, secure the necessary treatment; but rheumatic heart disease is more common in a grade of society that cannot readily face such a course. The hospitals obviously cannot at present provide beds for the lengthy residence that is very often required. The hospital convalescent homes are suitable neither in size nor arrangement to deal with those cases. The British Medical Association subcommittee put forward a plea for the establishment of special residential hospital schools or homes, and the Medical Research Council, in no uncertain words, argues on similar lines: "The plain need for organized after-care offers an urgent but soluble problem of preventive medicine, too long neglected, and every motive of humanity and wise economy should impel the community to provide the after-care as rapidly as possible."

All cases, of course, are not suitable for such homes—for instance, advanced or acute cases. But there are the children who have just passed through an attack of arthritis, chorea, or carditis, or very mild or even potential cases, or quiescent cases, for whom the strain of ordinary school life is too great. The Birmingham people, as a result of the earlier years' working, have had the accommodation doubled, and all reports are favourable as to the value to the patients. Until such places are available, and even afterwards, much remains to be done. All rheumatic children need special and regular supervision, and it seems to me that only by co-operation between practitioners, ante-natal clinic workers, school medical officers, and hospitals, will this be efficient, as first manifestations may be observed by any one of them.

The Rheumatism Clinic.

My own feeling is that any scheme on the lines adopted at Paddington Green under Dr. Reginald Miller serves a useful purpose. Attached to the hospital is a supervisory centre where all known rheumatic children are asked to attend. A temporary scheme of notification is adopted so that the medical officer of health can also give his help. Patients attending are carefully recorded and registered. Any line of treatment considered necessary is recommended only, and is carried out by the family doctor or the hospital, as is considered best. Children who would benefit by country residence are recommended to the care of the Invalid Children's Aid Association.

Another very useful function of such a centre is that of education. The parents are provided with a card giving general instructions on the care of rheumatic children. Similar instructions have been given in other parts of the country through the school medical officers whenever a case presented itself at the routine examination. Education of school nurses and teachers has also an important place in any scheme, as these can often detect early cases of chorea or other features of ill health before the doctor is called in.

The essential feature of any such scheme is that there must be co-operation between the various bodies concerned. No patient should be dismissed from hospital without information being sent to the practitioner or rheumatic centre, and, if fit for school, to the school medical officer. Similarly, cases seen at school should be notified to the practitioner or centre for supervision, while there should be ready access to hospital for patients requiring special care. The function of the centre would naturally be that of co-ordinating and supervising.

To make any impression on the incidence of rheumatic heart disease the problem must be faced from the aspect of rheumatism in childhood. At that stage alone is there any hope. The treatment of auricular fibrillation is often an eminently satisfactory piece of work, but, after all, it is only a patched-up job. To prevent relapses in a child, or, better still, to prevent rheumatism, is to save lives.

Even without a complete knowledge of all the facts of the natural history of this disease much good can be done now by: (1) Education of all in touch with child life—parents, teachers, nurses, doctors—in the early manifestations, the best plan to combat them, and the risk of neglect. (2) Prolonged care, by the doctor, of the child who has been attacked until all signs of activity have ceased. (3) Prolonged after-care in suitable surroundings for those who are recovering. (4) Constant supervision to detect the early signs of ill health, or of relapses.

THE INFLUENZA EPIDEMIC OF 1918:

COLOUR OF THE BLOOD IN FATAL CASES.

BY

J. S. HALDANE, C.H., M.D., F.R.S.

ONE of the most striking facts about the world-wide and extraordinarily fatal epidemic of "influenza" in 1918 was that in the bad cases one of the symptoms was a peculiar blue or violet form of cyanosis. At the time this cyanosis was attributed to broncho-pneumonia; but against this explanation was the fact that administration of oxygen failed to abolish or diminish the cyanosis, whereas in the cyanosis which sometimes accompanies ordinary lobar pneumonia, or the lung inflammation of poisoning by irritant gas, the cyanosis can usually be abolished easily by adding some oxygen to the inspired air.

In a paper published in the *British Medical Journal* of August 1st, 1925 (p. 187), on the presence post mortem of nitric-oxide-haemoglobin, by Dr. Banham, Dr. Savage, and myself, a fatal case of broncho-pneumonia (mistaken at first for carbon monoxide poisoning) was described, in which the blood was found to be everywhere red post mortem, and to give certain of the usual tests for CO-haemoglobin, although the patient was cyanosed just before death, and had not been exposed to carbon monoxide at all. The red colour was evidently due to NO-haemoglobin, which appears post mortem in poisoning by nitrite,[1] while the cyanosis during life was due to the fact that in poisoning by nitrite methaemoglobin is formed, producing practically the same colour in the blood as ordinary cyanosis due to reduced haemoglobin.

In this paper we mentioned the fact that Dr. Banham, when in command of the medical section of the military hospital at Cannock Chase during the war, had repeatedly observed that in the bodies of those who died in the 1918 influenza epidemic the blood was red on exposure post mortem. He had also made a special report on the subject to the War Office.

Since our paper was written I have received information from the doctors and nurses who saw the bodies in fatal cases, both in this country and in France; and they confirm Dr. Banham's experience that the blood was red post mortem, though cyanosis was present during life.

It thus appears to be at least extremely probable that the organism responsible for the very fatal character of the 1918 epidemic was a nitrite-forming organism, and that the main immediate cause of death was anoxaemia due to conversion of oxyhaemoglobin into methaemoglobin. In fatal nitrite poisoning in animals the immediate cause of death is anoxaemia.

Although nitrite-forming organisms are familiar to soil microbiologists, very little, if any, attention has hitherto been given to pathogenic organisms of a similar character. Apart from the 1918 influenza epidemic I have heard of several fatal cases of broncho-pneumonia in which deep cyanosis, probably due to methaemoglobin, was present. It is probable, therefore, that such cases are not very rare, even in the absence of an epidemic of them.

I have written this paper in the hope that some case of this kind may be diagnosed clinically or post mortem, and a proper bacteriological investigation made. It is easy to detect methaemoglobin clinically in a drop of blood, and equally easy to recognize nitric-oxide-haemoglobin post mortem. It seems, however, that unless there is any suspicion of carbon monoxide poisoning not much attention is usually paid at post-mortem examinations to the colour of the blood.

REFERENCE.

[1] Haldane, Makgill, and Mavrogordato: *Journ. of Physiol.*, xxi, 1897, p. 160.

TREATMENT OF PRURITUS ANI AND ANAL FISSURE:

THE USE OF ANAESTHETIC SOLUTIONS IN OIL.

BY

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FROM a practical point of view cases of pruritus ani may be divided into two main groups:

1. The group in which some definite local cause is present. This is usually some lesion which causes an abnormal amount of perianal moisture; amongst the commoner of these may be mentioned prolapsing piles, external piles, fissure, fistula, hypertrophied papillae, rectal polypi and tumours, threadworms, proctitis, etc. Treatment of cases in this group, if limited to removing the exciting cause, together with treatment of the perianal region with simple lotions and powders, is usually effective.

2. The second group is that in which patients complain of persistent severe itching, but examination reveals none of the obvious causes enumerated above. The rectum is smooth, and examination, as a rule, is negative, except that some evidence is found to confirm the patient's complaint of irritation. The perianal skin is often somewhat thickened and thrown into rugae radiating from the anus, with a varying amount of excoriation of the skin or fissuring.

It is cases in this second group which are the great problem as regards treatment. It is probable that a chronic neuritis of the sensory nerves in the anal region is present in most cases of long duration, and hitherto the recognized treatment of cases which have failed to respond to local treatment of the dermatitis has been either (1) operation—Ball's operation or any of the various modifications designed towards sectioning the cutaneous nerves of the anus; (2) the subcutaneous injection of various solutions such as absolute alcohol, quinine-urea, hydrochloric acid, etc.; (3) *x*-radiation.

After working for the last eight years in the out-patient department of St. Mark's Hospital, I have been impressed with the unsatisfactory results generally obtained by these methods. Judging from the number of patients who attend who have previously had one or more courses of *x*-ray treatment, the conclusion is forced upon one that the relief obtained, if any, is often of short duration, and the necessity for repeated courses of *x* rays is dangerous. *X*-ray dermatitis and *x*-ray carcinoma of the anus are well-known catastrophes. As regards Ball's operation, it is true that, if properly done, patchy anaesthesia results at once in the flaps outlined by the operation, but it seldom lasts more than a few months; the extensive wound never heals by primary union, and although there may be relief for a time, the irritation often returns after a few months. There is then quite often the added trouble that an atrophic condition of the skin flaps is liable to develop; the perianal skin within the two curved incisions appears thin, shiny, and discoloured, often with patchy excoriation; this may be partly a trophic condition from section of the sensory nerves, and partly due to the impaired vascular supply; it is, I think, a serious objection to Ball's operation.

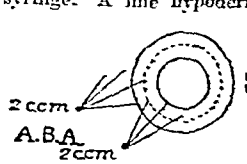
Pruritus being essentially a local condition, it is reasonable to expect a local treatment to relieve it, and subcutaneous injection of an anaesthetic solution appeals to me as being a sensible method likely to succeed. I was therefore greatly attracted by the report of Drs. Yeomans, Gorsch, and Mathesheimer[1] on the use of benacol in the treatment of pruritus ani. This solution was introduced to me last autumn by Dr. Frankfeldt of New York, who very kindly provided me with a supply for trial at St. Mark's. To quote Dr. Yeomans: "Benacol is a solution of equal parts of para-amino-benzoyl-benzoate and phenmethylol in 90 parts of rectified sweet almond oil. It is non-toxic, highly anaesthetic, moderately antiseptic, and, as far as investigated, has a mild depressant action on peripheral nerve endings."

The use of an oily as opposed to an aqueous solution would appear to be particularly valuable as a method of delaying absorption of the local anaesthetic, and therefore

of extending the duration of its action. As an alternative solution to benacol, I have tried and found equally satisfactory a solution known as "A.B.A.," prepared for me by Messrs. Allen and Hanburys, which is now available. A.B.A. is a 3 per cent. solution of anaesthesin with benzyl alcohol 5 per cent. and ether 10 per cent. in sterilized olive oil.

Method of Injection.

The contents of an ampoule of benacol or A.B.A., previously warmed by immersion in hot water, in order to render it more fluid, are drawn into a 2 c.cm. Record syringe. A fine hypodermic needle is attached, and the solution is injected subcutaneously in a fan-shaped manner around and up to the anal margin. The first injection is usually made under the area of maximum irritation. Two ampoules (4 c.cm.) can safely be injected at a time. The injections are usually repeated at intervals of three to seven days until the entire perianal region has been injected, when areas of continued irritation can then be reinjected. I make a practice of charting the injections in a diagrammatic manner (see diagram), which renders it easy to see at a glance the regions that have been injected.



Method of charting injection of left posterior quadrant.

Results.

A slight burning pain has been complained of by some patients either during the injection or some hours later. There has been no general reaction and no complication (particularly inflammation or sloughing of skin) has occurred. No medicinal treatment (bromides, etc.) has been given to any of these patients, and only the simplest applications have been made to the local dermatitis. Sixteen cases have been treated since September, 1928—7 females, 9 males. The irritation in 10 may be classified as severe, in 6 as moderate. The number of sessions has varied from one to six, and the greatest amount of benacol or A.B.A. that any one case has yet received is 22 c.cm., the average being 8 c.cm. It is too soon as yet to speak of "cure," but all of these patients have been relieved, and 8 have been so much improved that they are now practically free from all symptoms. In at least 4 cases with severe dermatitis the visible improvement in the perianal skin has been most dramatic.

The three following cases may be described as examples of the favourable results that have been obtained.

Case 1.—An unmarried woman, aged 28, had suffered from severe pruritus ani, for which Ball's operation was done in February, 1928. Irritation and pain returned as badly as ever within a few months. When seen in September, 1928, she presented a severely excoriated condition around the anus, with numerous fissures. One ampoule of benacol was injected at weekly intervals for four weeks, with immediate improvement; the slightly indurated skin and bright red hyperaemia round the anus was replaced by smooth, pale skin, the fissures healed, and the patient expressed herself as delighted with the improvement. A fifth and last injection was given in November, 1928; she was seen at intervals, and was finally discharged free from symptoms in March, 1929.

Case 2.—A married woman, aged 45, with severe pruritus ani of ten years' duration. She was treated for eighteen months as an out-patient at St. Mark's, with lotions and powders, with no ultimate relief. On September 18th, 1928, benacol 4 c.cm. was injected through four punctures, and on September 25th 2 c.cm. of benacol was injected. Immediate improvement resulted, and continued until March of this year, when a slight return of symptoms made a further injection advisable. I therefore injected 6 c.cm. of A.B.A. posteriorly to the anus, this being the site of slight irritation, and the trouble is again quiescent.

Case 3.—A man, aged 30, with pruritus of four years' duration, treated previously by two courses of x rays and much local treatment, with no real relief. In January of this year 6 c.cm. of A.B.A. was injected at two sessions, and great relief has been obtained. He now has very little trouble.

ANAL FISSURE.

Spasm of the external sphincter ani is undoubtedly the cause of the chronicity of anal fissures, and hitherto the various methods of treatment advocated have in reality been directed—and rightly so—towards relieving sphincteric spasm. These methods may be classified into: (*a*) those which promote relief of pain and consequently the spasm; (*b*) those which attack the spasm first.

Under the first heading are the following favourite methods: (1) insertion of analgesic ointments such as those containing cocaine, anaesthesin, chloretone, opium, and belladonna; (2) local application to the surface of the fissure of an albumin-coagulating agent such as silver nitrate, mercury perchloride, nitric acid, or ichthyol; (3) injection under the base of the fissure of an anaesthetic solution such as quinine-urea. The second method of treatment includes the old operation of forcible stretching of the sphincter muscle under local or general anaesthesia, and the various degrees of "incision" ranging from partial to complete division of the sphincter.

All of these methods have been useful, but the chief drawback has been their unreliability. The palliative methods have often failed to relieve the sphincteric spasm, and I have several times seen a recent fissure—in spite of treatment—gradually become chronic and undermined, until finally operation has had to be undertaken. The operation of divulsion of the sphincter is often successful, but, on the other hand, I have known cases where the fissure has failed to heal, with return of sphincteric spasm within a few days after the operation. The operation of incision of a fissure is a very excellent one when applied to the chronic undermined fissure, and is usually the only certain method of getting these cases to heal, but no one will deny that the after-treatment is a painful one; the wound takes three to five weeks to heal, and it is a severe operation to undertake for a recent fissure.

In the last eight months I have been using benacol and A.B.A. for the treatment of anal fissures, and as an ambulatory method this promises to cure rapidly a very large percentage of cases. It is, in effect, a combination of the two methods outlined above, and consists in the injection of these solutions into the external sphincter muscle and under the base of the fissure.

METHOD.

For treatment of the usual dorsal fissure the patient lies on his right side and the anus is painted with tincture of iodine. A 2 c.cm. Record syringe is filled with A.B.A., and with a hypodermic needle the skin is punctured one inch behind the anus in the middle line. The left forefinger is passed into the rectum as a guide and the needle is thrust deeply into the sphincter, first on one side of the middle line and then on the other, about three-fourths of a cubic centimetre of A.B.A. being injected into each side. The needle is then partially withdrawn and is directed forwards in the middle line under the base of the fissure where the remainder of the solution is slowly injected. This completes the first treatment, but if desired an application of pure ichthyol to the surface of the fissure may be made. In one case in this series I injected an anterior fissure in a similar manner with success.

A varying amount of pain is complained of during the actual injection, but it is seldom severe. Some cases have had pain three or four hours after the injection, but only in a few very nervous subjects has this late pain been at all marked. In every case of fissure injected great relief has been noted, or even complete absence of pain within the first twenty-four or forty-eight hours after the injection.

When re-examined, between the third and seventh days after injection, the local result is invariably very striking. Sphincteric spasm has usually completely disappeared; the finger is admitted readily without pain and the margins of the anus can be separated in a normal manner. In a number of cases at this stage a sentinel pile, if present, has been excised with scissors without further anaesthesia and without more than a faint sensation being noticed by the patient. Pure ichthyol is applied at this stage to the surface of the healing fissure, and the usual course of events now is for the fissure to be found completely healed about two or three weeks after the first injection, with the patient quite free from any symptoms. I do not consider the presence of a small sentinel pile at the outer end

of the fissure to be a contraindication to the use of this method. The sentinel "pile" is usually a small oedematous tag which on several occasions I have observed to disappear when sphincteric relaxation has been obtained by injection of A.B.A. In other cases the tag has subsequently been excised, either without further anaesthesia or after injection of a few drops of novocain. I believe this method will sometimes prove of value even in the case of an undermined fissure; if the sphincter has been made to relax I see no reason why an undermined tag should not be removed locally and successful healing obtained. In a few cases I have given a second injection of A.B.A., but as a rule the relaxation lasts sufficiently long for the fissure to heal, and the spasm then does not return. In one case, described below, injection of A.B.A. was of particular value in that it allowed adequate examination of the rectum (at first impossible on account of pain) to be performed a week later, when a large fibrous polyp in relation to the upper end of the fissure was discovered and accordingly removed. In no case has there been any history of incontinence from lack of sphincteric tone.

The following cases may be taken as representative of the series.

Case 1.—A married woman, aged 30, with a very painful dorsal fissure of eight weeks' duration. She was given an injection of 2 *c.cm.* of A.B.A. One week later the sphincteric spasm had disappeared and the fissure had healed. She was discharged fourteen days after the injection.

Case 2.—A married woman, aged 33, had a dorsal fissure with sentinel tag; duration two weeks; the sphincter was very spastic. On February 19th 2 c.cm. of A.B.A. was injected. On February 26th the sphincter was quite lax, and the patient was discharged on March 12th, the fissure being healed, and the sentinel tag had almost disappeared.

Case 3.—A married woman, aged 29, had a dorsal fissure with spastic sphincter and sentinel tag; duration two years. On January 8th 2 c.cm. of A.B.A. was injected. On January 15th her condition was much improved; the sentinel tag was excised without further anaesthesia. On February 5th no symptoms were present, but a superficial crack was still present; 2 c.cm. of A.B.A. was injected as before. On February 12th the fissure had healed; there was no pain or spasm. She was discharged completely healed on February 26th.

Case 4.—A married woman, aged 42. This patient had a chronic dorsal fissure with large sentinel tag and much sphincteric spasm. On March 12th 2 *c.cm.* of A.B.A. was injected. On March 15th the pain was much less; the sphincter was quite lax, and with a finger a large fibrous polyp in relation to the upper end of the fissure was discovered and readily delivered outside the anus. Novocain was injected at its base, and the polyp excised together with the sentinel tag. On March 26th the anus admitted two fingers readily, and the patient was discharged healed and free from symptoms on April 19th.

To summarize the results: 30 cases from my out-patients' clinic at St. Mark's Hospital and from my private practice have been injected; 18 have been discharged healed, mostly within a period of ten days to three weeks after the injection of A.B.A.; 6 cases remain under treatment. Two cases with indurated fissures were injected with A.B.A., but on further consideration I decided that operation would be more suitable and certain. Finally, 4 cases of recent fissures were injected once, but have not reported for re-examination. So far as I am aware, no patient has had to lie up or discontinue work while under treatment.

Conclusions.

As an ambulatory treatment for pruritus ani the subcutaneous injection of anaesthetic solutions in oil, such as benacol and A.B.A., would appear to be safe, of considerable value, and worthy of extended trial.

In the treatment of recent anal fissures the method described can be promised to effect a rapid and brilliant cure, and this early stage is obviously the best for treatment to be undertaken. In fissures of some duration, relief of pain and healing are likely to be obtained in a considerable proportion of cases.

Reference.

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TREATMENT OF PELVIC INFLAMMATIONS BY DIATHERMY.*

BY

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THE method of treating pelvic inflammations by a diathermy current passed between electrodes placed back and front may or may not be good, but it is not treatment by heating the pelvic contents. If, during a treatment so administered, a thermometer is placed in the cervical canal, no rise of temperature will be recorded. The method to be described in this paper is one in which the pelvic contents are heated by a high-frequency oscillating current, which is applied by means of an electrode introduced into the cervix or urethra.

The treatment of pelvic inflammations by the diathermy current arose, as will be seen later, out of the method of treating gonococcal infections of the cervix and urethra by this current. Diathermy treatment of cervix and urethra for gonococcal infection was founded upon the known fact that the gonococcus is vulnerable to comparatively slight rises of temperature above the normal temperature of the human body, though whether this is the only factor concerned is open to question. It was known that attempts had been made to free the male urethra from gonococcal infection by means of sounds heated by hot water circulating through them. These attempts failed because the sounds would, of course, not heat the tissues immediately underlying the mucous membrane. These deeper tissues can, however, be heated by a diathermy current to some depth, and it was decided to try the effects of heating them in this way.

Dr. E. P. Cumberbatch, in treating arthritis by diathermy of the joints, had observed that those cases which recovered were always due to gonococcal infection, and that there was no such beneficial effect on other cases of arthritis. As a result, attempts were made to rid the cervix and urethra of gonococcal infection by using the diathermy current, and during 1919 I arrived at the method of heating these tissues by means of metal electrodes introduced into their lumen.

The cervix, being insensitive, can be heated to any required temperature without an anaesthetic, but this, of course, is not so in regard to the urethra. An anaesthetic is undesirable because the patients must be treated as out-patients. The temperature at which the sensation of heat changes to pain is 115° F., and the urethra cannot therefore be heated beyond this without an anaesthetic. Moreover, up to this temperature no inflammatory reaction occurs, and, if it is not exceeded, no pain or discomfort follows the treatment. If it is even slightly exceeded some symptom indicating an inflammatory reaction, such as pain on passing water, will occur on the day following the treatment. No harm results until 131° F. is reached. It seems that the reaction to a temperature up to 115° F. does not set up inflammation, but that an inflammatory reaction begins directly this temperature is passed. As it is necessary in cases of gonococcal infection to treat both urethra and cervix at the same sitting, and inflammation following the treatment is to be avoided, the temperature of 115° F. is taken as the maximum allowable.

It was realized that if this temperature was insufficient the method would fail. There are two factors in the production of the lethal effect on the organism—namely, temperature and time. It was determined empirically that this temperature of 115° F. was sufficient if the length of time during which it was maintained was ten minutes. The number of times the process had to be repeated in the case of gonococcal infection was found to vary considerably, but generally six to eight bi-weekly treatments proved to be sufficient.

The technique now used is as follows: An electrode is introduced into the urethra, and by means of the diathermy current the tissues immediately surrounding the electrode

* Abstract of a communication to the Section of Electro-Therapeutics of the Royal Society of Medicine.

are heated to a temperature which is believed to be 115° F. This temperature is estimated by the patient's own sensation, and is the point where the sensation of heat changes to pain. The insensitive cervix is then treated in a similar manner, the current used to produce the temperature in the sensitive urethra being taken as the standard.

This method of freeing the cervix and urethra from gonococcal infection is very successful; it was first practised nine years ago, and up to the present very few cases refractory to it have been met with. Moreover, I found that in cases of gonococcal arthritis it was necessary to treat the cervix only, recovery of the arthritis then taking place. In 1920 I treated with success cases of arthritis not gonococcal in origin but associated with a cervicitis. In cervicitis due to infections other than gonococcal recovery may be procured and erosions healed, though in such cases a greater number of applications may be required.

French writers on the subject of uterine ionization are always very insistent that direct current applications must never be made if there is any inflammation of the uterine appendages. They state, moreover, that pain in the lower abdomen during such direct current treatments is diagnostic of inflammation of the pelvic organs. Up to the year 1921 I was treating by diathermy cases of cervicitis obtained chiefly from a special treatment centre, and it was obvious that cases of salpingitis would sooner or later arrive. I had treated the cervix in this way both to free it from gonococcal infection and for the effects of this procedure on arthritis, and had noticed that pain in the lower abdomen had occurred during the treatment. This occurred in cases in which other signs of salpingitis were absent. No harm had resulted. However, on September 20th, 1921, a patient came for treatment of vaginal discharge accompanied by definite signs and symptoms of salpingitis.

The patient, aged 31, gave a history of vaginal discharge for many months. Signs and symptoms of salpingitis were present. Gonococci were found in smears of the cervix and urethra. The first application of diathermy was given on September 20th, 1921. After this treatment the patient developed pain in the abdomen, with tenderness and rigidity in the right iliac fossa. Vomiting occurred and the temperature rose to 102° F. The patient was admitted to hospital, where she remained two weeks. By October 4th symptoms had subsided and diathermy was resumed. A week later the discharge was decidedly less, but there was still pain in the lower abdomen and tenderness on deep palpation. On October 14th there was no pain or tenderness. On November 7th, although symptoms of salpingitis had subsided, gonococci were found in abundance in the urethra but not in the cervix. On January 16th, 1922, gonococci were found in the cervix but not in the urethra, and, shortly after this date, treatment was resumed. Applications were made on January 24th and 27th. On February 23rd and March 2nd no gonococci were found in the urethra or cervix. On April 4th they were also absent, there was no discharge, her general health was good, and she appeared to have made a complete recovery. She had then remained free from signs and symptoms of salpingitis for six months from the time when they had first subsided.

In view of this experience I determined in such cases to use a milder degree of heating, hoping thereby that a subsidence of the salpingitis might be produced and that the cervicitis might be satisfactorily treated afterwards. I was at this time familiar with the effects on prostatitis due to gonococcal and other infections of diathermy applied to the prostate by means of a metal electrode introduced into the rectum. Subsidence of pain and frequency of micturition, recovery from arthritis and other metastases, and even recovery of the prostate from the infection were remarkably constant.

The intrapelvic electrode I now use is 1 inch in diameter. It is sheathed in vulcanite except for 1½ inches at the end which is to be in contact with the upper end of the vagina. This end must be rounded so as to give an even distribution of the current on account of the tendency high-frequency currents have of coming off at points or edges. The indifferent electrode used at present is a lead belt, 2½ inches wide, made of one pound of lead (gauge 24 S.W.G.) and fastened by a clip, which also serves for an attachment to the machine. With these electrodes a current of two amperes gives a temperature of 106° F. in the tissues in the neighbourhood of the metal part of the vaginal electrode. How quickly the temperature falls off from one electrode to the other is not known, so that the actual heating of the tubes and ovaries cannot be determined. The treatments last twenty minutes each, and are given twice a week.

The cases about to be tabulated and described were sent for treatment by one of the gynaecologists at St. Bartholomew's Hospital, from Dr. Malcolm Donaldson's department, by Dr. Wilfred Shaw, Mr. Lane Roberts, and Mr. Burt-White, and by Dr. Oldershaw from the Soho Hospital for Women. I am indebted to Dr. Oldershaw for his interest, kindly criticism, and help, and for some of the reports on the late results of the treatment. The total number of patients was 57, but, excluding 4 found unsuitable for treatment, 6 who attended for only one or two treatments, and 6 who received only a short course of treatment, the number may be reduced to 41. Of these, 33 recovered (about 80 per cent.), 6 were partially relieved of their symptoms or relapsed after apparent recovery, and 2 were unrelieved.

When cases are described as recovered it means that: (1) They are relieved of symptoms connected with the pelvic condition. Many of these patients have been complaining of symptoms for a long time, and their frame of mind is such that recovery from pelvic inflammation is not immediately followed by subjective improvement. Pains, discomfort, or headaches are enlarged upon on inquiry as to their present condition. They are regarded as recovered only if they are relieved of those symptoms which can be referred to pelvic inflammation. (2) Their general health is markedly improved. Instead of having a toxic appearance and being worn out from pain and sleeplessness they have the appearance of health, sleep well, and have improved appetite. (3) Physical signs of pelvic inflammation are absent; examination reveals no swelling which is tender on manipulation. Though there may be some thickening or other abnormality which the examining hand can still detect there is nothing which could be considered sufficient to justify the assertion that recovery has not taken place. In some cases, so far as can be ascertained by inspection and palpation, a complete return to normal has occurred. The appearance of the cervix is normal, and the erosion is healed.

The treatment is safe. No harm has ever resulted, except the acute exacerbation of the symptoms referred to as occurring occasionally when treating the cervix. No patient has died under the treatment, and no operation has become necessary as a result of it.

In the following tables the description of each case is necessarily very brief. Ip. indicates the mild heating by

TABLE I.—*Salpingitis of Undetermined Origin.*

Case No.	Remarks	Treatment.	Results.
50	Tense, tender mass Douglas's pouch, 3 months	Ip. 3	Pain relieved, still tender, operation.
51	Inflamed left appendages. Duration 2 years	Ip. 10, interval 2 months, Ip 9	Recovery. Slightly tender nodule in left fornix.
55	Right tube and ovary inflamed, 3 months	Ip. 12	Recovery. Pregnant
85	Inflamed right ovary and tube, 18 months	Ip 12	Recovery Followed one month.
116	Fluctuating swelling. Cervicitis, 18 months	Cerv 5. Ip. 3	Recovery
209	Both tubes enlarged, left is tender	Ip 10	Recovery.
389	Left tube and ovary enlarged and tender	Ip 10	Recovery.
407	Salpingitis. Cervicitis erosion, 6 to 7 years	Cerv 4. Ip. 2	Recovery.
441	Salpingitis Cervicitis erosion, 2 years	Ip. 3. Ions. 11	Recovery.
558	Dry pyosalpinx. Cervicitis, 6 years	Ip. 11	Recovery.
112	Double salpingo-oöphoritis	Ip. 5	Recovery.
108	Tender mass right fornix. Cervicitis	Ip 15. Cerv. 3	Recovery. Subjective symptoms remain.
433	Tender mass both iliac fossae. Cervicitis and erosion	Ip. 5. Cerv. 3. Ip. 5	Recovery. Subjective symptoms remain.
485	Double salpingo-oöphoritis. Cervicitis and erosion	Cerv. 20	Recovery; 9 months later well; 7 months preg.
599	Salpingitis and cervicitis	Ip. 12. Ions. 5	Recovery. Relapse of cervicitis.
160	Swelling right tube, less so left. Cervicitis	Ip. 10. Cerv. 5	Recovery. Followed two months.
528	Cervicitis, subsiding salpingitis, left	Ip. 9. Cerv. 3	Recovery.

the vaginal electrode, and cerv. means that the cervix has been especially treated. The total duration of the course of treatments may be roughly reckoned by remembering that the applications are made twice a week.

In Case 441, healing of the erosion was produced by ionization, which in some cases is more effectual or more rapid than diathermy. Of the seventeen cases, twelve have recovered; one had three treatments only, and the result is inconclusive; three made partial recovery, and one had a relapse of the cervicitis.

TABLE II.—*Cases in which Gonococcus was Found.*

Case No.	Remarks.	Treatment.	Result.
395	Salpingitis. G. found	Cerv. 5	Recovery. Observed six months.
162	Fluctuating swelling. G. found in cervix and urethra	Ip. 1. Cerv. 3. Ip. 6	Recovery. Followed one month. No relapse.
540	Arthritis and salpingitis. Aged 8 years	Ip. 8. Per rectum	Recovery. No arthritis, no salpingitis. Followed five months.
165	Appendix. Right tube and ovary removed, tender swelling left fornix	Ip. 5. Cerv. 3	Recovery.
282	Enlarged thyroid and salpingitis. Cervicitis	Ip. 4. Cerv. 8	Recovery. Thyroid not enlarged.
301	General peritonitis 7 months ago with inflammation of tubes and ovaries	Ip. 3. Cerv. 3	Recovery. Followed three months. Five examinations. No Gonococcus found.
223	Gonococcus found in pelvic pus of peritonitis. Pain and tenderness. Rigidity right iliac fossa	Ip. 11	Recovery.

Cases proved to be due to gonococcal infection all made a good recovery after a comparatively short period of treatment. This is nothing more than anyone familiar with the effects of diathermy treatment of gonococcal infections would have predicted, and requires no special treatment.

TABLE III.—*Following Confinement.*

Case No.	Remarks.	Treatment.	Result.
184	Cervicitis 2 years. Tender swelling left fornix	Cerv. 4. Ip. 12	Recovery.
84	Pain 2 years. Both appendages large and tender	Ip. 11	Recovery.
359	Pain one year. Left salpingo-oöphoritis. Cervicitis. Erosion	Ip. 1. Ions. 9	Recovery.
503	Pain 4 years. Tenderness both iliac fossae. Cervicitis	Ip. 2. Cerv. 7. Ions. 3	Recovery.
168	Bilateral-salpingo-oöphoritis	Ip. 8	No improvement.
375	After miscarriage 2 months ago. Swelling right fornix. Cervicitis and erosion	Ip. 5. Cerv. 3. Cerv. 11	Recovery. Relapse of cervicitis after 14 days. Curetted.
514	After miscarriage 3 years ago. Swelling left fornix	Ip. 8	Still has pain Failure.
7	Pain 2 years. Erosion and cervicitis	Cerv. 7	Recovery; 7 months later still recovered.
36	Post-puerperal. Swelling right fornix. Cervicitis	Cerv. 3. Ip. 16	Recovery. Followed one month.
137	Followed miscarriage. Tender swelling left fornix	Cerv. 3. Ip. 11	Recovery; 4 months later well and preg.
210	After confinement 5 years ago. Salpingitis	Ip. 7	Recovery; 5 months later 2 months preg.
295	After confinement one year ago. Salpingitis	Ip. 11	Recovery.

The cases occurring after confinement made a good recovery as a rule; they all had physical signs of salpingo-oöphoritis. Cases 168 and 514 definitely failed to improve after a month's treatment. I have no explanation of why this is so, or in what respect they differed from the rest. In one case (375) the cervicitis and erosion relapsed. The patient appeared recovered on January 6th, 1928, and again on February 21st. She was not seen again till October, when she gave a history of having been curetted in the meantime. There was a bright red rim round the cervical os, which returned to normal after a few diathermy treatments. The salpingitis had not relapsed.

TABLE IV.—*Parametritis, with Deep Lacerations.*

Case No.	Remarks.	Treatment.	Result.
567	Left parametritis. Two years' duration	Cerv. 3. Ip. 6	Recovery.
562	Parametritis	Ip. 4	Recovery incomplete. Was to have attended as an out-patient, but did not do so.

TABLE V.—*Following Operation for Ectopic Foetation.*

Case No.	Remarks.	Treatment.	Result.
524	Six to seven months after operation	Ip. 3	Relief of symptom. She was to have attended as out-patient, but did not do so.
418	Tenderness and swelling left ovary and tube. Operation 10 years ago	Ip. 8	Recovery.
576	Large hard tender mass low down in Douglas's pouch. After operation 12 months before. Thin, ill and toxic-looking	Ip. many	Small, hard, not tender swelling can still be felt. General health good.

Conclusions.

The cases likely to recover after a comparatively short course of treatment are those of chronic salpingo-oöphoritis without rise of temperature or constitutional disturbance. The pain in one or both iliac fossae may be severe, and there may be a considerable degree of ill health due to pain, sleeplessness, and toxaemia. The presence of pus is not necessarily a contraindication. The chronic pus tube may disappear as far as physical examination goes. Cases are likely to do well if there is evidence of infected cervix *with or without erosion, and especially if there are* gonococci present.

From the point of view of the effect of treating the cervicitis the figures are very striking. Twenty-five cases have been associated with cervicitis, but one of them received only three treatments. Of the remainder, twenty-two have recovered of the salpingitis, but two of them have had a relapse of the cervicitis. Two recovered as far as physical examination was able to establish the fact, *but* subjective symptoms remained. *If the cases in which cervicitis occurred are included in the failures, we have* twenty successes, two failures, and two doubtful successes, out of twenty-four cases.

The treatment of gonococcal salpingitis and ovaritis consists in most cases in the treatment of the cervical infection. This applies also to many cases of salpingitis due to infection other than gonococcal. The treatment of the cervix should not as a rule be proceeded with forthwith, *but be* preceded by a few applications of intrapelvic heating. If treatment of the cervix is undertaken when salpingitis of any degree of severity is present great increase of pain with rigidity of abdominal walls and rise of temperature may result. This condition may last a fortnight, and has occurred in two or three of the cases. No harm has resulted, and the cases have all been eventually cured. It will be noticed from the tables that some of the cases make a rapid recovery *even if the symptoms have existed for* years. It is probable that 80 per cent. of recoveries would be obtained if gynaecologists chose the cases with a knowledge of what may be expected of the treatment and, while giving a chance to cases on the borderline, exclude those which are obviously unsuitable.

A follow-up of cases treated within the last two years *has been carried out by Dr. Simon, and in 80 per cent.* of those from whom answers were received recovery was confirmed.

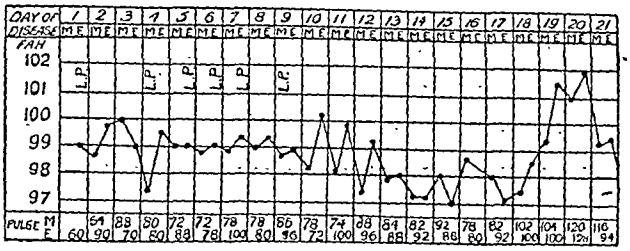
These chronic pelvic infections and inflammations have always presented a difficult problem in gynaecology. I believe that diathermy offers a new method which will avoid a long and tedious period of treatment with swabs, tampons, and douches, will render mutilations unnecessary, and will bring about recovery in some cases in which operation is not likely to succeed.

both hands was very weak, but the legs moved normally. No sensory abnormality to pin-prick or light touch could be found. His systolic blood pressure was 140 mm. of mercury. Morphine and hyoscine were given repeatedly for the pain and restlessness.

On the following day he had improved, but he had retention of urine for twenty-two hours; catheterization was not necessary.

From May 26th to 29th lumbar puncture was performed daily. The pressure and the proportion of blood were less on each occasion. On May 30th his reflexes were as before. The reaction of the pupils to light was sluggish, and the left disc appeared to be paler than the right. The next day lumbar puncture produced only a few drops of opalescent fluid. The patient still needed morphine.

Epistaxis occurred on June 1st, after which his blood pressure came down to 115. The reducing substance was by this time absent from the urine. From then until his discharge on July 4th recovery was steady with the exception of a relapse from



L.P.=Lumbar puncture.

June 9th to 11th. On these days his temperature rose to 102°-103°. The patient vomited and complained of severe headache. The pulse, which had previously been varying between 60 and 96, increased during the fever to as much as 128. The attack subsided without a lumbar puncture.

On discharge the central nervous system appeared to be normal, except for the increase of the left plantar reflex and the left pupil being larger than the right. Three weeks later the same signs persisted. Headaches were still present on exertion, but less severe.

Commentary.

Previous cases seen at necropsy or during operation have been found to have an aneurysm which has ruptured into the subarachnoid space at the termination of the internal carotid artery. The aneurysms have been considered to be congenital in origin.

Typically there is no evidence of syphilis, no history of trauma, the blood pressure is not necessarily high, and the patient is younger than the usual victim of a vascular intracranial lesion.

Features at the time of the attack to which Symonds draws attention are:

1. The sensation of something snapping at the base of the skull.
2. Brief initial loss of consciousness followed by a dazed "wandering" state.
3. Intense pain at the back of the neck associated with stiffness.

The case recorded in this note is that of a young healthy patient. The cerebro-spinal Wassermann reaction was negative. The highest blood pressure recorded was 140 mm. of mercury, but this was, of course, after the haemorrhage. The patient had a definite history of trauma; but this was eight years before and he had been perfectly well in the interval.

The attack began with sudden severe pain at the back of the neck and with sudden collapse. The period of unconsciousness was brief. Possibly this was due to early lumbar puncture. The patient subsequently complained of severe occipital headache and stiffness of the neck. The pain and stiffness of the neck were very marked; and his refusal to grip with his hands and the pain on movement of his shoulders are further evidence of irritation in the cervical region.

That the haemorrhage was not intracerebral is shown by the absence of localizing signs at the outset and the almost complete absence of residual lesions. The proportion of blood in the cerebro-spinal fluid leaves no doubt that the haemorrhage must have been extensive. Had it been intracerebral a haemorrhage of this size would almost certainly have left more definite residua. The only residual sign was the slight inequality of the pupils, which may reasonably be attributed to organization of blood clot round the third nerve at the base of the brain.

It is interesting to note the rise in temperature during the relapse, and that it was associated with increased pulse rate, not with the slow pulse of increased intracranial pressure.

Summary.

1. A case is reported of extensive intradural haemorrhage with sudden onset accompanied by collapse and signs of increased intracranial tension and of irritation at the base of the brain.

2. The lesion occurred in a young and healthy man, and is not attributed to trauma, infection, or heart or kidney disease.

3. Recovery occurred without appreciable residual lesion.

4. The diagnosis made was rupture of an intracranial aneurysm into the subarachnoid space.

My thanks are due to Dr. J. V. C. Braithwaite for permission to record this case.

A RAPID METHOD OF TREATMENT IN PERFORATED DUODENAL ULCER.

BY

C. J. CELLAN-JONES, M.D., F.R.C.S.Ed.,

ASSISTANT SURGEON, SWANSEA GENERAL HOSPITAL.

SURGICAL intervention, in so grave an emergency as the perforation of a duodenal ulcer, demands a variety of operative technique which combines speed and simplicity so that the degree of shock already existing shall not be made more profound by prolonged manipulation or anaesthesia. At the same time it must be remembered that a crisis has been reached in the history of the ulcer, and that, successfully treated, it may now undergo a spontaneous cure, relieving the patient of all his previous symptoms. Bearing this fact in mind, it is important that the operation shall be carried out in such a manner as to cause a minimal degree of narrowing of the duodenum, so that the necessity for performing a gastro-jejunostomy, either immediately or at a later date, shall seldom arise.

The method adopted by most surgeons when closing a duodenal perforation consists in the application of a purse-string suture or of a number of Lembert's sutures in the vicinity of the crater with a view to infolding its margins completely. With this aim accomplished, the operation is concluded, commonly, by the application of an omental graft. If the lesion is of some chronicity, it is also necessary either to excise the friable margins of the ulcer or to insert the sutures at least one-half to three-quarters of an inch from the actual gap, so as to prevent the catgut, when it is tied, from cutting through.

The main criticism which attaches itself to the above procedure is the degree of constriction of the duodenum which it necessarily engenders, and which is a much more fertile cause of a permanent stenosis than the fibrosis and contraction of the ulcer. I have proved to my own satisfaction that a higher percentage of successful results is obtainable when constriction of the duodenal lumen is reduced to a minimum.

The method of operation about to be described has been employed on fifty-one occasions during a period of three and a half years. It can be performed with greater rapidity and has yielded uniformly satisfactory after-results, since in only one instance among forty-two successful cases has a subsequent gastro-jejunostomy been found necessary.

The abdomen is opened by an incision three to four inches in length, situated above the umbilicus and about one inch to the right of the middle line. The stomach is identified and grasped by a protected clamp, applied over a saline towel. The clamp provides an opportunity for gentle traction, which is usually capable of bringing even an awkwardly situated perforation into comparative proximity with the edges of the wound.

Varying with the size of the perforation, some four to six sutures (catgut size 000 on a 30 *mm.* half-circle Souttar needle) are now rapidly inserted. All coats of the gut are invariably penetrated, and at least two sutures traverse the

floor of the aperture, entering and leaving the serous surface approximately a quarter of an inch from the margins of the ulcer. The remaining sutures occupy positions a little to the gastric and duodenal sides of the ulcer, and in each case the ends of the stitches are grasped by a pair of light forceps. The effect produced is that of an archway of sutures placed in the long axis of the gut and extending on each side for at least three-quarters of an inch beyond the ulcer cavity.

A long omental strand, of not too slender proportions, is now sought out and a fine suture passed through its extremity. Forceps readily draw the suture and omentum through the archway, and the tip of the strand is finally anchored by a couple of stitches to the serous and muscular coats in the region of the pyloric antrum. The sutures forming the archway are now tied off; those beyond the margins of the cavity are firmly knotted, whilst quite a fair degree of tension can be placed upon the stitches traversing the crater since the omentum behaves as a soft resilient cushion, which prevents the catgut from cutting through the rigid tissues.

When it has been established that the new attachment of the omentum has left no loop which might strangulate a segment of the intestine, the gastric clamp is removed and the abdominal contents are replaced. The peritoneal cavity is gently swabbed until it is fairly dry, and if perforation has preceded operation by a longer period than twelve hours suprapubic drainage is instituted, otherwise the incision is simply closed in layers.

On theoretical grounds it might be argued that this method should not succeed, since it strangulates the omentum over an area where infection is distinctly liable, and hence that sloughing and reopening of the crater should be the outcome of the procedure. In no instance, however, has this accident occurred, and an opportunity was given for observing the late results of the operation when a patient, who had been operated on two years previously, underwent laparotomy for cholelithiasis. In this case the ulcer seemed to be completely healed, the duodenum exhibited little evidence of scarring, and was merely thickened somewhat over the portion of the outer wall where the omentum had been applied. Local adhesions were conspicuous by their absence.

An immediate mortality of 17.6 per cent.—nine cases out of a group of fifty-one—has already been admitted in an earlier section of this paper, and calls for some further explanation. In one instance only did death occur when operation followed within twelve hours of perforation. In two cases from sixteen to eighteen hours had elapsed, whilst in two others there was an intervening period of more than twenty-four hours. The remaining fatal cases were not operated upon until more than forty-eight hours after perforation, when well-marked peritonitis was already established.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

FRACTURE OF ANTERIOR ILIAC SPINE.

THE following case seems to be worth recording since I can find only one reference to this condition in the literature at my disposal—namely, in Wilson and Cochrane's *Fractures and Dislocations*, 1929.

A strong young man, aged 19, had been practising for some sports, and had taken part in putting the weight and high and long jumping. He then tried a hundred yards sprint, but after travelling some seventy-five yards he felt "something give," and had severe pain in the groin, causing him to fall. He was raised to his feet, but could not flex the right thigh.

When examined he was found to have perfect passive movement of the knee and hip, but hyperextension of the thigh produced slight pain in the right groin. On walking he had to drag the right limb forward, being unable to lift the foot off the floor, unless by great effort. On deep palpation over the anterior part of the iliac crest, something was felt to slide backwards and forwards, and as the anterior superior spine was ill defined, the diagnosis of avulsion of the anterior superior iliac spine by the sartorius muscle was made. This was confirmed the following day by an x-ray examination, when the spine was found to be lying about one inch below its normal situation with the patient in the recumbent position.

The interest of this case seems to lie in the fact that the patient was using the sartorius to a less extent while running than while long jumping, etc., and secondly in the comparative rarity of a fractured anterior superior spine by indirect violence.

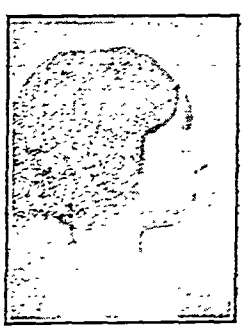
Gravesend. JAMES CRAWFORD, M.B., Ch.B.Ed.

CERVICAL SUBLUXATION FOLLOWING ANAESTHESIA.

THE following case seems of sufficient interest to warrant recording.

Last February the patient, a girl aged 9, was operated on in hospital under general anaesthesia. When her parents took her home they stated that her head was twisted and "stuck to one side." She was taken to one of the Royal National Orthopaedic Clinics (operated in conjunction with

Before operation. After operation.



Before operation. After operation.

local authorities) and on examination it was seen that her head was bent towards the left shoulder and the face twisted towards the left side. The right scalenes were prominent and spasmodically contracted, the right and left sterno-mastoids prominent, though relaxed, and the child could not move her head. She complained of a dragging pain radiating towards the left shoulder. Stereoscopic x-ray photographs were made, but they afforded no help in diagnosis. A tentative diagnosis of a subluxated cervical vertebra was made, and the child admitted to the country branch of the hospital at Stanmore.

At the operation, which was performed six weeks after the onset of the symptoms, the head was found to be fixed in the deformed position, a transverse process on the left side being unusually prominent. On palpation of the pharynx, a hard bony mass was felt projecting posteriorly and to the left, at about the level of the top of the left tonsillar fossa. Reduction was attempted by extension and manipulation, with apparent success. There was no "click," probably owing to the presence of adhesions and to the length of time that had elapsed, but after the manipulation the bony mass felt in the pharynx was median in position and no longer prominent. The child has regained a full range of movements without deformity.

I have to thank Dr. C. W. Durward for excellent photographs of the patient, taken before and after operation.

J. B. BURNETT, F.R.C.S.

Royal National Orthopaedic Hospital, Stanmore.

Reports of Societies.

STILLBIRTH AND NEO-NATAL DEATH.

AT a meeting of the Edinburgh Obstetrical Society held on May 8th, with the president, Dr. HAIG FERGUSON, in the chair, Dr. CHALMERS FAHMY and Dr. ELSIE CROWE presented a communication on "Stillbirth and neo-natal death." The paper was based on a study of 300 cases from the Royal Maternity and Simpson Memorial Hospital, Edinburgh. Of the total number, 248 foetuses were born at, or near, full term, while 52 were definitely premature. In order to keep in prominence the clinical aspect of the investigations, the cases were discussed according to the manner of delivery, the stillbirths and neo-natal deaths being dealt with separately in each group. Detailed microscopical reports were not included in the paper, though histological examination of a great many foetuses had been carried out. The 248 cases of foetuses born at, or near, full term were discussed according to the following table.

Management of Labour.	Stillbirths.	Neo-natal Deaths.	Macerated.	Total.
Spontaneous delivery (all vertex presentations)	47	16	28	91
Forceps	54	7	4	65
Breech	47	4	5	56
Caesarean section	8		0	13
Craniotomy	23	0	0	23
Totals	179	32	37	248

Special reference was made to the occurrence of intracranial haemorrhage, and its frequency in cases of normal spontaneous delivery was emphasized. There were 47 stillbirths in the group of spontaneous delivery (all vertex cases). Of this number, 11 deaths were due to intracranial haemorrhage, and 15 (in 8 of which some intracranial haemorrhage was also found) to asphyxia.

Acute anaemia was thought to be the cause of death in four instances. In each of these labour was complicated by ante-partum haemorrhage, and no cause for death was found other than the pale and anaemic state of all the foetal organs. Clinical histories were quoted of cases of easy labour in which death was due to intracranial haemorrhage. It was pointed out that in parous women the foetal head may be driven right through the pelvis from brim to outlet in a short space of time after rupture of the membranes, and that such rapid descent may predispose to the occurrence of haemorrhage. Such a rapid passage of the head was not dissimilar to that occurring during a breech delivery, which was known to predispose markedly to cranial injury. The number of neo-natal deaths in infants born at, or near, full term was 16, and of this number 7 were due to intracranial haemorrhage. The association of intracranial haemorrhage with asphyxia was noted. In many cases it was difficult to say which factor predominated, but stress was laid on the fact that the two conditions were frequently found in combination. The recognition of this fact was important clinically, for it pointed clearly to the need for treating asphyxiated infants with great gentleness, whether they were born white or blue. That infants born pallid should be treated as if in a condition of shock was well recognized, but the speakers did not think that equal care had hitherto been deemed necessary for those born in the state of blue asphyxia. Such infants, too, might be suffering from intracranial haemorrhage, and accordingly methods of artificial respiration, such as Schultze's and Byrd's, should not be practised. Attention was also drawn to the occasional finding of intracranial haemorrhage with pulmonary disturbance in the infant surviving only a few days. It was thought that the haemorrhage, by depressing the respiratory function, might predispose to partial atelectasis and also to patches of pneumonia.

Ureteric Dilatation and Pyelonephritis of Pregnancy.

Mr. D. STEWART MIDDLETON communicated a paper on "Ureteric dilatation of pregnancy: its complications and sequelae."

Mr. Middleton began by discussing the question of the dilatation of the ureters which is commonly associated with pregnancy. This dilatation had only been noted up to the last few years in post-mortem specimens, but latterly by pyelo-ureterography; thus it could be demonstrated that this was a condition that occurred in about 85 per cent. of pregnant women. The right ureter was usually affected alone, but both ureters might be affected—the left ureter becoming dilated at a much later date in the pregnancy. The etiology of dilatation of the ureter was discussed, and Mr. Middleton strongly favoured the theory that the ureters were affected by the same forces that had been acting on the uterine musculature throughout pregnancy—namely, muscular hyperplasia combined with diminished contractibility. The greater dilatation on the right side might be accounted for by torsion of the uterus. During the puerperium the muscular hyperplasia would, of course, retrogress, and mobility would be re-established immediately after delivery. It was clear that this thickened ureter, already the seat of connective tissue hyperplasia, and exposed to what must constitute a considerable degree of trauma during labour, would be liable in certain cases to become the seat of sufficient fibrosis to cause ureteric stricture, thus perpetuating what was otherwise a temporary hydro-ureter.

Mr. Middleton then went on to discuss the question of acute pyelonephritis of pregnancy, which, in his opinion, was due to chronic colonic stasis, which allowed the absorption of *B. coli* from the colon, and resulted in the infection of a vulnerable dilated ureter during the process of excretion of these organisms from the blood via the renal tract. In regard to treatment, he suggested that raising the foot of the bed might have a beneficial influence by decreasing any tendency to pressure on the lower ureter by the lower pole of the uterus. The majority of cases of pyelitis responded to simple treatment; but in more serious cases the dilated ureter had to be drained, and it was now seldom necessary to induce abortion or premature labour in cases of pyelitis. At the same time, measures should be taken to treat the stasis in the proximal colon wherein lay the origin of the infection. Idiopathic haematuria of pregnancy was next discussed, and was thought to be due to a compression of the veins in the renal pelvis, with a corresponding rise in the arterial tension. This would give rise from time to time to rupture of a small vessel. Mr. Middleton gave details of four cases of haematuria during pregnancy, and showed that catheterization of the ureter and aspiration of the renal and ureteric residual urine would, as a rule, cut the haematuria short. With regard to ureteric stricture, Mr. Middleton was inclined to emphasize the close association of stricture with multiparity. Before coming to this conclusion Mr. Middleton collected all the pyelograms made in the electric diagnostic theatre of the Royal Infirmary which showed a dilatation of the ureter due to stricture. On going thoroughly into the case of each of these pyelograms it was found that all occurred in multiparae, the dilatation in all but two being confined to the right side. This distribution of dilatation corresponded accurately with that of the simple dilatation of pregnancy. None of the cases had suffered from acute pyelitis during pregnancy, but the symptoms could be traced to having occurred shortly after a confinement. Mr. Middleton thought that stricture of the ureter gave rise to two clinical syndromes: (1) idiopathic haematuria of pregnancy; (2) pain in the renal region, usually on the right side, occurring in a multiparous woman, varying from a mild backache to pain so severe as to suggest renal colic. The pain often began during a pregnancy as backache, and became intensified during successive pregnancies. In more than half the cases no abnormality would be found in the urine, and the decision to proceed to a routine urological examination had to be based on consideration of the symptoms, and not on examination of the urine.

TREATMENT OF OESOPHAGEAL CANCER BY RADIUM.

AT the summer meeting of the Section of Laryngology of the Royal Society of Medicine on June 7th, with Mr. H. BELL TAWSE in the chair, a communication was made by Mr. F. J. CLEMINSON on the treatment of carcinoma of the oesophagus by radium.

Mr. Cleminson said that early last year two papers appeared which, taken together, suggested to him that it might be possible to improve the treatment of carcinoma of the oesophagus. The results in this field could hardly be worse—the mortality had been 100 per cent. in the hands of almost every worker—and there was always a chance that they might be improved. He therefore determined to try the method of bringing about lung collapse on one side and afterwards of practising a thoracotomy with a view to placing radon seeds in the periphery of the growth. Radon (radium emanation) was chosen rather than radium to obviate the necessity of subsequent removal. So far the method had been tried in three cases, which he described in detail. The first was a nervous man, aged 74, who was seen on June 12th of last year. For three months he had complained of a little indigestion and difficulty in swallowing. An *x*-ray film showed an irregular stricture at the level of the fourth to the sixth dorsal vertebra, strongly suggestive of malignant disease. A portion removed for histological examination showed active carcinoma, with many of the cells undergoing mitosis. On June 28th, the lung having previously been collapsed, the left side of the chest was opened, when an excellent view of the mediastinum was obtained, but it was not possible actually to feel the growth. Twenty unscreened radon seeds, each containing 1.2 millicuries of the radium emanation, were implanted by means of a curved needle and trocar, being distributed around the inferred position of the growth. About seven to ten days afterwards there was a distinct improvement in the swallowing, but pleural effusion formed and delayed convalescence. This was probably due to the fact that the seeds were unscreened, with consequent irritation from the alpha and beta rays. On August 21st a platinum-screened tube of radium, with an effective length of 2 in., and containing 50 millicuries, was passed through the oesophago-cope into the lumen at the position of the growth and left for twenty-four hours. The patient remained well for a time, but seven weeks later he had lost a good deal of ground, swallowing became very difficult, large quantities of sputum were brought up, and on November 8th he died. The second case was a man aged 58, first seen on July 24th. He had difficulty in swallowing, and there was an irregular stricture at about the level of the arch of the aorta. The oesophagoscope revealed an ulcerated growth, which had all the appearance of a carcinoma. A specimen was obtained later which showed carcinoma of the squamous-celled type. An artificial pneumothorax was induced, and afterwards on the same side a thoracotomy was done, giving a good view of the mediastinum. Again twenty radon seeds, each containing 1.3 millicuries, and having platinum screens, were inserted. The growth could not be felt, but, its position being known, the seeds were disposed around that area. On the fourth and fifth days the temperature rose to 101° F., and there was a moderate pleural effusion. Four weeks after the operation the patient went to a convalescent home, and marked improvement in the swallowing was evident. Six weeks later swallowing was not so good, and the radiogram revealed obstruction below the level of the aortic arch. A platinum-screened tube, of 2½ in. effective length, and containing 38.8 millicuries, was passed into the oesophagus, and kept there for a time, after which the patient got better, but later relapsed and died, the post-mortem examination revealing carcinoma on the left side of the oesophagus, about 4 in. in extent. It was noticed that certain of the implanted seeds were missing, and it was clear that through an abscess which had formed or by some other means they had got access to the lumen of the gullet and escaped. In the third case it was decided that less radon should be used in order to diminish the chance of the necrosis of tissue consequent upon the crowding of the seeds together. This was the case of a man, aged 61, with a history of dysphagia for five months. He was seen on February 1st of this year, when it appeared that there was a stricture at the level of the fourth dorsal vertebra. The growth proved to be a squamous-celled carcinoma. The lung was collapsed on the right side, thoracotomy was done, and 16 radon seeds inserted, representing a total dose of 19.8 millicuries. This man was a bronchitic individual, and ran a hectic temperature for some time afterwards, dying about five weeks after the thorax had been opened. It was too early to say yet, Mr. Cleminson concluded, that this technique was likely to produce a cure in any case.

Oesophageal growths were notoriously refractory to radium, but the purpose of his communication was to call the attention of other workers to this method, and so prepare them for the time when possibly something of real value might come along this line of investigation.

Mr. MUSGRAVE WOODMAN (Birmingham) also gave a brief account of some similar work which was started last November. It had been felt that the application of large doses of radium centrally in these growths must definitely fail, because the substance was in contact with the necrotic centre of the growth and not with the growing edge. The advantage of the radon was that time limited its activity—at the end of a week it was quite inert—and also that the small seeds were very easily inserted. There had never been any local inflammatory reaction, nor any general reaction, nor any immediate mortality in the thirty cases in which the method had been tried. The general improvement in swallowing was quite considerable. At the end of a month after the first application of the radon there was found invariably a regeneration of the epithelium, a diminished vascularity, an increase of fibrous tissue, and an improvement in the upper part of the stricture which it had been possible to reach. The speaker illustrated his cannula and trocar for implanting the seeds, and described two cases, one of which was still well six months after one application of radon; the other, after some improvement, had died of ascites. The surgery of the oesophagus was very difficult, but he looked forward to the time when this part of the alimentary tract would be dealt with as easily as the rectum.

Mr. THACKER NEVILLE also read a note in which he reported on two cases treated by radon inserted into the growth; the patients lived for about five months.

The PRESIDENT said that a great deal more work needed to be done on this subject, especially in the way of improvement in the technique of thoracotomy, but the future seemed to him to hold out a chance of cure by the combination of operation with radium insertion.

EXPLORATORY OPERATIONS AND THEIR JUSTIFICATION.

AT a meeting of the West London Medico-Chirurgical Society on June 7th, held at the West London Hospital, with Dr. H. H. SANGUINETTI in the chair, a discussion took place on exploratory operations and their justification.

Mr. DONALD ARMOUR, in opening, said that he had searched the Oxford Dictionary for a proper understanding of the word "exploration," and found its medical and surgical connotation given as "the examination of an organ, wound, etc., by the use of the finger, probe, or other physical appliance." Before undertaking such an exploration the surgeon must be able to show the reasonableness of his action. The tendency to perform exploratory operations was fostered by the element of uncertainty in medicine and the comparative safety of operations to-day, but an exploratory operation should not be used as a labour-saving device nor as a short cut to a diagnosis. Surgical skill and safety must not be allowed to weaken surgical conscience and judgement. Rather should every clinical means be used to make diagnosis more accurate, treatment more beneficial, and prognosis more positive. No one would question the advisability or justification of operations distinctly indicated for the relief of conditions only to be treated surgically, and in which the exploratory element was only of minor importance in the diagnosis; but when

the exploratory element became more pronounced, and the benefit to be derived more problematical, the justification became more difficult. From the ethical point of view there were justifiable and unjustifiable operations. The first were carried out in cases in which the diagnosis or surgical indications remained obscure, but in which the operation promised benefit to the patient, either through the relief of suffering or the averting of impending danger. Unjustifiable operations were those in which there was no real promise of facilitating a diagnosis, or of lessening suffering or warding off peril, and in the hands of the unscrupulous such operations might become reckless and sometimes even criminal.

Dr. J. A. RYLE laid it down that exploration should be the last method of approach to a diagnosis, and never undertaken lightly. The justification varied with the circumstances of the case, with the age of the patient, for example, and with the facilities for keeping observation on the patient and the availability of specialist colleagues. The increased precision of clinical diagnosis, both in acute and chronic abdominal disease, had, largely through the contributions of surgery, greatly diminished the need for exploration. Nevertheless, it would be generally agreed that the exploratory laparotomy could not be excluded. The exploratory operation might be the mature decision of a wise and careful man or the crude resort of an ignorant and baffled man. Exploration was justified when strong fears were entertained as to the presence of organic disease of a kind requiring surgical relief, while no determining evidence of its presence or nature was otherwise possible; also in the case of palpable tumours of uncertain nature when there was obstruction which might be due to growth in the head of the pancreas or to impacted gall-stones, for example; or again, when organic disease was known to be present and its nature had been determined, but there was uncertainty as to operability. This last applied to many growths of the stomach and colon, where diagnosis might be established with considerable confidence, and yet only exploration could decide whether the condition was operable.

He thought also that exploration was justified, though sparingly, in chronic abdominal cases in which it was believed there might be an organic element, due allowance having been made for constitutional and psychological factors, and other measures tried without success. As for contraindications, exploration of the "chronic abdomen" *per se* was far too frequently regarded as justifiable. Many chronic stomach cases no more justified surgery, even though the physician could not relieve them, than did common headaches or backaches. Many cases of pain in the iliac fossa were allowed to go to unjustifiable operation. It had to be remembered, on the other hand, that again and again an exploratory laparotomy revealed some quite unexpected and quite simple thing, such as an inflamed appendix, when something much worse had been expected, and therein it justified itself. Perhaps in no situation was one more forcibly reminded of the Hippocratic aphorism, "Life is short, the art of healing is long, experience fallacious, judgement difficult." It behoved the surgically minded to be medically thoughtful, and the medically minded to be surgically thoughtful.

Mr. ZACHARY COPE considered that it was justifiable to explore the abdomen or any other part of the body only when every other faculty or means of diagnosis had been exhausted. Disease showed itself in four ways: by anatomical alteration, physiological perversion, general depreciation, and pain. Pain was also a physiological perversion, but it was so characteristic a feature of many diseases of the abdomen, and often the only symptom, as to merit a separate category. Sometimes the diagnostician had only the symptom of pain to help him. If pain persisted in the abdomen in one spot and with increasing intensity, and if it had certain referred areas which were constant, and which suggested that some part of the nervous system was irritated, then it might be justifiable to open the abdomen, but the occasions for so doing were very few. When all four of these signs were present, as in hydronephrosis, there was no doubt whatever—one had the diagnosis. But there were many cases in which only one or two of the signs existed, and exploration seemed to be called for. Operability, again, was a delicate point. There were many cases in which it was hardly justifiable to open, and yet one never knew when one might be able to do something for the patient. It was impossible in many cases to distinguish between pneumococcal peritonitis, salpingitis, and appendicitis. If the indications were clear he would not open in the case of the first two, but would open in the case of the third. When it was not possible to distinguish between them he thought it justifiable to explore.

Dr. H. H. MILLS, speaking as a general physician, had come to the conclusion that there were two areas of the abdomen in which the diagnosis was almost necessarily uncertain—one the region of the gall-bladder, and the other the pelvic area. In the former category there were undoubtedly cases in which, however carefully one went to work, and whatever accessory means of diagnosis were used, the diagnosis remained uncertain until an exploratory operation was done. With regard to the pelvic area, in view of the misery which followed chronic uterine disease and other conditions, he thought as general physicians they were justified in advising an exploratory incision, and that the results were generally satisfactory. There was one series of cases in which the greatest caution should be observed as regards laparotomy—namely, projectile vomiting occurring with pyloric spasm in infants; this was exceedingly common, but, with the exercise of great patience, it did generally resolve.

Mr. HOWARD STRATFORD spoke of one region in which exploratory operation was, in his opinion, extremely important, and invariably done without undue risk. A few years ago a good deal was published about the serious consequences following empyema, especially of the sphenoidal sinus. The sphenoidal sinus was difficult to explore, but such exploration cleared up the diagnosis, and there was no other way of making certain of it. The antrum of Highmore could be explored with extraordinary ease, and here again the diagnosis was cleared up. This was a realm where exploratory operation was absolutely justifiable.

Mr. WINSBURY WHITE referred to exploratory operations in the urinary tract. It was agreed that in the recent past exploratory operations on the kidney and bladder were of great frequency, and often were entitled to be regarded as sound surgery; but that state of affairs did not exist to-day, for with *x* rays and cystoscopy and pyelography it was very unusual for the surgeon not to be able to come to a definite conclusion one way or the other, though there were still certain kidney cases with no tangible pathology. With regard to the bladder also it was unusual not to be able to say in any primary condition what was the cause of the symptoms, and in general it might be said that by carrying out the proper routine, in both kidney and bladder cases, one was left with no justification nowadays for exploring either of these regions.

Dr. G. M. J. SLOT thought that the consequences of exploratory as of other operations ought to be borne in mind. He believed that a woman, particularly one of middle age, who had had a fairly extensive abdominal operation never had quite the same abdomen afterwards. There was visceroptosis, and also functional symptoms, and the patient was really worse off in the long run than before. One part of the body where exploratory operations were not carried out as frequently as they might be was the chest. The operation he had in mind was simple exploratory puncture with the needle. All would agree that such explorations were perfectly justifiable.

Mr. DONALD ARMOUR, in replying, said that the range of the discussion was far greater than he had anticipated. The question of exploratory operation was, after all, one of degree. The cases in which he had pleaded the justifiability of such operation were those in which exhaustive clinical and laboratory investigation had taken place without arriving at a diagnosis. He was rather sorry to hear Mr. Howard Stratford suggest that the sphenoidal sinus could be explored without danger to the patient. There had been a number of such explorations with dire results. It was necessary only to think of the anatomical relations of the sinus. He agreed that in all exploratory operations a factor to be borne in mind was the psychology

of the patient. There was a type of patient, usually female, who demanded operations. He had known a case in which a woman had submitted herself to as many as thirteen *abdominal* operations. Her mental condition must have been like that of the flagellants of the Middle Ages, who found exquisite pleasure in the scourge. He was reminded of the classic case of the lady in Edinburgh who had an obsession that she had a lizard inside her. She so pestered and bothered the surgeons that at last, to satisfy her, they made a feint of operation. All they did actually was to make a small skin incision, but when she came round they told her they had removed the lizard. "What colour was it?" she asked. They replied that it was green. "Well, then," she said, "you haven't got it; that was another *lizard*."

OPERATIVE CYSTOSCOPY.

At a meeting of the Brighton and Sussex Medico-Chirurgical Society held on June 6th, with the president, Mr. GEOFFREY BATE, in the chair, Mr. F. E. FEILDEN read a paper entitled "Some observations on operative cystoscopy."

Mr. Feilden said that operative cystoscopy, for the most part, could be performed under local anaesthesia, thus avoiding the dangers of a general or spinal anaesthesia. If a local anaesthetic was to be of any value, due regard should be paid to the technique of its administration. Delicacy of touch in urethral instrumentation was of paramount importance. To avoid sepsis trauma must be avoided. In cases of suspected stone in any portion of the urinary tract, the investigation was not complete without an *x*-ray examination of the entire tract. The importance of cystoscopy in the investigation of diseases of the urinary tract could not be overestimated. In Mr. Feilden's opinion the bladder sound had ceased to fulfil any useful purpose, and should be discarded. The operation of choice for the removal of all uncomplicated cases of vesical calculi was litholapaxy, by means of a cystoscopic lithotrite. The bladder was opened too often for the removal of certain foreign bodies which could be removed more easily and judiciously by the transurethral route. A calculus impacted in the intramural portion of the ureter might be released by means of a knife or scissors used through an operating cystoscope. Diathermy was of value in the treatment of a ureterocele or vesical cyst, and was also a most satisfactory method of treatment in cases of benign papillomata of the bladder. The size of the electrode used should vary according to the size of the growth—a large electrode would reduce the number of sittings necessary. Diathermy was also of some value in malignant diseases of the bladder. Mr. Feilden did not recommend the removal, for diagnostic purposes, of a piece of bladder growth through an operating cystoscope. Cystoscopy was a most valuable method of investigation in cases of prostatism. In some cases all the symptoms of prostatic disease were present without enlargement of the gland.

The operation of partial prostatectomy, performed with a Kenneth Walker diathermy punch, was a most satisfactory operation in carefully selected cases, but if employed indiscriminately results were certain to be bad. Compared with a suprapubic or perineal prostatectomy the risks were negligible. In conclusion, Mr. Feilden emphasized that success in prostatic surgery was governed by the knowledge when to operate and the appropriate type of operation to employ.

LOCAL GOVERNMENT REFORM AND VOLUNTARY HOSPITALS IN SCOTLAND.

At the annual general meeting of the Royal Medico-Chirurgical Society of Glasgow, on May 3rd, with the president, Dr. JOSHUA FERGUSON, in the chair, an address was given by Dr. J. PARLANE KINLOCH, Chief Medical Officer, Department of Health for Scotland, on the effect of local government reform on the voluntary hospitals in Scotland.

Dr. Kinloch said he had no cut-and-dried plan to expound, and he invited an interchange of views. At the present time the whole medical organization of the country was in a state of transition. His department was attempting to formulate a comprehensive scheme, and in doing so it was taking steps to consult with the medical profession in the four great centres of Scotland. Any opinions which he might express were not to be taken as final or as having Government sanction; they were simply attempts to visualize the new organization. It was impossible to deal specifically with the hospitals alone, because the whole medical organization of the country must be taken into account.

First of all, with regard to finance, it must be remembered that the whole question of expenditure on health services had been reviewed in 1926 by the Royal Commission on National Health Insurance. We were now spending so much on these services as compared with our trade competitors that there was no case for increasing the contributions by employers, workers, or the Treasury until the whole health administration of Britain had been overhauled. Secondly, with regard to the hospitals, three types of institution had to be considered: (1) the great voluntary hospitals; (2) the public health hospitals; (3) the Poor Law hospitals. Accepting the view of the Insurance Commissioners that the health services must in the meantime be reorganized within the existing financial commitment of the Treasury, it became *obvious that the voluntary hospitals must be maintained* at their present level, and, if possible, expanded, if there was to be an adequate hospital service. This would enable the Government contribution to be used to fill up gaps in the existing hospital service and to round off the hospital system. It had been decided that the Poor Law hospital system should be reformed. Except in a few areas like Glasgow and Govan, the system was inferior in quality, and the hospitals must be brought up to a higher level all over Scotland. The Voluntary Hospitals Liaison Committee had played an important part in securing this reform whereby hospitals could be removed from the Poor Law, could become public health hospitals, and could be reconditioned and re-equipped to the standard of the best modern voluntary hospitals. The Liaison Committee was able to speak with the authority of the Voluntary Hospitals Regional Committees, and to advise the secretary in matters concerning these hospitals. This committee had taken the view that the existing voluntary hospitals could not meet the needs of the country, and they had agreed to Clauses 27 and 28 of the Local Government Act (the clauses empowering *local authorities to provide hospitals* and clinics). This implied co-operation between the voluntary hospitals and the statutory hospitals. By this means the position of the voluntary hospitals was safeguarded.

The Local Government Act laid it down that the local authority must have a complete health scheme for its area, including child welfare, ante-natal, and maternity services, medical inspection of school children and of children of pre-school age; the prevention and treatment of infectious diseases, including tuberculosis and venereal diseases; and the treatment of general diseases in the reconditioned Poor Law hospitals. These services would be augmented in certain directions; for example, it was proposed to provide medical treatment for school children. To deal with these requirements they might increase the number of whole-time medical officers, or incorporate the general practitioners within the public health service; the first proposal was a bad one, in Dr. Kinloch's opinion, and he strongly urged the importance of bringing the general practitioners into the scheme. He wished them to realize that if this was to be attained there must be organized *action by the medical profession itself*.

Co-ordination of Medical Services.

The national health insurance service had not been properly correlated so far with the public health services; until recently they had been dealt with by two different departments of the Scottish Board of Health, but this phase of administration had now been centralized for all time in the new Scottish Health Department. There would never be an adequate system until there was some scheme of extension of medical benefit to dependants, but it must be remembered that there was available for such a purpose an annual sum of only five million pounds. To carry out the scheme properly would require twelve million pounds a year—

a sum which the funds of the national health insurance scheme could not provide. It was proposed, therefore, to apply the whole of the funds at present available to the provision of a general practitioner service, while the whole cost of specialist services would have to be met by the local authorities. Dr. Kinloch suggested that this principle was already being applied in the case of the public health services, so that nothing fundamentally new was involved in the plan. The relation of this scheme to the voluntary hospitals and the medical teaching schools must be such that the medical schools embraced the whole. The teaching of medicine must be developed more on the preventive side. There had been some progress in this direction in connexion with the teaching of midwifery, and Dr. Kinloch referred more particularly to the schemes which had been formulated and advocated by Professor Munro Kerr. He thought there should be no difficulty about developing medical education along these lines, but there must be no hard-and-fast rules about no research work being done in the statutory hospitals, and matters of that kind. The medical curriculum must be modified in some way, though he hesitated to suggest in detail what reforms were required. They must not let the universities and the voluntary hospitals say that they were going to absorb the others; it was to be a joint scheme. It was important to prevent competition between the voluntary and the statutory hospitals; there should be the same staffs for both. Members of the visiting staffs of the voluntary hospitals should be *ex officio* consultants within the statutory hospitals, and the routine consultant work in the statutory hospitals should be undertaken by the assistants from the voluntary hospitals' staffs, acting under the supervision of their own chiefs as consultants. There was not enough money to endow a large staff of specialists. For this reason it was not proposed to interfere with the present status and privileges of the "chiefs" in voluntary hospitals. At present they had a certain say in the admission of patients, and so forth, and it was now proposed to continue this privilege with certain modifications. By a system of allocation of cases the voluntary hospitals would be kept full, the superintendents and the medical officer of health reviewing the waiting list from day to day. The normal mode of admission of patients would be from the central waiting list, but if any particular case was wanted by a surgeon it would go to his wards, and would not appear on the general list. There would thus be a new organization from the centre outwards.

The present referee system must be replaced by one in which local referees were increasingly employed and the regional referees were connected with the consulting teams in the various hospitals. These regional referees would act as a link between the medical officer of health and the voluntary and statutory hospitals on the one hand, and the general practitioners on the other hand. It was essential to put a stop to the present excessive medical certification of disablement; this would be possible only when there was an adequate consulting service.

Hospitals and the Act.

There were three important sections in the new Act relating to hospitals: (*a*) Section 14, giving power to transfer Poor Law hospitals to the public health hospital service; (*b*) Sections 27 and 28, the vital hospital clauses; and (*c*) Section 65, requiring a definite standard of efficiency in the hospital service. The larger public health areas defined by the Local Government Act would permit of more efficient health services within each of these areas, but the most important aim was to secure that the health services of these new and enlarged local authority areas were orientated towards the medical schools. In other words, the whole tendency was to evolve a regional hospital and medical service scheme out of the new local authority medical service scheme. For this purpose Scotland naturally fell into four main areas supplying the four medical teaching schools. From the point of view of the Central Department of Health such a regional system was in process of being developed in connexion with the national health insurance service.

So far as the medical teaching schools were concerned, it would be an easy matter to undertake that the teaching hospitals were supplied with a suitable admixture of cases. If, however, this was regarded as the solution of the teaching problem, then the medical schools must be content to be miniature medical schools. The real solution of the problem was for the medical schools to expand and embrace the statutory hospitals of their areas. Under such an arrangement, and without interference with the management of the voluntary and statutory hospitals, the teachers in the teaching hospitals would have access for teaching purposes to the statutory hospitals, and their assistants would largely be employed in providing the actual specialist medical and surgical services required by the local authority hospitals. Under such an arrangement there would be a co-partnership of the university authorities, the authorities of the voluntary hospitals, and the authorities of the statutory hospitals.

In the discussion which ensued Dr. A. S. M. MACGREGOR expressed the belief that it would be a long time before all the schemes which were contemplated came into operation; there must be gradual progress and evolution. He welcomed Dr. Kinloch's statement that there was to be an extension of benefit to the dependants of insured persons at an early date, for, in his opinion, no proper scheme of medical treatment could be made without this. He agreed with Dr. Kinloch that the interests of the voluntary hospitals as medical training schools must be paramount. The great benefit of the new proposals was that they removed the Poor Law system and opened up a whole field of disease to be dealt with in an organized way.

Professor E. P. CATHCART commented on the difficulty of altering the medical curriculum as at present constituted; he did not think it possible to do so without lengthening it.

Professor J. H. TEACHER cordially agreed with Dr. Kinloch's proposals to improve the facilities for teaching. He pointed out that in Glasgow an important reform of the curriculum in harmony with the views of Dr. Kinloch was already in force—namely, the schemes which had been initiated by Professor Munro Kerr in connexion with the teaching of midwifery, and which had led to important alterations in the curriculum as a whole. The scheme would economize the student's time, and give him access to certain subjects in a way which would emphasize the preventive side of medicine.

Dr. J. B. MILLER considered that the proposals outlined by Dr. Kinloch were a charter for the general practitioner of the future. The National Health Insurance Act was ostensibly an effort to raise the health of the people, and the bringing in of dependants was a necessary development of this idea.

Dr. J. FERGUSON SMITH said that in his view not the least important part of the work of the voluntary hospitals was done in the out-patient departments, and that no scheme which failed to realize this was likely to be satisfactory. He wondered what provision would be made for the support of the younger consultants. It was probably true that there were already twice as many men and women required to do the work of the hospitals as could make a reasonable living from the practice of their specialties. If the new statutory hospitals drew off any appreciable fraction of those patients who now obtained special treatment in private the position would be aggravated.

Dr. PARLANE KINLOCH, replying, said that the extension of medical benefit to dependants was still non-existent. If funds were diverted to specialist services there would be nothing available for the provision of benefits for dependants; this was the reason for bringing in the local authority. With regard to the management of the voluntary hospitals he wished to make it clear that what was intended was that the voluntary hospitals should control their own affairs, and that the statutory hospitals should be managed by the local authority. The consultants would remain in the same relation to the voluntary hospitals as at present, and would, in addition, come on the staffs of the statutory hospitals, where they would be working under the conditions existing there. In the future the supply of consultants would probably be increasingly regulated; they would graduate through the voluntary and statutory hospitals to junior teaching and research posts before admission to consultant rank.

Reviews.

MENTAL DEFICIENCY.

FOLLOWING appositely upon the publication of three parts of the Report of the Joint Committee of the Board of Education and Board of Control on Mental Deficiency, comes a fifth edition[1] of Dr. A. F. TREDGOLD's well-known and standard work on that subject and under that title. The report of the committee was described and commented upon in a leading article in the *Journal* of April 27th last (p. 775), and the fourth edition of Dr. Tredgold's work was reviewed on February 17th, 1923 (p. 291). The preface to the new edition reminds us that the book was first published in 1908, and that "during this twenty-one years there has been a markedly increased recognition of the importance of the subject with which it deals both by the medical profession and by the educated laity." It was the subject chosen for consideration by the Section of Medical Sociology at the Annual Meeting of the British Medical Association held at Portsmouth in July, 1923, and a reference to the full and interesting report of the discussion which then took place (*British Medical Journal*, August 11th, 1923, p. 219) may be profitable. The yearly conferences under the auspices of the Central Association for Mental Welfare are further evidence of a deepened and more intelligent concern with the social, medical, and educational problems connected with mental deficiency. Its nature, its varieties, its exact effects, have of recent years come to be more fully understood and appreciated, though it is still a subject on which medical men of some eminence, as well as some laymen, permit themselves to make public dogmatic statements based upon obsolete ideas and statistics that are long out of date. Part IV of the Report of the Joint Committee consists of a description of a detailed investigation made by Dr. E. O. Lewis and some colleagues under his direction in six areas in England and Wales, chosen as representative, and sets out the results and conclusions so arrived at. These should be studied in the report itself, for no summary can do justice to their interest and value, but their importance is indicated by the findings that the incidence figure of mental deficiency is not less than 8.5 per 1,000 population, that this is approximately twice as great as had previously been imagined, and that there can be no doubt that the number of mentally deficient persons is steadily increasing. Parliament has recognized the national importance of the matter, and the need for communal action, in the Mental Deficiency Acts of 1913 and 1927, but effective administration of the law is woefully lacking.

Facts like these make a book such as Dr. Tredgold's all the more necessary and valuable, and the latest figures and statistical tables and the most recent results of authentic research are embodied in the new edition. The general plan of the volume remains the same as in previous editions, but every chapter has undergone a complete revision. Some chapters have been entirely rewritten and their order has been rearranged. Material alterations will be found on a large proportion of the pages, and these have been very carefully and judiciously made. A number of new illustrations have been added. These changes have enhanced the value of a book which was already indispensable to those, whether medical or lay, who wish to have authoritative information and reliable opinions and judgement on the subject with which it deals. It is a book to be read, as well as a work of reference which it would be wise always to have at hand. It is very complete in its survey. The nature and definition of mental deficiency, its incidence, causation, classification, pathology, and psychology are dealt with. The physical characteristics of the different kinds of amentia are described, as well as the diagnosis, prognosis, and treatment of its clinical varieties, and their relation to other forms of mental disease and disorder. Moral deficiency, including the psychological basis of misconduct and the relation of mental deficiency to recidivism, is discussed in an important chapter. The law concerning amentia is set out, and various social questions relating to the education, employment, and general supervision of defectives are adequately considered. The final pages in the section on remedial measures, many of which are new in this edition, may be commended to the special attention of medical men, parliamentarians, and social and educational workers. They embody relatively recent conceptions of the biological causes of mental deficiency, and of its practical and genetic relationship to general mental dullness and instability, and emphasize the bearing of these things upon the questions of sterilization, segregation, and supervision, all of which are likely to be again under discussion in the early future.

In connexion with our review of this standard work we should like to draw attention to an article in the *British Journal of Medical Psychology* (vol. viii, Part IV, 1928) by Dr. Henry Harris on "Mental deficiency and maladjustment." It constitutes, in relatively small compass, a wide survey of such defect and maladjustment from the biological, psychological, and social aspects, which readers will find of great value and suggestiveness.

[1] *Mental Deficiency (Amentia).* By A. F. Tredgold, M.D.Durh., F.R.C.P.Lond., F.R.S.Ed. Fifth edition, largely rewritten. London: Baillière, Tindall and Cox. 1929. (Demy 8vo, pp. xvi – 535; 35 plates. 25s. net.)

ANATOMY FOR STUDENTS.

IN *Surface Anatomy*,[2] by Professor ARTHUR ROBINSON and Dr. E. B. JAMIESON, the subject is treated without reference to its clinical implications, the book being primarily intended for students whose work still lies in the dissecting room. Students in their final years, for whom the subject has a more practical importance, must therefore supplement the information given with clinical details obtained elsewhere. The book, however, is far from being concerned solely with surface form or even with the immediately underlying structures on which the form depends. Although perhaps the most obvious departure from the strict letter of the title is to be found in the account of the segmental nerve supply of the skin, many other instances might be given of the broad sense in which the authors interpret the subject.

The text is divided into seven sections, a separate section being allotted to the back. Each section is in turn subdivided into subsections, the structures being considered more systematically than topographically, under such headings as muscles, nerves, arteries, etc. The work is characterized by the thoroughness and accuracy which we associate with such experienced anatomists, and offers little scope for criticism. We note, however, despite the fact that the volume runs to 175 pages, a number of omissions which perhaps might in a future edition receive attention, particularly as several of them have a practical value. No mention is made, for example, of the levator cushion at the orifice of the Eustachian tube, or of the important connexion of the facial vein with the veins in the orbit. The only reference, again, to the important group of lymph glands which lies along the course of the recurrent laryngeal nerve is the statement that "small scattered glands lie on the front and sides of the trachea and larynx." A few of the illustrations, we regret to say, fail to reach the high standard to which we are accustomed in modern textbooks, and particularly in those published by the Oxford University Press. In Figure 21 the terminal part of the duodenum appears to pass in front of the transverse colon; in Figure 26 the continuity of the pulmonary artery with the infundibulum of the right ventricle is not apparent; in Figure 35 the cervical enlargement is shown too low and too localized; a carelessness is shown in the delineation of the bones of the foot in Figures 30 and 31. These are, however, minor blemishes; a more serious fault, in our opinion, lies in the dissociation of surface anatomy from applied anatomy and skiagraphy, whereby the subject is robbed of its main interest and value.

In Part IX of *Baillière's Synthetic Anatomy*[3] Dr. CHEESMAN continues his series of anatomical drawings on transparent sheets, his purpose being, as is probably now

[2] *Surface Anatomy.* By Arthur Robinson, M.D., F.R.C.S., and E. B. Jamieson, M.D. Oxford Medical Publications. London: Milford, Oxford University Press. 1923. (Roy. 8vo, pp. vii + 175; 12 figures. 15s. net.)

[3] *Baillière's Synthetic Anatomy.* By J. E. Cheesman. Parts IX and IXA. Baillière, Tindall and Cox. 1923. (7½ × 9; each part contains 12 plates and costs 2s. 6d.)

well known, to assist the student to reconstruct the various regions of the body by the superposition of drawings made on successive planes. In the part under notice Dr. Cheesman supplies drawings of the head and neck, while in Part IXA he provides a supplement in the form of drawings of the pterygo-maxillary region, on an enlarged scale. Owing to the multiplicity of the structures therein, and still more to the irregularity of the numerous planes in which they lie, the head and neck present difficulties sufficient to daunt anyone with less patience or skill than Dr. Cheesman. It is not surprising, therefore, that he has not altogether succeeded in maintaining in this volume the standard of his previous work. Nevertheless, with the exception of Figure 8 in Part IX, where the vertebral column appears to us to be unduly rotated, the figures are, generally speaking, both accurate and clear, and we congratulate Dr. Cheesman on the satisfactory completion of another chapter of his original and ingenious work.

FRACTURES.

THE appearance of a second edition of *Fractures and Dislocations*[4] by PHILIP WILSON and W. A. COCHRANE in four years shows that the merits of the book which we reviewed in our issue of May 16th, 1925 (p. 928) have been appreciated. Since then Mr. Cochrane's experience in Edinburgh has increased and the second edition is less an exposition of American practice than the first. Our good opinion of this book remains unaltered, and we only regret that we cannot put on record a greater advance in this country in the direction of the organization of fracture departments of hospitals on the Massachusetts model, to which the treatment of fractures in Boston owes so much. This revised edition contains the same number of pages as the first, but there are fifty-one more illustrations.

The recent articles and letters in the *British Medical Journal* on the treatment of Colles's fracture led us to refer to the section on this subject in Messrs. Wilson and Cochrane's book. As Mr. Cochrane recently stated in our columns, he considers that a frequent complication of this fracture of the radius is a partial luxation of the lower end of the ulna. We have turned to the new edition in the hope of finding a more detailed and exact definition of his meaning, but we are still uncertain as to what is meant by luxation of the ulna in this connexion. The unbroken ulna might have lost its normal relation with the triangular fibro-cartilage and carpus; in which case it would be more correct to say that the luxation was one of the carpus. Or, as nearly always happens in this fracture, the lower ends of the ulna and radius might have lost their normal relative positions, but in such a case it is the fractured radius which is luxated and not the ulna. Any abnormality in the position of the lower end of the ulna as regards the carpus and lower end of the radius should surely be described as a luxation of the fractured bone, and not as one of the uninjured bone of which the relations with the rest of the forearm are undisturbed. The point is one of more than mere words and names. The question involved is one of principle, on which much depends. The attention of the student should not be diverted to a supposed luxation of the ulna, when the need of the moment is the restoration of the lower end of the radius to its normal relationship with the rest of the forearm, of which the lower end of the ulna is but a part.

THYROID SECRETION.

Thyroxine,[5] by Professor E. C. KENDALL, is the latest contribution to the American Chemical Society Monograph Series. Anything written by this author on this subject is of great interest and importance, and the volume constitutes an authoritative summary of our present knowledge concerning the chemistry and physiology of thyroid secretion. The chemical section is, of course, of particular interest, and a full account is given of the author's own work, which laid down the foundations of our knowledge of this subject, and of the work of Harington, which solved the problem of the chemical nature of thyroxine, and led to its synthesis. The physiology of the thyroid is dealt with fully, and a very great amount of information has been collected; but this section would be made clearer by more careful arrangement of the subject-matter.

The author, in a brief discussion of the clinical aspects of his subject, remarks that many of the problems of greatest clinical interest are undecided. Whether the toxic effects in exophthalmic goitre are due to an excess of normal secretion or to the formation of an abnormal secretion is considered to be uncertain. In this connexion we note with interest that the author believes that at least three kinds of organic iodine compounds are present in the normal gland. The bulk of the iodine is in a form which is physiologically inert. The proportion present as thyroxine is always less than 15 per cent. of the total iodine content. Some glands which contain no thyroxine are nevertheless physiologically active, and therefore Kendall believes that thyroxine is an intermediate product, and that before it exerts a physiological action it passes into some slightly altered form which he terms "active thyroxine." The beneficial action produced by minute doses of iodine in exophthalmic goitre is described, but it is concluded that at present we do not know how this comes about.

The letterpress comprises only 230 pages, and is followed by a bibliography of 541 references. These figures indicate that all discussion has been reduced to a minimum, and the volume is chiefly occupied by the description of the results that have been obtained. The reader is, however, helped greatly by short summaries at the end of each chapter, in which the author states what appear to him to be the outstanding conclusions that may be drawn from the evidence available. The fact that the author is a leading authority on his subject makes these summaries of particular interest.

SURGERY IN THE TROPICS.

IT is a pleasure to welcome two such books as *Tropical Surgery and Surgical Pathology*,[6] by Major K. K. CHATTERJI, and *Surgery in the Tropics*,[7] by Sir FRANK P. CONNOR, for they are certainly needed, though some might not realize it. Doubtless, a good surgeon will do good work anywhere, but his best cannot be achieved without a working knowledge of local diseases and conditions, and it is just such information that these books convey, as far as writings can do. An experienced surgeon will appreciate this proviso, while the tyro may safely be guided by the rules and methods set forth.

In the introduction to *Tropical Surgery* Major Chatterji mentions that he is handicapped by writing in a foreign language; we could wish that this same language held no greater handicap for many of those who learnt it at their mother's knee, for the clarity of the exposition alone makes the book worth reading. Definite and minute instructions are given for various operative procedures as well as general measures. Some notes upon blood transfusion and upon protein shock might have found a place, and it was with surprise that we failed to find climatic bubo in the index. The book deals more particularly with the graver surgical conditions, major operations, and the scientific aspect of disease, so that it will be of more use to the experienced surgeon with every hospital facility found in the big towns, and to the student in his final year, than to the isolated practitioner endeavouring to carry on the art of healing to the best of his ability and circumstance. The volume includes a foreword by Sir Havelock Charles and a useful bibliography; it is profusely illustrated, and numerous coloured plates are given. Indeed, the author and publishers are to be congratulated upon the

[4] *Fractures and Dislocations.* By Philip D. Wilson, M.D., F.A.C.S., and William A. Cochrane, M.B., Ch.B., F.R.C.S.Ed. Second edition, revised. London: J. B. Lippincott Company. 1929. (Med. 8vo, pp. xvii + 783; 1029 figures. 45s. net.)

[5] *Thyroxine.* By Edward C. Kendall, M.S., Ph.D., D.Sc. American Chemical Society Monograph Series. New York: The Chemical Catalog Company, Inc. 1929. (Med. 8vo, pp. 265; 39 figures. 5.50 dollars.)

[6] *Tropical Surgery and Surgical Pathology.* By Karuna K. Chatterji, F.R.C.S.I., Major I.T.F. Medical Corps. With a foreword by Major-General Sir R. Havelock Charles, G.C.V.O., K.C.S.I., etc. London: J. Bale, Sons and Danielsson, Ltd. (Demy 8vo, pp. xxx + 244; 131 figures. 16s. net.)

[7] *Surgery in the Tropics.* By Sir Frank Powell Connor, D.S.O., F.R.C.S. Churchill's Empire Series. London: J. and A. Churchill. 1929. (5¼ × 8¼, pp. ix + 293. 99 figures. 12s. 6d.)

production of such a well turned out book at a reasonable price.

In *Surgery in the Tropics* Sir Frank Connor has achieved a most readable and helpful book of a very convenient size, and his method of discussing the surgical possibilities of most tropical diseases is at once stimulating and valuable. He avoids too great detail, yet a little more might be appreciated; for example, the points for and against the closure of a caecostomy, together with the chances of bowel stenosis and failure, might well be discussed. We note the faint praise accorded to lymphangioplasty, but scarcely expected even so much. The book is well illustrated and has a useful appendix, and from first to last the subject is covered in a most practical manner, so that this work should find a prominent place in the library of every practitioner in the tropics. We look forward to seeing a second edition in the near future.

DARWIN AND DARWINISM.

It might seem that at this time of day there could be no possible need to write another life of Charles Darwin. However, during the last five-and-twenty years there has been considerable criticism, not unmixed with misrepresentation, of Darwin and Darwinism, and HENSHAW WARD'S *Charles Darwin*[1] may therefore be regarded as timely. It is a well-written narrative, designed ostensibly to display what the author holds to be the chief meaning of Darwin's career, "that the result of his fifty years of observing nature was to teach the world not to rely on speculation." Some may consider that this fact had already been driven home by Bacon, Newton, Harvey, Hunter, and others, but there is no doubt that Darwin affords a brilliant example of the value of accurate observation, and this aspect of his life is emphasized over and over again in the author's book. But considerable space is also devoted to an explanation of Darwin's relation to the various theories on the nature of species which were current at the time, and as the facts are stated with much impartiality this may be considered to be the most interesting part of the book. The Mosaic idea of the stability of species prevailed generally, although some scientists—Lyell, for example—recognized that variations due to natural causes might arise within a species and cause structural resemblances to other species, simulating a genetic relationship. Buffon went so far as to admit that the resemblances were so striking in many cases that the theory of a genetic relationship would quite well serve as an adequate explanation. But there was an alternative, and this he adopted. "It is certain," he writes, "from revelation, that the original pair of each species issued full-formed from the hands of the Creator." It has been suggested that this plain statement was mere sarcasm; if this is so it becomes impossible to accept any of Buffon's statements with a feeling of security. Lamarck went further: he believed in the mutability of species as adumbrated by Buffon, but he also made an original contribution to the problem in the shape of a theory of the evolutionary process. He supposed—without adducing any considerable body of facts in support of his supposition—that the needs of animals entailed structural alterations in response to alterations in the environment; thus, since circumstances rendered it necessary for the giraffe to reach up to the trees for food, the animal's neck would become gradually stretched in the effort, and the resulting elongation would be transmitted to the offspring. If such reasoning were all that could be said in support of the theory of evolution, one would fain go back to the old Mosaic doctrine of creation, which at least had the merit of being a fine conception. It was at this stage that Darwin began his indefatigable labours and—with a hint, perhaps, from Malthus—developed his theory of evolution through variation and natural selection. The theory has the ring of truth in it, and it has altered and ennobled our whole conception of life. While admitting its truth, no one is called upon to admit that it is the whole truth; and Darwin himself has stated that "of course, my natural selection is not the only factor in evolution"—a circumstance which is sometimes forgotten in discussing Darwinism. The new theory was bound to come into collision with stereotyped beliefs. Hence the absurd meeting at Oxford—reminiscent in a minor degree of the final meeting of the Stanislow Society described in Bret Harte's poem—at which the bishop proposed to "smash" Darwin, and Hooker claimed to have "smashed" the bishop. Darwin would derive small satisfaction from sentiments of this kind; "the theological view of the question," he said, "is always painful to me. I am bewildered."

[1] *Charles Darwin. The Man and His Warfare.* By Henshaw Ward. London: J. Murray. 1928. (Demy 8vo, pp. 472, 27 plates. 21s. net.)

NOTES ON BOOKS.

WHEN in 1927 (July 9th, p. 61) we reviewed the first edition of Dr. SAMSON WRIGHT'S *Applied Physiology*, we commented on the amount and value of the information it contained and the attractive manner in which it was presented. The second edition,[2] recently published, appears to include the whole of the material in the first, revised and brought up to date, and a considerable number of sections dealing with fresh subjects. The work fulfils the needs of the practitioner seeking to correlate his clinical work with its underlying physiological principles, no less than those of the advanced student reading for higher medical degrees and diplomas.

In Fractures of the Upper End of the Humerus[10] Dr. GIAN CARLO PERACCHIA describes the normal anatomy of the parts concerned and the pathology of fractures in the same region. The work is well illustrated with radiograms, photographs, and drawings, and the results of treatment are set forth. While he considers that bloodless treatment should be the rule for these injuries, he recognizes and describes cases in which open operation and nailing or plating must be necessary. The book is well got up, and will be useful to readers of Italian, although it contains no startling new departure.

In *Nouveau Précis de Bactériologie*[11] Drs. DELATER and GRANDCLAUDE give us the course of instruction in bacteriology held in the dental schools of Paris. It consists of ten lectures and eleven practical classes; the latter part is profusely illustrated with coloured pictures which may well prove helpful to the student in remembering the cultural characteristics of the commoner organisms. It provides a clear and concise elementary introduction to the subject, but, covering as it does a wide ground, it is disappointingly brief in its treatment of the bacteriology of the mouth and its application to dental pathology: more work has been done on this subject than might be supposed from the nine pages here devoted to it.

[2] *Applied Physiology.* By Samson Wright, M.D., M.R.C.P. With introduction by Noble Vincent, M.D., LL.D., D.Sc., F.R.S.Ed. and Canada. Second edition. London: Milford, Oxford University Press. (Demy 8vo, pp. xxii + 510; 178 figures. 12s. net.)

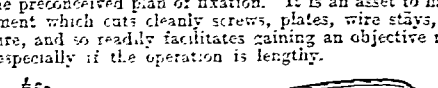
[10] *Le Fratture dell' Estremita Superiore dell' Omero.* Dott Gian Carlo Peracchia. Bologna: L. Cappelli. 1928. (Sup. roy. 8vo, pp. 154; 152 figures. L.25.)

[11] *Nouveau Précis de Bactériologie.* Par G. Delater et Ch. Grandclaude. Paris: Gauthier-Villars et Cie. 1928. (Roy. 8vo, pp. vi + 124; 55 plates. 35 fr.)

PREPARATIONS AND APPLIANCES.

STEEL-CUTTING FORCEPS.

MAJOR MAURICE SINCLAIR, C.M.G., R.A.M.C.(ret.), W.1, writes: The very powerful and compact steel-cutter here illustrated divides (with limitations) all metals from steel plates to silver wire, and does so with a minimum of muscular effort. It is useful to have such an instrument at hand while undertaking bone operations, since unfortunately every fracture does not fall into the preconceived plan of fixation. It is an asset to have an instrument which cuts cleanly screws, plates, wire stays, bolts, and wire, and so readily facilitates gaining an objective neatly, more especially if the operation is lengthy.

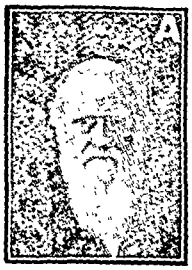


The blades are set at an angle to the handles in order to allow the actuating hand, when cutting within the tissues, to be placed out of the line of vision. After having wired the fragments of bone together the cutter readily allows one, in a deep wound, to see, and at the same time to cut off, the surplus twisted wire with a single effortless movement, and, moreover, without ever having to resort (as one often has to do with a less powerful instrument) to those rocking and flexing movements to break off the wire; these only tend to loosen the hold, and may be prejudicial to an otherwise good mechanical result.

The instrument is made for me by Down Brothers, Limited, London.

CHARLES DARWIN'S HOME.

OPENING CEREMONY AT DOWN HOUSE.



AT the meeting of the British Association in 1927, Sir Arthur Keith, as President, made an appeal for the preservation of Down House, in the county of Kent, as a memorial to Charles Darwin, who lived there from September 14th, 1842, until his death on April 19th, 1882. As recorded in our issue of September 10th, 1927 (p. 464), an immediate response to this appeal came from Mr. George Buckston Browne, F.R.C.S., F.S.A., who undertook to make himself wholly responsible for buying the estate and establishing a fund for its upkeep, in order to permit future generations to visit Darwin's home. Having acquired the property, Mr. Buckston Browne offered to transfer its possession to the British Association under the most liberal conditions, and with an endowment for its maintenance for all time. His desire was that Down House should be regarded as a gift to the nation, and that the British Association should use the building and grounds for the benefit of science. The General Committee of the Association thereupon authorized its President to accept with gratitude this munificent offer.

During the past six months Mr. Buckston Browne has fully restored the whole building and brought back the ground floor rooms—particularly the "old study" in which the *Origin of Species* was written—as far as possible to their condition in Darwin's time. Members of the Darwin family and other friends have generously co-operated in the work of restoration in order that the furniture and decoration of the lower rooms of the house might call to mind the surroundings in which Darwin thought and wrote for the greater part of his working life. The donor has devoted himself also to getting together the nucleus of a Darwin Collection for Down, and commissioned Mr. John Collier to paint replicas of his portraits of Darwin and Huxley to be hung there.

DOWN HOUSE FROM THE SOUTH.

The formal opening of Down House as a public memorial to the great naturalist took place on the afternoon of Friday, June 7th, when a large and distinguished company attended a garden party given by the President (Sir William Bragg) and officers of the British Association in the grounds of this secluded country house on the chalky Kentish uplands. The ceremony was held on the lawn under the presidency of Sir WILLIAM BRAGG, at whose invitation Mr. BUCKSTON BROWNE formally presented the house into the keeping of the British Association, and gave a brief address. Darwin, he said, influenced the mind not only of his own generation, but of the whole world for all time. Like Shakespeare, he was so great that he required no monument, but it might be permitted to them to preserve and keep sacred the house that sheltered Darwin and the things he handled and the grounds he walked on. This it had been his great privilege to be allowed to accomplish, with the willing assistance of Major Leonard Darwin (only surviving son of Charles Darwin) and other members of the family.

Sir WILLIAM BRAGG, in accepting the property as a national memorial, expressed the gratitude and appreciation of the officers of the British Association, not only for the gift itself, but also for the immense pains taken by Mr. Buckston Browne in supervising personally the work of restoration.

Sir ARTHUR KEITH then, at the President's request, declared Down House open to the public. They were assembled, he said, at a place which enshrined the personality of a great man, whom they were justly proud to claim as English through and through. Their distant successors would be proud of it, not so much perhaps on account of the books which were composed and written within its walls, but rather because of the personality of the man who wrote them—a man both good and great. It was right to stress this personal aspect of Darwin's life: he was an English gentleman, gentle and modest almost beyond parallel, living and loved in his home as few men had been; thoughtful for his community, just and charitable, even to those who sought to brand him as an enemy of mankind. Unwittingly Darwin had made these few acres of upland an international possession; in these grounds and within these walls were slowly hammered out new doctrines, which had penetrated to the ends of the earth, giving humanity a new interpretation of living things and its relationship to them. In entrusting his gift to the British Association Mr. Buckston Browne had made no stipulations, for he did not wish Darwin's home to be bound by the dead hand of the law. He had expressed, however, three personal wishes: that the house and grounds should be maintained as nearly as possible as Darwin knew them; that visitors, irrespective of nationality or creed, should be given free access to the public rooms and grounds; and that the officers of the British Association should use Down House to advance the cause of science in such manner as they thought best. In conclusion, Sir Arthur Keith recalled the profound impression made upon him by his first visit to that place, when he obtained a background for a mental picture in which the living Darwin moved, experimented, and thought. It seemed to him that a student would never know Darwin until he knew Down. Science could not be separated from personality. In making this place a national heritage they were acknowledging that sentiment had a place in science—not in the work of the laboratory, but in the heart of the scientific worker. They were not dedicating a monument to Darwin's memory, for he needed none; his works would outlast anything they could build in stone. They were giving way to a sentiment, an impulse, which was deeply implanted in human nature.

Dr. R. ANTHONY, professor of comparative anatomy at the National Museum of Natural History in Paris, briefly conveyed the congratulations of French science; and Dr. JOSEPH LEIDY, speaking on behalf of American science, recalled that Darwin was elected a corresponding member of the Philadelphia Academy of Natural Science immediately on receipt of the first edition of the *Origin of Species* in America. Among the congratulatory messages read by the President was one from Professor Henry Fairfield Osborn, President of the American Association for the Advancement of Science. A sympathetic article by Professor Osborn on the restoration of Darwin's House at Down appears in the issue of *Science* for May 24th.

An important part of the afternoon's proceedings was the pious pilgrimage made by every visitor to the kitchen garden and experimental greenhouses, and to the plantation with its "sand-walk," where Darwin paced up and down every day swinging his iron-shod stick and meditating on his work.

Charles Darwin was the son and grandson of medical men, and the estate at Down was purchased for him by his father, Dr. Robert Waring Darwin of Shrewsbury. He himself studied medicine for a time, and his third son and biographer, Sir Francis Darwin, was a graduate in medicine. A member of our profession made the first public appeal for the preservation of Down House, and another has with splendid generosity carried through the project. It was appropriate, therefore, that at the open-

ing ceremony the principal speeches were made by Sir Arthur Keith and Mr. Buckston Browne, and that the company included Sir John Rose Bradford, President, and Sir Thomas Barlow, Past-President, of the Royal College of Physicians of London, and Sir John Bland-Sutton, Past-President of the Royal College of Surgeons of England. In conclusion, we may note that Mr. Buckston Browne represents the fifth medical generation of his family, the first of the line having been Dr. Theophilus Browne of Derby, who was a fellow townsman and contemporary of Dr. Erasmus Darwin, grandfather of Charles Darwin.

EARLY TREATMENT OF SYPHILIS.

THE most recently issued report (No. 132) of the Medical Research Council relates to the treatment of syphilis, and, as we indicated last week when briefly announcing its publication, Colonel L. W. Harrison has directed attention to some points of great practical interest. The importance of commencing the treatment of syphilis as soon as possible has always been emphasized, but there has long been a suspicion that such early treatment may at times be unexpectedly ineffective as regards the prevention of the later sequels, and a definition of the limits of "earliness" is obviously desirable. Then, again, individual idiosyncrasy must be recognized as a by no means negligible factor, and renders it difficult to foretell how any particular patient will respond to treatment. The diversity of therapeutic methods in common use is an obvious indication that much remains to be learnt as regards the most suitable procedure, for, although more than 260,000 cases of syphilis have now been dealt with in treatment centres in England and Wales, very little attempt has been made to classify the results in relation to the kind of treatment adopted.

Colonel Harrison has surveyed the clinical records of all male cases of syphilis seen for the first time in the St. Thomas's Hospital venereal diseases department from January, 1920, to the end of March, 1926, and kept under observation till the end of June, 1927. His report consists of two parts. The first of these, which occupies the bulk of the booklet, reviews the results of treatment. Thus, different arsenobenzol compounds are compared as regards their effect on the Wassermann reaction; mercury is contrasted with bismuth in respect of its adjuvant effect; the responses of patients in different stages of syphilis to a single and to two courses of treatment are compared; and an attempt is made to assess the prognostic value which can be attached in early cases of this disease to the serological response to the first two courses of treatment. The incidence of relapses is considered, with special relation to involvement of the central nervous system, and the necessity of examining the cerebro-spinal fluid. Mention is made of the apparent possibility in a few cases of eradicating syphilis with very little treatment. In the short second part of the report Colonel Harrison deals with the sites of primary syphilitic lesions, and the occupations and ages of patients. It appears that extragenital syphilis is less common in Great Britain than was previously suspected on the basis of returns received from certain Continental countries.

Comparison of Therapeutic Methods.

Colonel Harrison comments on the regrettable differences of practice as regards treating syphilis which prevail at present; he suggests that it is greatly to be desired that those who are dealing with large numbers of cases should endeavour to take stock of their results and support their opinions by statistical evidence. He remarks that the result of treatment depends in very great measure upon the stage of the disease in which it is started, and that, consequently, different lines of treatment can only be legitimately compared by studying their effects on patients whose infections are within much the same narrow limits of duration. It is also necessary, in his opinion, to take into account the time over which a given total dosage has been spread, as well as the sizes of individual doses. To reach any reliable conclusion as to the requirements for eradicating syphilis from persons in different stages, it is essential to study the results of administering different total dosages in approximately the same time intervals to patients in much the same stages of the disease.

In his survey at St. Thomas's Hospital the following rules were observed in classification. A course of treatment must consist of not less than 5 grams of arsenobenzol compounds (except in the case of silver salvarsan) in conjunction with a minimum of 5 grams of mercury or 2 grams of bismuth, the course being continued for not more than four months. To qualify for admission to the category of "cases treated with two regular courses" the patients had to have received such a first course as defined, and have started the second course within three months of the end of the first course, completing it not more than four months later. To estimate the immediate effect of a course of treatment it was held essential that the blood tests should have been performed within one month of completion of the course. The Wassermann test method employed was No. 1 in the Medical Research Council's Special Report (No. 14).

Comparison in this way of different arsenobenzol brands, as judged by the effect produced by one course, led Colonel Harrison to the conclusion that no one brand was outstandingly better than any other. So far as can be judged by the serological effect of a single course of an arsenobenzol compound with mercury, as compared with one in which the compound was associated with bismuth (in an admittedly small number of sero-positive primary and early secondary cases) the adjuvant effect of the bismuth compound employed did not appear to be greater than that of mercury. The possibility is recognized, however, that the best bismuth preparation may not have been used; it is admitted also that bismuth therapy has distinct advantages over mercurial treatment in respect of tolerability.

Prognostic Considerations.

Comparison of the response to one and to two courses of treatment in different stages of syphilis is indicated by two tables. The effect of treatment is shown to diminish proportionately as the disease increases in duration, and thus the value of beginning remedial measures early is clearly indicated. Spacing out the injections of arsenobenzol compounds in small groups of doses separated by intervals each of one month seems to be a useful procedure; no jaundice or dermatitis resulted in Colonel Harrison's series. It seems probable, however, that no particular combination of dosage and intervals will ensure 100 per cent. of negative reactions in cases which have already become serologically positive. Patients who did not respond to the first course of treatment continued positive in greater numbers than those in which the reactions had been reduced by treatment to weak positive or negative. The after-histories of the cases left with weak positive reactions after the first course did not appear to be worse than those of cases which ended the first course with negative or weak Wassermann reactions.

Colonel Harrison draws the important conclusion that the more or less unsatisfactory after-histories of a number of those patients who were negative at the end of the first course and received regular treatment subsequently show that even the attainment of a negative reaction by such a first course is by no means a guarantee of its maintenance, even under regular treatment. Still, the fact remained clear that the outlook for primary cases treated while still sero-negative appeared to be distinctly better than in the case of those which were sero-positive at the beginning of treatment, even when these became negative at the end of a single course. Another valuable point noted is that the incidence of recurrent chancre points to the importance of local treatment of all primary sores.

Colonel Harrison concludes: (1) that in sero-negative primary cases a completely satisfactory percentage of cures cannot be expected from less than two full courses as defined by him; (2) in sero-positive primary and early secondary cases even three full courses do not afford a sufficiently satisfactory percentage of permanently negative reactions; (3) most relapses in the early stages occur in the first year, only a very small proportion developing after the second year; (4) while in some cases a very small amount of treatment appeared to have sufficed for the eradication of the disease, in other cases considerable amounts failed though administered regularly.

British Medical Journal.

SATURDAY, JUNE 15TH, 1929.

THE MEDICAL PROFESSION IN PARLIAMENT.

WITH the declaration of the poll for the Scottish Universities on Monday last, it has become possible to review completely and accurately the position of the profession of medicine in the new Parliament. In the House of Lords Lord Dawson has received the very welcome reinforcement of Lord Moynihan. Recent experience has shown that knowledge, reasonableness, and persistency combined can produce in that House great effect for the public good, even though the number of the advocates be small, and it would be difficult to imagine a more persuasive union of those qualities than in the two medical peers.

There are now eighteen registered medical practitioners who are members of the new House of Commons, as against thirteen in the old. They were all elected, of course, primarily as politicians, and all save one as party politicians. Dr. Graham Little, whom we may congratulate on the decisive nature of the result in his case, sits as an independent member for London University. We may be permitted also to endorse his opinion that a certain freedom from party ties should mark a member for a university, into whose election there may well enter some considerations different from those which are paramount in constituencies of the ordinary type. Arguments not without weight can be adduced in favour of the establishment of a second chamber on a vocational basis, but none of them are applicable to the House of Commons, where all members must be representative of their constituencies, and not of their profession, trade, or occupation. Nevertheless it is highly important that experience in different walks of life and in many vocations should, in fact, be represented there; and now that matters of public health and education, and important social questions in relation thereto, are so prominent in the public mind and in parliamentary discussion, it has become of great moment that medical knowledge and the medical point of view should receive adequate presentation and proportionate consideration. These they have not always received; nor, indeed, are they easy to secure.

It is well, therefore, that the medical members of the House of Commons are found among the three political parties in numbers not wholly out of proportion to the strength of those parties in general; but it is to be hoped that what in some quarters in the past has seemed to be a too narrow and rigid interpretation of what party loyalty involves may not interfere with the valuable service which the medical members, as individuals and as a group, may render to their profession as well as to the public whom they represent. It is well-nigh impossible that members elected on quite different grounds should reflect with absolute correctness the views of the profession as a whole or as an organized body, and it will certainly be found, in this as in previous Parliaments, that several of the medical members will express opinions about some matters relating to hospital management or the organization of health services which are entirely unrepresentative of those of their profession at large. The danger is that such expression may be taken as being more representative and authoritative than it is. In this connexion we would record our great regret at the defeat of Sir Richard Luce, whose work and services have been very valuable and much appreciated, and who was in a better position than any of his colleagues to gather the views of the organized profession. There will, however, be compensation for this if the medical members will all associate themselves with the Parliamentary Medical Committee, and if that committee be kept in close touch with the profession outside. Dr. Fremantle, Dr. Vernon Davies, and Dr. Drummond Shiels have been very helpful in this way, and such help may be expected to continue, though this may be affected by the appointment of Dr. Shiels to a post in the Government as Parliamentary Under Secretary for India. We offer our congratulations to him and to Dr. Christopher Addison, who returns to the House of Commons and to office as Parliamentary Secretary to the Ministry of Agriculture. Perhaps it may not be too much to hope now for help on the Parliamentary Medical Committee from Dr. W. E. Elliot, freed from the claims of office. A very welcome recruit should be found in Dr. Ethel Bentham, whom we congratulate as the first medical woman to enter Parliament. Mr. Somerville Hastings, too, resumes a seat which he formerly occupied; and among the newcomers are Dr. Joseph Hunter and Dr. Morris Jones. Professor Thomas Sinclair, by an unopposed return, continues to represent the Queen's University, Belfast, and so maintains, along with his lay colleague Sir Hilton Young, the personal connexion between the House of Commons and the General Medical Council. Of the unsuccessful candidates, we may specially regret, in addition to Sir Richard Luce, Dr. Haden Guest, who, however, is certain to reappear. Dr. R. A. Lyster and Dr. Stella Churchill would have represented an earnest section of the public health medical services, as would also, perhaps more widely, Dr. James Kerr.

It is understood that the Parliamentary Medical Committee is so constituted that M.P.'s for the universities, whether medical or lay, are members of it. This has proved to be a very wise and valuable arrangement. The personnel in this respect has been altered by the election of Miss Eleanor Rathbone as an independent representative of the combined English Universities. Her interest in social and family welfare, with which the medical profession is so intimately concerned, is well known. We would suggest that the committee might be appropriately strengthened by the inclusion of Sir Hilton Young, as a member of the General Medical Council.

In conclusion, we are confident that the medical profession, while feeling regret at the loss of the zeal and understanding of Mr. Neville Chamberlain, will sincerely welcome to their duties the new Minister of Health, Mr. Arthur Greenwood, and Miss Susan Lawrence, his Parliamentary Secretary. Mr. Greenwood is not without experience of the Ministry, having been Parliamentary Secretary in 1924, and will no doubt maintain the custom now established of conference with the profession on all occasions when they are concerned or likely to be of service.

PHYSIOLOGY IN RELATION TO PRACTICAL MEDICINE.

THE examination system, however necessary it may be, has long been recognized as an evil, not only by the victims, but by their teachers and by broad-minded educationists. Most students of medicine naturally concentrate their attention on the best way of satisfying the demands of the examiners, which militates against the acquisition of a sound knowledge of their subject of study. It has indeed been thought, and probably with good reason, that many of the ablest students are in one way or another the greatest sufferers from examinations. Furthermore, the curriculum is partitioned off into watertight compartments by periodical examinations, so that when the successful candidate gains his entrance to the pathological laboratories and the wards, he may fancy that biology, including therein anatomy and physiology, has become a thing of the past. With the lengthy and crowded state of the curriculum there is thus a real danger that in the final stages of his clinical work the student's memory, not only of the details, but of the principles of the underlying sciences, will have become dim and confused. The importance of correlating the subjects of medical education and of continuing instruction in the earlier sciences throughout the clinical years is now fully recognized, and in order to ensure that anatomy shall be applied, and that the student shall think physiologically and in terms of biochemistry, special courses have been recommended, and have been provided during the clinical years in the medical schools, though no doubt to a varying extent in different centres.

The era of morbid anatomy in the last century, when structural change was regarded as the cause and convincing proof of disease, has been superseded by the general attention paid to the diagnosis and methods of investigating disorders of function. Thus, the late Sir James Mackenzie laid down the principle that the vast majority of the symptoms of disease are disturbances of normal reflexes. The close relationship of physiology and its offspring biochemistry with pharmacology and therapeutics, pathology, and experimental medicine has ceased to be a new idea. The state of opinion is shown by the number and success of comparatively recent books dealing with the relations of physiology and practical medicine. Thus, to mention some works by British authors only, we have Dr. Robert Hutchison's *Applied Physiology* (1908), Dr. W. Langdon Brown's *Physiological Principles in Treatment* (1908, fifth edition 1924), Mr. A. Rendle Short's *The New Physiology in Surgical and General Practice* (1911, fifth edition 1922), Dr. Sampson Wright's *Applied Physiology* (1926, second edition 1928), Professor R. J. McDowall's *Clinical Physiology in Relation to Modern Diagnosis and Treatment* (1927), and the most recent of all, *Elementary Medicine in Terms of Physiology* (1929), by Dr. D. W. Carmalt-Jones, consulting physician to the Westminster Hospital and professor of systematic medicine in the University of Otago, New Zealand.

The best way of correlating physiological principles with the manifestations of disordered function is open to discussion, and possibly the most successful solution may be provided by the concurrent employment of different methods, such as separate courses of applied physiology by the physiological lecturers, and constant emphasis on the relation of physiology to symptoms in the course of their ward rounds by the clinicians, who must therefore have an up-to-date knowledge of the subject. In view of the greatly increased amount to be learnt by the present-day student it has been suggested—from a strictly utilitarian point of view, and perhaps with insufficient imagination of what developments in the future may bring within the range of practical medicine—that anatomical and physiological teaching should be regulated by the existing needs of the clinicians. To quote a somewhat extreme position, it appears to have been proposed in the United States of America that the clinician should examine the students in their knowledge of the pre-clinical subjects. This suggestion was slyly countered by Professor C. J. Wiggers[1] of the Western Reserve University, Cleveland, Ohio, with the alarming comment that, for the benefit alike of the students and the clinicians concerned, such clinical examiners should periodically be required to furnish evidence, by examination or otherwise, that they are masters of the subject they attempt to adjudicate upon. But a good deal can and has been done by introducing into biological work types of protozoa and animals met with in the study of disease, and by illustrating normal physiology—for example, of the nervous system—by patients showing the results of inhibition or abolition of the normal conditions. Further, the use of laboratory methods in demonstrating normal function can be extended to, and illustrated by, abnormal and artificially induced conditions of function which in turn can be correlated with conditions of disease in the human subject.

It is, of course, impossible to exaggerate the importance of applied physiology in the art of medicine; the two influence and benefit each other. In the past, more than in the present, medicine helped physiology; but the debt of medicine to the experimental method is ever increasing, so much so, indeed, as to narrow or even to obliterate any line of division between applied physiology or experimental medicine and the science and art of medicine. The closer the correlation between the two, and the more intimately the physiologists and the physicians work together and pool their knowledge, the more will medicine approach an exact science.

PREVENTION OF FIRE IN X-RAY DEPARTMENTS.

SOME obscurity still exists as to the nature of the heavy brown fumes which were liberated as the result of the explosion that occurred at the Cleveland Hospital, Ohio, on May 15th. That they were fumes of bromine with hydrocyanic acid was suggested by the coroner's statement (recorded in our issue of May 25th at page 963) to the effect that poisoning by these gases had been proved to be the cause of death in a number of the victims. It is probable, however, that the fumes consisted in large part of carbon monoxide and nitrogen peroxide, combustion products of nitrocellulose, the material used in the manufacture of the inflammable type of film. Not only is the amount of silver bromide in films relatively small, but it is improbable that bromine would have been liberated in the toxic quantities reported from so stable a compound. While, however, it may be argued that only an academic interest attaches to the composition of the liberated gases, there is no doubt that, so long as the inflammable type of film is used, protection against the hazards of fire is of immediate practical importance. In a letter published in our issue of June 8th (p. 1057) the X-Ray and Radium Protection Committee now investigating the latter problem in this country made the following provisional recommendations: (1) care should be taken to ensure that x-ray films are handled in such a manner as to reduce to a minimum the danger of fire; (2) films should be stored in filing

[1] Wiggers, C. J.: *Journ. Amer. Med. Assoc.*, Chicago, lxxii, xxi, 1.

cabinets or cupboards, leaving as few as possible lying open for reference; (3) on no account should smoking or naked lights be permitted near any film store; (4) in institutions where considerable numbers of films may be accumulated arrangements should be made for a special store, preferably isolated. With these recommendations it is interesting to compare those made by Mr. R. D. Hobbs of the Western Actuarial Bureau, Chicago, who, in an article in the November, 1928, issue of *The Modern Hospital*,[1] reported a fire which broke out in a room used for storing films and x-ray equipment in the Memorial Hospital, Albany, New York. Unexposed films, Mr. Hobbs suggests, should be stored in containers constructed of lead, or lead-lined, on shelves two feet above the floor, or in double wall cabinets, vented to the outside air. The amount of unexposed films in standard containers kept outside the fireproof vaults should not exceed 50 lb., and all films should be transferred to storage as quickly as conditions permit. In discussing the use of the so-called non-inflammable films—which, in fact, are inflammable, though they burn slowly and without the production of poisonous gases—he points out that their disadvantages are increased cost and a tendency to roll and curl, and draws the conclusion that property and lives may be endangered to facilitate handling and filing. The floor and walls of storage vaults should, he suggests, be of brick at least 8 in. thick, or of reinforced concrete at least 6 in. thick; and double fireproof doors should be provided, one at each face of the wall. The inner door should be made to close automatically; the outer, self-closing, should be of a swinging type, and made to close into a jamb so as to prevent the passage of flame around the edges. A vent to the open air should be provided, giving a clear opening of at least half a square inch per cubic foot of room. Mr. Hobbs recommends a number of general precautions, the adoption of which would demand nothing but a little intelligent organization. At no time, he suggests, should waste negatives and film scraps be allowed to accumulate on tables or floors; they should immediately be placed in fireproof metal cans fitted with self-closing spring-hinged covers. Only standard electrical fixtures should be permitted in rooms where films are filed or handled; the use of portable lights on extension cords should be forbidden. In each room there should be a fire extinguisher, and the doors should be arranged so as to make egress easy. Film negatives should be filed as soon as possible in heavy manila envelopes, and should be arranged so that from time to time useless negatives may be weeded out. The diffusion glass of film illuminators should be cool to the touch, and there should be no unnecessary display of film negatives in lighted illuminators. Smoking should be forbidden in rooms where films are stored, and no films should be placed within two feet of steam pipes, radiators, or other sources of heat.

[1] Abstracted in the *Journal of the American Medical Association*, May 25th, p. 1763.

LA SIGNORA DALLA LAMPADA.

THE present vogue of unsentimentality, expressed in a growing tendency to represent ideas and personalities generally regarded as beautiful and inspiring as being humdrum, if not actually paltry, has led in America to the coining of a new verb—to debunk. To debunk is to remove the whitewash from historical characters, or, conversely, to prove that they are only as black as they have been painted. No illusions may hope to elude the vigilance of the modern debunker, except his own and those of his own age and place. His happy hunting ground is the nineteenth century, to whose complacency and self-righteousness he feels a superiority which, it is common knowledge, is neither complacent nor self-righteous. In America he has debunked George Washington; in England, the eminent Victorians. Mr. Lytton Strachey has applied the process to Florence Nightingale, damning her with supercilious praise and throwing into relief those of her characteristics which became less amiable as she grew older. The author of the play *The Lady with the Lamp*, probably influenced by Mr. Strachey, has also emphasized the harder, more masculine side of Florence Nightingale's character at the expense of its more lovable, more feminine aspects. The account by Dr. E. W. Goodall[1] of an interview with Florence Nightingale when she was 73 years old presents her in so different a light that one may suspect these authors of having been influenced too much by the fact that their subject belonged to the Victorian instead of to their own more enlightened age, of having avoided one extreme of bunk only to be guilty of another. We are pleased to turn from their writings to a most graceful tribute paid to her memory and to the British medical profession by Colonel Arturo Casarini, M.D. (one of the delegates to the recent congress in London), in a pamphlet dedicated by the *Italian Journal of Military Medicine* to our Royal Army Medical Corps. Dr. Casarini, in "La Signora dalla Lampada (Fiorenza Nightingale)," opens with a short but vivid sketch of the influence of Rome on Britain, giving some account of Roman remains in this country, and reproducing appropriately a photograph of the monumental stone now in the Newcastle Museum, erected on Hadrian's wall to a young army surgeon of the Tungrian Cohort. That the influence has not always operated in one direction only is suggested by Colonel Casarini's handsome tribute to our nation for its sympathy and help in the stormy days of the last century when Italy fought to overcome the oppression of her alien masters. Florence Nightingale, who reformed the methods of nursing the sick throughout the world, though bred in England, was born in Italy and named after her birthplace, Florence. For many years she prepared herself by all available means for what was to prove her great mission; she studied the theory and practised the art of nursing wherever and whenever she could, and she visited and studied the organization of hospitals and infirmaries both at home and abroad. In the Institute of Protestant Deaconesses at Kaiserswerth she remained for six months learning the principles and details of hospital management; in Paris she studied the organization of the hospitals under the charge of the Sisters of St. Vincent de Paul. When at last, in 1854, she was invited by Sidney Herbert, Secretary of State for War, to proceed to Scutari to reorganize the barrack hospital, there was no one more fitted to undertake the task than she. Colonel Casarini reminds us that the appeal on behalf of the sick and wounded at Scutari was made by Sir William Russell, the *Times* correspondent, who described the superiority of the French medical services and the value to the French army of the Nursing Sisters of St. Vincent de Paul. In response to his indignant demand that the women of England should go out and nurse their countrymen, Florence Nightingale wrote offering her services, in a letter which crossed one from Sidney Herbert inviting her to go at once to the Crimea. Appointed with full powers, she set out for Turkey on October 23rd, 1854, with thirty-eight nurses, including ten Sisters of St. Vincent de Paul. She reached Scutari on November 4th, in time to attend to the wounded of Balaklava and Inkerman. The story of her work at Scutari and elsewhere is one of the most inspiring in English history, and we thank Colonel Casarini for telling it so beautifully. He concludes his work with a tribute to the Italian and British soldiers who fought and fell side by side in the great war, and to Miss Hilda Wynne, who, on many fronts, including Piave and Pralungo, proved herself a worthy follower of Florence Nightingale.

[1] *British Medical Journal*, October 27th, 1928, p 763.

THE STUDY OF TISSUE CULTURES.

THE work at present carried out at the Strangeways Research Laboratory, Cambridge, had its origin in a theory developed many years ago by the late T. S. P. Strangeways, Huddersfield Lecturer in Special Pathology, University of Cambridge, that our knowledge of a disease could best be advanced by a study of its pathology in the living body. We are reminded in a recently issued report[1] on the work of the laboratory that Strangeways's first studies of the cytology of the living cell were in connexion with the problems of rheumatoid arthritis, it being for the investigation of the pathological processes involved in this condition that he elaborated his technique for the cultivation of cells *in vitro*. He soon realized, however, that this method of approach was likely to help in the elucidation of wider problems connected with normal and abnormal tissue growth, and, gradually emptying his hospital wards of arthritic patients, he gave himself over almost entirely to investigating the technique and applications of tissue culture. Since 1920, states the report, the work done in the laboratory has related to four main subjects—cytology, embryology, radiology, and cancer. Strangeways's own research, which produced many valuable and interesting observations on the division, structure, and behaviour of living cells, has been continued by his daughter, who has recently studied one of the cytological problems of wound healing—namely, the question as to whether the cells of newly formed connective tissue may be derived from wandering cells of the blood. Of interest in connexion with the origin of various types of cerebral tumours is an investigation by Drs. Wells and E. A. Carmichael, who are studying the cytological development of the central nervous system by cultivating embryonic brain *in vitro*. The technique of embryological investigation, initiated by Strangeways's discovery that tissues cultivated in a suitable medium continue to undergo progressive structural differentiation, has been elaborated and successfully applied to a study of the development of the isolated limb and eye rudiments of early fowl embryos. The results of these and other embryological studies have demonstrated that complex tissues are able to develop from completely isolated rudiments without the control of nerves or blood vessels. Dr. J. G. H. Frew, in studying the embryology of the blow-fly, devised a method for growing fragments of its larvae *in vitro*, obtaining thereby important information about certain physiological factors involved in the metamorphosis of the maggot into the adult fly. In 1920 Strangeways began to study the effect of irradiation on the tissue cultures—an investigation which is making it possible to discriminate between those effects which are due to the action of the rays upon the cells and those due to the reactions of the body as a whole. It is further rendering possible the precise analysis of the effects of rays upon cell division—a subject of increasing importance to medical science. Since Strangeways's death Dr. Spear and Dr. Canti have investigated the effects of radium on cell multiplication, their results having an important bearing on the treatment of cancer by radiological methods. Dr. Spear, in his studies on the effect on cell division of temporary exposure to low temperature, has obtained results which resemble those obtained by irradiation with radium. Work on tumour growth was begun in 1925, when a study of Jensen's rat sarcoma was made by Dr. Fell and Dr. Andrews. In continuation of this study Dr. Andrews has conducted a series of researches on the relationship of acidity and cell degeneration to tumour growths, and has carried out a great number of experiments on the physiological conditions stimulating the multiplication of normal and cancer cells. As many of our readers are aware, Dr. Canti, using tissue cultures prepared in the laboratory, has evolved a technique for making cinematograph films of growing tissues, and has photographed cells actually under the influence of radium. Unfortunately, many lines of research have to be neglected owing to lack of funds, and if the work now being carried on at the laboratory is to continue its income must be increased sufficiently to enable it to provide salaries for a small permanent staff. As reported in our news column, a course of instruction in the technique of tissue culture will be given at the laboratory from July 9th to August 10th. Only a limited number of applicants can be received, and those wishing to take the course should apply, not later than June 30th, to Dr. H. B. Fell, Strangeways Laboratory, Cambridge.

[1] The Strangeways Research Laboratory, formerly The Cambridge Research Hospital, Cambridge. 1929.

COTTON CLOTH FACTORIES REGULATIONS, 1929.

THE Cotton Cloth Factories Regulations, made by the Secretary of State under a new short Act known as the Factory and Workshop (Cotton Cloth Factories) Act, 1929, came into operation on May 15th, the regulations under the Act of 1911 being, of course, repealed. These new regulations materially alter the requirements hitherto governing the conduct of cotton cloth weaving sheds, and give effect to certain recommendations of a departmental committee, to which weavers and manufacturers had agreed to submit their opposite contentions respecting the effects of humidification and the necessity for its abolition. The committee had agreed with the employers that humidification, as practised under the old regulations, did not adversely affect the sickness rate of workers in "humid" sheds as compared with that of workers in "dry" sheds, but held that the weavers were right in contending that the practice has a tendency to produce fatigue and limitation of output, and could, without detriment to the process, be subjected to further restriction. Both sides are doubtless pleased to have scored to this extent, though the real gain apparently lies in the clearing away of obstructions to an agreed set of regulations. On comparing the regulations with the recommendations one is immediately struck with the failure to do away completely with the old subdivision of weaving sheds into "humid" and "dry." Good reasons were given for suggesting this change, and, the recommendation to empower the Chief Inspector of Factories to grant exemptions in approved cases having been adopted, it is surprising that the complete cut was not made. Most of the requirements apply to "any weaving shed," but the two classes are still recognized by including them in the definitions and using the distinctive terms in three of the regulations. It is also to be regretted that the Secretary of State has not adopted the sound and practical suggestion that plans of new sheds and of alteration to buildings should be submitted to the factory department for approval. The new Order does, however, carry out most of the recommendations, and should materially reduce the discomfort to the weaver without adversely affecting production. Artificial humidification must cease when the wet bulb temperature reaches 72.5° F., instead of at 75° as formerly, or when the scheduled relationship between the wet and dry bulb readings is exceeded; if average readings exceed 85° wet bulb, work must cease until this limit is regained; the minimum temperature permitted is 50° dry bulb for the first half-hour of the day, and 55° subsequently. The taking of readings does not now require a representative from both employers and weavers, and the records are to be sent to the inspector monthly instead of immediately. Top lights are to face between north-east and north-west; if the average of the readings of the hygrometers reaches 72.5° wet bulb, ventilation is to be continued during dinner hour, or for two hours after work ceases, as the case may be; cloak rooms are compulsory for humid sheds built after February 2nd, 1888, and for "dry" sheds built after January 1st, 1928; defects in the working of appliances

must be reported, and only individuals duly authorized may interfere with them or with hygrometers. It is pleasing to note that the carbon dioxide standard, though now said to be unscientific, is still regarded as of practical utility and is not to be scrapped; inasmuch as it has been the big lever in producing workable schemes for combining ventilation and humidification, it should still be effective in keeping these up to the mark. Regulations concerning steam-pipes, boilers and flues, whitewashing, and hygrometers have not been altered.

BLOOD-VESSEL TUMOURS OF THE BRAIN.

ALTHOUGH vascular tumours of the brain are rare, their importance has aroused considerable interest, and Cushing and Bailey's useful monograph on the subject was reviewed at some length in our issue of May 25th (p. 958). In this connexion it may be mentioned that Mr. R. Foster Moore records a case of haemangioma of the meninges involving the visual cortex in the May issue of the *British Journal of Ophthalmology*. Mr. Foster Moore's patient was a boy, aged 12, who complained of defective vision of the left eye; there was a naevus of the left half of the face involving the eyelids. Examination of the fields of vision showed, however, that right homonymous hemianopia was present. He suggested that a naevus of the visual cortex was the likeliest cause of the condition, and that a skiagram should be taken with this in view. A large wedge-shaped tumour was revealed; it consisted of a new growth of large vessels, and was obviously a meningeal haemangioma: its base lay at the occipital pole immediately above the tentorium, and was, therefore, closely related to the visual cortex. Mr. Foster Moore draws attention to various other cases of the same kind that have been noted since 1922, when, in the *Journal of Neurology and Psychopathology*, Parkes Weber reported on a tumour recognized by *x*-ray examination of the living patient to be a calcified haemangioma. He mentions the frequent association of these tumours with such ocular abnormalities as buphthalmos and heterochromia iridis. In view of the frequency with which this first abnormality is found in cases of intracranial haemangioma, he advises that a skiagram of the skull should be obtained in all cases of buphthalmos, and also that a watch should be kept for the possible association of choroidal melanomata with intracranial tumours.

THE CARE OF EPILEPTICS.

IN the *Journal* of June 1st last (p. 1003) we gave an account of the provision for the care of epileptics made in several countries of Europe and the United States of America, and drew attention to the fact that there is an insufficiency of suitable provision in this country. The Permanent Committee on Epileptics, in response to whose inquiries much of this information was collected, has now issued to the officers of all county councils and county borough councils an appeal to consider the claims of epileptics when preparing administrative schemes under the Local Government Act, 1929. It is pointed out that there are numbers of epileptics in the general Poor Law institutions, and that this is not a satisfactory arrangement. Some of these epileptics are insane; a larger number are mentally defective; but a considerable proportion may be classed as mentally normal. These last often feel their position keenly, and really require separate institutional accommodation. The committee hopes, therefore, that, in addition to the use of their powers under the Mental Deficiency Acts and the Education Acts, councils will make such provision their special and early care. This circular letter to the county and county borough councils is an example of vigilant and appropriate action which may be commended to the notice of Divisions and Branches of the British Medical Association, and to others who are anxious for the best use of the opportunities afforded by the public health provisions of the new Act.

WE regret to announce the death of Sir William J. Thompson, M.D., Past-President of the Royal College of Physicians of Ireland, and for many years Registrar-General for Ireland.

THE L.C.C. AND TRANSFERRED HEALTH FUNCTIONS.

THREE PRINCIPAL MEDICAL OFFICERS.

THE London County Council, at its meeting on June 11th, decided, as from October next, to increase the fixed staff of its Public Health Department by three principal medical officers. This increase is the first result of the arrangements which have to be made consequent upon the transfer to the Council of Poor Law work under the Local Government Act, 1929. While such transfer does not take place until April next, it is felt that in view of the magnitude of the new duties to be undertaken and the necessity for ensuring that complete arrangements shall be made for the efficient organization and administration of the transferred functions as from the appointed day, adequate staffing arrangements should be made during the preliminary period. The officers in question, therefore, will be appointed before the Council rises at the end of July for the summer recess. The salary of each of the three officers will be an inclusive one of £2,000 a year, rising by annual increments of £100 to £2,500 a year. It should prove attractive to men with the highest qualifications for responsible work of this kind. Particulars of the new posts appear in our advertisement columns.

The Establishment Committee, in a report to the Council, estimates that the total staff of the 81 hospitals and infirmaries to be transferred to the Council from the Poor Law guardians and the Metropolitan Asylums Board numbers 16,000 persons, of whom no fewer than 400 are whole-time medical officers, and at least 7,500 are members of the nursing services. These figures do not take account of the expert technical staff engaged in consultative medical and surgical work and laboratory investigation, of which the total number engaged, whole-time and part-time, is upwards of 150. It is not possible at present to make any detailed statement as to the staff which will be required to assist the Council's medical officer of health (Dr. F. N. Kay Menzies) in carrying out the increased volume of work to be dealt with in his department, but it is considered necessary as a first step to appoint three principal medical officers of higher rank and salary than that of the present senior medical officers of the service. It will then be possible to reorganize the department on the basis of three divisions, thereby placing each of these principal officers in a highly responsible position, and providing for the necessary co-ordination of the existing and transferred health functions.

THE KING.

SINCE the publication of the note in our last issue (p. 1050), the following bulletin has been issued from Windsor Castle, dated June 10th: "His Majesty the King is making progress. The abscess is diminishing in size. The general health is good." During the week His Majesty has been well enough to receive outgoing Ministers and attend personally to business incidental to the appointment of the new Cabinet; he has also spent some hours out of doors in the grounds of the Castle. Our readers will have concluded from the earlier bulletin that a collection of pus had formed under the site of the old scar. This is now draining, and the abscess has nearly healed. *X*-ray examination shows the presence of one or two minute sequestra. There is a good prospect of the condition clearing up without further intervention.

CHEMICAL FACTORS IN THE CONTROL OF THE CIRCULATION.

CROONIAN LECTURES BY DR. H. H. DALE.

At the Royal College of Physicians on June 4th, 6th, and 11th, Dr. H. H. DALE, F.R.S., delivered the Croonian Lectures, his general subject being "Some chemical factors in the control of the circulation."

VASOMOTOR HORMONES.

In his first lecture he recalled that six years ago in the same assembly he delivered the Oliver-Sharpey Lectures, when his subject was the activity of the capillary blood vessels. His aim then was to bring together the evidence, much of it of recent date, on the independent contractile activity of those minute vessels and its bearing on certain problems of physiology and pathology. Some of the investigations were concerned with the vascular effects of certain intensely active principles, one of which, adrenaline, had long been known as a natural hormone. Two other bases, rivalling adrenaline in the intensity and evanescence of their activity on the tone of the small blood vessels, were also mentioned—namely, histamine and acetyl-choline—but there was then no evidence which seemed to justify the supposition that either of these substances was a natural constituent of the animal body.

During the last six years evidence from a number of sources had brought about a great change in the situation. Sir Thomas Lewis had published a systematic review of certain researches, the central interest of which from this point of view was the recurring evidence of liberation from injured or irritated cells of a chemical substance closely resembling histamine in its action and responsible for the vaso-dilatation and wheal formation in the immediate neighbourhood of the lesion. Meanwhile, the lecturer's own associates had been making progress, far beyond expectation, in the isolation, in pure form from extracts of animal tissues, of substances producing actions on peripheral blood vessels. From an entirely different direction evidence had appeared indicating that those changes in the automatic rhythm of the heart which were produced by stimulation of the vagus on the one hand, and of the sympathetic nerve supply on the other, were not the results of the direct passage of nerve impulses to the heart muscle, but were mediated by the liberation of chemical principles having inhibitory or excitatory actions.

Therefore it had seemed useful to attempt a review of the evidence concerning some of these chemical factors in the control of the circulation, passing under consideration, in the first place, the previously known substances which had claims to be regarded as circulatory hormones in the true sense—namely, adrenaline and the vaso-constrictor principle of the pituitary body. It was desirable to restrict the word "hormone" to its original meaning—namely, an active principle formed in one organ and carried by the blood to others in which it produced its specific pulsating or pharmacodynamic effect. In this sense adrenaline might be taken as a perfect type of the hormones, and the pituitary vaso-constrictor principle, which might be referred to as "vasopressin," had at least a presumptive claim to be included in the list.

Adrenaline.

The knowledge regarding adrenaline was more complete than in the case of any other hormone. It was a relatively simple derivative of catechol, and was successfully produced by synthesis many years ago. Its action, when applied through the circulation, was a very evanescent one, unless it was injected in quantities altogether beyond the physiological range. Accordingly it was admirably fitted for the temporary reinforcement, in response to sudden emergency, of the effects of true sympathetic nerves on almost all organs supplied by them. The output of adrenaline from the suprarenal medulla was under nervous control, responding to impulses in the splanchnic nerve fibres running to the gland. The consequent gush of adrenaline into the venous blood accompanying a sudden emotion, and the adaptation of its effects, especially on the circulation, to the physiological needs of the emergency, had already been emphasized. It must be supposed that adrenaline was carried in almost equal concentration to all parts of the circulatory mechanism, reproducing the sympathetic effects on the heart-beat, and affecting the blood vessels in the sense of their response to sympathetic impulses. The variations of this response in intensity and even in direction produced large variations in the relations between the vascular tone in different systems. The vessels of the gastro-intestinal canal were apparently in all animals more sensitive to the vaso-constrictor effect than those of the skeletal muscles, so that a dose of adrenaline entering the general circulation would tend to produce a redistribution of the blood supply in favour of the muscles and at the expense of the alimentary canal. Discussing the effect as seen typically in the cat and dog, he suggested that the acceleration of the output of adrenaline from the suprarenal medulla might be regarded as an item in a general series of changes replacing the physiological conditions favourable to contemplative digestion by those which fitted the animal for combat or flight.

Vasopressin.

The pituitary vasomotor principle presented in many respects a contrast to adrenaline. Opinion had been sharply divided as to whether one or several active principles were responsible for the effects produced by extracts of the pituitary posterior lobe. During the past year the matter had been settled by Kamm and a team of workers, who had obtained a powerful vaso-constrictor fraction, which they termed "vasopressin," which had but slight action on the uterus: Another fraction which they termed "oxytocin" was powerfully stimulating for the uterine muscles but almost inactive on the blood vessels. The actions of the whole extract on the plain muscle of the uterus and on the vascular tone were, therefore, certainly due to different principles.

Of the chemistry of vasopressin little was known. It was not a simple base, like adrenaline or histamine. Injected into the circulation, it was not, like adrenaline, rapidly destroyed. Its action was long and persistent. For its true hormone function and the manner in which it came into action, the evidence was remarkably incomplete and indirect. It was difficult to believe that a substance so potently active on artificial injection should be concentrated in a structure without other known function, with no provision for its carriage by the blood to the tissue in which its intense activity became effective.

So far as its action had yet been analysed, vasopressin appeared to produce its effects on the circulation by increasing the tone of the minute vessels without any discrimination corresponding to their nerve supply. The strongest evidence in favour of the function of vasopressin as a true hormone was its occurrence in such quantity in a tissue in which no local function could be imagined for it. It might be that the function of the pituitary hormone was to provide yet another safeguard against circulatory collapse by a general and undiscriminating maintenance of tone in the small blood vessels when sympathetic impulses and adrenaline alike began to fail under the stress of prolonged and excessive demand.

Control of Vascular Tone.

Looking at the function of the nerve centres controlling vascular tone, it was almost a commonplace to say that, like that of many hormones which had a general distribution through the blood, the control was predominantly tonic and vaso-constrictor. This control, whether by the nerve centres or the true hormones, might be regarded as adapted to the maintenance of the average vascular tone needed for an efficient circulation, to its adjustment in relation to the pressure created in the large arteries by the heart's activity, and to mass variations in the distribution of the blood supply as between one system and another or as between one organ and the rest of the body.

A large proportion of the vascular reactions of the body, however, were of quite different type, and fitted to effect

a much finer adjustment of the blood supply to more closely localized requirements. Into this class came all the reactions most accessible to observation in the skin and superficial mucous membrane, but they occurred in almost all organs in which a localized stimulus, irritation, or injury caused a local vaso-dilator reaction. According to Lewis, the immediate stimulus to these local vascular reactions was a chemical one. Some substance was liberated from the injured cells which directly dilated the minute vessels and rendered their walls abnormally permeable. Lewis had no direct evidence as to the nature of this chemical agent, but among known pure substances he found one—the base histamine—which reproduced the complex with detailed fidelity when introduced in minute dosage into the epidermis. The lecturer regarded it as highly probable that the substance recognized by Lewis was either histamine itself or some loose combination owing its action to histamine.

Local Vaso-dilator Reactions.

In his second lecture Dr. Dale devoted himself to the physiological significance of histamine, which, he said, was first made synthetically, as a chemical curiosity, by Windaus and Vogt. The first hint of its physiological interest was obtained when Barger and the lecturer were seeking for the principle in certain ergot extracts, which they had recognized by its potent stimulating property on the muscle of the isolated uterus, associated apparently with a pronounced depressor action, when administered intravenously to a cat. This substance was identified from ergot as the base now known as histamine. When Laidlaw and he came to investigate its action in detail, the remarkable resemblance between its effects in different species and those which, in the same species, had then recently been described as characteristic anaphylactic shock, soon became clear. It became clear also that in each species the corresponding physiological complex was produced by various organic extracts and products of protein digestion, in which the presence of unknown "depressor principles" had long been recognized.

The first definite claim to the chemical identification of histamine as the essential depressor constituent of a number of animal organs and tissues was made by Abel and Kubota in 1919. Their evidence, unfortunately, failed to carry complete conviction. They isolated histamine salts from two of the many tissues investigated, but their findings in both cases were open to criticism. Their conclusions, as more recent work had shown, were substantially correct, but the evidence left those conclusions open to doubt, and they met with no general acceptance.

Histamine as a Normal Constituent of Tissues.

About 1926 interest arose in claims made for injection of extracts prepared from the liver as a specific treatment of morbidly high blood pressure. The particular problem here was to discover the chemical nature of the substance producing the immediate depressor action, which was being used in the laboratory as an index of the value of the extract. Two different factors were easily recognized in the vaso-dilator activity of this extract: one of them an action resembling that of choline, affecting the stronger arterioles, and the other an action resembling that of histamine, confined to the minute vessels and capillaries, but exhibiting chemical properties quite unlike those of histamine itself. At several stages he and other workers had almost concluded that it could not be histamine, and were only saved from this error by observing that when histamine was added to the extract its chemical behaviour showed similar anomalies. Eventually both choline and histamine were isolated, being obtained not merely in sufficient quantities for complete chemical identification, but in such amounts as to make it unnecessary to suppose that any other more complex or unidentified principles contributed to the depressor vaso-dilator action. Attention was next turned to the lung, which yielded an extract having a peculiarly intense depressor action. Here almost all the activity was found to be of a histamine type, and there was comparatively little difficulty in isolating the histamine.

Dr. Dale then showed a table giving the figures obtained in a survey of a number of organs, the extracts being assayed for histamine by the physiological method. He drew attention to the relatively enormous histamine content of the lung and the low position of the skeletal muscle in the scale. It had been possible to test whether histamine thus extracted from a tissue such as the lung was present during life or formed rapidly after the death of the cells. The experiments showed that histamine had evidently as good a claim to be regarded as a normal constitutent of the living cell as any other substance which similarly conservative methods could extract. It must either be existing during life or be formed in the very act of cellular death.

Lewis's H- Substance.

All this work had an important bearing on the conclusions which Lewis and his colleagues were reaching independently. Lewis had evidence that the living cells of the skin, when subjected to irritation or injury, liberated a substance with an action remarkably like that of histamine. The suggestion was that this substance—Lewis's H- substance—was histamine itself, not newly formed in response to the stimulus, but already existing in the cell interior and only becoming active on liberation. Chemically identifiable histamine had not yet been obtained from the skin, but Harris, in Lewis's laboratory, had no difficulty in proving that the skin of man and other mammals, extracted by processes similar to those used for other tissues, yielded a substance physiologically indistinguishable from histamine.

So far all seemed to be in favour of the identification of the substance released from living cells in response to injury as histamine. Lewis, however, while acknowledging the many points in favour of such identification, preferred to refer to the substance liberated during life as the H-substance—a name designed to leave the question of identity open. A complete proof of the identity could only be obtained if the H- substance could be trapped in oedema fluid or in blood or lymph. The H- substance, by common consent, was normally present inside the cells of the tissue. When attempts were made to extract it, histamine was invariably obtained. If H- substance was not histamine, therefore, it was a substance immediately yielding histamine.

Difficulties of Identification.

Dr. Dale proceeded to discuss some of the difficulties in the identification of the H- substance with histamine. His general conclusion was that while some of the phenomena connected with the H- substance were not easy to reconcile immediately with the supposition that it was free histamine, there were others which would be equally difficult to explain if it were supposed to be a much more complex and indiffusible body. If these difficulties only were in question it would seem rational and entirely compatible with what was known of its properties to suppose that histamine was the active constituent of the H- substance, and that the latter, according to the varying conditions of its liberation, might represent all grades of molecular association, from free histamine to relatively large complexes. The term H-substance would then no longer represent a hypothetical chemical entity, which might be histamine or something entirely different; it would represent a group of loose molecular combinations, of varying complexity, in which histamine might be liberated from cells during life, and to all of which it might impart its characteristic physiological actions. More serious difficulties arose, however, if the attempt was made to apply such a conception to all vertebrate animals. In the case of the frog, for example, the lack of vaso-dilator action by histamine, which Laidlaw and the lecturer had indicated, constituted a genuine and complete discrepancy.

Viewed as a whole, the evidence seemed to indicate that histamine, in the mammals chiefly investigated, was a generally distributed constituent of the cells of the animal body, inert while it remained within the cell, but intensely active in producing local vaso-dilator reactions when appropriate stimuli released it from the cell into the tissue fluid, either free or in molecular combinations of varying complexity. In certain vertebrate types, such as the frog, some other basic substance, possibly allied to it, appeared to replace histamine in distribution and function.

Physiological Significance of Histamine in the Lung.

In discussing some of the physiological questions which arose out of this, the lecturer referred especially to the presence of histamine in so large a quantity in the lung. The fact that in the lungs alone there might be as much of this intensely active substance as there was of adrenaline in the suprarenal gland of the same animal, and that this organ, with its small intrinsic metabolism, had no obvious need for local variation of the diameter of its small vessels, naturally raised the question of an internal secretion of histamine from the lung, and the consequent function of histamine as a true hormone. There was no evidence of such a process, and it could only be recognized as a mere possibility. The alternative possibility, quite unsupported by any direct or adequate evidence, was that histamine, thus accumulated in the lung, might represent material which, having served its function elsewhere in more active tissues and escaped into the venous blood, had been caught on its way through the lung vessels and held there pending destruction by some method. The physiological significance of histamine in the lung was a problem deserving further investigation.

Looking at all the evidence for the normal physiological functions of histamine in various organs, the lecturer thought it might be concluded that histamine was practically limited to actions in the immediate neighbourhood of its liberation. On several occasions he had suggested that the liberation from the active cell of a substance acting like histamine on the minute vessels in its immediate neighbourhood should provide a perfect mechanism for the fine adjustment of the blood flow to the fluctuating needs of small tissue units; but there was still no more than this teleological argument in favour of such a process.

VASO-DILATOR SUBSTANCES: FURTHER CONSIDERATIONS.

In his third and concluding lecture Dr. Dale addressed himself further to the consideration of histamine, and entered upon a long and detailed argument concerning its significance in connexion with anaphylactic and allergic reactions.

Anaphylaxis and Histamine Action.

At the time when the activity of histamine was discovered, the rediscovery of experimental anaphylaxis in the guinea-pig, and the dramatically fatal character of the shock in that species, aroused fresh interest in the physiological details of the reaction as seen in different animal types. It seemed natural to suppose that the anaphylactic shock following the injection of Witte's peptone into the dog or guinea-pig was due to the liberation of a protein cleavage-product in the circulation by digestion of the reinjected antigen, and when the action of so simple a substance as histamine was found to produce the principal features of the shock, with their characteristic contrasts in the different species, it was again natural that it should be identified with this hypothetical circulating anaphylatoxin. This theory, however, had never appealed to the lecturer, and later his own investigations, together with those of a number of observers, convinced him of the correctness of the view which attributed the symptoms of the anaphylactic reaction, not to the formation of a poison in the blood, but to the reaction between the antigen and a precipitating antibody located in the cell protoplasm. The knowledge now available seemed to make the matter clear. Lewis, finding that a local anaphylactic reaction in the human skin presented the familiar "triple response" of the blood vessels to a local injury, concluded that the union of antigen and antibody in the sensitized cells acted, like any other injurious stimulus, by releasing his pre-formed H-substance. Such a conception appeared to the lecturer to fit all the known facts, and to make clear the meaning of many which were difficult to interpret on any other theory. It was difficult, with the earlier conceptions, to explain why, in each species, only those cells apparently should become sensitive to the foreign antigen, and react to its reinjection, which had normally a special sensitiveness to histamine. There was now no necessity for assuming such preferential sensitization of the cells which participated in the overt reaction. Cells of other types might be assumed to contain the specific antibody and, as the result of its union in their protoplasm with the foreign antigen, to liberate pre-formed histamine; but only those cells which, in each species, were sensitive to histamine would exhibit the physiological reaction thereto. The effect thus produced could arise in one of two ways: either the histamine might be liberated from the reacting cells, or anaphylactic injury of the cells of some large organ, such as the liver, might liberate histamine into the general circulation in such quantity as to produce its effects in the body generally, and thereby cause a histamine response in cells not themselves sensitized to the antigen. Dr. Dale proceeded to trace these alternative processes as the central features in the shock as seen in the guinea-pig in the one case and in the dog in the other.

Acetyl-choline.

After some further remarks on allergic reactions and anaphylactoid phenomena, Dr. Dale turned to the action of an entirely different type of vaso-dilator substance which resembled histamine in certain features of its scientific history. Like histamine, the simple quaternary ammonium base known as choline was made in the chemical laboratory long before it acquired a physiological interest. His own interest in it was first aroused, again as in the case of histamine, by the discovery of its presence in certain extracts of ergot. On making a more systematic investigation of its actions on various organs he was struck by the remarkable parallelism between its effects and those produced by stimulation of parasympathetic nerves. It showed an extraordinary instability when injected into the blood stream, presumably being hydrolysed with the liberation of the relatively inactive choline. Accordingly, its parasympathetic effects were even more rapidly evanescent, as well as more powerful, than the sympathetic effects of adrenaline produced under like conditions. During more recent years he had observed that, apart from its parasympathetic and vaso-dilator effects in minute doses, readily annulled by atropine, acetyl-choline exhibited, when injected in larger doses after atropine, a powerful nicotine-like action on ganglion cells, and also the peculiar motor effects on voluntary muscle which nicotine was already known to produce.

Isolation of Acetyl-choline from Spleen Extracts.

Dr. Dale went on to describe the work of Loewi and others on the frog's heart as affording evidence of the peripheral release, during vagus stimulation, of a chemical substance transmitting the characteristic effects of vagus impulses, and suggesting the properties of acetyl-choline; and then he told of some recent work of his own and his colleagues on spleen extracts, using the spleens from freshly killed oxen and horses, in which a surprisingly powerful action of the choline type had been found. Here was an intensely active and unstable choline ester, naturally present in an animal organ, and in such proportion that the attempt to isolate it was a reasonable enterprise. Such isolation had just been completed by his colleague Dr. Dudley and himself, and they were now able for the first time to state that the substance was indeed acetyl-choline. It was not to be supposed that the finding of acetyl-choline in the spleens of certain animals had necessarily any significance as regards the spleen itself or suggested a true hormonic action of the substance. The identification was important chiefly for the reason that acetyl-choline, which first came to notice as an artificial substance, and had hitherto been known only as such, or as a product of plant metabolism, was now known to be actually a natural constituent of the animal body. Dr. Dale entered upon a discussion of certain hitherto disconnected physiological phenomena which reinforced the strong probability that here one was dealing with acetyl-choline itself, and not with some unknown substance having similar properties.

Effects of Organic Extracts.

In summing up the whole subject, the lecturer said that he had endeavoured to describe the part played in the control of circulation by four chemical agents which seemed to him to be the only ones sufficiently definitely known to warrant even provisional conclusions as regards their normal

functional significance. Evidence existed as to the effects of extracts from various organs of the body, artificially injected, or applied to isolated preparations of cardiac or involuntary muscle; but a great many of these observations could only as yet be put on record for future interpretation. There was evidence, for example, as to the effect of extracts from the right auricle or sino-auricular junction on isolated heart muscle. It had been suggested that some of the stimulating or restorative effect of such extracts on the rhythm of the muscle might be due to the presence of histamine. There was not yet sufficient evidence to justify the assumption that such an extract contained a "heart hormone." What was really needed was a system of criteria or postulates (comparable to Koch's celebrated postulates dealing with the etiological significance of a micro-organism), representing conditions which must be fulfilled before physiological significance was attributed to the effects produced by the artificial application of an organ extract. There was no hope, however, that any such criteria as could at present be suggested would be more generally applicable, or less liable to exception, than Koch's postulates had proved to be in their own sphere.

Scotland.

The General Election: Scottish Universities.

THE result of the election of three members of Parliament for the combined Universities of St. Andrews, Glasgow, Aberdeen, and Edinburgh was declared on June 10th as follows:

*John Buchan (C.)	...	9,959
*Sir George Berry, F.R.C.S.Ed. (C.) ...	...	9,262
*D. M. Cowan (L.)	...	6,698
Dr. James Kerr (Lab.)	...	2,867

An asterisk denotes that the candidate sat in the last Parliament. Sir George Andreas Berry has been one of the members for the Scottish Universities since 1922. He is Extra Surgeon-Oculist to the King in Scotland and a Past-President of the Royal College of Surgeons of Edinburgh.

Public Health in the County of Aberdeen.

In the fourth annual report, for the year ended December 31st, 1928,[1] Dr. H. J. Rae, medical officer of health to the county of Aberdeen, states that the statistics for 1928 were, on the whole, satisfactory. The number of deaths in the eight districts was 1,415, which corresponds to a death rate of 13.4 per 1,000 of estimated population, the same rate as prevailed in 1927. Compared with 1927 there was a decrease of 48 deaths from influenza and 30 from cancer, but there were 48 more deaths from circulatory diseases and 19 more from tuberculosis. There was a decrease in the incidence of scarlet fever—577 cases as against 603 in 1927—and a slight increase in the incidence of diphtheria, 109 cases being notified as against 93 in the previous year. Schick and Dick testing and re-testing, with subsequent immunization of those found to be positive, continued to be used as a preventive measure, but failing the employment of a special medical staff this work in the rural areas was of necessity sporadic in character. Dr. Rae found that while in scarlet fever active immunization might prevent the occurrence of return cases, the same could not be said of diphtheria. The fact that immunity conferred by injections of toxoid-antitoxin took from six weeks to six months to develop made this device useless in the prevention of return cases. The most alarming outbreak of infectious disease was a sharp, but fortunately limited, epidemic of infantile paralysis, which occurred chiefly in the Fyvie district; in all, thirteen persons were attacked by this disease, and one died. During the last three years there had been a considerable increase in the provision of new houses; in 1928 the number of new houses completed at December 31st was 149, and 70 were in course of erection; in 1927 the corresponding figures were 111 and 107. The maternity and child welfare scheme continued to expand, and it was satisfactory to report a decline in the notifications of ophthalmia neonatorum. The total number of births registered in the area was 2,629, as compared with 2,559 in 1927. The rate of infantile mortality was 63.5, as compared with 73.5 in 1927 and 75.5 in 1926; the Scottish rate for 1928 was 86, and in 1927 it was 89. The maternal mortality rate, however, was higher than usual, the case mortality being 47.8 per cent., as against 6.6 per cent. in 1927. The school medical officers had to deal with 26,000 children, and it was an alarming fact that about a quarter of the beginners required medical attention. The majority of defects had thus manifested themselves in the pre-school period, and were due partly to hereditary degenerative processes, and partly to malnutrition and after-effects of infectious diseases, such as measles, whooping-cough, and tuberculosis. Many children entering school were already suffering from late rickets, general debility, diseases of the ear, nose, and throat, mouth breathing, and decay of the temporary teeth. The sick child, in Dr. Rae's view, should not be looked on as an independent unit, but as one of a family, the work of the school medical officer and the child welfare medical officer merging into one. To safeguard the health of the child it would be necessary to extend the Insurance Acts to cover the dependants of insured persons, and to include the general practitioner in a comprehensive scheme for the prevention of disease. The dental treatment of school children was gaining so much in popularity that it was difficult for the dentists to visit all the schools during each year. Increasing attention was also being given to the treatment of eye defects, but there were a few parents who refused to allow their children to follow the oculist's advice. During the year under review the number of cases of phthisis notified—namely, 149—was the lowest yet recorded, though a greater number of non-pulmonary notifications (153) had been made than in any previous year with the exception of 1924. The death rate from all forms of tuberculosis was 97.07 per 100,000, and from pulmonary tuberculosis alone 71.2 per 100,000. The Scottish tuberculosis death rates were 97 per 100,000 from all forms of tuberculosis, and 69 per 100,000 from tuberculosis of the lungs—the lowest Scottish tuberculosis death rates yet recorded. Dr. Rae does not anticipate that the Local Government (Scotland) Act, 1929, will entail much alteration in the organization of the health services, but suggests that future hospital policy will have to provide a concentration of hospital accommodation for persons suffering from infectious diseases throughout the county. Presumably the Public Health Committee to be constituted under the Act would deal centrally with all public health matters, leaving, however, scavenging, water supply, and drainage in the hands of local committees.

Visit of American Doctors to Edinburgh.

Some sixty members of the Inter-State Post-Graduate Assembly of North America visited Edinburgh on June 3rd and 4th, spending the forenoons of both days in the Royal Infirmary. A clinical programme had been arranged by Mr. W. A. Cochrane and Dr. Stanley Davidson. On June 3rd Dr. Woodburn Morison conducted the party round the new radiological department, and gave a demonstration. Thereafter the members split up into sections. A medical clinic was given by Professor W. T. Ritchie, and a lecture-demonstration on irradiated milk, its preparation and uses, by Dr. Chalmers Watson. Mr. Henry Wade carried out operations for renal tuberculosis, renal calculus, and enlarged prostate. Professor John Fraser performed two gastrectomies, excision of the breast, and Spössel's operation for spastic paralysis. Professor D. P. D. Wilkie operated on cases of duodenal ulcer and carcinoma of the rectum. These interested in gynaecology were catered for by Professor R. W. Johnstone, and laryngologists attended Dr. J. S. Fraser's clinic. On June 4th Mr. David Lees spoke of the treatment of neuro-syphilis. Professor Edwin Bramwell gave a medical clinic, Mr. J. M. Graham lectured on perforations of the alimentary tract, and Mr. J. J. M. Shaw demonstrated cases. In addition, Mr. W. Mercer did a bone graft and an operation for ulnar paralysis, while Mr. W. A. Cochrane showed a series of patients who had been operated on for simple fractures, and also performed

[1] Fourth Annual Report by the Medical Officer of Health on the Health and Sanitary Conditions of the County of Aberdeen for the year 1928. Aberdeen: C. Cornwall and Sons. 1929.

an operation for severe flexion contracture of the hip following poliomyelitis. The afternoons were spent in excursions.

New Students' Hall of Residence in Edinburgh.

There has hitherto been little development of residential halls for students in Edinburgh, although many years ago Professor Patrick Geddes and the Town and Gown Association instituted University Hall on self-governing lines, and its three houses—Ramsay Lodge, St. Cuthbert's House, and Blackie House—have continued to flourish. Recently Mr. Thomas Cowan, LL.D., retired shipowner, gave a sum of £55,000 for a new residential hall for men students. His first gift of £15,000 was made in recognition of the excellent work of the students in the general strike. Some houses on the south side of George Square have been reconstructed and extended for the purpose, and now Cowan House is nearing completion, and will be ready for occupation at the beginning of the winter session. Mr. R. D. Maclennan, M.A., lecturer in philosophy, has been appointed warden. The present accommodation consists of 100 study-bedrooms, of which 23 can be shared by two students, along with dining room, common room, library, and tennis courts. The charge is from £13 to £23 per term of ten weeks. Permission to reside in residence during vacations may be given by the warden. Applicants must give two references, and preference will be given to applicants of Scottish, English, Welsh or Irish descent. A few members of the teaching staff may be admitted. The University Court is the ultimate authority in all matters relating to the residence, but provision is made for a house committee consisting of the warden and five of the residents.

New Mental Institution for Govan.

Caldwell House Institution for Mental Defectives, which has been provided by the Govan District Board of Control in order to fulfil the terms of the Mental Deficiency Act, was formally opened on June 6th. The purchase of the Caldwell estate, which extends to 230 acres, the reconstruction of the mansion house and outbuildings, and the erection of a water tank of 100,000 gallons capacity, have involved an expenditure of £40,000. At the present moment there is accommodation for 70 female and 25 male defectives, but further extensions in the shape of pavilion dormitories and special nurses' quarters will be necessary. Mr. W. G. Sharp, chairman of the Caldwell Committee, performed the opening ceremony, and referred to the seriousness of the problem of mental deficiency. In Govan parish there were approximately six hundred certified or certifiable cases, but, in his opinion, if there was a closer investigation on the lines of the Commission for England and Wales it would not be surprising if the numbers were doubled. Dr. Hamilton Marr, one of the Commissioners of the General Board of Control for Scotland, said that all defectives were capable of being educated and being made useful to themselves and probably to the community. The central point of such an institution was its school. On the other hand, the central point of an asylum was its hospital. Other speakers were Mr. John Nelis, chairman of the District Board of Control; Dr. A. S. M. Macgregor, medical officer of health for Glasgow; and Dr. H. S. Edington, president of the Royal Faculty of Physicians and Surgeons of Glasgow.

Selkirk Hospital Association.

At the second annual meeting of subscribers to the Selkirk Hospital Association, Provost Ballantyne, who presided, stated that the association was now in a satisfactory position. They had a good going concern in Viewfield Nursing Home, a regular income fairly well assured, and a fine freehold building practically paid for. The number of patients treated during the year showed how great was the need for such an institution in Selkirk and district. The endowment fund now amounted to £7,396. The total ordinary revenue had been £1,500, and the expenditure £954. It had been decided to have fixed charges, of 3s. per day for contributors and 4s. per day for non-contributors. There were some cases, however, which would have to be admitted without paying these charges, but this matter would be in the hands of the committee.

Ireland.

Post-graduate Course at Trinity College, Dublin.

The programme for the post-graduate classes which are held in the autumn of each year in connexion with the Medical School of Trinity College, Dublin, has now been issued. This year a comprehensive course starts on September 16th and ends on October 5th. Post-graduate instruction is given in medicine, surgery, midwifery and gynaecology, diseases of the eye, diseases of the throat, nose, and ear, diseases of the skin, orthopaedic surgery, genito-urinary diseases, pathology and bacteriology, bio-chemistry as applied to medicine, anatomy, therapeutics, pathology and the uses of radium, and electro-cardiography. Arrangements have been made whereby some of those attending the classes can reside within the College; women can be accommodated in Trinity Hall. Further information concerning these classes can be obtained from the Secretary of the Post-graduate Classes, School of Physic, Trinity College, Dublin.

Births and Deaths in the Irish Free State.

The births, 13,670 in number, registered in the Saorstat during the quarter ended December 31st last were equivalent to an annual rate of 18.8 per 1,000 of the estimated population, which rate is 0.1 below the average for the fourth quarter of the preceding ten years and 0.2 below that of the fourth quarter of 1927. There were 9,803 deaths, equivalent to an annual rate of 13.0, which is 1.5 below the average for the fourth quarter of the preceding decennium and 0.3 below the rate for the fourth quarter of 1927. Of the deaths, 956 (13 per cent.) were those of infants under 1 year, and 4,338 (45.7 per cent.) of persons aged 65 and upwards. The number of deaths of infants was equivalent to 68 per 1,000 births registered, as compared with 62, 61, and 56 for the preceding quarters. The 3,556 marriages registered during the third quarter of 1923 were equivalent to an annual rate of 4.8 per 1,000, the rate being 0.1 above that for the corresponding period of 1927, and 0.2 below the average for the third quarter of the preceding ten years. Of the total number of marriages, 3,249 were those of Catholics. The marriage rate among Catholics is 0.2 below, and that relating to other denominations 0.1 above the average for the third quarter of the ten years 1918–27. In Northern Ireland, for the last quarter of 1923, the births registered were equal to an annual rate of 19.1 per 1,000, in England and Wales to 15.7, and in Scotland to 19.0. In the same period the deaths registered in Northern Ireland were equal to an annual rate of 14.4, in England and Wales to 11.7, and in Scotland to 12.9.

School Inspection in County Derry.

The report of Dr. M. Matson, school medical officer to the Derry and Limavady Education Committee, for the year 1928–29, stated that 74 per cent. of the children on the rolls presented themselves for general inspection. By far the most common defect was decayed teeth, from which 36 per cent. suffered more or less; 25 per cent. suffered from enlarged tonsils and adenoids, and 9 per cent. from defective vision. Defective speech was more common than defective hearing. There were no cases of definite pulmonary tuberculosis, but a few suspicious cases were referred to their own doctor for observation. Many children were anaemic; 316 were verminous. The school nurse visited 582 children at their homes, and paid 297 revisits to schools; subsequent to the medical inspection she noticed a great diminution in the verminous cases. The majority of the anaemic cases had improved. Many children were wearing and deriving great benefit from the free spectacles: 20 had their tonsils and adenoids removed. Very few of the school buildings were altogether suitable or in good order. Most of the voluntary schools required repairs and new equipment. Seven schools were somewhat overcrowded; two had no playground; in ten the ventilation and lighting were inadequate; four were insufficiently heated; six had either insufficient or no cloakroom accommodation. One

school had no water supply, while at fourteen others the water had to be carried from an inconvenient distance. Two schools had no closets, and at sixteen others the closets were unsuitable in type or in extremely bad repair. The interiors of many of the voluntary schools were depressing.

England and Wales.

Prevention of Mule-Spinner's Cancer.

INVESTIGATIONS carried out under the auspices of the Manchester Committee on Cancer on the part played in the production of cancer by the lubricating oils used in cotton mills have confirmed previous findings on the carcinogenetic power of various oils, and yielded valuable information on the concentration in them of the cancer-producing principle. The committee, in its annual report for the year 1928, states that search for the actual cancer-producing substance is proceeding satisfactorily, having been so concentrated in a pure artificially made tar that a 5 per cent. solution of this substance has been shown to be more powerful than shale oil, the most dangerous of all commercially used oils; furthermore, two pure compounds of known chemical constitution have been proved capable of producing tumours. Investigations are being conducted to determine the factors which change a non-carcinogenic into an active carcinogenic substance. No carcinogenicity has been demonstrated in bitumen; pitch, on the other hand, has proved to be very active as a cancer-producing agent. Important investigations have been undertaken with a view to destroying the cancer-producing power of certain oils, so as to render them safe for industrial use. Partial success has attended some of the methods which have been employed, one particularly having resulted in the production of a purified oil which, when subjected to vigorous tests, failed altogether to produce cancerous growths. Representatives of the cotton industry who have compared this oil with the crude untreated oil have reported that its lubricating power is unimpaired. The committee is therefore able to hold out the hope that before long it will be possible to put on the market an oil which fulfils the needs of industry, above all, cotton spinning, and is yet quite safe to the workers. Before taking such definite action, however, it desires to be sure of its results, and believes that considerable confirmatory work will have to be carried out. Meanwhile the committee recommends the use of lubricating oils which contain no shale oil.

The Home Ambulance Service.

The responsibility of the police in regard to the removal of persons found injured on the roads is stressed by the Joint Council of the Order of St. John and the British Red Cross Society in its report for the quarter ended March 31st. The Home Office returns have once more drawn attention to the increasing number of road accidents, 156,024 persons having thus been killed or injured in 1928, or over 12 per cent. more than the number in 1927. The police, suggests the council, may meet their responsibility by initiating their own ambulance service, or by making use of the vehicles of local authorities or of those belonging to the Order and Society. Already many, if not all, of the home service ambulances work in close association with the police. So long, however, as there is an existing service which can be relied on to meet calls at any time of the day or night a separate police ambulance service, especially in country districts, would seldom be economical or advantageous to the public. The council suggests, further, that county representatives and those in charge of ambulance stations should, in view of the ever-increasing scope of their work, consider the question of making a satisfactory arrangement with the police authorities in their own areas. The police, it points out, are empowered to bear certain expense in regard to this work, and would probably be fully alive to the advantage of supporting by a small subsidy or the payment of a small fee an existing service already available day and night. The Order of St. John is engaged in preparing specifications for first-aid huts which can suitably be erected and equipped by the roadside at a reasonable cost. Several huts of various patterns have already been erected about the country, and have proved of real service in treating road accidents. There can be no doubt that an extension of this work will help to minimize the consequences of injuries. The council is able to report that during the quarter no fewer than 19,109 patients were carried in the home service ambulances, and 9,742 in the affiliated ambulances, bringing the total number of cases carried to March 31st up to 762,339.

Remuneration of Coroners.

The London County Council is proposing to increase the remuneration of coroners in view of the additional duties devolving upon these officers in consequence of the Act of 1926. It is pointed out that coroners are empowered by that Act to order post-mortem examinations to be made in cases in which no inquest is held, and as a result they now decide, on their own responsibility, large numbers of cases in which, under the old procedure, inquests would have been held. During the first eight months in which the Act was in operation, 1,573 such cases were dealt with by London coroners. Further responsibilities are imposed upon them in connexion with the holding of inquests without a jury, and in connexion with disagreements by juries as to their verdicts. Coroners of the County of London are required to have both legal and medical qualifications, and it is considered that the increase in the responsibilities attaching to the position warrants an increase in allowances of £100 a year with effect as from January 1st last. The result will be to raise the total remuneration paid to the seven coroners by the Council from £9,715 to £10,415 a year.

Correspondence.

THE DEFINITION OF RHEUMATOID ARTHRITIS.

SIR,—The article by Dr. A. H. Douthwaite on some aspects of the treatment of rheumatoid arthritis (June 8th, p. 1035) raises a very important question with reference to the nomenclature of this condition. The writer of the article describes very clearly three types of cases, loosely termed "chronic rheumatism"—namely, (1) rheumatoid or atrophic arthritis, (2) infective arthritis, (3) osteo-arthritis or hypertrophic arthritis—and one would conclude that these types are included under the common designation "rheumatoid arthritis." According to this view, which is shared by many other authorities, rheumatoid arthritis is a group denomination; as a rule, however, the last-named condition—osteo-arthritis—is relegated to a category by itself.

While agreeing wholeheartedly with Dr. Douthwaite in recognizing three distinct types of so-called chronic rheumatism, I cannot help thinking that a great deal of the confusion with regard to chronic rheumatism is due to the loose manner in which the term "rheumatoid arthritis" is used. Is it not possible to arrive at some sort of general agreement as to the precise limitations of the term? I would propose that the designation "rheumatoid arthritis" be definitely confined to the first of the three clinical types Dr. Douthwaite describes:

"... a disease occurring largely in females of reproductive age and characterized by little or no pyrexia, low blood pressure, and unstable pulse rate, scattered pigmentation of the skin, on a basic waxy pallor, generalized wasting in addition to pronounced atrophy of the muscles about the affected joints, visceroptosis, hypochlorhydria, exaggerated tendon reflexes, and symmetrical swellings of smaller joints, particularly those of the fingers. The skin over the affected articulations is pale and atrophic, and local tenderness to pressure is never a striking feature. With the exception of increased translucency, bony change is absent for months or years."

Dr. J. A. Glover, in the Ministry of Health report on chronic arthritis (page 5), also refers to this type of case as follows:

"... the singularly acute and intractable form which occurs for the most part in quite young women undoubtedly merits some special mention. In this variety the initial attack is usually particularly severe and the resemblance (before described) to rheumatic fever unusually close. A recognizable focus of infection is

seldom seen in this form of the disease, and little or nothing is known of its etiology. It usually ends in the pathological variety known as 'atrophic.' It is of great importance from one point of view, in that, from its peculiar intractability to treatment, it has in no small measure helped to produce the pessimistic frame of mind with which the majority of the profession and laity alike have been wont to regard all chronic arthritis, many forms of which are, fortunately, much more amenable to treatment."

Although the two descriptions do not quite coincide there can be no doubt that both authorities are referring to the same condition. If it could be agreed that the term "rheumatoid arthritis" should be strictly limited to the above-described condition as it occurs in women of reproductive age, current ideas as to the terminology of chronic rheumatic affections would undergo a much-needed clarification. Such a limitation of the term would, of course, imply that the condition is wholely confined to women. Any joint condition in the opposite sex which in any way approaches it could quite well be described as atrophic arthritis, infective arthritis, or focal arthritis. Of course, there is a type of joint affection due to the presence of some focus of infection which arises in both sexes, but the term "rheumatoid arthritis" should not be used in that relation. It appears to me that if a definite sex incidence is ascribed to the condition in question, the gain in lucidity of description would amply compensate any problematical loss in accuracy.—I am, etc.,

London, W.1, June 7th. MATTHEW B. RAY.

VITAMIN A IN INFECTIVE CONDITIONS.

SIR,—I am sure all students of medicine will feel on reading in your issue of June 1st (p. 924) the paper by Professor E. Mellanby and Dr. H. N. Green that a new vista of rich promise has been opened out by their work. Whether their efforts have solved the hitherto elusive problem of streptococcal septicaemia or not, it seems clear that their very interesting preliminary experimental work will remain as a permanent milestone on the road of scientific progress. My object in writing, however, is not to eulogize this brilliant work, but to record briefly two cases in which radiostoleum (a product containing vitamins A and D) was used as a result of their previous paper in the *British Medical Journal* of October 20th, 1928 (p. 691).

Case 1.—A medical man developed a febrile attack last February, the temperature on one occasion reaching 105° F. A blood culture yielded a pure growth of *B. proteus*. He had frequency of, and severe pain on, micturition; there was pus in the urine and, later, some albumin in centrifuged specimens. His pulse at one stage was over 120, and of such a character as to cause grave anxiety. Prior to this febrile attack he had suffered for some time from more or less annoying dyspeptic symptoms. In addition to merely symptomatic treatment, he was given radiostoleum capsules and inoculations of an autogenous vaccine in very small doses. After one slightly larger inoculation some aggravation of the patient's symptoms appeared to result, and the vaccine was discontinued; but at this stage his serum agglutinated strongly the bacillus, which had been isolated. He eventually recovered. There was, however, nothing dramatic about the result, but it leaves the impression that radiostoleum is worth a trial in infections of this type, which are presumably of intestinal origin.

Case 2.—A patient suffering from very intractable furunculosis was given radiostoleum two months ago and inoculations of an autogenous vaccine. His condition still remains unsatisfactory.

One hopes that in our endeavours to ascertain the therapeutic value of vitamin A some attempt may be made to identify the exact nature of the infection in each case, as it seems *a priori* improbable that all patients suffering from infective conditions are predisposed to infection by vitamin deficiency.—I am etc.,

Manchester, June 5th. J. STAVELY DICK.

RELATIONSHIP OF ALASTRIM (VARIOLA MINOR) TO SMALL-POX (VARIOLA MAJOR).

SIR,—Dr. E. G. Fenton (June 8th, p. 1060) takes the view that variola minor and variola major are one and the same disease, and he advances the theory that the mild nature of variola minor is "entirely due to the fact that vaccination has now been extensively practised in Great Britain for over a hundred years," and has in consequence created a sort of hereditary immunity comparable to the immunity to malaria enjoyed by certain native races. Such a theory is, of course, attractive, as it affords a simple explanation of the remarkable mildness of present-day small-pox, while at the same time paying a graceful tribute to vaccination. I have heard it seriously propounded on many occasions. Unfortunately, a very little reflection will show that the theory is quite untenable. The chief arguments against it are as follows:

1. When variola minor invades an unvaccinated community like the city of Leicester (where compulsory vaccination was abandoned over forty years ago, since when 90 per cent. of the children born have not been vaccinated) it should, if the theory were sound, show a greater severity than in places where vaccination has been normal. Forty years without vaccination should surely be enough to weaken this "hereditary" immunity. But what are the facts? Variola minor is just as much variola minor in Leicester as elsewhere. During the past twenty-five years there have been some 369 cases of small-pox in Leicester without a single death. The last fatal case occurred in June, 1904. This may come as a surprise to Dr. Fenton, and to many others also; but it is nevertheless true.

2. On the other hand, when variola major appears in any part of Great Britain it quickly reveals its true nature in spite of Dr. Fenton's postulated "hereditary" immunity. There have been several instances of this in recent years, the latest being the *Tuscania* outbreak. Hereditary immunity did not do much to reduce the severity of the disease in these outbreaks.

3. Lastly, there is no true analogy in the immunity of native races to malaria. Such immunity is the result of natural selection, and is easily understandable; but what Dr. Fenton postulates is a hereditary immunity resulting from an *acquired* artificial immunity acting through some four generations. I think that any authority on heredity would say that there is no more likelihood of such a result than that the racial custom of circumcision should shorten the length of the prepuce. For, after all, "there's a divinity that shapes our ends, rough-hew them how we will"!—I am, etc.,

Leicester, June 8th. C. KILLICK MILLARD.

APPARENT RECURRENCES OF SCARLET FEVER.

SIR,—I was especially interested in Dr. Kelleher's article on recurrences of scarlet fever, in your issue of June 1st (p. 985), because I have seen one very unusual recurrence of the disease in the case of two brothers whom I treated.

In May, 1927, I was called to see a boy, aged 11, who had all the typical symptoms—erythema, severe throat symptoms, strawberry tongue, circumoral pallor, and a temperature of 102°. On my informing his mother that he had scarlet fever, she immediately protested that he had had similar attacks during the month of May in two preceding years, and that on each occasion he had been treated as a case of scarlet fever. I was dubious of this statement and did not pay much attention to it, especially when six days later a young brother, aged 3, developed typical scarlet fever. Desquamation occurred in both cases and the disease ran the usual course.

In May, 1928, I was called to see the same boy, who again had every symptom of typical scarlet fever. I asked my partner and the medical officer of health to see him, and both agreed with my diagnosis. Five days later the same young brother developed it, and both again followed the usual course, including considerable desquamation. In both years the boys had been in contact with scarlet fever at school, and there were numerous cases of it in the locality. This year both boys escaped.

I think there is no doubt that these were true recurrences.—I am, etc.,

Harrow, June 6th. H. P. WALSH, M.B., B.Ch.

ANAESTHESIA FROM THE SURGEON'S STANDPOINT.

SIR,—The article by Mr. Basil Hughes on progress in anaesthesia from the surgeon's standpoint (May 18th, p. 897) interests me, but from the anaesthetist's standpoint. It certainly shows that some effort is being made to advance, though it is extremely small and slow. One reason for this is the common belief that anyone is capable of giving an anaesthetic, and that no special knowledge is necessary. Taken generally, fees are in proportion to this idea, and therefore medical men are not encouraged to specialize in this branch of medicine. I have seen Mr. Basil Hughes operate, and can therefore appreciate why he is so partial to local and spinal anaesthesia.

The avertin anaesthetic (rectal) which he mentions has certainly given good results on the operating table, and afterwards, according to the report from St. Luke's Hospital, Bradford. The number of cases quoted—namely, 100—is very small, though, in my opinion, the way it is used there for a very light anaesthesia, in combination with 0.5 per cent. novocain solution locally, tends to safety.

The experience of the German originators has not been quite so happy. Killian, in 13,000 cases, mentions four deaths from ulcerated bowel (a difficulty which I believe is said to be overcome now), and there have been other deaths. Drs. Blomfield and Shipway, in the *Lancet* (March 16th), report 198 avertin anaesthetic cases, with two deaths. I know the cases were bad ones, but when this death rate is compared with the 1 in 2,000 death rate from chloroform (admittedly a most poisonous drug), I think there will have to be much more work done before the use of avertin becomes general. There is, however, no doubt of its convenience from the surgeon's standpoint.

Mr. Basil Hughes is rather hard on inhalation anaesthesia, for it has some valuable advantages—for instance, control. With spinal and avertin, or rectal ether, once the drug has been given the anaesthetist has lost all control. With the inhalation anaesthetics, on the other hand, a considerable amount of control remains, especially with nitrous oxide and oxygen, which is removed from the patient in about twenty seconds at will. If Mr. Basil Hughes had tried out nitrous oxide under good conditions he would have found his mortality decreased still further, and all the advantages of post-operative comfort and absence of vomiting for his patients. The experience in the United States of America bears out this view.

Gas and oxygen is not used extensively in England because of the harm that Boyle's apparatus and its modifications have done. This apparatus is misnamed in being called a gas and oxygen apparatus; really it is an ether apparatus for use in conjunction with gas. It is because anaesthetists try to give gas and oxygen with this or similar apparatus that we get experiences like the following:

> I was asked to give an anaesthetic for an old patient of mine who was to undergo an operation for panhysterectomy. I proposed to give gas and oxygen, but the surgeon said that in his experience this anaesthetic was a failure. I said, "It won't be a failure this morning, and, moreover, the patient won't be sick afterwards." After the operation, which took an hour and a half, the surgeon said, "Well! you've converted me; the anaesthetic has been excellent, and I had no trouble to do my work." The patient never vomited, nor was she ill in any way; she made a perfect recovery.

I do not claim to be specially clever, but I had an apparatus which was reliable and would do the job. I could not have done it with a "bubble bottle," because the oxygen control is not within 15 to 20 per cent. If I had to work with such a machine I should give it up, and agree with those who say that nitrous oxide and oxygen is impossible for abdominal work, and not very suitable for any long operation.

During the past twelve months I have used gas and oxygen for twelve hysterectomies, many gall-stone cases, several gastro-enterostomies, and any number of appendix cases. There have been no deaths. Given a careful surgeon there is no reason at all why nitrous oxide and oxygen, with its almost negligible mortality and morbidity, should not be used for every operation that is within the range of modern surgery. With the "bubble bottle" apparatus it is even necessary to use ether for an empyema case; but with a gas apparatus, with proper control, that would be unthinkable. I sincerely hope that more of our anaesthetists and surgeons will look closely into this matter, especially the younger ones.—I am, etc.,

Doncaster, June 7th. E. J. CHAMBERS.

"ANTIVIRUS" THERAPY.

SIR,—In your issue of May 25th (p. 955) is published a report of a paper on vaccine therapy by Professor Besredka, which was read at the annual general meeting of the Section of Tropical Diseases and Parasitology of the Royal Society of Medicine. In view of the considerable criticism which this paper aroused, perhaps you will allow me to make a few observations.

In the first place, it would seem from the report that the terminology used in the paper was confusing. The terms "vaccine" and "antivirus" appear to have been used throughout as if they were synonymous. But the term "vaccine," as usually understood, implies a suspension of dead bacteria prepared from a young culture, whereas Besredka uses the term "antivirus" to denote an inhibitory substance produced in an old broth culture.

It is unfortunate that the term "vaccine" employed in the paper was not more clearly defined, but, be that as it may, there seems no doubt from a laboratory point of view that filtrates from old broth cultures do possess remarkable inhibitory power; my own experiments lead me to believe that this phenomenon is not due to exhaustion of food materials, or to production of waste products. On the clinical side I am not qualified to speak, but I would refer to a paper by Buchanan[1] which was abstracted in a recent issue of the *British Medical Journal* (*Epitome*, April 13th, para. 373), and which gives an impressive list of cases, all suppurative or inflammatory conditions, in which broth filtrates were used with remarkably good effect.

My own view is that these filtrates act as fairly powerful antiseptics on bacteria such as staphylococci in purulent lesions, without in any way harming the body cells. Whatever may be the immunological theory underlying this action, the method seems worthy of extended clinical trial, and it would be unfortunate if the criticism which Besredka's paper evoked should tend to discourage further trial of antivirus therapy in practice.—I am, etc.,

Barnet, June 5th. R. F. HUNWICKE, B.Sc.

NATURAL AND ARTIFICIAL FOODS.

SIR,—Living somewhat off the beaten track, we, in the northern parts of Western Australia, get a mail but once in two months, and so I have only recently seen the *Journal* of December 15th, 1928, containing an article by Mrs. Mellanby and Dr. Pattison. I judge from it that the breakfast-table conversation of the future will be: "Tommy, have you taken your radiostol?" "Don't want no radiostol—want an apple."

Personally I don't know whether radiostol has any effect on the teeth or not; what I do know is that in England and America, where denatured or so-called refined cereals are eaten to the total exclusion of the natural grain, dental caries is increasing by leaps and bounds—so also are cancer and other diseases. In Western Australia, where white flour is in common use and the soil is deficient in calcium and phosphorus, it is quite common to find persons under 20 years of age without a natural tooth in their heads. I remember one poor little chap, aged 5, without a tooth showing, and the 6-year molars were irrupted decayed. That is one side of the picture.

Since 1900 I have lived in South Africa, West Africa, India, and now Australia. In Sierra Leone, when I was there, the natives lived on natural grain, fish, and game. There was no milk; owing to the tsetse fly no domestic animal could live on that coast. In South Africa the staple diet consisted of mealies, the millets, game, and milk. In the Punjab the staple diet is unleavened bread made of atta or whole-grain wheat flour, curried vegetables, dhal with a little ghee or clarified butter, and sour milk; they also eat a good deal of ghura or unrefined sugar as it comes from the cane, and, in the season, chew sugar cane. In the northern parts of Australia the aboriginal natives toil not, neither do they spin, but live on roots, fish, game, and, in the wet season, on beef. To those who say meat is bad for us I would mention that recently three natives were brought before me for cattle killing, and it came out in evidence that not more than fifteen natives had, in four days, killed and eaten three bullocks; the bullocks, or those parts of them eaten by aboriginals, would weigh about 600 lb. a carcass.

To return to the food question. All these people living on the edge of or outside civilization have one, and only one, food factor in common, and that is the consumption of

[1] *Journal of the Medical Association of South Africa*, January 5th, 1929, p. 37.

the whole grain of their cereal food. Dental caries is rare among these people, and also deformed jaws. I estimate that I examined the mouths of two or three thousand natives in India of military age and of all castes below the fighting caste. At the end of the dry season, when green food was unprocurable, I noted that pus could be expressed from the margin between gum and teeth, but with the advent of green food this condition cleared up; dental caries was negligible. I presume that all medical men know that white flour is made by sifting out the germ and bran of wheat; further, that the germ and bran contain the vitamins and vegetable salts of metals necessary both for the life of the wheat and for animal life. I wish to stress the fact that the salts contained in the wheat germ and bran are absolutely essential for animal life, and, further, that they are necessary for the complete digestion of the starch and gluten of white flour. In my opinion, whenever the fruits of the earth are contained in a palatable skin, that skin should be eaten, since it is required for the complete digestion of that fruit. I was taught, when learning physiology, that certain salts were necessary for life; presumably, the same truth is still taught. Why, then, does the medical profession allow, without protest, the miller to reject as pig food the bran and germ of wheat? I believe the answer is that the germ and bran are indigestible. A more fallacious argument or greater perversion of the truth was never uttered. If whole wheatmeal bread is not properly masticated, of course it is not digested; thoroughly masticated, it is one of the best of cures for dyspepsia and constipation that I know.

To the dietitians and others who deal in calories, to veterinary surgeons, stock-breeders, and others who eat denatured grains, I put this question: If denatured grain is best for you, surely it must be best for laboratory and stud animals; why not feed them on it? It is time the medical profession paused and thought before going into the virtues of radiostol and other vitamins. Our ancestors, and millions of people of to-day, living on foods as God gave them, and knowing nothing of vitamins, vegetable salts, calories, etc., maintained and maintain themselves in rude health, their only guide being their appetite. Remarks to the effect that a teaspoonful of gravy a day will supply this, a teaspoonful of yolk of egg will supply that, and one lettuce leaf a fortnight will supply the other thing are listened to with grave attention by the public when uttered by eminent medical men. Such remarks are, to say the least, misleading.

Before the children of Israel crossed over into the Promised Land, Moses harangued them and made the following promise: "Wherefore it shall come to pass, if ye hearken to these judgements, and keep, and do them, that the Lord thy God shall keep unto thee the covenant and the mercy which He sware unto thy fathers. . . . And the Lord will take away from thee all sickness, and will put none of the evil diseases of Egypt, which thou knowest, upon thee; but will lay them upon all them that hate thee." The quotation at first sight seems irrelevant, but I take it to mean, among other things, that simplicity of feeding was to continue. Wherefore, I ask the heads of the profession to pause and ask themselves: Where are we leading the nation? The cause of dental caries is undoubtedly the lack of cereal salts and hard chewing; the diet of grain-eaters proves this. It is more than a fifty-fifty chance that cancer is a food-deficiency disease, and similarly with acidosis, beri-beri, pellagra, and so forth.

I repeat: In which direction are the heads of the medical profession going to lead—back to perfect food as God gave it, and health, or onwards to vitamins, denatured foods, and disease? The laity will follow and trust us. Which is it to be—the health and prosperity of the British nation, or the death of the nation and its replacement by a whole-grain-eating coloured people? The world is outside the laboratory and will not wait for the evolution of the large-brained, jawless, and puny-bodied being who will live on tabloids.—I am, etc.,

F. W. COTTON.
Lieut.-Colonel R.A.M.C.(ret.).

Wyndham, Western Australia,
April 12th.

Obituary.

SIR CHARLES O'BRIEN HARDING, M.R.C.S.,

Past-President, Sussex Branch, British Medical Association, and thrice Mayor of Eastbourne.

SIR CHARLES O'BRIEN HARDING, who died at Eastbourne on June 7th, aged 70, was the son of Dr. J. F. Harding. Educated at Epsom College, he proceeded for his medical studies to the Sussex County Hospital and to St. Bartholomew's Hospital, obtaining the diploma of M.R.C.S. in 1883 and the L.R.C.P. in 1886. He was house-surgeon at St. Bartholomew's from 1883 to 1884, and then for a short time was a surgeon with the Orient Steam Navigation Company. He went to Eastbourne to practise in 1891.

Although enjoying a considerable practice, Sir Charles Harding will be remembered locally mainly on account of his extraordinary interest in municipal and other public affairs in Eastbourne. His record of service in public life is probably unsurpassed by that of any other medical man. After five years' practice in Eastbourne he was elected to the town council, and remained a member of the council, first as councillor and later as alderman, until early in 1929, when he resigned his position as alderman on account of failing health. He first served as mayor of the borough in 1902–3; he was again mayor from 1915–20 during the most difficult parts of the war years, and again in 1924–25. His services were so untiring and successful, particularly as mayor during the war, that a knighthood was conferred upon him in 1920. On the borough council his interests were very wide. He was particularly valuable in connexion with the sanitary work of the town. He also occupied at different times the chairmanship of the Watch Committee, the Finance and General Purposes Committee, and the Education Committee, as well as that of the Public Health Committee. He probably gave his most conspicuous service as chairman of the Finance Committee; his speeches as chairman of that committee, and particularly at the times of the making of the rates, will always be remembered for their remarkable lucidity, the multitude of figures regarding the finances of the borough being quoted without the aid of notes. Not content with his membership of the Eastbourne Borough Council, he served also as a member of the East Sussex County Council until Eastbourne became a county borough. In 1903 he was made a justice of the peace, and he also received the very unusual honour of being made a freeman of the county borough.

Sir Charles O'Brien Harding's devotion to municipal work did not end his activities. He was chairman of the Princess Alice Memorial Hospital, with the management of which he had been actively associated for many years. He was chairman of the Queen Alexandra Cottage Homes, and deputy chairman of the Eastbourne College Council. He was for a time in the R.N.V.R. as a lieutenant commander. He was president of the Eastbourne Horticultural Society, a director of the local building society, and also a director of the Eastbourne Waterworks Company. In fact, there were few activities in Eastbourne in which he had not a very active share. If anything of importance was to be undertaken in Eastbourne one of the first steps was to get Harding to act either as president or chairman, or in any case to take a leading part in the movement. All Freemasons will remember him as being especially well known in the craft. For a long time he was Director of Ceremonies for the Province of Sussex, and a Past Grand Master in the Mark degree. Only recently he had a beautiful testimonial given him for presiding over the Mark Mason Charity Festival. He was for many years an active member of the British Medical Association, serving as vice-chairman of the Eastbourne Division in 1907 and chairman in the following year, and remaining a member of the Executive Committee until 1916. He was president of the Sussex Branch in 1923–24, and was elected vice-president in 1927.

It was a very great advantage to Eastbourne that Sir Charles O'Brien Harding settled there and gave such valued service as a citizen. It is unfortunate that, as a rule, medical men have not more time to devote to municipal

service. The universal sense of loss which is felt in Eastbourne is a testimony to the service he gave in practically every direction. Besides the many people who have lost a great friend, the town as a whole is in mourning for the death of one of its most active and useful citizens.

While at Bart's Harding was a renowned Rugby footballer, and in his time played also for Middlesex and England. His interest in sport did not end when he settled in Eastbourne. He was on the committee of the Eastbourne Cricket and Football Club for many years, and acted for a time as its treasurer; he was also influential in resuscitating Rugby football in Eastbourne. The high regard in which his colleagues and fellow students held him may be judged from the fact that he was the only country general practitioner who took the chair at a St. Bartholomew's Hospital past and present dinner. The serious epidemic of influenza during the past winter claimed him as one of its victims; he never thoroughly recovered from his attack, and died of heart failure.

W. G. W.

SIR WILLIAM FAIRBANK, K.C.V.O., M.R.C.S.,

Honorary Surgeon-Apothecary to His Majesty's Household at Windsor.

WE regret to record the death, in his seventy-ninth year, of Sir William Fairbank, which took place on June 10th at his home at Windsor.

After receiving his early education at the Forest School, Walthamstow, William Fairbank entered, in 1868, as a medical student at St. Bartholomew's Hospital, where he was dresser to Sir James Paget; in 1872 he obtained the Licence of the Society of Apothecaries, and was admitted a member of the Royal College of Surgeons of England in the following year. In 1875, having completed an appointment as resident medical officer to the Royal Albert Infirmary, Wigan, he went as house-surgeon to the Rotunda Hospital, Dublin, and in 1877 became a licentiate in midwifery of the Royal College of Physicians of Ireland. In 1880 he was appointed surgeon-apothecary to Queen Victoria's Household at Windsor, and surgeon to Prince and Princess Christian, in place of his elder brother, Dr. Thomas Fairbank, who had just died suddenly. He then became in turn surgeon-apothecary at Windsor to Queen Victoria, to King Edward, and to King George.

Sir William Fairbank held a number of hospital and public appointments. For many years he was surgeon to the Windsor Royal Infirmary, being at the time of his death honorary consulting surgeon to its successor, the King Edward VII Hospital; he was local consulting physician to the Royal Ventnor Hospital for Consumption; chairman and president of the Royal Albert Institute at Windsor; examiner, and for thirty-nine years lecturer, to the Order of St. John of Jerusalem; a member of the Berkshire County Council, and from 1919 to 1920 mayor of Windsor. In recognition of his many services he was created M.V.O. in 1911, and promoted C.V.O. in 1921 and K.C.V.O. in 1924. In 1921 Fairbanks was a member of the delegation of British mayors who visited the devastated areas of France, and after Windsor had adopted Hardecourt-aux-Bois he raised funds for the reconstruction of the village, which afterwards he visited every year. In appreciation of his efforts the inhabitants of the village renamed after him their square and main street.

Sir William Fairbank married in 1879; he is survived by two sons and three daughters.

DR. JOHN BROWN, who died near Capetown on May 7th, in his eighty-sixth year, received his medical education at Aberdeen University, where he graduated M.D. (with honours) and C.M. (highest honours) in 1863. After spending ten years in Wynberg, Cape Colony, where he built up a successful practice, he returned to Edinburgh, and became demonstrator in anatomy at the University. In 1877 he took the diploma of public health, Cambridge, and in 1878 the Fellowship of the Royal College of Surgeons of England, and a degree in public health at Edinburgh. We are indebted to Dr. Athelstane Nobbs for the following appreciation: So well equipped was John Brown that he might successfully have invaded Charlotte Square, or come South to the purlieus of Cavendish Square, but he elected to work among the workers of Lancashire, and became junior partner to a Dr. Briggs in Burnley. In due course he became the senior partner when a certain brother Aberdonian, one James Mackenzie, became the junior—Brown being the surgeon, as it were, and Mackenzie the physician of the partnership. There can be no doubt that the man who later was to become the acknowledged master of the science of cardiology benefited by this early collaboration, and to the end Sir James Mackenzie, as he became, and his old senior, whose partner he had been in Burnley for twenty years, were the closest friends. John Brown, who, by the way, was a cousin of his namesake, the author of *Rab and His Friends*, had married a daughter of a former Premier of Cape Colony, and when he retired from practice, shortly after the South African war, returned to the Cape, but never to idleness. He leaves behind him the memory of one of God's good men, absolutely straight and humane, a scholar void of pedantry, with the capable hands of the ideal surgeon.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a congregation held on June 8th the following medical degrees were conferred:

D.M.—G. L. Evans.
B.M.—R. M. J. Harper, D. C. Shields, M. V. Bhajekar, H. G. Wells.

UNIVERSITY OF CAMBRIDGE.

DR. R. A. WEBB has been appointed University Demonstrator in Pathology, and Messrs. G. Anrep and H. E. Tunnicliffe University Demonstrators in Physiology.

At a congregation held on June 8th the degree of Bachelor of Medicine (M.B.) was conferred on R. Gallimore.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examination indicated:

THIRD M.B., B.S.—*†C. F. Cosin, *†E. A. Hunter (University medal), *†A. L. Light, *†E. G. M. Palser, *†S. F. Russell, *†H. A. H. Selbourne, *†C. E. W. Wheaton, Lucy E. Arthur, Mabel A. Baker, C. G. Bowen, Annie G. Busher, E. C. B. Butler, Alison M. Clark, Rosa O. J. Clark, S. L. A. Clarke, Joan C. Clatworthy, E. S. Cooksey, Hilda C. Dean, C. G. de Couilhard, V. P. de Zoysa, C. J. Donelan, D. E. Dunnill, Dorothy V. Dunolly, A. M. Easton, A. C. Elkin, C. N. Evans, G. S. Ferraby, Kathleen E. Gambrell, L. Gordon, D. P. Gray, Bridget S. P. Gurney, C. E. Hagenbach, Emily M. Hall, H. N. W. Harley, R. L. Harward, F. F. Hollier, C. F. Howes, E. C. H. Huddy, W. F. Hudson, H. E. James, P. Kaplin, D. W. S. Kaye, R. J. Krichefski, S. C. H. Lane, A. J. C. Latchmore, I. B. Limbery, G. H. Livingstone, W. S. McConnell, J. V. Macgregor, M. L. Mistri, Anna P. Montgomery, Jocelyn A. M. Moore, Joyce Morgan, D. T. E. Morris, C. B. Nicholson, C. G. MacM. Nicol, C. G. Paine, Keren I. Parkes, C. C. Pether, A. P. Pettigura, C. B. Picken, Betty J. W. Pilsworth, G. L. S. Plumbly, H. W. A. Post, I. Preiskel, K. H. Pridie, E. I. Puddy, W. G. Richards, Marjorie E. Roberts, I. M. Robertson, R. D. Robinson, Janet M. Roche, A. P. Ross, A. S. D. Russell, Beatrice A. Savill, J. E. Schneider, E. M. Sharples, D. Shaw, C. G. Sinclair, N. Sinnadurai, E. J. J. Smith, P. A. M. Soutter, R. B. Sugden, A. R. Thompson, F. S. Thornton, Decima M. Tracey, Frances J. Vinter, Nora W. Wamsley, A. J. Watson, S. A. Wickramasinghe, P. Wiles, W. A. Wilson, A. Wiseman, E. A. Wood, Joyce R. Woods, Mary Worthington, T. C. Yip, E. A. Young.

Group I.—Ellen M. Barnes, J. N. Bhada, C. V. Bloom, W. E. R. Branch, Eileen A. Chennell, Mabel J. Cooke, W. V. Cruden, Catherine Day, R. F. Fidler, Alice E. N. Gilby, D. R. Griffith, E. Grundy, F. R. Gustarson, G. F. Harrison, E. F. Hewlitt, J. F. L. King, G. Lee, Dorothy M. Lufkin, Dorothy F. McIntosh, T. H. Negus, A. T. Pagau, L. M. J. A. Pilot, J. C. Saldanha, C. P. Scott, Mary Sconloudi, Mary E. Sharp, R. Shelley, A. G. Sigay, Marjorie V. N. Sudds, K. G. Sugden, C. B. V. Tait, L. E. Vine.

Group II.—A. M. Boyd, Bertha A. Briant, Lilian P. Edwards, H. K. Evans, R. Evans, B. M. Fonseka, Ruth C. Gallotly, W. F. Hall, Margaret L. Hamburger, C. B. M. Hoggs, R. A. King, K. E. Lane, E. P. E. Laurent, A. Levy, F. J. G. Lishman, F. W. Martindell, R. Oliver, E. Purvis, Sylvia M. Ransford, J. A. Robson, R. C. N. Shires, W. D. Steel, S. A. Underwood, E. M. Wijerama, N. R. W. Wynn-Williams.

* Honours. † Distinguished in Medicine.
‡ Distinguished ... in Surgery.

UNIVERSITY OF DURHAM.

ON June 5th the Duke of Northumberland was installed as Chancellor of the University of Durham, in succession to the late Earl of Durham. The first part of the ceremony was held in the quadrangle of Durham Castle, where the Vice-Chancellor, Sir Thomas Oliver, M.D., conferred upon the Duke the degree of D.C.L. by diploma and installed him in office. After a thanksgiving service in the cathedral, when an address was given by the Bishop of Durham, convocation was resumed in the Chapter House, where the new Chancellor conferred honorary degrees upon a

number of distinguished persons, including the President of the Royal College of Physicians of London and the President of the Royal College of Surgeons of England, who each received the degree of D.C.L. Sir John Rose Bradford was presented by Professor Stuart McDonald (Dean of the College of Medicine) and Lord Moynihan by Professor Grey Turner. The degree of D.Sc. was conferred on Lord Rayleigh, Emeritus Professor of Physics in the Imperial College of Science, and on Dr. C. Tait Regan, Director of the Natural History Museum.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

[illegible]y, President of the Irish Medical Council, [illegible] College, Dublin, and Vice-Chancellor of the [illegible]y of Ireland, has been unanimously elected an honorary Fellow of the College.

The following candidates, having passed the examination for the Membership, were duly admitted as Licentiates in Medicine and Members of the College: J. Lait and F. MacSorley.

Reports have been received from the representatives of the College on the Irish Medical Council and on the General Medical Council on the recent proceedings of those bodies.

Medical News.

THE William Mackenzie medal for 1928 for original contributions to ophthalmology of outstanding merit has been awarded to Mr. W. S. Duke-Elder of London. The Glasgow Eye Infirmary, the custodians, have made the award on the advice of a committee representative of the University of [illegible] the Glasgow Eye Infirmary and of [illegible] Institution, and the Fellows of the [illegible] Faculty of Physicians and Surgeons of Glasgow.

PROFESSOR GREY TURNER, M.S., F.R.C.S., professor of surgery in the University of Durham, is taking charge of the teaching in the surgical unit of St. Bartholomew's Hospital, in place of Professor Gask, for a fortnight from June 10th to 22nd. It will be remembered that on former occasions Professor Harvey Cushing of Boston, Professor Hugh Cabot of Ann Arbor, and Lord Moynihan have acted in a similar way.

THE third annual MacAlister Lecture of the London Clinical Society will be delivered at the London Temperance Hospital, Hampstead Road, N.W.1, on Thursday, June 20th, at 8.45 p.m., by Sir Humphry Rolleston, on "Medical friendships, clubs, societies." The lecture is open to all medical practitioners, who are invited to bring their friends, ladies or gentlemen. The honorary secretary, Dr. F. Temple Grey, 25, Harley Street, W.1, will be glad to be notified of those who propose to attend.

A COURSE of instruction in the technique of tissue culture will be given at the Strangeways Research Laboratory from July 9th to August 10th. Only a limited number of applicants can be received. Notification from those wishing to take the course should be sent, not later than June 30th, to Dr. H. B. Fell, Strangeways Research Laboratory, Cambridge.

THE summer meeting of the Section of Otology of the Royal Society of Medicine will be held at Cambridge on June 21st and 22nd. A cinematograph demonstration of a prostatectomy, a litholapaxy, and an internal urethrotomy will be given at the summer meeting of the Section of Urology on June 27th, at 8.30 p.m.

A MEETING of the Biochemical Society will be held at the John Innes Horticultural Institution, Merton, Surrey, to-day (Saturday, June 15th), at 11.45 a.m. The subjects on which communications will be made include: carbohydrate metabolism in avitaminous birds, absorption of liquid paraffin from the alimentary tract of the rat and pig, the association of vitamin A activity with carotene in the carrot root, and the nature of the vitamin A constituent of green leaves.

THE annual meeting of the Incorporated Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded will be held at the Sandlebridge Institution, Alderley Edge, on Friday, June 21st. The chair will be taken by Sir Lewis Beard at 3.15 p.m.

THE annual meeting of King Edward's Hospital Fund for London was held at St. James's Palace on June 11th, the Prince of Wales presiding. In the course of his address His Royal Highness read a message from His Majesty the King, expressing delight at the response which had been made to the recent appeal for funds, and stated that during 1928 the amount distributed had for the first time reached a total of £250,000. Loans of radium, bought with Sir Otto Beit's gift, had been made to twenty hospitals, on the principle that there should be a few hospitals with a sufficient supply to act as radium centres, and a rather larger number with enough radium to provide effective treatment. The Prince paid a tribute to the generosity of the British public, which in the course of a single week contributed the money required for the radium side of the Thank-offering Fund. An account of the proceedings of the meeting will be given in next week's issue.

A CROWDED congregation, consisting largely of patients of the late Dr. R. E. Ingram-Johnson, filled the parish church of South Moor, Durham, on June 2nd, when a brass tablet to his memory was unveiled by Sir Thomas Oliver, Vice-Chancellor of the University of Durham. After its dedication by the Rural Dean, Sir Thomas Oliver addressed the congregation, paying a special tribute to the unselfishness that had always characterized Dr. Ingram-Johnson. Sir Thomas spoke in warm terms of the friendship between them, and mentioned the regret he had felt when Dr. Ingram-Johnson decided to go out to India and later to Malaya. There he had devoted himself particularly to the problem of malaria, and had conducted research which led him to the belief that treatment with the serum of dengue fever cases had a definite curative value in malaria. Dr. Ingram-Johnson, who died in May, 1923, was a strong supporter of the British Medical Association.

THE Fellowship of Medicine and Post-Graduate Medical Association has arranged two lectures for candidates for the M.R.C.P. examination, one by Dr. H. Gardiner-Hill on June 18th, and the other by Dr. Harold Pritchard on June 21st, at 8.30 p.m., at 11, Chandos Street, Cavendish Square, W. A free lecture on the management of patients suffering from cancer of the breast will be given on June 18th, at 4.45 p.m., by Dr. Hernaman-Johnson, at the British Institute of Radiology, 32, Welbeck Street, W. There is one week left of the following courses: in ophthalmology, at the Royal Westminster Ophthalmic Hospital, in diseases of the chest, at the Victoria Park Hospital, Victoria Park, E., in gynæcology, at the Chelsea Hospital for Women. From June 24th to 29th an all-day course in proctology will be given at St. Mark's Hospital for Diseases of the Rectum; fee £3 3s. From June 24th to July 6th the North-East London Post-Graduate College (Prince of Wales's General Hospital, Tottenham, N.) has arranged an intensive "refresher" course in medicine, surgery, and the specialties; fee £5 5s. or £3 3s. for either week. Also beginning on June 24th and continuing until July 7th, the Children's Clinic, in association with several other hospitals, will give a comprehensive course of instruction in diseases of children and infants; fee £2 2s. Copies of all syllabuses, the complete list of special courses for 1929, information on general post-graduate work, and specimen copies of the *Post-Graduate Medical Journal*, may be obtained from the secretary, Fellowship of Medicine, 1, Wimpole Street, London, W.1.

WE are informed by Sir James Barr that the following names are to be added to the signatories of the letter published on May 11th (p. 879) in support of the testimonial to Sir Ronald Ross: Professor Umberto Gabbi (Turin), Professor C. Savas (Athens), Dr. Anton Breinl (Townsville), and Professor C. Schilling (Berlin). A list of contributors to the fund was printed in our last issue (p. 1055). Donations should be sent to Lloyds Bank, Ltd., 110, High Street, Putney, S.W.15, cheques to be crossed "Ross Award Fund a/c."

THE Medical Research Council, after consultation with the Ministry of Health and the Board of Education, has appointed a committee to inquire into the prevalence and mode of spread of minor epidemics in residential schools, especially those believed to be spread by "droplet infection," and to report upon the means by which they may be prevented or restricted. The personnel of the committee is as follows; Sir George Newman, M.D. (chairman), Dame Janet Campbell, M.D., Dr. R. H. Crowley, Surgeon Commander S. F. Dudley, Dr. J. A. Glover, Professor M. Greenwood, F.R.S., Dr. L. R. Lempriere, Miss E. M. Newbold, M.A., and Professor W. W. C. Topley, M.D., with Dr. Joyce Wilson as secretary.

IN continuation of the series of visits to famous buildings in aid of King Edward's Hospital Fund for London, arrangements have been made for parties to visit the Foreign Office, India Office, and Admiralty on Saturday, June 22nd, at 2.45 p.m. On Friday, July 19th, at 4.30 p.m., a party will be conducted round Westminster Abbey, and on August 9th and 21st, at 2.30 p.m., visits will be paid to the Tower of London, when Mr. Walter Bell will give an address on the Tower and its history. Tickets, price 7s. 6d., can be obtained on application to King Edward's Hospital Fund for London, 7 Walbrook, E.C.4.

AT a meeting of the Central Midwives Board for England and Wales held on June 6th, with Sir Francis Champneys in the chair, a letter was read from the town clerk of York, submitting a scheme of lectures to be delivered at York Maternity Hospital by Dr. A. M. Hughes and Dr. Lister. The scheme was approved.

THE Medical Research Council announce that on behalf of the Rockefeller Foundation they have made the following awards of travelling fellowships for the academic year 1929-30: Olive Burton Buckley, B.M., M.R.C.P., King's College Hospital, London; George Aleck Crocker Gough, B.Sc., Ph.D., National Institute for Medical Research,

London; William Robert Henderson, M.B., Royal Infirmary, Edinburgh; Donald Hunter, M.D., F.R.C.P., assistant physician, London Hospital; George Eric Lewis, B.A., M.R.C.S., London Hospital; Moses Myer Suzman, M.D., M.R.C.P., College of Medicine, Newcastle-upon-Tyne; Janet Maria Vaughan, B.A., B.M., University College Hospital, London. These Rockefeller medical fellowships are awarded to graduates who have had some training in research work either in the primary sciences of medicine or in clinical medicine and surgery, and who are likely to profit by a period of work at a chosen centre in America or, in special cases, in Europe, before taking up positions for higher teaching or research in the British Isles. Dr. Gough's fellowship is tenable at the University of Münich; the others at centres in the United States. Dr. Lewis has been appointed on modified conditions while receiving emoluments from another source.

ON June 10th, at the Tower Bridge Police Court, a man charged with obtaining money by false pretences and with intent to defraud, pleaded guilty and was sentenced to imprisonment for three months in the second division. On behalf of the Pharmaceutical Society of Great Britain it was stated that the accused, having represented himself as a fully qualified chemist, obtained the post of manager to a chemist's shop. In substantiation of his claim he had produced a certificate under the Act which, though genuine, had been altered by the substitution of the accused's name for the one it bore originally. The accused, in the course of a statement, said that since he had managed the shop he had dispensed 50,000 prescriptions, and there had never been any trouble and everything had been in order.

THE ninth annual congress known as the Journées Médicales de Bruxelles will be held at Brussels from June 22nd to 26th, under the presidency of Professor Henry Coppez. Addresses will be delivered, among others, by Emile Sergent of Paris, Blum of Strasbourg, Nordenson of Upsala, Spillmann of Nancy, Putti of Bologna, Froment of Lyons, Eastman Sheehan of New York, Gonin of Lausanne, Hymans van den Bergh of Utrecht, and Tricot-Royer of Antwerp. The opening discourse will be given by the Parisian oto-rhino-laryngologist, Dr. Nepveu, who is well known in the literary world, as Luc Durtain. The subscription is 75 francs. Further information can be obtained from the general secretary, Dr. R. Beckers, 62, Rue Froissart, Brussels.

DR. G. WAYLAND ANCRUM of Gloucester and Dr. Richard Davies of Cheltenham have been appointed to the Commission of the Peace for the county of Gloucester.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediocera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

UMBILICAL DISCHARGE.

"W. D." writes: Can anyone suggest the cause of an occasional discharge from the umbilicus in a woman of 32? The discharge is serous in character, and occurred first at about the age of 14 years, and reappeared about three years ago.

WATER SOFTENERS.

"MEMBER OF FORTY YEARS' STANDING" asks whether it is advisable to use for the whole of the water supply (Kentish hard water) to his house one of the water softeners on the market. Is the softened water palatable, and does it contain any substance injurious to health? Is any one method of softening specially recommended?

INCOME TAX.

Appointment: Whether Liable to Tax.

"W. H. P." first commenced earning a salary in September, 1926, as an assistant, and his earnings have been as follows:

September, 1926, to December, 1926	£69
Year to December, 1927	£231
Year to December, 1928	£290
Three months to April, 1929	£109

He inquires whether he is liable to assessment, and as to what steps he should take.

*** He is liable as follows:

For the year 1926-27: £69+one-quarter of £231—that is, £127—exempt.
For the year 1927-28: three-quarters of £231+one-quarter of £290—that is, £245—£6 18s. tax.
For the year 1928-29: three-quarters of £231+one-quarter of £290—that is, £245—£6 18s. tax.

In explanation of the above the basis of assessment was the current year's earnings up to 1927-28 inclusive, and afterwards the previous year's earnings; in calculating the tax payable only earned income relief and the £135 personal allowance have been deducted; any life assurance relief would reduce the tax payable still further. It will probably be best for "W. H. P." to get in touch with the local inspector of taxes and make his formal returns.

Change of Employment.

"R. C. F. S." was acting as a general assistant to December 20th, 1927, and became a school medical officer under a public authority as from January 1st, 1928. What is his correct basis of assessment for the year to April 5th, 1928?

*** The actual amount of his earnings for that year. Where a substantial change in the nature and conditions of the employment takes place, as has occurred here, the correct method is to regard the former employment as having ceased and a new one as having commenced. The facts do not justify a claim to continuity of employment.

LETTERS, NOTES, ETC.

THE COCKTAIL HABIT IN FRANCE.

IN our issue of January 5th (p. 31) we noted Professor W. E. Dixon's warning about the injurious effects of cocktail addiction; recently a similar denunciation has been made at the Académie de Médecine by Professor Georges Guillain, who occupies the chair of nervous diseases in the Paris Faculty of Medicine. Before the war, he states, this practice, imported from America, had been confined to certain sections of French society, particularly racing, literary, and dramatic circles, but lately it has become prevalent among the well-to-do classes generally. The cocktail bar is to be found not only in hotels and restaurants, but even in the homes of the rich. Furnishing firms make it their business to supply more or less elegant bars suitable for drawing rooms, even for motor cars, while special hampers containing the ingredients and utensils used in the preparation of cocktails are on sale everywhere. As in this country, the principal victims of the habit are young men and women of the "smart" set, and among them Professor Guillain has often found obvious signs of chronic alcoholism. Commonly met with are digestive disturbances, manifested as loss of appetite, hyperchlorhydria, pyloric spasm, congestion of the liver, and enteritis, and such circulatory symptoms as tachycardia, precordial pain, and a tendency to syncope. The most important disorders, however, are referable to the nervous system, and include insomnia, physical and psychical asthenia, depression, and disinclination for mental work. In several instances epileptic attacks, attributed to the cocktail habit, have occurred for the first time in individuals of 25 to 35 years of age. Professor Guillain urges that young people of the wealthy classes should be enlightened as to the disastrous effects of cocktail drinking, both on their own physical and mental equilibrium and on that of their descendants.

VOTES FOR EPSOM COLLEGE.

DR. BERNARD ROWLANDS (London, N.15) writes: I appeal on behalf of John Horace Brockman White to any who have votes for Epsom College. Contemporaries of his father, Charles Powell White, M.A., M.D.Camb., F.R.C.S.Eng., who knew him as a good surgeon and research worker, will regret to know that this appeal is necessary.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 41, 42, 43, 47, 48, 49, and 50 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 44, 45 and 46.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 235.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

568. Ulcerative Colitis.

J. A. BARGEN and M. F. JACOBS (*Arch. Int. Med.*, April, 1929, p. 483) assert that *perforations of the colon* constitute one of the most serious complications in chronic ulcerative colitis, although they are frequently not recognized owing to the extreme illness of the patient masking the symptoms. Of 647 cases of the disease at the Mayo Clinic during five and a half years, perforations occurred in 22 (3.4 per cent.); 16 patients died, the mortality rate being 72.7 per cent. The majority of the patients were between the ages of 35 and 50, and the duration of the disease, which ranged from two months to thirty-five years, appeared to have but little bearing upon the incidence of perforation. The extent of bowel involvement was found to be more significant, the entire large bowel being diseased in 17 of the 22 cases. Notes of four of the cases are given. The authors remark that this disease presents a typical proctoscopic picture, the mucosa bleeding easily and presenting multiple irregular ulcers, with some bowel contraction. Perforation may be acute, chronic, or multiple, and abdominal pain, cramps, tenderness, and rigidity are the commonest among the symptoms. Recognition of the disease in its early stages before involvement of the entire colon has taken place is essential to successful treatment; a routine proctoscopic examination is advised in all cases of diarrhoea and bleeding from the rectum. When perforation has occurred treatment is mainly expectant, since an operation gives but little promise of cure. Ice bags or hot fomentations are applied to the abdomen, and no food or fluid is given by the mouth; sodium chloride solution is injected subcutaneously, and dextrose and sodium chloride solution intravenously. In addition to these measures opiates and blood transfusion constitute the main lines of treatment.

569. Essential Arterial Hypertension.

M. MOLHANT (*Le Scalpel*, March 23rd, 1929, p. 309) classifies cases of "essential" hypertension (distinguished from those secondary to renal lesions) according to the exciting causes of the condition, and outlines the appropriate treatments. He considers that the "dynamic constant" of arterial tension, as measured by the sphygmomanometer, may be taken in the healthy adult to be from 110/65 to 130/80. The maximum depends on the elasticity or tone of the arterial walls, and the minimum on the arterio-capillary tone, which in turn has an important relation to the state of the great venous reservoirs, particularly those of the abdomen. This tone is regulated by a double mechanism: the well-recognized psychic factors and the biological mechanism, which according to Molhant may be either automatic (in response to some form of shock, including that due to anaphylactic phenomena) or reflex. Molhant considers that the action of internal secretions on the arterial tension is not in every case dependent on nervous control; although the action of some visceral secretions is not yet fully understood, there appears to be a double and antagonistic system acting on the arterial tone. Hypotonic glands are the liver, genital glands, pancreas, lymphatic glands, and suprarenal cortex. The hypertonic glands are the thyroid gland, the suprarenal medulla, and the posterior part of the hypophysis. As distinct from cases where increased tension is the physiological response to unhealthy habits, when treatment by dieting is the obvious remedy, Molhant recognizes a large class where there exists a nervous dyscrasia susceptible to treatment by "hyperallergization" or by the exhibition of colloidal iodine, the action of which he regards as that of a catalyst acting on the hypotensive internal secretory glands. He further recognizes two groups of cases with increased tension according to the sphygmomanometric readings: (1) those with a "divergent" reading—200/95 to 170/85; and (2) those with a "*convergent*" reading—200/135 to 195/120. He considers that all the forms of hypertension are intimately connected with dyscrasic processes; in its dynamic form it depends on an allergic insufficiency of the tissues and fluids, giving rise to derangement of the reflex regulatory mechanism, whereas in its static or permanent form it is due to catalytic hypotension or inexcitability of the hypotensive endocrine system. The treatment is tabulated according to the pathogeny and clinical symptomatology as follows. (1) In "*dynamic hypertension*" due to allergic insufficiency "hyperallergization" by subcutaneous injections is employed. (2) In permanent hypertension of the "divergent" type due to catalytic deficiency of the hypotensive endocrine system, colloidal iodine and concentrated vitamins are indicated. (3) Permanent hypertension of the "convergent" type signifying arterio-capillary fibrosis and, if partly reducible, due to catalytic hypo-excitability of the hypotensive endocrine system, calls for repeated courses of colloidal iodine and occasional drastic purgation. (4) Permanent hypertension of the "convergent" type, if irreducible and due to catalytic inexcitability of the above system, is treated by the regular repetition of drastic purgation.

570. Maternal and Congenital Syphilis.

A. BUSCHKE (*Med. Welt*, April 20th, 1929, p. 566), in discussing the generally accepted theories regarding the transmission of syphilis, states that recent researches have proved that there are exceptions to the "Colles-Beaumès law." Spirochaetes have been demonstrated in the maternal placenta, and not infrequently these patients have developed tertiary syphilis and tabes subsequently. It is essential, therefore, that all mothers of syphilitic children should be carefully examined for latent syphilis. A theory has been advanced recently that the child may be infected at birth by laceration of the placental tissue and consequent liberation of spirochaetes therefrom. This would explain the fact that some children appear to be healthy at birth and develop symptoms of syphilis only three or four months afterwards. Buschke refers to the divergent views of various writers on the subject of the antisyphilitic treatment of expectant mothers. Some advise intensive salvarsan treatment; others mercury and bismuth or a mixed treatment. He prefers this combined treatment in the earlier stages. Doubtless intensive salvarsan treatment, followed by combined treatment, gives excellent results in regard to the child, but, on the other hand, salvarsan treatment is not free from danger for the mother, in two directions. Several fatal cases of encephalitis have been recorded after administration of small doses of neosalvarsan. If salvarsan is administered to the mother in small doses the dangers of such manifestations as neurosyphilis and syphilitic aortitis are greatly increased, although, on the other hand, salvarsan treatment offers the probability, but not the certainty, of a healthy child. There is also the danger of nephritis to be considered when salvarsan is administered during pregnancy. Buschke prefers mercurial inunction or bismuth injections, commenced as early as the fourth or fifth month, and adds that the treatment should be given in monthly courses with intervals of eight to fourteen days between each course. When possible it should be continued until the end of pregnancy, the dosage and length of treatment being modified when the patient's condition requires it. Statistics show that this method of treatment gives results as favourable as those obtained from salvarsan. Records collected during the period before the introduction of salvarsan prove that under mercurial treatment alone 88 per cent. of apparently healthy children were born, and that with less intensive and later treatment than is now advocated. Buschke considers, therefore, that mercurial or combined treatment yields most favourable results with greatly diminished risk as regards the mother.

Surgery.

571. Thrombo-angiitis Obliterans.

A. M. BECHTMAN (*Med. Journ. and Rec.*, April 3rd, 1929, p. 367) discusses the etiology, pathology, symptoms, diagnosis, and treatment of thrombo-angiitis obliterans (Buerger's disease), and endeavours to correlate the subject from an experience of excellent results in his own practice. The pathological process includes an inflammatory condition of the arteries and veins, with the presence of giant cells and cellular thrombosis in the acute lesions; periarterial fibrosis follows in the chronic stage. The disease appears in adult males between the ages of 20 and 50; they are usually large users of tobacco and, in 50 per cent. of the cases, of Hebrew extraction. It presents the characteristic colour changes in the extremities of rubor on depression and pallor on elevation, differentiating the functional from the organic conditions. The pedal pulse is absent, intermittent claudication is frequent, and in about one-third of the cases the parts are cold and superficial phlebitis is present. In the prevention of gangrene early diagnosis and the institution of prophylactic and active treatment are important, with the avoidance of meddlesome surgery of the toes and nails, which may lead to trophic changes. Protection of the extremities from cold and injury,

and the wearing of suitable shoes, are essential; an occupation should be chosen which does not entail weight bearing on the feet over long periods. Patients are of three types: (1) those in whom gangrene has progressed so far that amputation is imperative; (2) those in whom gangrene results in spite of all treatment; and (3) those whose limbs can be saved and the disease arrested by long and efficient treatment, rendering them eventually self-supporting and useful citizens.

572. Thrombo-angiitis Obliterans involving Spermatic Vessels.

A. L. MCGREGOR and F. W. SIMPSON (*Brit. Journ. of Surg.*, April, 1929, p. 539) report a case of thrombo-angiitis which affected the spermatic vessels. Buerger, whose name has been given to the disease, describes it as an occlusive thrombotic process involving the deep arteries and veins or superficial veins of the upper and lower extremities, manifesting itself as an inflammatory lesion which shows a specific and characteristic morphological picture during the process of healing. In the early or acute stage the appearance of purulent foci suggest a microbial agent or infectious causative factor. Out of 500 patients, 496 were Jews, commonly in the third decade of life, and only 3 were women. It is suggested that tobacco smoking brings about changes in the walls of the vessels and renders them liable to attacks of inflammation and thrombosis. Although the lower limbs are the most common seat of the disease, cases have been reported in the spermatic artery, in a branch of the gastric artery, and in the spermatic vessels of the cord. The first stage is often an acute phlebitis of the superficial veins, with swelling of the feet and tender inflammatory nodules in and under the skin, followed by pain and intermittent claudication. Pronounced vasomotor and trophic disturbances occur, with erythromelia, ischaemia, cyanosis, ulcers, and gangrene. The case reported occurred in a Russian Jew, aged 28, who complained of pain and irritation over the left half of the scrotum and over the penis and lower abdominal wall; it recurred daily for two or three hours. The left testis was smaller than the right; the epididymis contained two nodules in the caput and one in the cauda. After two months the symptoms were accentuated, and an operation on a diagnosis of tuberculous epididymitis was performed. The testis was removed with the cord as far as the internal ring, and the wound healed by first intention. On dissection the vas deferens was found to be normal, the apparent thickening of its upper part being due to the firm adhesion of many blood vessels to the periphery of the vas, giving the impression on palpation that this tube was much thickened. Histological changes found in the spermatic vessels were those of thrombo-angiitis obliterans. The disease is characterized by relapses, and the patient has had pains since operation in the remaining testis, suggesting the possibility that it also may become affected. The prognosis for life is good if the disease is localized in the scrotum. In cases where the limbs are affected amputation is the only sure treatment; though other methods of treatment relieve the symptoms temporarily, the gangrene ultimately occurs, and amputation becomes inevitable.

573. Dupuytren's Contracture.

A. OLLER (*Arch. de med., cir. y esp.*, March 16th, 1929, p. 333), who records an illustrative case, maintains that Dupuytren's contracture is not to be considered as an industrial accident. His reasons are as follows. Among the millions of workmen who suffer from haematomas and repeated traumas on their hands Dupuytren's contraction develops in only a very small number. A larger proportion of cases of Dupuytren's contraction are to be found in liberal professions than among manual labourers. The contraction is nearly always bilateral, whereas in almost all work only one hand is actively employed. When the contraction is confined to one side, it is almost always situated in the hand which does the least work. Oller recalls that at the fourth congress on industrial accidents, held at Amsterdam in 1925, the view was expressed that Dupuytren's contraction was not an industrial accident; he mentions that the textbooks of Leniger, Molineus, and Jottkowitz, published in 1928, are of the same opinion.

574. Ectopia of the Spleen.

E. PERINI (*Rass. internaz. di clin. e ter.* (Naples), March 30th, 1929, p. 198) records the case of an ostler, aged 40, who was admitted to hospital with severe abdominal pain and ineffectual attempts to vomit. He gave a history of having been kicked by a horse in the upper left quadrant of the abdomen four years previously, and of having had the tenth and eleventh ribs fractured also by a horse's kick two years later. Since then he had remained in good health until his present illness. During his stay in hospital he had a considerable amount of melaena without anything to account for it. The urine was normal and the Wassermann reaction negative. The abdominal pain, which was at first generalized, suddenly assumed the character of renal colic, but cystoscopy and examination of the right ureter revealed nothing. It was found impossible to pass even a small catheter into the left ureter. *X* rays showed a large shadow in the left hypochondrium, suggesting hydronephrosis caused by a calculus. The pain gradually subsided and laparotomy was not performed until the following year, when a spleen of practically normal size was found with torsion of its pedicle, its upper pole adherent to the diaphragm and the lower pole perpendicular to the costal arch and pointing downwards and backwards. Splenectomy was performed and recovery followed. The melaena during the first stage of the disease was explained by obstruction to the splenic circulation, which caused engorgement and rupture of the mesenteric vessels.

Therapeutics.

575. Antitoxin Treatment of Diphtheria.

V. BIE (*Deut. med. Woch.*, April 5th, 1929, p. 563) reports on the treatment, by large doses of serum, of 1,113 cases of diphtheria occurring in the Blegdamm Hospital in Copenhagen during five months—September 1st, 1928, to January 31st, 1929. The cases were considered in three groups. In 687 slight cases, including those in which the false membrane did not extend beyond the tonsils and there was only exceptionally catarrh with periadenitis, the patients received 16,000 units; there were no deaths. In 315 cases of medium severity, including those in which the membrane covered the tonsils and extended to the margin of the uvula, being associated with catarrh, fetor, more or less periadenitis, and occasionally albuminuria, the patients received 32,000 to 48,000 units, which was sometimes repeated on the following day; of these, three died (0.96 per cent.). There were 111 severe cases; in these the membrane reached to the uvula and more or less covered the soft palate, sometimes involving the hard palate and mucous membrane of the cheek and posterior wall of the pharynx, and being usually accompanied by catarrh, fetor, albuminuria, and severe periadenitis. These patients received 80,000 to 100,000 units, which might be increased by 50 to 100 per cent. Of these patients, 20 died, 5 within twenty-four hours; if these are excluded, the mortality is only 14.15 per cent., and the total mortality is 1.62 per cent. The serum for the intramuscular injections contained 700 antitoxin units per cubic millimetre; for intravenous injections 800 to 1,600 units; for intravenous administration the maximum dose was 50 c.cm. for adults and 1 c.cm. per kilo body weight for children.

576. Copper Treatment in Syphilis.

J. VIGNATI (*Derm. Woch.*, May 4th, 1929, p. 644), inspired by the work of Dajiro and Anjow on the spirillicidal action of copper, decided to make use of it in the treatment of syphilis. He employed a combination of copper and sodium thiosulphate (Cu-Devenau) and investigated its spirillicidal action, its influence on the Wassermann reaction, human tolerance, and the effects of the treatment, with the following results. The spirillicidal action of copper was found to be considerable; complete or partial disappearance of the spirochaetes from the syphilitic eruption ensued, and the clearing up of the rash and gummata was obvious. The effect on the Wassermann reaction was, however, very slight. The preparation was well tolerated by all patients, and no albuminuria or any other sequels were observed. The absence of any bad effects was attributable to the combination of copper with sodium thiosulphate.

577. Treatment of Rickets with Irradiated Ergosterol.

E. T. WILKES, D. W. FOLLETT, and ELEANOR MARPLES (*Amer. Journ. Dis. Child.*, March, 1929, p. 483) exhibited a commercial preparation of irradiated ergosterol successfully employed in twenty-four infants with mild to severe rickets. This preparation, given in doses of 3 mg. a day, required about three weeks to cause the serum phosphorus content and the calcium concentration to return to normal—about the same time for *x*-ray signs of healing of the bones to appear—and about six weeks for complete cure. These averages compare favourably with those obtained with cod-liver oil, quartz light, and egg. Craniotabes was healed within an average of one month in their series of twelve cases. In prophylaxis their experience was limited to eight cases, in which 3 mg. a day was given, beginning at the age of 2 weeks. One premature infant developed craniotabes when 3 months old, despite the ergosterol, but the condition disappeared with a further four weeks of the same treatment. Two patients in the series had tetany, which was cured

within eight days with the ergosterol, no other treatment having been given. The authors note, however, that caution may be necessary in using irradiated ergosterol in patients with tetany who show a high blood phosphorus content.

578. Treatment of Tuberculous Glands by Sodium Cacodylate.

J. L. Y GAÑÁN (*Arch. de med., cir. y esp.*, March 30th, 1929, p. 411) records his clinical and histological observations on two cases of tuberculous adenitis treated by intravenous injections of 20 per cent. solution of sodium cacodylate. The dose was at first 1 c.cm., and then gradually increased by ½ c.cm. to 7 c.cm., which was equivalent to 1 gram 40 *cg.* of the drug. The author comes to the following conclusions. Sodium cacodylate in progressive doses is one of the most efficacious remedies we possess for the treatment of chronic tuberculous adenitis. It has a beneficial action on the lympho-granulomatosis, which, though probably of tuberculous origin, has not been definitely proved to be so. It does not give rise to any disagreeable symptoms if the tolerance of the patient is carefully watched. Its mode of action is very similar to that of *x* rays without having any of the disadvantages of the latter. Sclerosis takes place through vascular changes in the gland.

579. Mercurochrome in Septicaemia.

S. H. ZIA, R. H. P. SIA, and S. T. WOO (*Nat. Med. Journ. of China*, April, 1923, p. 117) review the literature relating to the value of the intravenous administration of mercurochrome-220 in the treatment of septicaemia. They report a comparative study of ninety-four septicaemic cases, some of which were treated in this way, and some by other forms of intravenous therapy. They conclude that the mercurochrome treatment has no particular value in this connexion and that it may possibly do harm. Clinical symptoms of mercurial poisoning were often encountered, but were not very alarming. The authors report some experimental studies in this connexion; they found that mercurochrome did not seem to exert any beneficial action on the course or final outcome of septicaemia produced artificially in rabbits.

Ophthalmology.

580. Detachment of the Retina.

M. D. ANKLESARIA (*Indian Med. Gaz.*, April, 1929, p. 186) believes that detachment of the retina should be regarded as a sign rather than a disease, and suggests that it may be caused by a number of essentially different lesions. From a developmental viewpoint, a weak spot exists in the interretineal space between the pigment epithelium and the other layers of the retina, including the rods and cones. When a separation occurs it does so at this point, the pigment epithelium still remaining adherent to the choroid, and the intervening space being filled by serous fluid. A detachment usually originates in one of three ways. The retina may be pushed in or pressed away from the choroid into the vitreous chamber by a force greater than the vitreous tension; it may be pulled into the vitreous chamber owing to skrinkage of the vitreous; or the condition may be due to a hole or holes in the retina, the retina being floated in by the passage of fluid vitreous through an aperture in it. Detachments of the retina may be divided into two main groups: the simple, primary idiopathic or non-traumatic; and the secondary or symptomatic. The pathogenesis of the former, the majority of which are myopic detachments, is very obscure, and the prognosis is bad, as the prospects of cure even after long and tedious treatment are problematical. The most generally accepted views as to the genesis of this form of retinal datachment are: the exudation theory, subsequently modified by Raehlmann and called the diffusion theory, and the vitreous traction theory of Leber and Nordenson. Both these theories are fully discussed. Anklesaria reports a case in a student, cure being obtained by medical measures combined with rest in bed. Complete physical and physiological rest was enjoined. Both eyes were bandaged, and injections of saline solution, commencing with 4 per cent. strength and increasing to 10 per cent., were given in Tenon's capsule over the site of the detachment. Internally, the patient was given 7 grains of urotropine twice daily, on account of its supposed salutary action on the secretions of the ciliary body, and a mixture containing potassium iodide and sodium salicylate with salines. In six weeks much improvement was noted. A severe attack of typhoid fever, which lasted six weeks, then supervened, from which the patient eventually recovered. An ophthalmoscopic examination eleven months after the detachment revealed no evidence of its existence; the retina was found completely re-attached and fully functioning, and the patient has resumed his studies.

581. Medical Treatment of Glaucoma.

CH. ABADIE (*Presse Méd.*, February 16th, 1929, p. 220) defines three types of glaucoma: the acute, subacute, and simple chronic. The acute form, easily diagnosed, is marked by a sudden onset with violent orbito-frontal pains. The globe is injected, and is hard and resistant on palpation; the cornea loses its transparency and becomes blurred and greyish-white, permitting, however, the dilated pupil to be visible. Vision is completely lost. In the subacute form, characterized by intermittent crises, the patient sometimes notes coloured circles resembling a rainbow; this is a pathognomonic sign of a glaucomatous crisis. Sometimes more or less complete blindness lasts for an hour or two. In the intervals between attacks the optic conditions are normal. The attacks become more frequent, and finally the hypertension persists and blindness supervenes. In simple chronic glaucoma the vision progressively and very slowly decreases, the visual field gradually retracting, especially on the nasal side. Diagnosis is difficult, as certain atrophies of the optic nerves show almost the same evolution; it can only be made by ophthalmoscopic examination, glaucomatous atrophy presenting the characteristic excavation. Abadie does not agree with those who hold that glaucoma is due to an obstacle to the filtration of the intraocular fluids at the irido-sclero-corneal angle, but maintains that it is a result of an abnormal dilatation of the vessels of the eye innervated by the ocular sympathetic. In support of this view he states that administration of certain vaso-constrictor drugs causes its disappearance, and he is a strong advocate of medical rather than surgical treatment. The method recommended is to give daily two spoonfuls of the following mixture a quarter of an hour before food: fluid ergot 2 grams, calcium chloride 20 grams, water 200 grams. In addition he advises that two or three drops of the following solution should be instilled into the eyes thrice daily: pilocarpine nitrate 0.2 gram, distilled water 10 grams. Abadie reports great benefits from this treatment, and cites four cases in which the patients suffered from glaucoma in both eyes. Those patients in whom the eyes were treated medically recovered, while in those submitted to operation the vision was lost. The author adds that this treatment does not preclude subsequent operation, and, in fact, renders the eye more suitable for surgical intervention.

582. Uveal Cysts of the Iris.

REVIEWING the cases of uveal cyst of the iris recorded in the literature, W. H. WILMER (*Arch. of Ophthalmol.*, February, 1929; p. 162) remarks that with more exact methods of examination these cysts are found not to be so rare as was formerly thought. A further case is reported in which both eyes showed total posterior synechiae with iris bombé, and from the posterior pupillary margin of the left one a dark brown, non-translucent, granular mass was seen to protrude. Transfixion of the iris was performed on the left eye, and three weeks later the sclero-cornea was trephined with peripheral iridectomy. With the reduced tension the cyst collapsed, and later the opaque lens was removed. Cysts of the iris have been classified, according to their position, into cysts of the anterior layers of the iris, those free in the anterior chamber, and those of the pigment epithelial layer. The latter can be further subdivided into the primary, and those following synechiae with glaucoma. The exact genesis of these cysts is not yet definitely fixed. Of 36 reported cases, 20 were primary, 7 were caused by injury, 3 were consequent on glaucoma after injury, and 6 followed occlusion of the pupil or glaucoma. Spontaneous cysts are interesting both from their pathogenesis and also from the fact that, although they are true cysts, in some cases their walls are so translucent and seemingly so solid that the possibility of malignancy must be considered. In 6 cases the affected eye was removed owing to an erroneous diagnosis of melano-sarcoma; such growths are found in a position similar to that of spontaneous cysts. In some cases of primary cysts of the iris a true diagnosis can only be made by the removal of a piece of the iris with the cyst. When the eye is painless and there is useful vision this or some similar procedure should be resorted to before enucleation.

583. Naevus of Bulbar Conjunctiva.

F. H. RODIN and E. M. HALL (*Amer. Journ. Ophthalmol.*, January, 1929, p. 24) describe a case of pigmented naevus of the bulbar conjunctiva occurring in a boy aged 6. It had been first noticed a year previously, and had grown considerably during the year. The naevus was removed by operation, and a year later no recurrence had been detected. Pathological examination of the removed tissue showed pigmented cells of connective tissue arranged in small groups immediately below the epithelium; these cells were of the stellate type (chromatophores). These pigmented naevi of the bulbar conjunctiva are very liable to become malignant in early middle age, and they should be removed.

Obstetrics and Gynaecology.

584. Prevention of Eclampsia.

ACCORDING to G. BAUMGART (*Zentralbl. f. Gynäk.*, March 16th, 1929, p. 647) further diminution of the mortality from eclampsia is more likely to result from earlier recognition of the pre-eclamptic state than from improved treatment of the established disease. Although the three main pre-eclamptic symptoms—albuminuria, oedema, and increase of blood pressure—were recognized as clinical features of eclampsia respectively 89, 135, and 60 years ago, it is only comparatively recently that adequate attention has been given to their importance as precursors of eclampsia. To avoid the occurrence of this condition it is necessary to watch the pregnant patient, and, if the prodromal symptoms are found, to institute, according to Rissmann, Volhard, and others, a starvation regime for some days. Baumgart recommends monthly examinations of the patient, recording of the blood pressure, and investigation of the urine for albumin and casts; instructions are given to the patient to report at once the onset of swelling of the arms, legs, or eyelids. In the seventh month examinations are made fortnightly, in the eighth month weekly, and in the last month twice a week. Oedema, in the absence of albuminuria or cylindruria, usually disappears if the legs are kept high during the night and the patient rests more during the day. If, however, albuminuria is noted (usually in combination with hyperpiesis) the patient is generally—and, if casts are present, invariably—admitted to hospital. There she is kept in bed and nothing is given by the mouth for three days, except (in refractory patients) one or two apples or a banana daily. On the fourth day 9 ounces and on the fifth day 18 ounces of barley water are given, and thereafter return is gradually made to full diet, permanent reduction being maintained, however, in the intake of water and salt. Baumgart reports that of 152 women admitted to hospital with pre-eclamptic signs 22 only had an eclamptic convulsion, but these were all admitted during labour. Records are given of the speedy disappearance of oedema, albuminuria, and urinary casts after the carrying out of this "hunger and thirst treatment" as the sole therapeusis in 15 patients.

585. J. L. MILLS (*Minnesota Med.*, April, 1929, p. 186) believes that the most common finding in the late toxaemias of pregnancy is hypertension, which he classifies as: (1) a benign type—the so-called "nephroses" of pregnancy—occurring early with little evidence of intoxication; (2) a late type, rapid in onset, and in some cases passing into eclampsia; and (3) the hypertension which exists in pregnancy as a result of previous heart or kidney disease. Mills mentions a series of 222 cases of eclampsia reviewed by F. W. Rice; in only 7 per cent. was there adequate ante-natal care. In his own experience 50 per cent. of his obstetrical patients do not seek medical advice until the last month of pregnancy, and accordingly he urges medical practitioners to stress the benefit to be gained by careful supervision during the period of gestation. The treatment of cases of hypertension varies according to the degree of severity of the patient's symptoms. When the blood pressure has risen only slightly, and where the presence of albumin in the urine is doubtful, Epsom salts and a restriction of protein diet are usually enough. If there is not a prompt response to this treatment, confining the patient to bed and allowing milk only are successful in nearly every instance. Where a marked toxaemia with definite pre-eclamptic symptoms is present the author advises conservative treatment, and makes special mention of magnesium sulphate given either intravenously or intramuscularly. If the intravenous route is used, 20 c.cm. of a 10 per cent. solution are given; when injecting the sulphate intramuscularly, 15 c.cm. of a 25 per cent. solution are administered. Ammonium chloride is said to be very useful as a diuretic; to avoid gastric irritation Mills gives it in capsule form. He compares the results obtained by J. W. Williams by (1) operative and (2) conservative methods in dealing with eclampsia. By conservative treatment Williams has lowered his mortality from 24.8 to 13 per cent.

586. Cervico-vaginal Varix simulating Placenta Praevia.

H. NAUJOKS (*Zentralbl. f. Gynäk.*, March 9th, 1929, p. 605) records a case in which severe ante-partum haemorrhage three weeks before term was thought to be of rectal origin; after a vaginal examination it was attributed to placenta praevia. Abdominal Caesarean section was performed at once, but the placenta was found to have a normal high insertion. At the operation large varices were noticed on the anterior wall of the corpus uteri, and, after the operation, on the posterior vaginal wall; during the operation bleeding from the lower end of the uterine incision was persistent and profuse. The ante-partum haemorrhage, it was concluded, had come from varices of the cervical canal and lower uterine segments. Naujoks remarks that present-day teaching in Germany, where in the maternal interest Caesarean section is regarded as the treatment of choice in non-infected cases of placenta praevia, enjoins abstention from vaginal examination—a course which necessarily leads to a small proportion of errors in diagnosis, as in the present case. Caesarean section, however, was the correct treatment of the acute and severe bleeding in this case, and vaginal hysterotomy in the varicose area would have been extremely dangerous. Most commonly cervico-vaginal varix is not associated with varix of the vulva or legs, and occurs in young, healthy primiparae; the bleeding is very profuse, and in more than one-half of reported cases death has followed. In a case described by Wieloch fatal bleeding occurred after delivery of the head in a labour which until then had been normal and bloodless.

Pathology.

587. The Capillary Circulation in Children.

EMPLOYING the capillary microscope in children L. DOXIADES (*Deut. med. Woch.*, March 15th, 1929, p. 438) found that the form of the capillaries depended on the extent to which the lumen of the capillaries was filled; this in turn depended on the tone of the cells constituting the wall of the capillary. Changes in the form of the capillary wall are associated with alterations in permeability of the capillary endothelia. Doxiades examined the capillaries in the nail fold and mucous membrane of the lips in a number of infants and young children suffering from exudative conditions of the skin and found that both the arterial and venous limbs of the capillary loop had comparatively narrow lumina, and that the blood flow in them was accelerated. The exudative diathesis is said to be associated with a congenital increase in the permeability of the capillary wall, and, in comparison with the normal, the susceptibility of the cells constituting the capillary wall to products of metabolism circulating in the blood is also increased. Working in conjunction with Pototzky, he found that when the oral administration of thyroxin to myxoedematous children had been continued for some months the dilated capillaries with sluggish blood flow originally present became transformed into narrow capillaries with an accelerated flow. Examination of 26 rachitic infants who were receiving ultra-violet light treatment revealed an acceleration in the capillary circulation, an increase in the number of capillary loops visible, and a more intensive pink coloration of the corium in 18 cases after the tenth treatment, which involved a twenty-two minutes' exposure; in the remaining 8 infants a similar reaction appeared after ten minutes' exposure. Subsequent examination of the irradiated infants showed that as the cutaneous pigmentation disappeared after the conclusion of the course of treatment the capillary reaction just described also generally subsided. Capillary microscopic examination of a positive cutaneous Pirquet reaction showed a marked increase and dilatation of the capillaries of the skin and oedema of the cells of the corium.

588. Haemolytic Streptococci and Scarlet Fever.

G. MORIWAKI (*Journ. Preventive Med.*, January, 1929, p. 1) found that when there was a case of scarlet fever in a household there were often carriers of haemolytic streptococci among the other members of the family, or that carriers often had sore throats and fever before the onset of subsequent typical scarlet fever. Persons whose throats were found to be free from streptococci on preliminary examination yielded abundant streptococci when they developed scarlet fever. Convalescents might be the cause of return cases if they had relatively abundant haemolytic streptococci when discharged, whereas convalescents free from streptococci never gave rise to return cases.

589. Action of X rays on the Prostate.

P. DEL BUONO (*Riv. di radiol. e fisica med.*, January, 1929, p. 63), as the result of irradiating the prostate of dogs of various ages, comes to the following conclusions. Application of x rays to the prostate of adult dogs produces after a certain time functional and structural alterations which are remarkable for their varied intensity and importance. The diversity of the results appears to depend on other reasons besides the irradiation. The more or less rapid appearance of morbid changes does not seem to be due entirely to the intensity of the irradiations, but depends to some extent on the age of the animal. Though irradiation of the prostate in adult dogs is not followed by death, as in young animals, it nevertheless produces important changes in the organism—namely, increase in weight; areas of alopecia which are at first discrete and then confluent, and are associated with alterations in the colour, lucidity, and elasticity of the skin; and, finally, signs of premature senility.

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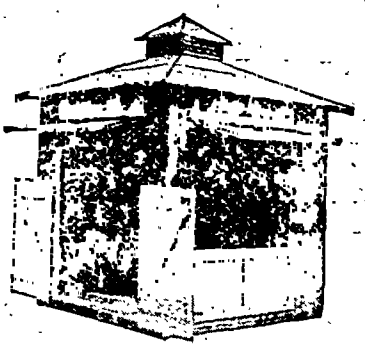

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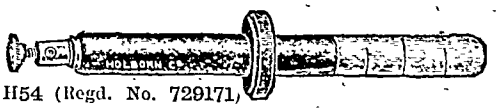

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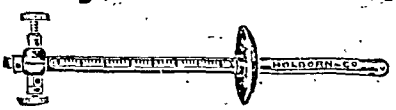

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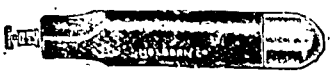

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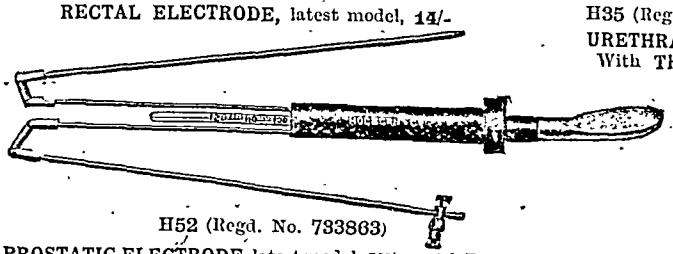

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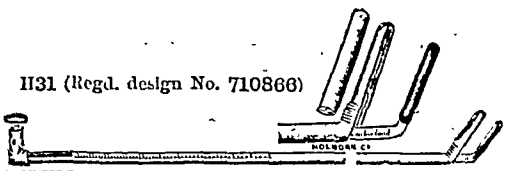

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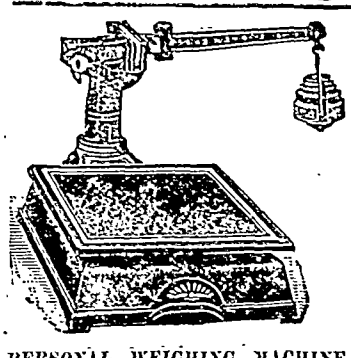

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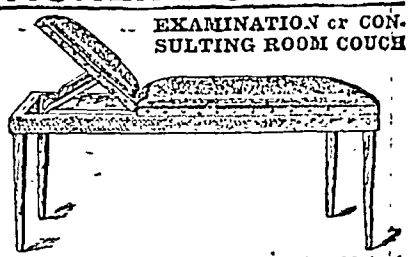

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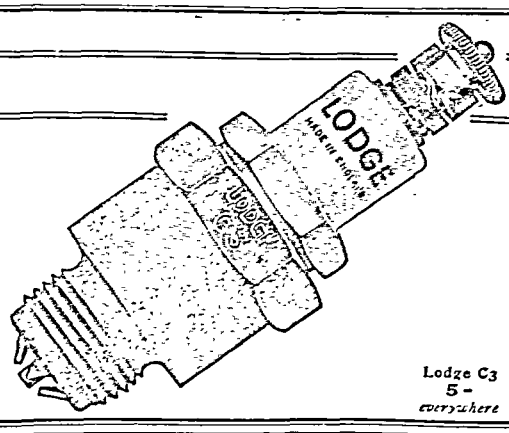

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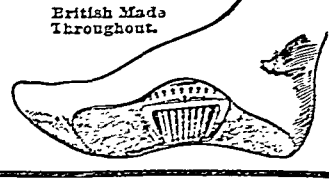

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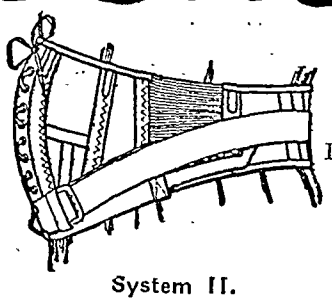

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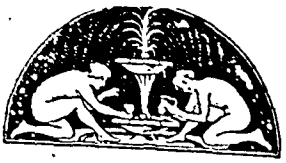

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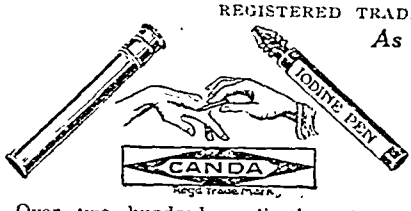

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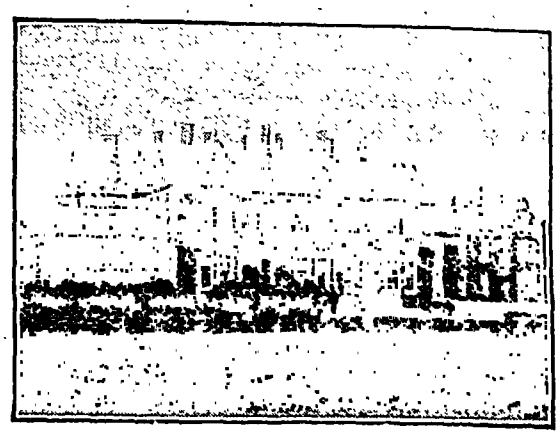

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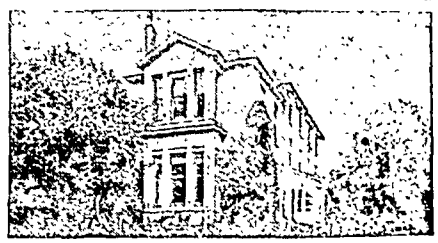

ALCOHOL AND DRUGS

"The Medical Annual" (1928) selects the SPRINGFIELD METHOD of withdrawal for special description.

This intensive method secures excellent results in four weeks only; was evolved and is conducted at a private nursing home in Hampstead, the address of which is never advertised.

Apply Medical Superintendent, 21, Cleveland Square, W.2. Langham 1643.

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DALRYMPLE HOUSE, RICKMANSWORTH, HERTS.

For the treatment of GENTLEMEN under the Act and privately. Estab. 1883 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded grounds on the bank of the River Colne. Full-sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by. For particulars apply to—F. S. D. HOGG, M.R.C.S., &c., Resident Medical Supt. *Telephone:* 16 RICKMANSWORTH.

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

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CALDECOTE HALL, NUNEATON.

RESIDENTIAL TREATMENT of the most modern kind is carried out under the personal direction of the Resident Medical Superintendent in this beautiful Country Mansion. Fees are moderate. *Full particulars from the Resident Medical Superintendent:*

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CITY OF LONDON MENTAL HOSPITAL, DARTFORD, KENT.

PRIVATE PATIENTS are received at a weekly charge of TWO GUINEAS and upwards.

Voluntary BOARDERS can now be admitted.—Apply to the MED. SUPERINTENDENT.

ALCOHOLISM, OTHER DRUG HABITS, AND TROPICAL AILMENTS

THE HARE NURSING HOME

As founded and established by the late Dr. FRANCIS HARE, for 20 years Med. Supt. of The Norwood Sanatorium, and author of "Alcoholism," etc.; for the treatment of ALCOHOLISM, other Drug Habits, Insomnia, Neurasthenia, Functional Nervous Disorders, TROPICAL Ailments, etc.

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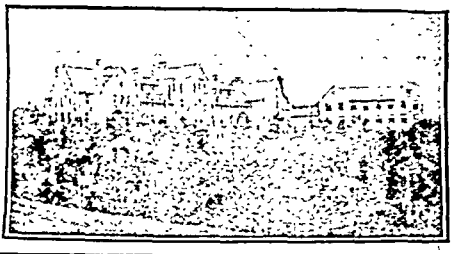

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FULLY EQUIPPED WITH EVERY MODERN APPLIANCE FOR THE DIAGNOSIS AND TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.

Physician Superintendent - J. M. JOHNSTON, M.B., D.P.H., etc.

Full particulars and Prospectus on application to the Secretary.

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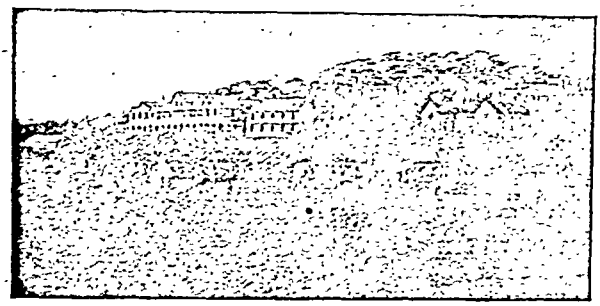

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FOR THE TREATMENT OF PULMONARY AND OTHER FORMS OF TUBERCULOSIS
WAS OPENED IN JANUARY, 1899.

Patients are received for open-air, inoculation, or operative treatment. There are X-ray and ultra-violet ray installations. Full nursing staff. The Sanatorium stands in gardens and private grounds of 65 acres, at an elevation of 862 feet above sea-level, surrounded by woods and moorland. The patients' rooms are heated by hot-water pipes and electrically lighted.

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For full particulars apply to *The Secretary*, Nordrach-upon-Mendip, Blagdon, Bristol. *Telegrams*: Nordrach, Blagdon. *Telephone*: Blagdon 23.

LINFORD SANATORIUM,

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Established 1898 for the treatment of Tuberculosis. Radiators and Electric Light throughout. Hot and cold water and shower bath in nearly all rooms. Powerful X-ray Plant. Ultra-violet Rays. Full Nursing Staff. All forms of treatment available. Farm of 120 acres, including 40 acres of wood. Herd of Tuberculin-tested Guernsey cows kept. Resident Physicians—Arthur de W. Snowden, M.D., B.Ch.(Cantab.), A. G. E. Wilcock, M.R.C.S., L.R.C.P., Colin Cassidy, M.B., B.Ch.(Cantab.)

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Telephone: HOLT 12

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On Pine-wooded heights above Cromer and Sheringham. Dry, Warm Climate. Maximum Sunshine. Completely Sheltered.

Terms: From 6 guineas weekly.

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Diseases of the **stomach, intestines,** *liver, and bile ducts:*	Rakoczy and Pandur springs (hyper- and subacidity). Luitpold spring (for hyperacidity), brine spring; mineral water containing magnesia salts, mud baths, fango baths.
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MINERAL WATERS SENT ANYWHERE WITH CERTIFICATE OF ORIGIN GIVEN BY THE ADMINISTRATION.

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in the valley of the Aare near Brugg (Station for Express trains Line: Zürich—Berne—Geneva. Motor Road: Zürich—Aarau—Berne

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Kurhaus: First-class hotel, with hot and cold water, private baths, entire suites. Restaurant. Directly connected with the Baths.

Curative Agencies.—Radioactive warm sulphur spring, pronounced by Professor Treadwell of the Federal Technical High School in Zurich to be the strongest sulphur spring on the Continent, with highest saturation of sulphurated hydrogen (5.6 per cent.). Radioactivity according to Professor Schweizer in Zürich: 4 52 ache units. Temperature 95° Fahrenheit, 308 Gallons per minute. Sulphur baths, Drinking cures, Inhalations, local Pulverisation, Spray baths, Sulphur mud treatment. Sun-bath, Open-air gymnastics and massage by Swedish personnel, X-ray, Diathermal Apparatus, Quartz lamps, Medico-chemical laboratory, Metabolism laboratory, Diet, Trained personnel, nurses

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Salts and Pastilles for export.

GOOD ACCOMMODATION AT MODERATE PRICES.

Hotel lists (8,000 beds) from the Municipal Information Office and Travel Bureaux.

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A really comfortable Home as PAYING GUEST wanted for an elderly Gentleman in quite good health but who spends most of his time in bed. Will pay £8 8s. a week to Doctor or Nursing Home, in London only. No suburb considered. —ALL SOULS NURSING ASSOC., 2 & 3, All Souls Place, London, W.1.

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A Private Home for the care and treatment of a limited number of ladies mentally afflicted. Climate healthy and bracing.
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Haslemere Nursing Home, "Courtsfold," Haslemere, Surrey. Medical, Convalescent, and permanent patients. Ideal for Rest Cures. Comfort, sunny rooms, large gard., own poultry, veg., etc. Trained staff. 5 to 10 gns. weekly. Tel.: Haslemere 22.

Resident Patients: — West End Physician has VACANCY. Fully equipped for all Physio-therapeutic methods; Rheumatism, Arthritis, Neuritis especially suitable. — Address, No. 3426, B.M.A. House, Tavistock Square, W.C.1.

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RAVEN HOTEL or PARK HOTEL famous for their comfort and hospitable service to each and every one of their guests.

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Illustrated Booklet on request. 'Phone 50 or 38.

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HERMITAGE SANATORIUM, Whitwell, Nr. Ventnor.

Unsurpassed situation, 600 ft. above sea-level, high sunshine record, own farm. Resident Medical Officer. Male cases only.

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Special preferential arrangements for a few private cases at 4 guineas.

Artificial Pneumothorax, etc.

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LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

(University of London.)

The course of study, covering a period of twelve calender months, will commence on September 30th, 1929, and is so designed that students wishing to do so can proceed to the new academic Diploma instituted by the University of London.

The inclusive fee of 50 guineas will cover the cost, not only of the ordinary lectures and demonstrations, but also of the necessary practical work in public health departments and instruction in infectious diseases, etc.

Enquiries should be addressed to the Secretary, London School of Hygiene and Tropical Medicine, Malet Street, London, W.C.1.

EDINBURGH POST-GRADUATE COURSES IN MEDICINE

IN CONNECTION WITH THE UNIVERSITY AND ROYAL COLLEGES, 1929.

THE POST-GRADUATE COURSES to be held this year will comprise:

(1) A GENERAL PRACTITIONERS' COURSE from August 12th to September 7th.
(2) A GENERAL SURGICAL COURSE from August 12th to September 7th.
The composite fee for each Course will be £10 10s. for the four weeks, or £6 6s. for either the first or second fortnight.
(3) A COURSE IN OBSTETRICS AND GYNÆCOLOGY AND DISEASES OF CHILDREN from July 15th to August 10th. Fee £10 10s.

In addition to the above, the following *Special Courses* have been arranged:

SUMMER TERM.

SURGICAL PATHOLOGY.—Mr. Wade, F.R.C.S.Ed., and others. May 14th. Fee: £4 4s.
OPHTHALMOSCOPY.—Drs. Graham and Ligertwood. May 6th. 12 Meetings, three weekly. Fee: £3 3s.
CLINICAL MEDICINE.—Medical Staff of Royal Infirmary. During May. Fee: £3 3s.

SUMMER, AUTUMN, AND SPRING TERMS.

CLINICAL SURGERY.—Surgical Staff of Royal Infirmary. Fee £3 3s.
DISEASES OF EAR, NOSE, AND THROAT.—Staff of Ear, Nose, and Throat Department, Royal Infirmary. Minimum number 5 Fee: £10 10s.
VENEREAL DISEASES.—Mr. Lees, F.R.C.S.Ed., Ward 5a, Royal Infirmary. Minimum number 5. Fee: £10 10s.
DISEASES OF EAR, NOSE, AND THROAT.—Dr. Douglas Guthrie. This class will meet twice weekly at the Ear and Throat Dispensary, Cambridge Street. Fee: £4 4s.
RADIOLOGY.—Dr. Woodburn Morison and Assistants. Royal Infirmary. Fee: £2 2s.

DURING THE PERIOD OF THE GENERAL COURSES (AUGUST-SEPTEMBER).

EXAMINATION OF THE BLOOD.—Dr. Alex. Goodall. Fee: £3 3s. VACCINE THERAPY.—Dr. A. Nimmo Smith. Fee: £3 3s.
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Further particulars may be had on application to the Hon. Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh.

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Why not add one of the following degrees or diplomas to your name?

Diploma in Psychological Medicine.
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We Specialise in Post-Graduate Coaching for all Examinations.

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BEHNKE METHOD. Estab. 1832. Cases, non-resident, treated at 33, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

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The Prince of Wales's General Hospital, Tottenham, N.15, and Associated Hospitals.

An INTENSIVE REFRESHER COURSE will be held from JUNE 24th to JULY 6th. Lectures, demonstrations, and clinics in the various general and special departments.

The number is limited to 25.

Enquiries and applications should be sent to the Dean at the Hospital, or to the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

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SKILLED COACHING, GUIDANCE, and ADVICE.

From Specialist Tutors, in conformity with the Regulations of the various Universities

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Sound Education. Upper and Lower Schools. Preparation, when desired, for all University Entrance Examinations. Particulars from Sec.

Special Terms to Medical Men.

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On Tuesday, June 18th, at 4.45 p.m., Dr. F. HERNAMAN-JOHNSON will give a Lecture-Demonstration at the BRITISH INSTITUTE OF RADIOLOGY, 32, Welbeck Street, W.1.

"The Management of Patients suffering from Cancer of the Breast."

This Lecture-Demonstration is open to Members of the medical profession, without fee.

UNIVERSITY OF LONDON.

EXTERNAL EXAMINERSHIPS, 1930.

The Senate announce the following vacant External Examinerships for all Examinations above Matriculation for the year 1930. Except when otherwise stated, Examiners will act in all Examinations in which the subject is included.

The Examiners for the Final Examinations will be invited as occasion arises to take part in the Higher Examinations, but the Senate have resolved that in certain cases in which the work is heavy they shall not be required to do so.

For the First Examination for Medical Degrees.
Biology. Chemistry. Physics.

For the Second Examination for Medical Degrees.
Anatomy (two). Pharmacology. Physiology.

NOTE.—One of the two Examiners appointed in Anatomy will be required to act for Science Examinations also.

For Final and Higher Examinations for Medical Degrees.
Medicine. Surgery (two). State Medicine.

Associate Examiners.

Applications will also be invited for Associate Examiners in Medicine, Obstetric Medicine, Pathology, and Surgery. A separate application form must be used for Associate Examinerships and the word "Associate" must be written on it

Application form (or forms if more than one Examinership is applied for) and particulars of the remuneration and duties can be obtained from the External Registrar.

Candidates must send in their names to the External Registrar, GEO. F. GOODCHILD, M.A., B.Sc., with any attestation of their qualifications they may think desirable on or before Monday, July 7th, 1929. (Envelopes should be marked "Examinership.")

The Senate desire that no application of any kind be made to individual members.

If testimonials are submitted one copy only of each is required. In no case should original testimonials be submitted. If more than one Examinership is applied for a separate and complete application must be forwarded in respect of each Examinership. The appointments will be made by the Senate in November. Applicants who desire that the result should be communicated to them are requested to enclose a stamped and addressed envelope with their applications.

University of London, South Kensington, S.W.7. June, 1929.

T. FRANKLIN SIBLY, Principal.

University of Birmingham.

CLINICAL BOARD.

An Intensive Course of Post-Graduate Clinical Demonstrations and Instruction will be held at the General, Queen's, and Special Hospitals, Birmingham, commencing on Monday, September 9th, and terminating on Saturday, September 21st, 1929 (9.30 a.m. to 5 p.m daily), provided that sufficient entries are received not later than July 1st The Course will be arranged to meet the requirements of General Practitioners. Fee for the Course £3 3s.

Further particulars may be obtained on application to the Dean of the Faculty of Medicine, The University, Edmund Street, Birmingham.

The University of Manchester.

The AMY HENRIETTA WORSWICK FELLOWSHIP for the investigation of the Causes and Treatment of Rheumatoid Arthritis is offered for competition. The Fellowship is of the value of £150 for one year, with the possibility of renewal for a second year Candidates must possess a registrable medical qualification.

Application must be made not later than October 15th to the Registrar, from whom further particulars may be obtained.

Society of Apothecaries of London.

MASTERY OF MIDWIFERY EXAMINATION.

The next Examination will take place on Monday, November 18th, and following days. For regulations apply to—

FRANK HAYDON, Secretary.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

THE MIDDLESEX HOSPITAL MEDICAL SCHOOL, LONDON, W.1.

(UNIVERSITY OF LONDON).

TWO ENTRANCE SCHOLARSHIPS of the value of £100 each, one in Arts and one in Science, will be offered for competition.

TWO SCHOLARSHIPS of the value of £90 and £60 respectively, are open to students of the Universities of Oxford and Cambridge who have completed the curriculum for or passed the Examination in Anatomy and Physiology.

The Examination will take place on July 29th, 30th, and 31st, 1929.

The successful candidates will be required to become general students of the School.

WINTER SESSION OPENS ON OCT. 1st.

Application forms and last year's papers can be obtained from the Secretary, Middlesex Hospital Medical School, Mortimer Street, W.1.

LONDON SCHOOL OF DERMATOLOGY,

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN,

LEICESTER SQUARE, W.C.2.

Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of artments of the London ectures and Demonstrad Thursday, at 5 p.m., and four times weekly daily at 2 p.m. and p.m. only. Pathological Laboratory for Instruction or Research Work.

For further particulars, fees, etc., apply to A. C. ROXBURGH, M.D., Dean.

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A PUBLIC SCHOOL FOR BOYS.

Boys are regularly prepared for the First M.B. Examination, University Scholarships in Chemistry, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology.

New Science Buildings, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1925. Prospectus from Head Master.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 7th, and for the Diploma in Tropical Hygiene on January 12th and April 26th. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

SCHOOLS for BOYS and GIRLS.

TUTORS FOR ALL EXAMS.

Messrs. J. & J. PATON, having an up-to-date knowledge of the BEST SCHOOLS and TUTORS in this Country and on the Continent, will be pleased to AID PARENTS in their choice by sending (free of charge) prospectuses and TRUSTWORTHY INFORMATION and ADVICE.

The age of the pupil, district preferred, and rough idea of fees should be given.

J. & J. PATON, Educational Agents, 143, Cannon St., London, E.C.4. Tel.: Mansion House 5053.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.

PRIVATE WARDS for paying patients.

F.R.C.S.(Edin.).

Prep. Classes and Museum Demons. for next Fellowship Exam will commence shortly. Correspondence course for Sept. and later exams. should begin now. Partics., Mr. H. C. ORRIN, F.R.C.S., at Surgeons' Hall, Edinburgh.

UNIVERSITY EXAMINATION POSTAL INSTITUTION

17, RED LION SQ., LONDON, W.C.1.

(FOUNDED IN 1882.)

Principal: Mr. E. S. WEYMOUTH, M.A.(Lond.). POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS.

SOME SUCCESSES:

M.D.(Lond.),	1901-28 (9 Gold Medallists during 1913-28)	309
M.S.(Lond.),	1901-28 (including 4 Gold Medallists)	20
M.B.,B.S.(Lond.),	*Final* 1906-28 (Completed Exam.).	237
F.R.C.S.(Eng.),	*Primary* 1906-28)	149
	Final	135
M.R.C.P.(Lond.),	1914-28	152
D.P.H.	(Various) 1906-28 (Completed Exam.).	280
F.R.C.S.(Edin.),	1918-28	39
M.R.C.S., L.R.C.P.	*Final* 1910-28 (Completed Exam.).	402
M.D.(Dur.)	(Practitioners) 1906-28	36
M.D.	Various. By Thesis. Numerous successes.	

Preparation for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.

M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.). Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Course. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

F.R.C.S. (Edin.).

A TUTORIAL CLASS, with Museum Demonstrations, for the next Examination will commence shortly. Correspondence tuition if desired.—FRED GRAHAM, M.D., F.R.C.S.(Edin.), Surgeons' Hall, Edinburgh.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to

The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5,

for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clines, and antenatal clinics. For further particulars, fees, etc., apply to the Secretary.

RADIOLOGICAL UNIT.

PRESTON ROAD, HARROW.

(11 mins. Baker Street Met. Station.)

COURSES OF LECTURES for Practitioners on the USE OF X-RAYS IN SURGICAL DIAGNOSIS. Particulars—A. P. BERTWISTLE, F.R.C.S.Ed.

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam. will commence shortly. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

Elizabeth Garrett Anderson HOSPITAL, Euston Road, N.W.

Wanted, fully qualified medical woman as ANÆSTHETIST. Attendance—Wednesday afternoons and Friday mornings (Nose, Throat, and Ear). Applications, with testimonials, should be sent to the Secretary before June 28th.

IMOGEN H. MURPHY, Secretary.

Warrington Infirmary and DISPENSARY.

POST-GRADUATE COURSE.

Syllabus of Lectures and Demonstrations.

June 13th. C. A. Wells, F.R.C.S. "The Early Signs of Disease of the Urinary Tract and their Investigation."

June 25th. G. E. Archer, M.B. "Indications for the Use of the Bronchoscope and Oesophagoscope."

July 2nd. R. Coope, M.D., M.R.C.P. "Diseases of Thyroid Gland."

July 9th. P. B. Mumford, M.D., M.R.C.P. "Some Common Skin Diseases of the Face."

The sessions are from June to July 9th, and from the middle of September to the end of October, at 8.30 p.m.

These lectures are open to members of the Medical Profession without fee.

All Saints' Hospital (For Genito-URINARY DISEASES), 49/55, Vauxhall Bridge Road, S.W.1.

DEMONSTRATIONS IN CYSTOSCOPY are held on:

Wednesdays ...	Mr. Coyte ...	1.30 p.m.
Thursdays ...	Mr. Attwater ...	1.30 p.m.
Saturdays ...	Mr. Loughnane...	1.30 p.m.

Special classes and tuition by arrangement.

The Government of Madras are

prepared to receive applications for an appointment of PROFESSOR OF PHYSIOLOGY at the MEDICAL COLLEGE, VIZAGAPATAM, MADRAS. Candidates should be Medical Graduates possessing a qualification registrable by the General Medical Council, and should have had recent teaching experience in a Medical College or School. Age should be between 28 and 40 years. The officer will be appointed on probation for one year and, if found suitable in all respects, will be offered permanent pensionable employment in the Madras Medical Service.

Pay in a scale of Rs.700—100 (biennial)—1,200 a month will be fixed with reference to age and qualifications (approximate equivalent at current rates of exchange, £630—£1,080 per annum).

Free first-class passage to Madras. Strict medical examination.

Forms of application and further particulars may be obtained, upon request by post-card, from the Secretary to the High Commissioner for India, General Department, 42, Grosvenor Gardens, London, S.W.1. Last date for the receipt of applications July 6th, 1929.

Sudan Government.

MEDICAL DEPARTMENT.

TWO MEDICAL OFFICERS are required immediately for the Sudan Medical Service. Candidates must be single and under 30 years of age, and they must have held a Resident appointment (preferably House Surgeon) in a large General Hospital.

Pay commences at £E.720 a year, rising to £E.1,200 after thirteen years' service. On confirmation of their appointments the selected candidates will be eligible for pension service.

Applications (in writing only), with copies of recent testimonials, should be made to Dr Hodson, 24, Welbeck Street, W.1, from whom, and from the Secretaries and Deans of the principal Medical Schools, further particulars can be obtained.

Southern Rhodesia Medical SERVICE.

GOVERNMENT MEDICAL OFFICER required for Southern Rhodesia Medical Service. Salary at the rate of £500 per annum, rising by £25 per annum to £650 per annum, with private practice. Applicants must be 25 to 30 years of age. Preference will be given to holders of Public Health or Tropical Medicine Certificates. Copies of conditions of appointment to the Southern Rhodesia Medical Service can be [illegible] of the High [illegible]esia, Crown [illegible] to whom all [illegible] with full [illegible]ioning age, whether married or single, past appointments held, etc., with copies of references. Applications should reach that office not later than June 20th.

City of Bradford.

LOCUM TENENS required during July and August for Bacteriological and Pathological work. Salary £12 12s. per week.

Applications should be sent to the Medical Officer of Health, Town Hall, Bradford, as soon as possible.

Town Hall, Bradford. June 7th, 1929. N. L. FLEMING, Town Clerk.

Prison Medical Service.

Applications are invited for the post of MEDICAL OFFICER, CLASS II, in the above service. Salary £350, rising by £20 per annum to £600, with quarters, or an allowance in lieu. The pay is subject to a bonus, which at present on a salary of £350 is £135 2s. These posts are pensionable, and there are prospects of promotion to higher rank.

Candidates must be fully qualified and registered. Preference will be given to those who have held House appointments, have had experience in Lunacy and Psychological methods, and are under the age of 30. Forms of application can be obtained from the Secretary, Prison Commission, Home Office, London, S.W.1.

The Otago Hospital Board.

UNIVERSITY OF OTAGO AND DUNEDIN HOSPITAL, NEW ZEALAND.

The post of RESIDENT SURGICAL OFFICER (Senior) will be vacant in August, 1929. Candidates must hold a degree in Medicine of a British University; must have been qualified for three years; and have held resident Hospital appointments for at least one year.

The duties of the successful candidate will be those of superintending house surgeons, with, in addition, certain tutorial work under the direction of the Professor of Surgery.

Salary for the position to be at the rate of £500 per annum, with board and residence.

Full details may be obtained on application to the High Commissioner for New Zealand, Strand, W.C.2.

Otago Hospital Board, Dunedin, New Zealand. May 23th, 1929. JOHN JACOBS, Secretary.

Ministry of Health.

The Minister of Health invites applications from registered medical practitioners (women) for appointment as MEDICAL OFFICER on the staff of the Ministry.

The salary commences at £600 per annum and rises by yearly increments of £25 to £900, and then by yearly increments of £50 to £1,100 per annum. In addition to the salary, a bonus, which varies with the cost of living, is payable; the bonus on the minimum salary is at present £176 7s.

The appointment will be subject to the usual Civil Service conditions as to pension, marriage, holidays, etc.

Candidates must be registered medical practitioners of not less than 7 years' standing and should have had special experience in Obstetrics and of Maternity and Child Welfare work under a Local Authority. Preference will be given to candidates possessing a University Degree in Medicine and a Diploma of Public Health.

Medical Officers are required to devote their whole time to the Public Service and must be prepared to work in any part of England or Wales if required to do so.

Canvassing Members of Parliament or officers of the Ministry will render a candidate liable to disqualification.

Forms of application, with further particulars of the appointment, may be obtained from the Director of Establishments, Ministry of Health, Whitehall, S.W.

No application can be considered unless received on the prescribed form not later than June 25th.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

Applications are invited for the post of HONORARY ASSISTANT SURGEON to the Ear, Nose, and Throat Department.

Applicants must be Fellows of one of the Royal Colleges of Surgeons, and engaged in Consulting Practice.

Applications, stating age, qualifications, and enclosing copies of three recent testimonials, to be sent on or before Monday, July 1st, to—

June 10th, 1929. FREDK. W. DREWETT, Director.

West Herts Hospital, HEMEL HEMPSTEAD.

(110 Beds. 24 miles from Euston.)

Applications are invited for the appointment of a JUNIOR RESIDENT MEDICAL OFFICER, to commence duties on July 1st next.

Salary £100, with rooms, board, and laundry. Preference given to male candidates.

Particulars to be obtained of, and applications, stating essential particulars, and enclosing copies of recent testimonials, to be sent at once to—

ROBT. L. BUTTERFIELD, Clerk to the Hospital.

Surrey County Council.

ASSISTANT MEDICAL OFFICER.

Applications are invited for the appointment of a Male Assistant Medical Officer. Candidates must possess a qualification in Public Health, and have had experience in the medical inspection of school children, maternity and child welfare, and the treatment of tuberculosis and venereal diseases. The officer appointed will be required to undertake such other public health duties as may be allocated to him. He will be on the staff of the County Medical Officer of Health, must reside in the County, and devote his whole time to the work. Salary £600 per annum, rising by annual increments of £20 to £700 per annum. Travelling expenses in accordance with the Council's scale will be allowed.

The appointment will be subject to the approval of the Ministry of Health, to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to the Standing Orders of the Council, which provide, inter alia, that appointments may be determined at any time by three months' notice.

Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, should be made on the prescribed form and sent to the County Medical Officer of Health, 5, Grove Crescent, Kingston-upon-Thames, from whom copies of the application form may be obtained, and to whom any enquiries relating to the appointment should be addressed.

Last day for receipt of applications, Saturday, June 29th. Canvassing, directly or indirectly, will disqualify.

County Hall, Kingston-upon-Thames. June 8th, 1929. DUDLEY AUKLAND, Clerk of the County Council.

Ludlow Union.

APPOINTMENT OF MEDICAL OFFICER FOR THE LUDLOW DISTRICT AND THE LUDLOW UNION WORKHOUSE.

The Guardians of the Ludlow Union will at their Meeting to be held on Wednesday, June 26th, be prepared to consider applications from duly qualified practitioners for the appointment of Medical Officer for the Ludlow District, which comprises the Parishes of Ashford Bowdler, Ashford Carbonel, Bromfield, East Hamlet, Ludford Ludlow, Richards Castle (Herefordshire), Richards Castle (Shropshire), and Stanton Lacy, containing an estimated population of 3,238, with an area of 22,557 acres, and for the Workhouse of the said Union for the term of one year or such other term as the Ministry of Health may fix, with three months' notice on either side.

The salary will be £150 per annum for the Ludlow District and £100 per annum for the Workhouse, exclusive of any extra fees allowed by the General Consolidated Orders of the Ministry of Health, but no fees will be paid for certifying as to Paupers Lunatics in the Workhouse.

The Medical Officer appointed will be required to commence his duties on July 1st next, to reside within the said District, to attend all Paupers therein in case of sickness, to provide all medicines and medical and surgical appliances (except cod-liver oil, quinine, and trusses), generally to perform all the duties of a District and a Workhouse Medical Officer as prescribed by the Ministry of Health, and to contract with the Board of Guardians for the due performance of Vaccination within the said District at the usual fees.

The election will be made subject to the approval of the Ministry of Health.

Applications, stating age, accompanied by testimonials, with evidence of qualification and registration under the Medical Act, 1858, endorsed "Medical Officer," to be sent in to me on or before June 24th.

By Order,

Poor Law Offices, Ludlow. May 29th, 1929. ARTHUR W. WEYMAN, Clerk.

Cumberland Education COMMITTEE.

APPOINTMENT OF ASSISTANT DENTAL OFFICER.

The Committee invite applications for the above post (male or female). Applicants must be fully qualified Dentists. Salary £450, rising to £500 by two annual instalments (subject to deductions under the provisions of the L.G.O.S. Act), with allowance for travelling and subsistence while on duty.

Particulars and forms of application on receipt of stamped addressed foolscap envelope addressed to "The School Medical Officer, County Offices, Carlisle."

June 3rd, 1929. C. W. ALLAN HODGSON, Clerk to the Committee.

Administrative County of Essex.

APPOINTMENT OF MALE ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

The County Council of the Administrative County of Essex invite applications for the above post from registered medical practitioners specially qualified in the treatment of Tuberculosis, School Medical Inspection, and Maternity and Child Welfare, holding a Diploma of Public Health, and not over 45 years of age.

Preference will be given to candidates who have had at least three years' experience in Public Health work subsequent to their medical qualification. The salary attached to the appointment will be £600 per annum and travelling expenses. The person appointed will be required to devote his whole time to the service of the Council, and to perform such duties and to furnish such advice and assistance appertaining to his office as may be required, and to reside in such district of the County as the Council may decide. The appointment will be subject to three months' notice on either side.

Applications on the prescribed form, obtainable from the undersigned, and accompanied by copies of not more than three testimonials, which will not be returned, should be addressed to me and delivered at the Shire Hall, Chelmsford, not later than 10 a.m. on Monday, July 1st.

Shire Hall, Chelmsford.
June 11th, 1929.

JOHN H. GOOLD, Clerk of the County Council.

Manchester Union.

BOOTH HALL INFIRMARY FOR CHILDREN.

ASSISTANT MEDICAL OFFICERS.

The Guardians of the Manchester Union invite applications from medical practitioners who have had previous resident Hospital experience, for the appointments of Junior Resident Assistant Medical Officers (Third and Fourth) at the Booth Hall Infirmary for Children (750 beds), Charlestown Road, Blackley, Manchester.

The Hospital is a recognized Training School for Nurses and is equipped with all modern Hospital requirements.

The salary for one appointment is at the rate of £275 per annum and for the other at the rate of £250 per annum, with rations and furnished apartments, subject to the usual deductions under the Poor Law Officers Superannuation Act, 1896.

The successful candidates will be required to commence duty about August 1st next.

Applications, endorsed "Medical Appointment," accompanied by not less than three testimonials, must reach me not later than Saturday, June 22nd instant.

By Order,

Union Offices, All Saints, Manchester.
June 6th, 1929.

F. W. GREENHALGH, Clerk to the Guardians.

South-Eastern Hospital for
CHILDREN, SYDENHAM, S.E.26.

Applications are invited for the positions of ASSISTANT and RESIDENT MEDICAL OFFICERS (ladies). The appointment will be for six months from August 1st. Honorarium £75 and £100 per annum, with board, residence, and laundry. Ample time for reading. Applications, by letter only, stating age and qualifications, with copies of testimonials, should be sent to the Hon. Secretary, WALTER MASON, "Woodfield," Dacres Road, Forest Hill, S.E.23, to be received not later than Saturday, June 29th.

Manchester Northern Hospital
FOR WOMEN AND CHILDREN,
Park Place, Cheetham Hill Road, Manchester.

The Committee of Management require the services of a JUNIOR HOUSE SURGEON, duly qualified, to commence duties on July 1st. Salary £100 per annum, with board only.

Applications, stating age and experience, with copies of recent testimonials, to be sent to the Secretary, Mr. JAMES C. DANIELS, 38, Barton Arcade, Manchester, not later than June 21st.

Kent and Canterbury Hospital,
CANTERBURY.

RESIDENT MEDICAL OFFICER (male) required. Nine months' appointment. Salary £125 per annum, plus board, residence, and laundry. Applications, accompanied by copies of testimonials, should be forwarded to the undersigned immediately.

W. T. SOUTHWOOD, Secretary.

City of Leicester.

MATERNITY AND CHILD WELFARE MEDICAL OFFICER.

The Health Committee of the Leicester Corporation require the services (whole-time) of a Maternity and Child Welfare Medical Officer and Organizer of Infant Welfare Centres, age not to exceed 40 years. The duties will be those usually appertaining to such a post, including the supervision of Health Visitors, Inspection of Midwives and Nursing Homes, conducting Ante-natal and certain Infant Clinics. Ability to address meetings of mothers will be an additional qualification. Commencing salary £600 per annum. The person appointed will be required to contribute to the Corporation Superannuation Fund.

Applications, stating qualifications, age, experience, whether married or single, and accompanied by three recent copies of testimonials, to be sent to the undersigned not later than Wednesday, June 26th.

Health Dept., Leicester.
June, 1929.

C. KILLICK MILLARD, Medical Officer of Health.

County Council of the West
RIDING OF YORKSHIRE.

PUBLIC HEALTH LABORATORIES.

TEMPORARY PATHOLOGIST.

Application : post of Temporary must be registered n th experience of Public Health, Bacteriology, and Pathology. Salary at the rate of £750. Forms of application and particulars of the appointment may be obtained from the undersigned, to whom applications must be sent marked "Confidential," accompanied by copies of not more than three recent testimonials, not later than June 29th.

J. CHARLES McGRATH.

County Hall, Wakefield.
June 10th, 1929.

The University of Liverpool.

The Council invites Applications for the post of JUNIOR in the Department o £300 per annum. F application should be made to the George Holt Professor of Pathology.

Applications to be sent to the undersigned not later than Thursday, June 27th.

EDWARD CAREY, Registrar.

Warrington Infirmary and
DISPENSARY.

The Board of Management invite applications for the post of HOUSE PHYSICIAN (male, unmarried). Applicants, who must be of British nationality, must be duly qualified medical practitioners.

Salary £150 per annum, with board, apartments, and laundry. The post is tenable for six months, with probable promotion at the end of that time. The vacancy is due to the promotion of the present staff.

The Hospital has special departments—i.e., Orthopædic, Skin, Aural, Genito-Urinary, Gynæcological, etc.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent in at once to the undersigned.

By Order,

May 18th, 1929.

HENRY L. BOOT, Supt. & Secretary.

The Babies' Hospital,
NEWCASTLE-ON-TYNE.

Part-time non-resident MEDICAL OFFICER required August 1st.

Duties will occupy half the day, leaving time for examination or research work. The appointment is for six months, and subject to reappointment. Salary £150 per annum.

Applications, with two testimonials, must be lodged with the Secretary, 33, West Parade, Newcastle-on-Tyne, by July 1st.

Birmingham and Midland
HOMŒOPATHIC HOSPITAL AND DISPENSARY,
Easy Row, BIRMINGHAM.

A vacancy occurs for the post of HOUSE SURGEON at the above Hospital on July 1st. Salary £150, with board, residence, and laundry.

Applications, stating age and qualifications, accompanied by copies of three testimonials, should be sent to the Secretary at the Hospital immediately.

Administrative County of London

The London County Council invites applications for three appointments, as from October 1st, 1929, as PRINCIPAL MEDICAL OFFICER in its Public Health Department. The duties attaching to the positions will be mainly concerned with general public health work; school medical service; infectious diseases; tuberculosis; children's diseases; administration of hospitals, especially Poor Law Hospitals; and district medical work. Each of the officers appointed will be placed in charge of a division of the Department dealing with branches of the work and will be responsible to the County Medical Officer of Health.

The commencing salary in each case will be £2,000 a year, rising by £100 yearly to £2,500 a year. Candidates must be not more than 55 years of age on October 1st, 1929.

Forms of application, containing full details, may be obtained from the Clerk of the Council, The County Hall, Westminster Bridge, S.E.1. A stamped addressed envelope should be enclosed and forms must be returned by July 3rd, 1929.

Canvassing disqualifies.

MONTAGU H. COX, Clerk of the Council.

Administrative County of London

The London County Council invites applications for appointment, as from October 1st, 1929, as MATRON-IN-CHIEF in its Public Health Department. Candidates must be fully trained nurses and must have administrative experience of hospital nursing. The principal duties attaching to the position will consist in organising and supervising the nursing staff of the hospitals which will be transferred to the Council under the Local Government Act, 1929. The total commencing salary will be £750 a year, rising by £50 a year to £1,000 a year. Applicants must be not more than 55 years of age on October 1st, 1929.

Forms of application containing full details may be obtained from the Clerk of the Council, The County Hall, Westminster Bridge, S.E.1. A stamped addressed foolscap envelope should be enclosed. Forms must be returned not later than July 3rd, 1929. Canvassing disqualifies.

MONTAGU H. COX, Clerk of the Council.

Ingham Infirmary, South Shields.

Wanted, JUNIOR HOUSE SURGEON (male). Salary £150 per annum, with residence, board, and washing. No out-visiting. Candidates must hold registered qualifications in Medicine and Surgery. The appointment will be terminable by one month's notice. Applications, stating age and accompanied by copies (which will not be returned) of recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

JOHN POTTER, Secretary.

Nuneaton General Hospital,
WARWICKSHIRE. (76 Beds.)

HOUSE SURGEON (male) required. Salary £120 per annum, with board, lodging, and laundry. The appointment is tenable for six months, but application may be made for an extension of this period.

Candidates must be registered according to the provisions of the Medical Act and be Members of one of the Medical Protection Societies.

Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent at once to the Medical Secretary.

The Jessop Hospital for Women,
SHEFFIELD.
Gynæcological and Maternity Departments.
(145 Beds.)

The Board of Management invite applications for the appointment of Three ASSISTANT HOUSE SURGEONS (male) for six months from July 15th.

Salary £100 per annum, together with board, age, together with copies should reach the undersigned on or before June 29th

H. B. SHELSWELL, Secretary.

Golden Square Throat, Nose, and
EAR HOSPITAL, London, W.1.

HOUSE SURGEON (male) required for August 1st. Salary £100 per annum, with board and lodging.

Applications, stating age, qualifications, and experience, together with copies of three testimonials, should reach the undersigned on or before Tuesday, July 2nd.

F. P. CARROLL, Secretary-Supt.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after two years' Indian service for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

PAY.

The monthly rates of pay for European officers in the Service who have a "non-Asiatic" domicile are as follows:

Rank.	Service in Rank.	Basic Pay	Overseas Pay.	Year of Total Service.
1	2	3	4	5
		Rs.	Rs	
Lieut.		500	150	1st
			150	2nd
			150	3rd
Capt.	(i) During first 3 years' service as Captain ...	650	150	4th
			£15	5th
			£15	6th
	(ii) With more than 3 and less than 6 yrs.' service as Captain	750	£25	7th
			£25	8th
			£25	9th
	(iii) With more than 6 years' service as Captain	850	£25	10th
			£25	11th
			£30	12th
Major	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years' service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years' total service	1500	£30	13th and over
	(ii) During 24th and 25th years' service	1600		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

WAR SERVICE CONCESSIONS.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion, retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

OUTFIT ALLOWANCE.

Officers on appointment will receive an outfit allowance of £50.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

PENSIONS.

The rates of pension are as follows:

	Per annum.
	£
After 17 years' service for pension	400
„ 18 „ „ „	430
„ 19 „ „ „	460
„ 20 „ „ „	500
„ 21 „ „ „	540
„ 22 „ „ „	580
„ 23 „ „ „	620
„ 24 „ „ „	660
„ 25 „ „ „	700
„ 26 „ „ „	750
„ 27 „ „ „	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all, the revision being undertaken triennially. With effect from July 1st, 1927, a reduction of 4½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with a free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. Applications should be submitted as soon as possible. The Selection Committee will meet early in July to make nominations, and the selected candidates will be required to attend a course of instruction commencing about the 6th August, 1929.

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Wanted. — Indoor Assistant, (Finsbury Park), male, single. £250, all found. Afternoons generally free. Usual bond. —Address, No. 3526, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, young, single, for Colliery Practice in Glamorganshire. Salary £250, all found. —Address, No. 3664, B.M.A. House, Tavistock Square, W.C.1.

Wanted, July, Indoor Assistant, male, young, single. Private and panel Practice. Salary £250 to £300. — Dr. F. ROGERSON, Troy House, Morley, Leeds.

Wanted. — Assistant, male, English or Scotch, Protestant, for panel and private Practice, South Yorks. Salary from £350, with unfurnished house and use of small car. Usual bond. Dispenser kept.—No. 3515, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Part-time Assistant (outdoor) at once. Suitable for anyone doing Post-Graduate Course. — Address, No. 3656, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, view Partnership. University Graduate, M.B., L.M. (Rotunda); ex R.S.O.; G.P. experience; age 26. — Address, No. 3509, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by a Ceylonese Doctor, M.B., Ch.B.(Aberd.), L.M.(Rotunda). Newly qualified.—Address, No. 3514, B.M.A. House, Tavistock Square, W.C.1.

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Hospitality offered to Doctor and wife for taking CHARGE of small Country Practice in Yorkshire for two weeks from July 18th. — Address, No. 3515, B.M.A. House, Tavistock Square, W.C.1.

Locum, male, experienced, wanted in S.E. London, from July 12th to July 28th inclusive. Work light. Terms 6 gns. per week. State essential particulars.—Address, No. 3520, B.M.A. House, Tavistock Square, W.C.1.

Locums wanted by Woman M.B., B.S. Several years' experience general practice, private and panel. Excellent references. Free July 7th. Phone, Temple Bar 8820, or address, No. 3665, B.M.A. House, Tavistock Square, W.C.1.

Locum Tenens required (English or Scotch), under 35, for nine weeks from end of June. Near London. If mutually satisfied long Assistantship may follow.—Address, No. 3660, B.M.A. House, Tavistock Square, W.C.1.

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Locum Tenens.—Gentleman exp. in, and conversant with, Panel and G.P. work, is free June 17th to undertake work as above. Qual. 1907. [illegible]

Locums.—Experienced and reliable Doctor, had own practice, desires further Locums. Terms from 6 gns. per week. London preferred. If country, where car and driver available. Good references.—Address, "MEDICUS," 24, Colville Road, Bayswater, W.

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Partner wanted about 30, well-qualified and experienced in general practice. Share for disposal 1/3 of £1,530 p.a. Two years' purchase. Rapidly increasing district, Essex. No agents.—Address, No. 3502, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES.

Wanted. — Good-class Practice or PARTNERSHIP in town on, or near, Coast of Southern, South-Western, or South-Eastern County. Advertiser has ample capital, and higher qualifications. Strict confidence. Private advertisement. — Address, No. 3651, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.B., mixed Practice with sound panel, in London (S.W. pref., but not essential). Income about £1,500 p.a., with good house. Ample capital available. — Address, No. 3669, B.M.A. House, Tavistock Square, W.C.1.

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London, N.W.—Very old-estab. PRACTICE. Receipts £400 p.a. Small panel. Good opportunity for anyone devoting whole time. Rent £1 a week. Moderate premium considered.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

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Close to Harley Street.—Lease of a well-appointed RESIDENCE for sale, with possession of charming maisonette and consulting rooms. Remainder of house let as consulting rooms, producing about £1,000 per annum. Low figure will be accepted for quick sale.—Apply, YATES & YATES, 12A, Hanover Square, W.1. (Mayfair 0501.)

Dental Surgeon (married) requires ACCOMMODATION with Doctor having busy practice. Easy access Euston district. State fullest particulars.—Address, No. 3522. B.M.A. House, Tavistock Square, W.C.1.

Doctor or Dentist may have Consulting, Waiting, and Dispensing, or Mechanics' Rooms (furnished), in late Doctor's house, Charing Cross District, Glasgow.—Apply to DONALD, BINNIE & Co., Writers, 221, West George Street, Glasgow.

The Old Sanatorium (freehold). HARROW-on-the-HILL, Mount Park Avenue, comprising 12 rooms and offices; also the COTTAGE, 1 room 25 ft. by 24 ft., and 5 other rooms; 3 Temporary WARDS; 1¼ acres For Sale by AUCTION by Messrs. FAREBROTHER, ELLIS & Co., at the London Auction Mart, 155, Queen Victoria Street, on Thursday, June 27th, 1929, at 2.30 p.m., unless previously disposed of privately.—Particulars and conditions of sale of PERCIVAL HARDY, Esq. (Messrs. YOUNG, JACKSON, BEARD, & KING), Solicitor, 46, Parliament Street, S.W., and of the Auctioneers, 26, Dover Street, W.1, and 29, Fleet Street, E.C.4.

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Unique Freehold Detached HOUSE, specially suitable Doctor, Dentist, or other profession, near station and within 16 miles London. Five beds., four reception (one with separate entrance), large attic, loggia, tennis, garage, glasshouses, one acre garden and woodland. For sale. Bargain price.—Add., No. 3465, B.M.A. House, Tavistock Sq., W.C.1.

X-Ray and Electro-Medical APPARATUS (SECOND-HAND), by the best makers, in stock. Re-conditioned and in perfect working order. Very moderate prices. Write for list, stating requirements.—The COX-CAVENDISH ELECTRICAL Co. (1924), Ltd., 105, Great Portland Street, London, W.1.

The Medical Practitioner's Cash BOOK is a boon to the busy medical man. Saves time, worry, and Income Tax 12/6 post free. Money refunded if not satisfied.—CHARNWOOD PUBLISHING Co., Atlas House, Coalville, Leicester.

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APPOINTMENTS.—Contd.

The Victoria Hospital for CHILDREN,
Tite Street, Chelsea, S.W.3 (130 Beds.)

The Committee of Management invite applications for the post of HOUSE SURGEON (vacant August 1st). The appointment is for six months. Salary at the rate of £100 per annum, with board, lodging, and washing.

Candidates must attend the Hospital for the purpose of an interview at 3.30 p.m. on Friday, July 12th. (No travelling or other expenses will be paid). They must hold Surgical qualifications and be registered under the Medical Act.

Applications, with copies of three recent testimonials, should be sent to the Secretary not later than first post on Wednesday, July 10th.

By Order,
D. ST. JOHN BAMFORD, Secretary.

North Staffordshire Royal INFIRMARY, STOKE-ON-TRENT.
(350 Beds.)

The General Committee invite applications for the post of HOUSE SURGEON for Ophthalmic and Aural Departments. Salary £150 per annum, with board, residence, and laundry. The appointment will be for six months, renewable.

Applications to be sent to the undersigned immediately, together with two or three copies of recent testimonials. Preference will be given to candidates having had previous Hospital experience in Ophthalmic and Aural Departments. There are six residents—two medical, four surgical.

North Staffs Royal Infirmary, Stoke-on-Trent.
W. STEVENSON, Secretary and House Governor.

North Staffordshire Royal INFIRMARY, STOKE-ON-TRENT.
(350 Beds.)

The General Committee invite applications for the post of ASSISTANT HOUSE PHYSICIAN. Salary £125 per annum, with board, residence, and laundry. The appointment will be for a period of twelve months.

Applications to be sent to the undersigned immediately, together with copies of two or three recent testimonials. Preference will be given to candidates having had previous Hospital experience.

There are six Residents—two medical, four surgical.

North Staffs Royal Infirmary, Stoke-on-Trent.
W. STEVENSON, Secretary and House Governor.

North Staffordshire Royal INFIRMARY, STOKE-ON-TRENT.
(350 Beds.)

The General Committee invite applications for the post of HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry. The appointment will be for a period of twelve months. Applications to be sent to the undersigned immediately, together with copies of two or three recent testimonials. Preference will be given to candidates having had previous Hospital experience. There are six residents—two medical, four surgical.

North Staffs Royal Infirmary, Stoke-on-Trent.
W. STEVENSON, Secretary and House Governor.

Royal United Hospital, Bath.

Wanted, an ASSISTANT HOUSE SURGEON. Salary £100 per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three recent testimonials, must be sent addressed to the Secretary.

J. M. SHEPPARD, F.C.I.S., Secretary.

Oldham Royal Infirmary.

Applications are invited for the undermentioned posts, which become vacant on July 1st:—

of Women's and
of Male Wards.
of Out-patients
in this post a knowledge of Refractions is desirable).

Salary £175 in each case, with board, residence, and laundry. Appointments tenable for six months. Successful applicants may re-apply for a further six months' service.

Applications, with copies of not more than three recent testimonials, to be forwarded to the undersigned by first post, Saturday, June 22nd.

CHARLES D. DRAKE, Gen. Supt.

Royal Sussex County Hospital, BRIGHTON. (225 Beds.)

Required, TWO CASUALTY HOUSE SURGEONS (male) to fill one immediate vacancy and a further vacancy occurring beginning of August. Salary in each case £120 per annum, with board, residence, and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should be sent to the undersigned.

L. L. W. LANCASTER-GAYE, Secretary-Superintendent.

Harrogate Infirmary.

Applications are invited from British subjects (male) for the post of JUNIOR HOUSE SURGEON, which will become vacant on June 30th, on which date the successful applicant will require to take up the appointment. Salary is at the rate of £100 per annum, with board, lodging, and laundry.

Applications to be made on official form to be had from the undersigned and should be sent in immediately.

The Infirmary, Harrogate.
GEO. BALLANTYNE, Secretary.

Chester Royal Infirmary.
(211 Beds.)

Wanted, HOUSE SURGEON (male), to commence duties July 1st. Salary £120 per annum, with board, lodging, and washing. Candidates must be doubly qualified and registered.

Applications stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than June 22nd.

J. ROWSE MITCHELL, Secretary.
June 11th, 1929.

Chester Royal Infirmary.
(211 Beds.)

Wanted, HOUSE SURGEON (male) to the Ear, Nose, and Throat Department, and CASUALTY OFFICER, to commence duties on July 8th. Salary £120 per annum, with board, lodging, and washing. Candidates must be doubly qualified and registered. Applications, stating age, and accompanied by copies of testimonials, to be sent to the undersigned not later than June 27th.

J. ROWSE MITCHELL, Secretary.
June 11th, 1929.

Dewsbury and District General INFIRMARY.

HOUSE SURGEON wanted (male). Post vacant August 15th. Salary £200 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three testimonials, to be in not later than Thursday, June 27th, to be addressed to—

EDWARD HEMINGWAY, Gen. Secretary.

Central London Ophthalmic HOSPITAL,
Judd Street, St. Pancras, W.C.1.

There are vacancies for the posts of SENIOR and JUNIOR HOUSE SURGEON. Salaries at the rate of £120 and £100 per annum respectively, with board and residence in the Hospital.

Applications, with testimonials, from duly qualified candidates must be sent to the undersigned on or before June 29th.

H. R. S. DRUCE, Secretary.

South Devon and East Cornwall HOSPITAL, PLYMOUTH. (210 Beds.)

HOUSE SURGEON (male) required. Salary £100 per annum, with board, residence, and laundry. Appointment is tenable for six months, and is subject to renewal. Duties to commence July 1st. Candidates must be registered under the Medical Acts.

Applications, stating age and qualifications, together with copies of recent testimonials, to reach the undersigned by June 21st.

ARTHUR R. CASH, Gen. Supt. & Secretary.
June 11th, 1929.

South Devon and East Cornwall HOSPITAL, PLYMOUTH. (210 Beds.)

RESIDENT SURGICAL OFFICER (male) required. Salary £150 per annum, with board, residence, and laundry. The appointment is tenable for six months and subject to renewal. Duties to commence July 6th. Candidates must be registered under the Medical Acts.

Applications, stating age and qualifications, together with copies of recent testimonials, to reach the undersigned by June 21st.

ARTHUR R. CASH, Gen. Supt. & Secretary.
June 11th, 1929.

Birkenhead & Wirral Children's HOSPITAL,
Woodchurch Road, BIRKENHEAD.

HOUSE SURGEON.

The Board invite applications for the post of House Surgeon (female), for a period of six months from September 1st. Honorarium at the rate of £100 per annum, with board, residence, and laundry. Applications, together with copies of testimonials, should be addressed to the Secretary at the Hospital, not later than June 29th.

Darlington General Hospital.

HOUSE SURGEON wanted, male, British nationality, fully qualified, unmarried. Salary £150 per annum, board, residence, etc.

Applications, stating experience, with copies of two recent testimonials, to be addressed to me forthwith.

A. RIDDLE, Secretary.

Poplar Hospital for Accidents, East India Dock Road, Poplar, E.14.

The Committee invite applications for the appointment of SECOND RESIDENT OFFICER, at a salary at the rate of £175 per annum, all found. Candidates must have held appointment as House Surgeon at a Hospital. Applications must be accompanied by a statement of the candidate's qualifications, and be forwarded to the Secretary, with three recent testimonials, not later than Friday, June 21st. The appointment is for a period of six months.

Seamen's Hospital Society, Greenwich, S.E.

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, for six months from July 1st. Salary £110 per annum, and a proportion of fees, with board, residence, and washing. Candidates must be male. Applications, with copies of three testimonials, to be sent in by June 17th to the undersigned.

R. E. V. BAX, Secretary.
Greenwich.
June 10th, 1929.

Deptford Babies' Hospital, ALBANY INSTITUTE.
Creek Road, Deptford, S.E.8.

Vacancy for NON-RESIDENT HOUSE PHYSICIAN (woman). Appointment for six months from July. Honorarium at the rate of £50 per annum.

Apply Secretary.

Macclesfield General Infirmary.
(100 Beds.)

Wanted, RESIDENT HOUSE SURGEON. Salary £120 per annum, with board and residence. Candidates must be fully qualified and registered.

Applications, with copies of testimonials, to be sent to the undersigned

A. E. HANRAHAN, Secretary.

Lowestoft and North Suffolk HOSPITAL.

HOUSE SURGEON (male) preferably with knowledge of X-ray. Salary £120 p.a., with board, residence, and laundry.

Applications, with copies of three recent testimonials, to the Honorary Medical Supt.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A RESIDENT MEDICAL OFFICER is required at the Country Branch Hospital, Tadworth Court, Tadworth, Surrey, on July 4th.

Gentlemen are invited to send in their applications to the Secretary before 12 o'clock on Monday, July 1st, accompanied by copies of not more than three testimonials given specially for the purpose.

The appointment is made for six months, but the successful candidate will be eligible for re-appointment.

Salary at the rate of £250 per annum, with board-residence in the Hospital, laundry allowance at the rate of £10 per annum, and, on re-election for a further period of six months, £18 18s. for the purpose of providing a substitute during annual leave of a maximum of four weeks.

Candidates must be unmarried and possess a legal qualification to practise, and must have held a responsible resident appointment at a General Hospital.

All candidates must be in attendance on Wednesday, July 3rd, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
June, 1929. Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A PART-TIME JUNIOR CASUALTY OFFICER is required on July 4th, to assist in the Casualty Department from 10 a.m. to 3 p.m. (Saturdays 10 a.m. to 1 p.m.), under the direction of the Casualty Officer.

Candidates must be registered medical practitioners, and have held a responsible Hospital appointment.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, July 1st, accompanied by copies of not more than three testimonials written specially for the purpose.

The appointment is made for six months and is non-resident.

Salary at the rate of £150 per annum, with luncheon.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, July 3rd, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
June, 1929. Secretary.

Westmorland Sanatorium,
MEATHOP, GRANGE-OVER-SANDS.

The Governors invite applications from registered medical practitioners (male) for appointment as MEDICAL SUPERINTENDENT of the above Institution. The successful candidate will also act as County Tuberculosis Officer for Westmorland under the County Council. The salary is £800 per annum, rising by yearly increments of £50 to £1,000. The use of a house (rent and rates free) will be provided, with existing furniture and electric light. Certain travelling expenses will be allowed. Preference will be given to candidates possessing a Diploma in Public Health and experience in X-ray work.

Applications, stating age, experience, and qualifications, accompanied by copies of three recent testimonials, must be addressed to the undersigned not later than July 2nd.

H. LEIGH GROVES, Esq.
Holehird, Windermere.

Ancoats Hospital, Manchester.

ASSISTANT PATHOLOGIST (part-time). Salary £150 per annum. Lady or gentleman. Appointment for twelve months. Applications, stating age, experience, and appointments held, together with copies of three recent testimonials, to be forwarded not later than June 18th to the undersigned.

HERBERT J. DAFFORNE,
General Supt. & Secretary.

Cameron Hospital,
WEST HARTLEPOOL.

HOUSE SURGEON, to commence duty on July 2nd. Salary £150 per annum, with board, lodging, etc. Applications, with copies of testimonials, and particulars of age and qualifications, to Hon. Secretary, Medical Board.

Salford Royal Hospital.
(263 Beds.)

Applications are invited for the following vacancies which will occur in the Resident Medical Staff (male) on June 30th next:

HOUSE PHYSICIAN. Salary at the rate of £125 per annum.

HOUSE SURGEON (attached to the Genito-Urinary Department). Salary at the rate of £125 per annum.

HOUSE SURGEON to Gynæcological, Aural, and Skin Departments. Salary at the rate of £125 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

Forms of application, which may be obtained from the undersigned, must be delivered without delay.

By Order of the Board,
Salford Royal Hospital, Manchester. GEORGE RUDDLE, Gen. Supt. & Secretary.
June 3rd, 1929.

Leicester Royal Infirmary.
VENEREAL DISEASES DEPARTMENT.

A qualified Female MEDICAL OFFICER is required for this Department. Clinics on three days per week of two, but not exceeding three, hours each. The successful candidate will give assistance in the In-patients' Wards of the Department when necessary, and will be required to commence her duties on appointment. Remuneration at the rate of £4 10s per week. Grant of £10 per annum for Locum Tenens.

Applications to the House Governor and Secretary at the Infirmary not later than June 24th.

June 8th, 1929.

Belgrave Hospital for Children
(Incorporated), 1, Clapham Rd., S.W.9.

The *Committee of Management invite* applications for the post of ASSISTANT PHYSICIAN. Candidates (men) must be Graduates in Medicine of an English University and Fellows or Members of the Royal College of Physicians of London. There is an honorarium of 50 guineas per annum attached to the post. Applications, with copies of testimonials, must be delivered to the undersigned by Tuesday, *July 9th, from whom further information may* be obtained.

By Order,
THOMAS CLAPHAM, Secretary.

Bolton Infirmary & Dispensary.
SECRETARY'S OFFICE.
(233 Beds, including Auxiliary Hospitals.)

Applications for the appointment of HOUSE SURGEON, salary £150 per annum, with apartments, board, and attendance, are invited from gentlemen having a registered Medical and Surgical qualification. The appointment will be for six or twelve months, from July 1st.

Applications, stating age and nationality, with copies of testimonials, should be forwarded to the undersigned (from whom further particulars may be obtained) not later than Monday, June 24th.

ALBERT E. BRISCOE, Secretary.

Children's Hospital, Balaam St.,
Plaistow, E.13.

HOSPITAL OF THE INVALID AND CRIPPLED CHILDREN'S SOCIETY.

The Committee invite applications for the post of HONORARY ORTHOPÆDIC SURGEON to the Out-patients' Department. Attendances of Out-patients average thirty-five per week. (Probably five beds for In-patients will be available shortly.)

Applications, stating qualifications, experience, etc., should be sent to the undersigned on or before June 24th next.

R. I. HOWARD, Secretary.

St. Andrew's Hospital,
Dollis Hill, N.W.2.

HONORARY SURGEON FOR DISEASES OF THE EAR, THROAT, AND NOSE.

Applications are invited for the post of Hon. Surgeon for Diseases of the Ear, Throat, and Nose. There is no Out-patient Department. Candidates must be Fellows of the Royal College of Surgeons of England.

Applications, with copies of recent testimonials, should be sent not later than June 25th to the Administrator.

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Berkshire. — About £700 General mixed Country PRAC. Panel about £287 p.a. Few mids. Fee 7/6. Excellent house and garden.—No. 8[illegible].

Cambridgeshire. — Nearly £[illegible] p.a. Appts. and panel over £[illegible] Visits 3/6 up. House, 7 bed., etc., good gar. to rent.—No. 8487.

London, S.E.—About £800 p. Visits 2/6. Panel over 700. C. house, rent £50 p.a.—No. 8486.

Lancs.—1/3 or 1/2 share of [illegible] £2,400 after prelim. assistancy. Fe £500. Mixed class. Good house, with 4 [illegible] 2 attics, etc.—No. 8454.

Bucks.—About £2,800 p.a. 1 share. Appts. £200 p.a. Pan[illegible] 1,900. Visits 3/6—10/6. Mids. 2–5 g[illegible] House, 4 bed., to rent; Prem. 1½ yrs.—No. 8[illegible]

N.E. Coast.—Over £7,000 p. 1/5 share, increasing to 1/3. Appts. £70 p.a. Panel 750. Mids. 3–7½ gns. Visits 5/- to 10/6. Good house, 8 bed., etc.—No. 8473.

Suffolk.—Over £1,000 p.a., unopp. Old-estab. Panel 530. Appts. £50 p.a. Usual fees. Good house, large gard.—No. 8472.

Lancs Town.—1/2 share of about £3,000 p.a. Panel over 2,500. Exc[illegible] house, good garden. Five bedrooms. Separate surgery. Premium 1½ years.—No. 8472.

S.W. County. — 1/2 share of about £3,000 p.a. Appts. £125 p.a. Panel about £520 p.a. Fees up to 21/-. Good house, 4 bed., etc., large gard. Sep. sgy.—No. 8458.

Western Suburb.—About £1,500 p.a. Non-panel, non-disp. Mids. 5 gns. up. Visits 5/- up. Good house, gard.—No. 8443.

Kent.—Country Practice. About £1,000 p.a. Panel about 400. Appts. over £50 p.a. Visits 3/6 to 10/6. Ho[illegible] 5 bed., etc. Extensive grounds.—No. 8463.

Birmingham.—About £2,300 p.a. Panel 1,700. Mids. from 2 gns. Visits 3/6 up. Good house, 4 beds., etc. Large garden. Two branches. Suitable for two.—No. 8466.

N.W. Coast Town.—Over £3,000 p.a. Old-established. Panel over 1,500. Usual fees. Medium house to rent.—No. 8465.

Staffs.—About £1,200 p.a. Good-class non-panel PRACTICE. Visits 5/- up. Good house available.—No. 8464.

Wilts. — Unopp. — About £850 p.a. Appts. about £100 p.a. Panel about 600. Visits 3/- up. Mids. 3 to 10 gns. Good house, nice garden, rent £52.—No. 8447.

Kent. — £1,500 share in non-panel, non-dispensing Practice. Appts about £1,200 p.a. Visits 5/- to 7/-. Mids 5 to 10 gns. Large house to rent.—No. 8460.

Glos.—Unopp. — About £1,200 p.a. Mids. 2 to 8 gns. Visits 3/6 to 21/-. Panel 1,100. House, 3 bed., etc., large garden. House and Practice £2,500.—No. 8455.

Co. Durham. — Half Share of about £2,800 p.a. Panel 2,600. Appts £300 p.a. Mids. from 30/-. Visits 2/6 to 7/6. House, 5 bed., etc.—No. 8453.

N. Wales Coast.—About £1,750 p.a. Panel and appts. about £400 p.a. Mids. 2 to 5 gns. Visits 3/6 to 31/6. House, 4 bed., etc. Separate surgery.—No. 8451.

Home Counties.—Aver. £2,800 p.a. Up to 2/5 share for sale, short Ass[illegible] ancy, possible early succession. Appts. £90 p.a. Small panel. Visits 3/6 up. Mids. 2 gns. up. House, 5 bed., etc., to rent.—No. 8441.

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FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants prepared to pay part of purchase money down and balance by instalments over 7 years (on the security of a Life and Sickness Policy). Full particulars on application to Mr. Percival Turner.

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HANTS.—(Coast).—Well-established private and panel PRACTICE. Receipts average nearly £1,600 p.a. *Premium* 1 years purchase.

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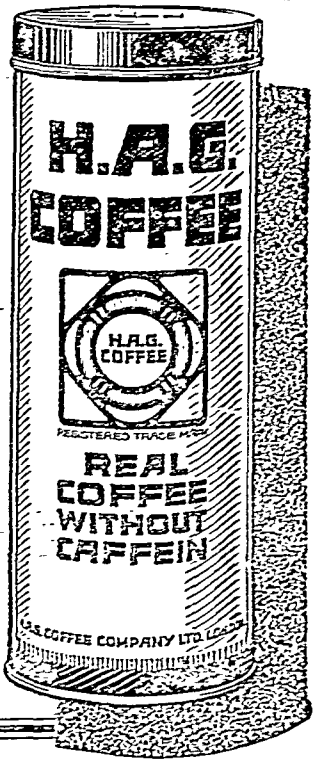

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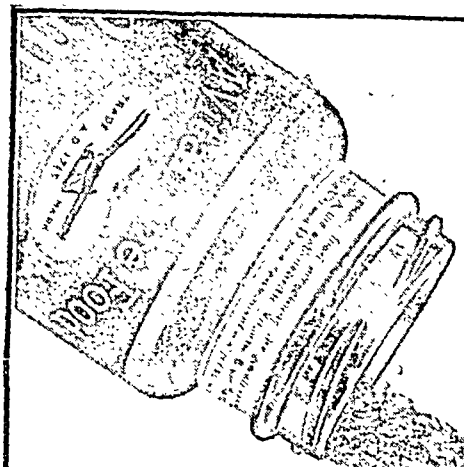

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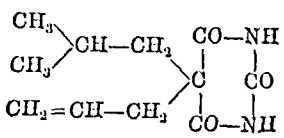

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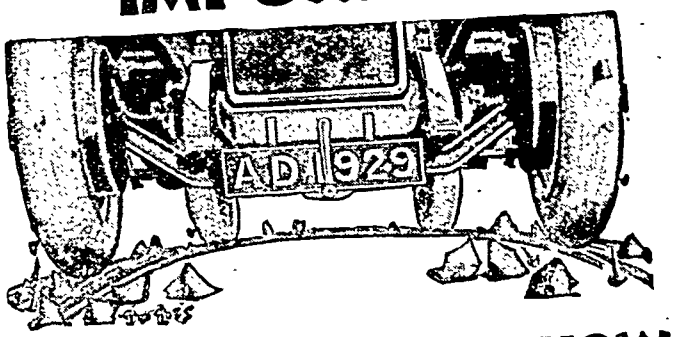

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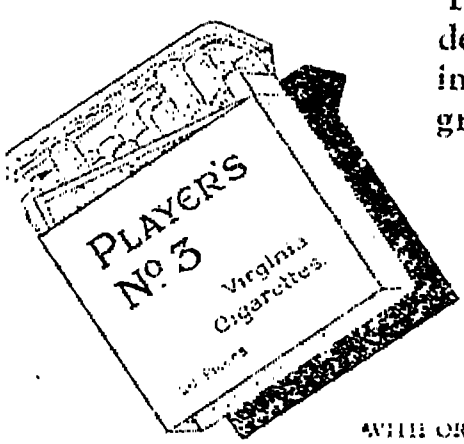

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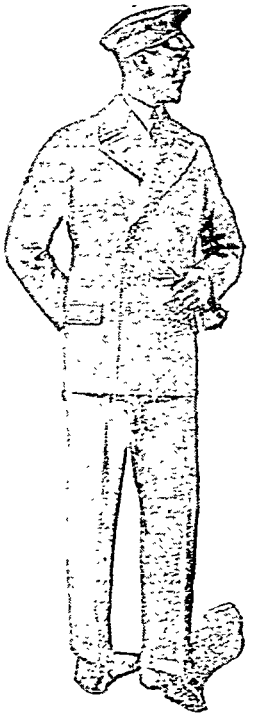

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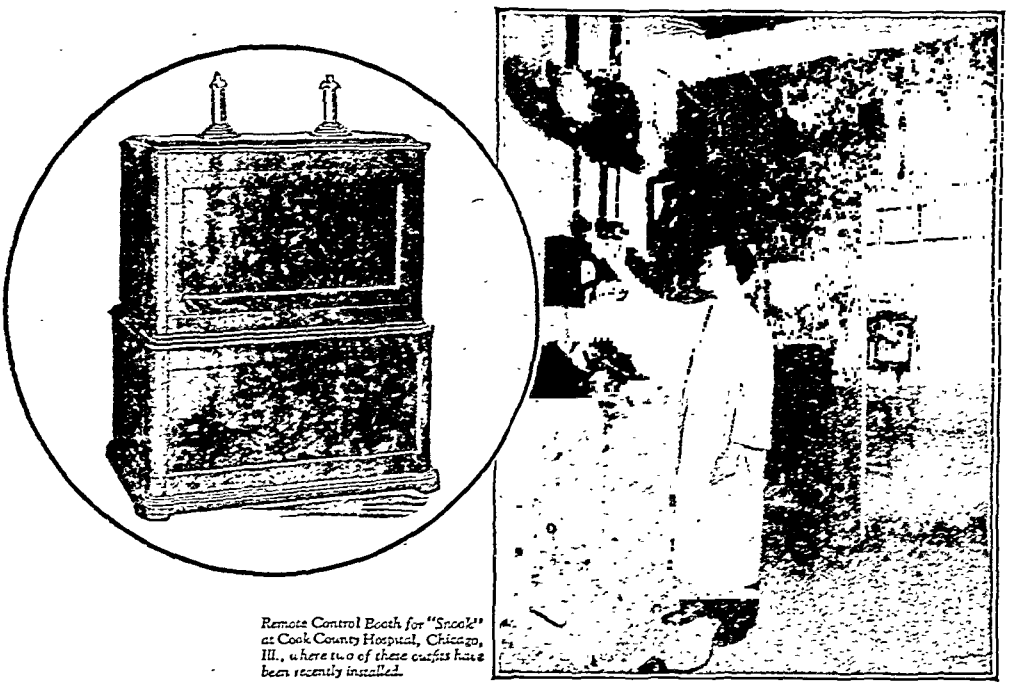

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*Lin. Belladon. Meth., 5 lb. @ 2/2 lb.; 1 lb. @ 2/5.
*Liq. Æther Nitros. (Sp. Æther Nit. Substitute), 5 lb. @ 2/3 lb.
*Liq. Ammon. Acet. Conc. (1-7), 6 lb. @ 1/- lb.
" Aromat., 6 lb. @ 1/- lb.
Petroleum Jelly Flav., B.P., 7 lb. @ 7½d. lb.
Bismuth Carb., 3 lb. @ 11/11 lb.
Chloroform Pur., 8 lb. @ 3/4 lb.
Pot. Bromide, 7 lb. @ 2/1½ lb.
Quinine Sulph., 4 oz. @ 2/3 oz.

PILLS TASTELESS COATED.

Potass. Iodid., B.P., 3 lb. @ 18/6 lb.
Sod. Sulph. Feathery cryst., 7 lb. @ 3d. lb.
Sp. Æther Nit., B.P., 4½ lb. @ 4/6 lb.; 1 lb. 4/10
Sp. Ammon. Aromat., B.P. 5 lb. @ 3/6 lb.
Syr. Cascara Aromat., B.P., 6 lb. @ 2/9 lb.
" Glycero-Phosp. Co., 6 lb. @ 1/9 lb.

SYRUPS.

Aurant., B.P., 7 lb. @ 1/10 lb.
Easton's, B.P., 7 lb. @ 1/6 lb.
Ferri Iodid., B.P., 7 lb. @ 1/10 lb.
Ferri Phosp. Co., 7 lb. @ 8d. lb.
Hypophosph. Co., B.P.C., 7 lb. @ 1/- lb.
Pruni Virg., B.P., 7 lb. @ 1/- lb.
Rhamni, 7 lb. @ 1/2 lb.
Rhei, B.P., 7 lb. @ 1/1 lb.
Scillae, B.P., 7 lb. @ 8d. lb.
Sennae, B.P., 7 lb. @ 1/2 lb.
Tolut., B.P., 7 lb. @ 10½d. lb.

TABLETS COMPRESSED.

	Per 1,000.
Blaud's (Sugar-coated), gr. 5... ...	... 3/10
Nitroglycerini, B.P., gr. 1-50th ...	... 5/-
Perchloride of Mercury (Coloured)	... 15/-

One Tablet in 1 pint of water is equivalent to 1 in 1,000.

Thyroid Gland, gr. 5... ... ... 12/6

We can supply smaller quantities at slightly increased rates.

We endeavour to adhere to prices quoted, but as same fluctuate from day to day, they must be considered as subject to change without notice.

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in 5-lb. Bottles.

	B.P. Aquos.		B.P. Aquos.
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Benzoin Co.	4/7	— Nucis. Vom.	3/10 1/4
Camph. Co.	... 3/-	1/6 Opii ...	... 5/7 4/6
Card. Co.	... 2/6	1/6 Quin. Ammon.	3/3 —
Gentianae Co.	2/8	1/6 Rhei Co.	... 2/8 1/9

Ung. Acid Boric., B.P., 28 lb. pail @ 11d. lb.
" Hydrarg., B.P., 7 lb. @ 4/6 lb.
" Ammon., 7 lb. @ 1/11 lb.
" Ichtaimolis, B.P.C., 7 lb. @ 1/10 lb.
" Zinci Ox., Benz., 28 lb. @ 1/- lb.

*Minimum quantity at these prices: Home Trade 3, Export 12 Winchester Quarts assorted. We can supply smaller quantities than advertised at slightly increased rates.

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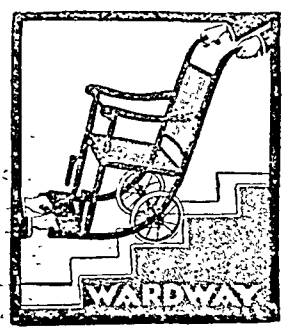

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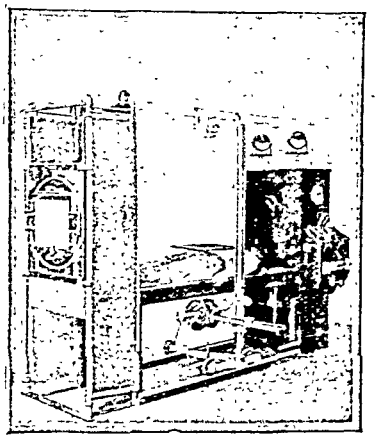

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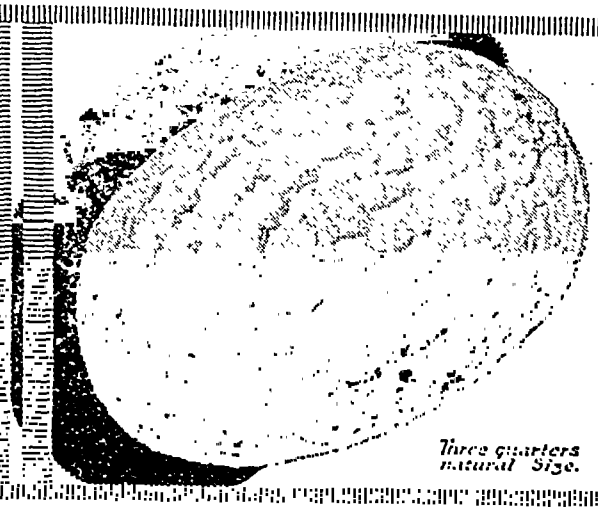

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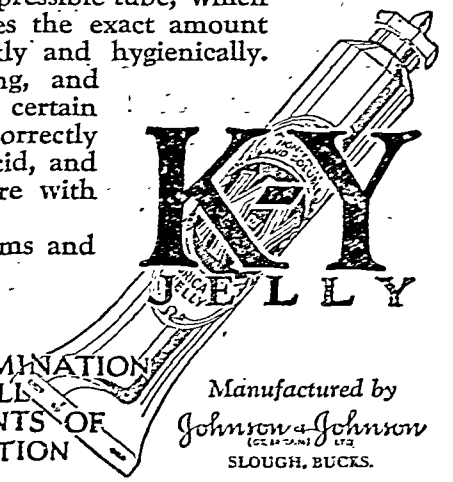

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All cases under treatment so far have recovered completely

The importance of this discovery and its possible influence upon the maternal mortality rate are obvious. The inference is that Radiostoleum will prove of inestimable value in the prevention of puerperal sepsis if it be administered regularly during the pre-natal period.

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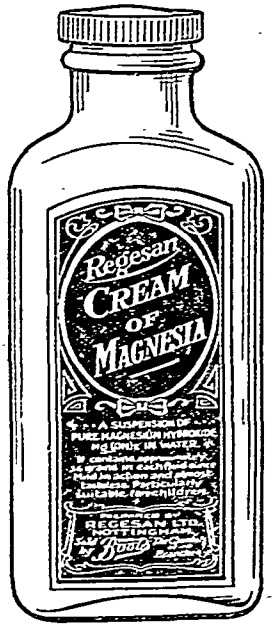

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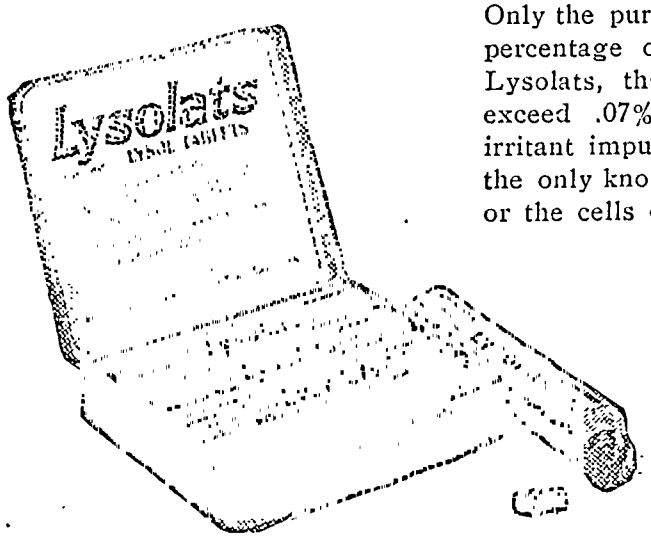

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M 230

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Compound Syrup of Hypophosphites

TRADE **"FELLOWS"** MARK

accelerates Convalescence, restores Energy and Vitality; and for over sixty years has been known as

"THE STANDARD TONIC"

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Frank Cooper's "Oxford" Marmalade is made from an exclusive recipe which preserves the health-giving qualities of the finest Seville oranges. No colouring, flavouring matter or preservatives whatever are used.

Prolonged boiling and retention of the pip almost till the last stage of this process gives Frank Cooper's "Oxford" Marmalade that full piquant flavour. A healthy promoter of appetite—a tonic to the stomach and liver—Frank Cooper's "Oxford" Marmalade is a stimulating addition to the breakfast menu.

A one-pound jar of Frank Cooper's "Oxford" Marmalade will be sent free to any medical practitioner on request.

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"Jack Spratt could eat no fat."

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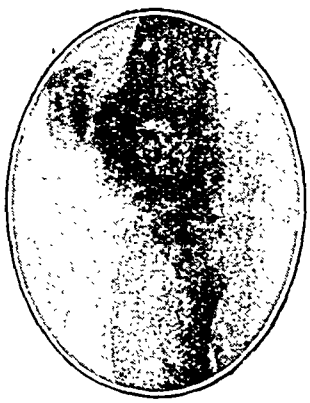

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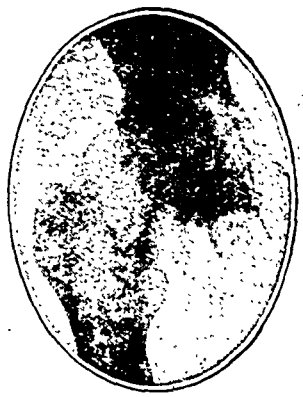

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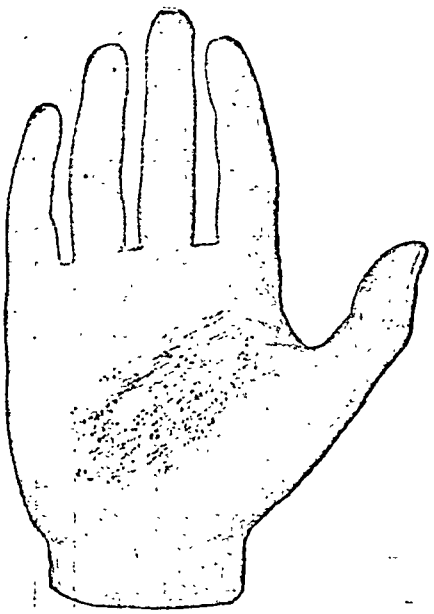
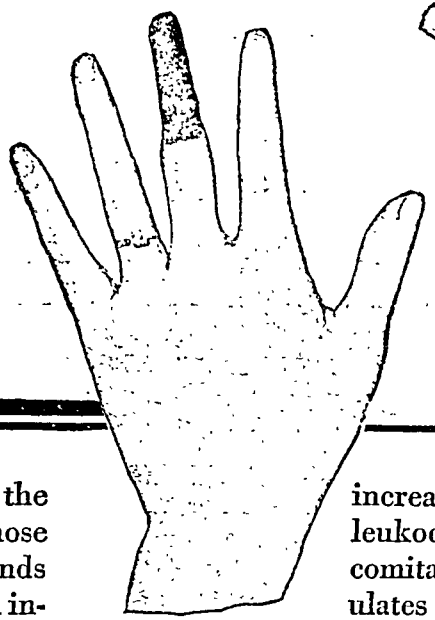
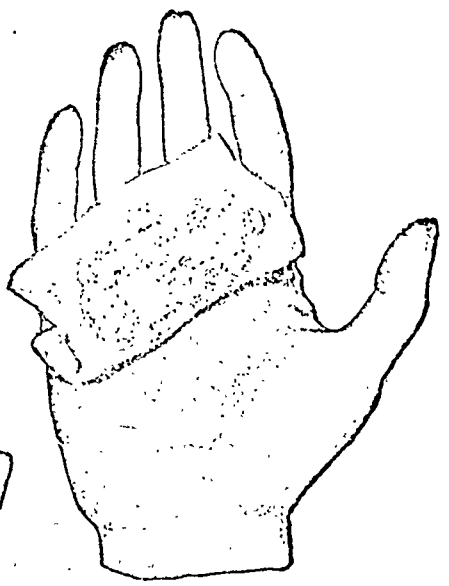


Contused wound of hand, with emery ground into the wound.



Carbolic acid gangrene of finger. Result of wrapping in cloths saturated with 5 per cent carbolic acid.



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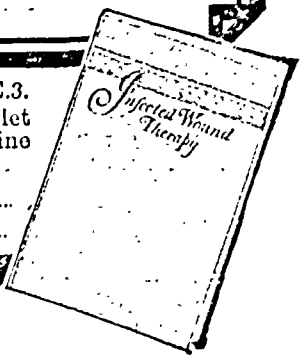

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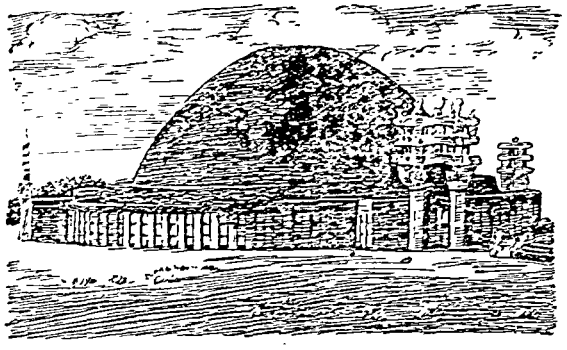
EXAMPLE OF CHARACTERISTIC EARLY INDIAN ARCHITECTURE: THE *STŪPA* FROM WHICH WAS EVOLVED THE HINDOO TEMPLE.—The most important outward testimony to the work of the pioneers of civilisation in ancient India is to be found in architecture, to which all other arts are accessory. Indian architecture springs out of religion, but not primarily from Buddhism: it has its roots in Indo-Aryan beliefs and ritual, as we know them in the Vedas. In Vedic times, the *stūpa* or *tope* (Hindoo *tope* from Sanskrit *stūpa*, a mound) was the tomb of a king or chieftain, and the form in which it survived was originally the tumulus. It then became a religious symbol used to mark sacred places. The *stūpa* here reproduced shows its usual form. It consisted of a solid structure of bricks laid in a cement of mud, with an outer facing of dressed stone overlaid with cement. The railing originated in the wooden fence which enclosed the Vedic sacrificial area; within it was the Path of Auspiciousness, perambulated by the pilgrims. The four gateways mark the cardinal points. Later, the *stūpa* became the central portion of a church, at the junction of nave and aisles. The *stūpa* itself belongs to the time of Asoka; the gateways and sculptures appear to have been added a little later.



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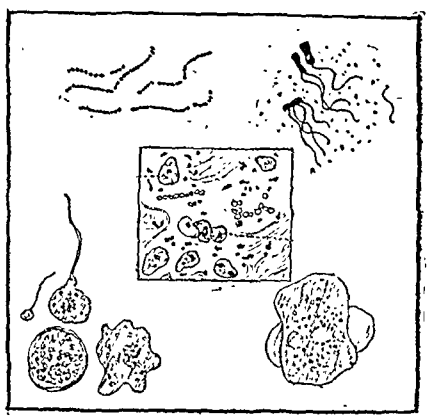
When the Colon Bacilli Revolt



WHEN the normally non-pathogenic colon bacilli rebel under the influence of foreign invaders or because of the putrefaction and toxæmia resulting from constipation and fæcal impaction, the consequences may be grave in the extreme.

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A British Medical Association Lecture
ON
DIFFICULT LABOUR.*

BY
R. W. JOHNSTONE, C.B.E., M.A., M.D., F.R.C.S.Ed.,
PROFESSOR OF MIDWIFERY AND THE DISEASES OF WOMEN, EDINBURGH UNIVERSITY.

EVERYONE with obstetrical experience will agree that the commonest cause of difficulty in labour is the occipito-posterior position of the vertex. Probably the second most frequent cause is breech presentation.

OCCIPITO-POSTERIOR PRESENTATIONS.

Considering how small is the deviation from the normal, the amount of trouble and worry which occipito-posterior positions cause is astonishing. Difficulty, of course, arises mostly in those cases in which the occiput fails to rotate spontaneously to the front, and this is due mainly to a lack of complete flexion of the head. It is elementary knowledge that an imperfectly flexed head throws larger diameters across the pelvis than a completely flexed one, and in the case of occipito-posterior positions this results in, first, late engagement of the head at the brim of the pelvis; secondly, a tendency to arrest and impaction of the head when it is in the cavity; and thirdly, great difficulty in the birth of the head, face to pubes.

The late engagement or arrest of the head at the brim, which occurs in some occipito-posterior cases, is largely due to the wide posterior part of the head trying to get into the pelvis through the sacro-cotyloid diameter, which is rather small for it. An important corollary is that this arrest of the posterior part of the head tends to a still further undoing of flexion and a consequent increase in the antero-posterior measurements of the head thrown across the pelvis. The degree of misfit which is thus present between the presenting part and the brim of the pelvis may lead to the membranes protruding through the partially opened os in a sausage shape; and, as always, such membranes are peculiarly liable to early rupture. Cases, therefore, in which there is considerable arrest of the head at the brim of the pelvis are often further complicated by the labour becoming a dry one. The result in such cases is a prolonged and painful first stage, dragging on hour after hour and it may be day after day, with intervals during which the pains, in some cases never properly efficient or regular owing to the lack of proper pressure by the head and the bag of membranes upon the region of the internal os, tend to cease altogether.

In time, however, the cervix becomes completely dilated and the moulded head slowly passes down through the pelvis, delay being experienced throughout, owing to the large diameters of the head. The crucial point is when the head reaches the pelvic floor. Where the flexion has been complete and the first stage more or less normal, the occiput rotates to the front without any great difficulty, but in the cases which we are considering, where flexion is imperfect, there is often great delay in the occurrence of rotation. In many cases the head remains in the oblique diameter of the pelvis simply because the uterus has become too exhausted to cause rotation; in other cases the deflexed head becomes impacted upon the ischial spines, while in still others, in which the degree of deflexion is even more marked, the sinciput becomes the leading part of the head, and is rotated to the front, while the occiput slips into the hollow of the sacrum. Delivery with the head in this position involves the passage through the outlet of the pelvis of diameters which are probably from a half to three-quarters of an inch longer than in a normal labour, with the consequence that great force must be exercised either by the uterus or by the forceps, and that a deep tear of the perineum is almost inevitable. All of us have experienced cases illustrating difficulty at any or all of the stages I have mentioned, but it may be helpful to consider them calmly in an atmosphere more judicial than the lying-in chamber.

* Abstract of a lecture delivered before the Blackburn Division on February 27th.

Diagnosis.

Before making any remarks with regard to treatment I must refer to diagnosis, because every year's increasing experience has brought it home to me that failure to recognize the occipito-posterior position is a more fruitful source of worry and suffering and disappointment than almost any other diagnostic error in midwifery practice.

Ante-natal examination will, in most cases, reveal the occipito-posterior position. The method of examination is abdominal and depends in the main upon failure to recognize the continuous resistance of the back running down the front of the uterus on one or other side of the middle line. Secondly, the small parts of the foetus are palpable with ease on both sides of the middle line. Thirdly, the trunk of the child may be felt well round to one or other flank, usually the right. Fourthly, the foetal heart is best heard well round to the flank, but may sometimes be heard also anteriorly on the opposite side of the abdomen. This last is a point of importance, as it indicates that the child is lying with its spine straightened and its chest thrown forwards, and this implies a degree of undoing of the flexion of the head.

Owing to the difficulty which the head, especially if incompletely flexed, may have in entering the brim of the pelvis, it tends to remain movable above the brim, even in a primigravida, until the commencement of labour. Failure of the head to engage in the brim of the pelvis at least a fortnight before labour in a primigravid woman should always make one think hard, and lead, if necessary, to revision of the pelvic measurements; but if these are quite satisfactory, then the posterior position of the head is enough to account for the failure to engage. Up to about five or six weeks before full time the child may quite readily change its position spontaneously, and come to lie occipito-anterior; but it rarely changes within the last fortnight, indeed comparatively seldom within the last month, and I think that cases of occipito-posterior position diagnosed in the later weeks should be treated by an effort to correct the position.

The only method that I know which affords any prospect of success is the one described by Dr. R. C. Buist of Dundee. The patient is asked to come back, bringing with her two pillow-slips and a bolster-slip. One pillow-slip is folded into a firm cylindrical pad or roller, which is then placed on the right flank (I am assuming a right occipito-posterior position in this case), in order to press the anterior shoulder of the child towards the middle line. The other pillow-slip is folded in four and placed as a firm pad on the left side of the lower abdomen to press back the limbs of the child, while the bolster-slip is fixed as a firm abdominal binder to keep the pads in position. The patient is then told to go home, to rest as much as possible during the next forty-eight hours, and to take a dose of castor-oil the morning after the pads have been applied. In a series of close upon a hundred cases, regarding which careful notes were taken in our ante-natal department, Haultain[1] found that the occiput rotated to the front in rather over 80 per cent. Once it has come round to the front the head tends to engage, especially if a firm binder be kept in position to press it into the pelvis, and relapse cannot occur. After the head has begun to engage with the occiput posterior, any attempt to rotate it by means of pads is, of course, useless, and the first stage of labour must be allowed to complete itself before any question of intervention arises.

During labour the diagnosis can again be made by the abdominal method, but an aseptic vaginal examination will further confirm it. The main point here is the recognition of the anterior fontanelle lying to the front, and it is important to try to feel also the posterior fontanelle, usually pretty high up in one or other posterior quadrant of the pelvis, and to attempt to assess the relative levels of the two fontanelles. This gives one an idea of the degree of flexion of the head. If, at the end of the first stage, there is still any doubt as to the exact position of the head, the point can be settled beyond all question by feeling the ear of the child. The one or two fingers which are sufficient to make the vaginal examination in a normal case are quite inadequate in an abnormal case. The secret of correct diagnosis in all cases of difficult labour is

"chloroform and the whole hand." Under anaesthesia, and with aseptic precautions, the hand is slipped up the side of the head until the ear is felt, and when it is flattened out on the head, the pinna points towards the occiput. The importance of this method of diagnosis is very great, because, as I have already indicated, so many disasters result from allowing the case to drift on without the attendant having an accurate knowledge of the position of the head, and therefore of the real cause of the delay.

Difficulties are likely to be encountered only where the head is imperfectly flexed; if, therefore, we can at a comparatively early stage recognize that we are dealing not merely with an occipito-posterior presentation, but with an imperfectly flexed head, then we are in a position to consider whether or not early intervention is advisable. Signs which point significantly to imperfect flexion are, first, delay in the engagement of the head; secondly, sausage-shaped membranes; thirdly, rupture of the membranes early in the first stage; fourthly, ability to hear the foetal heart through the chest of the child; and fifthly, the anterior fontanelle lying on a lower level than the posterior, as felt by vaginal examination. Look at this table, based upon an analysis by Miller[2] of over 750 cases of occipito-posterior positions in our hospital work in Edinburgh.

Signs of Imperfect Flexion.	No. of Cases in which Noted.	Termination.	
		Malrotation or Non-rotation.	Spontaneous Forward Rotation.
Early rupture of membranes ...	197	145 (74 %)	52 (26 %)
Delayed engagement of head ...	139	107 (77 %)	32 (23 %)
Foetal heart heard anteriorly as well as in flank	103	78 (76 %)	25 (24 %)
Two or more of above signs noted	141	81 %	19 %
Normal engagement, and rupture of membranes near full dilatation of os. Heart not heard in front	332	33 (10 %)	299 (90 %)

The moral to be drawn from this table is that if we can definitely recognize a lack of complete flexion from the presence of two or more indications we may justifiably and advantageously intervene early, in the interests of both mother and child; experience tends to show that when intervention has to be undertaken late in labour both patients are more exhausted, and the actual intervention itself is more difficult.

Management.

I am no advocate of unnecessary intervention in labour—very much the contrary, indeed. In the great majority of occipito-posterior cases the occiput will rotate to the front, if given sufficient time; it is only where one has definite evidence that in a given case the head is so deflexed that it will probably not rotate spontaneously to the front that I think one should intervene early. Such cases will probably form only from 10 to 20 per cent. of all occipito-posterior presentations. The method of intervention indicated is manual rotation, and with the head at the brim this is an easy operation. It is important to visualize exactly what we propose to do before the hand is introduced, just as in a case of internal version. Without this precaution, we may find ourselves attempting the operation in a strained attitude or with the hand which is obviously less convenient than the other hand would have been. It is important to try also to rotate the body of the child by external manipulation, and this can be helped in many cases by grasping the anterior shoulder between the tips of the first and second fingers *in utero*, while the palm of the hand is spread over the side of the child's head, and actually produces rotation of the head. Some authors have, I think, exaggerated the risk of rotating the child's head without the rotation of the shoulders. The child's neck is capable of rotation without injury to an extent considerably beyond the capacity of the adult, and I have again and again rotated the head without succeeding in rotating the body, and the child has been in no way affected. At the same time, it is certainly desirable to make every effort to rotate the shoulders, and there is a greater likelihood of the head going back to its original position if the shoulders are not turned.

When we come to the question of the arrest of the head on the floor of the pelvis we have to decide whether to attempt to rotate or to deliver by forceps as a face to pubes case. I confess that I very much prefer rotation to forcible delivery face to pubes; indeed, I think that to deliver a child of normal size as a face to pubes case should be regarded either as a failure in diagnosis or as a confession of failure in efforts to rotate. It is the most undesirable method of all, because it inevitably necessitates undue force and laceration. With regard to the methods of rotation, manual rotation is much safer than forceps rotation. Rotation of the head in the cavity is not, as a rule, a difficult matter. All that is required is that the head should be gently pressed back a little so as to undo any actual impaction; flexed, if possible, so as to throw smaller diameters across the pelvis; and then, if the side of the hand is spread out over the side of the head, a mere movement of rotation of the hand will produce a corresponding rotation of the head. As before, a similar effort should be made to rotate the shoulders by external manipulation through the abdominal wall. Lastly, in this connexion, we must not forget that, although the position is unquestionably the rarest of all, yet the left occipito-posterior position does exist. Therefore, if difficulty is found in trying to rotate the occiput round the right side of the pelvis, an effort should be made to rotate it round the left side before giving up manual rotation as impracticable. Should manual rotation fail, then forceps rotation, provided great care is used to avoid injury to the maternal soft passages as well as to the child's head, is a useful method of treatment. One of the secrets of success is to sweep the handle of the forceps gently and slowly round the arc of a considerable circle, so as to reduce to a minimum the movement of the blades inside the pelvis.

Where rotation has been effected by hand, the head should be well pressed down on to the floor of the pelvis by fundal pressure, and the remainder of the labour either left to nature or shortened by forceps, as circumstances indicate. When the head has been rotated by forceps, then I think that the rest of the delivery should also be conducted instrumentally by the rapid reapplication of the instruments with the blades in their proper position.

In cases where the delivery, for one reason or another, is being conducted face to pubes, and where considerable tearing is likely, I strongly advocate the deliberate incision of the perineum—that is to say, an operation of episiotomy. Personally I prefer to make this incision in a postero-lateral direction, so that any extension of the incision will avoid involvement of the anal sphincter. The subsequent stitching of a clean cut like this is very much easier, and the anatomical restoration of the parts simpler than in an irregular laceration, while the additional room which it gives shortens very materially the later part of the delivery.

BREECH PRESENTATIONS.

The next most common cause of difficult labour is, I think, breech delivery, and an analysis of the complications and difficulties which we have met in recent hospital experience of 233 breech deliveries in three years clearly indicates that the main causes of trouble are the impaction of the breech, especially in cases of frank breech, and, secondly, arrest of the after-coming head, due either to imperfectly dilated passages or to some undoing of the flexion of the head by pulling on the limbs. In these 233 cases we had 8 maternal deaths, but in only one could death be attributed even indirectly to the nature of the labour—a death from septicaemia following impaction at the brim. All the other 7 cases were very seriously complicated by eclampsia (2), concealed accidental haemorrhage (2), acute rheumatic fever, acute pulmonary oedema, and grave cardiac disease with heart failure. The foetal mortality (78) in these 233 cases varied from 3 per cent. in one year to 18 per cent. in another, after complications such as placenta praevia, contracted pelvis, accidental haemorrhage, extreme prematurity, etc., had been deducted.

I am not able to explain the great difference in different years. It may just be a matter of good or bad fortune, but it is quite possible that it is an indication of the skill of the house-surgeon at the time, because it is a well-known fact that the foetal mortality in breech cases depends in considerable measure upon the knowledge, skill, and presence of mind of the obstetrician.

The greatly increased difficulty and danger, especially to the child, in a breech case in a primigravida is so well recognized that we invariably make an effort to correct this malpresentation where it is met with in such patients in the ante-natal department. During the three years in which we dealt with these 233 cases there were to our knowledge an additional 44 cases so averted by external version.

Management of Breech Labour.

With regard to the general management of breech labour I have nothing to say that is in any sense new, but some points in the old and sound teaching may bear repetition. Masterly inactivity in the early stages is unquestionably the keynote of success. My old master, Sir Halliday Croom, used to sum it up in the words, "Hands off the breech," and this certainly may be said to summarize the whole management of a normal breech case up to the birth of the lower limbs. Frank breech cases always tend to give more trouble than those in which the attitude of the child is one of complete flexion. The extended legs act as splints to the trunk and prevent the lateral flexion of the trunk, which is an essential feature in the descent of the breech through the pelvic outlet. Impaction of the breech is therefore very liable to occur when it reaches the pelvic floor, and artificial assistance is often needed. This usually takes the form of bringing down one or sometimes both legs, and the fact that this diminishes the bulk of the breech as it passes through the outlet of the vagina, and that the soft passages are therefore not so completely dilated as they would otherwise have been, leads not infrequently to subsequent difficulty in the birth of the head.

In the 233 breech cases we had 21 cases of frank breech. Artificial assistance of one sort or another was required in 20 of these—that is, in over 95 per cent. The assistance took the form, in most instances, of extraction of the breech after bringing down a leg, and in 7 of these cases an episiotomy was performed in order to give more room for manipulation. No maternal deaths occurred, but 7 stillbirths—that is to say, a foetal mortality of 33 per cent. in this particular set of cases. The cause of death was cerebral haemorrhage in 4 instances, and asphyxia in 2, while one child was dead *in utero on admission of the mother to hospital.*

Treatment of Impaction.

This leads me to speak briefly of the treatment of impaction. If it occurs at the brim, the cause is almost always either the mere bulk of the breech or a contracted pelvis; if it occurs when the breech has reached the pelvic floor, the cause is usually a frank breech. With the breech at the brim, the treatment is to push the breech gently out of the pelvis and to bring down one foot, the foot lying anteriorly by preference. Unless there are definite indications for the rapid completion of the labour it is much safer for both patients to leave Nature to drive the half-breech slowly through the pelvis rather than to proceed immediately to the extraction of the child. To overcome the impaction is usually all that is needed, and intervention at this stage should preferably stop there.

When the impaction occurs at the pelvic floor—due usually to a frank breech—an attempt may be made to hook down the breech by passing the finger into the groin. The breech hook should be used only if the child is dead. No great degree of force can be exercised by the finger or fingers in the groin, and, if we fail, we may sometimes succeed in extraction by the use of forceps; but the grip is not a very satisfactory one, and I d rd the breech as at all a good indication for the I believe that better results follow if, wi in the Sims position, the breech is gently pr brim and one foot is brought down as bef doing this is undue stretching of the lo ment, but if the patient is deeply ana the manipulation is gently and slowly done, the risk is not great.

When intervention is required for the extraction of the *after-coming head or for the bringing down of a displaced* arm, the great danger is that the obstetrician may become flurried. It is perfectly true that there is no time to lose, but it is equally true that "the more hurry, the less speed." To be successful the intervention must be carried through exactly according to the book. I say this because, to the man who is anxious and flurried, and who dreads that he is going to have a stillbirth, the temptation to pull, in the hope that with a little extra force he will be able to extract the head, although it may be partially extended, or although one arm or even two may be displaced alongside it, is almost irresistible. The sooner that man realizes that in such an effort he is wasting valuable time and endangering the child's life, and that there is no road to success except the high road, the better for his obstetric practice. Two other small points in this connexion are: first, that no attempt to bring down an arm should *be made until the trunk is born as far as the scapula—in* other words, the arm must be brought well into the cavity of the pelvis and within reach, otherwise the attempt to get it down will fail; secondly, that in a case where intervention is hindered by a tense perineum, and in all cases of a primigravid breech labour, an episiotomy ought to be made, because the additional room which it gives is an enormous advantage in the necessary manipulations, and in the subsequent birth of the head.

Lastly, the Prague seizure is generally to be condemned as a crude and somewhat brutal method of extraction, in which one has little control over the force exerted. It is not comparable in efficacy with the Mauriceau-Smellie grip with the child astride the forearm and two fingers placed well back over its tongue. The essence of the manœuvre is to produce flexion of the head simultaneously with the extraction, and this can unquestionably be best *brought about by the fingers on the tongue pulling down* the face, while the occiput is forcibly lifted up against the symphysis pubis in the movement of extraction.

The After-coming Head.

The application of forceps to the after-coming head is a method of treatment which is more ignored than it deserves to be. If the forceps are sterilized and ready, it does not take more than a few moments to apply them to the after-coming head with the trunk and limbs of the child swung well forward and out of the way by an assistant; and there is no question that the forceps give a degree of control over the movements of the head which is greater than that obtained even in the Mauriceau-Smellie manœuvre, while the application of the force to the head and not to the neck is probably safer for the child. I always like to have forceps ready in a breech delivery, and I have found them *a most satisfactory means of delivering the after-coming* head. Herman described it, without qualification, as "the best treatment where help is needed in the delivery of the after-coming head."

From the figures I have already quoted with regard to stillbirths in frank breech cases, it will be seen that cerebral haemorrhage is one of the commonest causes of death. This exceedingly important observation is based on the incontrovertible evidence of a large series of post-mortem examinations. The haemorrhage is due in most cases to tears in the ligaments of the brain, the falx cerebri, and, in breech cases especially, the tentorium cerebelli, and the injury to these structures is unquestionably due to the fact that in the rapid extraction of the after-coming head the skull is exposed to rapid changes of shape, putting a sudden strain upon its internal structures which they are incapable of sustaining. In a head-first labour the slow moulding of the head allows very considerable changes in the shape of the head to occur with corresponding damage, but this is simply beca moulding forces are applied so slowly. As frequency of these intracranial injuries examination of the bodies of 16 infants *breech, found such injuries in no f* Heidler, in a recent examination breech deliveries, found tears

11 he found death to be due to asphyxia, while in the remaining 20 cases the skull was not dissected, so that no actual diagnosis was made. Browne, on the basis of an examination of 200 stillbirths in the Edinburgh Maternity Hospital, showed that cerebral haemorrhage was ten times more common in breech than in vertex cases.

The moral to be drawn from these observations is that intracranial injuries resulting from the rapid extraction of the after-coming head are a considerably greater source of danger to the child than is asphyxia from delay in the birth of the head. It is generally accepted that the foetus can exist for at least ten minutes without receiving fresh supplies of oxygen. Bourne, in his valuable little book, *Recent Advances in Obstetrics and Gynaecology*, refers in this connexion to the apnoeic condition of children born after a prolonged period of "twilight sleep," and who, if left severely alone but merely kept warm, remain motionless for perhaps ten minutes or a quarter of an hour while the heart beats quite regularly, and then quietly and gradually establish respiratory movements. As one who uses "twilight sleep" to a large extent, I have had a great many instances of this, and I can confirm it absolutely. But the application of the matter at present is that it emphasizes the need for care and deliberation in the extraction of the head, and the danger of "hurry."

White Asphyxia.

Many of you will have read recently in the *British Medical Journal* a short correspondence which followed a letter by Mr. Bourne in regard to the pallid form of asphyxia—and that is usually the only serious form. With the main burden of Mr. Bourne's letter I am in entire agreement. There is far too much done in the way of violent efforts at resuscitation of the asphyxiated child, and there is no question in my own mind that in many cases the child who is in this condition of suspended animation actually has the flickering spark of life extinguished by these misguided efforts. Clearing out the mucus and liquor amnii from the throat by means of a soft rubber suction tube, warmth to the surface of the body, and a little old brandy on the gums and palate, and in severe cases the intramuscular injection of one or two minims of pituitary extract, have in my experience proved most successful. The main general point to remember is, however, that infants who pass into a condition of white asphyxia are suffering from a condition akin to shock, and should be treated along appropriate lines, warmth and extreme gentleness of handling being the essentials.

References.

[1] Haultain: *Trans. Edin. Obstet. Soc.*, lxxxv, 1925-26. [2] Miller: Ibid., lxxxvi, 1926-27.

THE TREATMENT OF EXOPHTHALMIC GOITRE

BY

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The controversy which centres around the treatment of exophthalmic goitre is largely due to the fact that patients may get better without treatment. These recoveries are too often attributed to some particular line of treatment, which is then hailed as having the power to effect a cure in a substantial percentage of cases; thus numerous procedures have been advocated, all of which were said to produce good results. Until recently the physician alone showed any interest in the disease, and in his treatment he often adopted a rather fatalistic outlook. He insisted on the removal of all septic foci, advocated a diet in which meat was restricted, advised rest, prescribed sedatives, and if the case was not improved then, the disease had to be left to Nature. Serums, vaccines, and numerous lines of treatment have all been tried, but to-day the most popular remedies are (1) rest combined with iodine, (2) *x*-ray therapy, (3) operative procedures.

In this paper an attempt is made to compare the results obtained from these three lines of treatment, and in diagnosis, and in estimating improvement or otherwise, I have relied on the basal metabolic rate, the pulse, and the weight; the element of personal bias is thus eliminated and the results are probably rendered more acceptable. In calculating the basal metabolic rate the Douglas bag and Haldane gas analysis apparatus have been used exclusively.

In deciding whether a patient has exophthalmic goitre or not the view is adopted that there must be in every case an increased basal metabolic rate in addition to the usual signs and symptoms. There is a small group of women between the ages of 40 and 45 who show some signs and symptoms of exophthalmic goitre but in whom the basal metabolic rate is not increased; these are therefore not included in my cases. Cases of toxic adenoma are also omitted.

Treatment with Iodine.

The possibilities which treatment with iodine held out were first appreciated by Marine and Lenhart[1] when they found that the goitre in Graves's disease contained less than the normal amount of iodine. Ten years later Neisser[2] gave small doses of iodides to patients, and reported good results. These results were supported by the observations of Beebe,[3] using small doses of iodine, and by Loewy and Zondek,[4] who prescribed 3 drops of a 5 per cent. solution of potassium iodide. This they increased to 20 drops three times a day so long as the weight continued to increase.

We owe most of our knowledge to Plummer,[5] who reported the results of 43 cases in which Lugol's iodine was used; he found that 95 per cent. were benefited. He stated that the basal metabolic rate was considerably reduced, though only temporarily, in most of his cases in about ten days; this was confirmed by Cowell and Mellanby[6] in this country.

I have observed the effects of iodine in 36 cases, paying special attention to the basal metabolic rate, pulse, and weight. No case is included in which the basal metabolic rate was under +30 per cent., while in the most severe case there was a basal metabolic rate of +114 per cent. In 31 of these cases iodine was being given for the first time, and the drug prescribed was usually Lugol's iodine in doses of 20 to 30 minims a day. In 8 cases the basal metabolic rate and pulse rate were reduced to within normal limits; in 18 other cases there was marked improvement, but the basal metabolic rate and pulse were still raised. In 4 cases there was little or no effect, while in one case the patient became definitely worse, the basal metabolic rate and pulse rate rising from +32 per cent. and 100 to +53 per cent. and 128 respectively. Thus improvement followed the administration of iodine in 84 per cent. of cases. In mild cases with a basal metabolic rate of +20 to +25 per cent. the improvement which followed iodine administration was slight, and it was often difficult to say whether it was the relaxation from mental worry or the iodine which caused the improvement.

In 16 cases the effects of a second course of iodine were observed; these include 11 cases from the first group, on whom the results of a first course of iodine have already been noted. The interval which elapsed between the first and the second course in these 16 cases was variable, and appeared to influence the subsequent action of the drug—the longer the interval the more likely is it that the drug will act a second time; but this is by no means invariable. The length of time that the drug was continued on the first occasion also seems to be important; the longer the course the longer the interval before the drug will act a second time. If the course is a short one there is every likelihood of the drug acting a second time.

The lowest basal metabolic rate among these 16 cases was +33 per cent., while the highest was +75 per cent. In 6 cases the basal metabolic rate and pulse fell considerably at the end of ten days, and the improvement was quite comparable to the result of a first administration of iodine. In 5 cases the improvement was slight, but poor compared to the results of a first course. Three patients died within a month; they were very ill, however, when the iodine was given, and it is not thought that it hastened their deaths. In 2 cases the patients became definitely worse, the basal metabolic rate rising and the weight falling, but in one of these iodine had been of little value at its administration.

TABLE I.—*Results on the Basal Metabolic Rate of a Second Course of Iodine.*

No.	First Course.		Interval.	Second Course.	
	Before.	After.		Before.	After.
1	Per cent. +60	Per cent. +29	5 months	Per cent. +39	Per cent. +13
2	—	—	4 months	+35	+15
3	+46	+27	10 weeks	+53	+14
4	+60	+19	7 months	+59	+15
5	+71	+41	3 weeks	+75	+47
6	+59	+13	3 weeks	+61	+31
7	+70	+28	3 weeks	+39	+26
8	—	—	1 year	+53	+44
9	+114	+56	6 weeks	+75	+65
10	+65	+31	4 weeks	+50	+40
11	—	—	1 year	+33	+26
12	+72	+42	9 months	+70	Died
13	—	—	6 months	+54	Died
14	+60	+40	1 month	+72	Died
15	—	—	1½ years	+55	+70
16	+52	+48	3 weeks	+54	+61

From these figures it is seen that in only 37 per cent. of cases was a second course equal to a first. In all cases in which improvement was noted the maximum fall in the basal metabolic rate and pulse rate occurred in ten to fourteen days: in only one instance did the basal metabolic rate fall to any marked extent after the fourteenth day.

Cowell and Mellanby,[6] using small doses of potassium iodide, noted that the fall of the basal metabolic rate occurred in ten to twenty days, while Cole[7] says it occurs in two to three weeks.

It has been shown by most writers that improvement is merely temporary, that eventually there is a gradual exacerbation of symptoms with a coincident rise in the basal metabolic rate and pulse rate, and that this period of improvement depends largely, if not entirely, on whether the patient is exposed to worry or not. If the patient is kept away from the anxieties which attend home life or is treated in an institution, the basal metabolic rate may begin to rise again after two weeks and then gradually increase in height until it reaches the level prior to the administration of iodine. On the other hand, in some patients it may show no tendency to increase for four or five weeks, and in others eight weeks may elapse without any rise, but as soon as such a patient is sent home from hospital the basal metabolic rate returns to the original height.

I will quote three cases to illustrate these points and to emphasize that relapse ensues as soon as the patient begins to worry or is sent home.

1. A married woman, aged 30, was admitted to hospital; after she had rested in bed for a week the basal metabolic rate was +72 per cent. and the pulse usually about 120. She was given Lugol's iodine, and ten days later the basal metabolic rate was +28 per cent. and the pulse 92. Fourteen days later a rise to +45 per cent. was noted, while when a further nineteen days had elapsed it had risen to +57 per cent. and the pulse was then about 110.

2. A patient was given Lugol's iodine, and the basal metabolic rate fell to normal. It remained within normal limits for three weeks, at which time she received news that her child was not well. The basal metabolic rate rose the next week to +57 per cent., and consideration for her health forced us to send her home.

3. A patient was admitted to hospital, and after seven days' rest in bed the basal metabolic rate was +70 per cent. and the pulse 115. She was given Lugol's iodine, and ten days later the basal metabolic rate was +47 per cent. and the pulse 100. The basal metabolic rate varied between +44 and +53 per cent. for seven weeks, and she was then sent home, iodine treatment still continuing. Five weeks later she was readmitted, and the basal metabolic rate was +75 per cent. and the pulse 130.

If a patient has been given iodine and the basal metabolic rate and pulse rate have been lowered, the stopping of the iodine is followed by an immediate relapse. If the basal metabolic rate and pulse have been lowered, and after perhaps five weeks have risen slightly, but not to anything like the previous height, the withdrawal of the iodine still results in a relapse. In both cases the basal metabolic rate rises to the original level before iodine was given. On the other hand, in cases where iodine has been given, and the basal metabolic rate and pulse have gradually relapsed to their levels before iodine was administered, stopping the drug now appears to have no effect whatever; further, the patient does not appear to improve as the result of stopping the drug. I have frequently ceased to give a patient iodine after she has been on it continuously for six months, and the basal metabolic rate and pulse have not been influenced for better or for worse. On the other hand, Fraser[8] considers that 6 minims of 10 per cent. tincture of iodine may do harm if continued over a long period. Several French physicians, however, give larger doses than is customary in this country over a longer period, and claim that they obtain better results.

As shown above, in only 6 out of 16 cases was the response to a second course of iodine satisfactory. This means that in 10 cases, were an operation contemplated, the patient would not be able to have the beneficial effect of iodine as a preparation for the operation.

An example of this is that of a girl, aged 19, who was admitted to hospital with a basal metabolic rate of +59 per cent. and a pulse of 120. She was given Lugol's iodine, and ten days later the basal metabolic rate was +13 per cent. and the pulse 84. She refused operation and went home, but ten weeks later she was readmitted with a basal metabolic rate of +65 per cent. and a pulse of 125. During seven of these ten weeks she had been having iodine. On admission, Lugol's iodine, 10 minims three times a day, was prescribed, but the basal metabolic rate and pulse never fell below +60 per cent. and 120 respectively; the dose was then increased further, and the basal metabolic rate fell to +31 per cent., but no further.

The seriousness of such a state of affairs was emphasized by Goetsch.[2] In such a case, if an operation is undertaken, the risk is considerable, while had operation been performed when the patient was first given iodine the risk would have been far less. As it is held by most authorities that iodine by itself cannot cure exophthalmic goitre it seems only fair to the patient that iodine should be held back until an operation is decided upon, since its value in preparing patients for operation is well recognized, and is reflected in the improved mortality rates in published cases.

Iodine is an excellent remedy for the crisis with vomiting with which many patients are troubled, but if a course has already been given its value at such a time may be disappointing. On five occasions I have seen cases where a course of iodine has been given for months and then stopped. Later, the patient has had a crisis with vomiting, and iodine was valueless in checking it. More often than not, however, the crisis can be controlled by giving iodine, whether the patient has had it before or not.

In prescribing iodine I have rarely given a larger dose than 30 minims of Lugol's iodine a day, as it is said that large doses cause an actual exacerbation of symptoms. Cowell and Mellanby[6] found that improvement followed minute doses of potassium iodide, such as 2 or 3 grains a day, and they do not think that large doses are necessary. After the maximum reductions in the basal metabolic rate and pulse rate have been apparently reached an increase in the amount of iodine reduced the basal metabolic rate and pulse rate still further in 3 cases. These patients had had iodine for several weeks; in 2 cases the basal metabolic rate and pulse rate had returned to the levels before iodine was given, while in one case, already mentioned, it had had little or no effect. It was decided to operate on them, and the dose of Lugol's iodine was increased from 20 minims a day up to 40 minims. In the first case the basal metabolic rate fell from +65 to +31 per cent., in the second case from +34 per cent. to within normal limits, and in the third from +75 to +40 per cent. The first two patients were operated upon at once, but in the third the mistake was made of increasing the dose to 50 minims, and in spite of this, or because of it, the basal metabolic rate rose within a week to +63 per cent.

A striking fact which is noticed during iodine administration is the patient's increase in weight. This increase

TABLE II.—*Results of X-Ray Therapy.*

	Case 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Before treatment.	+79% 98 101	+78% 120 123	+50% 114 128	+57% 110 112	+63% 104 116	+43% 116 96	+40% 120 107	+65% 108 117	+37% 114 93	+52% 123 126	+39% 100 102	+5-% 106 112	+50 94 104	+40% 80 108	+30% 90 110	+60% 120 91	+48% 105 95	+36% 1 0 120	+33% 89 116	+55 1-4 137	+70% 118 77	+30% 100 1 1	+58% 1-0 85
After 1 mth.		+62% 110 134				+70% 114 100	+49% 121 107			+54% 100 123	+3-% 90 106	+47% 100 105							+57% 101 125	+70 128 131	+57% 92 102		+62% 110 82
2 mths.		+49% 100 135	+33% 102 126			0% 90 116						+52% 105 112	+45% 80 110		+21% 90 109				†	†		+42% 121 103	+8-% 1 0 91
3 mths.	+76% 12- 103		+31% 94 127	+25% 92 112			+18% 90 114							+51% 100 99		+72% 125 92	+38% 100 101						
4 mths.		−9% 70 123		+31% 93 120						+28% 86 133	+22% 82 107			*		*		+33% 100 —				+35% 110 112	
5 mths.	+-0% 80 107				+8% 86 129			+32% 110 120	+25% 118 91			+47% 103 112									+ 2% 120 105	+8% 92 125	+73% 1-0 92
6 mths.	+38% 104 108						+24% 92 114				+23% 80 107	+37% 80 120	+61% 90 107										
7 mths.										+9% 80 132												+20% 93- 128	+86% 124 89
8 mths.			Normal 80 134	+29% 94 120																	+61% 106 106		
9 mths.	+5% 85 110	Normal 70 130		+18% 86 116	+7% 84 126			+40% 86 123	+10% 112 92	+35% 80 131		+35 86 122	+32% 86 113		+15% 75 116		+26% 8- 101	+10% 91 120			†	+50% 110 —	
10 mths.								+30% 84 123														Died	
11 mths.				+21% 88 117																			+72% 150 81
12 mths.			+4% 72 145	+10% 80 117	+2% 75 127	+5% 80 118		+16% 84 127	+19% 100 92	+30% 86 134		+33 81 126	+46% 95 111		+30% 100 112		+35% 85 96	+40% 101 115					Died

* Insisted on operative treatment. † Refused further treatment. ‡ Operation considered advisable.

will often continue when the basal metabolic rate and pulse rate are rising. Thus, a patient weighing 5 st. 7 lb. was admitted with a basal metabolic rate of +70 per cent.; she was given iodine, and ten days later the basal metabolic rate was +28 per cent. and the weight was 5 st. 12 lb. Six weeks later the basal metabolic rate was +57 per cent., but the weight had increased to 7 st. 3 lb.—an increase of 19 lb. while the basal metabolic rate was rising from +28 to +57 per cent.

TREATMENT BY X RAYS.

The treatment by *x* rays is probably the most widely adopted to-day, and its chief merit lies in the fact that there is no mortality rate, although patients may die during the course of treatment as the result of the disease itself. *X*-ray burns, which a few years ago were only too common, are now rarely seen, and, indeed, the only cases seen recently are of patients who received treatment some years ago. It is probably no more frequent than injury to the recurrent laryngeal nerve during thyroidectomy.

The question whether *x*-ray therapy is of any value was discussed at the British Medical Association Meeting at Edinburgh in 1927, and most of the speakers were rather sceptical. Walton[10] recently said he did not think it was of much value, but there are many who have great faith in it, and some who make extravagant claims for its value. Little has been published in this country on *x*-ray therapy, but Hayes[11] found there was improvement in 76 out of 100 patients treated by him. Unfortunately no basal metabolic rates were given, and one has to rely on his judgement. Sanger[12] obtained good results in 41 out of 50 cases, and his results are adequately supported by basal metabolic rate estimations on all the patients. Borak[13] stated that 80 per cent. of patients improve, while 33 per cent. become free of symptoms.

There can be little doubt, therefore, that *x*-ray therapy is a valuable line of treatment in some cases. The time required to produce results is doubtful; some say one to four months, while Murray[14] states that it may take as long as two years.

I have been able to collect 23 cases in which I had examined the patients before the commencement of *x*-ray therapy, repeatedly during the course of treatment, and, finally, at the end of a year or at the termination of their treatment. Since it is undoubtedly a fact that various factors, such as excitement, influence the basal metabolic rate, great care has been taken in arriving at an accurate result, and in my cases the basal metabolic rate given is the mean of several estimations.

All the patients had well-marked signs and symptoms of exophthalmic goitre, and it will be seen that no patient had a basal metabolic rate of less than +30 per cent. at the commencement of treatment. A number of other patients were treated, but they would not come into hospital for a basal metabolic rate estimation, and so are not included. Some very mild cases with basal metabolic rates of around +20 per cent. were also treated, but in many of these it was not considered absolutely certain that they were not simple cases of neurasthenia.

The actual method of treatment is as follows:

Coil and Coolidge tube. Kilovoltage 80. Current 3 milliamperes. Filter 3 mm. aluminium *plus* two layers of felt. Dosage measured with Sabouraud pastilles, and a dose equal to half tint B (with filter in place) is given. This equals with apparatus in use a quarter of an erythema dose. Treatments are given at first twice a week, then once a week, and the intervals are gradually lengthened until a total of about thirty doses has been given, spread over a year. The interval between the doses and the total number of doses given depends on the progress of the patient.

In Table II, showing *x*-ray results, the details are given in the following order: (1) basal metabolic rate, (2) pulse rate, (3) weight in pounds.

In 6 of these 23 cases it will be seen that the basal metabolic rate has returned to within normal limits, and the pulse rate is between 70 and 85 beats per minute. The weight has increased in each case, the smallest increase

being 5 lb. and the biggest being 20 lb., while the average increase is 11 lb. In 6 cases there has been improvement, and in 5 of these the improvement was marked. The basal metabolic rate has fallen considerably in each instance, but not to within normal limits, while there has been an average increase in weight of 6 lb.

In 9 cases there was no improvement worth recording; in 5 of these the patients were emphatic that they felt no better, and either clamoured for an operation or refused further treatment. The other 4 cases showed no improvement whatever. Records for one year's treatment are given, while actually they have been treated for sixteen months and no improvement has been noted; it is not thought there is any likelihood of further change. Two deaths occurred, and it will be seen that one patient died after being treated for ten months and the other after receiving treatment for twelve months.

The time required for cure or improvement has now to be considered. It will be seen that among the cured cases the average duration of treatment necessary to bring the basal metabolic rate and pulse within normal limits is six and a half months, but it may occur as early as at the end of two months or as late as twelve months.

Among the cases classified as improved, the improvement was obvious in most cases by the third month, and in all cases by the sixth month. It seems fair, therefore, to assume that if benefit is likely to be derived from *x* rays, improvement will be noted in six months, whereas if there is no amelioration of symptoms during this period it is doubtful if further *x*-ray therapy will be of much value. The cases which responded most satisfactorily to *x*-ray therapy were those in which the signs and symptoms were of short duration, the size of the goitre being of less importance. Cases of longer duration in which the goitre was moderately enlarged and firm often improved, but were very seldom cured. The longer the disease has existed the less hope is there of benefit being derived from *x*-ray therapy.

Operative Treatment.

The third line of treatment is surgical: before giving the results it is desirable to describe briefly the procedure in each case. The patient was put to bed, and after she had rested for three days the basal metabolic rate was estimated; this was repeated until a consistent result was obtained, since frequently the second estimation is lower than the first, but the third is usually the same as the second. This is because on the first occasion the apparatus is apt to frighten the patient, and this in itself is sufficient to give an inaccurate result.

The patient was next given Lugol's iodine, 10 minims three times a day, and at the end of ten days one or more basal metabolic rate estimations were made; the patient had an electro-cardiograph taken, particular attention being paid to the inversion of T in lead II, and less attention paid to an inversion in lead III. If the basal metabolic rate was +30 per cent. or under, the pulse rate under 95, and the electro-cardiograph gave no contraindication, the case was regarded as operable. More attention was paid to the basal metabolic rate than to the pulse or electro-cardiograph, though all three received attention. There was no undue haste in operating, as it was felt that nothing was lost by waiting up to three weeks, while the increased weight at the end of that period, and the fact that patients often felt better after three weeks than after two weeks, convinced me that something was to be gained by a short delay. After the operation, which was a complete one wherever the basal metabolic rate was under +30 per cent., iodine was continued for three days. It will be seen that some patients were operated on whose basal metabolic rate was higher than +30 per cent. In these patients medical treatment had been given a complete trial, and in each case it was felt that unless an operation was performed the patient was likely to be an invalid until an early death.

I have been able to collect 25 consecutive cases in which the basal metabolic rate was estimated before and after operation, and the fact that no deaths occurred was very gratifying. The object in giving a list of these cases is not only to emphasize the fact that care and discrimination can reduce the mortality rate, as the Mayo Clinic have done this, but, first, to compare the immediate results with the results after a year or longer, and, secondly, to compare these results with those of *x*-ray therapy. Since the introduction of basal metabolic rate estimations there have been no deaths in this hospital, and this contrasts strongly with a mortality rate of 15 per cent. in the 25 cases preceding.

TABLE III.—*Immediate Results of Operative Treatment.*

No.	Before Iodine.		After Iodine		After Operation.		Operation.
	B.M.R.	Pulse.	B.M.R.	Pulse.	B.M.R.	Pulse.	
	Per cent.		Per cent.		Per cent.		
1	+53	113	+33	93	− 9	79	Thyroidectomy.
2	+40	110	+23	90	+39	95	Thyroidectomy.
3	+34	96	+ 6	80	− 5	84	Thyroidectomy.
4	+61	110	+13	90	0	84	Thyroidectomy.
5	+38	91	+30	83	+ 8	80	Thyroidectomy.
6	+89	132	+53	130	+44	100	Lobectomy.
7	+64	110	+33	102	− 4	80	Thyroidectomy.
8	—	—	+15	85	−15	76	Thyroidectomy.
9	—	—	+14	90	− 7	72	Thyroidectomy
10	+111	135	+56	103	+39	95	Ligation.
11	+78	125	+65	115	+32	124	Sympathectomy.
12	+25	100	+27	95	0	76	Thyroidectomy.
13	—	—	+23	93	+ 5	84	Thyroidectomy.
14	+57	104	+26	83	+20	85	Thyroidectomy.
15	+60	116	+24	95	−10	70	Thyroidectomy.
16	+43	110	+14	90	+13	85	Thyroidectomy.
17	+57	116	+13	90	− 8	76	Thyroidectomy.
18	+65	112	+31	100	+17	84	Thyroidectomy.
19	+53	104	+14	84	− 3	80	Thyroidectomy.
20	+57	116	+18	90	− 8	80	Thyroidectomy.
21	+51	110	+26	96	+10	72	Thyroidectomy.
22	+39	96	+26	80	+13	70	Thyroidectomy.
23	+80	120	+40	100	+63	100	Lobectomy.
24	+38	100	+16	85	−11	80	Thyroidectomy.
25	+53	110	+12	85	0	75	Thyroidectomy.

The ligation and sympathectomy were performed on the same patient, and there can be no doubt that the patient was benefited by these operations. A basal metabolic rate estimation was made a year after the sympathectomy; the result was +26 per cent., and the pulse was 90. Of the remaining 23 patients 17 have been cured by the operation, while in 6 cases the basal metabolic rate is still above normal limits; 4 of these have been considerably improved by the operation, and indeed it was a surprise to find in 3 of them that the basal metabolic rate still persisted above normal limits. The remaining two patients were not relieved of their symptoms and signs, and I felt, entirely apart from the basal metabolic rate, that the patients were not benefited to any great extent. It is obvious that in order to justify any surgical procedure the results must be considerably better than non-surgical methods, and, comparing the surgical results given here with the *x*-ray results, I feel that the surgeon has proved his case. The figures published by surgeons never give the number of cases regarded as inoperable and sent for medical or *x*-ray therapy. While the average case treated by a radiologist is more severe than that treated by a surgeon, it must be admitted that in operable cases the results are excellent—so good that it might be better for patients if experienced surgeons temporarily forgot mortality rates and did their fair share in the treatment of the disease.

The next step was to examine patients who had been operated on a year or longer, and to compare these results with the immediate results of operation, and also with cases treated by *x*-ray therapy. It is always difficult to get patients who have been treated a year or longer to return for a couple of days to hospital in order to have a test made,

but 16 patients did so, and, as in previous examinations, the basal metabolic rate was estimated and a careful four-hourly pulse chart kept. The basal metabolic rate and the mean pulse collected from the charts show that these results are pleasing, but not quite so convincing as the immediate results. Four cases in which one lobe was removed are given, and in each the basal metabolic rate has remained above normal limits.

TABLE IV.

No.	Years since Operation.	B.M.R.	Pulse.	Operation.
		Per cent.		
1	1½	+ 3	80	Thyroidectomy.
2	2½	+40	99	Lobectomy.
3	1½	+10	80	Thyroidectomy.
4	1	+ 7	83	Thyroidectomy.
5	1½	+19	95	Thyroidectomy.
6	1	+25	95	Lobectomy.
7	5½	+ 8	70	Thyroidectomy.
8	2½	−12	80	Thyroidectomy.
9	1	+40	100	Lobectomy.
10	1	+15	84	Thyroidectomy.
11	1	+10	84	Thyroidectomy.
12	1	+12	80	Thyroidectomy.
13	1	+ 5	60	Thyroidectomy.
14	1	+27	90	Thyroidectomy.
15	1	+14	85	Thyroidectomy.
16	2	+60	95	Lobectomy.

In the cases shown it would appear that about 80 per cent. of patients operated on are cured or are considerably benefited by thyroidectomy, and these figures hold good for at least one year after operation. The best result that has been obtained from *x*-ray therapy is improvement or cure in 12 out of 23 cases—that is, 52 per cent.; if the surgeon's mortality rate is not above the average the difference of 28 per cent. between the surgical and the *x*-ray results certainly seems to justify surgery and to give it the premier place in the treatment of the disease. Many surgeons who do not operate frequently on exophthalmic goitres have a rather appalling mortality rate, and whereas one may advocate surgery for some cases, it cannot be too strongly emphasized that surgical intervention should only be undertaken by an experienced surgeon. In few diseases will care and discrimination in the preparation and selection of the cases be rewarded by more gratifying results.

There are many patients with Graves's disease who are improved or cured by *x*-ray therapy; in view of this it seems only fair that the radiologist should be given a chance before the case is sent to a surgeon. The patient ought to be treated for about six months by *x*-ray therapy, and if at the end of that time the basal metabolic rate, weight, and pulse have not improved, it is probably useless to continue.

SUMMARY.

An attempt is made to compare the results of treatment by medical measures, *x*-ray therapy, and operative procedures. Any improvement or failure to improve is supported by the basal metabolic rate, the pulse, and in many cases the weight.

I am able to support the view held by many that iodine causes only a temporary amelioration of symptoms and signs, and that prolonged iodine treatment is of no benefit to the patient. The stopping of iodine after it has been given for some months did not cause any change in the patient's condition, as judged by the basal metabolic rate and pulse. A second course of the drug does not give the uniformly good results of a first.

X-ray therapy is considered; it is found that in only 52 per cent. of cases does any material improvement result, and improvement will be obvious in six months from the start of treatment. Cases in which there is no improvement after six months of treatment should be referred to a surgeon for operative procedures.

Operative treatment is dealt with, and a list of cases is given showing the basal metabolic rate and pulse before and after operation; it is found that over 80 per cent. are cured or improved. Emphasis is laid on the fact that usually only patients in whom the basal metabolic rate was under + 30 per cent. and the pulse under 95 after iodine therapy were operated on. A second list is given showing the basal metabolic rate and pulse a year or longer after operation, and it is found that about 80 per cent. maintain their improvement. The fact is stressed that the most unsuccessful cases are those in which too little of the goitre is removed.

In conclusion, it is considered that iodine should be reserved until it is considered necessary to operate; that the patient should be given a six months' trial with *x*-ray therapy; then, if improvement does not occur, or if it is not reassuring, the patient should be sent to an experienced surgeon for operation if suitable.

I wish to thank the physicians, surgeons, and radiologists who allowed me to carry out these investigations on their patients.

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A NOTE ON NARCOLEPSY.

WITH REPORT OF A CASE.

BY

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THIS curious condition is characterized by paroxysmal attacks of sleep, frequently coming on during the day and often quite irresistible. Gélineau[1] apparently first described the condition in 1880, and very few cases had been recorded when, in 1923, Worster-Drought[2] directed attention to the subject by reading a paper before the Medical Section of the British Psychological Society, giving an account of three cases which had been under his care. Last year Kinnier Wilson[3] summarized the current knowledge of the various forms of narcolepsy and collected records of 43 cases from the literature. At the beginning of the present year (1929) Fulton and Bailey,[4] writing from the surgical clinic of Dr. Harvey Cushing, published an interesting contribution to the study of tumours in the region of the third ventricle, and discussed their diagnosis and relation to pathological sleep.

Attacks of sleep may, of course, be symptomatic of other definite pathological lesions, such as cerebral arteriosclerosis, dyspituitarism, suprasellar cysts, encephalitis lethargica, etc., but there is a group of cases which would appear to be "idiopathic" or "functional" in so far as no underlying organic disease has been discovered. Some of these "idiopathic" cases may have cataplectic attacks associated with the narcoleptic.

The patient whose case is now recorded was a motor car driver, who first came under my care about the beginning of November, 1928. He was then 26 years of age, and the narcolepsy was well marked. Symptoms had commenced about thirteen months previously, but it was not until four months after coming under observation that cataplectic attacks set in.

His sister, when about 23 years of age, had a "nervous breakdown," and was unable to follow her occupation as a clerk for about two years. During this period she had a constant feeling of fullness in her head, and was subject to attacks of hysteria, depression, and crying, but never had any sleepy attacks. In his own personal history there was nothing of note until he reached the age of 15 or 16 years, when he was off work for three months with a bad attack of "influenza." He seemed to have had no serious effects or sequelae of this illness, except that for some time after he suffered from "blueness" of the hands, suggesting to his doctor at that time a mild Raynaud phenomenon. Eventually, however, this condition disappeared, but later he began to have occasional "flushings" of the face, and these have troubled him from time to time since.

At the age of 22 he began to have occasional transient attacks of double vision, lasting five to ten minutes. At first, and for

a long time, he would only have an attack about once a month, but eventually they became a little more frequent. It was his custom during such an attack to close one eye so that he could drive straight. About three years later, when about 25 years of age, he began to suffer from a feeling of fullness and throbbing in the head, and it was just about this time that he first began to be troubled with attacks of drowsiness—a tendency to fall asleep—while driving the motor car. These sleepy attacks came on quite suddenly; he had no "aura" or warning, and although he never actually fell asleep while driving it was only by a very great effort of will that he was able to ward the sleep off. Usually he just dozed for a few seconds, and then his employer, sitting beside him, would rouse him by a nudge or shout, telling him to mind where he was going, as he would be driving zigzag. He had many a "narrow squeak." Sometimes when he felt an attack coming on he would make an excuse to his employer to stop the car, jump out, and look at the engine, as he found that by this manœuvre he could get a chance of waking up and so warding off the attack.

Occasionally, when an attack was threatening, his driving would be so erratic that he slowed down for a short time till he could ward it off. He always felt that if he did not "pull himself together" he would have gone right off to sleep. Sometimes, when he had to wait outside a shop for his employer, he would fall asleep completely, and once or twice he has fallen asleep while smoking, and the cigarette has dropped from his mouth and burned him.

The attacks at the outset always occurred when he was engaged driving the motor car, and naturally caused him great and constant anxiety. He carried on for another six months in spite of almost daily attacks, until one day he dozed off and nearly crashed into another car. He then realized that he would have to give up his occupation. That night, while shaving, and for no apparent reason, he "seemed to lose control of himself" and threw his razor and brush across the room. A few days later he was admitted into hospital under my care.

He appeared to be a bright, active man, and weighed 9 st. 9½ lb. He had rather an anxious expression, and was easily startled, any slight stimulus—for example, a noise—causing his limbs, body, or head to jerk spasmodically. On inquiry he stated that these spasmodic movements had only affected him since the day he gave up work (that is, the day he nearly crashed with his car), and that they frequently occurred at night just as he was dropping off to sleep—particularly if the room was dark or his eyes were covered up by the bedclothes. His reflexes were all very active, but, apart from this, physical examination failed to reveal any abnormality. The fundi of the eyes and fields of vision were normal, and the ears and throat showed nothing of note. On *x*-ray examination of the skull a few faint opacities suggesting lime salts were seen at the site of the pineal gland, but no abnormality of the sella turcica was made out. He had no vomiting, no adiposity, no abnormal thirst; the urinary output was normal, and examination of the urine revealed nothing of note. His Wassermann reaction was negative, blood sugar normal, and systolic blood pressure 133 mm. of mercury.

When in the ward he slept soundly at night, and frequently dropped off to sleep during the day if the ward was quiet. He often shouted out in his sleep, and at times he would have sudden and fairly violent spasmodic movements of his limbs, body, or head when any unusual noise occurred. He had occasional flushings of his face, and he began to complain of his forehead feeling hot. His forehead undoubtedly felt hot to the touch, and this curious phenomenon has persisted. Throughout his residence in hospital he complained of a feeling of fullness in his head, and at times he had definite headache. He had been much troubled with dreams since a month or two before coming into hospital, and after coming in never slept without dreaming—whether by day or night—and occasionally he had definite "night terrors," which woke him up. Notwithstanding having wakened up in a bad dream he would go off to sleep again quite easily.

During the seven weeks he was under observation in hospital he became less easily "startled," the sleepy attacks became less frequent and he felt less "tired," and before he left the spasmodic jerkings had practically ceased. After leaving he went for a week's holiday, and was decidedly better then. He ascribed the improvement to the fact that he was among strangers, for he felt that he was then better able to control himself.

On returning to his own home the sleepiness recurred as bad as ever. Going to bed at 10:30 p.m. he would sleep till awakened for breakfast about 9.30 a.m., and after having breakfast he would sleep again until roused about midday or he woke of his own accord. When out in the afternoon he always felt that he wanted to drop off to sleep. He would, however, fight against it by keeping on walking, or if somebody accompanied him and kept him occupied by talking the drowsiness was not so troublesome.

About two months after leaving hospital he had his first cataplectic attack.

One afternoon while crossing a busy street, accompanied by his wife, he saw some cars coming towards him, when, suddenly, he became quite limp and unable to move. He had to be supported by his wife, otherwise he might have collapsed to the ground. During this attack, which lasted two or three minutes, he was quite conscious and could see the traffic going round and past him. His wife with difficulty managed to get him across to the pavement, where, after a few minutes, he felt better and was able to walk home. He was weak and rather limp for the remainder of that day. Three days later he had another similar attack.

The spasmodic jerkings returned after the first cataplectic attack, but they and the cataplectic attacks became less troublesome, and about two months later had almost passed off. He was then less drowsy, and felt he had more control of himself, although rather "weak about the knees," and occasionally he would have transient double vision.

His condition has remained much about the same—at times rather better, at other times rather worse. He says that if he worries about himself—for example, about not getting better—he is worse, starts to shake, and gets "jumpy turns." When he does not think about himself he is better. His sleep is just like ordinary sleep, but he never feels properly refreshed afterwards, and always has the feeling of fullness in his head. He sometimes has attacks of continuous yawning, and he thinks that if he "let himself go" he would sleep continuously.

It is now twenty months since the onset of his symptoms, and he has never shown any of the ordinary signs of intracranial tumour. At first the periodic diurnal drowsy attacks—narcoleptic—occurred alone, but later cataplectic seizures were superadded to the clinical picture, and tended to confirm the opinion that the case should be included in the "idiopathic" group of the narcolepsies.

One point only in the previous history is worthy of further mention. He had had an attack of what he called "influenza" when 15 or 16 years of age, and in consequence was off work for three months. There is always the possibility that this might have been encephalitic in nature, but of this one cannot be sure. It was, however, six years later before he began to have occasional and transient attacks of diplopia, and a further three years elapsed before his narcoleptic symptoms began.

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A NOTE ON A COMPARATIVELY RARE DISPLACEMENT OF THE INTERNAL EPICONDYLE OF THE HUMERUS.

BY

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In February, 1928, I operated on a boy of 15, who, as the result of a fall on his hand, had, without any dislocation, driven his internal epicondyle within his elbow-joint. At no time was there any ulnar nerve block. The fragment was withdrawn from the joint and removed. The attached soft parts were used to close the gaping defect in the capsule. Within two months recovery was complete, except for an almost negligible loss of extension that disappeared quickly after his discharge from treatment. Normal appearance and function were regained. *X*-ray outline drawings are shown (Figs. 1 and 2).

It seemed at this time that the lesion was a very rare one, as references to it in medical literature were difficult to find. Since then, however, two papers have appeared which describe the condition, and in one of these the author claims twelve cases. Early this year I met a second case precisely similar to the one briefly described, and

I am now driven to the conclusion that the injury, though seldom recorded, and unencountered by many surgeons of experience with whom I have spoken, is by no means as rare as was at first thought. For this reason it is perhaps not out of place to describe in detail the features of the latter case, together with the operative findings. In the light of the earlier experience gained the nature of the

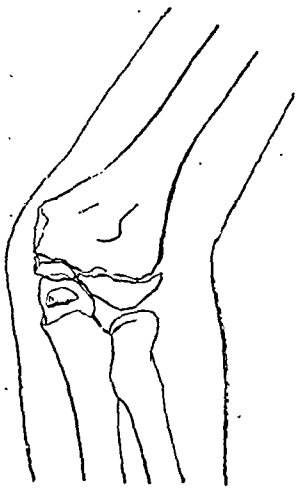

FIG. 1.

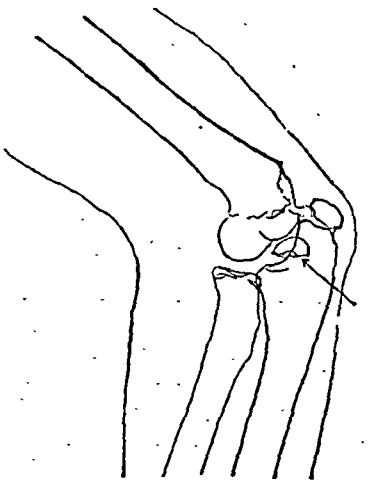

FIG. 2.

lesion was fully realized, and Miss Greg, M.R.C.S., kindly consented to make the sketches of the various stages of the operation which are shown here.

A girl, aged 13, some three or four days before she was seen, had fallen on her forearm, which was pronated and held in front of her. There had been no dislocation. Bruising extended widely over the front and inner aspects of the elbow and its vicinity. Flexion and extension movements were much lessened, but a small intermediate range, surprisingly free and painless, still existed. Tenderness was greatest over the inner side of the lower end of the humerus. The inner condyle was less defined than the outer. No nerve lesion was present. An *x*-ray photograph (Figs. 3 and 4) shows a loose fragment of bone, as Walker described it in his case (loc. cit.), of almost the size and

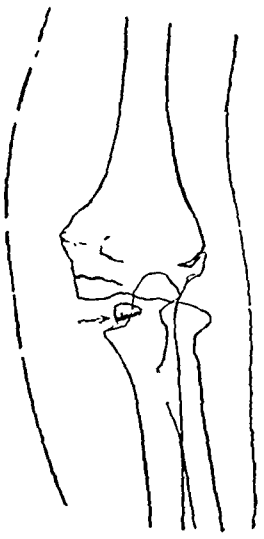

FIG. 3.

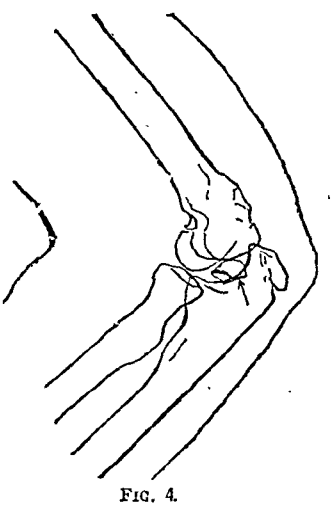

FIG. 4.

shape of a pisiform bone, lying between the widely separated articular surfaces of the humerus and ulna. There is a slight lateral subluxation of the forearm. Corroboration was given to the diagnosis by a skiagram of the normal elbow (Figs. 5 and 6).

The operative exposure was almost startlingly easy. Immediately below the skin, and as soon as its edges were retracted, the stump of the epicondyle, rough and sharply edged, came into view, leading directly downwards and forwards to the inner margin of the trochlear process. This part of the joint was divested entirely of its capsular covering. Just distal to the trochlea, and dipping abruptly into the interior of the joint, stretched a sheet composed of flexor origins and internal lateral ligament, which separated the humerus from the coronoid process of the ulna (Fig. 7). This was easily withdrawn, and brought with it the epicondyle attached (Fig. 8). At this point the amount of lateral play possible in the elbow was extreme. The forearm could be brought out easily to a

FIG. 5.

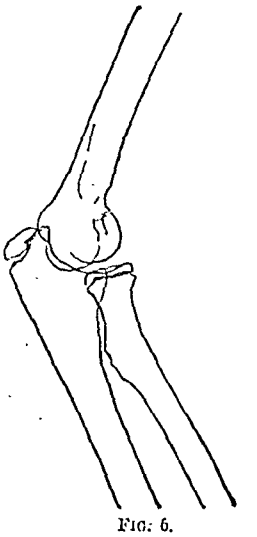

FIG. 6.

point of nearly 90 degrees of abduction. The fragment of bone was carried up and stitched to its bed, though, owing to the tension of the attached soft parts, not without difficulty. This exposure of the inner aspect of the humerus was so complete and easily made that the route commended itself as a formal operative approach when free access is desired for any purpose to the trochlea or the inner half of the elbow-joint cavity.

DIAGNOSIS.

Once the condition has been met and its anatomy seen no mistake will be made in the diagnosis when skiagrams in two planes are available. It is, however, doubtful whether the majority of those responsible for the treatment of such injuries would grasp its meaning when meeting it for the first time. My experience suggests that the skiagram does not evoke spontaneous or complete unanimity. No doubt some cases have passed for lesions of the coronoid process or the head of the radius, as in Cotton's patient (loc. cit.). The diagnosis is a pure skiagraphic one, and is to be made on (1) the presence of a small rounded nodule of bone between the gaping articular surfaces of humerus and ulna, and (2) the absence of the epicondyle from the humerus as seen from the front; this gives the internal condyle an abrupt and unfinished appearance. In an imperfectly

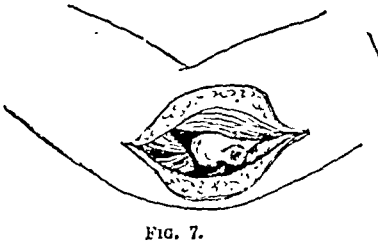

FIG. 7.

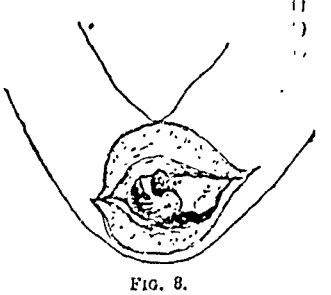

FIG. 8.

directed antero-posterior view this may not be obvious, but close inspection of the lateral skiagram will show the epicondylar base directed as usual somewhat backwards, but shortened, irregular, and jagged. A comparison with the normal side affords immediate help. The clinical examination of the patient does not suggest an injury of an unusual nature or one demanding operative intervention.

LITERATURE.

In 1924 H. A. T. Fairbank showed a skiagram of a similar case, and mentioned three others as examples of a very rare condition in which, as a result of a dislocation, the fractured epicondyle had entered the elbow-joint.

In April last year Walker published a well-illustrated and detailed account of a youth of 18 who dislocated his elbow laterally. The dislocation was reduced, but a subsequent *x*-ray photograph showed a typical fractured and misplaced epicondyle, together with a persisting lateral subluxation. There was an incomplete ulnar nerve lesion. The parts were restored by open operation, and a swollen contused ulnar nerve was noted at the back of the condyle.

This year Cotton records the last three of a series of ten completed cases met with during the last nineteen or twenty years. His first case was published nineteen years ago in his textbook. In addition, he mentions two others, more recent and not completed. Every one of these cases had an ulnar nerve lesion associated with the fracture, and gave a history of a dislocation treated before the patient was brought to his notice.

ETIOLOGY.

Fairbank, who speaks with great authority on epiphyses, associates the lesion always with dislocation, and makes the manipulative reduction responsible for the displacement of the epicondyle. It is unfortunate that the nature of the dislocations was not always noted in his account. Walker's case had a lateral dislocation followed by an incomplete reduction before he received it. Of Cotton's three described cases, each had a dislocation reduced before he saw them. Two of these are said to have been posterior; the third he found to be a still unreduced lateral subluxation. Cotton considers the lesion the result of manipulative reduction.

In the two cases here recorded no dislocation was known to have occurred, and certainly no manipulation. The cause, therefore, is not necessarily faulty reduction. In one the forearm was subluxated slightly outwards. So far as my histories are of value, it seems probable that the impact met the forearm held forward with the elbow bent: and, acting against a rigid internally rotated shoulder, caused a violent abduction strain at the elbow which tore away the epicondyle and caused the joint to gape. The amount of lateral mobility found at the operation showed that dislocation sideways would be a possible and even likely complication, and it is suggested that when dislocation occurs it is secondary to the tear of the inner part of the capsule. It is noteworthy that out of the four cases detailed (Walker and Cotton) lateral subluxations were found by the operator in two; the two others gave a history of a posterior displacement, but this had already been corrected.

A striking feature of Cotton's cases is the appearance without exception of the nerve block, which is unmentioned in Fairbank's. These were no doubt primary contusions resulting from stretching and friction over the sharp edges of the epicondylar bed at the moment of abduction, rather than compression due to the tension of soft parts, as Cotton seems to suggest. Not infrequently, as Platt has shown, nerve lesions are found in company with epicondylar separation, whether associated or not with dislocation, and these are possibly of similar origin. In the third case detailed by Cotton the nerve was actually found imprisoned between the humerus and ulna. To me this is capable of no other explanation than that wide abduction was produced with tremendous tension of the soft parts on the inner side of the elbow. The epicondyle and capsule giving way at this point, these structures entered the joint more or less in the same way as fascia, and even skin may be found nipped at the inner side of the knee after a severe abduction injury. The escape of the nerve in those cases in which no conduction block is evident is due presumably to an anatomical arrangement well behind the fracture or to the absence of highly energetic manipulations.

CONCLUSIONS.

It is possible that the injury described is distinctly commoner than might be supposed from its scarcity in the literature of elbow-joint lesions.

It is probably caused by a severe abduction strain, and is in the nature of an internal lateral ligament rupture. It is not uncommonly associated with a lateral subluxation of the forearm.

Detachment of the internal epicondyle with its lateral ligament and flexor origins is suggested as an operative approach to the inner side of the elbow-joint.

In conclusion, I must express my thanks to Miss Greg, who has been kind enough to make for me the sketches of the operation and the drawings of the *x*-ray appearances.

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AGGLUTININS TO B. DYSENTERIAE IN THE APPARENTLY HEALTHY.

BY

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My reasons for undertaking the investigation of which details are given were as follows:

1. To obtain an estimate of the number of people now showing agglutinins to *B. dysenteriae* in the absence of a clinical history of the disease, and when the specimens are taken from patients residing in districts in which clinical dysentery is rare.
2. To examine the alleged influence of sex on the prevalence and strength of these reactions.
3. To ascertain the types of the dysentery group most frequently involved.
4. To determine to what extent the occurrence of these so-called normal agglutinins can interfere with the serological diagnosis of dysentery.
5. To compare the agglutinins in healthy people with those of a recent epidemic in order to see if there are any essential differences between them.

Many have investigated the subject, but there is a lack of uniformity in their findings, probably due to different methods of working, variable agglutinability of the cultures, or local epidemiological conditions. A great deal of work was done during the war, when the incidence of dysentery and the number of carriers were above the usual level. It seemed worth while to go into the question again under more settled conditions and with improved methods.

Professor Dreyer's technique was used; each serum was tested with standardized cultures of Shiga's bacillus; Flexner's bacillus, Types V, W, X, Y, and Z; and Sonne's bacillus. In addition to saline controls, each specimen was investigated with a standardized culture of *B. abortus* Bang, as this micro-organism was deemed a suitable contrast to the dysentery group. Positive results were verified at least once by different stocks of culture. Serums to the number of 524 were examined from 262 males and 262 females. The results are shown in the following table.

MALES.			FEMALES.		
No. of Specimens.	Types.	Units.	No. of Specimens.	Types.	Units.
2	Positive to Sonne	1	1	Positive to Sonne	6
5	" " "	2	6	" " V	2.5
1	" " "	6	6	" " V	4.5
1	" " V	4.6	3	" " V	11.5
3	" " V	11.5	1	" " Z	9
1	" " V	46			
1	" " W	13			
1	" " Z	10			
1	" " Y	4.5			
245	Negative to all		245	Negative to all	
262			262		

The total 524 serums showed 33 positive reactions—that is, 6.29 per cent. Most of these positive cases came from crowded industrial areas, and only a few from the rural

districts. The 262 males gave 16 positives, or 6.1 per cent., and the females 17 positives, or 6.48 per cent. The males reacted most frequently to Sonne's bacillus, and the females showed a predilection for Type V of the Flexner group. There were no agglutinins within the limits of dilution used to either the Shiga bacillus or Type X of the Flexner group, and the females failed to agglutinate the W or Y types. The serum giving the strongest reaction was from a male—46 units to Type V. There was no explanation of this high titre. The male showing 13 units to Type W was aged 21 years; he had not been inoculated, had not been abroad, and had never suffered from dysentery. All the positive reactors were questioned with a view to obtaining evidence of present or past disease, but in only one instance could a definite history of dysenteric infection be obtained. This man stated that he had suffered from severe dysentery thirty years previously and that he had lived in India for fifteen years. His reaction was 6 units to Sonne's bacillus; no dysentery bacilli were found in this patient's faeces. Four of the female reactors gave vague histories of periodic diarrhoea, and one woman, with 11.5 units to Type V, had suffered from recent diarrhoea of several months' duration. She stated that during the illness she had passed about seven motions daily, and that slime was present, but no blood. She was now quite well, but a specimen of faeces could not be obtained.

One female serum was positive to *B. abortus*, but no history of illness which could be associated with this micro-organism was obtained. The patient was negative to all the dysentery group. The result is mentioned in view of the recent publications pointing out the pathogenicity of this bacillus for human beings. Several of the positive serums to *B. dysenteriae* were re-examined over a period of four months, and in all except one the titre remained stationary.

A comparison between the results obtained in the above table and the serological findings in a recent small epidemic of dysentery showed that co-agglutinins were absent from the apparently normal series within the limits of dilution of the standardized test, but co-agglutination of closely associated types was common in the patients suffering from acute dysentery. In this epidemic, which was for the most part a Flexner V infection, the strength of the reactions varied from 4 to 114 units, and several specimens reacted in the neighbourhood of 11 units—that is, showed less agglutinins than several of the specimens taken from people showing no clinical evidence of dysentery. The proportion of positives in the epidemic on one test was only 40 per cent., and while this figure contrasts with 6.29 per cent. found in healthy people, it leaves a big residue of negatives.

COMMENT.

Many of the published estimates of the number of healthy people showing agglutinins are higher than on the present occasion. Major Manifold[1] in Poona has recently examined the blood serums of 66 British troops and 121 Indian troops who were not suffering from dysentery, or on the first or second day after the onset of dysentery before agglutination due to the existing attack could become apparent in the serums. He used Professor Dreyer's technique. Of the British 31.8 per cent., and of the Indians 50.6 per cent., were positive to the Flexner group. Flexner V agglutinins were present in a larger percentage and to a higher titre than the agglutinins of the other Flexner strains. The highest titre, 1 in 250, was observed in the Indian troops; the British troops in no instance showed agglutination in a higher dilution than 1 in 125. The high percentage found by this investigator is consistent with local conditions, as Flexner infection is frequent in Poona.

During the war other authorities[2] found agglutinins to the Flexner group in 91 out of a total of 120 recruits. The positive reactions were present in dilutions varying from 1 in 24 to 1 in 192. These results were obtained with Oxford Flexner cultures. No definite history of dysentery could be obtained from these soldiers, but four had recently suffered from diarrhoea and only three had been abroad. Dysentery convalescents and carriers were more frequent at the time of this investigation than they are now, and the high percentage of positives found may be reasonably attributed to subliminal infection resulting from the conditions of camp life at the time.

From the foregoing it will be realized that a patient suffering from dysentery may give a negative agglutination reaction, whereas a person without symptoms of disease may show agglutinins. This paradox is not so misleading as it appears to be, for in an epidemic a bacteriological examination of the faeces soon settles the matter, and, anyway, some of the patients suffering from acute infection may show strong agglutinins with a rapidly changing titre sufficient to give a useful lead when waiting for the isolation of the micro-organism. It is in the isolated case, or when the patient is suffering from mild and protracted diarrhoea, that difficulty arises, and then it is unwise to frame a diagnosis on the agglutination test alone unless the titre is convincing. The Medical Research Council have suggested a standard as indicative of active infection. Their report[3] states that 10 standard agglutinin units per cubic centimetre of serum in a man and 20 units in a woman are, for all practical purposes, diagnostic of an active bacillary dysenteric infection caused by the bacillus agglutinated, and that 6 to 8 units in a man and 12 to 16 units in a woman justify a strong suspicion of dysenteric infection, provided that the patient has not previously had the disease or has not been inoculated. This standard is a great help, especially in so far as it refers to the higher titres, which are definitely stated to be diagnostic, but it is not infallible, and active dysentery cases may not reach the required titre and apparently normal people may exceed it.

When considering the source of these so-called normal agglutinins it should be remembered that, though widespread serious Flexner epidemics are rare in this country among civilians leading an ordinary existence, there is every reason to believe that mild infections are commoner than is generally supposed. Even when patients show definite clinical signs the causal bacillus may be concealed and outgrown by streptococci and *B. coli*. Streptococci are often present in abnormal numbers in Flexner infection. This fallacy is encouraged by faulty technique. Very frequently mild diarrhoea is ignored by the patient and never comes to diagnosis, and further loopholes are left by irregular fermenting types and the various para-dysentery bacilli.

The ease with which dysentery may occur in institutions shows that the micro-organisms are ubiquitous and that they only need some contributory factor to produce typical disease. Shiga infections are rarer in this country than Flexner and associated types, and it seems to be more than a coincidence that agglutinins to Shiga's bacillus were absent from the blood serums of the healthy people under review. The evidence, then, that most of these so-called normal agglutinins are due to subliminal or mild infection may be summarized thus:

(*a*) Shiga infections are rare in this country; agglutinins to this micro-organism are also rare in healthy individuals.

(*b*) When dysentery infections were more frequent in this country the percentage of healthy people showing agglutination was higher than that revealed in the present series.

(*c*) In countries where dysentery is now frequent the percentage of healthy people showing agglutination is much higher than in England. These results have been obtained by up-to-date standard methods, and should be comparable with the present series.

(*d*) Mild attacks of diarrhoea are often ignored by the patient, and do not come under the observation of the physician.

(*e*) Most of the positives in this investigation were obtained from people residing in thickly populated industrial districts.

(*f*) Normal agglutination is absent at birth.

We have a parallel in diphtheria of virulent micro-organisms producing serological changes with transient or unrecognizable disease, and it is now generally admitted that the natural antitoxin found in a large proportion of the population is the outcome of "larval" infection with the diphtheria bacillus. A more lasting antitoxin is produced by this mild diphtheria than by one acute typical attack. Although antitoxin and agglutinins are two

different things, it may be that similar factors are at work in dysenteric infections, and may explain the absence of lasting agglutination in some acute cases and its persistence in those people who can give no history of dysentery.

CONCLUSIONS.

1. Agglutinins to *B. dysenteriae* were present in 6.29 per cent. of 524 serums taken from individuals only one of whom gave a history of dysentery, thirty years previously.

2. The series consisted of an equal number of males and females. The males showed 6.1 per cent. positive and the females 6.48 per cent. The highest titres were found in specimens from males.

3. The males reacted most frequently to Sonne's bacillus, but the highest titres were to Types V, W, and Z of the Flexner group. The females reacted most frequently to Type V Flexner.

4. The presence of these "normal agglutinins" may interfere with serological diagnosis, as they sometimes come within the range of the standards laid down as indicative of active infection; besides, in active infections agglutinins may not always reach these suggested standards.

5. There is sufficient evidence to suggest that these so-called normal agglutinins are the outcome of subliminal or mild infection with homologous or associated micro-organisms, and that the term "normal" when applied to this reaction is a misnomer, and should be avoided.

My thanks are due to Dr. F. M. Rowland of Lichfield for revising the manuscript.

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[2] Medical Research Committee Special Report Series No. 7.
[3] Medical Research Council Special Report Series No. 51.

A CASE OF CONJOINED TWINS.

BY

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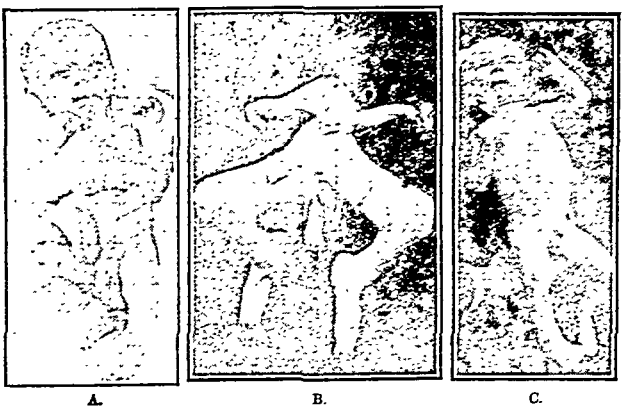
RARE as are conjoined twins, still rarer are cases in which one twin is normal and the other has a parasitic foetus attached. The case recorded below seems, therefore, worthy of publication.

A multipara, aged 35, living near Durban, Natal, gave birth to male twins on November 12th, 1928. The labour was, on the whole, easy. The first child, a head presentation, was normal in every respect, and weighed 7 lb. The second child, a breech presentation, had a parasitic foetus attached to it. I was called half an hour after the delivery, as the midwife, finding an unusual bulging in the umbilical region of the second twin, was afraid to cut the cord. When I arrived I found the placenta in the bed, and after cutting the cord I noticed a hernia-like protrusion of the bowel in the umbilical area.



A. B. C.

A, The conjoined twins at the age of 2 months. B, The parasite immediately after the operation. C, The autosite at the age of 3½ months.

Family History.

The father is 38 years of age, a factory employee of poor physique, below the average height and weight, and of intemperate habits. The mother is a healthy woman, and is of average height, weight, and physique. Three other children (two boys and a girl), aged respectively 7, 5, and 3, are normal in every respect. There is no history of miscarriages or of difficult labour.

The Autosite.

The autosite, a small baby weighing 5 lb. 8 oz., was poorly covered, had deficient muscle tone, loose skin, a Hippocratic facies, and a feeble cry. It was alert, cyanotic, especially about the feet, and had normal powers of suction and deglutition. The head was normal, except that the cranial bones were unusually soft. The lungs, the upper and lower extremities, the abdomen, and the anal orifice were normally developed, and hearing, sight, and intelligence appeared to be normal. On the other hand, a bruit was heard in the heart, due, probably, to a patent foramen ovale, and the genito-urinary system was abnormal. The left testis was undescended, and micturition occurred at independent times from the penis of the autosite and from that of the parasite.

The Parasite.

The parasite was attached to the autosite by a pedicle the circumference of which was about that of half a crown. The pedicle was partly bony and partly muscular. The upper bony part was attached, slightly to the right, to the lower end of the sternum of the autosite; the lower part of the pedicle was muscular, and joined to the upper part of the abdominal wall.

The chest of the parasite was undeveloped, and contained no heart or lungs. Its upper extremities were rudimentary; the *right* arm was longer than the *left*, and each hand had one rudimentary metacarpal, finger, and nail. The lower extremities were well developed and equal in size, but they were flexed to a right angle, and could not be straightened or bent any further. The ankles were stiff; each foot had five well-developed toes. There were no testes in the scrotum, but the penis was well formed, and the parasite passed water over the autosite. There was no umbilicus and no anal orifice, though a distinct dimple marked the place of the latter. The parasite displayed no movement, but when its skin was pinched or pricked with a needle the autosite winced and uttered a feeble cry.

Operation for Umbilical Hernia.

On November 13th, when the child was one day old, I opened the abdomen, removed the hernial sac, returned the intestines to the abdomen, and closed the wound. The child made an uninterrupted recovery, the cyanosis disappearing almost at once and its general condition improving. Waterproof material was used to protect the wound from the parasite's urine. Healing took place by first intention, leaving a clean scar.

I considered that the child's condition did not justify an attempt to remove the parasite, and decided to wait a little before undertaking this operation. Later, however, when he was 10 weeks old, I found him looking *extremely ill*, and was able to induce the father to allow me to remove the parasite at once.

Removal of Parasite.

The operation was performed on February 6th under light chloroform anaesthesia. I made an incision round the pedicle, and on opening the abdomen I found that there was free communication between the abdominal cavities and between the bowels themselves. The peritoneum of the autosite was continuous with that of the parasite, but the latter's bowel had an independent mesentery attached to its posterior abdominal wall. The intestines of the parasite were very thin and narrow; they originated from the autosite's small intestine and ended in its lower bowel. The parasite had one small right kidney, but no liver or spleen. Large blood vessels and nerves passed from the autosite to the parasite. I ligated and cut the vessels passing into the parasite, and then decided to cut through the bowel of the parasite, taking care not to endanger the intestines of the host. Keeping as close to the parasite as possible, I clamped the bowel, removed it as one would an appendix, and returned the host's intestines into his abdomen. I closed the abdomen in the usual manner and brought the edges of the skin together by interrupted silkworm-gut sutures. The operation lasted fifteen minutes, and except for a little sloughing of the wound the child made an uneventful recovery. The parasite weighed 8 ounces.

The child was breast-fed at three-hourly intervals, and twelve hours after the operation he had a normal stool. The fact that thereafter the stools were of normal colour and consistency assured me that his intestines had not been damaged at the operation. He began to improve steadily and gained in weight, and a month after the operation he was still alive and doing well.

forms occurred between them and the latter. Barnard's view had now received pretty general acceptance, and it would appear that the vast majority of all mediastino-pulmonary growths were carcinomas derived from the bronchi, while sarcomas of the lymph glands or thymus were somewhat exceptional. The fact of the growths arising from a tissue which was exposed to agencies inhaled from without the body may have much significance for their causation. With regard to the distribution of the tumours and effects on local organs, 45 cases were examined post mortem during the past six years. In 13 of these there was a very large mediastinal growth, and in most of the remainder mediastinal glands were invaded. The lung roots were invaded in all except one case (right 23, left 18, both 3); the single exception was a lymphosarcoma in a youth of 17, the only one of the kind in this series. Bronchial involvement with ulceration and compression was definitely observed in 35 cases, and only noted to be absent in one, the lymphosarcoma. As a result of bronchial obstruction and infection there were abscesses or cavities in the lungs in 23 cases, and other effects in 9 more. The pleurae commonly showed effusions, sometimes haemorrhagic, and in 7 cases there was emphysema. Professor Shaw Dunn said that a very definite increase in the percentage incidence of these tumours among post-mortem cases was observed in Manchester by J. B. Duguid (1927), and analyses made at other centres in this country and abroad all agreed in showing an increased frequency, especially in the past ten years. The cause of this had not been discovered, but it had generally been assumed that prolonged inhalation of some foreign material from the atmosphere must be responsible. In this connexion the special liability of the Schneeberg miners in Saxony to cancer of the lung was of much significance. A possible causal factor for the disease in their case is arsenic, which is present in the dust of the mines. Any theory to account for the prevalence of lung cancer must accord with the fact of its much greater frequency in men than in women. The greater pulmonary ventilation occurring in heavy manual workers might play a part in this.

Radiological Aspects.

Dr. E. W. TWINING said that malignant tumours of lung and mediastinum gave rise to very diverse radiological appearances, which depended less upon primary histological character than upon the rate and mode of progression and on secondary effects—of which the most important were bronchial obstruction, atelectasis, infection, central necrosis with cavity formation, and pleural effusions and thickening. These factors might fundamentally alter the *x*-ray picture in a short time, and the progressive study of these changes in a series of cases had helped in the recognition of cases which came first under observation, as usually happened, with the disease well advanced. The differential diagnosis from tuberculous lesions, from encysted pleural effusions, and inflammatory lesions of the lung was not easy, and required very careful *x*-ray study; the full lateral view was essential, and the "hollow-back" position often useful. Judgement might have to be suspended, and the course of the case watched for a time. Special difficulty in diagnosis attached to the cavernous forms of growth, which simulate chronic abscess.

ACHLORHYDRIA AND PERNICIOUS ANAEMIA.

AT a meeting of the Section of Medicine of the Royal Society of Medicine on June 11th, with Dr. ARTHUR F. HURST in the chair, an address was delivered by Dr. W. B. CASTLE of Boston, U.S.A., on the result of some work carried out in Professor Minot's clinic on the relationship of achlorhydia to pernicious (or Addison's) anaemia.

Dr. Castle expressed the pleasure it gave him to speak on this subject in London, where the description of the disease originated, and where many of its features were first described. It was due to Hurst and other British physicians and investigators that research on the subject was started in America. The speaker believed that achlorhydria was almost invariably present in pernicious anaemia, that it preceded the development of the disease by a considerable interval, even years, and also that in the families of those who developed pernicious anaemia there would be found more than the average incidence of achlorhydria. It was interesting to note that other conditions which might lead to achlorhydria had also been followed by the development of pernicious anaemia. In extensive cancer of the stomach, achlorhydria and pernicious anaemia had been found to develop coincidently or subsequently. This was not always the case, but in some of these cancer cases he had seen the true blood picture and the reaction to liver extract. Certain cases of chronic alcoholism where gastritis had appeared and achlorhydria subsequently developed led in the same way to pernicious anaemia. Three cases were on record—one by Moynihan in this country, a second by Hartmann at the Mayo Clinic, and a third from Heidelberg—in which, after complete removal of the stomach, with, presumably, the production of complete achlorhydria, the patients, surviving the operation for at least a year, developed pernicious anaemia; there was no evidence in these cases of metastases or any other cause, such as bleeding, to explain the anaemia, and apparently in each of them the picture was complete. Dr. Castle mentioned an interesting case in New York. Here pernicious anaemia developed in a child aged 13, at which age the spontaneous appearance of the disease was very unusual. Liver extract was given, and the blood findings showed a characteristic response, but other symptoms, such as vomiting, continued, and, an obstruction at the pylorus being noted, an operation was done. It was found that at the pylorus a number of tuberculous lymph glands were matted together, almost occluding the opening. This, therefore, was a case of achlorhydria produced by obstruction at the pylorus, and producing in some way a picture of pernicious anaemia at an age when it was uncommon for the disease to develop.

The use of liver or liver extract had thrown the greatest light on this subject. When liver was given to a patient with pernicious anaemia he proceeded to develop a normal blood picture, and in every way became better, except perhaps for some residual nervous disturbance, but apparently there was no amelioration of the achlorhydria or achylia previously exhibited. The characteristic response to liver made one think of pernicious anaemia as a deficiency disease, though it was difficult from this point of view to understand why persons who never ate liver did not develop pernicious anaemia at once. It was true that, once having developed the disease, most patients had to continue taking liver or liver extract for the rest of their lives. But the speaker imagined it not difficult to think of a hypothesis which connected achlorhydria with the disease as a deficiency disease. Since liver was largely a protein substance, and the function of the normal stomach was obviously for the peptic digestion of protein, it was thought worth while to take the hypothesis that patients who had achlorhydria developed pernicious anaemia because they could not develop from the protein of ordinary food a certain necessary principle. Within a few days after the patient with pernicious anaemia had been given liver there appeared in the circulating blood a number of immature cells, recognized by the fact that they had a blue-staining network known as reticulum. For patients with less than 3,000,000 red blood cells per cubic millimetre it might be expected that with a maximum dose of liver or liver extract there would be an inverse relationship between the percentage of reticulocytes developed at the maximum point of the reaction and the red blood cell count. The speaker proceeded to describe some experiments, and showed tables which bore out this result. A source of protein in the shape of ordinary beef muscle, finely divided, was taken to the amount of 300 grams and allowed to remain in the stomach of a normal individual for forty-five minutes; then, by stimulating the pharynx, the material was recovered, incubated, and administered through a nasal tube to pernicious anaemia patients. A complete duplication qualitatively was found of the phenomena anticipated with liver or liver extract. Ten cases were so treated, and in all but two of them the expected response of reticulocytes appeared. There were special circumstances attaching to the two cases which did not show the response. The meat itself did not contain anything which was capable of evoking such a response, and it was therefore thought possible that the effective principle was supplied by the normal gastric mucosa, which had operated upon the protein, and from further experiment it appeared to be

demonstrated that the response was due to an interaction between the normal human gastric juice and the beef muscle. It was then desired to find out what was the exact type of interaction which took place, but the experiments with this end in view had not yet been completed. The normal gastric contents included gastric juice, swallowed saliva, and occasional traces of duodenal contents. It had been possible to show that the swallowed saliva had nothing to do with the action. The general result of the experiments so far was to prove the importance of interaction between, on the one hand, some substance which was thermolabile, and which was destroyed under the same conditions as those under which the enzyme activity of gastric pepsin was destroyed, and, on the other hand, a protein which might be obtained from beef muscle. It had not been possible to show that this reaction occurred generally with enzymes operating in an acid medium. Patients were given beef muscle which had been incubated *in vitro* with hydrochloric acid and commercial pepsin, but the results were negative, and the commercial pepsin did not work. The general result of the experiments was consistent with the hypothesis that this reaction was a digestion of the protein made by an enzyme working in an acid medium, but possibly only natural human pepsin was effective in this respect. In conclusion, the speaker mentioned the parallel between diabetes and pernicious anaemia. In diabetes the pancreas was the organ at fault, and the physiological defect was the internal metabolism of carbohydrate; in pernicious anaemia the defect was in the external manipulation of the protein, and the stomach was the defective organ.

Dr. HURST mentioned, in addition to the three cases given by Dr. Castle of pernicious anaemia developing after gastrectomy, one other case recorded by Ellis, in which the patient developed pernicious anaemia five years after the operation.

OBSTETRICS AND GYNAECOLOGY.

At a meeting of the North of England Obstetrical and Gynaecological Society, held at Leeds on May 24th, Dr. A. M. CLAYE read a paper on "The puerperal morbidity rate in cases delivered normally: a comparison between cases examined vaginally and cases not examined vaginally." This will be published in full in a later issue.

Hypernephroma of the Ovary.

Mr. W. GOUGH (Leeds) showed a specimen of hypernephroma of the ovary. The patient was a married woman, aged 25 years. She had been normal as a child, but when seen she had a deep bass voice, and had to shave daily. The menses had appeared at the age of 13, and were regular up to the age of 20, when they ceased, and the changes in secondary sex characteristics began to appear. Her sexual feelings were normal. A mass, separate from the uterus, was found in the left iliac fossa, and there was some free fluid. On July 25th, 1928, abdominal section was performed. Two or three pints of straw-coloured fluid escaped, and a tumour of the left ovary, which had no adhesions, was removed. It was of bluish colour with pinkish orange excrescences on its surface. The right ovary and uterus were normal, and there were no swellings in the kidney regions. The tumour was reported as a typical hypernephroma. Twenty-eight days after operation the menses appeared. They next occurred a fortnight later, and thereafter were regular. As she last menstruated on April 6th she may be pregnant.

Dr. STEWART (Leeds) said the tumour was a simple benign hypernephroma exactly similar in structure to an adenoma of the adrenal gland. Dr. LEITH MURRAY (Liverpool) asked if male characteristics occur with unilateral renal hypernephromas, and said he thought Glynn asserted that they only occurred with bilateral tumours. Dr. Leith Murray had seen a case of sudden change in sex characteristics in a girl aged 25 in whom no abnormalities in the pelvis or the kidneys could be found. He asked if the cells in this case could be paralutein cells. Dr. STEWART said she did not consider that the cells showed the characteristics of paralutein cells. It was not necessary for the tumours to be bilateral to cause changes in sex characteristics.

Two Cases of Pyometra.

Miss RUTH NICHOLSON (Liverpool) recorded two cases of pyometra. The first patient was a single woman, aged 49, whose chief complaint was a constant vulval irritation for four to five years, and more recently a vaginal discharge. She had had cystitis as a child. The periods commenced at 14, and had always been irregular and scanty. She had not menstruated at all for the last five years. On bimanual examination thickening and fixation of the appendages was felt, and a diagnosis of tuberculous salpingitis was made. At operation very marked adhesions were found. The tubes were nodular, closed, and adherent to the ovaries. Panhysterectomy was performed. When the uterus was opened the cavity was found to be filled with a thick yellow pus. Microscopical sections showed typical giant-celled systems.

The second patient was a woman, aged 70, who had had a high amputation of the cervix eight years previously. She complained of a yellow discharge, partial rectal obstruction, and some vaginal haemorrhage. A mobile, solid mass, about the size of an orange, was felt continuous with the cervix. At operation, as soon as the vessels and cellular tissue had been cut across, the uterus broke away at the point where the previous amputation had been done. The specimen showed the uterine cavity distended with pus and lined with granulation tissue. Microscopically there was no evidence of malignant disease.

Puerperal Infection with B. welchii.

Dr. BURRIDGE (Leeds) recorded a case of puerperal infection with *B. welchii*. The patient was a primipara, aged 39, admitted to hospital with a diagnosis of prolonged labour and vomiting. Labour had commenced on March 21st, and on admission on March 25th her general condition was good: the temperature was 98.4° F., pulse rate 88. Vomiting had ceased, and no pains were present. The uterus was not tender, and no foetal sounds could be heard. The cervix was five shillings dilated, but not fully taken up. There was no change on March 26th, but by the morning of March 27th she was seriously ill, restless, of toxic appearance, and with a rising pulse. By noon the pulse was 120, the abdomen was distended, and the uterus tender. Preparations were made to assist the uterus to empty itself. The cervix was now half dilated, and an unsuccessful attempt was made to dilate it manually. This manipulation allowed the escape of a quantity of highly offensive gas, and some foul, frothy brown fluid. As immediate evacuation of the uterus was inadvisable axis traction forceps were applied, and a weight of 7 lb. was attached to the traction rods over a pulley. Pituitrin 4 minims was given at half-hourly intervals for five doses. These measures were successful, and by 5 p.m. the child's head was born. There was considerable difficulty with the delivery of the trunk owing to the enormous gaseous distension of the abdomen. Following delivery there was a free escape of brownish frothy fluid and much gas, but no haemorrhage. Swabs from the interior of the uterus, umbilical cord, and foetal abdomen gave a good growth of *B. welchii*. The patient stood delivery well, but in the evening restoratives were necessary. The next morning she was a little better, but the placenta was still in the uterus. It was left alone, as it was not causing symptoms. On March 28th 10 c.cm. Weinberg antigas gangrene serum and 40 c.cm. antistreptococcal serum were given. Further doses of antigas gangrene serums were given on the second, third, fourth, fifth, sixth, eighth, and eleventh days of the puerperium. Attempts to express the placenta on the fourth and fifth days of the puerperium were useless, but very painful. The patient remained *in extremis* for four days after delivery, and a change for the better was then noticed. Progress towards recovery was then remarkable, despite a vesico-vaginal fistula, which became manifest on the sixth day. By the seventeenth day the uterus was down to the pubis, and the lochia were scanty and non-offensive. The patient was sitting up on the twenty-first day, and walked a few steps on the thirty-fifth day.

The main points of the case are: (1) the absence of haemorrhage; (2) the fact that the placenta was never recovered would suggest that it was liquified; (3) the

retained placenta may have prevented the spread of infection; (4) the value of antigas gangrene serum.

Dr. CROFT (Leeds) remarked on another case which had been reported where a weight and traction rods were used to secure delivery. Professor CARLTON OLDFIELD (Leeds) mentioned a case of full-term ectopic pregnancy in which the child was extracted, but the placenta never came away. Later, this patient had an operation for ventral hernia, and no trace of the placenta could be found. Dr. STACEY (Sheffield) commented on the method of delivery as being useful in cases where there were no pains, and a dead child, in the presence of infection of the mother.

Dr. KING (Sheffield) had had three cases of *B. welchii* infection, none of which had recovered. He thought the conduct of labour in this case had been admirably conservative. He believed the idea of forceps *plus* a weight to be a valuable one, but that it had dangers, as witness the vesico-vaginal fistula in this case. He thought that labour ceased because there was an oedema of the uterine muscle, which caused paralysis. He had had a case in which he left the placenta *in situ*, and on the tenth day a portion about the size of a five-shilling piece was passed, and that was all. He considered that in the presence of a gas-forming organism tissue destruction must be much more rapid. Dr. LEITH MURRAY (Liverpool) had seen two cases of gas gangrene infection, both of which were fatal. The distressing feature he noticed was that the patients were acutely conscious although their bodies were really dead.

Dr. BAILEY (Leeds) had seen a number of cases of retained placenta. He always left the placenta alone in the absence of symptoms. Altogether he had had about thirty cases, and quoted some in which the placenta came away at varying intervals from thirty hours to six days, and one case where the woman would not allow him to examine her or to see the lochia. In this case, to the best of his knowledge, the placenta never came away. She was seen in his surgery two months after her confinement, quite well.

ENTERO-VESICAL FISTULA.

Professor CARLTON OLDFIELD (Leeds) reported two cases of entero-vesical fistula. The first patient was originally seen in 1914. A diagnosis of diverticulitis was then made and a pelvic abscess drained by posterior colpotomy. In 1928 the patient had three attacks of pain at different times, and after the third attack began to pass faeces and flatus from the bladder. This made the speaker still more certain that the condition was diverticulitis. The patient now had so much trouble that something had to be done. No information was obtained from cystoscopy. Abdominal section was performed and very dense adhesions were found. Eventually the bladder, uterus, and sigmoid were separated and a stony hard swelling was found adherent to the uterus and sigmoid. This was eventually separated, leaving a hole in the sigmoid, and a track lined by granulation tissue was discovered leading down to the bladder. The track was scraped and the hole in the sigmoid closed. The patient later developed obstruction, which was relieved by a caecostomy, and thereafter she made a good recovery. The report on the nodule was "typical, caseating, active tuberculosis; some parts of ovary, and plain muscle, are present." Professor Oldfield thought that the original lesion must have been tuberculous salpingitis.

The second case was one in which a vesico-vaginal fistula followed a Wertheim's operation. The fistula was repaired and a few days later urine was being passed per rectum. No further treatment was undertaken for this patient, and she remained quite well. Her only disability was the necessity for frequent bowel actions to pass urine.

RADIUM TREATMENT OF BUCCAL CANCER.

A MEETING of the Surgical Section of the Royal Academy of Medicine in Ireland was held in Dublin at the Royal College of Physicians on May 26th, with Mr. R. A. STONEY in the chair.

Mr. WALTER C. STEVENSON, in a paper on radium technique, said that unless those who used this powerful agent had suitable apparatus, and fully appreciated the physical properties which govern radiation, disastrous results would follow. This note of warning was necessary in the present boom, when those without previous experience might be tempted to employ this agent. He dealt briefly with the importance of obtaining uniform radiation and efficient treatment without over-dosage, and the risks of stimulating a growth by too small doses. He advocated the closest co-operation between the "radio-surgeon" and the specialist when carrying out surgical procedures in special branches, as in the throat or gynaecological conditions.

Mr. Stevenson showed six patients; in three of these an apparent clinical cure of cancer of the tongue, involving the floor of the mouth, and one of cancer of the lip, had been obtained by inserting six iridio-platinum needles containing 53.93 mg. of radium element, combining this treatment with surface application. A cancer of the tongue, in which a cauliflower growth had already disappeared, had not yet healed, the patient only having been treated about ten days before. A recent case of extensive cancer involving the whole upper lip and mucous membrane of the cheek, was also shown, in which twelve needles, containing 1 mg. of element each, had been employed in three positions, or thirty-six foci, during eighteen days. This patient had so far done remarkably well, all the growth in the lip having disappeared, and most of the growth in the cheek.

The CHAIRMAN said that, although some of the cases shown by Mr. Stevenson could not at present be claimed as cures, others appeared to be clinically cured, though it was not possible to say whether there would be a recurrence later on. In cases of carcinoma of the tongue there was at present a great tendency to recommend radium rather than operation. Operation in these cases entailed considerable risk, and if it was possible to get something which was at least as certain of doing good and of preventing recurrence he thought it should be recommended. When, however, he came across a case of early cancer of the tongue which could be removed by a partial excision of the tongue he did not feel justified in advising radium treatment, as in these cases it was possible to remove the growth at operation without producing any material deformity, and cure could be promised. There was also a certain class of case in which great assistance was derived by either radium treatment or *x*-ray treatment in rendering inoperable cases operable.

Dr. M. HAYES, referring to the complexities of radiotherapy, said that a tremendous amount of damage would be done unless those employing radium treatment would be guided by persons with previous experience of it. The physics of radium should be thoroughly understood by those using it in the treatment of disease. One of the chief dangers was radium burns, but unless the dose had been greatly excessive most of these could be healed by the application of normal saline solution. Referring to the problem of radium therapy *versus* operation, he said that if a malignant condition was operable surgery was preferable to all or any forms of radium treatment. Time alone would settle which was the best method. In cases of cancer of the tongue he thought radium treatment was preferable to operation, as after the treatment the tongue and speech were normal, and there was not the risk of deformity which surgery entailed.

Mr. C. J. MACAULEY said that cases of epithelioma of the lip, whether early or late, benefited by surgery, but as cases of carcinoma of the tongue and floor of the mouth were practically never seen in the early stages they did better by radium treatment. He always prepared such patients for radium treatment by getting any bad teeth removed and excising the glands in the neck; he thought it was a great mistake to treat these cases by radium without carrying out an extensive excision of the glands in the neck beforehand. Operations for cancer of the mouth carried a very high mortality, left the patients very deformed, and did not ensure any better promise of lasting good than radium treatment. He thought that the outlook for these patients was very much better at present than it had ever been before, and that any growth which could not be freely excised should be treated by radium.

Mr. A. CHANCE said that in the present state of knowledge he was convinced that radium treatment was suitable for all cancers of the tongue, except in very advanced

cases, where cure by any treatment was out of the question and the use of radium would discredit its value. The ultimate results of surgery in cancer of the tongue were as bad as they could be, and time alone would show what were the ultimate results to be expected with radium. On the established facts, radium should be the method of choice even in the earliest growths. The toilet of the mouth should be carried out before radium application. To extract a septic stump after radium application was to ask for septicaemia, as the vitality of the surrounding irradiated tissues favoured its development. There were reports in the literature of fatal results so brought about.

TUBERCULOMA IN THE FRONTAL LOBE.

Professor H. F. MOORE and Mr. C. J. MACAULEY showed a boy, aged 15, who, five years prior to his admission to the Mater Misericordiae Hospital, had sustained a head injury with a scalp wound in the left parietal region. Two years later he began to suffer from twitchings of the right side of the face, right eye, and right arm; the twitchings were preceded by an aura of taste, but the boy never lost consciousness. He had an attack while in hospital, and for some time after had considerable difficulty in speech. On examination an irregular defect could be felt over the upper part of the left parietal bone. There was paresis of the right arm with distinct astereognosis. The boy walked with a hemiplegic gait and the abdominal reflex was absent on the right side; Babinski's sign, ankle, and rectus clonus were present. Examination of the eyes revealed double optic neuritis with advancing atrophy, the latter being more advanced in the left eye. The Wassermann reaction was negative. X-ray examination showed convolutional atrophy but no bony depression. A diagnosis was made of a cerebral lesion involving the lower part of the left Rolandic area, possibly post-traumatic, and an operation was performed by Mr. MacAuley. A large scalp flap was turned down over the left fronto-parietal region. There was an irregular linear defect in the upper part of the left parietal bone, through which a bluish membrane presented; the defect was enlarged, the extreme thinness of the skull being noteworthy. The membrane, when incised, proved to be the dura mater, and some fluid escaped under moderate tension. The underlying brain was oedematous with flattened convolutions. Through the soft brain tissue one could palpate a firm nodular mass in the interior of the frontal lobe. The pial vessels were ligatured and the brain was incised. The tumour was then gently enucleated. It weighed 93 grams, and on section proved to be a tuberculoma. The boy made a complete recovery; he has had no twitchings since the operation, and power has remarkably increased in the right arm. Weakness in the internal rectus had now gone and the Babinski reflex was absent.

The CHAIRMAN said that the preliminary symptoms in this case were difficult to explain in view of the pathological findings. It was interesting to note the large size of the tumour and its consistency. Tuberculomas were usually small; as they got bigger they turned into definite abscesses. Mr. W. PEARSON thought the prognosis in this case was exceedingly good, and asked if there had been any urinary trouble. During the war he had seen a large number of frontal lesions, and the cases almost invariably suffered from disturbances of micturition. Mr. A. A. MCCONNELL said it was interesting to see a case in which it was possible to remove the tumour, and to find that such a large tumour turned out to be a tuberculoma. In his experience tuberculomas were rare, and the prognosis in the majority of cases was bad, owing to the presence of multiple tumours and the onset of dissemination. He thought that in the present case the patient would probably continue well; if there was to have been dissemination it would have taken place already.

Mr. MACAULEY, in replying, said he understood that the boy had at one time some nocturnal incontinence, but on admission to hospital this had disappeared.

NON-PARASITIC CYSTS OF THE LIVER.

Mr. F. MORRIN read a paper on non-parasitic cysts of the liver. He reported two cases of polycystic disease of the liver which had occurred in sisters during their third and fourth decade respectively. The family history revealed that the father died of pernicious anaemia, and a sister died at the age of 25 from some obscure abdominal complaint. One case was an abdominal emergency, a ruptured parovarian cyst being found at operation. The liver showed extensive polycystic disease, and, in addition, there were cysts in the transverse mesocolon and a cyst situated below the left kidney. The other patient complained of attacks of right-sided abdominal pain and vomiting. Operation disclosed polycystic disease of the liver and localized inflammatory reaction over some large cysts in the right lobe. In this case functional liver tests which were carried out showed no deviation from the normal. The varieties of cysts met with and the views as to their origin were mentioned. The familial association of the cases reported supported the view that the condition was most probably a developmental anomaly. Reference was made to the great difficulty in diagnosis, owing to the absence of jaundice and freedom from digestive disturbance; functional tests in one of the cases showed that the pigmentary, glycogenic, and excretory function of the liver was unaffected.

The CHAIRMAN said that polycystic disease of the liver and kidneys was of interest from an embryological point of view, and he had always been of opinion that these diseases must be due to some congenital abnormality. The fact that the fluid contained in the cysts was of a more or less non-biliary character suggested that it must be the product of cells not normally found in the liver. Mr. MACAULEY said that he thought a large number of cases of polycystic disease of the kidney were associated with polycystic disease of the liver. He wondered what the subsequent fate of patients with this disease was, and if death ensued from interference with liver function. Dr. A. B. CLERY remarked that Dr. Lindo had suggested that the disease was due to the maldevelopment of mesoblastic tissue in the fourth month of life.

Mr. MORRIN, in replying, said that according to the literature no necropsies had been performed in cases of polycystic disease of the liver except in children, but the oldest patient operated on for the condition was 82. In the great majority of cases the condition did not lead to early death, though the more severe cases died in early life.

RECIPROCAL CONTRACTION OF ANTAGONISTIC MUSCLES.

ON June 13th, at a meeting of the Royal Society, Sir CHARLES SHERRINGTON communicated a paper by Lady Briscoe and Miss Winifred Leyshon on the reciprocal contraction of antagonistic muscles in peripheral preparations —using a flashing neon lamp circuit for the excitation of nerve. It had been shown previously by one of the authors that all types of respiratory movement and different degrees of postural tone in the diaphragm could be accurately reproduced by varying the amplitude of a faradic stimulus. In this paper, illustrated by a cinematograph film, it was for the first time shown that reciprocal contraction of antagonistic muscles could be obtained in peripheral preparations by reciprocal excitation of the nerves of the opposing muscles. The electrical stimulation was carried out by using the regular intermittent discharges of a condenser in a neon tube flashing circuit. These discharges were passed either through a primary coil oscillating between two secondary coils, or through an arrangement of potential dividers, one of which consisted of a conducting fluid into which dipped an oscillating wire. Reciprocal changes in the stimuli were obtained by either of these methods, and it was shown that controlled and co-ordinated rhythmic movements of a limb closely resembling natural movements were produced by the suitable artificial stimulation of cut efferent nerves. If during this controlled rhythmic movement the mechanism producing phasic variation was stopped at any point, the limb remained held in posture. The method of stimulation was thus shown to be adequate for both movement and posture. An analysis of the forces controlling movement showed that the control of relaxation was as important for smooth co-ordination as the control of contraction.

Reviews.

DISEASES OF THE LIVER AND BILIARY TRACT.

THE sixteenth fasciculus—a bulky volume of more than a thousand pages—of the *Nouveau Traité de Médecine*,[1] edited by G. H. ROGER, the late F. WIDAL, and P. J. TEISSIER, is devoted to diseases of the liver and the biliary tract. It gives a well-illustrated account of the subject, with special reference to the many advances achieved by the work of French observers. It is written by thirteen contributors, among whom the late Professor F. Widal's name appears as responsible, with Professor P. Abrami, for the article on jaundice, which occupies a tenth part of the volume, and with Dr. Etienne May for a shorter but very considerable account of spirochaetosis icterohaemorrhagica. The volume opens with a description of the methods of physical examination of the liver by Professor Maurice Villaret and Dr. L. Justin-Besançon, who supply five other articles in the work, including that of 150 pages on the cirrhoses. Their account of the physical examination is accompanied by fifteen admirably clear illustrations, including skiagrams and outlines of orthodiagrams. As an introduction to his description of the symptoms of functional hepatic disorder Professor Marcel Garnier passes in review the functions of the liver, and the tests for hepatic efficiency; in their article on the syndrome of portal hypertension Villaret and Justin-Besançon, who later in the volume write on pylephlebitis, discuss the physiological and anatomical aspects of the hepatic circulation, and utilize much of the senior author's experimental work; the appearances of the collateral circulation in clinical cases are well illustrated by figures. In the article on jaundice the subject of haemolytic jaundice, on which Chauffard and other French writers have done so much, is handled fully and in an attractive manner, and attention is rightly drawn to the work of Aschoff and McNee. In the article on cirrhosis—a most valuable source of reference—the etiological influence of tuberculosis and syphilis is discussed, and whereas the former is regarded as unimportant, great stress is laid on previous syphilitic infection. Arguments against the existence of Hanot's hypertrophic biliary cirrhosis are well set out, and the various forms of Hanot's syndrome are noticed. Professor Legry's article on hepatic syphilis is generously illustrated with plates borrowed from works by the late Professor Maurice Letulle. For the account of hydatid disease the valuable services of Professor F. Dévé of Rouen, who has devoted so much attention to the subject, have fortunately been secured; of the rare alveolar form he accepts as genuine five cases only in France. The article on toxic hepatitis, in which reference to the late Benjamin Moore's work on trinitrotoluene is duly made, deals mainly with the effects of alcohol and chloroform, and two forms of the latter—benign and grave—are described. Diseases of the biliary tract are concisely dealt with by Professor M. Garnier and Dr. R. Prieur. In the section on gall-stones surgical intervention is admitted to be more efficacious than medical means of treatment. The concluding article in this instructive presentation, on perihepatitis and perihepatic abscess, by Professor Villaret and Dr. Justin-Besançon, is illustrated by fifteen skiagrams.

In a little volume entitled *Chirurgie des Voies Biliaires*[2] Professor SOBRÉ-CASAS of Buenos Aires discusses the results of cholecystostomy and cholecystectomy as usually practised, and describes several original methods in technique. In suitable cases he drains the gall-bladder after ligature of the cystic duct and of the cystic artery, and he finds that the results are superior to those of the ordinary procedures, in that in no case has the operation been followed by death or by any serious complications. In some cases he excises in addition the mucous membrane from the gall-bladder, leaving the outer coats in place. The details of the operative technique are shown in a series of admirable coloured drawings, which make the author's meaning perfectly clear, even without reference to the text. We would strongly recommend this little volume to the attention of all surgeons who are interested in this important branch of their art. It includes an extensive bibliography.

[1] *Nouveau Traité de Médecine.* G. H. Roger, Fernand Widal, P. J. Teissier. Fascicule xvi: Pathologie du Foie et des Voies Biliaires. Paris: Masson et Cie. 1928. (Sup. roy. 8vo, pp. viii + 1048; 20 plates, 153 figures. 125 fr.)

[2] *Chirurgie des Voies Biliaires.* Par C. Sobré-Casas. Préface du Professeur J.-L. Faure. Paris: Masson et Cie. 1928. (6 × 8½, pp. 119; 142 figures. 35 fr.)

LOOSE-LEAF LIVING SURGERY.

THE *Nelson Loose-Leaf Living Surgery*[3] in eight volumes is produced in a way which makes its appearance a new departure in surgical literature. Most of those who have bought expensive treatises or systems of medicine or surgery have been struck with the appalling rapidity with which they grow old and obsolete, either in part or as a whole. He who has sold his obsolete Ziemssen's cyclopaedia of medicine for 3s. 6d. a hundredweight as waste paper is not easily tempted to invest in another library likely to become rapidly obsolescent. In many cases the symptoms of decay in usefulness are unequally distributed throughout the work, some sections remaining still valuable and authoritative, while others are as good as dead. Struck by such experiences, a number of physicians, in consultation with the publishers of loose-leaf books, combined to bring out a loose-leaf medicine, the success of which has encouraged Messrs. Nelson to bring out the work now under notice. If the expectation of the authors and publishers is fulfilled the epithet "living" will be justified, for the intention is to reject every portion of the work as soon as it becomes obsolete, and to substitute for it a new and up-to-date section, which will be supplied by the publishers as soon as it becomes necessary. In this way the book, like a living organism, should be constantly extruding worn-out parts and acquiring new ones in their place.

The list of contributors to the eight volumes is a guarantee of the value of their contents. It comprises more than seventy names, nearly all of which are those of American and Canadian surgeons, only five being European, and none of those British. The editor-in-chief, Dr. ALLEN O. WHIPPLE of New York, has been assisted by an advisory board of nine surgeons, among which the name of Professor George W. Crile may be taken as an indication of their quality. The first essay—on the history of surgery, by Dr. Alfred Brown—is probably the one most likely to be permanent and to survive the operations of the loose-leaf binder; and when the owner of a copy of this system is purging it of obsolete stuff, as in the words of Homer, quoted by Dr. Brown, "Through the thick files he darts his searching eyes," he will spare this fascinating essay.

It is not possible in a general review to make any attempt to criticize such a work as this. Its scale may be estimated from the bare statement that 269 octavo pages are devoted to the consideration of fractures and dislocations, and that over 100 pages are taken up with the surgery of the hand alone, giving to this region an importance which the gravity of hand lesions deserves, but which they very seldom receive. The illustrations are worthy of their subjects, and many are in colour. We wish Messrs. Thomas Nelson and Sons success in the bold adventure which they have undertaken in their revolutionary production.

[3] *Nelson Loose-Leaf Living Surgery.* Allen O. Whipple, M.D., Editor-in-Chief; Fordyce B. St. John, M.D., Associate Editor. Vols. i to viii. New York, Edinburgh, London: T. Nelson and Sons. 1928. (7½ × 7½; pp. xxii + 685; illustrated.)

TEXTBOOKS OF BACTERIOLOGY.

THE requirements of those seeking a handbook of general microbiology will be well suited by TANNER'S *Bacteriology*.[4] Its province is much wider than that of bacteriology from the purely medical aspect, for it essays to cover the whole field of the subject. And although there are sections concerning human ailments, they take but a minor part in the book, so small indeed as to be of little value to the medical man, as may be judged by the brevity of the paragraphs touching diphtheria and tuberculosis; the Schick and Widal tests are described, but there is no

[4] *Bacteriology.* By Fred Wilbur Tanner. New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd. 1928. (Med. 8vo, pp. xvii + 548; 138 figures. 22s. 6d. net.)

mention of the serological reactions in syphilis. Chapters of a general nature describe with some completeness the features of the biology of micro-organisms, such as their morphology and chemistry, their reactions to physical and chemical agents, and their interrelations with each other, with plants, and with animals. Students of public health will find interesting and instructive chapters dealing with the bacteriology governing questions of food preservation, the purity of water, and sewage disposal. There are abundant details of a practical kind regarding the handling of milk and the preparation of butter and cheese, and many points are discussed which concern normal and diseased foods. There is, finally, a description of the diseases of plants due to bacteria. The classification adopted and detailed with great completeness is that of the Society of American Bacteriologists, and particularly Bergey's modification of it, and there is also an outline for a course of lectures on the subject the book deals with. The English purist will find few Americanisms to cavil at, but he will not be alone in his surprise at the apparent redundancy in a glossary of such a word as health, defined naively as a state of well-being in body and mind, while the word bacteriophage is wanting. The definition of the word "homologous" as "having the same function" is dubious. The volume is sufficiently illustrated and indexed; the references, which are many, are chiefly to American literature. The history of the subject is not neglected and some biographical data are included. But it seems unnecessary, in discussing theories of disease, to do more than mention the demonic hypothesis; and it is remarkable that in describing treatment of disease by bacterins (a synonym for prophylactic vaccines) the author should ignore the pioneer work of Wright. Misprints are few, but "attention" for "attenuation" catches the eye; the names of Negri and Metchnikoff are incorrectly spelt. For the student of bacteriology as a pure science Tanner's book has many merits, although it will hardly meet the requirements of medical men in general, nor indeed does it address itself to them.

The appearance of a second edition of BIGGER'S *Handbook of Bacteriology*[5] within a few years of the original publication is the index of a popularity that is likely to continue. The literature of bacteriology is constantly and rapidly increasing, and when an author, sifting through it and holding fast to that which is good, combines the result with his own experience he performs a real service to medicine. Written in a style which is at once pleasing and concise, this book is very full of the information valued by the student and also appreciated by those working at closer quarters with bacteriology. About half of the pages are concerned with general matters, including the preparation of media, immunity, and serological technique. There follows an account of the classification of bacteria, and the remainder of the volume deals with the subject from the systematic point of view. This new edition has been largely rewritten and amplified. The matter is of uniform excellence and a due balance is maintained between theory and practice. The account of vaccine therapy and the chapter on tuberculosis are especially praiseworthy. Important and tried methods of investigation are adequately described (the Levaditi method for staining spirochaetes rather shortly, however), and there is a sufficiency of illustration and indexing, though it is unfortunate that the index of coloured plates errs in the numbering of the pages referred to. The book is certain to retain its good name as a manual.

SCIENCE, PHILOSOPHY, AND RELIGION.

FROM time to time men eminent for their scientific attainments attempt to reconcile the discoveries of science with the tenets of religion. Thus Sir Lauder Brunton once wrote a book to explain the miracles of the Bible, such as the parting of the waters of the Red Sea, and the halting of the sun for the benefit of Joshua, in the light of scientific observation. Modern study of psychology has enabled Dr. WILLIAM BROWN to approach the subject in a more philosophic, and perhaps less unconvincing, spirit, and in *Science and Personality*[6] he has presented a synopsis of views which he developed in lectures delivered in the United States in 1928, on the Dwight H. Terry Foundation.

Dr. Brown divides the chief mental attitudes towards existence into the logical, the aesthetic, the ethical, and the religious. The first three are concerned with the true, the beautiful, and the good. The last is the attitude of the individual towards the universe as something upon which he completely depends and to which he attaches ultimate value. To the universe man adopts an attitude of worship, looking upon it as a value absolute in nature, not relative. In developing his thesis Dr. Brown seems to adhere rather closely to the doctrines of Plato. His definition of religion is perhaps nebulous. Such a statement as "philosophy may be made a religion, and in so far as it is made a religion it is more than mere philosophy," suggests the need for better defined terms. He assumes that the individual comes into the world with the power of discovering values; that he has a desire for the conservation of the three ultimate values of truth, goodness, and beauty; and that his mind has a non-temporal aspect, in that it has the power of forming ideals of knowledge, of beauty, and of goodness, and of considering the extent to which actual experience falls short of these ideals. Religion, he says, corresponds to an adequate sense of true values. A system of sentiments is built up within one all-inclusive sentiment; and this master sentiment will be centred round one supreme object, which, Dr. Brown says, must be the universe as a perfected system, as the full realization of the good, the beautiful, and the true. He believes that in the advance of science religion is needed more and more to keep us from reaching views which are a mere caricature of existence, and are out of harmony with our deepest aspirations and feelings.

Dr. Brown ranges over a wide area of science, pseudo-science, and philosophy. He discourses on relativity and the quantum theory in a manner which leads Sir Oliver Lodge, in a foreword to the book, to describe him as an unusually competent amateur. In biology, which he regards as the most fundamental physical science, he explains the doctrine of emergent evolution. He believes that science leads on to philosophy and metaphysics. He connects mysticism with an immediate experience of union with the spiritual universe; and distinguishes personality from individuality in that the former carries with it an element of universality. He pleads for the view that dissociation is just as necessary in the mind as association; and that it only becomes pathological when there is failure of the normal process of dissociation. Dr. Brown disagrees with the extreme views of the Freudians, and the overemphasis of the sex factor. On spiritual healing he adopts a non-committal attitude, as is perhaps natural in one who sat on the Archbishop of Canterbury's committee. He seems, however, to lean to a belief in telepathy, although he says that it is something about whose conditions we know next to nothing. He includes in his book two chapters on some investigations he has made into psychical research through a medium named Mrs. Osborne Leonard. He seems to have convinced himself, from various happenings at the séances, that there was "something in it." But another case in which he investigated the clairvoyant capacity of a shell-shocked soldier makes us, we are bound to confess, a little sceptical of Dr. Brown's valuation of results. Sixteen observations by the clairvoyant soldier were compared with extracts from letters received from his wife and daughter. Dr. Brown finds about 50 per cent. correspondence. Careful examination of the patient's statements and the information extracted from the letters suggests that a reckoning of 25 per cent. correspondence would be more than generous.

Interesting though the book is, it leaves in us a feeling that the scientific philosopher is inclined to magnify the position of man in the universe, forgetting that most of the human characteristics upon which we pride ourselves may not, after all, be very far removed from those of other animals; and that the investigation of the pseudo-sciences needs a kind of judgement which the scientific philosopher does not always possess.

[5] *Handbook of Bacteriology.* By Joseph W. Bigger, M.D., Sc.D., F.R.C.P.I., D.P.H., M.R.I.A. Second edition. London: Baillière, Tindall and Cox. 1929. (5¼ × 8¼, pp. xvi+452; 82 figures, 5 plates. 12s. 6d. net.)

[6] *Science and Personality.* By William Brown, M.D.Oxon., D.Sc.Lond. With a foreword by Sir Oliver Lodge, D.Sc., F.R.S. London: Milford, Oxford University Press. 1929. (Demy 8vo, pp. viii + 253. 12s. 6d. net.)

THE ACTIONS OF DRUGS.

ELEMENTS of the General and Special use of Medicaments,[7] by Professor PAUL TRENDELENBURG, is a small volume in which the author has set out extremely clearly the outstanding facts about the actions of the more important drugs, and his book resembles in some respects the volume *Useful Drugs*, which is published by the American Medical Association. Professor Trendelenburg abstains from all discussion on theories as to the mode of action of drugs; moreover, he makes no attempt to describe all drugs in modern use, the entry of capitalism into drug production having, he points out, resulted in the commercial exploitation of countless new remedies. The number of new drugs alone is sufficient to make an estimation of their relative value difficult; accurate judgement is rendered almost impossible by the manner of their advertisement. Professor Trendelenburg's method is to give in relation to each important drug a summary of its history, its physical and chemical characters, its fate in the body, indications for its use, its side actions and dangers, the mode of its administration, and a valuable but unusual feature, its price. The work as a whole forms an extremely useful textbook for students. Although the statements are condensed and dogmatic they are remarkably accurate, and the author's wide knowledge of his subject makes his opinions of great interest, even though they are presented in a very summary form.

NOTES ON BOOKS.

DR. KAHN'S textbook on *The Kahn Test*[8] gives an account of the use of precipitation phenomena in the diagnosis of syphilis, and a detailed discussion of the technical aspects of the Kahn test. It has been written for the use of laboratory workers, and the author expresses the hope that it will also be read by physicians employing the Kahn test in their professional work. The terminology of colloid chemistry is employed throughout; the book is clearly written, and may be recommended to those interested in the subject with which it deals.

It is not surprising that the *Essentials of Infant Feeding*,[9] written by Dr. E. A. BARTON of the Child Welfare Department of University College Hospital, has passed into a second edition, for it embodies scientific knowledge with the results of much experience and is full of sound advice expressed in clear language. This edition has been carefully revised in accordance with the advance of knowledge.

We have received from Dr. JEHANGIR J. CURSETJI of Bombay a copy of a pamphlet published by him under the title *Sub-Standard Lives and their Assessment in Life Assurance*. It consists of a series of articles contributed originally to an American periodical, and is intended as a companion to the author's *Pocket Guide to Medical Life Assurance*, of which a third edition is now in the press.

Radiation in Chemistry,[10] by R. ALAN MORTON, gives an account of the way in which radiations of all sorts—those of light, heat, and x rays in particular—find practical applications in industry and in scientific investigations of all sorts. The greater part of the volume is devoted to the chemical activities of light rays, and contains sections dealing with light sources and the measurement of the intensity of light, photo-chemical reactions and their applications in the photographic and allied industries, photo-electricity and luminescence, biochemistry, and light. The last section treats of x rays in chemical theory and practice. The author writes clearly, and has brought together a large amount of interesting information, quoting a great number of books and original papers as the prime sources of his volume. It is intended for the use of technologists in the first instance, but should appeal also to all readers interested in the manifold applications of radiations in art, industry, and therapy. Indeed, the author thinks it right to sound a warning note in his account of light therapy, and remarks on the "tendency, which has recently become apparent, to exaggerate the curative value of light. Actinotherapy opens up great possibilities for effective co-operation between chemistry and medicine, but investigation is much more necessary than propaganda; until we know more than at present caution is advisable, lest light therapy should suffer a great reaction and fall into the disrepute which overtakes panaceas."

Physics in the Food Industry,[11] by Sir WILLIAM HARDY, is one of a series of lectures dealing with the application of physics in industrial processes. The preservation of food by cold storage, which is the principal theme of the lecture, is a very vital commercial problem, and the ingenuity expended in solving it makes the subject one of general interest. When speaking of the freezing of meat the lecturer explains that if the frozen food is to remain palatable the chemical breakdown processes taking place after it has been thawed must be very like those in freshly killed meat. When the beef is frozen on a commercial scale this ideal is not achieved, since the ice phase which separates out is never completely reabsorbed on thawing, and thus we have unpalatable, dripping meat. By a most interesting series of experiments it has been shown that the injury which occurs is the irreversible dehydration of the colloidal systems of the muscle. If the meat is frozen at a higher temperature, and less ice is separated, the process is reversible and the water reabsorbed on thawing. The breakdown processes then proceed as they would in fresh beef. An illustration of this principle which should be of particular interest to physiologists was given by means of experiments on the frog's sartorius muscle. In this case the responsiveness of the muscle stimuli was used as an index of its normality. It was found that muscles frozen at a temperature higher than $-2°$ C. were still alive after thawing, whereas those frozen at $-2°$ C. or below were dead. A muscle which had had 78 per cent. of its water removed would freeze at about $-2°$ C., and it was thought possible that the irreversible change resulting in the death of the muscle at $-2°$ C. might be due to separation of 78 per cent. of its water as ice. Drying experiments were undertaken which showed that muscles could have 77.5 per cent. of their water removed, and, shrivelled and dead though they naturally appeared to be, could recover when placed in saline solution, reabsorb water, and become more capable of responding to stimuli. If, however, 78 per cent. of their water was removed the process had become irreversible, and they were in fact dead. It is hardly believable that this striking physiological confirmation of the physical theory of dehydration of the muscle colloids can be due to coincidence. In conclusion it should be said that this lecture, despite the amount of information contained in it, is both brief and readable.

The little book on visceroptosis by Dr. CHAUVOIS, under the title of *Les Dessanglés* [ungirthed] *du Ventre*,[12] gives a short account of the subject, and recommends physiotherapeutic measures in cases capable of correction, and belts, and especially a pneumatic pad, for incurable cases, which may thereby be relieved.

[7] *Grundlagen der allgemeinen und speziellen Arzneiverordnung.* Von Paul Trendelenburg. Zweite, verbesserte Auflage. Leipzig: F. C. W. Vogel. 1929. (Med. 8vo, pp. iv + 288. M.16.)

[8] *The Kahn Test.* By R. L. Kahn, M.S., Sc.D. London: Baillière, Tindall and Cox. (Med. 8vo, pp. xii + 201; 7 plates, 35 tables. 18s. net.)

[9] *Essentials of Infant Feeding.* By E. A. Barton. Second edition. London: H. K. Lewis and Co., Ltd. 1929. (Cr. 8vo, pp. viii + 80. 3s. 6d. net.)

[10] *Radiation in Chemistry.* By R. Alan Morton, B.Sc., Ph.D., F.I.C. Industrial Chemistry Series. London: Baillière, Tindall and Cox. 1928. (Demy 8vo, pp. xvi + 281; 44 figures. 15s. net.)

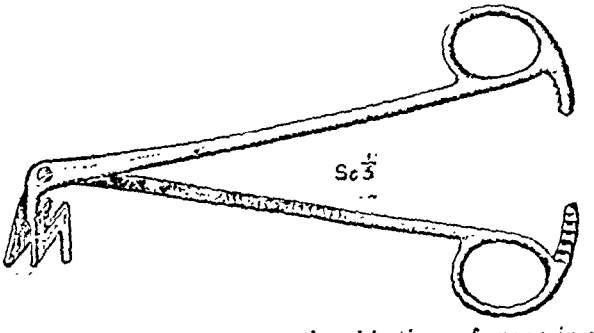
[11] *Physics in the Food Industry.* By Sir William Hardy, M.A., F.R.S. London: Institute of Physics. 1929. (6 × 9¼, pp. 21; 10 figures. 1s. net.)

[12] *Les Dessanglés du Ventre.* Par L. Chauvois. Deuxième édition. Paris: N. Maloine. 1928. (5¼ × 7¾, pp. 192; 110 figures, 7 plates. 18 fr.)

PREPARATIONS AND APPLIANCES.

PERITONEAL TETRA-TOWEL FORCEPS.

MR. W. McK. H. MCCULLAGH, *D.S.O., M.C.*, F.R.C.S. (London, W. 1), writes: The use of tetra cloths is now regarded as almost an essential in the technique of abdominal operations. The difficulty is suitable forceps. The forceps shown in the



accompanying figure overcomes the objections of many in use. It lies flat under the tetra cloth, as it has an abdominal curve. Its bite is also horizontal, and dips vertically into the wound over the skin edge. The fixation of the towel to the peritoneum is broad, and does not damage or tear the peritoneum. The instrument is sufficiently large to prevent possible loss in the abdomen. Two on each side are required for the average wound; the proximal two are attached by the operator with the assistant holding the peritoneal edge and towel edge in apposition, and the distal two by the assistant. They are of particular help in Caesarean sections. The forceps are made by Allen and Hanburys Limited.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

ANNUAL MEETING.

THE King Edward's Hospital Fund for London held its annual meeting (to which reference was made last week at page 1103) at St. James's Palace on June 11th, the Prince of Wales presiding.

In the course of his address His Royal Highness drew attention to the expansion undergone by the Fund during the past ten years. The distribution in 1918 was £200,000; in 1928 it had reached for the first time a total of £250,000. During that period it had grown into a central administrative body for the hospitals of London, and had the allocation of Sir Otto Beit's gift of £50,000 worth of radium. The Propaganda Committee had greatly extended its activities, and the publication entitled *Accounts for Small Hospitals*, prepared by the Economy Committee, was in demand not only in this country, but in many places abroad. A report had been prepared on the relations between the voluntary hospitals and municipal hospitals under the Local Government Act, and there had been important activities in relation to the Thank-offering Fund for the King's Recovery.

His Royal Highness then gave a summary of the principal data in the annual report for 1928, referring specially to the completion of the Wells legacies distribution, the start of the pensions scheme for nurses and hospital officers; the report of the Pay Beds Committee, and the allocation of the radium from the Beit gift. Lord Donoughmore, treasurer of the Thank-offering Fund, said that its figures had now reached £406,104, which did not include the £100,000 which had been given by the Government, on a pound for pound basis, to assist the radium part of the appeal. He moved a resolution expressing, on behalf of the General Council of the Fund, their heartfelt thankfulness for His Majesty's continued progress towards recovery, and the fervent hope for his early restoration to full health. His Royal Highness, in replying to a vote of thanks, which was moved by the Bishop of London and seconded by Sir William Collins, said that he knew the King would appreciate the kind words used by Lord Donoughmore, and the way in which the Council had received his resolution.

Report for 1928

During the year under review the total receipts of the King's Fund were £378,635, of which £40,852 was from the estates of the late Mr. and Mrs. John Wells. The amount for distribution was £250,000, an increase of £3,000 over 1927, apart from special pensions grants amounting to £9,452. Since the foundation of the Fund in 1897 a total of £6,109,306 has been distributed. With the Wells legacies, amounting to £255,092, the Fund has helped to extend forty hospitals, to rebuild four, to build three new ones, and to provide over 1,600 additional beds.

The report of the Pay Beds Committee, published in July, 1928, contained particulars of all the pay beds at the London voluntary hospitals. In March, eighty hospitals between them provided 1,005 such beds, and there were schemes to add another 900. The committee considered the methods of increasing accommodation and of providing for cost of maintenance and building, and recommended the organization of a mutual insurance scheme to assist persons of moderate means to meet the cost of maintenance and medical fees. It has been decided to compile in pamphlet form a list of pay beds in hospitals making returns to the King's Fund.

The superannuation scheme for nurses and hospital officers came into operation on January 1st, 1928, and by the end of the year had been adopted by 99 hospitals in London, and 77 outside London. The scheme, under which contributions are paid both by the institutions and by the staffs, and the pensions secured by insurance policies, was first recommended by a special committee of the Fund, and the details were settled by a series of conferences between the Fund, the British Hospitals Association, the Incorporated Association of Hospital Officers, and the College of Nursing. For seven years the Fund intends to make special grants, up to a limited amount, towards the expenditure incurred by hospitals on its books, and has set aside various sums to meet this liability.

Sir Otto Beit's Gift.

In allocating the Beit gift of £50,000 for the purchase of radium to be loaned to hospitals in London, the Fund gave preference to those hospitals in which the cure of disease was associated with interest in the furtherance of knowledge. Having placed an order for 4 grams the Fund proceeded to make a list of hospitals prima facie eligible; to inquire into existing stocks of radium at each of these hospitals and the specific purposes for which the additional radium was needed; to decide how much radium should be lent to the hospitals chosen; to approve the submitted specifications of the containers in which the radium for each hospital would be put up; to secure from each hospital the acceptance of the conditions of the loan; and to place orders for the putting up of the radium in the requisite form and to arrange for the testing of its amount in each container. The Distribution Committee decided to act on the principle that there should be a few hospitals with a sufficient supply to function as radium centres, and a larger number with sufficient to provide effective treatment to their own patients. Each hospital receiving a loan has been required to set up a Standing Advisory Committee to supervise its radium service; to submit to the Fund its rules for the use and care of the radium, and to send periodical reports showing all its stocks of radium, the milligram-hours of its use, and the number of patients treated. The radium, which in the first instance will be on loan for a period of a year and thereafter subject to withdrawal on due notice, is not to be removed beyond the hospital premises without the written authority of the Fund. At present, specifications covering 3.405 grams have been approved, while others amounting to 0.595 gram are still under consideration. It is stated in the report that in view of the long period taken up in the verification of the radium content of each container it would be some time yet before any of the radium is actually in use at the hospitals. The committee congratulates Sir Otto Beit on the foresight which led him, in dealing with his own generous gift, to adopt in the main the method to be used in the administration of the National Radium Fund.

Work of the Subcommittees.

With the object of ensuring that in the changes which result from the transfer of the Poor Law hospitals to the London County Council and other county authorities, the hospital service of the country shall not lose the features which are contributed by the voluntary hospitals system, the special committee of the Fund, under the chairmanship of the Right Hon. J. H. Whitley, prepared amendments to the bill, designed to secure co-operation between the voluntary hospitals and the county hospitals. In its memorandum, an account of which appeared in our issue of April 6th (p. 659), it suggested that this end could be achieved either by the presence on the appropriate committees of the county councils of persons experienced in the work of voluntary hospitals, or by provision for continuous consultation between those responsible for the two kinds of hospital, or by both methods taken together. The deliberations of the committee were still proceeding at the end of the year.

The Propaganda Committee records the assistance it has received from the press, the British Broadcasting Corporation, the film industry, medical and lay speakers, and many other agencies, in its work of spreading information about the achievements of medical science which are taking place in our voluntary hospitals to-day. During the year the net receipts from the committee's various activities have amounted to £1,142. The interest of the British Broadcasting Corporation in the King's Fund has steadily increased, and excellent results are being obtained by showing the hospitals film in conjunction with the general propaganda work of the Hospitals Savings Association.

Having considered various proposals that have been made with the view to lightening the burden thrown on hospitals by motor accidents, the Fund suggested that the most helpful way of dealing with the matter lay in encouraging motorists to include in their insurance policies a "hospital clause" with a small additional premium. So far, however, insurance representatives, in conference with the Fund, have put forward the view that the motoring public would not undertake a voluntary addition to the cost of insurance.

The Management Committee, having early in the year received applications for help from the hospitals situated within the Metropolitan Police district but beyond the eleven miles radius from St. Paul's, which is the present working area, took the opinion of all the other standing committees, and finally decided, with regret, that as the Fund had extended its radius as recently as 1925, it could not at present recommend the General Council to make further extensions.

Finances of Voluntary Hospitals.

The report concludes by drawing attention to the special need that exists at the present time to strengthen the financial position of the voluntary hospitals in order that their influence on the new developments in the hospital service of the country should be as great as possible. The annual distribution by the King's Fund is an important factor in maintaining the financial stability of these hospitals, and it is suggested that its power as a central co-ordinating body may be of the greatest value in the immediate future to all who desire the maintenance of the voluntary element in the hospital service.

RESEARCH DEFENCE SOCIETY.

STEPHEN PAGET MEMORIAL LECTURE BY PROFESSOR A. V. HILL.

THE annual meeting of the Research Defence Society took place at the House of the Medical Society of London on June 12th, with Lord LAMINGTON in the chair.

The report of the society's committee, which was presented, remarked on the fact that it was now twenty-one years since the society was founded by the late Stephen Paget, F.R.C.S., and it might be claimed that in carrying out the work of research defence it had rendered a distinct service to the community. The society, which was the only one of its kind in the country, had more than held its own against opponents, but the attention of members should be drawn to some new developments in antivivisection propaganda. For example, societies, instead of establishing shops, sent travelling vans loaded with literature and ghastly posters and exhibits into the country districts, and certain antivivisectionists were endeavouring to convert the Royal Society for the Prevention of Cruelty to Animals, with its huge funds, to a policy of antivivisection.

"*Enemies of Knowledge.*"

Professor A. V. Hill, Sc.D., F.R.S., delivered the third Stephen Paget Memorial Lecture, taking as his title "Enemies of knowledge." The advance of knowledge, he said, was something worth fighting for, because it was knowledge that made civilization. The position could not be held by standing still. It was necessary to combat the opposition to experiments on living animals. There was a limit beyond which intolerance, misstatement, and destructiveness must not be allowed to go. Medical men had their feelings, like the rest of humanity; some of them might be selfish or intolerant, but their general aspect was one of great friendliness. The reason he was standing up to defend his colleagues in the laboratories was because such a course had become an urgent necessity. When work done by the Medical Research Council was denounced by a priest, when the public were asked not to subscribe to hospitals lest the money be spent in torturing cats and guinea-pigs, when Ministers of the Crown allowed their names to appear as vice-presidents of antivivisection societies, the time for a counter-move had surely come. Instead of answering preposterous falsehoods by mere denials—remembering that when mud was thrown some of it stuck—it might be well to inquire what were the motives of those who circulated such falsehoods, what was the mentality of those who made them. Stephen Paget's generous heart and fighting spirit led him to join issue with those who combated the work which led to the discoveries that were the basis of so much mitigation of suffering.

Antivivisection was only one aspect of a general phenomenon which had been known throughout history; it was, if one liked so to regard it, a mild form of mental disorder. It had expressed itself at various times in a wide range of forms—persecution, hatred, malice, perpetual treachery, many hindrances to man in his slow efforts to climb the ladder of civilization. Many denied evolution, preferring to believe that Adam arrived fully equipped and educated in the Garden of Eden, and immediately started to give an appropriate name to each of the creatures he found, to his own satisfaction, rather than that there had been at least half a million years of slow and painful trial-and-error amid the necessities of life—namely, growth, maintenance, and production. What were man's methods of advance? Were they inevitable? Or could they be influenced by conscious adjustment on his part? There were "superior" people who affected to decry civilization and organization; they would have scientific work abandoned; scientific research and engineering development were regarded by them as things unworthy of man's highest physical state. Professor Hill agreed that, even for the best of causes, it was well to have to bear the brunt of criticism. He certainly did not favour making progress into a false god. Most people did not believe in magic, but realized that man's achievements had been won by eager search and patient toil, by failures as well as success. This desire for advancement was something to be regarded as sacred, as entitled to a high respect, even as was life itself. The advance of knowledge was a real thing, something well worth working for and fighting for; that was why that meeting had gathered, why this society had been established. We were still far from Utopia, either mental, moral, or physical. What made man superior to the animals was knowledge tempered by reasonable sentiment and controlled by decent emotion. All Governments paid at least lip service to education and service; the danger lay in special applications, not in the general proposition. Conflict arose when a piece of knowledge did not harmonize with vested interests, with inherent conservatism or natural cupidity; and the fight must always be against prejudice.

The Research Defence Society sought to promote national health and efficiency, and bring about a better understanding of medical and surgical studies and expose the false statements continually being made. Occasionally it was necessary to view the matter from a broader standpoint, to stand for the defence of research in whatever form that research was undertaken. There existed many "antibodies" apart from those in the human organism which were stimulated by infections and saved the patient from serious disease and death. Some of the social antibodies were comparatively harmless. There were, in London, four antivivisection societies, all fighting against one another in what they regarded as the same great cause. In 1835 there was formed an anti-railway society, and the editor of the journal devoted to it claimed that he was fighting for the truth. The subscribers to the anti-railway struggle included the provost and fellows of Eton College, fifteen canal companies, and a representative of a road transport company—all strenuously desirous of getting only the truth. However, false prophets could usually be trusted to cut each other's throats. Some people by their erratic behaviour amused, but it became a different matter when they threatened the State or the lives of their fellow men; society then had a way of removing them from the possibility of doing harm. If people by petty persecution in private, or malicious prosecution in a police court, provided a hindrance to the advance of knowledge, the matter ceased to be a joke, it must be taken seriously; and if a woman, to forward her thesis, did not hesitate to stop subscriptions to hospitals, and tried to stop the work on behalf of suffering humanity, it caused his blood to boil, and a feeling of tolerance to such became impossible. There was evident a desire to kill or seriously injure those whose opinions differed from their own; it was manifested all along the ages, and unfortunately was often linked with the name of God. In the parish magazine of St. Jude-on-the-Hill, Hampstead Garden Suburb, of May 24th, the incumbent asked intelligent people to take the opportunity of the General Election now past to put an end to the waste of public money involved in medical research, protesting against the spending of £148,000 during the last financial year by the Medical Research Council. Those who knew the splendid work being done by that Council to prevent suffering would wish to protest against that kind of propaganda. An advertisement in the *British Weekly* of May 16th last asked: "Will God allow the interests of humanity to be served by violating all His law of compassion; is blessing likely to rest upon such barbarities as baking animals in ovens and watching through glass doors to see how long they take to die; tying dogs' limbs over their backs and placing them in plaster-of-Paris and keeping them thus for six weeks?" The tendency of those who knew the facts was to laugh at these outpourings, but most of the readers probably did not know the truth. It was, said Professor Hill, possible to hold strong views and still be tolerant. What he was fighting against was calumny, persecution, attempts at legal interference with liberties, efforts to hinder co-operation in the cause of the greatest of human quests, the alleviation of suffering.

A number of questions were put by two women members of the audience on experimentation generally, without reference to the lecture, and also by Dr. A. S. MCNEIL. These were answered in an atmosphere of great excitement, and the end of the meeting was reached in considerable turmoil.

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CLINICAL METHODS AND MAXIMS.

THE study of clinical medicine is, in the first place, the observation and recognition of particulars. The facts are gathered at the bedside of the individual patient, and the student must be trained to mark and appreciate them. Here the teacher, not less a student because of his seniority, enjoys his first opportunity: it rests with him to develop in his pupils the capacity to note facts and accurately to record them. The next step is the interpretation of the facts as this is justified partly by a knowledge of physiology—normal and disturbed—and partly by accumulated and disciplined experience. The process is an exercise in inductive reasoning guided by truths or doctrines founded on a wider survey than that offered by the individual case and on the knowledge of the teacher who has enjoyed this wider survey. The facts duly observed and set out form the clinical problem, and the teacher has to guide himself and his pupils to the solution of this problem by the application of maxims or general truths drawn in part from science, and in part from clinical experience. To these general truths the student must in the meantime give not only an attentive ear, but also a willing acquiescence. The time may perhaps come when he will be free to challenge them, but this time is not yet. He is still, for his own benefit, in leading-strings, and he may count himself fortunate that much of the accumulated experience of his predecessors can be summed up in certain general propositions which offer themselves as guides to his early steps. Still more fortunate is he if his teacher can present these propositions in a fashion that appeals successfully both to the memory and to the judgement.

It is on this sound basis that the student passes in due time to face for himself the clinical problems of private practice. Many of these, as he will surely discover, refuse to present themselves as the exact counterparts of his previous experiences. None the less he will be competent generally to deal with them provided he has trained himself to accuracy in observation, and provided also that he recalls and appreciates the summaries of practical wisdom which his teachers have pressed upon his attention. Indeed, it may be fairly said that in proportion as these two conditions are satisfied the junior practitioner has the qualifications necessary to fit him for independent practice and for the utilization of further experience as the training ground for increasing efficiency. Not that the rules or doctrines of any teacher are permanently to bind him either in opinion or in practice. On the contrary, he may well examine and test rules in the light of his personal application of them, always remembering, however, that though the traditions of the elders are not invariably infallible, there is at least a presumption in their favour. To give them their most modest status, they are useful guides to youth until the arrival of that proud moment when youth can show that the new day can boast its brighter light.

If this brief summary of the method of clinical training is justified, it follows that the teacher of this method has towards his pupils two responsibilities: first, to guide the pupil to cultivate his powers of observation so as to secure a full and accurate record of facts, the training here including in some directions the use of certain instrumental devices; secondly, to provide and to emphasize sound doctrinal truths based upon first-hand knowledge, and serviceable as guiding lights to correct diagnostic conclusions and to safe and successful practice. The importance of the latter task is undoubted, for the practitioner in his early career will have to meet new situations, and if he is to meet these successfully it will not be by recalling events of exactly the same order and degree, but by applying in each instance methods and principles capable of wide application and made familiar to him in his earlier training. To develop these methods and to define these principles is the teacher's task, and the responsibility is a considerable one. If patience is needed for the one aim, sound judgement is essential to the other. The pathognomonic sign or symptom, and the commanding and universal proposition—so tempting alike to teacher and taught—can rarely be announced in clinical medicine. Exceptions, restrictions, limitations, and individual peculiarities invade the attempt to define a number of rules having sharply presented and absolute values. Nevertheless some guiding directions of this order must be attempted, for otherwise clinical medicine is a mere multitude of particulars, and the student has no pathway for his steps. Hence a special measure of gratitude is due to those teachers who, having a wide and comprehensive view of their subject, cultivate skill in putting into summarized and attractive forms the lessons, not excluding the rebukes, that they themselves have gathered in the hard school of practical life.

A recent example of this important aspect of the art of teaching may be found in "More Medical Notes" written by Sir Thomas Horder and published in the current number of the *St. Bartholomew's Hospital Journal*. By no means the first venture in this field, these "Notes" are worthy to rank with the author's previous efforts and with the tradition of his school, and they definitely contribute to the security of his position in the ranks of the writers of medical maxims and aphorisms. The disadvantage of such utterances is that brevity and precision may be cultivated at the expense of comprehensiveness, with the risk that the trusting disciple will some day discover that the master's absolute rule has played him false. Sir Thomas Horder successfully avoids this pitfall. He knows that clinical teaching admits few hard and absolute propositions, and when he presents the general doctrine he presents also the exceptions, and, what is much to the point, he explains and defines these exceptions. To be the master who teaches, not the master who rules, is his ambition.

One of the texts included in the present series of "Notes" is pyrexia in malignant disease. Possibly taking origin in Wunderlich's classical *Medical Thermometry* of the early seventies, but put into terms more rigid than the original, the statement has often been made that febrile and even subfebrile temperatures exclude cancer from the diagnosis; or there is added the qualification that "uncomplicated"

cancer does not cause pyrexia—an unhelpful addition, for in practice the question is not, Is this a case of cancer with complications? but, Is it a case of cancer at all? Rapid growth of tumour, secondary (pyogenic) infections, absorption of products of tumour disintegration, may all be responsible for febrile records, so that given both a tumour and pyrexia the latter may not be successfully quoted in absolute opposition to a diagnosis of malignant disease. Indeed, the position may be put more strongly, for it is not too much to say that among the causes of apparently obscure pyrexia malignant disease ought to take a place. A hypernephroma, for example, may exist entirely without pain or other local discomfort, and be discovered only when a thorough examination is compelled by a series of abnormal temperatures. Similarly rigors, with or without recorded fever, may for weeks or months be the sole clinical evidences of malignant ulceration of the colon, and when in due time a "lump" is discovered the febrile readings may be quoted against malignant disease and possibly in favour of abscess.

Another maxim which Sir Thomas Horder commends to his pupils is that cancer is always to be suspected in the presence of progressive loss of weight and strength for which no adequate cause can be discovered, and he emphasizes the truth that in these circumstances cancer of the stomach is a possibility even in the absence of pain and vomiting. Again, it is well to have the proposition that, *pace* the popular press, a malignant growth is more frequent in the apparently healthy than in the subjects of long-standing dyspepsia or constipation. The smooth history of the first of these groups must not be allowed to quiet suspicion. There is another instructive doctrine to note—namely, that the first event to attract attention in the clinical history of a case of malignant disease may be the appearance of a secondary growth or growths, the primary tumour being small, or hidden, or overlooked. Some years ago the late Sir William Osler, in his papers on "The medical aspects of carcinoma of the breast," showed that this order of events may be true even in mammary cancer, and Sir Thomas Horder refers in this connexion particularly to primary tumours originating in the suprarenal gland and in the prostate. Yet again, if the patient has at some time had a malignant tumour removed, any subsequent clinical event may, or even must, give rise to suspicion, and the suspicion may be allayed only by the lapse of time. Particularly difficult in this respect are symptoms due to metastases in the central nervous system, as, for example, pains in the back or limbs, ocular palsies, and so on. Suggestive as such occurrences must be, quite a long time may be required before certainty in one direction or the other can be attained.

Apart from the truths they convey, and apart also from the manner in which these truths are stated, Sir Thomas Horder's "Notes" are welcome as examples of the doctrinal side of clinical teaching. After all, it is at the bedside that the art of medicine must be learned, for it is there that it has to be practised. The students who receive in terse and impressive sentences the carefully gathered experience of a physician who has cultivated a wide outlook on the large field of clinical medicine are not without good fortune, and sooner or later they will realize this. To formulate these maxims may appear a simple undertaking. Actually they involve much thought and not a little skill in literary craftsmanship, and a corresponding measure of gratitude is due to those who construct them.

THE MANCHESTER PROGRAMME.

THE provisional programme for the ninety-seventh Annual Meeting of the British Medical Association, which appeared in full in the *Supplement* of June 8th, will be republished, with additions and corrections, in a later issue. This year the clinical and scientific work is being divided among nineteen Sections, as compared with seventeen when the Association last met in Manchester in 1902, and their sessions will be held on Wednesday, Thursday, and Friday, July 24th, 25th, and 26th. In planning their business the sectional officers have kept in mind the advantage of concentration upon a limited number of topics; so much so, that more than half of the Sections have eschewed the individual paper altogether. Experience long ago proved that the haphazard acceptance of a number of communications on unrelated subjects did not usually lead to fruitful discussions. Thus it comes about that for next month's meeting no fewer than forty set debates are announced, and several of these—on abdominal pain, on tuberculosis of the larynx, on the influence of x rays in the healing of wounds, and on x-ray treatment of microbic diseases of the skin—will be combined discussions.

Taken as a whole, the nineteen programmes cover a very wide field of science and practice, and are commendably free from over-particularity or parochialism. No Section has laid itself out to flatter the specialist who speaks a private language and lives in a little world apart. On the contrary, the aim has clearly been to interest as many members as possible in each day's proceedings, and every Section appears to have chosen for consideration at least one subject of general interest. Indeed, the enterprising general practitioner, anxious for self-improvement, will find difficulty in deciding how to distribute his time to the best advantage. With so many competing claims he may well sigh for a multiple personality, which would allow him to attend at one and the same hour on Thursday a debate on the treatment of pleural effusion, another on abdominal pain, another on placenta praevia, another on chronic dyspepsia in school children, another on persistent nasal catarrh, another on bacterial food poisoning, another on conditions simulating phthisis, and another on the treatment of scoliosis; to say nothing of any desire he may have to keep up with new work in anaesthesia, ophthalmology, and radiology, or to extend his knowledge about river pollution and the present position of the voluntary boarder. Truly a varied and attractive bill of fare for a single morning; and if such are his perplexities on Thursday, the choice will not be much easier for him on Wednesday and Friday.

Between them the nineteen Sections this year at Manchester will hold some forty-five sessions, each of about three hours. On this as on previous occasions the *British Medical Journal* will have a reporter in every Section, but, even so, the preparation, printing, and publishing of the reports of forty-five sessions is a big task. As far as possible the opening paper of each discussion is put into print before the Annual Meeting, and copies are supplied to the honorary secretaries for distribution to members who wish to take part in the debate. These opening papers, and most of the independent communications read before the Sections, are published during the autumn and early winter. The debates are summarized by our Section reporters (with assistance from the speakers taking part in them), and their notes of the proceedings appear in the *Journal* immediately after the close of the meeting. The

purpose of this arrangement, which worked very well last year, is to give members who are not able to attend the discussions a brief but readable account of what is said, within a few days or weeks of the event, and to publish in later issues among original articles the full text of papers read to the Sections.

The Council of the Association provides an addition to the number of pages at our disposal during the autumn, to ensure speedy publication of reports of the work of the Sections. But this authority is not unlimited; the understanding is that it shall be exercised reasonably, and in the interests of the members at large. Even if we had space to record in detail the proceedings in forty-five three-hour sessions, our readers would not thank us for making the attempt. Taste has changed since the war. The medical man and medical woman of to-day have little use for the long-winded formal reports which in more spacious times dragged out their slow length, week after week, from August to February.

REGULATION OF TRAFFIC NOISES.

THE publication on May 10th of the report of the conference on road traffic noises and priority of traffic at cross roads has been followed by definite action on the part of the Ministry of Transport. It will be remembered that last October the Ministry convened a conference of local and police authorities and motor organizations, under the chairmanship of Sir Henry Maybury, to consider what action might be taken to mitigate traffic noises, above all those arising from the sounding of strident motor horns, and from the use of motor vehicles defective in design or construction, or carrying loads loosely or inefficiently packed. The Ministry had decided, in so far as it was empowered to do so, to make these matters the subject of regulation, and invited recommendations which could eventually be embodied in national and local legislation. In a recent leading article on noises and road traffic (May 18th, p. 915) we pointed out that the proposals made by the conference, though not completely in accord with those set out in the British Medical Association's memorandum on the same subject, went far towards being so. It must be admitted that the regulations of the Ministry of Transport, no less than the recommendations of the conference, fall short of what the Association would regard as the desirable minimum of control on traffic noise; they represent, however, the first effective recognition on the part of a Government department that this problem exists, and as such are whole-heartedly to be welcomed. The new Motor Cars (Excessive Noise) Regulations, which will come into force on August 1st, make it an offence for any person to use, or permit to be used, any motor car, or trailer drawn by a motor car, which, by reason of its design, construction, lack of repair, or load, creates any excessive noise. The onus of deciding what constitutes "excessive noise" will be placed in the first instance on the police, and then on the magistrates who will have to deal with charges under the regulations. It is at the moment a little difficult to imagine how a policeman in proffering a charge will be able to convince the magistrate that his judgement of excess is objectively valid, or how the magistrate, who has not heard the noise at all, will be able to assess its quality or intensity. If the fate of the motorist is not to depend on the whim of the policeman or the magistrate it would seem that some more precise definition of "excessive noise" is called for. The regulations provide that where a person other than the driver is responsible for the maintenance of the vehicle or for its loading, the driver shall not be held liable unless the noise could have been prevented by the exercise of reasonable diligence and care on his part.

The conference, our readers will recall, found itself unable to suggest a satisfactory method of controlling the use in urban areas of motor horns which have a strident or disagreeable note, and recommended further investigation of this matter from the technical standpoint. We are glad to note, however, that its proposal to forbid, in connexion with vehicles at rest on the highway, the use of any instrument for the purpose of giving audible warning, except on the grounds of safety, has been embodied in the regulations. In a letter addressed to highway authorities the Minister of Transport draws attention to the conference recommendations on precedence of traffic at cross roads, and suggests that their adoption will sensibly diminish the toll of road accidents. He points out, however, that the advantages which may be anticipated from a continuous and systematic application of these recommendations will be largely thrown away if the drivers of vehicles on main trunk roads are thereby made to feel that all other traffic must necessarily give way to them. The conference recommended the erection of special cautionary signs on subsidiary roads, but merely to warn drivers on those roads that they are approaching a special danger of which they might otherwise be unaware. The driver on the main road is not therefore absolved from the responsibility of exercising proper caution when approaching a cross road, and the use of the ordinary cross-road sign on the main route will not be discontinued. It was not to be expected that immediate action would be taken on the more elaborate constructive proposals of the conference—namely, those dealing with the planning of suitable types of lay-out at road junctions—but it is encouraging to note that the Minister of Transport has drawn the attention of highway authorities to these proposals, and suggested that when roads are being enlarged or new roads constructed sufficient land should be taken to enable junctions to be laid out in accordance with the plans the conference considered to be most appropriate.

HEALTH, DISEASE, AND INTEGRATION.

THE word "integration" is a favourite one nowadays with writers on health subjects. Its increasing use is perhaps a sign of the times, an indication of a tendency in medical men and others concerned with individual and public health to view the cognate problems from many standpoints, to leave none of their aspects unsurveyed, and to avoid concepts which achieve simplicity at the cost of comprehensiveness. In its medical, perhaps in its mystical, significance the word is thoroughly exploited by Dr. H. P. Newsholme in his recent book *Health, Disease and Integration*,[1] a speculative essay whose main theme is that the study of problems related to the origin and incidence of disease has been concentrated too much on the seed and too little on the soil, and that even where the soil is taken into account due weight is given only to certain of its constituents. Healthy integration of the human body, according to the author, demands a neuro-somatic balance, a well-regulated but elastic interplay between the nervous and somatic systems; and its maintenance is subject to a coexisting harmony between the emotional, the intellectual, and the spiritual aspects of the mind. Disease, or mal-integration, results from disturbance of the normal neuro-somatic balance, whether this be produced by factors intrinsic or extrinsic to the body. Dr. Newsholme in this connexion argues that current views on the origins and development of disease are too often dominated by the doctrine that unhealthy conditions of the human body are produced by extrinsic factors, to the virtual exclusion of the idea that even in certain specific diseases the factor

[1] *Health, Disease and Integration: An Essay Based on a Study of Certain Aspects of Encephalitis Lethargica.* By H. P. Newsholme, M.D., F.R.C.P., B.Sc., D.P.H. London: G. Allen and Unwin, Ltd. 1929. (Demy 8vo, pp. 227. 12s. 6d. net.)

disturbing healthy integration may be intrinsic and originate in the soil itself. In considering the case histories and circumstances of some twenty-four patients who came under his observation suffering either from encephalitis lethargica or acute poliomyelitis, the author was impressed with the fact that the recorded bodily and nervous phenomena followed, or were associated with, some form of psychical disturbance, whether mental shock, fear, suppressed emotion, or some other evidence of a troubled mind. Many other observers have noticed in encephalitis lethargica the frequency with which psychic aberrations form part of the syndrome, particularly as late manifestations. Dr. Newsholme, however, puts forward the hypothesis that the psychic disturbances may in some cases be sufficient in themselves to initiate the various symptoms of this disease, and that in other cases also, whatever the specific or non-specific factor of causation may be, the symptoms may be produced by a "psychical mechanism." As a step further he seriously suggests that under certain conditions of nervous activity following on acute emotion or cerebral irritation, a living "intrinsic virus" may be developed and prove capable of producing symptoms indistinguishable from those arising out of extraneous infection. The author, it may be noted, frequently reminds his readers that this concept of the etiology of encephalitis lethargica is not intended to supplant the more orthodox views, but to expand them. In various other diseases as well—for example, tuberculosis, cancer, rheumatism, syphilis, leukaemia, and the acute infectious diseases—he suggests that the mal-integration involving faulty metabolism is caused or influenced more generally than is credited by a disturbance of the psychic factor—spiritual as well as emotional and intellectual—concerned in the neuro-somatic balance. Indeed, he holds that often it is in the realm of the spirit that the stresses which dislocate the perfect poise of neuro-somatic integration ultimately arise. He pleads, therefore, that medicine, if it is to prove effective in ministering to the body, should be assisted not only by art and education, but by the resources of religion, that only in this way will the emotions, the intellect, and the spirit which affect the bodily state receive their proper attention. This is much more than the *mens sana in corpore sano* doctrine as generally preached: it is a revolutionary conception of integration in relation to health and disease.

THE BRITISH ASSOCIATION IN SOUTH AFRICA.

THE British Association for the Advancement of Science is holding its annual meeting this summer in South Africa, under the presidency of Sir Thomas H. Holland. It will celebrate its centenary in 1931, being one year older than the British Medical Association. The first part of the meeting will be held in Capetown from July 22nd to 27th; the second part in Johannesburg and Pretoria from July 30th to August 5th. At the inaugural general meeting in the City Hall, Capetown, the association will be welcomed by the Earl of Athlone, Governor-General of the Union of South Africa, and after the induction of the new president Mr. J. H. Hofmeyr will give his address as president of the South African Association for the Advancement of Science on "Africa and science." On July 23rd there will be a discussion on science and industry; on July 25th Sir Ernest Rutherford will give an evening discourse on the structure of the atom; and on July 26th Professor Julian Huxley will give a public lecture on evolution. At Johannesburg the association will be welcomed by the mayor; Sir Thomas Holland will give his presidential address; and there will be a public lecture by Professor G. H. F. Nuttall on yellow fever in Africa. At Pretoria public lectures will be given by Professor J. H. Priestley on "The growth of a tree," and by Professor A. S. Eddington on "The interior of a star." The scientific work of the annual meeting will be divided among thirteen sections. In the Section of Chemistry Professor G. Barger's presidential address will be on the relation of organic chemistry to biology. This section will hold a joint discussion with the Section of Mathematical and Physical Sciences on quantitative chemical analysis by x rays and its applications. The Section of Zoology will hold a joint discussion with the Section of Physiology on experimental biology, and another on the nature of life, in which the Section of Botany will also take part. Among the papers to be read to this section will be one by Professor H. B. Fantham on protozoa found in South African soils, and another by Dr. Annie Porter on the hookworm problem in South Africa. The programme for the Section of Anthropology includes an account of the Taungs skull by Professor Raymond Dart, and several anatomical papers on the native races of South Africa. In the Section of Physiology Professor W. E. Dixon will give his presidential address at Capetown on July 24th, on "Physiology the basis of treatment," and a joint discussion with the Sections of Physiology and Chemistry on vitamins will be opened by Professor E. Mellanby and Professor A. Harden. The papers to be read to this section when it reassembles at Johannesburg include one on the influences of light on physiological functions, by Professor A. D. Stammers, another on the effects of dust inhalation, by Professor Mavrogordato and Professor J. S. Haldane, another on some factors controlling the structure of the teeth and their susceptibility to caries, by Mrs. Mellanby, and another on cancer and diet, by Dr. S. Monckton Copeman; there will also be a joint discussion on problems connected with deep-mine ventilation, introduced by Professor Haldane. The Section of Psychology has arranged a joint discussion with the Section of Educational Science on psychological tests in relation to education and vocational guidance; Mr. F. C. Bartlett's presidential address will deal with the experimental method in psychology, and Dr. C. S. Myers will read a paper entitled "A new interpretation of adaptation." In the Section of Educational Science, under the presidency of Dr. C. W. Kimmins, Sir Richard Gregory will present a report on science and the school certificate examination, and discussions will be held on the teaching of science in schools and on the professional education of South African natives.

MEDICAL CARE OF THE SICK POOR.

IN commemoration of the work of Dr. Joseph Rogers, who, at the age of 35 years, in 1856, was appointed medical officer to the Strand Board of Guardians, and thenceforth, amidst much controversy, devoted himself to the improvement of the medical treatment of the poor, there has been established a fund, the accumulated interest of which is from time to time to be given as a prize for the best essay on "The care of the sick poor of this country, and the preservation of the health of the poor of this country." The first of such prizes has been awarded to Mr. H. J. McCurrich, F.R.C.S., whose essay[1] appears to have been written in 1926, since that is the date of the prize, but the introduction is dated January, 1929, and there are indications in the text that regard has been had in some degree to recent developments. This is important, for the value of such a work is much diminished if it is not up to date and quite accurate in its facts. At the very least, a three years' delay in publication requires footnotes pointing out where subsequent events have affected statements of fact or of opinion. Moreover, in appraising a work of this kind we are bound to take into account the breadth of view and impartiality shown in its expressed opinions and criticism. There is abundant evidence of much industry and consider-

[1] *The Treatment of the Sick Poor of this Country, and the Preservation of the Health of the Poor in this Country.* By H. J. McCurrich, M.S., M.B., F.R.C.S. Oxford Medical Publications. London: Milford, Oxford University Press. 1929. (Cr. 8vo, pp. viii + 132. 5s. net.)

able care and thought on the part of the author, and his book will be found a useful compendium of interesting material connected with the history of its subject. Yet here and there we detect a certain lack of balance in judgement, and slight inaccuracies that point to an imperfect practical acquaintance with parts of the subject. One or two examples must be given. On the first page there is the statement: "At present legislation is under consideration to amalgamate all the medical services dependent on public funds"—a very inadequate indication of the effect of the Local Government Act in its relationship to public health administration, or even of the draft proposals issued by the Ministry of Health prior to the introduction of the bill. In the section on national health insurance the history of the introduction of the system and the attitude of the British Medical Association is calculated to produce an erroneous impression. It was indeed unnecessary to the author's purpose that this old controversy, now happily seen in better perspective, should have been revived. With regard to the administration and work of voluntary and Poor Law hospitals, which is clearly the author's main interest, and in connexion with which he evidently wishes to maintain a judicial attitude, it cannot be said that a wholly accurate picture is, in fact, presented. An interesting feature of his essay is the very wide connotation given by Mr. McCurrich to the word "poor." He takes it that "the sick poor include all those who are unable to make unassisted their own arrangements for their medical treatment, and the preservation of the health of the poor includes all public health schemes dependent on public money." This is perhaps legitimate when explicitly stated, but we think it would have been valuable to discuss how far this can be reconciled with the use of the word "destitute" in the Poor Law, and how far, and by what method, domiciliary attendance on the very poor should be provided. In a report lately issued by the medical superintendent of a large Poor Law hospital[1] it is claimed that "we can never refuse any case of illness, as the sick person at the gate is, in the more modern sense of the term, destitute for the time being of necessary medical service, and must be admitted." This raises at once in a very active fashion two questions which are over-ripe for a more practical and clearer discussion: (1) What is the proper relation of the municipal hospital and its staff both to the voluntary hospital and to the private practitioner? and (2) What change of administrative status of the district Poor Law medical officer is involved by the legislation now completed, and how can his domiciliary work be associated with both the work of hospitals and that of the national health insurance service?

FUNCTIONAL NERVOUS DISORDERS.

THE seventh annual report of the medical director of the Cassel Hospital for Functional Nervous Disorders[2] contains many items of interest both to the mental specialist and to the general practitioner. The medical director, Dr. T. A. Ross, while not denying the close relationship of toxaemic states with psycho-neurotic and psychotic symptoms, pleads for the adoption of a more cautious attitude in the matter of operative intervention. He points out that there must be some limit to the amount of search for toxic foci that is tolerable, and that in many cases where operation is resorted to the anticipated recovery does not come about. On the whole, the cases which he has quoted and analysed do not encourage the belief that psycho-neurotic symptoms are likely to be benefited by operation, and even where there exists an unmistakable connexion between the mental symptoms and the toxic absorption, as in the case instanced of a young woman suffering from phobias and anxieties whose symptoms were relieved by operation for old mastoid trouble, the indications for operation are, in Dr. Ross's opinion, identical with those in normal people. It is a feature of the reports of this hospital that no patients' cases are reported on until they have been away from the hospital for at least one year. Such a policy prevents premature conclusions being come to. During 1927, 190 patients were discharged from the hospital, and of these 161 were new cases; 99 suffered from various forms of psycho-neurosis, 43 from psychotic states, 3 were alcoholic, 7 the subjects of organic disease, and 9 classified under the head of "psychopathic personality." Of the psycho-neurotic group 81 were classed as suffering from anxiety states, 14 as hysterical, and 4 as compulsive obsessional. Out of the 91 psycho-neurotic patients, 70 reported themselves as well or improved; 58 were in the anxiety class, and 12 in the hysterical. The four obsessional cases did not improve. Many illustrative cases are quoted. The accounts given of individual patients are of much more use, and afford greater enlightenment than the accompanying group tables, although the latter show clearly that the results of the treatment carried out at Swaylands are highly encouraging.

[1] *A Report on the Work of the North Middlesex Hospital, London, for the year ended March 31st, 1928.* By Spencer Mort, M.S., M.D., F.R.C.S. London: T. J. Jolly, 228, Fore Street, N.18

[2] The Cassel Hospital for Functional Nervous Disorders, Swaylands, Penshurst, Kent. Seventh Annual Report by the Medical Director. Presented December 31st, 1928.

OXFORD OPHTHALMOLOGICAL CONGRESS.

THE final programme of the nineteenth annual meeting of the Oxford Ophthalmological Congress has been published this week; preliminary details were given in our issue of March 9th. As in former years, accommodation has been offered at Keble College, and members will assemble there informally at dinner on the evening of Wednesday, July 3rd. The meetings will be held in the Department of Human Anatomy in the University Museum, and in association with them there will be an exhibition of ophthalmic instruments and apparatus. After the formal opening of the congress by the Master, Mr. Bernard Cridland, at 10 a.m. on July 4th, a discussion on diseases of the lacrymal apparatus will be introduced from the ophthalmological aspect by Professor Joseph Meller of Vienna, and from the rhinological aspect by Dr. J. S. Fraser of Edinburgh. The afternoon will be devoted to a series of demonstrations, and in the evening the annual dinner will be held in the Hall of Keble College. The morning of July 5th will be given up to short papers and the delivery of the Doyne Memorial Lecture by Miss Ida Mann, D.Sc., F.R.C.S., entitled "Some observations on the vascularization of the vertebrate eye." In the afternoon a discussion on the ocular manifestations found in head injuries will be opened by Mr. Hugh Cairns from the general surgeon's point of view, and by Mr. Charles Goulden from that of the ophthalmic surgeon. The closing session on the morning of Saturday, July 6th, will be given up to papers on clinical ophthalmology. Copies of the programme and other information may be obtained from the honorary secretary, Mr. C. G. Russ Wood (12, St. John's Hill, Shrewsbury).

IT is proposed to hold a Masonic lodge meeting on Tuesday, July 23rd, at 5.30 p.m., at the Masonic rooms in Cooper Street, Manchester, to which all medical men who are members of the British Medical Association and of the Masonic Orders will be invited. Further details of the meeting will be given in future issues.

THE honorary degree of Doctor of Laws has been conferred upon Sir Charters Symonds, consulting surgeon to Guy's Hospital, by the University of New Brunswick, Canada, of which province he is a native. Sir Charters has signalized the occasion by founding a prize in histo[illegible] in honour of James Simonds, the original English se[illegible] at the mouth of the Saint John River.

PUBLIC HEALTH EDUCATION IN RELATION TO TUBERCULOSIS.*

BY

WILLIAM BRAND, B.A., M.B., C.M.,

SENIOR MEDICAL COMMISSIONER TO THE NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.

MORE than forty years ago, in Edinburgh, Sir Robert Philip started the tuberculosis clinics which have since been attended by thousands of medical men and women, through whom the message there inculcated has been carried far and wide. Edinburgh is entitled to make some proud claims in this connexion. From its tuberculosis dispensary the proper teaching on this subject has been disseminated, and having led the way with a chair of tuberculosis in its University, Edinburgh still sends out every year hundreds of men and women fully equipped to tell the public what is known on this subject.

Unfortunately, knowledge acquired is not always outpoured, and the direct teaching of public health principles to the people has not, as a general rule, advanced beyond the occasional or ceremonial stage. It is true, as Sir George Newman has pointed out, that the first form of education is the effective administration of the public health and medical services; but, at the same time, this machinery needs to be displayed, interpreted, and brought home to the people if their intelligent co-operation is to be gained.

The National Association for the Prevention of Tuberculosis.

In this connexion attention may be drawn to the work of the National Association for the Prevention of Tuberculosis, which was inaugurated by King Edward VII, when Prince of Wales, in 1898. The National Association is a voluntary, not a State organization, but it works in co-operation with all public health bodies. Its mission, which has been faithfully carried out for more than thirty years, was explained by Sir William Broadbent at its inaugural meeting—"to carry into every dwelling in the land an elementary knowledge of the modes in which consumption is propagated and the means by which its spread may be prevented, and thus to strengthen the hands of medical men throughout the country who are dealing with individual cases of the disease." The National Association is also able to-day to strengthen the hands of the central authority and of the local authorities in carrying out the national tuberculosis scheme.

It might be suggested—though not by anyone who knows the facts—that the propaganda work of the National Association would clash with or overlap that of the local authorities. So it would, in the absence of a perfect understanding between the two. But the creation of a universal interest in and knowledge of the prevention of tuberculosis is neither a one-man nor a one-department job; it is work for a team, and the bigger the team the better.

In 1926 the National Association launched a special appeal for funds to carry out extensive propaganda throughout the country. The appeal was entirely successful, and the result enabled four medical and two nurse commissioners to be appointed for this purpose. One of these medical commissioners has been touring Scotland for nearly two years, everywhere maintaining touch as far as possible with the medical officers of the local authorities, with private practitioners, and with all interested organizations and individuals. The nurse commissioners are following up the visits of the medical commissioner with a view to enlisting the co-operation of district nurses and others. Each of the medical commissioners has a caravan, fitted up with an interesting collection of exhibits, and including a cinematograph projector.

Principles necessary to be Taught.

What is it that such a National Association should teach?

In the first place, very large numbers of the public have only a faint idea of the purpose of the tuberculosis dispensary, or even where it is situated. Only by a perfect understanding between the people themselves, the medical practitioners of the area, and the dispensary staff can the functions of a dispensary be adequately discharged. The dispensary, for example, is the centre for diagnosis, from which the idea of the importance of early diagnosis and prompt treatment is to be inculcated. The public have also to learn that the dispensary is the place where such early diagnosis can be made, and that their own medical practitioner and the tuberculosis officer are intended to work in the scheme together.

The idea of the sanatorium also needs proper presentation. Many patients look upon admission to the sanatorium with gloomy forebodings, picturing a lonely institution in a distant part of the country, with stern nurses and unapproachable doctors, and the result of such forebodings is that they procrastinate under various excuses and lose precious time. It is a different story when, after a stay in the sanatorium, they return. But it is worth while to diffuse generally the conception of the sanatorium as a place where health is sought—and may be won—amidst pleasant surroundings and happy people.

Again, amid all the obscurities of tuberculous infection there are certain principles which can be taught. I think we must agree with Krause when he said, "It would seem the better wisdom to presume not at all upon a resistance, an acquired immunity, that must be of undeterminable and hypothetical integrity in any particular case. The only rational attitude is to protect all human beings, of whatever age, against exposure." By this is meant that every effort should be made to stop the dissemination of tubercle bacilli, and with this everyone will agree. The people should be told that any excretion or discharge from the body may contain germs of one kind or another and spread disease, and that all such excretions or discharges should be disposed of safely. The causative agent of nearly all the common infectious diseases, and of many of the epidemic nervous diseases, as well as of tuberculosis, may be conveyed in sputum. When this is made plain the proper and rational practice is laid down on a broad basis. The known tuberculous patient is not singled out.

The Formation of the Habit of Health.

When we studied physiology we learned about the law of facilitation or of habit, how when an impulse had passed through a particular set of neurones to the exclusion of others, it would tend to take the same course on a future occasion, and each time it traversed that path the resistance it encountered would be smaller. Education has been described as the laying down of nerve channels in the central nervous system while this is still plastic. The proper time to make permanent the habit of safe coughing and safe disposal of sputum is early childhood, and if such lessons are repeated over and over again during the years of childhood the nerve channels are laid down, and the involuntary reflex act is established. There is no reason, for example, why, as an automatic reflex act, a person should not put some cover in front of his mouth and nose every time he coughs or sneezes. It would become automatic if what might be termed "spray drill" were taught persistently during early childhood and school life.

A wealth of potential teaching talent exists in the medical and nursing professions, and if it were only mobilized and utilized an immense gain to public health would be the result. The public should be given information concerning resistance to infection, how few persons can expect to pass through youth and adult life without frequent contact with such infection, but that the hygienically educated person does not contaminate others, and that such person, being careful of the welfare of the community, is in no way to be feared or shunned. But the public has also to be told that infection may be distributed by others, many of whom are not aware that they have tuberculosis, or, knowing it, are careless or uninstructed or untrained. Infection, in the ordinary sense, is likely to end in manifest tuberculosis only when the organisms are assisted by contributory factors. These need not be enumerated to those I am addressing, but the public has to be informed as to the nature of these contributory factors or causes, and how to avoid them, and this necessitates a sound public health policy.

* A paper read at a meeting of the Tuberculosis Society of Scotland, held in Edinburgh, March, 1929. Abridged for publication.

Assistance for the Tuberculous Invalid.

Another respect in which the public needs information is with regard to the requirements of the dependent tuberculous invalid. The penalties of dependency and destitution in the case of the tuberculous patient have not yet been grasped by the community. Some patients, having had during their stay at the sanatorium full and proper diet, find themselves unable to provide what is necessary on their return to their homes. Food is only one of the requirements of the tuberculous invalid. In various ways he needs assistance in his continued fight against disease, and in order that that assistance may be given, the creation of a co-operative public opinion is necessary. Another very important piece of work is to urge those responsible for the health of the people to ensure by all means in their power a pure milk supply, one which does not carry tuberculosis.

All this that I have sketched is in reality the trend of the teaching of the National Association for the Prevention of Tuberculosis. The National Association is not oblivious of what is being done officially. This country enjoys the benefits of a highly organized public health service, one of whose units is the tuberculosis service, and not the least important of the functions of this official service is that of education in health matters, with special reference to tuberculosis. The sanatorium or hospital, and also the tuberculosis dispensary, are educational forces, but the teaching needs to be carried farther, into the patient's home (where the interest of his own medical attendant is necessary), and among his family and friends. This calls for home visitation, supplemented by central meetings, the organization of which latter is not a little difficult. In a busy tuberculosis dispensary, with an ambitious staff, the day is all too short for the hundred-and-one tasks to be faced each morning, and the staff may not feel inclined to arrange meetings, nor may they have the financial means to enable them to organize such, including, for example, the display of films.

In this respect the assistance of the caravans sent out by the National Association is warmly welcomed. The medical commissioners who are sent out go, as has been said, in the spirit of team work. They fully appreciate the fact that each area may have its own special problems. They work in co-operation with the medical officers of health, tuberculosis officers, and general practitioners, many of whom in all parts of the country have expressed their thanks in unstinted terms to the National Association for carrying out a programme of popular lectures in their areas. But, of course, it remains for those residing in the area to render permanent the value derived from the occasional campaign, and in this respect no one has a greater opportunity than the general practitioner. As health education plans become more clearly defined, there can be no doubt that general practitioners will shoulder the burden of preventing disease as cheerfully and thoroughly as they shoulder the burden of treating it.

TREATMENT OF MENTAL DISEASE.

MORISON LECTURES, 1929.

DR. R. DODS BROWN, F.R.C.P.Ed., physician-superintendent, Royal Mental Hospital, Aberdeen, delivered the Morison Lectures before the Royal College of Physicians, Edinburgh, on June 3rd, 5th, and 7th, taking as his subject "Some observations on the treatment of mental diseases." Dr. R. A. Fleming, President of the College, occupied the chair on each occasion. Dr. Dods Brown dealt first with the historical aspect of the subject, and then with certain methods of treatment recently introduced or revived.

Historical Aspects.

At the outset the lecturer quoted from ancient Egyptian, Chinese, Hindu, Greek, Latin, and Arabian writings, referring in particular to the views of Hippocrates, Celsus, Soranus, Aretæus, and Paul of Aegina. There was good reason to believe that many of the Greek and Roman physicians treated the mentally afflicted with great care and consideration. It was far otherwise in the succeeding centuries. One of those to protest against the abuses prevalent in this country in the seventeenth and eighteenth centuries was Daniel Defoe, who characterized the system as "the height of barbarity and injustice, and worse than a clandestine inquisition." These abuses persisted well into the nineteenth century, and readers of *Hard Cash*, written in 1863, would recall the dismal picture of life in private asylums presented by Charles Reade. Philippe Pinel (1745–1826) stood out in medical history as the first in modern times to treat the insane in a humane manner. Like most pioneers, he was met with much misrepresentation, ridicule, and hostility. The earliest of the reformers in this country were Tuke, Hill, and Conolly, and to this list might be added with justice the name of the founder of that lectureship, Sir Alexander Morison of Bankhead. The latter, in the face of much opposition, had begun a course of lectures on mental diseases in Edinburgh in 1823, and was far ahead of his time in his understanding and treatment of disorders of the mind. He recognized the benefit of beautiful surroundings, fresh air, sunlight, exercise, sea-bathing, occupation, amusements, and cheerful well-lighted apartments. A remedy he recommended was warm bathing, writing of it that "it tends to allay the tension and the agitation of the nervous system, and to soothe and to diminish an increased sensibility, both of which are very prominent symptoms in the insane state." He gave great consideration to the bodily health of his patients, ordering in certain cases special diet, acidulous fruits, and copious draughts of cold water. Only exceptionally did he prescribe alcohol, and he was no believer in administering drastic purgatives and emetics, as was customary at that time. Happily, it was now true to state that the patients in our mental hospitals were considered as persons sick in body and mind, and were treated as such. All so-called civilized countries, however, had not made the same advances.

Modern Methods of Treatment of General Paralysis.

It was questionable whether any method of treatment adopted for the relief or cure of mental disease had given rise to so much interest or to so extensive a literature as had the treatment of general paralysis by malaria, introduced by Wagner-Jauregg of Vienna. That acute fevers might bring relief to sufferers from mental troubles was known to the ancients, and Hippocrates believed that fevers, especially quartan fevers, relieved spasms and mental diseases. John Munro, in the eighteenth century, wrote that "an intermitting fever coming upon a madness of long standing has proved the cure of the madness." It was of interest to read in Sir Alexander Morison's lectures that he had observed in "dementia" that the occurrence of an acute disease had occasionally been the means of a cure. Stoddart had recently stated that the beneficial effect of malaria in insanity was discovered in 1248. Although Wagner-Jauregg suggested deliberate infection with malaria as a therapeutic measure in general paralysis in 1857, it was not until 1917 that he inoculated his first patient. In the interval he had experimented with various bacterial and non-bacterial preparations. It was now a historic fact that in 1917 Wagner-Jauregg inoculated nine general paralytics with blood infected with the *Plasmodium vivax*. Three passed into a complete remission which lasted for more than eight years, and three had incomplete remissions. The method had been in continuous use in Vienna since that time, and it was the claim of that school that 83 per cent. of early cases made a complete recovery. Few others were able to show such results, but there was general agreement as to the very great value of the treatment. In 1,377 cases treated with malaria, recently reported in the literature, 25.6 per cent. of complete clinical remissions and 30.4 per cent. of partial remissions were claimed. Thus 56 per cent. of patients were benefited. This contrasted very favourably with the percentage of spontaneous remissions, varying from 5 to 15, recorded by different observers. There was naturally difference of opinion as to the criteria of remission. Some were guided wholly by the mental improvement, others demanded, in addition, the disappearance

of all neurological findings, while yet others laid most stress on the serological findings. A survey of the results of malaria treatment of general paralysis in English mental hospitals had been made for the General Board of Control by Surgeon Rear-Admiral Meagher, and the lecturer had had access to the manuscript of the report. The results could be given in tabular form.

English Mental Hospitals (Meagher).

	1,173 Untreated Cases.		1,597 Treated Cases.	
		Per cent.		Per cent.
Dead	1,016	86 6	541	34
Alive	157	13.4	1,056	66
In hospital	117	10.0	652	41
Discharged	40	3.0	404	25

Meagher concluded by stating that, while malaria treatment precipitated death in a certain number of cases, it was valuable in extending life, in improving the mental and physical state, and in allowing some 30 per cent. of patients to resume normal life. The lecturer had also been fortunate in getting particulars of cases treated with malaria in Scottish mental hospitals. Excluding those that had received some form of specific treatment in addition to malaria, fifty remained for analysis. This figure included fourteen treated in the Aberdeen Mental Hospital. Twenty-four per cent. passed into a complete remission, 18 per cent. were greatly improved, 16 per cent. were slightly improved, and 22 per cent. died. Dr. Dods Brown then dealt in detail with the effects of the treatment on the serological findings, the technique of the methods of inducing malaria, the explanations offered of the mode of action, and the changes found in the brain in cases dying after the treatment. After a brief reference to the results of malaria therapy in other diseases, and to experiments with relapsing fever as a substitute for malaria, he passed to the use of other remedies in general paralysis and neuro-syphilis—namely, tryparsamide, arsenical preparations, salvarsanized serum, bismuth, mercury, agents producing leucocytosis, and foreign proteins.

Dementia Praecox.

After the success attending malaria treatment in general paralysis, it was natural that its effect should be tried in dementia praecox. Marked, though not always lasting, improvement had resulted in early cases, but the method was without value in old-standing cases. The experience in Aberdeen Mental Hospital had been unfavourable. Carroll and his associates in America, by repeated intrathecal injections of 25 c.cm. of inactivated horse serum, had tried to influence the course of the disease by producing a meningeal reaction, a sort of aseptic meningitis. In more than half of the forty-nine cases treated, there was decided benefit lasting for at least several months. Kubitschek and Carmichael made trial of this method in forty-five cases, and concluded that it held distinct possibilities in early cases. In four patients so treated in Aberdeen there was no improvement.

Heliotherapy and Actinotherapy.

These measures had been employed extensively in the Aberdeen Royal Mental Hospital in the attempt to benefit the mental through the bodily health. More than 200 patients had received one or more courses of ultra-violet irradiation. Seventy-seven per cent. had increased in weight, and the majority had shown improvement in muscle tone, appetite, and sleep, as well as in the blood picture. It was customary also to treat most of the recent admissions and many of the physically ill patients not only in the open air, but by heliotherapy, according to the graduated method of Rollier. The beneficent effect of this on the well-being of the patients was unquestionable.

Occupational Therapy.

For very many years patients in mental hospitals in this country had been employed on the farm, in the garden, the workshops, the laundry, the kitchen, the sewing room, and other departments, but the economic question was often the primary consideration, and the work chosen was not always calculated to enlist the interest of the patients. Occupational therapy, with the one object of curing or benefiting the patient, was no new fad. D. K. Henderson found from old reports that the directors of the Glasgow Royal Mental Hospital had referred to occupation as a means of cure in 1816. There was a note in the Aberdeen Mental Hospital records to the effect that male patients were employed in gardening, and female patients in spinning flax in 1810. About forty years ago craft work was developed in several of the larger mental hospitals in Austria, and for a considerable time the value of this means of treatment had been recognized in America and Canada.

In 1898 Hamilton Marr introduced craft work under the Brabazon scheme into Woodilee Mental Hospital. The idea was adopted in other institutions in this country early in the century, but fell into abeyance. It was only recently in Britain that interest had been revived in organized occupational therapy, and for this D. K. Henderson deserved most of the credit. It was desirable that the work should be carried out away from the wards in a special building which should be as bright and pleasant as possible. The complete change of environment was important. The department should be managed by a special teacher or teachers, who had nothing to do with the care and treatment of the patients in the wards. There should be a special annexe where noisy work, such as carpentry and metal work, was done. There was no limit to the variety of crafts that could be taught. In Aberdeen thirty different crafts were engaged in by the patients. The development of this means of treatment marked a very real advance.

At the close of the third lecture Professor G. M. ROBERTSON, physician-superintendent, Royal Mental Hospital, Edinburgh, moved a vote of thanks to Dr. Dods Brown.

FUNCTIONAL PROBLEMS OF CONVERGENCE.

SIR CHARLES SHERRINGTON'S FERRIER LECTURE.

THE contributors to a fund to commemorate the late Sir David Ferrier and his pioneer work upon the functions of the brain requested the Council of the Royal Society to accept the sum of £1,000 in trust for the institution of a David Ferrier Lecture. The Council, in accepting the trust, decided that the lecture should be given triennially on "a subject relating to the advancement of natural knowledge of the structure and function of the nervous system."

The first David Ferrier Lecture was delivered before the Royal Society, on June 20th, by Sir CHARLES SHERRINGTON, O.M., F.R.S., who took as his subject "Some functional problems attaching to convergence." The author's summary of the lecture is as follows:

The arrangement of the conducting paths of the nervous system, branching and redistributing their impulses as they do, exhibits places where numerous convergent paths run into one. When at such places two or more of the converging arcs are concurrently active, the trains of impulses arriving by them can interact. Such convergent places are co-ordination points. An example of such importance, and relatively accessible to experiment, is that in the spinal cord, where the motor nerve cells innervating a muscle receive as a group the various afferent paths which reflexly operate the muscle. If two or more of the convergent afferent nerves are excited concurrently the reflex interaction, as revealed by the muscle, exhibits three main sets of cases.

In one set of cases the muscular response under concurrent stimulation of two or more afferents shows a deficit in amount as compared with the sum of the responses obtainable from the several afferents taken separately. This occurs especially when the excitation of the reflexes is strong; it is most marked when they are of maximal strength. The contraction effect of one afferent may default altogether. The result might seem to indicate inhibition, but analysis shows that it is not referable to any form of inhibition. The explanation lies in the limita-

tions of the contraction response of the muscle fibres of the motor units activated: the contraction effect pertaining to one afferent being "occluded" for the time being by that pertaining to another. "Occlusion" is a result of the overlap of different afferent arcs upon the same motor units; this overlap is "central"—for example, in the spinal cord. The amount of "occlusion" as observed by the myograph gives a measure of the amount of that "central" overlap. In such estimates, however, the assumption is made that the component motor units of the muscle all of them possess individually the average value of contraction-tension which obtains for them. Thus in the knee-flexor (cat) semitendinosus has a value which is only one-third of that obtaining for gastrocnemius. It is, however, certain that the individual motor units differ considerably in contraction value within one and the same muscle. Examined by occlusion the overlap of the constituent branches of a single large afferent nerve upon its motor units can be well above tenfold. This gives a functional picture in harmony with the histological picture furnished long since by Cajal. In another set of cases, on the contrary, the contraction response of the muscle, under concurrent stimulation of two or more reflex arcs which are excitatory for it, shows a surplus of contraction as compared with the sum of the responses to the component afferents taken separately. This result is most evident with weak reflexes. As with the other set of cases this result also, although opposite to the previous class, brings evidence of the overlap of the convergent arcs upon the central ends of motor units held by them in common. Moreover, evidence is thus furnished that central states of excitement, individually too weak to provoke the motor units into discharging activity, can by summation become effective for that activation. The reflex excitation provoking contraction of the muscle is shown to be accompanied regularly in the spinal centre by concomitant subliminal excitation in other spinal motor cells over and above those excited to actual discharge. The time relation of central subliminal excited states obtaining in certain typical reflexes has been determined (J. C. Eccles). By the summation of subliminal excited states this fringe of subliminal effect is a functional means of liaison enabling co-operation between different adjuvant parts of the nervous system.

Although the neuron upon which convergent arcs interact is subject to their combined influence, and is to that extent an instrument passive in their hands, it is an instrument clearly with ways of its own. Thus, to receipt of a single stimulus it may react by a response consisting of a whole tetanic series of impulses. Another and third set of cases arising from interaction at the convergence point is where the upshot is inhibition. The clash is between "central" excitation and a central process which arrests or precludes it, but about which all that is known is that it antagonizes excitation. Evidence is adduced of the quantitative interplay of the opposed influences upon the individual neuron. Conditions favouring inhibition are discussed. Though trains of impulses are the sole reactions which enter and leave the central nervous system, it is clear that nervous impulses are not the sole reactions functioning within that system. States of excitement which can sum together, and states of inhibition which can sum together, and states which represent the algebraical summation of these two, are among the central reactions. The specific cell units, the neurons, far from behaving merely as passive recipients and transmitters of impulses, modify as well as transmit what they receive.

Union of South Africa.

[FROM OUR CORRESPONDENT IN PRETORIA.]

Food, Drugs, and Disinfectants Act.

THE Parliament which has just been dissolved was remarkable for the amount of health legislation it effected. It was responsible for the final passage of the Medical, Dental, and Pharmacy Bill, which had come up repeatedly for a dozen years, but had invariably been dropped when opposition, designed chiefly to permit of unqualified practice, stiffened. Two amending bills to the Public Health Act of 1919 were passed, one in 1927 and the other in 1928. The Food, Drugs, and Disinfectants Bill—to consolidate and amend the laws for preventing the importation or sale of foods or drugs which are unwholesome or adulterated or incorrectly or falsely described, and for regulating the labelling and sale and for preventing the incorrect or false description of disinfectants—was first introduced in the House of Assembly in 1927. It was read a first time, but made no further progress. It was reintroduced last year, passed first and second readings, and was referred to a select committee. This committee took evidence and reported on the bill shortly before the end of the session. During the final session of the late Parliament the bill became law, and was published in the *Government Gazette* of April 3rd, as Act No. 13 of 1929. It is proposed to frame and publish regulations and standards under the Act by the end of next September, and to bring the Act, together with these regulations and standards, into operation as from January 1st next. This will allow a period of three months for anyone concerned to submit representations regarding the regulations and standards proposed. The bill as finally passed may confidently be described as the most complete and comprehensive legislation of its kind extant. The Minister of Public Health is responsible for the administration of the Act, and the Secretary for Public Health is charged, under the control of the Minister, with its general execution and enforcement. The need for consolidating and up-to-date legislation had been strongly urged in every annual report issued by the Secretary for Public Health, Dr. J. A. Mitchell, since the Union Health Department was constituted. Much evidence had been collected by the department showing the frequency of adulteration and the extent to which the public was being defrauded. As in the case of the old English Act of 1875, the local Acts made no provision for uniform standards except in the case of one or two articles of dairy produce. All these older Acts were framed to meet the frequency, at the time, of harmful adulteration. Nowadays harmful adulteration is rare, but the public has to be protected from harmless adulteration and sophistication of articles of food done with a view to making money. The Act aims primarily at safeguarding the public health, but important objects are also the prevention of fraud and misrepresentation in regard to food and drugs, and the promotion and encouragement of honest production and trade in genuine materials. Adulteration of a chemical nature is almost exclusively dealt with. Questions of unfitness for food—owing to contamination, putrefaction, or decomposition, or to the presence of parasites—are dealt with under the Public Health Act and also under the Municipal Ordinances of the four provinces. The Act does not impose any restrictions on the sale of patent medicines or other drugs, provided that there is no misrepresentation and that no extravagant and unwarranted claims are made on the label or in the advertisements. Standards are not laid down in the Act, but the Minister is empowered to provide these by regulations. This is a satisfactory position. Amendments to parliamentary legislation are often difficult and cumbrous matters to negotiate; regulations, on the other hand, can readily be modified to meet local and rapidly changing conditions.

Epizootic Among Rodents.

In the *British Medical Journal* of February 16th (p. 314) an account was given of the very fatal epizootic among veld rodents in the De Aar area, at first attributed to plague, but later found to be due to a Gram-negative, bipolar staining organism conforming morphologically and culturally to the Pasteurella group. Investigations were continued by the Union Health Department and the South African Institute for Medical Research. For two months after the heavy rodent mortality in the De Aar area had been notified, reports came in from regions further east of rats dying in large numbers. Thus, at the end of January, the magistrate of Calvinia, 250 miles east of De Aar, reported that "veld rodents were dying by scores" on certain farms in his district. From the information now available it appears that an area extending

from De Aar on the east to Calvinia on the west, with an average width of about 150 miles, was involved. This region is very sparsely populated, being for the most part sand veld with scant scrub. The rodent population consists mainly of Namaqua gerbilles (*Desmodillus auricularis*). These were the animals almost exclusively affected, and their numbers have presumably been very greatly reduced. This is a matter of much significance to the health authorities, as the ever-present danger to the human population from plague epizootics among the gerbilles will in this region be very considerably reduced, at any rate for a year or two, until the veld is replenished by the prolific habits of these animals. The field conditions of the epizootic were so suggestive of plague that at first the laboratory observers were unprepared to find a causative organism other than *B. pestis*. But all laboratory tests on numerous specimens from De Aar and neighbouring districts proved negative for plague. After the epizootic had lasted a month no progress towards discovering its cause had been made, except that it was fairly definitely not plague. Meanwhile the wide area over which rodents were dying was causing considerable local alarm, which the occurrence of two undoubted cases of human bubonic plague within the affected area tended to increase. Eventually the causative organism of at any rate part of the epizootic was proved to be a Pasteurella. This organism was frequently present, often in great numbers, in the blood and organs of animals found dead. By scarification with blood or organs from such animals other rodents sickened and died, presenting appearances identical with those of the animals found dead of the natural disease. The organism was also grown on laboratory media; inoculation or scarification of suitable rodents with the organism in pure culture reproduced the disease in a manner similar to that of animals infected by scarification directly from animals dead of the natural disease. Uncertainty whether this Pasteurella was responsible for the whole of the epizootic is caused by the fact that in many gerbilles examined the organism was not found; scarifications from such gerbilles were not fatal to others. Dr. Pirie of the South African Institute for Medical Research suggests that these gerbilles did die from the effects of the Pasteurella, but failed to show it because of a partial, though imperfect, immunity. The organism which is responsible then for part, if not all, of the epizootic is placed by its morphologic, biologic, and pathogenic characters among the Pasteurellae or haemorrhagic septicaemia group of bacteria. Should it prove to be a new species, Dr. Pirie suggests the name *Pasteurella desmodilli* as indicative of its origin from the Namaqua gerbille (*Desmodillus auricularis*). Meanwhile, isolated cases of human plague continue to occur. In the Government bulletin of April 13th four cases are reported from farms in various parts of the country—a European in the Hopetown district of the Cape Province, who was on trek when he contracted the disease; a native in the Bothaville district, Orange Free State; two other native cases (one fatal) in the Hoopstad and Vredefort districts of the Orange Free State. In the bulletin of April 20th a fatal case in a European schoolboy is reported from a farm near Parys. Government health and rodent officers are sent to investigate such outbreaks wherever they occur; these officers take all possible precautions to prevent the spread of the disease. Dr. Hauptfleisch, the district surgeon who was reported in the *British Medical Journal* of May 4th (p. 826) to have contracted bubonic plague, as the result of infection while making a post-mortem examination, has made a complete recovery.

Precautions Against Influenza.

With the advent of winter, health authorities are becoming alert to the possibility of the spread to South Africa of the influenza which has been prevalent in Europe and the United States of America. A number of cases have occurred on board vessels arriving at Union ports. These have been successfully dealt with up to the present, and no contact cases have occurred; but the precautions may not be adequate when colder weather renders the local population more susceptible. The Government Health Department has therefore issued a pamphlet on influenza to all local authorities and magistrates in the Union, so that they may be prepared to deal with any emergency that may arise. The pamphlet urges the usual precautions, such as avoidance of needless exposure, the necessity for stopping work and going to bed on the appearance of the very first symptoms, and the organization of local medical and nursing services. The advantage of forming a "pool" of unattached medical men is pointed out. Where there is a serious shortage of medical men the whole area affected may be divided up into suitable districts, equal in number to the medical men available. With one doctor allocated to each district, much time and unnecessary travelling in this country of vast distances will be saved. For meeting the often more serious problem of the shortage of nurses a similar subdivision of the area is recommended. The trained nurse in each district will serve as a nucleus round which a service of voluntary helpers can be gathered. The co-operation of the V.A.D., if locally organized, should be enlisted in carrying out any scheme of nursing. It is pointed out that measures may be taken which, in the aggregate, may reduce the opportunities of infection. By thus helping to prevent mass infection serious dislocation of the ordinary life of the community may be prevented; such dislocation itself increases the danger by making proper care of the sick difficult.

Immunization of Typhoid Contacts.

At its last meeting the Council of Public Health, established under the Public Health Act, 1919, discussed the great economic loss to the country resulting annually from typhoid fever. They recommended that prophylactic immunization of all contacts be carried out by local authorities immediately after the discovery of a single case, and they drew attention in this connexion to the advantages in certain circumstances of the oral method of immunization. The Secretary for Public Health has followed up the council's resolution by issuing a pamphlet on typhoid to all local authorities and magistrates in the Union. In the covering letter the advantages of the oral method of vaccine administration are indicated. It is mentioned that immunity appears to be established more quickly by the oral than by the injection method; many persons who would object to injections are willing to take medicine in pill or tablet form by the mouth. The vaccine is quite harmless, and may be taken by anyone; it is supplied together with ox-bile tablets, which aid its action; an ox-bile tablet is taken last thing at night, and a vaccine tablet first thing next morning, for three successive days. Tablets for oral administration are obtainable from the South African Institute for Medical Research, Johannesburg, and also from the Government Laboratories at Capetown and Durban. The cost to local authorities is 9d. per dose sufficient for one person—that is, three bile and three vaccine tablets. The Secretary for Public Health emphasizes the fact that immunization, whether by the oral or injection method, must not be regarded as a substitute for the sanitary measures required to prevent the occurrence and spread of typhoid infection. Immunization must be regarded as an immediate and supplementary precaution.

The Late Sir Thomas Smartt.

The career of Sir Thomas Smartt as a medical practitioner was brief, and the public of South Africa was hardly aware that his name was on the *Medical Register*. It is as a statesman that he will be remembered—as leader of the Opposition when the Botha Government was in power, and later (after General Smuts had succeeded General Botha as Premier and had formed a coalition with the Unionist Party) as a Cabinet Minister. Thomas Smartt was born in 1858 at Trim, County Meath, Ireland. Soon after his birth his widowed mother moved to Dublin, in which city he grew up. He received his medical education at Adelaide Hospital, qualifying as Licentiate of the College of Surgeons at the age of 19. He had to wait until his majority before his licentiateship could be registered, after which he went to Australia as ship surgeon. Some months later he landed in Capetown, and we find him on the Cape *Medical Register* in October, 1880. During the Basuto war of 1881 he served for some months as surgeon in Carrington's column. After that he commenced practice in the remote Karroo district of Britstown, of which he

was appointed district surgeon; it was here that he commenced farming, which in later life he carried on so successfully. What the inducement was to commence farming in that arid area is very difficult to imagine. His contribution to the development of South Africa as a scientific farmer is by some considered to be as valuable as his statesmanship. He commenced political life in 1891, relinquishing his district surgeoncy for the purpose. He entered the Cape Parliament in 1824 as member for Wodehouse, and sat in that and the Union Parliament almost continuously until his death last month.

Scotland.

Presentation to Sir Alfred Ewing.

SIR ALFRED EWING, F.R.S., and Lady Ewing are receiving many tokens of regard on the eve of the former's retirement from the position of Principal of Edinburgh University. In April the retiring Principal received the Freedom of the City of Edinburgh. On June 11th portraits of Sir Alfred in his robes as vice-chancellor, painted in oils by Mr. Henry Lintott, R.S.A., were presented to the University and to Lady Ewing at a large and representative gathering of subscribers. A letter of apology for absence was read from the Earl of Balfour, Chancellor of the University. Lord Provost Sir Alexander Stevenson, in presenting the portrait to the University, referred to the services of Sir Alfred Ewing to the State, outstanding among which was his work at the Admiralty during the war, and to the University, which he was leaving after a period of unexampled development and expansion. He was carrying with him into his retirement the affection and esteem of very many friends. Sir John Gilmour, the Lord Rector, accepted the portrait on behalf of the University. The Lord Provost then presented a smaller portrait of the Principal to Lady Ewing as a personal gift to herself from the subscribers. On June 14th Sir Alfred and Lady Ewing received parting gifts from the students at a great gathering in the McEwan Hall. Mr. D. E. Keir, senior president of the Students' Representative Council, and Miss C. Hogg, junior president, made the presentations. The Principal made a delightful and highly characteristic reply. Another honour which is about to be conferred on Sir Alfred Ewing is the degree of Doctor of Science of Oxford University. On June 22nd a reception is being held in the Old College, Edinburgh, to welcome Sir Thomas Holland, the new Principal, and Lady Holland.

University of Edinburgh Alumnus Association.

The annual general meeting of the University of Edinburgh Alumnus Association was held in the Senate Hall on June 13th. In the absence of the president, Mr. Alexander Miles, P.R.C.S.Ed., the chair was taken by Dr. Logan Turner. Reference was made to the loss the association had sustained through the death of the Hon. Lord Constable. It was reported that a branch of the association had recently been formed at Hull, and that one was in process of formation in South Wales. During the year donations were made from the funds of the association to the Women Students' Union for an "Alumnus Association Room" (£200), to the Athletic Club towards a new pavilion at Craiglockhart (£100), to the University Settlement (£50), to the Inter-Universities Students Representative Councils Conference, and to the University Fives Club for a cup for annual competition. On Armistice Day a wreath was laid on the University war memorial. A useful function of the association had been to provide members in different parts of the world with such technical information as was within the province of the University to supply. The annual reunion was to be held in the Women Students' Union on June 27th, the date of the Arts Graduation, and invitations would be issued to all the graduands, including the honorary graduands, and to all final-year students in the other faculties. Professor Hannay congratulated the convener of the editorial committee, Dr. Logan Turner, on the current issue of the association's magazine, the *University of Edinburgh Journal*, which contained, in addition to much University news, notable and finely illustrated articles on the University Raeburns by Mr. James L. Caw, and on Professor David Masson by his daughter, Miss Flora Masson. The chairman appealed for still further support for the association, which was amply justifying its existence as a means of contact between graduates all over the world and their University.

Matriculation of Edinburgh Medical Students.

The Edinburgh University Court has decided that from October, 1930, no student shall be permitted to enter on the medical curriculum until he has passed the pre-registration examinations in chemistry and physics. A tuition course in chemistry for the examination will be arranged during the long vacation. Hitherto students have been allowed to start the medical course without having passed the pre-registration examination, provided they attended classes in elementary chemistry and physics and appeared for the examination at the end of the first three months.

New Graduation Hall at St. Andrews.

The new graduation hall which has been presented to the University of St. Andrews by the generosity of Dr. James Younger, LL.D., and Mrs. Younger, has now been almost completed. The need for a building of this nature had long been felt. The final designs were made in 1923 by the late Paul Waterhouse, F.R.I.B.A. The great hall, rising to the full height, runs north and south to a depth of 190 ft., with its stage at the northern end; while at the southern end are grouped the main entrance, the vestibule, the foyer, from which rise the double staircases, the robing rooms, and the lounge. The façade at the southern end, on a frontage of 170 ft., forms a noble and dignified continuation to the other University buildings in North Street. A great portico, surmounted by a classic pediment, articulates the main form of the hall, and this is flanked on either side by the club rooms and robing rooms. These are connected to the central block by the bold sweep of the walls that contain the main staircase. Advantage has been taken of the natural fall of the ground to place a large supper room, seating 80 persons, under the stage, with easy access and good natural light. The whole of the external stonework, with the exception of the columns, entablature, and pediment of the south portico, is of Cullaloe stone of a deep buff tone from the quarries near Aberdour. The external carving was modelled and carried out by Mr. A. Carrick, A.R.S.A. The roofs are covered with red Lombardic tiles. The floor of the hall (exclusive of stage) seats 624, and the main gallery 436 persons. The decoration of the hall has been kept extremely simple, and depends for its effect on its proportions and the very fine quality of the woodwork in Italian walnut. Special care has been taken over the acoustic properties. It is hoped to use the hall for a variety of purposes—University graduations and ceremonies, speeches, orchestral performances, stage plays, dances, and examinations. The cost of the whole building and site is approximately £95,000.

Dundee Royal Infirmary.

The annual meeting of the governors of Dundee Royal Infirmary was held on June 10th. Mr. Francis Stevenson, the chairman, said he would again emphasize the great necessity there was for everyone taking to heart his or her responsibility for helping in the great work of healing carried on at the Infirmary. During the last ten years, while over £80,000 had been added to the endowment fund, the income of which could be used only for the purposes of the institution, it might surprise them to learn that in one year only had there been a surplus carried to the reserve fund, the fund available for the general purposes of the hospital. From that fund, which stood at £109,765 in 1918, and towards which £103,305 had been received during the intervening years, it had been found necessary to draw a total sum of £161,663 in order to meet annual deficits, leaving the amount of the fund at £51,467 at December 31st. Reference was made to the gift by Mr. James Prain of the house in Dudhope Terrace as a preliminary training house for nurses. The house was ideally

situated in close proximity to the hospital, and would accommodate a sister-in-charge and seven pupils, who would spend two or three months there before engaging in regular ward duties.

Gift for Aberdeen Nurses.

Viscountess Cowdray, who has made generous gifts to nursing institutions in London and elsewhere, has given additional proof of her good will towards the nursing service of the country, and more particularly to the nursing service in the North of Scotland, by presenting the title-deeds of the Viscountess Cowdray College of Nursing Club to the Aberdeen branch of the College of Nursing—a gift representing more than £20,000 in terms of money. It is understood that this gift is associated with the thanksgiving movement for the King's recovery. It will be recalled that Lady Cowdray and the late Viscount Cowdray gave £25,000 each to initiate Lord Provost Lewis's Aberdeen Joint Hospitals Scheme, for which £408,000 has been raised in a couple of years. These are only some of the Cowdray benefactions to the city.

England and Wales.

Harveian Society.

THERE was a very large attendance of Fellows and visitors at the annual dinner of the Harveian Society of London, held at the Connaught Rooms on June 13th, with the president, Mr. Duncan C. L. Fitzwilliams, in the chair. All those present on this occasion were the guests of one member, Mr. George Buckston Browne, who has generously created a trust for the endowment of the society's annual dinners. After the loyal toasts had been honoured, Sir D'Arcy Power proposed the health of the Harveian Society, and the president, in replying, paid a tribute to the work of Sir D'Arcy—himself a past-president—to Mr. Buckston Browne, and to the officers of the society, whose efforts had contributed so much to its present prosperity. Dr. J. Walter Carr, president of the Medical Society of London, Lieut.-Colonel C. T. Samman, Master of the Apothecaries' Society, and Mr. A. P. Herbert of *Punch* replied to the toast of the visitors, which had been proposed by Dr. R. Cove-Smith.

National Association for Prevention of Tuberculosis.

The fifteenth annual conference of the National Association for the Prevention of Tuberculosis is to be held at Newcastle-upon-Tyne from October 10th to 12th. The chairmen are to be Sir Robert Philip and the Hon. Sir Arthur Stanley, and the principal subjects set down for discussion are "The factors that produce adult pulmonary tuberculosis," to be introduced by Dr. Edouard Rist of Paris, "National propaganda regarding tuberculosis," "Combined treatment and technical education of tuberculous youths," and, at a professional meeting, "The teaching of tuberculosis to undergraduates" and "The training of tuberculosis medical officers." An address is also to be given on "Tuberculosis on Tyneside," to be followed by discussion. Among those who are announced to take part in the proceedings of the conference are Sir Thomas Oliver, Professor Thomas Beattie, Dr. Fergus Hewart, Dr. W. H. Dickinson, Mr. William Guy (who is to speak on the relation of dentistry to the subject), Dr. A. H. Macpherson, medical superintendent of Burrow Hill sanatorium colony, and Dr. William Brand and Dr. Harley Williams, respectively senior and assistant medical commissioner to the National Association. The conference is open to all persons interested in tuberculosis on the payment of a fee of one guinea, and the Ministry of Health sanctions the payment of expenses of representatives by county and county borough councils and other authorities. The National Association has issued a report on the result of its recent special appeal for £100,000. The result, as announced some time ago in these columns, was that a larger sum than asked for was obtained. An amount of £59,684 was raised as a result of various efforts, to which an anonymous donor added a gift of £50,000. The money is being spent in education (for which purpose four highly qualified medical men have been engaged as lecturers), in the establishment of care committees for the supervision of patients and their families, in grants towards workshops for tuberculous patients, in assistance to the Burrow Hill colony, which is an experimental scheme for providing treatment and training for lads, and, finally, in helping individual cases where the official tuberculosis machinery does not cover the particular need.

Electric Supply in a Mental Hospital.

On October 5th, 1928, the Commissioners of the Board of Control, following their inspection of the County and City of Worcester Mental Hospital at Powick, directed attention to the benefits that would accrue to the institution from the installation of an electric supply. Much of the dinginess they noted was attributable to the use of an inadequate illuminant, and in the absence of electricity a number of suggestions they would wish to have made had to be deferred. The Commissioners expressed the hope, however, that as soon as the electric light was available no time would be lost in providing the hospital with a cinema apparatus, which their experience taught them was so much appreciated in mental institutions elsewhere. It is gratifying to note that, in his report for 1928–29, the medical officer and superintendent, Dr. H. F. Fenton, was able to state that the question of the introduction of electricity into the hospital was under immediate consideration by the committee. Besides the many purposes for which electricity could be used in the various departments of the hospital, it had, he pointed out, the advantages of affording increased safety, better health conditions and facilities for treatment, and greater comfort to the patients.

Correspondence.

PREVENTION OF MENTAL DISORDER.

SIR,—The National Council for Mental Hygiene earnestly wishes to draw attention to the urgent need for improved facilities for the treatment of poor persons suffering from nervous or mental breakdown, of a type which does not constitute insanity. They form a large class for whom little or no provision at present exists; yet the conditions from which they suffer are responsible for a large amount of avoidable invalidism and inefficiency as well as mental distress. For the rich who suffer in this way there are medical specialists and nursing homes available. For the poor there is practically no provision.

In England and Wales two special hospitals—the Lady Chichester Hospital at Hove and the Maudsley Hospital in London—provide beds for such patients; but only one or two out of the large number of general hospitals make any special provision, and then only to a meagre extent. Yet the functional nervous types of illness are numerically as frequent as any. Poor patients have, therefore, usually to be sent, if they are placed in hospital at all, to the observation wards of Poor Law infirmaries, where all kinds of mental illness are nursed in the same ward. This is detrimental to patients whose illness is of the variety referred to. Not, in fact, until the extreme stage of certifiable insanity is reached, when the patient is removed to a mental hospital, does any adequate treatment become available. Much more commonly the patient drifts helplessly, unhappy and inefficient, and often completely incapable of work for a period that has no definite limit. Apart from the suffering and unhappiness involved, the economic wastage of time and money is incalculable.

In reference both to this class of case and to the other and usually more severe types of mental illness, the Report of the Royal Commission on Lunacy and Mental Disorder, published in 1926, formulates the following principles:

"1. Illness of the mind should be regarded as an illness like other illnesses.

"2. The keynote of the future should be prevention and treatment.

"3. There is no clear demarcation between mental and physical illness. There are many cases of illness in which it is a question whether the physical or mental symptoms predominate.

"4. There is no definite line between the sane and the insane. It is a matter of degree. The degrees of mental instability are infinite.

"5. The number of persons who could avoid certification altogether would undoubtedly be increased if greater facilities existed for those who are willing to submit themselves to treatment.

"6. Hence the necessity of making provision in connexion with existing institutions or by the provision of new institutions for the treatment of mental disease from the very earliest moment of the appearance of its symptoms."

The report further states:

"In the case of every other type of institution for the treatment of disease the aim is to get into touch with the patient at the earliest possible stage of his attack and to ward off, or at least mitigate, its effects. Not so with the case of mental illness. Contrary to the accepted canons of preventive medicine, the patient who is becoming mentally ill is not admitted or admissible to most of the institutions provided for his treatment until the disease has progressed so far that he has become a certifiable lunatic. Then, and then only, is he eligible for treatment."

It is important to distinguish clearly between mental illness and mental defect. Mental defect is a failure of mental development, and is incurable. Nervous and mental breakdowns are illnesses which are often preventable and, in many cases, curable. They affect all classes, and frequently occur in persons of more than average mentality and usefulness. We are strongly of the opinion that accommodation and treatment for these cases will always be required in the ordinary public or municipal hospital, in addition to any provision which may be made for more established cases in special hospitals.

The new Local Government Act will inevitably involve a recasting of the whole public service. No scheme that is drawn up can be regarded as adequate which does not take into account the needs of those suffering from nervous breakdown and the early symptoms of mental illness. The National Council for Mental Hygiene sincerely hopes that public authorities will give their most earnest consideration to this question when submitting their schemes to the Ministry in regard to the administration of the new Local Government Act.—I am, etc.,

MAURICE CRAIG,
Chairman.

London, S.W.1, June 6th.

DEATH AFTER AVERTIN ANAESTHESIA.

SIR,—We think that the following report of a fatality following avertin anaesthesia may be of interest, as it resembles somewhat a case recorded by Dr. Blomfield and Sir F. E. Shipway in the *Lancet* of March 16th last.

The patient, a young and apparently healthy adult, was admitted to hospital on June 10th suffering from a right inguinal hernia. No sign of disease could be detected in the heart, lungs, or kidneys. He had the customary preparation—that is, a laxative on the evening of the operation and simple rectal washouts the following morning. At 5.30 p.m. his blood pressure was 125 mm. Hg, and morphine hydrochloride gr. 1/4 was given. The dose of avertin given was 5 c.cm. in a 3 per cent. solution, which was rather less than 0.1 gram per kg.; this was given at 6 p.m. It had been intended to supplement this with intrathecal novocain or gas and oxygen.

At 6.30 p.m. the operation was commenced. It was found that the anaesthesia was deeper than we desired for combination with spinal novocain, but not sufficiently deep for the operation to be carried out. The patient was somewhat cyanosed, but after the administration of a little gas and oxygen the colour rapidly became satisfactory. The operation was concluded at 7 p.m., and no anxiety was felt with regard to the patient's condition. During the operation his blood pressure was again taken and found to be 118 mm. Hg.

At 9.30 p.m. the patient was a little cyanosed, but respirations were regular in frequency and depth, and the volume of the pulse was excellent. Consciousness had not been regained. At 12 midnight cyanosis was more marked, and the pulse commenced to fail. Artificial respiration was resorted to, strychnine was given, and, finally, intracardiac adrenaline. In spite of all efforts the patient died.

A post-mortem examination was made by Dr. Stuart McAusland, lecturer in anaesthetics, David Lewis Northern Hospital, Liverpool. He reported the presence of a thymus gland weighing slightly more than 1/2 ounce, slight congestion of the lungs and brain, normal appearance of the rectum and other organs.

The conclusion which we draw from this case is that this man failed to eliminate the drug. The method of fractional administration as approved by Mr. Morrin would not have aided us, as our patient actually had less avertin than he advises for the initial dose. We must add that the drug has given very satisfactory results in all the cases in which it has been used previously in this hospital.—We are, etc.,

HENRY H. MACWILLIAM,
Medical Officer,
A. K. WILSON,
Senior Resident Medical Officer,
Walton Infirmary, Liverpool.

Liverpool, June 17th.

SUBARACHNOID ANEURYSM.

SIR,—Dr. M. C. Andrews's interesting case of ruptured subarachnoid aneurysm, reported in the *Journal* of June 15th (p. 1075), induces me to call attention to a case which I reported in 1925.[1] So far as I know, it is the only case on record in which an aneurysm of the basal arteries which had not ruptured or leaked has been diagnosed during life and confirmed at a subsequent necropsy.

Briefly, it is the case of a man, admitted to St. Bartholomew's Hospital under the care of Sir Thomas Horder, who was ultimately proved to be suffering from infective endocarditis, of which he died. Suddenly one night he developed a severe headache, and went blind in his right eye. The pupil of this eye reacted briskly to consensual light stimulus, but was quite inactive to direct light stimulus. There was nothing in the fundus to account for any loss of sight, and he stated that the sight of the other eye was perfect. (Later this proved to be not quite correct.) It was clear, therefore, that there was complete interruption of conduction somewhere between the back of the globe and the front of the chiasm on the right side, and in the absence of injury or any reason to suspect a metastatic malignant deposit, I wrote: " . . . is it possible that there is a localized aneurysm pressing on the optic nerve?" At the post-mortem examination seven weeks later a small unruptured and unleaking aneurysm about the size of a cherry was found, apparently at the termination of the internal carotid, on the right side, which had torn completely across the optic nerve. The specimen is in the museum of St. Bartholomew's Hospital, No. 2553A.—I am, etc.,

R. FOSTER MOORE.

London, W.1, June 15th.

SPA TREATMENT.

SIR,—As the date of the annual conference of the Spa Practitioners Group of the British Medical Association is drawing near it would be helpful if members intending to be present would give previous thought to the wording of a definition of a spa and of spa treatment. The definition used at the last meeting was approximately as follows:

"Spa treatment is treatment at a place possessing natural mineral waters of known therapeutic value and facilities for their application. This implies the existence of bath-houses, apparatus, and trained personnel for work in bath-houses and other physiotherapeutic departments. However great the importance of auxiliary treatments may be, drinking and bathing in fresh natural mineral waters form the basis of all genuine spa treatment."

As I drafted the foregoing definition for the purpose of a meeting at the British Medical Association House in connexion with the proposed spa treatment of insured persons, I was much interested in the criticisms it received at the subsequent Annual Meeting of the British Medical Association. I was not able to attend the meeting, but from the report in the *British Medical Journal* it seemed that certain critics feared that "mineral waters" would be interpreted as drinks of the ginger beer and lemonade variety. Perhaps they were being facetious, but it may be admitted that the word "mineral" is not essential. That particular phrase would thus read "fresh natural waters." The term "fresh natural waters" implies waters of either high or low mineralization when used at their source, and in this connexion is employed as distinctive from sea water and drinking water, the so-called tap water of common domestic use. It was evident that some of the

[1] *Trans. Ophthal. Soc. of the United Kingdom*, 1925, xlv, Part ii, p. 492.

criticism of the original definition came from representatives of certain seaside health resorts, which they were anxious to have included in the list of "spas."

The term "spa," taken from the Belgian health resort of that name, has by usage and common consent, both in this country and abroad, hitherto been limited to health resorts possessing natural waters with special therapeutic properties, but spas have never been confused with marine health resorts. The value of marine health resorts is quite as well known as, and in this country much more widely known than, the value of the spas. The presence of waters of the type under discussion at a seaside resort would, with the provision of facilities for their use, entitle it to rank as a spa, but mere proximity to sea water certainly does not do so.

Another objection was to the phrase "known therapeutic value." All water properly applied has therapeutic value; but it is certain that it has been the discovery that natural waters—that is, waters as they occur in nature—in certain localities possess distinctive therapeutic value which has led to the establishment of spas in these localities, after these special therapeutic properties have become known.

I would therefore suggest the following wording of the definition:

"Spa treatment is treatment at a place possessing natural waters of distinctive therapeutic value and facilities for their application. This implies the existence of bath-houses, apparatus, and trained personnel for work in bath-houses and other physiotherapeutic departments. Drinking and bathing in such fresh natural waters form the basis of all genuine spa treatment. The term fresh natural waters includes waters of either high or low mineralization when used at their source, but in this connexion is employed as distinctive from sea water and sweet drinking water, the so-called tap water of common domestic use."

—I am, etc.,

Harrogate, June 17th. GEOFFREY HOLMES.

SIR,—My attention has been drawn to an article by Dr. W. Edgecombe of Harrogate which appeared in the *British Medical Journal* of June 1st (p. 981). He states that the only example of waters containing bromine and iodine in Great Britain is "the water of Woodhall Spa." He evidently has not seen a recent analysis of Bridge of Allan waters. Their most important constituents are the chlorides of sodium, calcium, and magnesium. The chloride of calcium is present in quantities unusual to find in mineral waters either at home or abroad. They also contain bromine and iodine.

Bridge of Allan was at one time a famous spa, with mineral waters that were celebrated all over the world. Its decline began about the year 1890. Other British spas about that time were introducing Continental methods of treatment, but Bridge of Allan did nothing to bring it into line with the requirements of the day, and the inevitable followed. It is only a spa in a secondary sense at present, and if the town council wish to restore prosperity to the place it will be necessary to modernize its spa.

Dr. Fortescue Fox, who visited Bridge of Allan in 1922 and reported on the waters, bath establishment, etc., said: "Bridge of Allan, if scientifically developed, will take a distinct and definite place among British spas. . . . I entertain no doubt that the resources of Bridge of Allan are sufficient for a first-rate spa." He concludes his report by making a suggestion that a syndicate might develop the spa on modern lines, if the town council are disinclined to undertake the work.—I am, etc.,

J. HOSACK FRASER, M.B., F.R.C.P.Ed.

Bridge of Allan, June 13th.

SIR,—I have read Dr. Wilfrid Edgecombe's article (June 1st, p. 981) with much interest, and am in entire agreement with many of his conclusions concerning mineral waters and the exploitation of spas. I believe, however, that his classification of mineral waters according to their chemical constitution in the face of recent advances in medical hydrology (due largely to such pioneers as Fox and Ray in England) is not altogether justifiable. The chemical constitution, as considered in the past, does not represent everything, for it is but a medicament of a complex nature, with certain tangible and immediate effects (catharsis, diuresis, etc.), which must not be considered apart from certain very important physical and biological properties such as osmotic action, electrical reactions, and radio-activity. Indeed, it is likely that in the near future electrical conductivity depending on the number of free ions will be taken as a classification of mineral waters, for the study of waters at the present time is, beyond doubt, passing beyond chemical data to their physical and biological properties, and although such investigations are still in their infancy there are already opening up horizons on their mode of action on the body. As bearing on this important point it may be useful to remark that waters, although of different chemical composition, may have similar effects, and conversely; and again, that not infrequently slightly mineralized waters are very potent therapeutically. Again, as regards "specific actions" claimed by certain spas, there may be grounds for disagreement with Dr. Edgecombe's contention. Take, for instance, the specific actions justly claimed for the sulphur waters of Harrogate in certain affections, for Châtel Guyon in colitis, for Bad Nauheim in cardiac troubles, and for Montecatini in affections of the liver and gall-bladder.—I am, etc.,

Montecatini, June 3rd. T. GERALD GARRY, M.D.

THE DEFINITION OF RHEUMATOID ARTHRITIS.

SIR,—In reply to Dr. M. B. Ray's communication (June 15th, p. 1098), I hope I made it clear, in my article published in your previous issue, that I regarded rheumatoid arthritis as an entity quite distinct from infective and osteo-arthritis. My introductory remarks were made with this aim in view. On the other hand, I think Dr. Ray's proposal that the term "rheumatoid arthritis" should be confined to a disease occurring exclusively in women is too drastic. I am convinced that the condition is met with, though rarely, in young males, and is of different nature from that of infective or focal arthritis. The term "atrophic" may be used vicariously with that of "rheumatoid" for this disease.—I am, etc.,

London, W.1, June 15th. A. H. DOUTHWAITE.

IMMUNIZATION BY TUBERCULIN.

SIR,—Dr. Nathan Raw's paper on the production of immunity to tuberculosis (May 25th, p. 950) opens up a subject of enthralling interest. Most of us will think that living cultures of tubercle bacillus should not be used for the purpose. This bacterium is of such toughness that to entrust it, in the living state, to the human tissues, *seems* risking the possibility of reactivation. Tuberculin, it must be granted, can, by dosage, deal out stimulating taps or staggering blows. But, like a certain two-handed engine of old, it stands only to strike once, and strike no more. Now it can be foreseen clearly that, ere long, the real worth of tuberculin, both for treatment and for immunizing, must become generally recognized.

Dr. Nathan Raw rightly says that "all cases of tuberculosis" (assuming them, of course, to be uncomplicated) "should be treated by some form of tuberculin, which is the natural specific remedy." But I cannot follow him when he says, "this tuberculin should be prepared from attenuated, avirulent, non-toxic cultures," and that "attenuated cultures retain the quality of producing tuberculin, and, being deprived of their virulence and toxicity, are perfectly safe in use."

But what is tuberculin if not a toxin, the natural weapon of the organism? Of what use is any vaccine without its specific toxin? Toxicity is, moreover, a relative term, and toxins, when sufficiently diluted, become useful in therapy. Thus we start by giving very small doses of P.T.O. in lupus, where tuberculin sensitiveness is acute, and where focal reactions are easily observed. But the amount that causes reaction at first, fails to do so if repeated several times, and appreciably more must be given if the same result is to be again brought about. This judicious pushing of the dose constitutes the safest,

and surest, method of obtaining immunity. Nothing of a lasting nature could be produced, or even expected, if only weak dilutions were administered. It takes strong tuberculin, rightly timed, to make strong immunity, and it is only when pulmonary cases get up to P.T. that most of them begin to assume their former vigour; then it is that fibrosis becomes most definitely established, and cough and sputum tend to cease altogether.

If it can be shown that it is possible in cases definitely infected to stem, and finally to oust, the disease, is it not reasonable to infer that merely suspected cases can also be immunized, and with very much less difficulty? I refer, of course, to persons with family diathesis, to contacts, who are to some extent test-sensitive, to all, in short, who have come within the shadow of this devastating scourge. We can immunize these cases easily, no less thoroughly than the rest, and the sooner this is done the better. Children and young people, by their easy tolerance of, and ready response to, tuberculin, are especially fitted to be thus safeguarded, and, taking a long view, it looks as if this were the right end at which to begin. I believe that if this course were generally adopted acute pulmonary tuberculosis would become rare. Naturally we do not know everything about the subject, and many of the gaps in our knowledge will probably take years to fill; but we have gained enough, from reason and experience, to make a start, and to go forward boldly with the greatest hope.—I am, etc.,

Weymouth, June 12th. H. C. MANNING.

Obituary.

SIR WILLIAM J. THOMPSON, M.D., F.R.C.P.I.,

Formerly Registrar-General for Ireland.

As briefly announced in our last issue, Sir William J. Thompson, M.D., late Registrar-General for Ireland, died suddenly on the night of Sunday, June 9th, at his residence in Fitzwilliam Square, Dublin, at the age of 69 years.

The news of Sir William Thompson's death has come as a shock to his many friends, who held him in sincere affection, and to the general community in Ireland, to whom he was well known by reputation. Only three days before his death he had attended the General Assembly of the Presbyterian Church in Ireland as lay member of a deputation from the Methodist Conference, and had delivered a speech welcoming the Assembly to Dublin. On June 9th he attended both services at the Methodist Centenary Church in St. Stephen's Green. In the afternoon he visited the Peamount Sanatorium, in which he had taken the warmest interest since its foundation; he remained chairman of its committee or management until the end. On that Sunday evening he had a few intimate friends to dinner, and appeared to be in his usual health; a few hours afterwards he passed quietly away in his sleep.

William John Thompson was born in 1861 at Cavanaleck, County Tyrone, but his entire life since he was a student had been spent in Dublin. He followed a distinguished professional course of studies at the Royal College of Surgeons and at Trinity College, graduating B.A. of the University of Dublin in 1892, M.B. in 1894, and proceeding to the Doctorate of Medicine in 1895. He obtained the diploma of L.R.C.P.I. in 1888, the M.R.C.P. in 1893, and the F.R.C.P. in 1902. Soon after qualification he was elected demonstrator of anatomy to the College of Surgeons, and was appointed house-physician in St. Vincent's Hospital. He later became a visiting physician and, finally, senior physician to Jervis Street Hospital. He was a Past-President of the College of Physicians, and a Fellow of the Royal Academy of Medicine in Ireland, and had held the position of president of the Leinster Branch of the British Medical Association. A special share of his professional skill and energies was devoted to combating tuberculosis and infantile diseases. In the anti-tuberculosis campaign in Ireland he was a conspicuous figure, and became consulting physician to the National Hospital for Consumptives.

During Lord Aberdeen's tenure of the Viceroyalty in Ireland William Thompson was Physician-in-Ordinary to the Lord-Lieutenant, and he received the honour of knighthood in 1907. He was closely identified with all of Lady Aberdeen's activities in promoting a better condition of public health, notably with the supply of pure milk to children. Even after he became Registrar-General in 1909, he found an opportunity in the census returns of fixing public attention on the two causes, which he had made particularly his own. He retired from this office in 1926, when the statistical administration was entirely recast. Apart from his manifold public duties, a word must be said about another aspect of the man. There were those who knew him as a devoted and efficient practitioner in private cases. Unsparing of himself, he combined professional skill with a kindness and modesty of manner which sought to obscure it, and established a lasting claim on the regard of his patients and their friends. In social life he was held in universal esteem.

We are indebted to Professor T. GILLMAN MOORHEAD for the following tribute:

During the last five years I have been closely associated with the late Sir William J. Thompson on hospital and other committees, and desire to pay a brief tribute to him as a loyal friend and colleague. In all his work Sir William Thompson showed an intense anxiety for the welfare of the particular institution with which he was dealing, and took infinite trouble over details which, though necessary, were often uninteresting. He was a most useful individual in this respect, for he cheerfully and willingly undertook work which others were inclined to leave either undone or to be done by paid officials. In all this he was never self-seeking, and more than once allowed others to gain the credit for what he had himself accomplished. He was a man of peace, and helped on many occasions to conciliate conflicting interests and to bring in an element of calmness and of judgement on matters of contention. Even before his retirement from the post of Registrar-General he had given much time to the services of charitable institutions. During the last three years these services were multiplied, so that he spent the greater part of each day in work of that kind. His loss as a friend and helper will be deeply mourned by many. He was a true gentleman.

JOHN HEDLEY MARSH, M.R.C.S.,

Past-President, Lancashire and Cheshire Branch, British Medical Association.

WE regret to record the death, in his sixtieth year, of Dr. J. H. Marsh, which took place suddenly on June 6th, at a nursing home in Buxton.

John Hedley Marsh was educated at Owens College, Manchester, and in 1894 obtained the diplomas M.R.C.S., L.R.C.P. After holding appointments as senior house-surgeon at Macclesfield General Infirmary and the Manchester Royal Infirmary, he engaged in general practice, and actively identified himself with the work of the British Medical Association. From 1914 onward he was a member of the Lancashire and Cheshire Branch Council, being elected its president in June, 1923; he was also vice-chairman of the Stockport Division from 1915 to 1916, chairman from 1917 to 1923, and a member of its executive committee from 1924. In 1916 and 1927 he represented his Division in the Representative Body of the Association, and in 1928 was a member of the Insurance Acts Committee. In the course of his professional work in Macclesfield Dr. Marsh held appointments as honorary surgeon to the General Infirmary; medical superintendent to the Isolation Hospital; surgeon to the county police; school medical officer, and medical officer of health. He was made chairman of the County Palatine of Chester Local Medical and Panel Committees in 1917, having previously held office as vice-chairman during the chairmanship of Dr. T. W. H. Garstang. In recognition of what his fellow practitioners described as "spirited leadership" and of "a decade of genial and judicious conduct in the chair," the members and constituents of the local medical and panel committees presented Dr. Marsh, in 1927, with a bookcase bearing an illuminated inscription. In spite of the demands of a large private and panel practice, of his medical appointments, and of the numerous committees of

which he was a member, he carried out conscientiously his duties as a justice of the peace. He was honorary life member and examiner to the St. John Ambulance Association, and a Fellow of the Royal Institute of Public Health.

We are indebted to Dr. LIONEL PICTON for the following personal tribute:

I first knew him when he was established at Macclesfield—at the zenith of his vigour and labour. We met on the local Medical Committee, new-formed to watch the Insurance Bill. Later, when that committee was recognized as statutory, Dr. Marsh was one of the leading members. He saw clearly that the profession must work through these committees if it was to save general practice. To do that was his objective. He viewed medicine as a whole. Good surgeon as he was, he was a doctor first. M.O.H. as he was, he was a G.P. first. His was a life amazing full! And he focused all his varied experience upon the problems before the Panel Committee. I knew him then as a fighter, tenacious, resourceful, replete with information, direct in his method, not *rusé*. Direct though he was, he saw where action led. His aim was to safeguard the G.P. in his freedom to practise. Every move he urged had that in view. He was very English in his outlook. A scheme remote from actuality did not interest him. His interest was in the next business.

He was marked out for chairman on Dr. Garstang's retirement, and was elected without question. For twelve years he held the office, and last year we thanked him for his services by a presentation. He was ill at the time and could not be present, but never was a tribute more sincerely rendered. The actual tokens were a bookcase, an address, and a chair. The *bookcase*, for he was a tremendous and rapid reader, medical works mostly—half Lewis's shop seemed to overflow his shelves, not to speak of mastoids and models. But he had wider interests. His alert mind shone into many portals. Of one he seldom gave a hint, but the volumes, recent and read, gave it, volumes on a certain broad, open-eyed school of divinity. Whatever else he read, for half an hour last thing at night a favourite technical book generally occupied him—Beesley and Johnston's "Surgical Anatomy." Four days before he died he said "Send me my bible" (as he called it). He wanted to look up the innervation of the stomach. It was his conviction that if the G.P. is to survive he must justify himself by precise and ready knowledge—up to date and constantly reviewed. For the doctor who had relaxed he had a humorous contempt: "a bismuth and tinct. camph. co. doctor" he called him. The *address* we gave him had unconventional illuminations; bismuth and tinct. camph. co. bottles occupied a lowly place in the design. The *chair* was because "the flesh is weak," as he used to quote. He had a long weakening illness that year. None the less his spirit drove him again into active work. It was *in* him and must out.

Here is an instance of his humorous method. In a debate on the county tuberculosis scheme and the changes the Panel Committee wanted, he suddenly seemed metamorphosed. He began to say the Ministry would require this, the Regulations would require that, and that these requirements would conflict with what the Panel Committee wanted. Up rose Sir William Hodgson to warmly defend the proposals. Most ably he did it. Thereupon Dr. Marsh, smiling, explained that his opposition was merely academic, and he congratulated himself on having drawn from Sir William a defence of the policy "with every word of which I agree." He was a chairman to be beloved—he was beloved, not as chairman only, but as a doctor and as a friend.

Dr. WILLIAM DOYLE, who died recently at Colne, in Lancashire, aged 59, was the son of the late Dr. Edward Doyle of that town. He was educated at the University of Glasgow, where he graduated M.B., C.M. in 1891. After a period in private practice with his brother at Leigh he became medical officer of health and school medical officer for Colne. During the great war he served as a temporary lieutenant R.A.M.C. in Gallipoli and Egypt, and subsequently at the Whalley Military Hospital. He was a member of the Burnley Division of the British Medical Association and a fellow of the Society of Medical Officers of Health. The funeral was attended by representatives of the numerous bodies with which he was associated.

The Services.

TERRITORIAL ARMY AMBULANCE CHALLENGE SHIELD.

ON June 8th nine medical units competed for the Territorial Army Ambulance Challenge Shield at the Duke of York's Headquarters, Chelsea. The shield was again won, for the second year in succession, by the 167th (City of London) Field Ambulance, who gained 333 marks out of a possible 400. The Runners-up Cup, presented by Lieut.-General Sir Matthew H. G. Fell, Director-General Army Medical Services, was won by the 170th Cavalry Field Ambulance with a total of 314 marks. The Director-General, when presenting the badges to the winners, remarked that the standard of all the competing teams was higher than hitherto, and this went to show how hard they had all worked to fit themselves for the competition. The shield will be presented to the winners at a future date by the Lord Mayor of London.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on June 14th the following medical degrees were conferred:

M.B., B.CHIR.—J. M. Lees, J. R. Armstrong, H. Scudamore, C. W. Shaw, R. Hodkinson.
B.CHIR.—G. W. Willcox.

At a congregation held on June 18th the following medical degrees were conferred:

M.CHIR.—R. H. Metcalfe.
B.CHIR.—E. J. Pye-Smith.

UNIVERSITY OF LONDON.

THE degree of D.Sc. in Biochemistry has been conferred on Mr. H. J. Channon for his thesis on the unsaponifiable fraction of liver oils, and that of D.Sc. in Statistics on Miss E. M. Newbold for her thesis on practical applications of the statistics of repeated events, particularly to industrial accidents.

Dr. A. M. H. Gray and Professor William Wright have been elected the representatives of the medical schools on the newly constituted Senate of the University. As announced in our issue of May 25th the representatives of the Faculty of Medicine are Lord Dawson of Penn, Mr. H. L. Eason, and Sir Cuthbert Wallace.

UNIVERSITY OF BRISTOL.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B., PART I (*in Forensic Medicine and Toxicology only*).—A. J. B. Miall, H. M. Strover, W. L. Sleight. PART II.—*R. A. S. Cory (with distinction in Pathology, Medicine, and Obstetrics), *R. J. Krogh (with distinction in Medicine and Obstetrics), Isabella J. Armstrong, A. C. Fisher, April Doreen James (with distinction in Public Health). *Group II (completing examination)*: E. Southam. *Group I*: N. D. Gerrish, Mabel F. Potter. *Group II*: N. L. Price.

* With second-class honours.

UNIVERSITY OF MANCHESTER.

DR. F. E. TYLECOTE, honorary physician to the Manchester Royal Infirmary, has been appointed professor of systematic medicine as from September 29th, 1929. He has been a lecturer in clinical medicine in the University since 1916.

UNIVERSITY OF SHEFFIELD.

MR. J. H. COBB, M.B., B.S., F.R.C.S., has been appointed lecturer on applied aural anatomy, and Mr. E. G. Mackie, M.B., Ch.B., D.O.M.S., lecturer on applied ophthalmic anatomy.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council meeting of the Royal College of Surgeons of England was held on June 13th, when the President, Lord Moynihan, was in the chair.

Fellowship.

Mr. Comyns Berkeley was introduced and admitted a Fellow of the College.

It was reported that of the 103 candidates who had presented themselves for the Fellowship examination 31 were successful, including 3 candidates who had not yet complied with the regulations. The Diploma of Fellowship was granted to the following 28 candidates:

C. D. Shapland, N. L. White, J. C. Ainsworth-Davis, R. C. Taylor, E. S. Freshman, L. N. Pyrah, J. V. O'Sullivan, A. M. Lazarus, R. M. Bates, A. Simpson-Smith, R. V. Cooke, H. P. Nelson, J. F. Simpson, N. Attygalle, H. J. Burrows, G. M. Fitzgibbon, V. Kathirgamatamby, A. K. Gupta, R. W. Kenney, F. J. Milward, N. M. Matheson, R. L. Flett, S. Howard, M. Axford, H. S. Billcliff, J. H. Cramsie, D. D. McKenzie, F. E. Stabler.

Membership.

The diploma of Membership was conferred upon Nancy M. Badeley, S. T. Crowther, Catherine Day, Margaret L. Hamburger, and T. Nallainathan.

Diploma in Public Health.

Diplomas in Public Health were granted, jointly with the Royal College of Physicians, to the following 25 successful candidates:

A. Bakhsh, Y. B. Bedi, F. G. Brown, J. P. Chaudhuri, D. S. Chowdhary, G. Covell, S. D. De Vos, H. N. Dewan, D. P. Dutta, Nancy G. Howell, B. S. Kanga, G. R. Lynn, Elsie Lyon, D. G. Mohile, S. Mufty, C. C. Po, Marion Ravell, A. L. Schokman, A. Sharma, Patricia H. S. Shaw, K. A. Soutar, H. S. C. Starkey, G. G. Stewart, K. M. R. Swami, J. P. R. Tennekoon, R. L. Tull.

Mr. McAdam Eccles was appointed a representative of the College to serve on the Executive Committee of the British Social Hygiene Council, in place of the late Sir Anthony Bowlby.

A letter from the chairman of the Lister Medal Committee was read reporting that the Lister Medal for 1930 for distinguished contributions to surgical science, with the honorarium of £500, had been awarded to Dr. Harvey Cushing of Boston, U.S.A. Dr. Cushing will give an address at the Royal College of Surgeons in 1930 on some date to be arranged later.

The President reported that the Sir Gilbert Blane Gold Medal for 1929 had been awarded to Surgeon Lieut.-Commander Thomas Norman D'Arcy, Royal Naval Promotion Examination, 1929.

The following examiners were elected for the ensuing year:

Dental Surgery (Surgical Section). L. B. Rawlins, H. S. Clogg, T. P. Legg, R. J. Howard, G. E. O. Williams, J. Murray, Sir Cuthbert S. Wallace, C. E. Shattock. *Fellowship (Anatomy):* C. P. G. Wakeley, P. N. B. Odgers, W. Wright, J. E. S. Frazer. *(Physiology).* H. E. Roaf, C. A. L. Evans, R. J. S. McDowall, J. Mellanby.

Under the Conjoint Examining Board:

Elementary Biology.—T. W. Shore, J. P. Hill. *Anatomy:* J. B. Hume, W. Wright, R. B. Green. *Physiology:* E. B. Verney, H. Hartridge. *Midwifery:* C. White, T. B. Davies, A. W. Bourne, S. Ferdike. *Diploma in Public Health:* C. W. Hutt. *Diploma in Tropical Medicine and Hygiene (Pathology and Tropical Medicine).* W. P. MacArthur; *(Tropical Medicine and Surgery).* P. H. Manson-Bahr. *Diploma in Ophthalmic Medicine and Surgery (Part I).* C. B. Goulden, H. W. Lyle. *(Part II).* R. A. Greeves. *Diploma in Psychological Medicine:* F. L. Golla. *Diploma in Laryngology and Otology (Part I):* W. M. Mollison, N. Patterson; *(Part II).* W. G. Howarth.

Primary Fellowship.

At the recent primary examination for the Fellowship 164 candidates presented themselves, of whom the following 47 were approved:

A. H. Baker, D. S. M. Barlow, A. W. Bayley, K. B. Bridge, E. Carew-Shaw, D. O. Clark, A. A. Davis, E. A. Devenish, J. K. Elliott, A. L. Eyre-Brook, L. Fatti, K. Fletcher Barrett, R. J. Furlong, J. Gabe, R. H. Hadley, C. S. Hallpike, J. Hardman, E. A. H. Hindhaugh, C. Hooper, Ruby D. Johnson, E. C. B. Jones, H. Y. Khwaja, C. E. Kindersley, S. Lal, M. Lee, M. J. F. McArdle, D. J. MacMyn, D. H. Mitchell, E. W. T. Morris, A. B. Pain, G. T. Partridge, R. S. Pilcher, A. E. Perritt, C. A. M. Renou, L. A. Riddell, T. O. Sayle, H. H. Skooch, J. O. Smith, S. B. Smith, F. R. Stansfield, S. C. Suggit, B. M. Sundaravadanan, G. L. Talwar, K. H. Watkins, F. E. Webster, Eileen M. Whapham, H. L. C. Wood.

Medical News.

THE Cavendish Lecture before the West London Medico-Chirurgical Society will be given to-day (Friday, June 21st), at 8.15 p.m., by Professor Claude Régaud, director of the Radio-physiological Laboratory of the Radium Institute, Paris, whose subject is "Progress and limitation in the cure of malignant diseases by radium." The meeting will be held in the Kensington Town Hall at 7.30 p.m., and at 8 o'clock the West London triennial gold medal will be presented to Sir Ronald Ross. The annual conversazione will follow Professor Régaud's lecture.

THE executive committee of the National Campaign Against Rheumatic Diseases, of which Sir Thomas Horder is chairman and Sir William Willcox vice-chairman, has called a meeting of supporters, to be held at the house of the Royal Society of Medicine, 1, Wimpole Street, W., on Wednesday next, June 26th, at 5 p.m. The agenda includes election of a council and the reception of a report by the executive committee on the policy and constitution of the campaign. All members of the medical profession interested in the subject are cordially invited to attend this meeting.

THE Section of Urology of the Royal Society of Medicine will hold its last meeting this session on Thursday, June 27th. From 11 a.m. to 1 p.m. there will be an exhibition of urological instruments, from 2 p.m. operations at St. Peter's Hospital, Henrietta Street, W.C.2, and at 8.30 p.m. a cinematographic demonstration showing a prostatectomy, litholapaxy, and internal urethrotomy. The demonstration will be made by means of a talking film, the operation as it proceeds being explained audibly.

THE annual provincial meeting of the Society of Medical Officers of Health will be held at the Sedbury Park Hotel, near Chepstow, on Saturday, June 29th, at 10.30 a.m., when Dr. E. Colston Williams (C.M.O. Glamorgan) and Dr. R. M. F. Picken (M.O.H. Cardiff) will open a discussion on the medical aspects of the Local Government Act, 1929. Luncheon will be served at 12.30 (tickets 3s. 6d. each). At 1.30 p.m. members will motor to Chepstow Castle, Tintern Abbey, and Raglan Castle, and thence to a garden party at Llanover Park, by invitation of Lord Treowen, Lord-Lieutenant of Monmouthshire, and Lady Treowen. The full programme has been circulated to members of the society with the current issue of *Public Health*.

THE Tuberculosis Association will hold its provincial meeting during the latter part of next week, in the Pharmacology Lecture Theatre, Medical School, Downing Street, Cambridge. At the opening session, on the afternoon of Thursday, June 27th, Dr. Franz Nagelschmidt of Berlin will read a paper on the prevention and healing of tuberculosis by turtle-vaccine therapy. On June 28th discussions, each opened by three speakers, will take place in the morning on the diagnosis of intrathoracic tuberculosis in children, and in the afternoon on the correlation of *x*-ray findings in pulmonary tuberculosis with the symptoms and physical signs. On the morning of June 29th there will be a discussion on gas poisoning and gunshot wounds of the chest in relation to tuberculosis.

THE sixty-sixth annual meeting of the British Pharmaceutical Conference will be held in Dublin next week from June 24th to 27th, under the chairmanship of Mr. R. R. Bennett, B.Sc., whose inaugural address, entitled "The changing foundations of materia medica," will be given on June 25th.

THE annual general meeting of the Royal Society of Medicine will be held at 1, Wimpole Street, W.1, on Tuesday, July 2nd, at 4.30 p.m. when the officers and council for 1929–30 will be elected and the report of the council, including reports by the treasurers, librarians, and editors, will be presented.

THE Fellowship of Medicine and Post-Graduate Medical Association announces that the last two lectures of the M.R.C.P. evening course will be given at 11, Chandos Street, Cavendish Square, on June 25th and 28th, at 8.30 p.m.; the fee is 10s. 6d. per lecture, payable at the lecture hall. A free demonstration on nervous disease in children will be given by Dr. W. G. Wyllie, at 2.30 p.m., on June 27th, at the Hospital for Epilepsy and Paralysis, Maida Vale. A free clinical demonstration will be given by Mr. Harold Kisch, at 2 p.m., on June 27th, at the Central London Throat, Nose, and Ear Hospital, Gray's Inn Road. The following courses begin on Monday, June 24th: in proctology for one week at the St. Mark's Hospital, occupying all day, fee £3 3s.; in diseases of children for two weeks at the Children's Clinic and other hospitals, occupying most afternoons and some mornings, fee £2 2s.; and in medicine, surgery, and the special departments at the Prince of Wales's Hospital, Tottenham, occupying from 10.30 a.m. to 5.30 p.m., for two weeks, fee £5 5s., or £3 3s. for either week. In connexion with "Baby Week," the Fellowship of Medicine, at the request of the Maternity and Child Welfare Group of the Medical Officers of Health Society, has arranged lecture-demonstrations in London during the week July 1st to 6th. Various demonstrations, occupying the time from 10 a.m. until 4 p.m., will be given at the Queen Charlotte's Hospital on July 1st, followed by a lecture in the evening. On July 5th morning demonstrations have been arranged at the Tavistock Clinic for Functional Nervous Disorders, Tavistock Square, followed in the afternoon by a special demonstration at the Infants Hospital, Vincent Square. On July 6th there is a choice between two demonstrations, both taking place at 10 a.m., at the London Lock Hospital, Harrow Road, and at St. Thomas's Hospital. The fee for the whole course is 10s. 6d., and should be sent to the Fellowship of Medicine, 1, Wimpole Street, W.1, from whom syllabuses of this and all other post-graduate courses may be obtained.

TO mark the occasion of their forthcoming visit to the Annual Meeting of the British Medical Association in Manchester, Drs. Charles Horace Mayo and William James Mayo were elected honorary members of the Manchester Medical Society at the annual meeting, which was held on May 1st.

THE Academic Council of Queen's University, Belfast, on the recommendation of the Anatomical Association of Great Britain and Ireland, has awarded the triennial Symington prize in anatomy to Dr. H. A. Harris, assistant professor of anatomy, University College, and assistant to the Medical Unit, University College Hospital, in recognition of valuable contributions to anatomy, and especially of the paper on "The relation of skeletal ossification in the hind limb to the index of cerebral value of Anthony and Coupin."

THE Neech prize, offered annually for the best paper read before a Branch or Group of the Society of Medical Officers of Health, has been awarded for the session 1927–28 to Dr. H. Stanley Banks, medical superintendent of the City Isolation Hospital, Leicester. Dr. Banks's subject was the intensive serum treatment of severe diphtheria, and the

paper was read before the Fever Hospital Medical Service Group of the Society.

DR. OLIVER C. M. DAVIS was called to the Bar on June 12th by the Middle Temple.

THE proceeds of the Old English Garden Fête, which was held at the Royal Botanic Gardens on June 13th to 15th, have this year been donated to the Thank-offering Fund. Also to be devoted to the Fund are the profits from the sale of the reproduction of His Majesty's Message to his People, prepared by Messrs. Raphael Tuck, and now generally obtainable.

A VALUABLE article by Miss S. F. Cox and Dr. F. G. Spear on the radiological work of the Strangeways Research Laboratory, Cambridge, embodying accounts both of past work and investigations now in progress, is published in the May issue of the *British Journal of Radiology*.

SCHOLARS, medalists, and prizemen of University College, London, will be received on Thursday, July 4th, at 3 p.m., by Sir Walter Morley Fletcher, secretary of the Medical Research Council, who will afterwards address the Assembly. The new anatomy and physiology building (the gift of the Rockefeller Foundation), together with the museums and laboratories, and Sir Flinders Petrie's exhibition of recent discoveries of the British School of Archaeology in Egypt, will be open to inspection from 4.30 to 7 p.m.

A LARGE attendance of delegates from local authorities and voluntary child welfare institutions throughout the British Isles, and of Government representatives from the overseas Dominions, is expected at the fifth English-speaking conference on maternity and child welfare, to be held at the Friends House, Euston Road, N.W.1, from July 2nd to 4th. The maternity and child welfare group of the Society of Medical Officers of Health, in co-operation with the Fellowship of Medicine, has organized, in connexion with the conference, a short post-graduate course, of which full particulars will be forwarded to medical practitioners on application to the honorary secretary, National Association for the Prevention of Infant Mortality, Carnegie House, 117, Piccadilly, W.1.

THE third venereological congress of the Union of Soviet Republics will be held at Leningrad from July 1st to 7th, when the following subjects will be discussed: incidence and control of venereal disease in urban and rural districts, syphilis and constitution, congenital syphilis, dermatomycosis, complications of arsenical treatment, and control of gonorrhoea.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediscera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

DIATHERMY OF THE TONSILS.

DR. M. Y. PAGET (Ware, Herts) writes for details of the removal of the tonsils by diathermy (a method which he understands is used in America and France), and for information about the advantages this method may have over that of surgical operation.

UMBILICAL DISCHARGE.

MR. A. P. BERTWISTLE, F.R.C.S.Ed. (London, W.), writes: In reply to "W. D.'s" query (June 15th, p. 1104) I would suggest that, the point of exit of the discharge having been identified, lipiodol be injected into the sinus. If, on radiographing, the fluid is found passing downwards towards or even into the bladder the condition is probably due to a urachal vestige. There is a remote possibility of it being allantoic in origin, however. The only method of treatment is complete excision of the track. If a trace is left in any of these congenital sinuses —for example, cervical or thyroglossal—the whole recurs.

LETTERS, NOTES, ETC.

ABOLITION OF FRENCH VACCINATION REGULATIONS.

THE Director of the Office Français du Tourisme, 56, Haymarket, S.W.1, writes: Some time ago you published information concerning the vaccination regulations which were in force in France; these were, however, cancelled on June 4th. In view of the numerous inquiries which still reach us on this matter, I should be much obliged if you would kindly inform your readers that no vaccination certificates or "passeports sanitaires" are now required when landing in France from the British Isles.

VACATION EMPLOYMENT FOR UNDERGRADUATES.

MR. RALPH NUNN MAY, B.Sc., Secretary of the National Union of Students (3, Endsleigh Street, W.C.1), writes: The enormous extension of facilities for university education in England has produced a phenomenon strange to us but familiar enough in the United States and Canada, and not unknown even in Scotland. In America it is common for men and women undergraduates to spend their vacations in some form of paid occupation enabling them to earn their keep during the summer months. In England this has been practically unknown, except for the few senior scholars who have coached the sons of the well-to-do for school or university examinations. There is a limit to the number of wealthy parents anxious for the mental attainments of their children, and the opportunities for private coaching, never very great, are now quite inadequate to absorb the number of undergraduates from the old and the modern universities, who come very often from lower-middle or working-class homes, and who are anxious both to gain experience and to earn a living wage during July, August, and September. Applications are now reaching us from undergraduates all over the country who wish to find such temporary employment. But in a country where this is not traditional, where are we to find the firms or persons who will offer them posts or consider their employment during a seasonal rush period? Generally they are willing to do almost any kind of work—as labourers, shop assistants, waiters or waitresses, governesses, and so on. Some of the senior science students might be capable of acting as works chemists or physicists to replace staff on holiday. There is obviously a great number of ways in which they might usefully be employed to their own advantage, and possibly also to the ultimate advantage of industry. We have every desire to avoid the displacement in any way of normal or regular labour, but if there are any employers who, while bearing in mind this cardinal point, might still be able to offer temporary employment to university men or women we should be deeply grateful to hear of them.

HERPES AND VARICELLA.

DR. R. C. WORSLEY (Topsham, Devon) writes: I have often smiled, with others, at the appearance of the above perennial large gooseberry, but two striking cases in the last week have convinced me that there is "something in it." An old man had very bad shingles on his arm, shoulder, and back; a fortnight after its appearance his wife, some years younger, had the worst attack of chicken-pox I ever have seen in nearly forty years. (The patient was so ill that four doctors met to establish the differentiation from small-pox.) Three miles away, in a small village, a man had a severe attack of shingles on the leg, buttock, and scrotum, which ulcerated in parts. Two weeks after the onset his daughter developed varicella. There are, to my knowledge, no other cases of the latter disease in our neighbourhood.

NORTH-EAST COAST EXHIBITION.

THE Committee of the Medical Institute (J. Wilkie Smith Memorial), 7, Windsor Terrace, Newcastle-upon-Tyne, ask us to announce that the facilities of this institute are open to any medical man visiting the North-East Coast Exhibition at Newcastle. Bed and breakfast, 10s. 6d.

INDEXES TO "JOURNAL" WANTED.

DR. E. F. ARMOUR (6, Bruntsfield Terrace, Edinburgh) requires the following out-of-print Indexes to the *British Medical Journal*, and would be grateful to any reader who could supply him with all or any of them: General, Supplement, and Epitome Indexes, 1916, vol. i, and 1918, vol. ii; Epitome Index only, 1915, vol. i, 1916, vol. ii, 1918, vol. i, and 1919, vol. i. Cost of postage would be repaid.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 43, 44, 45, 46, 47, 48, 49, 52, 53, and 54 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 247.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

590. Dyspnoea and Polypnoea of Cardiac Origin.

L. GALLAVARDIN (*Lyon Méd.*, March 17th, 1929, p. 313) remarks that the term "dyspnoea" is commonly used to denote two quite distinct conditions, both the result of some degree of effort. He would prefer to use the terms "polypnoea" and "dyspnoea," in their strict etymological sense, for these two conditions. He considers that the first is essentially comparable with the increased respiratory exchange occurring as the physiological response to effort; although it may occur in a very wide variety of types of cardiac insufficiency, it has certain constant features: (1) It is directly proportional to the amount of effort producing it. (2) The usual sequel in extreme cases is the production of ventricular dilatation with pulmonary oedema. (3) It is never accompanied by the true anginal syndrome; sometimes there may be a feeling of tension in the epigastric region, even amounting to actual pain, but there is never the typical radiating pain of angina, and he suggests the use of the term "para-dyspnoeic angina" to describe it. (4) The patient experiences a feeling of breathlessness and not of suffocation. (5) Atmospheric conditions do not influence the condition except when they add to the effort, as, for example, progress against the wind. The second condition of "dyspnoea" is described as the counterpart of the physiological difficulty in breathing experienced in facing a strong wind, when there appears to be an actual difficulty in filling the lungs with air. As in the first instance, a large variety of pathological conditions of the heart may be found, but the constant features are as follows. The severity of the symptoms is not proportional to the amount of effort, which may, indeed, be trivial; the typical sequel is the appearance of the true anginal syndrome; there is no feeling of breathlessness, but rather of suffocation, and an impression that persistence in the causative effort will end in collapse; atmospheric conditions have a marked effect on the dyspnoea, and some patients are quite unable to go out in windy weather, particularly with cold or snow, without the certainty of having an attack. Gallavardin considers that the dyspnoeic syndrome has its origin in spasmodic phenomena which lead to reflex inhibition of the respiratory act. He notes that the two conditions described may quite commonly alternate in the same subject, according to the provocation. In conclusion he emphasizes the importance of distinguishing between the "compensatory polypnoea," which is the common reaction in cardiopathy with poor compensation, and the more rare "dyspnoea by inhibition," which may be regarded as a minor manifestation of true angina pectoris.

591. Diabetes and Exophthalmic Goitre.

M. LABBÉ and G. DREYFUS (*Paris Méd.*, May 4th, 1929, p. 429) think that the association of Basedow's disease with diabetes, though not very common, is too frequent to be a mere coincidence; that there is a morbid relation between the two diseases; and that the constant disturbance of glyco-regulation revealed by hyperglycaemia in the latter proves that thyroid hyperactivity exerts an influence on sugar metabolism. Usually the goitre appears first in this association, though sometimes this order is reversed. According to Joslin and Lahey and Wilder, toxic adenomatous or secondary goitre is the most often accompanied by diabetes; the primary type is less responsible. The pathological picture is that of an intense exophthalmic goitre, in which the basal metabolism reaches a higher level than in the simple forms. The diabetes is of varying gravity, ranging from a benign thyroid glycosuria to a grave diabetes with nitrogenous denutrition and acidosis. Death is usually due to coma, which, as a rule, is an ordinary acidosic coma, though cardiac collapse may be associated with the acidosis. In the majority of cases the two conditions evolve together and undergo simultaneous recrudescences. This has caused Labbé to suggest that the pathogeny of thyroid diabetes is distinct from that of the pancreatic type. In the former the glyco-regulating disturbance is due to the hyperthyroidism, and in the latter to insufficiency of the insulinic secretion. Many organs have an influence on glyco-regulation; among these the pancreas and the thyroid have antagonistic actions. The former lowers glycaemia and fixes the glycogen in the liver; the latter raises the glycaemia, removes glycogen from the liver, and activates its transformation into glucose. Thus pancreatic insufficiency has the same result as hyperthyroidism—it abolishes the glycogenic function and causes diabetes. The results of numerous animal experiments and observations in goitre cases bearing on this point are cited. The authors quote the experiences of several authorities in treatment; these all show that the active treatments of the goitre by iodine, *x* rays, and thyroidectomy exercise simultaneously a favourable effect on the diabetes, which is less influenced by diet and insulin than the pancreatic form. The exact pathogeny of diabetes associated with goitre is complex, and the glyco-regulating trouble results not only from insufficiency of insulin but also from excessive secretion of thyroxin. Two cases are reported.

592. The Blood Pressure in Influenza.

C. GOTTHEIL (*Deut. med. Woch.*, April 19th, 1929, p. 648) has studied the blood pressure changes associated with the circulatory disturbances frequently observed in influenza in a number of cases in which there was no evidence of valvular or muscular damage to the heart, and in which the symptoms could therefore be ascribed to central or peripheral damage to the vessels. In nearly every instance the systolic pressure was slightly raised as compared with the value obtained during convalescence, and the diastolic was considerably diminished, down to 30 mm. of mercury or less, giving a very large pulse amplitude such as generally only occurs in aortic incompetence. In a few cases capillary pulsation was also observed. This low diastolic pressure, which occurred in 40 of the 50 patients examined, seemed to be independent of the severity, duration, or localization of the influenzal attack, and of the age of the patient. In contrast to previous epidemics, the pulse rate was generally raised in proportion to the temperature. In certain other acute conditions, such as lobar pneumonia, which at the onset resembled influenza, this low diastolic pressure did not occur, and this fact was found of value in early differential diagnosis. As the infection subsides the diastolic pressure gradually returns to normal; this may either precede defervescence or follow many days after the temperature has subsided. It is suggested that the cause of the fall in diastolic pressure is primary damage and paralysis of the capillary system.

Surgery.

593. Foreign Bodies in Joints.

P. MOULONGUET (*Journ. Bone and Joint Surg.*, April, 1929, p. 353) divides foreign bodies in joints into two groups—those of synovial and those of osseous origin. Those of synovial origin occur in arthritis deformans and nerve arthropathies, and also in apparently healthy joints where the arthritis is very localized. Osteocartilaginous foreign bodies are the most important lesions in this group, and are usually of pathological origin, formed from the synovial membrane or from the bone terminals. Trauma appears at times to be the origin of these foreign bodies and of a dry arthritis; occasionally it breaks the pedicle of the foreign body already formed and functional disturbances follow. Arthrotomy, with the removal of all foreign bodies, is the operation of choice, excision being harder in the hip than in other joints. The dry arthritis, after a complete cleaning out of the articulation, may recede. The various types of foreign bodies of osseous origin are: the osteophytes, detached from the epiphysis; those developed about the fragments of necrosis of the articular surfaces; and those foreign bodies of osteochondritis dissecans. The foreign cartilaginous body develops round a small exfoliated osseous sequestrum. Osteochondritis dissecans may be indicated by pain at a fixed point at the edge of the joint or by a blocking of the joint. Treatment must be surgical, the sequestrum being removed from its lodgment, and the cartilage being cut round to raise the fragments from underneath toward the outside. Traumatic foreign bodies are very rare, but can be differentiated from those of the osteochondritis, which are free in the articulation, by being covered and given a pedicle by the synovia. In cases of traumatic foreign bodies there should be complete cure after operation, but when there is a pathological origin the condition is liable to recur, especially in the course of a severe irremediable articular lesion, including nerve arthropathies and general arthritis deformans, and in cases where there is an exuberant formation of foreign bodies in the serous bursae and the synovia as well as in the articulations. Surgical prognosis is good when foreign bodies of synovial origin exist without another important lesion in the articulation, and in foreign bodies of bony origin, especially those in osteochondritis dissecans.

591. Gas Gangrene in Peace Time.

M. SIEBNER (*Deut. Zeit. f. Chir.*, April, 1929, p. 59) states that though gas gangrene due to the Welch-Fränkel bacillus has been much rarer since 1918 than it was during the war, six cases have occurred among 4,500 patients in the surgical department of the Marien Hospital at Stuttgart in the course of the last three years. In each case the infection was connected with damage to the extremities (in one the upper and in five the lower) by vehicles or machines, the wounds being grossly contaminated by earth or dust. The ages of the patients ranged from 6 to 47 years. In three cases the wounds were complicated by compound fracture. In two cases recovery followed amputation, while the remaining four ended fatally. Serum treatment probably contributed to the recovery of one patient, so that, in addition to antitetanic serum, 10 to 20 c.cm. of polyvalent gas gangrene serum should be employed prophylactically in all wounds in which there has been a possibility of infection with anaerobic bacilli. In such cases excision of all damaged tissues and opening up of all pockets are important. Everything should be avoided which is liable to diminish free circulation through the tissues, such as adrenaline, tight dressings, and pressure by splints. As pain in the wound is an early symptom of gas gangrene, the occurrence of this symptom should demand immediate examination of the wound. Absence of an inflammatory reaction round the wound is characteristic of gas gangrene, as is also a rapid pulse with a low temperature. On the first suspicion of gas gangrene the wound should be freely opened and the infected parts removed as far as possible. If the infection is not too acute, Bier's treatment should be adopted. Amputation is usually inevitable when several groups of muscles are attacked and the infection has invaded the neighbouring joint. Maintenance of the heart's action by adrenaline, caffeine, or the intravenous injections of glucose is necessary, as death is usually due to cardiac paralysis.

595. Fatal Air Embolism.

AIR embolus has long been recognized as the cause of alarming symptoms or death following the inflation of the bladder or urethra with air for diagnostic and operative procedures, and its occurrence is said to be rather common. C. P. MATHÉ (*Surg., Gynecol. and Obstet.*, March, 1929, p. 429) emphasizes the danger of this measure, and reports a case of sudden death following such inflation. He maintains that the distension of the bladder or urethra with air or oxygen for any purpose may result in transitory or grave symptoms should it enter the venous circulation; he asserts that its use should be abandoned, and harmless sterile water or mild antiseptic solutions be substituted. Increased intravesical or intraurethral pressure is favoured by prostatic hypertrophy or by stricture formation, which prevents the escape of air between the urethral walls and the indwelling catheter or cystoscope. Rupture of the vesical mucosa by over-distension, or the presence of a pre-existing inflammation, ulcer formation, or a new growth, weakens the bladder wall, thus favouring the entrance of air into the venous circulation. Mild symptoms, consisting of restlessness and transient changes in the respiratory and cardiac action, have undoubtedly been overlooked, as has also the cause of fatal termination. Death is due to the arrest of the pulmonary circulation; to gaseous distension of the right heart interfering with the function of the tricuspid and pulmonary valves; to little blood reaching the left ventricle, so that anaemia of the vital centres of the brain is produced; and to stasis of the coronary vessels. The most effective treatment of air embolus is the immediate release of air pressure in the bladder, artificial respiration, and injection of 2 c.cm. of a 1 in 1,000 adrenaline solution directly into the right side of the heart.

596. Haemolytic Jaundice Treated by Splenectomy.

F. WIDAL, L. DE GENNES, and LAUDAT (*Presse Méd.*, April 20th, p. 513), although regarding congenital haemolytic jaundice more as a defect than a disease, describe a case in which splenectomy was performed by them owing to the persistent demand by their patient for operation. The result was markedly successful, and the general health of the patient was greatly improved, as were the more specific physio-pathological conditions. The jaundice, which had persisted for twenty-three years, completely disappeared, except when the patient became unduly fatigued or run down in health. The red cell count gradually rose from 2.5 million per c.mm. to 4.9 at the end of two years. Detailed tables are given showing the changes and improvements in the blood as regards corpuscular fragility, haemoglobin, cholesterin, and lipoids. The authors emphasize the dissociation between the evolution of the anaemia and that of the corpuscular fragility, and comment on the apparent parallelism of the curves of the resistance of the corpuscles and the lipoidal content of the serum.

Therapeutics.

597. The Sulphur Iodide Treatment of Cataract.

E. GINESTOUS (*Gaz. Hebd. des Sci. Méd. de Bordeaux*, March 10th, 1929, p. 152) considers that undoubted success has followed medical treatment of cataracts, and cites Badal's opinion of the efficacy of iodides in these conditions. The latter's formula has remained the basis of subsequent medical treatments of cataracts, though it has been modified by various authorities, Dor, for example, adding calcium chloride as a dehydrating agent. The organic tissues contain an albuminoid body, philothion, which with sulphur gives sulphuretted hydrogen. The tissues of the crystalline lens are rich in this substance; therefore De Rey-Pailhade concluded that sulphur would have an action on this organ, and Molinery that the philothion of the lens by its affinity for oxygen would become catalytic, and that this catalysis would increase in the presence of sulphur at the expense of the bodies causing the opacity of the lens by lysing either the sclerosed connective tissue or the calcareous products, factors of the cataract. For two years Ginestous has treated cataracts with sulphur in combination with iodides and calcium, and employs a mixture, compounded by Bazin, of the following formula: precipitated sulphur, 10 cg.; oil of sweet almonds, 2 grams; crystallized calcium chloride and dried sodium iodide, aa. 40 cg.; neutral vaseline and lanoline, aa. 5 grams. A piece the size of a pea is put into the eye morning and night. These applications are generally painless and cause no inflammatory reaction. In very rare cases a burning sensation is experienced, which can be prevented by adding 10 cg. of stovaine or, preferably, of butelline. Internal treatment, governed by the general state of the patient and the etiology of the cataract, should be given simultaneously. This treatment is useless in congenital or old cataracts or in those due to traumatism. It is beneficial in diabetic cataract, and especially so in senile forms. Genestous reports that, in more than 50 cases treated by this method at their commencement, the opacity not only did not progress but showed actual regression.

598. Calcium Treatment of Pulmonary Tuberculosis.

F. BECKER (*Zeit. f. Tuberk.*, April, 1929, p. 198) records his observations in 78 cases of pulmonary tuberculosis treated by intravenous injections of calcium chloride during the course of the last two and a half years. Of these patients, 28 were in the second and 50 in the third stage of the disease, according to the Turban-Gerhardt classification. In 61 instances the tuberculosis was "open" and in 17 "closed"; 67 were cirrhotic forms, 10 were mixed, and one was a case of purely inflammatory exudation. Cases with early infiltration were not subjected to the treatment. Of the 78 cases, there was distinct improvement in 59, 16 showed no change in the symptoms or physical signs, and 3 could not tolerate the treatment. Of the 61 "open" cases, only 7 became "closed" during the treatment—a small but remarkable proportion in view of the fact that the disease was usually extensive and of long standing. Becker comes to the conclusion that the method is of value in the treatment of pulmonary tuberculosis, especially in cases of bilateral disease.

599. Silver Preparations in Conjunctivitis.

BIRNBAUM (*Le Scalpel*, April 6th, 1929, p. 369) advocates the use in conjunctivitis of a new preparation of silver which, he claims, has already proved beneficial in various diseases such as enteritis. The two methods commonly used in conjunctivitis—namely, the instillation of preparations of silver compounds in the acute stages and of the astringent, zinc sulphate, in the chronic stages — have certain disadvantages. Silver nitrate precipitates the albumin and causes a subsequent irritation with hypersecretion. It forms an eschar and only the superficial micro-organisms are destroyed, while the subjacent tissues are irritated and, becoming hyperaemic, form a suitable nidus for bacterial development. Colloid silver has a greater penetrative power, but it is only a weak bactericide. Strong solutions of zinc sulphate are caustic, while weak ones are useless, and, in general, the efficacy of zinc is limited to a very short period. Birnbaum's preparation combines diacetyl tannin and silver albuminate. He states that it is not an irritant, despite the large amount (6 per cent.) of silver it contains, and that it does not cause excessive secretion. It is said to have a remarkable astringent action, much greater than that of zinc, and not to be caustic. Experiments have shown that it has considerable penetrating power as well as bactericidal action, though the latter is only half that of protargol. The preparation may be used in both acute and chronic conjunctivitis.

Dermatology.

600. Seasonal Bullous Dermatitis.

H. W. SIEMENS (*Münch. med. Woch.*, March 15th, 1929, p. 449) describes in detail four cases of dermatitis occurring in persons who had lain on the grass after bathing in rivers or bathing pools, and four other cases reported a year ago and re-examined. The lesions appeared within twenty-four to thirty hours on some only of the areas of skin which had come into direct contact with the grass; they were linear in form and were associated with irritation and a burning sensation. The centre subsequently became bullous, and when the bullae dried up about the sixth day pigmented spots remained which persisted for several months. All the patients had bathed in different places and none had previously suffered from similar attacks, though all were apparently in the habit of lying on the grass after bathing—one in exactly the same part of the same meadow. The plants growing in those parts of the meadows used by the bathers were examined and identified by Professor von Goebel, and attempts were made to reproduce the lesions by rubbing suspected plants into the skin and by strapping them on to the skin for twenty-four hours; the results were all negative. As Oppenheim and Peszler had suggested that the dermatitis might be due to hypersensitiveness of the patients to silicic acid, of which some grasses contain a high percentage, the sensitiveness of the patients to applications of sodium silicate and to very fine quartz sand was also tried, but no reaction resulted. Finally, in order to ascertain whether the skins of these patients were particularly sensitive to mechanical stimuli, finely powdered glass wool was applied. No reaction resulted from this nor from the application of barley dust, which contains very fine sharp spicules. The pathogenesis of the condition thus remains obscure, and Siemens concludes that though clinically the cases of this bullous linear dermatitis resemble one another closely, they are not due to one particular plant, but that an unknown factor, possibly the preliminary soaking of the skin (during bathing), sweating, or insolation, plays an important part in the etiology of the "conditioned hypersensitiveness" to which this form of dermatitis appears to be due.

601. DURING the last two years, V. GENNER (*Ann. de Derm. et de Syph.*, March, 1929, p. 269) has noted in Copenhagen the appearance during the late autumn of a dermatitis of a type which he thinks has not yet been recorded, and reports ten cases of the disease—nine in women and one affecting a boy aged 15. The affection was characterized by a very small number of disseminated, rounded bullae, some of which were about one inch in diameter. The contents, at first serous, quickly became purulent. The bullae were surrounded by a slight erythematous zone, but there was no infiltration; they reached their full development in twenty-four hours. Itching was absent or only slight. Primary lesions, such as papules, were never found. The affection was exclusively confined to the lower half of the legs, especially behind and above the malleoli. Treatment consisted in opening and evacuating the bullae, and applying a dressing of vaseline or silver nitrate ointment; this produced a rapid cure. Genner alludes to a similar seasonal affection occurring in Germany, and also to one in Japan, and remarks that bullous dermatitis may be caused by stings from plants or insects. In the former the eruption is almost always accompanied by characteristic erythematous changes and intense itching. From the absence of these features, the fact that the patients when infected were always in the open air, and the localization of the lesions to the lower limbs, Genner concludes that the present cases were most likely due to the bite of an insect.

602. The Etiology of Chronic Febrile Pemphigus.

THE obscure etiology of pemphigus has prompted J. SABRAZÈS and J. TORLAIS (*Gaz. Hebd. des Sci. Med. de Bordeaux*, April 7th, 1929, p. 209) to describe a case in a woman, aged 47, who came under their care for several months previous to her death. The bullae began in the buccal cavity and on the soft palate, assuming a haemorrhagic character at times. Later the back and chest were affected. There was no relevant previous history, but the patient had old-standing pyorrhoea alveolaris with greenish pus, and obstinate constipation with extremely fetid stools. From a blood culture *B. mesentericus vulgatus* was recovered; there was pyuria, and a pure growth of *B. coli* was obtained from the urine. The lungs, heart, and other viscera appeared normal. Treatment with mercurial ointment made the pyorrhoea worse without helping the pemphigus. There was considerable oliguria, only 500 to 600 c.cm. of urine being passed daily; at times the temperature rose to between 103° and 104° F. Later a large retro-trochanteric boil developed, which became an ulcer 4 inches in diameter, reaching down to the capsule of the hip-joint. Treatment consisted of antiseptic dressings and lavage with Dakin's solution and light vitaminiferous diet. The condition of the patient, however, steadily became worse, and in spite of diuretic treatment only 200 c.cm. of urine were passed in the twenty-four hours. Bullae continued to develop in the sternal, dorsal, and lumbar regions, and on the thighs, the total surface being vast. Details are given of the various pathological examinations of the blood and of the serous material from the bullae. The protein content of the blood serum was found to be little more than half the physiological amount, and the authors discuss the permeability of the cutaneous capillaries in the light of their findings of the protein and chlorides with regard to local oedema and bulla formation. Unfortunately no post-mortem examination was permitted.

603. Treatment of Annular Granuloma.

A. SÉZARY and A. DURCY (*Bull. de Derm. et Syph.*, March, 1929, p. 270) describe the results of treating with Vaudremer's vaccine two cases of annular granuloma which gave clearly positive skin reactions with tuberculin. The vaccine used in both cases was described by Sézary and Vaudremer in the same journal in February, 1927, and consists of a suspension of the non-acidophile granules of Koch's bacilli. It was injected twice weekly, and one or more courses of twelve doses were given. The adult dose began with 0.25 c.cm., and was increased gradually to 1.75 or 2.0 c.cm.; in a child the maximum dose was 0.5 c.cm. No general reaction was observed. In the first patient, a child aged 10, typical annular granuloma appeared in 1925 on the left index finger, and later other fingers and one ear became affected. Under ultra-violet treatment the first lesion disappeared, but the others remained obstinate. After the fifth injection of Vaudremer's vaccine they became modified in appearance, and after a second course all completely disappeared except the oldest lesion. The second patient, a woman aged 38, was first attacked on the back of the left hand, and, later, on the dorsal surfaces of the index and second fingers. Here again the last lesion to develop completely vanished under treatment; the original one was greatly modified, and the authors think that in time it may also be cured.

Obstetrics and Gynaecology.

604. Glycosuria and Acetonuria as Signs of Pregnancy.

O. PORGES and D. ADLERSBERG (*Wien. Arch. f. innere Med.*, April 10th, 1929, p. 1) call attention to the occurrence of spontaneous glycosuria during pregnancy, and the importance of this symptom in the diagnosis of that condition. According to several Continental authorities, this glycosuria depends upon an increased permeability of the kidneys in regard to sugar—that is, a renal glycosuria is established. Two writers have suggested the probability that the alimentary glycosuria observed in pregnant women is also of renal origin. Frank found an increased desire for sugar in a higher percentage of pregnant women than among normal persons, although hyperglycaemia and glycosuria did not occur. Many gynaecologists and obstetricians have accepted these conclusions, but other authorities have recorded numerous errors in diagnosis. The present authors think, therefore, that the occurrence of renal glycosuria in a young woman is not a definite proof of pregnancy. On the other hand, it has been shown that during pregnancy a varying degree of acetonuria is usual, the onset of which indicates exhaustion of the patient's carbohydrate metabolism and carbohydrate reserve. It is to be expected that in pregnancy (as compared with the non-pregnant state) a dietary of low carbohydrate content would have a greater effect upon carbohydrate metabolism, as the pregnant woman stands in greater need of carbohydrates. Alimentary acetonuria has been proved, therefore, to be of greater importance in the diagnosis of pregnancy than is alimentary glycosuria. The authors observed 30 primiparae and 24 controls, who consisted of healthy adults of both sexes, with a proportion of patients suffering from various internal, non-febrile diseases. It was found that every pregnant woman, after one day's carbohydrate-free diet, exhibited a positive acetone reaction in the urine, and the amylase deficiency caused a definite, though slight, glycosuria. Among the twenty-four controls two cases of Graves's disease exhibited an alimentary acetonuria, and three other cases an alimentary glycosuria; in every instance this occurred after the patients had received a mixed diet. The authors conclude that the simultaneous occurrence of both glycosuria and acetonuria is a more valuable diagnostic test of pregnancy than any of the hitherto accepted biochemical reactions.

605. Valvular Hydrosalpinx.

ACCORDING to C. BÉCLÈRE (*Gynécol. et Obstét.*, March, 1929, p. 191), hydrosalpinx in which both abdominal and uterine ends of the tube are closed is considerably more rare than valvular hydrosalpinx, which is usually bilateral and in which only the abdominal ostium is closed. In valvular hydrosalpinx egress of the effusion into the uterus is impossible; but fluids injected into the uterus can pass as through a valve under pressure, and, gaining access to the tube, give rise to a highly characteristic radiographic picture when lipiodol has been used. The essential diagnostic sign after lipiodol has been injected is the retention within the tube of the opaque fluid; this retention is shown by a control examination which can conveniently be made twenty-four hours afterwards, but also still later. A second sign, not invariably detected, is the demonstration during screen examinations of entry of the fluid and its accumulation in the tube in the form of spherical drops regularly succeeding each other. These signs have been described by numerous French and other observers, working independently. From an anatomical point of view, there is a contrast between the naked-eye appearances, which show neither adhesions nor abscess, and the microscopical characters, which are those of definite but slight inflammation. Some folds, with their epithelium, are preserved, the mucosa shows polymorphonuclear infiltration, and in the muscularis there is inflammatory regression. Signs of tuberculosis are sometimes present. Clinically the patients may have had one or more pregnancies, but more usually they are sterile, and the inception of the hydrosalpinx dates from the first sexual congresses. Commonly, as a result of infection from the husband by a gonococcus of attenuated virulence from an old lesion, there result sterility, slight yellow discharge, and repeated slight abdominal pain. Bimanual examination, except occasionally in the case of very large hydrosalpinges, usually reveals no gross adnexal swelling, although the fornices may be boggy and tender. It is therefore by radiographic examination only that early valvular hydro-salpinx is likely to be detected. Treatment even at this stage is unfortunately not hopeful with regard to the sterility, and not more than 5 per cent. of successes are claimed for salpingostomy. Recourse must too often be had to subtotal hysterectomy, or, better, to excision of the fundus, which at least conserves the menstrual function.

606. Hyperplasia Endometria and Carcinoma Corporis Uteri.

C. F. FLUHMANN and H. A. STEPHENSON (*Surg., Gynecol. and Obstet.*, March, 1929, p. 425) state that the association of hyperplasia of the endometrium with malignancy of the body of the uterus is rare, and only a few cases have been reported. R. Meyer, who recorded five cases, showed that an adenomatous cancer may not only have its origin in hyperplastic mucosa, but may arise directly from previously simple hyperplastic glands. The present authors report a case of marked hyperplasia of the endometrium accompanied by an adenomyosis uteri; in the endometrium was found an early adeno carcinoma, which arose apparently from hyperplastic glands. A complete hysterectomy with removal of the tubes, ovaries, and cuff of the vagina was performed. No adhesions and no enlarged glands were found, and the patient made an uneventful recovery. Apparently, as was shown by the specimen, all the cancerous tissue was removed by the curette, a possibility reported by other observers. Though some authors believe that hyperplasia of the endometrium predisposes to cancer, the general consensus of opinion is opposed to this view. Fluhmann and Stephenson state that hyperplasia may be followed by cancer, and emphasize the importance of careful study of all tissue obtained from the uteri of women with abnormal bleeding at the time of the menopause.

Pathology.

607. Vaccination with Dead Tubercle Bacilli.

S. A. PETROFF, A. BRANCH, and F. B. JENNINGS (*Journ. Immunol.*, March, 1929, p. 233) find that it is possible to establish skin hypersensitiveness in guinea-pigs by the intratesticular or intraperitoneal injection of heat-killed tubercle bacilli. In order to determine whether guinea-pigs sensitized in this way were immune to tuberculosis they performed the following experiment. Seventy-five guinea-pigs were sensitized by the intraperitoneal route with dead tubercle bacilli, three doses being given within a week, an equal number being kept as controls. A fortnight after the last injection 95 per cent. of the vaccinated animals reacted positively to the intracutaneous tuberculin test, while all the controls were negative. Each batch of animals was then formed into three groups, which were injected subcutaneously with different doses of living virulent human tubercle bacilli; the experiment was terminated after 630 days. The results were as follows: Group A1 of vaccinated animals received a dose of 440 organisms; Group A2 of control animals received the same dose. The total mortality (from both tuberculosis and intercurrent disease) among the A1 group was 54 per cent., among the A2 group 96 per cent.; the average survival time of the A1 group was 369 days, of the A2 group 295 days. Group B1 of vaccinated and Group B2 of control animals received a dose of 4,400 organisms: B1 had a mortality of 75 per cent. and an average survival time of 273 days; B2 had a mortality of 96 per cent. and a survival time of 236 days. Group C1 of vaccinated and Group C2 of control animals received a dose of 44,000 organisms: C1 had a mortality of 90 per cent. and a survival time of 303 days; C2 had a mortality of 100 per cent. and a survival time of 168 days. The authors conclude that, provided a small infecting dose is used, it is possible to show that guinea-pigs vaccinated with dead tubercle bacilli have a substantial immunity to experimental tuberculosis. They consider that a vaccine of heat-killed tubercle bacilli might profitably be used for the vaccination of children.

608. Cardiac Metabolism.

M. HAENDEL and A. MUNILLA (*Anal. de la Fac. de Med.*, February, 1929, p. 183) examined the cardiac, muscular, and hepatic glycogen and glycaemia in dogs after intraperitoneal injection of 2 grams of glucose per kilogram of body weight and of various pharmacodynamic substances, with the following results. Glycogen values in control animals amounted to 0.561 per cent. in the heart, 0.243 per cent. in the muscles, and 1.2519 per cent. in the liver. In digitalized animals there was a considerable fall of cardiac glycogen, but the glycogen in the other organs did not undergo any considerable change. Toxic doses of ouabain caused a general mobilization of glycogen, while small doses lowered the cardiac glycogen and to a slight extent the hepatic glycogen, causing hyperglycaemia. Toxic doses of camphor caused general mobilization of glycogen, while smaller doses had no influence on cardiac glycogen; there was hyperglycaemia. The action of caffeine was like that of camphor, except that its action on muscular glycogen was more pronounced. Potassium chlorate had no action on cardiac glycogen, though it acted on other glycogens and gave rise to hyperglycaemia. Calcium chloride caused a remarkable diminution of cardiac glycogen, and in large doses produced a general diminution of glycogen with hyperglycaemia. Adrenaline also caused general diminution of glycogen. The authors found that in normal animals the cardiac glycogen was independent of the action of insulin, contrary to what occurs in depancreatized dogs. Thyroxin had very little effect on cardiac glycogen, whereas it mobilized muscular and hepatic glycogen.

609. Relapsing Fever Spirochaetes in the Brain of the Mouse.

C. LEVADITI and T. E. ANDERSON (*C. R. Soc. de Biologie*, April 26th, 1929, p. 1121) record some experiments on the infectivity of the brain of mice inoculated with *Treponema duttoni*. Several workers have now shown that the brain may be infective long after the spleen and other organs of the body have become avirulent. The authors in their first experiment grafted the brain of a mouse, killed 99 days after infection, beneath the skin of the abdomen of six normal mice. Examination of the grafts at varying intervals failed to reveal the presence of spirochaetes. Nevertheless, the spleen and the blood of the mice became infective about the third day, though microscopically spirochaetes were not demonstrated till after four to seven days. In a second series of experiments the virulent brain of a mouse, killed 52 to 112 days after inoculation, was injected intraperitoneally in a finely suspended state into normal mice. The results showed that the blood, and with less constancy the peritoneal fluid, became infective after about twelve hours, and the spleen after about forty-eight hours. No spirochaetes were found microscopically, however, till the fourth or fifth day. Filtration experiments made on the virulent brain or peritoneal fluid were unsuccessful. Even with filters of compressed glass having large pores the infecting agent failed to pass into the filtrate; not until filters with an estimated pore size of 25 to 36μ were used did the filtrate prove infective. From these experiments the authors conclude that the virus of relapsing fever persists for a long time in the brain of the mouse, in an invisible form, probably within the cells. When it is inoculated beneath the skin or into the peritoneum of normal mice it promptly invades the blood stream, and in the course of a few days becomes transformed into the typical spirochaetal form.

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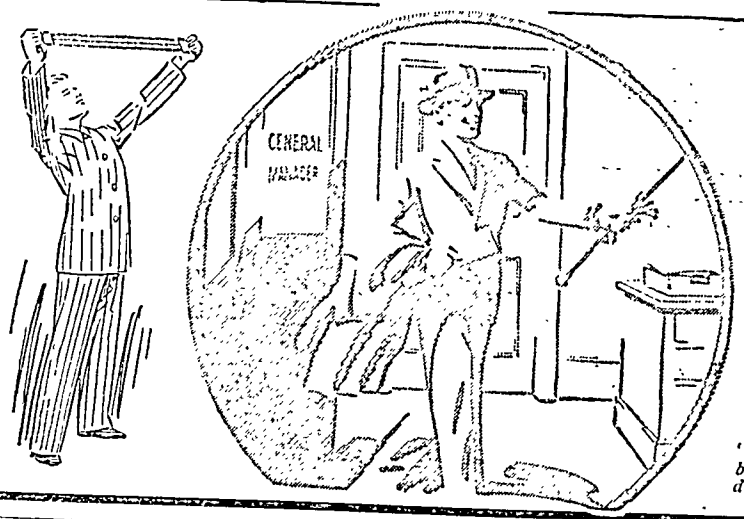

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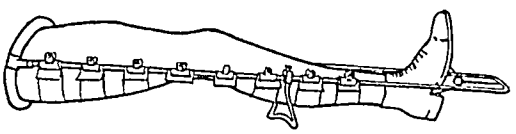

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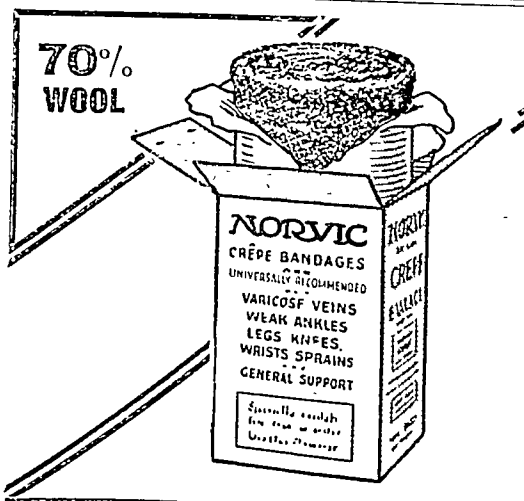

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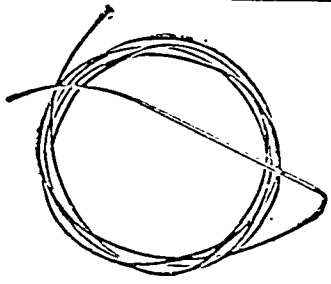

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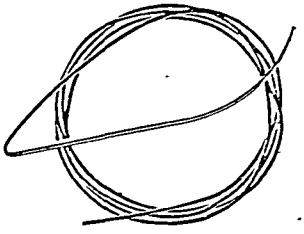

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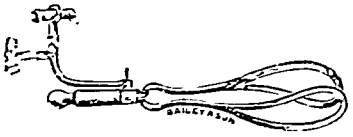

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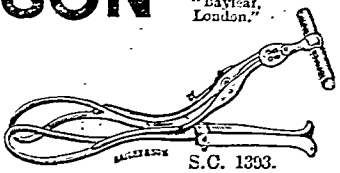

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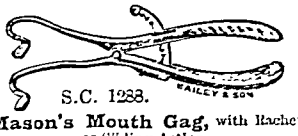

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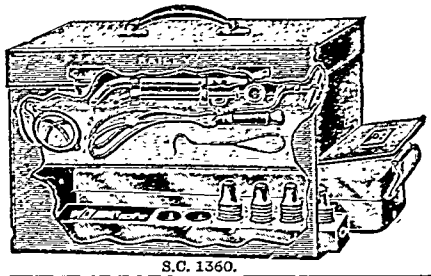

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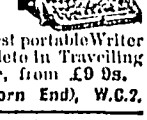

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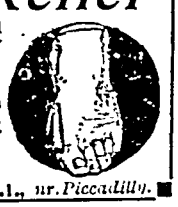

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Voluntary BOARDERS can now be admitted.—Apply to the MED. SUPERINTENDENT.

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Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical baths, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment It also contains Laboratories for biochemical, bacteriological, and pathological research.

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Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

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The Seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairtechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

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For terms and further particulars apply to the Medical Superintendent (Telephone: No 56 Northampton), who can be seen in London by appointment.

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For terms, etc., apply to the Medical Superintendent.

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Telegrams: Castle, Ruthin. Telephone: 66, Ruthin.

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(For the reception and treatment of cases of nervous and mental disease.) Tel.: Reliance 2182.

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PHYSICIAN SUPERINTENDENT: J. G. PORTER PHILLIPS, M.D., F.R.C.P. Assisted by Physicians, a Pathologist, and a staff of Visiting Consultants.

Patients of the . . . CURABLE CONDITION, are eligible for admission. With a view to the early treatment of eligible . . . . . tients are admitted. PATIENTS WHO CAN CONTRIBUTE THREE GUINEAS WEEKLY TOWARDS . . . . . RECEIVED AS VACANCIES ARISE. Treatment is carried out on the most modern principles. In connection with this Hospital there is a Convalescent Home on the Surrey hills at Witley.

For further particulars apply to the PHYSICIAN SUPERINTENDENT.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1926, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

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Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0333.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
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Telegrams: "Psycholia, London." Telephone: Rodney 4731—4732.

FOR THE TREATMENT OF MENTAL DISORDERS.

Completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Croquet, Squash Racquets, and all indoor Amusements, including Wireless and other Concerts. Occupational Therapy. Daily services in the Chapel.

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All particulars may be obtained from the Resident Medical Superintendent, Dr. MARY R. BARNAS, M.D., D.P.M.

BAILBROOK HOUSE, BATH.

A PRIVATE HOME for the care and treatment of persons with mental and nervous disorders.

Voluntary Boarders received in the Villas. Large Mansion on outskirts of Bath, with 20 acres of grounds (see *Medical Directory*, page 2134).

For terms apply to SAMUEL J. GILFILLAN, O.B.E., M.B., C.M.Edin., Resident Physician. Telephone No.: Batheaston 2169.

CHEADLE ROYAL, CHEADLE, CHESHIRE.

This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.

Telephone: 421 GATLEY.

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Rendlesham Hall, which is open to receive patients, is essentially a Sanatorium. Its daily life and routine are that of an ordinary comfortable holiday or health resort, or of a large country house. Each patient has all the privileges of a guest consistent with the prescribed medical treatment.

Rendlesham Hall has 45 bedrooms, and about 450 acres of gardens and park. It has also a private nine-hole golf course, tennis and croquet lawns, and bowling green.

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Proprietors: The Norwood Sanatorium, Limited.

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THE GRANGE,

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A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house with beautiful grounds and park, 5 miles from Sheffield. Station, Grange Lane, G.C. Railway, Sheffield. Telephone: No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S.

SPRINGFIELD HOUSE,

Near BEDFORD. (Phone 3417.)

FOR MENTAL AND NERVOUS CASES.

Physicians: DAVID AND CEDRIC W. BOWER. *Ordinary Terms, Five Guineas per week.* (Special terms where suitable.) Appointment.

PLYMPTON HOUSE,

PLYMPTON, S. DEVON.

This old-established Licensed House offers every advantage that experience can suggest for the care and treatment of mental cases.

For terms, etc., apply to the Resident Physicians: Dr. ALFRED TURNER, Dr. J. C. NINOS. Telephone: No. 2 Plympton.

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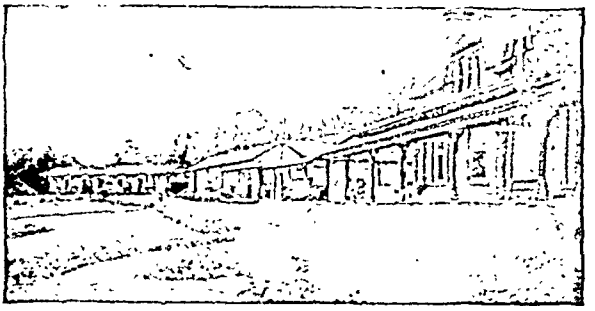
For the treatment of Ladies and Gentlemen mentally afflicted. Voluntary Boarders received. Situated 1,200 ft. above sea-level, facing S.; 14 acres of grounds.—For terms, apply to the Resident Medical Superintendent, W. W. HORTON, M.D. Nat. Tel. 130.

THE COTSWOLD SANATORIUM



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Apply: The Secretary, The Cotswold Sanatorium, Cranham, Gloucester.

Telephone: 41 WITCOMBE. *Telegrams*: "HOFFMAN, BIRDLIP."

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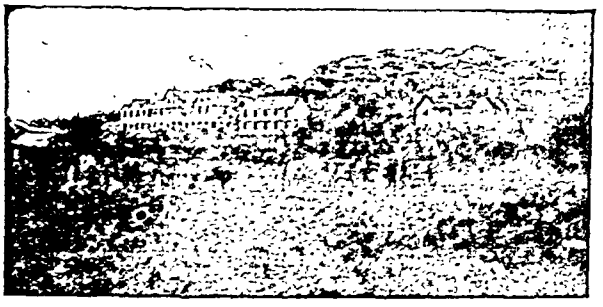

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Apply, Mr. D. C. FORD, Secretary,
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KINGUSSIE, N.B.

THE GRAMPIAN SANATORIUM.

Situated in the upper Speyside district of Inverness-shire. One of the highest inhabited districts in Britain—"The Switzerland of the British Isles." Bracing and dry mountain climate. Well-sheltered Sanatorium specially built for the Open-air Treatment of Tuberculosis. Opened in 1901. Elevation 860 ft. above sea level. Electric light throughout buildings and in rest shelters. Central heating. Fully equipped X-ray Plant. All forms of treatment available, including Artificial Pneumothorax, and Ultra-Violet Rays for surgical cases of Tuberculosis.

MEDICAL SUPT.: FELIX SAVY, M.B., Ch.B. *For particulars apply to the Secretary.*
Terms: £4 4s 8d to £5 5s per week inclusive, no extras.

VALE OF CLWYD SANATORIUM.

This Sanatorium is established for the treatment of TUBERCULOSIS of the LUNGS and the PLEURAL CAVITIES. It is situated in the midst of a large area of park-land at a height of 450 feet above sea-level, on the south-west slopes of mountains rising to over 1,800 feet, which protect it from north and east winds and provide many miles of graduated walks with magnificent views. Average rainfall 29.57 per annum. Full day and night nursing staffs. X-ray plant. Every facility for Artificial Pneumothorax, and for operations on the chest. Electric lighting. Central heating. Home farm. Clean milk from T.T. Herd. For particulars apply to Med. Supt., H. Morriston Davies, M.D., M.Ch.Cantab., F.R.C.S., Llanbedr Hall, Ruthin, N. Wales.

PENDYFFRYN HALL SANATORIUM

PENMAENMAWR.

Established 1900 for the treatment of Tuberculosis. Miles of carefully graduated walks through pine-clad hills, with sea and mountain views. Modern treatment, including SANOCRYSIN, ARTIFICIAL PNEUMOTHORAX, etc. X-ray plant, electric light, central heating, wireless. Full day and night nursing staff. On L.M.S. Main Line to Holyhead, 4¼ hours from London. Resident Physicians: Dennison Pickering, M.D.(Cantab.), F. W. Godbey, M.D., D.P.H.; Matron: Miss N. Rennardson, S.R.N.

For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 20.)

SELBRIGG SANATORIUM, HOLT, NORFOLK.

Telephone: HOLT 12.

Adjoining KELLING SANATORIUM

FOR THE TREATMENT OF TUBERCULOSIS.
On Pine-wooded heights above Cromer and Sheringham. Dry, Warm Climate. Maximum Sunshine. Completely Sheltered.
Terms: From 6 guineas weekly.
Further information and illustrated booklet from:
J. I. W. MORRIS, M.R.C.S.(Eng.), L.R.C.P.(Lond.),
Medical Superintendent, Kelling Sanatorium.

Sulphur Bath Schinznach

SWITZERLAND

in the valley of the Aare near Brugg (Station for Express trains) Line: Zürich—Berne—Geneva. Motor Road: Zürich—Aarau—Berne.

DOCTORS: Prof. Dr. E. Bürgi, Berne; Dr. med V. Heinemann; Dr. E. Jenny, Children's Specialist, Aarau.

TENNIS. GOLF (9 holes).

Kurhaus: First-class hotel, with hot and cold water, private baths, entire suites. Restaurant. Directly connected with the Baths.

Curative Agencies.—Radioactive warm sulphur [illegible] Professor Treadwell of the [illegible] School in [illegible] sulphur spring on the [illegible] test satu[illegible]ydrogen (5.6 per cent.). [illegible] to Professor Schweizer in Zürich: 4.52 Mache units. Temperat[illegible] Gallons per minute. Sulphur baths, Drinking cures, Inhalations, local Pulverisation, Spray baths, Sulphur mud treatment. Sun-bath, Open-air gymnastics and massage by Swedish personnel, X-ray, Diathermal Apparatus, Quartz lamps, Medico-chemical laboratory, Meta[illegible]olism laboratory, Diet, Trained personnel, nurses

Renowned for—Rheumatism, Gout, Chronic diseases of the joints (Arthritis) and of the bones, Fistulas, Varicose Ulcers, Suppurating wound, Sepsis, Neuralgia, Scrofula, Chronic Catarrh, Asthma, Arterio-sclerosis, Disturbance of Metabolism, Diabetes, Exhaustion.

SKIN DISEASES:—Eczema, Furunculosis, Acne, Psoriasis, Ichthyosis, Urticaria, Chronic Itch.

CHILDREN'S DISEASES:—Exsudative Diathesis and Eczema, Lymphatism, Recidivious Catarrhs, Scrofula, Diseases of the bones and glands, Fistulas, weakly anæmic constitution.

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All further information on application to the Management of Bad Schinznach.

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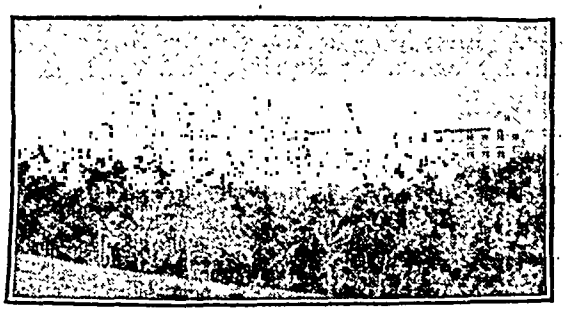
MURTLE DEESIDE ABERDEENSHIRE.



Medical Director: David Lawson, M.D., F.R.S.E.

FULLY EQUIPPED WITH EVERY MODERN APPLIANCE FOR THE DIAGNOSIS AND TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.

Physician Superintendent - J. M. JOHNSTON, M.B., D.P.H., etc.

Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.

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Unrivalled suites of Baths for Ladies and Gentlemen, including Turkish and Russian Baths, Aix and Vichy Douches, Massage and Plombières Treatment, an Electric Installation for Baths and other Medical purposes, Dowsing Radiant Heat, D'Arsonval High Frequency, Diathermy, Nauheim Baths, etc. Special provision for invalids. Milk from our farm. Large Winter Garden. Night Attendance. Rooms well ventilated and all bedrooms warmed in Winter. A large Staff (upwards of 60) of trained Male and Female Nurses, Masseurs, and Attendants.

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For Prospectus and full information please write MANAGER, M.J.

GREAT BRITAIN'S GREATEST HYDRO

Resident Physicians:
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R. MACLELLAND, M.D., C.M.(Edin.).

MATLOCK

LLANDRINDOD WELLS

Unsurpassable Mountain Air.
Saline, Sulphur, and Chalybeate Waters.
Up-to-date Electrical Treatments Given.

Guide and full particulars free from SECRETARY, SPA PUBLICITY DEPARTMENT.

HERMITAGE SANATORIUM, Whitwell, Nr. Ventnor.

Unsurpassed situation, 600 ft. above sea-level, high sunshine record, own farm. Resident Medical Officer. Male cases only.

Inclusive weekly terms 50/-.

Special preferential arrangements for a few private cases at 4 guineas.

Artificial Pneumothorax, etc.

THE BRITISH SANATORIUM, MONTANA sur/Sierre, SWITZERLAND.

Opened on January 1st, 1929, for the treatment of PULMONARY TUBERCULOSIS. English Nursing Staff. Inclusive terms from 7 guineas a week. *Medical Superintendent:*

Hilary Roche,

M.D. (Melb.), M.R.C.P. (Lond.), Tuberculous Diseases Diploma (Wales); Formerly H.P., Brompton Hospital, Medical Supt., Palace Sanatorium, Montana.

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famous for its natural Brine Baths, which will cure Rheumatism and Allied Ailments.

RAVEN HOTEL or PARK HOTEL

famous for their comfort and hospitable service to each and every one of their guests.

Adjoining Brine Baths. 230 rooms. Extensive grounds. Golf, tennis, mixed bathing Lock-up Garages and cars for hire.

Illustrated Booklet on request. 'Phone 50 or 38.

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All modern Baths, Douches, Massage, and Electrical Treatment. Ultra-Violet Radiation. Physician in attendance.

IDEAL HEALTH RESORT.

Electric Light, Central Heating, Electric Lift, three Billiard Tables, Ball Room, Winter Garden, Swimming Bath, Hard and Grass Tennis Courts, Badminton, Croquet Lawn, Golf Course. Prospectus from Manager. 'Phone: Peebles 2.

BOURNEMOUTH HYDRO,

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Every kind of Bath. Plombière Lavage.
Every kind of Massage. Ultra-violet Light.
Every kind of Electricity. Diathermy.
Every kind of Diet.
Carlsbad and Vichy Waters, etc.
High Frequency. Electric Lift.

Prospectus from Secretary. *Tele.* 341.
Resident Physician: W. JOHNSON SMYTH, M.D.

Dr. W. L. Stuart, Dunderach,

KLIPHEUVEL, CAPE PROVINCE, S.A., has facilities for accommodation on his farm for those seeking health or farming instruction; healthy and beautiful locality, near Cape Town; mod. alt. and rainfall; vineyards, wine making, orchards, pedigree pigs, poultry, and general farming; terms mod.; parties., refs. on applic.—No. 3504, B.M.A. House, Tavistock Sq., W.C.1.

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Radio-active saline thermal Springs 155° Fahrenheit. Daily output 176,000 gallons.

INDICATIONS: Gout, rheumatic ailments, neuralgia, catarrhs of the respiratory organs.

PALATIAL BATHING ESTABLISHMENTS. HOTELS FITTED WITH PRIVATE THERMAL BATHS. INHALATORIUM PUMPROOM.

NEW INTRODUCTION: Combined treatment for stiff and inactive joints.

GRAPE CURE IN THE AUTUMN. MOUNTAIN RAILWAY ON THE MERKUR (2,100 feet). REST CURES AND OPEN-AIR TREATMENT.

CONCERTS, THEATRES, DANCES. ALL KINDS OF OUTDOOR SPORT.

Information, prospectuses, etc., may be had from the "STÄDTISCHE KURDIREKTION," BADEN-BADEN.

THE FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION,

1, WIMPOLE STREET, LONDON, W.1. Telephone: Mayfair 2236.

POST-GRADUATE SPECIAL COURSES have been arranged for July and August as follows: Cardiology, Child Welfare, Dermatology, Urology, Diseases of Children, Medicine, Surgery, and Specialities (Intensive Course). Detailed syllabuses, General Course programme, and specimen copy of the "Journal" may be obtained from the Secretary.

DIPLOMA IN BACTERIOLOGY.

(University of London)

Applications for admission to the Course of Study for the Diploma in Bacteriology at the London School of Hygiene and Tropical Medicine for the academic year 1929-30, commencing in October next, should be addressed, without delay, to the Secretary of the School, Malet Street, London, W.C.1.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

(University of London.)

Bacteriology and Immunology.

One year's Course of Study for the Diploma in Bacteriology, beginning in October.

Epidemiology and Vital Statistics.

Special Courses of not less than three months.

Tropical Medicine and Hygiene.

Two Courses yearly, each of 20 weeks, commencing on September 30th, 1929, and February 3rd, 1930.

Diploma in Public Health.

A Course of Study, covering a period of twelve calendar months, beginning in October, 1929

Enquiries for syllabuses, etc., should be addressed to the Secretary, Endsleigh Gardens, London, W.C.1

TAUNTON SCHOOL, TAUNTON.

A PUBLIC SCHOOL FOR BOYS.

Boys are regularly prepared for the First M.B. Examination, University Scholarships in Chemistry, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology.

New Science Buildings, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1925. Prospectus from Head Master.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 7th, and for the Diploma in Tropical Hygiene on January 12th and April 26th. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.

PRIVATE WARDS for paying patients.

AN IDEAL PREPARATORY SCHOOL FOR BOYS.

KINGWELL HALL, Timsbury, near BATH. Grounds of 240 acres, between Bath and Wells; 600 ft. above sea, the air bracing, very beneficial to delicate boys. Games (cricket, football, hockey, tennis, golf) and physical training. A fine open-air swimming bath. Particular attention given to health, food, and rest. Four Public School Scholarships in last two years. Prospectus on application. — Headmaster: SYDNEY L. ALLAN, M.A.(Oxon.).

THE MIDDLESEX HOSPITAL MEDICAL SCHOOL, LONDON, W.I.

(UNIVERSITY OF LONDON).

TWO ENTRANCE SCHOLARSHIPS of the value of £100 each, one in Arts and one in Science, will be offered for competition.

TWO SCHOLARSHIPS of the value of £90 and £60 respectively, are open to students of the Universities of Oxford and Cambridge who have completed the curriculum for or passed the Examination in Anatomy and Physiology.

The Examination will take place on July 29th, 30th, and 31st, 1929.

The successful candidates will be required to become general students of the School.

WINTER SESSION OPENS ON OCT. 1st.

Application forms and last year's papers can be obtained from the Secretary, Middlesex Hospital Medical School, Mortimer Street, W.1.

THE MIDDLESEX HOSPITAL MEDICAL SCHOOL, W.I.

(University of London).

PRIMARY F.R.C.S.

A Course of Instruction for the above Examination will start on July 1st.

Fee:—

ANATOMY	...	£12 12 0
PHYSIOLOGY	...	£12 12 0

(If both subjects are taken, Fee **£21**)

Further particulars may be obtained on application to the School Secretary, Middlesex Hospital, Mortimer Street, W.1.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5, for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics. For further particulars, fees, etc., apply to the Secretary.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION.

The following arrangements have been made for POST-GRADUATE TEACHING in Glasgow during the Summer of 1929.

A. A **General Medical and Surgical Course** from August 19th to September 13th. Fee £10 10s. or £6 6s. for first or second fortnight.

B. **Clinical Assistantships** in General and Special Hospitals.

Syllabuses and any other information may be had on application to the SECRETARY, POST-GRADUATE MEDICAL ASSOCIATION, THE UNIVERSITY, GLASGOW.

DIPLOMA IN PUBLIC HEALTH

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

(University of London.)

The course of study, covering a period of twelve calender months, will commence on September 30th, 1929, and is so designed that students wishing to do so can proceed to the new academic Diploma instituted by the University of London.

The inclusive fee of 50 guineas will cover the cost, not only of the ordinary lectures and demonstrations, but also of the necessary practical work in public health departments and instruction in infectious diseases, etc.

Enquiries should be addressed to the Secretary, London School of Hygiene and Tropical Medicine, Malet Street, London, W.C.1.

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Are you preparing for any Medical or Surgical Examination ?

Do you wish to specialize in any branch of Medicine or Surgery ?

Send Coupon below for our valuable publication.

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The Examinations of the Conjoint Board.
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The D.P.H. and how to obtain it.
The Diploma in Tropical Medicine.
Diploma in Ophthalmology.
Diploma in Psychological Medicine.
Diploma in Radiology.

You can prepare for any of these qualifications by postal study at home. We specialize in Post-graduate tuition. Clinical and practical courses in any subject. Attendance at Hospital practice arranged.

THE SECRETARY,
MEDICAL CORRESPONDENCE COLLEGE,
19, Welbeck Street, Cavendish Square, London, W.1. Telephone: LANGHAM 1166.

Sir,—Please send me a copy of your "Guide to Medical Examinations" by return.

Name.....

Address.....

Examination in which interested.....

THE NORTH-EAST LONDON POST-GRADUATE COLLEGE.

The Prince of Wales's General Hospital, Tottenham, N.15, and Associated Hospitals.

An INTENSIVE REFRESHER COURSE will be held from JUNE 24th to JULY 6th. Lectures, demonstrations, and cliniques in the various general and special departments.
The number is limited to 25.
Enquiries and applications should be sent to the Dean at the Hospital, or to the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

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SKILLED COACHING, GUIDANCE, and ADVICE.
From Specialist Tutors, in conformity with the Regulations of the various Universities
Apply for particulars and free booklet, "Hints on Writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

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REASONABLE INCLUSIVE FEES.

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Sound Education. Upper and Lower Schools. Preparation, when desired, for all University Entrance Examinations. Particulars from Sec.
Special Terms to Medical Men.

NORTH-EAST LONDON POST-GRADUATE COLLEGE,

PRINCE OF WALES'S GENERAL HOSPITAL, N.15.
The Practice of the Hospital is limited to Medical Practitioners. Particulars from T. H. C. BESIANS, F.R.C.S., Dean

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam. will commence shortly. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

UNIVERSITY OF LONDON.

EXTERNAL EXAMINERSHIPS, 1930.

The Senate announce the following vacant External Examinerships for all Examinations above Matriculation for the year 1930. Except when otherwise stated, Examiners will act in all Examinations in which the subject is included.

The Examiners for the Final Examinations will be invited as occasion arises to take part in the Higher Examinations, but the Senate have resolved that in certain cases in which the work is heavy they shall not be required to do so.

For the First Examination for Medical Degrees.
Biology. Chemistry. Physics.

For the Second Examination for Medical Degrees
Anatomy (two). Pharmacology. Physiology.
NOTE.—One of the two Examiners appointed in Anatomy will be required to act for Science Examinations also.

For Final and Higher Examinations for Medical Degrees.
Medicine. Surgery (two). State Medicine.

Associate Examiners.

Applications will also be invited for Associate Examiners in Medicine, Obstetric Medicine, Pathology, and Surgery. A separate application form must be used for Associate Examinerships and the word "Associate" must be written on it.

Application form (or forms if more than one Examinership is applied for) and particulars of the remuneration and duties can be obtained from the External Registrar.

Candidates must send in their names to the External Registrar, GLD. P. GODCHILD, M.A., B.Sc., with any attestation of their qualifications they may think desirable on or before Monday, July 7th, 1929. (Envelopes should be marked "Examinership.")

The Senate desire that no application of any kind be made to individual members.

If testimonials are submitted one copy only of each is required. In no case should original testimonials be submitted. If more than one Examinership is applied for a separate and complete application must be forwarded in respect of each Examinership. The appointments will be made by the Senate in November. Applicants who desire that the result should be communicated to them are requested to enclose a stamped and addressed envelope with their applications.

University of London, South Kensington, S.W.7. T. FRANKLIN SIBLY, Principal.
June, 1929.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, *and in residence, in the Summer holidays*, at Miss BEHNKE'S house on the Chilterns

[illegible]

effective."—"Guy's Hospital Gazette."

STAMMERING, CLEFT PALATE SPEECH, LISPING, 39 of Miss BEHNKE, 39, Earl's Court Sq., S.W.5

Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims.
Chemistry, Physics, and Biology Labs.
MANCHESTER TUTORIAL COLLEGE,
327, Oxford Road, Manchester

F.R.C.S.(Edin.).

Prep. Classes and Museum Demons. for next Fellowship Exam will commence shortly. Correspondence course for Sept. and later exams. should begin now. Particulars, Mr. H. C. ORRIN, F.R.C.S., at Surgeons' Hall, Edinburgh.

The University of Manchester.

The AMY HENRIETTA WORSWICK FELLOWSHIP for the investigation of the Causes and Treatment of *Rheumatoid Arthritis* is offered for competition. The Fellowship is of the value of £150 for one year, with the possibility of renewal for a second year. Candidates must possess a registrable medical qualification.

Application must be made not later than October 15th to the Registrar, from whom further particulars may be obtained.

The University of Liverpool.

The Council invites applications for the post of JUNIOR LECTURER (ungraded) in the Department of Pathology. Salary £300 per annum. For further particulars, application should be made to the George Holt Professor of Pathology.

Applications to be sent to the undersigned not later than Thursday, June 27th.
EDWARD CAREY, Registrar.

UNIVERSITY EXAMINATION POSTAL INSTITUTION

17, RED LION SQ., LONDON, W.C.1.
(FOUNDED IN 1882.)

Principal: Mr. E. [illegible]
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SOME SUCCESSES:

M.D.(Lond.), 1901-28 (9 Gold Medallists during 1913-28) 309
M.S.(Lond.), 1901-28 (including 4 Gold Medallists) 20
M.B.,B.S.(Lond.), *Final* 1906-28 (Completed Exam.) 237
F.R.C.S.(Eng.), *Primary* 1906-28) 149
Final 135
M.R.C.P.(Lond.), 1914-28 152
D.P.H. (Various) 1906-28 (Completed Exam.) 280
F.R.C.S.(Edin.), 1918-28 39
M.R.C.S., L.R.C.P. *Final* 1910-28 (Completed Exam.) 402
M.D.(Dur.) (Practitioners) 1906-28 36
M.D. Various. By Thesis. Numerous successes.

Preparation for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.

M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.), Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Course. Openings for Women. Hints for writing Theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

The Otago Hospital Board.

UNIVERSITY OF OTAGO AND DUNEDIN HOSPITAL, NEW ZEALAND.

The post of RESIDENT SURGICAL OFFICER (Senior) will be vacant in August, 1929. Candidates must hold a degree in Medicine of a British University; must have been qualified for three years; and have held resident Hospital appointments for at least one year.

The duties of the successful candidate will be those of superintending house surgeons, with, in addition, certain tutorial work under the direction of the Professor of Surgery.

Salary for the position to be at the rate of £500 per annum, with board and residence.

Full details may be obtained on application to the High Commissioner for New Zealand, Strand, W.C.2.

Otago Hospital Board, Dunedin, New Zealand. JOHN JACOBS, Secretary.
May 22th, 1929.

University of Birmingham.

CLINICAL BOARD.

An Intensive Course of Post-Graduate Clinical Demonstrations and Instruction will be held at the General, Queen's, and Special Hospitals, Birmingham, commencing on Monday, September 9th, and terminating on Saturday, September 21st, 1929 (9.30 a.m. to 5 p.m. daily), provided that sufficient entries are received not later than July 1st. The Course will be arranged to meet the requirements of General Practitioners. Fee for the Course £3 3s.

Further particulars may be obtained on application to the Dean of the Faculty of Medicine, The University, Edmund Street, Birmingham.

Administrative County of East SUFFOLK.

RURAL DISTRICT OF HOXNE.

APPOINTMENT OF MALE ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH AND MEDICAL OFFICER OF HEALTH FOR THE RURAL DISTRICT OF HOXNE.

Applications are invited from male registered practitioners for the combined post of Assistant County Medical Officer of Health and District Medical Officer of Health.

The duties of the post include medical inspection of school children, maternity and child welfare work, clinical and tuberculosis work, and general public health work. The possession of the Diploma of Public Health is essential. The person appointed will be required to devote the whole of his time to the services of the two Councils.

The total salary will be £625 per annum; motor car allowance will be paid according to the County Council's scale for the use of the Officer's car.

The person appointed will be required to pass a medical examination and to contribute to the Council's Superannuation Fund. The appointment will be terminable by three months' notice on either side.

Applications must be made upon a form to be obtained, together with further particulars, from the County Medical Officer of Health, County Hall, Ipswich, to whom the completed forms should be returned not later than Friday, July 12th.

County Hall, Ipswich. CECIL OAKES, Clerk of the County Council.
June 14th, 1929.

County Borough of West BROMWICH.

SECOND ASSISTANT MEDICAL OFFICER OF HEALTH.

The Council invite applications for the above appointment.

The officer will be subject to and under the directions of the Medical Officer of Health.

The officer appointed will be required to assist chiefly in School Medical and Maternity and Child Welfare Services, and generally to work as one of the Assistants to the Medical Officer of Health.

Experience in Ante-natal work, Diseases of Children, and in the Diagnosis and Treatment of Tuberculosis will be specially considered.

Applicants must be registered medical practitioners and possess a Diploma in Public Health or similar qualification.

The person appointed will be required to devote the whole of his time to the duties assigned to him by the Council, to live in the Borough, and not to engage in private practice.

Salary £600 per annum. No bonus. Appointment terminable on the part of the officer by one month's notice.

Applications (on forms supplied by the undersigned), stating age, qualifications, and experience, accompanied by copies of not more than three recent testimonials, should be forwarded by not later than July 6th, and should be endorsed "Assistant Medical Officer of Health."

Town Hall, West Bromwich. ALFRED WICKHAM, Town Clerk.
June 19th, 1929.

County Borough of Gateshead.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER AT MENTAL HOSPITAL.

Applications are invited from registered medical practitioners (male) for the post of Assistant Medical Officer at the Gateshead Mental Hospital, Stannington, Northumberland.

Applicants must not be over 35 years of age and should have held a resident appointment in a General Hospital.

The salary will be at the rate of £400 per annum, rising by increments of £25 to £500 per annum, with board, lodging, and laundry (valued at £150 per annum), and will be subject to deductions according to the Asylum Officers Superannuation Act of 1909. The appointment to be terminable on three months' notice from either party.

The successful candidate will be expected to obtain the Diploma in Psychological Medicine.

Preference will be given to candidates having experience in Ear, Nose, and Throat Diseases.

Applications, accompanied by copies of three recent testimonials, to be sent to the Medical Superintendent, Gateshead Mental Hospital, Stannington, Northumberland, not later than Friday, July 12th.

Personal canvassing will be a disqualification.

By Order,
W. SWINBURNE,
[illegible] Town Clerk.
[illegible] Clerk to the Visiting Committee.
[illegible], 1922.

County Council of Durham.

MATERNITY AND CHILD WELFARE.

ASSISTANT WELFARE MEDICAL OFFICER.

The County Health Committee invite applications for the appointment of an Assistant Welfare Medical Officer (woman) at a commencing salary of £600, rising by annual increments of £25 to £650 per annum. Travelling expenses will be paid by the County Council according to scale.

Applicants must be registered medical practitioners of not less than three years' standing, and not exceeding 45 years of age, with special experience in Maternity and Child Welfare work and its organization. The person appointed will be required to reside in Durham City or other approved centre, and to devote her whole time to the duties of the office, and must be prepared, if called upon, to act as Locum Tenens to other members of the Medical Staff of the County Medical Officer, and will be debarred from engaging in private practice. The D.P.H. or its equivalent will be considered an additional qualification.

The appointment will be terminable by three months' notice on either side.

A condition of the appointment is that on marriage the officer will be required to vacate her post.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to a medical examination, as required by the Council for the purposes of the Act, and the statutory contributions to the Superannuation Fund under that Act will be deducted from the salary.

Applications, marked "Assistant Welfare Medical Officer," together with copies of not more than three recent testimonials, must be sent to the County Medical Officer, Shire Hall, Durham, not later than the 27th instant.

Shire Hall, Durham. HAROLD JEVONS, Clerk of the County Council.

June 14th, 1929.

Walsall and West Bromwich UNIONS JOINT COMMITTEE.

GREAT BARR HALL and GREAT BARR PARK COLONY.

APPOINTMENT OF ASSISTANT RESIDENT MEDICAL OFFICER.

The Committee invite applications from fully qualified resident medical practitioners for the appointment of Assistant Resident Medical Officer for the Institutions at Great Barr Park. The Institutions consist of Children's Homes for approximately 100 children under the age of five years and a Mental Defective Colony. The number of patients at present at the Colony is approximately 300. This number will be increased to 600.

The Assistant Resident Medical Officer will be responsible to the Resident Medical Officer, who in turn will be responsible to the Visiting Consulting Mental Officer so far as the Children's Homes are concerned, and a Visiting Consulting Medical Officer attends when required at the Colony.

Salary £200 per annum, together with furnished quarters, rations, laundry, and attendance.

The officer appointed must devote the whole of his time to the duties, and the appointment will be terminable by three months' notice on either side.

Canvassing, either directly or indirectly, is strictly prohibited and will be deemed a disqualification.

Applications, stating age, experience, and qualifications, accompanied by copies of not more than three recent testimonials, must reach me not later than Saturday, June 29th.

By Order,
A. H. WARD, Clerk.

22, Lombard St., West Bromwich.
June 12th, 1929.

County Borough of Ipswich.

The Council invites applications for the post of ASSISTANT MEDICAL OFFICER at the SANATORIUM (120 beds). Candidates must be unmarried, not exceed 30 years of age, registered, and qualified to practise Medicine and Surgery in England. Preference will be given to a candidate who has held the post of H.P. at a recognized Hospital for Diseases of the Chest. The appointment is for a period of six months in the first instance, but may be extended at the end of that time. Commencing salary will be at the rate of £250 per annum, with board, residence, and laundry. Further particulars can be obtained from, and letters of application, stating age, qualifications, experience (if any), and accompanied with copies of two recent testimonials, should be sent to W. F. SUTCLIFFE, Medical Superintendent, Ipswich Sanatorium, Suffolk, on or before June 29th.

Birmingham Union.

DUDLEY ROAD HOSPITAL.

JUNIOR ASSISTANT MEDICAL OFFICERS (Male).

Applications are invited from fully qualified medical practitioners for appointments as Junior Assistant Medical Officers (male) at the Dudley Road Hospital, Birmingham.

The Hospital has 926 beds, divided into Medical, Surgical, Children's, Infectious, Maternity, Gynæcological and Obstetrical Sections. There are completely equipped Pathological and Biochemical Laboratories, X-ray, Electrical, Massage, Sunlight, and Dental Departments. Approximately 5,000 operations are performed annually.

The appointments will be for a period of six months in the first instance, but may be extended at the end of that period.

The persons appointed will be required to assist at operations, to administer anæsthetics, and undertake casualty work and such other duties as may be assigned to them by the Chief Medical Officer, and, should occasion arise, to assist at any of the other Institutions under the control of the Guardians.

The salaries attached to the appointments will be at the rate of £200 per annum, together with full residential emoluments (rations, apartments, laundry, and attendance).

A deduction of 2 per cent. will be made from the salaries and value of emoluments under the provisions of the Poor Law Officers Superannuation Act, 1896, and for this purpose the emoluments are valued at £200 per annum. Fourteen days' leave will be granted to the successful candidates during their terms of office.

Further particulars of the appointments may be obtained from the Chief Medical Officer, F. W. ELLIS, Esq., M.D., F.R.C.S., Dudley Road Hospital.

Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, should be forwarded so as to reach me not later than Thursday, July 4th.

Union Offices, Birmingham. C. P. BEECH, Clerk to the Guardians.

June 17th, 1929.

Administrative County of Essex.

APPOINTMENT OF MALE ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

The County Council of the Administrative County of Essex invite applications for the above post from registered medical practitioners specially qualified in the treatment of Tuberculosis, School Medical Inspection, and Maternity and Child Welfare, holding a Diploma of Public Health, and not over 45 years of age.

Preference will be given to candidates who have had at least three years' experience in Public Health work subsequent to their medical qualification. The salary attached to the appointment will be £600 per annum and travelling expenses. The person appointed will be required to devote his whole time to the service of the Council, and to perform such duties and to furnish such advice and assistance appertaining to his office as may be required, and to reside in such district of the County as the Council may decide. The appointment will be subject to three months' notice on either side.

Applications on the prescribed form, obtainable from the undersigned, and accompanied by copies of not more than three testimonials, which will not be returned, should be addressed to me and delivered at the Shire Hall, Chelmsford, not later than 10 a.m. on Monday, July 1st.

Shire Hall, Chelmsford. JOHN H. GOOLD, Clerk of the County Council.

June 11th, 1929.

City of Leicester.

MATERNITY AND CHILD WELFARE MEDICAL OFFICER.

The Health Committee of the Leicester Corporation require the services (whole-time) of a Maternity and Child Welfare Medical Officer and Organizer of Infant Welfare Centres, age not to exceed 40 years. The duties will be those usually appertaining to such a post, including the supervision of Health Visitors, Inspection of Midwives and Nursing Homes, conducting Ante-natal and certain Infant Clinics. Ability to address meetings of mothers will be an additional qualification. Commencing salary £600 per annum. The person appointed will be required to contribute to the Corporation Superannuation Fund.

Applications, stating qualifications, age, experience, whether married or single, and accompanied by three recent copies of testimonials, to be sent to the undersigned not later than Wednesday, June 26th.

Health Dept., Leicester. C. KILLICK MILLARD, Medical Officer of Health.

June, 1929.

Surrey County Council.

ASSISTANT MEDICAL OFFICER.

Applications are invited for the appointment of a Male Assistant Medical Officer. Candidates must possess a qualification in Public Health, and have had experience in the medical inspection of school children, maternity and child welfare, and the treatment of tuberculosis and venereal diseases. The officer appointed will be required to undertake such other public health duties as may be allocated to him. He will be on the staff of the County Medical Officer of Health, must reside in the County, and devote his whole time to the work. Salary £600 per annum, rising by annual increments of £20 to £700 per annum. Travelling expenses in accordance with the Council's scale will be allowed.

The appointment will be subject to the approval of the Ministry of Health, to the provisions of the Local Government and Other Officers Superannuation Act, 1923, and to the Standing Orders of the Council, which provide, inter alia, that appointments may be determined at any time by three months' notice.

Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, should be made on the prescribed form and sent to the County Medical Officer of Health, 5, Grove Crescent, Kingston-upon-Thames, from whom copies of the application form may be obtained, and to whom any enquiries relating to the appointment should be addressed.

Last day for receipt of applications, Saturday, June 29th. Canvassing, directly or indirectly, will disqualify.

County Hall, Kingston-upon-Thames. DUDLEY AUKLAND, Clerk of the County Council.

June 8th, 1929.

Administrative County of London

The London County Council invites applications for three appointments, as from October 1st, 1929, as PRINCIPAL MEDICAL OFFICER in its Public Health Department. The duties attaching to the positions will be mainly concerned with general public health work; school medical service; infectious diseases; tuberculosis; children's diseases; administration of hospitals, especially Poor Law Hospitals; and district medical work. Each of the officers appointed will be placed in charge of a division of the Department dealing with branches of the work and will be responsible to the County Medical Officer of Health.

The commencing salary in each case will be £2,000 a year, rising by £100 yearly to £2,500 a year. Candidates must be not more than 55 years of age on October 1st, 1929.

Forms of application, containing full details, may be obtained from the Clerk of the Council, The County Hall, Westminster Bridge, S.E.1. A stamped addressed envelope should be enclosed and forms must be returned by July 3rd, 1929.

Canvassing disqualifies.

MONTAGU H. COX, Clerk of the Council.

Administrative County of London

The London County Council invites applications for appointment, as from October 1st, 1929, as MATRON-IN-CHIEF in its Public Health Department. Candidates must be fully trained nurses and must have administrative experience of hospital nursing. The principal duties attaching to the position will consist in organising and supervising the nursing staff of the hospitals which will be transferred to the Council under the *Local Government Act*, 1929. The total commencing salary will be £750 a year, rising by £50 a year to £1,000 a year. Applicants must be not more than 55 years of age on October 1st, 1929.

Forms of application containing full details may be obtained from the Clerk of the Council, The County Hall, Westminster Bridge, S.E.1. A stamped addressed foolscap envelope should be enclosed. Forms must be returned not later than July 3rd, 1929. Canvassing disqualifies.

MONTAGU H. COX, Clerk of the Council.

Cumberland Education COMMITTEE.

APPOINTMENT OF ASSISTANT DENTAL OFFICER.

The Committee invite applications for the above post (male or female). Applicants must be fully qualified Dentists. Salary £450, rising to £500 by two annual instalments (subject to deductions under the provisions of the L.G.O.S. Act), with allowance for travelling and subsistence while on duty.

Particulars and forms of application on receipt of stamped addressed foolscap envelope addressed to "The School Medical Officer, County Offices, Carlisle."

C. W. ALLAN HODGSON, Clerk to the Committee.

June 3rd, 1929.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after two years' Indian service for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

PAY.

The monthly rates of pay for European officers in the Service who have a "non-Asiatic" domicile are as follows:

Rank.	Service in Rank.	Basic Pay.	Overseas Pay.	Year of Total Service.
1	2	3	4	5
		Rs.	Rs.	
Lieut.		500	150	1st
			150	2nd
			150	3rd
Capt.	(i) During first 3 years' service as Captain	650	150	4th
			£15	5th
			£15	6th
	(ii) With more than 3 and less than 6 yrs.' service as Captain	750	£25	7th
			£25	8th
			£25	9th
	(iii) With more than 6 years' service as Captain	850	£25	10th
			£25	11th
			£30	12th
Major	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years' service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years' total service	1500	£30	12th and over
	(ii) During 24th and 25th years' service	1500		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

WAR SERVICE CONCESSIONS.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion, retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

OUTFIT ALLOWANCE.

Officers on appointment will receive an outfit allowance of £50.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

PENSIONS.

The rates of pension are as follows:

	Per annum.
	£
After 17 years' service for pension	400
,, 18 ,, ,, ,, ...	430
,, 19 ,, ,, ,, ...	460
,, 20 ,, ,, ,, ...	500
,, 21 ,, ,, ,, ...	540
,, 22 ,, ,, ,, ...	580
,, 23 ,, ,, ,, ...	620
,, 24 ,, ,, ,, ...	660
,, 25 ,, ,, ,, ...	700
,, 26 ,, ,, ,, ...	750
,, 27 ,, ,, ,, ...	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all, the revision being undertaken triennially. With effect from July 1st, 1927, a reduction of 4½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with a free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. Applications should be submitted as soon as possible. The Selection Committee will meet early in July to make nominations, and the selected candidates will be required to attend a course of instruction commencing on the 6th August, 1929.

Manchester Union.

ASSISTANT MEDICAL OFFICER.

The Guardians of the Manchester Union invite applications from medical practitioners who have had previous resident Hospital experience for the following appointments:

JUNIOR RESIDENT ASSISTANT MEDICAL OFFICER (male) at the WITHINGTON HOSPITALS (1,200 beds) and INSTITUTION (1,150 beds), Nell Lane, West Didsbury, Manchester;

JUNIOR RESIDENT ASSISTANT MEDICAL OFFICER (male) at the CRUMPSALL INFIRMARY (1,300 beds) and INSTITUTION (1,600 beds, including 600 beds for Mental Patients), Crescent Road, Crumpsall, Manchester.

The Hospitals and the Infirmary are recognized Training Schools for Nurses and are equipped with all modern Hospital requirements.

The appointments are entirely separate and the salary for each will be at the rate of £275 per annum, with rations and furnished apartments, subject to the usual deductions under the Poor Law Officers' Superannuation Act, 1896.

The successful candidates will be required to commence duty on September 1st.

Applications, endorsed "Medical Appointment," stating at which establishment—Withington or Crumpsall—an appointment is desired, accompanied by not less than three testimonials, must reach me not later than Wednesday, July 3rd proximo.

Candidates desiring to apply for more than one appointment must send in a separate application in respect of each Hospital.

By Order,
F. W. GREENHALGH,
Clerk to the Guardians.

Union Offices, All Saints, Manchester.
June 13th, 1929.

County Borough of Barnsley.

MEDICAL OFFICER OF HEALTH.

The Barnsley County Borough Council invite applications for the positions of Medical Officer of Health, School Medical Officer, Chief Tuberculosis Officer, Infant Welfare Superintendent, and Chief Officer of the Corporation's Venereal Disease Clinic. The total commencing salary for the whole of the positions held will be £900 per annum. Candidates must be duly qualified medical practitioners, possessing a recognized Diploma in Public Health and the requisite qualifications required by Acts of Parliament and the Regulations of the Ministry of Health, in respect of each of the above positions. The gentleman appointed will be required to devote the whole of his time to his duties and will not be allowed to engage in private practice. Canvassing, either directly or indirectly, will be regarded as a disqualification, but the selected candidates will be permitted to send 20 copies of their application and testimonials for use of members of the Selection Committee. Applications, accompanied by copies of not more than three recent testimonials, must be sent to the undersigned, endorsed "Medical Officer of Health," not later than Monday, July 8th.

A. D. MASON,
Town Clerk.

The Town Clerk's Office, Barnsley.
June 12th, 1929.

The Royal Albert Hospital and EYE INFIRMARY, DEVONPORT.

A vacancy for an ASSISTANT HOUSE SURGEON (unmarried) exists. Applicants must be fully qualified, registered, and the appointment will be for six months. Salary £50 per annum, with apartments, board, and laundry free.

Applications, stating age, accompanied by copies of not more than three testimonials, should reach the undersigned not later than Friday, June 28th.

By Order of the Committee,
FRANK ROWE,
Secretary.

June 3rd, 1929.

The County Hospital, York.

Applications are invited for the post of HOUSE SURGEON. Salary £150, with board-residence, etc. Duties begin August 1st. Applications, stating qualifications and experience, should be addressed to the undersigned, to arrive not later than June 30th.

J. BIRBECK, Manager.

The County Hospital, York.

Applications are invited for the post of ASSISTANT ANÆSTHETIST, who will also be required to assist the House Surgeon. Salary £150, with board-residence. Duties begin about July 14th. Applications, stating qualifications and experience, should be addressed to the undersigned, to arrive not later than June 30th.

J. BIRBECK, Manager.

Metropolitan Asylums Board.

TUBERCULOSIS SERVICE.

APPOINTMENT OF CONSULTING LARYNGOLOGIST.

The Board desire to obtain the services of a Consulting Laryngologist for their Institutions for the treatment of Pulmonary Tuberculosis. Remuneration at the rate of 200 guineas per annum, but it is possible that the work may be divided between two Consultants at a remuneration at the rate of 100 guineas each. Visits to be made once a month to four Institutions, and once every two months to two Institutions. Three of the Institutions are situated in the outer suburbs of London, and the other three are near Godalming, Wokingham, and Brentwood respectively.

Form of application, giving full particulars, may be obtained by forwarding stamped addressed foolscap envelope to the Clerk, Metropolitan Asylums Board, Victoria Embankment, London, E.C.4, to whom completed applications must be returned not later than 10 a.m. on Thursday, July 4th.

ALLAN POWELL, Clerk to the Board.

Metropolitan Asylums Board.

The Board invite applications for appointment as JUNIOR ASSISTANT MEDICAL OFFICER in their Mental Hospitals Service. Salary £500 per annum, rising after three years' approved service to £560. Candidates must be under 40 years of age, and should hold, or should be prepared to undertake to read for, the Diploma in Psychological Medicine. The appointment is renewable annually, and is made in the first instance to March 31st, 1930.

If the candidate appointed is required to reside in the Institution to which he is allocated, a charge fixed by the Board's Finance Committee will be made for such residential allowances as may be authorised.

Forms of application may be obtained by sending stamped addressed foolscap envelope to the Clerk to the Board, Metropolitan Asylums Board, Victoria Embankment, E.C.4, to whom they should be returned not later than July 4th.

ALLAN POWELL, Clerk to the Board.

Swansea County Borough.

ASSISTANT MEDICAL OFFICER.

The Swansea Borough Council invite the applications from duly qualified medical practitioners for the post of Assistant Medical Officer to assist with the medical services of the Corporation and to commence duties in September.

Resident Hospital, school medical service, maternity and child welfare experience, together with special experience in the treatment of venereal diseases of women and children, are desirable qualifications.

Salary £600 per annum, subject to B.M.A. scale conditions. The appointment is subject to the approval of the Ministry of Health and Board of Education.

Applications, on special forms, which can be obtained from Dr. THOMAS EVANS, Medical Officer of Health, Public Health Office, Swansea, to be sent in not later than July 4th.

Evelina Hospital for Children, Southwark, S.E.1.

The Committee of Management requires a HOUSE PHYSICIAN (male) for seven months, from July 12th (during first four months duty in Casualty and Out-patient Department) Salary £120 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, to the undersigned at the Hospital, before June 24th. Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates must attend Committee of Management. Date of meeting will be notified by undersigned, from whom rules and other particulars relating to the post must be obtained.

By Order of the Committee of Management,
H. C. S. SMITH,
Secretary-Supt.

June 11th, 1929.

David Lewis Northern Hospital, LIVERPOOL.

SURGICAL TUTOR, SURGICAL ASSISTANT, and ASSISTANT PATHOLOGIST.

Applications are invited for the post of Surgical Tutor. The Tutor will also act as Surgical Assistant and Pathologist to No. 2 Surgical Service. Salary £145 per annum. Duties to commence on October 1st next, and successful candidate will be appointed for one year and will then be eligible for re-appointment for a further year. Applications and testimonials to be sent to Honorary Secretary, Medical Board, on or before July 1st.

Administrative County of East SUFFOLK.

APPOINTMENT OF MALE ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from male registered practitioners for the above appointment.

The duties of the post include the Medical Inspection of School Children and Maternity and Child Welfare work. Experience in Eye Refraction is desirable, and the possession of the Diploma of Public Health will be a recommendation. The person appointed will be required to devote the whole of his time to the duties of the office.

The salary attaching to the post will be £600 per annum. A deduction of 5 per cent. for superannuation will be made, and motor car allowance will be paid on the Council's scale for use of the officer's car.

The person appointed will be required to pass a medical examination, and the appointment will be subject to three months' notice on either side.

Applications are to be made upon a form which can be obtained from the County Medical Officer of Health, County Hall, Ipswich, to whom the completed forms should be returned not later than Friday, July 12th.

CECIL OAKES,
Clerk of the County Council.

County Hall, Ipswich.
June 18th, 1929.

Derby Union.

SECOND RESIDENT MEDICAL OFFICER.

Applications are invited for the appointment of Second Medical Officer (male) of the Guardians' Institution and Infirmary, which is a Major Training School for Nurses (a new Hospital of 350 beds is nearing completion). Salary at the rate of £250 per annum, with residential allowances.

Two months' notice of resignation to be given to date from the Board Meeting next after the receipt of the resignation.

The appointment will be subject to the sanction of the Ministry of Health, and to the provisions of the Poor Law Officers Superannuation Act, 1896.

Applications, with particulars of age, pre- diplomas and 3 copies of three ... sent in on or before Thursday, July 4th.

RALPH GRANTHAM,
Clerk to the Guardians.

Poor Law Offices, Derby.

Preston Union.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER.

Salary at the rate of £104 per annum, with board, lodging, etc.

Candidates must be duly qualified and registered under the Medical Acts.

The appointment is for six months commencing on September 1st.

Duties include work in any wards of the Hospital, in the Institution as required, and also in the Sharoe Green Maternity Home adjoining.

Applications should be made by letter, accompanied by copies of three testimonials of recent date, and should reach me on or before 10 o'clock a.m. on Thursday, July 11th.

THOMAS H. BENTHAM,
Clerk to the Guardians

Union Offices, Lancaster Road, Preston.
June 18th, 1929.

Royal Devon & Exeter Hospital, EXETER. (225 Beds.)

ASSISTANT HOUSE SURGEON (Male).

Applications are invited for the post of Assistant House Surgeon at this Hospital, vacant on July 1st next. The appointment is for six months, but candidates are eligible for re-election.

The duties include assisting in the Ear, Nose, Throat, Radiological, and Casualty Departments, and the giving of anæsthetics.

Salary at the rate of £100 per annum, with board, apartments, and washing.

Applications, giving particulars as to age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned as soon as possible.

By Order of the Committee,
S. S. COLE,
Secretary & Manager.

June 4th, 1929.

East Sussex County Mental HOSPITAL, HELLINGLY, SUSSEX.

LOCUM TENENS MEDICAL OFFICER (Resident) required from July 17th to August 8th, and September 1st to November 23rd; seven guineas per week and travelling expenses one way. Apply, Resident Physician and Medical Superintendent.

Royal Salop Infirmary,
SHREWSBURY. (150 Beds.)

APPOINTMENT OF RESIDENT SURGICAL OFFICER.

Applications are invited from fully qualified men for the appointment of Resident Surgical Officer, vacant about the middle of August.

The appointment is for a period of 12 months, at a salary of £200 per annum, with board, residence, etc.

The Resident Surgical Officer is Senior Resident Officer of the Hospital. House staff comprises House Physician and House Surgeon.

Applications, stating age, qualifications, experience, nationality, and accompanied by copies of three recent testimonials, to be sent to the undersigned.

J. W. NOBLE,
June 14th, 1929. Secretary-Supt.

Princess Louise Kensington
HOSPITAL FOR CHILDREN,
North Kensington. (42 Beds.)

HOUSE SURGEON (woman) required for six months from August 1st. During the first three months the House Physician will be Senior Resident, after which a new House Physician is appointed and the House Surgeon becomes Senior.

Salary at the rate of £75 per annum for the first three months and at the rate of £100 for last three months, with board, residence, and laundry.

Applications, together with copies of three testimonials, must be submitted on a form to be obtained from the Secretary, Princess Louise Kensington Hospital for Children, St. Quintin Avenue, North Kensington, W.10. Applications must reach the Secretary not later than first post on Monday, July 15th.

Miller General Hospital,
Greenwich Road, S.E.10.

PATHOLOGIST required to carry out the work of the Pathological Department at the Hospital. Private pathological practice is allowed and the Hospital's laboratory may be used for this purpose. The Pathologist must not accept any other appointment without the consent of the Board of Management. Salary commencing at £600 per annum. The appointment is subject to three months' notice on either side. Duties to commence if possible on July 15th next. Candidates will be expected to call upon the members of the Honorary Medical and Surgical staff. Applications, giving qualifications, with copies of not less than three recent testimonials, to be sent to the Secretary of the Hospital on or before July 3rd.

June 12th, 1929.

East Suffolk and Ipswich
HOSPITAL, IPSWICH.
(260 Beds. 7 Residents.)

Wanted on July 1st, a CASUALTY OFFICER. Commencing salary £150 per annum, rising after one year to £200, with board, residence, and laundry. Previous experience essential. Also a HOUSE SURGEON. Salary at the rate of £120 per annum. Six months' contract, with board, residence, and laundry. (British, male.)

Applications, stating age, qualifications, and experience, and accompanied by copies of three recent testimonials, to be sent to the undersigned forthwith.

The Hospital, ARTHUR GRIFFITHS,
Ipswich Secretary.
June 15th, 1929.

Bootle Borough Hospital
(General—100 Beds)
DERBY ROAD, BOOTLE.

Applications are invited from medical men and women for the posts of SENIOR MEDICAL OFFICER and Two JUNIOR MEDICAL OFFICERS for the period ending Sept. 30th.

Salaries at the rate of £150 per annum Senior Officer, £125 per annum each Junior Officer, with board, residence, and laundry. Duties to commence as soon as possible. Applications, stating age and qualifications, with copies of testimonials, to be sent to the undersigned immediately.

J. A. BEARDSALL, Secretary-Supt.

Liverpool Heart Hospital.
MAURICE STERN RESEARCH FELLOWSHIP.

Applications are invited for the position of Research Fellow (part-time) (£150 per annum). Applications should reach the Secretary (Miss LEWIS, 14, Cook Street) not later than July 1st.

St. Bartholomew's Hospital,
ROCHESTER, KENT. (126 Beds.)
Rochester, Chatham, Gillingham, and District.

The House and Finance Committee invite applications for the post of THIRD RESIDENT MEDICAL OFFICER to act as Casualty House Surgeon, and who will assist the Orthopædic Surgeon, which will become vacant on July 12th.

Candidates must be unmarried, qualified, and resident medical men. The appointment is for six months. Salary at the rate of £175 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, experience, etc., accompanied by copies of three recent testimonials, must be received by the Secretary not later than Thursday, June 27th.

C. SPEYER,
June 14th, 1929. Secretary.

St. Bartholomew's Hospital.
OFFICE OF ASSISTANT PHYSICIAN and ASSISTANT DIRECTOR of the MEDICAL PROFESSORIAL CLINIC.

Notice is hereby given that a Meeting of the Election Committee will be held on Tuesday, July 23rd, 1929, at 4 o'clock in the afternoon, to elect an Assistant Physician to this Hospital and Assistant Director of the Medical Professorial Clinic.

Candidates, who must be Fellows or Members of the Royal College of Physicians of London, are required to lodge 50 copies of their applications and testimonials with the undersigned on or before Monday, July 8th.

THOMAS HAYES,
June 22nd, 1929 Clerk to the Governors.

The Guest Hospital, Dudley.
APPOINTMENT OF HONORARY ORTHOPÆDIC SURGEON.

Applications are invited for the post of Honorary Orthopædic Surgeon to the above Hospital. Candidates must be Fellows of the Royal College of Surgeons and should have had special experience in Orthopædic work.

Applications, stating age, details of experience and posts held, together with certificate of registration and copies of testimonials, to be sent to the Secretary, Guest Hospital, Dudley, not later than July 12th.

The Guest Hospital, H. RAYMOND HURST,
Dudley. Secretary.
June 15th, 1929.

The Guest Hospital, Dudley.
(General Hospital. 104 Beds.)

Applications are invited for the posts of HOUSE SURGEON and ASSISTANT HOUSE SURGEON. Duties include Medical, Surgical, Eye, Ear, Nose, and Throat, and Venereal Diseases work. Salary £175 and £150 per annum respectively, with furnished apartments, board, and laundry. Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, to be sent to the undersigned.

The Guest Hospital, H. RAYMOND HURST,
Dudley. Secretary.
June 15th, 1929.

The Guest Hospital, Dudley.

Notice is hereby given that a Meeting of the Committee of Election will be held in the Board Room, Guest Hospital, Dudley, on July 19th, at 12 o'clock noon, for the purpose of electing an HONORARY ORTHOPÆDIC SURGEON to the Hospital.

By Order of the Committee,
The Guest Hospital, H. RAYMOND HURST,
Dudley Secretary.
June 15th, 1929.

The Royal Infirmary, Sunderland
(290 Beds.)

Wanted, beginning of August, HOUSE SURGEON (male). Salary £140 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and accompanied by copies of testimonials, to be sent to the undersigned by June 28th.

S. C. FRYERS,
House Governor & Secretary.

Royal Cornwall Infirmary,
TRURO. (70 Beds.)

HOUSE SURGEON required, with experience of X-ray work and Anæsthetics. Salary £170 per annum, rooms, board, and washing. Apply, with copies of three recent testimonials, to the Secretary, of whom further particulars may be obtained.

The Staffordshire General
INFIRMARY, STAFFORD.

Applications are invited from gentlemen for the positions of HOUSE SURGEON and HOUSE PHYSICIAN, which will become vacant on July 16th next. Candidates must be duly qualified and registered under the Medical Acts.

Salary at the rate of £200 and £150 respectively, with board, lodgings, etc.

The appointments to be held for at least six months.

Applications, stating age, accompanied by copies of three recent testimonials, should reach the undersigned not later than the first post on Thursday, the 27th instant.

Stafford. A. E. COLLINS,
June 15th, 1929. Secretary.

The Gloucestershire Royal
INFIRMARY AND EYE INSTITUTION,
GLOUCESTER. (145 Beds.)

Applications are invited for a HOUSE PHYSICIAN (male). Salary £150 per annum, with board, residence, and laundry.

The appointment is for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be received by the undersigned not later than first post on Wednesday, June 26th. The appointed candidate will be required to enter upon his duties on Monday, July 1st.

P. J. SYMONS,
June 14th, 1929. Secretary.

Sheffield City Hospitals.
INFECTIOUS DISEASES. (460 Beds.)

RESIDENT MEDICAL OFFICER.

Applications are invited from duly qualified registered medical practitioners, with bacteriological experience, for the post of Resident Medical Officer.

Salary, with three years' experience in professional practice, £350, with board, lodging, and washing.

Applications, stating age, qualifications, and previous experience, with copies of recent testimonials, to be sent to the Medical Superintendent, Lodge Moor Hospital, Sheffield, not later than June 29th.

Wrexham and East Denbighshire War Memorial Hospital.
(105 Beds.)

Two RESIDENT HOUSE SURGEONS (male) required at above Hospital, to commence on August 1st. Appointments are for a period of not less than six months. Salaries £150 per annum, with board and laundry.

Applications, stating age, nationality, experience, and qualifications, accompanied by copies of three recent testimonials, to be sent to the undersigned not later than Wednesday, July 3rd.

LESLIE SPENCER,
June 15th, 1929. Secretary.

Nottingham General Dispensary.
(BRANCH.)

Wanted, RESIDENT LADY SURGEON. Must have Medical and Surgical qualifications. Salary £250, with £25 increase per year up to £300. Apartments (not board), attendance, lights, and fuel. This Institution is a non-provident one. No beds. No midwifery. Preference given to anyone experienced in Heliotherapy.

Applications, stating age and accompanied by recent testimonial, to be sent by July 3rd.

5, Elden Chambers, R. J. WILLATT,
Nottingham. Secretary.

Stockport Infirmary.

Wanted immediately, an ASSISTANT AURAL SURGEON FOR EAR, NOSE, AND THROAT DEPARTMENT.

Particulars of the duties can be obtained from the undersigned, and application, with copies of three recent testimonials, should be sent to the Secretary-Superintendent at the earliest possible date.

EDWIN J. PEARCE, Secretary-Supt.

Stockport Infirmary.

Required, RADIOGRAPHER for three weeks' Locum duty in the month of September.

Apply, stating salary and experience, to the Secretary-Superintendent, General Infirmary, Stockport.

Bristol City Mental Hospital.

THIRD ASSISTANT MEDICAL OFFICER.

Applications are invited from unmarried gentlemen, duly qualified and registered, and not over 35 years of age, for the above post. Salary commencing at £350, rising by two annual increments of £25 to £400 per annum, with board, apartments, laundry, and attendance. Fully equipped laboratory, with trained Assistant for research and clinical pathology.

The appointment is subject to the Asylum Officers Superannuation Act, 1909. Application forms, which are obtainable from the Medical Superintendent, should reach him at the Mental Hospital, Fishponds, Bristol, completed with copies of three testimonials, by Wednesday, July 10th.

The Council House, Bristol. June 22nd, 1929.

JOSIAH GREEN, Clerk to the Visiting Committee.

Swansea Hospital.

(316 Beds.)

Applications are invited for the following resident appointments:

HOUSE PHYSICIAN (male, single). Salary £150—£200, according to experience.

HOUSE SURGEON (male, single). Salary £150.

Duties of House Physician to commence immediately. House Surgeon August 1st.

Applications, stating age, qualifications, experience, and nationality, together with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS, Secretary.

Queen Mary's Hospital for the

EAST END, Stratford, E.15.
Telephone: Maryland 2616.

Applications are invited from fully qualified and registered medical men for the post of CASUALTY OFFICER. Salary £150 p.a.

The Hospital contains 213 beds, including 46 Maternity, and other special departments.

Candidates, who should have previously held Hospital appointments, must send applications, accompanied by testimonials, to the undersigned not later than Saturday, June 29th.

RAPHAEL JACKSON (Major), Secretary.

The Royal Hospital,

WOLVERHAMPTON
(Incorporated under Charter).

The Board of Management are about to appoint TWO SURGEONS to the Ear, Throat, and Nose Department.

The Surgeons appointed must agree to reside in Wolverhampton and will be debarred from General Practice. The Department is a large one and is rapidly growing.

Applications, stating qualifications and experience, should be forwarded to the undersigned.

Wolverhampton. June 16th, 1929.

W. H. HARPER, House Gov. & Secretary.

West London Hospital,

Hammersmith, W.6.

Applications are invited for the post of DIRECTOR to the Venereal Diseases Department. Salary £700 per annum. Candidates must be registered medical practitioners who are exclusively engaged in the practice of the treatment of Venereal Diseases. For further particulars apply to the undersigned.

H. A. MADGE, Secretary.

Golden Square Throat, Nose, and

EAR HOSPITAL, London, W.1.

Applications are invited for the post of HONORARY ASSISTANT SURGEON. Applications, stating age, qualifications, and experience, accompanied by copies of three testimonials, should reach the undersigned not later than Saturday, July 20th.

F. P. CARROLL, Secretary-Supt.

General Hospital, Gt. Yarmouth.

(72 Beds.)

Applications are invited for the post of JUNIOR HOUSE SURGEON. Salary £100 per annum, with board, residence, and laundry. Candidates (male and unmarried) must be

nationality, and copies of three t immediately to the undersigned.

T. H. G. GARTLAND, Secretary.

Queen Mary's Hospital for the

EAST END, E.15.

Applications are invited for the post of HONORARY MEDICAL OFFICER in charge of the Electro-therapeutic Department at the above Hospital.

Applicants must be registered medical practitioners engaged solely in the practice of Electro-therapeutics; a knowledge of Radium Therapy is essential.

Applications, with copies of not more than three recent testimonials, should be forwarded to the undersigned on or before July 3rd next.

Further particulars may be obtained from—

RAPHAEL JACKSON (Major), Secretary.

Queen Mary's Hospital for the

EAST END, E.15.

Applications are invited for the post of ANÆSTHETIST to the above Hospital.

Applications, accompanied by copies of testimonials, from male candidates only, should be forwarded to the undersigned not later than July 3rd.

The appointment carries with it an honorarium of 50 guineas per annum, and attendance will be required on Thursday mornings.

RAPHAEL JACKSON (Major), Secretary.

Queen Mary's Hospital for the

EAST END, E.15.

Applications are invited for the post of HONORARY SURGEON in charge of the Orthopædic Department at the above Hospital.

Candidates must be Fellows of a Royal College of Surgeons.

Applications, with copies of not more than three recent testimonials, should be forwarded to the undersigned on or before July 3rd next.

Further particulars may be obtained from—

RAPHAEL JACKSON (Major), Secretary.

Queen Mary's Hospital for the

EAST END, E.15.

Applications are invited for the post of HONORARY PHYSICIAN in charge of the Skin Department at the above Hospital.

Applicants must be Graduates of a British University, or Fellows or Members of a Royal College of Physicians.

Applications, with copies of not more than three recent testimonials, should be forwarded to the undersigned on or before July 3rd next.

Further particulars may be obtained from—

RAPHAEL JACKSON (Major), Secretary.

Hereford County and City

MENTAL HOSPITAL.

Wanted, a SECOND ASSISTANT MEDICAL OFFICER (male, unmarried), not exceeding 40 years of age, doubly qualified, and registered under the Medical Act. Salary £350 per annum, with board, furnished apartments, laundry, etc.

The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Applications, with copies of not more than three recent testimonials, to be sent to the Medical Superintendent, County and City Mental Hospital, Burghill, Hereford.

Farringdon General Dispensary,

Holborn Circus, E.C.4.

Applications are invited for the Honorary appointment of SURGEON in charge of the Dental Department. Applicants must be fully qualified and will be required to attend on Friday mornings.

Applications, with copies of two recent testimonials, to be sent to the Farringdon General Dispensary, 17, Bartlett's Buildings, E.C.4, not later than June 28th.

B. A. COCKLE, Hon. Secretary.

Applications are invited for the position of GENERAL SECRETARY (male) to the WORCESTER GENERAL INFIRMARY, stating age, whether married or single, and giving details of previous experience in Hospital administration and finance, and salary required, together with copies of testimonials (not exceeding four), and must be sent to the Chairman of the Committee, Worcester General Infirmary, endorsed "Application for Secretary," not later than July 5th.

E. J. HOLLAND, Secretary.

Central London Throat, Nose,

AND EAR HOSPITAL,
Gray's Inn Road, London, W.C.1.

ASSISTANT SURGEON.

A vacancy occurs for an Assistant Surgeon, who must be a Fellow of one of the Royal Colleges of Surgeons of the United Kingdom, or a Master in Surgery of a British University.

CHIEF CLINICAL ASSISTANTS.

There are vacancies for two Chief Clinical Assistants. The appointments are honorary and tenable for one year, subject to re-election. Attendances are required at two clinics each week to assist the Surgeons in seeing patients.

RESIDENT HOUSE SURGEON (male).

There will be a vacancy for a Second Resident House Surgeon to enter on duty on August 1st next. Remuneration at the rate of £75 per annum.

Applications for the above appointments, accompanied in each case by copies of not more than three recent testimonials, should be sent to the undersigned on or before July 6th.

JOHN H. YOUNG, Secretary-Supt.

Royal Westminster Ophthalmic

HOSPITAL
(Incorporated by Royal Charter)
Broad Street, Holborn, W.C.2.

The Committee of Management are prepared to receive applications for the appointment of REFRACTION ASSISTANT to the Hospital for six months, as from August 1st. Salary at the rate of £100 per annum.

Applications, together with copies of testimonials, should be forwarded to the Secretary (from whom further particulars can be obtained) on or before June 30th.

Eye and Ear Hospital,

TUNBRIDGE WELLS.

Applications are invited for the post of HOUSE SURGEON. Some knowledge of Eye, Ear, and Throat work desirable. Salary £150 p.a., with furnished apartments, board, and laundry. Applications, stating age, experience, and qualifications, and accompanied by copies of testimonials, should be sent to the Secretary of the Medical Staff on or before July 1st.

General Lying-In Hospital,

York Road, Lambeth, S.E.1.

Applications are invited for the post of HONORARY ASSISTANT PHYSICIAN. Candidates must possess either of the following qualifications: F.R.C.P.(London), M.R.C.P.(London), or F.R.C.S.(Eng.). Applications, with three copies of testimonials, to be sent not later than July 1st to the undersigned.

LILY HEARN, Secretary.

Western Ophthalmic Hospital,

Marylebone Road, N.W.1.

Applications are invited for the post of SENIOR NON-RESIDENT HOUSE SURGEON for a period of five months from July 1st. The salary is at the rate of £150 per annum. Applications, accompanied by copies of not more than three testimonials, should reach me by June 29th.

H. W. BURLEIGH, Hon. Secretary.

Ilford Emergency Hospital,

ESSEX. (70 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male, unmarried). Medical and Surgical qualifications. Salary £100 per annum, with apartments, board, and laundry. Applications, stating age, qualifications, and experience, with copies of testimonials, should be sent to the Secretary immediately.

Peace Memorial Hospital,

WATFORD, HERTS.

A RESIDENT MEDICAL OFFICER (male). £150 per annum. Appointment for six months, eligible for re-election. Applications, stating age and qualifications, with at least three recent testimonials, should be received not later than June 28th by the Secretary. No canvassing permitted.

Dr. Steevens' Hospital, Dublin.

RESIDENT SURGEON required. Salary £150 per annum, with apartments, board, etc. Applications should be sent at once to the Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.)*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society) (Workmen's Medical Scheme.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme)*	**PUBLIC HEALTH.**	
	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
June 19th, 1929.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A RESIDENT MEDICAL OFFICER is required at the Country Branch Hospital, Tadworth Court, Tadworth, Surrey, on July 4th.

Gentlemen are invited to send in their applications to the Secretary before 12 o'clock on Monday, July 1st, accompanied by copies of not more than three testimonials given specially for the purpose.

The appointment is made for six months, but the successful candidate will be eligible for re-appointment.

Salary at the rate of £250 per annum, with board-residence in the Hospital, laundry allowance at the rate of £10 per annum, and, on re-election for a further period of six months, £18 18s. for the purpose of providing a substitute during annual leave of a maximum of four weeks.

Candidates must be unmarried and possess a legal qualification to practise, and must have held a responsible resident appointment at a General Hospital.

All candidates must be in attendance on Wednesday, July 3rd, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
June, 1929. Secretary.

Lowestoft and North Suffolk HOSPITAL.

HOUSE SURGEON (male) preferably with knowledge of X-ray. Salary £120 p.a., with board, residence, and laundry.

Applications, with copies of three recent testimonials, to the Honorary Medical Supt.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A PART-TIME JUNIOR CASUALTY OFFICER is required on July 4th, to assist in the Casualty Department from 10 a.m. to 3 p.m. (Saturdays 10 a.m. to 1 p.m.), under the direction of the Casualty Officer.

Candidates must be registered medical practitioners, and have held a responsible Hospital appointment.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, July 1st, accompanied by copies of not more than three testimonials written specially for the purpose.

The appointment is made for six months and is non-resident.

Salary at the rate of £150 per annum, with luncheon.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, July 3rd, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
June, 1929. Secretary.

Central London Ophthalmic HOSPITAL,
Judd Street, St. Pancras, W.C.1.

There are vacancies for the posts of SENIOR and JUNIOR HOUSE SURGEON. Salaries at the rate of £120 and £100 per annum respectively, with board and residence in the Hospital.

Applications, with testimonials, from duly qualified candidates must be sent to the undersigned on or before June 28th.

H. R. S. DRUCE, Secretary.

Royal Sussex County Hospital,
BRIGHTON. (225 Beds.)

Required, TWO CASUALTY HOUSE SURGEONS (male) to fill one immediate vacancy and a further vacancy occurring beginning of August. Salary in each case £120 per annum, with board, residence, and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should be sent to the undersigned.

L. L. W. LANCASTER-GAYE,
Secretary-Superintendent.

London Temperance Hospital,
Hampstead Road, N.W.1.

Applications are invited for the post of CASUALTY OFFICER (male), which will become vacant on July 15th.

The appointment will be for a period of six months, at a salary of £120 per annum. (Ceteris paribus, preference will be given to abstainers).

Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Friday, June 28th, addressed to the Secretary.

Royal United Hospital, Bath.

Wanted, an ASSISTANT HOUSE SURGEON. Salary £100 per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three recent testimonials, must be sent addressed to the Secretary.

J. M. SHEPPARD, F.C.I.S.,
Secretary.

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

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Each Additional Line, 1s. 6d.
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Sixpence should be added if replies to a box number are to be posted.

All advertisements must be received not later than first post Tuesday previous to date of publication.

ASSISTANCIES.

Wanted. — Assistant, male, to manage Branch and help generally. Private and panel Practice, Country. Good Accoucheur. British, Protestant, Public School. Fond of games. £250, with board and lodging. If own car, allowance for running expenses. Photo and full particulars.
Address, No. 3856, B.M.A. House, Tavistock Square, W.C.1.

Wanted shortly, male ASSISTANT, with view: English or Scotch; ex H.S. or H.P. or som experience of G.P. Cyclist or motor cyclist. Usual bond. Mixed Pra tice near Manchester. Dispenser kept. £280 p.a., indoor, with increase. Age exper., photo etc.—No. 3720. B M.A. House Tavistock Sq., W.C.1.

Wanted immediately. — Assistant, outdoor, with definite view to Partnership. Manchester area. Salary £425. £75 allowed for running of own car. Usual bond, photo, and testimonials.—Address, No. 3868, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Assistant in Glamorgan Industrial Practice, male, reliable, sober. Welsh, English, or Scotch. State age, etc. — Address, No. 3735, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Indoor and Outdoor ASSISTANTS (male), with and without view. Also LOCUM TENENS. Good salaries offered. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester

Wanted immediately, indoor ASSISTANT. Salary £250. Usual bond, photograph, and testimonials required.—Apply, Dr. AITCHISON, Philipson Street, Willington-on-Lyne.

Wanted. — Assistant, outdoor, single. Pleasant district near Cardiff. Work easy. Salary £360 a year. Rooms and attendance.—Address, No. 3710, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Lady Assistant, Country Practice, Cotswolds. Desiderata: tact, insight, facility of management, with exp. and up-to-dateness. Spare time and opport. tennis and socialities. Photo and age requested. —No. 3652, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, for pleasant Midland Town. Salary £300 per annum, all found.—Address, stating age, etc., No. 3869, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, to manage a Branch Practice in London, E. Work light. Good salary to a suitable man. —Address, No. 3858, B.M.A. House, Tavistock Square, W.C.1.

Wanted.-Indoor Assistant, male, single, Protestant, English or Scotch. With or without view. Good experience. Send particulars and photo. Salary £250 to £300. —Address, No. 3734, B.M.A. House, Tavistock Square, W.C.1.

Wanted, young male unmarried ASSISTANT, indoor, for general Practice, industrial, near Oldham. Usual bond. Photo. Initial salary £250 p.a.—Address, No. 3702, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, prefe ably married, with view to early Succession by arrangement, in good-class suburban Practice. Photo and testimonials.—Address, No. 3864, B.M.A. House, Tavistock Square, W.C.1.

Wanted Assistantship, part-time work, or LOCUMS, by Woman M.B., B.Ch., D.P.H., qual. 1924. Good experience panel and p ivate practice. Free now in London. Interview.—Addr ss, No. 3713, B.M.A. Hou e, Tavistock Square, W.C.

Assistantship desired by M.R.C.S., L.R.C.P., male, æt. 30; qual. 1922; ex H.S.; experienced G.P. Abstemious, good refs., drive car, etc. View preferred. Marriage comtemplated. Desire to settle.—Add., No. 3729, B.M.A. House, Tavistock Sq., W.C.1.

M.B., B.Ch., B.A.O. (1924), requires outdoor ASSISTANTSHIP; ex H.S., H.P.; Post-graduate midwifery. Private, panel, and colliery experience. — Address, No. 3860, B.M.A. House, Tavistock Square, W.C.1.

Reliable, experienced man desires ASSISTANCY or other remun. APPOINTMENT. Not a youngster. Has held posts of responsibility. Son of Coll. Principal. For further details kindly see Advert. No. 3666 in last week's issue of B.M.J. (June 15th), under Medical Posts. Free July.—Address, No. 3725, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted. — Post as Medical OFFICER with good COMPANY trading in MIDDLE EAST (Assam or Malay preferred), by M.B., Ch.B.(Aberd.), who has had good all-round medical experience in Tropics, and holds Certificate London School of Tropical Medicine. —No. 3722, B.M.A. House, Tavistock Sq., W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

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Handsome Pair of £4 4s. Square Polished ASH TENNIS STANDARDS. Complete with heavy ground plates, powerful fixing screws, and solid brass net-winder, 50/-. Also full regulation size heavy Waterproof Net, with steel headline, 20/-. Both perfect new condition. Never used. Approval against post-dated cheque.—GILYARD, Darley St., Bradford.

Smart Saloon Car, "Citröen," with owner-driver, for HIRE; day, week, or contract. 'Phone: North 0953.—"F. J. M.," 6, Thornhill Road, Barnsbury, N.1.

The Guardians of the Poor of the SCULCOATES UNION invite TENDERS for the PROVISION and INSTALLATION of an X-RAY APPARATUS. 30 milliampere Trolley (bedside) Set for Direct Current at 220 volts, with accessories.

Further particulars may be obtained from the undersigned.

12, Harley St., Hull, Yorks. June 17th, 1929.

W. BARROW, *Clerk to the Guardians.*

NOTICE IS GIVEN THAT

ERIC ALLAN PETER SUTHERLAND-RAWLINGS

L.R.C.P.Lond., M.R.C.S.Eng., of Charing Cross Hospital, House Physician, ex House Surgeon and of Womersley House, Crouch Hill, London, and of Kingswood, Kingswood Common, Staffs, has by DEED POLL, dated 1st June, 1929, assumed the name of SUTHERLAND-RAWLINGS in lieu of RAWLINGS, and intends henceforth to be addressed and known as E. A. P. Sutherland-Rawlings, M.R.C.S., L.R.C.P.

CAVENDISH NURSES (Male and Female)

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Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling and all cases. Nurses reside on the premises, and are always ready for urgent calls Day and Night. Skilled Masseuses, Masseurs, and good Valet attendants supplied.

Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

Westmorland Sanatorium,
MEATHOP, GRANGE-OVER-SANDS.

The Governors invite applications from registered medical practitioners (male) for appointment as MEDICAL SUPERINTENDENT of the above Institution. The successful candidate will also act as County Tuberculosis Officer for Westmorland under the County Council. The salary is £800 per annum, rising by yearly increments of £50 to £1,000. The use of a house (rent and rates free) will be provided, with existing furniture and electric light. Certain travelling expenses will be allowed. Preference will be given to candidates possessing a Diploma in Public Health and experience in X-ray work.

Applications, stating age, experience, and qualifications, accompanied by copies of three recent testimonials, must be addressed to the undersigned not later than July 2nd.

H. LEIGH GROVES, Esq.
Holehird, Windermere.

Hull Royal Infirmary.
(272 Beds)

Applications are invited for the following, male, Resident posts:

1. SECOND HOUSE SURGEON (vacant July 17th).
2. HOUSE SURGEON to Ophthalmic and Ear, Nose, and Throat Departments (vacant July 21st).
3. CASUALTY HOUSE SURGEON (vacant now).

The appointments will be for six months in the first instance and will be terminable by one month's notice on either side.

Salary for posts 1 and 2 will be at the rate of £150 per annum and for post 3 at the rate of £130 per annum, including, in all cases, board, residence, and laundry.

Applications, with copies of testimonials, should reach the undersigned on or before Tuesday, July 2nd.

R. J. CARLESS, House Governor.

Miller General Hospital,
Greenwich Road, S.E.10.

Applications are invited for the two following posts:

HOUSE PHYSICIAN (male);
HOUSE SURGEON (male).

Salary in each case at the rate of £125 per annum, with board, residence, and laundry. The appointments are for six months from July 1st next. Candidates must be unmarried. There are five Resident Officers. Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent to the Secretary as soon as possible.

June 13th, 1929.

Leicester Royal Infirmary.
VENEREAL DISEASES DEPARTMENT.

A qualified Female MEDICAL OFFICER is required for this Department. Clinics on three days per week of two, but not exceeding three, hours each. The successful candidate will give assistance in the In-patients' Wards of the Department when necessary, and will be required to commence her duties on appointment. Remuneration at the rate of £4 10s per week. Grant of £10 per annum for Locum Tenens.

Applications to the House Governor and Secretary at the Infirmary not later than June 24th.

June 8th, 1929.

Belgrave Hospital for Children
(Incorporated), 1, Clapham Rd., S.W.9.

The Committee of Management invite applications for the post of ASSISTANT PHYSICIAN. Candidates (men) must be Graduates in Medicine of an English University and Fellows or Members of the Royal College of Physicians of London. There is an honorarium of 50 guineas per annum attached to the post. Applications, with copies of testimonials, must be delivered to the undersigned by Tuesday, July 9th, from whom further information may be obtained.

By Order,
THOMAS CLAPHAM, Secretary.

The Victoria Hospital for CHILDREN,
Tite Street, Chelsea, S.W.3. (130 Beds.)

The Committee of Management invite applications for the post of HOUSE SURGEON (vacant August 1st). The appointment is for six months. Salary at the rate of £100 per annum, with board, lodging, and washing.

Candidates must attend the Hospital for the purpose of an interview at 3.30 p.m. on Friday, July 12th. (No travelling or other expenses will be paid). They must hold Surgical qualifications and be registered under the Medical Act.

Applications, with copies of three recent testimonials, should be sent to the Secretary not later than first post on Wednesday, July 10th.

By Order,
D. ST. JOHN BAMFORD, Secretary.

The Queen's Hospital for CHILDREN,
Hackney Road, London, E.2.
Telephones: Bishopsgate 6305 and 2534.

The Committee invite applications for the post of SURGEON for the Ear, Nose, and Throat Department.

Attendance required on Monday and Thursday morning for about three hours, commencing at 9.30. Lunch provided and honorarium to cover travelling expenses.

Candidates must be Fellows by examination of the Royal College of Surgeons, England.

Applications, with copies of three recent testimonials, which may be printed or typewritten, should be sent on or before July 8th to the undersigned, from whom further particulars may be obtained.

T. GLENTON-KERR,
May 27th, 1929. Secretary.

Bolton Infirmary & Dispensary.
SECRETARY'S OFFICE.
(233 Beds, including Auxiliary Hospitals.)

Applications for the appointment of HOUSE SURGEON, salary £150 per annum, with apartments, board, and attendance, are invited from gentlemen having a registered Medical and Surgical qualification. The appointment will be for six or twelve months, from July 1st.

Applications, stating age and nationality, with copies of testimonials, should be forwarded to the undersigned (from whom further particulars may be obtained) not later than Monday, June 24th.

ALBERT E. BRISCOE, Secretary.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

Applications are invited for the post of HONORARY ASSISTANT SURGEON to the Ear, Nose, and Throat Department.

Applicants must be Fellows of one of the Royal Colleges of Surgeons, and engaged in Consulting Practice.

Applications, stating age, qualifications, and enclosing copies of three recent testimonials, to be sent on or before Monday, July 1st, to—

FREDK. W. DREWETT,
June 10th, 1929. Director.

The Jessop Hospital for Women,
SHEFFIELD.
Gynæcological and Maternity Departments.
(145 Beds.)

The Board of Management invite applications for the appointment of Three ASSISTANT HOUSE SURGEONS (male) for six months from July 15th.

Salary £100 per annum, together with board, residence, and laundry.

Applications, stating age, together with copies of recent testimonials, should reach the undersigned on or before June 29th

H. B. SHELSWELL, Secretary.

Dewsbury and District General INFIRMARY.

HOUSE SURGEON wanted (male). Post vacant August 15th. Salary £200 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three testimonials, to be in not later than Thursday, June 27th, to be addressed to—

EDWARD HEMINGWAY, Gen. Secretary.

The Devon Mental Hospital,
EXMINSTER, Near EXETER.
(1,400 Beds.)

Required, JUNIOR ASSISTANT MEDICAL OFFICER (male). Candidates must be registered medical practitioners, and unmarried. Preference will be given to candidates who either have or are anxious to obtain a Diploma in Psychological Medicine. The Hospital is fully equipped with Operating Theatre, X-ray Installation, Bacteriological Laboratory, etc. Salary £300 per annum, rising by £25 per annum to £350, with board, apartments, laundry, and attendance.

The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909. Form of application to be obtained from the Clerk to the Devon Mental Hospital, Exminster, which must be completed and returned on or before the first post on Monday, June 24th.

The Willesden General Hospital
(Incorporated), London, N.W.10.
(165 Beds.)

The Executive Committee invite applications for the appointment of RESIDENT HOUSE SURGEON (male). Candidates must be duly registered under the Medical Acts, and unmarried.

The appointment is for a period of six months from August 1st (the first three months as Junior House Surgeon, the second three months as Senior House Surgeon). Salary at the rate of £100 per annum.

Fully detailed applications, with copies of testimonials, to be received by the Secretary not later than noon on Tuesday, July 2nd.

June 6th, 1929.

Poplar Hospital for Accidents,
East India Dock Road, Poplar, E.14.

The Committee invite applications for the appointment of SECOND RESIDENT OFFICER, at a salary at the rate of £175 per annum, all found. Candidates must have held appointment as House Surgeon at a Hospital. Applications must be accompanied by a statement of the candidate's qualifications, and be forwarded to the Secretary, with three recent testimonials, not later than Friday, June 21st. The appointment is for a period of six months.

The Liverpool Eye and Ear INFIRMARY, Myrtle Street, LIVERPOOL.

Applications are invited for the post of HOUSE SURGEON to the Ophthalmic Department of the above Institution. Salary £100 per annum, with board and lodging.

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, should be sent in not later than June 25th to—

CHARLES W. WRIGHT, Esq.
9, Harrington St., Liverpool.

The Royal Eye and Ear Hospital,
BRADFORD.

Wanted, JUNIOR HOUSE SURGEON (male). Salary £120, with board, residence, and laundry.

Applications, stating qualifications, age, etc., with copies of recent testimonials, to be forwarded to the undersigned on or before June 25th.

P. BRIGGS, Secretary-Supt.

Macclesfield General Infirmary.
(100 Beds.)

Wanted, RESIDENT HOUSE SURGEON. Salary £120 per annum, with board and residence. Candidates must be fully qualified and registered.

Applications, with copies of testimonials, to be sent to the undersigned

A. E. HANRAHAN, Secretary.

Hull Royal Infirmary.

LAY RADIOGRAPHER (male) required for holiday duty August 6th to 20th.

Applications, stating qualifications, salary required, etc., should be sent to the undersigned.

R. J. CARLESS,
June 5th, 1929. House Governor.

Park Hospital, Davyhulme.

RESIDENT MEDICAL OFFICERS.

Applications are invited for the following appointments at the Park Hospital, Davyhulme.

One Senior Resident Medical Officer at £250 per annum.

One Second Resident Medical Officer at £225 per annum.

One Third Resident Medical Officer at £200 per annum.

The emoluments attached to each of the positions will consist of rations, furnished apartments, etc.

The appointments will be made, in the first instance, for a period of six months, but applicants will be eligible for re-appointment for a further period of six months.

The appointment may be terminated by one month's notice, in writing, given by either side.

The Hospital accommodation is 500 beds, divided into Medical, Surgical, Gynæcological and Obstetrical, etc., Sections. There are X-ray, Electro-therapeutic, Massage, and Sunlight Departments. A Medical Superintendent is in attendance and there is a Consulting Staff.

Applications to be made on printed forms, which may be obtained from the undersigned, accompanied by not more than three recent testimonials, and a description of diplomas, certificates of degrees, etc., held by the candidate, must be returned to me not later than Saturday, June 29th.

All communications must be distinctly marked in the top left-hand corner of the envelope "Medical Officer."

By Order,
CHARLES FAULKNER,
Clerk to the Management Committee.

Park Hospital, Moorside Road, Flixton, Near Manchester. June 13th, 1929.

St. James' Hospital, Leeds.

Applications are invited from male members of the medical profession for the filling of a vacancy in the staff of HOUSE PHYSICIANS and SURGEONS at the above Hospital. Applicants must be fully qualified and registered. The Hospital is one of 1,126 beds, with special departments for Radiology, Pathology, Midwifery, and Diseases of Children. There are, in addition, 320 beds in separate Mental Wards. The staff consists of a Medical Superintendent, a Resident Medical Staff of six, a Pathologist, a Radiologist, and Visiting Physicians and Surgeons.

The successful applicant will be required to act as House Physician and Surgeon under the Medical Superintendent and, the Visiting Staff, and to perform such other duties as the Medical Superintendent may direct. The term of appointment is limited to two years.

Salary £200 per annum, with board, apartments and attendance, subject to deductions under the Poor Law Officers Superannuation Act, 1896.

Applications, stating qualifications, and giving particulars of present and prior occupations, together with copies of three recent testimonials, must be received by me not later than 10 a.m. on Monday, July 1st, endorsed "House Physician and Surgeon."

Selected candidates will receive due notice to attend.

JAMES H. FORD,
Clerk to the Guardians.
Township of Leeds.

Poor Law Offices, South Parade, Leeds. June 12th, 1929.

The General Hospital, BIRMINGHAM.

Applications are invited for the post of RESIDENT SURGICAL REGISTRAR.

This officer will be attached to two Surgical Units and to the Throat and Ear Department. The salary will be £100—£20—£140.

The appointment will be made for one year in the first instance and be subject to renewal for two further years. Candidates must have had previous surgical experience.

Applications, giving full details of qualifications and experience, and accompanied by testimonials, should reach the undersigned, if possible, by July 2nd.

A. H LEANEY, House Governor.

The General Hospital, BIRMINGHAM.

Applications are invited for the following Resident appointments from July 15th:

RESIDENT ANÆSTHETISTS (Two). Salary £120 per annum.

HOUSE PHYSICIAN. Salary £70 per annum.

HOUSE SURGEONS (Two). Salary £70 per annum.

HOUSE SURGEON to the V.D. and Skin and Eye Department. Salary £70 per annum.

Applications, giving full details of qualifications, and accompanied by testimonials (if desired), should reach the undersigned by July 1st.

A. H. LEANEY, House Governor.

BRITISH MEDICAL BUREAU

NORTHERN BRANCH.
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TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

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(In conjunction with the MALE NURSES' ASSOCIATION),
29, York St., Baker St., London, W.1.
Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

ST. LUKE'S HOSPITAL.

FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165

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Chester Royal Infirmary.

(211 Beds.)

Wanted, HOUSE SURGEON (male) to the Ear, Nose, and Throat Department, and CASUALTY OFFICER, to commence duties on July 8th. Salary £120 per annum, with board, lodging, and washing. Candidates must be doubly qualified and registered. Applications, stating age, and accompanied by copies of testimonials, to be sent to the undersigned not later than June 27th.

J. ROWSE MITCHELL,
Secretary.

June 11th, 1929.

West Herts Hospital,

HEMEL HEMPSTEAD.
(110 Beds. 24 miles from Euston.)

Applications are invited for the appointment of a JUNIOR RESIDENT MEDICAL OFFICER, to commence duties on July 1st next.

Salary £100, with rooms, board, and laundry. Preference given to male candidates.

Particulars to be obtained of, and applications, stating essential particulars, and enclosing copies of recent testimonials, to be sent at once to—

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

THE OLDEST AND LEADING MEDICAL AGENT

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4 & 5, ADAM ST., STRAND, W.C.2.
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Terms post free on application.

South Coast Seaport Town.—Over £1,500. Panel and appts. £358. Good house, 6 bed., etc., for sale. Good schools.—No. 8495.

Home County.—Over £700 p.a. Small residential town within 25 miles, South. Panel 462. Good fees. Large well-built house and garden.—No. 8494.

Cornwall.—Share worth £1,000 p.a. General mixed Practice. Panel nearly 2,400. House, 5 bed., etc., low rent.—No. 8493.

Berkshire. — About £700 p.a. General mixed Country PRACTICE. Panel about £287 p.a. Few mids. Fees 2/6—7/6. Excellent house and garden.—No. 8490.

Cambridgeshire. — Nearly £600 p.a. Appts. and panel over £250 p.a. Visits 3/6 up. House, 7 bed., etc., good garden, to rent.—No. 8487.

London, S.E.—About £800 p.a. Visits 2/6. Panel over 700. Small house, rent £50 p.a.—No. 8486.

Lancs.—1/3 or 1/2 share of over £2,400 after prelim. assistancy. Panel £500. Mixed class. Good house, with 4 bed., 2 attics, etc.—No. 8454.

Bucks.—About £2,800 p.a. 1/2 share. Appts. £200 p.a. Panel over 1,900. Visits 3/6—10/6. Mids. 2—5 gns. House, 4 bed., to rent. Prem. 1½ yrs.—No 8483.

Suffolk.—Over £1,000 p.a., unop. Old-estab. Panel 530. Appts. £50 p.a. Usual fees. Good house, large gard.—No. 8479.

Lancs Town.—1/2 share of about £3,000 p.a. Panel over 2,500. Excellent house, good garden. Five bedrooms. Separate surgery. Premium 1½ years.—No. 8472.

S. W. County. — 1/2 share of about £3,000 p.a. Appts. £125 p.a. Panel about £520 p.a. Fees up to 21/-. Good house, 4 bed., etc., large gard. Sep. sgy.—No. 8470.

Western Suburb.—About £1,300 p.a. Non-panel, non disp. Mids. 5 gns. up. Visits 5/- up. Good house, gard.—No. 8443.

Kent.—Country Practice. About £1,000 p.a. Panel about 400. Appts. over £50 p.a. Visits 3/6 to 10/6. House, 5 bed., etc. Extensive grounds.—No. 8408.

Birmingham.—About £2,300 p.a. Panel 1,700. Mids. from 2 gns. Visits 3/6 up. Good house, 4 beds., etc. Large garden. Two branches. Suitable for two.—No. 8466.

N. W. Coast Town.—Over £3,000 p.a. Old-established. Panel over 1,500. Usual fees. Medium house to rent.—No. 8465.

Wilts. — Unopp. — About £850 p.a. Appts. about £100 p.a. Panel about 600. Visits 3/- up. Mids. 3 to 10 gns. Good house, nice garden, rent £52.—No 8447.

Kent. — £1,500 share in non-panel, non-dispensing Practice. Appts about £1,200 p.a. Visits 5/- to 7/-. Mids 5 to 10 gns. Large house to rent.—No. 8460

Glos.—Unopp. — About £1,270 p.a. Mids. 2 to 8 gns. Visits 3/6 to 21/-. Panel 1,100. House, 3 bed, etc., large garden. House and Practice £2,500.—No. 8455.

Co. Durham. — Half Share of about £2,800 p.a. Panel 2,600. Appts. £300 p.a. Mids. from 30/-. Visits 2/6 to 7/6. House, 5 bed., etc.—No. 8453.

N. Wales Coast.—About £1,750 p.a. Panel and appts. about £400 p.a. Mids. 2 to 5 gns. Visits 3/6 to 31/6. House, 4 bed., etc. Separate surgery.—No. 8451.

Home Counties.—Aver. £2,800 p.a. Up to 2/6 share for sale, short Assistancy, possible early succession Appts. £90 p.a. Small panel. Visits 3/6 up. Mids. 2 gns. up. House, 5 bed., etc, to rent.—No. 8441.

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FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants prepared to pay part of purchase money down and balance by instalments over 7 years (on the security of a Life and Sickness Policy). Full particulars on application to Mr. Percival Turner.

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LONDON, W.1.—NUCLEUS G.P. (Lock-up Surgery), held on lease. Rent £70 p.a. Suitable for one keen on Anæsthetics and V.D. work. Premium £70.

EASTERN COUNTIES.—PARTNERSHIP in rural G.P. Receipts over £2,200. Panel 1,500. Premium for 1/3rd share 2 years' purchase. Part down and balance by arrangement.

HOME COUNTIES.—NUCLEUS Country Practice with excellent scope for development. Receipts approx. £600 p.a. Small but growing panel. House to rent or for sale. Premium £700 or near offer.

LONDON, W.—Suburban PRACTICE. Receipts approx. at the rate of £1,000 p.a. Panel 610. House to rent in good district. Premium £1,300 or near cash offer.

LONDON, N.—Well-established G.P., middle and working-class residential locality. Suitable house with separate entrance to surgery available. Receipts over £1,900. Several appointments. Premium £2,100 plus appointments.

SOUTH COAST (Hants.).—Well-established private and panel PRACTICE in good locality. Receipts approx. £1,500. Panel 1,330. Prem. 1½ years' purchase. House £2,000.

GLOS.—Well-established middle- and working-class Practice. Medium-sized freehold house in own grounds. Receipts average £1,270 p.a. Panel 1,100. Fees 2/6 up. Premium for house and Practice £2,700.

MIDDLESEX.—Well-established G.P. in growing residential locality. Receipts nearly £1,600 p.a. Panel approx. 1,400. Medium-sized house. Premium for Practice 1½ years' purchase, cash.

ESSEX.—PARTNERSHIP in middle-class G.P. situated in growing residential locality. Small panel. Share worth £550 p.a. at 2 years' purchase.

If the investment you are seeking is not advertised here, let us know your wants, and we will gladly forward details of others suitable to your requirements.

LONDON, E.—NUCLEUS G.P. situated in thickly populated locality. Medium-sized house to rent. Receipts approx. £450 p.a. Panel 300. Premium 1½ years' purchase.

BEDS.—PARTNERSHIP in Town Practice. Receipts approx. £1,300 p.a. Panel 1,750. Half share for disposal with possible view to succession at 2 years' purchase.

LONDON, E.—PARTNERSHIP in Industrial Practice. Receipts over £3,500 p.a. Panel over 1,000. Premium for 1/3rd share with view to larger share 1½ years' purchase (cash.)

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MIDLANDS.—X-RAY PRACTICE situated in large town. Excellent corner house for sale or to rent. Receipts over £1,200. Two appts.; prospects of others. Premium for Practice and full appliances £1,250, part down, balance by instalments. Excellent scope for experienced man.

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LONDON, S.E.—Middle and working-class G.P. Medium-sized house to rent. Branch Surgery in new L.C.C. estate. Receipts £1,292. Panel 560. Premium 1½ years' purchase. Excellent scope.

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5. SEASIDE RESORT (N.W.).—PARTNERSHIP (with succession) to Practice of £2,000. Panel 1,000. Fees 5/- to 21/-. Half share at 2 years.
6. HOME COUNTY.—Unop. PRACTICE £1,300. Panel and appts. £650. Premium £2,000. Old-fashioned residence for sale.
7. NUCLEI.—SEASIDE (S.).—£500 p.a. Appts. £200. Convenient house on lease. Beautiful spot. One opponent. Price for quick sale £500. BEDS.—Country. £600 p.a. House and garden at £80. Great scope. Price £700 or offer.
8. SANATORIUM. — Gentlemen interested in this can hear of a good investment in charming spot within 40 miles on application to Mr. HERBERT NEEDES.
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Telegrams: Herbaria Westrand, London. *Telephone*: Central 2630.

LOCUM TENENS and ASSISTANTS supplied free of charge to principals.

FOR SALE.

1. LONDON, E. (Hackney). — Old-established PRACTICE. Non-panel. Receipts £500 p.a., good scope for panel. House on lease, £100 p.a. Vendor retiring through age, 75. Premium £450.
2. LONDON, N.—Old-established PRACTICE. Receipts average £650 per annum. No panel, but excellent scope. Good corner house. Rent £150. Illness cause of selling. Premium moderate. Densely populated area.
3. LONDON (near Clerkenwell). — Mixed-class PRACTICE. Receipts £400 p.a., including panel nearly 350. Small corner house, rent £24. Vendor going abroad. Moderate premium for quick sale. Excellent scope.
4. KENT (15 miles from Charing Cross).—Old-established panel and private PRACTICE. Receipts over £300. Panel 200. Convenient house 30/- weekly, long lease. Excellent opportunity young energetic doctor. Suit lady.
5. LONDON, W.—Mixed-class PRACTICE for immediate disposal. Receipts last year nearly £450. Panel nec available. Prem
6. MIDLAND TOW TICE. Receipts £ panel. Rent £70, long lease. Premium 2 years' purchase, part can remain.
7. Near NEWCASTLE-ON-TYNE. — Old-estab. mixed Practice. Receipts £750. Panel 700 patients. Good house on lease Opposition weak. Capable much extension. Premium moderate.
8. LONDON, N.W.—Very old-established PRACTICE. Receipts £400 p.a., small panel. Good opportunity for anyone devoting whole time. Rent £1 a week. Moderate premium considered.
9. LONDON, S.E. (near Waterloo).—Old-estab. cash and panel PRACTICE. Receipts average £1,300 p.a., including panel 1,400. Rent of premises £75, lease. Vendor going abroad. Premium moderate. Excellent scope.

No charge to purchasers or for enquiries.

ESTABLISHED 1877.

LEE & MARTIN, LTD.,

The Birmingham Medical Agency,

71, TEMPLE ROW, BIRMINGHAM.

Telegrams: "Locum, Birmingham." *Telephone*: 5953 Midland, B'ham.

Transfers of Practices and Partnerships arranged.

ACCOUNTS INVESTIGATED AND INCOME TAX RETURNS PREPARED.

RELIABLE AND EFFICIENT LOCUMS SUPPLIED AT SHORT NOTICE, also ASSISTANTS.

FOR DISPOSAL.

1. GLOUCESTERSHIRE. — Well-estab. unopposed middle and working-class Country PRACTICE. Receipts average £1,270 p.a. Panel 1,113. Good house, garden, and garage.
2. WARWICKSHIRE.—DEATH VACANCY.—Well-estab. Country Practice, in rapidly growing district near large town. Good house, garage, etc. Receipts average £1,974 p.a. Panel 650.
3. NORTH-WEST MIDLANDS (County Town).—Well-estab. PRACTICE. Receipts £1,450, and increasing. Panel approx. 510, and ample scope for increase. Good fees. House to rent. Garage and garden.
4. SOMERSET.—PARTNERSHIP (Half Share) in well-established unopposed Country Practice. Receipts £3,040, and increasing. Panel about 1,200. Good modern house, garden, and garage.
5. NORTH WALES COAST. — Well-established middle-class PRACTICE. Receipts average £1,745 p.a. Panel 713. Good modern house to rent. Garage and garden.
6. BIRMINGHAM.—Industrial Cash and Panel PRACTICE. Receipts about £400 p.a. Panel 630. Good house, garden, and garage accommodation.
7. WORCESTERSHIRE. — Well-estab. Country PRACTICE. Growing population. Receipts average £1,023 p.a. Panel 360. Good house, garden, and garage.
8. MIDLANDS. — NUCLEUS in middle-class Practice. Receipts £600 to £700 p.a. Panel 118, and rapidly increasing. Good house to rent or for sale. Garage.

FINANCIAL ASSISTANCE afforded to approved applicants for the purchase of Practices or Partnerships on very reasonable terms. Full particulars on application.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

12, Stratford Place,
Oxford Street, W.1.

Tele. Address: Triform, Westo—London. Telephone: Mayfair {1783 / 1783

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads:—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence. Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

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Assistants and Locumtenents can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out.

RESIDENT PATIENTS.

Medical Men wishing to receive Resident Patients should enrol their names on the books of the British Medical Bureau. A large number of Patients are placed yearly through this medium.

ACCOUNTANCY.

The British Medical Bureau has its own staff of fully qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Books & Accounts, etc.

Practices and Partnerships for Disposal. Full particulars sent free.

1 SHEFFIELD. — Non-dispensing Practice about £800 (including two appointments worth £165 p.a.). No panel. Conveniently situated house (6 bedrooms). Premium, Practice and house, £2,000.

2 YORKSHIRE COAST. — Practice averaging £1,850 p.a. in pleasant seaside town. Panel 80. Modern double-fronted house (6 bedrooms) for sale. Premium £2,400.

3 NORTHUMBERLAND.—Death Vacancy. —Seaside Practice about £1,200, including panel 1,100, with good prospects. House (two reception, four bedrooms) for sale.

4 HOME COUNTY.—Third Partner (young, well qualified) required in Country Practice averaging £4,550 p.a. in first-rate residential district under 50 miles from London. Panel about 1,000. One-fifth share at 2 years' purchase.

5 GOOD RESIDENTIAL DISTRICT about 12 miles from London.—PARTNERSHIP in non-dispensing Practice £5,200 p.a. No panel. Detached house (6 bedrooms), garage, and beautiful garden, for sale. Share worth about £1,700 at 2 years' purchase.

6 INLAND SPA.—Partnership in non-dispensing Practice over £5,100 p.a. Small select panel. House (6 bedrooms) to rent. Partner should be an Obstetrician, and there is scope for gynæcology. Premium five-twelfths share 2 years' purchase.

7 SUFFOLK. — Country Practice nearly £1,100 p.a. in agricultural district. Panel 530. Modernized house (6 bedrooms), with electric light, inside sanitation, and large garden, for sale. Sport. Premium £1,500.

8 SOUTH OF ENGLAND.—Seaport Town. PRACTICE doing £800 p.a., including appointments over £225 p.a., and panel nearly 1,000. Good house (6 bedrooms) for sale. Premium 1½ years' purchase.

9 N.W. OF ENGLAND. — Partnership in Practice about £2,000 p.a. in popular seaside resort. Small panel. Desirable modern residence (4 bedrooms) to rent. Premium one-half share 1½ years' purchase.

10 SOUTH OF ENGLAND.—Seaport Town. PARTNERSHIP in non-dispensing Practice about £3,000 p.a. No panel or appointments. Partner should be keen on medicine and midwifery, and experienced in anæsthetics. One-fourth or one-third share at 2 years' purchase.

11 CARDIFF. — Non-dispensing Practice averaging £1,543 p.a. Small panel. Pleasantly situated house (5 bedrooms). Premium £2,000.

12 DERBYSHIRE.—Country Practice about £1,250 p.a. in beautiful district, easy distance of first-rate town. Panel 675. Small house to rent. Cottage Hospital. Premium 1½ years' purchase.

13 S.W. OF ENGLAND. — Partnership in steadily growing Country Practice, close to first-rate town. Receipts £2,500 p.a. Panel 1,327. Small house (5 bedrooms) for sale. One-half share 2 years' purchase.

14 YORKSHIRE (W.R.).—Practice £1,380 p.a. in industrial district near important town. Panel 940. House (4 bedrooms) to rent. Premium £2,100.

15 EAR, NOSE, AND THROAT Practice of nearly £3,200 p.a. in health resort.

16 N. LONDON.—Steadily growing "Lock-up" Cash PRACTICE on main road. Receipts last 12 months £720. Panel 539. Shop-fronted premises to rent. Prem £350.

17 S.W. OF ENGLAND.—Partnership in an old-established Practice of £5,000 p.a. in one of the chief towns. Panel 2,397. House (5 bedrooms) to rent. One-fifth share 2 yrs.' purchase.

18 LONDON, W. — Partnership in non-dispensing Practice about £2,500 p.a. No panel or appointments. One-third share with view to ultimate succession. Premium 2 years' purchase.

19 SOUTH MIDLANDS. — Partnership in Country Practice of £6,300 p.a. in residential and agricultural district. Panel over 2,200. Suitable house for sale. Hospital. Partner should be 28 to 30 and have held House appointment. Premium one-fifth share £2,510.

20 LONDON, N.—Partnership in well-estab. middle-class Practice, nearly £2,750 p.a., in pleasant outlying suburb. Panel about 800. Suitable accommodation to rent. Premium one-third share 2 years' purchase.

21 MIDLANDS. — Partnership (after preliminary assistantship) in good mixed Practice worth £4,000 p.a. in country town. Panel 3,600. House to rent. Hospital and scope for surgery. Partner should be keen on his work and have held H.S. and H.P. appointments. One-third share at 2 years' purchase.

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Practices and Partnerships for Disposal (continued).

22 YORKSHIRE (W.R.). — Practice averaging nearly £1,350 p.a. in manufacturing town. Panel 995. Detached house (4 bedrooms) for sale. Premium £2,000.

23 CARMARTHENSHIRE. — Steadily increasing PRACTICE of £800 in small country town. Panel 645. Small house (3 bedrooms) to rent. Premium 1½ years' purchase.

24 SOUTH OF ENGLAND. — Unopposed Country PRACTICE of £1,800 p.a. in manufacturing village. Panel about 1,400. Nice detached residence (5 bedrooms) to be let or sold. Sport. Premium £2,700.

25 SOUTH OF ENGLAND.—Partnership in non-dispensing Practice £4,200 p.a. in attractive watering-place. Panel about 1,500. Incoming Partner must be F.R.C.S.Eng. or Edin., or M.D.Lond., Oxon., or Camb. One-fourth share at 2 years' purchase. (Preliminary assistantship.)

26 DEVON.—Practice about £800 in small delightfully situated town on coast. Panel under 400. Detached house (4 bedrooms), in own grounds, to rent. Excellent up-to-date Cottage Hospital. Premium £1,300.

27 ISLE OF WIGHT.—Easily worked PRACTICE of £1,340 p.a. (including clubs and appointments worth £300). Panel 500. Convenient modern house. Garden and garage. Scope. Premium, Practice and house, £3,800.

28 ESSEX. — Partnership in mixed-class Practice £4,400 p.a. Panel over 2,200. Small house (3 bedrooms) to rent. One-fourth share at 1½ years' purchase. Good Hospital.

29 ITALY.—Season (March to October) PRACTICE in famous city. Receipts average £563 p.a. No midwifery or night work. Up-to-date Hospital. Premium £563.

30 BUCKS.—Practice about £800 in small country town. Panel 741. Nice detached house (4 bedrooms), garden and garage, to rent. Premium £1,200.

31 LIVERPOOL. — Cash and Panel Practice about £865 p.a. in working-class district. Panel over 1,200. Large house to be sold or let. Great scope. Prem. 1½ yrs.' pur.

32 KENT. — Practice averaging £1,030 p.a. (appts. and panel over £300) in beautiful country district. Convenient house (6 bedrooms) for sale. Premium, Practice, £1,500.

33 N.W. COAST. — Partnership in Practice over £3,000 in first-rate residential seaside town. Panel 450. Suitable house to rent. One-half share for sale (one-third first year) at 1½ years' purchase.

34 EAST ANGLIA.—Country Practice about £1,470 p.a., easy reach of important town. Panel about 1,000. Nice house (10 bed and dressing rooms), with electric light, etc., for sale. Premium 1½ years' purchase.

35 DEATH VACANCY.—DEVON.—Country PRACTICE Receipts, 1928, £1,266. Panel about 700. Modern house (7 bed and dressing rooms) in grounds of 2 acres. Price of house £3,000.

36 S.E. COAST.—Practice averaging £1,127 p.a. in favourite resort. No panel. Very good semi-detached house (6 bedrooms) for sale. Scope. Premium 1½ years' purchase.

37 N. GLOUCESTERSHIRE. — Country PRACTICE in delightful part. Cash receipts £560. Panel 450. Modern house (6 bed and dressing rooms), with garden 1 acre, for sale. Premium—Practice—£750.

38 SUSSEX. — Small Country Practice in delightful part near coast. Receipts past 12 months £346. Picturesque house (3 bedrooms), with nice garden to be sold or let. Premium £350.

39 MIDLANDS. — Partnership in old-estab. Practice (entirely Skin work) in first-rate town. Earnings about £2,200 p.a. Suitable house for sale or rent. Premium one-third share 2 years' purchase.

40 EAST COAST. — Partnership in Practice £2,800 p.a. in popular watering-place. No panel. House to rent. One-third share at 2 years' purchase. Partner must have some knowledge of Ear, Nose, and Throat work.

41 N.W. COAST. — Non-dispensing Practice over £850 p.a. in seaport town. No panel and very little night work. Excellent semi-detached residence (5/6 bedrooms) for sale. Premium 1½ years' purchase.

42 YORKSHIRE (W.R.). — Partnership in Practice about £2,600 in one of the chief towns. Panel over 900. Partner should be a Protestant. One-third share at 1½ years' purchase after preliminary assistantship.

43 S.W. of ENGLAND.—Partnership in Practice about £3,000 in market town. Panel 1,100/1,200. Detached house (5 bed and dressing rooms), in 3/4 acre garden, for sale. Premium one-half share 2 years' purchase.

44 HOME COUNTIES.—Practice about £1,000 p.a., with great scope, in beautiful country district under 35 miles from London. House (6 bedrooms) to rent. Prem. 1½ yrs.' pur.

45 SOUTH AFRICA. — Compact unopposed Village PRACTICE of about £1,000 p.a., in attractive part of Cape Colony. Exceptional house (4 bedrooms) and about 2 acres ground. Price £1,000. Excellent climate. Premium £500.

46 HOME COUNTIES. — Country Practice about £425, in beautiful part about 40 miles from London. Small panel. House and about 50 acres farm land. Price, Practice, House, Farm, etc., £4,250.

47 LONDON S.E. — Practice about £800 in populous district. Panel 800. No midwifery. House (3 bedrooms) to rent. Premium 1½ years' purchase.

48 SUSSEX.—Partnership in Country Practice, £2,750, in residential district (appointments and panel about £1,000). Good house (5 bedrooms and 3 attics) with large garden. To rent. One-half share at 2 years' purchase.

49 SOUTH OF ENGLAND.—Partnership in Practice £2,280 in first-rate County town. Small panel. Well-built house (6 bedrooms) to rent. Prem. one-half share 1½ yrs.' pur.

50 N. DEVON. — Country Practice £775 p.a. in a most beautiful part. Panel 340. Detached house (7 bed and dressing rooms), with old-fashioned garden, for sale. Scope. Premium 1½ years' purchase.

51 NORTH-EAST COAST. — Ophthalmic PRACTICE of about £400 p.a., capable of increase, in favourite watering-place. Large house in best part, which need not be taken. Prospects of Hospital appointment. Premium £500.

52 MIDLANDS.—Non-dispensing Practice in prosperous town. No panel, clubs, or midwifery. Receipts 1928, £1,200, including small amount from Electro-therapy. House (5 bedrooms) for sale. Scope. Prem. £1,500, to include apparatus.

53 LONDON, W.—Middle-class Practice £730 p.a. in residential Western Suburb. No panel. House, with 5 bedrooms and garden, to rent. Premium £1,100.

54 EAST COAST. — Partnership in Practice over £2,000 p.a. in small rapidly growing popular watering-place. Panel 700. Partner should be aged 25 to 30, single, with English qualifications, and have held Hospital appointment. Preliminary assistantship. One-third share at 2 years' purchase.

55 LANCASHIRE.—Practice of about £2,000 in semi-rural district, easy distance of several good towns. Panel returns about £520 p.a. Nice house (6 bedrooms), with garage and garden.

56 LONDON, E. — Practice over £700 in populous district. Panel nearly 500, rapidly increasing. Shop-fronted house for sale or rent. Premium 1½ years' purchase.

57 HOME COUNTIES.—Partnership in Practice between £4,000 and £5,000 p.a. in first-rate residential town. Panel 1,900. One-fourth share at 2 years' purchase.

58 N. WALES.—Very old-established, £1,346 p.a. in small town. Panel 716. House (6 bed and dressing rooms) to rent. Premium 1½ years' purchase.

59 HOME COUNTIES. — Partnership in Practice about £2,800 p.a. in good town about 30 miles from London. Practically no panel and very little midwifery. Suitable house to rent or purchase. Partner should be experienced, and have held Hospital appointments. One-third share at 2 years' purchase after preliminary assistantship.

"MEDICAL PARTNERSHIPS, TRANSFERS AND ASSISTANTSHIPS" (BARNARD & STOCKER). *Published by B.M.B., post free 12/6.*

All communications to be addressed to Mr. A. V. STOREY, General Manager.

BOVRIL MEDICAL AGENCY, Ltd.

ALDINE HOUSE,

10-13, BEDFORD STREET, STRAND, LONDON, W.C.2.

Telegrams: BOVMEDICAL, WESTRAND-LONDON. *Telephone*: GERRARD 3543 (3 Lines).

Under the personal direction of Dr. J. FIELD HALL and Mr. J. C. NEEDES

who have both had many years' experience as Medical Transfer Agents.

The commission chargeable in respect of any practice or partnership in Great Britain placed exclusively in the hands of this Agency has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being fifty pounds (£50).

No charge is made to Principals for the introduction of Locum Tenens or Assistants.
Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges.

1. WEST END.—Good-class non-panel and non-dispensing PRACTICE, established many years. Average cash receipts for past three years nearly £1,400. Fees one guinea. Suitable accommodation available. Premium £2,000. Good introduction. Ill health reason for sale.
2. X-RAY AND ELECTRO-THERAPEUTIC PRACTICE.—Large Hospital Town within 80 miles of London. A well-established connection averaging nearly £1,000 p.a. (last year £1,059). Patients upper and middle-class. Fees 1½ to 15 gns. House in pleasant position, with ample professional accommodation. Rent £60. Premium £1,500, or offer. Electric plant (which has been valued) £670 extra. Vendor is on staff of Hospital and successor will be appointed.
3. SOUTHAMPTON.—Old-established mixed-class PRACTICE. Average gross cash receipts for past 3 years £1,535, including panel and appts. worth about £850. Visits 3/6 to 10/6. Practically no midwifery. Exceptionally nice house, with ample accommodation and garden. Price £2,000. Premium 1½ years' purchase.
4. DEVON.—NEAR LARGE TOWN.—PARTNERSHIP.—A half share in a good mixed Practice, rapidly increasing and situated in beautiful district near sea. Gross cash receipts for immediate past year £2,600, including panel of over 1,300, and appts. worth nearly £250. Fees 2/6 to 21/-. Mids 3 to 10 gns. Convenient house, with 2 reception, 5 bedrooms, etc., and separate professional accommodation. Garden. Price for freehold £1,000. Excellent sport and schools. Premium 2 years' purchase.
5. SOUTH CORNWALL.—COAST TOWN.—PARTNERSHIP.—A one-fifth share in an old-established Practice, producing about £5,000 p.a., including panel of nearly 2,400. Very good house, with 2 reception, 5 bedrooms, etc., and usual offices. Rent on lease £45 p.a. Well-equipped Hospital. Premium 2 years' purchase.
6. LONDON, S.W.—A HALF SHARE in a well-established Practice, the gross cash receipts of which for the past three years averaged £2,466. Panel of 1,260. Fees 3/6 upwards. Midwifery from 5 gns.; about 30-40 cases yearly. Suitable accommodation available. Premium 2 years' purchase.
7. PARTNERSHIP.—MIDLANDS.—PROSPEROUS TOWN.—A one-third share (with increase to one-half) is offered in a very old-established good middle-class Practice averaging £3,400 p.a., including selected panel of over 1,000. M.O.H. and School appts. worth nearly £300. Fees 3/6 to 21/-. Mids. 2 to 10 gns. (20—30 cases yearly). Commodious house, with 2 reception, 5 bedrooms, etc. Electric light. Garden. Garage. Can be rented on lease at £65 p.a. Good sport and schools. Premium 2 years' purchase.
8. WESTERN SUBURB.—Well-established increasing PRACTICE, producing for the last 12 months nearly £1,200, including panel of 1,400. Visits 3/6 to 7/6. Good house, containing 2 reception, 8 bedrooms, etc., and professional accommodation. Electric light. Garden. Garage. Can be rented on lease at £130 p.a., or the freehold purchased. Premium £1,800.
9. PARTNERSHIP.—NEAR EPPING FOREST.—A one-fifth share, with increase later, in a well-established and rapidly developing good middle-class Practice, averaging nearly £2,800. Selected panel of about 600. Lowest fee 3/-. Suitable house, with 2 reception, 5 bedrooms, etc., and professional rooms. Can be rented on lease at about £70 p.a. Premium 2 years' purchase.
10. SOUTH COAST.—Popular and Favourite Watering-place.—Old-established increasing mixed-class PRACTICE, producing last year nearly £1,600 (this year to end of May £880), including panel of over 1,150. Visits 3/6 upwards. Mids. from 4 gns. (30 cases yearly). House contains eight rooms, with usual offices and garden. Price for freehold £1,450 (£1,000 at least obtained on mortgage). *Held by Vendor over 9 years.*
11. EAST COAST.—Popular Resort.—Old-established non-panel better and middle-class PRACTICE, offering excellent scope to a good Surgeon. There is a Hospital with over 80 beds, and prospect of appt. on staff. Average cash receipts for past three years £2,400. Fees 3/6 to 10/6 and upwards. Very little mid. Very good private residence near sea, with ample accommodation. Central Surgery. Premium for prompt sale, owing ill health, only £1,500.
12. YORKS.—PROSPEROUS LARGE TOWN.—Well-established compact PRACTICE, averaging nearly £1,600 p.a., including panel of 1,400. Fees 3/- upwards. Not much midwifery. Low expenses. Very well-situated double-fronted house, with 2 reception, 4 bedrooms, etc., and good professional rooms. Electric light. Garden. Price for freehold £1,500, of which £1,000 could remain on mortgage. Premium 1½ years' purchase.
13. PARTNERSHIP.—SOUTH-WESTERN COUNTY.—In a large seaport town the THIRD SHARE (to commence with) of an old-established mixed-class Practice averaging £3,200 p.a., including panel of over 2,000, is offered. Visits 3/6 to 10/6. Midwifery discouraged; about 30 cases yearly at 3 gns. upwards. Expenses light. Suitable residence available. Premium 2 years' purchase.
14. EAST COAST.—ASSISTANTSHIP with view to PARTNERSHIP.—A one-third share in a very sound mixed-class Practice, producing £2,300 p.a., and offering excellent scope. Panel of about 1,000, and good appointments. Choice of houses. Premium 2 years' purchase.
15. SUSSEX.—PARTNERSHIP.—*A one-half share in a very old-established unopposed Practice in delightful district near sea.* Average cash receipts for past three years £2,800, including £1,000 from panel and appointments. Visits 3/6 to 42/-. Midwifery from 2 gns.; about 30 cases. Very attractive house, with 2 reception, 5 bedrooms, etc., large garden. Can be rented on lease at £80 p.a. Excellent sport and schools. Premium 2 years' purchase.
16. WITHIN FIFTEEN MILES OF LONDON.—PARTNERSHIP.—A three eighths share, with increase later, is offered in a well-established Practice in favourite residential district. Receipts average about £3,000 p.a., including panel of 1,500. Fees 3/6 to 21/-. Choice of two houses. Good society, sport, and schools. Cottage Hospital and excellent scope for surgery. Premium 2 years' purchase, part by instalments.
17. EASTERN COUNTIES.—Unopposed Country PRACTICE, easily worked, and situated in beautiful district, near two good towns. Average cash recei[illegible]ars £1,064, including panel of 530. Nice hou[illegible] 6 bedrooms, etc. Price for freehold £2,000.
18. EASTERN SUBUR[illegible], with succession. A half share in an old-established Practice averaging over £1,100 p.a., including panel of 1,145. No midwifery, but scope for this. Suitable house, with electric light and garden. Price £800. Premium 2 years' pur.
19. MANCHESTER.—PRACTICE is situated in a growing district offering very good scope. Income for the immediate past 12 months over £1,600, including panel of nearly 900. Fees 3/6 upwards. Detached well-situated house, with 3 reception, 5 bedrooms, etc. Can be rented on lease at £110 p.a. Premium 1½ years' purchase.
20. LONDON.—EAST END.—Increasing cash and panel PRACTICE producing £450 p.a., including 300 panel patients. Visits 3/- upwards. Very little Midwifery. Seven-roomed house on lease. Rent £78, inclusive of rates and taxes. Premium £650.
21. WITHIN 50 MILES OF LONDON.—In a small Country Town, in pretty district, a well-established increasing PRACTICE, worth last year over £800, including panel of 525, and appts. about £60. Visits 3/6 to 21/-, medicine extra. Midwifery discouraged. Railway station in place. Very good house (3 reception, 5 bedrooms, etc.), with large garden. Tennis court. Garage. Electric light. Price for freehold £3,100. Premium 1½ years' purchase. Exceptionally good educational facilities for boys.
22. MIDLANDS.—UNOPPOSED COUNTRY PRACTICE, near good town.—*Well-established Practice*, averaging over £1,000 p.a., including panel of nearly 600. Fees 2/6 to 10/-. Excellently situated house, with 2 reception, 5 bedrooms, etc., and separate entrance to professional rooms. Good garden and garage for 2 cars. Can be rented on lease at £100 p.a. Premium £1,350.
23. CARDIFF. — Good-class old-established non-dispensing PRACTICE, worth last year about £1,350, including select panel of 450. Visits [illegible]. Midwifery. Good house in best part of City. Price, freehold, £2,000. Prem. £2,000.
24. [illegible].—PARTNERSHIP.—A well-qualified expe[illegible] (aged about 40, married, and good at Gynæcology) is required to purchase the half share of an old-established good class non-dispensing Practice owing to the retirement through ill health of the senior partner. Income about £5,000, including small select panel. Good number of midwiferies. Suitable house available, with ample accommodation, at low rental. Premium 2 years' purchase.
25. SOUTH LONDON (Near CROYDON).—Sound and increasing mixed-class PRACTICE, in growing locality. Gross cash receipts for immediate past 12 months £2,800, including panel of 2,240. Fees 2/6 to 7/6. Convenient freehold house, with electric light. Garage. Garden. Good sport and schools. Premium £4,500. *Efficient introd.*
26. PARTNERSHIP, with ultimate succession.—SOUTH-WEST LONDON.—A third or half share, to commence with, in an old-established good mixed non-panel Practice, offering large scope. Receipts for last year nearly £2,300. Fees 2/6 to 7/6. *Little midwifery.* Good house, with garden. Can be obtained on long lease at the very moderate rent of £55 p.a. Premium 2 years' purchase.
27. NEW ZEALAND.—(North Island).—In an up-to-date Town (pop. 12,000, with a further 10,000 in outlying district) within 12 miles of the sea, a well-established PRACTICE worth last year over £1,000, including appts. averaging £280. Visits 10/6 to 21/-, mileage extra. No dispensing. Excellent Bungalow residence, in an acre of garden, with fruit trees, tennis court, etc., containing 9 rooms, bathroom, etc. Electric light, h. and c. water. Climate finest in New Zealand. Splendid educational facilities and unlimited sport. Scope for surgery.
28. PARTNERSHIP.—LONDON.—*In a populous district, the half share of* an old-established middle and working-class Practice, worth over £2,000 p.a., including panel of 1,300 Visits 3/6 to 10/6. Expenses light, car not necessary. House contains professional accommodation, 2 reception, 2 bedrooms, bathroom, etc. Held on lease at rental of about £60 p.a. Premium 2 years' purchase.
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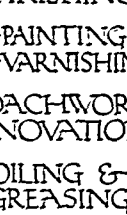

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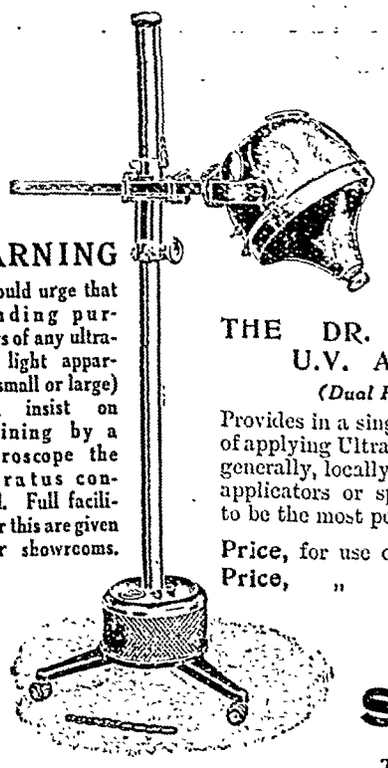

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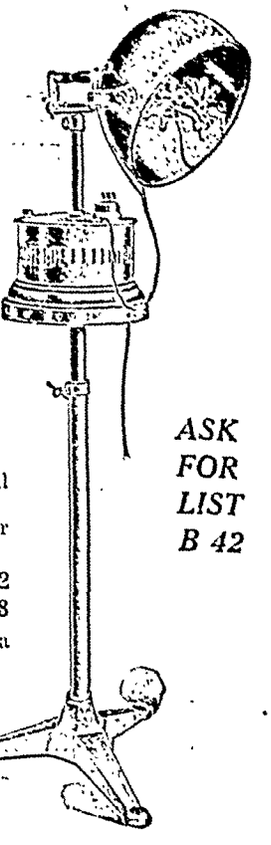

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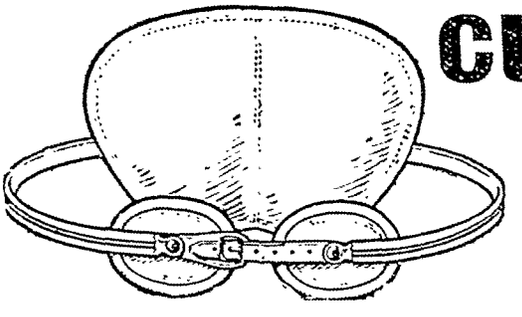

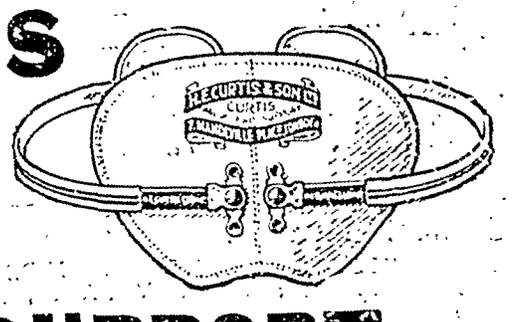

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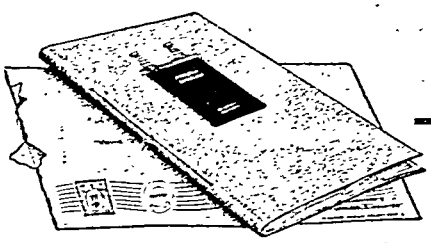

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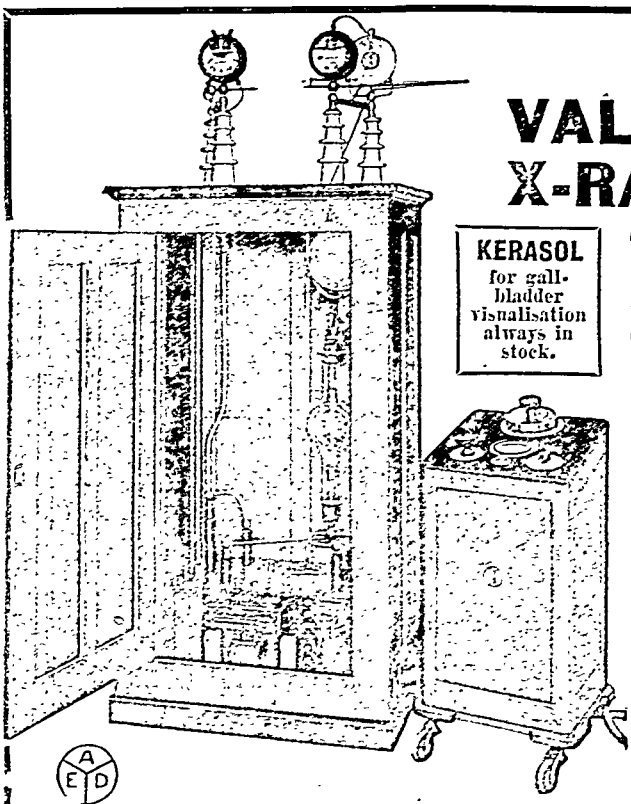

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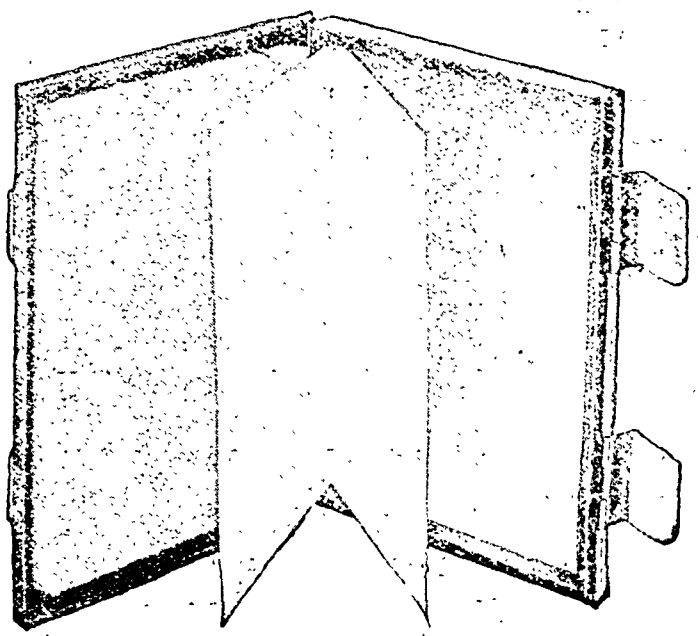

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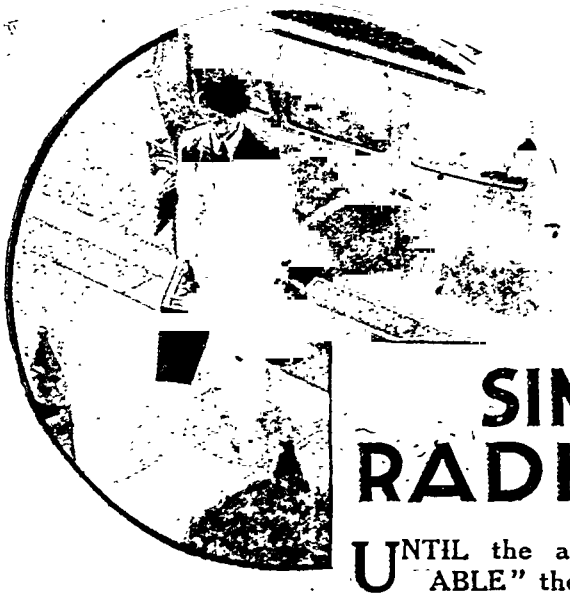

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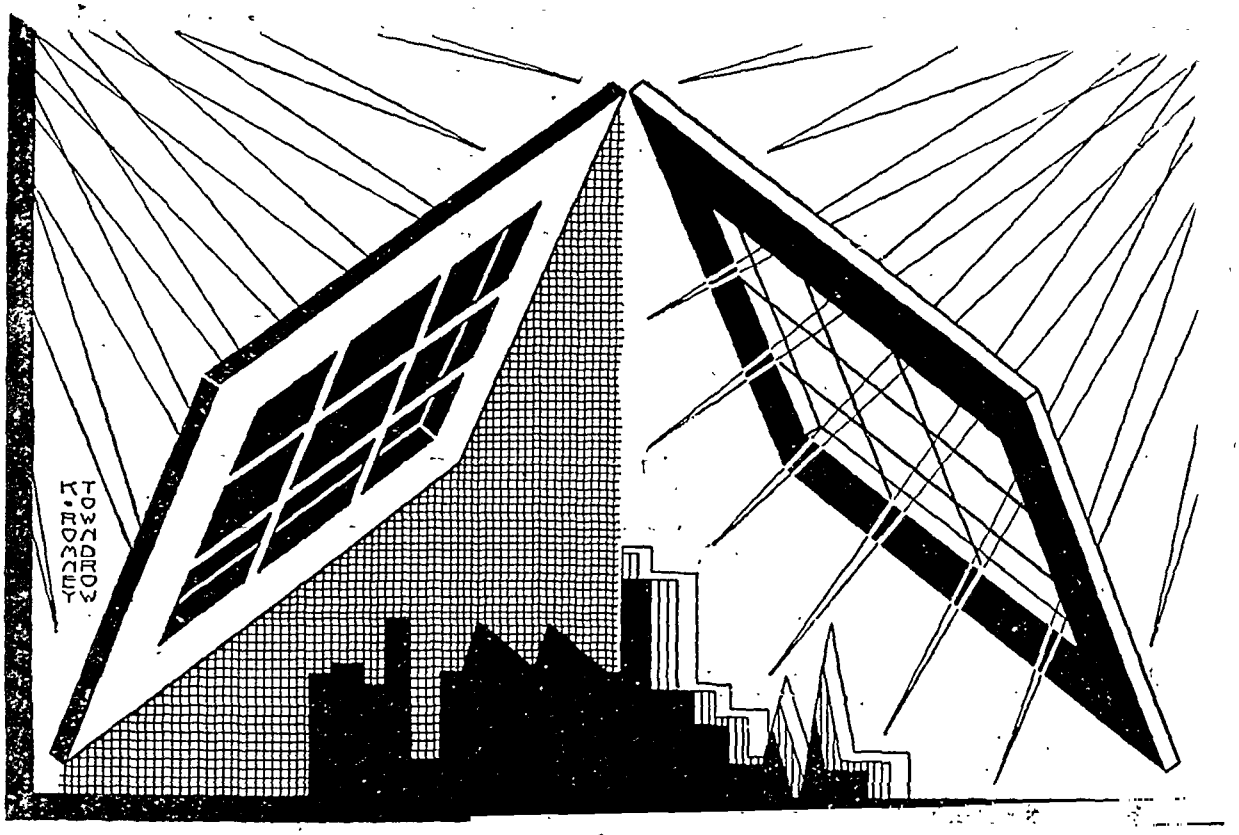

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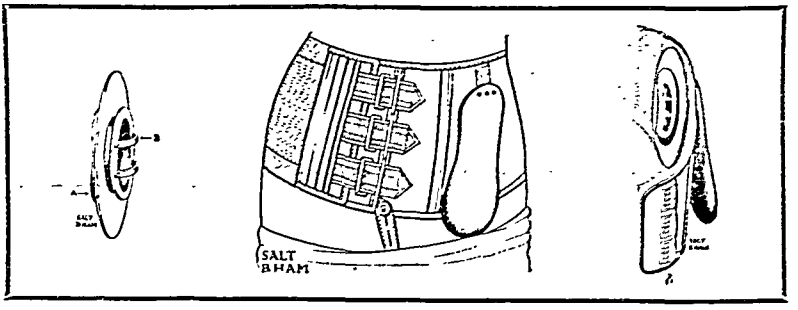

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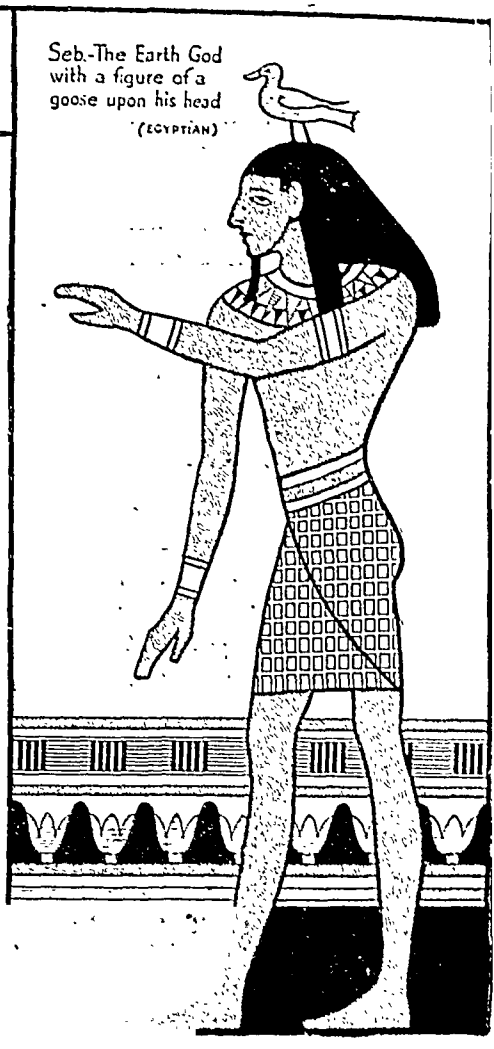

Seb.-The Earth God with a figure of a goose upon his head (EGYPTIAN)

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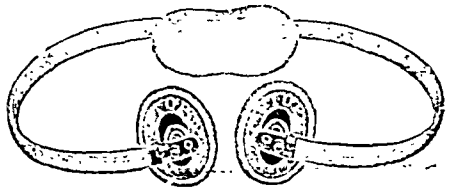

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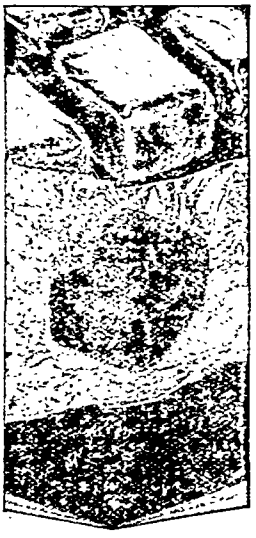

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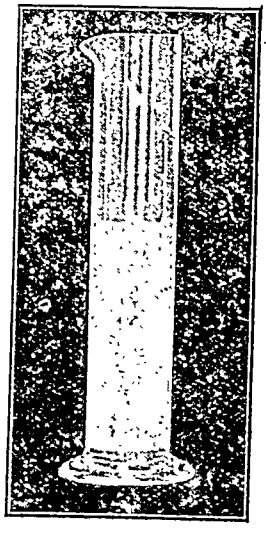

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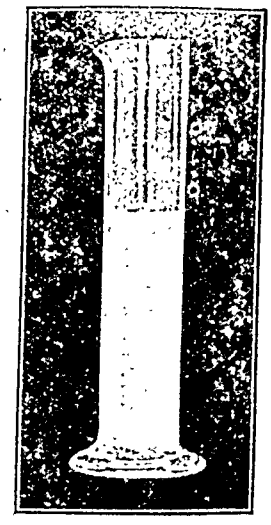

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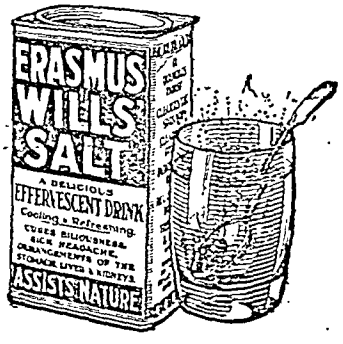

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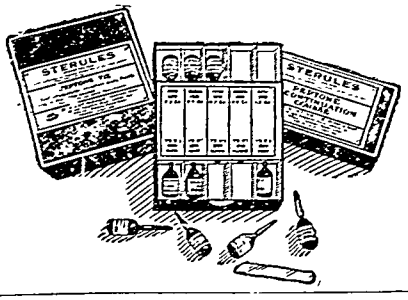

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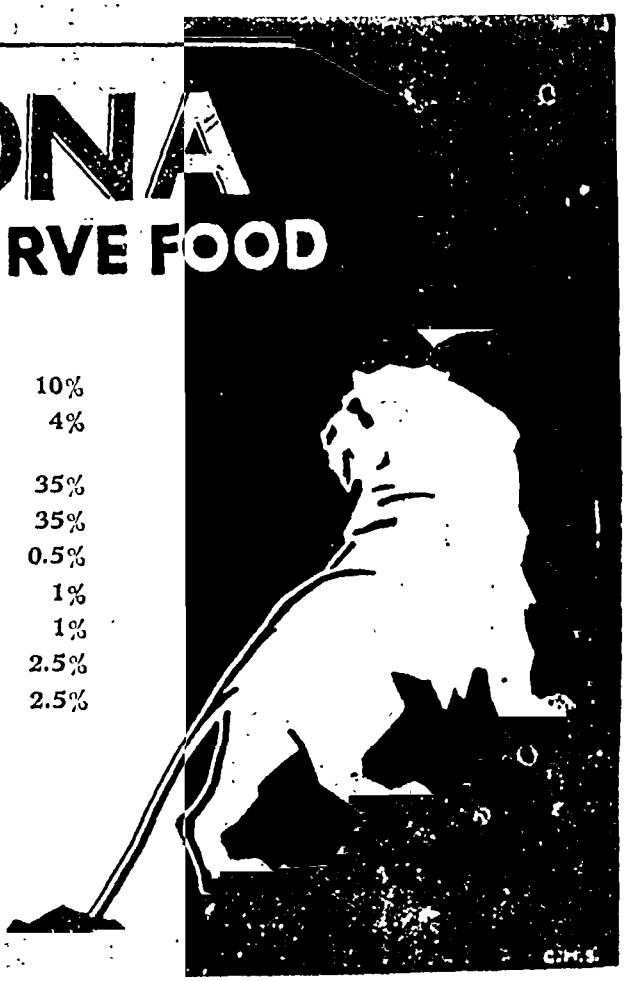

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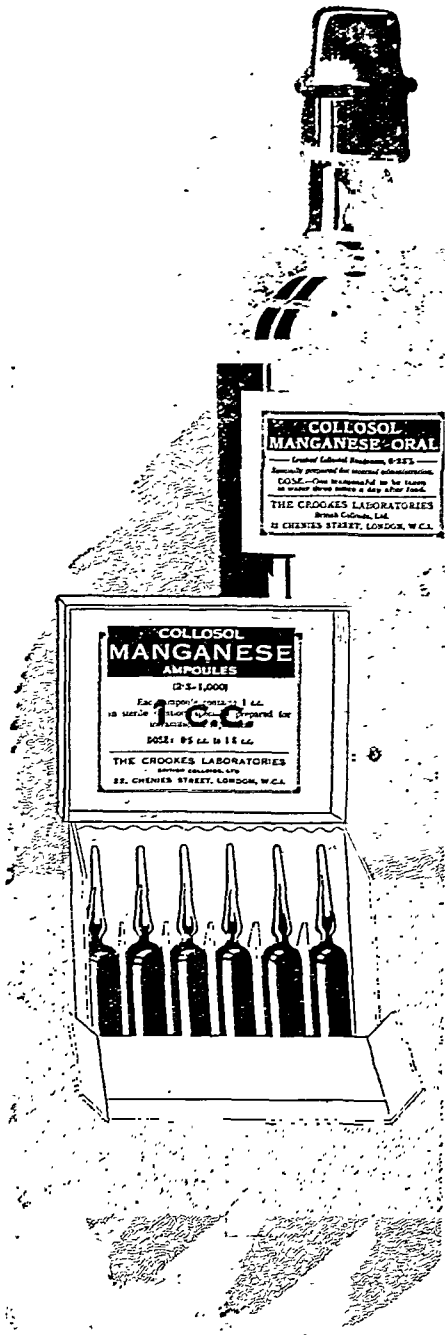

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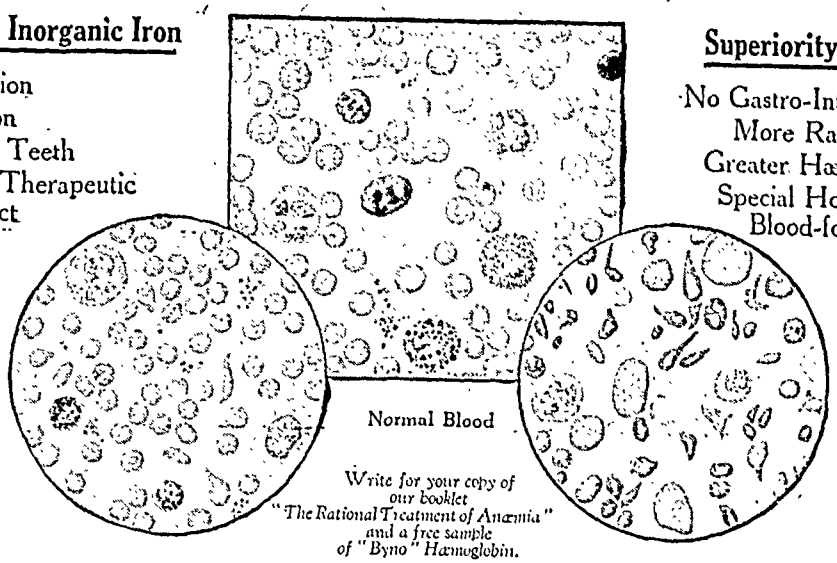

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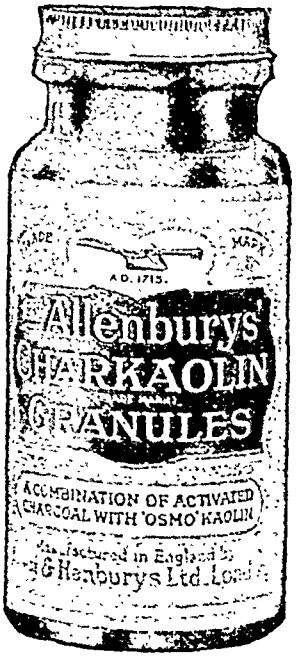

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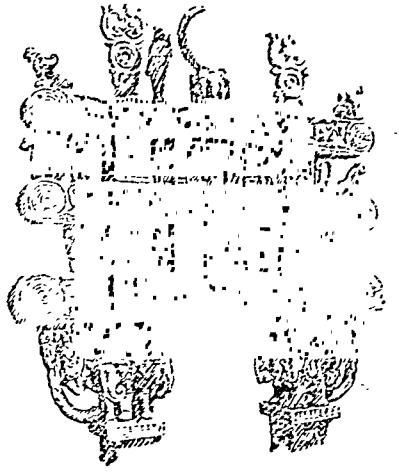

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Postulate 3.

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Remarks on THE PRESENT POSITION OF THE PROBLEM OF PSYCHIATRIC PATHOLOGY.*

BY

W. F. MENZIES, M.D.ED., F.R.C.P.,

CHEDDLETON.

THE mental case is too often an unwelcome addition to the anxieties of the busy practitioner. Apart from nursing difficulties the whole process of ingravescent mental disorder seems to him so ill-defined, even mysterious, that he scarcely knows where to begin. He finds it far from easy to persuade the relatives that early removal to a special hospital is desirable, although he assures them that thus only can the patient receive proper treatment. This is a most generous attitude on his part, for he knows that, except for moral control and outdoor exercise, the case will receive much the same symptomatic treatment as he himself is well able to supply—chiefly laxatives and sedatives. But it is undesirable that any case of illness should present itself to a medical man as a nuisance, and for this those who practise and teach psychiatry are largely to blame. *The limited time available in a crowded curriculum* precludes the teacher from directing the attention of the senior student to the physiological and neurological aspects of mind, so that, coming fresh from more exact histological and biochemical laboratory methods, he is given "nothing to get hold of." We may as well admit our ignorance—we cannot teach what we do not know; for, let there be no doubt about it, theories of the causation of mental illness are highly problematical. But the best way to tackle a problem is to set up a theory and then proceed to demolish it, until from the ruins a sounder edifice can be erected. There are no mental diseases properly so called, there is only disordered action of the brain cortex; there is no essential difference between the neuroses, the psychoneuroses, and the psychoses; *the diseased processes which* result in mental illness are just those which we are accustomed to recognize in physical disorders, and that the clinical presentations are so different is more a social than a medical problem. Therefore I believe that the general practitioner could help the psychiatrist beyond measure if he had time to make a note on his clinical cases of all the slight mental changes which occur from day to day—the attitude, facial expression, mental outlook expressed in conversation, memory, attention, interests, dreams, reaction to pain, and so on, carefully correlated to the somatic signs present. This address is frank propaganda; its object is to seek the help of our medical colleagues in furthering the great cause of mental welfare, one important aspect of which is the pathology of mental disorder. It may enlist their interest if I mention a few of the almost innumerable problems upon which we should like light to be thrown. These are not selected quite at random, but because over forty years of clinical experience suggest to me that some of them may ultimately yield useful results in furthering the cause we have at heart.

The efforts of Pinel, Tuke, Conolly, and others at the beginning of last century and earlier were devoted to the social amelioration of the insane rather than to the scientific side, so that France and England lagged behind Germany; nor had the United States, where of late years more work has been done than anywhere else, yet entered the lists. But for nearly a century a long roll of distinguished workers in the Wakefield Asylum laboratory has kept alive the spirit of research—Sir William Ellis, Sir David Ferrier, Dr. Henry Maudsley, Sir James Crichton-Browne, Dr. Herbert Major, Professor Bevan Lewis, and the present president of the Royal Medico-Psychological Association, Professor J. Shaw Bolton. Nowadays, of course, nearly every mental hospital and psychiatric clinic has its laboratory, and, especially since 1918, an enormous stream of literature has poured forth, applying to mental cases nearly every clinical or laboratory test which has been suggested for use in general medicine. And withal I think we must confess that no special light has been thrown upon the genesis of mental disorder. Not that all these efforts have been wasted; on the contrary, a negative deduction is of value in eliminating one more source of error.

Within the last two years the Royal Medico-Psychological Association, recognizing that one great reason for failure has been diffusion of effort, and that more and more in the future team work will be necessary, has, mainly through the enthusiastic drive of one of our recent presidents, Colonel J. R. Lord of Epsom Mental Hospital, appointed a comprehensive committee to co-ordinate investigation. We do not expect miracles, we realize that none of those at present alive are likely to see a solution of our difficulties, but we do at least hope to make a beginning, to build up effort gradually, until in the end some such body as the Medical Research Council, or even the League of Nations, takes up the work. But right at the beginning it seems to me that it would be a mistake to start with such abstruse problems as schizophrenic conditions: we are more likely to advance by means of the simpler emotional and toxic psychoses. It is true that the lamented death of Sir Frederick Mott left incomplete his work on dementia praecox and the endocrine glands, but I think he wanted really to establish a standard, for he often expressed to me the hope that biochemical work on the action of the vegetative nervous system in connexion with the emotions would follow upon his anatomical findings. And so I confine myself here to the manic-depressive or toxic psychoses, and suggest a pathology which will serve as well as any other as a cock-shy; for what excites opposition may also, in some corner or other, stimulate investigation.

The mention of the word toxaemia is apt to raise a smile, yet I doubt if anyone questions its importance in disease. Many, perhaps most, families of micro-organisms, aerobic and anaerobic, produce by their life-processes haemolytic or neurolytic non-specific poisons, chiefly in the intestine, but also in mouth, fauces, accessory sinuses, or genito-urinary tract, less often in joints, lungs, or skin. These toxins are normally dealt with by the portal system, principally the liver, but if this barrier fails they may reach any part of the body in the blood stream. Before they can affect the neurones of the central nervous system they must reach the cerebro-spinal fluid through the reticulo-endothelial system of the choroid plexuses, and only then can a psychosis be produced. The actual method of production, as suggested by the work of Marinesco, Mott, and others, seems to be a toxic anoxaemia by inhibition of the neuronal oxidases, so that the state of synaptic resistance is altered and the cortical pathways disorganized, for synaptic resistance is the anatomical basis of all regulated nerve action. But, further, the pathways in the basal ganglia, hypothalamus, and mid-brain are liable to become confused, with disastrous consequences to the vegetative and extrapyramidal reflex systems. And so it may come about that the basic emotional feeling-tone which determines the character of the psychosis may be due, not to any difference in the nature of the original toxaemia, nor to any primary variation in the quality of the endocrine secretions, but only to the manner in which these are influenced by the sympathetic system, and so ultimately to the directional manner in which the built-up emotion is presented to the cortical analysers. Therefore I suggest that five essential fields for research are: (1) the bacteriology of the intestine and accessory sinuses; (2) the proteolytic functions of the liver; (3) the histology of the basal ganglia, mid-brain, and hypothalamus; (4) the influence of toxic agents on the cortex; and (5) the permeability of the choroid plexuses.

BACTERIOLOGICAL PROBLEMS.

Clinically we have a good deal of negative knowledge of toxaemia in the psychoses. We meet sepsis in all its forms in mental hospitals; in fact, the helpless social habits of our patients constitute one of our worst surgical troubles; but we never find a septic infection arousing an acute mental exacerbation in a chronic case. I have never seen an acute puerperal psychosis arising primarily in a mental hospital confinement—that is, in a patient already

* Made at a meeting of the Staffordshire Branch of the British Medical Association, May 15th, 1929.

under treatment for some delusional or chronic mental illness. We all know that in a very small percentage of cases of almost any bodily disorder, exanthematous or otherwise, a psychosis may arise, and this quite independently of the degree of severity of the illness. On the other hand, many diseases have their specific mental side, such as thyroid imbalance or pellagra. That toxaemia has a very real connexion with the psychoses is indicated by the improvement when sources of sepsis are removed, especially by a course of autogenous vaccines. Some pathogenic organisms are highly virulent, and produce a toxin demonstrable by a specific reaction, but most intestinal groups are of low virulence, and produce mixtures of non-specific ptomaines whose influence on the host varies extraordinarily under different conditions of susceptibility, etc. This at once suggests some abnormal deviation in a group normally indigenous to the bowel.

At Cheddleton Major F. H. Stewart, working with aerobic methods, has studied the formation by coliforms of phenol and tyramine from tyrosine, and has established the following position.

1. Carriers of N.L.F. coliforms (paracolon mutabile) are four times more common among acute mental patients than among sane controls on the same diet.

2. Bacteria forming phenol from tyrosine in alkaline media are much more abundant in the faeces of acute psychotics than of sane controls; these were chiefly (*a*) the Morgan group (in 25 per cent. of mental cases and 9.5 per cent. of controls), (*b*) *B. phenologenes* of Berthelot—that is, a generic term for any phenol-forming coliform.

3. Fifty per cent. of acute psychotics yielded from faeces in tyrosine media over 0.015 per cent. of phenol; no sane controls reached this amount; many yielded none. Of course, no one supposes that phenol itself is the toxic agent, but it is a mensurable indicator of some more complicated abnormal product.

4. Intravenous autogenous Morgan vaccination will remove this bacillus from the stools without immediate mental improvement, but bodily symptoms may be relieved—that is, headache, dyspepsia, anaemia, loss of weight.

5. In relapsing cases thus treated the place of Morgan in the intestine is taken over by one of the phenologenous group.

Those interested in the subject will find Stewart's work set forth in detail mostly in recent numbers of the *Journal of Mental Science*. What interests us here is not scientific labelling, but solely the question, Does this or that organism produce a toxin? If so, under what conditions, and what is its biochemistry?

Dr. Ford-Robertson at St. Andrew's Hospital, Northampton, has been working on the anaerobic groups, especially the diphtheroid-lepto-streptothrix types, and believes that subtoxic anaerobes play an important part in chronic focal infections, principally in the intestine, but also in teeth, tonsils, sinuses, and cerebro-spinal fluid. Special forms of anaerobes have been found in mental cases which are rare in sane controls, and it would appear that to some groups the central nervous system is especially susceptible.

The work of Dr. F. A. Pickworth, pathologist to the Birmingham Mental Hospitals, is well known from his publications on the bacteriology of the accessory sinuses. Some of his beautifully mounted specimens show bacteria from the sphenoidal sinus passing through the thin bony septum and invading the pituitary fossa and substance of that gland. Many of the patients treated at the Birmingham mental hospitals for sinusitis by Mr. W. S. Adams are stated to have lost their more urgent symptoms—headache, malaise, and depression—and to have been able to return home and resume work.

Finally, in connexion with bacteriological problems, many believe that the organisms actually at fault are filterable viruses, possibly commensal with some which can be readily recovered from the intestine and other body cavities.

Liver Efficiency.

It is not without significance that mental diseases have been associated with liver disturbances since the dawn of medicine; the word melancholia reminds us of the connexion. Clinically a large percentage of recent and acute psychotics show marked digestive upset, chiefly the manic-depressive types, the so-called "toxic" or "toxaemic" class. It is the usual thing for chronic cases subject to periodical acute relapses to usher these in with a "bilious" attack. In recent melancholia we find anorexia, flatulence, gastric discomfort, constipation, often slight jaundice; in early mania, headache, furred tongue, foul breath, or vomiting; all these, of course, are traceable to disturbance of the involuntary nervous system. But there are so many other disorders apart from mental illness which exhibit similar troubles that we want all the information we can get about the emotional side of such functional upsets as seasickness, migraine, vertigo, tinnitus, nystagmus, headache, and the large class of neuroses dubbed "neurasthenia," as well as those included under such headings as "the chronic abdomen." No doubt the intact intestinal mucosa ought to prove an efficient barrier against the entrance of toxins into the portal circulation, but enteroptosis, liver cirrhosis, jaundice, appendicitis, cholecystitis, atheroma, and countless other disorders are evidence of the universality of toxaemia. The functions of the liver are so numerous and ill defined that it is difficult, even theoretically, to devise efficiency tests. The glycogenic function is about the only one which has been seriously attacked in connexion with mental states in this country. S. A. Mann at the Maudsley laboratory, and Drury and Farren Ridge at Stafford, have estimated the blood glucose in a series of cases, and the former in another series used the levulose reaction. Everyone admits that sugar storage is disordered in mental disorder, especially in melancholia, but Mann concludes that the pancreas rather than the liver is at fault. I hardly think his cases were very well selected; what is wanted is not a haphazard group of mental patients, but rather an intensive study of a few cases, correlating the results with the varying mental states. Isabella Robertson has dealt somewhat fully with the homoclasic crisis of Widal, and here again the results are indeterminate, although certainly a leucopenia is much commoner in psychotics than in normal controls. But the connexion of the haemoclasic crisis with liver functions is still undetermined. The various papers of the above workers may be found in the *Journal of Mental Science*, July, 1925. I cannot find any record of a systematic series of van den Bergh reactions in mental cases; it would be trying to the patients to bleed them sufficiently often, and this procedure alone would tend to vitiate results. In some cases at Cheddleton we have obtained encouraging results, but it has only been used where some suspicion of hepatic defect was otherwise excited. It would appear that the efficiency of the liver cells varies from hour to hour, and that the reserve of efficiency is very large. There are some diseases where degeneration of liver and central nervous system occurs simultaneously, such as in Wilson's disease. Also one occasionally, in mental hospitals, meets with cases of pernicious anaemia and subacute combined sclerosis which develop a psychosis, and this may be either excitement or depression.

Mid-brain and Hypothalamus.

Our knowledge of the mid-brain, hypothalamus, and tegmentum is still most imperfect. The parts are not easy of access in the experimental animal, small lesions are misleading and easily fatal, the paths are short and lend themselves badly to degenerations, and the systems are very complicated and not strongly marked. The main connexions of the red nucleus have been fairly well established; it can be studied phylogenetically, and its position as a great co-ordinating centre of extrapyramidal and cerebellar functions is clear. But other grey masses still elude us, and for further advance we must trust to careful records of clinical cases. In this way we are beginning to learn something of two great ganglia—the substantia nigra and the corpus Luysii. It would appear that the neurones of the former are greatly reduced in Parkinsonian degeneration, whatever other centres may be in addition, those of the latter in chronic chorea. Now these two degenerations are associated with somewhat specific mental states. In advanced Parkinsonism euphoria is the rule, although not always seen in early cases. This euphoria is real mental satisfaction and contentment in the patient, and is not merely loss of power over the facial muscles hiding the expression of a dysphoria; the patient enjoys life and entirely fails to realize the gravity of his condition, and a

similar feeling-tone is described in lenticular degenerations. In chorea another change is seen—gross instability of emotional tone. Dr. Pindon Martin[1] has found that nearly all recorded cases show such mental changes and that they are associated with degeneration of the corpus Luysii. Just as in acute chorea the muscular movements are entirely purposeless and belong to a low physiological level, so in chronic chorea the patient is apt to be impulsive, irascible, and uncontrolled. This is well seen in Huntington's chorea, such families being notable for illegitimacy and drink.

The broad view to take of the mid-brain, hypothalamus, and bulb is to look upon the grey masses not so much as nuclei of origin of nerve impulses, but rather as great reflex relay stations between cortical and striothalamic functions; and if it can be shown that different focal lesions are accompanied by uniformly varying feeling-tones the possibility is opened up that emotional variations depend, not so much on the nature of endocrine, sympathetic, and other afferent elements, as on divagations of the paths of presentation to the thalamus, and ultimately to the cortex. The Lange-James theory of the emotions depends upon results produced through afferents from somatic muscle, but we now realize that this is only a small part of the picture, for plain muscle everywhere produces a like effect upon the elements of an emotion. Not seldom one comes across manic-depressive cases whose relapses are sometimes into excitement, sometimes into depression—this from similar sets of causes and without regular sequence. People gravely ill from, say, puerperal or other sepsis vary greatly: some are petulant and fearful, some unreasonably buoyant. And the same occurs in advanced phthisis. Until we know what happens to the sympathetic afferents after they enter the cord, and until we know whether the pain fibres in the posterior columns are unmyelinated or not, it would be premature to formulate definite theories; but if differences in synaptic resistance in the subthalamus and neighbouring parts can be produced by neurotoxins, then the whole mass of glandular, vascular, respiratory, and postural elements which go to build up the complete emotional picture may depend upon geography. Such a line of thought leads straight to Pavlov's theory of sleep; internal cortical inhibitions spreading to the great basal relay stations would remove at once the necessity for predirating a sleep centre in the hypothalamus; synaptic resistances would produce the same effect.

The Action of the Brain Cortex.

The two principal directions in which the human cortex transcends that of lower phylae are the more extensive association areas round each primary centre and the growth of the supragranular layers. Both these have really one objective—the multiplication of neural paths. Supragranular axons are associational only, within the cortex, and each individual path is quite short: infragranular axons form the corticifugal side of the two-way paths to lower nervous levels. The granular layers are, in some sense-reception centres, such as the visuosensory, so numerous as to form a duplicated line, and in final transmitting centres, such as the precentral, so few that the area has been called "agranular." Granule, or stellate, cells are, wherever they occur, the jack-plugs of the switchboard; their dendrites form synapses with the collaterals of distant neurones; their axons break up at once and form synapses with the dentrites of the next neurones in order. They are the actual anatomical means whereby multiplication of neural pathways can be utilized; they are essential elements in the structure of mind. It is sometimes not easy to realize that mind is merely an anatomical arrangement of intensely complicated cortical pathways, and that numerically the neurones can account for all the phenomena displayed. There are a good many platitudes which as neurologists we recognize but as psychiatrists we jib at. Yet there is only one kind of nerve action, whatever it is. A neurone can only discharge, on the "all or none" principle, go through a refractory interval, and slowly recover. There is not one kind of excitation stimulus and another kind of inhibition stimulus: it is all a question of paths. Many years ago Professor McDougall formulated his "neurine" hypothesis, and it has never been improved upon, although possibly he laid too much stress on the passive aspect. Then there is the law of dynamic polarity: the synapses are one-way valves. How they act we know not, but probably it is a matter of slight variations in the hydrogen-ion concentration from moment to moment. Again, serial representation occurs everywhere, as has actually been demonstrated in the visual pathway. So mental images and ideas are slowly built up by repeated experience of different degrees of stimulus. Every concept involves the whole of the nervous system, if only by reference to unconscious memory habits; but not every stimulus causes every neurone to discharge, even in the epileptic fit, the nearest approach to a mass discharge which we know. The convulsion, however, is sufficiently near it to indicate the nature of coma, and, conversely, to suggest that consciousness is a state of receptivity of the cortex to incoming stimuli unimpeded by generalized inhibition, which latter is, as Pavlov points out, sleep. Attention is a directed concentration of neural paths, generally determined by the emotion of the moment. All life is one vast complication of conditioned reflexes at every physiological level, and the unconscious are to the conscious as a million to one. By the law of summation of stimuli repetition lowers the synaptic resistance of a given path, hence instinct, habit, custom. Some paths are biologically very old; thus, the vagus system has altered little since the time of Silurian invertebrates. Other paths are exceedingly evanescent, such as women's dress fashions. Free will is a figment of the imagination; every human action is guided by an almost endless chain of previous conditioned reflexes—biological, racial, hereditary, educational; and the only reason why an experience is never exactly repeated is that life is not long enough. We flatter ourselves that we are guided by reason, but the only difference in mentality between civilized man and savage is that the conditioned reflexes of the latter are on lower physiological levels; they are not guided by recent knowledge, and so we call them superstitions.

Neuro-toxins and the Cerebro-spinal Fluid.

The central branches of the cerebral arteries supply the choroid plexuses, the cortical branches send tiny loops into the surface grey matter of the hemispheres. The cerebro-spinal fluid is secreted by the choroidal epithelium, and to a small extent also is a serous filtration into the perivascular lymphatic spaces of the brain. This latter is not a reversible action within physiological pressure limits. L. H. Weed in America has for many years investigated this matter, following the original work of Dixon and Halliburton; a summary of Weed's views is to be found in *Physiological Reviews*, 1922. Having escaped through the foramina in the roof of the fourth ventricle and reached the cisterna magna the fluid capillarizes up the arachnoid network, chiefly through the Sylvian fissure, over the hemispheres, tends to pool along the great longitudinal fissure, and gradually enters the superior longitudinal sinus, picking up in its course the products of neuronal disintegration. If it is very toxic it may produce death of many supragranular neurones, which is dementia. If the toxicity was prenatal the growing neurones are nipped in the bud, hence amentia. In any case the irritation of the fluid gradually, as age advances, excites the lymphatic hyperplasia which we call the Paccionian bodies. It may be asked why we do not in an acute psychosis necessarily get motor paralyses, blindness, anaesthesia, and other gross lesions. Such a question loses sight of the essential nature of cortical action. The cortex is, after all, only the highest level of the nervous system: its object is an exquisitely delicate selective release; it does not concern itself with the means by which a movement is performed so much as the reasons for that movement. Even if no movement results, the idea of movement, which older psychologists called ideation or conation, is still there. Besides, the toxic injury is only slight: if it were not so, we should get unconsciousness in some form—in other words, coma. We can no more have an active psychosis with a fully paralysed cortex than we can have athetosis with a wholly destroyed pyramidal tract. The lower mechanisms are older and

sturdier, and they are less directly exposed to the wash of a neuro-toxic cerebro-spinal fluid.

The nature of an insane idea may be illustrated by the sign of "past-pointing." Here a lower mechanism, *whether cortical or subcortical*, has by instinct and habit established a conditioned reflex of movement and posture which is presented to the cortical analysers as a composite picture or *schema*, as Head calls it, representing the attainment of a certain position in space arrived at in a certain definite manner. When the lower mechanisms are at fault a different picture is produced, which is again accepted by the cortical analysers at its face value, regardless of the fact that the real value has altered. In the insane idea the composite picture is much more complicated, more largely cortical, each component having its own innumerable subschemes derived from every lower physiological level. Thousands of experiences crowd in from every side of our personality—biological, genetic, instinctive, habitual, educative, social; orderly conduction along the millions of paths which constitute normal reason is disturbed by the toxaemia, and the result reacts upon conduct. The details of the process are infinitely complicated, but the mode of action is fairly understandable in the light of our present knowledge.

It is evident that in health the choroid plexuses form a barrier which prevents deleterious substances—for example, organic arsenical preparations—from entering the cerebro-spinal fluid, but I do not know that there is much experimental evidence concerning permeability to tissue poisons. Büchler[2] of Budapest dealt with the subject, and Walter[3] of Rostock Gelsheim devised a bromide permeability test. Measured doses of sodium bromide are given for five days, and a ratio called the "permeability quotient" is set up between blood bromine and C.S.F. bromine. But probably the P.Q. varies from hour to hour according to blood pressure, serum protein content, buffering, and so on; further, permeability to a crystalloid is no index of the behaviour of the much larger colloid molecule. Nor can we separate out the effects of the accumulation of toxins which produce the acute hallucinations occurring in the endurance trials on American speed tracks after days of continuous driving with practically no sleep from those produced by low oxygen tension, and which result in the depression, confusion, and irritability seen in many from continuous high flying or mountain climbing. The cranium is for practical purposes a closed box wherein in health an equilibrium is maintained between the arterial, venous, and cerebro-spinal fluid pressure; the less of any one of these, the more of the others. When the total pressure exceeds physiological limits there comes a time when the amount of arterial blood is insufficient to supply oxygen to the neurones.

I have dealt with mental disease from the physiogenic side. Are there not, then, psychogenic causes as well? *Certainly there are, and they often yield to psycho-therapeutic measures*, which are, whatever form they take, a deliberate modification on the part of the physician of the patient's higher conditioned reflexes. But their effects are only indirect; the concentrated attention and emotional unrest called worry produce loss of sleep and appetite through endocrine and sympathetic upset, and toxaemia follows. From this stage onwards physiogenic and psychogenic causes march hand-in-hand. I realize that I have given no really practical explanation of mental pathology, but, to tell the truth, we cannot get much further without the intensive work of the biochemist, and the public do not often see the necessity for giving adequate remuneration to a scientific worker who cannot, at a moment's notice, produce rabbits from his hat. The psychiatrist is not wholly to blame for his own ignorance; old legal traditions are powerful, and the state of the law is a heavy drag on our efforts. Nor are our cases easy to manage; they are often restive and always unreliable; they resemble children in that the subjective side of diagnosis is more or less absent, and in many mental conditions even the material obtained for laboratory examination is merely misleading.

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HAEMOSTATIC THERAPY IN HAEMOPHILIA

BY

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THE value of most haemostatic drugs can be demonstrated either *in vitro* or by means of an experimental animal. It does not follow, however, that similar good results will follow in the treatment of pathological states. The value of haemostatic drugs in these conditions rests largely on clinical reports based on impressions unsubstantiated by actual measurements. Furthermore, it is highly probable that a drug which might be completely efficacious in dealing with one form of haemorrhage might be quite useless in the case of another. Our conclusions are therefore strictly confined to haemophilia.

In each case the value of the therapeutic agent has been assessed by its effects on the coagulation time. This can be accurately estimated by the Dale-Laidlaw method. Using this method the average normal coagulation time is 1 minute 45 seconds. Values below 1 minute 30 seconds or above 2 minutes are considered to be abnormal. The bleeding time was also taken in each instance, but in haemophilia it is such a variable quantity that it is of little help in diagnosis and quite useless for assessing the value of treatment. It is quite common in haemophilia to find a normal bleeding time.

Inasmuch as the bleeding from a simple needle puncture in a normal subject often stops before clotting can have occurred it follows that other factors besides clot formation must be involved. Two possible mechanisms are: (1) contraction of the capillary walls, and (2) aggregation of platelets sealing the injured wall (Tidy[1]). In haemophilia there is no known damage to the capillary walls and the platelet count is normal. It is not, therefore, surprising that the bleeding time is often normal. The prolonged bleeding times sometimes found are probably due to puncture of larger vessels, in which case the formation of a clot is necessary to supplement the action of the above two factors. The condition in thrombocytopenic purpura is in direct contrast to this. Here the capillaries are easily damaged and the platelet count is low, and so, despite an almost normal coagulation time, the bleeding time is markedly prolonged.

CASE REPORTS AND RESULTS.

Four cases of haemophilia were investigated.

CASE I.—Male, aged 6. No family history of "bleeders" was obtained. Of two brothers, one was normal and the other had a coagulation time of 2 minutes 18 seconds. The subject himself had frequent haematomas and haemorrhages into his joints. The blood platelet count was 243,000 per c.mm. The Wassermann reaction was negative.

CASE II.—Male, aged 2; an only child. There was no family history of bleeding. He has had several effusions, presumably haemorrhagic, into his joints. While in hospital he cut his tongue and bled for six days, losing much blood. The platelet count was 245,000 per c.mm.

CASE III.—Male, aged 9½. Family history of "bleeders" obtained. He had been in hospital twice before, once for a small wound, and once for teeth extraction.

CASE IV.—Male, aged 5. Family history of "bleeders." On two previous occasions he had been admitted for haemorrhages. Once transfusion was necessary before bleeding stopped, and once injection of his mother's serum controlled the haemorrhage (technical data not available). On the present occasion it was necessary to extract a tooth, and, despite all the usual local treatment, haemorrhage could not be controlled.

In all these cases the bleeding time showed marked variation without any relation to either the coagulation time or the therapeutic substance used. Most of the values obtained were normal. The following figures show the range of the bleeding time in each subject:

Case I	30 seconds to 12½ minutes.
Case II	1¼ minutes to 4¼ minutes.
Case III	15 seconds to 4½ minutes.
Case IV	45 seconds to 3¼ minutes.

THE METHOD OF INVESTIGATION.

Most of the substances have been examined in two ways: (*a*) The immediate effect has been studied by determining the coagulation time at frequent intervals after a single dose. The coagulation times were estimated before giving the substance, and then for one hour, at quarter-hour intervals, except occasionally, when estimations were made every half-hour. After the first hour two further estimations were made at about hourly intervals. (*b*) The prolonged effect has been studied by determining the coagulation time before, during, and after a series of doses.

Haemoplastin.

Immediate Effect.—Case i was given 4 c.cm. subcutaneously. The coagulation time fell from 5 minutes 58 seconds to 5 minutes 35 seconds in one hour, and then rose to 6 minutes 49 seconds in two hours.

Prolonged Effect.—Case i was given 2 c.cm. subcutaneously for five days. The coagulation time fell from 5 minutes 8 seconds to 4 minutes 48 seconds on the first day, and rose to 6 minutes 25 seconds on the sixth day. In Cases ii and iii no fall in the coagulation time was observed, but there was a definite rise by the end of the period.

Coagulin Ciba.

Immediate Effect.—Case i was given 20 c.cm. intramuscularly. The only change in the coagulation time was a rise at the end of one hour from 5 minutes 35 seconds to 7 minutes 45 seconds, which lasted for at least two hours.

Prolonged Effect.—Intramuscular injections of 20 c.cm. were given for four days; there was no change in the coagulation time.

Effect of Oral Administration.—Case i was given 1 gram; there was an immediate increase in the coagulation time from 5 minutes 55 seconds to 8 minutes 23 seconds, followed by a rapid decrease to 5 minutes. Within an hour the coagulation time had returned to its initial value.

Fibrogen Merrell (Tissue Fibrinogen).

Immediate Effect.—Subcutaneous injection of 2 c.cm. produced only a small increase in the coagulation time.

Prolonged Effect.—2 c.cm. were given subcutaneously for three days; no change occurred.

Effect of Oral Administration.—On an empty stomach 3 c.cm. in 6 oz. of iced water were given to Cases i, ii, and iii; 6 c.cm. also were given to Case i. In Case i, with 3 c.cm. the coagulation time fell from 5 minutes 30 seconds to 4 minutes 10 seconds in three-quarters of an hour, rising to 7 minutes 37 seconds in one and a quarter hours. With 6 c.cm. the coagulation time fell from 5 minutes 53 seconds to 3 minutes 29 seconds in a quarter of an hour, and rose to 7 minutes 42 seconds in one hour. In Case ii the initial coagulation time was 9 minutes 48 seconds, and during the test it varied irregularly between 8 minutes 32 seconds and 10 minutes 52 seconds. In Case iii the coagulation time rose from 3 minutes 15 seconds to 3 minutes 52 seconds; 6 oz. of iced water alone given to Case i caused the coagulation time to fall from 5 minutes 45 seconds to 4 minutes 17 seconds, with no subsequent rise above the initial time.

Horse Serum.

Immediate Effect.—After 20 c.cm. had been given subcutaneously to Case i there was an initial fall from 5 minutes 44 seconds to 5 minutes 3 seconds, followed by a rise to 6 minutes 23 seconds.

Prolonged Effect.—On two days 10 c.cm. and on the third day 20 c.cm. were given subcutaneously to Case i; no change occurred.

Protein Shock.

(*a*) *Typhoid Vaccine.*—Doses of 10, 20, 50, and 200 million of mixed typhoid, A and B, were given to Case i; no general disturbance occurred and no change in the coagulation time, except after the last dose, when there was a fall from 5 minutes 32 seconds to 4 minutes 3 seconds, within an hour, followed by a rise to 6 minutes 50 seconds after two and a half hours.

(*b*) *Milk.*—Subcutaneous injection of 5 c.cm. of boiled milk caused a fall from 5 minutes 36 seconds to 4 minutes 23 seconds at the end of one hour, followed by an increase to 6 minutes 6 seconds three hours later.

(*c*) *Peptone.*—5 c.cm. of a 5 per cent. solution of Witte's peptone were given subcutaneously. Owing to an error the peptone was given before a coagulation time was obtained. The value ten minutes after was 4 minutes 28 seconds. (The average value for Case i was 5 minutes 30 seconds.) Half an hour later the coagulation time was 5 minutes 24 seconds, and no further variation occurred.

Calcium.

Immediate Effect.—Half a grain of calcium chloride was given to Case i intravenously; the coagulation time increased within twenty minutes from 4 minutes 16 seconds to 8 minutes 2 seconds.

Prolonged Effect.—For three days 7 grains of calcium lactate were given daily to Case i; no change resulted. Case iii was given 5 grains three times a day for seven days; a small decrease in the coagulation time occurred.

Citrated Human Blood.

Transfusions were given to Cases iii and iv; in both the bleeding stopped within a quarter of an hour, and the coagulation time the next day had fallen in Case iii from 13⅔ minutes to 3 minutes 55 seconds, and in Case iv from 11½ minutes to 3 minutes 40 seconds. In Case iii it returned to the initial level in six days; in Case iv, on the third day bleeding started again, although the coagulation time had risen to only 4 minutes 13 seconds, and further treatment was necessary.

Citrated Human Plasma.

Case i was given 25 c.cm. of citrated human plasma intraperitoneally, with no effect. Case iv was given 10 c.cm. of citrated human plasma intramuscularly on the fourth day after the transfusion; the coagulation time was not altered, and the bleeding, which had restarted on the day before, continued. The next day 30 c.cm. of plasma which had been kept five days in the ice-chest were given intravenously, and after an interval of two hours the bleeding ceased and the coagulation time, which had risen to 5 minutes 11 seconds, fell to 3 minutes 6 seconds, and remained at that level for over forty-eight hours. The coagulation time then very slowly rose, but even after two weeks had not quite reached its initial value.

DISCUSSION.

In this study we have kept in mind the following three points: (1) Can any treatment produce a permanent improvement in haemophilia? (2) Can any treatment produce a temporary improvement? (3) What is the best form of pre-operative prophylaxis?

It may be stated at once that no known agent has any permanent effect in haemophilia. Any improvement in the coagulation time which we found was of a temporary nature. As many of the substances used contained animal protein the question of the effect of protein shock on the blood coagulability will be considered first.

It is accepted by most authorities that foreign protein, when injected into the body in sufficient amount to produce some degree of shock, causes a stage of hypercoagulability followed by one of hypocoagulability. There is, however, for every individual an optimal dosage varying with the type of protein used. Too small a dose results in no appreciable change in the coagulation time; too large a dose shortens the period of hypercoagulability and augments that of hypocoagulability until finally the effect on the blood is for all practical purposes merely to increase the coagulation time. According to Pickering,[2] "success depends on the use of a haemostatic of the required activity and upon the subject not being hypersensitive to its reaction. The optimum dosage is one which will produce a 'plasma shock' with minimal excitation of general shock." It will be clear that finding the correct dosage must be to a considerable extent a matter of chance.

In our hands protein shock, by means of typhoid vaccine, peptone, and milk, produced the normal type of response—namely, a transient state of hypercoagulability followed by one of hypocoagulability. In no case was the actual fall in the coagulation time at all impressive. The responses obtained from the other haemostatic drugs administered so resembled protein shock as to raise the question of whether their effect on the coagulation time in haemophilia was due to the small amount of animal protein present in each preparation. In every case the response was either one of hypercoagulability followed by hypocoagulability or one of hypocoagulability alone. On the other hand, this type of response may also be due to a generalized reaction to a substance tending to cause local clotting (cf. Pickering)—as, for example, with calcium chloride. Following its administration the coagulation time rose rapidly, so that within twenty minutes it was nearly double the initial value. There is no question here of protein shock. In either case the question of dosage must be carefully considered, as there appears to be an equal liability for a

period of hypocoagulability to result. While in the case of adults the size of the dose has been fairly definitely laid down, in children the matter is by no means so clear, and in some cases we have possibly erred in not reducing the adult dose sufficiently.

The only form of treatment that was found to be of any real value was intravenous injection of either citrated whole blood or citrated human plasma; citrated plasma given intraperitoneally or intramuscularly was without effect. Citrated human plasma, as pointed out by Feissly,[3] has the advantage of not requiring a preliminary blood grouping, and the use of human plasma prevents any danger of anaphylaxis. Furthermore, both with whole blood and plasma no stage of hypocoagulability occurs. According to Christie and Gulland,[4] fresh intravenous human serum has only a very small effect as compared with whole blood, as shown by coagulation times; in fact, both Feissly and Christie and Gulland find that no substances other than whole blood or plasma have any but the slightest effect on the coagulation time. Emile-Weil[5] states, however, that monthly subcutaneous injections of human or animal serum prevent spontaneous haemorrhages and reduce the coagulation time, but apparently not to the same extent as plasma or whole blood.

SUMMARY.

The bleeding time is of no value in indicating the liability to haemorrhage in haemophilia.

No method except the injection of intravenous whole blood or plasma produced more than a transient unimportant improvement in the coagulation time. In the majority of cases a period of decreased coagulability occurred of longer duration and greater magnitude than the preceding stage (if any) of increased coagulability.

The most effective agents, both for treatment and preoperative prophylaxis, are citrated whole blood and citrated plasma given intravenously.

We are indebted to Dr. R. Frew and Mr. O. L. Addison and Mr. Tyrrell Gray for permission to use their cases, and also to Miss E. M. Taylor for some of the coagulation times.

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ON THE ORIGINS AND TREATMENT OF DYSPEPSIA.*

BY

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[*Abridged.*]

IT will be well to concentrate upon what I am, perforce, daily familiar with, the natural history of dyspepsia, and upon the lines of treatment that seem justified by the results; for you may try many keys, but the one that will turn in the lock is probably the right key.

Now the data of the natural history of disease are mainly stories of the patients seen. They cannot for the most part be expressed in percentages or graphs. The composite picture, which is in fact our collected experience and our concluded opinion derived from it, can best be drawn by telling the stories of a few patients and making comments upon them as we go along. For brevity, what is printed below consists mainly of the comments.

(A case of acute influenzal dyspepsia, with facial herpes was mentioned.)

Again and again it will be found that, if we dig into the history of a dyspepsia, a common cold was at its root. Or, not uncommonly, as in this child, a transient febrile malaise was associated with gastro-intestinal symptoms. The child was quickly relieved by a few doses of salicin. Since Mr. E. B. Turner taught us all to use salicin in influenza, I have found it of the greatest use, not only in the major epidemics, but also in catarrhs and chills. What I want to bring out here is that it is at least as useful, if not more, in the cases of febrile malaise with digestive symptoms as in those with respiratory symptoms in which, perhaps, it is more commonly employed.

That a facial or labial herpes may accompany acute gastritis was taught by Austin Flint and by Sir William Osler. But I notice that a recent textbook of medicine, encyclopaedic and many-authored, makes no mention of this tell-tale associative sign. It is a sign which, to my mind, clinches the association between acute gastric catarrh and influenza.

(Cases in which gout and trauma played a part were discussed.)

I think trauma was the primary factor in the case I am about to relate.

A man of 30, a yardman at a chemical works, who for several days had been suffering from indigestion attributed to a meal of pork, and from constipation, visited a football match and was crushed in the crowd. He sustained a severe pressure in the upper abdomen. This incident happened at the end of April, 1927. He felt pains in the affected region for a week afterwards. None the less he continued at work. Now the work that fell to his lot from the 1st to the 6th of May was heavy—shovelling heavy clay; moreover, the weather was wet. He was constantly wet through and chilled; and he became very constipated. He felt sick, but could not be sick. A week later he began to have an aggravated indigestion, which culminated, seven days later, in an attack which woke him at 3 a.m. He awoke to find himself lying turned towards his left side and in great pain. The pain was situated in the left hypochondrium. It made such an impression on his mind that he noted the exact time of its awakening him.

After a short while he rifted up wind, and that gave him relief from the worst of the pain. He lay still abed till morning.

Now when one listens to a patient relating such a story as this, it is inevitable that one's mind should follow the imagined stages of the progress of the conditions and changes in the viscera which were related to the symptoms as they emerged into the picture. First there would be trauma, some bruise of stomach or intestines. Then the damaged tissue or a thrombosed vein would be open to infection, or, in the stomach or small gut, to digestion; and an ulcer might result. A. J. Carlson goes so far as to say that the stimulation of any sensory visceral nerves makes the pylorus contract or stops its relaxation; whilst Carnot showed that crushing of various organs, or of the parietal peritoneum, had the same effect.* In this case there were aggravating factors in the next few days which may have mordanted the damage, so to speak, and rendered it permanent—cold and wet, heavy labours—aggravating circumstances these, which, adding catarrh and further causes of stasis to the original trauma, established it as a gross lesion.

Then came the day in which he awoke in agony, lying turned towards his left side. The tension within the stomach will be greater in that position than in any other. And it is undue tension that is the common provoker of pain in a hollow organ. Patients often complain that they cannot sleep on the left side because they can hear a pulse beating. I suppose the weight of the liver pressing upon the full, closed stomach, and increasing the tension in it, has something to do with producing this symptom. Turning on to the opposite side cures it. I suppose that it cures it partly by taking the weight of the liver off the stomach, and partly by allowing gravity to help the exit of the food via the pylorus.

If an ulcer had formed in my patient as the result of the crush, the likely site would be the first part of the duodenum. By the time he came under my care, nearly two years later, such an ulcer might have healed and broken down many times, as we see small varicose ulcers do in the leg. Some such lesion would be the most likely with the history he brought. For this first part, the "duodenal cap" is the most vulnerable length—the "hammock hook" from which the stomach is slung, dragged upon when violence is done to the belly.

Assume, then, that an ulcer had formed in my patient in this vulnerable spot: that would explain the nocturnal

*A paper read before the Oxford Division of the British Medical Association at the Radcliffe Infirmary on March 27th, 1929.

*Even after the vagi were cut in the neck. The splanchnic nerves are the path of this reflex.

attack. The ulcer would provoke the stomach rapidly to empty the first part of the meal last taken.* The duodenal cap and the ulcer would be filled with acid chyme. The mere flood of acid is not enough to cause ulcer pain. There is another factor, otherwise there would be no remission; whereas there is often complete remission. Nor do the contractions of the stomach and gut alone provoke pain; for when they have been watched by radiologists, sweeping over the antrum, and restarting sometimes, or starting afresh sometimes, in the pyloric cap, it has been noted that whilst some synchronize precisely with pains, others are entirely painless. It seems there is a third factor besides the acid flood and the contractions. What is this third factor? The authorities speak vaguely of a sensitizing process. Palmer found the ulcer sensitive to acid on some days and not on others. But when I read, in Alvarez's book, a hint which, he tells, Ivy gave him, I felt we were "getting a little warmer," as the children say.

Ivy's hint was got from some animals in which he had closed one end of a loop of bowel and sewed the other end to an opening in the abdominal wall. The bowel at the mouth of the fistula was quite insensitive. That, of course, is familiar enough. But Ivy's further observation, I think, is of an order hitherto unfamiliar, that when the mucous membrane became everted and swollen, then, if it were pinched, great pain and sometimes vomiting resulted. The fashionable metaphor is that the threshold for stimuli has been lowered. Similar conditions, around the edge of an *ulcer*, account, he suggests, for the continuous pain: and the acid flood may play a part, indirectly, by aggravating the swelling of the mucosa.

After the first rapid rushes through the pylorus which radiologists associate with duodenal ulceration, there is a reversal of the process, a spasm of the sphincter and a hold-up of the stomach contents. The normal regurgitation of alkali from the duodenum into the stomach thus fails, *and the acidity of the stomach contents is accordingly* prolonged. Downward peristalsis in the stomach and reversed peristalsis in the duodenum meet at the closed doors of the pylorus. It was at such a moment, I imagine, that my patient awoke in agony. You will recall the way in which the agony was at last relieved—namely by rifting up wind. The relief, then, came by reversed peristalsis starting in the stomach.

All this happened nearly two years before the man came into my care; but the events he related had ushered in a long period in which the dyspepsia was chronic, the patient despairing of relief. At first he could not work, and was on the sick list for twelve weeks. Then he returned to duty, and managed some work; but his employers, valuing him, gave him that rare and much coveted employ, "a light job."

But he worked in wretchedness. He often felt sick but could not be sick. He was constantly conscious of pains and uneasiness, especially about the left hypochondrium. He had lost his appetite, and had lost weight.

Well, this man got well; or so nearly so that the phrase is justified. And the change followed rapidly on a reorganization of his diet.

Will you allow me to refer to his meals, the changes and reasons for making them, also to his habits?

A remark made by the patient that his bowels were moved daily on getting up in the morning led to a review of the physiological event which precedes a normal action of the bowels, the rush or heave which starts in the colon when food is taken into the stomach. My patient had not taken food into his stomach since the previous night, and therefore I felt there was something wrong. His early morning action was eight or ten hours belated.

Now inhibition is all very well, but it must not be done to death. A patient whom Alvarez mentioned in whom the mere thought of food produced an urgent desire to defaecate was much disadvantaged thereby. His condition was abnormal. But surely the opposite condition also is abnormal, that in which the desire has been so habitually repressed that the sensation passes off and the faeces meanwhile accumulate, not only in the pelvic colon, but in the distended rectum.

In taking that view I find myself opposed to one whose opinion is worthy of very great respect, Dr. Hurst. He thinks that the accumulation which follows several meals may normally be stored in the pelvic colon. The simile of Alvarez is apt. As, when several railway trucks are set rolling down an incline one by one, and come to a standstill when they have exhausted their momentum on the level, though the later ones reach and touch the earlier ones and run together in a group in contact with one another, yet one coming later still, bumping into the group, gives a momentum which is so conveyed through the group to the first wagon of all that that is bumped off the group again and sent rolling independently—*so*, thinks Dr. Alvarez, and *so*, thinks Dr. Hurst, is the accumulation in the pelvic colon normally voided.

That this happens I admit. That it should happen does not seem consistent with full health. As many actions as there are *full* meals seems more normal—for instance, after breakfast and between the last meal and bedtime. Every medical student knows that the two parts of the digestive tract from which the subject derives sensation are the mouth and the rectum; and that it is no more normal for the second to be kept full than the first. Every general practitioner knows that a rectal examination made after a good meal will find the rectum loaded, despite a complete relief "that morning after breakfast." The fact, I think, is that the viscera in question are built to deal with a twelve-hour load, and find it hard to deal with a twenty-four-hour load. The pelvic colon extracts water. The final faeces may be more than twice as concentrated as the fluid that comes through the ileo-caecal sphincter. Two actions daily imply a lower degree of concentration—that is, a softer faecal mass evacuated and a greater *total* weight of faeces. Imagine the difference between a pelvis weighted during the hours of sleep with an accumulation bulging the would-be collapsed rectum, and the pelvi-rectal kink accentuated by a further accumulation in the sigmoid; and, on the other hand, a pelvis from which all the accumulation had been voided at bedtime. To my mind the loaded sigmoid and rectum "keep bad neighbourhood," as our forefathers used to say, with the adjacent organs—with for instance, the uterus in the pre-menstrual epoch: or with the prostate. I dare to think that a morning and an evening action, habitually and naturally obtained, may be reasonably thought of as in some degree prophylactic against enlargement of the prostate.

The relief of headache and sense of pressure in the head following a timely evacuation of the bowels is too prompt to be due to the mere removal of bad chemical influences. It must be due to an adjustment of what Mr. Hilton called the equipoise between the cerebro-spinal fluid and the venous circulation. The relation between the pressure in the cerebral ventricles, the gastro-colic reflex, and defaecation was familiar enough to John Arderne in the fourteenth century: "And witte thou, . . . that the synowez closyng and openyng the lure [rectum] hathe festnyng with the stomake and with the ventriculez of the brayne, And for this cause suche pacientez ar som tyme vexed in the heued and in the stomak."

He is right, too, about those "vexed in the stomak." The increased commonness of appendicitis is no doubt due to the increased commonness of a single daily action. But I would go a little further and say that a great part of the dyspepsia from which sedentary people in middle life commonly suffer is the "expression" of reverse peristalsis quietly rippling back every now and then along the ileum, jejunum, and duodenum as a reflex from a stuffed rectum and *loaded colon*.

Meat and starchy foods were to be taken at separate meals. Pavlov showed how the mixture of meat and starch was delayed in the stomach twice as long as meat alone. The reason why bread was (in the diet prescribed) withheld as often as possible is empirical. The explanation of the observed benefit may be that bread is a sponge and that the starch in it is therefore difficult of digestive attack. In any case, as the starch grains are unburst they have to wait till they reach the duodenum for digestion.

Dinner was soup, meat and greens, and fruit. The greens were to be ample in amount, to be boiled five minutes* by the clock, to be shaken free from water but

* Galen knew this. "The stomach, when, as often happens, it is irritated by acidity, gets rid of the food, although still undigested, easier than proper." (Galen: "On the Natural Faculties." *Loeb*. III, v.)

* Plunge them in boiling water. Count the five minutes from the time you hear the water come back to the boil.

on no account squeezed, and to be dressed plentifully with butter. No one who has not had green vegetables thus prepared can realize that they can be so much more acceptable than when they are cooked twenty minutes or half an hour in the ordinary way. Ninety per cent. of people who really try this method remain firmly attached to it.

The plentiful dressing of butter or dripping with the greens is of importance, and the oil to be used with salads —*for three reasons:*

1. A natural alliance between vitamin A and fat.
2. The calorie value of this diet, lowered by reduction of starch, is raised by the fat.
3. Fat, passing the sphincter of Oddi, stimulates contraction of the gall-bladder.

Suppose a stomach reasonably filled, after soup (which soon runs out) with a little grilled meat, with greens or salads, yielding, as they do, 3 per cent. of their 5 per cent. of starch, and with fruit, digestion is facilitated. Equally filled with food rich in starchy carbohydrates, such as the conventional bread, potato, and rice pudding which form the bulk of the so-called meat meal of the middle and working classes, the stomach would often be overtaxed with foods of a texture it was not constructed to handle, and which would be delayed in transit by the presence amongst it of meat.

From a mere calorie point of view unnecessary carbohydrate must often be taken at such meals merely to provide the bulk required to still and tranquillize the stomach—bulk which could be better provided by green leaves or by fruit, foods of a more suitable texture and without excess of nourishment.

So much for the principles of the diet which brought relief to the patient instanced, the yard-man at the chemical works.

(Instances of dyspepsia excited by influenza, colds, catarrhs, gout, trauma, and excessive and unsuitable food were reviewed.)

Not a few large eaters eat too much of too concentrated food because constipation gives them an instinct to take in such a bulk of ingesta as will restart the gastro-colic reflex and steepen the gradient. Dr. Drysdale (of St. Bartholomew's Hospital) once advised me to give such patients boiled cabbage stalks.

Constipation is a feature of most cases of dyspepsia. The "gradient" is "flattened," Alvarez would say, and requires to be "steepened." Curiously enough, he seems much more anxious about devising "smooth diets," and eliminating cellulose, and in dealing with the reflex irritation of colitis than in restoring what Hippocrates would call the stronger diet of pristine health.

(But that this latter policy can succeed, another case with emaciation and constant vomiting was related as evidence. Finally a patient with gastro-jejunal ulcer, who declined further operation, was described.)

I have tried to tell my very ordinary stories and thereon make my comments, which constitute a mere mental flotsam and jetsam washed up upon the beach of an average medical experience. But I should like to gather a few specimens from this flotsam and jetsam which will have at any rate this merit, that they will be debatable.

Here is the first:

A diet mainly of grilled meat including liver, and fish including roes, and green leaves including lettuce and cabbage, and fruit will often cure a chronic dyspepsia. Perhaps such food as that succeeds because it must be closely similar to the food of primitive man. Anthropoid apes live on leaves, young green shoots, some roots and barks, some meat—for example, the baboons in the Zoo are known to catch and eat grey squirrels and birds. Such food is, in essentials, not far removed from the meat, greens, and fruit diet I have spoken of.

Dr. Chalmers Mitchell says people kill their tame monkeys with cereals. The misuse of cereals causes an incalculable amount of disease and death amongst mankind.

The production and use of cereals has, according to Sir Arthur Keith, made civilization possible. With the change of habits that came when the hunter became the husbandman there came no corresponding change in anatomy. The human digestive tract is still that of man the hunter. In youth and health it (the human digestive tract) is elastic and adaptable enough to manage with a very wide range of kinds of food. But just as presbyopia comes with age so does less adaptability in the matter of food. Many dyspepsias of middle life are due to persisting in the diet that did well enough in youth. More or less of a return to or towards the meat-fish-greens-fruit diet is indicated.

Starchy food must be surrendered judiciously; and hydromel—that is to say, honey and water—an eggcupful at a time, is occasionally useful as a drink for odd moments in persons who give up a good deal of starchy food but feel weak without it. (I understand the levulose in the honey requires very little labour at the hands of the liver.)

The starchy food that is best tolerated is porridge at breakfast. The porridge should be made in the old Scottish way, scattering the meal into *boiling* water and stirring the while. The importance of this detail is that the aleurin envelopes of the starch granules should be burst so that the starch becomes mucilage. Ptyalin is said not to digest starch unless it is boiled. It is hard to accept this limitation. What was the ptyalin for, before men learned to cook?

Dyspeptics should not eat starchy food and meat at the same meal. (See reference above to Pavlov.) From that embargo surprising consequences flow—for example, a sandwich of meat and bread is an example of forbidden food, so is a pork pie, so is a plate of meat and potatoes so is fish and bread-and-butter, so is a sausage, which is a mixture of meat and bread. On the other hand, a sandwich of cold boiled bacon (which is practically fat) and brown bread is permissible. This is important in working class practice where dinner has to be carried out.

A useful formula for middle-class people is "fish one day liver two, meat the rest, but chicken on saints' days." (The last phrase is not intended literally.) The potato dinner may be substituted for one of the meat days.

Amylaceous dyspepsia used to be thought to be associated with fermentation of starch delayed in the stomach and consequent gas production. This, so stated, is now known to be seldom true (apart from pyloric obstruction. Amylaceous dyspepsia is associated with constipation.

Since 1872 the stone mill has gradually been replaced by the steel roller mill. The rise in the sale of patent aperients has gone up concurrently. Wholemeal flour will not keep, because the germ contains a ferment. Attempts to stabilize it, by treating the germ with superheated steam, succeed, at the expense of destroying the thermolabile moiety of the vitamin B. It is better to use wheat freshly ground. I don't know whether the vitamin B has more to do with preventing constipation than cellulose. The diet which keeps Eskimos in health contains no cellulose, but the vitamins are there got second-hand through the organs and fat of the animals and fish eaten. I suppose they, in their turn, get them from small creatures—crustacea, myriad copepods—and those get them from the vegetable *plankton*, algae and diatoms. So the Eskimo gets them really fourth- or fifth-hand, not second-hand. The substitution of manufactured food, imported into Labrador, for the traditional diet, which was similar to that of Eskimos, has, I understand, been followed by illness and physical degeneration.

The commonest sort of dyspepsia is due to constipation producing reversed peristalsis in the jejunum and duodenum, and in the ileum too. The greatest pain probably happens an hour or so after meals, when the pylorus closes against this reverse peristalsis. The gentle reversed peristalsis which may in healthy digestion wash a little alkali chyme back into the stomach at about the same interval after a meal, finds the pylorus a compliant janitor. But to the backward surge of the dyspeptic he is at first adamant. Constipation enough to call forth these effects may be present in spite of a daily action. To eat when cold feet seems to invite an aggravation of the reverse peristalsis.

The condition of amylaceous dyspepsia *plus* constipation must result in different intestinal bacteria predominating from those which predominate in full health when

rectum is emptied fairly soon after it is filled. Comparative studies of the ecology of the constipated and normal intestine would, I think, reveal a very different flora.

The "climax association" (as I think the ecologists call the most permanent partnerships of living things*) in severe types of chronic constipation may show a haemolytic streptococcus dominant and thus explain the anaemia. Other bacteria in the small gut may be engaged in fermentation of kinds which do not go on in health. To that extent there still may be truth in the old idea that amylaceous dyspepsia may be due to fermentation, even though the stomach itself be exonerated.

To reverse the diet from the civilized prepared cereal food to the polite equivalent of an uncivilized diet is a great means of health to such people. But they cannot wait, and medicines may give quicker relief. The best I have found is iodine and cajuput:

℞ Tr. iodi		nx
Ol. cajuputi		mij
Mucilag.		q.s.
Aquam	ad	3j

Sig.: t.d.s.; 10′ a.c.

Its action seems best explicable on the theory that some of the symptoms are produced by fermentation. A laxative will be required for a time, such as the popular emulsion of paraffin with agar and phenolphthalein, but only for a time.

CAVERNOUS SINUS THROMBOSIS WITH RECOVERY.†

BY

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CAVERNOUS sinus thrombosis is comparatively rare and all authorities describe it as a fatal condition. Parsons[1] says "the patient always dies." McCallan,[2] opening the discussion at the Ophthalmological Society of the United Kingdom last year on the diagnosis and treatment of inflammatory affections of the orbit, refers to it as "this fatal affection." The most favourable views I have found are Posey's,[3] "barely 7 per cent. of cases recover," and Collins and Mayou's,[4] "if the clot be septic death usually follows, but in aseptic cases the patient may live; the exophthalmos continues, optic neuritis with atrophy following."

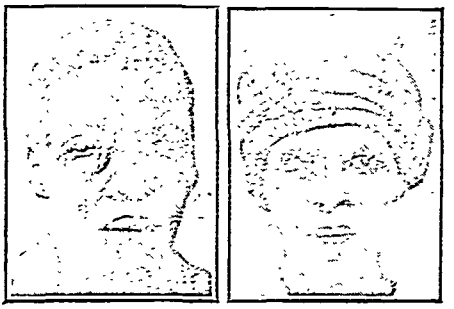
Most authorities, I believe, base their conclusions on their study of the condition in European patients. The wonderful powers some South African natives have of resisting certain infections may account for the survival of the patient whose case is now to be described.

A Kafir woman, aged 30, the mother of seven healthy children, was sent to me by Dr. Ella Britten on August 18th, 1922. She was thin, weak, and flabby, with quick pulse, and had her year-old baby with her—still at the breast.

The history she gave me—and I must emphasize the vagueness of the native where exact dates and figures are concerned—was that her eyes were perfectly well until shortly after this last baby's birth. The confinement had been severe, and recovery long delayed. Pain began in the left eye with headaches; the eye got red and very large, and pain was also felt behind the left ear. Dr. Britten saw her when this left eye was proptosed—a most valuable observation as regards subsequent diagnosis. The patient says this condition lasted some months, and then the right eye went through changes similar to those of the left, while the latter decreased in size. Eye pain and headaches were also similar.

On the date of her first visit the right eye was proptosed directly forwards to the extent of three-quarters of an inch. Chemosis was so marked as entirely to conceal the lower lid. Conjunctival congestion was trifling and limited to the upper part of the bulb. The ciliary vessels showed no fullness. The cornea was exposed fully, but three-quarters of its surface could be covered on effort. It was hazy and oedematous but still bluntly sensitive, and gave a mottled staining with fluorescein. The pupil was semi-dilated and insensitive to light. Tension was soft—17 mm. Schiötz. The eyeball was fixed and could not be moved by effort. The media were clear, allowing for corneal haze. The disc was somewhat pale. The field of vision was diminished between the macula and nerve-head. Right vision: 6/36; c. + 2.00 sph. = 6/24. Left vision: able to count fingers at 6 feet.

The left eye seemed fairly normal, though deviating upward and outward. No inward movement was possible beyond the midline, and fixation was difficult and transient. The pupil was



enlarged and very sluggish even to strong light. The media were clear. The disc was pale on the temporal side; its edges were sharp, and its vessels were not enlarged. The tension was normal. No bruit was complained of or listened for over the frontal region. She was ordered a simple boric lotion, the cornea being protected by a pad and bandage over boric ointment.

On August 28th the proptosis was less. The cornea was clearer and could be entirely covered by the upper lid. A photograph was taken.

On September 4th there was slight movement up and down of the right eye. The conjunctival chemosis was pricked and sanious fluid let out, which considerably lessened the proptosis.

On September 9th the condition was as before; the conjunctiva was again pricked with good result. On this date the patient was shown at a British Medical Association meeting and agreement was expressed with the diagnosis.

Five days later she began taking a mixture containing potassium iodide in moderate doses, and at her next visit, on September 20th, she looked and felt better. The proptosis now allowed a finger-tip insertion between the bulb and bony orbit above. Movement was increased in all directions. Her visual acuity remained unchanged. The potassium iodide in the mixture was reduced to 2½ grains in each dose, as signs of iodism were present.

I did not see her again till the following January. Though the eye had changed little in appearance, vision was now reduced to counting fingers at two feet. The field of vision also was much lessened. The cornea was dull and hazy, and it was impossible to make a detailed examination of the fundus. She said she felt stronger and better, but still complained of occasional pain in the eye region and the vertex.

It was four years later when I next saw her—February 4th, 1927. The right eye was now quite shrunken into the orbit, and, of course, absolutely blind. The left eye seemed just as at her first visit, both in appearance and acuity of vision. The field of vision was absent on the temporal side right up to fixation point. The disc was as before, but a speckled pigment area was seen impinging on its temporal edge.

In March of this year (1929) she came again. The general health had improved but the condition of the eyes remained unaltered. A photograph taken on this date (March 7th) shows a somewhat healthier and happier-looking woman. I may add that she now earns a little as a blanchisseuse.

However fortunate one may deem oneself in having seen any stage of this case, one must regret the absence of such opportunity in its early stages and before it was seen by Dr. Britten. The definite fact remains that the trouble began in one eye and then appeared in the other. This ensuing bilaterality, which occurs in most cases, has been insisted upon by authorities as a characteristic in distinguishing cavernous sinus thrombosis from orbital cellulitis—the affection most likely to simulate it. A simultaneous cavernous sinus thrombosis of both sides is well known in certain cases of sphenoidal air sinus disease, the close proximity of these sinuses to the cavernous sinus affording an explanation. Immobility was no doubt due in part to paralysis of the ocular nerves, as they lie embedded in the cavernous sinus wall, and in part to venous congestion—all ophthalmic veins emptying into the cavernous sinus.

* For example, heather, Scots pines, and cross-bills.

† Read before a meeting of the Medical Association of South Africa (B.M.A.), April, 1929.

It is interesting to note the low tension of the right eye and to compare it with Foster Moore's[5] observations on intraocular tension in cases of thrombosis of the retinal veins. He states that "in most cases of thrombosis of the central retinal vein the intraocular tension of the affected eye is appreciably less than that of the unaffected eye."

In speculating on the cause in the above case, one is handicapped by the late date at which medical advice was sought. Of the three usually assigned causes—infective, primary or marasmic, and traumatic—I think the first the most likely. It is suggested by the severity of the confinement, prolonged convalescence, and the absence of a history of any head, face, or ear lesion. Statistics also show that the great majority of cases of cavernous sinus thrombosis are of infective origin.[6 7]

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PREVALENCE OF ENCEPHALITIS EPIDEMICA IN CHINA.

A CONTRIBUTION TO THE HISTORY OF THE DISEASE IN THE FAR EAST.

BY

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CRUCHET's latest contribution to the literature of encephalitis epidemica has aroused increased interest in the question of the origin of this disease, and since recently a writer published an article suggesting the possible introduction of encephalitis from China, it seems desirable that the data with regard to the history of the disease in that country should be carefully examined and more valuable material collected. I hope the following observations will serve this purpose.

When, in 1921, I returned to China I found encephalitis rather flourishing, and since that time I have observed cases everywhere in the northern, Yangtse, and southern provinces where I looked out for the disease. Encephalitis is nowadays not rare in China, although there are many medical practitioners, even in the large cities of the coastal districts, who have never seen or recognized a case as such. The fact that many medical men in China are still unfamiliar with the picture of encephalitis in my opinion accounts for the paucity of knowledge and documentary evidence of the disease in that country.

The first publication on the appearance of epidemic encephalitis in China was written by W. W. Cadbury,[1] who observed one case in Canton as early as August, 1919. In 1920 Judson[2] described two cases from Anhwei province, and Lennox[3] another case which he had seen in Peking. Later, in the winter of 1921–22, two cases were reported by Wassell[6]—one from a hospital in Wuchang and another from Changsha in Hunnan. With the opening, in 1921, of a special neurological department of the Peking Union Medical College the opportunity for seeing a large number of neurological cases was given, and thus A. H. Woods was able to report on twenty-one cases which he had seen within the first year of the new institution's existence.

During my activities as neurologist at the Peking Union Medical College I made a special study of encephalitis, and the following report comprises my observations on a hundred cases seen during the period of two and a half years (1923–25). The following are the places from which the cases came:

Peking	... 53	Shanghai ...	... 5
Peking (country)	... 13	Mukden ...	... 2
Tientsin... ...	... 7	Chefoo ...	... 2
Peitaiho ...	... 4	Tsingtao ...	... 1
Foochow ...	... 4	Kalgan ...	... 1
Shansi	... 3	Chengtu ...	... 1
Paoting... ...	... 3		
Nanking ...	... 3		100

As the list shows, more than half of the patients came from Peking or its immediate neighbourhood, most of the others from places situated at the coast or near the lines of railway traffic. Szechuan was the furthest interior province from which a patient was sent to us.

The earliest of our cases was a student who gave a reliable account of his disease, the onset of which he dated back to the beginning of the year 1919. For its historical interest the case might briefly be described here.

The patient, aged 25, states that when he was in Shanghai in March, 1919, he had fever for ten days, with dizziness and double vision, followed by sleepiness, which continued for several weeks. Since 1922 he has suffered from difficulty of speech, increased salivation, and involuntary movements of the head and hands. Clinical examination elicited the following signs: typical Parkinsonian posture and gait; myoclonus of the left sterno-mastoid muscle; tremor of both hands; dilated pupils, absence of reaction to light, and paresis of the rectus internus muscles; exaggerated tendon reflexes; negative Wassermann reaction.

Four other patients were admitted who had contracted the disease in the same year, one in July in Foochow, the rest in the autumn in Peking, Paoting, and Tai Yuan (Shansi). The number of admissions of encephalitic cases gradually increased from year to year, probably partly owing to the growing interest of the medical men who had sent these patients to us for further study. There were, in addition, small epidemics in Peking and its neighbourhood, such as in Peitaiho, a health resort at the seaside, where for several years regular outbreaks occurred during the hot summer months. The first cases at the latter place, of which I examined one myself in 1921, displayed rather fulminating symptoms. Four patients died in quick succession; in later years the character of the disease became much milder.

With regard to the season, the frequency curve shows that new cases appeared the whole year round, but, as also happened in other countries, a marked rise was noted, especially in 1923 and the following year, during the winter months December to March, which in northern China form the cold, dry season with dusty winds—the season of catarrhs of the respiratory tract. A second but slighter elevation of the curve set in with the beginning of the dry season in August. On this occasion it is interesting to compare the great outbreak of a special form of encephalitis in Japan in 1924, which occurred in a remarkably dry summer and abated with the onset of the wet season. Most of the patients were between puberty and middle age; the youngest was 5 months, the oldest 61 years of age. Among the 100 cases there were only 20 females; 82 were Chinese, the rest foreigners. Farmers were less affected than people leading a sedentary life; the highest incidence was among the students, with 27 cases; soldiers, who furnished the richest material in neuro-syphilis, were represented only by a single case.

The clinical picture of epidemic encephalitis is essentially the same as in Western countries, and the Parkinsonian type, which occurs in 35 per cent. of all cases, represents the largest group. The earliest appearance of Parkinsonian manifestations was noticed three months after an acute onset with fever, oculomotor symptoms, and lethargy. In most other cases about two years, or even a longer time, had elapsed between the initial symptoms and the first kinetic disturbances. Marked sleepiness was one of the most constant features in the history of this group. In some, especially in young patients, the akinesia reached a very high degree. Neglected by their family, emaciated to the bones, and motionless like a statue, these unfortunates would easily impress the people as beings possessed by some kind of evil demon.

The greasy appearance of the face, a characteristic sign in European patients, has not the same striking significance in patients of the yellow race, since in the latter the skin has already a somewhat shiny appearance. In most cases the oculomotor nerve was involved, with partial paralysis of one or several muscles. In 5 cases ocular crises were observed, with temporary tonic fixation of the eyeballs in an upward direction. Twenty cases belonged to the purely hyperkinetic type, displaying all grades, from the most minute tremor of the lips or hands to coarse choreiform movements of one or several extremities; in the worst cases the whole body was shaken with an intensive general tremor.

Of acute cases, beginning with fever, headache, joint pains, and sleepiness, 25 patients were admitted, of whom 3 with very grave symptoms died a few days after the onset. In one case a post-mortem examination was performed, and the microscopic findings showed an extensive perivascular as well as intrathecal cell infiltration, and degeneration of ganglion cells, most marked in the substantiae nigrae of either side and in the area of the oculomotor nucleus.

As a separate group I should like to consider 15 cases of bulbar forms. They had the character of a small epidemic of a benign nature, and were observed during the winter of 1924 in Peking. Besides ptosis and diplopia, bulbar symptoms were the most prominent features, with difficulty in speech and swallowing and paresis of the accessory nerve. Several of these patients had suffered from a previous catarrh of the upper air passages, and in 5 cases of a striking similarity the possibility of a direct contact infection in the hospital cannot be entirely excluded.

In the same winter a number of cases were seen, monosymptomatic forms with some kind of oculomotor disturbance or more or less marked lethargy, which in my opinion must be classified among the abortive forms of encephalitis epidemica.

The question of the routes by which the encephalitis found its way into China is interesting. Three main possibilities have to be considered.

First, the invasion could have taken place from the east, from America by way of the Pacific and Japan. In its course westward from Central Europe the steps can be traced by which encephalitis gradually reached first the east of England, then its western side, during the spring of 1918, and the east coast of America at the end of 1918. But in the western parts of America the disease was not noticed until the autumn of 1919. Thus, since in China a case had already occurred in March, 1919, it does not seem likely that the infection came the long way over sea from America.

The second route by which the disease could have been introduced is by way of Siberia. In Russia encephalitis had been observed some time before 1919, but in its eastern parts apparently not before the end of that year. At that time the trans-Siberian railway line was still interrupted at various places, and there was as yet no through traffic to China by this route. From investigations I learned that the first cases appeared in Harbin and Mukden at a date later than the autumn of 1919, when the first case was observed in Peking. It seems to me much more probable that the cases in Peking originated in infections from the south along the railway line from Shanghai.

The third possible way is by the most frequented route of sea traffic from Europe by way of India to the ports of China. This appears to be the most probable path by which the encephalitis travelled, for the disease made its first appearance in the southern ports of China, following a course similar to that of other epidemics entering China from the west.

There is another fact which speaks for the great probability of the introduction by the southern route. In the same year that the first cases were known to have appeared in China a small outbreak of encephalitis had been observed in the military barracks in Karachi, and in July, 1919, on the Andaman Islands, which are situated about midway between India and China. Thus it seems quite possible that soldiers were the carriers of the disease to the Far East. I may mention here that in Japan the disease appeared approximately at the same time as in China, probably introduced along the same lines of transmission.

There remains another possibility, explored by Dr. A. J. Watson in a paper entitled "The origin of encephalitis lethargica," which was published in the *China Medical Journal* for June, 1928, and subjected to some criticism in a leading article in the *British Medical Journal* of August 18th of that year. Watson claims to have seen a case of encephalitis in Yunnanfu in 1927, the onset of which, according to the statements of the patient and his friends, was dated back twelve years—that is, to 1915. The case was seen only once in the out-patients' department, and was not thoroughly studied, as Dr. Watson's assistant, Dr. H. P. Yew, admitted in a note in the *China Medical Journal* for January, 1929. A second case seen in 1927 with an eight years' history would have started in 1919, in the same year in which, as we have seen, encephalitis had already made its appearance in other parts of the south and east of China. The rest of Watson's cases are of a still later date. Thus his theory of the origin of the disease in Yunnan practically rests only upon the poor evidence of one inadequately investigated—which is hardly enough to serve as a basis for a new theory.

But even if we could accept this "early" case as proven, we need not assume that the disease really originated in Yunnan. I can offer another much more probable explanation. From my personal experience and further inquiries I am able to state that soldiers from Indo-China were engaged in the battle zone of Verdun, where the first cases were reported to have appeared in 1915, and that in the same year Annamite troops from this front returned to their homes. The railway connecting the coast with Yunnanfu was already in existence, and the infection could thus have been carried within a short time into the heart of Yunnan province. Remoteness and isolation—factors which Watson further mentions in support of the endemic nature of encephalitis in Yunnan—are only relative conceptions; even the poorest traffic would suffice to convey the virus of an epidemic disease by one or the other means.

In 1926 I expressed the view that encephalitis lethargica was introduced into China from the southern ports; I consider it probable that another way in which the disease may have entered China was through the native soldiers of Indo-China. If the disease had originated in Yunnan and thence spread to other parts of the world, especially to the west, we would have seen quite a different epidemiological picture.

SUMMARY.

Encephalitis epidemica is known to have appeared in China early in 1919 and to have spread along the lines of frequent traffic.

In its clinical aspect the disease does not differ essentially from its behaviour in Western countries. The Parkinsonian symptom-complex is the most common sequel.

The epidemic character has been less obvious in China than in Europe, but a few small epidemics have been observed in the north of the country.

There is no evidence that encephalitis has its origin in one of the provinces of China, but enough satisfactory evidence exists to support the assumption that the disease was introduced through Indo-China, and through the ports of the southern and eastern coast of China by means of the sea traffic from Europe through the Indian Ocean.

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CEREBRAL ABSCESS FOLLOWING ACUTE TONSILLITIS.

BY

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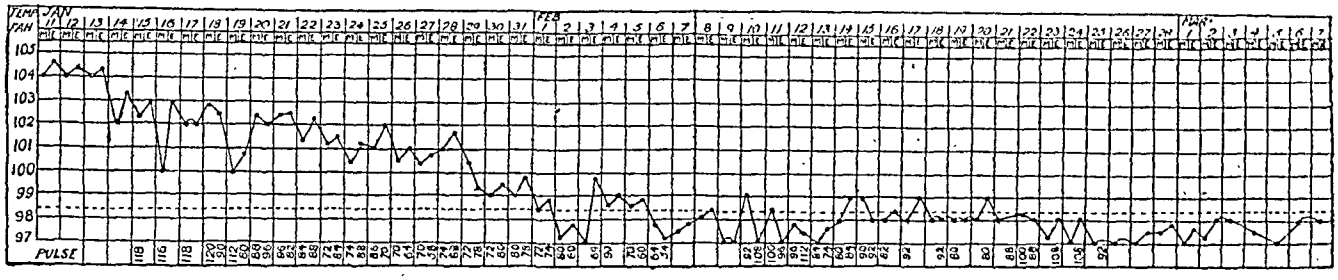
THE sequence indicated in the above title is sufficiently rare to make the following case worth recording. No reference could be found in the literature of the subject to a case of cerebral abscess secondary to throat conditions, although foci of sepsis in the lungs, cardiac valves, liver, and bones are mentioned as possible causes. Other remarkable features of this case were the patient's apparent complete recovery after an illness of six weeks' duration, in which he had for a period of a month shown unmistakable signs of an intracranial abscess, and then his comparatively sudden death.

A plumber, a healthy, well-built lad of 18, with no history of previous illness or ear trouble, was first seen on January 11th.



He had been out-of-sorts for several days, and complained of a sore throat. His temperature was 104° F., pulse 120, and respiration normal. The fauces on both sides were intensely injected, together with the posterior pharyngeal wall, which was covered with a muco-purulent exudate. No other physical abnormality could be found. His temperature remained as high for several days, with slight variations in the throat condition, and a good deal of general disturbance. On January 14th the temperature fell to 102°, and remained at this level for the following week, with a relatively slow pulse below 100. On the same day he commenced to have rigors once or twice daily until January 17th, when the tonsillitis began to localize as a peritonsilar swelling on the left side. On January 19th ptosis of the left eyelid and a left internal strabismus were noticed, associated with periods of "sleepiness," although the patient was quite rational when roused. He had some headache, aggravated by attacks of coughing coming on at hourly intervals, in which he expectorated a muco-purulent sputum. On January 18th he was given 1 c.cm. of "S.U.P." intramuscularly, and on January 20th a second injection of this and 25 c.cm. of polyvalent antistreptococcal serum, without obvious effect.

On January 21st he was seen in consultation with Dr. C. E. Lakin, who found rigidity of neck muscles, modified Kernig's sign, left knee-jerk absent, right just present, plantar reflex flexor, ptosis of left eyelid, internal strabismus of left eye, with much congestion of the retinal vessels on this side. The throat still showed some peritonsillar swelling on the left side, but Dr. Lakin detected no abnormality in the chest or abdomen, and suggested the presence either of a cerebral abscess or a basal meningitis. Removal to hospital was advised, but consent was refused.

During the following week the nervous symptoms varied. The ptosis became less noticeable, although the strabismus remained throughout. The neck rigidity continued, with a doubtful Kernig's sign. On January 23rd and 24th all reflexes, except the superficial abdominal, could be obtained. At times the patient seemed sleepy, but he was bright mentally, and his fever continued in the region of 101°, and his pulse rate from 60 to 90 per minute.

On January 25th scattered dry rhonci were found on both sides of the chest, with moist crepitations at both bases, associated with a purulent sputum which, on examination, was found to contain pneumococci, *B. influenzae*, and staphylococci. The cough, which still only occurred infrequently, continued for several weeks, and then entirely ceased.

Nothing further of note happened until the morning of February 2nd, when at 6 o'clock, following an hour's incoherent speech, the patient commenced to have fits. They began by a deviation of the head and eyes to the right, with marked lateral nystagmus and hippus of both eyes. Then followed a clonic convulsion, originating in the right side of the face and spreading to the neck and jaw muscles. Between 6 and 9 a.m. fifteen occurred, and in the more severe ones the convulsion spread to the right and left arms and involved the entire musculature. The knee-jerks remained present, and an ankle clonus was obtained on the right side. No further fits took place, and the next day he was conscious, but at times was "muddled" in his speech. On February 4th he was very delirious, but by February 8th he was comatose, and rolled his head continually from side to side. The temperature was now subnormal, and the pulse rate varied from 54 to 90 per minute. He had become very emaciated.

He was still unconscious on February 9th, when he was seen with me by Dr. D. G. Leys. He found a bilateral ankle clonus, but could obtain no reliable evidence from the reflexes to point to a unilateral cerebral lesion, nor any definite optic neuritis in either eye, but suggested that exploration of the brain was worth considering after further investigation in hospital. Unfortunately no permission for the patient's removal to hospital could be obtained.

From February 10th to 16th the patient remained in a semi-comatose condition, and nutrition was only kept up by rectal feeds of 5 per cent. glucose. Death seemed the only possible issue, but on February 16th he regained consciousness, began to take nourishment, and by February 18th seemed quite normal mentally, although a little excited. The following day an abscess, which had gradually formed on the back, at the site of the serum injection, was opened, and a greenish-yellow pus was evacuated. By February 25th he seemed well in every way, was eating solid food, sleeping well, putting on weight, and normal mentally; he was allowed up for half an hour, with daily increments.

It looked as if our interpretation of his cerebral symptoms had been at fault, and that the abscess on his back had acted as a fixation abscess and brought about a cure, for his improvement was uninterrupted until March 11th. During the morning of this day he was getting about the house, but at midday he seemed sleepy, and at 4 p.m. he became unconscious, and remained so until his end was brought about at 6.30 the next morning, by what was clinically an acute oedema of the lungs.

A post-mortem examination, confined to the brain, performed with the help of Dr. Allen Piggot, revealed an abscess about the size of a walnut in the tip of the left temporo-sphenoidal lobe, with some adhesions between the surrounding pia mater and dura. There was no sign of bone infection in the skull.

It may be pointed out that the cerebral symptoms had already appeared before any abnormality could be detected in the lungs, so that it is probable the cerebral abscess was a direct complication of the acute tonsillitis.

Any incompleteness in these notes is due to the fact that they were gathered in general practice, and that, owing to the refusal of the patient's parents to agree to his removal to hospital, the clinical observations and partial post-mortem examination had to be carried out in a small artisan dwelling.

My thanks are due to Drs. C. E. Lakin, D. G. Leys, and Allen Piggot for permission to associate their names with this case.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF PHYSOPYOMETRA WITH PERITONITIC ABSCESS.

MOST of the reported cases of physometra (gas in the uterine cavity) have been associated with septic abortions or other complications of the puerperium. In such cases the symptoms are usually very grave and the issue fatal. The organisms concerned are frequently *B. welchii*, anaerobic streptococci, and *B. coli*. Chronic pyometra is a condition more common, and occurs where retained uterine secretions have become infected, as in senile and tuberculous endometritis, malignant disease of the body or cervix, and suppurating fibromyomata.

History of Case.

The patient, a woman aged 65, was admitted, on January 6th of this year, complaining of offensive vaginal discharge and haemorrhage. She was married, and had two children, aged respectively 29 and 24. She had ten or twelve miscarriages before the birth of her first child.

Fibromyoma uteri was diagnosed thirty years ago, but no treatment had been received. The menopause occurred twenty-three years ago. Three years ago she had slight vaginal haemorrhage, and several floodings had occurred during the last two years. *A greenish offensive vaginal discharge had been present for the last* three months.

She was admitted with an abdominal tumour, arising out of the pelvis to the level of the umbilicus. There was a copious purulent vaginal discharge. Temperature 100° F., pulse 98.

Total hysterectomy was performed by Mr. Victor Bonney. Both tubes and ovaries were removed. There was a small localized peritonitic abscess in the neighbourhood of the fimbriated extremity of the right tube. The appendix was not in the immediate vicinity, did not appear to be involved, and was left *in situ*. The patient made an uninterrupted recovery.

The uterus contained multiple fibroids of varying sizes. Some were cystic and some calcareous. The uterine cavity was distended and fluctuating. On opening the cavity a considerable quantity of gas escaped with a hiss, followed by 1½ pints of greenish-yellow pus with a *B. coli odour*. A soft, friable, fungating mass involved the endometrium and uterine wall in the region of the fundus. Sections from this area showed an adeno-carcinoma corporis uteri. The remainder of the wall of the cavity was lined by a rough pyogenic membrane. Both tubes contained pus. The lumen of the extremity of the left tube was occluded, and it was distended.

My thanks are due to Mr. Victor Bonney for permission to publish the notes of this case.

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RAT-BITE FEVER FROM THE BITE OF A PIG.

THE following case is of so unusual a nature that it seems worthy of recording.

On March 20th a woman, in feeding a small pig with a bottle, was bitten on the forefinger; the wound bled slightly and healed normally. On April 4th it began to swell, and continued to swell and become increasingly painful for four days, on the last of which I saw it for the first time. The terminal phalanx was extremely swollen and tender, and I proposed to incise it, but for domestic reasons she wished it postponed to the next day. On April 8th it was excised freely under gas; no pus was found and there was very little bleeding at the time; it bled normally later and the pain was relieved considerably. Boric fomentations were applied, but there was no discharge, and the next day the wound was almost healed.

On April 11th there was a red line of lymphangitis, a temperature of 101°, and the finger was more painful. Gas was given again and the wound was opened up more freely on both sides of the finger and at the root of the nail; a little clear serum escaped. The temperature did not subside, and she developed red nodules very similar to erythema nodosum along the arm and a few on the legs, abdomen, and neck. Owing to nursing difficulties she was moved into hospital and the arm kept in a eusol bath. The temperature then became normal, and remained so from April 16th to 20th, when it again rose to 100° and on the 21st to 104.8°. On April 22nd the temperature was 99° in the morning and normal by evening, and remained normal until April 25th, when it reached 100° in the evening.

Sir William Willcox, to whom I mentioned the case, agreed that it was a case of rat-bite fever, though he had never heard of a case occurring as a result of a pig bite, and on his advice 0.6 gram of novarsenobenzene was given, after which the temperature fell to normal in twelve hours and has remained so. There was considerable desquamation of all the nodules and arm where the lymphangitis had occurred. Recovery was quite uneventful, except for an attack of urticaria two days after the injection.

Chelmsford. R. P. SMALLWOOD, M.B.

EXCESSIVE HAEMORRHAGE AFTER TOOTH EXTRACTION, DUE TO ACUTE LEUKAEMIA.

THE case here recorded, in which the extraction of a tooth was followed by excessive haemorrhage, resulting in death of the patient, seems of sufficient interest to warrant publication.

An unmarried girl, aged 17, was admitted to the Salford Royal Hospital on April 25th last as a case of excessive haemorrhage occurring after tooth extraction. The second left upper molar tooth was extracted on April 18th, and she had bled continuously from that time until her admission—that is, for seven days. She had never previously had a day's illness in her life. Menstruation had started the day before.

Condition on Admission.—She was very pale, anaemic, almost moribund. The mouth was septic. The tooth socket had stopped bleeding. Temperature 97° F., pulse 140, respirations 34. No other abnormalities were noticed at the time.

She was given rectal salines, digitaline, and mouth washes, and rallied slightly. The next day a transfusion of one pint of blood from her father was given, and there was immediate temporary improvement. Bleeding started again, however, in a few hours' time, but not much blood was lost before the heart suddenly failed and she died on April 26th at 7.30 p.m.

A necropsy revealed amongst other things multiple haemorrhages into the heart muscle, lungs, upper surface of the diaphragm, and suprarenals; intense fatty change in the heart, liver, and kidneys. The spleen was not enlarged and was macroscopically normal. A generalized slight enlargement of lymph glands was present. Free blood was present in the peritoneal cavity and there was a great deal of blood in and around the left tube and ovary (Graafian follicle especially); the condition of the left tube and ovary was such that in certain circumstances—for example, an abdominal section—it might quite easily have been mistaken for a ruptured ectopic pregnancy.

Stained sections of the liver and spleen were reported on as acute lymphatic leukaemia. A blood smear taken even seventy-two hours after death showed lymphocytes to be almost as numerous as the red cells.

The parents, convinced that the dental extraction had caused the girl's death, precipitated an inquest. At the inquest it was maintained that: (1) Death was due to acute lymphatic leukaemia. (2) There was internal haemorrhage, sufficient in amount and situated in such a way as to account for death quite easily. (3) It was impossible to say that the extraction had accelerated death, and probably it was a coincidence.

Mr. J. B. Macalpine, under whose care this case was, kindly gave permission to write this note.

W. C. D. WALMESLEY, M.B., Ch.B.,
House-Surgeon, Salford Royal Hospital.

Reports of Societies.

RESULTS OF THE OPERATIVE TREATMENT OF ENDOMETRIOMATA.

AT a meeting of the Obstetric Section of the Royal Society of Medicine, with the president, Dr. J. S. FAIRBAIRN, in the chair, Mr. CHARLES D. READ and Mr. FREDERICK ROQUES communicated a paper on after-results of the operative treatment of endometriomata—a study of forty-one cases.

In spite of the large amount of literature on endometriomata, the authors found but few references to the treatment of these tumours. They quoted Herd and Sampson, the latter author having reported 23 cases but given details of the results of treatment in only 10. A detailed study of the authors' cases followed. They were divided into five groups: (*a*) ovarian, 25 cases or 61 per cent.; (*b*) uterine, 11 cases or 27 per cent.; (*c*) abdominal scar, 3 cases or 7 per cent.; (*d*) recto-vaginal space, 1 case or 2 per cent.; (*e*) umbilicus, 1 case or 2 per cent. Tables were shown giving full clinical details in each of the 41 cases, with the treatment and the condition of the patients at the time of writing. The results of treatment in each group were then analysed. The ovarian cases fell into two groups: (1) Cases in which the growth had been excised from one or both ovaries or in which one ovary only was removed in its entirety; in other words, all ovarian tissue was not removed at operation. (2) Cases in which both ovaries were completely removed or in which complete removal was attempted, with or without concomitant hysterectomy. Of 14 patients in whom one ovary or part of an ovary was left 10 were cured, 2 improved, and 2 remained unrelieved. These two patients were later treated by more radical measures, bringing the total number of operations in the ovarian group to 27. Of 13 patients from whom all ovarian tissue was removed 10 were cured, 2 improved, and 1 remained unrelieved. The uterine cases were similarly divided into two groups. (1) Cases in which the growth was excised from the uterus. (2) Cases which were treated by hysterectomy—total or subtotal—with or without concomitant hysterectomy. In 2 cases the growth was excised from the uterus. One patient was cured, the other improved. Nine cases were treated by hysterectomy. The authors remarked that removal of the ovaries with the uterus did not influence the result in cases treated by hysterectomy, and suggested that the question of oöphorectomy in uterine endometriomata should be determined by the age of the patient and the degree of implication of the ovaries with the uterine growth. The remaining cases—3 abdominal scar, 1 recto-vaginal, and 1 umbilical—were treated by local excision. Comment was made upon the relatively low incidence of recto-vaginal tumours in this series. The results of the two forms of

treatment—conservative and radical—of 43 operations on 41 patients, were then reviewed. Of 21 patients treated conservatively 15 were cured, 4 improved, and in 2 symptoms persisted after operation. Of the 22 patients who were treated radically 19 were cured, 2 improved, and in 1 no relief was experienced. The most striking fact which emerged from these figures was the high "cure rate" of conservative treatment, which in the authors' opinion was the treatment of election in all patients under 38 years of age in whom the local conditions of the growth—for example, extensions involving the bowel—were not unfavourable. They again quoted Sampson, who reported three pregnancies among five patients treated by conservative operation. The advantages of local excision were that the operation was less severe and probably attended by a lower operative mortality, there was a possibility of subsequent pregnancy, and, usually, continuation of the menses. Against those advantages the chance of recurrence was to be weighed. This risk was more than justifiable in the young patient, whenever local conditions permitted. Only very occasionally in extensive lesions was complete clearance of the pelvis indicated, irrespective of the patient's age. For the older patient more extensive measures were recommended. The advantage claimed was the complete success with which they were attended, although the mortality might reasonably be expected to be higher. In the series of cases under discussion this consideration did not apply, as the mortality was *nil*. Post-menopausal retrogression of endometriomata was mentioned in connexion with the disappearance of the outstanding symptoms of dysmenorrhoea and menorrhagia. In patients near to the climacteric operation was only justifiable in those cases in which the tumour was causing the mechanical symptoms of pressure and intestinal stenosis. The value of radium in treatment was discussed, and the authors referred to one of their cases in which radium proved successful after three laparotomies had failed. They favoured the use of radium in selected cases, but thought it doubtful whether radium would ever be applicable to ovarian or to uterine endometriomata, for the reason that diagnosis, in many cases, was very difficult, in some cases almost impossible. In particular, the difficulty of excluding pelvic inflammation as an alternative diagnosis would make most hesitate to advise radium treatment for endometriomata of the ovaries or of the uterus.

The following factors influenced the method of treatment in any given case. (*a*) *The age of the patient.* The younger the patient the stronger was the indication for conservative treatment, except in large tumours with extensive infiltration of surrounding structures. (*b*) *The extent of the lesion.* This influenced the decision between "conservative" treatment, on the one hand, and "radical" and "radium" treatment on the other. Conservative treatment was indicated for a limited growth in young patients, radical operation for all extensive lesions in patients over 38 years of age, especially in the presence of mechanical symptoms. Radium was a useful adjunct in inoperable cases and in cases in which radical operation had failed. (*c*) *The site of the lesion.* Ovarian endometriomata lent themselves to both forms of surgical treatment depending on the factors already considered. Uterine endometriomata should be similarly treated, remembering the governing principles of age, extent, and parity. Conservative treatment was less frequently possible than in the case of the ovarian tumours. Endometriomata in the recto-vaginal space, if accompanied by uterine or ovarian involvement, demanded radical operative treatment. Localized tumours lent themselves to both local incision and radium therapy. Scar and umbilical endometriomata were satisfactorily treated by local excision. In these situations radium was a possible alternative; but its use had not yet been exploited.

A Gigantic Foetus.

At the same meeting Dr. E. LAWTON MOSS showed a specimen of a gigantic foetus. The head had been delivered with axis-traction forceps, and the shoulders by means of traction with a blunt hook. The foetus was stillborn, and immediately after delivery weighed 24 lb. 2 oz. The sub-occipito-bregmatic diameter of the head was 5½ in., and the length from vertex to heel was 35 in. The placenta weighed 4 lb. The mother made an uneventful recovery. Dr. *Lawton Moss* pointed out that the enormous size of the foetus could not even in part be attributed to post-maturity, since the mother started labour a few days before her expected full term. A search through the English references had failed to reveal any reference to a foetus so large as the one shown. Dr. HERBERT SPENCER, in the discussion, suggested that the weight of the foetus was a record not only for English cases, but for all cases of this kind published in any country.

Vulval Fibro-adenoma.

Mr. A. J. WRIGLEY showed sections of two cases of adenomatous tumour of the vulva which had the histological characters of a fibro-adenoma, such as is commonly found in the breast. He said that these tumours in the vulva were very rare, or at any rate very rarely described, and as their anatomical position excluded the possibility of their arising in Bartholin's gland, and because their histological appearance differed from that of a sebaceous adenoma, he looked upon them as a distinct type of fibro-adenoma.

Pelvis of an Australian Aboriginal Woman.

The SECRETARY read a paper by Professor Cleland and Drs. Dawson, Wallace, and Hackett, the object of which was to record accurate measurements of the bony pelvis of an aboriginal woman of Australia. The measurements were taken from a pelvis removed post mortem from a woman who had died during labour. In comparison with the pelvis of a normal white woman, the most striking differences in the pelvis described were a narrow subpubic angle, and a marked diminution in the transverse diameters of the brim, the cavity, and the outlet. The pelvis, as a whole, was funnel-shaped.

A Method of Inducing Labour.

Mr. G. F. GIBBERD read a short communication recording the results of thirty cases of induction of labour undertaken by means of the introduction into the uterus of a sterile animal bladder containing glycerin. Although the method had disadvantages and dangers shared by other instrumental methods of induction, it had the one advantage that, compared with other methods, its use was attended by a considerable reduction in the time interval before the onset of pains.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.

AT a meeting of the Aberdeen Medico-Chirurgical Society on June 6th, the president, Professor ALEXANDER LOW, in the chair, a demonstration of specimens was given in the pathology department, Marischal College. Professor THEODORE SHENNAN Dr. JOHN GRAY, and Dr. R. D. LOCKHART described the exhibits.

Among the post-mortem specimens shown by Professor Shennan and Dr. Gray were two cases of cancer of the body of the pancreas, neither involving the head and both showing extensive metastases to liver, mesenteric border of small intestine, and omentum; a specimen of acute phlegmonous gastritis showing inflammatory oedema and suppuration in all coats of the stomach wall, most extensive in the submucosa and implicating the lower part of oesophagus and upper duodenum, with Gram-positive diplococci present throughout the lesions and no evidence of antecedent ulceration or infective foci; a case of primary cancer of the left kidney, infiltrating the organ diffusely and enlarging it greatly; a case of periarteritis nodosa terminating in uraemia; a case of active glandular tuberculosis in a female, aged 72, with cervical and mediastinal glands increased to the size of walnuts but with only slight pulmonary infiltration; and specimens demonstrating widespread metastases in the myocardium, mediastinum, lungs, liver, gall-bladder, abdominal glands, bone, and pituitary gland, from a squamous epithelioma arising in an indolent leg ulcer in an individual with a positive Wassermann reaction.

Dr. Lockhart showed a dissected preparation of a rare condition, complete double aortic arch in the adult; two brains showing symmetrical psammomata of the choroidal plexus; the brain of a rabbit 4 days old, with hydrocephalus; an infantile form of appendix, lying behind the peritoneum and reaching along the ascending colon to the hepatic flexure; radiograms and photographs illustrating the position of the scapula in trapezius paralysis; and a series of radiograms demonstrating the relative amount of movement occurring in the normal shoulder-joint during elevation from the dependent to the horizontal position and from the horizontal to the vertical.

Reviews.

THE SCIENCES AND PHILOSOPHY.

CONSIDERING how much that was obscure in Nature has been explained by science, it may seem excusable to believe, as some do, that science will in due time solve for us the mystery of the universe. Such a belief, without doubt, acts as a stimulus to research, and on this account it would seem to be mere gratuitous meddling to attempt to undermine it. There is, however, another aspect of the question, and it is very ably discussed by Professor J. S. HALDANE in the Gifford Lectures for 1927–28, under the heading of *The Sciences and Philosophy*.[1] Professor Haldane has reflected on this question for some forty or fifty years, and, being a scientist, he approaches the subject in a scientific spirit and, one may suppose, with a leaning towards science. A study of his lengthy argument leads to the conviction that the advances made by science have brought us no nearer the solution of the mystery of Nature than were the contemporaries of Job; in fact, the mystery appears to deepen with each new discovery. This conclusion is of no great practical importance, but another deduction is drawn, the practical importance of which cannot be exaggerated. It is shown with a considerable degree of plausibility that the gross materialism which is a characteristic of the present time has its roots in a tendency to allow conventional and limited scientific conceptions to do duty for philosophy or, as the author defines it, the conception of the whole as distinguished from a mere part of the reality of Nature. From this tendency arose the mechanistic conception of Nature elaborated by Descartes and largely held in a semi-conscious fashion at the present time. Mechanical and physico-chemical forces appeared to explain so much that men came to think that all would ultimately be thereby explained. This was an error, for it omitted all consideration of the essential feature of living organisms—namely, the power of developing and maintaining their specific structure and of reproducing it from generation to generation. This fact is inexplicable on a purely physico-chemical theory, which is thus shown to be merely a conventional and limited conception of reality. The same is true of the vitalistic theory initiated by Stahl—namely, that all could be explained by assuming the presence of a vital principle or soul, having an independent existence in the organism and controlling the physico-chemical processes of the body. A very essential reality is omitted in this theory, one which is strongly emphasized by Professor Haldane as marking the distinction between biology and psychology as separate sciences. In unconscious living beings, such as plants, the vital reactions are determined solely by present conditions; whereas in conscious organisms ideas of the past and the future and a consciousness of interest and values are introduced as a new element—and not only the interest of the organism concerned, but also that of his fellows, present and to come. The biological or vitalistic theory, therefore, is, like the mechanistic theory, inadequate as a conception of the whole of reality. The separation of the sciences in different watertight compartments is doubtless practically convenient; the engineer need take no account of biological forces in carrying out his engineering schemes, and the surgeon can disregard psychological subtleties when performing a major operation These are arts which call merely for a restricted and conventional view of natural forces; but the art of living needs something more than restricted views, and nothing will avail except philosophy or the "conception of reality in its totality." If an attempt is made, as above indicated, to elevate any one of the sciences into the position of a philosophy, materialism is the inevitable result. The bearing of these facts on questions of general and technical education is obvious, and is clearly expounded in the Gifford Lectures. What, then, it may be asked, is the philosophical view of life and the universe ultimately reached by Professor Haldane? The reader is recommended to procure the book and study this, the most important part of the work, for himself.

[1] *The Sciences and Philosophy.* Gifford Lectures, University of Glasgow, 1927 and 1928 By J. S. Haldane, C.H., M.D., F.R.S. London: Hodder and Stoughton, Ltd. 1929. (Demy 8vo, pp. ix + 344; 15s. net.)

HYDROGEN-ION CONCENTRATION.

THE volume entitled "*p*H in Biology"[2] by MM. MARCEL VERAIN and JEAN CHAUMETTE prompts us to reflect that aesthetic considerations have not always weighed in the choice of scientific symbols. It is, however, too late to complain that *p*H is lacking in the picturesque. *p*H has arrived; and in no field has it arrived with such assurance as in the domain of physiology. The hydrogen ion—most diminutive of molecular species known to chemistry—holds the stage, directing the activities of enzymes, controlling the restless forces of metabolism, and shaping that destiny which is thrust upon each living organism by the environment in which it finds itself. A scientific symbol is justified by works, not by faith. It is useful only in so far as it may permit a more economical description of observed phenomena. By this token *p*H has earned a place in the vocabulary of every biologist. At the same time, it has its defects. *p*H, on the one hand, represents a direct experimental observation made with appropriate instruments. On the other hand, it stands for the whole body of theory of electrolytic dissociation which is now the foundation of the treatment of all aqueous systems in which biology is interested. The dual role has proved difficult to sustain. Moreover, it is to be remembered that *p*H involves a scale of reckoning which is foreign to most of us, requiring, as it does, the mental habits of a slide-rule.

For all these reasons biologists may properly seek instruction in the mysteries of the hydrogen ion. Tempted by the comprehensive title chosen by the authors, they will be liable to disappointment unless they have been already warned by the modest dimensions of the book. This is not a wide and general survey of the significance of hydrogen-ion activity in vital phenomena. The main part is devoted to an exposition of the fundamental principles upon which the theory of electrolytic dissociation is based, particular attention being directed to those weak acids and bases which figure prominently in physiological systems. The presentation is simple and attractive, but it seems a pity that the revolution in the treatment of ampholytes which we owe to Bjerrum and Bronsted should have been ignored. The inclusion of this is urged, not because it is recent knowledge, but because it leads to a definite simplification of treatment. Detailed description is then given of the various methods in common use for the determination of the hydrogen-ion concentration of fluids, particularly of blood. For the rest, there are chapters on the hydrogen-ion concentration of the blood and of the cerebro-spinal fluid, and a catholic section of fourteen small pages roaming without aim over the fields of digestion, bacteriology, and vegetable physiology.

As a contribution to a series of monographs on practical medicine this book presumably seeks to do service to the medical profession. This it does within the restricted field covered; but we feel that the biological section suggests a narrow interest which does scant justice to so ambitious a title. This is a pity, for many seek an understanding of these matters.

[2] *Le pH en Biologie.* Par Marcel Verain et Jean Chaumette. Préface du Professeur E. Darmois. Paris: Masson et Cie. 1928. (5¼ × 7¾; pp. viii + 150; 20 figures. 16 fr.)

THE SEXUAL LIFE OF SAVAGES.

UNTIL fairly recently the tendency both among anthropologists and psycho-analysts was to keep strictly to their respective fields, the former to a study of the variations of custom and belief among peoples of diverse races, traditions, and cultures, the latter to a study of the springs of behaviour in normal and abnormal persons in civilized society. Lately, however, a few workers in these sciences have invaded each other's territory, and found, to their surprise, that they felt almost at home. Psycho-analytic theories which deal with the significance of the sexual life in the formation of character traits, and the determination of behaviour—in particular, theories which define in exact terms the psychological mechanisms involved—have been criticized on the ground that they are valid, if at all, only in relation to a particular culture and family structure, and cannot, without considerable modification, be used to

interpret the behaviour of persons living in another cultural environment involving an entirely different system of family relationships. *Totem and Taboo* by Freud, *Dream and Myth* by Karl Abraham, and a number of studies in *Essays in Applied Psycho-Analysis* by Ernest Jones, represent attempts on the part of psycho-analysts to meet this criticism and to relate psycho-analytic theory to that portion of the world's population which does not inhabit Vienna, Budapest, New York, and London. That the anthropologists, too, have gained something by a study of the psycho-analytic method is evident from much of their recent work—above all, from the work of Professor BRONISLAW MALINOWSKI. Professor Malinowski, it may be said, has visited the well of psycho-analysis, but has drunk with restraint and discrimination. His *Sex and Repression in Savage Society* owes much to the work of Freud and his disciples; it represents, however, as cogent and intelligent a criticism of that work as has ever been made. In his latest book, *The Sexual Life of Savages in North-Western Melanesia*,[3] he does not concern himself so strictly with theory; he is content rather to provide material for the theorist in the form of a vivid and detailed account of custom, thought, and ritual, especially in relation to sexual play, courtship, marriage, and family life among the Trobriand islanders, one of the Melanesian peoples of British New Guinea. The interdependence of sexual, matrimonial, and family relationships can be adequately understood only by a study of their variations under different cultural conditions.

Professor Malinowski's book falls roughly into two parts: the first records the life-history of the average Trobriand islander, and includes what must be the most precise and unemotional account of the manifestations of infantile sexuality that has appeared in the English language. It is interesting to learn that pre-nuptial licence, which appears to be general in Melanesia, leads inevitably to the development of monogamous interest and finally to marriage. The early love affairs represent a form of courtship, a process of trial and error, in which promiscuous unions gradually become restricted and give place to permanent, legally sanctioned marriage. According to Professor Malinowski, pre-nuptial licence among the Trobriand islanders leads only very rarely to the production of illegitimate children, and women relatively prolific after marriage remain sterile throughout the period of adolescent liaison. Beyond stating categorically that the natives use no form of contraception Professor Malinowski makes no attempt to account for this extraordinary phenomenon, holding that it demands skilled medical investigation. He insists throughout, though not very convincingly, that the Trobriand islanders have so far failed to associate reproduction directly with the sexual process. In the second part of the book Professor Malinowski makes a detailed study of erotic folklore, games, stories, and songs, and considers at some length the psycho-analytic correlation between myth, day-dreams, and other forms of wish-fulfilment fantasy, and the structure of the family in a matrilineal society. It remains only to add that the book is beautifully written, and one is continually reminded of the fact that Bronislaw Malinowski is a countryman of Joseph Conrad.

CARDIOLOGY.

A CONSIDERABLE number of alterations and additions have been made in the second edition of Dr. REID'S book, *The Heart in Modern Practice*,[4] though the general character of the first edition, which was noticed in our columns on November 17th, 1923, has been retained. Perhaps the best part of the book is the arrangement of the subject-matter, which is presented in five sections. The first deals shortly with anatomical and physiological considerations and methods of examination, and contains a classification of heart disease on the lines of that recently published by the American Heart Association. The three succeeding sections consider heart disease from the etiologic, structural, and functional points of view, while the fifth section deals with treatment; to this are added appendixes giving diets and occupations suitable for cardiac patients, and a series of illustrative case reports.

The aim of the author is to present the best of the new knowledge with that less recently acquired, and there are many references to modern work throughout the text. The book, however, is patchy, and the amount of space devoted to some subjects is hardly in keeping with their importance. Thus, for example, coronary infarction is dismissed in little more than one page, while extra-systoles receive no less than twenty-two pages.

Again, the important subject of failure with congestion is given scant treatment, and neither failure nor venous congestion appears in the index. Though it is true—as the author points out in his preface, foreseeing such criticism—that certain subjects do lend themselves to a brief presentation, while with others clearness demands greater space, yet in a manual for students and physicians the brief statement of important signs and symptoms is too often inadequate to make the reader realize their significance. We feel that though the author has a good story to tell, he does not make his points sufficiently clear.

AMERICAN MEDICAL WAR HISTORY.

THE fourth volume of the history of the Medical Department of the United States Army in the world war has been prepared by Major ALBERT S. BOWEN, under the title of *Activities Concerning Mobilization Camps and Ports of Embarkation*.[5] Other volumes of the series embody data bearing closely on this subject, but not covering it completely. The student of military medicine is bound to be interested in a work that describes and discusses the method by which a large army was mobilized and its raw material trained. It is being realized more and more that if the personnel of an army is to withstand the strains of modern warfare the medical profession must play an important part in its mobilization and training, in the selection of fit men for the more arduous duties, and the placing of unfit men in positions where they may be of maximum benefit to the force. Only in this way, moreover, can the admissions to hospital, invalidism, and pensions be kept down to the minimum.

The volume under review deals with two classes of camps—divisional and miscellaneous—which were used for the mobilization of the fighting forces. The divisional camps comprised the tent group for the National Guard divisions, and the cantonment group for the National Army divisions; the miscellaneous group comprised the special camps intended for embarkation purposes or for mobilizing and training special troops. In describing the procedure during the mobilization and training period (August 25th, 1917, to November 11th, 1918) it is pointed out that the general officer commanding each of the sixteen National Army cantonments was required not only to organize his division, but, for the ultimate purpose of receiving and training men for the tactical divisions, to establish a depot brigade, which from the point of view of the medical department became an important part of camp organization. There follows a detailed account of the medical administrative officer's duties, which are grouped thus: (*a*) prevention of the introduction and spread of communicable disease in the cantonment area; (*b*) administration of prophylactic inoculations; (*c*) sanitation of the cantonment area; (*d*) physical examination of drafted men; (*e*) organization and equipment of sanitation units; and (*f*) instruction and training of medical department personnel. It has been a commonplace of military history that whenever a large force has been specially raised any personnel not required for the combatant units has been considered good enough for the medical services. This same error of organization occurred in the American army, and it was only after the lapse of time that commanding officers came to realize that the care of the sick and wounded was too important and

[3] *The Sexual Life of Savages in North-Western Melanesia.* By Bronislaw Malinowski, Ph.D., D.Sc. With a preface by Havelock Ellis. London: G. Routledge and Sons, Ltd. 1929. (6 × 10¼, pp. xxiv + 505; 96 illustrations. 42s. net.)

[4] *The Heart in Modern Practice.* By William Duncan Reid, A.B., M.D. Second edition, revised and enlarged. London: J. B. Lippincott Company. 1928. (Med. 8vo, pp. xii + 466; 81 illustrations. 25s. net.)

[5] *The Medical Department ... ...ny in the World War.* Prepared under the ... M. W. Ireland. Vol. iv: *Activities Concer... ... and Ports of Embarkation.* By Major Albert S. Bowen, *M.C.* Washington: U.S. Government Printing Office. (Sup. roy. 8vo, pp. vii + 494. 1.75 dollars.)

too arduous a task to be delegated haphazard to whatever personnel remained when the combatant units had made their selection.

Four chapters of the book are devoted to a detailed description of the arrangements peculiar to National Army cantonments, and to National Guard camps, while the concluding two chapters, based on the *History of the Office of the Surgeon, Port of Embarkation, Hoboken, N.J., and Newport News, Va.*, give a broad survey of the intricate administrative measures required during embarkation and disembarkation of troops. The mass of facts presented in these chapters is likely to prove uninteresting to the non-specialist student, who will find it difficult to extract from them any broad principles; but the placing on record for all time of the intimate details of the work done in the various camps must command our respect. The officers responsible for the medical organizations in the late war will, in the nature of things, give place to others; and while it is earnestly hoped that the next generation will be spared the horror of war, the record under review will, if the occasion ever arises, prove of inestimable value in helping the medical officer of the future to avoid a repetition of past failures and to build up on the accumulated experience of the past.

NOTES ON BOOKS.

THE sixth edition of Sir EDWARD HENRY'S *Classification and Uses of Finger Prints*,[6] which originally appeared in 1900 at the request of the Indian Government, and subsequent editions at the instance of the Secretary of State for the Home Department, gives an account of the development of this now familiar method of identification. As long ago as 1823 Purkinje, in his inaugural dissertation at Breslau, advocated its introduction, giving nine standard types and suggesting a system of classification. Later Sir William Herschel of the Indian Civil Service, impressed by the amount of false personation in the courts, attempted, but without success, to get their means of fixing identity adopted. In 1894 Sir Francis Galton's further elaboration of the system was considered by a special committee appointed by the Home Secretary, Mr. Asquith. In 1897 the method of classification of finger marks, constructed by the Inspector-General of Police, Lower Provinces, Mr. (later Sir) E. R. Henry, was recommended by a committee as superior to Bertillon's more complicated anthropometric system (1883), and was officially adopted before 1899 in India; in 1901 the identification by finger prints, without the combined primary classification by Bertillonage, as recommended in 1894, was adopted in this country. In this work the method of taking and the necessarily elaborate system of classifying finger prints are clearly set out, and very copiously illustrated by more than 200 diagrams.

The April number of the *Guy's Hospital Reports*,[7] which contains ten articles, opens with a pleasantly written essay, the outcome of Professor G. W. Nicholson's thoughts and reading for thirty years, on the philosophy of natural science. This is followed by a valuable and well-illustrated article on the etiology and significance of extra-systoles, based on analysis of 500 consecutive cases at the cardiographic department, by Dr. Maurice Campbell; they were recorded in about one-fifth of the patients, and were supraventricular only in 30 per cent., ventricular only in 40 per cent., both in 10 per cent., and in 20 per cent. interrupted auricular fibrillation. The editor's name appears over two conjoint papers: with Dr. J. F. Venables of the New Lodge Clinic he shows that, like the duodenal ulcer diathesis, the gastric ulcer diathesis is characterized by the presence of hyperchlorhydria. In reporting two cases of gastric ulcer associated with congenital diaphragmatic hernia, he first points out that there are only two such cases on record—one by Bright in the first volume of these *Reports*, and the other by Key of Stockholm in 1924. Mr. Philip Turner contributes two papers; he describes two cases of multiple rapidly growing soft fibro-adenomata of the breast in girls aged 14 and 15 years, and for comparison one of true hypertrophy of both mammae in a woman aged 25 years. Together with Mr. Nils Eckhoff, the surgical registrar, he gives the results of treating inguinal hernia by simple excision of the sac. There are three articles, replete with analyses of cases, by Mr. Ralph Thompson, from the genito-urinary department, dealing with horseshoe kidney, solitary kidney, and the formation of calculi in the kidney and ureter. A case of total cystectomy in which some investigations on urinary secretion were made is described by Mr. H. L. Maister, Mr. W. H. Ogilvie, and Professor M. S. Pembrey.

One of the great advances in the prophylaxis of malaria has been the recognition that the problem is a local one. It is impossible to formulate any general principles which are applicable everywhere; instead local conditions must be studied on the spot. To this end the Institute for Medical Research inaugurated a series of mosquito surveys in South Africa. The results of the first survey (Part I) received a notice in this *Journal* on June 2nd last year (p. 949). Part II, *A Mosquito Survey of Certain Parts of South Africa, with Special Reference to the Carriers of Malaria and their Control*,[8] by ALEXANDER INGRAM and BOTHA DE MEILLON, which has now appeared, deals for the most part with the low veld district of the Eastern Transvaal, one of the most malarious regions in the Union of South Africa, during September–November, and secondly, with observations made during a tour through the Eastern and Northern Transvaal during the malarial season. Those interested in the epidemiology of malaria will do well to consult this paper.

The official directory for 1923 of the Association of British Chemical Manufacturers, entitled *British Chemicals: Their Manufacturers and Uses*,[9] contains, in addition to particulars of the 120 firms who compose the association, a classified list of British chemicals, with a note on their uses and applications. The names of these chemicals are furnished in five languages in addition to English—namely, French, German, Spanish, Italian, and Portuguese—the idea being that the volume may be of use to commercial attachés, consular officers, and trade commissioners throughout the world, and so widen the British chemical market. Another useful section gives proprietary and trade designations, with a chemical description of the products and the name of the manufacturer. Medicine figures as the sole or as one of the principal uses of a very great number of the preparations. Among the acids alone some forty are given a medical use, and nearly as many of the sodium compounds. The volume is a directory and also a technological dictionary, as well as an impressive index to post-war enterprise in this important field.

The second edition of the book containing tables of doses for roentgentherapy,[10] by Professor Dr. F. VOLTZ, differs from the first in three respects: the text has been extended, the diagrams illustrating the text altered, and the dosage tables, which are the essential feature, have been considerably expanded. The tables should be very useful to those who use *x* rays for therapeutic purposes, as a reference to them saves the trouble of working out depth doses. The letterpress deals with general rules—this covers dispersion, absorption, and scattering of *x* rays—with various points, physical, biological, and so on, affecting dosage, and with methods of measurement.

[6] *Classification and Uses of Finger Prints.* By Sir E. R. Henry, Bt., G.C.V.O., K.C.B., C.S.I. Sixth edition. London: H.M. Stationery Office. 1923. (Demy 8vo, pp. vi + 142; illustrated. 3s. net.)

[7] *Guy's Hospital Reports*, Vol. 79 (Vol. 9, *Fourth Series*), No. 2, April, 1929. Edited by Arthur F. Hurst, M.D. London. The *Lancet* Limited. (Med. 8vo, pp. 127–252; 33 figures. Annual subscription for four numbers, £2 2s.; single numbers, 12s. 6d.)

[8] *A Mosquito Survey of Certain Parts of South Africa, with Special Reference to the Carriers of Malaria and their Control* (Part II). By Alexander Ingram, M.D.Ed., and Botha de Meillon, M.Sc., Witwatersrand. Johannesburg: Publications of the South African Institute for Medical Research, No. xxiii. 1923. (Cr. 4to, pp. 85–170; 25 figures.)

[9] *British Chemicals: Their Manufacturers and Uses. Being the Official* Directory of the Association of British Chemical Manufacturers for 1923. London: E. Benn, Ltd. 1923. (Sup. roy. 8vo, pp. 258. 10s. 6d. net.)

[10] *Dosierungstafeln für die Röntgentherapie.* Von Professor Dr. Friedrich Voltz. Zweite, vermehrte und verbesserte Auflage. München: J. F. Lehmann. 1923. (Post 8vo, pp. 145; 21 figures. M.5.)

PREPARATIONS AND APPLIANCES.

AN X-RAY PLANT FOR SHIP SURGEONS.

WE have received from Messrs. Philips Lamps Limited the following particulars of a portable *x*-ray outfit, known as Philips "Metalix-Portable," which they claim is suitable for use at sea. A trolley table carries the entire outfit, and accommodates a small rotary converter, which supplies the necessary alternating current to the apparatus from the ship's electric supply. The outfit is provided with a metal-clad *x*-ray tube mounted on adjustable legs, by which means it can be accurately centred over the patient, the high-tension current being fed through two specially insulated shockproof cables. While in operation the outfit can be handled with perfect safety. The patient experiences no sensation, and nothing to indicate that a pressure of some 65,000 volts is being generated within such a small compass. The apparatus is completely enclosed, and no special knowledge is required to operate it.

AN IODINE "PEN."

We have received from Messrs. Clay and Abraham, Ltd. (87, Bold Street, Liverpool), a specimen of their Canda iodine pen. This handy little appliance, as its name implies, is a tubular receptacle for tincture of iodine. The mouth of the glass phial is drawn out into a point so that the iodine can be applied drop by drop without the need of a brush. A screw top with washer prevents leakage, and further security is given by a metal container. The price complete is 1s. 2d., post free.

TREATMENT OF MALIGNANT DISEASE BY RADIUM.

CAVENDISH LECTURE BY PROFESSOR CLAUDE REGAUD.

THE Cavendish Lecture, under the auspices of the West London Medico-Chirurgical Society, was delivered at Kensington Town Hall on June 21st by Professor CLAUDE REGAUD, director of the physiological laboratory of the Radium Institute, Paris. The title was "The progress and limitation in the cure of malignant diseases by radium." Professor Regaud exhibited many tables of statistics of cases treated at the institute, which were not, however, very easy to follow, and he spoke of "complete cures" when it was not quite clear what criterion of cure had been adopted. In one part of his lecture he referred to a five-year freedom from recurrence as though this were equivalent to cure, and yet apparently cases which had been treated as recently as 1926 were recorded as cures.

Methods of Radium Application.

Professor Regaud began by remarking that the chief advances in radium therapy (or as he preferred to call it "curietherapy") had resulted from an increased knowledge in two directions: the physical properties of radio-active substances, and radio-physiology in general; in particular, the behaviour of cancer treated by radiation. Various methods of attacking cancer by radium had been followed these last thirty years. One method might be dismissed at once as having no proved value—namely, indirect approach by way of the blood stream. The three main procedures had been internal, interstitial, and external curietherapy. The first consisted in the introduction of radium tubes into the natural cavities or channels. In general this had not been very successful except in the treatment of squamous-celled cancers of the uterus. Here Professor Regaud gave statistics of uterine cancer treated in this manner at the Radium Institute in Paris, and claimed for it a high percentage of cures. The second method was what he called radium puncture—namely, the introduction of radio-active needles into the substance of the tissues. Radium puncture had been perfected at the Paris Radium Institute, where treatment by numerous foci of weak intensity was made a regular method. It was reserved, however, for certain cancers of small size, cutaneous or subcutaneous, such as certain varieties of cancer of the breast, and especially cancer of the tongue. In this limited field the procedure gave good results, despite the difficulty of ensuring a uniform irradiation and the possibility of radium necrosis which sometimes complicated the treatment. His institute was by no means wedded in principle to this procedure. Maxillary cancers had been treated by resection of the superior maxilla followed by packing the cavity with numerous small radio-active foci. The use of radium combined with surgery offered a promising field, and in cancer of the rectum the employment of surgical radium puncture and excision seemed to give better results than excision alone. Of cancers of the tongue and floor of the mouth treated at the Radium Institute between 1920 and 1926, a complete clearing up was reported in 82 out of 367, while 193 had to rank as complete failures. The method adopted was again that of numerous weak radio-active foci, the tubes being retained in position by gauze packing. The lecturer also described a method of applying radium externally by embedding the tubes in plastic supports of any desired shape or dimensions. This method had resulted in great progress in treatment of cancers of the skin, lymphatic glands, and mouth, other than the tongue. Statistics for cancer of the lips treated in this way between 1920 and 1926 showed that in 62 operable cases a complete cure was effected by radium in 56; out of 22 cases of doubtful operability there were 16 complete cures, and out of 28 inoperable cases, 4 cures.

Telecurietherapy.

When the depth of the cancer necessitated a screen distance greater than 6 to 8 cm., the dose of radium required, instead of a few hundred milligrams, was of the order of grams. It was then necessary to surround the radiating surface with lead several inches thick in order to protect the body of the patient and others. These considerations during the past six years had led to the construction of a source of gamma radiation acting at a distance, in the same way as the x-ray tube. Telecurietherapy, or irradiation of the tumour at some distance from the body, required the use of radium in bulk, and its use must always be limited by the scarcity and high price of the element. It had been employed in the treatment of deeply seated cancers. In actual procedure up to the present, not more than 4 or 5 grams of radium had been used, and with this a screen distance of 10 to 12 cm. could scarcely be exceeded; with greater distances the time occupied in treatment would be too long. If only radium were more plentiful it would be possible to develop this method, and the relative values of roentgenotherapy and curietherapy in the treatment of malignant disease would be greatly altered and the value of the latter enhanced. Professor Regaud illustrated by diagrams how a radium source of the strength indicated was enclosed in a lead box with walls 6 cm. thick, suspended from a supported beam, and placed in position over the patient for the treatment of cancer of the uterus.

Radio-physiological Investigation.

In spite of the fact that it had been again contended recently that radiation acted on cancerous tissue indirectly, the direct effect of the rays on the cells appeared to him to be established beyond serious criticism. The central problem of radiotherapy consisted in destroying the cancer cells through the whole extent of the infected area. There were two methods which could be employed. One was to give such a dose of radiation that all the living cells in the treated region were destroyed; the other—much more interesting and important—was to take advantage of the differences of the cells in respect to radio-sensitiveness and to cure the cancer by a cell dissection. This procedure, which had received the name of selective radiotherapy, depended upon a greater radio-sensitiveness of the neoplastic than of the normal cells. The difference should be sufficiently great to permit the toleration of those inequalities which were by reasons of geometry unavoidable in the irradiated area. Cancers differed widely in their degree of radio-sensitiveness; lymphosarcoma, for example, provided its dimensions were limited, could nearly always be sterilized, whatever its situation, because of its radio-sensitiveness, though the cure was unfortunately only local. Radiotherapeutic methods owed their utter powerlessness in certain cases not so much to the absolute radio-resistance of the neoplasm as to the great radio-sensitiveness of the surrounding tissues. Time did not permit the lecturer to deal with the reasons for the difference in radio-sensitiveness, but he indicated how the two factors, intensity of radiation and time of application, could be altered so as to get nearer to the desired effect. By using weaker doses spread over a longer time effects could be obtained which varied greatly from those forthcoming with strong doses given for a more limited time. Touching upon the association with radium therapy of the Blair Bell method of chemotherapy, the lecturer said that it was premature to draw conclusions from this research, but it was not impossible that it would produce important practical results, and once again experiment might set aside the limits apparently imposed upon the radiologist by Nature herself.

General Conclusions.

Summing up his general conclusions, Professor Regaud said that among the various procedures for applying radium the method of radium puncture should survive, though in a limited field. Radium combined with surgery still offered promise for further research. The employment of radium by placing it in the natural cavities appeared to have reached the limits of its usefulness, except in the uterus. Substances of plastic material were of value in the treatment of cancers of the skin and in some subcutaneous tumours. Telecurietherapy was encouraging in the treatment of deep-seated cancers, but was limited

by the scarcity of radium. On the radio-physiological side it remained to make the most fruitful investigations, and if means could be found to increase the narrow margin of radio-sensitiveness which lay between normal and *cancerous tissues it would constitute a momentous discovery.* A judicious exploration of the time factor had enabled the treatment of squamous-celled cancer to be greatly facilitated. By persevering in this line of research fresh progress would be made. Nevertheless, the fact could not be disguised that there was one obstacle which would always lie in the path of local radiotherapeutic methods—namely, the lack in certain cancerous cells of sensitiveness to radium, leading to widespread local extension and dissemination of the disease. The treatment of cancer by x rays and gamma rays had made great progress. Nevertheless, the method was limited. Radium was not a panacea for cancer—far from it. The public, and even medical men, did not always realize the serious difficulties which were encountered in its use. Therefore, while awaiting further developments in the radium treatment of cancer, the first reliance must be upon early diagnosis and prompt treatment.

MEDICAL CLUBS AND SOCIETIES.

MACALISTER LECTURE BY SIR HUMPHRY ROLLESTON.

To a gathering at the London Temperance Hospital, under the auspices of the London Clinical Society, on June 20th, Sir HUMPHRY ROLLESTON, Bart., G.C.V.O., delivered the third annual lecture in memory of Sir John MacAlister, the secretary of the Royal Society of Medicine. The subject of the lecture was "Medical friendships, clubs, and societies."

Sir Humphry Rolleston began by mentioning four men—three of them medical men, and the fourth J. Y. W. MacAlister—who, differing widely in their circumstances, illustrated some points in common, especially a manifest love for their fellow-men, the association of this charity with a like affection for books, and an appreciation of the value of clubs, societies, and libraries for professional life and progress. The first was Conrad Gesner, of the sixteenth century, who "kept open house for all learned men who came into his neighbourhood"; the second was Sir Thomas Browne, the author of *Religio Medici*, a book-lover and a philosopher, with a wide circle of friends and acquaintances; and the third was Sir William Osler, scholar-physician, teacher, humanist, a man thoughtless of self, and in sympathy with young and old, with the faculty of rapidly forming friends and of keeping them. As for MacAlister, a very clubbable man, the lecturer briefly sketched his career, and his great work for the Royal Society of Medicine and for the improvement of libraries.

Medical Clubs.

The lecturer went on to speak of the various medical clubs in London, some of them of a private, almost a family character. At the Royal College of Surgeons there was a Council club, and the Royal College of Physicians had a Fellows' club. The United Hospitals Club kept green the former close proximity and association of Guy's and St. Thomas's. Edinburgh also was rich in medical clubs of a convivial character. Sir Robert Philip had told him about the Harveian Society of Edinburgh, also called the Circulation Club, founded in 1782, with twenty members. The founder was Andrew Duncan, sen., and the threefold intention was to commemorate the discovery of the circulation, to promote good fellowship, and to foster experimental research. Another Edinburgh club, the Aesculapian, originally a supper and subsequently a dining club, was founded in 1773. It met quarterly, and was composed of 22 members chosen from among the Fellows of the Royal Colleges of Physicians and Surgeons of Edinburgh. A remarkable feature of this club was the devotion of the secretaries, for between 1773 and 1823 it had but five, an average tenure of twenty-three years. A more recent club, but now extinct, in Edinburgh was the Round Table, which flourished from 1868 to 1895. In Dublin, again, there were many clubs. The Medico-Philosophical Society, founded in 1756, was occupied at first with learned papers, but later it underwent a change, and the character of its meetings became entirely festive. In May, 1831, it was extinguished, to be revived in 1856 under its original name, as a dining club, sometimes jocularly dubbed the "Philo-oesophageals," the business being confined to the reading of the minutes of the previous meeting, which merely recorded the locality of the dining room and the names of the banqueters. The membership was limited to twelve.

Certain clubs developed into medical societies with a formal constitution. The lecturer mentioned the Leeds Medical Club, founded in 1862 by Clifford Allbutt and others. This club met until December, 1872, when it adjourned *sine die* in favour of the Leeds and West Riding Medico-Chirurgical Society, which flourished to this day. A body which represented the transition between a club and a society was the Association of Physicians of Great Britain and Ireland, started in 1907, largely under Osler's influence. It was composed of 250 members actively engaged in the teaching of medicine or in research, and met for two days once a year in university towns or towns the seat of recognized medical schools.

Medical Societies.

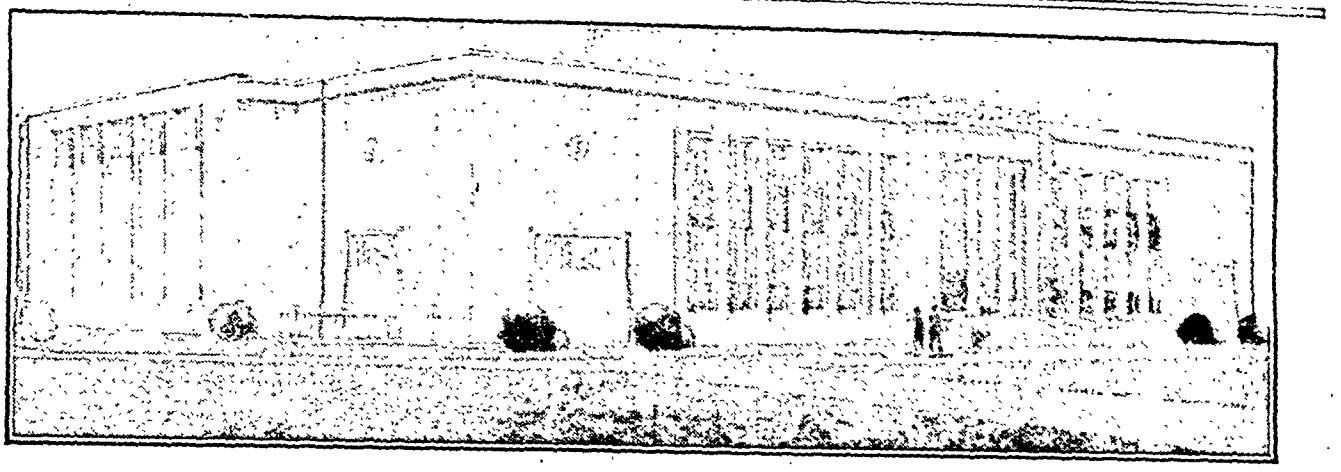
The medical society, the lecturer continued, supplied some of the essentials of post-graduate education; it offered also a legitimate means of intra-professional advertisement, and enabled young men to make themselves known to their older and better-established, but not necessarily better-equipped, brethren. The germ of the medical society in this country might be regarded as the meetings, beginning about 1649 in Oxford, of the "Philosophicall Clubbe." Many of the members, but by no means all, were physicians, and their object was the study of science in which medicine was to a certain extent included. The earliest medical societies proper were simply committees which published medical papers. After mentioning the early history of medical societies in Scotland, the lecturer sketched the growth during the second half of the eighteenth century of quite a number of medical societies in London and the provinces. John Hunter, with George Fordyce, founded the Society for the Improvement of Medical and Chirurgical Knowledge. More than one of these early societies bore much the same name as the present Medical Society of London, which was founded in 1773, and in consequence confusion might easily occur. The Medical Society of London was at first limited to 30 physicians, 30 surgeons, and 30 apothecaries, as the general practitioners were then called. The Medical and Chirurgical Society split off from this body in 1805, and rather more than a century later became the Royal Society of Medicine.

In the formation of provincial medical societies in the latter part of the eighteenth century the example appeared to have been set by Warrington; others followed at Colchester, Plymouth, Leicester, Halifax, St. Helens, and Nottingham. All these were formed between 1774 and 1828. The Gloucestershire Medical Society, which was spoken of as the Fleece Medical Society, from the name of the inn in which it met, was favoured by Edward Jenner in 1789 with "remarks on a disease of the heart following acute rheumatism, illustrated by dissections"—perhaps the earliest occasion, or one of the earliest, on which rheumatic heart disease was recognized. The lecturer also glanced at students' medical societies, in London, Edinburgh, and Glasgow. America was rich in this product; at Harvard there were more than a dozen such medical students' clubs, which were named frequently by letters from the Greek alphabet.

Libraries.

Sir Humphry Rolleston concluded with a few words about libraries. Like clubs, he said, libraries provided welcome meeting-places for making new acquaintances along many lines of thought and cementing old attachments. There the living could gain an intellectual and intimate affection for the heroes of the past. "To spend hours in a library excites feelings of pity, sadness, and humility, for there are many and bulky tomes on which their authors expended their energies in the hope of attaining fame, and yet too often without any success—a sobering warning to modern aspirants for literary honours, that success in gaining immortal fame is unlikely to be attained without hard honest work and ability." The book-lover knew well the advantages of his friends, the dead authors to whom he could turn for counsel and comfort at any time of day or night. Librarians who thus introduced the present to the past should be the friends not only of those whose messages were under their official guardianship, but of those who came to listen and to learn. And so he ended with a reference again to MacAlister, the model librarian, who sacrificed his own ambitions to satisfy those of others in study and publication.

A warm vote of thanks was accorded to Sir Humphry Rolleston on the motion of Major RICHARD RIGG, the chairman of the hospital, seconded by Mr. ERNEST CLARKE, and supported from the chair by Mr. HERBERT J. PATERSON, the president of the society.



AUSTRALIAN INSTITUTE OF ANATOMY.

By a unanimous vote the Federal Parliament of Australia recently authorized the immediate construction, according to revised plans, of an Institute of Anatomy at Canberra, at a cost of approximately £100,000. The Institute will have as its first director Sir W. Colin Mackenzie, M.D., F.R.C.S., whose unique collection of specimens of the native fauna will serve as the basis of a wider collection which is intended to embrace every aspect of anatomy. On his return to Australia after the war he resolved to devote his life and resources to the study and preservation of the "living fossils" of his native land—platypus, echidna, and the many forms of marsupials—all of which were threatened with speedy extinction. Some of our readers will recall[1] that when it was determined to centralize the Commonwealth Government at Canberra a scheme was sanctioned for the erection of a national museum of Australian zoology in the new capital, and that Professor Colin Mackenzie was called upon to organize and direct this great undertaking, which is henceforth to be known as the Australian Institute of Anatomy.

[1] *British Medical Journal*, September 22nd, 1928, p. 539.

The architectural drawing reproduced herewith shows the new Institute as it will appear when completed. The height of the building will be 36 feet, and it will have a frontage of 183 feet, and a depth of 134 feet. It will comprise a block devoted to administration and research, and a museum. The administrative block will consist of a basement; a ground floor, containing the entrance hall, an anthropology room, a department of histology, the director's and secretary's offices, waiting rooms, research rooms, a library, and a lecture theatre seating 200; and a first floor, which will be occupied by a dissection room, a department of osteology, six research rooms, and a room for still and cinematographic projection. The museum block will be made up of two units, each 87 feet by 52 feet, and containing a basement for storage, a ground floor for the exhibition of specimens, and a gallery. The building will be completed in April, 1930.

Besides this provision, an area of 80 acres has been reserved on the River Molonglo, in connexion with the Institute, where it will be possible to study the Australian fauna in their natural state.

Nova et Vetera.

GILBERT MAMINOT, THE CONQUEROR'S PHYSICIAN.

Our knowledge of Gilbert Maminot, Bishop of Lisieux and physician to William the Conqueror, rests principally upon the account of him given by Ordericus Vitalis, in his *Ecclesiastical History of England and Normandy*. Ordericus was a contemporary, and would appear to have known him well. This is what he has to say about him:

"Gislebert, surnamed Maminot, the king's physician and chaplain, was chosen bishop of Lisieux, and consecrated by Michael, bishop of Avranches, in the presence of the lord archbishop John, who, as we have said, had lost the use of his speech. He was a son of Robert de Courbépine, a brave knight; and, filling the see twenty-three years, managed ecclesiastical matters with a strong hand. Though deeply skilled in the art of medicine, after he became bishop he was unable to cure himself. He was eminent for his learning and eloquence, abounded in wealth and the luxuries it procured, but was a slave to his own gratification and the care of the flesh. Ease and leisure were his great objects, and he indulged frequently in dice and other games of hazard. Negligent and slothful in his ecclesiastical duties, he was ready and active enough in hunting and hawking. He therefore devoted his life to worldly exercises and employments, and did not give them up till age compelled him. I could write more about him, but I check my pen, because it was by him that I was admitted to the order of subdeacon, with (as well as I can recollect) three hundred others. But as I have mentioned some things that were not very creditable to him, it is but right that I should record his merits and his doings which are worthy of imitation. He gave alms freely to the poor, and was distinguished for a stately sumptuousness and wise liberality. In his judgements he keenly investigated the truth, and was indefatigable in defending the right, dispensing justice freely to all who came for it. He treated with gentleness offenders who humbly confessed their sins, and judiciously gave wise and salutary counsel to true penitents. He performed the ceremony of conferring sacred orders, and of consecrations, with care and devotion; but he was inert and difficult to be roused to undertake them, nor would he engage in these offices until he was compelled by the united entreaties of numbers. . . . He maintained those appointed to office in the church at Lisieux by bishop Hugh, and gave them instructive lessons in the wide field of arithmetic, astronomy, physics, and other profound sciences, receiving them as his guests, and familiarly conversing with them at his entertainments."

Gilbert was tall and spare; he was addicted to watching the stars, and drew the usual supernatural inferences from anything unusual which he happened to observe.

In the year 1089 Gilbert's disputes with the monks of St. Evroult culminated; he had refused to give his benediction to their abbot unless the latter signed a profession of canonical obedience. This controversy had been going on for ten years, and was finally settled by Gilbert giving way, under royal pressure, in the year above named. Gilbert Maminot died at an advanced age in August, 1101.

Of his patients the only one of whom we have much knowledge is his master, the Conqueror. Gilbert was in attendance during the four weeks which elapsed between William's abdominal injury and his death in 1087. This responsibility he shared with Guntard, abbot of Jumièges. He was present, in his ecclesiastical capacity, at William's funeral at Caen.

Gilbert was made bishop of Lisieux in 1077; he assisted at the Council of Rouen in 1096.

It is unlikely that Gilbert Maminot was much in England at any time, but he was a tenant *in capite* of an estate of twelve hides in Gloucestershire; he had here as subtenant one Hugo Maminot, obviously a relation. It should be noted that this estate was his personal property apart from his position as Bishop of Lisieux. The bishopric owned land in Wilts, Dorset, Hertfordshire, Bucks, and Oxfordshire, as well as two *mansiones* in York. R. R. J.

British Medical Journal.

SATURDAY, JUNE 29TH, 1929.

A NATIONAL MATERNITY SERVICE.

IN an article in our issue of April 13th last (p. 691) Dr. Farquhar Murray well says that "the problems of maternity provide the greatest possible scope for organized preventive medicine. By means of an adequate maternity service many of the deaths and much invalidism resulting from childbirth could be avoided." The problems indicated have been under consideration and discussion by the medical profession and others for a considerable number of years, and there is now a decided feeling among the profession and the public that early and practical steps should be taken to deal with them on a national basis.

The British Medical Association has taken a large part in the effective consideration of these matters, though its activities have perhaps received an insufficiently wide recognition. During the past five years, to go no further back, a considerable part of the time of the Council and of the Representative Body has been occupied with the problems of maternity. In addition to the ordinary work of the Maternity and Child-Welfare Standing Subcommittee, two special committees have dealt with special aspects of the subject. An influential and representative conference was called in January, 1928. Evidence containing definite proposals for the lines of action was given before the Royal Commission on National Health Insurance, and, more recently, before the Departmental Committee on the Training and Employment of Midwives. In the columns of the *Journal*, besides the reports of the committees or conferences and the memorandums of evidence above referred to, there have appeared a large number of articles and letters offering important and suggestive contributions to the discussion. Finally, in this week's *Supplement*, in the Supplementary Report of Council (p. 258), will be found the details of a scheme which is recommended to the Representative Body "as a contribution, on lines acceptable to the profession, towards the establishment of a national maternity service."

It is of some importance to note that during the earlier years of the discussion from which this practical scheme has emerged there was definite diversity of opinion within the profession as to the lines on which a solution was to be sought. One school of thought, probably never having any large number of adherents, but marked by the definite pronouncements of a few very influential persons among those adherents, maintained that safety lay mainly in the direction of a large increase in the institutional provision for both normal and abnormal confinements, and for the setting up, under the auspices of local health authorities, of an extensive service of specialist obstetricians, general practitioners being either wholly excluded from this work or admitted to it only after strict tests of skill and reliability applied by some competent authority, and on an obligation officially to furnish a detailed report of their treatment to some superior officer. It may be useful to refer to a leading article on this aspect of the subject which appeared in the *Journal* of June 12th, 1926 (p. 999); but there have been indications recently that one or two of the advocates of such a system have considerably modified their attitude, and such a solution as that above suggested can now commend itself only to an occasional professor or to a few members of the public health service. The general opinion of the medical profession has developed, more and more strongly, on entirely different lines; and these other lines are also those indicated by the Report of the Royal Commission on National Health Insurance, and by the general body of evidence which has been presented to official or scientific committees of inquiry. It is being recognized with increasing emphasis that ante-natal care and the supervision of childbirth and of the puerperium are the business of the general practitioner, that full and organized co-operation between doctor and midwife is a necessity, and that specialist advice and institutional accommodation must be available for all cases which require them.

It is on these lines that the scheme now put forward by the Council of the Association is constructed. It is avowedly based upon the three principles: "(*a*) that the normal case can be safely treated at home; (*b*) that maternal mortality and morbidity can be very greatly reduced when proper ante-natal care and supervision during confinement is provided in all cases, together with institutional accommodation for cases of complicated labour; (*c*) that maternal morbidity can be greatly reduced with proper post-natal care and treatment." The second of these statements is now accepted almost as a commonplace; the important things to note in connexion with it are that there is great need for the better instruction of the general body of midwives in accurate ante-natal observation, and to some extent of medical practitioners in ante-natal examination, and that, apart from their use as educational centres, and in some areas as convenient places at which practitioners may examine their patients in the presence of the midwife, ante-natal clinics are not necessary to ensure proper ante-natal care. The third of the above statements of principle has been less frequently made but is equally important, as is emphasized by Dr. James Young's article on "The woman damaged by child-bearing" published in the *Journal* of May 18th last (p. 891).

The attention of the profession and of the public should be particularly drawn to the first of the enunciated principles—that the normal maternity case can be safely treated at home. To support this proposition it is not at all necessary to draw any comparisons between statistics relating to institutional and to domiciliary cases; still less to seem to disparage in the slightest degree the excellent work of institutions. It is admitted, however, that the congregation of maternity cases in institutions has certain possible dangers, and that there have been a large number of private practices, conducted over a long series of years and in most unsatisfactory housing conditions, which show a surprisingly low maternal mortality. The statistics given in the Council's report of the outdoor practice of maternity hospitals and institutions may fairly be said definitely to establish the proposition laid down. This is of the first importance, for it allows of a national scheme on the basis of home attendance in confinement, and of institutional provision mainly restricted to those abnormal cases which really require it on medical grounds. Such a scheme, providing for everything that is essential, but not setting out to supply all those things which may be called in this connexion luxuries or mere conveniences, yet leaving a margin, as it does, for the adequate training in normal cases of the midwife and the medical student, is certain to receive a careful and sympathetic consideration from all those who are concerned with the problem towards the solution of

which it is offered as a contribution. Its details of organization, statistics, and finance are of very great interest. It is understood that the Ministry of Health is preparing a scheme with a view to legislative and administrative action. The Association's proposals, along with those which will be shortly forthcoming from the Departmental Committee, will certainly be found of service. They at any rate indicate the lines upon which the medical profession would be willing to offer its zealous co-operation for the national good.

THE INDIAN MEDICAL SERVICE.

DURING recent years the medical services of the armed forces have been passing through a period of stress and difficulty, due primarily perhaps to the reaction against such service following on the experience of the great war and the inevitable difficulties of post-war reorganization, but in part also to the rival attractions of the expanding public health services at home and the increased demands of the colonial medical services overseas. In the case of the Indian Medical Service these factors have been reinforced, not only by the difficulties and uncertainties common to all Indian services in existing political conditions, but by long-drawn-out suspense as to the basis of reorganization of the military medical services in India. Other contributory factors have been the altered status of medicine under the reform scheme as a "transferred" subject administered by Indian provincial ministers, and by the loss to the I.M.S. of a number of minor civil surgeoncies and a few important teaching posts through the formation of a provincial cadre of non-I.M.S. appointments. It is little wonder, then, that during some years recruiting for the I.M.S., more especially of British officers, has been for the most part limited to temporary appointments, when not actually in abeyance.

The publication in 1928 of the reorganization scheme for the medical services in India and the resumption of recruitment for permanent commissions in the I.M.S. did something to improve a position of the utmost gravity. But, apart from the wider issues of the transition period in India, two main sources of dissatisfaction remained which, in the opinion of the Council of the British Medical Association, were in themselves sufficiently important to hinder an adequate supply of European candidates for the Service. The first was that the chief administrative posts under the provincial Governments were omitted in the scheme from the list of appointments reserved for officers of the I.M.S. Secondly, the shortage of recruits so impeded the transfer of officers from military to civil employ as to minimize what has always been recognized as the chief attraction of the Service. As reported in the *Supplement* to our last issue (p. 241), the chairman of the Naval and Military Committee was able to inform the June meeting of the Council of the British Medical Association that steps have actually been taken to remedy both these defects. Further information will be found in the *Supplement* this week (p. 253).

In the first place it has been ruled that, until all officers in civil employ at the date of publication of the reorganization scheme have retired or been otherwise provided for, the chief civil medical administrative posts under the provincial Governments will be filled by officers of the I.M.S. This means on the one hand that the provincial departments will for some twenty-five years enjoy the services of the most competent officers, both British and Indian, likely to be available during that period, and on the other that the legitimate interests not only of the British members of the Service, but also of the pick of the young Indian practitioners, many of whom have incurred the labour and expense of acquiring British qualifications, will be adequately safeguarded. The proviso does not, of course, directly affect future entrants to the Service; it does, however, remove a doubt as to fair dealing with the existing Service, the significance of which at the present time will be recognized by those who are conversant with Indian conditions. In the second place, the end of the block in the transfer of officers from military to civil employ is now in sight. The resumption of recruiting has already eased the position, and the military authorities, realizing the nature of the impasse, have agreed to reduce their demands by no fewer than fifty British officers. This leaves only twenty-two to be recruited as from the beginning of the current year, and of that number sixteen have already been accepted and are under training, while the remaining vacancies, which have already been advertised in the *British Medical Journal* and elsewhere, will doubtless be filled in the course of the ordinary summer recruiting next month. As soon as these officers have received a year's training in India the flow into the civil branch of the Service will be renewed. Full particulars with regard to the conditions of service, pay, and pensions can now be obtained on application to the India Office, and it is perhaps pertinent to observe that candidates entering the Service at the moment will be in a particularly favourable position as regards prospects of promotion, owing to the preceding period of suspended recruiting.

The Council of the British Medical Association heard with great satisfaction that once again its efforts to secure the removal of obstacles to the efficient working of a service in support of which the Association has always been particularly active had been crowned with success. It has informed the India Office that it is now prepared to assist, as heretofore, in obtaining an adequate supply of recruits. Members of the Indian Medical Service will doubtless feel that the presence at the India Office of so distinguished and experienced an officer as Sir Leonard Rogers has not been without its influence in determining the sympathetic attitude of both the civil and military authorities in this matter.

He would be a bold prophet who should venture at this juncture on a definite forecast of the future of any Indian service, but to the tale of obstacles removed we may fairly add some account of definite advances which we understand have already been achieved. The military branch of the Service is now working in harmony with the Royal Army Medical Corps in well-equipped station hospitals. Thirty well-qualified British officers have entered the Indian Medical Service in the course of the past twelve months. The fact that at present junior officers seldom avail themselves of the right to retire with a gratuity of £1,000 after six years' or of £2,500 after twelve years' service seems to indicate that the financial position is not unsatisfactory. As compared with that of twenty or thirty years ago, indeed, it is definitely satisfactory. India is not exempt from the general post-war rise in both costs and standards of living, but the pay, including the overseas allowance, is at three times the old rate, while the sterling value of the rupee is nearly 50 per cent. above the rate then prevailing. Passages are now available for

officers and their families going on leave, provision is made for study leave, and freedom from moves during the first year's service is guaranteed.

There remains one feature of the position the importance of which for the future of India and the I.M.S. can hardly be exaggerated. The development of the research department, so far from being checked by recent difficulties, has received a definite impetus during the past few months. The scheme described in the *British Medical Journal* for December 1st, 1928 (p. 1001), has been accepted, including a new central research laboratory with twenty acres of ground in the favourite station of Dehra Dun and a new public health laboratory opposite the Calcutta School of Tropical Medicine. This last, made possible by the generosity of the Rockefeller Foundation, will also be maintained and staffed by the Government of India. An officer of the I.M.S. has just been appointed as its first head, and members of the Service will be eligible for such posts in the future. If such development continues unchecked (and it must be remembered that research, as a "reserved" and not a "transferred" subject, has some slight protection against the changes and chances of the transition period), the I.M.S. should offer to selected workers, both British and Indian, an entrance to a field of research unrivalled in any part of the Empire.

MEDICAL EDUCATION.

THE problems of medical education are not only many and difficult; they are to a considerable extent contradictory. The demand for a somewhat later beginning and for a simplified and, if possible, shortened curriculum is combined with the suggestion that many parts of the curriculum should receive fuller attention, and that further subjects—some purely professional, others not strictly medical, but having a useful if not essential value in relation to medical practice—should be added thereto. The nature and cost of medical education are, of course, of interest not merely to actual and prospective members of the profession itself, but also to the public in general, for on the efficiency of such education the safety of that public in health matters depends, and on the cost of such education depends in large part the cost to the public of its medical care.

We are reminded of these things by a paper recently read before the Annual Congress on Medical Education, Medical Licensure, and Hospitals, Chicago, by Dr. Ray L. Wilbur.[1] The conditions in this regard in the United States are not quite the same as with us, but similar problems arise and similar principles are applicable. The relative efficiency of medical education in America is of more recent establishment than here. As Dr. Wilbur says: "A generation ago we were well behind the schools of Europe, and the aim of an ambitious student was to round off his training *in a foreign clinic.*" As a reaction from this there is, he thinks, now "some distortion of the whole scheme of medical education," and "there is developing an exuberance in some plans for buildings for medical instruction In one great city the plan is going forward for the construction of a plant at an approximate cost of 55,000,000 dollars, with the primary aim of undergraduate instruction of medical students. With a striking absence of facilities for post-graduate training it seems absurd to aggregate such large sums of money in metropolitan centres for undergraduate medical instruction. *No such sums are actually required to* give the training necessary." We can the more readily agree with Dr. Wilbur, inasmuch as we are not likely to be faced in Great Britain with any financial proposals of such magnitude, and believe that we can maintain a satisfactory position without them. Here, as well as there, however, in Dr. Wilbur's words, "It is important that a proper scheme be evolved so *that medical education may not put too great a cost* on the sick. We do not want cheap education or cheap men; but we do need to demand all the economies that are reasonable and possible during the period of medical training if we are to solve the problem of the distribution of medical service at a reasonable cost to the public." Dr. Wilbur demands not only simplification of plant, but a shortening of the period of medical study, while at the same time he suggests that training in the field of economics and social organization should be added to the course. He *does not succeed in showing exactly how this is to* be done.

The whole field needs to be surveyed from time to time in its due perspective, and not the less now because the General Medical Council has in some sort made such a survey of existing conditions. The main points to be determined are (1) what it is that we are to expect of the medical student at the time of his qualification; (2) how far we are to rely on preliminary and pre-medical education to enable the required result to be produced, and on post-graduate opportunities for further progress; and (3) how best the intervening undergraduate medical course can be arranged and utilized. On the first point we have previously said in a leading article in this *Journal*:[2] "There is no pretence that a medical student, on passing his qualifying examination, has become a wise practitioner or is specially skilled in any branch of his profession; but his training and knowledge should even then be such that he can safely undertake many kinds of medical and surgical work, that after relatively short further experience he can properly assume considerable responsibility in one or other of the local government medical services, and that he will be in a position fully to profit by increasing experience, whether in such service or in private practice." On the second point we have raised the question whether the time is not now ripe to raise to 18 years the age at which medical education, properly so called, should begin, and as to whether prior to this commencement there should not be required evidence, not merely of a good general education and of some knowledge of physics and chemistry, but of a thorough grounding in these basic sciences, and especially in organic chemistry and in biology, so that throughout the medical curriculum proper it would be only the medical and surgical applications of these sciences that would be taught. On the third point we have emphasized the advantages of the British plan of picking up clinical methods and pathology while in daily contact with patients, rather than that of assuming that the ideal medical man can be rapidly made out of a well-drilled laboratory pupil. There is nevertheless need—and Dr. Wilbur has performed a real service in pointing this out—for reasonable opportunity for the medical student acquiring some knowledge of economic and social sciences, and, we would add, of psychology also. Perhaps such opportunity would be sufficiently provided if undergraduate medical education were pursued always under true university conditions rather than in the narrower atmosphere of an isolated medical school.

[1] *Journal of the American Medical Association*, April 28th, 1928, p. 1410.

[2] June 11th, 1927, p. 1[illegible]

ENCEPHALITIS LETHARGICA IN CHINA.

REFERENCES in the literature to the existence of encephalitis lethargica in the Far East are increasing, and the latest contribution to knowledge of the disease in China is supplied by Dr. Maximilian Pfister, whose article we publish on page 1156 of our present issue. With the special opportunities afforded by his position as neurologist at the Peking Union Medical College the author has been able to study the disease in 100 patients coming under his observation during part (2½ years) of the period 1923–25. Of this series—the largest so far reported from China—more than half the number of patients came from Peking and its neighbourhood, and the remainder from coastal towns in China. As in this country, the disease was most prevalent during the cold season, it affected those of sedentary occupation rather than outdoor workers, and its chief incidence was among those between puberty and middle age; as regards sex incidence, however, it is interesting to note that 80 per cent. of the patients were males. The clinical picture is also said to be similar to that presented by European patients, and in this series of cases, as in many others, Parkinsonism was the commonest form of post-encephalitis. It is noteworthy that Dr. Pfister refers to the occurrence of epidemic outbreaks in the neighbourhood of Peking and in particular to "a small epidemic of benign character," which occurred during 1924, the peak year in this country, when the disease, though unusually prevalent, was comparatively mild in character; during the same winter the author met with abortive forms of the disease. Regarding the presence of encephalitis lethargica in China, Dr. Pfister considers that the disease has been imported from the West along the sea routes from Europe and by way of India to the ports of China; as Dr. Pfister says, this would certainly appear to be the most likely route by which the infection of cosmopolitan diseases would reach China. Dr. Pfister makes the additional suggestion that the infection of encephalitis lethargica was originally brought to China from Europe by Indo-Chinese troops returning from the European war areas. On the other hand, Dr. A. J. Watson of Yunnanfu, in a paper which received notice in our issue of August 18th, 1928, and to which Dr. Pfister now directs critical attention, puts forward the hypothesis that the infection of encephalitis lethargica was taken out of China by those Chinese who took part in the European war and by them disseminated among the combatants of other nations. Dr. Watson's hypothesis rests particularly upon the assumption that one of the 19 patients seen by him during 1928 was correct in referring the onset of his illness to the year 1915 and upon the inference that there may have been other undiscovered cases in China about, or even before, that time. Dr. Watson was impressed by the fact that most of the patients seen by him came from remote country districts which they had not previously left, and where, in normal times, the inhabitants have little intercourse outside their own villages; in this comparatively isolated province of Yunnan encephalitis lethargica is considered, indeed, by Dr. Watson to be an endemic disease. Dr. H. P. Yew has more recently[1] expressed a similar belief, based upon an experience of thirty odd cases seen over a period of two years in Yunnan Province. Dr. Pfister, however, questions the reliability of the case-history given by this particular patient of Dr. Watson, despite the belief of both Dr. Watson and Dr. Yew that the evidence was trustworthy. He also assails the argument used by Dr. Watson in support of his notion that the disease may have originated in Yunnan Province. The fact, adduced by Dr. Pfister, that troops from Annam were engaged at Verdun and returned from that front in 1915 rather supports the supposition that the disease was introduced into China from France, but at the same time it is not altogether irreconcilable with Dr. Watson's hypothesis. The world war certainly provided a unique occasion for the dispersion of diseases which may have been previously localized; and, speaking generally, there does not seem to be anything too far-fetched in the idea that through the intermingling of soldiers, many of them recruited from remote districts in their own countries, a specific infection might be released—so to speak—and be carried for the first time out of a country, such as Yunnan, where its activities had previously remained endemic and beyond the ken of trained observers. There is still a good deal that is obscure about the early history of encephalitis lethargica. Its primary appearance (or possibly reappearance) in epidemic form can clearly be correlated with the outbreak of the great war, but recent references to its antecedents would seem to suggest that its irruptions in various countries were more nearly coincident in point of time than the early successive series of published case reports might lead one to suppose. It is to be hoped, therefore, that, while clinical witnesses may yet be available, other medical observers in China will be stimulated to co-operate in the interesting investigation initiated by Dr. Watson and Dr. Pfister.

[1] Yew, H. P.: Encephalitis Lethargica, *China Medical Journal*, 1929, xliii, 80 (letter).

THE LISTER INSTITUTE.

THE annual general meeting of the Lister Institute of Preventive Medicine was held on June 19th, when the governing body presented its thirty-fifth annual report to the members. Before proceeding to give a brief survey of the researches in progress during the year in the various departments of the Institute, the report makes acknowledgement of the continued co-operation given by the Medical Research Council, the Department for Scientific and Industrial Research, the British Empire Cancer Campaign, and the International Committee for the Study of Infantile Paralysis. Grants from these bodies to skilled investigators have added greatly to the range of scientific work carried out at the Institute. We can only mention here a very few of the multifarious activities of the year under review. Professor J. C. G. Ledingham, working with Dr. McClean in the bacteriological department, has published experiments showing the possibility of propagating vaccine virus from dermis to dermis of the rabbit by intracutaneous inoculation. In the course of such passage the virus appears to acquire a greatly increased capacity for proliferation in the dermis, and a corresponding diminished capacity for proliferation in the shaved skin. In collaboration with Dr. Mary Barratt, Professor Ledingham has been investigating certain problems concerned with the generalization of the lesions of vaccinia; he has also studied the "elementary bodies" (0.2μ in diameter) in vaccine virus first described by Paschen in 1906. A systematic study of the vaccine virus *in vitro* is being carried out by Drs. Eagles and McClean; their observations throw doubt on the generally accepted view that actively growing cells are necessary to the propagation of the virus. A considerable amount of research on poliomyelitis has been undertaken, the cost being defrayed by a grant from Mr. Milbank of New York. Reinvestigation of the histology of the experimental disease in monkeys indicates that the nerve cell destruction is to be regarded as a primary event, and not due to the interstitial changes. An inquiry into the part attributed to cocci in the etiology of experimental poliomyelitis has ruled out such micro-organisms as causal factors. Attempts to reproduce the disease in rabbits have failed. Investigations bearing on the vitamin content of various Empire products are being carried out by Dr. S. S. Zilva and his colleagues in the department of biochemistry; the expenses of these are defrayed by a

grant to the Medical Research Council from the Empire Marketing Board. The work undertaken in the departments of chemistry and of experimental pathology has included researches on the anti-scorbutic principle (vitamin C) and the metabolism of animals affected by scurvy; and also a large number of experiments in nutrition bearing upon the properties and distribution of water-soluble B vitamins in natural foodstuffs, and the occurrence and nature of vitamin A. In order to fill a blank in our knowledge of the biological action of light Sir Charles Martin has tried to determine what proportion of the total radiant energy of sunlight is absorbed by the skin and various fabrics and converted into heat. Absorption by the skin varied from 65 per cent. in the very fair complexioned to 87 per cent. in the negro. Dr. Korenchevsky's work on the endocrine glands has included attempts to obtain a specifically active extract from the testicle and prostate, but so far without success. Dr. Lumsden has continued his researches on cancer; after many failures results are now being obtained which promise some success in preventive vaccination against implanted tumours. During the year the national collection of type cultures has grown, over 300 new strains having been added, and 5,000 cultures distributed. In this department many useful investigations are constantly being carried out for the identification of strains on behalf of biologists who do not possess equipment and conveniences for such work. In conclusion, the report notes that a self-contained laboratory and two bungalows, with six acres of land, at the Serum Department, Elstree, have been rented to the Cancer Hospital for investigations by members of the staff of the research institute of that hospital.

CAVERNOUS SINUS THROMBOSIS.

THE paper on cavernous sinus thrombosis by Dr. E. A. Scale of Grahamstown, South Africa, which appears elsewhere in this issue (p. 1155) gives details of the recovery of one of that type of case, which is so desperate that mercifully it is equally rare. That it should be so rare is a matter of some wonder, considering the anatomical relation of these venous sinuses in the basis cranii. The cavernous sinuses lie in a relatively thin-walled sulcus of the floor of the skull, in bone which forms the roof of one of the air sinuses; this air sinus communicates with the "rabbit warren" of the nasal sinuses, and it is but little removed from the roof of the pharynx. The frequency of nasal infections makes the escape of the venous sinuses remarkable. Again, the sinuses themselves are like under-street tunnels for the number of vessels and nerves that run within the dural sheath of the sinuses and actually bulge into the passage ways. Where there are so many and such close possibilities of inflammatory reactions from contiguity, or of infections that have spread to the sinuses themselves, the rarity of thrombosis is amazing. The clinical symptoms of the disease are unmistakable. The sudden and severe proptosis of the eye, the protuberant lids and conjunctiva, and some degree of optic neuritis—all point clearly to the diagnosis of a retro-bulbar affection of great severity. And if the actual nature of the diagnosis should still be in abeyance for a few hours, it is soon settled by the appearance of the same symptoms in the other eye. Treatment is almost hopeless. All that can be done is thoroughly to open every nasal air sinus that may possibly be the seat of the primary infection, and drain them well. But unfortunately the patients are usually so ill that the surgeon may deem operative measures of any extent almost unjustifiable, even though they present the last chance; yet the patient should be given this last chance. In the few cases in which recovery has been recorded there has been permanent disability, blindness to a greater or lesser degree, and facial deformity owing to exophthalmos. The occurrence of such cases as these points to the urgency of evacuating discharges from septic air sinuses in and behind the nose, and of securing free drainage. No one doubts the urgency of such measures in mastoid disease; it is no less urgent in sinus disease. Dr. Scale is to be congratulated upon the successful treatment of his patient, and upon the fact that there was such a good measure of recovery that the woman was able to earn her living once more as a laundress. He modestly attributes her recovery to the high resisting powers of the negro.

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS.

THE annual report on the museum of the Royal College of Surgeons of England issued by the conservator, Sir Arthur Keith, includes the reports of the curators of the several departments, together with a general survey of the year's work by the conservator. In the latter special mention is made of those who have contributed specimens to the museum during the year, and it is satisfactory to find that so large a number of medical men, not officially connected with the museum, take an interest and pride in it. On the pathological side the curator, Mr. C. F. Beadles, F.R.C.S., reports the addition of over a hundred and fifty new specimens; these, with the additions to other departments, will be on view in Room I of the museum from July 4th to July 27th. Special mention is made by the curator of the numerous additions to the brain and nerve series and to those of the thyroid and pituitary glands. There are also some beautiful preparations illustrating von Recklinghausen's disease, which by themselves are well worth a visit to the museum; and many individual specimens of conditions of which the opportunities for study are infrequent, such as the results of bone grafting for tuberculous disease of the spine, osteoporosis of the skull from diet deficiency, a condition resembling leontiasis of the cranium following injury, and mediastinal teratoma. A comparatively new department is that of palaeopathology, dealing with prehistoric diseases. This is a subject in which Sir Arthur Keith takes a special interest; he has already secured the aid of many possible donors in various parts of the country, and in this way has accumulated a nucleus for a section of British palaeopathology. A notable contribution to this section is due to Dr. Wingrave of Lyme Regis, who has presented a number of specimens of fossil vertebrae of the extinct reptilia; these represent the earliest traces of disease which have so far come under the eye of the geologist. In the department of human osteology Miss Tildesley has made progress in the cataloguing of the collection of human crania. When this work is completed the collection will form a valuable standard of reference in determining the racial affinities of excavated human remains. Many interesting specimens have been added in the physiological department; among these may be mentioned a series of dissections of brains of the higher primates, showing the relative development of the basal ganglia in relation to the expanse of the cortex. From these dissections it appears that in the human brain the basal ganglia have undergone as great a progressive expansion as the cortex. The curator of this department, Mr. R. H. Burne, F.R.S., has continued his investigations on the component of the vascular system of bony fishes, which was discovered by him; and several researches of interest have been carried out by other investigators. Under the care of its honorary curator, Sir Frank Colyer, the odontological section is now one of the most pro- gressive and rapidly expanding parts of the muse every effort is evidently being made by him to re the collection representative in every detail. historical department Mr. C. J. S. Thompson

honorary curator, is able to report the addition of a large number of surgical instruments, most of them presented by that indefatigable antiquarian Dr. F. W. Cock.

BILHARZIASIS IN PALESTINE.

DR. H. GOLDIE, medical superintendent of the "Hadassa" dispensary at Tiberias in Palestine, has prepared a useful report[1] on bilharziasis in Palestine. His cases fall into two groups. The first and most numerous were all acute cases, among males aged 17 to 32, infected in Egypt or in Palestine, in the Auja district. These patients usually complained of symptoms of cystitis, and always had albumin and blood cells in the urine; the ova of bilharzia were not found on every occasion; two patients had been hastily diagnosed elsewhere, without careful examination, as cases of chronic gonorrhoea, but ova were found in their urines, and, as in the other cases, they were cured with intravenous tartrated antimony, which these patients take very well. In the second and more interesting group of 28 cases the nature of the illness was revealed by the routine urine analysis which is made for all patients of the dispensary; the patients did not complain of urinary symptoms, but of anaemia, dysmenorrhoea, and lumbar or abdominal pain, while three were found to have pneumonia. Ova were present in all the urines, with blood cells, and most patients had albuminuria, which was generally slight. All the 28 were Jewish immigrants from Arbela in Mesopotamia, their ages ranging from 10 to 60; 26 of them were female and only 2 were men, and they had been in Palestine from two to nine years. The whole of this colony, 82 persons in all, was examined; 28 patients had the characteristic ova, 16 only cells, and the rest were apparently well. The men were shopkeepers or craftsmen; the high infection rate of the women was explained by the fact that at Arbela they had had to wade out twice a day into the stream to fill their water jars. They had not set up an endemic focus of the disease in Palestine, for there are no Bulinus snails about Tiberias. This group of enfeebled people reacted badly to tartrated antimony, which gave rise to unpleasant cough or giddiness. Other preparations were tried, therefore, and Dr. Goldie was most successful with antimosan in intramuscular injection, which was usually painless. He began with 2.5 c.cm. of a 5 per cent. solution; after the dose of 40 c.cm. the ova generally disappeared, but the proof of the death of the parasite—absence of the ova from the urine three months later—was only expected if treatment had continued until 65–70 c.cm. had been administered.

PASTEUR'S EARLY WORK ON THE NATURE OF INFECTIVE DISEASE.

THE beautiful edition of Pasteur's works which is being issued by Masson et Cie under the editorship of Professor Pasteur Vallery-Radot, and is to be completed in seven volumes, should find a place in every medical library. The fourth volume, containing the studies on silkworm disease, has been referred to already in this *Journal* (March 5th, 1927, p. 436). The fifth volume,[2] recently issued, contains the work published in 1876 under the title "Studies in beer, its diseases, the causes which produce them, and the method of rendering it stable; with a new theory of fermentation." The famous researches described in this volume foreshadowed in the clearest manner a true and scientific comprehension of the nature of infective disease, at a time when the prevailing doctrine was that disease arose "in us, from us, and by us." Pasteur clearly foresaw the approaching revolution of ideas on this subject; "it is possible," he writes in his preface, "that an unexpected light is about to be thrown on the causation of contagious disease." He showed how the normal alcoholic fermentation of beer might be deranged owing to its accidental association with other forms of fermentation, each with its specific organism and each producing definite symptoms or signs in the form of "turning," viscosity, putridity, or acetic or lactic acidity. "From the physiological point of view all these ferments are equivalent. The botanist and savant, students of nature, give equal attention to plants, whether they are useful or hurtful, because they are subject to the same natural laws; but industry and hygiene have other standpoints." Analogous phenomena occurring in man and animals would be regarded as diseases. The suggested analogy proved to be sound, and the important principle of specificity in bacterial disease became securely established on a scientific basis. A recrudescence of the theory of spontaneous generation, chiefly through the influence of Bastian, acted at the time as a slight obstacle to the general acceptance of Pasteur's views, but the theory received its final quietus at the hands of Tyndall, a letter from whom, referring to this subject and to Pasteur's work generally, is included in the present volume. "For the first time in the history of the science," he writes, "we have the sure and certain hope that, in regard to epidemic diseases, medicine will shortly be delivered from empiricism and placed on a genuine scientific basis; when this great day arrives, humanity, in my opinion, will remember that its gratitude is due principally to you."

[1] *Arch. fur Schiffs- u. Tropen-Hygiene*, April, 1929, p. 128.
[2] *Œuvres de Pasteur*. Réunies par Pasteur Vallery-Radot. Tome v: Études sur la Bière. Paris: Masson et Cie. 1928. (Imp. 8vo, pp. 361; 85 figures, 12 plates. 120 fr.)

VICTOR HORSLEY LECTURE.

THE third Victor Horsley Memorial Lecture will be delivered by Sir Thomas Lewis, M.D., LL.D., F.R.S., Physician to University College Hospital, who has taken as his subject "Observations relating to the mechanism of Raynaud's disease." The lecture will be given at University College Hospital Medical School, Gower Street, W.C., on Tuesday, July 16th, at 5 p.m., under the chairmanship of Sir John Rose Bradford, K.C.M.G., M.D., F.R.S., President of the Royal College of Physicians of London. Admission to the lecture is free on presentation of visiting card.

THE Metropolitan Asylums Board had before it on June 22nd a statement prepared by the medical superintendent of the small-pox hospitals showing the condition as to vaccination of patients suffering from small-pox admitted from January 1st, 1928, to May 31st, 1929. The statement showed that out of 1,057 cases admitted 163 were said to have been vaccinated in infancy only, that the youngest of these 163 cases was 15 years 11 months old, and the evidence of vaccination was doubtful, and that the next youngest cases were 19 years old. Eleven cases were stated to have been vaccinated and revaccinated, but in 7 of these cases the evidence of revaccination was either not present or was doubtful. In the remaining 883 cases there was no evidence of vaccination prior to infection.

ON Thursday, July 18th, the Prince of Wales will open the new building of the London School of Hygiene and Tropical Medicine which has been erected, as a gift of the Rockefeller Foundation, in Keppel Street, W.C. The foundation stone was laid by Mr. Neville Chamberlain, as Minister of Health, on July 7th, 1926.

THE British Orthopaedic Association and the American Orthopaedic Association will hold a joint meeting in London on Thursday, Friday, and Saturday, July 4th, 5th, and 6th.

ENGLISH HOSPITAL PLANNING.

On May 27th Mr. H. PERCY ADAMS, F.R.I.B.A., delivered a lecture on English hospital planning, before the Royal Institute of British Architects. After some introductory remarks, Mr. Adams said that the ideal hospital site was high ground sloping gently from north to south or south-east, and sheltered by trees on rising ground. It should be away from noise and dirt, have good roads on the northern side, a sub-soil of chalk, rock, or gravel, and adequate facilities for water, gas, and drainage. Possibly, in future all large hospitals would be outside the town areas, and only central clearing stations for casualties and out-patient departments in the large towns themselves.

Lay-out of the Buildings.

The various hospital departments, said Mr. Adams, should be arranged in blocks, each in the position most suitable for its individual requirements and in relation to the others, and affording scope for future extension. The administration block should be central, with a main corridor running east and west; the wards should be at right angles, running north and south with cross-ventilation, the out-patient and casualty departments easily accessible from the street, and the dispensary and electrical departments available for both in- and out-patients. The kitchens should be accessible for tradesmen, and centrally placed for serving patients and staff; the nurses' home should be away from, but easily accessible to, the hospital. The boiler-house should be at a low level, and as central as possible, and the chimney shaft away from the prevailing wind.

The Wards.

Mr. Adams drew attention to the recent tendency to reduce the size of the general wards and to have in each unit side wards for special cases. A width of 22 ft. seemed sufficient for a general ward of 16 beds, if it was not used for clinical teaching. The head space for each bed should be not less than 8 ft. from centre to centre, rather more than this for maternity and special cases and a little less for children. Recently many doctors had advocated the plan of placing the beds parallel to the windows. For the new hospital at Southend Mr. Adams was proposing T-shaped wards, containing 24 beds, in sections of 4, 4, and 16, with the beds parallel to the windows, and, to facilitate supervision, having the upper parts of the screens against the heads of beds made of clear plate-glass. The system most generally adopted for heating the wards was by means of radiators under the windows. Heated pipes round the walls, however, were cheaper than radiators, no more difficult to clean, and they gave an equable temperature; they presented, perhaps, a larger surface for the accumulation of dust. The open-air chapel at the King Edward Sanatorium was warmed by means of pipes under the stone-flagged floor. After describing in detail the structure of the general ward, of its doors, windows, and floor, Mr. Adams said that during the past few years the sanitary adjuncts of the ward had been placed near its entrance in order to be under better control, to simplify the plumbing, heating, and drainage, and to be available for the side wards; a ventilated lobby between the sanitary adjuncts of the ward was an advantage.

The w.c.'s should be at least 5 ft. by 2 ft. 9 in., and their doors should always open outwards. The sink room should be at least 10 ft. by 8 ft., with a sink for cleaning bed-pans and urine bottles. An open-air balcony should be provided for refuse bins, and a lavatory for patients; the bathroom should have an area of at least 9 ft. by 8 ft., with the head of the bath facing the window, and its side at least 2 ft. from the wall. In connexion with the wards, Mr. Adams said there should be a ward kitchen not less than 16 ft. by 14 ft., a small, well-ventilated larder, a clinical room, a small sterilizing room in surgical units, a record room for the use of the registrar, a linen store, a patients' storeroom containing numbered lockers, a storeroom for bedrests, splints, etc., a service room for the cleaners' brooms and pails, a nurses' w.c., a day room, a class room, and possibly a sisters' room. It was an advantage to have a balcony at the south end, partly enclosed on the east and west sides.

Wards for paying patients should have easy access to the special departments of the hospital and to the general kitchen, which might be provided with a section where special foods could be prepared. The wards should be supplied with lavatory basins and fitted with wardrobes.

The Operating Theatres.

The most satisfactory provision for students witnessing operations, said Mr. Adams, was a raised platform at the north end of the theatre, having a separate access from outside the theatre. It was an advantage to concentrate the general operating theatres in one block rather than to have them dotted about the hospital. The department should be separated from the main corridor by a ventilated lobby, and should be in a quiet position and not overlooked. The usual plan was to have the theatres with due-north light and the entrance at the south; on one side there should be a room for cleaning the bowls, instruments, etc., and on the other a room for the sterilizers. Adjacent to the theatre there should be an anaesthetizing room, a room for surgeons to change in, a sisters' room, and an instrument room. In large hospitals there were usually special theatres for the ophthalmic, maternity, and casualty departments, and often in the children's block theatres for tonsils and adenoid cases. Mr. Adams suggested that the dimensions of a theatre should be not less than 22 ft. long by 18 ft. wide by 14 ft. high, with a vertical north window 12 ft. wide, and, among other practical details, mentioned the need for setting the glass in frames with rounded corners, an outside balcony giving cleaners access to the windows, provision for cooling the theatre in hot weather, and the desirability of building instrument cabinets into the walls of the theatre with flush, clear glass doors. The flush panel radiator was excellent for heating purposes, and it was advisable to have some of the radiators heated from the general hot-water system, supplementing them with radiators heated by the steam supply, which was always available for sterilizers and cooking. In cities it might be an advantage to use the plenum system of heating and ventilation, so that the air could be well filtered and its temperature regulated before being delivered into the theatre. The doors of the theatre and anaesthetizing rooms should be at least 4 ft. wide and perfectly flush on both sides. For lighting the table the new scialytic shadowless lamp seemed to be in favour. Mr. Adams described also the structure and equipment of the washing-up room, the sterilizing room, and the anaesthetic room.

Electrical Department.

This department, he said, was most conveniently placed on the ground floor, not in the basement; it was essential to place the high-tension generating plant in a room by itself, next to the *x*-ray room, and if there were separate rooms for therapy and diagnosis the transformer room should be placed between them and the door fitted with a switch, so as automatically to cut off the current when the door was opened. The ceilings of *x*-ray rooms should be arranged for suspending the overhead high-tension gear in connexion with the apparatus. Access to the dark room should be either by a revolving light lock door or by a maze light lock without door or even curtain. There should also be a film-filling room, a room for the viewing cabinet, a general storeroom, doctors' and nurses' rooms, and waiting rooms and dressing rooms for patients. For the protection of operators walls were built of bricks made of barium sulphate, or covered with barium plaster or lead, and doors were sheathed with lead. The protection for 100,000 volts was 1.5 mm. of lead, and for 200,000 volts 4 mm. of lead. The thickness of bricks and ordinary concrete that would give protection equal to 1.5 mm. of lead was approximately 5 inches. To protect the dark room and storeroom from accidental exposure the walls should be covered with lead 1 mm. thick. Artificial ventilation was required, and could be supplied by a centrifugal exhaust fan with fresh air (light-protected) inlets.

Venereal Diseases Department.

In planning this department the first principle was to secure privacy for patients and facilities for quick service to the staff. Essentials were a clerk's room next to the consulting room, a patients' waiting room with lavatory accommodation, a general service room for routine clinical pathology, and a

series of cubicles entered by the patients direct from a corridor or waiting room and planned to secure privacy. All the rooms should have the floors and walls of impervious materials and easily cleaned.

Prevention of Noise.

Having described in some detail the architecture of the casualty department, the post-mortem room, laboratories, and the administrative blocks, Mr. Adams said that to guard against noise corridor floors should be insulated, a good method being to have a margin of hard material like terrazzo, with the centre slightly sunk to take the rubber cemented down to it. Lift gear should be placed in insulated rooms and pumps for heating mains connected with flexible rubber. At the entrance to the duct for the main from the boiler-house a felt curtain would help to deaden sound. Self-closing doors with air-pump springs were a great boon for all wards.

POST-VACCINAL ENCEPHALITIS.

NEWSPAPER reports of recent inquests in the London area have reawakened interest in the occurrence of acute disease of the central nervous system after primary vaccination.

The pathology of encephalo-myelitis arising in the course of virus disease and the exanthemata was discussed in the Section of Pathology and Bacteriology at the Annual Meeting of the British Medical Association in Cardiff last year; we reported the proceedings in the *Journal* of August 4th, 1928 (p. 202), and the introductory papers by Professors H. M. Turnbull and James McIntosh appeared in our issue of August 25th (pp. 331 and 334). The debate at Cardiff, on July 25th, turned largely on the question of post-vaccinal encephalitis, and in the same week the report of the Committee on Vaccination, presided over by Sir Humphry Rolleston, was presented to Parliament by the Minister of Health.[1] A considerable part of the Rolleston Committee's report was devoted to diseases of the central nervous system following vaccination, and it included the full text of the report by an earlier committee which went into this subject, under the chairmanship of Sir Frederick Andrewes, between November, 1923, and May, 1925. An account of the findings of both committees appeared in our issue of August 11th (p. 265).

The Andrewes Committee Report.

The members of the Andrewes Committee (Professor McIntosh dissenting) came to the conclusion that it was extremely improbable that the 62 reported cases of post-vaccinal encephalitis in this country could have been due solely to the vaccine virus. On the other hand, they held it not altogether improbable that vaccination might here and there have precipitated encephalitis in a person harbouring another virus. It seemed to them conceivable that "a virus, such as that of poliomyelitis, which can only occasionally set up an encephalitis in a normally resistant person when unaided may, if another virus, such as that of vaccinia, is present in the brain, be enabled to do so." The provisional opinion they reached was that the nervous sequelae under consideration were most satisfactorily explained on the assumption that the vaccine virus had stimulated to activity some latent neurotropic virus harboured by the vaccinated subject, and that to such a combination of viruses might be attributed any notable peculiarities in clinical course, histological picture, and generally lethal character of the cases.

The Rolleston Committee Report.

The Rolleston Committee, which investigated a further series of 25 cases, went very fully into the various theories that had been put forward in explanation of the occurrence of post-vaccinal encephalitis. While it acquitted the vaccine virus of being the *sole* cause of the disease it was unable to exonerate vaccination from playing some part in its causation. Its considered opinion was that the co-operation of vaccinia with the viruses of poliomyelitis, encephalitis, or some unknown neurotropic virus, must be accepted as a working hypothesis of causation, pending further research into the nature and properties of neurotropic viruses in general. This opinion is shared by the Commission on Small-pox and Vaccination of the League of Nations, which reported subsequent to the publication of the Rolleston report. The Rolleston Committee pointed out the extreme rarity of post-vaccinal nervous disease, particularly after revaccination and after primary vaccination in early infancy, from which it followed that early infancy must continue to be regarded as the time of choice for primary vaccination. In order to encourage vaccination the Committee recommended that the customary four insertions of vaccine should be replaced by one, made with a minimum of trauma, and that multiple scarification and (or) cross-hatching should be deprecated. Vaccination in multiple insertions should, however, be available for such persons as desire to obtain the maximum protection against small-pox obtainable at one operation.

The Geneva Memorandum.

The risk of post-vaccinal encephalitis has been discussed also in a memorandum issued last autumn by the Commission on Small-pox and Vaccination of the Health Organization of the League of Nations at Geneva, to which reference was made in our issue of September 29th, 1928 (p. 582). The Commission emphasized the fact that post-vaccinal did not necessarily imply propter-vaccinal; that in view of the millions of vaccinations carried out in any given year there must always be present in the community very large numbers of people subject to the ordinary chances of life, and only incidentally under the influence of the vaccinia virus. Such people were no more immune from disease of the brain and nervous system than anyone else, and there was therefore no reason why the coincidence of vaccinia with a true encephalitis should not be expected to occur. Encephalitis, moreover, occurred as a complication of numerous infections—for example, measles and various forms of toxaemia—and in so far as vaccinia was an infection it might be considered legitimate to regard the cases under consideration merely as instances of ordinary post-infective encephalitis. The Commission, however, was of opinion that there were practical reasons for considering post-vaccinal encephalitis as a separate pathological and clinical entity. Its general conclusion was that the virus of vaccinia could not of itself be considered responsible for encephalitis. It considered rather that some unknown factor—perhaps a filter-passing virus or a latent virus—determined the occurrence of the complication in question.

The age distribution in the incidence of post-vaccinal encephalitis is of particular interest; the bulk of the cases have occurred in children between the ages of 3 and 12. Moreover, the disease follows revaccination of older children and of adults with the utmost rarity, a fact which, taken in conjunction with the almost complete immunity of the first two years, provides ample reason for emphasizing the value of undertaking primary prophylactic vaccination against small-pox as early as possible in life.

Summary.

The rare occurrence of post-vaccinal encephalitis is no reason for lightly estimating its importance; the risk, though small, is of a very dangerous disease. It is necessary, however, to remember that vaccination is not believed to be its sole cause, nor is there any evidence of its transmission by vaccine lymph, however manufactured. In view of the fact that the majority of recorded cases have occurred in persons primarily vaccinated after infancy, it is desirable to advocate more strongly than ever the need for carrying out primary vaccination of infants between the ages of 2 and 6 months. Continued protection against small-pox could then be ensured by revaccination when the child first enters school, and again when he reaches school-leaving age. To avoid undue reaction it would be well to carry out vaccination in one or two insertions, each made with a single linear incision, rather than in the customary four.

[1] The Report of the Committee on Vaccination. Cmd. 3143. London: H.M. Stationery Office. 1929. 7s. net.

Scotland.

Honorary Graduates of Glasgow University.

DR. CHARLES OLIVER HAWTHORNE, F.R.C.P., chairman of the Representative Body of the British Medical Association, was one of a notable group of honorary graduands at the graduation ceremony at Glasgow University on June 12th. In presenting Dr. Hawthorne for the honorary degree of Doctor of Laws (LL.D.), the Dean of the Faculty of Law (Professor T. C. Wright) said that he was a distinguished student and prizeman of the University, where he had graduated with honours. For over a decade he was a much appreciated teacher in the Western Infirmary. Thereafter he transferred his energies to London and became one of the inaugurators of the Polyclinic, the first real post-graduate institution in that city. Gifted with a brilliant and a fearless mind, his trenchant pen was always at the service of common sense and justice in medicine. In addition to his strictly professional duties, Dr. Hawthorne had taken an active part in the affairs of the British Medical Association. In recognition of his services to medical science the Senate desired that there should be added to his Doctorate of Medicine the further degree of Doctor of Laws. At a luncheon held after the graduation ceremony, Sir Donald MacAlister, Bt., principal of the University, in proposing the toast of "The Honorary Graduates," said of Dr. Hawthorne that they greeted him as one of their many alumni, who, having taken high honours in their own schools, had gone forth to seek and find fame in the wider world of London. They now acclaimed him Doctor of Laws in recognition of his success as a medical statesman and organizer. By fearless speech and pointed pen he had won for himself a leading place in the councils of his profession, and he now directed the Representative Body of the widely influential British Medical Association with vigour and sagacity.

Among others who received the honorary degree of LL.D. on this occasion were Sir John Cargill, Professor Carslaw of Sydney, Madame Curie, the Earl of Elgin, Provost Gwynn of Trinity College, Dublin, Herr Fritz Kreisler, Lord Lugard, Lord Provost Sir David Mason, and Professor Merriman of Harvard. Madame Curie received a special ovation. She was introduced as the professor of physics and director of the Curie Laboratory of the Radium Institute in the University of Paris, a woman celebrated throughout the world for her epoch-making discoveries of radium and polonium. In company with her late husband, Dr. Pierre Curie, and M. Henri Becquerel, she was awarded the Nobel Prize in 1903; and again in 1911 she received the Nobel Chemistry Prize for her work in radio-activity. In recognition of her services to science, and in appreciation of her work for humanity, the Senate sought to do itself honour by enrolling Madame Curie among its honorary Doctors of Laws. Herr Kreisler played to the students in the Bute Hall on the afternoon of the graduation. His visit was appropriate, because of the establishment this year of a chair of music in the University.

Appointments at Aberdeen and Inverness.

Dr. Harry J. Rae has been appointed medical officer of health for the city of Aberdeen in succession to Dr. J. Parlane Kinloch, now chief medical officer to the Department of Health for Scotland. Dr. Rae is a native of Aberdeen, where, after receiving his preliminary education at the grammar school, he graduated at the university in arts in 1907, and in medicine, with honours, in 1911. In 1914 he obtained the Diploma in Public Health of Aberdeen University, and became assistant school medical officer for Aberdeenshire. Thereafter he acted as assistant tuberculosis officer, and, after a period of war service, deputy county medical officer of health. He was appointed chief medical officer for Aberdeenshire in 1925, when the scheme for the co-ordination of the medical services in the county came into operation. The directors of the Northern Infirmary, Inverness, have appointed Dr. R. C. Bannerman to the newly created full-time post of pathologist and bacteriologist to the hospital. Dr. Bannerman is a graduate of Edinburgh University, having qualified in arts in 1910, and in medicine, with first-class honours, in 1914.

The Scottish Health League.

The Scottish Health League is an amalgamation of a large number of varied interests in health education. Its president is the Duchess of Atholl, and Sir Robert Philip is one of its vice-presidents; the council includes a number of medical practitioners and dental surgeons, and there is an advisory council of medical officers of health. The aim of the league is to disseminate knowledge among the people in regard to the most efficient methods for the maintenance of health and the prevention of illness. It does not seek to relieve local authorities of their responsibilities, but to establish a link between the public and the responsible officers of the authorities, so that the existing powers may be used to the utmost advantage. To attain this object branches of the league are being formed throughout Scotland. Posters, leaflets, health books, lantern slides, films, and lecture outlines are being distributed from the headquarters of the league, and lecturers on health education matters are sent out on request. An attractive periodical, *The Scottish Health Magazine*, now in its third issue, is published monthly, price 6d., at 29, Cadogan Street, Glasgow, C.2, under the editorship of Dr. M. Menzies Campbell.

Treasurership of the Edinburgh Royal Infirmary.

Mr. William Strathie Caw, who has given forty-nine years' loyal service to the Royal Infirmary of Edinburgh, is retiring from the office of treasurer and clerk at the end of the year. The managers have appointed Mr. Henry Maw as his successor. Mr. Maw, after receiving a training as an accountant, took up hospital administrative work in 1912, and acted for eight years as accountant and assistant secretary of the Bradford Royal Infirmary. Since 1920 he has been secretary of the Clayton Hospital at Wakefield, where he has acquired a high reputation as an organizer and administrator.

England and Wales.

Honours for Sir Ronald Ross.

On the evening of June 21st Sir Ronald Ross received the Manson Medal at the hands of the president of the Royal Society of Tropical Medicine and Hygiene, and the triennial Gold Medal of the West London Medico-Chirurgical Society at the hands of the president of that body. In both places the presentation was made in very felicitous terms and to the accompaniment of hearty applause from those assembled. Sir Ronald Ross, who was obviously in a very weak state of health, contented himself with a word of thanks in each instance. At the Royal Society of Tropical Medicine Dr. G. Carmichael Low recapitulated some of the important landmarks in the work of Ronald Ross. When he began work in India in 1889 Sir Ronald was attracted to the study of malaria, a disease which was not only very prevalent there, but was one of the main causes of death among the natives of the country. Returning to England on leave in 1894 he had the good fortune to meet Manson, and to listen to the latter's hypothesis that "the flagellate bodies are stages in Leveran's parasites which produce motile spores for the purpose of infecting mosquitos which happen to suck the blood of patients." Struck by this idea, and stimulated by his conversations with Manson, Sir Ronald, on his return to India in 1895, started on his world-famous researches, which were ultimately to prove the hypothesis suggested by Manson and to give the world the true history of the malarial parasite in its passage from man to man. Dr. Low went on to say that the story of the difficulties, heart-breaking disappointments, and laborious and trying work carried out in an exhausting tropical climate, crowned eventually by complete success, was to be found in Sir Ronald Ross's memoirs; and no one reading that account could fail to appreciate the grit, energy, determination, and ability of the man who carried it

out. The remarkable feature of his work was that he completely elucidated the whole cycle of the malarial parasite. This had stood to the present day almost exactly as he described it, and had not required altering in any respect. So often did it happen that a big discovery by one man was changed out of all recognition by later investigators, who took the major share of the credit. Sir Ronald Ross had had many honours for his work, but Dr. Low ventured to think that the Manson Medal would rank high among them because it associated his name with that of his old friend who had suggested the hypothesis and had helped and encouraged him in every way during his work in India. It would seem strange, therefore, and incomplete, if a Manson Medal did not include the name of Ross among its recipients, because the names of these two great men would go down to posterity together as the conquerors of malaria. At the West London Medico-Chirurgical Society, on the occasion of the Cavendish Lecture, reported at page 1164 of this issue, Dr. H. H. Sanguinetti handed to Sir Ronald Ross the Gold Medal, and in doing so said that the society honoured itself in honouring one whose work had been of such immense value to the Empire and to the world. It was due to his work that, for example, it had been possible to rid the Panama Canal zone of disease and to make safe and healthy vast rubber plantations.

Royal Society Conversazione.

At the second summer conversazione of the Royal Society, held on June 19th, the four rooms at Burlington House were, as usual, full of interesting and varied exhibits for the entertainment of Fellows and guests. The Strangeways Research Laboratory again contributed a collection of microscopic specimens illustrating recent work on embryonic development *in vitro*. The isolated femurs of six-day fowl embryos show a remarkable capacity for self-differentiation. When removed from the body and cultivated in a watch-glass containing suitable culture-medium the femurs may increase to more than three times their original length, and they also undergo what appears to be a normal anatomical and histological development, including ossification. Further, just as in normal development, the femurs cultivated *in vitro* synthesize a phosphatase, which may effect calcification by liberating inorganic phosphate from phosphoric esters. On cultivating undifferentiated three-day embryonic limb-buds in a watch-glass these have been found to differentiate to form small-celled cartilage, but not enlarged cartilage cells, osteoblasts, or bone, nor is phosphatase synthesized by these explants. This work was by Dr. H. B. Fell and Dr. R. Robison. Further work by Dr. R. G. Canti and others, under the auspices of the same laboratory, showed the effect of radium on mitosis *in vitro*. Tissue cultures were exposed for a short time to radium and subsequently incubated at 37° C. Irradiation was found first to cause a reduction in mitosis, followed by a compensatory increase, bringing the mitotic figures to a point largely in excess of the controls, and, finally, after six hours, mitosis fell to normal. The effect of temporary exposures of the cultures to low temperatures was strikingly similar to that seen with radium. Tissue cultures exposed to x rays for a short time showed a reduction in the number of cells in mitosis, and, for a longer time, a degeneration and breaking-down of individual cells. Some very interesting exhibits came from the natural history departments of the British Museum. These included fossil specimens of extinct mammals and fish, the colouring and patterning of certain woodpeckers, another exhibit illustrating the similarity of form that may occur in insects belonging to different orders, as well as in widely different sections of the same order, also a model of a remarkable abyssal cephalopod, the specimen being obtained at 750 fathoms in the Pacific, and representing the most primitive member of the octopoda, or an intermediate between that order and the decapoda (squids and cuttle-fish). Then Dr. H. Eltringham illustrated a wonderfully minute study on the scent-producing organs of insects. Scents are produced and employed by insects in courtship and in defence to an extent difficult for the ordinary person to realize. The very complicated organs found in the heads of minute caddis flies—the whole head is rather less than one-fiftieth of an inch across—were quite amazing, as seen in Dr. Eltringham's models. The Potato Virus Research Station, Cambridge, showed how it was possible to alter the character of the virus of potato mosaic by passing it through another plant host, and also by using different methods of transmission. When the virus is inoculated into tobacco with the needle an infectious disease known as "ring-spot" is produced, and progressive needle inoculation of ringspot through successive tobacco plants increases the virulence of the virus until it becomes almost lethal to the plant. When ringspot is transmitted to healthy tobacco by greenfly instead of by needle dark green mottled lines are produced, and not rings, and when either of these diseases is returned to the healthy potato an intensified and highly infectious form of the original mosaic is produced, showing that passage through the tobacco plant has induced a change in the nature of the virus. There were also shown at Burlington House many experiments in physics of great interest. Mr. J. E. Barnard illustrated his method of dark-ground illumination with ultra-violet light in the microscopy of very small bacteria, beyond the limit of optical achievement of the objectives employed. Among other exhibits was a cosmetic found in the tomb of Tut-ankh-Amen at Luxor, which had been carefully analysed, and might be supposed to have consisted, originally, of nine-tenths of neutral animal fat and one-tenth of some resin or balsam. Mr. A. A. Campbell Swinton's photographs of eminent scientific men were also of great interest. Mr. Swinton has been fortunate enough, as an amateur photographer, to have had as his sitters all the most celebrated scientific men of this country since Huxley, of whom he has a photograph, taken by the wet-plate process, dating from 1877.

Livery Dinner of the Apothecaries' Society.

At the Livery Dinner of the Society of Apothecaries of London, held at Apothecaries' Hall on June 18th, the Master, Lieut.-Colonel C. T. Samman, spoke of the movement lately entered upon by the Society. In particular, a committee had been set up to give advice in regard to light treatment, its object being to enable doctors, wherever they might be, to find some practitioner in whom they could place implicit trust when such treatment was required. Another new departure consisted in infusion of fresh blood into the Court, and he hoped that in that way the interest of the Society and the profession would be furthered. A little more than a year ago, he said, it had been discovered that the woodwork of the Society's hall had been ravaged by the death-watch beetle, and but for the skill of the surveyor, Sir William Wells, absolute disaster would have followed. The fate threatened was averted at a cost of about £20,000, and a generous response had been made to an appeal for funds which the Society had sent out to all its members. There was still, however, a large deficit, which he invited the Livery to make good. In the course of the evening Dr. R. Whiteside Statham presented Sir William Hale-White to the Master, to receive the honorary freedom of the Society. There was a close similarity, said Dr. Statham, between the presentation that was being made that evening and one which had taken place three hundred years ago; in the year 1629 Thomas Johnson, a great Royalist and an authority on the properties and actions of drugs, had been admitted to the freedom of the Society; Sir William Hale-White in his turn was the greatest living authority to-day on therapeutics. Like his prototype in the seventeenth century, he had served in His Majesty's Forces, and the Society, by admitting a man of his distinction, was honouring the profession and itself. Sir William Hale-White, in replying, said that he all the more appreciated the honour conferred on him because, under the ordinances, the number of honorary freemen was limited to ten, and frequently the full complement did not exist. Sir Ewen J. Maclean, president of the British Medical Association, and Mr. Francis Weston replied to the toast of "The Guests," which had been proposed by Sir George Buchanan, the junior warden, and the toast of "The Livery" was replied to by Sir George Makins and Dr. J. P. Gibbons.

Centenary of King's College, London.

The Duke and Duchess of York inaugurated, on June 25th, the centenary celebrations of King's College, London. The ceremonies continued during the week and included a thanksgiving service in Westminster Abbey and the dedication by the Archbishop of Canterbury of a new wing of the students' hostel in Vincent Square, Westminster. King's College was a pioneer in the provision of hostels for students, and in addition to the delightful building in Westminster, which is for men, it has a women's hostel at Bayswater, and another men's hostel at Denmark Hill. The college buildings in the Strand have some very interesting medical associations. Here Lister, it will be remembered, held a professorship, and in the neuro-pathological laboratory Sir David Ferrier carried out much of his experimental work. The University of London, to which the college is affiliated, continues to teach in King's Buildings the preliminary and intermediate medical studies, but King's College Hospital, which was formerly in close proximity, was removed many years ago to the south-eastern suburbs. Other notable names associated with the college history are, in physics, those of Clerk Maxwell and Wheatstone; in literature, Thomas Hardy and Edwin Arnold; and in theology, Wace, Gore, and F. D. Maurice. Both King's and University College, which date from the same period, suffer from the fact that they possess neither the air of antiquity, like Oxford and Cambridge, nor that of modernity, like the newer provincial universities, and for that reason, although their achievements have been very noteworthy, and they have supplied a stream of brilliant men to the industries and professions, they have not attracted endowments. King's College has been hampered by lack of room. A new building has lately been taken above the adjacent underground station of Aldwych—a much less classical environment than the wing of Somerset House, where the main building is situated—and here several of the departments are housed. These of chemistry and anatomy, however, still suffer from cramped quarters. It is hoped, in view of the interest which the centenary may be expected to arouse, that not only will it be possible to obtain the funds necessary for completing the hostel extension at Vincent Square, but also those for rebuilding one of the blocks in the Strand so as to provide an extension for the department of chemistry, and a new anatomy building above it. It is stated that the number of students at King's has doubled since the war, and that it includes at the present moment over a hundred visiting students from the Empire overseas and foreign countries.

Ireland.

The Changing Foundations of Materia Medica.

A PRESIDENTIAL address of unusual range and interest was delivered from the chair at the sixty-sixth annual British Pharmaceutical Conference which has been held in Dublin during the past week. Mr. R. R. Bennett, F.I.C., gave in outline an account of some of the more striking changes in materia medica wrought by progress in chemistry and biochemistry, in physics, in physiology, and in the science and practice of medicine. The present, said Mr. Bennett, was an age of standardized products, and isolated active principles had to a considerable extent replaced the parent drug. He mentioned morphine, cocaine, atropine, quinine, and emetine as a few of the older well-known examples of the active plant alkaloids which in large measure had replaced in medical practice the drugs wherein they occurred. More recently ergotoxine had been made from ergot on a commercial basis. Among the achievements of recent years was the replacement of the active principles of certain natural products by identical substances synthetically produced at a cost which compared favourably with that of the natural article. The price of synthetic thyroxin, Mr. Bennett said, was half that of the natural product obtained from the thyroid gland. Another case in point was the replacement of the natural ephedrine by the synthetic product, though the latter did not possess the same therapeutic activity as the natural alkaloid. Both in the animal and in the vegetable world Nature effected her syntheses within a very small range of temperature and with very mild reagents. Fusions with alkali, treatment with powerful dehydrating agents, and sealed-tube reactions under pressure were unknown to her. The syntheses of the laboratory were invariably performed in a manner which would destroy the apparatus in which nature works. Nature also possessed the secret of optical activity, and left to art the synthesizing of optically inactive forms only, but most of these optically inactive forms could now be resolved. Mr. Bennett went on to point out that in addition to the substances occurring naturally in the vegetable and animal kingdoms there were an enormous number possessing valuable medicinal properties which were obtained solely by a synthetic chemical process. From the synthesis of urea by Wöhler just a hundred years ago to the recent synthesis of thyroxin, vast numbers of organic compounds had been synthesized. Many synthetic local anaesthetics had been introduced as a result of the search for substitutes for the natural alkaloid cocaine. The toxicity of the members of this group—including ethocaine, borocaine, eucaine, and stovaine—was less than that of cocaine, but their anaesthetizing power was less also. Avertin, a tribrom-ethyl alcohol, was the latest addition to the drugs at the disposal of the anaesthetist. A great amount of work had also been done in the development of the use of synthetic dyes in therapeutics. The study of dyestuffs had been directed to the treatment of disease due to protozoal infection, and some very useful compounds had been discovered. Trypan blue had proved particularly successful in the treatment of "red water" fever in cattle. Some of the dyestuffs first studied for their trypanocidal effects had been found more useful as bactericides, as, for example, acriflavine and auramine. Mercurochrome had resulted from the search for an actively antiseptic organic mercury compound possessing the antiseptic properties of the inorganic mercury salts, and at the same time free from the disadvantages of the latter in the way of destructive action upon animal tissue. Tetraiodophenolphthalein had been successfully applied in x-ray technique for cholecystography. Again, the control and cure of protozoal diseases by means of various organic compounds of arsenic and antimony was an achievement of outstanding importance. Mr. Bennett mentioned also the work done on chemotherapy, and the need for a closer alliance of chemical, biochemical, pathological, and clinical workers in this direction. A start had been made, he said, through a permanent committee of chemists and biologists, in organizing chemo-therapeutic research, and a separate committee would organize and direct the necessary clinical trials of substances which were likely to be of importance in medicine. An experiment of great interest in this connexion was the establishment of a chemical research laboratory at Teddington, under the general scheme of work directed by the Department of Scientific and Industrial Research; here work will be done in collaboration with the Medical Research Council, with the object of obtaining experimental evidence of the relationship between chemical constitution and physiological activity.

Ballinasloe Mental Hospital.

In the course of the annual report presented by Dr. John Mills, resident medical superintendent of Ballinasloe Mental Hospital, the following outstanding facts are mentioned. Attention has frequently been drawn to the advantage to the patient of seeking treatment at the early stage of the disorder, but the inrooted prejudice against admitting that there is any insanity in the family still exercises a potent influence in deterring relatives from seeking the provided means of treatment, and this is often not used until some indefensible unsocial act is committed which brings the patient within the terms of the Dangerous Lunatics Act, under which 220 of the total number were committed. In this connexion Dr. Mills draws attention to the establishment by the governors of the Royal Edinburgh Asylum of two hospitals within their area where voluntary patients are admitted as to an ordinary hospital, and there receive the treatment most appropriate to their condition; many such patients escape

thereby what is still regarded as the stigma of certification. With the advance of knowledge of mental disorder this method of treatment is bound to secure a wider field of application than it has yet attained. In the admissions to Ballinasloe during the year under review the principal causes of insanity assigned were heredity in forty-eight cases, congenital mental defect in fifteen, puberty and adolescence in twenty-four, senility in twelve, mental stress, sudden or prolonged, in twenty-two, lesions of the brain and epilepsy in six, and disorders of gastro-intestinal system in fifteen. In thirty of the cases no principal factor could be ascertained. Dr. D. L. Kelly, inspector of mental hospitals, in the course of his report, mentioned that the general health of the patients at Ballinasloe was good; the number confined to bed was not unduly high. Seclusion was scarcely ever resorted to, but one patient had constantly to be restrained by the jacket for violence and continual resistance. He saw all the patients, paying special attention to the recent admissions; they appeared suitable cases for treatment. Some patients with whom he conversed spoke highly of their food and of their treatment generally; they appeared to be contented and comfortable. The appearance presented by the male patients was creditable to the staff. They were dressed in good materials; their clothing was sound, clean, and tidy, and their boots were polished. Indoors, the non-workers should in all cases be provided with slippers or unnailed boots. The female patients were, as usual, extremely neat and tidy. A great variety in the design of their attire was allowed, and they used their own taste in making such articles of personal dress as crochet collars, etc. This practice was to be approved of. Every endeavour was made to find employment for the patients. The men were principally engaged on farm work and at general tidying up round the institution; some worked as tailors, bakers, stokers, etc. The women were to be found at work in all divisions, sewing, knitting, rug-making, and repair and fancy work; a large number found employment in the laundry and the kitchen. The work turned out in the laundry was highly satisfactory, and the patients worked under favourable conditions.

Proposed Home for Defective Children in Belfast.

A report of a deputation from the Belfast guardians to the Ministry of Home Affairs for Northern Ireland regarding the provision of a central home for afflicted children was presented at a recent meeting of the Belfast guardians. Miss Gaffikin (the report stated), speaking for the deputation, said that their object was to impress upon the Ministry the desirability of providing one central home for defective children, whether educable or non-educable. The board of guardians would have no objection to adult mental defectives being received in the same home. Miss Gaffikin also stated that the guardians believed that the establishment of a central home was desirable on the ground of economy and of efficiency, and that it would not be in the interests of the public or of the children that the home should be carried on under the Poor Law. The home contemplated should be for the whole of Northern Ireland. The guardians expressed their willingness to co-operate in any scheme that might be put forward for running the proposed institution. Major Harris, secretary, Ministry of Home Affairs, pointed out that about 500 children had to be provided for. The deputation assured the Ministry that the guardians were prepared to share the responsibility for the cost, provided that the education authority would be responsible for educable children of school age. Major Harris later stated that the whole matter would receive careful consideration, but that it could not be promised that steps would be taken immediately.

Sunshine Home, Stillorgan.

The annual meeting of the Sunshine Home, Stillorgan, was held recently, when Sir William Wheeler presided; the Governor-General was present. The annual report stated that during the year thirty-one children were discharged cured, this number, an increase of thirteen over that of the previous year, bringing the total of cured cases to seventy-six; three were improved. The number of cases admitted during the year was forty-six, and the number undischarged on February 28th was twenty-four. There was accommodation for twenty-four children, which, however, was far from adequate, and the committee looked forward to the time when it could deal with cases of rickets as they arose. At present the most urgent cases were admitted at the first opportunity; less urgent cases had to be kept waiting owing to lack of room, with the result that the children became worse and on admission were incurable. The committee, therefore, appealed most urgently for funds to build, equip, and endow an additional ward to accommodate at least twelve children; their greatest need was more annual subscribers.

India.

Organization of Medical Research in India.

IN an article on the organization of medical research in India, published in the *British Medical Journal* of December 1st, 1928 (p. 1001), some account was given of the findings and recommendations of the committee which went out to India in the winter of 1927–28, with Sir Walter Fletcher as chairman, to study this problem. After considering the matter in all its bearings, the Fletcher Committee found at Dehra Dun an appropriate site for the Central Medical Research Institute. It is understood that a number of copies of the Fletcher Committee's Report were printed more than a year ago by order of the Government of India, but this document has not yet been issued for general circulation. The All-India Conference of Research Workers passed a resolution last winter urging the Government to publish the report forthwith, and a further indication of the growing demand for its publication is given in a printed communication lately received from the Bombay Medical Union. This consists of a long letter, dated May 16th, addressed by Dr. G. V. Deshmukh, President of the Union, to the Secretary of the Department of Education, Health, and Lands of the Government of India. The letter expresses regret "that though the Fletcher Committee signed their report in March, 1928, and that though the All-India Medical Congress held at Calcutta urged the circulation of this report last December, and that though my committee submitted a similar request last January, Government have not yet published this report and the evidence collected by the Fletcher Committee. Such an attitude on the part of the Government can only serve to increase the suspicion which the independent medical profession is driven to entertain as to the reasons why the medical advisers of Government are pressing for locating the Central Medical Research Institute at Dehra Dun and rushing this plan through."

Extension of Bombay Hospitals.

At the end of 1925 a Hospital Fund for Bombay was inaugurated under the presidency of Sir Leslie Wilson, with a view to supplementing the hospital accommodation in this city by 2,000 beds, and then to continue on the lines of King Edward's Hospital Fund for London. The annual report of this Fund for 1928 contains information about the active work that is being done in connexion with enlarging some of the existing hospitals. Thus, it is proposed to rebuild the Cowasjee Jehangir Ophthalmic Hospital, bringing its accommodation up to 100 beds. A gift from the trustees of the Sir Sassoon David Charity Trust will result in the provision of beds for Jewish patients in a special pavilion of the Jamsetji Jeejibhoy Hospital. A new hospital for children has been erected, this being the first new institution completed under the auspices of the Fund. The extension of certain other hospitals is under consideration, and the Fund is meeting half the cost of constructing a ward of 16 beds for venereal patients at the King Edward Memorial Hospital. On March 19th the Governor of Bombay laid the foundation stone of an extension to the Bai Yamunabai L. Nair Hospital, which is situated in a very thickly populated part of Bombay. The Governor in his speech, commented on the growth of this hospital and of the medical college attached to it, and expressed regret that it had been found impossible for

the Government to co-operate financially, owing to the heavy pressure of other commitments. This hospital was opened in May, 1925, and has about seventy beds. The numbers of both out-patients and in-patients are increasing rapidly, and the institution has recently been approved by the Bombay Presidency Nursing Association for the training of probationer nurses.

Progress of Medical Treatment in Nepal.

A short but interesting account of the history of scientific medicine in the secluded kingdom of Nepal is contributed by Dr. Indra Man, assistant surgeon to the Bir Hospital, Katmandu, Nepal, to the April issue of the *Indian Medical Record*; he traces its beginning to the period of the Indian Mutiny, when the Maharaja Jung Bahadur appointed a Dr. Khetra Mohan Mukherji as his palace physician. From the biography of this officer it appears that in those days the Maharaja made use also of the services of the English surgeon attached to the British Residency, but no public medical institution existed for the indigent and needy. The Maharaja's nephew, Bir Shum Sher, similarly employed the services of a family physician, and was the first to establish a hospital in Nepal—namely, the Bir Hospital at the capital, Katmandu, which comprised two separate buildings for the two sexes. Later another public hospital was opened at Birganj, a frontier town. More rapid progress followed in the provision of scientific medical assistance with the coming into power of the present prime minister, the Maharaja Chandra Shum Sher, who established the Sri B. Chandra Loke Hospital at Bhadgaon, a large town six miles from the capital. He next provided a hospital at Bhimphedi, and later decreed that there should be one hospital in each district, so that there are now more than two dozen hospitals in operation in the kingdom. The prime minister has recently caused a military hospital to be constructed; in the current year he is arranging for the establishment of a dispensary at Patan, and a leper asylum at Firping, under a Bengali medical practitioner trained at the State expense in the Calcutta School of Tropical Medicine. The prime minister has also arranged for several Nepalese youths to receive a full course of medical education in British India, so that the staffing of these institutions may be secured. The Bir Hospital under his regime has been enlarged and its trained staff has been increased. Dr. Indra Man comments on the very considerable change with regard to scientific medical treatment which has occurred among the very conservative Nepalese in the course of the last fifty years. They were at first highly suspicious, and avoided the hospitals, but they are now responding to the commendable encouragement given by the Government and are coming freely for treatment. Education is being improved and knowledge about public health is spreading; one of the latest steps to be taken is the allocation of a sum of money for the construction of a sanatorium for tuberculosis.

Medical Journalism in South India.

As previously mentioned in these columns, the monthly medical journal known as *The Antiseptic* recently completed twenty-five years of existence, having been founded by Dr. U. Rama Rau, with the late Dr. T. M. Nair as its first editor. Dr. Nair continued as editor until his death in 1919. The April issue of this periodical takes the form of a silver jubilee number, and Dr. U. Rama Rau, the present editor, contributes an account of its history, with especial reference to the interest that has been taken in the welfare of assistant medical officers. At its inception there was no considerable scientific medical journal in South India, and, consequently, it carried a heavy load of responsibility as regards the publication of medical research and the championing of various causes; one of the first of these was a defence of vaccination against an attack based on a case of death due to the subsequent infection by tetanus of a vaccination wound. Other matters of public interest with which *The Antiseptic* has concerned itself are: medical education in India and the establishment of a register; sanitary conditions in large towns; hospital abuse; and various medical problems in the Madras Presidency. The silver jubilee issue contains messages of congratulation from prominent medical practitioners in Great Britain as well as in India.

Correspondence.

X-RAY TREATMENT OF EXOPHTHALMIC GOITRE.

SIR,—To those who lightly skim through the *Journal* the argument of Dr. Charles S. D. Don (June 22nd, p. 1103) in his attempt to evaluate statistically x-ray treatment and operation in exophthalmic goitre may appear convincing. To those, however, who read between the lines I am afraid that some of the abuses as well as the uses of statistics are illustrated: for his material is limited to twenty-five cases of each series, all the factors are not given or analysed, and his results are not compared critically with those of others in the same field.

Thus the patients for whom operation was considered were put to bed, and iodine was administered till the basal metabolic rate had come down to about +30 per cent. If after three weeks the rate remained above 30 per cent. the case was regarded as inoperable. Are we to infer that x-ray treatment was tried in these rejected cases?

If the x-ray series of cases (whether their severity was equivalent to that of the operable or not) were treated as *out*-patients, and without the advantage of iodine administration (no data are given on these points), these factors alone would render them not truly comparable with the operated on series; but in addition, compared with the doses advocated by most radiologists, too small x-ray doses appear to have been given. "A quarter of an erythema dose" is considered by some to be a "stimulation" dose: in any case, however useful such a dose may prove at the beginning of treatment where often-repeated doses may be given, it seems an inadequate dose for the later widely spaced treatments. Further, in Dr. Don's data we are not told if the x rays were applied only from the front in one area, or if from each side; nor are we told if the thymus was irradiated as well as the thyroid, though this is of considerable importance.

Dr. Don says that "little has been published in this country on x-ray therapy," but A. E. Barclay[1] has shown in 300 private cases lately about 90 per cent. success, and I[2] have shown out of 107 cases an 82 per cent. success with x-ray treatment. Barclay's dose was a third of an erythema dose from each side of the neck, including the thymus area, given twice a week at first, later weekly, and at longer intervals. (Filter 2 mm. Al.) The dosage I had used was "one-half to two-thirds of the dose which will produce an erythema on the sensitive skin of the exophthalmic patient." If the Sabouraud pastille be used this is one-half to two-thirds of a pastille with 1 mm. Al filter, 120 or more kv.; or with 3 mm. Al one to one and one-third of a pastille. With the Holzknecht scale (as given by Lenk) this is from 2½ to 5 H.

It is convenient to group patients into several grades as regards chronicity, mildness, size and hardness of the thyroid, and whether other conditions are satisfactory, and to treat accordingly. Patients here, more than with many other disabilities, need to be individualized; and routine treatments will meet with only a small measure of success. If adequate x-ray dosage be given, x-ray treatment gives results second to none.—I am, etc.,

London, W.1, June 22nd. J. H. DOUGLAS WEBSTER.

TUBERCULOUS ADENITIS.

SIR,—I was much interested in Mr. Gordon Bruce's article on enlarged cervical glands in the *Journal* of June 8th (p. 1030), as during my service as civil surgeon in the Punjab I had a great deal of clinical experience in this subject. I can now only state from memory, but during the last four years I was in Amritsar I performed at least 400 operations for this condition.

This disease is very common in the Punjab; not only does one get cervical adenitis, generally of both sides, but also tuberculous axillary and inguinal glands. Tuberculosis of all kinds is very prevalent in the Punjab, but whereas surgical tuberculosis is found both in villagers and town-dwellers, tuberculosis of the lungs is confined entirely to

[1] A. E. Barclay and F. M. Fellows: *Lancet*, March 30th, 1929, p. 633.
[2] J. H. Douglas Webster: *British Medical Journal*, June 15th, 1929, p. 965.

the dwellers of the crowded and insanitary towns, and in my experience is invariably fatal. Surgical tuberculosis, however, especially among the villagers, is quite amenable to active treatment, and of these conditions the treatment of tuberculous adenitis by excision is eminently satisfactory—in fact, it is the only treatment worth considering. The results, even in very extensive disease—and the cases one gets are often far advanced—are excellent. Of course, one cannot follow them up in India as Mr. Bruce can in this country, but the immediate results are good. I certainly think that patients would not come to one for treatment if the permanent results were not also good; for the Punjabi peasant is no fool, and although he has not much faith in European medicine he appreciates to the full the benefits of surgery.

I can only remember two fatal results during my service. One was from delayed chloroform poisoning in a girl of 6, who had both sides of the neck extensively involved. I was tempted to do both sides at one sitting, and she died of delayed chloroform poisoning two days later. The other case—one of my earlier ones, which was due perhaps to inexperience—happened in 1908. This patient was a fine young Punjabi Mohammedan, the son of a leading man in the district, who had enormous masses of glands on both sides of the neck. I excised those on the right side successfully, and he returned in good health two months afterwards to have the other side operated on. I had nearly finished when I discovered a few glands left deep down in the subclavicular triangle. I was pulling on what I thought was an adhesion when there was a gush of venous blood, and I found that I had torn one of the communicating veins from the internal jugular. Eventually I had to tie the jugular in two places. The wound healed satisfactorily, but the patient returned two months later with advanced tuberculosis of the lungs, from which he died. I have no doubt that owing to this unfortunate accident a systemic infection took place. After this I never cut through any adhesion without first clamping it.

I have never done any injury to the nerves, and can confirm Mr. Bruce's opinion that the mass of glands around the spinal accessory should be split up. Also in all extensive cases the borders of the sterno-mastoid should be carefully defined before the deep dissection is proceeded with; this muscle forms a valuable landmark, and should never be injured. The most useful instrument for dissecting out the glands is a pair of blunt-pointed scissors curved on the flat; I never used the knife for this purpose, but removed the glands by a combination of leverage and snipping with the scissors. I learnt this originally from that great surgeon the late Mr. Jacobson, who taught me how to do the operation. His well-known dictum was to treat all tuberculous disease as malignant, and to remove it whenever possible.

A drainage tube should always be inserted for the first two days, as there is generally considerable oozing, specially when the adhesions are extensive. If this is not done healing will be delayed and suppuration may take place. It is unwise to use any of the various forms of gland forceps: they very rarely hold properly, and in most cases lead to rupture of a caseating gland and infection of the wound.—I am, etc.,

Streatham Park, S.W., June 17th. H. C. KEATES, M.D., B.S.Lond., Lieut.-Colonel I.M.S.(ret.).

CLASSIFICATION OF RHEUMATIC DISEASES.

SIR,—The letter by Dr. M. B. Ray, criticizing Dr. A. H. Douthwaite's nomenclature of these conditions, is really rather amusing, and shows the utter fog there is on the subject, for if Dr. Ray cannot follow Dr. Douthwaite I am sure Dr. Douthwaite cannot follow Dr. Ray.

At the discussion on chronic arthritis at the Royal Society of Medicine in November, 1923, and on other occasions, I have urged that the term "rheumatoid arthritis" be scrapped, for the following reasons:

1. It is used by some clinicians to include all forms of chronic arthritis, and not only arthritis, but fibrositis and such conditions as hallux rigidus and bunion.
2. It is used by others to signify all forms of infective periarthritis.
3. The general public have got hold of the term, which they associate with an incurable disease. How frequently one is asked in one's consulting room, "Have I got rheumatoid arthritis?" and patients are very much depressed if they are told they are suffering from rheumatoid disease when they are suffering from fibrositis or chronic villous arthritis—that is, climacteric arthritis.

The term "rheumatoid" must go. Let us carry on with the nomenclature of the Ministry of Pensions. Group C, Chronic Joint Changes, consists of four subgroups: No. 6, rheumatoid arthritis (infective periarthritis); No. 7, osteo-arthritis; No. 8, gout; No. 9, chronic joint changes unclassified. With these four subgroups one may have as many subdivisions as one likes—for instance, under No. 6, a subdivision for spondylosis rhizomelique, another for Still's disease, and yet a third for atrophic arthritis. Under No. 7, osteo-arthritis, one may have a subdivision for spondylitis deformans, and another for malum coxae senilis, and so on.

I have referred to atrophic arthritis. I believe that there is a special entity confined, as Strangeways also pointed out, to the female sex. It attacks young women at the commencement of the reproductive period. This is the type of case referred to by Dr. J. A. Glover and quoted by Dr. Ray, and I am glad to see that Dr. Douthwaite recognizes this variety also as distinct from infective arthritis, which is so commonly called rheumatoid. These cases are limited in number, and only represent about 9.6 per cent. of what is commonly called the rheumatoid group (infective arthritis and chronic villous arthritis). Chronic villous arthritis (or climacteric arthritis) I recognize as still another variety, which if not treated may tend to become osteo-arthritis, but never what is commonly called "rheumatoid." I am convinced that confusion in the nomenclature will continue until we get rid of the term "rheumatoid."—I am, etc.,

Harrogate, June 18th. G. L. KERR PRINGLE.

IMMUNIZATION BY TUBERCULIN.

SIR,—The great interest of the medical profession in tuberculin immunization is shown by the large number of letters I receive on the subject.

A full description of my method was published in the *British Medical Journal* of April 23rd, 1921, and I have nothing new to add to it. Metchnikoff wrote, in 1903: "In all the bacteriological institutes and laboratories search is being made for some vaccine or serum which will arrest a disease that in many cases Nature herself cures. But the results amount practically to nothing." We have reluctantly to admit that we are in much the same position to-day. In my judgement we should concentrate our activities more on the prevention of tuberculosis, and this can be accomplished by producing some active immunity in children who are associated with cases of open tuberculosis.

The method adopted by Calmette is scientifically sound, but it is open to objection on account of the possibility of reactivation of the living attenuated bovine bacilli in the body of a young child. Moreover, it is proved that immunity can be produced by dead bacilli, as is shown by the work of Petroff and others in the *Journal of Immunology* for March, 1929. The brilliant work of Sir Almroth Wright has given to the world an antityphoid vaccine which is prepared from dead bacilli of low virulence.

I would like to suggest to all tuberculosis officers and others engaged in this work the advisability of immunizing all children who are in association with cases of pulmonary tuberculosis. Two injections only are necessary, the proceeding is perfectly safe, and I have never observed any untoward symptoms. After a long experience, I am convinced that this is our best method of protecting the future generations of children against this deadly disease.—I am, etc.,

London, June 22nd. NATHAN RAW.

GAS-OXYGEN ANAESTHESIA.

SIR,—In your issue of June 15th (p. 1099) appears a letter from Mr. E. J. Chambers of Doncaster. It would be of interest to know the form of gas-oxygen apparatus he uses. It would seem strange, if the apparatus devised by Mr. Boyle had done so much harm, that it should still be used and taught in the leading teaching hospitals in

London. Further, Mr. Chambers states that to call it a gas-oxygen apparatus is a misnomer, as it is really an ether apparatus for use in conjunction with gas.

I have always understood that the very foundation principles of the apparatus were that it should be used for gas and oxygen, and the ether employed merely as an occasional accessory anaesthetic when, and if, necessary. I submit that when patients have had gas-oxygen anaesthesia administered by means of Boyle's apparatus, combined with so little accessory ether as to be conscious when leaving the theatre, those patients can be described for all practical purposes to have had a gas-oxygen anaesthetic.

I entirely agree with Mr. Chambers in his plea for the more generalized use of gas-oxygen anaesthesia, not only for the comfort of the patient in obviating post-anaesthetic vomiting, but also in those cases where the inhibition of other anaesthetics would probably tend to retard recovery. It is hard to agree, however, with his suggestion that gas and oxygen should be used for all cases of surgical work, and for all types of patient. Surely the old maxim, "Routine anaesthesia is bad anaesthesia," is as true now as ever.

In conclusion, I venture to suggest that the best results from the use of Boyle's apparatus can only be attained by the following: (1) careful selection of cases; (2) the greatest care in maintaining the perfect working order of apparatus; (3) meticulous attention to detail in administration.—I am, etc.,

London, W.1, June 13th. T. DE LACY WALKER.

MEDICAL ATTENDANCE ON PATIENTS IN PRIVATE WARDS.

SIR,—Will you kindly afford me space in which to describe what my Division considers to be a retrograde step in the Hospital Policy of the British Medical Association, on the treatment of private patients in private wards of hospitals. It should be remembered that these patients will be required to pay the full cost of maintenance, with medical, surgical, and specialist fees in addition. Hitherto the policy of the Association has granted to these people complete freedom of choice of medical attendant. The new policy deprives them of this right, and compels them to be under the care of the visiting staff of the hospital. In other words, the patient pays the piper and the hospital calls the tune.

The old procedure preserved the ordinary relationship of family practitioner to consultant, a relationship which is the result of long experience, and is in the best interests of the patient and the profession. The practitioner attended his own patient and was able to suggest the consultant best suited to the condition. The prestige of the practitioner was maintained and the confidence of his patient preserved. This is the present policy of the Association, and the proposed change involves the complete inversion of this relationship.

It is now suggested that the patient shall be under the "responsible care" of a member of the visiting staff. The private doctor of the patient is relegated to a very inferior position where he "should have such share of responsibility and treatment of the patient as may be agreed upon." A very slight acquaintance with the psychology of the honorary, resident, and nursing staffs of hospitals will enable one to appreciate that such a condition of things is impossible. In actual practice the family practitioner will be "frozen out," and his position and prestige in the eyes of his patient will be seriously damaged. We cannot imagine that any self-respecting family practitioner would tolerate being placed in such an invidious position.

We are faced with the two conflicting interests: the interest of the family practitioner in his patient, and the interest of the consultant in the work of the hospital. The present policy preserves that of the family doctor primarily, while the proposed new policy preserves that of the hospital consultant primarily. In Sunderland we have settled this problem by a compromise on lines which will preserve the interests of both. We have opened private wards in which patients are allowed to be under the responsible care of their own family doctor. If, however, any consultant is required, or any special work is to be done, the family doctor must call in a member of the visiting staff. This preserves the old relation of family doctor and consultant, maintains the prestige of the doctor in the eyes of his patient, and secures for the visiting staff their interest in the work of the hospital. We maintain that it is only along the lines of preserving the normal relationship of family practitioner to consultant that any co-operation is possible.

In order that the profession may have an opportunity for expressing its opinion on this question, this Division has put the following amendment on the agenda for the Annual Representative Meeting.

> "That the suggested new para. 29 (*a*) be deleted and the following paragraph be inserted:
>
> "(*a*) if the hospital has a resident medical officer or officers, and also a visiting staff which is ordinarily responsible for the care of all the patients in the public wards, the patient should be allowed to select any available registered medical practitioner as his attendant, but, if the treatment of the patient at any time involves the application of special skill or experience, then the practitioner undertaking the treatment should be a member of the visiting staff of the hospital."

The object of this letter is to stimulate a little interest in the subject, and to give representatives time to think the matter over before the meeting.—I am, etc.,

Sunderland, June 17th. R. H. DIX, Honorary Secretary, Sunderland Division.

A COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS.

SIR,—A great deal has been heard lately on the subject of a College of Obstetricians and Gynaecologists. The main argument advanced for this innovation is that the present standard of teaching and practice in obstetrics and gynaecology requires raising.

Surely this can equally well be achieved by (1) the granting of a diploma for obstetrics, (2) having a special examination for a fellowship in gynaecology, and (3) having a permanent representative of obstetrics and gynaecology on the committee of management of the Conjoint Board.

Although specialization is a necessity in the various branches of surgery, it is difficult to see why it should be necessary to have separate colleges. If we have a college for gynaecology, why not one for proctology, urology, etc.? Personally, I am quite content to be a surgeon.—I am, etc.,

London, W.1, June 18th. MALCOLM DONALDSON.

SPA TREATMENT.

SIR,—In to-day's issue of the *Journal* Dr. Geoffrey Holmes reverts to the question of a definition of spa treatment.

The definition which was proposed at the Annual Representative Meeting at Cardiff was not accepted. It certainly only approximates, as Dr. Geoffrey Holmes states, to the definition which he quotes, as it contains the following important addendum, which was not in the definition proposed by Dr. Dain. "However great the importance of auxiliary treatments may be, drinking and bathing in fresh natural mineral waters form the basis of all genuine spa treatment." Considerable alterations have now been made in the draft, but the definition which is put forward for consideration appears to be cumbersome and unlikely to meet with general approval.

What is the necessity at the present time for a definition of forms of treatment which are difficult to define when the word "spa" is attached to them? The only reason mentioned in the letter of Dr. Geoffrey Holmes appears to be in connexion with the proposed spa treatment for insured persons. If this is the reason, it is pertinent to inquire, if definite arrangements are made for spa treatment for insured persons, whether such treatments will only be recognized at places agreed upon by the Spa Practitioners Group of the British Medical Association and the insurance societies. If so, I consider that in the present state of our knowledge of "natural waters of

distinctive therapeutic value" the decision would be unfortunate. It is admitted that "all water properly applied has therapeutic value"; but how, in a definition such as is now proposed, can a final distinction be made between waters which have "a therapeutic value" and those having "distinctive therapeutic value"?

Does the statement "drinking and bathing in such fresh natural waters form the basis of all genuine spa treatment" mean that it is necessary both to drink natural water and to bathe in the natural water in order to have spa treatment; if so, what is the position of a recognized spa which does not possess a natural mineral drinking water? Further, has the time come for the insertion of the word "genuine" into a medical definition?

The various schemes which have been under consideration for spa treatment for insured persons deal mainly with rheumatic conditions. Evidence in reference thereto was given before the Royal Commission of National Health Insurance in 1925, and in a "Note on the treatment of chronic rheumatism in insured persons" attached to the evidence given on July 14th, 1925, it is concluded that three-tenths of sufferers from chronic rheumatism would be benefited by medicinal waters in a spa hospital, whereas the other seven-tenths would not require medicinal waters, but could best be treated by external methods in clinics. Even if this is in the main accurate, and I think it is, these external methods consist of baths, douches, packs, electricity, light, heat, massage, and exercises, which comprise a large percentage of all spa treatments, and are available at many places, other than a recognized spa.

Spa treatments comprise the drinking of water and its use for baths and douches, along with physical treatments, diet, and environment, which includes climate, air, amusement, and social amenities. It is only the use of its natural water for drinking, baths, and douches, and its climate, that are peculiar to a spa; but excluding the use of its natural water for drinking, there is no definite evidence to prove that the external use of its natural water for baths and douches is in any way specific for the treatment of chronic rheumatism, and it has been pointed out that the claims made by all British spas are extremely alike, similar conditions being treated with very dissimilar waters with apparently equal benefit. No one with experience of spa treatments will cavil at the statement that they are probably the most beneficial methods of treatment in chronic rheumatic diseases. As all these spa treatments, except the natural mineral water, which is only apparently required in three-tenths of the cases, are available at many places, it is, I consider, detrimental to progress to circumscribe the term "spa treatment" with a contentious definition.—I am, etc.,

Torquay, June 22nd. K. R. COLLIS HALLOWES.

DR. C. POWELL WHITE: AN APPEAL.

SIR,—We are writing to appeal for funds on behalf of Dr. Charles Powell White, who, as the result of a severe cerebral haemorrhage, is unable to maintain himself, his wife, and family. This position is largely due to the fact that he has devoted his life to cancer research for the benefit of the general public and the world at large. By his writings and works he has obtained an international reputation as an authority on cancer problems.

For many years he has given all his time to cancer research in Manchester for the Christie Hospital for Cancer, the Pilkington Cancer Research Fund, the University of Manchester, and the Manchester Committee on Cancer. In each of these appointments he has received only a nominal salary for a man of his eminence, and not being on the teaching staff of a university he is not eligible for any pension. Possessing the highest medical and surgical qualifications, he could have commanded a much more lucrative position in the active practice of his profession, but he preferred to use his wide knowledge of mathematics, chemistry, physics, and general natural sciences for the study of cancer, its treatment and prevention.

Dr. Powell White's work has a soundness of character and a breadth of application still only incompletely recognized. Thus it is to him that we owe the present classification of tumours—a classification which has been very widely adopted by pathologists. His other work is less generally known, since it is more mathematical and abstruse, but from it emerges the fact that certain analyses suggest that in persons suffering from malignant disease changes occur which show that some fundamental metabolic disturbance is present in this condition, and that these changes are greater than can be accounted for by the growth itself. He possesses a grip of the problem of malignant disease shared by few.

Dr. White has conducted long and tedious analyses on cancer problems which would have daunted many by their extent and difficulty, and it was in his laboratory that he was taken ill. He has a world-wide reputation as an authority on cancer, and has communicated articles on the subject to your columns. We hope that many of your readers to whom we cannot send the special letter of appeal will be able to contribute towards the fund. Subscriptions should be sent to Mr. Wilson Hey, 16, St. John Street, Manchester.—We are, etc.,

WALTER H. MOBERLY,
Vice-Chancellor, University of Manchester.
FREDERICK P. NATHAN,
Chairman, Christie Pavilion and Home.
R. VEITCH CLARK,
Chairman, Manchester Committee on Cancer.

Manchester, June 19th.

MENTAL HYGIENE.

SIR,—I was glad to see in this week's *Journal* (p. 1140) the earnest appeal by Sir Maurice Craig to the public health authorities to provide facilities for psychological treatment for the poorer classes. His letter receives additional emphasis from the striking report of the success of the Cassel Hospital, Swaylands, which is epitomized in the same issue (p. 1133). Also, on page 1131 there is a review of Dr. Newsholme's iconoclastic book on health, disease, and integration. The coincidence of these three items encourages me in the hope that we are at last on the eve of doing something to stop up this leak, which is draining the vital forces of the community.—I am, etc.,

Birmingham, June 23rd. R. MACDONALD LADELL.

PUERPERAL SEPSIS.

SIR,—Dr. Colin Craig's letter on puerperal sepsis (June 8th, p. 1057) should be of considerable service. That puerperal sepsis is produced *from* within I am fully convinced, as this offers the only explanation for a large number of cases that are seen in general practice. Although I have given up midwifery practice for a number of years, I was struck, as Dr. Craig has been, by the number of cases of puerperal sepsis I met with for which I could not find a satisfactory explanation.

In this connexion I undertook the task of examining over 300 urines of females—chemically, microscopically, and bacteriologically. I submitted the result to a meeting of the Edinburgh Obstetrical Society, and it was published in the society's *Transactions* in 1906. As it substantiates Dr. Craig's contention, it might be of interest if I briefly summarize my findings.

1. Out of every four urines examined, one contained pus and bacteria.

2. The bacteria *found were Bacillus coli*, staphylococci, streptococci, gonococci, pseudo-diphtheritic bacilli, and other rod-shaped bacilli which, at the time, I could not place.

3. Pyuria in its mildest form should be regarded as a septic condition.

4. Leucorrhoea existing with a pyuria should be regarded as a septic condition.

5. The urine of all pregnant women should be as carefully examined for pus as for albumin, as a puerperal fever may be caused by infection from the urethra.

6. The presence of the colon bacillus in so many urines and in vaginal discharges makes the probability almost a certainty that infection was from the anus.

There are other cases, however, to which I referred, that might be infected directly through the blood stream, as Dr.

Craig suggests. Dr. John Campbell of Belfast had a most interesting article in the *British Medical Journal* of September 23rd, 1905, entitled "The influence of the presence of pus in the female urethra on the progress of gynaecological and obstetrical cases," and this has a direct bearing on Dr. Craig's observations.

The articles I have mentioned appear as ancient history, but it is surprising that puerperal sepsis, as Dr. Craig points out, is still regarded as due to the sins of the general practitioner. What apparently is required is a bureau for assorting and assessing the numerous investigations that have been carried out, at considerable labour, for the furtherance of knowledge, and which are allowed to sink into oblivion.—I am, etc.,

Edinburgh, June 12th. FREDERICK PORTER.

PRURITUS ANI.

SIR,—The frequency of pruritus ani and the ease with which it is benefited by appropriate treatment makes me doubt if the causation is so obscure, or the treatment necessarily so drastic, as that suggested in Mr. Gabriel's valuable paper (June 15th, p. 1070). The doubt already assailed me twenty to twenty-five years ago, when, as a frequent visitor to St. Mark's Hospital, I heard these theories and noted the effects of treatment there. The common feature in all cases is a perianal dermatitis, and the cause, I believe, a soiling of the perianal skin after defaecation by imperfect toilet methods. Detailed attention to this factor will nearly always give relief, and at the request of medical sufferers, who had been so relieved, I published a note thereon in the *Journal* a few years ago. The anal fissure also usually yields readily to simple treatment, but confessedly I have not a wide experience of chronic cases.—I am, etc.,

Paignton, June 15th. ERNEST WARD.

Obituary.

DR. ERNEST MORTON WYCHE died on June 13th at his residence in Nottingham in his sixtieth year, after a very brief illness. He was educated at Oundle School and the London Hospital, and obtained the M.R.C.S. and L.R.C.P. diplomas in 1893. After holding various appointments, he took the D.P.H.Lond. in 1898. For eighteen months he served as surgeon on a cable-laying ship, and then went into general practice in Cambridgeshire. On the inception of the school medical service in 1908 he was appointed to South Essex, where he had to do pioneer work in a large rural area. In August, 1914, he was appointed senior school medical officer to the city of Nottingham. The service was still in its infancy, and Dr. Wyche devoted himself to extension of the work as rapidly as the difficulties of the war allowed. Careful not to encroach on the work of the general practitioner and the hospitals, he attempted to supply those forms of treatment which were otherwise difficult to secure. The expansion of the service after the war soon brought about the necessity for a bigger central clinic, and he was instructed to work with the city architect in adapting a large building to his needs. The new clinic was opened in November, 1926, and is a lasting testimony to his foresight and ingenuity. He was justly proud of the tonsil and adenoid theatre and wards, and of the dental department. He followed closely scientific research on the health of young people, and he was always to the forefront in securing for the children of Nottingham the benefits of new advances. A keen enthusiast on the importance of fresh air, he was instrumental in establishing one of the finest open-air schools in the country. He was quick to realize the value of ultra-violet therapy for the ailing child, and his committee was one of the first to install this treatment. His detailed organizing ability applied to every aspect of school medical work was especially shown in his scheme for the ascertainment of mentally defective and dull and backward children. A man who avoided personal publicity, he was loved by all who came in contact with him, from the youngest of his patients to the highest officials in the town. The members of his staff feel his death most keenly. They have lost not only a respected chief, but also a sympathetic friend. He leaves a widow, a son, and a daughter.

DR. THOMAS SIMMONS MORLEY died at Mill Hill on June 20th, at the age of 76. He was just beginning to get about after a long illness involving a series of operations, when infection suddenly lighted up in the kidneys, and he rapidly succumbed. He received his medical education at Guy's Hospital, taking the M.B. degree of London University and the M.R.C.S.Eng. diploma in 1874, and proceeding M.D. in 1878. After holding the appointments of obstetric resident at Guy's, and clinical assistant at Great Ormond Street, he joined his father in a practice at Barton-on-Humber, which the latter had established in 1837. In 1886, when his father died, Dr. Thomas Morley was left in sole charge of this extensive town and country practice. He was Poor Law medical officer, public vaccinator, and surgeon to the Admiralty, but he relinquished the former duties many years ago owing to the pressure of work. The difficulties and trials of a country practice, particularly in the days before the advent of the motor car, are only known to those who have experienced them, and he had little leisure. Nevertheless he kept wonderfully up to date, and his spare time was given to medical and general reading. He was a member of the Barton Urban District Council for some years, and had held office as president of the East Yorks and North Lines Branch of the British Medical Association, of which he was always an active member. By early training and lifelong conviction he was an ardent lover of civil and religious liberty, and served with great diligence the Church, with which he had been united in early life. He was an enthusiastic Liberal of the Gladstonian school, and was a well-known figure on the political platforms of that period. In the latter years of his work Dr. Thomas Morley was assisted by his sons, but owing to the war he was again single-handed, and when the influenza epidemic of 1918 broke out he worked day and night without falling a victim to this disease, which had nearly killed him in 1890. He retired at the end of 1921, and went to live at Bournemouth, but continued to take a great interest in the activities of the Association and in modern advances in the science to which his life had been devoted. He is survived by a widow, and three sons who are all engaged in the practice of medicine.

DR. BEPIN BEHARI GHOSH, who died on May 23rd, after a short illness, at the age of 72, was one of the oldest members of the British Medical Association in Calcutta. After a brilliant career at the Calcutta Medical College, he entered the service of the Government of India as an assistant surgeon, but after a little while relinquished his post to establish himself in private practice. During the latter years of his life he occupied a prominent position in Calcutta as consulting physician, and was vice-president of the Calcutta Medical Club. A conscientious public servant, he founded an English school in Antpur, his native village, was a trustee of the Shambazar A.V. School, and a member of the executive committee of the Calcutta Orphanage and of the district charitable society.

The death occurred on June 12th, at New Galloway, after a long illness, of JOHN COWAN, M.B. (Edin.), a well-known figure in the public life of the Stewartry of Kirkcudbright. Dr. Cowan had been provost of the royal burgh of New Galloway for nearly thirty years, and had figured prominently in county administration for nearly forty years, being a member of the county committee of the licensing court, and a justice of the peace for the county. As medical practitioner for the Glenkens he was widely known and highly esteemed. He was also prominently identified with Masonic activities, and was for many years worshipful master of the local lodge for many years. He was in his sixty-fourth year, and is survived by Mrs. Cowan and one son, Dr. J. G. Cowan, who was associated with his father in the practice.

We much regret to record the tragic death of Miss Barbara Edith May Morris, as the result of a shooting accident, at the early age of 33 years. She was the daughter of Mr. E. W. Morris, C.B.E., house governor of the London Hospital, and received her medical education at St. Mary's Hospital Medical School. She took the diplomas of the English Conjoint Board in 1927, but a breakdown in health prevented her from starting in practice, and she was convalescing at Bingham Park after a serious operation when the fatal accident occurred on June 17th.

The death occurred, on June 20th, of Dr. ARCHIBALD MACMILLAN, at his residence, Croft Park, Blantyre, Lanarkshire. Dr. Macmillan took the qualifications of L.R.C.P., L.R.C.S.Ed., L.R.F.P.S.Glas., with honours, in 1901, and the D.P.H.Camb. in 1913. He saw considerable war service, and had the distinction of O.B.E. conferred on him. At the conclusion of the war he took over the extensive practice in Blantyre formerly held by the late Dr. William Grant. Dr. Macmillan leaves a widow, one son, and two daughters.

The following well-known foreign medical practitioners have recently died: Professor HIROTA, the first occupant of the chair of paediatrics at the Imperial University of Tokyo, founder of the Japanese Paediatric Society, of which he was president for thirty-three years, and organizer of many maternal and child welfare foundations, aged 70; Professor FRANK KEIBEL, director of the Sicard Anatomical Institute, and professor of histology in Berlin University, aged 68; and Dr. SAMUEL S. ADAMS, an eminent paediatrist of Washington, aged 75.

The Services.

INDIAN MEDICAL SERVICE.

ANNUAL DINNER.

THE annual London dinner of the Indian Medical Service was held at the Trocadero Restaurant on June 19th, with Lieut.-Colonel D. G. Crawford in the chair. The guests were Dr. N. G. Horner, Editor of the *British Medical Journal*, and Dr. E. C. Morland of the *Lancet*.

THE CHAIRMAN, in proposing the toast of "The Indian Medical Service," welcomed several of the latest recruits to the service who had just finished their probationary course, and who would soon take up their duties in India. While few could hope to reach the success attained by such men as Sir John McNeill and Sir Joseph Fayrer in political and administrative work, or to write their names high on the scroll of fame, as great scientific discoverers, as two of his own contemporaries had done, he thought that the Indian Medical Service still offered a good career, with interesting work, fair pay, and a fair pension at the end. Most of those who, like himself, had passed the allotted span of man's life, would be glad to begin their careers over again. "If I had to live life over, I would live that life again." He also wished to welcome among them the representatives of the *British Medical Journal* and the *Lancet*. All the seniors, at least, in the service must know what the British Medical Association and the two great medical journals had done for the public medical services, not only for the I.M.S., but also for the R.A.M.C. and the medical department of the Navy. Whenever the medical services had been suffering from reasonable grievances, or had been in a tight place and had asked for help and support from the civil profession, the help and support required had been given fully, freely, and ungrudgingly by the Association, and by the two great medical journals.

It was now a little over three hundred years since the East India Company opened their first settlement in India, at Surat in 1609. Their factory had as staff a few senior officers, called merchants; a few juniors, starting as clerks, or, as they were then called, writers; also a chaplain and a chirurgeon. And the Indian Medical Service started, one strong! For defence they had a handful of Goanese peons. That small body of merchants and writers had grown into the great Civil Service of India, that half company of Goanese peons had expanded into the Indian army, the finest army in the world. And that Civil Service and that army, with the I.M.S. sharing in their work as a branch of the army, had built up the Indian Empire, and had given to India peace and prosperity in the place of anarchy and misery.

In 1763, just about halfway between the first beginning and the present time, the Indian Government organized their scattered medical officers, who by this time amounted to well over a hundred in number, into a graded service, with regular fixed ranks and pay: the Indian Medical Service, with its three establishments—Bengal, Madras, and Bombay. These medical officers were not commissioned officers; only the surgeon-general held a commission—the rest were warrant officers. Lord Cornwallis gave commissions to all medical officers, from the date of their appointment, in 1788. Eight years later, in 1796, furlough and pension were granted. Up to that year an officer who wished to go home had to resign the service, being allowed, as a rule, to resign, "with permission to return." The rates of furlough pay and pension granted in 1796 seemed nowadays absurdly small; but they were a great advance upon nothing at all.

Early in the history of the English in India the Company found it necessary to provide hospitals for their servants and other Europeans in the Presidency towns. Madras was the first, about 1664. Bombay followed suit, in 1670, and Calcutta in 1707. These hospitals, however, were for Europeans only, and practically for Government servants only, for the soldiers and sailors, who provided the majority of the patients, were all servants of Government. For the general public—for the Indian population—there was no medical provision at all. And when such provision was made it was chiefly due to members of the I.M.S. The first suggestion of a hospital for the Indian public seemed to have been made by Surgeon William Gordon of Madras, in 1787. There was no provision for the treatment of the Indian population in the *mofussil* before the nineteenth century. There were hospitals for the army—general hospitals at the headquarters of divisions and brigades; regimental hospitals in the smaller cantonments—where the soldiers received medical treatment fairly up to the standard of the time. But these hospitals were for soldiers only. The first native hospitals in the *mofussil* were opened about 1804, at Dakka, Patna, Benares, and Murshidabad. But most of the hospitals and dispensaries in civil stations were started in the thirties and forties of the last century; the majority owed their origin to the energy of individual civil surgeons, who gave their time, their skill, and their money to found hospitals in their stations, collected subscriptions and got grants of public money to maintain these hospitals, and also themselves trained the necessary assistants, native doctors and compounders. The Calcutta Medical College was founded in 1835, and opened in that year with eight young Hindus as first-year students. They must have been courageous youths, these eight. Not only was the handling of dead bodies, in dissection, clean against the principles of their caste, but what must have been the condition of the bodies provided for dissection!

Medicine, surgery, sanitation, medical education, medical research, might all be considered as regular professional duties—all in the day's work for a medical officer. Most of the work done in natural science in India has been done by members of the I.M.S. To mention only a few names—in botany, Roxburgh, Wallich, and, in our own days, King and Prain; in geology, Falconer; in zoology, Alcock. Even the natural sciences were, until the specialization of the last half-century, part of the regular work of medical men. But members of the I.M.S. had gone far beyond the limits of regular professional work, and had had a large part in organizing and developing these great auxiliary services which now shared in the administration of India. Alexander Gibson of Bombay and Hugh Cleghorn of Madras were two of the first conservators of forests. James Ranken and George Paton were among the first postmasters-general. And the electric telegraph was introduced into India, and put into working order, by Sir William O'Shaughnessy-Brooke of Calcutta. It was unlikely that the I.M.S. would ever again furnish the British Foreign Office with an ambassador, or that it would again provide a Governor for Bengal; but the path of scientific research remained open.

In proposing the toast of "The Chairman," Sir LEONARD ROGERS said he supposed that most of the senior officers, at any rate, were of the opinion that the chief glory of the Indian Medical Service lay in the past, so it was appropriate that their chairman should be the historian of the service. However, he himself was not one of the pessimists who thought there was no future for the I.M.S., and he wished to take this opportunity of pointing out that under the reorganization scheme sanctioned last year the I.M.S. had obtained most solid advantages, which placed it in a more favourable position than any other service in India. Thanks to the necessity of providing a military reserve, which could not be altered without the sanction of the British War Office, the I.M.S. was now guaranteed the all-essential framework of two-thirds British officers in both the military and civil departments, against a maximum of 50 per cent. in any other service. In saying this, the last thing he wished to do was to disparage in any way the Indian members of the I.M.S., for he maintained that they were also recruiting the pick of the younger Indian medical men, many of whom had taken British qualifications, and thus had had the opportunity to absorb something of the spirit of the British race and of British medicine. Moreover, the pay of junior officers was now just three times the old rate, and that, too, with the sterling value of the rupee nearly 50 per cent. over that of his early days in India, with the additional advantages of study leave, passages for officers and their families, and better conditions of work for the military side in well-equipped station hospitals, in the closest harmony with the officers of the R.A.M.C. Another concession of vital importance, the necessity for which he had urged before the Lovett Committee some years ago, was the right of retirement after six years' service, with a gratuity of £1,000, and after twelve years with £2,500, to enable any officer dissatisfied with his service prospects to buy a practice at home. This concession also allowed the popularity or otherwise of the service to be gauged. Out of about a score of officers who might have retired with the first bonus last year the only one who availed himself of the opportunity was a man who was allowed to take it as an act of grace; so these officers, who should best know where the shoe pinched, were clearly satisfied with their prospects. Turning to the civil side, the position last year was not so satisfactory in two respects, but thanks to the help of their old friends in the British Medical Association the Naval and Military Committee had once more come to their help, with the result that two all-important concessions would be announced in the *British Medical Journal* and in India in a few days' time.* After explaining the significance of these concessions, Sir Leonard Rogers turned to the subject of his toast, describing the chairman, Colonel Crawford, as "the erudite historian of our service, who devoted thirty years' labour among the dusty papers of the record departments in Calcutta and at the India Office to collecting the mass of facts regarding the early history of the medical services in India with which every one of the 1,064 pages of his monumental work bristles." When the service lost a great administrator it gained a unique historian, for Colonel Crawford had continued to devote many years of a well-earned rest to his studies on the history of the I.M.S.

The following is a list of the officers present at the dinner:

Major-Generals: A. A. Gibbs, K.H.P., G. F. A. Harris, C.S.I., A. Hewson, C.I.E., Sir Leonard Rogers, C.I.E., F.R.S.

Colonels: J. Anderson, C.I.E., R. F. Baird, C. M. Goodbody, C.I.E., D.S.O., T. A. Granger, C.M.G., C. R. M. Green, G. Hutcheson, J. J. Pratt, F. Wall, C.M.G., C. N. C. Wimberley, C.M.G.

Lieut.-Colonels: A. Alcock, C.I.E., F.R.S., W. G. P. Alpin, O.B.E., G. T. Birdwood, E. W. Bradfield, O.B.E., Harold E. Brown, J. T. Calvert, C.I.E., D. Coutts, J. M. Crawford, O.B.E., C. D. Dawes, C. H. Fielding, H. E. B. Gibson, T. H. Gloster, H. Greany, D. Heron, C.I.E., E. V. Hugo, C.M.G., Dalzell J. B. Hunter, O.B.E., J. W. Illius, R. S. Kennedy, D.S.O., M.C., H. H. King, J. Kirkpatrick, J. C. G. Kunhardt, Clayton A. Lane, W. B. Lane, C.I.E., C.B.E., G. Rigby Lynn, D.S.O., A. A. Macnaught, F. O. N. Mell, C.I.E., A. Miller, T. R. Mulroney, J. H. Murray, C.I.E., B. E. M. Newland, E. S. Phipson, D.S.O., E. Rost, O.B.E., A. J. H. Russell, C.B.E., R. B. Seymour Sewell, W. S. Jagoe Shaw, N. S. Simpson, G. M. C. Smith, C.M.G., R. Steen, Ashton Street, W. A. Sykes, D.S.O., C. Thomson, G. Sloane Thomson, W. H. Thornhill, E. L. Ward, C.B.E., W. L. Watson, O.B.E., A. C. Younan.

Majors: T. J. Anderson, M.C., H. Chand, M.C., J. C. Chukerbuti, G. Covell, W. E. R. Dimond, Sir T. Carey Evans, M.C., A. H. Harty, L. M. R. Hennessey, W. P. Hogg, M.C., R. N. Kapadia, M.C., J. G. McCann, A. N. Palit, B. Prasad, W. C. Spackman, H. J. H. Symons, M.C.

Captains: J. H. Barret, Thaw Ba, A. T. Cox, T. J. Davidson, D. A. S. Hart, A. V. Lopes, D. P. McDonald, A. Rosenblum, A. N. Sharma, D. K. Thapar.

Lieutenants: H. J. Boulkley, T. W. H. Caughey, A. M. Fraser, F. T. Harrington, W. P. Lappin, P. Shannon, D. L. Trant, H. S. Waters.

* See Supplementary Report of Council, *Supplement*, p. 253.

DEATHS IN THE SERVICES.

Deputy Inspector-General Edward Julian Sharood, R.N. (ret.), died at Worthing on June 3rd, aged 80. He was educated at University College, London, taking the M.R.C.S. in 1860, and at Edinburgh University, where he graduated as M.D. in 1862. Entering the navy soon after, he attained the rank of fleet surgeon on June 16th, 1883, and retired with an honorary step of rank as D.I.G. on June 25th, 1893. He was in receipt of a Greenwich Hospital pension for good service.

First-class Assistant Surgeon Joseph Reginald Herbert Cabral, Indian Medical Department, was murdered by a Waziri fanatic at Bibizai, in Waziristan, on the North-West Frontier of India, on June 13th, along with another officer. Both were shot while travelling in a motor car. Cabral was born on May 9th, 1884, and entered the I.M.D. on March 31st, 1905, reaching his late rank in 1922. He served in South Persia during the great war.

Medico-Legal.

CHARGE OF PROFESSIONAL NEGLIGENCE.

SHEWRY *v.* MAYBURY.

BEFORE the Lord Chief Justice (Lord Hewart) and a special jury the hearing was begun on June 11th, and lasted seven days, of a case in which Leslie Shewry of Eastney, Portsmouth, an infant suing through his father, claimed damages against Dr. Lysander Maybury of Southsea for personal injuries owing to negligence in treatment, a charge which was denied.

Case for the Plaintiff.

Mr. Raynor Goddard, K.C., in opening the case, stated that when the boy Shewry was 14 days old, in August, 1920, Dr. Maybury, on the ground that he had congenital syphilis—from which, in fact, he had never suffered—injected into his head the arsenical preparation known as novar-enobillon. The fluid entered the tissues of the brain, destroying and injuring certain of them, so that the child was, and always would be, a hopeless idiot and epileptic. Dr. Maybury had attended at the birth of the child, and had attended the mother before that event. The injections were given at the surgery, and it was alleged that no blood test was made beforehand. Within an hour of the first injection the child had a fit. Four further injections were given on later dates up to September. Dr. Maybury never mentioned his suspicion of syphilis to the parents, and they believed that the injections had been given for an attack of jaundice from which the child had suffered. It was strongly denied that either of the parents had ever had syphilitic infection, and since the birth of this child, who was the first-born, they had had two perfectly healthy children.

Inspector Shewry of the Portsmouth police, the father of the child, testified to having paid more than £40 on account of Dr. Maybury's bill; the bills as presented amounted to about £142 altogether. Mrs. Shewry, in evidence, said that the doctor told her he would like to inject something to clear up the jaundice. He never inquired about her personal history or that of her family. The baby was not ill until the injections were given.

Dr. C. R. Crawford of Southsea said that he first saw the child in March, 1922, and thought the case to be one of epilepsy following injury to the brain. He would most certainly not feel justified in injecting "N.A.B." into the longitudinal sinus of an infant unless he had a positive result from the blood test. Nor did he think that a general practitioner would do the operation, which was one of great difficulty. Mr. Harold Burrows, F.R.C.S., until recently of Portsmouth, said that he had examined the child, and considered that the attempt to make such injections could have caused the injury. He would not agree that this was an ordinary case of idiocy due to some ante-natal cause, and he did not believe that Dr. Maybury ever saw in this child the stigmata of syphilis. Dr. W. B. Cosens of Chelsea said that from his recent examination of the child he had come to the conclusion that he was suffering from a condition which came on after birth. The operation performed in this case had now fallen into disrepute because of the possibility of a mistake being made. In his belief it was quite wrong to treat a child of 14 days with arsenic.

Case for the Defence.

Mr. Roland Oliver, K.C., instructed by Messrs. Hempsons for the defence, said that Dr. Maybury was being called to account for something he had done nine years previously. It was now the

to say that he had performed an operation known to be dangerous. The textbooks of that day had advocated injection into the sinus vein as the best, easiest, and safest way of introducing medicinal matter into a child's system. Dr. Maybury had performed the operation many times with perfect success. He would call a body of testimony to show that, as far as anyone could diagnose the case at all, it was one of ordinary congenital disease. The child, according to Dr. Maybury, was sickly from birth, feeble, constantly crying, developed "snuffles" and a characteristic rash, and had jaundice. For nearly a year after the injections the mother did not take the child to a doctor. The story of the convulsions had been antedated to implicate Dr. Maybury.

Dr. Maybury, who said that he was registered in 1879, bore out his counsel's statement, and added that previous to July, 1928, no one had accused him of treating the child improperly. In cross-examination, he admitted that an action for negligence was brought against him at Winchester assizes in 1925, and resulted in a verdict for the plaintiff, with £1,000 damages.[1] With regard to the present case, he admitted that his diagnosis of syphilis might have been wrong, but he saw signs of the disease, and had to treat it by the most approved method. He booked fees of five guineas for each injection, which he thought a fair charge. Asked about the effect on the brain should there be an accident in giving the injection, he said that some inflammation would be set up, but he did not think there would be destruction of brain tissue.

Evidence was given by Dr. W. F. Eberlie, now of Luton, who at the time was Dr. Maybury's assistant. He stated that cases of congenital syphilis in infants were frequently treated by Dr. Maybury by the injection of "N.A.B.," and he could not remember any case in which the injection was followed by fits or convulsions. It did not strike him that it was very early to operate on a child. Dr. R. C. MacPherson, medical superintendent of St. Mary's Hospital, Portsmouth, of which the child is an inmate, said that there was nothing to differentiate the case of Leslie Shewry, an imbecile, from scores of other cases. Since he first saw him, in May, 1926, his condition had become progressively worse. He had never seen or heard of a case in which these or similar results had been produced by an "N.A.B." injection. Dr. F. M. R. Walshe of Portland Place, a specialist in neurology, attributed the disease from which the child suffered to an imperfectly developed brain. To discover by percussion of the skull, as one of the expert witnesses said he had done, that the lesion in the child's brain was artificially produced and not congenital, was magic, not medicine. It was almost a typical case of Little's disease. Dr. George Riddoch, consulting neurologist, said that he examined Leslie Shewry in April, 1924. The child unquestionably had a lesion of the brain in both hemispheres. He did not believe that the condition was due to the effect of the injections. Dr. J. J. Abraham of Harley Street, a specialist in venereal disease, said that in 1920 an injection of "N.A.B." into the longitudinal sinus was considered the best method of treating congenital syphilis in the infant. He had himself treated 100 to 150 children by this method without any ill result. Even if Dr. Maybury's diagnosis was faulty, the treatment would do the child no harm. He agreed, in cross-examination, that if a doctor really diagnosed congenital syphilis he should inform the nurse or midwife that the case might be contagious. Mr. A. Lawrence Abel, F.R.C.S., of Harley Street, said that both in 1920 and at the present day the best way of treating congenital syphilis was by the injection of "N.A.B." into the longitudinal sinus; he had never heard of a case in which untoward results had followed. He considered that Leslie Shewry, whom he had examined a few months previously, had severe, but typical, Little's disease. Dr. A. Mearns Fraser, M.O.H., Portsmouth, said that the authorities had supplied "N.A.B." since 1917 to doctors who were regarded as capable of administering it properly, and Dr. Maybury, who had the necessary qualifications, was one of the first to whom the preparation was supplied.

The Summing-up.

After counsel had addressed the jury,

The Lord Chief Justice, in his summing-up, which lasted two hours, said that this was a case of exceptional gravity. He had had to do with no graver case during the twenty-seven years he had been engaged in the practice of the law, either at the bar or on the bench. The case was grave enough, in all conscience, when it started, but it had assumed an aspect of gravity which no one could have anticipated on reading the pleadings. Since the action came into court a great deal had happened. The writ was endorsed "for the defendant's negligence," and it was on the ground of negligence that the claim for damages was made. But in the course of the case the suggestion had been made on behalf of the plaintiff that this was not a case of negligence in treatment; a new and terrible suggestion had been made, that this defendant never diagnosed congenital syphilis at all, and entered upon a series of operations described as hazardous or dangerous deliberately in order to put fees into his pocket. If a doctor were guilty of that conduct it would not be a case of negligence, but of crime; not that he had exercised too little care, but that he had committed an assault, and also that he had attempted to obtain money by false pretences. If such a charge were seriously brought, the defendant would be in the dock, and the judge would tell the jury that they could not find him guilty unless they were satisfied beyond reasonable doubt. Imagine a prosecution attempting, after a lapse of nine years, on the basis of the controversial recollections of 1920, to secure the conviction of this practitioner. But had that course been taken, no mention of the case at Winchester would have been allowed to influence the verdict. It would have been far better, in this civil case, and after this lapse of time, had those responsible for the conduct of the plaintiff's case said, "Let us not disturb the calm atmosphere of this scientific inquiry by any topic of prejudice. Let us be fair with regard to the question of fees and other collateral matters which do not bear upon the scientific inquiry." Had that course been taken? No; the case began with talk about fees, it ended with talk about fees. He asked the jury to bring their minds dispassionately to bear upon what was really a scientific inquiry. Compassion for the child and its parents must not be allowed to divert the judgement. It must not be said, "This thing has happened; the injections were made; blame the doctor."

Again, under the system of law, which was the growth of many centuries, there were certain things called statutes of limitations. An action could not be brought for the recovery of a simple debt after six years, and in the case of things like assault the limitations were closer. Actions for assault and trespass, according to a statute of James I, must be commenced within four years of the cause of such action. If what was alleged in this case had happened to an adult, this action, relating to what had taken place nine years ago, could not have been brought, but the statute did not hold good in the case of an infant. Why did our wise forefathers pass statutes of limitations? No doubt in part it was to prevent or diminish fraud; but was it not, in addition, out of a sense of fairness, that it was not possible after many years fairly to bring to light all the relevant materials in a condition in which they might be suitably marshalled and impartially examined? He had been asking himself as the case proceeded, "What were *you* doing on a given date in 1920?" How impossible it was to recollect! And this case depended not only upon recollection, but upon controversial recollection—recollection developed, perhaps, during months and years of disappointment and resentment.

It was vital for the plaintiff to establish that the injuries complained of were the result of the negligence. It was idle to prove that the defendant was negligent if it was not proved that the negligence resulted in the injuries of which complaint was made. Otherwise it was like pulling a bell-handle with no bell at the other end. The case failed utterly unless it was shown that the bodily and mental condition of this child was the result of negligence or, as the case had developed, the calculated dishonesty of the defendant. There was no more room in this case for adjective or rhetoric than in an inquiry as to whether the formula for water was H_2O. The investigation was just as dry and scientific as that. Here was a boy in a certain condition of mind and body. Was it established that the cause of that condition was what was done by this defendant in July and August, 1920?

Lord Hewart then turned to the evidence. On the side of the plaintiff there was the evidence of Dr. Crawford, who, however, knew of no case in which an injection into the brain had caused epilepsy. Then came Mr. Burrows, who had been closely associated with this case, but who said frankly that he did not treat syphilis himself, and that, "except in textbooks," he had never heard of such a condition as was found in this case as being due to injection. When asked what the textbooks were, he said that Professor Leonard Findlay, in his book *Syphilis in Childhood* (1919), had referred to the danger; but it proved that Professor Findlay was speaking of the injection of salvarsan —"606"—which was a far more irritant thing, according to all the evidence. Mr. Burrows laid stress upon the coincidence of time—which, however, depended upon what was told him about the history—and upon the coincidence of place—that is, that the part of the brain which the injections presumably entered was the part affected in this case as judged by the paralysis. Finally, came Dr. Cosens, who had never seen the child until a few weeks ago, when the contest had already been marked out and the allegations put forward. He also said, however, that "N.A.B." was the best form of arsenic to use for intravenous injection; salvarsan was a more irritating form. But he believed that if "N.A.B." reached the brain cells it would destroy them.

What of the expert evidence on the other side? Gentlemen of high position in the profession had come into court to tell their experience. Dr. MacPherson had said that not only were the injections not the cause of the condition, but he could tell the court what the cause was: it was not the case that brain substance which had been there was destroyed by the mechanical introduction of a foreign body, but it was because, in the

[1] *British Medical Journal*, ii, 1925, p. 42.

inscrutable course of nature, this child had not been born with a complete brain; there had been failure of a part of the brain to come to birth. Dr. MacPherson said that the use of "N.A.B." injections in the longitudinal sinus was considered proper in 1920, and was considered proper still. Then came Dr. Walshe, who found that it was a characteristic and severe case of Little's disease, in which the symptoms were a generalized rigidity of the child's muscles, having the effect of partly paralysing its movements, and there were also indications of idiocy. Dr. Walshe knew of no case where such a condition as was found here was traceable to injections. This child's brain was very profoundly affected throughout its substance. If this amount of damage had been inflicted by outside interference the child must have died almost at once. Then came Dr. Riddoch, not originally anticipated as a witness, but called because of an incidental reference to a document made in the course of the case. He spoke to having seen the child in 1924, and said, "I never thought, nor do I think, that the condition was or could be produced by the injection of 'N.A.B.'" Then Dr. Abraham, surgeon to the London Lock Hospital, who said that in 1920 the method of "N.A.B." injection into the longitudinal sinus was considered the best and a safe method in treating little children. Finally, there was Mr. Abel, who said that the dose given to this child was only one-ninetieth of the dose given to an adult, and that if the fluid went through the sinus to the brain in this strength and quantity it would have no effect in ninety-nine cases out of a hundred, and he could not believe that in any case permanent injury to the brain could be caused. Such a portion of the brain could not have been damaged by external influence except by such injury as would kill.

Here was a body of testimony, said the Lord Chief Justice, from the heads of the profession that the injury could not have been due to the treatment. Were the jury going to say that they did not care whether it was impossible or not, that it might be quite true there had never been another case, but nevertheless they were going to find that it happened in this one? Unless the jury were satisfied that the condition of the infant was indeed due to the action of this doctor in 1920 there was nothing else in the case. Therefore he asked the jury to say, "Was the condition of this infant caused by the treatment administered by the defendant?" If the jury answered "No," he need not trouble them with anything else. If, however, it was found, somehow, that this deplorable condition of the child was due to these injections, one came back to the question of negligence. Here he quoted Mr. Justice Tindal in 1838—what he said then was still the law—and, earlier still, Lord Ellenborough. Every person who entered into a learned profession undertook to bring to the exercise of it a reasonable degree of care and skill. He did not undertake, if he was an attorney, that he would gain his case, nor, if he was a surgeon, that he would perform a cure, but he undertook to bring to the case a fair, reasonable, and competent degree of skill. A surgeon, to quote Tindal, did not become an actual insurer. He was bound only to display sufficient skill and knowledge of his profession.

The Lord Chief Justice then examined other points in the evidence in which there was conflicting testimony. In the statement of claim it was affirmed by the plaintiff that the child was suffering from thrush before the injections were begun; but in the witness-box, by the witnesses for the plaintiff, the question of thrush had been avoided, or negatived, or dated to the following month. Was it not apparent that for some reason or other, either deliberately or through the unconscious play of the mind, it had been thought desirable to exclude the mention of thrush, in a baby said to have been without spot or blemish, because with thrush there would be a rash? His lordship also referred to the fact that it was not until eighteen months after the birth that the father consulted Dr. Campbell about the child, and, after Dr. Campbell's death, Dr. Crawford. Was it to be believed that during that interval this child was having fits every day? How easy, looking back on the many occasions when this child was in the paroxysms of epilepsy, to antedate the beginning of the trouble!

The Jury's Decision.

The jury disagreed on the question whether the condition of the child was caused by Dr. Maybury's treatment. On the other questions which the Lord Chief Justice put to them they answered as follows:

> Did Dr. Maybury believe that the infant plaintiff had congenital syphilis?—Yes.
>
> Was Dr. Maybury negligent in diagnosing that the infant plaintiff was suffering from congenital syphilis?—Yes.
>
> Was he negligent in deciding on the method of treatment?—No.
>
> Was he negligent in the way in which he administered the treatment?—Yes, in his general treatment.

The Lord Chief Justice said that having regard to these answers the case was not closed; it would be put into the paper for further discussion by counsel at a date to suit both parties.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

Assembly of New Parliament.

THE new Parliament assembled on June 25th, when the House of Commons re-elected Captain Fitzroy as its Speaker. The Lords took the Oath, and the Commons also spent the rest of the week in swearing in. The King's Speech is to be read by Royal Commission on July 2nd, and is expected to announce a long legislative programme, including proposals on health and housing. The medical M.P.'s and Peers will meet at an early date to set up a Parliamentary Medical Committee, and are expected to select a medical member of the Labour party as its chairman, to facilitate contact with the Government on medical subjects.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Rockefeller Fellowships for Medical Research.

THE Hon. Olive B. Buckley, B.M., Somerville College and King's College Hospital, and Miss Janet M. Vaughan, B.M., Somerville College and University College Hospital, have been appointed by the Medical Research Council to Rockefeller Travelling Fellowships for the year 1929-30.

UNIVERSITY OF CAMBRIDGE.

PROFESSOR H. R. DEAN, M.D., has been admitted as Master of Trinity Hall, in succession to Dr. Henry Bond.

The Council of the Senate has appointed Sir Humphry Rolleston, Regius Professor of Physic, to be a Governor of the Darwin Trust, which administers property at Girton for the encouragement of research into mental defect or disorder.

The Vice-Chancellor gives notice that a congregation, at which degrees in medicine and surgery will be conferred, will be held on Saturday, July 20th, at 2 p.m.

The following candidates have been approved at the examinations indicated:

M.CHIR.—J. Gray, R. H. Metcalfe.

THIRD M.B., B.CHIR.—*Part I, Surgery, Midwifery, and Gynæcology*: C. Arthur, A. R. Banham, D. W. Bawtree, G. H. Bradshaw, J. W. Bromley, G. Herbert, H. L. Hoffmann, F. W. Hollinworth, H. P. Hutchinson, R. W. McConnel, W. M. Macgregor, G. C. C. MacVicker, R. B. Mayfield, I. B. Morris, G. W. Pickering, P. H. L. Playfair, R. B. Pringle, B. Rothery, J. D. Simpson, F. J. G. Slater, J. H. Smith, E. C. Sugden, W. E. Tucker, J. K. Wilson-Pepper, W. R. Winterton, H. M. Yardley. *Women*: G. E. Grove, M. C. Seward. (*Part II, Principles and Practice of Physic, Pathology, and Pharmacology*): C. P. Campion, A. J. W. Channings, C. J. Grosch, C. Hill, T. A. A. Hunter, P. G. S. Kennedy, L. W. A. Lankester, J. F. V. Lart, G. E. Lewis, T. K. S. Lyle, F. H. McCay, R. A. Maynard, *A. D. Morton*, W. G. Oakley, J. R. Peacock, G. W. Bickering, L. J. Rae, T. S. Read, J. E. Semple, D. M. Stern, C. G. Townsend, W. E. Tucker, J. F. Varley, J. Vaughan-Bradley, F. W. J. Wood. *Women*: P. Ram, M. C. Seward, B. M. Williams, K. Wilson.

UNIVERSITY OF LONDON.

THE degree of D.Sc. in Anthropology has been conferred on William James Perry, University reader in cultural anthropology.

UNIVERSITY OF GLASGOW.

AT the graduation ceremony on June 19th (as recorded at p. 1175, the honorary degree of LL.D. was conferred upon Dr. C. O. Hawthorne, Chairman of the Representative Body of the British Medical Association.

The Harry Stewart Hutchison Prize of £55 for a writing or writings embodying original research in a branch of medical science relating to children was presented to Dr. Peter L. McKinlay for his essays on mortality of infants.

UNIVERSITY OF BELFAST.

PROFESSOR A. M. DRENNAN, M.D., F.R.C.P.Ed., has been appointed part-time lecturer in medical jurisprudence. Dr. C. S. Thomson, the new medical officer of health for Belfast, has been appointed part-time lecturer in public health administration.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—A. Campbell, R. Gilmore, S. R. G. Pimm.

MEDICINE.—P. S. Balachandran, G. A. F. Holloway, P. Horton, B. J. Niall.

FORENSIC MEDICINE.—A. Clark, H. G. Edmunds, B. J. Niall, Z. Risk.

MIDWIFERY.—L. P. Clarke, W. T. Ellis, J. Gordon, W. M. Hamer, J. H. Johnston, E. J. O'Loughlin, P. U. Rao.

The diploma of the Society has been granted to Mr. B. J. Niall.

Medical News.

THEIR Royal Highnesses the Duke and Duchess of York will open the Devonport Pathological Laboratory and the Devonport Nurses' Home, at the Dreadnought Hospital, Greenwich, on Monday, July 15th, at 3 o'clock.

THE annual dinner of the West London Medico-Chirurgical Society will be held at the Trocadero Restaurant on Thursday, July 4th, at 7.30 for 8 p.m.

FOUNDER'S DAY at Epsom College will be celebrated this year on Saturday, July 27th, when the prizes will be given away by Lord Eustace Percy, late President of the Board of Education, at 2.45 p.m. At noon there will be a service in chapel for boys and parents, and in the evening a performance by the School Dramatic Society.

A SPECIAL course in the radium treatment of cancer will be held at the Westminster Hospital Medical School from July 29th to August 3rd. The course is designed for medical men who have recently had, or are about to have, radium placed at their disposal. The fee is 10 guineas. Full information can be obtained from the Dean, 12, Caxton Street, S.W.1.

THE Fellowship of Medicine and Post-Graduate Medical Association has arranged two free clinical demonstrations: one on July 1st, at 4.30 p.m., at the West End Hospital for Nervous Diseases, by Dr. L. R. Yealland; the other on July 4th, at 3 p.m., at St. Paul's Hospital, by Mr. Winsbury White. From July 1st to 6th the following lecture-demonstrations will be given in connexion with "Baby Week"; this series is open to all members of the medical profession, and the fee is 10s. 6d.; July 1st, clinics at Queen Charlotte's Hospital, morning and afternoon, by Mr. Trevor Davies, Mr. Aleck Bourne, Mr. L. C. Rivett, and Mr. Leonard Phillips, followed by an evening lecture at the B.M.A. House by Dr. J. S. Fairbairn; July 5th, morning demonstration at the Tavistock Clinic by Dr. Hamilton Pearson and Dr. Alice Hutchison, and afternoon demonstration at the Infants Hospital by Dr. Eric Pritchard; July 6th, morning demonstrations at the London Lock Hospital by the obstetric surgeon and at St. Thomas's Hospital by Dr. R. C. Jewesbury. From July 8th to 20th there will be an afternoon course at the Hospital for Diseases of the Skin, Blackfriars Road; fee, £1 1s. In August three courses will be given: in urology at the All Saints Hospital for one month; in diseases of children at the Queen's Hospital for two weeks; and in medicine, surgery, and the specialties at the Queen Mary's Hospital, Stratford, for two weeks. Detailed syllabuses of courses and information on post-graduate work may be obtained from the Fellowship of Medicine, 1, Wimpole Street, W.1.

THE following courses of lectures and demonstrations open to post-graduate students will be conducted in English at the Faculty of Medicine in Paris during October next: surgery of the eye, October 2nd to 12th: paediatrics, with special reference to respiratory diseases and tuberculosis in infancy and childhood, October 7th to 12th; diseases of the lung, October 21st to 26th; surgery of the digestive tract and liver, October 14th to 19th; cardiology, October 21st to 31st; and surgery of the ear, nose and throat, October 14th to 25th. Further information and particulars of fees, etc., may be obtained from the Association pour le Développement des Relations Médicales, Salle Béclard, Faculté de Médecine, Paris (6e).

A POST-GRADUATE course on recent advances in medicine, with special reference to therapeutics, will be held at the Faculty of Medicine, Vienna, from September 30th to October 13th, and followed by discussion classes from October 14th to 19th. Further particulars may be obtained from the Dean, Wiener medizinische Fakultät, Wien.

THE fortieth congress of the Royal Sanitary Institute will be held at Sheffield from July 13th to 20th, under the presidency of Earl Fitzwilliam. The details of the congress programme were published in our issue of May 25th (p. 971); it is now announced that the business will be divided into six sections—namely, preventive medicine, architecture and engineering, maternity and child welfare (including school hygiene), hygiene of food, hygiene in industry, and veterinary hygiene; and the following six conferences: representatives of sanitary authorities, national health insurance services, medical officers of health, engineers and surveyors, sanitary inspectors, and health visitors.

THE eleventh annual conference of the Association for Education in Industry and Commerce will be held in London on July 1st, 2nd, and 3rd, at the Savoy Hotel, Strand, and the Polytechnic, Regent Street.

THE sixth Congress of French-speaking Obstetricians and Gynaecologists will be held at Brussels from October 3rd to 5th, on the occasion of the fortieth anniversary of the foundation of the Belgian Society of Obstetrics and Gynaecology. The following subjects will be discussed: relations between the hypophysis and the genital system in women, introduced by Drs. L. Brouha of Liège and J. L. Wodon of Brussels; myomectomy during and apart from pregnancy, introduced by Drs. Mériel and Baillet of Toulouse and Brindeau of Paris; indications for, and technique of, sterilization in women, introduced by Drs. Muret of Lausanne and Laffont of Algiers. Further information can be obtained from the general secretary, Dr. Max Cheval, 16, Rue Alphonse-Holtat, Brussels.

THE eleventh Carlsbad international medical post-graduate course with special reference to balneology and balneotherapy will be held from September 15th to 21st. Clinicians and scientists from the medical faculties of nearly all European countries will give addresses. An invitation is extended to all physicians; those who accept will receive a passport visé without charge and a 33 per cent. reduction on all State railways in Czechoslovakia. A programme of entertainment has been arranged. Further information may be obtained from the secretary of the medical post-graduate course, Dr. Edgar Ganz, in Carlsbad, Czechoslovakia.

THE following German congresses will be held next September: Society of Tropical Medicine at Tübingen, 12th to 14th; Orthopaedic Congress at Münich, 16th to 18th; Industrial Hygiene at Heidelberg, 16th to 18th; Pharmaceutical Society at Münster, 25th.

THE friends, colleagues, and pupils of the late Professor J. A. Sicard have decided to have a medallion of him placed in the Hôpital Necker, where he held his consultations, and to raise a fund for investigations on the physiology, pathology, and treatment of the nervous system. Subscriptions should be sent to MM. Masson et Cie, 120, Boulevard St. Germain, Paris, VIe.

THE honorary degree of Doctor of Laws has been conferred by Princeton University, New Jersey, upon Sir Wilfred Grenfell, K.C.M.G., M.D.

PRESIDING over the proceedings of commemoration day at Livingstone College, Leyton, the Bishop of Chelmsford emphasized the importance of educating missionaries medically so that they might deal with the various emergencies in isolated parts of the mission field. Reports of the value of this training were given by missionaries from Sierra Leone and Paraguay. Mr. W. McAdam Eccles commented on the economical way in which the college was conducted, and pleaded for additional support. The principal of the college stated that twenty-four students had entered it during the present year, of whom eight had taken the full course. The number attending a course held last July was thirty-two, and twenty-four others had come for more elementary instruction as regards the care of the health.

Commonhealth, a periodical for the instruction of children in the prevention of tuberculosis, has been issued by the Tuberculosis Committee of the Belfast Corporation, under the editorship of Dr. Andrew Trimble, chief tuberculosis officer. Most of the articles in the April number contain information of interest to teachers, parents, and children alike. Copies may be obtained from Dr. Trimble at 1d. each, or 9d. per dozen, post free.

PART XIII of the Minutes of Evidence taken before the Royal Commission on Local Government has been issued (obtainable from H.M. Stationery Office or through any bookseller, price 6s. 6d. net). It contains the evidence given on behalf of the County Councils Association, the Association of Municipal Corporations, the Association of Local Government Officers, and by other witnesses between December, 1928, and March, 1929.

AT the last meeting of the Metropolitan Asylums Board it was reported that in the "Freedom from Accidents" competition for 1928 the National "Safety First" Association had awarded medals, or bars for medals previously awarded, to thirty-eight of the Board's motor ambulance drivers who had been free from accidents for from five to seven consecutive years. The medals were presented to the drivers by the chairman of the Board, Lord Donoraile. In addition, diplomas have been awarded to eighty-five other drivers who have been free from accidents for shorter periods. When regard is had to present-day conditions of traffic in the inner London areas in which most of the Board's ambulance work is carried out, and to the need for avoiding delay when en route, these figures may be regarded as very commendable.

CONSIDERABLE developments are foreshadowed at Woodhall Spa, where the baths were kept open through the winter for the first time last year. A proposal to enlarge the bath-house and to build a new hostel for patients to replace that burnt down a few years ago has been adopted by the controlling syndicate. The Alexandra Hospital (16 beds for men and

16 for women requiring spa treatment) is being enlarged and provided with a new heating plant, a room for Plombières douching, and another for electrical treatment.

DR. LUDVIG HEKTOEN, head of the department of pathology at the University of Chicago and director of the John McCormick Institute for Infectious Diseases, was recently decorated with the Norwegian Order of St. Olaf for distinguished service in medical science.

PROFESSOR KARL HERXHEIMER of Frankfort has been elected honorary member of the Dutch Dermatological Association, the Roumanian Dermatological Society, and the Dermatosyphilological Society of Saratow; and Professor Wilhelm Kolle has been nominated honorary member of the Società Italiana di Dermatologia e Sifilografia.

THE Hanover Medical Club, founded by the orthopaedic surgeon Georg Friedrich Louis Stromeyer, celebrated the centenary of its foundation last month.

THE following appointments have recently been made in foreign faculties of medicine: Professor Felix Klewitz of Königsberg, successor of the late Professor Eduard Müller in the chair of internal medicine at Marburg; Dr. Knoll of Arosa, professor of physical exercises at Hamburg; and Dr. R. Wagner, professor of physiology at Graz.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863, and 9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:
EDITOR of the *British Medical Journal, Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediscia Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550. Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

GLAND IMPLANTATION FOR RHEUMATOID ARTHRITIS.

DR. WILLIAM ALLEN (Glasgow) writes: A Dr. Paul Niehaus of *Montreux claims to have cured some cases of rheumatoid* arthritis in women by the implantation of sheep's ovaries in the abdominal wall. I should be glad to know if any medical man in *this* country has had a patient treated by this method, or has actually seen a case of rheumatoid arthritis before and after this treatment, and what was the result?

STIES.

DR. J. E. HARFORD (Haxey, Lincs) writes: Could any reader give some suggestion for treatment of recurrent sties? The patient has had most of the ordinary treatments, including *x* rays to lids and examination for errors of refraction, of which there is none existing.

HAY FEVER.

DR. J. D. HINDLEY-SMITH (London, W.) writes: I should be grateful if anybody would inform me whether any clue is obtainable in a case of violent hay fever with the following history. The condition has in previous years begun about May 27th. This year has, botanically speaking, been a late year, and the hay fever did not begin until June 9th. Possibly this may suggest some particular variety of vegetable life to a reader having a better knowledge of botany than I possess.

SCREAMING FITS IN AN ADULT.

"SENEX" writes: I have a patient, aged 64, deaf, a professional man, with a large prostate, who has the usual disturbances every three hours at night. He had slight hemiplegia in 1927, was unconscious for two days, but completely recovered. He has suffered from muscular rheumatism since childhood, and now has rheumatic osteitis in the knees, but is able to get about for six-mile walks. He has lately developed frequent "startlings" during the day on slight noises, such as coal crackling in the grate. These starts are often accompanied by a loud scream. Valerian and bromide has no effect. These night and day disturbances are producing steady deterioration and depression. Suggestions for treatment and prognosis will be welcomed from any readers who have had similar cases under their care.

DIATHERMY OF THE TONSILS.

DR. WARNER COLLINS (London, S.W.), in reply to Dr. M. Y. Paget's inquiry (June 22nd, p. 1146) writes: I have treated over a hundred cases by diathermy within the last three years with no accident of any kind. Cocaine anaesthesia is used: there is no hospitalization of the patient, no shock, and no haemorrhage.

PAINFUL HELL.

"X. X." writes: In several recent issues you have published suggestions, in answer to a query by "GIZA" (May 11th, p. 890), on a case of painful heel. There have been various explanations of the cause of the condition, but I have not yet seen a reply by "GIZA" giving the final diagnosis. I feel sure that those who reply to queries, and no doubt others of your readers, would be interested to have the ultimate diagnosis, when this is available.

WATER SOFTENERS.

DR. W. A. D. LAWSON (Luton), in reply to "Member of Forty Years' Standing" (June 15th, p. 1104), writes: Having recently come to live in an area near London with a water of some 20 degrees of hardness (mostly temporary), I have installed a domestic softener costing £5 or £6. The apparatus is a cylinder some 6 inches in diameter and about 2 feet long, which connects like an ordinary hose-pipe to the kitchen tap. It is made by the Electrolux firm at Luton, Beds, and can effectually soften 15 to 20 gallons of water of above hardness. Larger forms are made which are fixed permanently to the pipes. After exhaustion renewal is brought about by passing through it a strong solution of salt. The same idea is used in the Permutit type of softener, and the chemistry is the exchange of calcium for sodium in the case of the carbonates, and on regeneration the sodium is retained and calcium chloride comes away. Hence there is nothing deleterious added to the water, and it is quite palatable, though some prefer the taste of hard water, and some think the latter makes better tea. Apart from the obvious advantages of soft water for washing, it is perhaps not so well known that soft water is better for most cooking purposes, especially of greens. One warning is, perhaps, worth while—namely, the softened water charged with soda should not be used in aluminium pans.

UMBILICAL DISCHARGE.

"CONSULTANT" writes in reply to "W. D." (June 15th, p. 1104), who asked if anyone could suggest the cause of an occasional discharge from the umbilicus in a woman of 32: I would suggest as the most probable cause a patent urachus, and that the fluid is *rather of the nature of urine mixed with some serum. I have* seen two cases in which the condition occurred as a complication of pregnancy. In one it never evidenced itself after the confinement, and in the other, in consequence of the discharge becoming somewhat worse after confinement, I cut down on the urachus and removed it. Both these cases were uncomplicated by any infection. In another case with definite abscess formation, shortly after confinement, I operated and removed a well-defined pus sac. The non-septic case showed quite clearly the communication between the bladder below and the umbilicus above. In the septic case, however, though I could trace a continuity between the lower portion of the abscess cavity and the bladder, I could not discover the connexion with the umbilicus. Ordinarily the urachus is cut off from the bladder by a valve-like arrangement, and, so long as this valve acts satisfactorily, there is no escape of urine into the urachus, which gradually shrivels and is converted into the cord-like structure, which one can easily recognize when opening the peritoneal cavity in the mid-line. Occasionally the action of the valve is incomplete and the urachus retains its patency so that any distension of the bladder may cause an overflow towards and an escape through the umbilicus. It is, then, quite possible that there may be merely an occasional escape of fluid from the umbilicus; or, with some obstruction at the vesical end, there may occur, if infection should gain entrance, a cystic enlargement, or, if it does, an abscess. "W. D." will find that there is a fairly large amount of literature on the subject.

INCOME TAX.

Sale of Practice on Introduction [illegible]

"R. J. F." has sold his practice as from August 19th, 1929, on a six weeks' introduction to September 30th, at the rate of £1,000 per annum, after which he hopes to go to another practice. How should his return for 1929–30 be made?

*** He will be liable for the period April 5th to September 30th at the amount of his earnings for that period and the Inland Revenue authorities are entitled to revise his assessment for the year ended April 5th, 1929, to the amount of his earnings for that year. After August 19th he will not be chargeable to any trade receipts for work done prior to that date, his general practice earnings having then ceased; except as regards the special fee of six weeks' salary at £1,000 per annum, which is more in the nature of remuneration for employment than of a share of practitioner. On the other hand, in dealing with the liability *on any new practice he may purchase he will not be allowed to*

adopt the cash basis, and will be chargeable on the basis of the value of his bookings. As regards the rendering of his return the most convenient course seems to be to explain the facts to the local inspector of taxes and arrange with him for the statement to be lodged after August 19th.

Cash Basis; Practice Sold.

"D. W. R." has relinquished his practice, and his accountant informs him that "he is liable for all fees received after relinquishing the practice, or, alternatively, that the assessor can go back and assess him on a credit basis."

*** The first alternative is not legally correct. As from the date "D. W. R." gave up the practice he ceased to derive *income* from it; any sum he may have received represented *payment of capital amount of debts* due to him as at the date of relinquishment. The second alternative, however, holds good, but it is very rarely applied, because over a period of, say, six years the annual value of the bookings is normally about equal to the cash receipts—in fact, if the bookings have been falling off the adjustment should work out to "D. W. R.'s" *advantage*. There is no special precedent or judicial decision on the point; in our experience it is admitted by the authorities.

New Partner: Succession or New Practice.

"PAR" has been taken into partnership by a practitioner who, up to then, had been in practice by himself. The inspector of taxes claims that the cash basis must be discarded and the practice assessed as a new one as from the date when our correspondent became a partner.

*** This involves the new legislation introduced by the Finance Act of 1926. As we read the relevant section the practice must be treated as a continuing one, unless both partners agree otherwise. *If so treated* there is no reason why the cash basis should be discarded, provided that *all* cash receipts are brought into the computation of the gross assessment, whether our correspondent is entitled to share in them or not.

Residence Abroad.

"R. B." inquires whether, if he lives out of Great Britain for more than six months in the year, he is entitled to claim relief in respect of income tax on his retired (naval) pay.

*** As a British subject living abroad he is entitled to a proportion of the personal allowance, according to the ratio of the amount of income assessable to British income tax to the amount of his total income, including therein, of course, income which may be exempt from assessment owing to his residence abroad.

Assistant: Board and Lodging.

"R. L." received as an assistant £300 a year *plus* free rooms and attendance. The inspector of taxes regards the latter benefit as worth £75 a year, and claims to assess "R. L." at £375.

*** One of the leading cases decided in the House of Lords many years ago that a bank manager was not liable to account for tax on the value of free accommodation, which he had no power to sublet, on the ground that that advantage of his employment was not capable of being converted by him into cash, though it saved him laying out some cash for his personal benefit. "R. L.'s" case seems clearly to fall within that rule, and it is not understood on what ground it is sought to assess him on the £75. We suggest that he should inform the inspector of taxes that he is advised that his case seems to be covered by the decision in the case of Tennant *v.* Smith, and should request the inspector to explain the grounds on which he seeks to differentiate that case from his own.

Earned Income Relief.

"H. W. H. H." has been allowed the one-sixth relief in respect of earned income as calculated on the gross earnings—£1,000, less expenses, £300. Is this basis correct?

*** Yes. The effect of the relief is to reduce the assessable earnings by one-sixth; £1,000−£300=£700 is the amount assessable, and one-sixth of £700 is the maximum amount of relief. The common sense of the rule will be apparent from the ordinary case of a tradesman whose gross profits may be three or four times his net profits, after deducting rent and rates, wages, and other expenses.

Employment: Broken Periods.

"A. R. B.'s" earnings during the income tax year 1927–28 were £167, partly as assistant and partly as locumtenent, but for six months of the year he was "virtually unemployed," owing to post-graduate work. For 1928–29 he earned £240 in a similar capacity. What is his liability for that year?

*** It appears from the facts that "A. R. B." ceased his employment in 1926–27, and started it again after completion of his post-graduate course. Section 45 (4) of the Finance Act provides that for the first year of the holding of a particular office or employment the amount to be assessed under Schedule E is the total earnings of that year. If our view is correct—that is, that the employment was temporarily discontinued—then 1928–29 is the first year of resumption, and "A. R. B." is assessable on the amount of the earnings of that year. We may, perhaps, add that a similar result would be reached if the professional work is regarded as producing profits assessable under Schedule D.

Motor Car Expenses.

"E. F. B." holds a public appointment and uses a car "partly for work and partly for pleasure," the total average mileage being about 7,000 a year. How should the claim to allowance for motor expenses be calculated?

*** The first essential is to ascertain approximately the ratio between professional and private use. Suppose it is half and half, then "E. F. B." will be entitled to one-half the depreciation allowance—which, on the basis of an original cost of £180, we calculate at one-half of £23 for the third year of the life of the car—*plus* one-half of the fixed charges—tax, insurance, and garage cost—and running expenses, petrol, oil, repairs, etc. When the car is replaced one-half of the obsolescence allowance should also be claimed as an expense.

Purchase of Motor Car.

"A. G." bought a new (first) motor car in February, 1928. What "expenses" can he claim, as against the year 1928?

*** No portion of the cash outlay on the purchase of a first car can be allowed, as it represents the investment of capital in the equipment of the practice; it may, of course, be different with a second car bought to maintain the equipment rather than to create or improve it. But "A. G." can claim as an "allowance," not strictly as an "expense," 15 per cent. or 20 per cent. of the cost, as representing depreciation, by reason of wear and tear.

LETTERS, NOTES, ETC.

LOOSE DIAGNOSIS OF DIABETES.

DR. F. G. BUSHNELL (Plymouth) writes: The tendency in certain quarters to diagnose diabetes on insufficient data is to be deprecated. If a patient's urine contains a small or large trace of sugar, without definite changes in his blood sugar, it is nowadays the fashion among certain physicians, though other characteristic diabetic symptoms may be absent, to diagnose diabetes and prescribe a restricted diet. Such traces of sugar in the urine may be temporary and be due to transitory ill health; thus a physician abroad diagnosed diabetes from the presence of sugar in the urine, though his diagnosis was promptly and rightly corrected by two London physicians. Something should be done to check this tendency to make a loose diagnosis of diabetes. The rigid dieting such diagnosis involves imposes a real and great hardship on working-class patients, and as a member of the British Medical Association for thirty-five years I ask the Association to take action.

MEDICAL GOLF.

THE Medical Golfing Society held their summer meeting at Walton Heath on Thursday, June 20th, by the kind permission of the Walton Heath Golf Club, and at the invitation of Lord Riddell, who again entertained all the competitors as his guests. A delightful day was spent, and the golf was distinctly good. Play was from all back tees. The results of the competitions were as follows:

Lancet Challenge Cup.—H. Gardiner Hill, 2 up. T. P. Kolesar all square.
Henry Morris Challenge Cup.—F. Rose, 2 up. R. Lindsay Rea, L. W. Bathurst, Sir Milsom Rees, A. Gallately, all 1 up.
Milsom Rees Challenge Cup.—F. Rose.
Veteran's Cup (presented by Sir Kenneth Goadby).—F. Rose.
Sealed Handicap (Mr. George Dawson's prize).—A. Soper, 1 up.
Class I.—First Prize: A. C. Palmer, 3 up. *Second Prize:* Sir Milsom Rees and A. Gallately, 1 up. T. P. Kolesar and D. Jackson, all square.
Best last nine holes; T. Stordy.
Class II.—First Prize: F. Rose, 2 up. R. Lindsay Rea and L. W. Bathurst, 1 up. J. Ligat, all square. *Best last nine holes:* W. Yorke-Davies, 1 up, after tie with L. W. Bathurst.
Foursomes.—C. Max Page and Sir Stanley Hewitt, 3 up. E. Lanning Evans and M. L. Trechman, 1 up.

HYGIENE FOR THE YOUNG.

WE have received from the Health and Cleanliness Council (5, Tavistock Square, W.C.1) a copy of its new publication, entitled *On the Arch of the Rainbow*, in which the author, Mary Tyreman, uses the pleasant form of the fairy tale to coat the pill of hygienic instruction. The booklet has been specially written for young people, and the Council is prepared to put supplies without charge at the disposal of teachers, Girl Guide captains, and all those interested in the teaching of hygiene to children.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 41, 42, 43, 44, 45, 46, 47, 50, 51, and 52 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 48 and 49.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 283.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

610. B. abortus Infection in Man.

K. POPPE (*Münch. med. Woch.*, April 26th, 1929, p. 703) remarks that numerous instances of the occurrence of undulant fever in man due to *B. abortus* (Bang) have recently been recorded. The first cases were described in the United States, and subsequent cases were published in South Africa, the Dutch Indies, Spain, Italy, France, England, Switzerland, Holland, Poland, Sweden, and Denmark. The disease is most likely to attack persons engaged in farming who have to deal with living or slaughtered animals. The male sex is more affected than the female, and most infections occur between the ages of 15 and 40. The possibility of Bang infection should be remembered in the course of infectious diseases with prolonged fever and little disturbance of the general condition. It must therefore be considered in the diagnosis of typhoid, paratyphoid, influenza, malaria, and septicæmia, and in doubtful cases an agglutination test should be performed. Indeed, according to Poppe, in every case where the Widal test is required the agglutination reaction with *B. abortus* (Bang) should be tested. The relation of Bang infection to Malta fever and the question of identity of *B. abortus* (Bang) and *B. melitensis* (Bruce) are not yet settled.

611.

CHAMPNEYS (*Bull. Office Internat. d'Hyg. Publ.*, March, 1929, p. 423), after referring to investigations as to the occurrence of endemic undulant fever in Denmark, the United States, South Africa, Germany, France, and Italy, states that only 8 cases of endemic undulant fever of the Mediterranean type have been recorded in England (Manson-Bahr (2 cases), Byam (1 case), Box and Bamforth (1 case), Bamforth (2 cases), Woodley (2 cases). No statistics are available as to the frequency of infectious abortion in cattle in England, but it is considered probable that about 50 per cent. of cows supplying milk in this country are more or less affected. Among 158 examinations of blood made in North Ireland in 1927 a positive reaction was obtained in 39 cases (24.7 per cent.). In view of our ignorance as to the frequency in England and Wales of infectious abortion in cattle, it is impossible to have any definite knowledge of the occurrence of human infection. It is doubtful, however, if there are many unrecognized cases of undulant fever in the country, especially as a large number of practitioners must have become familiar with the disease in the war; other forms of endemic fever are rare in England. Champneys adds, however, that the importance of an extensive inquiry should not be underestimated, since undulant fever is responsible for a considerable amount of illness and financial loss, although the actual mortality is very low.

612. Heart-block and Uraemia.

H. K. MOHLER (*Journ. Amer. Med. Assoc.*, March 2nd, 1929, p. 706) reports two cases illustrating the association between heart-block and uraemia. One patient was admitted to hospital for removal of a hypertrophied prostate. Previous to admission he was in fair health apart from the discomfort of regular catheterization, but there were arterio-sclerotic changes in the cardio-vascular system. Immediately after the operation the pulse rate fell from 70 to 36, but within twenty-four hours the rate rose to 70 a minute, the blood urea was 35.32 (16.66 on admission), and there were symptoms of complete heart-block, which were confirmed by the electrocardiograph. Measures to promote elimination were taken and the patient's physical condition improved daily until forty-one days after the operation, when it suddenly failed again, death ensuing from uraemia on the forty-seventh day after operation. The electro-cardiogram and pulse rate showed that rises in the non-protein nitrogen content of the blood were accompanied by slowing of the heart due to block. The heart-block changed to normal rhythm with the return toward normal of the non-protein nitrogen. In the second case, a patient who had bradycardia, it was concluded that heart-block had been present for at least thirty years. This patient passed safely through an attack of uraemia without any changes in the heart and without symptoms of impairment of cardiac function. Complete heart-block continued after recovery from uraemia. The patient was able to return to work, and died three years later from cancer of the bowel. The author comments on the importance of considering the condition of the heart muscle when attempting prognosis, since the outlook in heart-block is largely dependent on this.

613. Meningococcal Meningitis.

A. CARBONELL and E. L. COOK (*Military Surgeon*, January, 1929, p. 49) record an outbreak at Fort Slocum, New York, of 19 cases of meningococcal meningitis; 11 patients completely recovered, 6 became unfit for service (5 on account of nervous sequels and one on account of synovitis of the knee), and 2 died. The authors' conclusions are as follows. (1) Strict attention should be paid to the patient's nutritional state, and tube feeding should be instituted when sufficient calories are not being ingested voluntarily. Care should also be taken that a positive water balance is maintained, and that dehydration does not occur, by administration of glucose solution in preference to saline on account of the additional calories contained in it. (2) Combined intraspinous and intravenous treatment should be given at intervals of eight to twelve hours until at least four intravenous and 6 intraspinous injections have been administered. (3) If at the end of specific treatment for forty-eight hours there is no marked improvement, another commercial type of serum should be substituted; if this type proves ineffectual at the end of the second forty-eight-hour period it should be changed, and so on, until a suitable serum is found. (4) An attempt should be made when possible to obtain a culture from the initial spinal tapping to be used for agglutination purposes in case the selection of a suitable serum from a number of commercial types becomes necessary.

614. Cardiac Disorders due to Hyperthyroidism in the Aged.

ACCORDING to F. KASPAR (*Wien. klin. Woch.*, April 25th, 1929, p. 520) hyperthyreosis in the aged represents an attenuated form of hyperthyroidism. The thyroid symptoms are mild or may even be absent, but the cardiac symptoms (palpitations, dilatation of the left ventricle, and auricular fibrillation) are very prominent; this type of thyreosis is consequently often mistaken for a primary cardio-vascular affection. The myocardium is affected very early, therefore an operation on the thyroid gland, in order to prevent cardiac insufficiency, should not be long delayed. The operation is not considered dangerous, and the results, particularly with regard to the cardiac symptoms, are very good. Success depends on an extensive bilateral resection of the thyroid. Suitable preparation of the patient and care after the operation are very essential.

Surgery.

615. Thoracoplastic Operations for Pulmonary Tuberculosis.

J. GRAVESEN (*Nord. Med. Tidskrift*, April 27th, 1929, p. 266) summarizes the results achieved with thoracoplastic operations at Vejlefjord Sanatorium, Denmark, during the past twelve years. Up to March, 1928, 191 thoracoplastic operations had been performed, 9 of them for such non-tuberculous conditions as bronchiectasis, empyema, and gangrene of the lung. There were 13 operation deaths, an operation mortality of 7.1 per cent. The facts that the operation mortality for the first 100 cases was 9 per cent., and only 4.9 per cent. for the subsequent 82 cases, showed how the improvement in technique and the increased frequency with which partial operations were performed reduced the risk of operation fatalities. These were due in 3 cases to post-operative paresis of the heart, in 2 to aspiration pneumonia, in 2 to shock, and in one to each of the following causes: novocain-adrenaline poisoning, embolism of the pulmonary artery, post-operative empyema in a lacerated pleural cavity, tuberculous pneumonia in the other lung, sepsis of the operation wound, and tetanus. In 63.6 per cent. the patients were discharged from the sanatorium much improved (41) or improved (73). Of the 182 cases of pulmonary tuberculosis thus treated 3 were still undergoing treatment, and were therefore not included in the analysis. To ascertain the late results of this treatment the author investigated the subsequent fates of the 155 patients whose operations dated back more than two years—namely, before March, 1926. On March 1st, 1928, 37 were fully fit for ordinary work and 28 were fit for light work—a total of 42 per cent. Death from tuberculosis accounted for 74, or 47.7 per cent.; 4 had died from some other disease than tuberculosis and 4 from some unknown cause. There remained 8 patients still invalided by tuberculosis. The author concludes that without this treatment only 10 to 15 per cent. of the patients suited for a thoracoplastic operation can expect, under conservative treatment, to recover fitness for work.

616. Periurethral Phlegmon.

M. F. CAMPBELL (*Surg., Gynecol. and Obstet.*, March, 1929, p. 382) states that the so-called "urinary extravasation" is an extensive fulminating phlegmon originating in or about the urethra, and is usually accompanied by massive genital and perigenital gangrene. It claims a high mortality of 40 per cent.; its early diagnosis and prompt treatment is therefore of prime importance. For anatomical reasons, which are fully explained, periurethral phlegmon is peculiar to males, and it may be met with at any age, even in infancy. The lesion is always an infection, most often following pre-existing urethral disease, notably stricture, but it may be secondary to trauma. Bacteriologically, streptococci, staphylococci, *B. coli*, *B. perfringens*, and various anaerobes are most often etiologically connected with the condition. French observers maintain that the phlegmon is caused by bacteria only; that actual urinary extravasation does not exist; and that fluid in the tissues simulating urine is an acute inflammatory exudate. Most frequently urethral necrosis occurs with subsequent perforation at or proximal to a stricture at onset; the lesion is a cellulitis with extensive vascular thrombosis, resulting in early gangrene. The toxic symptoms of cellulitis are marked; great local tenderness and swelling, chills, and fever, succeeded by toxic mental confusion, often progressing to delirium and coma, are the outstanding symptoms. The onset is abrupt, and most often the lesion is heralded only by acute dysuria, immediately followed by swelling and the signs of phlegmon. The correct diagnosis is usually made by inspection. Extravasation must be distinguished from the massive oedema of cardio-nephropathy and cirrhosis; in these cases, oedema elsewhere, particularly of the lower extremities, is present. The treatment is surgical, radical, and an emergency measure; delay and meagre incisions are fatal. Free drainage must be afforded to the bladder and involved cutaneous tissues by means of very wide incisions. The preservation of free bladder drainage and an enormous fluid intake are the chief post-operative measures. When stricture has been found, periodic dilatation with sounds must be employed as the only effective prophylactic measure against future phlegmons.

617. Perinephric Abscess in Children.

M. D'ALESSANDRO (*La Pediatria*, April 1st, 1929, p. 385) reviews the literature relating to this rather rare disease in children, and states that it is usually unilateral and has no special sex incidence. It may be primary, occurring in association with general infections, or secondary, and due to traumatism or the spread of a local infection. In children the secondary form is rare. The organisms commonly found are staphylococci, *B. coli*, or streptococci. The condition usually begins gradually; fever is often the only symptom at the outset, pain and swelling appearing later. Pain occurs on movement or pressure, inducing some rigidity of the spine and scoliosis; if the abscess tracks towards the psoas the characteristic flexion of the thigh may develop. The abscess may be too deep for fluctuation to be detected. The track of the abscess depends on whether it is above, below, or in front of the kidney. Hydronephrosis and sarcoma may lead to mistakes in diagnosis. Very rarely the abscess may dry up; if it points it generally tends to track downwards. The prognosis is, on the whole, good if surgical treatment is early, and the patient usually recovers in one or two months.

618. Diaphragmatic Hernia.

G. L. CARRINGTON (*Annals of Surgery*, April, 1929, p. 512) describes diaphragmatic hernia as a protrusion of an abdominal viscus through the diaphragm into the thoracic cavity. It may be congenital, acquired, or traumatic, and the first two types usually involve a passage through the hiatus pleuroperitonealis, the dome of the diaphragm, the oesophageal hiatus, the foramen Morgagni, or through an embryonic fusion point of the diaphragm. Treatment must be operative, the abdomino-thoracic approach providing the best exposure and freedom of manipulation, especially in the case of a very large hernia. The division of the phrenic nerve in the neck or chest makes the operation easier by paralysis of the diaphragm, and gastric lavage before the operation decreases the chance of aspiration pneumonia. Carrington reports a case in which a preliminary extrapleural thoracoplasty was performed involving the lower chest on the affected side. The second stage, or repair operation, was conducted through a thoraco-abdominal incision. Sterile fluid collected in the left side of the thorax, but it became purulent after the patient contracted a septic sore throat. After nine months' treatment the empyema thoracis was cured without approximation of the visceral and parietal pleura resulting; the treatment adopted was the drainage of the chest and alternate daily irrigations with Dakin's solution and neutral acriflavine 1 in 2,000. Eleven months after the operation the patient was well and had gained 18 lb. in weight.

Therapeutics.

619. Prophylactic Physical Exercises in Bronchial Asthma.

E. SCHILCHER (*Med. Klinik*, March 8th, 1929, p. 387) points out that though there is a general agreement on the importance of allergens, as defined by Storm van Leeuwen and others, in the production of asthma, the fact that the sensitiveness of the allergen-sensitive patient is subject to considerable variations must not be overlooked. He has confirmed the experience of other workers that this predisposition to asthmatic attacks may be considerably diminished by such general methods of treatment as substituting a diet which is mainly vegetarian for one which is rich in fats and purins, and reducing the intake of sugar, vinegar, salts, and cold drinks. The following prophylactic measure, which he has found useful for some years in a large number of cases, was suggested by the fact that many asthmatics are free from attacks during the warm months of the year and in a warm climate. Profuse sweating is induced by physical exercise in a warm atmosphere several times a week. Patients in whom the heart has been little affected should engage in drill, gymnastics, or dancing, in a room which is as free from dust as possible and heated by steam radiators to a temperature of 30° C., though, when once an adequate secretion of sweat has started, the presence of a certain amount of dust has little effect on the patient. These exercises are repeated three to six times, and are then omitted for four to six weeks, during which time the patient generally remains free from attacks. Schilcher remarks that other methods of inducing sweating, such as hot-air baths and vapour baths, have proved much less effective in the treatment of asthma, since the muscular activity of the whole body has a beneficial effect on the circulation, metabolism, and respiration, which the other forms of treatment lack. For patients for whom indoor exercise such as that described is impracticable he suggests fairly brisk walking exercise on the level several times a week, preferably in the sunny hours in the middle of the day, and gymnastic exercises, mainly of the legs, in short spells for a total of forty minutes before going to bed. These facilitate the expectoration of tough accumulations of secretion and remove the residual air from the lungs, besides reducing the risk of gastro-intestinal distension from flatus.

620. Therapeutic Uses of Pepsin.

M. LOEPER (*Bull. de l'Acad. de Méd.*, séance, April 23rd, 1929, p. 510) believes that the activity of pepsin is not limited to the stomach, but that it has a general physiological action. Pepsin may be gastric in origin, but, according to the author, its diffusion throughout the body is a fact. It has been found in the cerebro-spinal fluid, and a ferment very similar to pepsin impregnates the pneumogastric of the dog during digestion. Part of the pepsin is reabsorbed in the stomach and part in the small intestine. Absorption depends on the permeability of the mucous membrane. Pepsinaemia, which is difficult to demonstrate, and pepsinuria, which appears one hour after food, result. Pepsin appears to be a hormone capable of influencing directly or indirectly the organs, tissues, and nervous elements. It can safely be given to man in hypodermic doses of 0.1, 0.2, and 0.4 gram without accident. It increases the peptic power of the gastric juice, the intensity and frequency of intestinal movements are augmented, and diarrhoea may be caused in constipated subjects. In its general action it gives rise to a hyperglycaemia, hinders the action of insulin, slows the pulse, and lowers arterial tension. A specific action on the vagus is shown. Peptone in identical doses and the same dilution does not produce the same results. Treatment by hypodermic injections of pepsin is recommended for conditions of hypopepsia, hypotonia, constipation, tachycardia, and vascular hypertension. Diabetics and patients with kidney disease are particularly sensitive, and the dosage for them should never exceed 0.2 gram. Loeper adds that pepsin injections also possess an anti-anaphylactic power; he has employed them in asthma, urticaria, and for patients sensitive to alimentary proteins. He considers it probable that there is a formation of "antipepsin" in the body.

621. Phenylhydrazine Hydrochloride in Polycythaemia Vera.

PHENYLHYDRAZINE hydrochloride is a popular therapeutic agent in the treatment of polycythaemia vera, but the fact that there is some risk entailed in its administration is pointed out by H. Z. GIFFIN and H. M. CONNER (*Journ. Amer. Med. Assoc.*, May 4th, 1929, p. 1505), who report a series of forty-one cases treated by them since 1924. There were very good results in twenty-five patients, who were relieved of symptoms and were enabled to resume whole- or part-time work, regulating

their own dosage subsequently according to their individual requirements. The dosage employed in the series started with 0.1 gram three times a day and rose to a total of 3.4 to 7.6 grams. Most of the patients in whom the results were favourable were protected from any recurrence of the symptoms by taking 0.1 to 0.3 gram each week, whenever the symptoms showed signs of returning. Of the remaining patients, eight did not regain good health owing to the disease being advanced and complicated by arterio-sclerosis. Ten patients died, one accidentally and one of pneumonia. As the result of their experience the authors consider that patients with advanced polycythaemia vera who are necessarily confined to bed should not receive this treatment; extreme care should be taken in giving the drug to patients over the age of 60, or who have marked arterio-sclerosis or advanced visceral impairments. No higher initial dose than 0.1 or 0.2 gram should be administered, and the effect of this must be watched over several succeeding days. Similar care should be taken in the case of patients who have probably had thrombosis, and every effort has to be made to keep the already sluggish circulation in this disease as free as possible; the patients are therefore encouraged to walk about freely and are given massage and exercises if in bed.

Neurology and Psychology.

622. Personality Changes following Cerebral Trauma.

J. KASANIN (*Journ. Nerv. and Mental Dis.*, April, 1929, p. 385), as the result of a systematic investigation of mentally defective children in a Boston institution, found that 10 per cent. of them, who had been originally diagnosed as psychopathic personalities, had received some injury to the brain during childhood or adolescence. The author remarks that in addition to the problem of the relation of cerebral injury to personality disorders the interesting point has been advanced by some authors whether the pathology of the central nervous system in cerebral trauma and epidemic encephalitis is essentially of the same character, and in this connexion he reviews the pathology of cerebral concussion in adults and children, and concludes that there is also a clinical similarity. The personal changes in the two conditions are somewhat of the same type—namely, extreme emotional instability, outbursts of temper, egocentricity, and inability to follow a definite goal in life. Such a parallel ends with the prognosis. As seen in Kasanin's cases, there is, in spite of a long period of various conduct disorders, a tendency towards adjustment on a somewhat lower level, while patients suffering from sequels of epidemic encephalitis show a grave prognosis. Brain injury and encephalitis as such do not cause a specific reaction as far as behaviour is concerned, and any factor which causes a diffuse process in the central nervous system will interfere with the formation of proper inhibitory influences. Cases of personality changes require careful history probing, especially with regard to early encephalitis or brain injuries; when there has been a history of injury a very thorough neurological examination is essential. Certain phenomena associated with post-traumatic states are of diagnostic importance. Encephalography by the lumbar route should be freely employed. Any organic treatment is impossible, and these patients must therefore be treated by environmental change and psychotherapy. Special training in a correctional institution may be necessary in some cases. As a prophylactic measure the child should be taken to the country shortly after the injury in order to avoid city excitement and stimulation. Fifteen cases of personality disorders are reported, all of which were treated first as functional cases with extensive psychotherapy and exploration and change of environment, and only after repeated failure of the treatment was it felt that they were personality disorders of definite organic etiology in which psychotherapy had only a limited application.

623. The Treatment of Epilepsy.

SINCE there has lately been a tendency to develop some definite conception of the perverted physiology of epilepsy and to design treatment accordingly, I. ATKIN (*Journ. Mental Sci.*, January, 1929, p. 101) briefly reviews several forms of therapy, with the theories on which each is based. In support of the vasomotor theory of causation is the known fact that sudden cessation of the cerebral circulation will cause epileptiform convulsions, and that vasomotor spasm may produce fits through cortical anaemia. On this hypothesis treatment with belladonna, nitro-glycerin, and amyl nitrite has been tried, excellent results with the last-named having been claimed by Popea and Eustatziou. This theory leaves several problems unanswered, and allergy and toxaemia have been advanced as possible causative factors. The allergic theory regards epilepsy as a manifestation of sensitization. This was suggested by the temporary disappearance of fits in cases treated with serum for some other disease and by the fact that occasionally fits seem to be caused by certain foods. Protein therapy has yielded success in the hands of some authorities, and either horse serum, peptone, or tuberculin may be used. The metabolic theory of Collier is based on the occurrence of fits in various diseases of the endocrine glands and of the renal and hepatic systems, in eclampsia, in lead, bismuth, or alcohol poisoning, and by the periodical tendency of fits. The actual metabolic toxin has not been determined with certainty, but ammonia, choline, bile sulphates, or uric acid have been suggested as such. Atkin has not found benefit from the use of potassium-boro-tartrate, recommended by Marie on the theory that the dyscrasia was due to a disturbed acid-base equilibrium of the blood. There is much evidence in favour of the psychogenic theory. A fit often improves the patient's condition, and the average epileptic possesses a peculiar mentality. Causal emotional factors may act through the autonomic nervous system in producing the seizures. As regards general treatment, Atkin states that there are many secondary causal factors in epilepsy. Emotional changes play an important part, and a thorough knowledge of the patient's temperament is a useful aid in treatment. Constipation is undesirable, and is better treated by diet than by indiscriminate purging. Dyspepsia, fatigue, excessive physical exertion, and atmospheric changes are causal factors; hence the importance of general hygienic measures. Judgement should be used in prescribing bromides, and the required dosage can only be discovered by trial. Luminal, though allowing compensatory irritative symptoms to develop, has been found useful in several established cases where bromides were not well tolerated.

624. Circumscribed Serous Spinal Meningitis.

UNDER certain pathological conditions, such as trauma and syphilis, membrane-like bands form between the arachnoid and pia, or portions of the latter become adherent to the arachnoid membrane, thus occluding whole sectors of the subarachnoid space. This interferes with the free circulation of the cerebro-spinal fluid, and many cases of so-called spastic paraplegia are believed to be due to these circumscribed accumulations of the fluid. G. B. HASSIN and E. ANDREWS (*Journ. Amer. Med. Assoc.*, March 16th, 1929, p. 877) report two cases of circumscribed serous spinal meningitis in females aged 14 and 29 respectively. In the first, the youngest case recorded, the condition was due to trauma, and in the latter to syphilis. In the traumatic case laminectomy effected a definite cure, while in the syphilitic one this operation, combined with specific treatment, was of no avail, and the patient eventually died. Trauma is said to be a less common cause than syphilis, and the latter affects the nervous system in various ways. The usual meningeal changes are adhesions and thickenings, which do not yield to the anti-syphilitic remedies usually so effective in other types of cerebro-spinal syphilis. There may be a great disparity between the clinical and pathological manifestations, and in such cases the disease is most likely to be found affecting the meningeal or epimeningeal spaces. The result of treatment in the two cases shows clearly the greater danger of the syphilitic type, in which the symptoms and sequels are treated, leaving the cause undisturbed; in the traumatic form the sequels only are dealt with. In obscure cases of spastic paraplegia in which primary cord lesions such as myelitis, syringomyelia, or multiple sclerosis can be excluded, laminectomy is indicated. This should also be resorted to in those cases of spastic paraplegia known as Erb's type of cerebro-spinal syphilis (syphilitic spastic spinal paralysis), combined with a vigorous antisyphilitic treatment.

625. Double Hysterical Amaurosis.

RENEDO (*La Med. Ibera*, March 9th, 1929, p. 311), who records an illustrative case, emphasizes the extraordinary rarity of double hysterical amaurosis in contrast with unilateral amaurosis, which is much less unusual, and more or less marked amblyopia of one or both eyes, which is much more frequent and easy to diagnose. Renedo's patient was a woman, aged 21, who suddenly became completely blind. Examination made the following day showed that the eyeball from cornea to retina was completely normal. Lesions of the optic nerves, chiasma, optic radiations, or occipital lobe were excluded by the absence of any other symptoms, such as paralysis or psychical changes. On the other hand the presence of hysteria was shown by anaesthesia of the palpebral conjunctiva, with conservation of corneal sensibility, lack of sensibility to contact and to sensations of heat, cold, and pain in the areas supplied by the first and second branches of the trigeminal nerve, anaesthesia of both forearms, feet, and soft palate. Complete recovery of vision followed the subcutaneous injection of sterile water first in the left and then in the right temporal region.

Obstetrics and Gynaecology.

626. Tuberculosis of the Cervix Uteri.

TUBERCULOSIS of the cervix uteri is very rare and fewer than twenty primary cases have been reported. Secondary involvement of the cervix is much more frequent. MARION DOUGLASS and M. RIDLON (*Surg., Gynecol. and Obstet.*, March, 1929, p. 408) report two cases, one of pantuberculosis of the pelvic viscera, and the other a presumable case of primary tuberculosis of the cervix, since there was no evidence of the disease in other organs. Complete recovery followed panhysterectomy in the first case. Vigorous antisyphilitic treatment was given in the second case, but this produced no improvement, and the patient refused operation. Tuberculosis of the cervix is due to either a blood stream infection or to an ascending infection from a primary genital lesion. Primary infection has been found in women whose husbands had phthisis, infection taking place both generally through tuberculous sputum and infection of hands, or by transmission of the bacilli from a tuberculous epididymitis. Anatomically the lesions have been classified as miliary, interstitial, papillary, and ulcerative. In early cases the lesion is usually hypertrophic, proliferative or vegetative; whereas in advanced stages true tubercle formation and ulceration with loss of tissue is a pronounced feature. The different anatomical forms are possibly varying stages of the same pathological process. The gross appearance is often confusing, and microscopic examination is necessary for correct diagnosis. Usually in tuberculosis the tissues tend to be softer than in carcinoma, and lack friability. The symptoms are highly variable and indefinite; malaise, occasionally fever, amenorrhoea, and leucorrhoea have been noted. Slight haemorrhage after coitus is common, but a blood-stained purulent discharge is a typical finding in contrast with the more watery discharge of cancer. The prognosis is good in primary cases, but in secondary ones it depends on the severity of the general infection. If the lesion is definitely primary, surgery is indicated, total abdominal hysterectomy being the method of choice. If the vagina is involved, its extirpation may be necessary. Amputation of the cervix is advised when a more radical operation is contraindicated. In secondary lesions only palliative remedies are advised. Cauterization may give some relief, and astringent douches may be useful. Radium may be used, but it is contraindicated if salpingitis is present. The general treatment of the patient is very important; primary cases should be dealt with promptly, as general systemic tuberculosis may ensue.

627. The Zondek-Aschheim Reaction in Pregnancy.

R. BRÜHL (*Deut. med. Woch.*, April 26th, 1929, p. 696) employed this test in 68 women at different periods of pregnancy; 2 were in the second month, the clinical diagnosis being inconclusive. Of these 68 patients, 67 gave positive reactions and one was negative in the fifth month. Furthermore, in six cases of tubal pregnancy the test was performed eight times, and all were positive. He obtained a positive reaction once in the urine of a woman six weeks after her confinement; also in an erosion of the os with leucorrhoea in a woman aged 37. The tests were positive also in three cases of colpitis (kraurosis), in four cases of climacteric disturbances, and in seven cases of carcinoma or sarcoma of the genital organs. Brühl concludes as follows: (1) A positive result of the Zondek-Aschheim reaction is a very conclusive indication of the existence of pregnancy, and a negative result excludes pregnancy with absolute certainty. (2) It is very probable that in the anterior lobe of the pituitary body at least two hormones are formed: one causes maturation of the follicle, and is found in the urine of women after the climacteric and after oöphorectomy, while the other influences the formation of the corpus luteum, and is chiefly demonstrable in pregnancy. (3) In the urine of gravid mares and cows the hormone could not be demonstrated.

628. Parturition and Infantile Albuminuria and Glycosuria.

K. JAROSCHKA (*Zentralbl. f. Gynäk.*, March 2nd, 1929, p. 522) comments on the many differences of opinion about the etiology of albuminuria, its frequency, time of appearance and duration, and its relation to the condition of the mother or the duration of labour. In forty newly born male children, watched carefully from birth until the sixth day, he found albumin in 65 per cent., the maximum amount occurring in those between 3 and 5 days old. After spontaneous delivery it was found in 50 per cent., and after operative delivery in 80 per cent. The length of the labour appeared, however, to make no appreciable difference. The worst case was the child of a woman in the pre-eclamptic state. Albumin was present in all the five forceps deliveries, the quantity varying with the difficulty of the case. On the whole a long labour with plenty of time for head moulding caused less albumin than a quick operative delivery with more sudden pressure on the head. Dehydration is said to be a contributory and sometimes the only cause of albuminuria; when there is much loss of fluid acetone bodies are also found. In four cases albuminuria was produced by applying a tight bandage round the kidney region, showing that purely mechanical pressure must be considered a possible cause. Glycosuria is said to be much rarer, and is practically unknown after spontaneous delivery, however long. It is occasionally found after operative intervention, especially when high forceps are used, and in cases where the carbon dioxide concentration has been increased; it is usually found in very large and heavy children.

Pathology.

629. The Survival Rate of Leucocytes in Disease.

R. LUSENA (*Il Policlinico*, Sez. Prat., April 8th, 1929, p. 479) has studied the duration of survival of leucocytes in relation to death of the individual with a view to determining whether the leucocytes were affected by important alterations in various organs, or whether they retained independent vitality. The author had previously found that in a case of chronic myeloid leukaemia there was a diminished vitality in the leucocytes, and that this diminution was enhanced immediately before the death of the patient. Excluding diseases of the haemopoietic system, the author investigated four cases. The method adopted was to dilute a sample of blood with sterile physiological solution, and to keep the sample thus diluted in the author's modification of Forti's pipette at a freezing temperature. A drop of the mixture was examined at intervals on a warm stage, and the time of cessation of motility of the leucocytes was noted. The remainder of the sample was inoculated in broth, and was found to be sterile in each case. The four cases studied were: (1) malignant tumour of the abdomen with cholaemia; (2) miliary tuberculosis; (3) poisoning with corrosive sublimate; and (4) diabetic coma. Two samples of blood were taken, one about a month before death and the second within a few days of death. The observations were as follows on both occasions: (1) there was no movement of leucocytes after fifteen hours; (2) leucocytes survived for five days; (3) leucocytes survived for fifteen days; (4) survived for eight days. The author concludes that the alteration in the survival rate is associated with the cause of death. As the survival rate was the same on both occasions in the same patient, apparently the leucocytes remained uninfluenced by the patient's general condition.

630. The Flocculation Reaction of Vernes in Osteo-articular Tuberculosis.

J. VALLS and V. C. GIRARDI (*Rev. Med. Latino-Americana*, February, 1929, p. 506) investigated the flocculation reaction of Vernes in 90 cases of osteo-articular tuberculosis and came to the following conclusions. The high percentage of positive results in patients with undoubted osteo-articular lesions justifies this reaction being considered as of diagnostic value. In incipient forms, or with small localized foci, the results are inconstant, and consequently of little value. The reaction is of great service in enabling one to appreciate the degree of improvement or aggravation, since the reaction closely corresponds to the evolution of the lesions.

631. Splenic Irradiation and Sedimentation of Blood Cells.

R. DE TULLIO (*Studium*, March 20th, 1929, p. 110) describes a series of investigations undertaken to show the effect of irradiation of the spleen on the velocity of sedimentation of the blood cells. Since the spleen is an organ intimately concerned with the composition of the blood, it was thought probable that by submitting it to *x*-ray irradiation an effect would be produced on the velocity of sedimentation. The subjects of the investigation were healthy individuals and patients suffering from splenomegaly—both the syphilitic and malarious forms. *X*-ray irradiation was applied to the splenic area once daily for three days. The velocity of sedimentation was studied immediately after the first treatment, and again six and twenty-four hours afterwards. The method of Westergreen was used, the blood being drawn from a vein and mixed with 5 per cent. sodium citrate. The reading of the sedimentation was taken at thirty, sixty, and ninety minutes, and two, three, six, and twenty-four hours. All the readings pointed to the same conclusion—namely, that from one to six hours after the irradiation there was a transient acceleration in the velocity of sedimentation; it was invariably followed by a retardation more marked than the preceding acceleration, so that on the whole the velocity was diminished.

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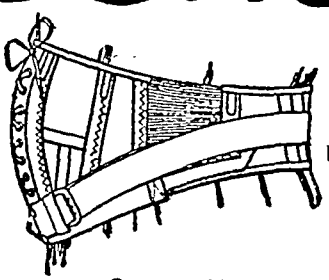

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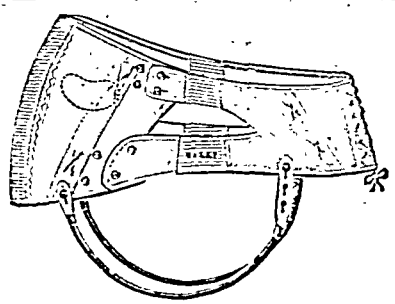

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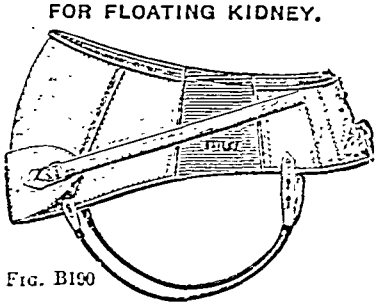
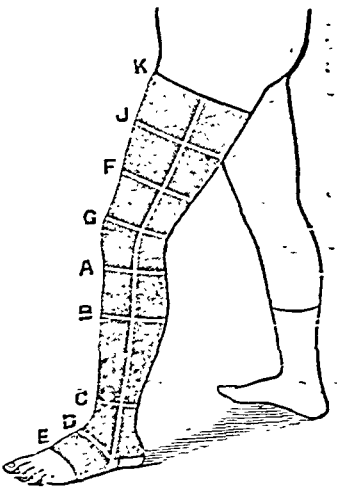


FIG. B190
BELT FOR ENTEROPTOSIS.



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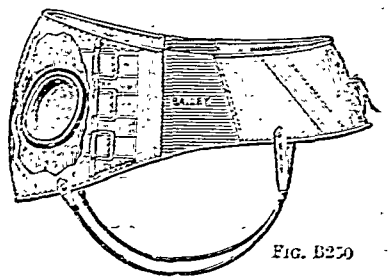
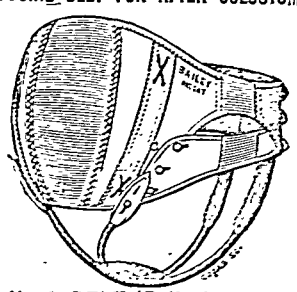
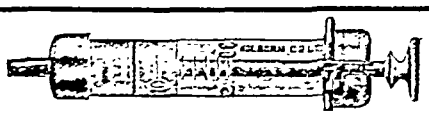


FIG. B250
(Showing Interior of Cup.)
SPECIAL BELT FOR AFTER COLOSTOMY.



No. 3. BELT (Bailey's Patent)
for PROLAPSUS UTERI.



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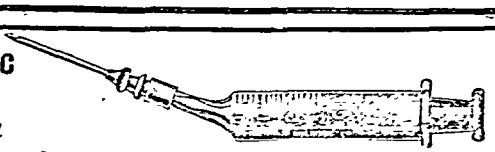

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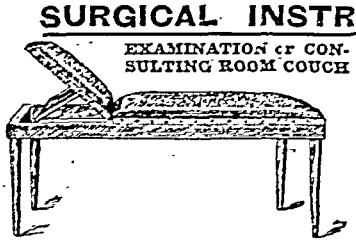

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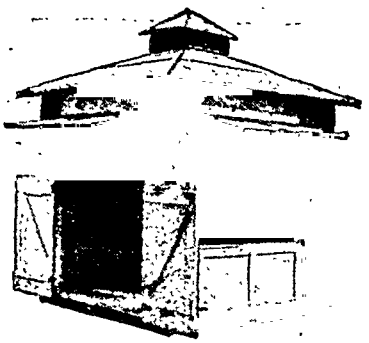

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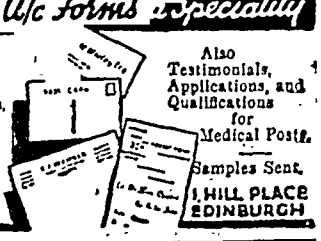

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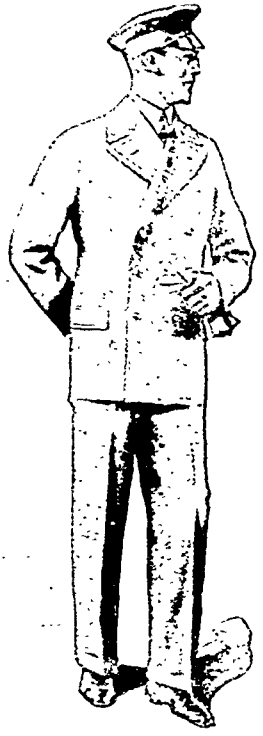

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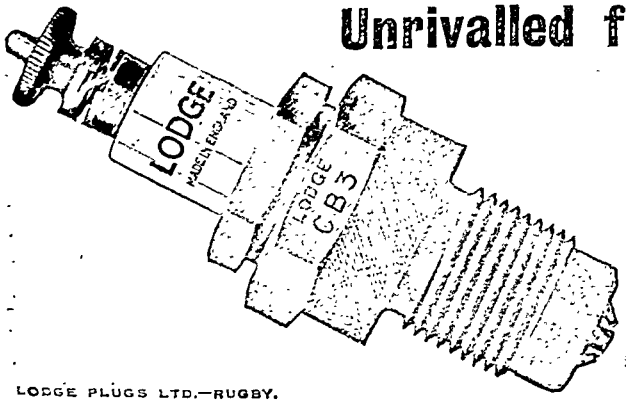

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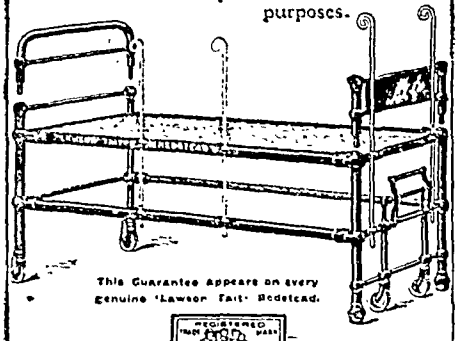

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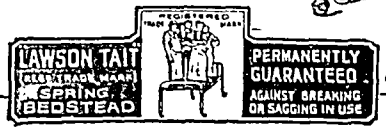

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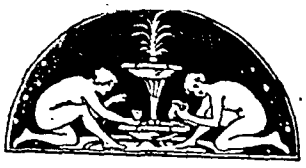

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WYE HOUSE, BUXTON.
For the treatment of Ladies and Gentlemen mentally afflicted. Voluntary Boarders received. Situated 1,200 ft. above sea-level, facing S.; 14 acres of grounds.—For terms, apply to the Resident Medical Superintendent, W. W. HORTON, M.D. Nat. Tel. 130.

Bishopstone House, Bedford.
PRIVATE HOME for MENTALLY AFFLICTED LADIES. Ten only received. Apply, Medical Officer or Mrs. PEELE. *Telephone:* 2708.

CITY OF LONDON MENTAL HOSPITAL, DARTFORD, KENT.
PRIVATE PATIENTS are received at a weekly charge of TWO GUINEAS and upwards.
Voluntary BOARDERS can now be admitted.—Apply to the MED. SUPERINTENDENT.

THE RESIDENTIAL TREATMENT OF ALCOHOLISM & DRUG ADDICTION

RENDLESHAM HALL

(Postal Address)—WOODBRIDGE, SUFFOLK.

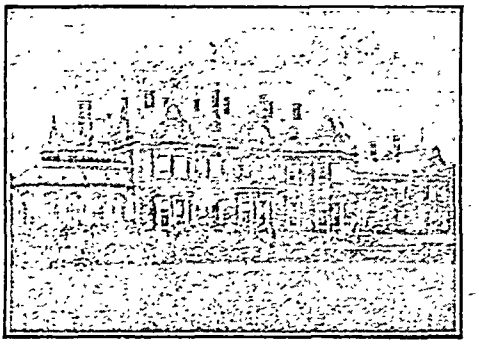
Rendlesham Hall, which is open to receive patients, is essentially a Sanatorium. Its daily life and routine are that of an ordinary comfortable holiday or health resort, or of a large country house. Each patient has all the privileges of a guest consistent with the prescribed medical treatment.

Rendlesham Hall has 45 bedrooms, and about 450 acres of gardens and park. It has also a private nine-hole golf course, tennis and croquet lawns, and bowling green.

Illustrated Booklet, giving particulars as to terms, etc., can be had on application to the

RESIDENT MEDICAL SUPERINTENDENT.

Telegrams and Telephone: Wickham Market 16.



RENDLESHAM HALL.

To those desiring to be near London—
The Mansion, Beckenham Park, Beckenham, as carried on for the last twenty years, is available. Booklet and particulars from the Resident Medical Superintendent.

Telephone: RAVENSBOURNE 0643. *Telegrams:* NOROTORIUM, BECKENHAM

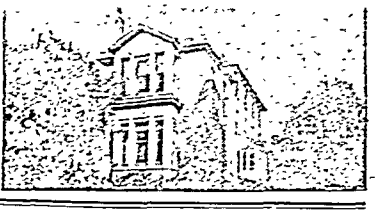
Proprietors: The Norwood Sanatorium, Limited.

ALCOHOLISM, DRUG HABIT, AND NEURASTHENIA.

BAY MOUNT, PAIGNTON.

(ESTABLISHED 1922). *'Phone:* PAIGNTON 5110.

A small comfortable Home charmingly situated in secluded gardens overlooking Torbay. Ladies and Gentlemen treated with a view to a rapid and permanent cure by modern methods, which give excellent results. Ample amusement, billiards, wireless, golf, tennis, etc. Good train service (3½ hours London). Moderate inclusive terms. Prospectus, report, etc., from—Stanford Park, M.B., CH.B., Res. Med. Supt., Bay Mount, Paignton.



INEBRIETY

DALRYMPLE HOUSE, RICKMANSWORTH, HERTS.

For the treatment of GENTLEMEN under the Act and privately. Estab. 1823 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded grounds on the bank of the River Colne. Full-sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by. For particulars apply to—F. S. D. HOGG, M.R.C.S., &c., Resident Medical Supt. Telephone: 16 RICKMANSWORTH.

ALCOHOLISM, OTHER DRUG HABITS, AND TROPICAL AILMENTS

THE HARE NURSING HOME

As founded and established by the late Dr. FRANCIS HARE, for 20 years Med. Supt. of The Norwood Sanatorium, and author of "Alcoholism," etc.; for the treatment of ALCOHOLISM, other Drug Habits, Insomnia, Neurasthenia, Functional Nervous Disorders, TROPICAL Ailments, etc.

"THE OLD HILL HOUSE," CHISLEHURST, KENT.

Terms moderate. Quiet and pleasant situation. *Ladies and gentlemen admitted for treatment.* For Prospectus, etc., write or 'phone: WALTER E. MASTERS, M.D., M.R.C.S., D.P.H., Barrister-at-Law (Resident Medical Superintendent). *'Phone:* Chislehurst 451. *Telegrams:* "Masters," Chislehurst.

BOREATTON PARK, BASCHURCH, SALOP.

A first-class Country Mansion especially adapted for the reception of a limited number of ladies and gentlemen mentally affected.
For particulars, apply Dr. Sankey.

BARNWOOD HOUSE, GLOUCESTER.

A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—ARTHUR TOWNSEND, M.D., Resident Supt. Telephone: No. 7 Barnwood.

CHEADLE ROYAL, CHEADLE, CHESHIRE.

This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.
Telephone: 481 GATLEY.

DRUG-ADDICTION AND NEURASTHENIA.

CALDECOTE HALL, NUNEATON.

RESIDENTIAL TREATMENT of the most modern kind is carried out under the personal direction of the Resident Medical Superintendent in this beautiful Country Mansion. Fees are moderate. *Full particulars from the Resident Medical Superintendent.*

Dr. A. E. CARVER, M.D., D.P.H.
Telephone: Nuneaton 241.

INEBRIETY AND DRUG-ADDICTION.

The Church of England Temperance Society has its own COUNTRY MANSION where Treatment is given by its Resident Medical Superintendent. The Institution is not conducted for profit, and fees are moderate, with Grants-in-Aid in certain cases.

Particulars from the General Secretary,
40, Marsham Street, S.W.1.

THE LAWN, LINCOLN.

A Registered Hospital situated in large grounds near the Cathedral receives VOLUNTARY BOARDERS and PRIVATE PATIENTS of both sexes for treatment of Mental and Nervous Disorders, including Post-Encephalitic conditions. Special facilities for Psychotherapy in co-operative cases.

All particulars may be obtained from the Resident Medical Superintendent,
Dr. MARY R. BARNES, M.D., D.P.M.

ST. ANDREW'S HOSPITAL
FOR MENTAL DISORDERS,
NORTHAMPTON

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical baths, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The Seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit *this branch for a short seaside change or for longer periods. The Hospital has its own private* bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone: No 56 Northampton), who can be seen in London by appointment.

HAYDOCK LODGE
NEWTON-LE-WILLOWS, LANCASHIRE.

'Phone: 11 *Ashton-in-Makerfield.*

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

COURT HALL, KENTON, EXETER,
SOUTH DEVON.

For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

Resident Physicians: BERTHA M. MULES, M.D., B.S.; ANNIE S. MULES, M.R.C.S., L.R.C.P.
Telephone: *Teignmouth* 289.

NEURASTHENIA
BELVOIR NURSING HOME, ASTON-ON-TRENT, DERBY.

Private Nursing Home for Neurasthenia and allied Functional Nervous Disorders, for general Convalescent Cases, and those requiring Electrical Treatment.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes In addition to the methods of general medicine, Psycho-Therapeutic treatment is used extensively in suitable cases. Certifiable cases are not received. Electrical Treatment, Radiant Heat, X-ray. Ultra-violet Light, and Massage is available in the Nursing Home. Billiards, tennis, etc Fees from 5 to 12 guineas per week. For further particulars apply to—
Dr. E. M. DOUGLAS-MORRIS, ASTON, DERBY. *Telephone*: *Shardlow* 16.
Dr Douglas-Morris can be seen by appointment in *London*.

THE COPPICE, NOTTINGHAM.
HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.

For terms, etc., apply to the Medical Superintendent.

MAUDSLEY HOSPITAL,
DENMARK HILL, S.E.5.

Telephone: RODNEY 4841.

A CLINIC [illegible] *for* [illegible] *London County Council for* [illegible] *CURABLE Mental Disorders. Voluntary patients ONLY RECEIVED.*

OUT-PATIENTS—2 p.m.: MEN—Mondays and Thursdays. WOMEN—Tuesdays and Fridays.
IN-PATIENTS: (*a*) 160 beds (both sexes) in wards or separate rooms. (*b*) 13 private rooms (for ladies) with special sitting rooms, garden, and dietary.

Terms:

(*a*) £5 a week, but in case of patients with a legal settlement in the County of London a less sum may be charged according to means.
(*b*) £6 6s. a week.

Terms include (with rare exceptions) all forms of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the hospital. Inquiries of EDWARD MAPOTHER, M.D., M.R.C.P., F.R.C.S., Medical Superintendent.

CHISWICK HOUSE.

A Private Mental Hospital for the Treatment and Care of Mental and Nervous Disorders.

Now removed to:

CHISWICK HOUSE,
PINNER,
MIDDLESEX.

Telephone: PINNER 234.

A modern country house, 12 miles from Marble Arch, in beautiful secluded grounds.

Fees are from 10 guineas a week.

Voluntary Patients received for treatment.

DOUGLAS MACAULAY, M.D., D.P.M.

Preston Deanery Hall,
Northampton.

(3½ miles from L.M.S. Station.)

This DIETETIC ESTABLISHMENT is equipped for the complete Investigation and treatment of patients on rational lines. Own X-ray and Laboratory Biochemical investigation is made a special feature.

Resident Biochemist, Masseurs and Masseuses, Hydro- and Electro-therapeutics, Fasting on Scientific Principles. The staff are specially qualified to deal with the errors of Metabolism, and provision is made for the treatment of Tropical Diseases.

Further particulars from the Secretary, Preston Deanery Hall, Northampton.
Tel.: Hardingstone 6.

STRETTON HOUSE,
Church Stretton, Shropshire.

A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental or Nervous cases are received without certificates as Voluntary Boarders. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. Telephone: 10 *P.O., Church Stretton.*

THE GRANGE,
near ROTHERHAM.

A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house with beautiful grounds and park, 5 *miles from* Sheffield. Station, Grange Lane, G.C. Railway, Sheffield. Telephone: No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S.

PLYMPTON HOUSE,
PLYMPTON, S. DEVON.

This old-established Licensed House offers every advantage that experience can suggest for the care and treatment of mental cases.
For terms, etc., apply to the Resident Physicians: Dr. ALFRED TURNER, Dr. J. C. NIXON.
Telephone: *No.* 2 *Plympton.*

RUTHIN CASTLE

(FORMERLY DUFF HOUSE, BANFF.)

The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiograph, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The Climate is mild and the neighbourhood beautiful. Apply: The Secretary,
Telegrams: Castle, Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

OXHEY GROVE,

HATCH END, MIDDLESEX

A NURSING HOME for BORDERLINE CASES of BOTH SEXES, twelve miles from Marble Arch.
Resident Medical Officer, male and female staff, visiting Pathologist. Fees 5 to 12 guineas.
Full particulars from the MEDICAL SUPERINTENDENT. *Telephone:* Hatch End 368.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.
Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone:* NORTH 0888.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "Psycholia, London." Telephone: Rodney 4731—4732.

FOR THE TREATMENT OF MENTAL DISORDERS.

Completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Croquet, Squash Racquets, and all indoor Amusements, including Wireless and other Concerts. Occupational Therapy. Daily services in the Chapel.
Senior Physician: Dr. HUBERT J. NORMAN; assisted by three Medical Officers, also resident. An illustrated Prospectus, giving full particulars and terms, may be obtained upon application to the Secretary.
HOVE VILLA, BRIGHTON. — A CONVALESCENT BRANCH OF THE ABOVE.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

FENSTANTON,

CHRISTCHURCH ROAD,

STREATHAM HILL, S.W.2.

A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Separate accommodation for Voluntary Boarders. Large Mansion with 12 acres of ground. (See *Medical Directory*, p. 2190.) Apply J. H. EARLS, M.D., Resident Physician. Telephone: Streatham 8430.

HEIGHAM HALL, NORWICH.

Telephone: 80 Norwich. FOR UPPER AND MIDDLE CLASSES

A PRIVATE HOME for Cure of Ladies and Gentlemen suffering from NERVOUS and MENTAL DISEASES. Extensive pleasure grounds. Private suites of Rooms with Special Attendants available. Boarders received without certificates.

Terms from 4 guineas weekly. Patients sent for. Apply, Dr. G. STEVENS POPE or Mrs. POPE, Resident Licensees.

GARTH HILL,

NORTH QUEENSFERRY,

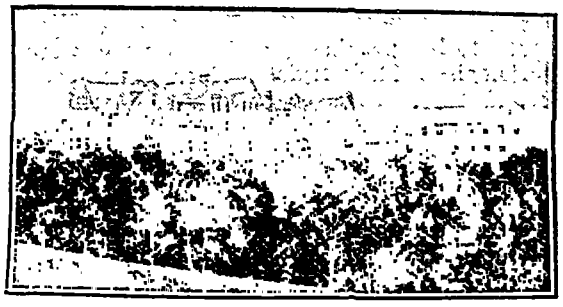
near EDINBURGH.

A SMALL PRIVATE HOME FOR TREATMENT OF NEURASTHENIC CASES.

Magnificent situation overlooking Firth of Forth. Stress laid on re-education of will and intelligent re-adaptation to environment.
For particulars apply ARTHUR J. BROCK, M.D., Medical Superintendent.
Telephone: *Inverkeithing* 179.

TOR-NA-DEE SANATORIUM

MURTLE DEESIDE ABERDEENSHIRE.



Medical Director: David Lawson, M.D., F.R.S.E.

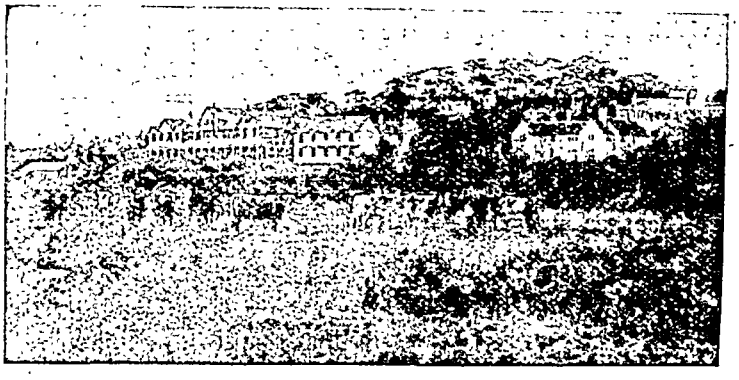
FULLY EQUIPPED WITH EVERY MODERN APPLIANCE FOR THE DIAGNOSIS AND TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.

Physician Superintendent - J. M. JOHNSTON, M.B., D.P.H., etc.

Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.

MUNDESLEY SANATORIUM



Specially built for the treatment of Pulmonary and other forms of Tuberculosis. Aspect S.S.W., on a carefully chosen site. Pure bracing air. High sunshine record. *Heliotherapy. Arc-light* treatment. One mile from the coast. Electric light throughout. X-ray installation. Full day and night Nursing Staff. Wireless (head-phones) throughout.

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L. WHITTAKER SHARP, M.B.(Camb.).
ANDREW J. MORLAND, M.B.(Lond.).

Apply, Mr. D. C. FORD, Secretary,
The Sanatorium, Mundesley, Norfolk.

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Established 1898 for the treatment of Tuberculosis. Radiators and Electric Light throughout. Hot and cold water and shower bath in nearly all rooms. Powerful X-ray Plant. Ultra-violet Rays. Full Nursing Staff. All forms of treatment available. Farm of 120 acres, including 40 acres of wood. Herd of Tuberculin-tested Guernsey cows kept. Resident Physicians—Arthur de W. Snowden, M.D., B.Ch.(Cantab.), A. G. E. Wilcock, M.R.C.S., L.R.C.P., Colin Cassidy, M.B., B.Ch.(Cantab.).

NORDRACH-UPON-MENDIP SANATORIUM

FOR THE TREATMENT OF PULMONARY AND OTHER FORMS OF TUBERCULOSIS
WAS OPENED IN JANUARY, 1899.

Patients are received for open-air, inoculation, or operative treatment. There are X-ray and ultra-violet ray installations. Full nursing staff. The Sanatorium stands in gardens and private grounds of 65 acres, at an elevation of 862 feet above sea-level, surrounded by woods and moorland. The patients' rooms are heated by hot-water pipes and electrically lighted.

Physicians: ROWLAND THURNAM, M.D., JAMES HENDERSON, M.B., Ch.B.Glas.

For full particulars apply to *The Secretary*, Nordrach-upon-Mendip, Blagdon, Bristol. *Telegrams*: Nordrach, Blagdon. *Telephone*: Blagdon 23

PENDYFFRYN HALL SANATORIUM

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Established 1900 for the treatment of Tuberculosis. Miles of carefully graduated walks through pine-clad hills, with sea and mountain views. Modern treatment, including SANOCRYSIN, ARTIFICIAL PNEUMOTHORAX, etc. X-ray plant, electric light, central heating, wireless. Full day and night nursing staff. On L.M.S. Main Line to Holyhead, 4¼ hours from London. Resident Physicians: Dennison Pickering, M.D.(Cantab.), F. W. Godbey, M.D., D.P.H.; Matron: Miss N. Rennardson, S.R.N.

For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 20.)

SELBRIGG SANATORIUM, HOLT, NORFOLK.

Telephone: HOLT 12.

Adjoining KELLING SANATORIUM

FOR THE TREATMENT OF TUBERCULOSIS.

On Pine-wooded heights above Cromer and Sheringham. Dry, Warm Climate. Maximum Sunshine. Completely Sheltered.

Terms: From 6 guineas weekly.

Further information and illustrated booklet from:
J. I. W. MORRIS, M.R.C.S.(Eng.), L.R.C.P.(Lond.),
Medical Superintendent, Kelling Sanatorium.

SMEDLEY'S

Unrivalled suites of Baths for Ladies and Gentlemen, including Turkish and Russian Baths, Aix and Vichy Douches, Massage and Plombieres Treatment, an Electric Installation for Baths and other Medical purposes, Dowsing Radiant Heat, D'Arsonval High Frequency, Diathermy, Nauheim Baths, etc. Special provision for invalids. Milk from our farm. Large Winter Garden. Night Attendance. Rooms well ventilated and all bedrooms warmed in Winter. A large Staff (upwards of 60) of trained Male and Female Nurses, Masseurs, and Attendants.

Telegrams: "SMEDLEY'S, MATLOCK." 'Phone: No. 17.
For Prospectus and full information please write MANAGER, M.J.

GREAT BRITAIN'S GREATEST HYDRO

Resident Physicians:
G. C. R. HARBINSON, M.B., B.Ch., B.A.O. (R.U.I.),
R. MACLELLAND, M.D., C.M.(Edin.).

MATLOCK

THE VICTORIA SANATORIUM,

AN ENTIRELY BRITISH SANATORIUM,

DAVOS (GRISONS), SWITZERLAND.

Terms - - from £5 a week.

Medical Superintendent: Bernard Hudson, M.D.(Cantab.), M.R.C.P., Swiss Federal Diploma.

LLANDRINDOD WELLS

Unsurpassable Mountain Air,
Saline, Sulphur, and Chalybeate Waters.
Up-to-date Electrical Treatments Given.

Guide and full particulars free from SECRETARY, SPA PUBLICITY DEPARTMENT.

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Owing to extensions there are at present a few Vacancies at the

DAVID LEWIS COLONY

for Ladies and Gentlemen who have Epilepsy, but are of good intelligence and sound mind.

Colony life gives to most people who have epilepsy the best chance of happiness and contentment.

Apply to the Medical Superintendent,
The David Lewis Colony, Warford, Alderley Edge

DROITWICH SPA

famous for its natural Brine Baths, which will cure Rheumatism and Allied Ailments.

RAVEN HOTEL or PARK HOTEL

famous for their comfort and hospitable service to each and every one of their guests.

Adjoining Brine Baths. 250 rooms. Extensive grounds. Golf, tennis, mixed bathing
Lock-up Garages and cars for hire.

Illustrated Booklet on request. 'Phone 50 or 38.

PEEBLES HYDRO.

Beautifully situated 600 feet above sea-level. Facing south, completely sheltered from north and east. 21 miles from Edinburgh.
All modern Baths, Douches, Massage, and Electrical Treatment. Ultra-Violet Radiation. Physician in attendance.
IDEAL HEALTH RESORT.
Electric Light, Central Heating, Electric Lift, three Billiard Tables, Ball Room, Winter Garden, Swimming Bath, Hard and Grass Tennis Courts, Badminton, Croquet Lawn, Golf Course Prospectus from Manager. 'Phone: Peebles 2.

Tel. & Telegrams: "Haynes, Brentwood, 45"
Littleton Hall, Brentwood, Essex.

Large grounds, 400 ft. above sea. HOME for Ladies Mentally afflicted. Voluntary Boarders received. Stations: Brentwood and Shenfield 1 mile. Liverp'l St. 26 min.—Apply, Dr. HAYNES.

NATIONAL ADOPTION SOCIETY,

4, Baker Street, W.1 (WEST OF ENGLAND BRANCH, 8, Bennett Street, Bath), seeks ADOPTING HOMES for Baby Boys and Girls who are medically recommended. No payment.

GRAMPIAN SANATORIUM,

KINGUSSIE, INVERNESS-SHIRE.

Specially built for the Open-air Treatment of Tuberculosis, and opened in 1901. Bracing mountain air. Elevation 860 ft. above sea-level. Sheltered situation in pine wood. Graduated walks. Electric light throughout building and in shelters. Central heating. Fully equipped X-ray Plant. Inoculation Treatment available for patients—24 beds. Trained Nurse on duty all night. Terms £4 6s. 8d. to £6 6s. *inclusive p.w.* Med. Supt.—FELIX SAVY, M.B., Ch.B. For particulars apply to the Secretary.

THE BRITISH SANATORIUM, MONTANA sur/Sierre,

SWITZERLAND.

Opened on January 1st, 1929, for the treatment of PULMONARY TUBERCULOSIS. English Nursing Staff. Inclusive terms from 7 guineas a week. *Medical Superintendent:*
Hilary Roche,
M.D. (Melb.), M.R.C.P. (Lond.), Tuberculous Diseases Diploma (Wales); Formerly H.P., Brompton Hospital, Medical Supt., Palace Sanatorium, Montana.

HERMITAGE SANATORIUM, Whitwell, Nr. Ventnor.

Unsurpassed situation, 600 ft. above sea-level, high sunshine record, own farm. Resident Medical Officer. Male cases only.

Inclusive weekly terms 50/-.

Special preferential arrangements for a few private cases at 4 guineas.

Artificial Pneumothorax, etc.

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Every kind of Massage. Ultra-violet Light.
Every kind of Electricity. Diathermy.
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Carlsbad and Vichy Waters, etc.
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Resident Physician: W. JOHNSON SMYTH, M.D.

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KLIPHEUVEL, CAPE PROVINCE, S.A., has facilities for accommodation on his farm for those seeking health or farming instruction; healthy and beautiful locality, near Cape Town; med. alt. and rainfall; vineyards, wine making, orchards, pedigree pigs, poultry, and general farming, terms mod.; particrs. refs. on applic.—No. 3504, B.M.A. House, Tavistock Sq., W.C.1.

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(FOUNDED IN 1882.)

Principal: Mr. E. S. WEYMOUTH, M.A.(Lond.). POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS.

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F.R.C.S.(Eng.), *Primary* 1906-28)	149
Final	135
M.R.C.P.(Lond.), 1914-28	152
D.P.H. (Various) 1906-28 (Completed Exam.).	280
F.R.C.S.(Edin.), 1918-28	39
M.R.C.S., L.R.C.P. *Final* 1910-28 (Completed Exam.).	402
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Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1 (Telephone: HOLBORN 6313.)

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Qualified Medical Women are admitted to **The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5,** for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clines, and antenatal clinics For further particulars, fees, etc., apply to the Secretary

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RADIUM COURSE

WESTMINSTER HOSPITAL (UNIVERSITY OF LONDON) MEDICAL SCHOOL

SPECIAL COURSE IN THE RADIUM TREATMENT OF CANCER

AS announced in May last a practical course in the RADIUM treatment of Cancer, designed for Medical Men who have recently had, or are about to have, Radium put at their disposal, will be held at Westminster Hospital from July 29th to August 3rd, 1929.

Details of the Course, for which the fee will be ten guineas, may be obtained on application to the Dean,

A. S. WOODWARK, C.M.G., C.B.E., M.D., F.R.C.P.,
WESTMINSTER HOSPITAL MEDICAL SCHOOL, 12, CAXTON STREET, S.W.1

Ryland

THE MIDDLESEX HOSPITAL MEDICAL SCHOOL, W.1.
(University of London.)

PRIMARY F.R.C.S.

A Course of Instruction for the above Examination will start on July 1st.

Fee:—
ANATOMY ... £12 12 0
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(If both subjects are taken, Fee £21)

Further particulars may be obtained on application to the School Secretary, Middlesex Hospital, Mortimer St., W.1

LONDON SCHOOL OF DERMATOLOGY,
ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN,
LEICESTER SQUARE, W.C.2.

Conducted by the Honorary Staff of the Hospital, together with Physicians in charge of the Dermatological Departments of the London Teaching Hospitals. Lectures and Demonstrations every Tuesday and Thursday, at 5 p.m., from October to March, and four times weekly during May (Tuesdays daily at 2 p.m. and 6 p.m., Saturdays 2 p.m. only. Pathological Laboratory for Instruction or Research Work.
For further particulars, fees, etc., apply to A. C. ROXBURGH, M.D., Dean.

Society of Apothecaries of LONDON.

MASTERY OF MIDWIFERY EXAMINATION.

The next Examination will take place on Monday, November 18th, and following days. For regulations apply to—
FRANK HAYDON, Secretary.

THE MIDDLESEX HOSPITAL MEDICAL SCHOOL, LONDON, W.1.
(UNIVERSITY OF LONDON).

TWO ENTRANCE SCHOLARSHIPS of the value of £100 each, one in Arts and one in Science, will be offered for competition.

TWO SCHOLARSHIPS of the value of £90 and £60 respectively, are open to students of the Universities of Oxford and Cambridge who have completed the curriculum for or passed the Examination in Anatomy and Physiology.

The Examination will take place on July 29th, 30th, and 31st, 1929.

The successful candidates will be required to become general students of the School.

WINTER SESSION OPENS ON OCT. 1st.

Application forms and last year's papers can be obtained from the Secretary, Middlesex Hospital Medical School, Mortimer Street, W.1.

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A PUBLIC SCHOOL FOR BOYS.

Boys are regularly prepared for the First M.B. Examination, University Scholarships in Chemistry, Biology, etc.

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COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 7th, and for the Diploma in Tropical Hygiene on January 12th and April 26th. (Candidates for the D.T.H. must possess the D.T.M. of this University.)
For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

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Remedial instruction for Stammer, Aphonia, Neurotic hesitation and lisp, Cleft palate and disturbed or undeveloped co-ordination.
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Special Terms to Medical Men.

F.R.C.S. (Edin.).

A TUTORIAL CLASS, with Museum Demonstrations, for the next Examination will commence shortly. Correspondence tuition if desired.—FRED GRAHAM, M.D., F.R.C.S.(Edin.), Surgeons' Hall, Edinburgh.

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F.R.C.S.ENGLAND. (Primary & Final.) C.M.EDINBURGH. M.C.CANTAB. F.R.C.S.EDINBURGH. M.S.LONDON.

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Applications are invited for this

SCHOLARSHIP

of the value of £50 per annum.

The successful candidate will conduct Clinical Research at the Hospital. Names must be sent in by July 15th, 1929.

For details apply to—

THE DEAN,
Royal London Ophthalmic Hospital, City Road, London, E.C.1.

F.R.C.S.(Edin.).

Prep. Classes and Museum Demons. for next Fellowship Exam will commence shortly. Correspondence course for Sept. and later exams.

P.....

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

Warrington Infirmary and DISPENSARY.

POST-GRADUATE COURSE.

Syllabus of Lectures and Demonstrations.

July 2nd. R. Coope, M.D., M.R.C.P. "Diseases of Thyroid Gland."

July 9th. P. B. Mumford, M.D., M.R.C.P. "Some Common Skin Diseases of the Face."

The sessions are from June to July 9th, and from the middle of September to the end of October, at 8.30 p.m.

These lectures are open to members of the Medical Profession without fee.

All Saints' Hospital (For Genito-URINARY DISEASES), 49/55, Vauxhall Bridge Road, S.W.1.

DEMONSTRATIONS IN CYSTOSCOPY are held on:

Wednesdays ...	Mr. Coyte ...	1.30 p.m.
Thursdays ...	Mr. Attwater ...	1.30 p.m.
Saturdays ...	Mr. Loughnane ...	1.30 p.m.

Special classes and tuition by arrangement.

Goculdas Tejpal Hospital, BOMBAY.

APPOINTMENT OF HONORARY SURGEON.

Applications are invited for the above appointment. Goculdas Tejpal Hospital (266 beds) is associated with the Grant Medical College, Bombay, for clinical teaching of undergraduates. The appointment carries an honorarium of Rs.150 per mensem, and will be for a period of five years, subject to termination by three months' notice on either side.

Applications, in duplicate, marked "Honorary Surgeon," stating age, qualifications, and experience, together with copies of three recent testimonials, must be sent so as to reach the undersigned not later than the first week in August.

F. N. MOOS, M.D.Lond.,
Superintendent, G. T. Hospital, Bombay.

The Urban District of Weston-SUPER-MARE.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH.

The Council invite applications for the position of Medical Officer of Health and Medical Superintendent of the Isolation Hospital.

For the present the appointment will be a part-time one, but it is hoped that further Public Health work will become available in the near future.

The gentleman appointed will be precluded from engaging in general practice, but will be given opportunity for doing other remunerative work.

Applicants must be registered Medical Practitioners, holding a qualification in Public Health or State Medicine. Previous experience in school medical work is desirable.

The appointment will be subject to the provisions of the Public Health (Officers) Act, 1921, and the Sanitary Officers Order, 1926, and the duties will be those prescribed by the Order, and such other duties as are or may be imposed by the Council. Any other work or duty proposed to be undertaken to be subject to the approval of the Council.

Commencing salary £600 per annum, payable monthly.

Office accommodation and staff are provided by the Council.

The office is an established post under the Local Government and Other Officers Superannuation Act, 1922.

Personal canvassing of members of the Council, either directly or indirectly, will be a disqualification, but 24 copies of the application and testimonials may be sent to me for the use of the Council.

Applications, on forms to be obtained from the undersigned, endorsed "Medical Officer of Health," and accompanied by copies of three testimonials of recent date, must be forwarded to me before July 15th next.

SYDNEY C. SMITH,
Town Hall, Clerk to the Council.
Weston-super-Mare.
June 20th, 1929.

Edinburgh District Board of CONTROL.

GOGARBURN—MEDICAL SUPERINTENDENT.

Medical Superintendent wanted by the Edinburgh District Board of Control for Gogarburn Certified Institution.

Applications, with one copy of testimonials, to be lodged with the Clerk to the Board not later than Saturday, July 13th.

Particulars of the appointment may be obtained on application to the Clerk, Mr. W. M. MOWAT, Edinburgh District Board of Control, Castle Terrace.

Chambers, Castle Terrace, Edinburgh,
June 22nd, 1929.

Birmingham Union.

DUDLEY ROAD HOSPITAL.

JUNIOR ASSISTANT MEDICAL OFFICERS (Male).

Applications are invited from fully qualified medical practitioners for appointments as Junior Assistant Medical Officers (male) at the Dudley Road Hospital, Birmingham.

eds, divided into Infectious, Mater- ectrical Sections. There are completely equipped Pathological and Biochemical Laboratories, X-ray, Electrical, Massage, Sunlight, and Dental Departments. Approximately 5,000 operations are performed annually.

The appointments will be for a period of six months in the first instance, but may be extended at the end of that period.

The persons appointed will be required to assist at operations, to administer anæsthetics, and undertake casualty work and such other duties as may be assigned to them by the Chief Medical Officer, and, should occasion arise, to assist at any of the other Institutions under the control of the Guardians.

The salaries attached to the appointments will be at the rate of £200 per annum, together with full residential emoluments (rations, apartments, laundry, and attendance).

A deduction of 2 per cent. will be made from the salaries and value of emoluments under the provisions of the Poor Law Officers Superannuation Act, 1896, and for this purpose the emoluments are valued at £200 per annum. Fourteen days' leave will be granted to the successful candidates during their terms of office.

Further particulars of the appointments may be obtained from the Chief Medical Officer, F. W. ELLIS, Esq., M.D., F.R.C.S., Dudley Road Hospital.

Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, should be forwarded so as to reach me not later than Thursday, July 4th.

Union Offices, C. P. BEECH,
Birmingham. Clerk to the Guardians.
June 17th, 1929.

Birmingham Union,

SELLY OAK HOSPITAL.

CASUALTY OFFICER (MALE).

Applications are invited from fully qualified medical practitioners for the appointment of Casualty Officer (male) at the Selly Oak Hospital, Birmingham.

The present Hospital accommodation is 550 beds, divided into General Medical, General Surgical, Gynæcological, Obstetrical, Children, and Infectious sections. There is a completely equipped Pathological Laboratory, also X-ray, Electro-Therapeutic, Massage, and Sunlight Departments. Over 2,500 operations are performed annually.

The appointment will be for a period of six months in the first instance, but may be extended at the end of that time.

The person appointed will be required to assist at operations, administer anæsthetics, and undertake casualty work, and such other duties as may be assigned to him by the Medical Superintendent, and, should occasion arise, to assist at any of the other Institutions under the control of the Guardians.

The salary attached to the appointment is at the rate of £200 per annum, together with full residential emoluments (rations, apartments, laundry, and attendance).

A deduction of 2 per cent. will be made from the salary and value of emoluments under the provisions of the Poor Law Officers Superannuation Act, 1896, and for this purpose the emoluments are valued at £200 per annum.

Further particulars of the appointment may be obtained from the Medical Superintendent, Mr. R. P. S. KELMAN, M.B., F.R.C.S. (Eng. & Edin.), at the Selly Oak Hospital.

Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, must be forwarded so as to reach me not later than Friday, July 12th.

Union Offices, C. P. BEECH,
Edmund Street, Clerk to the Guardians.
Birmingham.
June 21st, 1929.

Harrogate Infirmary.

Applications are invited from British subjects (male) for the post of JUNIOR HOUSE SURGEON, which will become vacant on June 30th. The successful applicant will be required to take up the appointment at once. Salary is at the rate of £100 per annum, with board, lodging, and laundry.

Applications to be made on official form to to be had from the undersigned and should be sent in immediately.

The Infirmary, GEO. BALLANTYNE,
Harrogate. Secretary.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered *under the Medical Acts* in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after two years' Indian service for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

PAY.

The monthly rates of pay for European officers in the Service who have a "non-Asiatic" domicile are as follows:

Rank.	Service in Rank.	Basic Pay.	Overseas Pay.	Year of Total Service.
1	2	3	4	5
		Rs.	Rs.	
Lieut.		500	150	1st
			150	2nd
			150	3rd
Capt.	(i) During first 3 years' service as Captain	650	150	4th
			£15	5th
			£15	6th
	(ii) With more than 3 and less than 6 yrs.' service as Captain	750	£25	7th
			£25	8th
			£25	9th
	(iii) With more than 6 years' service as Captain	850	£25	10th
			£25	11th
			£30	12th
Major	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years' service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years' total service	1500	£30	13th and over
	(ii) During 24th and 25th years' service	1600		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

WAR SERVICE CONCESSIONS.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion, retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

OUTFIT ALLOWANCE.

Officers on appointment will receive an outfit allowance of £50.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

PENSIONS.

The rates of pension are as follows:

	Per annum. £
After 17 years' service for pension	400
„ 18 „ „ „	430
„ 19 „ „ „	460
„ 20 „ „ „	500
„ 21 „ „ „	540
„ 22 „ „ „	580
„ 23 „ „ „	620
„ 24 „ „ „	660
„ 25 „ „ „	700
„ 26 „ „ „	750
„ 27 „ „ „	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all, the revision being undertaken triennially. With effect from July 1st, 1927, a reduction of 4½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 *per annum for officers who have held* administrative appointments.

PASSAGES.

An officer on appointment is provided with a free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. Applications should be submitted as soon as possible. The Selection Committee will meet early in July to make nominations, and the selected candidates will be required to attend a course of instruction commencing on the 6th August, 1929.

ROYAL ARMY MEDICAL CORPS.

TWENTY-FIVE COMMISSIONS in the ROYAL ARMY MEDICAL CORPS will be offered in July, 1929. Applications should reach the War Office not later than July 20th.

Candidates will be selected for Commissions without competitive examination, and will be required to present themselves in London for interview and medical examination towards the end of July. They must be under 28 years of age on August 1st, 1929, and registered under the Medical Acts.

Officers of the R.A.M.C. are liable to serve in any part of the world where British Troops are quartered.

Ample opportunities exist in the Army for clinical professional work, both Medical and Surgical, as well as for the study and practice of Hygiene, Pathology, and all the special branches.

The cost of Post-Graduate study, which is compulsory, is met from Army Funds.

Pay and Allowances.—Pay from £500 to £2,000 a year according to rank and length of service.

Gratuities on Retirement.—After 7 years' service £1,000.
„ 15 „ „ £2,800.
„ 18 „ „ £3,500.

Current rates of retired pay range from £372 per annum normally earned by a Major after 20 years' service to £940 per annum, the maximum for which a Major-General is eligible. The rates of pay and retired pay are subject to periodical variation consequent on fluctuation in the cost of living.

Outfit Grant.—An officer on joining receives £50 as outfit allowance.

Marriage Allowance.—Officers of 30 years of age and over who are married are entitled to draw special rates of allowances.

A Voluntary Widows' and Orphans' Fund exists for officers of the Corps.

All particulars may be obtained by application, in writing or personally, to the Under Secretary of State, The War Office (A.M.D.1), Whitehall, London, S.W.1.

Administrative County of East SUFFOLK.

RURAL DISTRICT OF HOXNE.

APPOINTMENT OF MALE ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH AND MEDICAL OFFICER OF HEALTH FOR THE RURAL DISTRICT OF HOXNE.

Applications are invited from male registered practitioners for the combined post of Assistant County Medical Officer of Health and District Medical Officer of Health.

The duties of the post include medical inspection of school children, maternity and child welfare work, clinical and tuberculosis work, and general public health work. The possession of the Diploma of Public Health is essential. The person appointed will be required to devote the whole of his time to the services of the two Councils.

The total salary will be £625 per annum; motor car allowance will be paid according to the County Council's scale for the use of the Officer's car.

The person appointed will be required to pass a medical examination and to contribute to the Council's Superannuation Fund. The appointment will be terminable by three months' notice on either side.

Applications must be made upon a form to be obtained, together with further particulars, from the County Medical Officer of Health, County Hall, Ipswich, to whom the completed forms should be returned not later than Friday, July 12th.

County Hall, Ipswich.
June 14th, 1929.

CECIL OAKES,
Clerk of the County Council.

Administrative County of East SUFFOLK.

APPOINTMENT OF MALE ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from male registered practitioners for the above appointment.

The duties of the post include the Medical Inspection of School Children and Maternity and Child Welfare work. Experience in Eye Refraction is desirable, and the possession of the Diploma of Public Health will be a recommendation. The person appointed will be required to devote the whole of his time to the duties of the office.

The salary attaching to the post will be £600 per annum. A deduction of 5 per cent. for superannuation will be made, and motor car allowance will be paid on the Council's scale for use of the officer's car.

The person appointed will be required to pass a medical examination, and the appointment will be subject to three months' notice on either side.

Applications are to be made upon a form which can be obtained from the County Medical Officer of Health, County Hall, Ipswich, to whom the completed forms should be returned not later than Friday, July 12th.

County Hall, Ipswich.
June 1929.

CECIL OAKES,
Clerk of the County Council.

City and County of Newcastle-UPON-TYNE.

CITY [illegible] FOR INFECTIOUS DISEASES.

RESIDENT MEDICAL ASSISTANT (Male).

Wanted [illegible] a Resident Medical Assistant [illegible] ds a registrable qualification in [illegible] Surgery (and preferably also [illegible] ealth), and possesses a practical k[illegible] Bacteriology.

Salary £[illegible], with board, lodging, etc.

Applications [illegible] qualifications, and previous experience, [illegible] warded with copies of not more than [illegible] of testimonials to the Medical [illegible] ealth, Town Hall, Newcastle-upon-Tyne.

June 25th, 1929.

Oldham Royal Infirmary.

Applications are invited for the undermentioned posts:

HOUSE SURGEON in charge of Women's and Children's Wards.

HOUSE SURGEON in charge of Male Wards.

HOUSE SURGEON in charge of Out-patients and Special Departments; each post a knowledge of Refraction desirable.

Salary £175 in each case with board, residence, and laundry. Appointments tenable for six months. Successful applicants may reapply for a further six months' service.

Applications, with copies of not more than three recent testimonials, to be forwarded to the undersigned immediately.

CHARLES [illegible] A.R.F.
General Superintendent.

Parish of Portsmouth.

THIRD ASSISTANT RESIDENT MEDICAL OFFICER.

The Guardians of the above-named Parish invite applications for the appointment of Third Assistant Resident Medical Officer for Saint Mary's Hospital, Institution, and Children's Home.

The appointment will be made for a period not exceeding two years, and will be subject to one month's notice on either side. Salary £250 per annum, with furnished apartments, rations, and all other allowances.

The appointment will be subject to the provisions of the Poor Law Officers Superannuation Act, 1896, for which purpose the value of the emoluments has been fixed at £125 per annum.

Candidates must be single gentlemen, duly registered, and possessing the qualifications required by the Orders of the Ministry of Health, and preference will be given to candidates having a knowledge of the treatment of Mental Diseases.

A Resident Medical Superintendent is in attendance.

Applications to be made on printed forms, which may be obtained at the Guardians' Offices, 1, St. Michael's Road, Portsmouth, and must be returned to me, accompanied by not more than three recent testimonials and description of diplomas, certificates of degrees, licences, and other instruments held by the candidate, by 10 a.m. on Tuesday, the 16th day of July, 1929.

Selected candidates will have notice to attend, and third-class railway fare and reasonable personal expenses will be allowed.

By Order,
W. E. GODFREY,
Clerk to the Guardians.

June 21st, 1929.

County Borough of West BROMWICH.

SECOND ASSISTANT MEDICAL OFFICER OF HEALTH.

The Council invite applications for the above appointment.

The officer will be subject to and under the directions of the Medical Officer of Health.

The officer appointed will be required to assist chiefly in School Medical and Maternity and Child Welfare Services, and generally to work as one of the Assistants to the Medical Officer of Health.

Experience in Ante-natal work, Diseases of Children, and in the Diagnosis and Treatment of Tuberculosis will be specially considered.

Applicants must be registered medical practitioners and possess a Diploma in Public Health or similar qualification.

The person appointed will be required to devote the whole of his time to the duties assigned to him by the Council, to live in the Borough, and not to engage in private practice.

Salary £600 per annum. No bonus. Appointment terminable on the part of the officer by one month's notice.

Applications (on forms supplied by the undersigned), stating age, qualifications, and experience, accompanied by copies of not more than three recent testimonials, should be forwarded by not later than July 6th, and should be endorsed "Assistant Medical Officer of Health."

Town Hall, West Bromwich.
June 19th, 1929.

ALFRED WICKHAM,
Town Clerk.

County Borough of Gateshead.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER AT MENTAL HOSPITAL.

Applications are invited from registered medical practitioners (male) for the post of Assistant Medical Officer at the Gateshead Mental Hospital, Stannington, Northumberland.

Applicants must not be over 35 years of age and should have held a resident appointment in a General Hospital.

The salary will be at the rate of £400 per annum, rising by increments of £25 to £500 per annum, with board, lodging, and laundry (valued at £150 per annum), and will be subject to deductions according to the Asylum Officers Superannuation Act of 1909. The appointment to be terminable on three months' notice from either party.

The successful candidate will be expected to obtain the Diploma in Psychological Medicine.

Preference will be given to candidates having experience in Ear, Nose, and Throat Diseases.

Applications, accompanied by copies of three recent testimonials, to be sent to the Medical Superintendent, Gateshead Mental Hospital, Stannington, Northumberland, not later than Friday, July 12th.

Personal canvassing will be a disqualification.

By Order,
W. SWINBURNE,
Town Clerk.

Town Hall, Gateshead.
June 14th, 1929.

Clerk to the Visiting Committee.

County Council of Middlesex.

TUBERCULOSIS MEDICAL OFFICER.

The County Council invite applications for the post of Tuberculosis Medical Officer. Salary £750 per annum, rising by annual increments of £50 to £1,000 (no bonus), together with out-of-pocket travelling expenses.

Candidates must be registered medical practitioners of not less than 25 years of age, who have held resident appointment in a General Hospital for at least six months, and have had special practical experience in the diagnosis and treatment of tuberculosis in sanatoria or otherwise.

The officer appointed will be required to devote his whole time to his official duties, to work under the administrative control of the County Medical Officer of Health, to reside in such district as may be required, to pass such medical examination as the County Council may direct, and to contribute to the County Council's superannuation fund.

The duties will include the charge of tuberculosis dispensaries, the general arrangement for the treatment of tuberculous patients otherwise than in sanatoria, and such other duties of a similar nature as the Council may direct.

The appointment will commence on October 1st, will be during the pleasure of the Council, and subject to one month's notice on either side.

Applications, setting out (1) age, (2) qualifications, (3) experience, and (4) past appointments, together with copies of three recent testimonials, must be received by the undersigned not later than July 15th. No special application forms are provided. Canvassing will disqualify.

ERNEST S. W. HART,
Clerk of the County Council.

Middlesex Guildhall, Westminster, S.W.1.
June 24th, 1929.

County Borough of Barnsley.

MEDICAL OFFICER OF HEALTH.

The Barnsley County Borough Council invite applications for the positions of Medical Officer of Health, School Medical Officer, Chief Tuberculosis Officer, Infant Welfare Superintendent, and Chief Officer of the Corporation's Venereal Disease Clinic. The total commencing salary for the whole of the positions held will be £900 per annum. Candidates must be duly qualified medical practitioners, possessing a recognized Diploma in Public Health and the requisite qualifications required by Acts of Parliament and the Regulations of the Ministry of Health, in respect of each of the above positions. The gentleman appointed will be required to devote the whole of his time to his duties and will not be allowed to engage in private practice. Canvassing, either directly or indirectly, will be regarded as a disqualification, but the selected candidates will be permitted to send 20 copies of their application and testimonials for use of members of the Selection Committee. Applications, accompanied by copies of not more than three recent testimonials, must be sent to the undersigned, endorsed "Medical Officer of Health," not later than Monday, July 8th.

The Town Clerk's Office, Barnsley.
June 12th, 1929.

A. D. MASON,
Town Clerk.

Derby Union.

SECOND RESIDENT MEDICAL OFFICER.

Applications are invited for the appointment of Second Medical Officer (male) of the Guardians' Institution and Infirmary, which is a Major Training School for Nurses (a new Hospital of 350 beds is nearing completion). Salary at the rate of £250 per annum, with residential allowances.

Two months' notice of resignation to be given to date from the Board Meeting next after the receipt of the resignation.

The appointment will be subject to the sanction of the Ministry of Health, and to the provisions of the Poor Law Officers Superannuation Act, 1896.

Applications, with particulars of age, previous career, qualifications, diplomas and certificates held, together with copies of three recent testimonials, must be sent in on or before Thursday, July 4th.

Poor Law Offices, Derby.

RALPH GRANTHAM,
Clerk to the Guardians.

Stockport Infirmary.

Applications are invited from fully qualified gentlemen for the positions of HOUSE SURGEON and HOUSE PHYSICIAN. Salary £175 per annum in each case, with board, residence, and laundry. Applications, addressed to the undersigned, stating age and qualifications, with copies of three recent testimonials, to be delivered not later than Saturday morning, July 6th.

EDWIN J. PEARCE.
Secretary-Superintendent.

The Welsh National School of MEDICINE.

The Board of Medicine invite applications for the following posts:

(a) JUNIOR ASSISTANT in the MEDICAL UNIT. The appointment is a probationary one for a period not exceeding three years beginning in October next, and the salary is £500 per annum.

(b) JUNIOR ASSISTANT in the SURGICAL UNIT. The appointment is a probationary one for a period not exceeding two years beginning as soon as possible, and the salary is £350 per annum.

(c) ASSISTANT LECTURER in PATHOLOGY at a salary of £500 per annum. The appointment will be made as from October next.

The person appointed in each case will be required to devote his whole time to the duties of the office.

Further particulars may be obtained from the undersigned, by whom applications, accompanied by not more than four testimonials, must be received on or before July 15th.

Sixty typewritten copies of applications and testimonials are required.

University College, Cardiff. D. J. A. BROWN, Secretary.

June 24th, 1929.

Metropolitan Asylums Board.

TUBERCULOSIS SERVICE.

APPOINTMENT OF CONSULTING LARYNGOLOGIST.

The Board desire to obtain the services of a Consulting Laryngologist for their Institutions for the treatment of Pulmonary Tuberculosis. Remuneration at the rate of 200 guineas per annum, but it is possible that the work may be divided between two Consultants at a remuneration at the rate of 100 guineas each. Visits to be made once a month to four Institutions, and once every two months to two Institutions. Three of the Institutions are situated in the outer suburbs of London, and the other three are near Godalming, Wokingham, and Brentwood respectively.

Form of application, giving full particulars, may be obtained by forwarding stamped addressed foolscap envelope to the Clerk, Metropolitan Asylums Board, Victoria Embankment, London, E.C.4, to whom completed applications must be returned not later than 10 a.m. on Thursday, July 4th.

ALLAN POWELL, Clerk to the Board.

Metropolitan Asylums Board.

NORTHERN HOSPITAL, Winchmore Hill, N. 21.

APPOINTMENT OF JUNIOR ASSISTANT MEDICAL OFFICER in the Female Pulmonary Tuberculosis Unit.

Applications are invited for the appointment of Junior Assistant Medical Officer in the section of the above-named Hospital set apart for the reception and treatment of female adults suffering from pulmonary tuberculosis.

Candidates must not exceed 30 years of age, and should have had experience in artificial pneumothorax treatment, in X-ray work, and in the giving of anæsthetics for dental work.

Salary £500 per annum.

The candidate appointed will be required to reside in the Hospital, and to pay for board, lodging, and washing at the rate fixed from time to time. At present the rate is £130 per annum. Married quarters are not available.

Application to be made not later than 10 a.m. on Thursday, July 11th, 1929, on form obtainable by sending stamped addressed foolscap envelope to the Clerk, Metropolitan Asylums Board, Victoria Embankment, London, E.C.4.

ALLAN POWELL,
June 24th, 1929. Clerk to the Board.

Manchester Northern Hospital

FOR WOMEN AND CHILDREN,
Park Place, Cheetham Hill Road, Manchester.

require the
IGEON, duly
n as possible.
d only.
perience and

when available, with copies of recent testimonials, to be sent to the Secretary, Mr. JAMES C. DANIELS, 38, Barton Arcade, Manchester, not later than July 5th.

Golden Square Throat, Nose, and EAR HOSPITAL, London, W.1.

Applications are invited for the post of HONORARY ASSISTANT SURGEON. Applications, stating age, qualifications, and experience, accompanied by copies of three testimonials, should reach the undersigned not later than Saturday, July 20th.

F. P. CARROLL, Secretary-Supt.

County Borough of Croydon.

CROYDON MENTAL HOSPITAL, UPPER WARLINGHAM, SURREY.

APPOINTMENT OF SECOND ASSISTANT MEDICAL OFFICER.

The Visiting Committee of the Croydon Mental Hospital are prepared to receive applications from medical men for the appointment of Second Assistant Medical Officer at the Croydon Mental Hospital.

The salary will be at the rate of £350 per annum, rising by two annual increments of £25 to a maximum of £400 per annum, and the age of the candidate should not exceed 35.

Furnished apartments will be provided, with board and washing, and for the purpose of superannuation will be valued at £125 per annum.

Candidates must be registered under the Medical Act and possess previous Mental Hospital experience, and preference will be given to those candidates who have held the post of House Surgeon or House Physician at a General Hospital.

The appointment will be subject to the provisions of the Asylum Officers Superannuation Act, 1909.

Applications to be made on forms to be obtained by sending a stamped addressed foolscap envelope to the undersigned, with copies (not originals) of not more than three testimonials of recent date, not later than 11 o'clock in the forenoon of Thursday, July 4th, 1929, endorsed "Croydon Mental Hospital Second Assistant Medical Officer."

Canvassing in any form is prohibited.

Town Hall, Croydon. JOHN M. NEWNHAM, Clerk to the Visiting Committee.

June 25th, 1929.

Manor Hospital, Walsall.

A JUNIOR RESIDENT ASSISTANT MEDICAL OFFICER.

The Guardians of the Walsall Union invite applications from duly qualified gentlemen for the appointment of Junior Resident Assistant Medical Officer, at Manor Hospital, Walsall.

The appointment will be for a period of six months, renewable at the option of the Guardians, and the salary will be at the rate of £130 per annum, together with the usual residential emoluments.

The gentleman appointed will be required to act under the general direction of the Medical Officer, from whom particulars of the appointment may be obtained.

Applications, stating age, professional qualifications, and experience, accompanied by not more than three copies of recent testimonials, should be sent to the undersigned at once.

C. S. FOTHERGILL, Union Offices, 29, Leicester Street, Walsall. Clerk to the Guardians.

Bristol Homœopathic Hospital.

(BRUCE MELVILLE WILLS MEMORIAL.)

The Board of Management invite applications for the appointment of RESIDENT MEDICAL OFFICER at a salary of £100 per annum, with board, laundry, etc., and residence in the Hospital.

Good Surgical and general experience.

Candidates must be registered under the Medical Acts, and produce testimonials of good personal character and ability.

Applications should be forwarded, with three copies of recent testimonials, addressed to the undersigned, not later than July 4th.

Applicants should state the earliest date they could commence duties, if appointed

H. HUNTER (Lt.-Colonel), Secretary.

Napsbury Mental Hospital,

NAPSBURY, ST. ALBANS, HERTS.
COUNTY COUNCIL OF MIDDLESEX.

Male JUNIOR ASSISTANT MEDICAL OFFICER required. Salary £425 per annum, rising by £10 per annum to £525. Deductions for board, lodging, washing, and attendance, £120 per annum. Appointment is subject to the Asylum Officers Superannuation Act, 1909. Applications, with copies of testimonials, to the Medical Superintendent.

General Hospital, Gt. Yarmouth.

(72 Beds.)

Applications are invited for the post of JUNIOR HOUSE SURGEON. Salary £100 per annum, with board, residence, and laundry. Candidates (male and unmarried) must be fully qualified and registered.

Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be sent immediately to the undersigned.

T. H. G. GARTLAND, Secretary.

Royal Salop Infirmary,

SHREWSBURY.
(150 Beds.)

APPOINTMENT OF RESIDENT HOUSE PHYSICIAN.

Applications are invited from fully qualified men for the appointment of Resident House Physician.

Salary £160 per annum, with board, residence, etc.

The appointment is for six months in the first instance, subject to reappointment for a further period of six months.

Applications, stating age, qualifications, experience, nationality, and accompanied by copies of three recent testimonials, to be sent to the undersigned immediately.

J. W. NOBLE,
June 14th, 1929. Secretary-Superintendent.

Royal Salop Infirmary,

SHREWSBURY. (150 Beds.)

APPOINTMENT OF RESIDENT SURGICAL OFFICER.

Applications are invited from fully qualified men for the appointment of Resident Surgical Officer, vacant about the middle of August.

The appointment is for a period of 12 months, at a salary of £200 per annum, with board, residence, etc.

The Resident Surgical Officer is Senior Resident Officer of the Hospital. House staff comprises House Physician and House Surgeon.

Applications, stating age, qualifications, experience, nationality, and accompanied by copies of three recent testimonials, to be sent to the undersigned.

J. W. NOBLE,
June 14th, 1929. Secretary-Supt.

North Staffordshire Royal INFIRMARY, STOKE-ON-TRENT.

(350 Beds.)

The General Committee invite applications for the post of HOUSE SURGEON for Ophthalmic and Aural Departments. Salary £150 per annum, with board, residence, and laundry. The appointment will be for six months, renewable.

Applications to be sent to the undersigned immediately, together with two or three copies of recent testimonials. Preference will be given to candidates having had previous Hospital experience in Ophthalmic and Aural Departments. There are six residents—two medical, four surgical.

North Staffs Royal Infirmary, Stoke-on-Trent. W. STEVENSON, Secretary and House Governor.

North Staffordshire Royal INFIRMARY, STOKE-ON-TRENT.

(350 Beds.)

The General Committee invite applications for the post of HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry. The appointment will be for a period of twelve months. Applications to be sent to the undersigned immediately, together with copies of two or three recent testimonials. Preference will be given to candidates having had previous Hospital experience. There are six residents—two medical, four surgical.

North Staffs Royal Infirmary, Stoke-on-Trent. W. STEVENSON, Secretary and House Governor.

St. John's Hospital, Lewisham,

S.E.13.

Applications are invited for TWO MALE RESIDENT HOUSE APPOINTMENTS, for a period of 3 months commencing on August 1st. Salary for each, £100 per annum. Successful applicants must apply for a further term of duty in the next senior appointment for 3 months beginning November 1st. Applications, with copies of testimonials, should reach the Secretary not later than Wednesday, July 10th.

Royal Berkshire Hospital.

(257 Beds.)

Wanted on July 9th, a HOUSE PHYSICIAN, who must be fully qualified and registered. The appointment is for six months. Salary £150 per annum, with residence, board, and laundry. Applications, with copies of testimonials, should be addressed to the undersigned.

Reading. HERMAN BURNEY,
June 14th, 1929. Secretary.

Cameron Hospital,

WEST HARTLEPOOL.

HOUSE SURGEON, to commence duty on July 2nd. Salary £150 per annum, with board, lodging, etc. Applications, with copies of testimonials, and particulars of age and qualifications, to Hon. Secretary, Medical Board.

Ancoats Hospital, Manchester.

RESIDENT MEDICAL OFFICER required to commence duty on August 1st next. Salary £150 per annum, with board, residence, etc. Previous experience in a similar position preferred. Applications, stating age, qualifications, previous experience (including appointments held), together with copies of three recent testimonials, to be forwarded to the undersigned on or before July 10th next.

FORTHCOMING VACANCIES.

HOUSE PHYSICIAN. Six months' appointment from September 1st.

HOUSE SURGEON (Orthopædic). Six months' appointment from September 1st.

By Order of the Board,
HERBERT J. DAFFORNE.
Gen. Supt. & Secretary.

Ancoats Hospital, Manchester.

ASSISTANT PATHOLOGIST (part-time). Salary £200 per annum. Male or female. Appointment for twelve months. Applications, stating age, experience, and appointments held, together with copies of three recent testimonials, to be forwarded not later than July 9th to the undersigned.

HERBERT J. DAFFORNE,
General Supt. and Secretary.

Cheltenham General and Eye HOSPITALS.

The Board of Management invite applications for the post of HOUSE PHYSICIAN (male) at the General Hospital.

Candidates must be unmarried, have a registered qualification in Medicine and Surgery, and produce evidence that they are qualified to administer anaesthetics.

Salary £200 p.a., with board, lodging, and laundry.

Applications, with copies of testimonials, to be sent in sealed envelopes, marked "House Physician," to the undersigned by July 6th.

J. CUMMING SMITH, F.C.I.S.,
Secretary.

General Hospital,
Cheltenham. June 25th, 1929.

Accrington Victoria Hospital.

The Governing Body of this Hospital invite applications for the post of HOUSE SURGEON.

Candidates may be of the male or female sex, and duly qualified and registered. Number of beds, 50.

Salary £150 per annum, with board and lodging.

There are two Honorary Anaesthetists on the Staff, who attend on regular operation days.

Conditions of appointment and particulars of duties may be obtained from the undersigned, to whom application, with copies only of testimonials, should be sent on or before July 8th.

Town Hall, W. H. WARHURST,
Accrington. Hon. Secretary.
June 25th, 1929.

Children's Hospital, Balaam Street, Plaistow, E.13.

HOSPITAL FOR THE INVALID AND CRIPPLED CHILDREN'S SOCIETY.

Applications are invited for the post of HOUSE PHYSICIAN (female) to the above Hospital for a period of six months. Salary at the rate of £50 per annum, together with board, residence, and laundry.

Applications, together with particulars of qualifications and testimonials, must be sent to the undersigned not later than July 8th next.

R. I. HOWARD, Secretary.

City of London Hospital for DISEASES OF THE HEART AND LUNGS, Victoria Park, E.2.

(Bus, Tram, and Rail, Cambridge Heath, L. & N.E. Railway.)

The Committee invite applications for the post of ASSISTANT LARYNGOLOGIST.

Candidates must be Fellows of the Royal College of Surgeons of England. An honorarium is attached to the post. Applications, accompanied by copies of testimonials, should reach the Secretary at the Hospital not later than Monday, July 15th.

GEORGE WATTS, Secretary.

Macclesfield General Infirmary. (100 Beds.)

Wanted, RESIDENT HOUSE SURGEON. Salary £180 per annum, with board and residence. Candidates must be fully qualified and registered.

Applications, with copies of testimonials, to be sent to the undersigned.

A. E. HANRAHAN, Secretary.

Evelina Hospital for Children, Southwark, S.E.1.

The Committee of Management requires a HOUSE PHYSICIAN (male) for seven months, from July 12th (during first four months duty in Casualty and Out-patient Department) Salary £120 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, to the undersigned at the Hospital, before July 4th. Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates must attend Committee of Management. Date of meeting will be notified by undersigned, from whom rules and other particulars relating to the post must be obtained.

By Order of the Committee of Management,
H. C. S. SMITH,
June 11th, 1929. Secretary-Supt.

East Ham Memorial Hospital, Shrewsbury Road, E.7.

Applications (male) are invited for the following:

1. RESIDENT MEDICAL OFFICER.
2. RESIDENT HOUSE PHYSICIAN AND CASUALTY OFFICER.

The appointments are for six months as from July 1st next, with salaries at the rate of £150 and £100 per annum respectively, with board, residence, and laundry. Applications, stating age, experience, and full particulars, together with copies of testimonials, should be sent immediately to the Honorary Secretary of the Medical Committee, 94, Harley Street, W.1.

The Victoria Hospital for CHILDREN, Tite Street, Chelsea, S.W.3. (130 Beds.)

The Committee of Management invite applications for the post of HOUSE SURGEON (vacant August 1st). The appointment is for six months. Salary at the rate of £100 per annum, with board, lodging, and washing.

Candidates must attend the Hospital for the purpose of an interview at 3.30 p.m. on Friday, July 12th. (No travelling or other expenses will be paid). They must hold Surgical qualifications and be registered under the Medical Act.

Applications, with copies of three recent testimonials, should be sent to the Secretary not later than first post on Wednesday, July 10th.

By Order,
D. ST. JOHN BAMFORD, Secretary.

The Royal Infirmary, Sheffield. (500 Beds.)

OPEN APPOINTMENTS.

The Weekly Board of Management invite applications for the four undermentioned posts:
ASSISTANT CASUALTY OFFICER,
HOUSE SURGEON,
OPHTHALMIC HOUSE SURGEON, and
ASSISTANT OPHTHALMIC HOUSE SURGEON.
The appointments will be tenable for six months from July 1st. The salary attached to each appointment is £80 per annum, with board and residence. Applications, with copies of testimonials, to be sent to the undersigned immediately.

JNO. W. BARNES, F.C.I.S.,
General Superintendent and Secretary.
Board Room, June 19th, 1929.

The Royal Infirmary, Sheffield.

OPEN ELECTION.

A vacancy having arisen in the post of SURGICAL REGISTRAR to the Royal Infirmary, Sheffield, the Weekly Board invite applications therefor.

Candidates must be Fellows of one of the Colleges, and the successful candidate will not be allowed to engage in general practice. The post is tenable for one year, and the holder will be eligible for re-election. The salary is £230 per annum.

Applications, stating age and qualifications, together with copies of testimonials, to be sent to the undersigned not later than July 12th next.

JNO. W. BARNES, F.C.I.S.,
General Superintendent and Secretary.
Board Room, June 19th, 1929.

The Northern Infirmary, INVERNESS (204 Beds).

Wanted for beginning of August next HOUSE PHYSICIAN AND JUNIOR HOUSE SURGEON (combined post), fully qualified and registered, male, unmarried. Salary £100 per annum, with board, residence, and laundry.

Applications, stating age, medical school, qualifications, and experience, with copies of recent testimonials, to be sent before July 9th to Mr. ROBERT GILBERT, Hon. Secretary to the Institution, 20, Church Street, Inverness.

June 24th, 1929.

Royal London Ophthalmic HOSPITAL, (Moorfields Eye Hospital), City Road, E.C.1.

TWO OUT-PATIENT OFFICERS.

Applications are invited for the post of Out-patient Officer, to attend on two mornings each week as follows:

Monday and Thursday;
Wednesday and Saturday.

Candidates must be registered medical practitioners. Salary at the rate of £100 per annum. The Out-patient Officers will be appointed for a period of one year, and will be eligible for re-appointment.

Copies of regulations governing the appointment can be obtained on application.

Applications, with testimonials, stating age and qualifications, must be received not later than July 4th by

ARTHUR J. M. TARRANT, Secretary.

Hospital for Consumption and DISEASES OF THE CHEST, Brompton, S.W.3.

The Committee of Management invite applications for the post of HOUSE PHYSICIAN (for which there are three vacancies) The duties include work in the Out-patient Department as well as in the Wards.

Applications, with copies of testimonials, must reach the undersigned not later than Saturday July 13th.

The appointment is for six months, commencing on August 1st, with an honorarium of £50.

FREDERICK WOOD, Secretary.
Brompton, June, 1929.

The Royal Albert Hospital and EYE INFIRMARY, DEVONPORT.

A vacancy for an ASSISTANT HOUSE SURGEON (unmarried) exists.

Applicants must be fully qualified, registered, and the appointment will be for six months. Salary £50 per annum, with apartments, board, and laundry free.

Applications, stating age, accompanied by copies of not more than three testimonials, should reach the undersigned not later than Friday, July 5th.

By Order of the Committee,
FRANK ROWE, Secretary.
June 24th, 1929.

Central London Ophthalmic HOSPITAL, Judd Street, St. Pancras, W.C.1.

There are vacancies for the posts of SENIOR and JUNIOR HOUSE SURGEON. Salaries at the rate of £120 and £100 per annum respectively, with board and residence in the Hospital.

Applications, with testimonials, from duly qualified candidates must be sent to the undersigned on or before June 29th.

H. R. S. DRUCE, Secretary.

Royal South Hants and South-AMPTON HOSPITAL, SOUTHAMPTON.

HOUSE PHYSICIAN (male and unmarried) required to commence duties at the end of July. Six months' engagement.

Salary £130 per annum, with rooms, board, and laundry. Applications, stating age, to be sent to the undersigned, together with copies of testimonials (limited to five), not later than July 7th.

HY. TRUSSON,
Secretary.

Ilford Emergency Hospital, ESSEX (70 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male, unmarried). Medical and Surgical qualifications. Salary £100 per annum, with apartments, board, and laundry. Applications, stating age, qualifications, and experience, with copies of testimonials, should be sent to the Secretary immediately.

The County Hospital, York.

Applications are invited for the post of HOUSE SURGEON. Salary £150, with board-residence, etc. Duties begin August 1st. Applications, stating qualifications and experience, should be addressed to the undersigned, to arrive not later than June 30th.

J. BIRBECK, Manager.

The County Hospital, York.

Applications are invited for the post of RESIDENT ANÆSTHETIST, who will also be required to assist the House Surgeon. Salary £150, with board-residence. Duties begin about July 14th. Applications, stating qualifications and experience, should be addressed to the undersigned, to arrive not later than June 30th.

J. BIRBECK, Manager.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.).*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	SOUTH SHIELDS COUNTY BOROUGH. *(Assistant Medical Officer.)*
LLWYNYPIA, CLYDACH VALE PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society) (Workmen's Medical Scheme.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practice.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	Dr. E. S. MEYERS (Hon. Sec., Queensland Branch), British Medical Association, Adelaide St., Brisbane.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
June 26th, 1929.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A PART-TIME JUNIOR CASUALTY OFFICER is required on July 4th, to assist in the Casualty Department from 10 a.m. to 3 p.m. (Saturdays 10 a.m. to 1 p.m.), under the direction of the Casualty Officer.

Candidates must be registered medical practitioners, and have held a responsible Hospital appointment.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, July 1st, accompanied by copies of not more than three testimonials written specially for the purpose.

The appointment is made for six months and is non-resident.

Salary at the rate of £150 per annum, with luncheon.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, July 3rd, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
June, 1929. Secretary.

Hereford County and City
MENTAL HOSPITAL.

Wanted, a SECOND ASSISTANT MEDICAL OFFICER (male, unmarried), not exceeding 40 years of age, doubly qualified, and registered under the Medical Act. Salary £350 per annum, with board, furnished apartments, laundry, etc.

The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Applications, with copies of not more than three recent testimonials, to be sent to the Medical Superintendent, County and City Mental Hospital, Burghill, Hereford.

Wrexham and East Denbighshire War Memorial Hospital.
(105 Beds.)

TWO RESIDENT HOUSE SURGEONS (male) required at above Hospital, to commence on August 1st. Appointments are for a period of not less than six months. Salaries £150 per annum, with board and laundry.

Applications, stating age, nationality, experience, and qualifications, accompanied by *copies of three recent testimonials, to be sent* to the undersigned not later than Wednesday, July 3rd.

LESLIE SPENCER,
June 15th, 1929. Secretary.

Nottingham General Dispensary.
(BRANCH)

Wanted, RESIDENT LADY SURGEON. Must have Medical and Surgical qualifications. Salary £250, with £25 *increase per year up to £300.* Apartments (not board), attendance, lights, and fuel. This Institution is a non-provident one. No Lods. No midwifery. Preference given to anyone experienced in Heliotherapy.

Applications, stating age and accompanied by recent testimonial, to be sent by July 3rd.

5, Eldon Chambers, R. J. WILLATT,
Nottingham. Secretary.

Elsie Inglis Memorial Maternity
HOSPITAL, ABBEY HILL, EDINBURGH.

Applications are invited from qualified women for the post of HOUSE SURGEON at this Hospital.

Two appointments will be made, for periods of nine months, from October 1st and January 1st respectively.

Residence, board, and laundry provided.

Applications, with copies of testimonials, should be sent to the Convener of the Medical Committee, at the Hospital, on or before Friday, July 19th.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A RESIDENT MEDICAL OFFICER is required at the Country Branch Hospital, Tadworth Court, Tadworth, Surrey, on July 4th.

Gentlemen are invited to send in their applications to the Secretary before 12 o'clock on Monday, July 1st, accompanied by copies of not more than three testimonials given specially for the purpose.

The appointment is made for six months, but the successful candidate will be eligible for re-appointment.

Salary at the rate of £250 per annum, with board-residence in the Hospital, laundry allowance at the rate of £10 per annum, and, on re-election for a further period of six months, £18 18s. for the purpose of providing a substitute during annual leave of a maximum of four weeks.

Candidates must be unmarried and possess a legal qualification to practise, and must have held a responsible resident appointment at a General Hospital.

All candidates must be in attendance on Wednesday, July 3rd, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
June, 1929. Secretary.

West London Hospital,
Hammersmith, W.6.

Applications are invited for the post of DIRECTOR to the Venereal Diseases Department. Salary £700 per annum. Candidates must be registered medical practitioners who are exclusively engaged in the practice of the treatment of Venereal Diseases. For further particulars apply to the undersigned.

H. A. MADGE, Secretary.

ASSISTANCIES.

Wanted immediately, experienced indoor ASSISTANT, view early partnership. Old-established country practice, Yorkshire. Age about 30. Salary £250. Usual bond. Photograph and testimonials required. British and Church of England preferred.—Address, No. 3907, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Indoor and Outdoor ASSISTANTS (male), with and without view. Also LOCUM TENENS. Good salaries offered. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted immediately, indoor ASSISTANT. Salary £250. Usual bond, photograph, and testimonials required.—Apply, Dr. AITCHISON, Philipson Street, Willington-on-Lyne.

Wanted. — Assistant, outdoor, single. Pleasant district near Cardiff. Work easy. Salary £360 a year. Rooms and attendance.—Address, No. 3710, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, male (indoor), £250 all found. Afternoons usually free. Usual bond. 15 minutes from West End.—Address, No. 3922, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Lady Assistant, country practice, Cotswolds. Desiderata: Tact, insight, facility of management, with exp. and up-to-dateness. Spare time and oppor. for tennis and socialities. Photo (snap) and age req. No. 3924, B.M.A. House, Tavistock Sq. W.C.1.

Wanted. — Outdoor Assistant for Practice near Manchester. Salary £300 p.a. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, Assistantship for Sept. in or near London by Woman (31), 6 yrs. experience country G.P., with well-established Woman Doctor, to gain experience in woman's practice. Own car.—Address, No. 3902, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted.—North-East London area. Male Assistant, recently qualified and unmarried; must be energetic and reliable. Salary to begin £300 p.a., with furnished rooms and attendance. Abstainer preferred.—Add., No. 3920, B.M.A. House, Tavistock Square, W.C.1.

Assistant, experienced, view Partnership. Midland Suburban Practice. Must be keen and anxious to settle. Public school-boy preferred, with capital. Could do Locum end August. Particulars and photo if possible.—Address, No. 3913, B.M.A. House, Tavistock Square, W.C.1.

Assistantship wanted by M.B., Ch.B. (Edinburgh), aet. 26, single, ex H.P., H.S., and R.M.O. (mentals). Can dispense; anaesthetics; general practice experience (private and panel).—Address, No. 3905, B.M.A. House, Tavistock Square, W.C.1.

Malay States.—Assistant required as soon as possible. Salary £700 to £770 p.a. and free quarters. Passage paid. Applicants should be young and unmarried.—Apply, BRITISH MEDICAL BUREAU, 12, Stratford Place, London, W.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted. — Post as Medical OFFICER with good COMPANY trading in MIDDLE EAST (Assam or Malay preferred), by M.B., Ch.B.(Aberd.), who has had good all-round medical experience in Tropics, and holds Certificate London School of Tropical Medicine.—No. 3722, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, Post as Medical Officer by M.B., Ch.B., D.P.H.Camb., having 15 years' experience in the Tropics, holding excellent testimonials, now on leave from the East. Malay or India preferred.—Address, No. 3906, B.M.A. House, Tavistock Square, W.C.1.

Wanted, 3 Medical Officers, fully qualified, August-September, for the whaling ventures to the Subantarctic of the whalers *Saragossa*, *Salvestria*, and *Sourabaya*.—Apply, CHR. SALVESEN & Co., Leith.

Wanted.—Part-time Work by M.B., F.R.C.S., in London. Morning or evening work.—Address, No. 4025, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Doctor for Channel ISLANDS, NEWFOUNDLAND. PRACTICE returning £800—£1,100 to active man. House or board available, moderate charge.—Apply, CLUNY MACPHERSON, St. Johns, Newfoundland.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Deputy.—Experienced Doctor free to DEPUTISE evenings, half-days, Sundays, etc. Skilled operator and anaesthetist. London area.—Address, No. 3927, B.M.A. House, Tavistock Square, W.C.1.

Dispensers supplied to Doctors at short notice, without fee. Qualified and exper. in priv. and panel prac. Perm. and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 87, Holborn Viaduct House, 12, Holb. Viad., E.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Gerrard 2699, THE DISPENSERS' BUREAU, 145, Shaftesbury Avenue, London, W.C.2.

Medical Officer of Health wanted for OILFIELD in the TROPICS. Age about 30. Must have had experience in Sanitation and Antimalarial work. Qualifications in Health Department work more important than purely medical or surgical work, though usual degrees in the latter of course essential. Five-year agreement. Free passage out and home. Salary dependent on qualifications.—Write, giving full particulars, to Z. G. 480, care of DEACON'S ADVERTISING AGENCY, Fenchurch Avenue, London, E.C.3.

Part-time Work wanted in London by L.R.C.P., L.R.C.S.(Edin.). N.W. district if possible. Excellent experience. Free 2–5.30 p.m. daily. Own car. Write terms.—Address, No. 3909, B.M.A. House, Tavistock Square, W.C.1.

Required by large Company operating in the MIDDLE EAST, TWO ASSISTANT MEDICAL OFFICERS, who must be between the ages of 30 and 35, and must have held resident appointments. Fully organized medical service, four hospitals, eighteen British doctors, including specialists, etc. Commencing salary £800 per annum, with free furnished bachelor quarters, provident fund, etc. Three years' agreements, renewable. Free first-class passage out and home. Applicants must be of British parentage and preferably unmarried.—Address, with copies of testimonials (not returnable), No. 3908, B.M.A. House, Tavistock Square, W.C.1.

Surgeon required for the East. Must be fully qualified (preferably F.R.C.S. Eng. or Edin.), with experience in Major Surgery. Age under 40. Commencing salary £1,300 p.a., with free furnished quarters and first-class passages. Agreement three years, renewable, with six months' leave on full pay.—Address, stating age, experience, and former appointments held, No. 4209, B.M.A. House, Tavistock Sq., W.C.1.

Shorthand-Typist in English and French (some German) requires WORK, evenings and week-ends. Experienced medical work.—Address, No. 3911, B.M.A. House, Tavistock Square, W.C.1.

The Services of a Medical Man, EXPERIENCED in the MANUFACTURE of THERAPEUTIC SERA and ALLIED PRODUCTS, are required to control the production of, and undertake research into, these products, at Evans' Biological Institute, Runcorn, Cheshire. Every facility is available for the carrying out of such work in congenial surroundings with new and up-to-date buildings and equipment.

Applications, giving full particulars, accompanied by copies of three testimonials, should be addressed to the Chairman of Directors, EVANS SONS LESCHER & WEBB, Ltd., 56, Hanover Street, Liverpool.

Typewriting.—Expert undertakes Theses, Testimonials, etc. Numerous letters of appreciation from Doctors.—Write or 'Phone: BEATRICE RADFORD, 27, Buckland Crescent, Swiss Cottage, London, N.W.3. Primrose Hill 0803.

LOCUMS.

FOR LOCUM TENENS APPLY TO Mr. PERCIVAL TURNER, Ltd. The oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals. 4, ADAM ST., Strand, London, W.C.2. Teleg.: "Epsomian, Lond." 'Phone: Gerrard 0399

Wanted, Locums for July and August, N.W. districts, or permanency S.W. England, by elderly but vigorous M.D. with overseas experience. Does no drive.—Address, MEDICUS, *China Inland Mission*, Newington Green, N.16.

Wanted. — Locum, South Midlands Country Practice, from July 27th to August 23rd. Own car. State essential particulars.—Address, No. 3701, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Locums (long or short) by exp. G.P. Hard worker, steady, reliable, total abstainer. British, middle-aged. 6 gns. Free July onwards.—Address, No. 3920, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Locum from July 20th to August 12th. Irish Graduate, R.C., with panel and private experience preferred. No midwifery. Work light. London. Six guineas weekly.—'Phone, Bermondsey 3414.

Wanted. — Hospitality LOCUM for three weeks in August. Lovely house, garden, tennis court. Seaside. Little work.—Address, No. 4028, B.M.A. House, Tavistock Square, W.C.1.

As Locum Tenens.—Gentleman, experienced in Panel and G.P. work, now free for engagements. Qualified 1907, St. Barts. Recent references.—Apply, stating terms, The Red House, Lancing, Sussex. 'Phone, 57 Lancing.

A semi-retired Medical Man would take LIGHT LOCUM WORK. Comfortable home and moderate remuneration required.—Write, Dr. CALLAGHAN, Overseas Club House, Park Place, St. James Street, S.W.

General Practitioner (retired), with wide experience, is willing to undertake LOCUM APPOINTMENTS. Life abstainer. *If work light—terms 5 guineas.*—Address, No. 3901, B.M.A. House, Tavistock Square, W.C.1.

Hospitality and 3 guineas weekly offered to Doctor and wife for TAKING CHARGE of small Practice in pretty Cotswold town for 3 weeks. No surgery on Sundays nor Wed. evening. No maternity or nightwork.—Address, BM/BCSW, Monomark House, Holborn.

Locum wanted for month of August. Work very light; practically no night calls. London suburb. Suit elderly practitioner accustomed to panel work, or lady practitioner.—Address, No. 3915, B.M.A. House, Tavistock Square, W.C.1.

Locum wanted, August, 3 or 4 weeks. Work light; no midwifery or night work. South-Western coast town. Own car preferred. State essential particulars.—Address, No. 3931, B.M.A. House, Tavistock Square W.C.1.

Locum.—Indian Doctor desires Holiday or Hospitality LOCUM work, with hospitality for wife and daughter. Free July 9th to 31st. Private and Hospital experience. State terms.—Address, No. 3912, B.M.A. House, Tavistock Square, W.C.1.

Locum required, London, S.E., for two weeks commencing 8th July. Evening surgery only.—Address, No. 3929, B.M.A. House, Tavistock Square, W.C.1.

M.B., Ch.B. wants Locum Tenens. Ex H.S. and H.P. Well experienced in private and panel practice.—Address, No. 3904, B.M.A. House, Tavistock Sq. W.C.1.

HOLIDAY LOCUMS.

THE MEDICAL AGENCY has pleasure in announcing that lists are now being prepared [illegible] for the forthcoming [illegible] principals requiring a [illegible] are advised to make early application.—Address, W. H. GRANT, The Medical Agency, Watergate House, Adelphi, W.C.1. Tel.: Gerrard 8954 and Riverside 1254 (night calls).

PARTNERSHIPS.

Wanted.—Partnership with preliminary assistantship, in the South, by M.R.C.S., L.R.C.P. 1927. St. Barts. Married. Age 27.—Address, No. 3925, B.M.A. House, Tavistock Square, W.C.1.

Wanted by highly qualified Physician with special experience in mental and nervous diseases, PARTNERSHIP in better-class practice or suitable appointment.—Address, No. 3917, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.D., M.R.C.P., age 27, PARTNERSHIP in good-class Practice in London or suburbs.—Apply for particulars to CHURCHMAN, WOOD & JACOBS, Chartered Accountants 59, Berners street, London, W.1.

Wanted. — Well-qualified man as THIRD PARTNER in good-class non-dispensing Practice within 15 miles of London.—Address, No. 3532, B.M.A. House, Tavistock Square, W.C.1.

Doctor, married, now overseas, desires to hear of PARTNERSHIP in panel Practice on return to England in December. Capital available. Strict confidence.—Address, No. 3935, B.M.A. House, Tavistock Square, W.C.1.

Lancashire Town.—Partnership. Half share in old-estab. Practice. Average cash receipts £3,920. Panel 2,516. Excellent house for sale, 3 bedrooms, garage, and garden. Price £1,600. Premium—Practice—1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Medical Woman offered PARTNERSHIP in South London. Small premium and good prospects to one willing to help work up neglected woman doctor's practice. Comfortable small home provincial preferred.—Ad. L., No. 3923, B.M.A. House, Tavistock Square, W.C.1.

North Wales Doctor requires PARTNER for half-share of old-established Practice. Large panel and dispensing. Important appointments held.—Full particulars from H. R. DAVIS, 1, Hunter Street, Chester.

Partner wanted about 30, well- qualified and experienced in general practice. Share for disposal 1/3 of £1,530 p.a. Two years' purchase. Rapidly increasing district, Essex. No agents.—Address, No. 3502, B.M.A. House, Tavistock Square, W.C.1.

Partnership, London, S.W.— Young British Male Graduate offered share in old-established middle Class Practice of £900 p.a. paid 1.035. Increasing, view developing rapidly growing residential new estate adjacent. Can reside with Principal until prepared take new house (available on lease). Great opportunity right man, preferably with speciality. Payment by arrangement.—Address, No. 3916, B.M.A. House, Tavistock Square, W.C.1

Partnership wanted in Practice with good panel. Capital available.—Address, No. 3914, B.M.A. House, Tavistock Square, W.C.1.

Partnership, 1/3 to 1/2 share, offered in Surrey, within 10 miles of London, to a Doctor (preferably Scotch). Cash receipts average £2,500, panel of 1,300. Visits from 3/6 to 15/6. Beautiful district, population of 64,000. Incoming Partner must have plenty of capital. Preliminary assistantship University degrees essential.—Address, No. 3528, B.M.A. House, Tavistock Square, W.C.1.

Seaport Town, N.E. England. PARTNER required in old-established general practice with surgical work. No panel. Receipts about £3 000. One-third or more for disposal.—Address, No 4030, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES.

Wanted. — Practice in London, with good panel. Income £1,700 £3,500. Can wait up to twelve months if necessary. Ample capital. No agents.—Address, No. 3862, B.M.A. House, Tavistock Square, W.C.1

Wanted. — Practice, panel 1,500 to 2,500. No agents. Ample capital. Income must be over £1,500 per annum. —Address, No. 3033, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—We have innumerable applicants for sound investments in all districts, incomes from £600 to £4,000, with and without panel. Correspondence invited from prospective Vendors. — THE MEDICAL AGENCY (W. H. Grant), Watergate House, 15, York Buildings, Adelphi, W.C.2.

Wanted. — Large non-panel PRACTICE in Winchester, Cheltenham, or similar town, producing not less than £2,000 per annum. House with 6 bedrooms and garden desired, preferably to rent. Advertiser has necessary capital and is free to negotiate.—No. 3415, B.M.A. House, Tavistock Sq., W.C.1.

Wanted by M.D.Cantab., F.R.C.S Eng., Public School, better-class PRACTICE or PARTNERSHIP, within 100 miles London, or good class suburb Ample capital. —Address, No. 1505, B.M.A. House, Tavistock Square, W.C.1

Branch Surgery for Sale in Leeds. Average annual receipts £1,350. Panel 1,600, rapidly increasing. Surgery on lease, low rental. Price 1½ years' purchase, or nearest offer.—Address, No. 3452, B.M.A. House, Tavistock Square, W.C.1.

Bradford. — For immediate disposal. Mixed PRACTICE. In Vendor's hands 30 years. Panel and appointment £518. Average receipts £1,350 p.a. Premium £2 000. Detached modern House, garage, etc., for sale, or let for period.—Address, No. 39.0, B.M.A. House, Tavistock Square, W.C.1.

Branch (Lock-up) for Sale, London, S.E. Average £1,100 p.a. Low rent; lease. Expenses very light. All cash, no booking. Panel nearly 400. Great scope. Price £1,602 cash.—Address, No. 3921, B.M.A. House, Tavistock Square W.C.1.

Beds.—Country Practice in very pretty district. Nice house, garden, garage, £70. Receipts over £350. Excellent scope. Panel 70. Price £350, or house and practice £1,050 part deferred.—MANCHESTER MEDICAL AND SCHOLASTIC ASSOCIATION, 6, Brown Street.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2

Hants.—Half Share, well- established Cash and Panel PRACTICE. Receipts last year nearly £1,000, including panel 900, increasing. Good scope. Offers invited.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

London, E. — Lower-middle and working-class G.P. Good-sized house to rent. Receipts £3,200 p.a. Panel 4 000. Premium £5,000, cash.—Apply to THE MEDICAL AGENCY, Watergate House, Adelphi, W.C.2.

London, S.E. (nr. Waterloo).— Old-established Cash and Panel PRACTICE. Receipts average £1 300 p.a., including panel 1.400. Rent of premises £75, lease. Vendor going abroad. Premium moderate. Excellent scope.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C 2.

Lake District. — Old-estab. PRACTICE. Cash receipts 1928, £1,398. Panel 700. Excellent detached house to rent at £60 p.a., containing 3 enter. and 9 bedrooms. Garage and large garden. Premium £2 000, part by arrangement. Partnership if desired. BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

London, W.—Mixed-class PRACTICE for immediate disposal. Receipts

London, S.E.—Old-estab. Cash and Panel PRACTICE. Receipts average over £800 p.a. Panel 800. House to rent, £62 p.a. Premium £1 200. Densely populated district. Excellent scope for increase.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Lancs Coast Resort.—Old-estab. PRACTICE. Av. cash receipts £1,100. Panel 550. Scope. Modern house (freehold) for sale, containing 2 reception rooms, 5 bedrooms, garage, and garden. Premium—Practice—1½ years' purchase—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

London Suburb.—Practice yield- ing £950. Visits 3/6, 5/-; cons. 3/6, 5/-. Panel 125, but good scope. House, with garage, main road, best position, £1,100. Premium £1,100.—Address, No. 2935, B.M.A. House, Tavistock Square, W.C.1.

Lancs Town, near Manchester.— Average cash receipts £1,602. Panel 1,330. Good house to rent in main street, 4 bedrooms, 2 reception rooms. Garage. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester.—Working-class PRACTICE in congested area. Good house, 8 rooms, bath; rent £46 4s. Receipts nearly £500. Excellent scope. Panel 4,260. Price 1 year's purchase or near offer.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown St.

Manchester. — Good-class Prac- TICE. Pleasant residential suburb. Cash receipts 1928, £2,179 16s. Excellent house to rent, containing 8 bedrooms, 4 entertaining rooms. Garage and garden. Good introduction. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

North Wales Coast.—Good-class PRACTICE. Cash receipts 1923, £1,749. Panel 713. Excellent modern house to rent, 4 bedrooms. Garden; also well-fitted surgery and garage. Good scope. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Nr. Chester.—Practice. Cash receipts 1928, £600. Panel 440. Scope. Nice modern house to rent, 2 enter., 3 bedrooms, garden and garage. Premium £550 cash (to include surgery furniture and drugs).—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

New Zealand Practice and House for sale. Hawke's Bay district. Estab. ten years. Vendor retiring.—Address, No. 3505, B.M.A. House, Tavistock Square, W.C.1.

Near Manchester.—Small Prac- TICE, in residential district. Cash receipts 1928, £630. Panel 530. Good scope. House to rent, 3 bedrooms. Garage and garden. Premium £260, to include fittings and drugs.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Practice wanted in London, East area preferred. Income £1,200—£1,800 p.a. Panel 1,500—2,500. Ample capital.—Address, No. 4026, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL PRACTICE FOR SALE.

Scotland.—East Coast Resi- dential and Holiday Resort. Good old-established general PRACTICE for immediate disposal owing to illness. Panel 620 receipts about £1,500. Suitable house, garage, and garden. Practice and House £3,000.—Apply, ALEXANDER TOSH & SON, C.A., 11, Reform Street, Dundee.

South Coast.—Nursing Home for Sale. House fully furnished and equipped, operating theatre, gardens; rent £200 on lease. Receipts past six months £580. Price £1,800 as going concern.—MANCHESTER MEDICAL AND SCHOLASTIC ASSOCIATION, 6, Brown Street.

Southport.—Wanted, well-estab. PRACTICE or PARTNERSHIP with view, by married practitioner in own sound practice. Excellent appearance, refs. Health reasons. Capital. Ex H.S. Confidential.—Address, No. 3929, B.M.A. House, Tavistock Square, W.C.1.

To Purchasers. — Do not buy without expert assistance. With 40 yrs.' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Gerrard 0399. Telegrams: "Epsomian, London."

Woman's Practice, S.E. London. Receipts £20 per month. Panel 100.—Address, No. 3932, B.M.A. House, Tavistock Square, W.C.1.

£2,100 will buy House, Garage, Stabling, nice Garden and 1 acre Paddock, with steadily increasing PRACTICE of £700 a year on Cotswolds. Write for details before calling.—Address, No. 3930, B.M.A. House, Tavistock Square, W.C.1.

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Consulting Rooms to be Let. —Harley Street and district. Whole or part-time. Lists sent on application.—ELLIOTT & CO., 10, Henrietta Street, Cavendish Square, W.1. Mayfair 5659.

Brentwood.—Imposing fhld. det. CORNER RESIDENCE; good cond.; well back main road; drive, garage; 12 fine rms. (4 can be let off as s.c. flat), lovely gdn.; unrivalled outlook back and front; verandah due South; ½ hr. City; poss. abt. Sept. £2,350; further ground if desired, £325; or wd. let with lino. £180 p.a.—Write Box K.T.Y., c/o DAVIES & Co., 95, Bishopsgate, E.C.2.

Doctor and Dentist badly wanted in fast growing district. N.W. D tched HOUSE, main road. Or Surgery and other conveniences as desired.—'Phone: OWNER, 2832 Wembley.—Write, 142, Preston Road, Wembley Park, Middlesex.

Doctor's (deceased) RESIDENCE. Centre of Brixton. Large Corner Property, 12—14 rooms, bath, etc. In perfect repair, and all redecorated. Ready for immediate occupation, and large practice assured. Lease 35 yrs.—OWNER, 232, Stockwell Rd., Brixton.

Devon, Exmouth (growing village near).—For sale Corner Detached HOUSE. Suit medical man. Practitioner needed. Three reception rooms 6 bedrooms, bath; ½ acre; garage. Well worth consideration to young or retiring doctor.—HART & BRAY 25, Queen Street, Exeter.

Excellent House, main road Hove, occupied by Doctor for five years, to LET from August 2nd on long lease. Suitable for young medical.—For further particulars, address, No. 3704, B.M.A. House, Tavistock Square, W.C.1.

TO MEMBERS OF THE MEDICAL PROFESSION

Park Lane (best position).—Two excellent self-contained CONSULTING ROOMS and bathroom on ground floor. Beautifully furnished and with excellent attendance. TO BE LET FURNISHED for any period.—Full particulars from sole Agents, Messrs. KING & KING, 15, Brompton Road, S.W.3.
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OVERLOOKING CHARMING GARDENS WITH TENNIS COURTS AND RIGHT OF ENTRY.

To be Sold, an exceptional CORNER RESIDENCE in a main and favourite thoroughfare, and enjoying maximum amount of light and air, and eminently SUITABLE for MEDICAL PRACTITIONER. 12 bedrooms, 4 bathrooms 4 reception rooms, and model offices.
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HAMPTON & SONS 20 St. James' Square, W.1.

To Let.—Well-furnished WAITING and CONSULTING ROOM in medical woman's house, daily from 10—6.30. Near Gt. Portland Street Station. M.V. lamp available.—Address, No. 4027, B.M.A. House, Tavistock Square, W.C.1.

To Let.—Detached House, 1¼ acres (Doctors, Public Health). Excel. position. Furnished £75 if desired. Splendid opportunity to commence G.P. Agricultural, residential, and new mining area, Notts. Gas, elec., water. Parties. Lease possible.—Address, No. 3910, B.M.A. House, Tavistock Square W.C.1.

To Let.—Good first-floor Consult- ING ROOM adjoining Cavendish Square, including use of waiting room and attendance. Constant hot water. £160 per annum.—Add., No. 3712, B.M.A. House, Tavistock Sq., W.C.1.

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Handsome Pair of £4 4s. Square Polished ASH TENNIS STANDARDS. Complete with heavy ground plates, powerful fixing screws, and solid brass net winder, 50/-. Also full regulation size heavy Waterproof Net, with steel headline, 20/-. Both perfect new condition. Never used. Approval against post-dated cheque.—GILYARD, Darley St., Bradford.

Steel Box Burglar Alarm, 9½ in. by 5½ in., suitable for holding poisons and bacteria tubes. Rings electric alarm when touched, except with key. £3 3s. Demonstration anywhere, free.—ABBOTTS, 121, Lavender Hill. Phone, Battersea 1968.

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Can secure Perfect Fitting and Distinctive Clothes of Exceptional value. FINEST QUALITY MATERIALS. *BEST WORKMANSHIP ONLY.*
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JACKET & VEST (in black or grey), £5 5s.
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THE Ideal Suit for Professional or Business wear
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Special Bargain.—£50 down, and reasonable monthly payments to suit convenience, will purchase an exceedingly smart 14-h.p. "ARMSTRONG SIDDELEY," with Coachbuilt Coupé body, in excellent condition throughout. Specific guarantee given with this car. Worth prompt attention. — Apply, CONNAUGHT, 121/122, Long Acre, London, W.C.2. Regent 6440.

The Proprietor of British Letters Patent No. 244015 for "Improvements in or relating to Stetho-scopes" is desirous of entering into negotiations with interested parties for the GRANTING OF LICENCES thereunder on reasonable terms, or for the SALE of the PATENT outright. — Communications please address to DICKER, POLLAK, & MERCER, Chartered Patent Agents, 20-23, Holborn, London, E.C.1.

The Medical Practitioner's Cash BOOK is a boon to the busy medical man. Saves time, worry, and Income Tax. 12/6 post free. Money refunded if not satisfied.—CHARNWOOD PUBLISHING CO., Atlas House, Coalville, Leicester.

X-Ray and Electro-Medical APPARATUS (SECOND-HAND), by the best makers, in stock. Re-conditioned and in perfect working order. Very moderate prices. Write for list, stating requirements.—The COX-CAVENDISH ELECTRICAL CO. (1924), Ltd., 105, Great Portland Street, London, W.1.

APPOINTMENTS.—Contd.

The Northern Infirmary,
INVERNESS (104 Beds).

Wanted on August 1st next, SENIOR HOUSE SURGEON, fully qualified and registered, male, unmarried. Salary £120 per annum, with board, residence, and laundry. Previous hospital experience is desirable.

Applications, stating age, medical school, qualifications, and experience, with copies of recent testimonials, to be sent on or before July 9th to Mr. ROBERT GILBERT, Hon. Secretary to the Institution, 20, Church Street, Inverness.

June 24th, 1929.

Westmorland Sanatorium,
MEATHOP, GRANGE-OVER-SANDS.

The Governors invite applications from registered medical practitioners (male) for appointment as MEDICAL SUPERINTENDENT of the above Institution. The successful candidate will also act as County Tuberculosis Officer for Westmorland under the County Council. The salary is £800 per annum, rising by yearly increments of £50 to £1,000. The use of a house (rent and rates free) will be provided, with existing furniture and electric light. Certain travelling expenses will be allowed. Preference will be given to candidates possessing a Diploma in Public Health and experience in X-ray work.

Applications, stating age, experience, and qualifications, accompanied by copies of three recent testimonials, must be addressed to the undersigned not later than July 2nd.

H. LEIGH GROVES, Esq.
Holehird, Windermere.

Kesteven Mental Hospital,
SLEAFORD, LINCOLNSHIRE.

APPOINTMENT OF MEDICAL SUPERINTENDENT.

A Medical Superintendent is required for the above Mental Hospital at a commencing salary of £700 per annum, with furnished house, coals, light, and washing (the emoluments for superannuation purposes to be valued at £200 per annum). Duties to commence on September 1st next.

The successful candidate will be expected to act as Medical Adviser under the Mental Deficiency Acts, for which an additional salary of £52 per annum will be paid.

Applications, endorsed "Medical Superintendent," stating age, qualifications, and experience, accompanied by two recent testimonials, to be sent to me on or before the 15th day of July, 1929.

County Offices, A. D. PIPER,
Sleaford, Clerk to the Mental Hospital
June 24th, 1929. Visiting Committee.

Woolwich and District War
MEMORIAL HOSPITAL, Shooters Hill, London, S.E.18.
GENERAL HOSPITAL (112 Beds).

HOUSE PHYSICIAN; also HOUSE SURGEON.

The Appointments Committee invite applications for appointment as (a) House Physician and (b) House Surgeon. An honorarium of £135 per annum will be paid in respect of each appointment, which will be for a period of six months as from August 13th.

Applications, accompanied by copies of not more than three recent testimonials, are invited from suitably qualified candidates, and should be addressed to the undersigned to reach him not later than 10 a.m. on Monday, July 15th.

EDWIN RADFORD, J.P.
Secretary-Superintendent.

Swansea Hospital.
(316 Beds.)

HOUSE SURGEON wanted, gentleman, single. Salary £150, with board, residence, and laundry. Duties to commence August 1st.

Applications, stating age, nationality, qualifications, and experience, with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS, Secretary.

The Babies' Hospital,
NEWCASTLE-ON-TYNE.

Part-time NON-RESIDENT MEDICAL OFFICER (acting as House Physician) required August 1st.

Duties will occupy half the day, leaving time for examination or research work. The appointment is for six months, and subject to reappointment. Salary £150 per annum. Applications, with two testimonials, must be lodged with the Secretary, 33, West Parade, Newcastle-on-Tyne, by July 1st.

The Children's Hospital
(East End Branch Out-patients' Department).

Wanted, JUNIOR HOUSE SURGEON (female), qualified and registered. Salary £100 per annum. Duties to commence July 1st. Applications to be addressed to the undersigned as early as possible.

GEO. M. GILL, Secretary.
Western Bank, Sheffield.

Lowestoft and North Suffolk
HOSPITAL.

HOUSE SURGEON (male) preferably with knowledge of X-ray. Salary £120 p.a., with board, residence, and laundry.

Applications, with copies of three recent testimonials, to the Honorary Medical Supt.

CAVENDISH NURSES (Male and Female)

Head Office: 54, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

A very convenient form of telephone message pad sent free on application to the Secretary.

Branches: MANCHESTER: 176, *Oxford Road.* *GLASGOW:* 28, *Windsor Terrace.* *DUBLIN:* 23, *Upper Baggot Street.*

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Tactear, London. Surgical, Glasgow. *London*, 1277 Welbeck. Glasgow, 477 Douglas.
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Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling and all cases. Nurses reside on the premises, and are always ready for urgent calls Day and Night. Skilled Masseuses, Masseurs, and good Valet attendants supplied.

Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

Hull Royal Infirmary.
(272 Beds)

Applications are invited for the following, male, Resident posts:

1. SECOND HOUSE SURGEON (vacant July 17th).
2. HOUSE SURGEON to Ophthalmic and Ear, Nose, and Throat Departments (vacant July 21st).
3. CASUALTY HOUSE SURGEON (vacant now).

The appointments will be for six months in the first instance and will be terminable by one month's notice on either side.

Salary for posts 1 and 2 will be at the rate of £150 per annum and for post 3 at the rate of £130 per annum, including, in all cases, board, residence, and laundry.

Applications, with copies of testimonials, should reach the undersigned on or before Tuesday, July 2nd.

R. J. CARLESS, House Governor.

Miller General Hospital,
Greenwich Road, S.E.10.

PATHOLOGIST required to carry out the work of the Pathological Department at the Hospital. Private pathological practice is allowed and the Hospital's laboratory may be used for this purpose. The Pathologist must not accept any other appointment without the consent of the Board of Management. Salary commencing at £600 per annum. The appointment is subject to three months' notice on either side. Duties to commence if possible on July 15th next. Candidates will be expected to call upon the members of the Honorary Medical and Surgical staff. Applications, giving qualifications, with copies of not less than three recent testimonials, to be sent to the Secretary of the Hospital on or before July 3rd.

June 12th, 1929.

Jewish Maternity Hospital.
Jewish Maternity Home (Incorporated), Underwood Street, E.1.

RESIDENT MEDICAL OFFICER required to commence duties on August 17th. Board, residence, and laundry provided. Salary £50 per annum. The appointment is for six months.

Applicants may be either male or female.

Applications, with copies of three testimonials, to be sent to the Secretary not later than July 12th.

Worthing Hospital.

Applications are invited for the post of HOUSE SURGEON, vacant July 12th.

The appointment is for six months, renewable. Salary at the rate of £150 per annum, with board, lodging, and washing.

Applications, stating age, qualifications, and experience, with copies of testimonials, to be sent to the Secretary on or before July 5th

East Sussex County Mental Hospital, HELLINGLY, SUSSEX.

LOCUM TENENS MEDICAL OFFICER (Resident) required from July 17th to August 8th, and September 1st to November 23rd; seven guineas per week and travelling expenses one way. *Apply,* Resident Physician and Medical Superintendent.

Durham County Sanatorium, HOLYWOOD HALL, WOLSINGHAM.

LOCUM required for eight weeks from July 16th. Candidates must be registered practitioners, with experience in Tuberculosis Salary £9 9s. per week, and board and lodgings.

Applications should be sent to the Medical Superintendent.

Peace Memorial Hospital, WATFORD, HERTS.

A RESIDENT MEDICAL OFFICER (*male*) for six months, ... cations, stating ... last three recent ... should be received not later than June 28th by the Secretary. *No canvassing* permitted.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of ASSISTANT RADIOLOGIST at the DREADNOUGHT HOSPITAL, GREENWICH.

The selected candidate will be appointed for twelve months, but will be eligible for re-election.

Candidates must be fully qualified medical practitioners. In view of the future rearrangement of extension of this Department, the elected officer will be required to attend not less than *two half-days a week.*

There is an honorarium of fifty guineas attached to the post.

Applications, with copies of three recent testimonials, to be sent in on or before July 16th to the undersigned, from whom further particulars can be obtained.

Greenwich. R. E. V. BAX.
June 24th, 1929. Secretary.

The General Hospital, BIRMINGHAM.

Applications are invited for the post of RESIDENT SURGICAL REGISTRAR.

This officer will be attached to two Surgical Units and to the Throat and Ear Department. The salary will be £100—£20—£140.

The appointment will be made for one year in the first instance and be subject to renewal for two further years. Candidates must have had previous surgical experience.

Applications, giving full details of qualifications and experience, and accompanied by testimonials, should reach the undersigned, if possible, by July 2nd.

A. H. LEANEY, House Governor.

Royal Victoria and West Hants HOSPITAL, BOURNEMOUTH. (BOSCOMBE BRANCH—170 Beds.)

A HOUSE SURGEON (male, British nationality) required to commence duty about the end of July. Salary £120 per annum, with board, lodging, and washing. The appointment is tenable for six months, and candidates must be *registered according to the provisions of the* Medical Act.

Applications, stating place of birth, with copies of three testimonials, *to be sent immediately* to the undersigned. Women and married men are ineligible.

GORDON M. SAUL, Secretary.
June 21st, 1929.

Edinburgh Hospital for Women AND CHILDREN, WHITEHOUSE LOAN, EDINBURGH.

Applications are invited from qualified women *for the following posts* at this Hospital:

1. SENIOR HOUSE SURGEON.
2. JUNIOR HOUSE SURGEON.

Residence, board, and laundry *provided.*

Appointments are for six months from October 1st.

Applications, with copies of testimonials, should be sent to the Convener of the Medical Committee, at the Hospital, on or before Friday, July 19th.

West Herts Hospital, HEMEL HEMPSTEAD.
(110 Beds. 24 miles from Euston.)

Applications are invited for the appointment of a JUNIOR RESIDENT MEDICAL OFFICER, to commence duties on July 1st next.

Salary £100, with rooms, board, and laundry. Preference given to male candidates.

Particulars to be obtained of, and applications, stating essential particulars, and enclosing copies of recent testimonials, to be sent *at once to*—

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

Victoria Central Hospital, WALLASEY.

Applications are invited for the position of *JUNIOR HOUSE SURGEON (male).* Salary at the rate of £100 per annum, with board, residence, and laundry. Candidate chosen would be appointed for six months. Duties include out-patients and some home visiting. Applications, *with copies of recent testimonials,* to be sent to the Secretary not later than July 15th.

Central London Throat, Nose, AND EAR HOSPITAL, Gray's Inn Road, London, W.C.1.

ASSISTANT SURGEON.

A vacancy occurs for an Assistant Surgeon, who must be a Fellow of one of the Royal Colleges of Surgeons of the United Kingdom, or a Master in Surgery of a British University.

CHIEF CLINICAL ASSISTANTS.

There are vacancies for two Chief Clinical Assistants. The appointments are honorary and tenable for one year, subject to re-election. *Attendances are required at two clinics each* week to assist the Surgeons in seeing patients.

RESIDENT HOUSE SURGEON (male).

There will be a vacancy for a Second Resident House Surgeon to enter on duty on September 1st next. Remuneration at the rate of £75 per annum.

Applications for the above appointments, accompanied in each case by copies of not more than three recent testimonials, should be sent *to the undersigned on or before July 6th.*

JOHN H. YOUNG, Secretary-Supt.

Swansea County Borough.

ASSISTANT MEDICAL OFFICER.

The Swansea Borough Council invite the *applications from duly qualified women medical* practitioners for the post of *Assistant Medical* Officer to assist with the medical services of the Corporation and to commence duties in September.

Resident Hospital, school medical service, maternity and child welfare experience, together with special experience in the treatment of venereal diseases of women and children, are desirable qualifications.

Salary £600 per annum, subject to B.M.A. scale conditions. The appointment is subject to the approval of the Ministry of Health and Board of Education.

Applications, on special forms, which can be obtained from Dr. THOMAS EVANS, Medical Officer of Health, Public Health Office, Swansea, *to be sent in not later than July 4th.*

The Kidderminster and District GENERAL HOSPITAL. (120 Beds.)

HOUSE SURGEON (male) required.

Salary £150 per annum, with residence, *board, and washing.* The appointment is for twelve months, renewable if mutually arranged. The duties are mainly surgical. Candidates must be unmarried, and should state nationality.

Third-class railway fares will be paid for selected candidates, who will be interviewed on Wednesday, July 10th.

Applications, with not more than three testimonials, to be sent to the Assistant Secretary, Miss S. SMITH, South Cliff, Kidderminster, on or before Saturday, July 6th.

The Royal Dental Hospital of LONDON, 32, Leicester Square, W.C.2.

There is a vacancy for the post of HONORARY *ANAESTHETIST,* who will be required to attend on Friday afternoons from 2 to 5 p.m. The present Honorary Assistant Anaesthetists are *eligible for the post, and in the event of one of* them being elected the resulting vacancy for an Honorary Assistant Anaesthetist will be filled *from amongst those applicants willing to take* the junior appointment. Applications and testimonials, stating age and experience, should be sent in not later than July 8th to the Secretary.

Applications are invited for the position of GENERAL SECRETARY (male) to the WORCESTER GENERAL INFIRMARY, stating age, whether married or single, and giving details of previous experience in Hospital administration and finance, and salary required, together with copies of testimonials (not exceeding four), and must be sent to the Chairman of the Committee, Worcester General Infirmary, endorsed "Application for Secretary," not later than July 5th.

E. J. HOLLAND, Secretary.

Princess Louise Kensington HOSPITAL FOR CHILDREN, North Kensington. (42 Beds.)

HOUSE SURGEON (woman) required for six months from August 1st. During the first three months the House Physician will be Senior Resident, after which a new House Physician is appointed and the House Surgeon becomes Senior.

Salary at the rate of £75 per annum for the first three months and at the rate of £100 for last three months, with board, residence, and laundry.

Applications, together with copies of three testimonials, must be submitted on a form to be obtained from the Secretary, Princess Louise Kensington Hospital for Children, St. Quintin Avenue, North Kensington, W.10. Applications must reach the Secretary not later than first post on Monday, July 15th.

Queen Mary's Hospital for the EAST END, E.15.

Applications are invited for the post of HONORARY MEDICAL OFFICER in charge of the Electro-therapeutic Department at the above Hospital.

Applicants must be registered medical practitioners engaged solely in the practice of Electro-therapeutics; a knowledge of Radium Therapy is essential.

Applications, with copies of not more than three recent testimonials, should be forwarded to the undersigned on or before July 3rd next.

Further particulars may be obtained from—
RAPHAEL JACKSON (Major),
Secretary.

Queen Mary's Hospital for the EAST END, E.15.

Applications are invited for the post of ANÆSTHETIST to the above Hospital.

Applications, accompanied by copies of testimonials, from male candidates only, should be forwarded to the undersigned not later than July 3rd.

The appointment carries with it an honorarium of 50 guineas per annum, and attendance will be required on Thursday mornings.

RAPHAEL JACKSON (Major),
Secretary.

Queen Mary's Hospital for the EAST END, E.15.

Applications are invited for the post of HONORARY SURGEON in charge of the Orthopædic Department at the above Hospital.

Candidates must be Fellows of a Royal College of Surgeons.

Applications, with copies of not more than three recent testimonials, should be forwarded to the undersigned on or before July 3rd next.

Further particulars may be obtained from—
RAPHAEL JACKSON (Major),
Secretary.

Queen Mary's Hospital for the EAST END, E.15.

Applications are invited for the post of HONORARY PHYSICIAN in charge of the Skin Department at the above Hospital.

Applicants must be Graduates of a British University, or Fellows or Members of a Royal College of Physicians.

Applications, with copies of not more than three recent testimonials, should be forwarded to the undersigned on or before July 3rd next.

Further particulars may be obtained from—
RAPHAEL JACKSON (Major),
Secretary.

Royal Northern Hospital, Holloway, London, N.

Applications are invited for the post of HOUSE SURGEON. The appointment is for nine months (six months House Surgeon and three months Casualty Officer) from September 15th. Salary at the rate of £70 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent by July 6th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER,
Secretary.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

Applications are invited for the post of HONORARY ASSISTANT SURGEON to the Ear, Nose, and Throat Department.

Applicants must be Fellows of one of the Royal Colleges of Surgeons, and engaged in Consulting Practice.

Applications, stating age, qualifications, and enclosing copies of three recent testimonials, to be sent on or before Monday, July 1st, to—

FREDK. W. DREWETT,
June 10th, 1929. Director.

ST. LUKE'S HOSPITAL. FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165

Bristol City Mental Hospital.

THIRD ASSISTANT MEDICAL OFFICER.

Applications are invited from unmarried gentlemen, duly qualified and registered, and not over 35 years of age, for the above post. Salary commencing at £350, rising by two annual increments of £25 to £400 per annum, with board, apartments, laundry, and attendance. Fully equipped laboratory, with trained Assistant for research and clinical pathology.

The appointment is subject to the Asylum Officers Superannuation Act, 1909. Application forms, which are obtainable from the Medical Superintendent, should reach him at the Mental Hospital, Fishponds, Bristol, completed with copies of three testimonials, by Wednesday, July 10th.

The Council House, Bristol. JOSIAH GREEN, Clerk to the Visiting Committee.
June 22nd, 1929.

St. Bartholomew's Hospital.

OFFICE OF ASSISTANT PHYSICIAN and ASSISTANT DIRECTOR of the MEDICAL PROFESSORIAL CLINIC.

Notice is hereby given that a Meeting of the Election Committee will be held on Tuesday, July 23rd, 1929, at 4 o'clock in the afternoon, to elect an Assistant Physician to this Hospital and Assistant Director of the Medical Professorial Clinic.

Candidates, who must be Fellows or Members of the Royal College of Physicians of London, are required to lodge 50 copies of their applications and testimonials with the undersigned on or before Monday, July 8th.

THOMAS HAYES,
June 22nd, 1929. Clerk to the Governors.

The Willesden General Hospital (Incorporated), London, N.W.10. (106 Beds.)

The Executive Committee invite applications for the appointment of RESIDENT HOUSE SURGEON (male). Candidates must be duly registered under the Medical Acts, and unmarried.

The appointment is for a period of six months from August 1st (the first three months as Junior House Surgeon, the second three months as Senior House Surgeon). Salary at the rate of £100 per annum.

Fully detailed applications, with copies of testimonials, to be received by the Secretary not later than noon on Tuesday, July 2nd.

June 6th, 1929.

The Preston and County of LANCASTER QUEEN VICTORIA ROYAL INFIRMARY.

The Board of Management invite applications from unmarried gentlemen, duly qualified and registered, for the post of HOUSE SURGEON. Duties under Consulting Surgeon.

Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, to be forwarded to the undersigned as soon as possible.

JOHN GIBSON,
Superintendent and Secretary.
Royal Infirmary, Preston,
June, 1929.

St. Mary's Hospitals, Manchester.

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Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges.

1. DEATH VACANCY.—EAST COAST.—In a thriving Seaport and Hospital Town, an old-established good middle-class PRACTICE, the gross cash receipts of which have averaged for the past three years £1,180, including panel of 1,500. Suitable house in central position, with 2 reception, 4 bedrooms, usual offices, and professional rooms. Electric light. Garden. Can be rented on lease at £50 p.a. Efficient locum in charge. Premium 1½ years' purchase, or near offer.
2. EAST COAST.—SEAPORT TOWN.—Old-established middle and working class PRACTICE. Average cash receipts for the past three years £1,835, including panel of over 1,000. Fees 2/6 to 10/6. Midwifery has been discouraged, but much can be had at fees from 5 gns. upwards. Good house with 2 reception, 5 bedrooms, etc. Electric light. Small garden. Price for freehold £1,350, part on mortgage. Premium 1½ years' purchase, part by instals. Ill health reason for sale.
3. WEST END.—Good-class non-panel and non-dispensing PRACTICE, established many years. Average cash receipts for past three years nearly £1,400. Fees one guinea. Suitable accommodation available. Premium £2,000. Good introduction. Ill health reason for sale.
4. SOUTHAMPTON.—Old-established mixed-class PRACTICE. Average gross cash receipts for past 3 years £1,535, including panel and appts. worth about £850. Visits 3/6 to 10/6. Practically no midwifery. Exceptionally nice house, with ample accommodation and garden. Price £2,000. Premium 1½ years' purchase.
5. DEVON.—NEAR LARGE TOWN.—PARTNERSHIP.—A half share in a good mixed Practice, rapidly increasing and situated in beautiful district near sea. Gross cash receipts for immediate past year £2,600, including panel of over 1,300, and appts. worth nearly £250. Fees 2/6 to 21/-. Mids. 3 to 10 gns. Convenient house, with 2 reception, 5 bedrooms, etc., and separate professional accommodation. Garden. Price for freehold £1,000. Excellent sport and schools. Premium 2 years' purchase.
6. SOUTH CORNWALL.—COAST TOWN.—PARTNERSHIP.—A one-fifth share in an old-established Practice, producing about £5,000 p.a., including panel of nearly 2,400. Very good house, with 2 reception, 5 bedrooms, etc., and usual offices. Rent on lease £45 p.a. Well-equipped Hospital. Premium 2 years' purchase.
7. LONDON, S.W.—A HALF SHARE in a well-established Practice, the gross cash receipts of which for the past three years averaged £2,466. Panel of 1,260. Fees 3/6 upwards. Midwifery from 5 gns.; about 30-40 cases yearly. Suitable accommodation available. Premium 2 years' purchase.
8. PARTNERSHIP.—MIDLANDS.—PROSPEROUS TOWN.—A one-third share (with increase to one-half) is offered in a very old-established good middle-class Practice averaging £3,400 p.a., including selected panel of over 1,000. M.O.H. and School appts. worth nearly £300. Fees 5/6 to 21/-. Mids. 2 to 10 gns. (20—30 cases yearly). Commodious house, with 2 reception, 5 bedrooms, etc. Electric light. Garden. Garage. Can be rented on lease at £65 p.a. Good sport and schools. Premium 2 years' purchase.
9. SOUTH COAST.—Popular and Favourite Watering-place.—Old-established increasing mixed-class PRACTICE, producing last year nearly £1,600 (this year to end of May £880), including panel of over 1,150. Visits 3/6 upwards. Mids. from 4 gns. (30 cases yearly) House contains eight rooms, with usual offices and garden. Price for freehold £1,450 (£1,000 at least obtained on mortgage). Held by Vendor over 9 years.
10. EAST COAST.—Popular Resort.—Old-established non-panel better and middle-class PRACTICE, offering excellent scope. There is a Hospital with over 80 beds. Average cash receipts for the past three years £2,400. Fees 3/6 to 10/6 and upwards. Very little mid. Very good private residence near sea, with ample accommodation. This need not be taken, as purchaser could reside at suitable central surgery premises. Premium for prompt sale, owing ill health, only £1,500.
11. YORKS.—PROSPEROUS LARGE TOWN.—Well-established compact PRACTICE, averaging nearly £1,600 p.a., including panel of 1,400. Fees 3/- upwards. Not much midwifery. Low expenses. Very well-situated double-fronted house, with 2 reception, 4 bedrooms, etc., and good professional rooms. Electric light. Garden. Price for freehold £1,500, of which £1,000 could remain on mortgage. Premium 1½ years' purchase.
12. PARTNERSHIP.—SOUTH-WESTERN COUNTY.—In a large seaport town the THIRD SHARE (to commence with) of an old-established mixed-class Practice averaging £3,200 p.a., including panel of over 2,000, is offered. Visits 3/6 to 10/6. Midwifery discouraged; about 30 cases yearly at 3 gns. upwards. Expenses light. Suitable residence available. Premium 2 years' purchase.
13. EAST COAST.—ASSISTANTSHIP with view to PARTNERSHIP.—A one-third share in a very sound mixed-class Practice, producing £2,300 p.a., and offering excellent scope. Panel of about 1,000, and good appointments. Choice of houses. Premium 2 years' purchase.
14. SUSSEX.—PARTNERSHIP.—A one-half share in a very old-established unopposed Practice in delightful district near sea. Average cash receipts for past three years £2,800, including £1,000 from panel and appointments. Visits 3/6 to 42/-. Midwifery from 2 gns.; about 30 cases. Very attractive house, with 2 reception, 5 bedrooms, etc., large garden. Can be rented on lease at £80 p.a. Excellent sport and schools. Premium 2 years' purchase.
15. EASTERN COUNTIES.—Unopposed Country PRACTICE, easily worked, and situated in beautiful district, near two good towns. Average cash receipts for past three years £1,064, including panel of 530. Nice house, with 3 reception, 6 bedrooms, etc. Price for freehold £2,000. Premium £1,500.
16. EASTERN SUBURB.—PARTNERSHIP, with succession.—A half share in an old-established Practice averaging over £1,100 p.a., including panel of 1,145. No midwifery, but scope for this. Suitable house, with electric light and garden. Price £800. Premium 2 years' pur.
17. MANCHESTER.—PRACTICE is situated in a growing district offering very good scope. Income for the immediate past 12 months over £1,600, including panel of nearly 900. Fees 3/6 upwards. Detached well-situated house, with 3 reception, 5 bedrooms, etc. Can be rented on lease at £110 p.a. Premium 1½ years' purchase.
18. LONDON.—EAST END.—Increasing cash and panel PRACTICE producing £450 p.a., including 300 panel patients. Visits 3/- upwards. Very little Midwifery. Seven-roomed house on lease. Rent £78, inclusive of rates and taxes. Premium £650.
19. WITHIN 50 MILES OF LONDON.—In a small Country Town, in pretty district, a well-established increasing PRACTICE, worth last year over £800, including panel of 525, and appts. about £60. Visits 3/6 to 21/-, medicine extra. Midwifery discouraged. Railway station in place. Very good house (3 reception, 5 bedrooms, etc.), court. Garage. Electric light. Price for 1½ years' purchase. Exceptionally good boys.
20. COUNTRY PRACTICE, near good town.— averaging over £1,000 p.a., including panel of nearly 600. Fees 2/6 to 10/-. Excellently situated house, with 2 reception, 5 bedrooms, etc., and separate entrance to professional rooms. Good garden and garage for 2 cars. Can be rented on lease at £100 p.a. Premium £1,350.
21. GLOS.—LARGE TOWN.—PARTNERSHIP.—A well-qualified experienced gentleman (aged about 40, married, and good at Gynæcology) is required to purchase the half share of an non-dispensing Practice owing to the retire of the senior partner. Income about £5,00(panel. Suitable house available, with ample rental. Premium 2 years' purchase, part by instalments.
22. MIDLANDS.—Country District, near large Town.—Agricultural and working-class PRACTICE, rapidly increasing. Income last year £1,250, including panel of 545. Visits 3/6 and 5/-. Small convenient house, freehold. Price, including all furniture excepting linen and plate, £1,650 (£1,000 on mortgage at 4 per cent.). Large garden. Garage. Excellent sport. Premium £1,800.
23. CARDIFF. — Good-class old-established non-dispensing PRACTICE, worth last year about £1,350, including select panel of 450. Visits up to 21/-. Very little midwifery. Good house in best part of City, with ample accommodation. Price, freehold, £2,000. Prem. £2,000.
24. SOUTH LONDON (Near CROYDON).—Sound and increasing mixed-class PRACTICE, in growing locality. Gross cash receipts for immediate past 12 months £2,800, including panel of 2,240. Fees 2/6 to 7/6. Convenient freehold house, with electric light. Garage. Garden. Good sport and schools. Premium £4,500. Efficient introd.
25. PARTNERSHIP, with ultimate succession.—SOUTH-WEST LONDON.—A third or half share, to commence with, in an old-established good mixed non-panel Practice, offering large scope. Receipts for last year nearly £2,500. Fees 2/6 to 7/6. Little midwifery. Good house, with garden. Can be obtained on long lease at the very moderate rent of £55 p.a. Premium 2 years' purchase.
26. —NEW ZEALAND.—(North Island).—In an up-to-date Town (pop. 12,000, with a further 10,000 in outlying district) within 12 miles of the sea, a well-established PRACTICE worth last year over £1,000, including appts. averaging £280. Visits 10/6 to 21/-, mileage extra. No dispensing. Excellent Bungalow residence, in an acre of garden, with fruit trees, tennis court, etc., containing 9 rooms, bathroom, etc. Electric light, h. and c. water. Climate finest in New Zealand. Splendid educational facilities and unlimited sport. Scope for surgery.
27. PARTNERSHIP.—LONDON.—In a populous district, the half share of an old-established middle and working-class Practice, worth over £2,000 p.a., including panel of 1,300. Visits 3/6 to 10/6. Expenses light, car not necessary. House contains professional accommodation, 2 reception, 2 bedrooms, bathroom, etc. Held on lease at rental of about £60 p.a. Premium 2 years' purchase.
28. SOUTH-WEST OF ENGLAND.—Large Thriving Hospital Town.—PARTNERSHIP.—The half or five-ninths share in an old-established better and middle-class non-panel general and surgical Practice can be acquired by a suitable gentleman possessing the F.R.C.S. degree. Receipts for the past three years average over £5,000 p.a. Good house, with ample accommodation, at present held on lease with option to purchase. Premium 2 years' purchase
29. X-RAY AND ELECTRO-THERAPEUTIC PRACTICE.—Large Hospital Town within 80 miles of London. A well-established connection averaging nearly £1,000 p.a. (last year £1,059). Patients upper and middle-class. Fees 1½ to 15 gns. House in pleasant position, with ample professional accommodation. Rent £60. Premium £1,500, or offer. Electric plant (which has been valued) £670 extra. Vendor is on staff of Hospital and successor will be appointed.
30. LIVERPOOL.—Mixed-class PRACTICE, producing this year at the rate of over £1,200. Panel of 560. Good house specially built and well situated, containing 2 reception, 4 bedrooms, etc. Large garden. Garage. Price for leasehold £1,800, part on mortgage. Prem. £1,650.

Full Schedule of Terms and Conditions will be forwarded on application.

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